# 107 ES



**Mn/DOT Name:** 107 ES
**NGS Name:** 107 ES
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 116 N | 27 W | 445001.00 | 940751.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | USGS |

**Description:** (2016) **Stamping:** 107 ES 1955

4.6 MILES NORTHEAST OF GLENCOE, 0.1 MILE NORTHWEST ALONG MORNINGSIDE DRIVE FROM THE JUNCTION OF MORNINGSIDE DRIVE AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.4 MILE NORTH ON UNION AVENUE, THEN 1.1 MILES NORTH ON COUNTY ROAD 3, THEN 3.0 MILES CONTINUED NORTH ON FALCON AVENUE, 139.0 FEET SOUTH AND 29.0 FEET EAST OF THE CENTERLINE OF A TEE-ROAD EAST (THE JUNCTION OF FALCON AVENUE AND COUNTY ROAD 55), 1.0 FOOT EAST OF A POWER LINE POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.844 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.502 12B = -90.515 09 = -90.443 03 = -90.275**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 108 ES
**NGS Name:** 108 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 116 N | 27 W | 445305.00 | 940749.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | USGS |

**Description:** (1959) **Stamping:** 108 ES 1955

3.5 MILES SOUTHEAST OF SILVER LAKE, 2.5 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 2 IN SILVER LAKE, THEN 1.6 MILES SOUTH ON FALCON AVENUE NORTH, 54.0 FEET NORTH AND 84.0 FEET EAST OF THE CENTERLINE OF A ROAD AT A RAILROAD CROSSING, 1.0 FOOT NORTH OF THE NORTH RIGHT-OF-WAY FENCE, 1 POLE EAST OF MILEPOST 57.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.368 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.367 12B = -90.380 09 = -90.308 03 = -90.144**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 109 ES
**NGS Name:** 109 ES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6189 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 117 N | 27 W | 445502.83 | 940803.81 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (2005) **Stamping:** 109 ES 1955

3.15 MILES NORTHEAST OF SILVER LAKE, 3.6 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 TO TRUNK HIGHWAY 7 MILEPOINT 153.90, AT THE WEST EDGE OF SILVER LAKE, THEN 0.75 MILE NORTH ON COUNTY ROAD 88 (FALCON AVENUE), 100.3 FEET EAST-NORTHEAST OF A POWER POLE, 50.0 FEET EAST OF COUNTY ROAD 88, 24.0 FEET SOUTH OF 207TH STREET, 11.3 FEET EAST OF A POWER POLE, 2.2 FEET WEST OF A WITNESS POST.

**Station Pair:** STED MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1035.319 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1035.342 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1035.319 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1035.280 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.817 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 1034.939 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1035.319 | | | 944.998 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1035.319 | | | 944.998 | .007 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1035.438 | .262 | | 945.116 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1035.270 | .262 | | 944.952 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1035.398 | .262 | | 945.074 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1035.333 | .262 | | 945.008 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| | | | 944.998 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1035.267 | .262 | | 945.011 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 945.087 | .009 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1035.267 | .131 | | 945.221 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1035.267 | .131 | | 945.221 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.318 12B = -90.325 09 = -90.256 03 = -90.098**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 02.83486 | 94 08 03.80534 | 629258.231 | 268601.549 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 55 02.83486 | 94 08 03.80534 | 629258.231 | 268601.549 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 55 02.83530 | 94 08 03.80612 | 629258.174 | 268601.593 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 55 02.83508 | 94 08 03.80558 | 629258.213 | 268601.571 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 55 02.83453 | 94 08 03.80496 | 629258.258 | 268601.516 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 55 02.83518 | 94 08 03.80477 | 629258.272 | 268601.582 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 55 02.83486 | 94 08 03.80534 | 629258.231 | 268601.549 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 02.83476 | 94 08 03.80580 | 629258.198 | 268601.539 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 55 02.83501 | 94 08 03.80621 | 629258.168 | 268601.564 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 02.83447 | 94 08 03.80588 | 629258.192 | 268601.509 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 55 02.83447 | 94 08 03.80588 | 629258.192 | 268601.509 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 55 02.83447 | 94 08 03.80588 | 629258.194 | 268601.510 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 02.82865 | 94 08 03.80102 | 629258.545 | 268600.923 | .033 | C | GPS - STATIC | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589854.051 | 1027105.941 | 1346665.212 | 16320198.820 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2589854.051 | 1027105.941 | 1346665.212 | 16320198.820 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2589853.995 | 1027105.986 | 1346665.156 | 16320198.865 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2589854.034 | 1027105.964 | 1346665.194 | 16320198.842 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2589854.078 | 1027105.908 | 1346665.238 | 16320198.786 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2589854.092 | 1027105.973 | 1346665.253 | 16320198.851 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2589854.051 | 1027105.941 | 1346665.212 | 16320198.820 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589854.018 | 1027105.931 | 1346665.178 | 16320198.810 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2589853.989 | 1027105.956 | 1346665.149 | 16320198.836 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589854.012 | 1027105.901 | 1346665.172 | 16320198.780 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2589854.012 | 1027105.901 | 1346665.172 | 16320198.780 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2589854.012 | 1027105.901 | 1346665.172 | 16320198.780 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589854.361 | 1027105.312 | 1346665.513 | 16320198.187 | .033 | C | GPS - STATIC | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/109_ES-DF6189-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/109_ES-DF6189-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/109_ES-DF6189-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 110 ES



**Mn/DOT Name:** 110 ES
**NGS Name:** 110 ES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 117 N | 28 W | 445650.00 | 940800.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SEE DESCRIPTION | USGS |

**Description:** (2016) **Stamping:** 110 ES 1955

1.0 MILE SOUTH AND 4.2 MILES WEST OF WINSTED, 1.0 MILE SOUTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 IN WINSTED, THEN 3.9 MILES WEST ON COUNTY ROAD 5, THEN 0.2 MILE SOUTH ON COUNTY ROAD 86, NEAR THE JUNCTION OF COUNTY ROAD 5 (EAST AND NORTH) AND COUNTY ROAD 86 (SOUTHWEST), 26.0 FEET NORTH AND 55.0 FEET WEST OF A ROAD AT A DRIVE SOUTHWEST.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.224 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.285 12B = -90.285 09 = -90.210 03 = -90.072**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 116 ES **NGS Name:** 116 ES

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 117 N | 28 W | 445609.00 | 941521.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2010 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 4 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SEE DESCRIPTION | USGS |

**Description:** (2016) **Stamping:** 116 ES 1955

2.3 MILES NORTH AND 2.8 MILES WEST OF SILVER LAKE, 0.2 MILE NORTH ALONG COUNTY ROAD 16 (JADE ROAD) FROM THE JUNCTION OF COUNTY ROAD 16 AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 0.7 MILE WEST CONTINUED ON COUNTY ROAD 16, THEN 2.0 MILES NORTH CONTINUED ON COUNTY ROAD 16, THEN 1.5 MILES WEST ON 220TH STREET, 52.0 FEET SOUTH AND 58.0 FEET EAST OF THE JUNCTION OF COUNTY ROAD 71 AND 220TH STREET.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.616 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -89.977 12B = -89.987 09 = -89.875 03 = -89.731**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 117 ES **NGS Name:** 117 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6190 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 117 N | 28 W | 445333.82 | 941519.52 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 2 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (2016) **Stamping:** 117 ES 1955 TT

3.3 MILES SOUTHWEST OF SILVER LAKE, 2.6 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 147.7, 270.0 FEET EAST OF COUNTY ROAD 71, 89.0 FEET NORTH OF TRUNK HIGHWAY 7, 1.5 FEET WEST-SOUTHWEST OF A POWER POLE, 1.1 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.947 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1056.934 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.481 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 1056.504 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 966.786 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 966.894 | .012 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1056.920 | .131 | | 967.022 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1056.920 | .131 | | 967.022 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.187 12B = -90.197 09 = -90.082 03 = -89.924**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.82200 | 94 15 19.51635 | 597945.587 | 259417.428 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.82208 | 94 15 19.51717 | 597945.528 | 259417.436 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.82148 | 94 15 19.51657 | 597945.571 | 259417.375 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 33.82148 | 94 15 19.51657 | 597945.572 | 259417.375 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.81659 | 94 15 19.51312 | 597945.822 | 259416.879 | .033 | C | GPS - STATIC | 1989 | HSILV |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.97000 | 94 15 18.55000 | | | .100 | C | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558474.013 | 1018166.225 | 1315184.732 | 16311649.001 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558473.954 | 1018166.234 | 1315184.672 | 16311649.010 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558473.997 | 1018166.173 | 1315184.715 | 16311648.948 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2558473.997 | 1018166.173 | 1315184.715 | 16311648.948 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558474.244 | 1018165.677 | 1315184.956 | 16311648.449 | .033 | C | GPS - STATIC | 1989 | HSILV |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1933875.000 | 690090.700 | | | .100 | C | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** 118 ES
**NGS Name:** 118 ES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0664 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 116 N | 28 W | 445111.64 | 941513.57 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 1975 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** 118 ES 1955

6.0 MILES EAST-SOUTHEAST OF HUTCHINSON, 8.1 MILES SOUTHEAST ALONG COUNTY ROAD 22 FROM THE JUNCTION OF COUNTY ROAD 22 AND WASHINGTON AVENUE EAST IN HUTCHINSON, THEN 2.1 MILES EAST ON COUNTY ROAD 11, THEN 0.8 MILE NORTH ON COUNTY ROAD 71, 0.17 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 71 AND 165TH STREET, 0.08 MILE NORTH OF STATION 118 ES RESET USGS, 57.10 FEET EAST OF THE CENTERLINE OF COUNTY ROAD 71.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.307 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.737 | .328 | | 961.727 | .328 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.390 12B = -90.394 09 = -90.289 03 = -90.118**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 11.63949 | 94 15 13.57251 | 598440.631 | 245019.183 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 11.63496 | 94 15 13.56730 | 598441.009 | 245018.726 | .328 | | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 11.77127 | 94 15 12.64285 | | | .100 | 4 | CLASSICAL SURVEY | 1986 | 10744 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558857.186 | 1003765.984 | 1315390.197 | 16297248.330 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558857.560 | 1003765.524 | 1315390.565 | 16297247.866 | .328 | | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1934255.595 | 675688.950 | | | .100 | 4 | CLASSICAL SURVEY | 1986 | 10744 |

# 118 ES RESET



**Mn/DOT Name:** 118 ES RESET **NGS Name:** 118 ES RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0663 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 116 N | 29 W | 445111.82 | 941512.71 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1974 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | USGS |

**Description:** (2016) **Stamping:** 118 ES TT USGS 1955 RESET 1974

2.1 MILES NORTHEAST OF BISCAY, 0.9 MILE NORTH ALONG COUNTY ROAD 4 (MAJOR AVENUE) FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, THEN 1.0 MILE EAST ON COUNTY ROAD 11, THEN 0.8 MILE NORTH ON COUNTY ROAD 71, 0.17 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 71 AND 165TH STREET, 0.08 MILE NORTH OF STATION 118 ES RESET USGS, 113.42 FEET EAST OF THE CENTERLINE OF COUNTY ROAD 71.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1049.407 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1984 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.390 12B = -90.394 09 = -90.289 03 = -90.390**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 11.82486 | 94 15 12.71006 | 598502.676 | 245038.246 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 11.82036 | 94 15 12.70472 | 598503.063 | 245037.792 | .328 | | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 11.95664 | 94 15 11.78042 | | | .100 | 4 | CLASSICAL SURVEY | 1986 | 10744 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558919.371 | 1003784.564 | 1315452.593 | 16297266.138 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558919.754 | 1003784.107 | 1315452.970 | 16297265.676 | .328 | | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1934317.780 | 675707.530 | | | .100 | 4 | CLASSICAL SURVEY | 1986 | 10744 |

# 118 ES RESET USGS



**Mn/DOT Name:** 118 ES RESET USGS **NGS Name:** 118 ES RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0665 Get Map
**NGS Quad / Sta Num :** 44094142/1003
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 116 N | 28 W | 445107.42 | 941513.66 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1975 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 6 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | USGS |

**Description:** (2016) **Stamping:** 118 ES TT 1955 RESET 1975

6.0 MILES EAST-SOUTHEAST OF HUTCHINSON, 4.0 MILES SOUTHWEST OF SILVER LAKE, 2.5 MILES SOUTHWEST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, THEN 2.8 MILES SOUTH ON COUNTY ROAD 71, 0.65 MILE SOUTH OF STATION HASSEN 2, 55.0 FEET EAST OF COUNTY ROAD 71, 6.0 FEET EAST OF THE CENTER OF 2 WIRE GATES, 1.0 FOOT NORTH OF A PROPERTY LINE FENCE, 1.8 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1049.985 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1984 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.424 | .262 | | 960.411 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.394 12B = -90.397 09 = -90.295 03 = -90.124**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 07.41907 | 94 15 13.66373 | 598436.052 | 244591.710 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 07.41454 | 94 15 13.65835 | 598436.442 | 244591.253 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 07.55083 | 94 15 12.73409 | | | .100 | 3 | CLASSICAL SURVEY | 1986 | 10744 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558849.288 | 1003338.603 | 1315377.033 | 16296821.173 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558849.674 | 1003338.143 | 1315377.413 | 16296820.708 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1934247.696 | 675261.570 | | | .100 | 3 | CLASSICAL SURVEY | 1986 | 10744 |

**Mn/DOT Name:** 119 ES

**NGS Name:** 119 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 7 | 115 N | 28 W | 444634.00 | 941416.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SEE DESCRIPTION | USGS |

**Description:** (2016) **Stamping:** 119 ES 1955

0.5 MILE NORTH AND 4.0 MILES WEST OF GLENCOE, 4.0 MILES WEST ALONG 110TH STREET FROM THE JUNCTION OF 110TH STREET AND ARMSTRONG AVENUE, 30.0 FEET NORTH AND 30.0 FEET EAST OF A POINT OF TANGENCY OF COUNTY ROAD 5 WITH A TEE-ROAD SOUTHWEST, 30.0 FEET EAST OF A FARM ROAD NORTH, 1.0 FOOT WEST OF A POWER POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.630 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.735 12B = -90.741 09 = -90.636 03 = -90.462**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 130 ES **NGS Name:** 130 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 114 N | 29 W | 444205.00 | 942232.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 1993 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SEE DESCRIPTION | USGS |

**Description:** (2016) **Stamping:** 130 ES 1955

2.1 MILES SOUTH AND 1.2 MILES WEST OF BROWNTON, 1.0 MILE WEST ON TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 25 (NORTH) IN BROWNTON, THEN 1.7 MILES SOUTH ON TRUNK HIGHWAY 15, 730.0 FEET NORTH AND 79.0 FEET EAST OF THE CROSSROADS (TRUNK HIGHWAY 15 AND 57TH STREET), 600.0 FEET SOUTH AND 79.0 FEET EAST OF TRUNK HIGHWAY 15 AT AN EAST-WEST FENCE LINE, 2.0 FEET NORTHEAST OF A CORNER FENCE POST.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.521 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.810 12B = -90.804 09 = -90.682 03 = -90.548**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 131 ES USGS **NGS Name:** 131 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0648 Get Map
**NGS Quad / Sta Num :** 44094134/1061
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 114 N | 29 W | 443933.21 | 942232.66 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2024 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 4 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (2016) **Stamping:** 131 ES 1955 1024

5.0 MILES SOUTH OF BROWNTON, 1.0 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 25 IN BROWNTON, THEN 4.6 MILES SOUTH ON TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 15 MILEPOINT 84.9, 87.0 FEET EAST OF TRUNK HIGHWAY 15, 83.0 FEET SOUTH OF COUNTY ROAD 17, 20.0 FEET NORTHEAST OF A POWER POLE, 23.0 FEET WEST-NORTHWEST OF A CORNER FENCE POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.785 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1024.785 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1024.900 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1024.834 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.457 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |
| 1024.256 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.791 | .262 | | 933.804 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1024.791 | .262 | | 933.797 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1023.620 | .197 | | 932.957 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.991 12B = -90.994 09 = -90.859 03 = -90.731**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.21058 | 94 22 32.65845 | 567031.777 | 174159.804 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 39 33.21063 | 94 22 32.65787 | 567031.818 | 174159.809 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.20903 | 94 22 32.66114 | 567031.582 | 174159.646 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.20291 | 94 22 32.65756 | 567031.843 | 174159.027 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.33709 | 94 22 31.71882 | | | .100 | 2 | CLASSICAL SURVEY | 1977 | 16059 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526902.571 | 933160.071 | 1282575.603 | 16227055.003 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2526902.613 | 933160.076 | 1282575.645 | 16227055.007 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526902.376 | 933159.915 | 1282575.406 | 16227054.849 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526902.632 | 933159.294 | 1282575.654 | 16227054.225 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902301.013 | 605083.001 | | | .100 | 2 | CLASSICAL SURVEY | 1977 | 16059 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/131_ES-PQ0648-3E-22MAY2024.jpg | E | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/131_ES-PQ0648-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/131_ES-PQ0648-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 142 ES

**NGS Name:** 142 ES

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 114 N | 30 W | 444118.00 | 942951.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 3 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (2016) **Stamping:** 142 ES 1955 1054

2.5 MILES SOUTH AND 0.5 MILE WEST OF STEWART, 2.3 MILES SOUTH ALONG COUNTY ROAD 7 FROM THE JUNCTION OF COUNTY ROAD 7 AND TRUNK HIGHWAY 212 IN STEWART, THEN 1.0 MILE WEST ON 50TH STREET, 71.0 FEET SOUTH AND 58.0 FEET EAST OF A ROAD AT A TEE-ROAD EAST, 31.0 FEET NORTH AND 58.0 FEET EAST OF A NORTH-SOUTH ROAD AT A TEE-ROAD WEST, 30.0 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.329 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.646 12B = -90.666 09 = -90.528 03 = -90.394**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/142_ES-3E-19APR2011.jpg | E | Apr 19, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/142_ES-2-19APR2011.jpg | | Apr 19, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/142_ES-1-19APR2011.jpg | | Apr 19, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 147 ES
**NGS Name:** 147 ES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1478 Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 117 N | 30 W | 445633.54 | 943001.76 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (2016) **Stamping:** 147 ES TT 1955 1107

1.1 MILES EAST OF CEDAR MILLS, 1.1 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 26 IN CEDAR MILLS, AT THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 7 MILEPOINT 134.1, AT TRUNK HIGHWAY 22 MILEPOST 130, IN THE CENTER MOST OF THE EAST SODDED ISLAND FORMED BY THE JUNCTION, 100.0 FEET NORTHWEST OF THE MOST EAST POINT OF THE ISLAND, 46.0 FEET NORTH OF TRUNK HIGHWAY 7, 41.0 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 0.6 FOOT SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.613 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1107.599 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000698 |
| 1107.599 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1107.599 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2006 | VBLOM |
| 1107.616 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.117 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1107.120 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1980 | L24530 |
| 1107.163 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1966 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.613 | | | 1018.738 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1107.613 | | | 1018.745 | .006 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 1018.738 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1107.609 | .131 | | 1018.942 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1107.435 | .262 | | 1018.722 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1107.609 | .131 | | 1018.846 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2242-B |
| 1107.609 | .131 | | 1018.846 | .066 | 2007 | GPS - STATIC | 2010 | HBLOM |
| 1107.609 | .131 | | 1018.928 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2242 |
| 1107.609 | .131 | | 1018.928 | .066 | 1996 | GPS - STATIC | 2006 | HBLOM |

**Geoid Separations(ft): GEOID18 = -88.865 12B = -88.861 09 = -88.714 03 = -88.658**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.53581 | 94 30 01.75874 | 534400.535 | 277419.970 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 56 33.53578 | 94 30 01.75874 | 534400.535 | 277419.967 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 56 33.53581 | 94 30 01.75874 | 534400.535 | 277419.970 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.53681 | 94 30 01.75957 | 534400.475 | 277420.071 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 56 33.53578 | 94 30 01.75929 | 534400.495 | 277419.967 | .033 | C | ADJUSTMENT | 2010 | GPS2242-B |
| 44 56 33.53578 | 94 30 01.75929 | 534400.495 | 277419.967 | .033 | C | GPS - STATIC | 2010 | HBLOM |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.53520 | 94 30 01.75895 | 534400.519 | 277419.908 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 56 33.53520 | 94 30 01.75894 | 534400.520 | 277419.908 | .033 | C | ADJUSTMENT | 2006 | GPS2242 |
| 44 56 33.53520 | 94 30 01.75894 | 534400.520 | 277419.908 | .033 | C | GPS - STATIC | 2006 | HBLOM |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495076.610 | 1036659.588 | 1252033.533 | 16330920.588 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2495076.610 | 1036659.584 | 1252033.533 | 16330920.585 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2495076.610 | 1036659.588 | 1252033.533 | 16330920.588 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495076.551 | 1036659.689 | 1252033.475 | 16330920.691 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2495076.570 | 1036659.585 | 1252033.493 | 16330920.586 | .033 | C | ADJUSTMENT | 2010 | GPS2242-B |
| 2495076.570 | 1036659.585 | 1252033.493 | 16330920.586 | .033 | C | GPS - STATIC | 2010 | HBLOM |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495076.594 | 1036659.526 | 1252033.517 | 16330920.527 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2495076.595 | 1036659.526 | 1252033.517 | 16330920.527 | .033 | C | ADJUSTMENT | 2006 | GPS2242 |
| 2495076.595 | 1036659.526 | 1252033.517 | 16330920.527 | .033 | C | GPS - STATIC | 2006 | HBLOM |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/147_ES-PQ1478-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/147_ES-PQ1478-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/147_ES-PQ1478-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 167 ES

**NGS Name:** 167 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1535 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 115 N | 29 W | 444545.00 | 942232.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | PROJECTS 3 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (1984) **Stamping:** 167 ES 1955

2.0 MILES NORTHWEST OF BROWNTON, 2.8 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 92.2, 73.0 FEET EAST OF TRUNK HIGHWAY 15, 23.0 FEET SOUTH-SOUTHEAST OF A POWER POLE, 0.4 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.517 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.031 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1030.979 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.544 12B = -90.548 09 = -90.407 03 = -90.266**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 168 ES
**NGS Name:** 168 ES
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 116 N | 29 W | 444819.50 | 942231.49 | 2 | 3 |

**NGS ACRN:** PQ1531 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (1984) **Stamping:** 168 ES 1955

4.6 MILES SOUTH OF HUTCHINSON, 6.4 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 95.2, 191.0 FEET NORTH OF COUNTY ROAD 70, 71.5 FEET EAST OF TRUNK HIGHWAY 15, 3.6 FEET SOUTH OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.980 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1046.980 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1046.993 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.517 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1046.573 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.901 | .262 | | 956.684 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.357 12B = -90.341 09 = -90.216 03 = -90.079**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 19.50038 | 94 22 31.49436 | 566947.075 | 227461.498 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527231.474 | 986455.073 | 1283560.024 | 16280332.091 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/168_ES-PQ1531-3E-12APR2011.jpg | E | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/168_ES-PQ1531-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/168_ES-PQ1531-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 169 ES
**NGS Name:** 169 ES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1525 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 116 N | 29 W | 445056.00 | 942231.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 1985 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 3 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (1984) **Stamping:** 169 ES 1955

3.0 MILES SOUTH OF HUTCHINSON, 3.45 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 98.2, 141.5 FEET EAST-NORTHEAST OF A TELEPHONE CABLE PEDESTAL, 103.4 FEET SOUTH OF A POWER POLE, 72.0 FEET EAST OF TRUNK HIGHWAY 15, 5.5 FEET NORTH OF A SECTION LINE FENCE, 1.0 FOOT SOUTH OF A WITNESS POST.

**Station Notes**
04-13-11 FOUND THE CONCRETE BROKEN, THE DISK WAS MISSING.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.749 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.289 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1044.398 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.108 12B = -90.082 09 = -89.957 03 = -89.832**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 170 ES
**NGS Name:** 170 ES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1517 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 117 N | 29 W | 445344.00 | 942208.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 5 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (1984) **Stamping:** 170 ES 1955

IN HUTCHINSON, 0.15 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, NEAR THE SOUTHEAST END OF A TRUNK HIGHWAY 15 BRIDGE OVER THE CROW RIVER, AT TRUNK HIGHWAY 15 MILEPOINT 101.5, 63.1 FEET NORTHWEST OF A FLAGPOLE, 55.8 FEET EAST OF TRUNK HIGHWAY 15, 39.1 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF BRIDGE NUMBER 5235.

**Station Notes**
NEW BRIDGE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.952 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.512 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1039.808 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -89.764 12B = -89.754 09 = -89.629 03 = -89.524**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 171 ES

**NGS Name:** 171 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1502 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 19 | 117 N | 29 W | 445541.00 | 942202.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 4 IN. | STEEL ROD IMBED IN MON |

**Monument Type**
CONCRETE POST (PREFABRICATED)

**Disk Type**
BENCH MARK DISK

**Mon. Agency**
USGS

**Description:** (1986)

**Stamping:** 171 ES 1955

2.75 MILES NORTH OF HUTCHINSON, 2.2 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 IN HUTCHINSON, IN THE SOUTHEAST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 15 AND 215TH STREET (EAST), AT TRUNK HIGHWAY 15 MILEPOINT 103.85, 123.0 FEET SOUTH OF A TOWNSHIP ROAD, 86.0 FEET SOUTH-SOUTHWEST OF A CORNER FENCE POST, 69.0 FEET EAST OF TRUNK HIGHWAY 15, 13.3 FEET NORTH-NORTHWEST OF A RIGHT-OF-WAY POST, 12.9 FEET WEST OF THE NORTH-SOUTH FENCE, 0.7 FOOT WEST OF A TELEPHONE CABLE MARKER POST, 1.1 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1091.897 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1091.487 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1091.231 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1970 | CS4305 |
| 1091.113 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -89.521 12B = -89.514 09 = -89.386 03 = -89.291**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 172 ES

**NGS Name:** 172 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1509 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 117 N | 29 W | 445752.00 | 942207.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 1 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE POST (PREFABRICATED) | BENCH MARK DISK | USGS |

**Description:** (1986) **Stamping:** 172 ES 1955

5.2 MILES NORTH OF HUTCHINSON, 4.8 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 IN HUTCHINSON, IN THE NORTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 15 AND COUNTY ROAD 60, AT TRUNK HIGHWAY 15 MILEPOINT 106.45, 250.0 FEET NORTH OF COUNTY ROAD 60, 147.5 FEET SOUTH OF AN ENTRANCE, 82.7 FEET SOUTHEAST OF THE NORTHEAST CORNER OF A HOUSE, 69.5 FEET WEST OF TRUNK HIGHWAY 15, 29.8 FEET NORTH OF A POWER POLE WITH A TRANSFORMER.

**Station Notes**

FOUND THE MARK LOOSE, THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1097.895 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1097.524 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1097.472 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -89.268 12B = -89.262 09 = -89.140 03 = -89.052**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4302 A **NGS Name:** 4302 A

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0071 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 26 | 117 N | 27 W | 445423.36 | 940158.85 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1968 | 2005 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 4 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | MNDT |

**Description:** (1990) **Stamping:** 4302 A 1968

1.2 MILES NORTH-NORTHEAST OF LESTER PRAIRIE, 1.0 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261 IN LESTER PRAIRIE, AT THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 9, AT TRUNK HIGHWAY 7 MILEPOINT 158.9, 90.0 FEET EAST-SOUTHEAST OF A POWER POLE, 74.0 FEET WEST OF COUNTY ROAD 9, 63.0 FEET NORTH OF TRUNK HIGHWAY 7, 45.5 FEET WEST OF A TELEPHONE POLE, 0.5 FOOT SOUTH OF A WITNESS POST.

**Station Notes**

THE MONUMENT WAS RECOVERED WITH THE CONCRETE BUSTED AND THE DISK MISSING (WRIGHT COUNTY SURVEYOR). MAGNETIC, PROJECTS 4.0 INCHES.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.463 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 998.413 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 998.413 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.941 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 998.128 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L22905 |
| 998.128 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L114 MINN |
| 998.016 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 908.243 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 908.322 | .009 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 998.423 | .131 | | 908.459 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 998.423 | .131 | | 908.459 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.203 12B = -90.229 09 = -90.144 03 = -900000**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.36189 | 94 01 58.84837 | 655550.401 | 264781.050 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.36208 | 94 01 58.84901 | 655550.355 | 264781.069 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.36169 | 94 01 58.84871 | 655550.377 | 264781.029 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 23.36169 | 94 01 58.84871 | 655550.375 | 264781.029 | .033 | C | GPS - STATIC | 2002 | HLEST |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2616113.215 | 1023081.535 | 1372866.005 | 16315852.055 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2616113.169 | 1023081.554 | 1372865.959 | 16315852.075 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2616113.191 | 1023081.514 | 1372865.980 | 16315852.035 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2616113.191 | 1023081.514 | 1372865.980 | 16315852.035 | .033 | C | GPS - STATIC | 2002 | HLEST |

**Mn/DOT Name:** 4302 AA **NGS Name:** 4302 AA

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 31 | 117 N | 28 W | 445335.06 | 941412.49 | 2 | C |

**NGS ACRN:** DQ4222 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 24 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4302 AA 2015

2.1 MILES SOUTHWEST OF SILVER LAKE, 1.7 MILES SOUTHWEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 148.70, 191.8 FEET NORTHWEST OF TRUNK HIGHWAY 7, 37.8 FEET WEST OF KALE AVENUE, 3.7 FEET SOUTH OF A RIGHT-OF-WAY POST, 3.7 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.716 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1054.716 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.716 | | | 964.493 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1054.716 | | | 964.493 | .017 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1054.735 | .262 | | 964.493 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1054.775 | .262 | | 964.535 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1054.765 | .262 | | 964.526 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1054.785 | .262 | | 964.532 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1054.653 | .262 | | 964.401 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.239 12B = -90.252 09 = -90.147 03 = -89.977**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 35.06292 | 94 14 12.48991 | 602770.386 | 259566.058 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 35.06292 | 94 14 12.48991 | 602770.386 | 259566.058 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 35.06284 | 94 14 12.48973 | 602770.399 | 259566.049 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 35.06280 | 94 14 12.49022 | 602770.364 | 259566.045 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 35.06302 | 94 14 12.48994 | 602770.384 | 259566.068 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 35.06296 | 94 14 12.48949 | 602770.417 | 259566.062 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 53 35.06282 | 94 14 12.48970 | 602770.401 | 259566.047 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 35.06240 | 94 14 12.49017 | 602770.368 | 259566.005 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563299.354 | 1018277.368 | 1320009.984 | 16311700.578 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2563299.354 | 1018277.368 | 1320009.984 | 16311700.578 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2563299.367 | 1018277.360 | 1320009.997 | 16311700.570 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2563299.332 | 1018277.356 | 1320009.962 | 16311700.566 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2563299.352 | 1018277.378 | 1320009.982 | 16311700.588 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2563299.384 | 1018277.372 | 1320010.015 | 16311700.582 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2563299.369 | 1018277.358 | 1320009.999 | 16311700.568 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563299.335 | 1018277.315 | 1320009.965 | 16311700.526 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_AA-DQ4222-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_AA-DQ4222-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_AA-DQ4222-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 AB **NGS Name:** 4302 AB

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4220 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 116 N | 29 W | 445332.47 | 941616.13 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 34 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4302 AB 2015

4.8 MILES EAST OF HUTCHINSON, 3.1 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 146.95, 95.9 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 7, 126.8 FEET WEST OF A FIELD ENTRANCE, 2.2 FEET NORTH OF A RIGHT-OF-WAY POST, 2.2 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.983 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1066.983 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.983 | | | 976.852 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1066.983 | | | 976.852 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1066.917 | .262 | | 976.780 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1067.055 | .262 | | 976.917 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1067.016 | .262 | | 976.878 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1067.025 | .262 | | 976.878 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1066.950 | .262 | | 976.803 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.138 12B = -90.147 09 = -90.033 03 = -89.875**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.46831 | 94 16 16.12560 | 593870.743 | 259261.802 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 32.46831 | 94 16 16.12560 | 593870.743 | 259261.802 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 32.46838 | 94 16 16.12513 | 593870.776 | 259261.810 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 32.46821 | 94 16 16.12618 | 593870.701 | 259261.792 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 32.46864 | 94 16 16.12643 | 593870.683 | 259261.836 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 32.46827 | 94 16 16.12566 | 593870.738 | 259261.798 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 53 32.46788 | 94 16 16.12580 | 593870.728 | 259261.759 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.46777 | 94 16 16.12583 | 593870.726 | 259261.748 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2554398.478 | 1018042.261 | 1311108.886 | 16311575.360 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2554398.478 | 1018042.261 | 1311108.886 | 16311575.360 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2554398.512 | 1018042.268 | 1311108.919 | 16311575.367 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2554398.436 | 1018042.251 | 1311108.844 | 16311575.351 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2554398.418 | 1018042.295 | 1311108.827 | 16311575.395 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2554398.474 | 1018042.257 | 1311108.881 | 16311575.356 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2554398.463 | 1018042.218 | 1311108.871 | 16311575.317 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2554398.461 | 1018042.206 | 1311108.868 | 16311575.306 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_AB-DQ4220-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_AB-DQ4220-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_AB-DQ4220-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 B **NGS Name:** 4302 B

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0072 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 35 | 117 N | 27 W | 445421.81 | 940248.39 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1972 | 2019 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | MNDT |

**Description:** (1990) **Stamping:** 4302 B 1972

1.2 MILES NORTH OF LESTER PRAIRIE, 0.3 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261, AT TRUNK HIGHWAY 7 MILEPOINT 158.2, IN THE SOUTHEAST CORNER OF A TRUNK HIGHWAY 7 BOX CULVERT AT A SMALL CREEK, 138.5 FEET EAST OF A POWER POLE NUMBER 376, 42.0 FEET SOUTH OF TRUNK HIGHWAY 7.

**Station Notes**

THE SURVEY MARK HAS BEEN DEEMED UNSAFE DUE TO FALL RISK AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.554 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 997.603 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 997.603 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 997.550 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 997.603 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.071 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 997.314 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L22905 |
| 997.314 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L114 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.610 | .262 | | 907.456 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.216 12B = -90.249 09 = -90.154 03 = -90.010**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.81329 | 94 02 48.38562 | 651986.115 | 264598.221 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2612547.957 | 1022926.445 | 1369300.048 | 16315740.948 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_B-PQ0072-3S-10MAY2011.jpg | S | May 10, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_B-PQ0072-2-10MAY2011.jpg | | May 10, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_B-PQ0072-1-10MAY2011.jpg | | May 10, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 C **NGS Name:** 4302 C

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0070 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 117 N | 27 W | 445421.81 | 940106.66 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1972 | 2019 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | MNDT |

**Description:** (1990) **Stamping:** 4302 C 1972

1.5 MILES NORTHEAST OF LESTER PRAIRIE, 1.75 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261 IN LESTER PRAIRIE, 0.31 MILE WEST OF THE JUNCTION OF TRUNK HIGHWAY 7 AND ZEBRA AVENUE, AT TRUNK HIGHWAY 7 MILEPOINT 159.6, IN THE SOUTHEAST CORNER OF THE EAST HEADWALL OF A TRUNK HIGHWAY 7 BOX CULVERT AT CRANE CREEK, 45.0 FEET SOUTH OF TRUNK HIGHWAY 7.

**Station Notes**

THE SURVEY MARK HAS BEEN DEEMED UNSAFE DUE TO FALL RISK AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 958.164 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 958.213 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 958.276 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 958.233 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 958.450 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 957.761 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 958.171 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L22905 |
| 958.171 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L114 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 958.197 | .262 | | 868.069 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.190 12B = -90.216 09 = -90.131 03 = -89.990**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.81238 | 94 01 06.65938 | 659307.854 | 264652.147 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2619869.192 | 1022923.429 | 1376618.748 | 16315647.728 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_C-PQ0070-3S-10MAY2011.jpg | S | May 10, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_C-PQ0070-2-10MAY2011.jpg | | May 10, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_C-PQ0070-1-10MAY2011.jpg | | May 10, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 D **NGS Name:** 4302 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1169 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 33 | 117 N | 29 W | 445346.54 | 941933.10 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4302 D 1984

2.0 MILES NORTHEAST OF HUTCHINSON, 2.2 MILES EAST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 144.20, 72.0 FEET NORTH OF TRUNK HIGHWAY 7, 28.0 FEET EAST-SOUTHEAST OF A POWER POLE NUMBER 33-1, 2.6 FEET SOUTH OF A RIGHT-OF-WAY POST, 2.0 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.705 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1063.705 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1063.705 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1063.548 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1990 | 17351 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.262 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1063.266 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 973.774 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 973.889 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1063.712 | .131 | | 974.011 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1063.712 | .131 | | 974.011 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |
| 1063.712 | .197 | | 974.125 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.924 12B = -89.918 09 = -89.793 03 = -89.668**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.54057 | 94 19 33.10376 | 579684.247 | 260628.734 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.54070 | 94 19 33.10422 | 579684.214 | 260628.747 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.54013 | 94 19 33.10358 | 579684.260 | 260628.689 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 46.54013 | 94 19 33.10358 | 579684.261 | 260628.688 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 44 53 46.53958 | 94 19 33.10542 | 579684.128 | 260628.633 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.53495 | 94 19 33.09958 | 579684.549 | 260628.166 | .033 | C | GPS - STATIC | 1991 | H1991 |
| 44 53 46.53501 | 94 19 33.09935 | 579684.567 | 260628.172 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.67280 | 94 19 32.16580 | | | .100 | C | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540224.394 | 1019519.153 | 1296957.175 | 16313226.762 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540224.361 | 1019519.166 | 1296957.142 | 16313226.775 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540224.407 | 1019519.108 | 1296957.188 | 16313226.717 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2540224.407 | 1019519.108 | 1296957.188 | 16313226.717 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 2540224.275 | 1019519.053 | 1296957.054 | 16313226.664 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540224.693 | 1019518.582 | 1296957.467 | 16313226.188 | .033 | C | GPS - STATIC | 1991 | H1991 |
| 2540224.710 | 1019518.589 | 1296957.484 | 16313226.194 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1915622.812 | 691441.973 | | | .100 | C | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** 4302 E **NGS Name:** 4302 E

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9119 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 3 | 116 N | 29 W | 445332.00 | 941815.57 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 5 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)
**Disk Type:** VERTICAL CONTROL DISK
**Mon. Agency:** MNDT

**Description:** (1990) **Stamping:** 4302 E 1989

3.25 MILES EAST OF HUTCHINSON, 3.25 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 145.3, 128.0 FEET SOUTH OF TRUNK HIGHWAY 7, 76.0 FEET EAST-NORTHEAST OF A POWER POLE WITH A METER, 31.0 FEET EAST OF NICKEL AVENUE, 1.8 FEET WEST OF A POWER POLE WITH A TRANSFORMER, 1.0 FOOT WEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.974 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1068.971 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.525 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 978.978 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1068.895 | .262 | | 978.991 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1068.961 | .131 | | 979.086 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1068.961 | .131 | | 979.198 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1068.961 | .131 | | 979.086 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1068.699 | .262 | | 978.932 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -90.026 12B = -90.026 09 = -89.901 03 = -89.767**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.00032 | 94 18 15.57013 | 585271.730 | 259177.904 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.00056 | 94 18 15.57099 | 585271.668 | 259177.928 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 32.00029 | 94 18 15.57113 | 585271.658 | 259177.900 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 53 32.00029 | 94 18 15.57113 | 585271.658 | 259177.900 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 31.99973 | 94 18 15.57055 | 585271.700 | 259177.844 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 32.00034 | 94 18 15.57066 | 585271.691 | 259177.906 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2545799.906 | 1018025.134 | 1302512.633 | 16311664.351 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2545799.844 | 1018025.158 | 1302512.571 | 16311664.377 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2545799.834 | 1018025.131 | 1302512.561 | 16311664.350 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2545799.834 | 1018025.131 | 1302512.561 | 16311664.350 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2545799.876 | 1018025.074 | 1302512.602 | 16311664.292 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2545799.868 | 1018025.136 | 1302512.595 | 16311664.354 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_E-DG9119-3S-05MAY2011.jpg | S | May 5, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_E-DG9119-2-05MAY2011.jpg | | May 5, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_E-DG9119-1-05MAY2011.jpg | | May 5, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4302 E RESET



**Mn/DOT Name:** 4302 E RESET **NGS Name:** 4302 E RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4219 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 3 | 116 N | 29 W | 445332.00 | 941815.57 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4302 E RESET 2015

3.25 MILES EAST OF HUTCHINSON, 3.25 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 145.30, 128.0 FEET SOUTH OF TRUNK HIGHWAY 7, 76.0 FEET EAST-NORTHEAST OF A POWER POLE WITH A METER, 31.0 FEET EAST OF NICKEL AVENUE, 1.8 FEET NORTH-NORTHWEST OF A POWER POLE WITH A TRANSFORMER, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.784 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1068.784 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.909 | .262 | | 978.883 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1068.738 | .262 | | 978.712 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.026 12B = -90.026 09 = -89.901 03 = -89.767**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.00055 | 94 18 15.56993 | 585271.744 | 259177.927 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 31.99948 | 94 18 15.56882 | 585271.824 | 259177.819 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2545799.921 | 1018025.157 | 1302512.648 | 16311664.375 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2545800.000 | 1018025.049 | 1302512.726 | 16311664.265 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_E_RESET-DQ4219-3S-16JUN2024.jpg | S | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_E_RESET-DQ4219-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_E_RESET-DQ4219-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 F **NGS Name:** 4302 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9120 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 117 N | 29 W | 445333.93 | 941722.20 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4302 F 1989

4.8 MILES EAST OF HUTCHINSON, 3.95 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 146.05, 70.0 FEET NORTH OF TRUNK HIGHWAY 7, 287.0 FEET WEST OF DRIVEWAY NUMBER 14596, 5.6 FEET WEST OF A POWER POLE WITH A GUY WIRE, 1.5 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.920 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1065.920 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1065.920 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1065.913 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.467 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.798 | .262 | | 975.723 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.072 12B = -90.075 09 = -89.957 03 = -89.813**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.92841 | 94 17 22.91554 | 589061.693 | 259388.840 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549591.025 | 1018206.621 | 1306304.883 | 16311798.996 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_F-DG9120-3N-28JUL2015.jpg | N | Jul 28, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_F-DG9120-2-28JUL2015.jpg | | Jul 28, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_F-DG9120-1-28JUL2015.jpg | | Jul 28, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4302 F RESET

**Mn/DOT Name:** 4302 F RESET
**NGS Name:** 4302 F RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS3058 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 117 N | 29 W | 445333.93 | 941722.92 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2024) **Stamping:** 4302 F RESET 2024

4.8 MILES EAST OF HUTCHINSON, 3.95 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 146.05, 70.0 FEET NORTH OF TRUNK HIGHWAY 7, 287.0 FEET WEST OF DRIVEWAY NUMBER 14596, 5.6 FEET WEST OF A POWER POLE WITH A GUY WIRE, 1.5 FEET EAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.664 | | | 975.625 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1065.664 | | | 975.625 | .012 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1065.716 | .262 | | 975.644 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**Geoid Separation(ft): GEOID18 = -90.072**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.92902 | 94 17 22.91521 | 589061.716 | 259388.902 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 33.92902 | 94 17 22.91521 | 589061.716 | 259388.902 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 33.92962 | 94 17 22.91505 | 589061.728 | 259388.963 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.92847 | 94 17 22.91537 | 589061.705 | 259388.846 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549591.049 | 1018206.683 | 1306304.908 | 16311799.058 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2549591.049 | 1018206.683 | 1306304.908 | 16311799.058 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2549591.061 | 1018206.743 | 1306304.921 | 16311799.118 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549591.038 | 1018206.627 | 1306304.896 | 16311799.002 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_F_RESET-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_F_RESET-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_F_RESET-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 G

**NGS Name:** 4302 G

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9121 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 116 N | 29 W | 445331.00 | 941623.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1989) **Stamping:** 4302 G 1989

4.3 MILES SOUTHWEST OF SILVER LAKE, 3.7 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 146.80, AT THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 4 SOUTH, 149.0 FEET SOUTH OF TRUNK HIGHWAY 7 ON COUNTY ROAD 4, 78.5 FEET EAST OF COUNTY ROAD 4, 1.7 FEET NORTH OF A POWER POLE, 0.6 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.663 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1069.653 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.204 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.131 12B = -90.141 09 = -90.026 03 = -89.872**

*** No Horizontal Positions in the Database ***

# 4302 H



**Mn/DOT Name:** 4302 H

**NGS Name:** 4302 H

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9123 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445333.00 | 941436.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1989) **Stamping:** 4302 H 1989

2.6 MILES SOUTHWEST OF SILVER LAKE, 2.0 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, NEAR A CEMETERY, AT TRUNK HIGHWAY 7 MILEPOINT 148.3, 69.5 FEET NORTH OF TRUNK HIGHWAY 7, 44.0 FEET WEST OF THE WEST ENTRANCE TO A CEMETERY, 7.6 FEET NORTHWEST OF A RIGHT-OF-WAY POST, 2.0 FEET WEST-NORTHWEST OF A POWER POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.396 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1057.380 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.953 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.236 09 = -90.124 03 = -89.960**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4302 J

**NGS Name:** 4302 J

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9146 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 117 N | 28 W | 445347.00 | 941318.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1989) **Stamping:** 4302 J 1989

1.4 MILES SOUTHWEST OF SILVER LAKE, 0.95 MILE WEST AND SOUTHWEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 149.35, 173.0 FEET EAST-NORTHEAST OF A FARM ENTRANCE, 90.0 FEET SOUTHEAST OF TRUNK HIGHWAY 7, 4.2 FEET NORTH-NORTHEAST OF A CORNER FENCE POST, 1.3 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.405 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1051.382 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.949 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.266 12B = -90.279 09 = -90.177 03 = -90.006**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4302 K **NGS Name:** 4302 K

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 33 | 117 N | 28 W | 445411.00 | 941243.00 | 2 | |

**NGS ACRN:** DG9126 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1989) **Stamping:** 4302 K 1989

IN SILVER LAKE, 0.2 MILE WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 150.50, 98.0 FEET SOUTHEAST OF TRUNK HIGHWAY 7 ON TO COUNTY ROAD 92 (MAIN STREET), 69.5 FEET WEST-SOUTHWEST OF COUNTY ROAD 92, 32.1 FEET NORTH OF UNDERGROUND CABLE MARKER POST NUMBER 42-1, 1.7 FEET NORTH OF A CORNER FENCE POST, 1.8 FEET NORTH-NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.839 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1042.816 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.377 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.266 12B = -90.279 09 = -90.180 03 = -90.006**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4302 L **NGS Name:** 4302 L

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9127 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445409.15 | 941155.07 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOUNDATION | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4302 L 1989

IN SILVER LAKE, 0.2 MILE SOUTH ALONG PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 194.0 FEET EAST ON MAIN STREET, THEN 212.0 FEET SOUTH ON TOWER AVENUE, IN THE SOUTHWEST QUADRANT OF THE JUNCTION OF MAIN STREET AND TOWER AVENUE, IN A BASE FOR THE SOUTHWEST LEG OF A WATER TANK, 212.0 FEET SOUTH OF MAIN STREET, 32.0 FEET EAST OF TOWER AVENUE, 26.2 FEET NORTH-NORTHWEST OF A POWER POLE NUMBER 45-12, 14.0 FEET NORTH OF AN ALLEY.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.092 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1068.092 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1068.092 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1068.065 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.623 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.908 | .262 | | 977.600 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1067.846 | .262 | | 977.629 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.298 12B = -90.308 09 = -90.216 03 = -90.042**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 09.15358 | 94 11 55.06728 | 612645.296 | 263069.267 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 09.15287 | 94 11 55.06888 | 612645.181 | 263069.194 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573200.223 | 1021703.433 | 1329950.064 | 16315003.450 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573200.108 | 1021703.361 | 1329949.948 | 16315003.380 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_L-DG9127-3E-09MAY2011.jpg | E | May 9, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_L-DG9127-2-09MAY2011.jpg | | May 9, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_L-DG9127-1-09MAY2011.jpg | | May 9, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 M
**NGS Name:** 4302 M
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9128 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 27 | 117 N | 28 W | 445424.86 | 941140.47 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4302 M 1989

IN THE NORTHEAST EDGE OF SILVER LAKE, 0.05 MILE WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 2 SOUTH IN SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 151.20, 55.0 FEET NORTH OF TRUNK HIGHWAY 7, 3.2 FEET SOUTHWEST OF A POWER POLE WITH A TRANSFORMER, 1.2 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.752 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1050.752 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1050.752 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1050.723 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.280 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.588 | .262 | | 960.287 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1050.726 | .262 | | 960.513 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.292 12B = -90.302 09 = -90.213 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.85915 | 94 11 40.46985 | 613687.450 | 264665.568 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.85942 | 94 11 40.46978 | 613687.455 | 264665.595 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574254.646 | 1023291.437 | 1331023.746 | 16316577.949 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574254.652 | 1023291.464 | 1331023.752 | 16316577.977 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_M-DG9128-3N-10MAY2011.jpg | N | May 10, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_M-DG9128-2-10MAY2011.jpg | | May 10, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_M-DG9128-1-10MAY2011.jpg | | May 10, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4302 M RESET



**Mn/DOT Name:** 4302 M RESET
**NGS Name:** 4302 M RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS3059 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 27 | 117 N | 28 W | 445424.86 | 941140.47 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | FLUSH | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2024) **Stamping:** 4302 M RESET 2024

IN THE NORTHEAST EDGE OF SILVER LAKE, 0.05 MILE WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 2 SOUTH IN SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 151.20, 55.0 FEET NORTH OF TRUNK HIGHWAY 7, 3.2 FEET SOUTHWEST OF A POWER POLE WITH A TRANSFORMER, 1.2 FEET SOUTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.480 | | | 960.221 | .020 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1050.480 | | | 960.221 | .020 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1050.625 | .262 | | 960.333 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**Geoid Separation(ft): GEOID18 = -90.292**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.85970 | 94 11 40.47081 | 613687.381 | 264665.623 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 24.85970 | 94 11 40.47081 | 613687.381 | 264665.623 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 24.85970 | 94 11 40.47152 | 613687.330 | 264665.623 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.85917 | 94 11 40.47115 | 613687.357 | 264665.569 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574254.578 | 1023291.492 | 1331023.678 | 16316578.006 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 2574254.578 | 1023291.492 | 1331023.678 | 16316578.006 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2574254.526 | 1023291.492 | 1331023.627 | 16316578.007 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574254.553 | 1023291.439 | 1331023.653 | 16316577.953 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_M_RESET-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_M_RESET-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_M_RESET-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 N **NGS Name:** 4302 N

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9131 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 35 | 117 N | 28 W | 445424.71 | 941006.88 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 N 1989

1.5 MILES NORTHEAST OF SILVER LAKE, 1.95 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 152.25, 71.5 FEET NORTH OF TRUNK HIGHWAY 7, 1.5 FEET SOUTHEAST OF A POWER POLE NUMBER 317, 1.4 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.692 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1028.702 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1028.702 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1028.702 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1028.702 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1028.669 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.216 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.692 | | | 938.348 | .018 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1028.692 | | | 938.348 | .018 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1028.823 | .262 | | 938.492 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1028.633 | .262 | | 938.302 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1028.709 | .262 | | 938.377 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1028.774 | .262 | | 938.440 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1028.640 | .262 | | 938.308 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1028.712 | .262 | | 938.377 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1028.571 | .262 | | 938.315 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.331 12B = -90.334 09 = -90.256 03 = -90.092**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.70643 | 94 10 06.87457 | 620424.033 | 264687.478 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 24.70643 | 94 10 06.87457 | 620424.033 | 264687.478 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 24.70614 | 94 10 06.87417 | 620424.062 | 264687.449 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 24.70594 | 94 10 06.87446 | 620424.042 | 264687.428 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 54 24.70633 | 94 10 06.87490 | 620424.010 | 264687.468 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 54 24.70651 | 94 10 06.87446 | 620424.041 | 264687.486 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 54 24.70694 | 94 10 06.87492 | 620424.008 | 264687.529 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 24.70599 | 94 10 06.87487 | 620424.012 | 264687.433 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.70587 | 94 10 06.87612 | 620423.922 | 264687.421 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.70601 | 94 10 06.87501 | 620424.002 | 264687.435 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2580990.550 | 1023261.008 | 1337757.145 | 16316464.443 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 2580990.550 | 1023261.008 | 1337757.145 | 16316464.443 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2580990.579 | 1023260.978 | 1337757.174 | 16316464.413 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2580990.558 | 1023260.958 | 1337757.152 | 16316464.393 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2580990.527 | 1023260.998 | 1337757.121 | 16316464.433 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2580990.558 | 1023261.016 | 1337757.153 | 16316464.451 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2580990.525 | 1023261.059 | 1337757.121 | 16316464.495 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2580990.529 | 1023260.963 | 1337757.123 | 16316464.399 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2580990.439 | 1023260.951 | 1337757.033 | 16316464.388 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2580990.518 | 1023260.965 | 1337757.113 | 16316464.401 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_N-DG9131-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_N-DG9131-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_N-DG9131-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 P **NGS Name:** 4302 P

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9132 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 26 | 117 N | 28 W | 445424.61 | 940902.97 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4302 P 1989

2.2 MILES NORTHEAST OF SILVER LAKE, 2.85 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 153.15, 74.0 FEET NORTH OF TRUNK HIGHWAY 7, 20.0 FEET EAST OF A DRIVEWAY NUMBER 7808, 1.8 FEET SOUTHEAST OF A POWER POLE NUMBER 300, 1.0 FOOT SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.626 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1042.642 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1042.642 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1042.642 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1042.642 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1042.606 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.147 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.626 | | | 952.301 | .021 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1042.626 | | | 952.301 | .021 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1042.714 | .262 | | 952.377 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1042.721 | .262 | | 952.380 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1042.606 | .262 | | 952.265 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1042.619 | .262 | | 952.350 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.341 12B = -90.341 09 = -90.269 03 = -90.108**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.61284 | 94 09 02.96717 | 625023.803 | 264704.757 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 24.61284 | 94 09 02.96717 | 625023.803 | 264704.757 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 24.61200 | 94 09 02.96660 | 625023.845 | 264704.672 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 24.61310 | 94 09 02.96705 | 625023.812 | 264704.783 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 24.61181 | 94 09 02.96648 | 625023.854 | 264704.653 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.61229 | 94 09 02.96658 | 625023.846 | 264704.701 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.61244 | 94 09 02.96770 | 625023.766 | 264704.716 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585589.875 | 1023242.544 | 1342354.770 | 16316389.262 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 2585589.875 | 1023242.544 | 1342354.770 | 16316389.262 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2585589.916 | 1023242.459 | 1342354.810 | 16316389.176 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2585589.884 | 1023242.570 | 1342354.779 | 16316389.288 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2585589.924 | 1023242.440 | 1342354.818 | 16316389.157 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585589.917 | 1023242.488 | 1342354.811 | 16316389.205 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585589.837 | 1023242.504 | 1342354.731 | 16316389.222 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_P-DG9132-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_P-DG9132-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_P-DG9132-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 Q
**NGS Name:** 4302 Q
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9135 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 31 | 117 N | 27 W | 445422.87 | 940710.10 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 Q 1989

3.7 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 3.25 MILES WEST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 154.65, 87.5 FEET SOUTH OF TRUNK HIGHWAY 7, 36.0 FEET EAST OF A FIELD ROAD BETWEEN THE TREES, 1.2 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.107 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1031.133 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1031.133 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1031.090 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.628 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.107 | | | 940.825 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1031.107 | | | 940.825 | .011 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1031.159 | .262 | | 940.838 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1031.140 | .262 | | 940.822 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1031.035 | .262 | | 940.717 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1031.166 | .262 | | 940.835 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1031.087 | .262 | | 940.756 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1031.136 | .262 | | 940.881 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.318 12B = -90.331 09 = -90.256 03 = -90.098**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.86795 | 94 07 10.09670 | 633148.723 | 264577.742 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 22.86795 | 94 07 10.09670 | 633148.723 | 264577.742 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 22.86742 | 94 07 10.09666 | 633148.726 | 264577.689 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 22.86731 | 94 07 10.09708 | 633148.696 | 264577.678 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 54 22.86774 | 94 07 10.09690 | 633148.708 | 264577.721 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 54 22.86749 | 94 07 10.09675 | 633148.719 | 264577.696 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 54 22.86755 | 94 07 10.09654 | 633148.734 | 264577.702 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.86738 | 94 07 10.09731 | 633148.679 | 264577.684 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.86761 | 94 07 10.09725 | 633148.683 | 264577.708 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593712.782 | 1023052.405 | 1350472.698 | 16316099.024 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2593712.782 | 1023052.405 | 1350472.698 | 16316099.024 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2593712.785 | 1023052.352 | 1350472.701 | 16316098.971 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2593712.755 | 1023052.340 | 1350472.670 | 16316098.960 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2593712.768 | 1023052.384 | 1350472.684 | 16316099.003 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2593712.779 | 1023052.359 | 1350472.694 | 16316098.978 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2593712.794 | 1023052.365 | 1350472.709 | 16316098.984 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593712.738 | 1023052.348 | 1350472.654 | 16316098.967 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593712.743 | 1023052.371 | 1350472.658 | 16316098.990 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Q-DG9135-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Q-DG9135-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Q-DG9135-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 R **NGS Name:** 4302 R

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9136 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 32 | 117 N | 27 W | 445422.69 | 940628.81 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 R 1989

3.2 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 2.65 MILES WEST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 155.25, 91.5 FEET WEST OF A DRIVEWAY, 73.0 FEET SOUTH OF TRUNK HIGHWAY 7, 12.4 FEET EAST OF AN UNDERGROUND CABLE MARKER POST NUMBER 8007-1, 2.0 FEET NORTH-NORTHWEST OF A POWER POLE WITH A TRANSFORMER, 2.2 FEET NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.941 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1032.977 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1032.977 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1032.934 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.468 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.039 | .262 | | 942.738 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1032.865 | .262 | | 942.626 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.305 12B = -90.321 09 = -90.239 03 = -90.085**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.68557 | 94 06 28.81059 | 636120.412 | 264578.235 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.68504 | 94 06 28.81049 | 636120.420 | 264578.181 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2596684.101 | 1023029.801 | 1353442.764 | 16316039.795 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2596684.108 | 1023029.747 | 1353442.770 | 16316039.742 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_R-DG9136-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_R-DG9136-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_R-DG9136-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 S **NGS Name:** 4302 S

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9145 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 33 | 117 N | 27 W | 445421.63 | 940537.86 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 S 1989

2.59 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 2.0 MILES WEST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 155.9, 112.0 FEET SOUTH OF TRUNK HIGHWAY 7, 33.5 FEET EAST OF DAIRY AVENUE, 2.1 FEET SOUTH-SOUTHEAST OF A POWER POLE, 1.5 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.613 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1032.655 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1032.655 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1032.613 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.140 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.613 | | | 942.377 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1032.613 | | | 942.377 | .011 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1032.682 | .262 | | 942.400 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1032.695 | .262 | | 942.387 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1032.521 | .262 | | 942.301 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.282 12B = -90.305 09 = -90.220 03 = -90.065**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.63178 | 94 05 37.85683 | 639788.518 | 264495.489 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 21.63178 | 94 05 37.85683 | 639788.518 | 264495.489 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 21.63127 | 94 05 37.85741 | 639788.477 | 264495.437 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 21.63204 | 94 05 37.85694 | 639788.510 | 264495.515 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.63135 | 94 05 37.85781 | 639788.448 | 264495.445 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.63150 | 94 05 37.85724 | 639788.489 | 264495.461 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2600351.101 | 1022918.554 | 1357107.182 | 16315883.380 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2600351.101 | 1022918.554 | 1357107.182 | 16315883.380 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2600351.059 | 1022918.502 | 1357107.140 | 16315883.329 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2600351.093 | 1022918.580 | 1357107.175 | 16315883.407 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2600351.031 | 1022918.510 | 1357107.111 | 16315883.338 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2600351.072 | 1022918.525 | 1357107.153 | 16315883.352 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_S-DG9145-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_S-DG9145-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_S-DG9145-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 T **NGS Name:** 4302 T

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9137 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 117 N | 27 W | 445423.11 | 940425.70 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2019 | GOOD | Horz=NO Vert=NO | YES | 4553 | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 T 1989

1.92 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 1.0 MILE WEST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 156.9, AT THE NORTHWEST CORNER OF THE JUNCTION OF TRUNK HIGHWAY 7 AND CABLE AVENUE, 185.7 FEET WEST OF A POWER POLE, 125.8 FEET NORTH OF A POWER POLE, 72.0 FEET WEST OF A GRAVEL ROAD, 53.5 FEET NORTH OF TRUNK HIGHWAY 7, 0.8 FOOT EAST OF THE NORTHWEST CORNER OF A HEADWALL OF TRUNK HIGHWAY 7 BOX CULVERT 226 AT OTTER CREEK.

**Station Notes**

THE SURVEY MARK HAS BEEN DEEMED UNSAFE DUE TO FALL RISK AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE. NO WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.649 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1012.698 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1012.672 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1012.626 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.150 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.718 | .262 | | 922.436 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1012.790 | .262 | | 922.600 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.249 12B = -90.282 09 = -90.187 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.11234 | 94 04 25.70344 | 644980.751 | 264680.489 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.11210 | 94 04 25.70424 | 644980.693 | 264680.464 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605544.116 | 1023063.168 | 1362300.251 | 16315963.938 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605544.059 | 1023063.144 | 1362300.193 | 16315963.915 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_T-DG9137-3N-22MAY2019.jpg | N | May 22, 2019 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_T-DG9137-2-22MAY2019.jpg | | May 22, 2019 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_T-DG9137-1-22MAY2019.jpg | | May 22, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 U **NGS Name:** 4302 U

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9138 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 27 | 117 N | 27 W | 445423.25 | 940349.17 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 U 1989

1.67 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 0.5 MILE WEST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 157.4, 66.0 FEET NORTH OF TRUNK HIGHWAY 7, 2.4 FEET SOUTHEAST OF A POWER POLE NUMBER 217, 2.1 FEET SOUTH-SOUTHWEST OF A WITNESS POST.

**Station Pair:** LUCKY - MCLEOD, MN

**Station Notes**
THE DISK IS SLIGHTLY TILTED TO THE WEST BUT SOLID.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.482 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1013.538 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1013.538 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1013.489 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.013 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.482 | | | 923.295 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1013.482 | | | 923.295 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1013.764 | .262 | | 923.528 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1013.574 | .262 | | 923.302 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1013.528 | .262 | | 923.354 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.236 12B = -90.269 09 = -90.174 03 = -90.026**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.24577 | 94 03 49.16920 | 647610.197 | 264712.238 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 23.24577 | 94 03 49.16920 | 647610.197 | 264712.238 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 23.24582 | 94 03 49.16881 | 647610.225 | 264712.243 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 23.24577 | 94 03 49.16932 | 647610.189 | 264712.238 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.24553 | 94 03 49.17024 | 647610.122 | 264712.213 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.24554 | 94 03 49.16948 | 647610.177 | 264712.214 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2608173.478 | 1023074.470 | 1364928.870 | 16315942.831 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2608173.478 | 1023074.470 | 1364928.870 | 16315942.831 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2608173.506 | 1023074.475 | 1364928.898 | 16315942.836 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2608173.470 | 1023074.470 | 1364928.862 | 16315942.831 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2608173.403 | 1023074.445 | 1364928.795 | 16315942.808 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2608173.458 | 1023074.446 | 1364928.850 | 16315942.808 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_U-DG9138-3N-20JUN2024.jpg | N | Jun 20, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_U-DG9138-2-20JUN2024.jpg | | Jun 20, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_U-DG9138-1-20JUN2024.jpg | | Jun 20, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4302 V



**Mn/DOT Name:** 4302 V

**NGS Name:** 4302 V

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9122 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 116 N | 29 W | 445333.00 | 941529.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| WALL - LIGHT RETAINING | BENCH MARK DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 V 1989

3.2 MILES SOUTHWEST OF SILVER LAKE, 2.7 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 147.6, 375.0 FEET WEST OF COUNTY ROAD 71, 43.1 FEET SOUTH OF TRUNK HIGHWAY 7, IN THE SOUTHEAST CORNER OF THE EAST HEADWALL OF A TRUNK HIGHWAY 7 BOX CULVERT.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.999 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1045.985 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.533 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.177 12B = -90.190 09 = -90.075 03 = -89.915**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4302 W
**NGS Name:** 4302 W
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9139 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 26 | 117 N | 27 W | 445422.97 | 940309.03 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4302 W 1989

1.2 MILES NORTH OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 144.0 FEET EAST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 157.9, IN THE NORTHEAST QUADRANT OF THE TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261, 163.0 FEET EAST OF COUNTY ROAD 1, 70.5 FEET NORTH OF TRUNK HIGHWAY 7, 2.2 FEET WEST OF A POWER POLE NUMBER 381, 1.0 FOOT SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1001.445 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1001.501 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1001.501 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1001.451 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1000.972 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1001.445 | | | 911.261 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1001.445 | | | 911.261 | .011 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1001.517 | .262 | | 911.297 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1001.533 | .262 | | 911.278 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1001.445 | .262 | | 911.284 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.256 09 = -90.161 03 = -90.013**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.97121 | 94 03 09.02459 | 650499.788 | 264704.845 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 22.97121 | 94 03 09.02459 | 650499.788 | 264704.845 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 22.97115 | 94 03 09.02467 | 650499.782 | 264704.839 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 22.97131 | 94 03 09.02453 | 650499.792 | 264704.855 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.97088 | 94 03 09.02560 | 650499.715 | 264704.811 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.97099 | 94 03 09.02488 | 650499.767 | 264704.823 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611062.647 | 1023044.611 | 1367816.697 | 16315877.378 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2611062.647 | 1023044.611 | 1367816.697 | 16315877.378 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2611062.641 | 1023044.605 | 1367816.691 | 16315877.372 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2611062.651 | 1023044.622 | 1367816.701 | 16315877.388 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611062.574 | 1023044.578 | 1367816.624 | 16315877.346 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611062.626 | 1023044.589 | 1367816.675 | 16315877.356 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_W-DG9139-3N-20JUN2024.jpg | N | Jun 20, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_W-DG9139-2-20JUN2024.jpg | | Jun 20, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_W-DG9139-1-20JUN2024.jpg | | Jun 20, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 X
**NGS Name:** 4302 X
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8111 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 117 N | 29 W | 445344.34 | 942050.64 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1996 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** 4302 X 1996

1.0 MILE EAST OF HUTCHINSON, 1.0 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.1, 134.3 FEET EAST-NORTHEAST OF A LIGHT POLE, 129.7 FEET EAST OF A FIRE HYDRANT, 75.0 FEET NORTH OF TRUNK HIGHWAY 7, 4.6 FEET EAST OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.271 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1072.271 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1072.271 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1072.271 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.829 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 982.432 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1072.196 | .262 | | 982.482 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1072.275 | .131 | | 982.541 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1072.275 | .131 | | 982.646 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1072.275 | .131 | | 982.541 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1072.127 | .262 | | 982.531 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| | | | 982.547 | .009 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1072.275 | .131 | | 982.672 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1072.275 | .131 | | 982.672 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -89.846 12B = -89.836 09 = -89.711 03 = -89.596**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.33795 | 94 20 50.64231 | 574103.139 | 260385.310 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.33783 | 94 20 50.64307 | 574103.084 | 260385.297 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 44.33804 | 94 20 50.64340 | 574103.061 | 260385.318 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 53 44.33804 | 94 20 50.64340 | 574103.061 | 260385.318 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 44.33789 | 94 20 50.64205 | 574103.158 | 260385.303 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.33748 | 94 20 50.64284 | 574103.101 | 260385.262 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 44.33780 | 94 20 50.64308 | 574103.084 | 260385.294 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 53 44.33733 | 94 20 50.64135 | 574103.208 | 260385.247 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 53 44.33733 | 94 20 50.64135 | 574103.209 | 260385.247 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534642.105 | 1019319.077 | 1291374.006 | 16313095.663 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534642.050 | 1019319.065 | 1291373.951 | 16313095.652 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2534642.026 | 1019319.086 | 1291373.928 | 16313095.674 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2534642.026 | 1019319.086 | 1291373.928 | 16313095.674 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2534642.123 | 1019319.071 | 1291374.025 | 16313095.657 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534642.066 | 1019319.029 | 1291373.967 | 16313095.616 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2534642.049 | 1019319.062 | 1291373.950 | 16313095.649 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2534642.173 | 1019319.014 | 1291374.074 | 16313095.599 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2534642.173 | 1019319.014 | 1291374.074 | 16313095.599 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_X-CJ8111-3N-04MAY2011.jpg | N | May 4, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_X-CJ8111-2-04MAY2011.jpg | | May 4, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_X-CJ8111-1-04MAY2011.jpg | | May 4, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4302 X RESET



**Mn/DOT Name:** 4302 X RESET
**NGS Name:** 4302 X RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4213 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 117 N | 29 W | 445344.34 | 942050.64 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4302 X RESET 2015

IN HUTCHINSON, 1.0 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.10, 75.0 FEET NORTH OF TRUNK HIGHWAY 7, 129.7 FEET EAST OF A FIRE HYDRANT, 9.0 FEET EAST OF A CABLE BOX, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.062 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1072.062 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.062 | | | 982.232 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1072.062 | | | 982.232 | .014 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1072.075 | .262 | | 982.226 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1072.048 | .262 | | 982.203 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1072.084 | .262 | | 982.239 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1072.048 | .262 | | 982.213 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1071.963 | .262 | | 982.127 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -89.846 12B = -89.836 09 = -89.711 03 = -89.596**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.33772 | 94 20 50.64215 | 574103.151 | 260385.286 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 44.33772 | 94 20 50.64215 | 574103.151 | 260385.286 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 44.33780 | 94 20 50.64231 | 574103.139 | 260385.294 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 44.33770 | 94 20 50.64263 | 574103.116 | 260385.284 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 53 44.33788 | 94 20 50.64263 | 574103.116 | 260385.302 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 53 44.33815 | 94 20 50.64230 | 574103.140 | 260385.330 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 53 44.33763 | 94 20 50.64161 | 574103.190 | 260385.277 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.33725 | 94 20 50.64268 | 574103.113 | 260385.238 | .066 | | NCAT | 2024 | HHUTCH1 |

# 4302 X RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534642.116 | 1019319.054 | 1291374.017 | 16313095.640 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2534642.116 | 1019319.054 | 1291374.017 | 16313095.640 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2534642.105 | 1019319.062 | 1291374.006 | 16313095.648 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2534642.081 | 1019319.052 | 1291373.983 | 16313095.638 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2534642.082 | 1019319.070 | 1291373.983 | 16313095.657 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2534642.105 | 1019319.097 | 1291374.007 | 16313095.683 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2534642.155 | 1019319.044 | 1291374.056 | 16313095.630 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534642.078 | 1019319.006 | 1291373.978 | 16313095.593 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_X_RESET-DQ4213-3N-16JUN2024.jpg | N | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_X_RESET-DQ4213-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_X_RESET-DQ4213-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 Y
**NGS Name:** 4302 Y
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4225 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 33 | 117 N | 28 W | 445410.17 | 941243.44 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 13 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4302 Y 2015

IN SILVER LAKE, 0.2 MILE SOUTHWEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 150.20, 85.4 FEET SOUTHEAST OF TRUNK HIGHWAY 7, 140.5 FEET SOUTHWEST OF COUNTY ROAD 92 (MAIN STREET WEST), 68.8 FEET SOUTHWEST OF THE NORTH CONCRETE POST OF THE NORTHWEST CORNER OF THE CITY OF SILVER LAKE SIGN, 1.5 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.433 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1043.433 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.433 | | | 953.177 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1043.433 | | | 953.177 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1043.469 | .262 | | 953.203 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1043.387 | .262 | | 953.112 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.269 12B = -90.279 09 = -90.180 03 = -90.010**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 10.17345 | 94 12 43.44007 | 609162.875 | 263154.257 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 10.17345 | 94 12 43.44007 | 609162.875 | 263154.257 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 10.17417 | 94 12 43.44019 | 609162.866 | 263154.330 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 10.17341 | 94 12 43.44068 | 609162.832 | 263154.253 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 10.17291 | 94 12 43.44036 | 609162.855 | 263154.202 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2569718.903 | 1021815.463 | 1326471.209 | 16315158.391 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2569718.903 | 1021815.463 | 1326471.209 | 16315158.391 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2569718.894 | 1021815.536 | 1326471.201 | 16315158.464 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2569718.859 | 1021815.459 | 1326471.165 | 16315158.388 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2569718.882 | 1021815.408 | 1326471.187 | 16315158.337 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Y-DQ4225-3SE-17JUN2024.jpg | SE | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Y-DQ4225-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Y-DQ4225-1-20AUG2015.jpg | | Aug 20, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4302 Z **NGS Name:** 4302 Z

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4224 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 117 N | 28 W | 445337.18 | 941334.62 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 27 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4302 Z 2015

1.5 MILES SOUTHWEST OF SILVER LAKE, 1.15 MILES SOUTHWEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 149.20, 55.0 FEET SOUTHEAST OF TRUNK HIGHWAY 7 FOG LINE, 48.6 FEET WEST OF 190TH STREET, 1.5 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.269 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1063.269 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.269 | | | 973.013 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1063.269 | | | 973.013 | .016 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1063.302 | .262 | | 973.033 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1063.223 | .262 | | 972.944 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.266 12B = -90.279 09 = -90.177 03 = -90.006**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 37.18087 | 94 13 34.61791 | 605495.801 | 259794.019 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 37.18087 | 94 13 34.61791 | 605495.801 | 259794.019 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 37.18127 | 94 13 34.61741 | 605495.837 | 259794.059 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 37.18105 | 94 13 34.61782 | 605495.807 | 259794.037 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 37.18035 | 94 13 34.61816 | 605495.783 | 259793.966 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2566026.193 | 1018484.133 | 1322738.542 | 16311873.642 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 2566026.193 | 1018484.133 | 1322738.542 | 16311873.642 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2566026.229 | 1018484.173 | 1322738.578 | 16311873.682 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2566026.200 | 1018484.151 | 1322738.548 | 16311873.660 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2566026.175 | 1018484.080 | 1322738.523 | 16311873.589 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Z-DQ4224-3SE-17JUN2024.jpg | SE | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Z-DQ4224-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4302_Z-DQ4224-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4303 A
**NGS Name:** 4303 A
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 30 | 114 N | 29 W | 443842.10 | 942228.93 | 2 | 3 |

**NGS ACRN:** DK3436 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | SURVEY DISK | MNDT |

**Description:** (1993) **Stamping:** 4303 A 1993

7.0 MILES NORTH OF WINTHROP, 7.05 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 19 IN WINTHROP, AT TRUNK HIGHWAY 15 MILEPOINT 83.95, 370.0 FEET EAST OF TRUNK HIGHWAY 15 ON 20TH STREET, 30.0 FEET NORTH OF A GRAVEL ROAD, 1.8 FEET SOUTHEAST OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1029.450 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1029.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1029.384 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.020 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.480 | .262 | | 938.427 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1029.453 | .262 | | 938.400 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1029.283 | .262 | | 938.230 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1029.375 | .262 | | 938.318 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |

**Geoid Separations(ft): GEOID18 = -91.056 12B = -91.056 09 = -90.925 03 = -90.797**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 42.09640 | 94 22 28.92845 | 567317.838 | 168984.002 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 38 42.09569 | 94 22 28.92860 | 567317.827 | 168983.929 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 38 42.09666 | 94 22 28.92860 | 567317.827 | 168984.028 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 38 42.09643 | 94 22 28.92797 | 567317.873 | 168984.005 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527148.430 | 927982.791 | 1282757.835 | 16221876.023 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2527148.419 | 927982.719 | 1282757.823 | 16221875.951 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2527148.419 | 927982.817 | 1282757.825 | 16221876.049 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2527148.465 | 927982.794 | 1282757.870 | 16221876.025 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_A-DK3436-3N-22MAY2024.jpg | N | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_A-DK3436-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_A-DK3436-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4303 B **NGS Name:** 4303 B

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK3437 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 114 N | 29 W | 444016.00 | 942233.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2010 | GOOD | Horz=NO Vert=NO | YES | 43015 | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (1993) **Stamping:** 4303 B 1993

4.0 MILES SOUTH-SOUTHWEST OF BROWNTON, IN THE SOUTHEAST CORNER OF A BRIDGE ABUTMENT OF TRUNK HIGHWAY 15 BRIDGE NUMBER 43015, 3.8 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 85.8, 23.5 FEET EAST OF TRUNK HIGHWAY 15.

**Station Notes**

THE SURVEY MARK HAS BEEN DEEMED UNSAFE DUE TO FALL RISK AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.835 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1030.756 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.375 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

**Geoid Separations(ft): GEOID18 = -90.938 12B = -90.938 09 = -90.810 03 = -90.679**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_B-DK3437-3N-01DEC2010.jpg | N | Dec 1, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_B-DK3437-2-01DEC2010.jpg | | Dec 1, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_B-DK3437-1-01DEC2010.jpg | | Dec 1, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4303 C **NGS Name:** 4303 C

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK3438 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 114 N | 29 W | 444039.58 | 942227.80 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 8 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | SURVEY DISK | MNDT |

**Description:** (1993) **Stamping:** 4303 C 1993

3.75 MILES SOUTH-SOUTHWEST OF BROWNTON, 3.4 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 86.2, 445.0 FEET EAST ALONG 42ND STREET FROM THE JUNCTION OF 42ND STREET AND TRUNK HIGHWAY 15, 32.0 FEET NORTH OF 42ND STREET, 2.4 FEET WEST OF A POWER POLE, 1.0 FOOT NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.085 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1022.085 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1022.085 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1022.006 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.619 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.239 | .262 | | 931.324 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1022.085 | .262 | | 931.169 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |

**Geoid Separations(ft): GEOID18 = -90.912 12B = -90.912 09 = -90.784 03 = -90.653**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 40 39.58496 | 94 22 27.79787 | 567361.738 | 180883.089 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 40 39.58459 | 94 22 27.79607 | 567361.868 | 180883.052 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527284.654 | 939879.840 | 1283040.124 | 16233768.361 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2527284.784 | 939879.802 | 1283040.253 | 16233768.322 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_C-DK3438-3N-22MAY2024.jpg | N | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_C-DK3438-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_C-DK3438-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4303 D **NGS Name:** 4303 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK3439 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 114 N | 29 W | 444113.96 | 942232.80 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | SURVEY DISK | MNDT |

**Description:** (1993) **Stamping:** 4303 D 1993

2.75 MILES SOUTH-SOUTHWEST OF BROWNTON, 2.7 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 86.9, 70.0 FEET EAST OF TRUNK HIGHWAY 15, 25.0 FEET NORTH OF A FIELD ENTRANCE, 3.0 FEET NORTH OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.157 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1027.157 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1027.157 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1027.081 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.684 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.213 | .262 | | 936.343 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1027.144 | .262 | | 936.278 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |

**Geoid Separations(ft): GEOID18 = -90.869 12B = -90.869 09 = -90.741 03 = -90.610**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 13.96472 | 94 22 32.80295 | 566989.053 | 184363.815 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 41 13.96498 | 94 22 32.80189 | 566989.130 | 184363.842 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526939.031 | 943362.966 | 1282737.385 | 16237254.840 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2526939.108 | 943362.992 | 1282737.462 | 16237254.865 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_D-DK3439-3E-22MAY2024.jpg | E | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_D-DK3439-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_D-DK3439-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4303 E **NGS Name:** 4303 E

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK3440 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 114 N | 29 W | 444245.21 | 942232.52 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | SURVEY DISK | MNDT |

**Description:** (1993) **Stamping:** 4303 E 1993

1.75 MILES SOUTH-SOUTHWEST OF BROWNTON, 0.90 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 88.65, 70.5 FEET EAST OF TRUNK HIGHWAY 15, 25.0 FEET SOUTH OF A FIELD ENTRANCE, 2.4 FEET SOUTH OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.198 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1030.198 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1030.198 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1030.198 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1030.198 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1030.129 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.709 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.142 | .262 | | 939.378 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1030.149 | .262 | | 939.385 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1030.169 | .262 | | 939.408 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1030.077 | .262 | | 939.319 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1030.073 | .262 | | 939.440 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.761 12B = -90.758 09 = -90.633 03 = -90.495**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 42 45.21204 | 94 22 32.51961 | 566980.282 | 193605.146 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 42 45.21189 | 94 22 32.51878 | 566980.342 | 193605.131 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 42 45.21204 | 94 22 32.51891 | 566980.333 | 193605.146 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 42 45.21235 | 94 22 32.51929 | 566980.305 | 193605.177 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 42 45.21237 | 94 22 32.51944 | 566980.295 | 193605.179 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527001.969 | 952603.070 | 1282913.884 | 16246491.791 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2527002.029 | 952603.054 | 1282913.944 | 16246491.775 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2527002.019 | 952603.070 | 1282913.935 | 16246491.790 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2527001.992 | 952603.101 | 1282913.908 | 16246491.822 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527001.981 | 952603.103 | 1282913.897 | 16246491.825 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_E-DK3440-3E-17SEP2025.jpg | E | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_E-DK3440-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4303_E-DK3440-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 A
**NGS Name:** 4304 A
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1540 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 31 | 115 N | 29 W | 444349.62 | 942134.49 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2025 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1990) **Stamping:** 4304 A 1984

0.25 MILE WEST OF BROWNTON, 0.3 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), THEN 0.5 MILE EAST ON COUNTY ROAD 32, 54.0 FEET SOUTH OF COUNTY ROAD 32 (DIVISION STREET), 0.8 FOOT NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.858 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1016.871 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1016.871 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1016.871 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1016.871 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1016.806 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1016.806 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |
| 1016.871 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.373 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |
| 1016.373 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |
| 1016.373 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.029 | .262 | | 926.314 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1016.911 | .262 | | 926.196 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1016.793 | .262 | | 926.081 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1016.871 | | | 926.120 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1016.871 | | | 926.120 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1016.861 | .131 | | 926.438 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1016.760 | .262 | | 926.179 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.715 12B = -90.715 09 = -90.581 03 = -90.433**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.61973 | 94 21 34.49237 | 571148.915 | 200141.866 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 49.62007 | 94 21 34.49353 | 571148.831 | 200141.900 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 49.61994 | 94 21 34.49265 | 571148.895 | 200141.887 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 49.62007 | 94 21 34.49320 | 571148.855 | 200141.900 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 49.62007 | 94 21 34.49320 | 571148.855 | 200141.900 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.61982 | 94 21 34.49383 | 571148.810 | 200141.875 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.61959 | 94 21 34.49361 | 571148.826 | 200141.851 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2531220.748 | 959106.536 | 1287211.541 | 16252941.680 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2531220.664 | 959106.571 | 1287211.458 | 16252941.716 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2531220.728 | 959106.557 | 1287211.521 | 16252941.701 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2531220.688 | 959106.571 | 1287211.482 | 16252941.715 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2531220.688 | 959106.571 | 1287211.482 | 16252941.715 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2531220.642 | 959106.545 | 1287211.436 | 16252941.691 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2531220.658 | 959106.522 | 1287211.451 | 16252941.667 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_A-PQ1540-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_A-PQ1540-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_A-PQ1540-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 AA **NGS Name:** 4304 AA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9913 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 116 N | 30 W | 445102.17 | 942233.61 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2019 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 AA 2011

2.5 MILES SOUTH OF HUTCHINSON, 3.4 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 98.3, 86.4 FEET WEST OF TRUNK HIGHWAY 15, 18.0 FEET NORTH OF A FIELD ENTRANCE, 15.3 FEET WEST OF CABLE BOX NUMBER KO 15, 1.7 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.677 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1045.677 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.664 | .262 | | 955.572 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1045.677 | | | 955.576 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1045.677 | | | 955.576 | .014 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1045.667 | .131 | | 955.858 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1045.510 | .262 | | 955.566 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.095 12B = -90.069 09 = -89.944 03 = -89.819**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 02.16666 | 94 22 33.60896 | 566742.539 | 243935.785 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 51 02.16672 | 94 22 33.60815 | 566742.598 | 243935.791 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 51 02.16672 | 94 22 33.60815 | 566742.598 | 243935.791 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 02.16619 | 94 22 33.60837 | 566742.582 | 243935.737 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 02.16638 | 94 22 33.60884 | 566742.548 | 243935.757 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527154.797 | 1002928.783 | 1283686.486 | 16296802.316 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2527154.856 | 1002928.788 | 1283686.544 | 16296802.321 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527154.856 | 1002928.788 | 1283686.544 | 16296802.321 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527154.840 | 1002928.735 | 1283686.528 | 16296802.268 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527154.806 | 1002928.754 | 1283686.494 | 16296802.288 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_AA-DO9913-3W-07NOV2019.jpg | W | Nov 7, 2019 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_AA-DO9913-2-07NOV2019.jpg | | Nov 7, 2019 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_AA-DO9913-1-07NOV2019.jpg | | Nov 7, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 AB **NGS Name:** 4304 AB

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9915 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 12 | 116 N | 30 W | 445234.42 | 942234.13 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 18 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** 4304 AB 2011

IN HUTCHINSON, 1.65 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 100.05, 127.4 FEET WEST OF SOUTHBOUND TRUNK HIGHWAY 15, 52.3 FEET NORTHWEST OF THE WEST POST OF THE KENTUCKY FRIED CHICKEN SIGN, 44.2 FEET SOUTH OF THE MALL ENTRANCE ROAD LIGHT POLE, 38.8 FEET NORTHEAST OF A LIGHT POLE, 1.5 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.103 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1065.103 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.103 | | | 975.195 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1065.103 | | | 975.218 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1065.103 | | | 975.195 | .009 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1065.103 | | | 975.218 | .012 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1065.218 | .262 | | 975.323 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1065.103 | | | 975.195 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1065.103 | | | 975.195 | .009 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1065.090 | .131 | | 975.461 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1065.024 | .262 | | 975.274 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.895 12B = -89.882 09 = -89.750 03 = -89.642**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 34.41993 | 94 22 34.12659 | 566675.733 | 253279.108 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 52 34.42058 | 94 22 34.12699 | 566675.704 | 253279.173 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 52 34.41993 | 94 22 34.12659 | 566675.733 | 253279.108 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 52 34.42058 | 94 22 34.12699 | 566675.704 | 253279.173 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 52 34.42062 | 94 22 34.12724 | 566675.686 | 253279.177 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 52 34.41993 | 94 22 34.12659 | 566675.733 | 253279.108 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 52 34.41993 | 94 22 34.12659 | 566675.733 | 253279.108 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 34.41981 | 94 22 34.12650 | 566675.739 | 253279.095 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 34.41954 | 94 22 34.12714 | 566675.693 | 253279.068 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 52 34.42019 | 94 22 34.12754 | 566675.664 | 253279.134 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 52 34.41952 | 94 22 34.12706 | 566675.699 | 253279.066 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527160.499 | 1012271.419 | 1283807.477 | 16306142.334 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2527160.470 | 1012271.485 | 1283807.449 | 16306142.400 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2527160.499 | 1012271.419 | 1283807.477 | 16306142.334 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2527160.470 | 1012271.485 | 1283807.449 | 16306142.400 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2527160.452 | 1012271.489 | 1283807.431 | 16306142.404 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2527160.499 | 1012271.419 | 1283807.477 | 16306142.334 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527160.499 | 1012271.419 | 1283807.477 | 16306142.334 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527160.505 | 1012271.407 | 1283807.483 | 16306142.321 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527160.459 | 1012271.379 | 1283807.436 | 16306142.294 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2527160.431 | 1012271.445 | 1283807.409 | 16306142.361 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2527160.465 | 1012271.377 | 1283807.442 | 16306142.293 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_AB-DO9915-3S-16JUN2024.jpg | S | Jun 16, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_AB-DO9915-2-16JUN2024.jpg | | Jun 16, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_AB-DO9915-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 B **NGS Name:** 4304 B

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 31 | 115 N | 29 W | 444346.08 | 942211.90 | 2 | 3 |

**NGS ACRN:** PQ1539 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2025 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1990) **Stamping:** 4304 B 1984

0.75 MILE WEST OF BROWNTON, 0.3 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 89.9, 250.0 FEET EAST OF TRUNK HIGHWAY 15 ON COUNTY ROAD 32 (DIVISION STREET), 89.0 FEET WEST-SOUTHWEST OF THE SOUTHEAST CORNER OF A HISTORIC MARKER, 48.0 FEET NORTH OF COUNTY ROAD 32, 19.4 FEET WEST-SOUTHWEST OF THE NORTH LEG OF THE WELCOME TO BROWNTON SIGN, 2.1 FEET SOUTH OF A RIGHT-OF-WAY POST, 1.4 FEET EAST OF A WITNESS POST.

**Station Notes**

DUE TO TREE COVER, THIS SURVEY MARK HAS BEEN ABANDONED FOR MNDOT GEODETIC HORIZONTAL SURVEYS.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.411 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1029.411 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1029.411 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1029.411 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1029.411 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1029.411 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1029.411 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1029.345 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1029.345 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |
| 1029.404 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.905 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |
| 1028.905 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |
| 1028.905 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.443 | .262 | | 938.745 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1029.411 | .262 | | 938.712 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1029.470 | .262 | | 938.768 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1029.430 | .262 | | 938.728 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1029.322 | .262 | | 938.758 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.699 12B = -90.699 09 = -90.564 03 = -90.416**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 46.08234 | 94 22 11.90183 | 568449.300 | 199774.699 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 46.08237 | 94 22 11.90150 | 568449.324 | 199774.702 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 46.08313 | 94 22 11.90222 | 568449.272 | 199774.779 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 43 46.08337 | 94 22 11.90277 | 568449.232 | 199774.803 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 46.08407 | 94 22 11.90447 | 568449.109 | 199774.874 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528518.656 | 958760.369 | 1284505.900 | 16252628.839 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2528518.680 | 958760.372 | 1284505.924 | 16252628.842 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2528518.629 | 958760.449 | 1284505.873 | 16252628.920 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2528518.589 | 958760.474 | 1284505.834 | 16252628.945 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528518.467 | 958760.545 | 1284505.712 | 16252629.018 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_B-PQ1539-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_B-PQ1539-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_B-PQ1539-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 C **NGS Name:** 4304 C

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 115 N | 29 W | 444436.00 | 942210.00 | 2 | |

**NGS ACRN:** PQ1538 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2019 | DESTROYED | Horz=NO Vert=NO | YES | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 C 1984

0.75 MILE NORTHWEST OF BROWNTON, 1.3 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 90.8, 300.0 FEET EAST OF TRUNK HIGHWAY 15 ON 85TH CIRCLE, 181.1 FEET SOUTH OF THE EAST CORNER OF A GARAGE, 103.5 FEET EAST OF AN ENTRANCE, 88.2 FEET EAST OF THE SOUTH CORNER OF THE EAST PILLAR, 30.0 FEET NORTH OF 85TH CIRCLE, 1.8 FEET WEST OF A POWER POLE.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.367 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.875 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.640 12B = -90.643 09 = -90.499 03 = -90.354**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_C-PQ1538-3N-29NOV2010.jpg | N | Nov 29, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_C-PQ1538-2-29NOV2010.jpg | | Nov 29, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_C-PQ1538-1-29NOV2010.jpg | | Nov 29, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4304 C RESET



**Mn/DOT Name:** 4304 C RESET **NGS Name:** 4304 C RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9901 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 115 N | 29 W | 444435.11 | 942208.67 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2019 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 C RESET 2011

0.75 MILE NORTHWEST OF BROWNTON, 1.3 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 90.8, 300.0 FEET EAST OF TRUNK HIGHWAY 15, 181.1 FEET SOUTH OF THE EAST CORNER OF A GARAGE, 103.5 FEET EAST OF DRIVEWAY NUMBER 18856, 1.8 FEET WEST OF A POWER POLE, 1.8 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.114 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1022.114 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.239 | .262 | | 931.596 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1022.127 | .262 | | 931.484 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1022.114 | | | 931.455 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1022.114 | | | 931.455 | .011 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1022.111 | .131 | | 931.757 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1022.052 | .262 | | 931.550 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.643 12B = -90.643 09 = -90.502 03 = -90.357**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 35.10932 | 94 22 08.67051 | 568666.474 | 204740.797 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 44 35.10915 | 94 22 08.66972 | 568666.531 | 204740.779 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 35.10978 | 94 22 08.67098 | 568666.439 | 204740.843 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 44 35.10978 | 94 22 08.67098 | 568666.439 | 204740.843 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 35.10925 | 94 22 08.67049 | 568666.475 | 204740.789 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 35.10924 | 94 22 08.67141 | 568666.409 | 204740.788 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# 4304 C RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528774.335 | 963724.097 | 1284822.577 | 16257588.125 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2528774.392 | 963724.080 | 1284822.634 | 16257588.106 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2528774.302 | 963724.144 | 1284822.544 | 16257588.172 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2528774.302 | 963724.144 | 1284822.544 | 16257588.172 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528774.337 | 963724.090 | 1284822.579 | 16257588.117 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528774.271 | 963724.090 | 1284822.512 | 16257588.118 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_C_RESET-DO9901-3N-03JUN2019.jpg | N | Jun 3, 2019 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_C_RESET-DO9901-2-03JUN2019.jpg | | Jun 3, 2019 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_C_RESET-DO9901-1-03JUN2019.jpg | | Jun 3, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 D **NGS Name:** 4304 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1537 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 19 | 115 N | 29 W | 444510.08 | 942214.93 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2025 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 D 1984

1.25 MILES NORTHWEST OF BROWNTON, 2.1 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 91.45, 128.2 FEET NORTH-NORTHEAST OF A POWER POLE, 99.0 FEET EAST OF TRUNK HIGHWAY 15, 88.1 FEET SOUTH-SOUTHEAST OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

**Station Notes**
DUE TO TREE COVER, THIS SURVEY MARK HAS BEEN ABANDONED FOR MNDOT GEODETIC HORIZONTAL SURVEYS.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.704 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1016.704 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1016.704 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.215 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.760 | .262 | | 926.163 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1016.642 | .262 | | 926.045 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1016.658 | .262 | | 926.061 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1016.704 | | | 926.097 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1016.704 | | | 926.097 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1016.697 | .131 | | 926.393 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1016.596 | .262 | | 926.143 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.597 12B = -90.597 09 = -90.456 03 = -90.311**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 10.07650 | 94 22 14.92578 | 568203.555 | 208280.740 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 45 10.07669 | 94 22 14.92568 | 568203.562 | 208280.760 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 45 10.07668 | 94 22 14.92505 | 568203.607 | 208280.759 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 45 10.07678 | 94 22 14.92566 | 568203.563 | 208280.769 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 45 10.07678 | 94 22 14.92566 | 568203.563 | 208280.769 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 10.07743 | 94 22 14.92655 | 568203.499 | 208280.834 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 10.07627 | 94 22 14.92599 | 568203.539 | 208280.717 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528338.949 | 967267.149 | 1284430.905 | 16261135.604 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2528338.956 | 967267.168 | 1284430.912 | 16261135.623 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2528339.001 | 967267.167 | 1284430.958 | 16261135.621 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2528338.957 | 967267.177 | 1284430.914 | 16261135.633 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2528338.957 | 967267.177 | 1284430.914 | 16261135.633 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528338.894 | 967267.244 | 1284430.851 | 16261135.699 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528338.933 | 967267.126 | 1284430.889 | 16261135.581 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_D-PQ1537-3E-17SEP2025.jpg | E | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_D-PQ1537-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_D-PQ1537-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 E
**NGS Name:** 4304 E
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1536 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 115 N | 29 W | 444540.36 | 942224.71 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 E 1984

1.75 MILES NORTHWEST OF BROWNTON, 2.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 92.1, 600.0 FEET EAST OF TRUNK HIGHWAY 15 ON COUNTY ROAD 26, 35.5 FEET EAST OF AN ENTRANCE, 29.0 FEET NORTH OF COUNTY ROAD 26, 16.0 FEET SOUTH OF A POWER POLE, 2.0 FEET EAST-SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.871 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1021.871 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1021.871 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.386 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.871 | | | 931.317 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1021.871 | | | 931.317 | .014 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1021.881 | .131 | | 931.596 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1021.737 | .262 | | 931.324 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.554 12B = -90.558 09 = -90.413 03 = -90.272**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.35801 | 94 22 24.70672 | 567487.906 | 211345.331 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 45 40.35801 | 94 22 24.70672 | 567487.906 | 211345.331 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.35884 | 94 22 24.70675 | 567487.903 | 211345.415 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.35746 | 94 22 24.70700 | 567487.886 | 211345.275 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527647.178 | 970336.876 | 1283777.099 | 16264213.039 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527647.178 | 970336.876 | 1283777.099 | 16264213.039 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527647.176 | 970336.960 | 1283777.098 | 16264213.123 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527647.157 | 970336.820 | 1283777.078 | 16264212.984 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_E-PQ1536-3N-12APR2011.jpg | N | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_E-PQ1536-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_E-PQ1536-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 F

**NGS Name:** 4304 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1533 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 115 N | 29 W | 444628.00 | 942228.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 F 1984

2.75 MILES NORTHWEST OF BROWNTON, 3.6 MILES NORTH-NORTHWEST ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, 300.0 FEET EAST OF TRUNK HIGHWAY 15, 37.3 FEET WEST-SOUTHWEST OF A CORNER FENCE POST, 28.5 FEET NORTH OF COUNTY ROAD 3, 2.0 FEET WEST-SOUTHWEST OF A POWER POLE, 1.1 FEET SOUTH-SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.899 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.417 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.495 12B = -90.495 09 = -90.357 03 = -90.216**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4304 G **NGS Name:** 4304 G

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1532 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 12 | 115 N | 30 W | 444704.51 | 942234.04 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 G 1984

3.25 MILES NORTH-NORTHWEST OF BROWNTON, 4.3 MILES NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 93.7, 114.2 FEET NORTH-NORTHEAST OF THE NORTHWEST CORNER OF THE LAKE MARION REGIONAL PARK OFFICE (NUMBER 11655), 110.5 FEET WEST OF TRUNK HIGHWAY 15, 110.5 FEET NORTH-NORTHEAST OF THE NORTHEAST CORNER OF A HOUSE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.540 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1051.540 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1051.540 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.061 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.396 | .262 | | 961.084 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.453 12B = -90.446 09 = -90.311 03 = -90.174**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 04.51169 | 94 22 34.03712 | 566787.730 | 219866.148 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527013.214 | 978861.974 | 1283248.276 | 16272743.697 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_G-PQ1532-3SW-12APR2011.jpg | SW | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_G-PQ1532-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_G-PQ1532-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 H **NGS Name:** 4304 H

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1170 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 1 | 115 N | 30 W | 444738.20 | 942234.46 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 H 1984

4.0 MILES NORTH-NORTHWEST OF BROWNTON, 4.95 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 94.35, 129.0 FEET WEST OF TRUNK HIGHWAY 15, 1.7 FEET EAST OF A POWER POLE, 0.5 FOOT NORTH OF AN EAST-WEST FENCE LINE, 1.2 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.983 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1066.983 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1066.983 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.504 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.953 | .262 | | 976.684 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1066.993 | .197 | | 976.921 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.410 12B = -90.397 09 = -90.269 03 = -90.131**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 38.20220 | 94 22 34.46055 | 566746.415 | 223278.184 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 38.20308 | 94 22 34.46159 | 566746.340 | 223278.273 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 38.19855 | 94 22 34.45768 | 566746.622 | 223277.815 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 47 38.19892 | 94 22 34.45789 | 566746.608 | 223277.853 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 38.33570 | 94 22 33.51780 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526998.380 | 982273.874 | 1283275.474 | 16276154.876 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526998.305 | 982273.963 | 1283275.401 | 16276154.966 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526998.585 | 982273.504 | 1283275.675 | 16276154.503 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2526998.570 | 982273.541 | 1283275.660 | 16276154.540 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902396.888 | 654197.095 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_H-PQ1170-3W-12APR2011.jpg | W | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_H-PQ1170-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_H-PQ1170-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 J **NGS Name:** 4304 J

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1171 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 115 N | 30 W | 444813.88 | 942234.25 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2020 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 J 1984

4.5 MILES NORTH-NORTHWEST OF BROWNTON, 5.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 95.1, 127.0 FEET WEST OF TRUNK HIGHWAY 15, 13.5 FEET NORTH OF DRIVEWAY ENTRANCE NUMBER 12935, 2.0 FEET EAST OF A POWER POLE, 1.9 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.568 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1044.568 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1044.568 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1043.732 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1990 | 17351 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.092 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.571 | .262 | | 954.224 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1044.568 | | | 954.194 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1044.568 | | | 954.191 | .009 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 954.194 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1044.585 | .131 | | 954.483 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1044.503 | .262 | | 954.283 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1044.552 | .131 | | 954.378 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1044.552 | .131 | | 954.378 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1044.552 | .131 | | 954.434 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1044.552 | .131 | | 954.434 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| 1044.552 | .197 | | 954.555 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.364 12B = -90.348 09 = -90.220 03 = -90.085**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 13.87830 | 94 22 34.25274 | 566749.990 | 226891.470 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 48 13.87876 | 94 22 34.25337 | 566749.944 | 226891.517 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 48 13.87881 | 94 22 34.25351 | 566749.934 | 226891.522 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 44 48 13.87876 | 94 22 34.25337 | 566749.944 | 226891.517 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 13.87952 | 94 22 34.25426 | 566749.880 | 226891.593 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 48 13.87910 | 94 22 34.25468 | 566749.849 | 226891.551 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 48 13.87910 | 94 22 34.25468 | 566749.849 | 226891.551 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 13.87835 | 94 22 34.25380 | 566749.913 | 226891.475 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 48 13.87836 | 94 22 34.25382 | 566749.911 | 226891.476 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 48 13.87836 | 94 22 34.25382 | 566749.911 | 226891.476 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 48 13.87892 | 94 22 34.25590 | 566749.762 | 226891.532 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 13.87421 | 94 22 34.25184 | 566750.057 | 226891.055 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 48 13.87478 | 94 22 34.25226 | 566750.025 | 226891.114 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 14.01170 | 94 22 33.31220 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527029.991 | 985886.650 | 1283351.591 | 16279766.302 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2527029.946 | 985886.697 | 1283351.546 | 16279766.350 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527029.936 | 985886.702 | 1283351.536 | 16279766.355 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 2527029.946 | 985886.697 | 1283351.546 | 16279766.350 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527029.882 | 985886.774 | 1283351.483 | 16279766.428 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2527029.852 | 985886.732 | 1283351.453 | 16279766.386 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2527029.852 | 985886.732 | 1283351.453 | 16279766.386 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527029.915 | 985886.656 | 1283351.515 | 16279766.309 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2527029.913 | 985886.657 | 1283351.513 | 16279766.310 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2527029.913 | 985886.657 | 1283351.513 | 16279766.310 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2527029.764 | 985886.714 | 1283351.364 | 16279766.369 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527030.054 | 985886.236 | 1283351.649 | 16279765.887 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527030.024 | 985886.293 | 1283351.620 | 16279765.945 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902428.330 | 657809.827 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_J-PQ1171-3W-31MAR2020.jpg | W | Mar 31, 2020 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_J-PQ1171-2-31MAR2020.jpg | | Mar 31, 2020 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_J-PQ1171-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 K **NGS Name:** 4304 K

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1530 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 116 N | 30 W | 444844.26 | 942237.07 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 K 1984

4.25 MILES SOUTH OF HUTCHINSON, 5.95 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 95.7, 325.0 FEET WEST OF TRUNK HIGHWAY 15 ON 135TH STREET, 28.0 FEET NORTH OF 135TH STREET, 1.7 FEET EAST OF THE EAST POWER POLE WITH A TRANSFORMER, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.406 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1057.406 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1057.406 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.934 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.314 | .262 | | 967.140 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.321 12B = -90.298 09 = -90.174 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 44.25733 | 94 22 37.07402 | 566536.877 | 229967.591 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526840.776 | 988964.016 | 1283200.352 | 16282845.180 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_K-PQ1530-3N-12APR2011.jpg | N | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_K-PQ1530-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_K-PQ1530-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 L

**NGS Name:** 4304 L

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1528 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 116 N | 30 W | 445002.46 | 942239.67 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 1985 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984)

**Stamping:** 4304 L 1984

2.75 MILES SOUTH OF HUTCHINSON, 4.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 97.15, 500.0 FEET WEST OF TRUNK HIGHWAY 15 ON COUNTY ROAD 18, 64.0 FEET EAST OF AN ENTRANCE, 46.5 FEET SOUTH OF COUNTY ROAD 18, 2.0 FEET EAST-SOUTHEAST OF A POLE, 1.8 FEET SOUTHWEST OF A WITNESS POST.

**Station Notes**

04-12-11 FOUND THE CAP OFF, DID NOT RESET (POOR LOCATION - DITCH BOTTOM, UNDER WATER). THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.928 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.462 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.193 12B = -90.170 09 = -90.046 03 = -89.918**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4304 M
**NGS Name:** 4304 M
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1529 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 30 | 116 N | 29 W | 444923.77 | 942227.83 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 M 1984

3.25 MILES SOUTH OF HUTCHINSON, 5.25 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 96.45, 300.0 FEET EAST OF TRUNK HIGHWAY 15, 16.0 FEET NORTH OF DRIVEWAY ENTRANCE NUMBER 14262, 2.4 FEET WEST OF A POWER POLE, 1.4 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.816 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1062.816 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1062.816 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.347 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.744 | .262 | | 972.623 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.266 12B = -90.243 09 = -90.121 03 = -89.987**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 23.76995 | 94 22 27.83094 | 567190.513 | 233971.511 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527525.394 | 992962.336 | 1283934.073 | 16286833.990 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_M-PQ1529-3E-12APR2011.jpg | E | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_M-PQ1529-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_M-PQ1529-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 N
**NGS Name:** 4304 N
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1526 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 24 | 116 N | 30 W | 445047.00 | 942233.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 N 1984

1.75 MILES SOUTH OF HUTCHINSON, 3.65 MILES SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 98.0, 95.0 FEET WEST OF TRUNK HIGHWAY 15, 32.0 FEET SOUTHWEST OF A TELEPHONE CABLE MARKER, 9.0 FEET NORTH OF THE END TREE ON AN EAST-WEST ROW OF PINE TREES, 1.5 FEET SOUTH OF A POWER POLE.

**Station Notes**
04-13-11 FOUND THE CAP OFF, RESET THE MARK. THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.083 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.620 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.121 12B = -90.098 09 = -89.974 03 = -89.846**

*** No Horizontal Positions in the Database ***

# 4304 N RESET



**Mn/DOT Name:** 4304 N RESET
**NGS Name:** 4304 N RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9912 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 24 | 116 N | 30 W | 445046.38 | 942233.73 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 5 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2014) **Stamping:** 4304 N RESET 2011

1.75 MILES SOUTH OF HUTCHINSON, 3.65 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15, TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 98.05, 95.0 FEET WEST OF TRUNK HIGHWAY 15, 32.0 FEET SOUTHWEST OF A TELEPHONE CABLE BOX, 9.0 FEET NORTH OF THE EAST END OF AN EAST-WEST ROW OF SPRUCE TREES, 1.5 FEET SOUTH OF A POWER POLE, 1.5 FEET SOUTH OF A WITNESS POST. NOT SUITABLE FOR GPS.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.859 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1058.859 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.859 | | | 968.778 | .028 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1058.859 | | | 968.778 | .028 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1058.856 | .131 | | 969.011 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1058.836 | .262 | | 968.860 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.121 12B = -90.098 09 = -89.974 03 = -89.849**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 46.37716 | 94 22 33.73410 | 566738.577 | 242336.596 | .039 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 50 46.37716 | 94 22 33.73410 | 566738.577 | 242336.596 | .039 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 46.37635 | 94 22 33.73601 | 566738.440 | 242336.513 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 46.37699 | 94 22 33.73446 | 566738.551 | 242336.579 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527138.427 | 1001329.832 | 1283650.395 | 16295204.001 | .039 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527138.427 | 1001329.832 | 1283650.395 | 16295204.001 | .039 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527138.289 | 1001329.751 | 1283650.257 | 16295203.922 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527138.401 | 1001329.815 | 1283650.369 | 16295203.985 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# 4304 N RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_N_RESET-DO9912-3W-13APR2011.jpg | W | Apr 13, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_N_RESET-DO9912-2-13APR2011.jpg | | Apr 13, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_N_RESET-DO9912-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 P **NGS Name:** 4304 P

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 30 W | 445126.23 | 942236.20 | 2 | 3 |

**NGS ACRN:** PQ1524 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 6 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4304 P 1984

1.0 MILE SOUTH OF HUTCHINSON, 2.9 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 98.8, 325.0 FEET WEST OF TRUNK HIGHWAY 15, 152.0 FEET WEST-NORTHWEST OF THE NORTHWEST CORNER OF THE HUTCHINSON SIGN, 2.0 FEET EAST OF A POWER POLE NUMBER 13-1, 0.9 FOOT SOUTH OF A WITNESS POST. CONTACT THE AIRPORT MANAGER BEFORE USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1052.009 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1052.009 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1052.009 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.550 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.937 | .262 | | 962.042 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.042 12B = -90.020 09 = -89.895 03 = -89.773**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 26.22672 | 94 22 36.19748 | 566548.368 | 246372.002 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526979.555 | 1005366.190 | 1283541.363 | 16299241.224 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_P-PQ1524-3NW-13APR2011.jpg | NW | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_P-PQ1524-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_P-PQ1524-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 Q
**NGS Name:** 4304 Q
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1521 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 116 N | 29 W | 445226.00 | 942231.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 1985 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MAT FOUNDATION (NON-PAVEMENT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984)
**Stamping:** 4304 Q 1984

IN HUTCHINSON, 1.85 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 15 MILEPOINT 99.85, 151.0 FEET SOUTH-SOUTHEAST OF A POWER POLE, 126.0 FEET EAST OF TRUNK HIGHWAY 15 ON ATLANTA AVENUE, 77.8 FEET NORTH-NORTHEAST OF A POWER POLE, IN THE SOUTHWEST CORNER OF AN 11.0 FEET SQUARE CONCRETE BASE FOR THE HUTCHINSON TVI SCHOOL SIGN.

**Station Notes**
04-13-11 THE SIGN WAS REMOVED.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.230 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.777 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.918 12B = -89.901 09 = -89.773 03 = -89.662**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4304 R **NGS Name:** 4304 R

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 116 N | 29 W | 445148.75 | 942225.30 | 2 | 2 |

**NGS ACRN:** PQ1172 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)
**Disk Type:** VERTICAL CONTROL DISK
**Mon. Agency:** MNDT

**Description:** (1998) **Stamping:** 4304 R 1984

0.5 MILE SOUTH OF HUTCHINSON, 2.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 99.15, 500.0 FEET EAST OF TRUNK HIGHWAY 15 ON COUNTY ROAD 18, 35.0 FEET NORTH OF COUNTY ROAD 18, 27.0 FEET WEST OF A FIELD ENTRANCE, 2.7 FEET EAST-NORTHEAST OF A STEEL GAME REFUGE SIGNPOST, 2.1 FEET SOUTHWEST OF A POWER POLE, 3.1 FEET SOUTHEAST OF A WITNESS POST.

**Station Notes**

THE MARK HAS BEEN HIT AND TIPPED TO THE EAST.
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.980 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.524 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.990 | .197 | | 973.312 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.006 12B = -89.983 09 = -89.859 03 = -89.741**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.74771 | 94 22 25.29696 | 567326.337 | 248655.423 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.74371 | 94 22 25.29274 | 567326.644 | 248655.018 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 51 48.74416 | 94 22 25.29296 | 567326.626 | 248655.064 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.88090 | 94 22 24.35380 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527775.142 | 1007643.280 | 1284364.831 | 16301507.876 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527775.444 | 1007642.873 | 1284365.127 | 16301507.465 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527775.429 | 1007642.919 | 1284365.112 | 16301507.511 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903173.613 | 679566.259 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# 4304 R RESET



**Mn/DOT Name:** 4304 R RESET **NGS Name:** 4304 R RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9914 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 116 N | 29 W | 445148.75 | 942225.30 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2013 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** 4304 R RESET 2011

0.5 MILE SOUTH OF HUTCHINSON, 2.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, TO TRUNK HIGHWAY 15 MILEPOINT 99.15, THEN 500.0 FEET EAST ON COUNTY ROAD 115 (AIRPORT ROAD), 35.0 FEET NORTH OF COUNTY ROAD 115, 27.0 FEET WEST OF A FIELD ENTRANCE, 2.7 FEET EAST-NORTHEAST OF A STEEL GAME REFUGE SIGN POST, 2.1 FEET SOUTHWEST OF A POWER POLE, 3.1 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.688 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1062.688 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.688 | | | 972.669 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1062.688 | | | 972.669 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1062.695 | .131 | | 972.948 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1062.573 | .262 | | 972.715 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.006 12B = -89.983 09 = -89.859 03 = -89.741**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.74784 | 94 22 25.29592 | 567326.412 | 248655.436 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 51 48.74784 | 94 22 25.29592 | 567326.412 | 248655.436 | .007 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.74840 | 94 22 25.29597 | 567326.408 | 248655.493 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.74746 | 94 22 25.29656 | 567326.366 | 248655.397 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527775.217 | 1007643.292 | 1284364.906 | 16301507.887 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527775.217 | 1007643.292 | 1284364.906 | 16301507.887 | .007 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527775.214 | 1007643.349 | 1284364.903 | 16301507.944 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527775.171 | 1007643.254 | 1284364.859 | 16301507.850 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# 4304 R RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_R_RESET-DO9914-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_R_RESET-DO9914-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_R_RESET-DO9914-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 S **NGS Name:** 4304 S

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1520 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 116 N | 29 W | 445251.16 | 942209.66 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1987) **Stamping:** 4304 S 1984

IN HUTCHINSON, 1.05 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 15 MILEPOINT 100.6, 127.0 FEET SOUTHEAST OF TRUNK HIGHWAY 15, 65.5 FEET WEST OF MAIN STREET (TRUNK HIGHWAY 15), 43.0 FEET NORTH OF OAKLAND AVENUE, 16.0 FEET SOUTHEAST OF THE SOUTH CORNER OF A CONCRETE SLAB FOR A PICNIC SHELTER, 6.4 FEET WEST OF A FLAGPOLE BASE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1074.447 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1074.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1074.450 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1074.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.997 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1073.997 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.450 | | | 984.650 | .020 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1074.450 | | | 984.650 | .020 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1074.594 | .262 | | 984.713 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1074.338 | .262 | | 984.601 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1074.342 | .262 | | 984.709 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.882 12B = -89.869 09 = -89.741 03 = -89.629**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 51.16194 | 94 22 09.66011 | 568432.155 | 254980.388 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 52 51.16194 | 94 22 09.66011 | 568432.155 | 254980.388 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 52 51.16215 | 94 22 09.65942 | 568432.205 | 254980.409 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 51.16323 | 94 22 09.66045 | 568432.130 | 254980.519 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 51.16153 | 94 22 09.66045 | 568432.131 | 254980.346 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 52 51.16196 | 94 22 09.66063 | 568432.117 | 254980.390 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528929.898 | 1013958.852 | 1285597.219 | 16307807.460 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 2528929.898 | 1013958.852 | 1285597.219 | 16307807.460 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2528929.948 | 1013958.873 | 1285597.269 | 16307807.480 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528929.874 | 1013958.983 | 1285597.197 | 16307807.591 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528929.873 | 1013958.811 | 1285597.194 | 16307807.419 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2528929.860 | 1013958.854 | 1285597.181 | 16307807.463 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_S-PQ1520-3SE-16JUN2024.jpg | SE | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_S-PQ1520-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_S-PQ1520-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 T **NGS Name:** 4304 T

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DM5598 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 31 | 117 N | 29 W | 445343.04 | 942209.03 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2006 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43016 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE RAILING | SURVEY DISK | MNDT |

**Description:** (2006) **Stamping:** 4304 T 2009

IN HUTCHINSON, IN A BRIDGE RAILING IN THE SOUTHEAST CORNER OF TRUNK HIGHWAY 15 BRIDGE NUMBER 43016 OVER THE SOUTH FORK OF THE CROW RIVER, 0.15 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15, TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 101.50, 21.9 FEET EAST OF NORTHBOUND TRUNK HIGHWAY 15. THE DISK WAS SET IN THE BRIDGE WHEN BUILT IN 2006 THEN STAMPED WHEN USED IN 2009.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.787 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1048.787 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1048.787 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1048.781 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.695 | .262 | | 959.070 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1048.666 | .262 | | 959.142 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.767 12B = -89.757 09 = -89.629 03 = -89.524**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 43.03898 | 94 22 09.03314 | 568460.255 | 260234.685 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 43.03819 | 94 22 09.03472 | 568460.142 | 260234.605 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528998.767 | 1019212.262 | 1285730.932 | 16313058.563 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528998.653 | 1019212.183 | 1285730.818 | 16313058.485 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_T-DM5598-3E-11MAY2011.jpg | E | May 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_T-DM5598-2-11MAY2011.jpg | | May 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_T-DM5598-1-11MAY2011.jpg | | May 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 U **NGS Name:** 4304 U

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9902 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 19 | 115 N | 29 W | 444448.23 | 942213.34 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 U 2011

1.4 MILES NORTHWEST OF BROWNTON, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 91.05, 126.4 FEET WEST OF TRUNK HIGHWAY 15, 53.4 FEET NORTH OF TAGUS AVENUE, 7.5 FEET SOUTH-SOUTHEAST OF A RIGHT-OF-WAY POST, 7.5 FEET SOUTH-SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.360 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1022.360 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.396 | .262 | | 931.773 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1022.275 | .262 | | 931.648 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1022.360 | | | 931.730 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1022.360 | | | 931.730 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1022.373 | .131 | | 932.022 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1022.268 | .262 | | 931.786 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.623 12B = -90.623 09 = -90.482 03 = -90.338**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.22645 | 94 22 13.34387 | 568324.864 | 206068.180 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 44 48.22633 | 94 22 13.34294 | 568324.931 | 206068.168 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 44 48.22679 | 94 22 13.34408 | 568324.848 | 206068.214 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 44 48.22679 | 94 22 13.34408 | 568324.848 | 206068.214 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.22635 | 94 22 13.34594 | 568324.714 | 206068.169 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.22625 | 94 22 13.34449 | 568324.819 | 206068.159 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528443.072 | 965053.949 | 1284507.765 | 16258921.704 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2528443.139 | 965053.937 | 1284507.832 | 16258921.691 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2528443.057 | 965053.984 | 1284507.750 | 16258921.739 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2528443.057 | 965053.984 | 1284507.750 | 16258921.739 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528442.923 | 965053.940 | 1284507.615 | 16258921.696 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528443.027 | 965053.929 | 1284507.719 | 16258921.685 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_U-DO9902-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_U-DO9902-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_U-DO9902-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 V **NGS Name:** 4304 V

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9903 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 29 W | 444526.97 | 942227.41 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1998 | 2014 | GOOD | Horz=NO Vert=NO | YES | 43009 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (1998) **Stamping:** 4304 V 1998

2.0 MILES NORTHWEST OF BROWNTON, 2.3 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), IN AN ABUTMENT IN THE SOUTHEAST CORNER OF TRUNK HIGHWAY 15 BRIDGE NUMBER 43009 OVER BUFFALO CREEK, AT TRUNK HIGHWAY 15 MILEPOINT 91.85, 26.0 FEET EAST OF TRUNK HIGHWAY 15.

**Station Notes**

IF THE COORDINATES AND/OR ELEVATIONS ARE ESTABLISHED OR PUBLISHED ON THIS GEODETIC CONTROL DISK, THEY SHOULD BE USED WITH CAUTION. THE GEODETIC CONTROL DISK IS LOCATED ON AN INTEGRAL ABUTMENT AND/OR A JOINTLESS BRIDGE AND IS SUBJECT TO MOVEMENT BEYOND GEODETIC TOLERANCES.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1019.001 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1019.001 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.978 | .262 | | 928.407 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1018.876 | .262 | | 928.450 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.567 12B = -90.571 09 = -90.426 03 = -90.289**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 26.97078 | 94 22 27.40589 | 567297.457 | 209988.876 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 26.97156 | 94 22 27.40804 | 567297.301 | 209988.955 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527446.229 | 968982.083 | 1283559.526 | 16262861.076 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527446.074 | 968982.163 | 1283559.373 | 16262861.157 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_V-DO9903-3E-20NOV2014.jpg | E | Nov 20, 2014 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_V-DO9903-2-20NOV2014.jpg | | Nov 20, 2014 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_V-DO9903-1-20NOV2014.jpg | | Nov 20, 2014 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 W
**NGS Name:** 4304 W
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9906 Get Map
**NGS Quad / Sta Num :** 48092313/
**USGS Quad:** MARION LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 12 | 115 N | 30 W | 444651.48 | 942232.42 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 W 2011

3.6 MILES NORTH-NORTHWEST OF BROWNTON, 3.9 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 93.55, 49.9 FEET WEST OF TRUNK HIGHWAY 15, 190.7 FEET SOUTH OF 115TH DRIVE, 29.2 FEET SOUTH OF DRIVEWAY ENTRANCE NUMBER 11387, 4.2 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.012 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1047.012 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.012 | | | 956.540 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1047.012 | | | 956.540 | .013 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1047.012 | .131 | | 956.822 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1046.907 | .262 | | 956.579 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.469 12B = -90.462 09 = -90.328 03 = -90.190**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 51.47737 | 94 22 32.42477 | 566908.203 | 218546.417 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 46 51.47737 | 94 22 32.42477 | 566908.203 | 218546.417 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 51.47709 | 94 22 32.42603 | 566908.112 | 218546.388 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 51.47686 | 94 22 32.42528 | 566908.166 | 218546.365 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527123.430 | 977541.486 | 1283342.199 | 16271422.200 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527123.430 | 977541.486 | 1283342.199 | 16271422.200 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527123.339 | 977541.458 | 1283342.108 | 16271422.173 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527123.393 | 977541.434 | 1283342.161 | 16271422.149 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_W-DO9906-3W-02MAY2011.jpg | W | May 2, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_W-DO9906-2-02MAY2011.jpg | | May 2, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_W-DO9906-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 X
**NGS Name:** 4304 X
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9907 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 1 | 115 N | 30 W | 444725.92 | 942233.99 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 X 2011

4.3 MILES NORTH-NORTHWEST OF BROWNTON, 4.6 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 94.15, 110.5 FEET NORTH OF 120TH STREET, 66.0 FEET WEST OF TRUNK HIGHWAY 15, 43.6 FEET SOUTH OF A FIELD ENTRANCE, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.277 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1060.277 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.277 | | | 969.854 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1060.277 | | | 969.854 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1060.267 | .131 | | 970.129 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1060.168 | .262 | | 969.887 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.426 12B = -90.416 09 = -90.285 03 = -90.147**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 25.91539 | 94 22 33.99440 | 566783.963 | 222033.897 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 47 25.91539 | 94 22 33.99440 | 566783.963 | 222033.897 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 25.91365 | 94 22 33.99561 | 566783.876 | 222033.721 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 25.91495 | 94 22 33.99486 | 566783.930 | 222033.852 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527026.268 | 981029.461 | 1283288.025 | 16274910.450 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527026.268 | 981029.461 | 1283288.025 | 16274910.450 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527026.180 | 981029.286 | 1283287.935 | 16274910.275 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527026.235 | 981029.417 | 1283287.991 | 16274910.406 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_X-DO9907-3W-02MAY2011.jpg | W | May 2, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_X-DO9907-2-02MAY2011.jpg | | May 2, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_X-DO9907-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 Y
**NGS Name:** 4304 Y
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9900 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 30 | 115 N | 29 W | 444409.73 | 942216.19 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 Y 2011

1.1 MILES WEST-NORTHWEST OF BROWNTON, 0.75 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 90.3, 77.5 FEET WEST OF TRUNK HIGHWAY 15, 36.7 FEET NORTH OF A FIELD ENTRANCE, 1.8 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.220 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1028.220 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1028.220 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1028.220 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.223 | .262 | | 937.554 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1028.216 | .262 | | 937.547 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1028.226 | .262 | | 937.557 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1028.203 | .262 | | 937.534 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1028.220 | | | 937.528 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1028.220 | | | 937.528 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1028.213 | .131 | | 937.836 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1028.148 | .262 | | 937.616 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.669 12B = -90.669 09 = -90.531 03 = -90.384**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 09.73315 | 94 22 16.19361 | 568131.737 | 202168.999 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 44 09.73321 | 94 22 16.19247 | 568131.820 | 202169.005 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 44 09.73308 | 94 22 16.19323 | 568131.765 | 202168.991 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 44 09.73244 | 94 22 16.19307 | 568131.777 | 202168.927 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 09.73343 | 94 22 16.19325 | 568131.763 | 202169.027 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 44 09.73343 | 94 22 16.19325 | 568131.763 | 202169.027 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 09.73290 | 94 22 16.19315 | 568131.771 | 202168.973 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 09.73294 | 94 22 16.19357 | 568131.740 | 202168.977 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528219.716 | 961156.802 | 1284236.517 | 16255028.325 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2528219.799 | 961156.808 | 1284236.600 | 16255028.329 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2528219.744 | 961156.795 | 1284236.544 | 16255028.317 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2528219.755 | 961156.730 | 1284236.555 | 16255028.252 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2528219.742 | 961156.830 | 1284236.544 | 16255028.352 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2528219.742 | 961156.830 | 1284236.544 | 16255028.352 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528219.749 | 961156.777 | 1284236.550 | 16255028.299 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528219.719 | 961156.781 | 1284236.520 | 16255028.303 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_Y-DO9900-3W-17SEP2025.jpg | W | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_Y-DO9900-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_Y-DO9900-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4304 Z **NGS Name:** 4304 Z

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9911 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 24 | 116 N | 30 W | 445007.00 | 942233.77 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4304 Z 2011

3.6 MILES SOUTH OF HUTCHINSON, 4.45 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 97.3, 96.0 FEET WEST OF TRUNK HIGHWAY 15, 33.1 FEET WEST OF CABLE BOX NUMBER KO 15, 27.4 FEET SOUTH OF A FIELD ENTRANCE, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.540 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1066.540 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.540 | | | 976.353 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1066.540 | | | 976.353 | .016 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1066.533 | .131 | | 976.625 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1066.455 | .262 | | 976.412 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.190 12B = -90.167 09 = -90.046 03 = -89.915**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 06.99836 | 94 22 33.77315 | 566748.367 | 238348.309 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 50 06.99836 | 94 22 33.77315 | 566748.367 | 238348.309 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 06.99773 | 94 22 33.77365 | 566748.331 | 238348.245 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 06.99808 | 94 22 33.77365 | 566748.331 | 238348.281 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527117.268 | 997341.990 | 1283580.058 | 16291217.498 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527117.268 | 997341.990 | 1283580.058 | 16291217.498 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527117.232 | 997341.926 | 1283580.020 | 16291217.434 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527117.232 | 997341.962 | 1283580.021 | 16291217.470 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_Z-DO9911-3W-02MAY2011.jpg | W | May 2, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_Z-DO9911-2-02MAY2011.jpg | | May 2, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4304_Z-DO9911-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 A
**NGS Name:** 4305 A
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1497 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 31 | 117 N | 29 W | 445424.32 | 942206.82 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 5 IN. | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 33 FT)

**Disk Type**
VERTICAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (1986)

**Stamping:** 4305 A 1986

IN THE NORTH EDGE OF HUTCHINSON, 0.7 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, 82.0 FEET WEST OF TRUNK HIGHWAY 15 ON COUNTY ROAD 76, 42.5 FEET SOUTH OF COUNTY ROAD 76 (NORTH HIGH DRIVE NORTHWEST), 2.4 FEET NORTHWEST OF A POWER POLE, 1.0 FOOT SOUTH OF A WITNESS POST.

**Station Notes**
NEW INTERSECTION.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1079.821 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1998 | 17353 |
| 1079.817 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1079.388 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 990.169 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1079.821 | .131 | | 990.283 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1079.821 | .131 | | 990.283 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1079.821 | .131 | | 990.385 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1079.821 | .131 | | 990.385 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| 1079.821 | .197 | | 990.451 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1079.394 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.678 12B = -89.668 09 = -89.541 03 = -89.439**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32425 | 94 22 06.81510 | 568606.334 | 264416.623 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32432 | 94 22 06.81582 | 568606.282 | 264416.630 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 54 24.32432 | 94 22 06.81582 | 568606.282 | 264416.630 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32378 | 94 22 06.81537 | 568606.315 | 264416.575 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 54 24.32378 | 94 22 06.81537 | 568606.315 | 264416.575 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 54 24.32559 | 94 22 06.81763 | 568606.151 | 264416.758 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32178 | 94 22 06.81209 | 568606.551 | 264416.373 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 54 24.32025 | 94 22 06.81161 | 568606.586 | 264416.217 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.45850 | 94 22 05.87270 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529177.279 | 1023392.538 | 1285961.024 | 16317235.468 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529177.227 | 1023392.545 | 1285960.972 | 16317235.476 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2529177.227 | 1023392.545 | 1285960.972 | 16317235.476 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529177.259 | 1023392.490 | 1285961.004 | 16317235.421 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2529177.259 | 1023392.490 | 1285961.004 | 16317235.421 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2529177.097 | 1023392.674 | 1285960.844 | 16317235.607 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529177.494 | 1023392.287 | 1285961.236 | 16317235.214 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2529177.528 | 1023392.132 | 1285961.268 | 16317235.059 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1904575.687 | 695315.503 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_A-PQ1497-3N-26MAR2007.jpg | N | Mar 26, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_A-PQ1497-2-26MAR2007.jpg | | Mar 26, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_A-PQ1497-1-26MAR2007.jpg | | Mar 26, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 B **NGS Name:** 4305 B

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1501 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 117 N | 29 W | 445512.17 | 942203.35 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** 4305 B 1986

1.75 MILES NORTH OF HUTCHINSON, 1.65 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 103.35, 67.1 FEET NORTH-NORTHWEST OF A POWER POLE, 64.2 FEET WEST OF TRUNK HIGHWAY 15, 16.3 FEET EAST OF THE SOUTHEAST CORNER OF THE BASE OF THE WOLF GRAVESTONE, 14.5 FEET NORTH OF THE SOUTH ENTRANCE TO A CEMETERY.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1085.004 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1085.004 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1085.004 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.588 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 995.441 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1085.004 | .131 | | 995.556 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1085.004 | .131 | | 995.657 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1085.004 | .131 | | 995.556 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1084.919 | .262 | | 995.575 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.580 12B = -89.573 09 = -89.442 03 = -89.344**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 12.16935 | 94 22 03.35152 | 568839.811 | 269263.255 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 12.16930 | 94 22 03.35222 | 568839.761 | 269263.250 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 55 12.16930 | 94 22 03.35222 | 568839.761 | 269263.250 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 12.16879 | 94 22 03.35178 | 568839.793 | 269263.198 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 55 12.16969 | 94 22 03.35218 | 568839.764 | 269263.289 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529448.336 | 1028236.750 | 1286291.852 | 16322074.971 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529448.286 | 1028236.745 | 1286291.802 | 16322074.966 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529448.286 | 1028236.745 | 1286291.802 | 16322074.966 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529448.318 | 1028236.693 | 1286291.833 | 16322074.914 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529448.289 | 1028236.784 | 1286291.805 | 16322075.006 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_B-PQ1501-3W-03NOV2010.jpg | W | Nov 3, 2010 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_B-PQ1501-2-03NOV2010.jpg | | Nov 3, 2010 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_B-PQ1501-1-03NOV2010.jpg | | Nov 3, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 C
**NGS Name:** 4305 C
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 117 N | 29 W | 445607.44 | 942206.45 | 2 | C |

**NGS ACRN:** PQ1503 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 28 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** 4305 C 1986

2.5 MILES NORTH OF HUTCHINSON, 2.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 104.35, 196.0 FEET WEST OF TRUNK HIGHWAY 15 ON 220TH STREET, 129.0 FEET NORTHWEST OF A POWER POLE, 122.0 FEET SOUTHWEST OF A POWER POLE, 32.5 FEET SOUTH OF 220TH STREET, 0.7 FOOT SOUTH OF A RIGHT-OF-WAY POST, 1.7 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1109.729 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1109.729 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1109.729 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1109.325 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1020.277 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1109.742 | .131 | | 1020.395 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1109.742 | .131 | | 1020.497 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1109.742 | .131 | | 1020.395 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1109.601 | .262 | | 1020.365 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1109.742 | .197 | | 1020.566 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.462 12B = -89.455 09 = -89.327 03 = -89.235**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.44024 | 94 22 06.44733 | 568598.829 | 274860.462 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.44020 | 94 22 06.44796 | 568598.783 | 274860.458 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 56 07.44020 | 94 22 06.44796 | 568598.783 | 274860.458 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.43969 | 94 22 06.44753 | 568598.815 | 274860.407 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 07.43988 | 94 22 06.44770 | 568598.802 | 274860.426 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 07.44091 | 94 22 06.44842 | 568598.750 | 274860.530 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.43642 | 94 22 06.44214 | 568599.203 | 274860.077 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 56 07.43519 | 94 22 06.44269 | 568599.165 | 274859.952 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.57320 | 94 22 05.50240 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529250.817 | 1033835.130 | 1286163.577 | 16327674.209 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529250.772 | 1033835.126 | 1286163.531 | 16327674.206 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529250.772 | 1033835.126 | 1286163.531 | 16327674.206 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529250.803 | 1033835.075 | 1286163.561 | 16327674.154 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529250.791 | 1033835.094 | 1286163.549 | 16327674.173 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2529250.739 | 1033835.198 | 1286163.500 | 16327674.278 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529251.189 | 1033834.742 | 1286163.943 | 16327673.816 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2529251.149 | 1033834.617 | 1286163.901 | 16327673.692 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1904649.370 | 705757.872 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_C-PQ1503-3W-03NOV2010.jpg | W | Nov 3, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_C-PQ1503-2-03NOV2010.jpg | | Nov 3, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_C-PQ1503-1-03NOV2010.jpg | | Nov 3, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 D **NGS Name:** 4305 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1507 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 18 | 117 N | 29 W | 445633.36 | 942157.27 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** 4305 D 1986

3.0 MILES NORTH OF HUTCHINSON, 3.2 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 IN HUTCHINSON, 500.0 FEET EAST OF TRUNK HIGHWAY 15 ON 225TH STREET, 32.5 FEET SOUTH OF 225TH STREET, 2.8 FEET NORTHWEST OF A POWER POLE, 1.6 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1090.618 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1090.618 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1090.618 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1090.221 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1001.202 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1090.615 | .131 | | 1001.320 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1090.615 | .131 | | 1001.422 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1090.615 | .131 | | 1001.320 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1090.457 | .262 | | 1001.255 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1090.615 | .197 | | 1001.487 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.422 12B = -89.416 09 = -89.291 03 = -89.199**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.36074 | 94 21 57.26587 | 569250.720 | 277487.902 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.36067 | 94 21 57.26649 | 569250.675 | 277487.895 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 56 33.36067 | 94 21 57.26649 | 569250.675 | 277487.895 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.36017 | 94 21 57.26608 | 569250.705 | 277487.845 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 33.36086 | 94 21 57.26594 | 569250.715 | 277487.915 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 33.36238 | 94 21 57.26562 | 569250.737 | 277488.069 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.35714 | 94 21 57.25914 | 569251.205 | 277487.540 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 56 33.35639 | 94 21 57.26013 | 569251.135 | 277487.463 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 33.49420 | 94 21 56.31960 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529923.017 | 1036457.186 | 1286867.998 | 16330287.209 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529922.973 | 1036457.179 | 1286867.953 | 16330287.203 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529922.973 | 1036457.179 | 1286867.953 | 16330287.203 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529923.002 | 1036457.129 | 1286867.982 | 16330287.152 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529923.012 | 1036457.198 | 1286867.993 | 16330287.222 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2529923.036 | 1036457.352 | 1286868.019 | 16330287.375 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529923.500 | 1036456.819 | 1286868.476 | 16330286.837 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2529923.428 | 1036456.744 | 1286868.403 | 16330286.762 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1905321.681 | 708379.959 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_D-PQ1507-3N-04NOV2010.jpg | N | Nov 4, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_D-PQ1507-2-04NOV2010.jpg | | Nov 4, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_D-PQ1507-1-04NOV2010.jpg | | Nov 4, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 E
**NGS Name:** 4305 E
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1508 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 117 N | 29 W | 445712.52 | 942206.81 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 28 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** 4305 E 1986

4.0 MILES NORTH OF HUTCHINSON, 4.0 MILES NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 105.65, 88.0 FEET NORTH OF A FIELD ENTRANCE, 73.5 FEET WEST OF TRUNK HIGHWAY 15, 3.5 FEET WEST-SOUTHWEST OF A POWER POLE, 1.6 FEET SOUTH OF A WITNESS POST.

**Station Notes**
FOUND THE ROD BENT OVER, DIDN'T RESET DOWN TO THE METAL STABILIZER, NO CAP.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1104.063 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1103.679 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1104.066 | .197 | | 1015.011 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.337 12B = -89.331 09 = -89.209 03 = -89.117**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 12.51716 | 94 22 06.81113 | 568551.223 | 281451.510 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 12.51189 | 94 22 06.80471 | 568551.686 | 281450.977 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 57 12.51099 | 94 22 06.80540 | 568551.638 | 281450.887 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 12.64920 | 94 22 05.86390 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529254.363 | 1040425.733 | 1286248.604 | 16334262.889 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529254.823 | 1040425.197 | 1286249.056 | 16334262.348 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2529254.773 | 1040425.106 | 1286249.005 | 16334262.258 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1904653.064 | 712348.328 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** 4305 F **NGS Name:** 4305 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1510 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 117 N | 29 W | 445830.89 | 942211.04 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2007) **Stamping:** 4305 F 1986

6.75 MILES NORTH OF HUTCHINSON, 5.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 107.1, IN THE NORTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 15 AND 247TH STREET, 250.0 FEET WEST OF TRUNK HIGHWAY 15 ON 247TH STREET, 32.0 FEET NORTH OF 247TH STREET, 8.8 FEET WEST OF AN ENTRANCE, 3.7 FEET EAST-SOUTHEAST OF A POWER POLE, 0.8 FOOT SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1098.735 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1098.735 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1098.735 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1098.374 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1009.594 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1098.663 | .262 | | 1009.676 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| | | | 1009.713 | .012 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1098.751 | .131 | | 1009.801 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2004 | GPS2022 |
| 1098.751 | .131 | | 1009.801 | .066 | 1996 | GPS - STATIC | 2004 | HMEEK |

**Geoid Separations(ft): GEOID18 = -89.199 12B = -89.193 09 = -89.075 03 = -88.983**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 30.89234 | 94 22 11.04063 | 568221.348 | 289388.570 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 30.89209 | 94 22 11.04134 | 568221.297 | 289388.545 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 30.89358 | 94 22 11.04165 | 568221.274 | 289388.696 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 58 30.89158 | 94 22 11.04102 | 568221.320 | 289388.494 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 44 58 30.89158 | 94 22 11.04102 | 568221.320 | 289388.494 | .033 | C | GPS - STATIC | 2004 | HMEEK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528986.120 | 1048364.385 | 1286078.633 | 16342202.575 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528986.068 | 1048364.360 | 1286078.582 | 16342202.550 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528986.047 | 1048364.511 | 1286078.562 | 16342202.701 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2528986.091 | 1048364.308 | 1286078.604 | 16342202.498 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 2528986.091 | 1048364.308 | 1286078.604 | 16342202.498 | .033 | C | GPS - STATIC | 2004 | HMEEK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_F-PQ1510-3N-04NOV2010.jpg | N | Nov 4, 2010 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_F-PQ1510-2-04NOV2010.jpg | | Nov 4, 2010 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_F-PQ1510-1-04NOV2010.jpg | | Nov 4, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 G
**NGS Name:** 4305 G
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9756 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 31 | 117 N | 29 W | 445348.39 | 942208.08 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4305 G 2009

IN HUTCHINSON, AT THE JUNCTION OF TRUNK HIGHWAY 15/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 15 MILEPOINT 101.70, 83.3 FEET EAST OF TRUNK HIGHWAY 15, 75.5 FEET NORTH OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22, 31.9 FEET EAST-SOUTHEAST OF A STREET SIGNAL, 8.1 FEET NORTHWEST OF A FIRE HYDRANT, 2.5 FEET SOUTH OF A RIGHT-OF-WAY POST, 2.5 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.896 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1048.896 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1048.896 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1048.889 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.896 | | | 959.135 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1048.896 | | | 959.135 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1048.896 | | | 959.135 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1048.896 | | | 959.135 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1048.964 | .262 | | 959.207 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1048.902 | .262 | | 959.145 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1048.859 | .262 | | 959.116 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1048.896 | | | 959.135 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1048.896 | | | 959.135 | .006 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 959.135 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1048.882 | .131 | | 959.381 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1048.751 | .262 | | 959.135 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1048.882 | .131 | | 959.247 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1048.882 | .131 | | 959.348 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1048.882 | .131 | | 959.247 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1048.709 | .262 | | 959.198 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.757 12B = -89.747 09 = -89.619 03 = -89.514**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 48.38889 | 94 22 08.08125 | 568527.022 | 260776.752 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 53 48.38889 | 94 22 08.08125 | 568527.022 | 260776.752 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 48.38889 | 94 22 08.08125 | 568527.022 | 260776.752 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 53 48.38889 | 94 22 08.08125 | 568527.022 | 260776.752 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 48.38906 | 94 22 08.08161 | 568526.996 | 260776.769 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 48.38845 | 94 22 08.08176 | 568526.985 | 260776.707 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 53 48.38839 | 94 22 08.08009 | 568527.106 | 260776.701 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 53 48.38889 | 94 22 08.08125 | 568527.022 | 260776.752 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 48.38885 | 94 22 08.08119 | 568527.026 | 260776.747 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 53 48.38889 | 94 22 08.08125 | 568527.022 | 260776.752 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 48.38943 | 94 22 08.08207 | 568526.963 | 260776.806 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 48.38900 | 94 22 08.08236 | 568526.942 | 260776.763 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 53 48.38900 | 94 22 08.08236 | 568526.942 | 260776.763 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 48.38842 | 94 22 08.08159 | 568526.998 | 260776.704 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 53 48.38842 | 94 22 08.08159 | 568526.998 | 260776.704 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 53 48.38847 | 94 22 08.08180 | 568526.982 | 260776.709 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 53 48.38845 | 94 22 08.08180 | 568526.982 | 260776.707 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 48.38896 | 94 22 08.08218 | 568526.955 | 260776.758 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529069.732 | 1019753.742 | 1285808.564 | 16313599.016 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 2529069.732 | 1019753.742 | 1285808.564 | 16313599.016 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2529069.732 | 1019753.742 | 1285808.564 | 16313599.016 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2529069.732 | 1019753.742 | 1285808.564 | 16313599.016 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2529069.706 | 1019753.759 | 1285808.539 | 16313599.034 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2529069.695 | 1019753.698 | 1285808.527 | 16313598.972 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2529069.815 | 1019753.691 | 1285808.647 | 16313598.964 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2529069.732 | 1019753.742 | 1285808.564 | 16313599.016 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2529069.736 | 1019753.738 | 1285808.568 | 16313599.012 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2529069.732 | 1019753.742 | 1285808.564 | 16313599.016 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529069.673 | 1019753.797 | 1285808.506 | 16313599.072 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529069.652 | 1019753.754 | 1285808.485 | 16313599.029 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529069.652 | 1019753.754 | 1285808.485 | 16313599.029 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529069.707 | 1019753.695 | 1285808.539 | 16313598.969 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2529069.707 | 1019753.695 | 1285808.539 | 16313598.969 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2529069.692 | 1019753.700 | 1285808.524 | 16313598.974 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2529069.692 | 1019753.698 | 1285808.524 | 16313598.972 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529069.665 | 1019753.750 | 1285808.498 | 16313599.024 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_G-DL9756-3N-16JUN2024.jpg | N | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_G-DL9756-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_G-DL9756-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 H **NGS Name:** 4305 H

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9757 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 19 | 117 N | 29 W | 445543.28 | 942201.94 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 39 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4305 H 2009

2.2 MILES NORTH OF HUTCHINSON, 2.2 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 103.90, 85.6 FEET EAST OF TRUNK HIGHWAY 15, 79.3 FEET NORTH OF 215TH STREET, 41.4 FEET NORTH-NORTHEAST OF A POWER POLE, 1.4 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1094.250 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1094.250 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1004.739 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1094.178 | .262 | | 1004.798 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1094.256 | .131 | | 1004.857 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1094.256 | .131 | | 1004.959 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1094.256 | .131 | | 1004.857 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1094.040 | .262 | | 1004.752 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.518 12B = -89.511 09 = -89.380 03 = -89.288**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 43.28076 | 94 22 01.93733 | 568931.276 | 272414.603 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 43.28053 | 94 22 01.93734 | 568931.276 | 272414.580 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 55 43.28069 | 94 22 01.93795 | 568931.232 | 272414.596 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 55 43.28069 | 94 22 01.93795 | 568931.232 | 272414.596 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 43.28019 | 94 22 01.93753 | 568931.262 | 272414.545 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 55 43.28035 | 94 22 01.93772 | 568931.248 | 272414.561 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529564.244 | 1031386.995 | 1286446.656 | 16325222.894 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529564.243 | 1031386.972 | 1286446.655 | 16325222.870 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529564.199 | 1031386.988 | 1286446.611 | 16325222.888 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529564.199 | 1031386.988 | 1286446.611 | 16325222.888 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529564.229 | 1031386.938 | 1286446.640 | 16325222.836 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529564.216 | 1031386.954 | 1286446.627 | 16325222.853 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_H-DL9757-3E-11MAY2011.jpg | E | May 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_H-DL9757-2-11MAY2011.jpg | | May 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_H-DL9757-1-11MAY2011.jpg | | May 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 J
**NGS Name:** 4305 J
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9758 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 18 | 117 N | 29 W | 445659.98 | 942204.46 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4305 J 2009

3.7 MILES NORTH OF HUTCHINSON, 3.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 105.40, 67.6 FEET EAST OF TRUNK HIGHWAY 15, 31.3 FEET SOUTH OF 230TH STREET EXTENDED, 6.2 FEET SOUTH OF A CABLE BOX, 1.4 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1088.676 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1088.676 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 999.309 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1088.626 | .262 | | 999.391 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1088.679 | .131 | | 999.417 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1088.679 | .131 | | 999.522 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1088.679 | .131 | | 999.417 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1088.525 | .262 | | 999.381 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.363 12B = -89.357 09 = -89.235 03 = -89.144**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.98135 | 94 22 04.45540 | 568724.780 | 280182.405 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.98134 | 94 22 04.45557 | 568724.768 | 280182.404 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 56 59.98129 | 94 22 04.45605 | 568724.733 | 280182.399 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 56 59.98129 | 94 22 04.45605 | 568724.733 | 280182.399 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.98079 | 94 22 04.45565 | 568724.762 | 280182.348 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 59.98126 | 94 22 04.45624 | 568724.720 | 280182.395 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529418.051 | 1039155.438 | 1286396.537 | 16332990.933 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529418.039 | 1039155.437 | 1286396.525 | 16332990.933 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529418.004 | 1039155.432 | 1286396.490 | 16332990.928 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529418.004 | 1039155.432 | 1286396.490 | 16332990.928 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529418.033 | 1039155.381 | 1286396.518 | 16332990.877 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529417.991 | 1039155.429 | 1286396.476 | 16332990.925 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_J-DL9758-3E-11MAY2011.jpg | E | May 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_J-DL9758-2-11MAY2011.jpg | | May 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_J-DL9758-1-11MAY2011.jpg | | May 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 K **NGS Name:** 4305 K

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9759 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 7 | 117 N | 29 W | 445727.92 | 942204.27 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4305 K 2009

4.2 MILES NORTH OF HUTCHINSON, 4.2 MILES NORTH ALONG TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 105.9, 75.6 FEET EAST OF TRUNK HIGHWAY 15, 45.3 FEET SOUTH OF DRIVEWAY NUMBER 23562, 31.7 FEET SOUTHWEST OF A POWER POLE, 1.1 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1103.003 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1103.006 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1013.686 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1102.970 | .262 | | 1013.784 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1103.016 | .131 | | 1013.791 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1103.016 | .131 | | 1013.896 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1103.016 | .131 | | 1013.791 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1102.823 | .262 | | 1013.725 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.314 12B = -89.308 09 = -89.186 03 = -89.094**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 27.92301 | 94 22 04.26993 | 568728.892 | 283012.447 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 27.92275 | 94 22 04.27075 | 568728.833 | 283012.420 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 57 27.92295 | 94 22 04.27059 | 568728.844 | 283012.441 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 57 27.92295 | 94 22 04.27059 | 568728.844 | 283012.441 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 27.92245 | 94 22 04.27020 | 568728.872 | 283012.390 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 27.92326 | 94 22 04.27105 | 568728.811 | 283012.472 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529444.124 | 1041985.100 | 1286457.594 | 16335819.463 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529444.064 | 1041985.074 | 1286457.534 | 16335819.438 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529444.076 | 1041985.095 | 1286457.546 | 16335819.458 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529444.076 | 1041985.095 | 1286457.546 | 16335819.458 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529444.104 | 1041985.044 | 1286457.573 | 16335819.407 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529444.043 | 1041985.126 | 1286457.514 | 16335819.490 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_K-DL9759-3E-11MAY2011.jpg | E | May 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_K-DL9759-2-11MAY2011.jpg | | May 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_K-DL9759-1-11MAY2011.jpg | | May 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 L
**NGS Name:** 4305 L
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9760 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 117 N | 29 W | 445818.35 | 942205.52 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 40 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4305 L 2009

5.15 MILES NORTH OF HUTCHINSON, 5.15 MILES NORTH ALONG TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 106.85, 62.5 FEET EAST OF TRUNK HIGHWAY 15, 26.8 FEET NORTH OF A FIELD ENTRANCE, 2.6 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1077.127 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1077.127 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1077.150 | .262 | | 987.921 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1077.094 | .262 | | 987.872 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 987.908 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1077.058 | .262 | | 987.957 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1077.130 | .131 | | 988.010 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1077.130 | .131 | | 988.115 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1077.130 | .131 | | 988.010 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1077.016 | .262 | | 988.007 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.229 12B = -89.219 09 = -89.101 03 = -89.009**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 18.35332 | 94 22 05.52097 | 568622.294 | 288119.871 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 58 18.35294 | 94 22 05.52066 | 568622.316 | 288119.832 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 58 18.35338 | 94 22 05.52052 | 568622.326 | 288119.877 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 18.35298 | 94 22 05.52096 | 568622.295 | 288119.836 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 58 18.35332 | 94 22 05.52120 | 568622.277 | 288119.871 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 58 18.35332 | 94 22 05.52120 | 568622.277 | 288119.871 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 18.35282 | 94 22 05.52081 | 568622.306 | 288119.820 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 58 18.35333 | 94 22 05.52129 | 568622.271 | 288119.872 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529377.172 | 1047092.728 | 1286453.840 | 16340926.447 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2529377.195 | 1047092.689 | 1286453.861 | 16340926.408 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2529377.205 | 1047092.734 | 1286453.872 | 16340926.453 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529377.173 | 1047092.694 | 1286453.840 | 16340926.413 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529377.156 | 1047092.728 | 1286453.823 | 16340926.448 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529377.156 | 1047092.728 | 1286453.823 | 16340926.448 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529377.184 | 1047092.677 | 1286453.850 | 16340926.396 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529377.149 | 1047092.729 | 1286453.817 | 16340926.449 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_L-DL9760-3E-30MAR2020.jpg | E | Mar 30, 2020 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_L-DL9760-2-30MAR2020.jpg | | Mar 30, 2020 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_L-DL9760-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4305 M
**NGS Name:** 4305 M
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9761 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 117 N | 29 W | 445843.27 | 942206.18 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 40 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4305 M 2009

5.65 MILES NORTH OF HUTCHINSON, 5.65 MILES NORTH ALONG TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 15/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 107.35, 62.7 FEET SOUTH OF COMMON STREET, 62.5 FEET EAST OF TRUNK HIGHWAY 15, 26.3 FEET SOUTHWEST OF A POWER POLE WITH THREE GUY WIRES, 1.1 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1105.434 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1105.434 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1016.248 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1105.428 | .262 | | 1016.366 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1105.444 | .131 | | 1016.346 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1105.444 | .131 | | 1016.451 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1105.444 | .131 | | 1016.346 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1105.372 | .262 | | 1016.402 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.189 12B = -89.180 09 = -89.062 03 = -88.973**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 43.27427 | 94 22 06.17725 | 568566.897 | 290643.785 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 43.27416 | 94 22 06.17801 | 568566.843 | 290643.773 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 58 43.27421 | 94 22 06.17792 | 568566.849 | 290643.778 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 58 43.27421 | 94 22 06.17792 | 568566.849 | 290643.778 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 43.27371 | 94 22 06.17754 | 568566.877 | 290643.728 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 58 43.27475 | 94 22 06.17759 | 568566.873 | 290643.833 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529341.368 | 1049616.765 | 1286449.274 | 16343450.197 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529341.313 | 1049616.754 | 1286449.219 | 16343450.186 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529341.320 | 1049616.759 | 1286449.226 | 16343450.191 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529341.320 | 1049616.759 | 1286449.226 | 16343450.191 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529341.346 | 1049616.709 | 1286449.252 | 16343450.140 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529341.344 | 1049616.814 | 1286449.250 | 16343450.245 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_M-DL9761-3NE-12MAY2011.jpg | NE | May 12, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_M-DL9761-2-12MAY2011.jpg | | May 12, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4305_M-DL9761-1-12MAY2011.jpg | | May 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4306 A **NGS Name:** 4306 A

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1593 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 115 N | 28 W | 444304.65 | 941350.34 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4306 A 1985

3.5 MILES NORTH OF NEW AUBURN, 3.5 MILES NORTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 15 WEST IN NEW AUBURN, AT TRUNK HIGHWAY 22 MILEPOINT 101.5, 275.0 FEET EAST OF TRUNK HIGHWAY 22, 17.0 FEET NORTH OF 70TH STREET, 1.4 FEET WEST OF A POWER POLE, 1.0 FOOT NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.530 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1016.533 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1016.530 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2010 | 00000663 |
| 1016.533 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2006 | VGAYL |
| 1016.530 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.133 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1985 | VLORD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.668 | .262 | | 925.713 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1016.396 | .262 | | 925.438 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1016.461 | .262 | | 925.608 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.955 12B = -90.955 09 = -90.853 03 = -90.702**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 04.64979 | 94 13 50.34423 | 604680.476 | 195726.651 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 04.65055 | 94 13 50.34355 | 604680.525 | 195726.728 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 04.65036 | 94 13 50.34528 | 604680.400 | 195726.708 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564713.389 | 954431.614 | 1320637.471 | 16247856.265 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2564713.438 | 954431.691 | 1320637.521 | 16247856.341 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564713.313 | 954431.672 | 1320637.395 | 16247856.324 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_A-PQ1593-3N-06MAY2024.jpg | N | May 6, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_A-PQ1593-2-06MAY2024.jpg | | May 6, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_A-PQ1593-1-06MAY2024.jpg | | May 6, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4306 B
**NGS Name:** 4306 B
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1594 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 32 | 115 N | 28 W | 444343.87 | 941310.06 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)

**Disk Type**
VERTICAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (2016)

**Stamping:** 4306 B 1985

3.5 MILES SOUTHWEST OF GLENCOE, 0.85 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 3.5 MILES WEST OF GLENCOE), TO TRUNK HIGHWAY 22 MILEPOINT 102.5, THEN 0.15 MILE EAST ON 77TH STREET, 37.2 FEET EAST OF A POWER POLE, 25.0 FEET NORTH OF 77TH STREET, 1.0 FOOT EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS RETURNED TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1014.450 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1014.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2010 | 00000663 |
| 1014.450 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2006 | VGAYL |
| 1014.450 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.043 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1985 | VLORD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.414 | .262 | | 923.489 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 923.538 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1014.430 | .262 | | 923.604 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 923.696 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1014.434 | .131 | | 923.804 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1014.466 | .131 | | 923.804 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1014.434 | .131 | | 923.804 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1014.434 | .131 | | 923.804 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 923.696 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |

**Geoid Separations(ft): GEOID18 = -90.925 12B = -90.925 09 = -90.827 03 = -90.669**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 43.87434 | 94 13 10.06428 | 607568.897 | 199713.770 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 43.87519 | 94 13 10.06445 | 607568.884 | 199713.856 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 43.87518 | 94 13 10.06532 | 607568.821 | 199713.855 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 43.87528 | 94 13 10.06566 | 607568.796 | 199713.864 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 43 43.87528 | 94 13 10.06566 | 607568.796 | 199713.864 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 43.87482 | 94 13 10.06495 | 607568.848 | 199713.818 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 43 43.87482 | 94 13 10.06495 | 607568.848 | 199713.818 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 43 43.87482 | 94 13 10.06495 | 607568.848 | 199713.818 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 43 43.87482 | 94 13 10.06495 | 607568.848 | 199713.818 | .033 | C | GPS - STATIC | 2006 | HGAYL |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567632.376 | 958395.747 | 1323604.335 | 16251783.375 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2567632.364 | 958395.833 | 1323604.324 | 16251783.461 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567632.301 | 958395.833 | 1323604.261 | 16251783.461 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2567632.276 | 958395.843 | 1323604.237 | 16251783.472 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2567632.276 | 958395.843 | 1323604.237 | 16251783.472 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567632.328 | 958395.796 | 1323604.287 | 16251783.425 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2567632.328 | 958395.796 | 1323604.287 | 16251783.425 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2567632.328 | 958395.796 | 1323604.287 | 16251783.425 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2567632.328 | 958395.796 | 1323604.287 | 16251783.425 | .033 | C | GPS - STATIC | 2006 | HGAYL |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_B-PQ1594-3N-15APR2015.jpg | N | Apr 15, 2015 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_B-PQ1594-2-15APR2015.jpg | | Apr 15, 2015 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_B-PQ1594-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4306 B RESET



**Mn/DOT Name:** 4306 B RESET **NGS Name:** 4306 B RESET

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 32 | 115 N | 28 W | 444343.88 | 941310.06 | | 3 |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)

**Disk Type**
METAL ROD (WITH REMOVABLE ID DISK)

**Mon. Agency**
MNDT

**Description:**

**Stamping:** 4306 B 2024

3.5 MILES SOUTHWEST OF GLENCOE, 0.85 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 3.5 MILES WEST OF GLENCOE) TO TRUNK HIGHWAY 22 MILEPOINT 102.5, THEN 0.15 MILE EAST ON 77TH STREET, 25.0 FEET NORTH OF 77TH STREET, 37.2FEET EAST OF A POWER POLE WITH 3 GUY WIRES, 1.0 FOOT EAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.325 | .262 | | 923.400 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**No Geoid Separations Available**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 43.87514 | 94 13 10.06356 | 607568.948 | 199713.851 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567632.428 | 958395.828 | 1323604.388 | 16251783.455 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_B_RESET-3N-08MAY2024.jpg | N | May 8, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_B_RESET-2-08MAY2024.jpg | | May 8, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4306_B_RESET-1-08MAY2024.jpg | | May 8, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AA **NGS Name:** 4307 AA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1564 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 25 | 116 N | 29 W | 444933.18 | 941624.98 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 AA 1987

IN BISCAY, 0.15 MILE SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4, AT TRUNK HIGHWAY 22 MILEPOINT 114.95, 88.5 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 20.1 FEET WEST OF A FLAGPOLE, 18.5 FEET SOUTHEAST OF THE NORTHWEST CORNER OF A BRICK BUILDING, 2.6 FEET EAST-NORTHEAST OF A POWER POLE WITH A LIGHT.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.031 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.588 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 935.720 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 935.822 | .012 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1026.048 | .131 | | 935.966 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1026.048 | .131 | | 935.966 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.479 12B = -90.476 09 = -90.371 03 = -90.203**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 33.17746 | 94 16 24.97622 | 593340.635 | 235023.661 | .020 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 33.17753 | 94 16 24.97668 | 593340.601 | 235023.668 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 33.17698 | 94 16 24.97606 | 593340.646 | 235023.613 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 49 33.17698 | 94 16 24.97606 | 593340.647 | 235023.611 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2553680.241 | 993811.370 | 1310092.083 | 16287360.432 | .020 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2553680.208 | 993811.377 | 1310092.050 | 16287360.440 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2553680.252 | 993811.321 | 1310092.094 | 16287360.384 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2553680.252 | 993811.321 | 1310092.094 | 16287360.384 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# 4307 AB



**Mn/DOT Name:** 4307 AB

**NGS Name:** 4307 AB

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1563 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 23 | 116 N | 29 W | 445007.00 | 941706.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000)

**Stamping:** 4307 AB 1987

0.84 MILE NORTHWEST OF BISCAY, 0.5 MILE NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 115.60, AT A GRAVEL PIT AND A MAINTENANCE STOCKPILE, 179.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 44.5 FEET NORTH-NORTHEAST OF A GRAVEL ROAD IN A STOCKPILE AREA, 23.0 FEET SOUTHEAST OF A 30.0 INCH DIAMETER COTTONWOOD TREE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.966 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.527 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

**Geoid Separations(ft): GEOID18 = -90.413 12B = -90.403 09 = -90.295 03 = -90.138**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 AC **NGS Name:** 4307 AC

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1561 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 22 | 116 N | 29 W | 445033.73 | 941804.70 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2019 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AC 1987

3.0 MILES SOUTHEAST OF HUTCHINSON, 1.77 MILES NORTHWEST OF BISCAY, 1.65 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 116.75, AT AN ENTRANCE TO THE QUONSET HUT BUILDINGS, 152.0 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 12.5 FEET NORTHWEST OF DRIVEWAY NUMBER 15255, 1.8 FEET NORTHEAST OF A GATE POST, 0.5 FOOT NORTHEAST OF A WITNESS POST.

**Station Notes**

THE SURVEY MARK IS ON PRIVATE PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.553 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1031.553 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1031.553 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1031.553 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1031.553 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.110 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.599 | .262 | | 941.261 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1031.484 | .262 | | 941.163 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 941.205 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1031.468 | .262 | | 941.255 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1031.560 | .131 | | 941.314 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1031.560 | .131 | | 941.314 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1031.560 | .131 | | 941.452 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1031.560 | .131 | | 941.314 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1031.560 | .131 | | 941.314 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1031.314 | .262 | | 941.251 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1031.560 | .131 | | 941.452 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1031.560 | .131 | | 941.452 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 941.314 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1031.560 | .131 | | 941.452 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1031.560 | .131 | | 941.452 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.338 12B = -90.321 09 = -90.216 03 = -90.065**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 33.72940 | 94 18 04.69883 | 586128.022 | 241125.789 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 50 33.72875 | 94 18 04.69855 | 586128.042 | 241125.723 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 50 33.72977 | 94 18 04.69879 | 586128.025 | 241125.826 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 33.72970 | 94 18 04.69985 | 586127.948 | 241125.819 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 50 33.72977 | 94 18 04.69933 | 586127.986 | 241125.826 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 50 33.72977 | 94 18 04.69933 | 586127.986 | 241125.826 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 50 33.72977 | 94 18 04.69933 | 586127.986 | 241125.826 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 50 33.72977 | 94 18 04.69933 | 586127.986 | 241125.826 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 50 33.72977 | 94 18 04.69933 | 586127.986 | 241125.826 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 33.72922 | 94 18 04.69868 | 586128.033 | 241125.770 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 50 33.73037 | 94 18 04.69883 | 586128.022 | 241125.887 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 50 33.72922 | 94 18 04.69868 | 586128.033 | 241125.770 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 50 33.72922 | 94 18 04.69868 | 586128.033 | 241125.770 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 50 33.72922 | 94 18 04.69868 | 586128.033 | 241125.770 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 50 33.72922 | 94 18 04.69868 | 586128.034 | 241125.771 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2546515.948 | 999968.695 | 1303005.738 | 16293604.286 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2546515.968 | 999968.629 | 1303005.758 | 16293604.220 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2546515.951 | 999968.733 | 1303005.742 | 16293604.323 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2546515.875 | 999968.726 | 1303005.665 | 16293604.318 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2546515.912 | 999968.733 | 1303005.703 | 16293604.324 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2546515.912 | 999968.733 | 1303005.703 | 16293604.324 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2546515.912 | 999968.733 | 1303005.703 | 16293604.324 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2546515.912 | 999968.733 | 1303005.703 | 16293604.324 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2546515.912 | 999968.733 | 1303005.703 | 16293604.324 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2546515.959 | 999968.677 | 1303005.749 | 16293604.267 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2546515.949 | 999968.793 | 1303005.740 | 16293604.384 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2546515.959 | 999968.677 | 1303005.749 | 16293604.267 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2546515.959 | 999968.677 | 1303005.749 | 16293604.267 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2546515.959 | 999968.677 | 1303005.749 | 16293604.267 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2546515.959 | 999968.677 | 1303005.749 | 16293604.267 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AC-PQ1561-3SW-07NOV2019.jpg | SW | Nov 7, 2019 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AC-PQ1561-2-07NOV2019.jpg | | Nov 7, 2019 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AC-PQ1561-1-07NOV2019.jpg | | Nov 7, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AD **NGS Name:** 4307 AD

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 15 | 116 N | 29 W | 445055.27 | 941853.93 | 2 | C |

**NGS ACRN:** PQ1560 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AD 1987

2.5 MILES SOUTHEAST OF HUTCHINSON, 4.2 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 117.55, 168.0 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 33.5 FEET NORTH OF 160TH STREET, 5.8 FEET WEST-SOUTHWEST OF A POWER POLE WITH ANCHOR WIRES, 1.8 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.924 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1031.924 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1031.838 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1031.838 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1031.838 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.396 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.924 | | | 941.721 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1031.924 | | | 941.721 | .016 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1032.124 | .262 | | 941.855 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1031.809 | .262 | | 941.557 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1031.842 | | | 941.560 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1031.842 | | | 941.560 | .007 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 941.560 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1031.855 | .131 | | 941.839 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1031.756 | .262 | | 941.616 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1031.822 | .131 | | 941.665 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1031.822 | .131 | | 941.665 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1031.822 | .131 | | 941.806 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1031.822 | .131 | | 941.665 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1031.822 | .131 | | 941.665 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1031.556 | .262 | | 941.553 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1031.855 | .131 | | 941.806 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1031.855 | .131 | | 941.806 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 941.665 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1031.855 | .131 | | 941.806 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1031.855 | .131 | | 941.806 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.269 12B = -90.256 09 = -90.141 03 = -900000**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 55.27314 | 94 18 53.93291 | 582571.923 | 243293.562 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 50 55.27314 | 94 18 53.93291 | 582571.923 | 243293.562 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 50 55.27353 | 94 18 53.93311 | 582571.908 | 243293.602 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 50 55.27351 | 94 18 53.93243 | 582571.957 | 243293.600 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 50 55.27324 | 94 18 53.93289 | 582571.924 | 243293.572 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 50 55.27323 | 94 18 53.93285 | 582571.927 | 243293.571 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 50 55.27324 | 94 18 53.93289 | 582571.924 | 243293.572 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 55.27312 | 94 18 53.93393 | 582571.849 | 243293.560 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 50 55.27321 | 94 18 53.93339 | 582571.888 | 243293.570 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 50 55.27321 | 94 18 53.93339 | 582571.888 | 243293.570 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 50 55.27321 | 94 18 53.93339 | 582571.888 | 243293.570 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 50 55.27321 | 94 18 53.93339 | 582571.888 | 243293.570 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 50 55.27321 | 94 18 53.93339 | 582571.888 | 243293.570 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 55.27254 | 94 18 53.93274 | 582571.935 | 243293.502 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 50 55.27268 | 94 18 53.93275 | 582571.935 | 243293.516 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 50 55.27267 | 94 18 53.93275 | 582571.935 | 243293.515 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 50 55.27393 | 94 18 53.93397 | 582571.846 | 243293.642 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 50 55.27267 | 94 18 53.93275 | 582571.935 | 243293.515 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 50 55.27267 | 94 18 53.93275 | 582571.935 | 243293.515 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 50 55.27267 | 94 18 53.93275 | 582571.935 | 243293.515 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 50 55.27267 | 94 18 53.93275 | 582571.935 | 243293.516 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542977.140 | 1002163.792 | 1299495.002 | 16295842.390 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2542977.140 | 1002163.792 | 1299495.002 | 16295842.390 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2542977.126 | 1002163.832 | 1299494.988 | 16295842.430 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2542977.175 | 1002163.829 | 1299495.037 | 16295842.427 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2542977.141 | 1002163.802 | 1299495.004 | 16295842.400 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2542977.144 | 1002163.801 | 1299495.007 | 16295842.399 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2542977.141 | 1002163.802 | 1299495.004 | 16295842.400 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542977.067 | 1002163.790 | 1299494.929 | 16295842.389 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2542977.105 | 1002163.799 | 1299494.968 | 16295842.397 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2542977.105 | 1002163.799 | 1299494.968 | 16295842.397 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2542977.105 | 1002163.799 | 1299494.968 | 16295842.397 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2542977.105 | 1002163.799 | 1299494.968 | 16295842.397 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2542977.105 | 1002163.799 | 1299494.968 | 16295842.397 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542977.152 | 1002163.731 | 1299495.013 | 16295842.329 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2542977.151 | 1002163.745 | 1299495.013 | 16295842.343 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2542977.151 | 1002163.744 | 1299495.013 | 16295842.342 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2542977.064 | 1002163.872 | 1299494.927 | 16295842.471 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2542977.151 | 1002163.744 | 1299495.013 | 16295842.342 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2542977.151 | 1002163.744 | 1299495.013 | 16295842.342 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2542977.151 | 1002163.744 | 1299495.013 | 16295842.342 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2542977.152 | 1002163.744 | 1299495.013 | 16295842.342 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AD-PQ1560-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AD-PQ1560-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AD-PQ1560-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AE **NGS Name:** 4307 AE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1558 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 16 | 116 N | 29 W | 445116.82 | 941925.49 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4307 AE 1987

2.5 MILES SOUTHEAST OF HUTCHINSON, 3.65 MILES SOUTHEAST OF THE SOUTH JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 118.1, 73.5 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 36.4 FEET WEST OF AN UNDERGROUND TELEPHONE WARNING POST, 14.0 FEET NORTHWEST OF AN ENTRANCE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.776 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.330 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 961.556 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 961.671 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1051.770 | .131 | | 961.803 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1051.770 | .131 | | 961.803 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.213 12B = -90.197 09 = -90.082 03 = -89.944**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 16.81734 | 94 19 25.48745 | 580290.193 | 245466.789 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 16.81744 | 94 19 25.48772 | 580290.174 | 245466.799 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 16.81688 | 94 19 25.48704 | 580290.223 | 245466.742 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 51 16.81688 | 94 19 25.48704 | 580290.224 | 245466.743 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540712.576 | 1004354.447 | 1297258.095 | 16298060.352 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540712.557 | 1004354.458 | 1297258.075 | 16298060.362 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540712.605 | 1004354.401 | 1297258.123 | 16298060.305 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2540712.605 | 1004354.401 | 1297258.123 | 16298060.305 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**Mn/DOT Name:** 4307 AE RESET
**NGS Name:** 4307 AE RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9762 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 16 | 116 N | 29 W | 445116.82 | 941925.49 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2010) **Stamping:** 4307 AE RESET 1987 2009

2.5 MILES SOUTHEAST OF HUTCHINSON, 2.9 MILES SOUTH ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 118.10, 73.5 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 14.0 FEET NORTHWEST OF A FIELD ENTRANCE, 2.0 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.569 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1051.569 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1051.569 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1051.566 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.569 | | | 961.340 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1051.569 | | | 961.340 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1051.461 | .262 | | 961.248 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1051.497 | .262 | | 961.301 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 961.340 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1051.422 | .262 | | 961.343 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1051.573 | .131 | | 961.461 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1051.573 | .131 | | 961.570 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1051.573 | .131 | | 961.461 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1051.294 | .262 | | 961.350 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -90.210 12B = -90.197 09 = -90.082 03 = -89.944**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 16.81741 | 94 19 25.48733 | 580290.202 | 245466.796 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 51 16.81741 | 94 19 25.48733 | 580290.202 | 245466.796 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 51 16.81750 | 94 19 25.48819 | 580290.140 | 245466.805 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 51 16.81674 | 94 19 25.48658 | 580290.256 | 245466.728 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 51 16.81741 | 94 19 25.48733 | 580290.202 | 245466.796 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 16.81767 | 94 19 25.48799 | 580290.154 | 245466.822 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 51 16.81751 | 94 19 25.48837 | 580290.127 | 245466.806 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 51 16.81751 | 94 19 25.48837 | 580290.127 | 245466.806 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 16.81686 | 94 19 25.48710 | 580290.219 | 245466.740 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 51 16.81693 | 94 19 25.48773 | 580290.173 | 245466.747 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 51 16.81784 | 94 19 25.48821 | 580290.138 | 245466.839 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540712.585 | 1004354.455 | 1297258.103 | 16298060.359 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2540712.585 | 1004354.455 | 1297258.103 | 16298060.359 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2540712.523 | 1004354.464 | 1297258.042 | 16298060.369 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2540712.638 | 1004354.386 | 1297258.156 | 16298060.290 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2540712.585 | 1004354.455 | 1297258.103 | 16298060.359 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540712.537 | 1004354.481 | 1297258.056 | 16298060.386 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2540712.510 | 1004354.465 | 1297258.029 | 16298060.370 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2540712.510 | 1004354.465 | 1297258.029 | 16298060.370 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540712.601 | 1004354.399 | 1297258.119 | 16298060.303 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2540712.556 | 1004354.406 | 1297258.074 | 16298060.311 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2540712.521 | 1004354.498 | 1297258.041 | 16298060.403 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AE_RESET-DL9762-3SW-17JUN2024.jpg | SW | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AE_RESET-DL9762-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AE_RESET-DL9762-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AF **NGS Name:** 4307 AF

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1556 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 9 | 116 N | 29 W | 445148.01 | 942003.95 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 AF 1987

1.5 MILES SOUTHEAST OF HUTCHINSON, 2.2 MILES SOUTH OF THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 118.95, 250.0 FEET SOUTH OF COUNTY ROAD 115 IN A FIELD, 0.1 FOOT WEST OF TRUNK HIGHWAY 22 IN A FIELD, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.601 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1059.601 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1059.601 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1059.601 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1059.601 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.155 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1059.155 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 969.486 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 969.598 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1059.611 | .131 | | 969.732 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1059.611 | .131 | | 969.732 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.124 12B = -90.111 09 = -89.993 03 = -89.862**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.01338 | 94 20 03.94685 | 577507.967 | 248615.972 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.01349 | 94 20 03.94711 | 577507.949 | 248615.983 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 48.01294 | 94 20 03.94642 | 577507.999 | 248615.927 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 51 48.01294 | 94 20 03.94642 | 577507.999 | 248615.927 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537955.153 | 1007524.819 | 1294540.556 | 16301263.842 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537955.134 | 1007524.830 | 1294540.537 | 16301263.853 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537955.184 | 1007524.774 | 1294540.586 | 16301263.797 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2537955.184 | 1007524.774 | 1294540.586 | 16301263.797 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AF-PQ1556-3E-14OCT2009.jpg | E | Oct 14, 2009 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AF-PQ1556-2-14OCT2009.jpg | | Oct 14, 2009 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AF-PQ1556-1-14OCT2009.jpg | | Oct 14, 2009 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AG



**Mn/DOT Name:** 4307 AG
**NGS Name:** 4307 AG
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1555 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 8 | 116 N | 29 W | 445216.00 | 942046.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1996) **Stamping:** 4307 AG 1987

1.0 MILE SOUTH OF HUTCHINSON, 2.2 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE SOUTH JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 119.55, 119.7 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 75.0 FEET SOUTHWEST OF A POWER POLE, 58.0 FEET NORTH-NORTHWEST OF THE NORTHEAST CORNER OF A METAL BUILDING, 5.6 FEET SOUTHWEST OF THE SOUTHWEST LEG OF A BILLBOARD SIGN WITH A WITNESS SIGN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.488 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1042.491 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1042.459 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.042 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1042.012 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

**Geoid Separations(ft): GEOID18 = -90.036 12B = -90.020 09 = -89.898 03 = -89.773**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 AH **NGS Name:** 4307 AH

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1554 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 7 | 116 N | 29 W | 445234.19 | 942125.16 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MAT FOUNDATION (NON-PAVEMENT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AH 1987

0.5 MILE SOUTH OF HUTCHINSON, 1.45 MILES SOUTHEAST ALONG COUNTY ROAD 5/ADAMS STREET FROM THE JUNCTION OF COUNTY ROAD 5/ADAMS STREET AND TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT THE NATIONAL GUARD ARMORY, 151.0 FEET WEST OF TRUNK HIGHWAY 22, IN THE TOP OF A CONCRETE BASE FOR THE ARMORY FLAGPOLE, 43.0 FEET NORTH OF THE MAIN ENTRANCE TO THE ARMORY, 15.4 FEET SOUTH-SOUTHWEST OF THE SOUTH END OF A SIDEWALK, 1.3 FEET NORTH-NORTHEAST OF A FLAGPOLE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.006 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1042.006 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1042.006 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1042.006 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1042.006 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.556 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1041.560 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.809 | .262 | | 951.862 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1041.920 | .262 | | 952.098 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.964 12B = -89.947 09 = -89.823 03 = -89.705**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 34.18627 | 94 21 25.16054 | 571642.307 | 253271.715 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 34.18523 | 94 21 25.16297 | 571642.133 | 253271.609 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532126.380 | 1012225.486 | 1288771.418 | 16306035.119 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532126.204 | 1012225.382 | 1288771.242 | 16306035.016 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AH-PQ1554-3S-04MAY2011.jpg | S | May 4, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AH-PQ1554-2-04MAY2011.jpg | | May 4, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AH-PQ1554-1-04MAY2011.jpg | | May 4, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AJ **NGS Name:** 4307 AJ

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1552 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 6 | 116 N | 29 W | 445303.46 | 942154.46 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - MEDIUM | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AJ 1987

0.75 MILE SOUTH ALONG ADAMS STREET FROM THE JUNCTION OF ADAMS STREET AND TRUNK HIGHWAY 7 IN HUTCHINSON, 47.0 FEET WEST OF ADAMS STREET, 93.6 FEET NORTH OF THE NORTHEAST CORNER OF A BUILDING, IN A LIGHT BASE FOR THE HUTCHINSON COOP (CENEX) IN HUTCHINSON.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.432 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1046.432 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1046.432 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1046.432 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1046.432 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1046.422 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1046.422 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.972 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.432 | | | 956.609 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1046.432 | | | 956.609 | .016 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1046.550 | .262 | | 956.678 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1046.274 | .262 | | 956.415 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1046.363 | .262 | | 956.632 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1045.582 | .262 | | 955.963 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.869 12B = -89.855 09 = -89.728 03 = -89.619**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.45595 | 94 21 54.45544 | 569522.909 | 256229.112 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 53 03.45595 | 94 21 54.45544 | 569522.909 | 256229.112 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 53 03.45575 | 94 21 54.45569 | 569522.890 | 256229.092 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 03.45572 | 94 21 54.45423 | 569522.996 | 256229.089 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.45644 | 94 21 54.45792 | 569522.730 | 256229.161 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.45552 | 94 21 54.45575 | 569522.886 | 256229.069 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 53 03.45248 | 94 21 54.45741 | 569522.768 | 256228.760 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# 4307 AJ



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530030.202 | 1015198.953 | 1286712.528 | 16309033.634 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 2530030.202 | 1015198.953 | 1286712.528 | 16309033.634 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2530030.184 | 1015198.933 | 1286712.509 | 16309033.614 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2530030.289 | 1015198.929 | 1286712.614 | 16309033.609 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530030.024 | 1015199.003 | 1286712.350 | 16309033.686 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530030.180 | 1015198.909 | 1286712.505 | 16309033.591 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2530030.059 | 1015198.602 | 1286712.380 | 16309033.285 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AJ-PQ1552-3W-16JUN2024.jpg | W | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AJ-PQ1552-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AJ-PQ1552-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AK



**Mn/DOT Name:** 4307 AK
**NGS Name:** 4307 AK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8107 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 116 N | 29 W | 445225.00 | 942007.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1996 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AK 1996

2.0 MILES SOUTHEAST OF HUTCHINSON, 3.1 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, TO TRUNK HIGHWAY 22 MILEPOINT 118.95, THEN 0.7 MILE NORTH ON TRUNK HIGHWAY 22, 29.0 FEET EAST OF TRUNK HIGHWAY 22, 7.0 FEET SOUTH-SOUTHWEST OF A POWER POLE, 1.2 FEET NORTH OF A WITNESS POST.

**Station Notes**
NEW ROAD.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.167 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1058.167 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.721 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**Geoid Separations(ft): GEOID18 = -90.049 12B = -90.039 09 = -89.918 03 = -89.790**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 AL **NGS Name:** 4307 AL

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8110 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 5 | 117 N | 29 W | 445313.50 | 942052.10 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1996 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | SURVEY DISK | MNDT |

**Description:** (1996) **Stamping:** 4307 AL 1996

1.0 MILE SOUTHEAST OF HUTCHINSON, 0.65 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, TO TRUNK HIGHWAY 22 MILEPOINT 120.55, THEN 0.7 MILE WEST ON 5TH AVENUE SOUTHEAST, 98.1 FEET NORTHEAST OF A FIRE HYDRANT, 70.0 FEET SOUTHWEST OF A POWER POLE, 30.0 FEET NORTH OF 5TH AVENUE SOUTHEAST, 1.6 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.282 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1073.282 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.839 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**Geoid Separations(ft): GEOID18 = -89.911 12B = -89.898 09 = -89.773 03 = -89.659**

*** No Horizontal Positions in the Database ***

# 4307 AL RESET



**Mn/DOT Name:** 4307 AL RESET
**NGS Name:** 4307 AL RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9763 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 5 | 117 N | 29 W | 445313.23 | 942052.32 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 6 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2010) **Stamping:** 4307 AL RESET 1996 2009

1.0 MILE SOUTHEAST OF HUTCHINSON, 0.65 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, TO TRUNK HIGHWAY 22 MILEPOINT 120.55, THEN 0.7 MILE WEST ON 5TH AVENUE SOUTHEAST, 98.1 FEET NORTHEAST OF A FIRE HYDRANT, 70.0 FEET SOUTHWEST OF A POWER POLE, 30.0 FEET NORTH OF 5TH AVENUE SOUTHEAST, 1.6 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.065 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1073.069 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 983.167 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1073.026 | .262 | | 983.253 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1073.062 | .131 | | 983.279 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1073.062 | .131 | | 983.384 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1073.062 | .131 | | 983.279 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1072.839 | .262 | | 983.180 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.911 12B = -89.898 09 = -89.773 03 = -89.659**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.22848 | 94 20 52.31635 | 573993.673 | 257234.094 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.22832 | 94 20 52.31751 | 573993.590 | 257234.077 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 13.22858 | 94 20 52.31736 | 573993.600 | 257234.104 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 53 13.22858 | 94 20 52.31736 | 573993.600 | 257234.104 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.22802 | 94 20 52.31680 | 573993.641 | 257234.047 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 13.22855 | 94 20 52.31739 | 573993.598 | 257234.101 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# 4307 AL RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534508.196 | 1016169.111 | 1291201.246 | 16309948.239 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534508.112 | 1016169.095 | 1291201.162 | 16309948.225 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2534508.124 | 1016169.122 | 1291201.173 | 16309948.251 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2534508.124 | 1016169.122 | 1291201.173 | 16309948.251 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534508.164 | 1016169.064 | 1291201.213 | 16309948.193 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2534508.121 | 1016169.119 | 1291201.172 | 16309948.248 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AL_RESET-DL9763-3N-04MAY2011.jpg | N | May 4, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AL_RESET-DL9763-2-04MAY2011.jpg | | May 4, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AL_RESET-DL9763-1-04MAY2011.jpg | | May 4, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AL RESET 2



**Mn/DOT Name:** 4307 AL RESET 2 **NGS Name:** 4307 AL RESET 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4216 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 5 | 117 N | 29 W | 445313.23 | 942052.32 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 7 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AL RESET 2015

IN HUTCHINSON, 0.65 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON TO TRUNK HIGHWAY 22 MILEPOINT 120.55, THEN 0.7 MILE WEST ON 5TH AVENUE SOUTHEAST, 30.0 FEET NORTH OF 5TH AVENUE SOUTHEAST, 98.1 FEET NORTHEAST OF A FIRE HYDRANT, 43.0 FEET EAST OF AN ENTRANCE, 1.6 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.059 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1073.059 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.059 | | | 983.177 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1073.059 | | | 983.177 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1073.111 | .262 | | 983.203 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1072.993 | .262 | | 983.092 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -89.911 12B = -89.898 09 = -89.773 03 = -89.659**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.22857 | 94 20 52.31659 | 573993.656 | 257234.103 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 53 13.22857 | 94 20 52.31659 | 573993.656 | 257234.103 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 53 13.22817 | 94 20 52.31672 | 573993.647 | 257234.062 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 13.22819 | 94 20 52.31620 | 573993.684 | 257234.064 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.22809 | 94 20 52.31705 | 573993.623 | 257234.054 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534508.179 | 1016169.120 | 1291201.229 | 16309948.249 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2534508.179 | 1016169.120 | 1291201.229 | 16309948.249 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2534508.169 | 1016169.080 | 1291201.219 | 16309948.208 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2534508.207 | 1016169.082 | 1291201.257 | 16309948.210 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534508.146 | 1016169.072 | 1291201.195 | 16309948.201 | .066 | | NCAT | 2024 | HHUTCH2 |

# 4307 AL RESET 2



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AL_RESET_2-DQ4216-3N-16JUN2024.jpg | N | Jun 16, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AL_RESET_2-DQ4216-2-16JUN2024.jpg | | Jun 16, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AL_RESET_2-DQ4216-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AM
**NGS Name:** 4307 AM
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8113 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 17 | 116 N | 29 W | 445146.36 | 942012.07 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43528 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AM 1996

2.5 MILES SOUTHEAST OF HUTCHINSON, IN A BRIDGE ABUTMENT AT THE SOUTHEAST CORNER OF COUNTY ROAD 8 BRIDGE NUMBER 43528 OVER THE SOUTH FORK OF THE CROW RIVER, 3.1 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON TO TRUNK HIGHWAY 22 MILEPOINT 119.00, THEN 0.15 MILE WEST ON COUNTY ROAD 115 (AIRPORT ROAD), 22.8 FEET SOUTHEAST OF COUNTY ROAD 8. THE DISK WAS SET IN THE BRIDGE WHEN BUILT IN 1982, THEN STAMPED WHEN FIRST USED IN 1996.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.300 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1055.300 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1055.300 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1055.290 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1055.290 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1055.290 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.844 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.185 | .262 | | 965.077 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.121 12B = -90.105 09 = -89.990 03 = -89.859**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 46.36163 | 94 20 12.07134 | 576923.373 | 248446.542 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537369.319 | 1007359.948 | 1293952.853 | 16301106.245 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AM-CJ8113-3SE-03MAY2011.jpg | SE | May 3, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AM-CJ8113-2-03MAY2011.jpg | | May 3, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AM-CJ8113-1-03MAY2011.jpg | | May 3, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AN



**Mn/DOT Name:** 4307 AN
**NGS Name:** 4307 AN
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9245 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 3 | 115 N | 28 W | 444726.13 | 941054.99 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 AN 2000

2.0 MILES NORTHWEST OF GLENCOE, 2.6 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 AT THE NORTHWEST EDGE OF GLENCOE, TO TRUNK HIGHWAY 22 MILEPOINT 110.60, THEN 1.05 MILES EAST ON COUNTY ROAD 15 (120TH STREET), 133.0 FEET NORTH OF COUNTY ROAD 15, 27.0 FEET EAST OF HILTON AVENUE, 13.1 FEET NORTH OF A POWER POLE, 2.6 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1035.087 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1035.090 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 944.378 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1035.149 | .262 | | 944.516 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 944.444 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1035.103 | .131 | | 944.604 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1035.103 | .131 | | 944.604 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.712 12B = -90.715 09 = -90.633 03 = -90.459**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 26.12718 | 94 10 54.99304 | 617195.749 | 222274.720 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 26.12692 | 94 10 54.99340 | 617195.723 | 222274.694 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 26.12729 | 94 10 54.99381 | 617195.693 | 222274.731 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 26.12683 | 94 10 54.99332 | 617195.729 | 222274.685 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 26.12683 | 94 10 54.99332 | 617195.728 | 222274.683 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577433.170 | 980878.847 | 1333678.734 | 16274139.263 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577433.144 | 980878.820 | 1333678.708 | 16274139.237 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2577433.115 | 980878.858 | 1333678.678 | 16274139.275 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577433.150 | 980878.811 | 1333678.713 | 16274139.228 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2577433.150 | 980878.811 | 1333678.713 | 16274139.228 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AN-DF9245-3N-28APR2011.jpg | N | Apr 28, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AN-DF9245-2-28APR2011.jpg | | Apr 28, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AN-DF9245-1-28APR2011.jpg | | Apr 28, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AN RESET



**Mn/DOT Name:** 4307 AN RESET
**NGS Name:** 4307 AN RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4201 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 3 | 115 N | 28 W | 444726.13 | 941054.99 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 6 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015)
**Stamping:** 4307 AN RESET 2015

2.0 MILES NORTHWEST OF GLENCOE, 2.6 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 IN GLENCOE TO TRUNK HIGHWAY 22 MILEPOINT 110.60, THEN 1.05 MILES EAST ON COUNTY ROAD 3 (120TH STREET), 133.0 FEET NORTH OF COUNTY ROAD 3 (120TH STREET), 27.0 FEET EAST OF HILTON AVENUE, 13.1 FEET NORTH OF A POWER POLE NUMBER 3-1, 1.0 FOOT SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.890 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1034.886 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.890 | | | 944.135 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1034.890 | | | 944.135 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1034.972 | .262 | | 944.257 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1034.811 | .262 | | 944.099 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.712 12B = -90.715 09 = -90.633 03 = -90.459**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 26.12732 | 94 10 54.99344 | 617195.719 | 222274.734 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 47 26.12732 | 94 10 54.99344 | 617195.719 | 222274.734 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 47 26.12722 | 94 10 54.99376 | 617195.696 | 222274.724 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 47 26.12722 | 94 10 54.99305 | 617195.748 | 222274.724 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 26.12696 | 94 10 54.99367 | 617195.703 | 222274.698 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577433.141 | 980878.861 | 1333678.705 | 16274139.278 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2577433.141 | 980878.861 | 1333678.705 | 16274139.278 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2577433.118 | 980878.851 | 1333678.682 | 16274139.268 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2577433.170 | 980878.851 | 1333678.733 | 16274139.267 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577433.125 | 980878.824 | 1333678.688 | 16274139.242 | .066 | | NCAT | 2024 | HHUTCH2 |

# 4307 AN RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AN_RESET-DQ4201-3E-27JUL2015.jpg | E | Jul 27, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AN_RESET-DQ4201-2-27JUL2015.jpg | | Jul 27, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AN_RESET-DQ4201-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AP **NGS Name:** 4307 AP

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9246 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 2 | 115 N | 28 W | 444728.64 | 940956.62 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 AP 2000

1.5 MILES NORTH OF GLENCOE, 2.6 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 AT THE NORTHWEST EDGE OF GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 110.6, THEN 1.85 MILES EAST ON COUNTY ROAD 15 (120TH STREET), THEN 0.1 MILE NORTH OF COUNTY ROAD 2, 58.0 FEET EAST OF COUNTY ROAD 2, 1.5 FEET WEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.405 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1026.409 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 935.694 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1026.494 | .262 | | 935.871 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 935.759 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1026.409 | .131 | | 935.923 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1026.409 | .131 | | 935.923 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.699 12B = -90.699 09 = -90.623 03 = -90.453**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 28.63960 | 94 09 56.61578 | 621404.418 | 222552.933 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 28.63993 | 94 09 56.61616 | 621404.391 | 222552.966 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 28.63969 | 94 09 56.61655 | 621404.363 | 222552.941 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 28.63922 | 94 09 56.61606 | 621404.398 | 222552.894 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 28.63922 | 94 09 56.61606 | 621404.397 | 222552.895 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# 4307 AP



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581643.438 | 981124.323 | 1337890.740 | 16274332.858 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581643.411 | 981124.357 | 1337890.713 | 16274332.892 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2581643.382 | 981124.333 | 1337890.685 | 16274332.868 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581643.418 | 981124.285 | 1337890.719 | 16274332.820 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2581643.418 | 981124.285 | 1337890.720 | 16274332.819 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AP-DF9246-3E-27APR2011.jpg | E | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AP-DF9246-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AP-DF9246-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AP RESET



**Mn/DOT Name:** 4307 AP RESET
**NGS Name:** 4307 AP RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4202 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 2 | 115 N | 28 W | 444728.64 | 940956.62 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AP RESET 2015

1.5 MILES NORTH OF GLENCOE, 2.6 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 IN GLENCOE TO TRUNK HIGHWAY 22 MILEPOINT 110.60, THEN 1.85 MILES EAST ON COUNTY ROAD 3 (120TH STREET), THEN 0.1 MILE NORTH ON COUNTY ROAD 2, 58.0 FEET EAST OF COUNTY ROAD 2, 1.5 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.195 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1026.192 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.117 | .262 | | 935.418 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.699 12B = -90.699 09 = -90.623 03 = -90.453**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 28.63948 | 94 09 56.61558 | 621404.433 | 222552.921 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581643.452 | 981124.311 | 1337890.754 | 16274332.845 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AP_RESET-DQ4202-3E-27JUL2015.jpg | E | Jul 27, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AP_RESET-DQ4202-2-27JUL2015.jpg | | Jul 27, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AP_RESET-DQ4202-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AQ



**Mn/DOT Name:** 4307 AQ
**NGS Name:** 4307 AQ
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9257 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 115 N | 27 W | 444724.65 | 940749.49 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 AQ 2000

1.5 MILES NORTHEAST OF GLENCOE, 0.1 MILE NORTHWEST ON 10TH STREET FROM THE JUNCTION OF 10TH STREET AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.4 MILE NORTH ON UNION AVENUE, THEN 1.1 MILES EAST AND NORTH ON COUNTY ROAD 3, 257.0 FEET EAST OF COUNTY ROAD 3, 38.0 FEET NORTH OF COUNTY ROAD 15, 5.3 FEET WEST OF A POWER POLE, 2.7 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.463 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1013.463 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1013.466 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |
| 1013.466 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 922.803 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1013.459 | .262 | | 922.885 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1013.449 | .131 | | 922.849 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1013.449 | .131 | | 922.849 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1013.449 | .131 | | 923.013 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1013.482 | .131 | | 923.013 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 922.849 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1013.449 | .131 | | 923.013 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1013.449 | .131 | | 923.013 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.646 12B = -90.649 09 = -90.574 03 = -90.416**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 24.64840 | 94 07 49.48580 | 630575.323 | 222203.359 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 24.64848 | 94 07 49.48657 | 630575.267 | 222203.367 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 24.64855 | 94 07 49.48655 | 630575.268 | 222203.374 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 47 24.64855 | 94 07 49.48655 | 630575.268 | 222203.374 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 47 24.64855 | 94 07 49.48655 | 630575.268 | 222203.374 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 24.64808 | 94 07 49.48605 | 630575.304 | 222203.326 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 47 24.64808 | 94 07 49.48605 | 630575.304 | 222203.326 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 47 24.64808 | 94 07 49.48605 | 630575.304 | 222203.326 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 24.64808 | 94 07 49.48605 | 630575.304 | 222203.325 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590810.396 | 980703.534 | 1347049.689 | 16273799.415 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590810.341 | 980703.542 | 1347049.633 | 16273799.423 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2590810.343 | 980703.549 | 1347049.635 | 16273799.431 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2590810.343 | 980703.549 | 1347049.635 | 16273799.431 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2590810.343 | 980703.549 | 1347049.635 | 16273799.431 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590810.378 | 980703.501 | 1347049.670 | 16273799.382 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2590810.378 | 980703.501 | 1347049.670 | 16273799.382 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2590810.378 | 980703.501 | 1347049.670 | 16273799.382 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2590810.378 | 980703.501 | 1347049.670 | 16273799.382 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AQ-DF9257-3N-27APR2011.jpg | N | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AQ-DF9257-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AQ-DF9257-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AQ RESET



**Mn/DOT Name:** 4307 AQ RESET
**NGS Name:** 4307 AQ RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2201 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 115 N | 27 W | 444724.65 | 940749.48 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AQ RESET 2015

1.5 MILES NORTHEAST OF GLENCOE, 0.15 MILE NORTH ON MORNINGSIDE DRIVE FROM THE JUNCTION OF MORNINGSIDE DRIVE AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.15 MILE WEST ON 11TH STREET, THEN 0.35 MILE NORTH ON UNION AVENUE, THEN 1.1 MILES EAST AND NORTH ON COUNTY ROAD 15(FALCON AVENUE), 257.0 FEET EAST OF COUNTY ROAD 15(FALCON AVENUE), 38.0 FEET NORTH OF COUNTY ROAD 3(120TH STREET), 5.3 FEET WEST OF A POWER POLE, 2.7 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.269 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1013.269 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.220 | .262 | | 922.570 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.646 12B = -90.649 09 = -90.574 03 = -90.416**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 24.64736 | 94 07 49.48458 | 630575.411 | 222203.254 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590810.484 | 980703.428 | 1347049.775 | 16273799.308 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AQ_RESET-DQ2201-3N-14APR2015.jpg | N | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AQ_RESET-DQ2201-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AQ_RESET-DQ2201-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AR **NGS Name:** 4307 AR

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9258 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 12 | 115 N | 28 W | 444652.20 | 940753.60 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2006 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 AR 2000

1.0 MILE NORTHEAST OF GLENCOE, 0.1 MILE NORTHWEST ON MORNINGSIDE DRIVE/10TH STREET FROM THE JUNCTION OF MORNINGSIDE DRIVE/10TH STREET AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.4 MILE NORTH ON UNION AVENUE, THEN 0.5 MILE EAST AND NORTH ON COUNTY ROAD 3, 46.0 FEET EAST OF COUNTY ROAD 3, 7.5 FEET NORTH OF A POWER POLE, 3.5 FEET NORTH OF A WITNESS POST.

**Station Notes**
THE CAP WAS FOUND OFF, RESET AS: 4307 AR RESET.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.104 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1012.108 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 921.402 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 921.455 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1012.104 | .131 | | 921.619 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1012.104 | .131 | | 921.619 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.679 12B = -90.682 09 = -90.603 03 = -90.449**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.20275 | 94 07 53.59580 | 630299.162 | 218915.523 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.20289 | 94 07 53.59659 | 630299.105 | 218915.537 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.20241 | 94 07 53.59611 | 630299.140 | 218915.488 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 52.20241 | 94 07 53.59611 | 630299.140 | 218915.487 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590508.722 | 977418.285 | 1346707.697 | 16270518.901 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590508.665 | 977418.300 | 1346707.640 | 16270518.916 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590508.700 | 977418.251 | 1346707.674 | 16270518.867 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2590508.700 | 977418.251 | 1346707.674 | 16270518.867 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AR-DF9258-3W-27APR2011.jpg | W | Apr 27, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AR-DF9258-2-27APR2011.jpg | | Apr 27, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AR-DF9258-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AR RESET



**Mn/DOT Name:** 4307 AR RESET **NGS Name:** 4307 AR RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK7114 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 12 | 115 N | 28 W | 444652.20 | 940753.60 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2006 | 2015 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 14 FT) | SURVEY DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AR 2000 2006

1.0 MILE NORTHEAST OF GLENCOE, 0.15 MILE NORTH ALONG MORNINGSIDE DRIVE FROM THE JUNCTION MORNINGSIDE DRIVE AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.15 MILE WEST ON 11TH STREET, THEN 0.35 MILE NORTH ON UNION AVENUE, THEN 0.45 MILE EAST AND NORTH ON COUNTY ROAD 15 (FALCON AVENUE), 46.0 FEET WEST OF COUNTY ROAD 15 (FALCON AVENUE), 7.5 FEET NORTH OF A POWER POLE, 3.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.055 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1012.055 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1012.055 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1012.055 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.953 | .262 | | 921.271 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1011.986 | .262 | | 921.383 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.679 12B = -90.682 09 = -90.603 03 = -90.449**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.20156 | 94 07 53.59546 | 630299.187 | 218915.402 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.20207 | 94 07 53.59625 | 630299.130 | 218915.454 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590508.747 | 977418.165 | 1346707.720 | 16270518.780 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590508.690 | 977418.217 | 1346707.664 | 16270518.833 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AR_RESET-DK7114-3W-14APR2015.jpg | W | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AR_RESET-DK7114-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AR_RESET-DK7114-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AS **NGS Name:** 4307 AS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4212 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 7 | 116 N | 29 W | 445240.06 | 942131.88 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43012 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 AS 1989

0.3 MILE SOUTHEAST OF HUTCHINSON, 1.25 MILES SOUTHEAST ON ADAMS STREET FROM THE JUNCTION OF ADAMS STREET AND TRUNK HIGHWAY 15 IN HUTCHINSON, IN AN ABUTMENT IN THE SOUTHEAST CORNER OF TRUNK HIGHWAY 22 BRIDGE NUMBER 43012 OVER THE CROW RIVER, 34.0 FEET NORTHEAST OF TRUNK HIGHWAY 22.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.506 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1039.506 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.519 | .262 | | 949.595 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -89.944 12B = -89.928 09 = -89.803 03 = -89.688**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 40.06014 | 94 21 31.88085 | 571156.348 | 253864.986 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2531645.086 | 1012822.453 | 1288297.627 | 16306637.860 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AS-DQ4212-3NW-28JUL2015.jpg | NW | Jul 28, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AS-DQ4212-2-28JUL2015.jpg | | Jul 28, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AS-DQ4212-1-28JUL2015.jpg | | Jul 28, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AT



**Mn/DOT Name:** 4307 AT
**NGS Name:** 4307 AT
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9967 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 31 | 117 N | 29 W | 445338.80 | 942153.20 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1996 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43531 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE RAILING | BENCH MARK DISK | MN-085 |

**Description:** (2016) **Stamping:** 4307 AT 1996

IN HUTCHINSON, 0.15 MILE SOUTHWEST ALONG ADAMS STREET FROM THE JUNCTION OF ADAMS STREET AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, IN A RAIL IN THE SOUTHEAST CORNER OF ADAMS STREET BRIDGE NUMBER 43531 OVER THE SOUTH FORK OF THE CROW RIVER, 3.5 FEET SOUTHWEST OF A LIGHT POLE, 4.3 FEET SOUTHEAST OF A SIDEWALK, 33.6 FEET SOUTHEAST OF ADAMS STREET.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.251 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1041.251 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1041.251 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1041.251 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

**Geoid Separations(ft): GEOID18 = -89.790 12B = -89.783 09 = -89.655 03 = -89.547**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AT-DO9967-3SE-28JUL2015.jpg | SE | Jul 28, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AT-DO9967-2-28JUL2015.jpg | | Jul 28, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AT-DO9967-1-28JUL2015.jpg | | Jul 28, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AU **NGS Name:** 4307 AU

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4199 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 10 | 115 N | 28 W | 444643.62 | 941104.58 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 32 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2015) **Stamping:** 4307 AU 2015

1.4 MILES NORTHWEST OF GLENCOE, 2.7 MILES NORTH AND NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 109.30, 70.5 FEET NORTHEAST OF TRUNK HIGHWAY 22, 88.8 FEET SOUTHEAST OF MILLER WAY EXTENDED, 39.5 FEET SOUTHEAST OF A FIELD ENTRANCE, 1.5 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.628 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1025.621 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.628 | | | 934.864 | .019 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1025.628 | | | 934.864 | .019 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1025.513 | .262 | | 934.759 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1025.608 | .262 | | 934.850 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.758 12B = -90.758 09 = -90.676 03 = -90.502**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 43.61589 | 94 11 04.58063 | 616528.026 | 217965.455 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 46 43.61589 | 94 11 04.58063 | 616528.026 | 217965.455 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 46 43.61556 | 94 11 04.57947 | 616528.109 | 217965.422 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 46 43.61504 | 94 11 04.57991 | 616528.078 | 217965.369 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 43.61555 | 94 11 04.58094 | 616528.003 | 217965.420 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576732.059 | 976575.348 | 1332924.884 | 16269845.692 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 2576732.059 | 976575.348 | 1332924.884 | 16269845.692 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2576732.143 | 976575.314 | 1332924.967 | 16269845.657 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576732.111 | 976575.261 | 1332924.935 | 16269845.605 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576732.037 | 976575.313 | 1332924.861 | 16269845.657 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AU-DQ4199-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AU-DQ4199-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AU-DQ4199-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4307 AV



**Mn/DOT Name:** 4307 AV
**NGS Name:** 4307 AV
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4203 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 5 | 115 N | 28 W | 444735.82 | 941316.40 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2015)
**Stamping:** 4307 AV 2015

3.7 MILES NORTHWEST OF GLENCOE, 4.85 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 111.45, 72.2 FEET NORTHEAST OF TRUNK HIGHWAY 22, 52.2 FEET NORTHWEST OF A FIELD ENTRANCE, 1.5 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.681 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1021.681 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.681 | | | 930.996 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1021.681 | | | 930.996 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1021.694 | .262 | | 931.005 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1021.717 | .262 | | 931.022 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.689 12B = -90.695 09 = -90.600 03 = -90.420**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 35.81994 | 94 13 16.39700 | 606992.796 | 223202.306 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 47 35.81994 | 94 13 16.39700 | 606992.796 | 223202.306 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 47 35.81971 | 94 13 16.39655 | 606992.828 | 223202.283 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 47 35.81971 | 94 13 16.39660 | 606992.825 | 223202.283 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 35.81959 | 94 13 16.39715 | 606992.785 | 223202.270 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567238.789 | 981885.564 | 1323499.796 | 16275271.143 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2567238.789 | 981885.564 | 1323499.796 | 16275271.143 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2567238.822 | 981885.540 | 1323499.828 | 16275271.119 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2567238.818 | 981885.540 | 1323499.825 | 16275271.119 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567238.778 | 981885.528 | 1323499.785 | 16275271.108 | .066 | | NCAT | 2024 | HHUTCH2 |

# 4307 AV



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AV-DQ4203-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AV-DQ4203-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AV-DQ4203-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AW **NGS Name:** 4307 AW

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4206 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 116 N | 29 W | 444847.53 | 941538.88 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 57 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AW 2015

1.1 MILES SOUTHEAST OF BISCAY, 1.2 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 113.90, 66.4 FEET NORTHEAST OF TRUNK HIGHWAY 22, 6.7 FEET SOUTHWEST OF A FENCE LINE, 1.5 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.581 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1009.581 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.581 | | | 919.024 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1009.581 | | | 919.024 | .014 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1009.552 | .262 | | 918.991 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1009.647 | .262 | | 919.086 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1009.549 | .262 | | 918.988 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1009.552 | .262 | | 918.994 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1009.575 | .262 | | 919.017 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.561 12B = -90.558 09 = -90.459 03 = -90.285**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 47.53164 | 94 15 38.88190 | 596684.076 | 230415.646 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 48 47.53164 | 94 15 38.88190 | 596684.076 | 230415.646 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 48 47.53199 | 94 15 38.88176 | 596684.086 | 230415.682 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 48 47.53170 | 94 15 38.88259 | 596684.026 | 230415.652 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 48 47.53228 | 94 15 38.88227 | 596684.049 | 230415.711 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 48 47.53133 | 94 15 38.88170 | 596684.091 | 230415.615 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 48 47.53137 | 94 15 38.88251 | 596684.032 | 230415.618 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 47.53143 | 94 15 38.88186 | 596684.079 | 230415.625 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2556987.461 | 989178.002 | 1313341.265 | 16282687.666 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2556987.461 | 989178.002 | 1313341.265 | 16282687.666 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2556987.471 | 989178.037 | 1313341.276 | 16282687.701 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2556987.411 | 989178.008 | 1313341.216 | 16282687.672 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2556987.434 | 989178.066 | 1313341.239 | 16282687.731 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2556987.475 | 989177.970 | 1313341.279 | 16282687.634 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2556987.417 | 989177.974 | 1313341.221 | 16282687.639 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2556987.463 | 989177.980 | 1313341.268 | 16282687.644 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AW-DQ4206-3NE-31MAR2020.jpg | NE | Mar 31, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AW-DQ4206-2-31MAR2020.jpg | | Mar 31, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AW-DQ4206-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AX **NGS Name:** 4307 AX

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4207 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 25 | 116 N | 29 W | 444910.76 | 941607.04 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 18 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AX 2015

0.4 MILE SOUTHWEST OF BISCAY, 0.7 MILE SOUTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 114.45, 67.0 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 30.7 FEET NORTH OF 140TH STREET, 1.5 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.604 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1018.604 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.604 | | | 928.076 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1018.604 | | | 928.076 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1018.679 | .262 | | 928.161 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1018.469 | .262 | | 927.957 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.518 12B = -90.515 09 = -90.413 03 = -90.243**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 10.76503 | 94 16 07.03860 | 594643.673 | 232759.506 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 49 10.76503 | 94 16 07.03860 | 594643.673 | 232759.506 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 49 10.76465 | 94 16 07.03788 | 594643.725 | 232759.468 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 49 10.76493 | 94 16 07.03937 | 594643.617 | 232759.495 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 10.76480 | 94 16 07.03851 | 594643.679 | 232759.483 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2554965.527 | 991537.395 | 1311348.981 | 16285071.281 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2554965.527 | 991537.395 | 1311348.981 | 16285071.281 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2554965.579 | 991537.356 | 1311349.032 | 16285071.242 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2554965.471 | 991537.385 | 1311348.926 | 16285071.272 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2554965.533 | 991537.372 | 1311348.987 | 16285071.258 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AX-DQ4207-3SW-17JUN2024.jpg | SW | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AX-DQ4207-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AX-DQ4207-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AY **NGS Name:** 4307 AY

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4208 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 26 | 116 N | 29 W | 444947.01 | 941640.46 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AY 2015

0.25 MILE NORTHWEST OF BISCAY, 0.2 MILE NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 115.25, 52.8 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 28.9 FEET SOUTHEAST OF AN ENTRANCE TO RADIO TOWER NUMBER 14183, 10.9 FEET NORTH OF THE NORTHEAST CORNER OF A CABLE BOX, 1.5 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.230 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1018.230 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.230 | | | 927.790 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1018.230 | | | 927.790 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1018.341 | .262 | | 927.889 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1018.161 | .262 | | 927.715 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.456 12B = -90.446 09 = -90.341 03 = -90.177**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 47.00769 | 94 16 40.45867 | 592218.608 | 236419.473 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 49 47.00769 | 94 16 40.45867 | 592218.608 | 236419.473 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 49 47.00755 | 94 16 40.45898 | 592218.586 | 236419.459 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 49 47.00750 | 94 16 40.45911 | 592218.576 | 236419.454 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 47.00731 | 94 16 40.45850 | 592218.621 | 236419.435 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552569.199 | 995215.710 | 1308998.667 | 16288778.058 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2552569.199 | 995215.710 | 1308998.667 | 16288778.058 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2552569.177 | 995215.696 | 1308998.645 | 16288778.043 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2552569.167 | 995215.691 | 1308998.635 | 16288778.039 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552569.211 | 995215.672 | 1308998.679 | 16288778.019 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AY-DQ4208-3SW-20AUG2015.jpg | SW | Aug 20, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AY-DQ4208-2-20AUG2015.jpg | | Aug 20, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AY-DQ4208-1-20AUG2015.jpg | | Aug 20, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 AZ **NGS Name:** 4307 AZ

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4210 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 23 | 116 N | 29 W | 445016.47 | 941726.25 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 24 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 AZ 2015

1.15 MILES NORTHWEST OF BISCAY, 1.0 MILE NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 116.10, 75.8 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 23.4 FEET NORTHEAST OF A RIGHT-OF-WAY POST, 23.1 FEET NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.101 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1022.101 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.101 | | | 931.750 | .020 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1022.101 | | | 931.750 | .020 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1022.272 | .262 | | 931.885 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1022.167 | .262 | | 931.789 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.387 12B = -90.374 09 = -90.269 03 = -90.111**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 16.46715 | 94 17 26.25024 | 588905.797 | 239388.957 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 50 16.46715 | 94 17 26.25024 | 588905.797 | 239388.957 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 50 16.46752 | 94 17 26.25012 | 588905.805 | 239388.995 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 50 16.46749 | 94 17 26.25020 | 588905.800 | 239388.992 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 16.46672 | 94 17 26.25006 | 588905.810 | 239388.914 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549279.877 | 998210.526 | 1305747.202 | 16291812.549 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 2549279.877 | 998210.526 | 1305747.202 | 16291812.549 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2549279.886 | 998210.563 | 1305747.211 | 16291812.586 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2549279.880 | 998210.560 | 1305747.205 | 16291812.583 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549279.890 | 998210.482 | 1305747.214 | 16291812.505 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AZ-DQ4210-3SW-17JUN2024.jpg | SW | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AZ-DQ4210-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_AZ-DQ4210-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 BA **NGS Name:** 4307 BA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4217 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 9 | 116 N | 29 W | 445156.01 | 942001.15 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 37 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 BA 2015

2.0 MILES SOUTHEAST OF HUTCHINSON, 1.2 MILES SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 119.05, 89.0 FEET NORTHEAST OF NORTHBOUND TRUNK HIGHWAY 22, 3.1 FEET SOUTHWEST OF A RIGHT-OF-WAY POST, 1.5 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.923 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1060.923 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.923 | | | 970.799 | .018 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1060.923 | | | 970.799 | .018 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1060.976 | .262 | | 970.864 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1060.851 | .262 | | 970.753 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.111 12B = -90.098 09 = -89.980 03 = -89.849**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 56.01253 | 94 20 01.14761 | 577706.613 | 249426.868 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 51 56.01253 | 94 20 01.14761 | 577706.613 | 249426.868 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 51 56.01341 | 94 20 01.14749 | 577706.622 | 249426.958 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 51 56.01194 | 94 20 01.14781 | 577706.599 | 249426.809 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 56.01209 | 94 20 01.14722 | 577706.642 | 249426.824 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2538160.067 | 1008334.069 | 1294755.396 | 16302070.336 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 2538160.067 | 1008334.069 | 1294755.396 | 16302070.336 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2538160.076 | 1008334.158 | 1294755.406 | 16302070.425 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2538160.052 | 1008334.009 | 1294755.381 | 16302070.277 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2538160.095 | 1008334.024 | 1294755.424 | 16302070.291 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BA-DQ4217-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BA-DQ4217-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BA-DQ4217-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 BB **NGS Name:** 4307 BB

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4215 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 5 | 116 N | 29 W | 445313.28 | 942002.25 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 38 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4307 BB 2015

1.8 MILES EAST OF HUTCHINSON, 0.65 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 120.60, 172.5 FEET WEST OF TRUNK HIGHWAY 22, 60.5 FEET NORTH OF 5TH AVENUE SOUTHEAST, 4.2 FEET EAST OF A RIGHT-OF-WAY POST, 1.5 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.527 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1061.527 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.527 | | | 971.556 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1061.527 | | | 971.556 | .012 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1061.589 | .262 | | 971.629 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1061.484 | .262 | | 971.533 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -89.960 12B = -89.951 09 = -89.826 03 = -89.705**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.28382 | 94 20 02.24512 | 577598.787 | 257252.647 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 13.28382 | 94 20 02.24512 | 577598.787 | 257252.647 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 13.28379 | 94 20 02.24462 | 577598.823 | 257252.644 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 13.28335 | 94 20 02.24465 | 577598.821 | 257252.599 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.28333 | 94 20 02.24549 | 577598.761 | 257252.597 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2538112.995 | 1016159.681 | 1294804.908 | 16309894.315 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2538112.995 | 1016159.681 | 1294804.908 | 16309894.315 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2538113.031 | 1016159.678 | 1294804.945 | 16309894.311 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2538113.029 | 1016159.634 | 1294804.942 | 16309894.266 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2538112.968 | 1016159.632 | 1294804.881 | 16309894.265 | .066 | | NCAT | 2024 | HHUTCH1 |

# 4307 BB



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BB-DQ4215-3W-16JUN2024.jpg | W | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BB-DQ4215-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BB-DQ4215-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 BC **NGS Name:** 4307 BC

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4214 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 33 | 117 N | 29 W | 445344.95 | 941958.18 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 43 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2015) **Stamping:** 4307 BC 2015

IN HUTCHINSON, AT THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 121.20, 97.7 FEET EAST OF TRUNK HIGHWAY 22, 129.9 FEET SOUTH OF TRUNK HIGHWAY 7, 4.0 FEET NORTH OF A RIGHT-OF-WAY POST, 1.5 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.969 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1065.969 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.969 | | | 976.071 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1065.969 | | | 976.071 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1066.044 | .262 | | 976.143 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1065.926 | .262 | | 976.032 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -89.901 12B = -89.895 09 = -89.767 03 = -89.645**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.95270 | 94 19 58.17521 | 577879.983 | 260461.174 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 44.95270 | 94 19 58.17521 | 577879.983 | 260461.174 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 44.95236 | 94 19 58.17462 | 577880.025 | 260461.140 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 44.95255 | 94 19 58.17490 | 577880.005 | 260461.159 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 44.95225 | 94 19 58.17536 | 577879.972 | 260461.129 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2538419.058 | 1019365.619 | 1295150.461 | 16313095.560 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2538419.058 | 1019365.619 | 1295150.461 | 16313095.560 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2538419.101 | 1019365.584 | 1295150.503 | 16313095.525 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2538419.080 | 1019365.604 | 1295150.483 | 16313095.544 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2538419.047 | 1019365.573 | 1295150.449 | 16313095.514 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BC-DQ4214-3E-16JUN2024.jpg | E | Jun 16, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BC-DQ4214-2-16JUN2024.jpg | | Jun 16, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_BC-DQ4214-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 E
**NGS Name:** 4307 E
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1571 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 115 N | 28 W | 444755.50 | 941417.05 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE POST (PREFABRICATED) | BENCH MARK DISK | MNHD |

**Description:** (2015) **Stamping:** 4307 E 1987

4.8 MILES NORTHWEST OF GLENCOE, 4.8 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 83 IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 112.40, 49.6 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 0.6 FOOT NORTHEAST OF A WITNESS POST.

**Station Pair:** LEE - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.116 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1020.116 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1020.116 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1019.680 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1020.201 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.116 | | | 929.454 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1020.116 | | | 929.454 | .007 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1020.162 | .262 | | 929.509 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1020.198 | .262 | | 929.545 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1020.192 | .262 | | 929.539 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1020.005 | .262 | | 929.349 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 929.454 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1020.087 | .262 | | 929.532 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1020.110 | .131 | | 929.532 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1020.110 | .131 | | 929.532 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1020.110 | .131 | | 929.690 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1020.110 | .131 | | 929.690 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 929.532 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1020.110 | .131 | | 929.690 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1020.110 | .131 | | 929.690 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.653 12B = -90.653 09 = -90.558 03 = -90.380**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 55.49619 | 94 14 17.05442 | 602608.734 | 225173.393 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 47 55.49619 | 94 14 17.05442 | 602608.734 | 225173.393 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 47 55.49606 | 94 14 17.05434 | 602608.740 | 225173.379 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 47 55.49600 | 94 14 17.05474 | 602608.711 | 225173.373 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 47 55.49584 | 94 14 17.05430 | 602608.743 | 225173.357 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 47 55.49592 | 94 14 17.05475 | 602608.710 | 225173.365 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 47 55.49619 | 94 14 17.05442 | 602608.734 | 225173.393 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 55.49601 | 94 14 17.05490 | 602608.699 | 225173.374 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 55.49635 | 94 14 17.05502 | 602608.690 | 225173.409 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 47 55.49635 | 94 14 17.05502 | 602608.690 | 225173.409 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 47 55.49635 | 94 14 17.05502 | 602608.690 | 225173.409 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 55.49585 | 94 14 17.05451 | 602608.728 | 225173.358 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 47 55.49586 | 94 14 17.05451 | 602608.728 | 225173.359 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 47 55.49586 | 94 14 17.05451 | 602608.728 | 225173.359 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 47 55.49586 | 94 14 17.05451 | 602608.728 | 225173.359 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 55.49586 | 94 14 17.05451 | 602608.726 | 225173.359 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2562870.621 | 983890.436 | 1319157.596 | 16277329.198 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2562870.621 | 983890.436 | 1319157.596 | 16277329.198 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2562870.627 | 983890.423 | 1319157.602 | 16277329.184 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2562870.598 | 983890.417 | 1319157.573 | 16277329.179 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2562870.630 | 983890.401 | 1319157.604 | 16277329.162 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2562870.598 | 983890.409 | 1319157.572 | 16277329.170 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2562870.621 | 983890.436 | 1319157.596 | 16277329.198 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2562870.587 | 983890.418 | 1319157.561 | 16277329.180 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2562870.578 | 983890.453 | 1319157.553 | 16277329.214 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2562870.578 | 983890.453 | 1319157.553 | 16277329.214 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2562870.578 | 983890.453 | 1319157.553 | 16277329.214 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2562870.615 | 983890.402 | 1319157.589 | 16277329.163 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2562870.615 | 983890.403 | 1319157.589 | 16277329.164 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2562870.615 | 983890.403 | 1319157.589 | 16277329.164 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2562870.615 | 983890.403 | 1319157.589 | 16277329.164 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2562870.615 | 983890.403 | 1319157.589 | 16277329.164 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_E-PQ1571-3SW-31MAR2020.jpg | SW | Mar 31, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_E-PQ1571-2-31MAR2020.jpg | | Mar 31, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_E-PQ1571-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 F **NGS Name:** 4307 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1567 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 116 N | 29 W | 444845.37 | 941536.32 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 F 1987

1.0 MILE SOUTHEAST OF BISCAY, 1.3 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 113.80, IN THE SOUTHEAST CORNER OF A TRUNK HIGHWAY 22 BOX CULVERT, 22.5 FEET NORTHEAST OF TRUNK HIGHWAY 22, 2.6 FEET NORTHWEST OF A SIGNPOST. THE DISK WAS SET IN THE BRIDGE WHEN BUILT IN 1948, BUT NOT STAMPED AND USED UNTIL 1987.

**Station Notes**

THE SURVEY MARK HAS BEEN DEEMED UNSAFE DUE TO FALL RISK AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.434 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1015.434 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1015.434 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.998 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1015.119 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.342 | .262 | | 924.782 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1015.372 | .262 | | 924.910 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.564 12B = -90.561 09 = -90.462 03 = -90.289**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 45.36806 | 94 15 36.32223 | 596869.611 | 230197.366 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 45.36867 | 94 15 36.32298 | 596869.557 | 230197.428 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557171.276 | 988958.310 | 1313522.322 | 16282465.774 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557171.223 | 988958.372 | 1313522.269 | 16282465.837 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_F-PQ1567-3NE-03MAY2011.jpg | NE | May 3, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_F-PQ1567-2-03MAY2011.jpg | | May 3, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_F-PQ1567-1-03MAY2011.jpg | | May 3, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 G **NGS Name:** 4307 G

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1565 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 36 | 116 N | 29 W | 444905.59 | 941601.40 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 G 1987

0.5 MILE SOUTHEAST OF BISCAY, 0.75 MILE SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 114.35, IN THE NORTHWEST CORNER OF TRUNK HIGHWAY 22 BOX CULVERT, 23.0 FEET NORTHEAST OF A TRUNK HIGHWAY 22, 1.2 FEET NORTHWEST OF A STEEL POST. THE DISK WAS SET WHEN THE BRIDGE WAS BUILT IN 1948, BUT NOT STAMPED AND USED UNTIL 1987.

**Station Notes**

THE SURVEY MARK HAS BEEN DEEMED UNSAFE DUE TO FALL RISK AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.340 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1016.340 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1016.340 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.900 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1016.031 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.271 | .262 | | 925.746 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1016.287 | .262 | | 925.864 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.528 12B = -90.525 09 = -90.423 03 = -90.252**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 05.59303 | 94 16 01.40272 | 595052.284 | 232237.515 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 05.59330 | 94 16 01.40373 | 595052.211 | 232237.542 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555370.031 | 991012.301 | 1311746.899 | 16284541.356 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555369.958 | 991012.328 | 1311746.827 | 16284541.384 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_G-PQ1565-3NE-27JUL2015.jpg | NE | Jul 27, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_G-PQ1565-2-27JUL2015.jpg | | Jul 27, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_G-PQ1565-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 H
**NGS Name:** 4307 H
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 23 | 116 N | 29 W | 445010.00 | 941716.00 | 2 | |

**NGS ACRN:** PQ1562 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2000 | DESTROYED | Horz=NO Vert=NO | NO | 4912 | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 H 1987

0.75 MILE NORTHWEST OF BISCAY, 0.85 MILE NORTHWEST ON TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, IN THE SOUTHEAST CORNER OF THE SOUTHEAST HEADWALL OF TRUNK HIGHWAY 22 BRIDGE NUMBER 4912 OVER THE SOUTH FORK OF THE CROW RIVER, AT TRUNK HIGHWAY 22 MILEPOINT 115.95, 17.0 FEET NORTHEAST OF TRUNK HIGHWAY 22.

**Station Notes**
THE STATION WAS SET IN 1948, BUT NOT STAMPED AND USED UNTIL 1987.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.418 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.975 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1025.100 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.403 12B = -90.390 09 = -90.285 03 = -90.128**

*** No Horizontal Positions in the Database ***

# 4307 J



**Mn/DOT Name:** 4307 J

**NGS Name:** 4307 J

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 15 | 116 N | 29 W | 445056.00 | 941849.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (1948) **Stamping:**

2.51 MILES NORTHWEST OF BISCAY, 2.4 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 STATION 1730+12, 106.74 FEET NORTH OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 67, 72.0 FEET LEFT OF TRUNK HIGHWAY 22.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.190 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.272 12B = -90.256 09 = -90.144 03 = -90.003**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 K **NGS Name:** 4307 K

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1559 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 16 | 116 N | 29 W | 445110.00 | 941913.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2000 | DESTROYED | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| WALL - LIGHT RETAINING | BENCH MARK DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 K 1987

2.3 MILES SOUTHEAST OF HUTCHINSON, 3.85 MILES SOUTHEAST ON TRUNK HIGHWAY 22 FROM THE SOUTH JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 117.9, IN THE SOUTHEAST CORNER OF A TRUNK HIGHWAY 22 BOX CULVERT AT A SMALL CREEK, 52.5 FEET NORTHEAST OF TRUNK HIGHWAY 22, 37.1 FEET WEST OF A RIGHT-OF-WAY POST, 1.0 FOOT WEST OF A WOOD GUARDRAIL POST.

**Station Notes**

THE STATION WAS SET IN 1948, BUT NOT STAMPED AND USED UNTIL 1987.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.365 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.922 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1033.919 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.233 12B = -90.216 09 = -90.102 03 = -89.964**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 L

**NGS Name:** 4307 L

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 16 | 116 N | 29 W | 445124.00 | 941932.00 | 2 | |

**NGS ACRN:** PQ1557 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2000 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| WALL - LIGHT RETAINING | BENCH MARK DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 L 1987

2.0 MILES SOUTHEAST OF HUTCHINSON, 3.45 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE SOUTH JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 118.3, IN THE SOUTHEAST CORNER OF THE EAST HEADWALL OF A TRUNK HIGHWAY 22 BOX CULVERT, 22.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 2.8 FEET NORTHWEST OF A SIGNPOST.

**Station Notes**

THE STATION WAS SET IN 1948, BUT NOT STAMPED AND USED UNTIL 1987.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.637 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.194 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1044.270 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.193 12B = -90.177 09 = -90.065 03 = -89.928**

*** No Horizontal Positions in the Database ***

# 4307 M



**Mn/DOT Name:** 4307 M

**NGS Name:** 4307 M

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 16 | 116 N | 29 W | 445146.00 | 942004.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (1948)

**Stamping:**

2.26 MILES SOUTHEAST OF HUTCHINSON, 1.4 MILES SOUTHEAST ON TRUNK HIGHWAY 22 FROM THE SOUTH JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 STATION 1807+00, 75.0 FEET SOUTH OF TRUNK HIGHWAY 22.

**Station Notes**

IN 1996 THE GEODETIC UNIT COULD NOT FIND THE STATION-NO DETAILS WERE GIVEN.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.201 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.128 12B = -90.115 09 = -89.997 03 = -89.865**

*** No Horizontal Positions in the Database ***

# 4307 N



**Mn/DOT Name:** 4307 N
**NGS Name:** 4307 N
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 8 | 116 N | 29 W | 445205.00 | 942030.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | SURVEY DISK | MNDT |

**Description:** (1948)
**Stamping:**

1.78 MILES SOUTHEAST OF HUTCHINSON, 0.8 MILE SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 STATION 1831+55, IN THE SOUTHEAST CORNER OF A TRUNK HIGHWAY 22 BOX CULVERT, 97.86 FEET NORTHEAST OF THE CENTERLINE OF TRUNK HIGHWAY 22.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.101 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.072 12B = -90.056 09 = -89.937 03 = -89.810**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 O **NGS Name:** 4307 O

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1553 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 7 | 116 N | 29 W | 445239.00 | 942132.00 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | 4913 | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:** (2016) **Stamping:** 4307 O 1987

0.3 MILE SOUTHEAST OF HUTCHINSON, 1.25 MILES SOUTHEAST ON TRUNK HIGHWAY 22 FROM THE SOUTH JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 120.5, IN THE SOUTHEAST CORNER OF TRUNK HIGHWAY 22 BRIDGE NUMBER 4913 OVER THE CROW RIVER, 16.0 FEET NORTHEAST OF TRUNK HIGHWAY 22.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.354 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1037.908 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1037.892 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.391 | .262 | | 949.588 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.944 12B = -89.928 09 = -89.803 03 = -89.688**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 40.06063 | 94 21 31.88095 | 571156.340 | 253865.036 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2531645.079 | 1012822.503 | 1288297.621 | 16306637.910 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_O-PQ1553-3NW-04MAY2011.jpg | NW | May 4, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_O-PQ1553-2-04MAY2011.jpg | | May 4, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_O-PQ1553-1-04MAY2011.jpg | | May 4, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 P **NGS Name:** 4307 P

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 14 | 115 N | 28 W | 444559.64 | 940929.61 | 2 | 3 |

**NGS ACRN:** PQ1578 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - SMALL | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** 4307 P 1987

IN GLENCOE, 0.2 MILE NORTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212, ON TRUNK HIGHWAY 22 (CHANDLER AVENUE) MIDWAY BETWEEN 7TH STREET AND 8TH STREET, 33.0 FEET EAST OF TRUNK HIGHWAY 22, 39.0 FEET NORTHWEST OF THE NORTHWEST CORNER OF A SINGLE STORY BUILDING, 21.2 FEET NORTH-NORTHEAST OF A LIGHT STANDARD, IN THE CONCRETE BASE OF THE WEST STEEL SIGNPOST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.867 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 999.850 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 999.850 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 999.867 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 999.867 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |
| 999.867 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.440 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.726 | .262 | | 909.024 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.781 12B = -90.781 09 = -90.702 03 = -90.538**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 59.64016 | 94 09 29.61302 | 623404.413 | 213550.579 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583573.216 | 972107.644 | 1339709.012 | 16265295.195 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_P-PQ1578-3E-26APR2011.jpg | E | Apr 26, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_P-PQ1578-2-26APR2011.jpg | | Apr 26, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_P-PQ1578-1-26APR2011.jpg | | Apr 26, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 Q
**NGS Name:** 4307 Q
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1577 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 14 | 115 N | 28 W | 444618.17 | 940955.72 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 Q 1987

IN GLENCOE, 0.2 MILE WEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 SOUTH, AT TRUNK HIGHWAY 22 MILEPOINT 108.25, 74.8 FEET SOUTH OF TRUNK HIGHWAY 22, 2.7 FEET WEST OF A RIGHT-OF-WAY POST, 1.2 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK IS LEANING NORTH.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.594 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1014.575 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1014.594 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1014.594 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1014.594 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1014.594 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |
| 1014.594 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |
| 1014.594 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.168 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.594 | | | 923.794 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1014.594 | | | 923.794 | .009 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1014.686 | .262 | | 923.915 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1014.594 | | | 923.794 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1014.594 | .131 | | 924.014 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1014.594 | | | 923.801 | .009 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1014.512 | .262 | | 923.745 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1014.493 | .262 | | 923.722 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 923.794 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1014.545 | .262 | | 923.853 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 923.847 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1014.598 | .131 | | 924.014 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1014.598 | .131 | | 924.014 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.771 12B = -90.771 09 = -90.689 03 = -90.525**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 18.17199 | 94 09 55.72149 | 621509.923 | 215416.524 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 46 18.17199 | 94 09 55.72149 | 621509.923 | 215416.524 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 46 18.17114 | 94 09 55.72143 | 621509.928 | 215416.437 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 46 18.17199 | 94 09 55.72149 | 621509.923 | 215416.524 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 18.17211 | 94 09 55.72174 | 621509.905 | 215416.535 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 18.17203 | 94 09 55.72223 | 621509.870 | 215416.527 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 46 18.17171 | 94 09 55.72113 | 621509.949 | 215416.495 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 46 18.17199 | 94 09 55.72149 | 621509.923 | 215416.524 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 18.17184 | 94 09 55.72196 | 621509.889 | 215416.508 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 46 18.17214 | 94 09 55.72239 | 621509.858 | 215416.538 | .023 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 18.17167 | 94 09 55.72189 | 621509.894 | 215416.491 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 46 18.17167 | 94 09 55.72189 | 621509.894 | 215416.491 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 18.17167 | 94 09 55.72189 | 621509.894 | 215416.491 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 18.17167 | 94 09 55.72189 | 621509.895 | 215416.492 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581693.481 | 973988.055 | 1337852.977 | 16267198.151 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2581693.481 | 973988.055 | 1337852.977 | 16267198.151 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2581693.485 | 973987.969 | 1337852.979 | 16267198.065 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2581693.481 | 973988.055 | 1337852.977 | 16267198.151 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2581693.463 | 973988.067 | 1337852.958 | 16267198.164 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2581693.427 | 973988.059 | 1337852.923 | 16267198.156 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2581693.507 | 973988.027 | 1337853.002 | 16267198.122 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2581693.481 | 973988.055 | 1337852.977 | 16267198.151 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581693.447 | 973988.040 | 1337852.942 | 16267198.136 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2581693.416 | 973988.070 | 1337852.912 | 16267198.167 | .023 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581693.452 | 973988.023 | 1337852.947 | 16267198.119 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2581693.452 | 973988.023 | 1337852.947 | 16267198.119 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2581693.452 | 973988.023 | 1337852.947 | 16267198.119 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2581693.452 | 973988.023 | 1337852.947 | 16267198.119 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Q-PQ1577-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Q-PQ1577-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Q-PQ1577-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 R **NGS Name:** 4307 R

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1576 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 10 | 115 N | 28 W | 444633.61 | 941048.30 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 R 1987

1.5 MILES NORTHWEST OF GLENCOE, 1.0 MILE WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 SOUTH IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 109.05, 74.7 FEET NORTHEAST OF TRUNK HIGHWAY 22, 46.7 FEET WEST-NORTHWEST OF A TELEPHONE POLE, 30.5 FEET WEST OF A FIELD ENTRANCE, 2.2 FEET EAST-SOUTHEAST OF A RIGHT-OF-WAY POST, 1.2 FEET WEST-NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.648 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1020.641 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1020.641 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1020.648 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1020.651 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |
| 1020.648 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.221 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.480 | .262 | | 929.713 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1020.602 | .262 | | 929.837 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 929.880 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1020.687 | .262 | | 930.005 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 929.942 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1020.667 | .131 | | 930.106 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1020.667 | .131 | | 930.106 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.764 12B = -90.764 09 = -90.686 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 33.60649 | 94 10 48.30313 | 617707.832 | 216958.232 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 46 33.60728 | 94 10 48.30338 | 617707.813 | 216958.312 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 46 33.60711 | 94 10 48.30312 | 617707.832 | 216958.295 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 33.60634 | 94 10 48.30392 | 617707.775 | 216958.216 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 46 33.60724 | 94 10 48.30398 | 617707.770 | 216958.308 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 33.60677 | 94 10 48.30348 | 617707.806 | 216958.260 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 33.60677 | 94 10 48.30348 | 617707.807 | 216958.260 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577903.881 | 975559.095 | 1334083.851 | 16268815.329 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2577903.864 | 975559.175 | 1334083.834 | 16268815.410 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2577903.882 | 975559.158 | 1334083.852 | 16268815.392 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577903.824 | 975559.080 | 1334083.793 | 16268815.315 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2577903.820 | 975559.171 | 1334083.790 | 16268815.406 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577903.856 | 975559.123 | 1334083.826 | 16268815.358 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2577903.856 | 975559.124 | 1334083.826 | 16268815.358 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_R-PQ1576-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_R-PQ1576-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_R-PQ1576-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 S **NGS Name:** 4307 S

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1575 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 9 | 115 N | 28 W | 444658.79 | 941133.42 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 S 1987

2.5 MILES NORTHWEST OF GLENCOE, 2.2 MILES WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3/COUNTY ROAD 83 IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 109.80, 130.0 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 21.5 FEET SOUTH OF 115TH STREET, 8.5 FEET EAST OF A POWER POLE WITH GUY WIRES, 0.8 FOOT NORTH OF A STEEL WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.906 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1024.906 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1024.906 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1024.906 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |
| 1024.906 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.473 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1024.906 | | | 934.152 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1024.906 | | | 934.152 | .008 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1024.975 | .262 | | 934.230 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1024.936 | .262 | | 934.194 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1024.945 | .262 | | 934.201 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 934.152 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1024.893 | .262 | | 934.234 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 934.221 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1024.900 | .131 | | 934.381 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1024.900 | .131 | | 934.381 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.741 12B = -90.745 09 = -90.659 03 = -90.482**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 58.79463 | 94 11 33.42027 | 614439.382 | 219491.359 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 46 58.79463 | 94 11 33.42027 | 614439.382 | 219491.359 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 46 58.79438 | 94 11 33.42116 | 614439.318 | 219491.333 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 46 58.79402 | 94 11 33.42062 | 614439.357 | 219491.297 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 46 58.79424 | 94 11 33.42022 | 614439.386 | 219491.319 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 46 58.79463 | 94 11 33.42027 | 614439.382 | 219491.359 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 58.79438 | 94 11 33.42163 | 614439.284 | 219491.333 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 46 58.79474 | 94 11 33.42103 | 614439.327 | 219491.369 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 58.79428 | 94 11 33.42052 | 614439.364 | 219491.323 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 46 58.79424 | 94 11 33.42053 | 614439.364 | 219491.319 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 58.79424 | 94 11 33.42053 | 614439.365 | 219491.320 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574655.551 | 978117.272 | 1330867.972 | 16271412.700 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2574655.551 | 978117.272 | 1330867.972 | 16271412.700 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2574655.487 | 978117.247 | 1330867.907 | 16271412.676 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2574655.526 | 978117.210 | 1330867.946 | 16271412.639 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2574655.554 | 978117.232 | 1330867.975 | 16271412.660 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2574655.551 | 978117.272 | 1330867.972 | 16271412.700 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574655.453 | 978117.247 | 1330867.873 | 16271412.676 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2574655.496 | 978117.283 | 1330867.917 | 16271412.712 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2574655.533 | 978117.236 | 1330867.953 | 16271412.665 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2574655.532 | 978117.232 | 1330867.952 | 16271412.661 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2574655.532 | 978117.232 | 1330867.952 | 16271412.661 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_S-PQ1575-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_S-PQ1575-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_S-PQ1575-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 T
**NGS Name:** 4307 T
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 9 | 115 N | 28 W | 444721.28 | 941205.65 | 2 | C |

**NGS ACRN:** PQ1574 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 T 1987

3.0 MILES NORTHWEST OF GLENCOE, 2.85 MILES WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3/COUNTY ROAD 83 (THE JUNCTION OF 13TH STREET AND HENNEPIN AVENUE) IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 110.45, 69.5 FEET NORTHEAST OF TRUNK HIGHWAY 22, 1.0 FOOT SOUTH-SOUTHWEST OF A WITNESS POST.

**Station Pair:** TROOP MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1035.703 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1035.707 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1035.703 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1035.707 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |
| 1035.707 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1035.274 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1035.707 | | | 944.988 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1035.707 | | | 944.988 | .008 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1035.680 | .262 | | 944.962 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1035.677 | .262 | | 944.955 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 944.988 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1035.661 | .262 | | 945.028 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 945.060 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1035.693 | .131 | | 945.221 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1035.693 | .131 | | 945.221 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.718 12B = -90.722 09 = -90.633 03 = -90.456**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 21.28212 | 94 12 05.64761 | 612102.781 | 221756.387 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 47 21.28212 | 94 12 05.64761 | 612102.781 | 221756.387 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 47 21.28141 | 94 12 05.64694 | 612102.830 | 221756.316 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 47 21.28163 | 94 12 05.64696 | 612102.828 | 221756.338 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 47 21.28212 | 94 12 05.64761 | 612102.781 | 221756.387 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 21.28206 | 94 12 05.64860 | 612102.710 | 221756.381 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 21.28227 | 94 12 05.64834 | 612102.728 | 221756.402 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 21.28177 | 94 12 05.64780 | 612102.768 | 221756.352 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 47 21.28178 | 94 12 05.64783 | 612102.765 | 221756.353 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 21.28178 | 94 12 05.64783 | 612102.765 | 221756.351 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2572336.859 | 980400.147 | 1328578.067 | 16273723.423 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2572336.859 | 980400.147 | 1328578.067 | 16273723.423 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2572336.907 | 980400.075 | 1328578.114 | 16273723.350 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2572336.906 | 980400.097 | 1328578.113 | 16273723.373 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2572336.859 | 980400.147 | 1328578.067 | 16273723.423 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2572336.787 | 980400.141 | 1328577.995 | 16273723.418 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2572336.806 | 980400.163 | 1328578.014 | 16273723.439 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2572336.845 | 980400.112 | 1328578.052 | 16273723.388 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2572336.843 | 980400.113 | 1328578.050 | 16273723.389 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2572336.843 | 980400.113 | 1328578.050 | 16273723.389 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_T-PQ1574-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_T-PQ1574-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_T-PQ1574-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 U **NGS Name:** 4307 U

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1573 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 5 | 115 N | 28 W | 444732.91 | 941303.74 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 U 1987

3.6 MILES NORTHWEST OF GLENCOE, 3.65 MILES WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3/COUNTY ROAD 83 IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 111.25, 74.5 FEET NORTH-NORTHEAST OF TRUNK HIGHWAY 22, AT THE WEST EDGE OF A GROVE OF TREES, 0.6 FOOT SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.567 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1022.567 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1022.567 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.131 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1022.714 | .262 | | 932.019 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1022.573 | .262 | | 931.963 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.695 12B = -90.702 09 = -90.607 03 = -90.426**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 32.91274 | 94 13 03.73936 | 607907.120 | 222912.511 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 32.91180 | 94 13 03.74147 | 607906.969 | 222912.414 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2568150.740 | 981588.705 | 1324407.823 | 16274963.148 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2568150.588 | 981588.611 | 1324407.670 | 16274963.055 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_U-PQ1573-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_U-PQ1573-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_U-PQ1573-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 V

**NGS Name:** 4307 V

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1572 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 5 | 115 N | 28 W | 444743.00 | 941348.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000)

**Stamping:** 4307 V 1987

4.25 MILES NORTHWEST OF GLENCOE, 4.3 MILES WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3/COUNTY ROAD 83 IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 111.9, 119.7 FEET NORTH-NORTHEAST OF A POWER POLE NUMBER 72, 74.3 FEET NORTH OF TRUNK HIGHWAY 22, 2.2 FEET WEST-NORTHWEST OF A RIGHT-OF-WAY POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.485 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.052 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

**Geoid Separations(ft): GEOID18 = -90.672 12B = -90.676 09 = -90.581 03 = -90.403**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 W
**NGS Name:** 4307 W
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1570 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 115 N | 28 W | 444804.80 | 941429.50 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 W 1987

5.0 MILES NORTHWEST OF GLENCOE, 5.0 MILES WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 / COUNTY ROAD 83 (THE JUNCTION OF 13TH STREET AND HENNEPIN AVENUE) IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 112.60, 75.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 13.0 FEET NORTHWEST OF A FIELD ENTRANCE, 1.5 FEET EAST-SOUTHEAST OF A RIGHT-OF-WAY POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.989 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.552 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 935.336 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 935.418 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1025.982 | .131 | | 935.572 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1025.982 | .131 | | 935.572 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.636 12B = -90.640 09 = -90.541 03 = -90.364**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 04.80480 | 94 14 29.50322 | 601706.520 | 226111.814 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 04.80497 | 94 14 29.50383 | 601706.476 | 226111.831 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 04.80448 | 94 14 29.50332 | 601706.513 | 226111.782 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 48 04.80448 | 94 14 29.50332 | 601706.513 | 226111.782 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2561975.816 | 984835.739 | 1318274.692 | 16278285.240 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2561975.772 | 984835.757 | 1318274.648 | 16278285.258 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2561975.808 | 984835.707 | 1318274.684 | 16278285.208 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2561975.808 | 984835.707 | 1318274.684 | 16278285.208 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# 4307 X



**Mn/DOT Name:** 4307 X

**NGS Name:** 4307 X

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1569 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 116 N | 28 W | 444830.00 | 941511.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2000 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| WALL - LIGHT RETAINING | BENCH MARK DISK | MNDT |

**Description:** (2000)

**Stamping:** 4307 X 1987

6.0 MILES NORTHWEST OF GLENCOE, 5.75 MILES WEST-NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3/COUNTY ROAD 83 (13TH STREET AND HENNEPIN AVENUE) IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 113.35, AT TRUNK HIGHWAY 22 BOX CULVERT NUMBER 8101, 23.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 12.8 FEET SOUTHEAST OF A STEEL POST, 1.9 FEET NORTHWEST OF A STEEL POST, IN THE SOUTHEAST CORNER OF THE SOUTHEAST HEADWALL OF A TRUNK HIGHWAY 22 BOX CULVERT.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.022 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.583 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

**Geoid Separations(ft): GEOID18 = -90.594 12B = -90.590 09 = -90.495 03 = -90.318**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4307 Y
**NGS Name:** 4307 Y
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1568 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 116 N | 28 W | 444833.42 | 941514.25 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 24 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** 4307 Y 1987

1.6 MILES SOUTHEAST OF BISCAY, 1.75 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 113.40, AT THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 21, 150.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 52.0 FEET EAST OF COUNTY ROAD 71, 35.1 FEET NORTHEAST OF A POWER POLE, 2.5 FEET WEST OF A WITNESS POST.

**Station Notes**
TREES TO THE EAST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.827 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1009.827 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1009.827 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.388 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.169 | .262 | | 919.581 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1009.873 | .262 | | 919.286 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 919.253 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1009.772 | .262 | | 919.283 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 919.342 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1009.840 | .131 | | 919.493 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1009.840 | .131 | | 919.493 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.587 12B = -90.587 09 = -90.489 03 = -90.315**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 33.41862 | 94 15 14.25157 | 598466.377 | 228994.498 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 48 33.41874 | 94 15 14.24973 | 598466.509 | 228994.511 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 48 33.41967 | 94 15 14.24925 | 598466.544 | 228994.605 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 33.41962 | 94 15 14.25015 | 598466.479 | 228994.599 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 48 33.41990 | 94 15 14.24977 | 598466.506 | 228994.628 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 33.41941 | 94 15 14.24925 | 598466.544 | 228994.579 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 48 33.41941 | 94 15 14.24925 | 598466.543 | 228994.578 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558758.489 | 987743.202 | 1315094.107 | 16281231.471 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2558758.622 | 987743.213 | 1315094.240 | 16281231.481 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2558758.657 | 987743.308 | 1315094.276 | 16281231.575 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558758.592 | 987743.303 | 1315094.211 | 16281231.571 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2558758.620 | 987743.331 | 1315094.239 | 16281231.599 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558758.657 | 987743.281 | 1315094.276 | 16281231.548 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2558758.657 | 987743.281 | 1315094.276 | 16281231.548 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Y-PQ1568-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Y-PQ1568-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Y-PQ1568-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4307 Z **NGS Name:** 4307 Z

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1566 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 36 | 116 N | 29 W | 444902.02 | 941557.52 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4307 Z 1987

0.8 MILE SOUTHEAST OF BISCAY, 0.85 MILE SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY TO TRUNK HIGHWAY 22 MILEPOINT 114.3, 76.3 FEET NORTHEAST OF TRUNK HIGHWAY 22, 8.5 FEET SOUTHEAST OF A FIELD ENTRANCE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.367 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1012.367 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1012.367 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.927 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.367 | | | 921.865 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1012.367 | | | 921.865 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1012.524 | .262 | | 921.990 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1012.318 | .262 | | 921.786 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 921.822 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1012.252 | .262 | | 921.822 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 921.911 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1012.367 | .131 | | 922.059 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1012.367 | .131 | | 922.059 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.535 12B = -90.531 09 = -90.430 03 = -90.259**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 02.02215 | 94 15 57.52231 | 595333.637 | 231877.121 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 49 02.02215 | 94 15 57.52231 | 595333.637 | 231877.121 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 49 02.02267 | 94 15 57.52250 | 595333.623 | 231877.174 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 49 02.02176 | 94 15 57.52257 | 595333.618 | 231877.082 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 49 02.02289 | 94 15 57.52224 | 595333.641 | 231877.196 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 02.02194 | 94 15 57.52339 | 595333.559 | 231877.099 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 49 02.02316 | 94 15 57.52271 | 595333.608 | 231877.223 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 02.02194 | 94 15 57.52224 | 595333.642 | 231877.100 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 49 02.02265 | 94 15 57.52217 | 595333.647 | 231877.172 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 49 02.02265 | 94 15 57.52217 | 595333.645 | 231877.171 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555648.548 | 990649.769 | 1312020.870 | 16284175.499 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2555648.548 | 990649.769 | 1312020.870 | 16284175.499 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2555648.535 | 990649.822 | 1312020.857 | 16284175.551 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2555648.529 | 990649.730 | 1312020.851 | 16284175.459 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2555648.553 | 990649.844 | 1312020.876 | 16284175.573 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555648.470 | 990649.748 | 1312020.792 | 16284175.478 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2555648.520 | 990649.872 | 1312020.843 | 16284175.601 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555648.553 | 990649.748 | 1312020.875 | 16284175.477 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2555648.558 | 990649.820 | 1312020.881 | 16284175.549 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2555648.558 | 990649.820 | 1312020.881 | 16284175.549 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Z-PQ1566-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Z-PQ1566-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4307_Z-PQ1566-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 A **NGS Name:** 4308 A

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1475 Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 117 N | 30 W | 445846.28 | 943006.49 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1978 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | MNDT |

**Description:** (1978) **Stamping:** 4308 A 1978

1.2 MILES SOUTH OF GREENLEAF, 1.1 MILES SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 18 IN GREENLEAF, AT TRUNK HIGHWAY 22 MILEPOINT 132.6, AT THE NORTH COUNTY LINE, IN THE NORTHEAST CORNER OF A TRUNK HIGHWAY 22 BOX CULVERT, 23.8 FEET EAST OF TRUNK HIGHWAY 22.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1081.753 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1081.753 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1081.753 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1081.258 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1980 | L24530 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1081.678 | .262 | | 993.210 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -88.605 12B = -88.612 09 = -88.468 03 = -88.402**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 46.28259 | 94 30 06.48997 | 534038.491 | 290864.409 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2494818.852 | 1050105.190 | 1251942.330 | 16344365.906 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_A-PQ1475-3E-14APR2011.jpg | E | Apr 14, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_A-PQ1475-2-14APR2011.jpg | | Apr 14, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_A-PQ1475-1-14APR2011.jpg | | Apr 14, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 AA **NGS Name:** 4308 AA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9926 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 20 | 117 N | 30 W | 445529.07 | 942841.46 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 AA 2011

5.9 MILES NORTHWEST OF HUTCHINSON, 6.15 MILES WEST AND NORTHWEST ALONG TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 128.30, 114.7 FEET SOUTHWEST OF TRUNK HIGHWAY 22 / TRUNK HIGHWAY 7, 13.7 FEET SOUTHEAST OF A FIELD ENTRANCE, 11.5 FEET NORTHEAST OF A BIKE PATH, 1.5 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.676 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1084.653 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.630 | .262 | | 995.543 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1084.650 | .262 | | 995.562 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1084.676 | | | 995.612 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1084.676 | | | 995.612 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1084.643 | .131 | | 995.785 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1084.493 | .262 | | 995.559 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.088 12B = -89.088 09 = -88.934 03 = -88.868**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 29.06861 | 94 28 41.45664 | 540189.208 | 270900.802 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 55 29.06844 | 94 28 41.45662 | 540189.209 | 270900.784 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 55 29.06840 | 94 28 41.45724 | 540189.165 | 270900.780 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 55 29.06840 | 94 28 41.45724 | 540189.165 | 270900.780 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 29.06794 | 94 28 41.45693 | 540189.187 | 270900.734 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 29.06805 | 94 28 41.45767 | 540189.134 | 270900.745 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# 4308 AA



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500814.014 | 1030096.343 | 1257688.259 | 16324288.046 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2500814.016 | 1030096.325 | 1257688.260 | 16324288.029 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2500813.971 | 1030096.322 | 1257688.215 | 16324288.026 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2500813.971 | 1030096.322 | 1257688.215 | 16324288.026 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500813.993 | 1030096.275 | 1257688.237 | 16324287.979 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500813.940 | 1030096.286 | 1257688.184 | 16324287.991 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_AA-DO9926-3SW-30MAR2020.jpg | SW | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_AA-DO9926-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_AA-DO9926-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4308 AB



**Mn/DOT Name:** 4308 AB **NGS Name:** 4308 AB

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9928 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 19 | 117 N | 30 W | 445542.26 | 942919.04 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 AB 2011

6.6 MILES NORTHWEST OF HUTCHINSON, 6.75 MILES WEST AND NORTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 128.85, 123.4 FEET SOUTHEAST OF 215TH STREET, 113.3 FEET NORTHWEST OF A FIELD ENTRANCE, 73.5 FEET SOUTHWEST OF TRUNK HIGHWAY 22/7, 5.9 FEET SOUTHWEST OF A CABLE BOX, 1.5 FEET NORTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1093.813 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1093.790 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1093.813 | | | 1004.801 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1093.813 | | | 1004.801 | .011 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1093.797 | .131 | | 1004.985 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1093.640 | .262 | | 1004.772 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.019 12B = -89.022 09 = -88.868 03 = -88.806**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.26411 | 94 29 19.03635 | 537482.840 | 272232.291 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 55 42.26411 | 94 29 19.03635 | 537482.840 | 272232.291 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.26297 | 94 29 19.03720 | 537482.779 | 272232.175 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.26369 | 94 29 19.03663 | 537482.820 | 272232.248 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498118.309 | 1031448.652 | 1255009.975 | 16325673.352 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2498118.309 | 1031448.652 | 1255009.975 | 16325673.352 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498118.247 | 1031448.537 | 1255009.911 | 16325673.237 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498118.288 | 1031448.609 | 1255009.954 | 16325673.310 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_AB-DO9928-3SW-03MAY2011.jpg | SW | May 3, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_AB-DO9928-2-03MAY2011.jpg | | May 3, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_AB-DO9928-1-03MAY2011.jpg | | May 3, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 B **NGS Name:** 4308 B

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1474 Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 117 N | 30 W | 445754.34 | 943004.66 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1978 | 2011 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 5 IN. | MARKER IS STEEL ROD |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| COPPER CLAD ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1978) **Stamping:** 4308 B 1978

1.75 MILES NORTHEAST OF CEDAR MILLS, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN CEDAR MILLS, AT TRUNK HIGHWAY 22 MILEPOINT 131.6, 166.6 FEET EAST OF TRUNK HIGHWAY 22, 34.0 FEET SOUTH OF A TOWNSHIP ROAD (240TH STREET), 10.0 FEET WEST OF A POWER POLE NUMBER 37071800, 0.8 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1088.997 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1088.997 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1088.997 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1088.498 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1980 | L24530 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1088.997 | | | 1000.280 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1088.997 | | | 1000.280 | .013 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1089.007 | .131 | | 1000.500 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1088.774 | .262 | | 1000.218 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -88.697 12B = -88.701 09 = -88.556 03 = -88.497**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 54.33638 | 94 30 04.65672 | 534178.807 | 285603.340 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 57 54.33638 | 94 30 04.65672 | 534178.807 | 285603.340 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 54.33532 | 94 30 04.65643 | 534178.829 | 285603.233 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 54.33568 | 94 30 04.65715 | 534178.777 | 285603.269 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2494918.360 | 1044843.672 | 1251976.643 | 16339104.525 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2494918.360 | 1044843.672 | 1251976.643 | 16339104.525 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2494918.380 | 1044843.565 | 1251976.661 | 16339104.417 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2494918.328 | 1044843.602 | 1251976.611 | 16339104.455 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_B-PQ1474-3S-13APR2011.jpg | S | Apr 13, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_B-PQ1474-2-13APR2011.jpg | | Apr 13, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_B-PQ1474-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 C **NGS Name:** 4308 C

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1473 Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 117 N | 30 W | 445701.07 | 943006.10 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1978 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| COPPER CLAD ROD (NO SLEEVE) (DEPTH 32 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4308 C 1978

1.0 MILE NORTHEAST OF CEDAR MILLS, 0.5 MILE NORTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN CEDAR MILLS, AT TRUNK HIGHWAY 22 MILEPOINT 130.6, AT THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 20, 92.7 FEET EAST OF TRUNK HIGHWAY 22, 45.4 FEET WEST-SOUTHWEST OF THE WEST END OF A METAL CULVERT, 44.0 FEET SOUTH OF COUNTY ROAD 20, 2.0 FEET NORTH OF A POWER POLE WITH A GUY WIRE, 0.8 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1095.188 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1095.188 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1095.165 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1094.666 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1980 | L24530 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1095.063 | .262 | | 1006.412 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -88.799 12B = -88.796 09 = -88.651 03 = -88.596**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 01.80086 | 94 30 06.11529 | 534082.534 | 280282.220 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2494780.841 | 1039523.950 | 1251773.294 | 16333787.878 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_C-PQ1473-3S-13APR2011.jpg | S | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_C-PQ1473-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_C-PQ1473-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 D **NGS Name:** 4308 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1464 Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 117 N | 30 W | 445632.25 | 943001.50 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1978 | 2014 | DESTROYED | Horz=NO Vert=NO | YES | | PROJECTS 3 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | MNDT |

**Description:** (1984) **Stamping:** 4308 D 1978

1.1 MILES EAST OF CEDAR MILLS, 1.1 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 26 IN CEDAR MILLS, AT THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22, 450.0 FEET EAST OF THE WEST COUNTY LINE AND TRUNK HIGHWAY 22 MILEPOST 134, 217.5 FEET WEST-SOUTHWEST OF TRUNK HIGHWAY 7 MILEPOST 130, 61.8 FEET WEST-NORTHWEST OF A TELEPHONE CABLE POST, 57.8 FEET SOUTHWEST OF TRUNK HIGHWAY 7, 1.0 FOOT NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1108.170 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1108.157 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000698 |
| 1108.157 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1108.157 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2006 | VBLOM |
| 1108.157 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.659 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1107.659 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1980 | L24530 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.846 | .262 | | 1019.132 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -88.865 12B = -88.865 09 = -88.717 03 = -88.661**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 32.24845 | 94 30 01.49906 | 534419.427 | 277289.613 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495094.489 | 1036529.100 | 1252049.792 | 16330789.913 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_D-PQ1464-3S-01NOV2010.jpg | S | Nov 1, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_D-PQ1464-2-01NOV2010.jpg | | Nov 1, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_D-PQ1464-1-10JAN2006.jpg | | Jan 10, 2006 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 F **NGS Name:** 4308 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1492 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 35 | 117 N | 30 W | 445333.39 | 942420.91 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | 8879 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | MNDT |

**Description:** (1992) **Stamping:** 4308 F 1984

IN HUTCHINSON, 1.8 MILES WEST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 22 MILEPOINT 123.95, 22.5 FEET SOUTH OF TRUNK HIGHWAY 22, IN THE SOUTHEAST HEADWALL OF TRUNK HIGHWAY 22 BOX CULVERT NUMBER 8879 AT THE CHANNEL BETWEEN CAMPBELL LAKE AND OTTER LAKE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.541 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1043.515 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1043.604 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.148 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1044.201 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1956 | CS4308 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.420 | .262 | | 953.919 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.652 12B = -89.642 09 = -89.501 03 = -89.409**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.39141 | 94 24 20.91137 | 558969.078 | 259228.902 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2519500.990 | 1018280.249 | 1276224.249 | 16312244.106 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_F-PQ1492-3S-13APR2011.jpg | S | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_F-PQ1492-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_F-PQ1492-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 G

**NGS Name:** 4308 G

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1485 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 19 | 117 N | 30 W | 445543.00 | 942921.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1992)

**Stamping:** 4308 G 1984

1.5 MILES SOUTHEAST OF CEDAR MILLS, 1.2 MILES SOUTHEAST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN CEDAR MILLS, AT TRUNK HIGHWAY 22 MILEPOINT 128.85, 161.5 FEET NORTHWEST OF A TELEPHONE CABLE PEDESTAL, 124.5 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 30.0 FEET SOUTH OF A GRAVEL ROAD, 1.5 FEET NORTHEAST OF A POWER POLE, 1.5 FEET EAST OF A WITNESS POST.

**Station Notes**

IN 1992 THE MARK WAS FOUND WITH THE ALUMINUM ROD BENT AND THE DISK CUT IN HALF. 04-13-11 ROD WAS TOO DAMAGED TO RESET, REMOVED IT FROM THE GROUND.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1092.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1091.950 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.016 12B = -89.019 09 = -88.865 03 = -88.802**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4308 H **NGS Name:** 4308 H

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1484 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 117 N | 30 W | 445609.65 | 942933.89 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4308 H 1984

1.0 MILE EAST-SOUTHEAST OF CEDAR MILLS, 0.55 MILE SOUTHEAST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN CEDAR MILLS, AT TRUNK HIGHWAY 22 MILEPOINT 129.45, 102.5 FEET NORTHEAST OF TRUNK HIGHWAY 22, 28.8 FEET NORTHEAST OF A RIGHT-OF-WAY POST, 2.2 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.380 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1107.360 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1107.360 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1106.865 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.380 | | | 1018.449 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1107.380 | | | 1018.449 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1107.347 | .131 | | 1018.627 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1107.173 | .262 | | 1018.384 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -88.940 12B = -88.943 09 = -88.789 03 = -88.733**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 09.64634 | 94 29 33.89021 | 536409.331 | 275003.752 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 56 09.64634 | 94 29 33.89021 | 536409.331 | 275003.752 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 09.64727 | 94 29 33.88970 | 536409.367 | 275003.847 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 09.64584 | 94 29 33.89050 | 536409.310 | 275003.702 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2497066.423 | 1034228.093 | 1253992.747 | 16328465.094 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2497066.423 | 1034228.093 | 1253992.747 | 16328465.094 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2497066.460 | 1034228.187 | 1253992.785 | 16328465.187 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2497066.402 | 1034228.043 | 1253992.725 | 16328465.043 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_H-PQ1484-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_H-PQ1484-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_H-PQ1484-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 J **NGS Name:** 4308 J

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 20 | 117 N | 30 W | 445524.63 | 942828.48 | 2 | 3 |

**NGS ACRN:** PQ1486 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2011) **Stamping:** 4308 J 1984

2.3 MILES SOUTHEAST OF CEDAR MILLS, 1.85 MILES SOUTHEAST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN CEDAR MILLS, AT TRUNK HIGHWAY 22 MILEPOINT 128.1, 91.0 FEET SOUTHWEST OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22, 41.4 FEET WEST-NORTHWEST OF A TELEPHONE CABLE PEDESTAL, 41.0 FEET EAST OF AN ENTRANCE EXTENDED, 34.0 FEET NORTHEAST OF A TRAIL, 2.4 FEET NORTH-NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.562 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1080.542 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1080.562 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.077 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.428 | .262 | | 991.471 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.111 12B = -89.111 09 = -88.957 03 = -88.891**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 24.62886 | 94 28 28.48292 | 541123.589 | 270452.934 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2501744.807 | 1029641.285 | 1258613.182 | 16323821.595 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_J-PQ1486-3SW-13APR2011.jpg | SW | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_J-PQ1486-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_J-PQ1486-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 K **NGS Name:** 4308 K

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1487 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 28 | 117 N | 30 W | 445502.72 | 942739.68 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4308 K 1984

3.0 MILES WEST-NORTHWEST OF HUTCHINSON, 5.15 MILES WEST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 127.3, AT A REST AREA, 119.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 86.0 FEET WEST OF WALDEN AVENUE, 29.0 FEET WEST OF A 10.0 INCH DIAMETER ASH TREE, 20.1 FEET SOUTH OF A 6.0 INCH DIAMETER TWIN CEDAR TREE, 2.3 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.989 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1071.989 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1071.989 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.510 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.878 | .262 | | 982.816 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.216 12B = -89.216 09 = -89.062 03 = -88.989**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 02.71644 | 94 27 39.68342 | 544639.656 | 268240.741 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505243.278 | 1027402.102 | 1262083.053 | 16321539.732 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_K-PQ1487-3NE-13APR2011.jpg | NE | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_K-PQ1487-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_K-PQ1487-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 L

**NGS Name:** 4308 L

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1488 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 28 | 117 N | 30 W | 445448.00 | 942717.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4308 L 1984

2.5 MILES WEST-NORTHWEST OF HUTCHINSON, 4.8 MILES WEST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 126.95, 133.0 FEET SOUTH-SOUTHWEST OF TRUNK HIGHWAY 22, 114.5 FEET WEST-NORTHWEST OF A STEEL SIGNPOST FOR A CAUTION SIGN, 105.0 FEET WEST OF A FIELD ENTRANCE, 63.1 FEET SOUTH-SOUTHEAST OF A 12.0 INCH DIAMETER TWIN TREE, 2.5 FEET NORTH-NORTHEAST OF A WITNESS POST.

**Station Notes**

04-13-11 FOUND THE ROD BENT, THE CAP WAS MISSING AND RESET IT.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.898 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.422 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.275 12B = -89.278 09 = -89.121 03 = -89.045**

*** No Horizontal Positions in the Database ***

# 4308 L RESET



**Mn/DOT Name:** 4308 L RESET **NGS Name:** 4308 L RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9923 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 28 | 117 N | 30 W | 445449.78 | 942720.03 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 8 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 L RESET 2011

2.5 MILES WEST-NORTHWEST OF HUTCHINSON, 4.8 MILES WEST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 126.95, 133.0 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 11.0 FEET NORTHWEST OF AN ENTRANCE, 8.0 FEET SOUTHWEST OF A TRAIL, 1.0 FOOT NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.940 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1066.940 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.875 | .262 | | 977.761 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.268 12B = -89.271 09 = -89.114 03 = -89.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 49.78068 | 94 27 20.03093 | 546056.760 | 266933.625 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2506650.067 | 1026084.159 | 1263473.179 | 16320204.740 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_L_RESET-DO9923-3NW-13APR2011.jpg | NW | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_L_RESET-DO9923-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_L_RESET-DO9923-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 M **NGS Name:** 4308 M

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1489 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 117 N | 30 W | 445418.76 | 942626.28 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2020 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT)

**Disk Type**
VERTICAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (1984)

**Stamping:** 4308 M 1984

2.0 MILES WEST-NORTHWEST OF HUTCHINSON, 3.85 MILES WEST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 126.0, 133.0 FEET SOUTH-SOUTHWEST OF TRUNK HIGHWAY 22, 62.9 FEET SOUTHWEST OF A POWER POLE, 25.5 FEET WEST OF AN ENTRANCE, 1.7 FEET NORTH OF A WITNESS POST.

**Station Notes**
DUE TO TREE COVER, THIS SURVEY MARK HAS BEEN ABANDONED FOR MNDOT GEODETIC HORIZONTAL SURVEYS.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.210 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1064.210 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1064.210 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.741 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.017 | .262 | | 974.611 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1064.135 | .262 | | 974.887 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.406 12B = -89.403 09 = -89.252 03 = -89.170**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 18.76110 | 94 26 26.27982 | 549932.504 | 263800.713 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 18.76145 | 94 26 26.28340 | 549932.246 | 263800.748 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2510501.024 | 1022921.581 | 1267284.032 | 16316995.394 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2510500.767 | 1022921.618 | 1267283.774 | 16316995.434 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_M-PQ1489-3S-30MAR2020.jpg | S | Mar 30, 2020 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_M-PQ1489-2-30MAR2020.jpg | | Mar 30, 2020 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_M-PQ1489-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4308 N



**Mn/DOT Name:** 4308 N

**NGS Name:** 4308 N

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1490 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 34 | 117 N | 30 W | 445351.00 | 942554.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984)

**Stamping:** 4308 N 1984

1.25 MILES WEST OF HUTCHINSON, 3.15 MILES WEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 125.4, 173.5 FEET SOUTHWEST OF TRUNK HIGHWAY 22, 118.0 FEET SOUTHWEST OF A TELEPHONE CABLE PEDESTAL, 98.5 FEET SOUTH-SOUTHEAST OF THE SOUTHEAST CORNER OF A BUILDING, 49.7 FEET SOUTHEAST OF A POWER POLE WITH A TRANSFORMER, 2.6 FEET NORTH-NORTHWEST OF A WITNESS POST.

**Station Notes**

04-13-11 NEW BUILDING IN THE AREA.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.995 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.529 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.511 12B = -89.508 09 = -89.357 03 = -89.271**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4308 P
**NGS Name:** 4308 P
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 34 | 117 N | 30 W | 445337.00 | 942514.00 | 2 | 3 |

**NGS ACRN:** PQ1491 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)

**Disk Type**
VERTICAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (1984)

**Stamping:** 4308 P 1984

0.75 MILE WEST OF HUTCHINSON, 2.55 MILES WEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 124.7, 88.5 FEET NORTH OF TRUNK HIGHWAY 22, 34.0 FEET WEST OF ULM ROAD, 1.3 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.980 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.386 | .262 | | 972.951 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.590 12B = -89.580 09 = -89.436 03 = -89.347**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 37.86997 | 94 25 12.96319 | 555220.506 | 259672.356 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515756.334 | 1018752.728 | 1272486.435 | 16312762.713 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_P-PQ1491-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_P-PQ1491-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_P-PQ1491-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 Q **NGS Name:** 4308 Q

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1493 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 116 N | 30 W | 445330.08 | 942339.66 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=YES Vert=YES | YES | NONE | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** 4308 Q 1984

IN HUTCHINSON, 1.3 MILES WEST ALONG TRUNK HIGHWAY 7 /TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15, THEN 0.15 MILE SOUTH ON SCHOOL ROAD, IN THE NORTHWEST CORNER OF A SCHOOL ROAD BRIDGE OVER THE SOUTH FORK OF THE CROW RIVER , 25.0 FEET WEST OF SCHOOL ROAD.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.953 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1061.924 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1061.953 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1061.924 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1061.953 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.501 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.852 | .262 | | 972.301 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1061.888 | .262 | | 972.432 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.701 12B = -89.691 09 = -89.554 03 = -89.458**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 30.08325 | 94 23 39.65811 | 561940.020 | 258902.357 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 30.08449 | 94 23 39.65855 | 561939.988 | 258902.482 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522469.022 | 1017930.695 | 1279187.158 | 16311857.989 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522468.991 | 1017930.821 | 1279187.129 | 16311858.115 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Q-PQ1493-3S-13APR2011.jpg | S | Apr 13, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Q-PQ1493-2-13APR2011.jpg | | Apr 13, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Q-PQ1493-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 Q 1 **NGS Name:** 4308 Q 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1494 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 116 N | 30 W | 445326.41 | 942336.97 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | GOOD | Horz=NO Vert=YES | YES | OTTER LAKE | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | UNSPECIFIC DISK TYPE (SEE TEXT) | MNDT |

**Description:** (2019) **Stamping:** 4308 Q 1 1984

IN HUTCHINSON, 1.3 MILES WEST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7 /TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15, THEN 0.25 MILE SOUTH ON SCHOOL ROAD, 20.0 FEET EAST OF SCHOOL ROAD, IN THE SOUTHEAST CORNER OF A SCHOOL ROAD BRIDGE OVER THE SOUTH FORK OF THE CROW RIVER .

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.160 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1062.127 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1062.127 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.674 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.002 | .262 | | 972.439 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.714 12B = -89.705 09 = -89.567 03 = -89.468**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 26.41003 | 94 23 36.97144 | 562134.541 | 258530.898 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522660.636 | 1017557.774 | 1279374.114 | 16311482.803 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Q_1-PQ1494-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Q_1-PQ1494-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Q_1-PQ1494-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 R

**NGS Name:** 4308 R

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1495 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 36 | 117 N | 30 W | 445340.00 | 942251.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1984)

**Stamping:** 4308 R 1984

IN HUTCHINSON, 0.6 MILE WEST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15, THEN 0.15 MILE SOUTH ON 3RD AVENUE NORTHWEST, AT A CURVE, 37.2 FEET SOUTH OF LES KOUBA PARKWAY NORTHWEST, 6.3 FEET NORTH OF A FENCE, 4.3 FEET EAST OF THE WEST LEG OF A GOPHER CAMPFIRE CONSERVATION CLUB SIGN, 2.6 FEET SOUTHEAST OF A LARGE ROCK, 6.0 FEET NORTH-NORTHEAST OF A WITNESS POST.

**Station Notes**

FOUND THE CAP OFF, RESET WITH I.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.559 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.113 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.731 12B = -89.718 09 = -89.586 03 = -89.488**

*** No Horizontal Positions in the Database ***

# Geodetic Data Sheet (Feet)
# GSID Station # 86971

## 4308 R RESET

04/28/2026
Sheet Help

**Mn/DOT Name:** 4308 R RESET
**NGS Name:** 4308 R RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DM5599 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 36 | 117 N | 30 W | 445340.00 | 942250.00 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** 4308 R 1984 2009 RESET

AT HUTCHINSON, 0.6 MILE WEST ON TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15, THEN 0.15 MILE SOUTH ON MONTANA STREET, AT A CURVE, 37.2 FEET SOUTH OF LES KOUBA PARKWAY NORTHWEST, 6.3 FEET NORTH OF A FENCE, 4.3 FEET EAST OF THE WEST LEG OF A GOPHER CAMPFIRE CONSERVATION CLUB SIGN, 2.6 FEET SOUTHEAST OF A LARGE ROCK, 6.0 FEET NORTH-NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.296 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1045.296 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1045.296 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1045.277 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.211 | .262 | | 955.628 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.728 12B = -89.718 09 = -89.583 03 = -89.485**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 40.53678 | 94 22 51.80519 | 565381.884 | 259971.494 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2525918.744 | 1018972.992 | 1282648.807 | 16312857.396 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_R_RESET-DM5599-3S-13APR2011.jpg | S | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_R_RESET-DM5599-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_R_RESET-DM5599-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 S
**NGS Name:** 4308 S
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9916 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 36 | 117 N | 30 W | 445343.41 | 942320.92 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 S 2011

IN HUTCHINSON, 1.0 MILE SOUTHWEST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 123.1, 38.9 FEET NORTHWEST OF WESTBOUND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, 21.2 FEET NORTHEAST OF A CABLE BOX, 8.0 FEET NORTHWEST OF A BIKE PATH, 1.6 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.632 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1057.609 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.593 | .262 | | 967.911 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1057.632 | | | 967.902 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1057.632 | | | 967.902 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1057.609 | .131 | | 968.161 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1057.547 | .262 | | 968.003 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.691 12B = -89.682 09 = -89.544 03 = -89.449**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 43.41037 | 94 23 20.92192 | 563284.874 | 260256.144 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 53 43.41046 | 94 23 20.92120 | 563284.926 | 260256.153 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 43.41046 | 94 23 20.92120 | 563284.926 | 260256.153 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 43.40983 | 94 23 20.92177 | 563284.885 | 260256.089 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 43.41006 | 94 23 20.92168 | 563284.891 | 260256.112 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2523824.208 | 1019273.876 | 1280558.564 | 16313184.066 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2523824.260 | 1019273.885 | 1280558.615 | 16313184.074 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2523824.260 | 1019273.885 | 1280558.615 | 16313184.074 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2523824.219 | 1019273.821 | 1280558.573 | 16313184.011 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2523824.226 | 1019273.845 | 1280558.580 | 16313184.034 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_S-DO9916-3NW-30MAR2020.jpg | NW | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_S-DO9916-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_S-DO9916-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 T **NGS Name:** 4308 T

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9917 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 36 | 117 N | 30 W | 445334.42 | 942356.89 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 T 2011

IN HUTCHINSON, 1.5 MILES WEST ALONG TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 123.6, 213.2 FEET EAST OF SHADY RIDGE ROAD, 71.3 FEET NORTH OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7, 44.7 FEET WEST OF A LIGHT POLE, 6.6 FEET NORTH OF A BIKE PATH, 1.6 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.604 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1058.574 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.604 | | | 968.902 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1058.604 | | | 968.902 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1058.561 | .131 | | 969.142 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1058.499 | .262 | | 968.974 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.675 12B = -89.665 09 = -89.524 03 = -89.432**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 34.42010 | 94 23 56.88903 | 560698.226 | 259337.992 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 34.42010 | 94 23 56.88903 | 560698.226 | 259337.992 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 34.41956 | 94 23 56.88939 | 560698.200 | 259337.938 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 34.41970 | 94 23 56.88956 | 560698.188 | 259337.952 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521230.765 | 1018375.910 | 1277954.737 | 16312318.377 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2521230.765 | 1018375.910 | 1277954.737 | 16312318.377 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521230.739 | 1018375.856 | 1277954.710 | 16312318.322 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521230.727 | 1018375.870 | 1277954.698 | 16312318.337 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_T-DO9917-3N-03MAY2011.jpg | N | May 3, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_T-DO9917-2-03MAY2011.jpg | | May 3, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_T-DO9917-1-03MAY2011.jpg | | May 3, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 U
**NGS Name:** 4308 U
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9919 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 117 N | 30 W | 445334.65 | 942445.97 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 28 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2011)
**Stamping:** 4308 U 2011

2.2 MILES NORTHWEST OF HUTCHINSON, 2.15 MILES WEST ALONG TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22 / TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 124.25, 60.8 FEET SOUTH OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7, 39.7 FEET NORTH OF A STATE TRAIL, 35.2 FEET WEST OF ENTRANCE NUMBER 20641, 1.7 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.245 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1047.222 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.245 | | | 957.587 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1047.245 | | | 957.587 | .011 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1047.209 | .131 | | 957.843 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1047.183 | .262 | | 957.711 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.623 12B = -89.616 09 = -89.472 03 = -89.380**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 34.64736 | 94 24 45.97405 | 557164.387 | 259351.141 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 34.64736 | 94 24 45.97405 | 557164.387 | 259351.141 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 34.64733 | 94 24 45.97411 | 557164.383 | 259351.138 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 34.64705 | 94 24 45.97454 | 557164.352 | 259351.110 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2517697.476 | 1018416.473 | 1274422.904 | 16312402.570 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2517697.476 | 1018416.473 | 1274422.904 | 16312402.570 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2517697.472 | 1018416.470 | 1274422.899 | 16312402.567 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2517697.441 | 1018416.442 | 1274422.868 | 16312402.539 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_U-DO9919-3S-16MAY2011.jpg | S | May 16, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_U-DO9919-2-16MAY2011.jpg | | May 16, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_U-DO9919-1-16MAY2011.jpg | | May 16, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 V
**NGS Name:** 4308 V
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9920 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 117 N | 30 W | 445337.73 | 942511.54 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 V 2011

2.5 MILES NORTHWEST OF HUTCHINSON, 2.55 MILES WEST ALONG TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 124.65, 86.7 FEET EAST OF ULM AVENUE, 70.0 FEET NORTH OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7, 22.3 FEET SOUTH OF A FRONTAGE ROAD, 17.7 FEET EAST OF THE NORTHEAST CORNER OF CABLE BOX NUMBER 70-35-06, 1.8 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.885 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1062.869 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.885 | .262 | | 973.302 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1062.885 | | | 973.269 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1062.885 | | | 973.269 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1062.859 | .131 | | 973.522 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1062.810 | .262 | | 973.371 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.590 12B = -89.580 09 = -89.436 03 = -89.347**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 37.72560 | 94 25 11.53764 | 555323.172 | 259658.003 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 53 37.72580 | 94 25 11.53780 | 555323.160 | 259658.024 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 37.72580 | 94 25 11.53780 | 555323.160 | 259658.024 | .007 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 37.72526 | 94 25 11.53739 | 555323.190 | 259657.969 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 37.72551 | 94 25 11.53825 | 555323.128 | 259657.994 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515858.876 | 1018737.580 | 1272588.762 | 16312746.303 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2515858.864 | 1018737.600 | 1272588.751 | 16312746.324 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2515858.864 | 1018737.600 | 1272588.751 | 16312746.324 | .007 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515858.893 | 1018737.545 | 1272588.779 | 16312746.268 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515858.832 | 1018737.571 | 1272588.718 | 16312746.295 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_V-DO9920-3N-30MAR2020.jpg | N | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_V-DO9920-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_V-DO9920-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 W
**NGS Name:** 4308 W
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9921 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 34 | 117 N | 30 W | 445354.82 | 942559.82 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 36 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 W 2011

3.3 MILES NORTHWEST OF HUTCHINSON, 3.3 MILES WEST AND NORTHWEST ALONG TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 125.45, 107.9 FEET SOUTHWEST OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7, 61.5 FEET SOUTHEAST OF COUNTY ROAD 115/ VALE AVENUE, 19.5 FEET NORTHEAST OF A BIKE PATH, 1.7 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.087 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1061.077 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.087 | | | 971.566 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1061.087 | | | 971.566 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1061.087 | .131 | | 971.822 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1061.021 | .262 | | 971.681 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.495 12B = -89.491 09 = -89.340 03 = -89.255**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 54.82286 | 94 25 59.81813 | 551843.114 | 261380.809 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 54.82286 | 94 25 59.81813 | 551843.114 | 261380.809 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 54.82258 | 94 25 59.81912 | 551843.042 | 261380.780 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 54.82259 | 94 25 59.81861 | 551843.079 | 261380.781 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2512392.622 | 1020487.162 | 1269145.046 | 16314538.244 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2512392.622 | 1020487.162 | 1269145.046 | 16314538.244 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2512392.551 | 1020487.134 | 1269144.975 | 16314538.217 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2512392.587 | 1020487.135 | 1269145.011 | 16314538.217 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_W-DO9921-3SW-03MAY2011.jpg | SW | May 3, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_W-DO9921-2-03MAY2011.jpg | | May 3, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_W-DO9921-1-03MAY2011.jpg | | May 3, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 X
**NGS Name:** 4308 X
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9922 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 117 N | 30 W | 445440.28 | 942656.25 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 X 2011

4.2 MILES NORTHWEST OF HUTCHINSON, 4.45 MILES WEST AND NORTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 126.6, 70.2 FEET NORTHEAST OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7, 16.4 FEET NORTHWEST OF A FIELD ENTRANCE, 2.2 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.514 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1061.514 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.461 | .262 | | 972.144 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1061.514 | | | 972.199 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1061.514 | | | 972.199 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1061.514 | .131 | | 972.429 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1061.455 | .262 | | 972.291 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.317 12B = -89.317 09 = -89.163 03 = -89.084**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 40.27663 | 94 26 56.25251 | 547770.203 | 265974.845 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 54 40.27623 | 94 26 56.25303 | 547770.165 | 265974.804 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 40.27623 | 94 26 56.25303 | 547770.165 | 265974.804 | .007 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 40.27592 | 94 26 56.25432 | 547770.072 | 265974.773 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 40.27593 | 94 26 56.25339 | 547770.139 | 265974.773 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508355.858 | 1025112.210 | 1265166.507 | 16319211.959 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2508355.820 | 1025112.169 | 1265166.469 | 16319211.919 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2508355.820 | 1025112.169 | 1265166.469 | 16319211.919 | .007 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508355.727 | 1025112.138 | 1265166.376 | 16319211.890 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508355.794 | 1025112.139 | 1265166.442 | 16319211.889 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_X-DO9922-3NE-30MAR2020.jpg | NE | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_X-DO9922-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_X-DO9922-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 Y **NGS Name:** 4308 Y

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9924 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 28 | 117 N | 30 W | 445455.72 | 942731.20 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 Y 2011

4.8 MILES NORTHWEST OF HUTCHINSON, 5.0 MILES WEST AND NORTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22 / TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 127.1, 106.7 FEET SOUTHWEST OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7, 17.4 FEET NORTHEAST OF A BIKE PATH, 1.6 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.847 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1069.847 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.847 | | | 980.602 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1069.847 | | | 980.602 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1069.847 | .131 | | 980.835 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1069.860 | .262 | | 980.776 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.242 12B = -89.242 09 = -89.088 03 = -89.012**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 55.71751 | 94 27 31.20034 | 545251.641 | 267533.178 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 55.71751 | 94 27 31.20034 | 545251.641 | 267533.178 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 55.71735 | 94 27 31.20088 | 545251.602 | 267533.162 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 55.71712 | 94 27 31.20078 | 545251.609 | 267533.138 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505849.698 | 1026689.881 | 1262680.509 | 16320820.199 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2505849.698 | 1026689.881 | 1262680.509 | 16320820.199 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505849.660 | 1026689.865 | 1262680.470 | 16320820.183 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505849.666 | 1026689.841 | 1262680.477 | 16320820.160 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Y-DO9924-3SW-03MAY2011.jpg | SW | May 3, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Y-DO9924-2-03MAY2011.jpg | | May 3, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Y-DO9924-1-03MAY2011.jpg | | May 3, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4308 Z
**NGS Name:** 4308 Z
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9925 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 29 | 117 N | 30 W | 445512.81 | 942800.81 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2020 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** 4308 Z 2011

5.3 MILES NORTHWEST OF HUTCHINSON, 5.5 MILES WEST AND NORTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 127.65, 75.3 FEET NORTHEAST OF TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7, 18.8 FEET NORTHWEST OF A FIELD ENTRANCE, 2.0 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1075.903 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1075.897 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1075.887 | .262 | | 986.717 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1075.903 | | | 986.740 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1075.903 | | | 986.740 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1075.884 | .131 | | 986.953 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1075.871 | .262 | | 986.858 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.170 12B = -89.170 09 = -89.012 03 = -88.943**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 12.81199 | 94 28 00.81267 | 543117.050 | 269260.075 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 55 12.81244 | 94 28 00.81367 | 543116.978 | 269260.120 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 55 12.81244 | 94 28 00.81367 | 543116.978 | 269260.120 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 12.81172 | 94 28 00.81404 | 543116.951 | 269260.047 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 12.81202 | 94 28 00.81405 | 543116.951 | 269260.078 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2503728.767 | 1028433.116 | 1260581.686 | 16322589.204 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2503728.696 | 1028433.162 | 1260581.615 | 16322589.250 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2503728.696 | 1028433.162 | 1260581.615 | 16322589.250 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2503728.669 | 1028433.089 | 1260581.587 | 16322589.178 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2503728.668 | 1028433.119 | 1260581.587 | 16322589.208 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Z-DO9925-3NE-30MAR2020.jpg | NE | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Z-DO9925-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4308_Z-DO9925-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 A

**NGS Name:** 4309 A

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1551 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 29 | 115 N | 28 W | 444422.00 | 941324.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2006 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1987) **Stamping:** 4309 A 1985

4.0 MILES SOUTHWEST OF GLENCOE, 0.65 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 115.75, 113.5 FEET SOUTH OF TRUNK HIGHWAY 212, 76.8 FEET SOUTHWEST OF A RIGHT-OF-WAY POST, 3.2 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.992 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.582 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1020.582 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1020.582 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1985 | VLORD |

**Geoid Separations(ft): GEOID18 = -90.886 12B = -90.886 09 = -90.787 03 = -90.623**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4309 B

**NGS Name:** 4309 B

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 30 | 115 N | 28 W | 444422.00 | 941430.00 | 2 | |

**NGS ACRN:** PQ1550 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

**Monument Type**
UNKNOWN

**Disk Type**
VERTICAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (1986)

**Stamping:** 4309 B 1986

5.5 MILES EAST OF BROWNTON, 6.7 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 212 MILEPOINT 114.8, 149.0 FEET SOUTH OF TRUNK HIGHWAY 212, 20.0 FEET EAST OF THE EAST ENTRANCE, 1.3 FEET WEST OF THE NORTHWEST CORNER OF A LARGE SHED.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.258 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.838 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.869 12B = -90.869 09 = -90.761 03 = -90.600**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_B-PQ1550-3S-22APR2011.jpg | S | Apr 22, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_B-PQ1550-2-22APR2011.jpg | | Apr 22, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_B-PQ1550-1-22APR2011.jpg | | Apr 22, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4309 B RESET



**Mn/DOT Name:** 4309 B RESET
**NGS Name:** 4309 B RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2203 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 30 | 115 N | 28 W | 444422.00 | 941430.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015)
**Stamping:** 4309 B RESET 2015

5.5 MILES EAST OF BROWNTON, 6.7 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 114.8, 149.0 FEET SOUTH OF TRUNK HIGHWAY 212, 20.0 FEET EAST OF AN ENTRANCE, 1.3 FEET WEST OF THE NORTHWEST CORNER OF A SHED.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.097 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1021.097 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

**Geoid Separations(ft): GEOID18 = -90.869 12B = -90.873 09 = -90.764 03 = -90.600**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_B_RESET-DQ2203-3S-15APR2015.jpg | S | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_B_RESET-DQ2203-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_B_RESET-DQ2203-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 C

**NGS Name:** 4309 C

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1546 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 26 | 115 N | 29 W | 444410.00 | 941720.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1986)

**Stamping:** 4309 C 1986

3.0 MILES EAST OF BROWNTON, 4.25 MILES EAST ON TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, AT TRUNK HIGHWAY 212 MILEPOINT 112.35, 68.2 FEET SOUTHEAST OF TRUNK HIGHWAY 212, 61.0 FEET NORTHEAST OF AN ENTRANCE, 4.0 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.451 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.015 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.817 12B = -90.813 09 = -90.702 03 = -90.544**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4309 D **NGS Name:** 4309 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1545 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 115 N | 29 W | 444353.20 | 941818.35 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** 4309 D 1986

2.0 MILES EAST OF BROWNTON, 3.4 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 111.5, 300.0 FEET SOUTH ON DRIVEWAY NUMBER 15485, 12.4 FEET WEST OF DRIVEWAY NUMBER 15485, 1.8 FEET EAST OF A WITNESS SIGN ON A POWER POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.732 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1013.732 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1013.732 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.292 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.564 | .262 | | 922.757 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1013.663 | .262 | | 922.971 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.813 12B = -90.807 09 = -90.695 03 = -90.538**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 53.19904 | 94 18 18.35139 | 585307.820 | 200556.717 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 53.19843 | 94 18 18.35197 | 585307.778 | 200556.655 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2545380.918 | 959411.435 | 1301371.655 | 16253072.346 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2545380.876 | 959411.373 | 1301371.612 | 16253072.285 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_D-PQ1545-3S-15APR2015.jpg | S | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_D-PQ1545-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_D-PQ1545-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 E
**NGS Name:** 4309 E
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1544 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 115 N | 29 W | 444355.85 | 941904.64 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43010 | FLUSH | NO MAG MATERIAL |

**Monument Type:** BRIDGE ABUTMENT
**Disk Type:** VERTICAL CONTROL DISK
**Mon. Agency:** MNDT

**Description:** (1986) **Stamping:** 4309 E 1986

1.25 MILES EAST OF BROWNTON, IN A BRIDGE ABUTMENT IN THE SOUTHEAST CORNER OF TRUNK HIGHWAY 212 BRIDGE NUMBER 43010 OVER BUFFALO CREEK, 2.75 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 110.85, 25.5 FEET SOUTH OF TRUNK HIGHWAY 212.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.795 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1015.795 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1015.795 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.352 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.730 | .262 | | 924.946 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1015.644 | .262 | | 924.978 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.791 12B = -90.784 09 = -90.666 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.84964 | 94 19 04.64475 | 581964.699 | 200811.954 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.84930 | 94 19 04.64554 | 581964.642 | 200811.919 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542040.240 | 959692.588 | 1298035.347 | 16253394.505 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542040.183 | 959692.553 | 1298035.289 | 16253394.471 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_E-PQ1544-3W-15APR2015.jpg | W | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_E-PQ1544-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_E-PQ1544-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 F **NGS Name:** 4309 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1542 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 33 | 115 N | 29 W | 444355.27 | 942007.49 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2025 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1990) **Stamping:** 4309 F 1986

0.5 MILE EAST OF BROWNTON, 1.95 MILES EAST-NORTHEAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 110.05, 123.0 FEET NORTH-NORTHWEST OF TRUNK HIGHWAY 212, 60.5 FEET SOUTH OF COUNTY ROAD 32, 47.96 FEET EAST-NORTHEAST OF STATION STRE MNDT, 37.4 FEET EAST OF STRE MNDT RM 1, 2.8 FEET WEST OF A POWER POLE, 0.8 FOOT SOUTH-SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.972 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1039.968 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1039.968 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1039.968 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2005 | VBRWN |
| 1039.968 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.476 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.949 | .262 | | 949.191 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1039.985 | .262 | | 949.230 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1039.886 | .262 | | 949.257 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.758 12B = -90.751 09 = -90.630 03 = -90.476**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.27240 | 94 20 07.49448 | 577427.623 | 200736.404 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 55.27216 | 94 20 07.49518 | 577427.573 | 200736.379 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.27272 | 94 20 07.49552 | 577427.548 | 200736.436 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537503.204 | 959652.264 | 1293499.040 | 16253409.991 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2537503.153 | 959652.240 | 1293498.989 | 16253409.968 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537503.128 | 959652.297 | 1293498.965 | 16253410.025 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_F-PQ1542-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_F-PQ1542-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_F-PQ1542-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 G **NGS Name:** 4309 G

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1541 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 29 | 115 N | 29 W | 444407.74 | 942102.61 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43520 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4309 G 1986

AT THE NORTHEAST EDGE OF BROWNTON, IN THE SOUTHEAST CORNER OF THE BRIDGE ABUTMENT OF COUNTY ROAD 25 BRIDGE NUMBER 43520 OVER BUFFALO CREEK, 0.2 MILE NORTH ALONG 5TH AVENUE NORTH (COUNTY ROAD 25) FROM THE JUNCTION OF DIVISION STREET AND 5TH AVENUE NORTH IN BROWNTON, 22.5 FEET EAST OF COUNTY ROAD 25(5TH AVENUE NORTH).

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.715 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1018.715 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1018.715 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1018.715 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2005 | VBRWN |
| 1018.715 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.148 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.728 | .262 | | 928.020 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1018.653 | .262 | | 928.079 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.712 12B = -90.708 09 = -90.574 03 = -90.426**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 07.73517 | 94 21 02.60783 | 573444.449 | 201984.419 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 07.73538 | 94 21 02.60894 | 573444.368 | 201984.440 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533530.264 | 960931.020 | 1289542.889 | 16254737.274 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533530.184 | 960931.042 | 1289542.809 | 16254737.297 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_G-PQ1541-3E-21APR2011.jpg | E | Apr 21, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_G-PQ1541-2-21APR2011.jpg | | Apr 21, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_G-PQ1541-1-21APR2011.jpg | | Apr 21, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 H **NGS Name:** 4309 H

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 29 | 115 N | 29 W | 444403.97 | 941930.96 | 2 | 3 |

**NGS ACRN:** PQ1543 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43521 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** 4309 H 1986

1.0 MILE EAST OF BROWNTON, IN A BRIDGE ABUTMENT IN THE SOUTHEAST CORNER OF ORANGE AVENUE BRIDGE NUMBER 43521 OVER BUFFALO CREEK, 2.45 MILES EAST-NORTHEAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 TO TRUNK HIGHWAY 212 MILEPOINT 10.5, THEN 0.1 MILE NORTH ON ORANGE AVENUE, 16.5 FEET EAST OF ORANGE AVENUE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.690 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1014.690 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1014.690 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.243 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.617 | .262 | | 923.856 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1014.594 | .262 | | 923.955 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.764 12B = -90.761 09 = -90.640 03 = -90.485**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 03.96858 | 94 19 30.95740 | 580062.008 | 201626.947 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 03.96925 | 94 19 30.95888 | 580061.901 | 201627.014 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540144.137 | 960522.237 | 1296149.962 | 16254247.249 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540144.030 | 960522.305 | 1296149.856 | 16254247.319 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_H-PQ1543-3N-21APR2011.jpg | N | Apr 21, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_H-PQ1543-2-21APR2011.jpg | | Apr 21, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_H-PQ1543-1-21APR2011.jpg | | Apr 21, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 M

**NGS Name:** 4309 M

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 33 | 115 N | 30 W | 444324.90 | 942641.38 | 2 | |

**NGS ACRN:** DK3081 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1990) **Stamping:** 4309 M 1990

1.7 MILES EAST OF STEWART, 1.7 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 104.5, 108.2 FEET NORTH-NORTHWEST OF TRUNK HIGHWAY 212, 82.0 FEET EAST-SOUTHEAST OF A TELEPHONE POLE, 14.7 FEET SOUTH-SOUTHEAST OF THE SOUTH RAIL OF THE RAILROAD TRACKS, 14.0 FEET EAST-NORTHEAST OF AN ENTRANCE, 4.4 FEET NORTHWEST OF A WITNESS POST.

**Station Notes**

THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.458 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1051.468 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.005 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

**Geoid Separations(ft): GEOID18 = -90.577 12B = -90.581 09 = -90.446 03 = -90.315**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4309 N **NGS Name:** 4309 N

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK3082 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 115 N | 30 W | 444328.13 | 942454.05 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1990) **Stamping:** 4309 N 1990

2.9 MILES WEST OF BROWNTON, 2.2 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, AT TRUNK HIGHWAY 212 MILEPOINT 105.95, 84.7 FEET WEST OF A POWER POLE, 71.5 FEET SOUTH OF TRUNK HIGHWAY 212, 6.5 FEET EAST OF A FIELD ENTRANCE, 2.8 FEET NORTH OF A FENCE POST, 3.9 FEET NORTHWEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.772 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1045.753 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.306 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.690 | .262 | | 955.195 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.633 12B = -90.633 09 = -90.495 03 = -90.357**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.13066 | 94 24 54.05123 | 556747.599 | 197921.966 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2516804.198 | 956998.681 | 1272772.769 | 16251011.699 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_N-DK3082-3S-18APR2011.jpg | S | Apr 18, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_N-DK3082-2-18APR2011.jpg | | Apr 18, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_N-DK3082-1-18APR2011.jpg | | Apr 18, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4309 N RESET



**Mn/DOT Name:** 4309 N RESET
**NGS Name:** 4309 N RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9870 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 115 N | 30 W | 444328.13 | 942454.05 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2015)
**Stamping:** 4309 N RESET 2015

2.9 MILES WEST OF BROWNTON, 2.2 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 105.95, 84.7 FEET WEST OF A POWER POLE, 71.5 FEET SOUTH OF TRUNK HIGHWAY 212, 6.5 FEET EAST OF A FIELD ENTRANCE.

**Station Notes**
THE FARMER ASKED FOR THERE TO BE NO SIGN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.641 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1045.641 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.638 | .262 | | 955.005 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1045.641 | | | 954.982 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1045.641 | .131 | | 955.198 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1045.641 | | | 954.982 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1045.598 | .262 | | 954.965 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.633 12B = -90.633 09 = -90.495 03 = -90.357**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.13098 | 94 24 54.05022 | 556747.672 | 197921.998 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 28.13121 | 94 24 54.05067 | 556747.639 | 197922.021 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 28.13121 | 94 24 54.05067 | 556747.639 | 197922.021 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 28.13059 | 94 24 54.05014 | 556747.678 | 197921.959 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.13102 | 94 24 54.05114 | 556747.605 | 197922.002 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2516804.271 | 956998.713 | 1272772.843 | 16251011.730 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2516804.239 | 956998.736 | 1272772.811 | 16251011.754 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2516804.239 | 956998.736 | 1272772.811 | 16251011.754 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2516804.277 | 956998.673 | 1272772.848 | 16251011.690 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2516804.205 | 956998.717 | 1272772.777 | 16251011.735 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# 4309 N RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_N_RESET-DP9870-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_N_RESET-DP9870-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_N_RESET-DP9870-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 P
**NGS Name:** 4309 P
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK3083 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 36 | 115 N | 30 W | 444327.13 | 942347.79 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1990) **Stamping:** 4309 P 1990

2.0 MILES WEST OF BROWNTON, 1.3 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 106.85, 170.0 FEET SOUTH OF TRUNK HIGHWAY 212, 118.4 FEET SOUTHWEST OF A POWER POLE NUMBER 476, 76.2 FEET SOUTH OF CABLE MARKER POST NUMBER 70201, 34.0 FEET WEST OF COUNTY ROAD 54 (TAGUS AVENUE), 4.9 FEET NORTH OF A RIGHT-OF-WAY AND A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.709 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1034.709 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1034.709 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1034.673 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.227 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.745 | .262 | | 944.076 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1034.791 | .262 | | 944.122 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1034.709 | | | 944.024 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1034.709 | .131 | | 944.280 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1034.709 | | | 944.043 | .010 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1034.726 | .262 | | 944.057 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1034.709 | | | 944.024 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1034.709 | | | 944.024 | .011 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1034.676 | .131 | | 944.280 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1034.621 | .262 | | 944.086 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.669 12B = -90.669 09 = -90.535 03 = -90.394**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 27.13461 | 94 23 47.79150 | 561532.009 | 197834.457 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 27.13495 | 94 23 47.79098 | 561532.046 | 197834.491 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 27.13494 | 94 23 47.79138 | 561532.017 | 197834.490 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 27.13481 | 94 23 47.79158 | 561532.003 | 197834.477 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 27.13470 | 94 23 47.79059 | 561532.074 | 197834.466 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 27.13494 | 94 23 47.79138 | 561532.017 | 197834.490 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 27.13494 | 94 23 47.79138 | 561532.017 | 197834.490 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 27.13459 | 94 23 47.79245 | 561531.940 | 197834.455 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 27.13449 | 94 23 47.79170 | 561531.994 | 197834.445 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 27.13449 | 94 23 47.79170 | 561531.994 | 197834.445 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521587.267 | 956874.067 | 1277553.096 | 16250828.281 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2521587.304 | 956874.101 | 1277553.134 | 16250828.315 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2521587.275 | 956874.100 | 1277553.105 | 16250828.315 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2521587.261 | 956874.087 | 1277553.090 | 16250828.302 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2521587.332 | 956874.075 | 1277553.161 | 16250828.289 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2521587.275 | 956874.100 | 1277553.105 | 16250828.315 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2521587.275 | 956874.100 | 1277553.105 | 16250828.315 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521587.198 | 956874.065 | 1277553.027 | 16250828.280 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521587.252 | 956874.055 | 1277553.081 | 16250828.270 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2521587.252 | 956874.055 | 1277553.081 | 16250828.270 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_P-DK3083-3W-17SEP2025.jpg | W | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_P-DK3083-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_P-DK3083-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 Q **NGS Name:** 4309 Q

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9871 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 33 | 115 N | 30 W | 444324.04 | 942630.16 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 Q 2015

2.4 MILES EAST OF STEWART, 1.8 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 104.6, 64.5 FEET SOUTH OF TRUNK HIGHWAY 212, 32.2 FEET WEST OF A FIELD ENTRANCE, 1.5 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.754 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1047.754 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.754 | | | 957.177 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1047.754 | .131 | | 957.393 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1047.754 | | | 957.177 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1047.724 | .262 | | 957.137 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.584 12B = -90.587 09 = -90.453 03 = -90.318**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 24.04244 | 94 26 30.16109 | 549809.199 | 197490.450 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 24.04244 | 94 26 30.16109 | 549809.199 | 197490.450 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 24.04218 | 94 26 30.16035 | 549809.252 | 197490.424 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 24.04224 | 94 26 30.16157 | 549809.164 | 197490.430 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2509863.411 | 956621.046 | 1265829.058 | 16250719.542 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2509863.411 | 956621.046 | 1265829.058 | 16250719.542 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2509863.464 | 956621.019 | 1265829.110 | 16250719.515 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2509863.376 | 956621.025 | 1265829.022 | 16250719.522 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_Q-DP9871-3S-19MAY2015.jpg | S | May 19, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_Q-DP9871-2-19MAY2015.jpg | | May 19, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_Q-DP9871-1-19MAY2015.jpg | | May 19, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 R
**NGS Name:** 4309 R
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9872 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 115 N | 29 W | 444328.86 | 942100.73 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 44 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 R 2015

0.5 MILE SOUTH OF BROWNTON, 1.0 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 109.15, 72.8 FEET SOUTH OF TRUNK HIGHWAY 212, 138.0 FEET EAST OF COUNTY ROAD 52(PLUM AVENUE), 6.0 FEET NORTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.006 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1038.006 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.020 | .262 | | 947.259 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1037.921 | .262 | | 947.160 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1038.006 | | | 947.245 | .019 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1038.006 | .131 | | 947.459 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1038.006 | | | 947.245 | .019 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1037.941 | .262 | | 947.186 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.761 12B = -90.754 09 = -90.630 03 = -90.482**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.85885 | 94 21 00.72748 | 573593.880 | 198047.592 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 28.85883 | 94 21 00.72746 | 573593.881 | 198047.590 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 28.85922 | 94 21 00.72780 | 573593.857 | 198047.630 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 28.85922 | 94 21 00.72780 | 573593.857 | 198047.630 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 28.85910 | 94 21 00.72708 | 573593.909 | 198047.618 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.85903 | 94 21 00.72828 | 573593.822 | 198047.610 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533649.122 | 956993.578 | 1289613.288 | 16250799.413 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2533649.123 | 956993.576 | 1289613.289 | 16250799.411 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2533649.099 | 956993.615 | 1289613.265 | 16250799.451 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 2533649.099 | 956993.615 | 1289613.265 | 16250799.451 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 2533649.151 | 956993.603 | 1289613.317 | 16250799.438 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533649.064 | 956993.596 | 1289613.230 | 16250799.432 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_R-DP9872-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_R-DP9872-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_R-DP9872-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 S
**NGS Name:** 4309 S
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9873 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 115 N | 29 W | 444355.59 | 941859.82 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 14 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 S 2015

1.6 MILES EAST OF BROWNTON, 2.8 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 110.95, 54.5 FEET SOUTH OF TRUNK HIGHWAY 212, 60.5 FEET EAST OF A FIELD ENTRANCE, 51.3 FEET NORTH-NORTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.232 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1011.232 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.225 | .262 | | 920.435 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1011.232 | | | 920.431 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1011.232 | .131 | | 920.651 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1011.232 | | | 920.431 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1011.150 | .262 | | 920.366 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.794 12B = -90.784 09 = -90.669 03 = -90.515**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.58538 | 94 18 59.81863 | 582313.213 | 200786.543 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 55.58565 | 94 18 59.81883 | 582313.199 | 200786.570 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 55.58565 | 94 18 59.81883 | 582313.199 | 200786.570 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 55.58520 | 94 18 59.81814 | 582313.249 | 200786.525 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.58545 | 94 18 59.81930 | 582313.165 | 200786.550 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542388.509 | 959664.474 | 1298383.175 | 16253362.117 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2542388.495 | 959664.502 | 1298383.161 | 16253362.144 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2542388.495 | 959664.502 | 1298383.161 | 16253362.144 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2542388.544 | 959664.456 | 1298383.210 | 16253362.098 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542388.460 | 959664.482 | 1298383.127 | 16253362.124 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_S-DP9873-3S-21SEP2025.jpg | S | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_S-DP9873-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_S-DP9873-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 T **NGS Name:** 4309 T

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9874 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 26 | 115 N | 29 W | 444420.69 | 941645.60 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 24 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 T 2015

6.0 MILES SOUTHWEST OF GLENCOE, 3.5 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 SOUTH (THE JUNCTION IS 3.5 MILES SOUTHWEST OF GLENCOE), AT TRUNK HIGHWAY 212 MILEPOINT 112.95, 70.4 FEET SOUTH OF TRUNK HIGHWAY 212, 70.0 FEET EAST OF A FIELD ENTRANCE, 4.3 FEET NORTH OF A FENCE LINE, 2.9 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.014 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1034.017 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.017 | | | 943.213 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1034.017 | .131 | | 943.430 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1034.017 | | | 943.213 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1033.955 | .262 | | 943.135 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.817 12B = -90.820 09 = -90.705 03 = -90.548**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 20.69354 | 94 16 45.59812 | 591991.892 | 203369.340 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 20.69354 | 94 16 45.59812 | 591991.892 | 203369.340 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 20.69320 | 94 16 45.59739 | 591991.945 | 203369.306 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 20.69335 | 94 16 45.59860 | 591991.858 | 203369.321 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552085.906 | 962171.779 | 1308108.730 | 16255749.470 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2552085.906 | 962171.779 | 1308108.730 | 16255749.470 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2552085.959 | 962171.744 | 1308108.781 | 16255749.434 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552085.871 | 962171.759 | 1308108.694 | 16255749.451 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_T-DP9874-3S-12MAY2015.jpg | S | May 12, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_T-DP9874-2-12MAY2015.jpg | | May 12, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_T-DP9874-1-12MAY2015.jpg | | May 12, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 U **NGS Name:** 4309 U

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9875 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 25 | 115 N | 29 W | 444421.34 | 941545.16 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 39 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 U 2015

5.5 MILES SOUTHWEST OF GLENCOE, 2.5 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 SOUTH (THE JUNCTION IS 3.5 MILES SOUTHWEST OF GLENCOE), AT TRUNK HIGHWAY 212 MILEPOINT 113.8, 59.8 FEET SOUTH OF TRUNK HIGHWAY 212, 19.6 FEET EAST OF A FIELD ENTRANCE, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.521 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1027.521 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.521 | | | 936.711 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1027.521 | .131 | | 936.931 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1027.521 | | | 936.711 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1027.485 | .262 | | 936.639 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.846 09 = -90.731 03 = -90.571**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.34229 | 94 15 45.15783 | 596354.408 | 203454.463 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 21.34229 | 94 15 45.15783 | 596354.408 | 203454.463 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 21.34196 | 94 15 45.15800 | 596354.396 | 203454.429 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.34210 | 94 15 45.15830 | 596354.374 | 203454.443 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2556448.483 | 962223.016 | 1312470.707 | 16255747.044 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2556448.483 | 962223.016 | 1312470.707 | 16255747.044 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2556448.470 | 962222.983 | 1312470.694 | 16255747.011 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2556448.449 | 962222.997 | 1312470.673 | 16255747.026 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_U-DP9875-3S-19MAY2015.jpg | S | May 19, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_U-DP9875-2-19MAY2015.jpg | | May 19, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_U-DP9875-1-19MAY2015.jpg | | May 19, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 V **NGS Name:** 4309 V

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 30 | 115 N | 28 W | 444422.19 | 941456.84 | 2 | C |

**NGS ACRN:** DP9876 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 V 2015

5.0 MILES SOUTHWEST OF GLENCOE, 1.9 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 SOUTH (THE JUNCTION IS 3.5 MILES SOUTHWEST OF GLENCOE), AT TRUNK HIGHWAY 212 MILEPOINT 114.5, 65.5 FEET SOUTH OF TRUNK HIGHWAY 212, 41.8 FEET WEST OF A FIELD ENTRANCE, 4.7 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1007.465 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1007.462 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1007.462 | | | 916.616 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1007.462 | .131 | | 916.832 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1007.462 | | | 916.616 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1007.419 | .262 | | 916.557 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.859 12B = -90.863 09 = -90.751 03 = -90.590**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 22.19498 | 94 14 56.83677 | 599841.988 | 203556.993 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 22.19498 | 94 14 56.83677 | 599841.988 | 203556.993 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 22.19445 | 94 14 56.83633 | 599842.020 | 203556.939 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 22.19479 | 94 14 56.83725 | 599841.953 | 203556.973 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559936.380 | 962298.450 | 1315958.538 | 16255779.567 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2559936.380 | 962298.450 | 1315958.538 | 16255779.567 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2559936.411 | 962298.397 | 1315958.570 | 16255779.513 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559936.345 | 962298.431 | 1315958.504 | 16255779.549 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_V-DP9876-3S-12MAY2015.jpg | S | May 12, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_V-DP9876-2-12MAY2015.jpg | | May 12, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_V-DP9876-1-12MAY2015.jpg | | May 12, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4309 W **NGS Name:** 4309 W

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9877 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 29 | 115 N | 28 W | 444423.36 | 941400.54 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 19 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4309 W 2015

4.3 MILES SOUTHWEST OF GLENCOE, 1.1 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 SOUTH (THE JUNCTION IS 3.5 MILES SOUTHWEST OF GLENCOE), AT TRUNK HIGHWAY 212 MILEPOINT 115.25, 64.2 FEET NORTH OF TRUNK HIGHWAY 212, 40.5 FEET EAST OF A FIELD ENTRANCE, 5.7 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.273 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1014.270 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.270 | | | 923.436 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1014.270 | .131 | | 923.656 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1014.270 | | | 923.436 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1014.178 | .262 | | 923.299 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.876 12B = -90.879 09 = -90.774 03 = -90.610**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.35684 | 94 14 00.54325 | 603904.858 | 203694.228 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 23.35684 | 94 14 00.54325 | 603904.858 | 203694.228 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 23.35633 | 94 14 00.54317 | 603904.865 | 203694.176 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.35665 | 94 14 00.54376 | 603904.822 | 203694.208 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563999.758 | 962404.114 | 1320022.048 | 16255835.238 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2563999.758 | 962404.114 | 1320022.048 | 16255835.238 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2563999.763 | 962404.063 | 1320022.053 | 16255835.186 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563999.721 | 962404.095 | 1320022.011 | 16255835.220 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_W-DP9877-3N-12MAY2015.jpg | N | May 12, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_W-DP9877-2-12MAY2015.jpg | | May 12, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4309_W-DP9877-1-21MAY2015.jpg | | May 21, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 A

**NGS Name:** 4310 A

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1581 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 28 | 115 N | 28 W | 444429.00 | 941151.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1987)

**Stamping:** 4310 A 1987

3.0 MILES SOUTHWEST OF GLENCOE, 2.5 MILES WEST-SOUTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 117.05, 50.0 FEET NORTH-NORTHWEST OF NORTHBOUND TRUNK HIGHWAY 212, 35.0 FEET SOUTH-SOUTHEAST OF WESTBOUND TRUNK HIGHWAY 212, 22.0 FEET WEST-SOUTHWEST OF A WITNESS POST.

**Station Notes**

NEAR A DITCH BLOCK IN THE MEDIAN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.903 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.493 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

**Geoid Separations(ft): GEOID18 = -90.889 12B = -90.892 09 = -90.797 03 = -90.633**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4310 B **NGS Name:** 4310 B

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1580 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 22 | 115 N | 28 W | 444508.15 | 941020.70 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43001 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:** (1987) **Stamping:** 4310 B 1987

1.6 MILES SOUTHWEST OF GLENCOE, IN A BRIDGE ABUTMENT IN THE SOUTHEAST CORNER OF HAMLET AVENUE BRIDGE NUMBER 43001 OVER BUFFALO CREEK, 1.0 MILE SOUTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 22 NORTH AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 400.0 FEET SOUTH ON HAMLET AVENUE, 18.2 FEET EAST OF HAMLET AVENUE. STATION 4310 B WAS SET IN 1965, BUT NOT STAMPED AND USED UNTIL 1987.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.709 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 998.709 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 998.709 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.289 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 998.262 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4309 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.676 | .262 | | 907.833 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.846 12B = -90.843 09 = -90.758 03 = -90.597**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 08.15103 | 94 10 20.69687 | 619748.274 | 208314.725 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2579876.894 | 966900.910 | 1335949.786 | 16260135.491 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_B-PQ1580-3N-15APR2015.jpg | N | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_B-PQ1580-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_B-PQ1580-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 C
**NGS Name:** 4310 C
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1579 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 23 | 115 N | 28 W | 444523.92 | 941002.31 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1987 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | VERTICAL CONTROL DISK | MNDT |

**Description:** (1987) **Stamping:** 4310 C 1987

1.25 MILES SOUTHWEST OF GLENCOE, 0.65 MILE SOUTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 IN GLENCOE, 149.0 FEET SOUTH-SOUTHEAST OF THE SOUTHWEST CORNER OF THE MCLEOD COOP POWER BUILDING, 75.8 FEET NORTHWEST OF WESTBOUND TRUNK HIGHWAY 212, 44.5 FEET SOUTHEAST OF A FRONTAGE ROAD, 23.5 FEET WEST-SOUTHWEST OF A POWER POLE, 19.2 FEET EAST-NORTHEAST OF A TELEPHONE POLE, 1.0 FOOT SOUTH OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.144 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.724 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.121 | .262 | | 907.380 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.827 12B = -90.827 09 = -90.741 03 = -90.581**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 23.91903 | 94 10 02.31235 | 621065.889 | 209919.213 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581206.796 | 968494.941 | 1337298.886 | 16261712.689 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C-PQ1579-3N-25APR2011.jpg | N | Apr 25, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C-PQ1579-2-25APR2011.jpg | | Apr 25, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C-PQ1579-1-25APR2011.jpg | | Apr 25, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 C 1 **NGS Name:** 4310 C 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK7115 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 19 | 115 N | 27 W | 444511.88 | 940752.71 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2006 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | SURVEY DISK | MNDT |

**Description:** (2015) **Stamping:** 4310 C 1 2006

1.5 MILES SOUTHEAST OF GLENCOE, 0.55 MILE SOUTH ALONG MORNINGSIDE DRIVE FROM THE JUNCTION OF MORNINGSIDE DRIVE AND TRUNK HIGHWAY 212 IN GLENCOE, THEN CONTINUE 0.55 MILE SOUTH ON FALCON AVENUE, 45.0 FEET NORTH OF A POWER POLE, 28.0 FEET EAST OF FALCON AVENUE, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.684 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1010.684 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1010.684 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1010.680 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.743 | .262 | | 919.962 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1010.611 | .262 | | 919.916 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.781 12B = -90.777 09 = -90.695 03 = -90.544**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 11.88453 | 94 07 52.70906 | 630425.769 | 208755.997 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 11.88425 | 94 07 52.71040 | 630425.672 | 208755.968 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590556.359 | 967259.153 | 1346630.398 | 16260362.331 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590556.262 | 967259.125 | 1346630.301 | 16260362.304 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_1-DK7115-3E-27APR2011.jpg | E | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_1-DK7115-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_1-DK7115-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 C 2 **NGS Name:** 4310 C 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK7116 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 115 N | 27 W | 444436.38 | 940753.25 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2006 | 2015 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | SURVEY DISK | MNDT |

**Description:** (2006) **Stamping:** 4310 C 2 2006

2.1 MILES SOUTHEAST OF GLENCOE, 1.7 MILES SOUTH ALONG FALCON AVENUE FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND FALCON AVENUE IN GLENCOE, 57.0 FEET SOUTH OF A FIELD ENTRANCE, 32.0 FEET EAST OF FALCON AVENUE, 12.5 FEET SOUTH OF A POWER POLE NUMBER 40, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.076 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 999.076 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 999.076 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 999.073 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.040 | .262 | | 908.312 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.817 12B = -90.813 09 = -90.728 03 = -90.577**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 36.37707 | 94 07 53.24758 | 630409.073 | 205159.684 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590511.717 | 963663.462 | 1346541.573 | 16256768.297 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_2-DK7116-3NE-27APR2011.jpg | NE | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_2-DK7116-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_2-DK7116-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# 4310 C RESET



**Mn/DOT Name:** 4310 C RESET **NGS Name:** 4310 C RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9878 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 23 | 115 N | 28 W | 444523.92 | 941002.31 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4310 C RESET 2015

1.25 MILES SOUTHWEST OF GLENCOE, 0.65 MILE SOUTHWEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 118.85, 44.5 FEET SOUTHEAST OF A FRONTAGE ROAD, 75.8 FEET NORTHWEST OF WESTBOUND TRUNK HIGHWAY 212, 23.5 FEET WEST-SOUTHWEST OF A POWER POLE WITH A GUY WIRE, 1.5 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.079 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 998.075 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.075 | | | 907.272 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 998.075 | .131 | | 907.492 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 998.075 | | | 907.272 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 997.977 | .262 | | 907.150 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.827 12B = -90.827 09 = -90.741 03 = -90.581**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 23.91975 | 94 10 02.31229 | 621065.893 | 209919.286 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 45 23.91975 | 94 10 02.31229 | 621065.893 | 209919.286 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 45 23.91990 | 94 10 02.31210 | 621065.907 | 209919.301 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 23.91956 | 94 10 02.31276 | 621065.860 | 209919.266 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581206.800 | 968495.014 | 1337298.891 | 16261712.762 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2581206.800 | 968495.014 | 1337298.891 | 16261712.762 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2581206.814 | 968495.029 | 1337298.905 | 16261712.777 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2581206.766 | 968494.994 | 1337298.857 | 16261712.743 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# 4310 C RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_RESET-DP9878-3NW-15APR2015.jpg | NW | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_RESET-DP9878-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_C_RESET-DP9878-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 D
**NGS Name:** 4310 D
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 28 | 115 N | 28 W | 444432.64 | 941144.10 | 2 | C |

**NGS ACRN:** DP9879 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4310 D 2015

3.0 MILES SOUTHWEST OF GLENCOE, 2.4 MILES SOUTHWEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 117.2, 96.7 FEET NORTHWEST OF WESTBOUND TRUNK HIGHWAY 212, 3.8 FEET SOUTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.949 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1009.949 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.985 | .262 | | 919.099 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1009.949 | | | 919.073 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1009.949 | .131 | | 919.293 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1009.949 | | | 919.073 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1009.896 | .262 | | 919.007 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.886 12B = -90.889 09 = -90.794 03 = -90.630**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 32.63505 | 94 11 44.09809 | 613748.789 | 204684.557 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 44 32.63565 | 94 11 44.09797 | 613748.797 | 204684.618 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 32.63565 | 94 11 44.09797 | 613748.797 | 204684.618 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 32.63508 | 94 11 44.09791 | 613748.802 | 204684.560 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 32.63546 | 94 11 44.09848 | 613748.761 | 204684.598 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573850.028 | 963317.847 | 1329880.669 | 16256627.597 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2573850.037 | 963317.907 | 1329880.679 | 16256627.657 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2573850.037 | 963317.907 | 1329880.679 | 16256627.657 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2573850.041 | 963317.850 | 1329880.682 | 16256627.599 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573850.000 | 963317.888 | 1329880.642 | 16256627.638 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_D-DP9879-3NE-06MAY2024.jpg | NE | May 6, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_D-DP9879-2-06MAY2024.jpg | | May 6, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_D-DP9879-1-06MAY2024.jpg | | May 6, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# Geodetic Data Sheet (Feet)
## GSID Station # 103503

## 4310 E

04/28/2026
Sheet Help

**Mn/DOT Name:** 4310 E
**NGS Name:** 4310 E
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9880 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 22 | 115 N | 28 W | 444455.63 | 941052.54 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 39 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4310 E 2015

2.3 MILES SOUTHWEST OF GLENCOE, 1.55 MILES SOUTHWEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 118.05, 96.0 FEET NORTHWEST OF WESTBOUND TRUNK HIGHWAY 212, 5.0 FEET SOUTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.305 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1003.305 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.305 | | | 912.482 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1003.305 | .131 | | 912.702 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1003.305 | | | 912.482 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1003.220 | .262 | | 912.357 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.863 12B = -90.863 09 = -90.774 03 = -90.610**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 55.63059 | 94 10 52.53955 | 617457.322 | 207033.809 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 55.63059 | 94 10 52.53955 | 617457.322 | 207033.809 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 55.63013 | 94 10 52.53916 | 617457.350 | 207033.762 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 55.63040 | 94 10 52.54005 | 617457.286 | 207033.790 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577576.303 | 965637.967 | 1333634.359 | 16258901.213 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2577576.303 | 965637.967 | 1333634.359 | 16258901.213 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2577576.331 | 965637.920 | 1333634.386 | 16258901.166 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2577576.267 | 965637.948 | 1333634.322 | 16258901.195 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_E-DP9880-3NW-21MAY2015.jpg | NW | May 21, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_E-DP9880-2-21MAY2015.jpg | | May 21, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_E-DP9880-1-21MAY2015.jpg | | May 21, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 F **NGS Name:** 4310 F

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9881 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 115 N | 28 W | 444602.15 | 940819.40 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** 4310 F 2015

IN GLENCOE, 1.0 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 120.8, 34.2 FEET NORTH OF WESTBOUND TRUNK HIGHWAY 212, 1.5 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.325 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 989.322 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.394 | .262 | | 898.650 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 989.325 | | | 898.624 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 989.325 | | | 898.624 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 989.430 | .262 | | 898.683 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 989.322 | | | 898.624 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 989.322 | .131 | | 898.847 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 989.322 | | | 898.624 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 989.204 | .262 | | 898.459 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.745 12B = -90.741 09 = -90.666 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 02.14522 | 94 08 19.40089 | 628468.615 | 213834.452 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 02.14481 | 94 08 19.40072 | 628468.628 | 213834.410 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 46 02.14481 | 94 08 19.40072 | 628468.628 | 213834.410 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 46 02.14414 | 94 08 19.39975 | 628468.698 | 213834.343 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 46 02.14481 | 94 08 19.40072 | 628468.628 | 213834.410 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 02.14481 | 94 08 19.40072 | 628468.628 | 213834.410 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 02.14471 | 94 08 19.40015 | 628468.669 | 213834.400 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 02.14455 | 94 08 19.40128 | 628468.588 | 213834.383 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 46 02.14463 | 94 08 19.40117 | 628468.596 | 213834.392 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2588638.938 | 972352.126 | 1344776.186 | 16265477.307 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2588638.950 | 972352.084 | 1344776.198 | 16265477.265 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2588638.950 | 972352.084 | 1344776.198 | 16265477.265 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2588639.020 | 972352.017 | 1344776.267 | 16265477.196 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2588638.950 | 972352.084 | 1344776.198 | 16265477.265 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2588638.950 | 972352.084 | 1344776.198 | 16265477.265 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2588638.991 | 972352.074 | 1344776.239 | 16265477.254 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2588638.909 | 972352.058 | 1344776.157 | 16265477.239 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2588638.917 | 972352.066 | 1344776.165 | 16265477.247 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_F-DP9881-3N-21SEP2025.jpg | N | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_F-DP9881-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_F-DP9881-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 G **NGS Name:** 4310 G

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9882 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 27 W | 444606.49 | 940626.31 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2016) **Stamping:** 4310 G 2015

2.0 MILES EAST OF GLENCOE, 2.6 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 122.5, 80.4 FEET NORTH OF WESTBOUND TRUNK HIGHWAY 212, 91.8 FEET NORTHEAST OF DOVE AVENUE, 1.5 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.941 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 997.941 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.990 | .262 | | 907.328 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 997.941 | | | 907.328 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 997.941 | .131 | | 907.551 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 997.941 | | | 907.328 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 997.908 | .262 | | 907.242 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.663 12B = -90.666 09 = -90.581 03 = -90.436**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.48941 | 94 06 26.31309 | 636624.846 | 214325.556 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 06.48950 | 94 06 26.31297 | 636624.854 | 214325.565 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 06.48950 | 94 06 26.31297 | 636624.854 | 214325.565 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 06.48905 | 94 06 26.31291 | 636624.859 | 214325.520 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.48933 | 94 06 26.31342 | 636624.822 | 214325.548 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2596797.879 | 972779.776 | 1352937.845 | 16265804.501 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2596797.887 | 972779.785 | 1352937.854 | 16265804.510 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2596797.887 | 972779.785 | 1352937.854 | 16265804.510 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2596797.891 | 972779.740 | 1352937.858 | 16265804.464 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2596797.855 | 972779.768 | 1352937.821 | 16265804.493 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_G-DP9882-3N-21SEP2025.jpg | N | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_G-DP9882-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_G-DP9882-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 H **NGS Name:** 4310 H

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9883 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 16 | 115 N | 27 W | 444604.37 | 940438.09 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** 4310 H 2015

1.8 MILES WEST OF PLATO, 1.8 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 NORTH IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 124.0, 75.1 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212, 20.2 FEET NORTHWEST OF A WOODEN POST FOR A FIBER OPTIC CABLE, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 982.337 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 982.334 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 982.341 | .262 | | 891.773 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 982.334 | | | 891.790 | .018 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 982.334 | .131 | | 892.019 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 982.334 | | | 891.790 | .018 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 982.157 | .262 | | 891.573 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.567 12B = -90.584 09 = -90.485 03 = -90.354**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.36618 | 94 04 38.08960 | 644434.254 | 214162.409 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 04.36597 | 94 04 38.08977 | 644434.242 | 214162.388 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 04.36597 | 94 04 38.08977 | 644434.242 | 214162.388 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 04.36540 | 94 04 38.08937 | 644434.271 | 214162.331 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.36578 | 94 04 38.09021 | 644434.210 | 214162.369 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2604604.960 | 972555.947 | 1360739.704 | 16265484.761 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2604604.948 | 972555.926 | 1360739.691 | 16265484.740 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 2604604.948 | 972555.926 | 1360739.691 | 16265484.740 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 2604604.977 | 972555.868 | 1360739.719 | 16265484.682 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2604604.916 | 972555.907 | 1360739.659 | 16265484.721 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_H-DP9883-3S-21SEP2025.jpg | S | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_H-DP9883-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_H-DP9883-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 J **NGS Name:** 4310 J

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9884 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 15 | 115 N | 27 W | 444604.08 | 940327.16 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 24 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** 4310 J 2015

1.0 MILE WEST OF PLATO, 0.8 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 NORTH IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 124.95, 65.5 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212, 57.3 FEET EAST OF BELL AVENUE, 31.6 FEET NORTH OF A RIGHT-OF-WAY POST, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.547 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 997.547 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 997.583 | .262 | | 907.078 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 997.547 | | | 907.052 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 997.547 | .131 | | 907.278 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 997.547 | | | 907.052 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 997.406 | .262 | | 906.881 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.505 12B = -90.521 09 = -90.420 03 = -90.295**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.07919 | 94 03 27.15644 | 649552.077 | 214168.916 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 04.07939 | 94 03 27.15672 | 649552.056 | 214168.936 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 04.07939 | 94 03 27.15672 | 649552.056 | 214168.936 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 04.07896 | 94 03 27.15632 | 649552.085 | 214168.893 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.07922 | 94 03 27.15716 | 649552.024 | 214168.919 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2609722.139 | 972522.665 | 1365854.833 | 16265388.586 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2609722.119 | 972522.686 | 1365854.813 | 16265388.607 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2609722.119 | 972522.686 | 1365854.813 | 16265388.607 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2609722.148 | 972522.642 | 1365854.841 | 16265388.563 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2609722.087 | 972522.668 | 1365854.781 | 16265388.590 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_J-DP9884-3S-21SEP2025.jpg | S | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_J-DP9884-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_J-DP9884-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4310 K
**NGS Name:** 4310 K
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2198 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 115 N | 27 W | 444604.00 | 940108.32 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** 4310 K 2015

1.2 MILES EAST-SOUTHEAST OF PLATO, 1.05 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 NORTH IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 126.9, 72.3 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.896 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 989.900 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.893 | .262 | | 899.500 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 989.841 | .262 | | 899.431 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.394 12B = -90.407 09 = -90.311 03 = -90.200**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 03.99781 | 94 01 08.31918 | 659568.823 | 214233.885 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 03.99784 | 94 01 08.32029 | 659568.743 | 214233.887 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2619738.032 | 972509.736 | 1375867.308 | 16265252.558 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2619737.952 | 972509.739 | 1375867.228 | 16265252.563 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_K-DQ2198-3S-21SEP2025.jpg | S | Sep 21, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_K-DQ2198-2-21SEP2025.jpg | | Sep 21, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4310_K-DQ2198-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 4311 A

**NGS Name:** 4311 A

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0011 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 26 | 117 N | 27 W | 445506.80 | 940310.70 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1968 | 2019 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | MNDT |

**Description:** (1989) **Stamping:** 4311 A 1968

2.0 MILES NORTH OF LESTER PRAIRIE, 0.85 MILE NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND TRUNK HIGHWAY 7 IN LESTER PRAIRIE, AT TRUNK HIGHWAY 261 MILEPOINT 12.8, 92.3 FEET SOUTHEAST OF THE NORTH END OF A CONCRETE CULVERT, 47.0 FEET EAST OF TRUNK HIGHWAY 261, 8.0 FEET NORTH-NORTHWEST OF A POWER POLE NUMBER 401, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.200 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.918 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1973 | L22905 |
| 1017.918 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L54 MINN |
| 1017.918 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.220 12B = -90.252 09 = -90.157 03 = -90.010**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4311 B
**NGS Name:** 4311 B
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0008 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 14 | 117 N | 27 W | 445640.00 | 940310.50 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1968 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | RECESSED 1 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE POST (PREFABRICATED) | BENCH MARK DISK | MNDT |

**Description:** (1989) **Stamping:** 4311 B 1968

1.3 MILES SOUTH OF WINSTED, 2.65 MILES NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND TRUNK HIGHWAY 7 IN WINSTED, AT TRUNK HIGHWAY 261 MILEPOINT 14.6, 48.0 FEET EAST OF TRUNK HIGHWAY 261, 45.0 FEET NORTH OF A FIELD ENTRANCE, 9.1 FEET SOUTH-SOUTHWEST OF A POWER POLE NUMBER 439, 0.9 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.726 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.447 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1010.447 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L54 MINN |
| 1010.447 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.229 12B = -90.259 09 = -90.157 03 = -90.010**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4311 C
**NGS Name:** 4311 C
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0006 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 10 | 117 N | 27 W | 445723.00 | 940316.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1968 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | MNDT |

**Description:** (1989) **Stamping:** 4311 C 1968

AT THE SOUTH EDGE OF WINSTED, 1.0 MILE SOUTH ALONG COUNTY ROAD 61 FROM THE JUNCTION OF COUNTY ROAD 61 AND COUNTY ROAD 6, AT TRUNK HIGHWAY 261 MILEPOINT 15.45, 76.0 FEET SOUTH-SOUTHWEST OF THE SOUTH GATE POST, 66.0 FEET WEST OF TRUNK HIGHWAY 261, 6.4 FEET NORTHEAST OF A SAWED OFF TELEPHONE POLE, 4.3 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.939 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.663 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1014.663 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L54 MINN |
| 1014.663 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.236 12B = -90.266 09 = -90.167 03 = -90.020**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4311 D **NGS Name:** 4311 D

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9140 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 34 | 117 N | 27 W | 445340.00 | 940312.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2005 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | VERTICAL CONTROL DISK | MNDT |

**Description:** (1989) **Stamping:** 4311 D 1989

1.0 MILE NORTHWEST OF LESTER PRAIRIE, 0.8 MILE SOUTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261 IN LESTER PRAIRIE, AT TRUNK HIGHWAY 261 MILEPOINT 11.15, 48.5 FEET WEST OF TRUNK HIGHWAY 261, 2.9 FEET NORTHEAST OF A POWER POLE, 1.2 FEET SOUTHEAST OF A WITNESS POST.

**Station Notes**
THE DISK IS MISSING.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.632 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1011.586 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.090 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.233 12B = -90.266 09 = -90.167 03 = -90.026**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 4311 D RESET
**NGS Name:** 4311 D RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS3060 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 34 | 117 N | 27 W | 445340.66 | 940311.85 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 9 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2024) **Stamping:** 4311 D RESET 2024

1.0 MILE NORTHWEST OF LESTER PRAIRIE, 0.8 MILE SOUTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261 IN LESTER PRAIRIE, AT TRUNK HIGHWAY 261 MILEPOINT 11.15, 48.5 FEET WEST OF TRUNK HIGHWAY 261, 2.9 FEET NORTHEAST OF A POWER POLE, 1.2 FEET SOUTHEAST OF A WITNESS POST. ROD DEPTH UNKNOWN.

**Station Notes**
ROD DEPTH UNKNOWN.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.625 | | | 920.428 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1010.625 | | | 920.428 | .011 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1010.749 | .262 | | 920.517 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**Geoid Separation(ft): GEOID18 = -90.233**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 40.65726 | 94 03 11.84835 | 650327.079 | 260417.877 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 40.65726 | 94 03 11.84835 | 650327.079 | 260417.877 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 40.65750 | 94 03 11.84931 | 650327.010 | 260417.901 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 40.65705 | 94 03 11.84861 | 650327.061 | 260417.856 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2610856.628 | 1018759.529 | 1367557.948 | 16311596.280 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2610856.628 | 1018759.529 | 1367557.948 | 16311596.280 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2610856.559 | 1018759.554 | 1367557.879 | 16311596.305 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2610856.610 | 1018759.508 | 1367557.929 | 16311596.259 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4311_D_RESET-3W-20JUN2024.jpg | W | Jun 20, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4311_D_RESET-2-20JUN2024.jpg | | Jun 20, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/4311_D_RESET-1-20JUN2024.jpg | | Jun 20, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** 7 15 **NGS Name:** 7 15

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0069 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 25 | 117 N | 27 W | 445423.00 | 940104.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1968 | 1972 | DESTROYED | Horz=NO Vert=NO | NO | | | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - SMALL | SEE DESCRIPTION | MNDT |

**Description:** (2016) **Stamping:**

3.25 MILES NORTHEAST OF LESTER PRAIRIE, 1.7 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261 IN LESTER PRAIRIE, 1600.0 FEET WEST OF EAST MCLEOD COUNTY LINE TRUNK HIGHWAY 7, OVER CRANE CREEK, A BRASS PLUG IN THE NORTHEAST CORNER OF A HEADWALL CONCRETE BOX CULVERT, 22.0 FEET NORTH OF TRUNK HIGHWAY 7.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 958.810 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.190 12B = -90.216 09 = -90.128 03 = -89.987**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** 99 ES

**NGS Name:** 99 ES

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 115 N | 27 W | 444446.00 | 940734.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | USGS |

**Description:** (2016) **Stamping:** 99 ES 1955

1.5 MILES SOUTH AND 1.0 MILE EAST OF GLENCOE, 0.4 MILE SOUTH ON HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.8 MILE EAST ON 1ST STREET, THEN 0.2 MILE CONTINUED EAST ON 100TH STREET, THEN 1.0 MILE SOUTH ON FALCON AVENUE, THEN 0.3 MILE EAST ON 90TH STREET, 75.0 FEET SOUTH AND 322.0 FEET EAST OF A TOWNSHIP ROAD AT A TEE-ROAD EAST, 16.0 FEET WEST OF A PRIVATE DRIVE SOUTH, 1.0 FOOT EAST OF A FENCE.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.358 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |

**Geoid Separations(ft): GEOID18 = -90.794 12B = -90.791 09 = -90.705 03 = -90.561**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** A 125 **NGS Name:** A 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0018 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 9 | 116 N | 27 W | 445214.00 | 940417.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1989 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** A-125 1934

2.7 MILES SOUTH OF A WATER TANK AT LESTER PRAIRIE, 1.36 MILES SOUTHWEST OF LESTER PRAIRIE, 1.0 MILE WEST ALONG COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND BABCOCK AVENUE, THEN 0.4 MILE SOUTH ON COUNTY ROAD 63, IN THE SOUTHWEST CORNER OF A BRIDGE, 9.0 FEET WEST OF A ROAD.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 977.259 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 976.819 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.292 12B = -90.321 09 = -90.226 03 = -90.075**

*** No Horizontal Positions in the Database ***

# ACOM MNDT



**Mn/DOT Name:** ACOM MNDT
**NGS Name:** ACOM
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6191 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 27 | 117 N | 30 W | 445424.73 | 942615.54 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2011 | POOR | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 10 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2001) **Stamping:** ACOM 1992

4.0 MILES WEST-NORTHWEST OF HUTCHINSON, 3.9 MILES WEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON TO TRUNK HIGHWAY 22 MILEPOINT 126.05, THEN 0.05 MILE NORTH ON VALE AVENUE, THEN 0.15 MILE EAST ON 200TH STREET, AT THE TOP OF A HILL, 71.0 FEET NORTHEAST OF A POWER POLE, 24.0 FEET NORTH OF 200TH STREET, 18.0 FEET EAST OF A FIELD ENTRANCE, 13.8 FEET WEST OF A WITNESS POST.

**Station Notes**
FOUND CAP LOOSE. USE WITH CAUTION.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1093.817 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1093.820 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1093.817 | | | 1004.411 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1093.817 | | | 1004.407 | .005 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 1004.411 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1093.830 | .131 | | 1004.654 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1093.685 | .262 | | 1004.440 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1093.764 | .131 | | 1004.532 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1093.830 | .131 | | 1004.532 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1093.830 | .131 | | 1004.604 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1093.830 | .131 | | 1004.532 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1093.764 | .131 | | 1004.532 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1093.669 | .262 | | 1004.503 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1093.764 | .131 | | 1004.604 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1093.764 | .131 | | 1004.604 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 1004.532 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1093.764 | .131 | | 1004.604 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1093.764 | .131 | | 1004.604 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1093.764 | .131 | | 1004.604 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |
| 1093.797 | .131 | | 1004.604 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1093.502 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.399 12B = -89.399 09 = -89.249 03 = -89.166**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.73020 | 94 26 15.53508 | 550704.433 | 264407.117 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 24.73016 | 94 26 15.53510 | 550704.432 | 264407.113 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 54 24.73020 | 94 26 15.53508 | 550704.433 | 264407.117 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.73095 | 94 26 15.53659 | 550704.324 | 264407.193 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 24.73032 | 94 26 15.53611 | 550704.359 | 264407.129 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 54 24.73032 | 94 26 15.53611 | 550704.359 | 264407.129 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 54 24.73032 | 94 26 15.53611 | 550704.359 | 264407.129 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 24.73032 | 94 26 15.53611 | 550704.359 | 264407.129 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 54 24.73032 | 94 26 15.53611 | 550704.359 | 264407.129 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.72979 | 94 26 15.53565 | 550704.392 | 264407.076 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.077 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 24.73110 | 94 26 15.53576 | 550704.384 | 264407.208 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.077 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.077 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.077 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.077 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.076 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 44 54 24.72980 | 94 26 15.53566 | 550704.391 | 264407.077 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.72348 | 94 26 15.53063 | 550704.755 | 264406.436 | .033 | C | GPS - STATIC | 1992 | HHUTC |

# ACOM MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511277.559 | 1023521.921 | 1268067.781 | 16317585.978 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2511277.558 | 1023521.917 | 1268067.779 | 16317585.974 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2511277.559 | 1023521.921 | 1268067.781 | 16317585.978 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511277.451 | 1023521.997 | 1268067.674 | 16317586.056 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2511277.485 | 1023521.933 | 1268067.707 | 16317585.991 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2511277.485 | 1023521.933 | 1268067.707 | 16317585.991 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2511277.485 | 1023521.933 | 1268067.707 | 16317585.991 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2511277.485 | 1023521.933 | 1268067.707 | 16317585.991 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2511277.485 | 1023521.933 | 1268067.707 | 16317585.991 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511277.518 | 1023521.879 | 1268067.739 | 16317585.937 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2511277.517 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2511277.511 | 1023522.012 | 1268067.734 | 16317586.070 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2511277.517 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2511277.517 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2511277.517 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2511277.517 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2511277.518 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 2511277.517 | 1023521.880 | 1268067.738 | 16317585.938 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511277.876 | 1023521.238 | 1268068.089 | 16317585.292 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ACOM-DF6191-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ACOM-DF6191-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ACOM-DF6191-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ADDI MNDT



**Mn/DOT Name:** ADDI MNDT
**NGS Name:** ADDI
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF8418 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 115 N | 30 W | 444329.66 | 942241.59 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2001) **Stamping:** ADDI 1990

1.0 MILE WEST-SOUTHWEST OF BROWNTON, 0.35 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 107.7, 76.8 FEET NORTH OF TRUNK HIGHWAY 212, 44.0 FEET EAST-NORTHEAST OF CABLE MARKER POST NUMBER 97000/7, 19.0 FEET NORTHWEST OF AN ENTRANCE, 11.0 FEET EAST OF A WITNESS POST.

**Station Pair:** JONES MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.073 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1045.073 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1045.073 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1045.073 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1045.073 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1045.073 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1045.073 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1045.018 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1045.018 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1044.575 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |
| 1044.575 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

# ADDI MNDT



## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.162 | .262 | | 954.457 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1045.093 | .262 | | 954.388 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1045.073 | .262 | | 954.371 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1045.073 | | | 954.345 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1045.073 | .131 | | 954.647 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1045.073 | | | 954.342 | .008 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1045.086 | .262 | | 954.385 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1045.073 | | | 954.345 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1045.073 | | | 954.345 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 954.345 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1045.077 | .131 | | 954.647 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1044.945 | .262 | | 954.378 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1045.077 | .131 | | 954.526 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1045.077 | .131 | | 954.526 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1045.011 | .131 | | 954.591 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1045.011 | .131 | | 954.591 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 954.526 | .034 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1045.011 | .131 | | 954.591 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1045.011 | .131 | | 954.591 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 954.526 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1045.011 | .131 | | 954.670 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1045.011 | .131 | | 954.670 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1045.011 | .131 | | 954.670 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |
| 1045.011 | .131 | | 954.670 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |

**Geoid Separations(ft): GEOID18 = -90.702 12B = -90.702 09 = -90.571 03 = -90.426**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.66172 | 94 22 41.59460 | 566310.806 | 198104.833 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 29.66190 | 94 22 41.59468 | 566310.800 | 198104.851 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 29.66190 | 94 22 41.59420 | 566310.835 | 198104.851 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 43 29.66205 | 94 22 41.59506 | 566310.773 | 198104.866 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 29.66191 | 94 22 41.59516 | 566310.766 | 198104.852 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 29.66177 | 94 22 41.59473 | 566310.797 | 198104.838 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 29.66205 | 94 22 41.59506 | 566310.773 | 198104.866 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 29.66195 | 94 22 41.59506 | 566310.773 | 198104.856 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 43 29.66205 | 94 22 41.59506 | 566310.773 | 198104.866 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.66185 | 94 22 41.59748 | 566310.598 | 198104.845 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 29.66226 | 94 22 41.59640 | 566310.676 | 198104.887 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 43 29.66226 | 94 22 41.59640 | 566310.676 | 198104.887 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 43 29.66226 | 94 22 41.59640 | 566310.676 | 198104.887 | .023 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 43 29.66226 | 94 22 41.59640 | 566310.676 | 198104.887 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.66160 | 94 22 41.59546 | 566310.744 | 198104.820 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 29.66160 | 94 22 41.59546 | 566310.744 | 198104.820 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 43 29.66160 | 94 22 41.59546 | 566310.744 | 198104.820 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 43 29.66160 | 94 22 41.59546 | 566310.744 | 198104.820 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 43 29.66160 | 94 22 41.59546 | 566310.744 | 198104.820 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 43 29.66160 | 94 22 41.59546 | 566310.744 | 198104.820 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 43 29.66251 | 94 22 41.59772 | 566310.581 | 198104.912 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 43 29.66251 | 94 22 41.59772 | 566310.581 | 198104.912 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 43 29.66251 | 94 22 41.59772 | 566310.581 | 198104.912 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 44 43 29.66251 | 94 22 41.59772 | 566310.580 | 198104.912 | .033 | C | GPS - STATIC | 2003 | HOLIV |

# ADDI MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526367.501 | 957107.327 | 1282334.971 | 16251002.686 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2526367.495 | 957107.345 | 1282334.966 | 16251002.704 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2526367.530 | 957107.345 | 1282335.000 | 16251002.704 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2526367.468 | 957107.360 | 1282334.938 | 16251002.720 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2526367.460 | 957107.346 | 1282334.931 | 16251002.706 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2526367.491 | 957107.332 | 1282334.962 | 16251002.691 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2526367.468 | 957107.360 | 1282334.938 | 16251002.720 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2526367.468 | 957107.350 | 1282334.938 | 16251002.710 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2526367.468 | 957107.360 | 1282334.938 | 16251002.720 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526367.293 | 957107.341 | 1282334.763 | 16251002.703 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2526367.371 | 957107.382 | 1282334.842 | 16251002.743 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2526367.371 | 957107.382 | 1282334.842 | 16251002.743 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2526367.371 | 957107.382 | 1282334.842 | 16251002.743 | .023 | | ADJUSTMENT | 2007 | GPS2300 |
| 2526367.371 | 957107.382 | 1282334.842 | 16251002.743 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526367.438 | 957107.315 | 1282334.909 | 16251002.675 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2526367.438 | 957107.315 | 1282334.909 | 16251002.675 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2526367.438 | 957107.315 | 1282334.909 | 16251002.675 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2526367.438 | 957107.315 | 1282334.909 | 16251002.675 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2526367.438 | 957107.315 | 1282334.909 | 16251002.675 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2526367.438 | 957107.315 | 1282334.909 | 16251002.675 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2526367.276 | 957107.408 | 1282334.747 | 16251002.770 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2526367.276 | 957107.408 | 1282334.747 | 16251002.770 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2526367.276 | 957107.408 | 1282334.747 | 16251002.770 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 2526367.276 | 957107.408 | 1282334.747 | 16251002.770 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ADDI-DF8418-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ADDI-DF8418-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ADDI-DF8418-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** ALLIS MN085 **NGS Name:** ALLIS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9683 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 4 | 114 N | 29 W | 444231.06 | 941854.59 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (1993) **Stamping:** ALLIS

2.25 MILES SOUTHEAST OF BROWNTON, 1.5 MILES WEST AND SOUTH ALONG ORANGE AVENUE FROM THE JUNCTION OF ORANGE AVENUE AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.1 MILES SOUTH ON COUNTY ROAD 13, 530.0 FEET SOUTH AND 30.0 FEET WEST OF THE JUNCTION OF COUNTY ROAD 13 (ODAY AVENUE) AND 65TH STREET, AT THE NORTHEAST CORNER OF A FARM SITE WITH FIRE NUMBER 6331, 7.0 FEET NORTH OF A FIELD DRIVEWAY.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.886 | | | 938.988 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1029.886 | | | 938.965 | .009 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 938.988 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1029.886 | .131 | | 939.257 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1029.808 | .262 | | 939.037 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1029.886 | .131 | | 939.155 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1029.886 | .131 | | 939.155 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1029.854 | .131 | | 939.237 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1029.854 | .131 | | 939.237 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.394 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.892 12B = -90.876 09 = -90.771 03 = -90.630**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 42 31.05731 | 94 18 54.58641 | 582724.395 | 192227.248 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 42 31.05748 | 94 18 54.58646 | 582724.391 | 192227.265 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 42 31.05731 | 94 18 54.58641 | 582724.395 | 192227.248 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 42 31.05686 | 94 18 54.58725 | 582724.335 | 192227.202 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 42 31.05749 | 94 18 54.58756 | 582724.312 | 192227.266 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 42 31.05749 | 94 18 54.58756 | 582724.312 | 192227.266 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 42 31.05690 | 94 18 54.58676 | 582724.370 | 192227.207 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 42 31.05689 | 94 18 54.58677 | 582724.369 | 192227.206 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 42 31.05689 | 94 18 54.58677 | 582724.369 | 192227.206 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 42 31.05277 | 94 18 54.58571 | 582724.448 | 192226.787 | .033 | C | GPS - STATIC | 1993 | CO43 |

# ALLIS MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542733.193 | 951103.176 | 1298622.508 | 16244798.903 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2542733.190 | 951103.193 | 1298622.504 | 16244798.920 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2542733.193 | 951103.176 | 1298622.508 | 16244798.903 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542733.133 | 951103.130 | 1298622.446 | 16244798.859 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2542733.110 | 951103.194 | 1298622.425 | 16244798.923 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2542733.110 | 951103.194 | 1298622.425 | 16244798.923 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542733.168 | 951103.134 | 1298622.482 | 16244798.862 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2542733.167 | 951103.133 | 1298622.481 | 16244798.861 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2542733.167 | 951103.133 | 1298622.481 | 16244798.861 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542733.242 | 951102.716 | 1298622.551 | 16244798.443 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ALLIS-DI9683-3W-21APR2011.jpg | W | Apr 21, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ALLIS-DI9683-2-21APR2011.jpg | | Apr 21, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ALLIS-DI9683-1-21APR2011.jpg | | Apr 21, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ALVA MNDT



**Mn/DOT Name:** ALVA MNDT **NGS Name:** ALVA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8109 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 116 N | 29 W | 445239.24 | 941933.65 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** ALVA 1992

2.0 MILES EAST-SOUTHEAST OF HUTCHINSON, 0.3 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.2 MILE EAST ON TRUNK HIGHWAY 22 (WASHINGTON AVENUE), THEN 2.6 MILES SOUTH-SOUTHEAST ON TRUNK HIGHWAY 22 (ADAMS STREET), THEN 1.0 MILE NORTH ON TRUNK HIGHWAY 22 (PAGE AVENUE), THEN 0.45 MILE EAST ON A GRAVEL ROAD (NOBLE ROAD), 27.0 FEET NORTHEAST OF NOBLE ROAD, 16.0 FEET NORTHWEST OF A FIELD ENTRANCE, 9.2 FEET SOUTHEAST OF A WITNESS POST.

**Station Notes**
THE MARK WAS FOUND LOOSE AND NEEDS TO BE RESET. THE ROD DEPTH IS UNKNOWN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.951 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1067.951 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.508 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 977.898 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 978.013 | .007 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1067.944 | .131 | | 978.138 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1067.944 | .131 | | 978.138 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.485 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.052 12B = -90.042 09 = -89.921 03 = -89.793**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23895 | 94 19 33.64531 | 579670.990 | 253812.236 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23910 | 94 19 33.64554 | 579670.974 | 253812.252 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23854 | 94 19 33.64484 | 579671.024 | 253812.195 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 52 39.23854 | 94 19 33.64484 | 579671.026 | 253812.196 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23468 | 94 19 33.64330 | 579671.137 | 253811.805 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.230 | 1012703.626 | 1296806.907 | 16306414.001 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.213 | 1012703.642 | 1296806.891 | 16306414.017 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.264 | 1012703.585 | 1296806.941 | 16306413.959 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2540158.264 | 1012703.585 | 1296806.941 | 16306413.959 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.373 | 1012703.193 | 1296807.045 | 16306413.567 | .033 | C | GPS - STATIC | 1992 | HHUTC |

# ALVA MNDT RESET



**Mn/DOT Name:** ALVA MNDT RESET
**NGS Name:** ALVA RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9771 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 116 N | 29 W | 445239.24 | 941933.65 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 10 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2010) **Stamping:** ALVA RESET 1992 2009

2.0 MILES SOUTHEAST OF HUTCHINSON, 1.3 MILES SOUTH ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON TO TRUNK HIGHWAY 22 MILEPOINT 119.90, THEN 0.45 MILE EAST ON NOBLE ROAD, 26.9 FEET NORTHEAST OF NOBLE ROAD, 10.2 FEET NORTHWEST OF A FIELD ENTRANCE, 9.1 FEET SOUTHEAST OF A WITNESS POST.

**Station Pair:** NOBLE MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.777 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1067.777 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1067.777 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1067.777 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.777 | | | 977.721 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1067.777 | | | 977.721 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1067.842 | .262 | | 977.790 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1067.829 | .262 | | 977.777 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1067.800 | .262 | | 977.761 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1067.711 | .262 | | 977.669 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 977.721 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1067.668 | .262 | | 977.747 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1067.780 | .131 | | 977.829 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1067.780 | .131 | | 977.941 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1067.780 | .131 | | 977.829 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1067.563 | .262 | | 977.774 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -90.052 12B = -90.042 09 = -89.921 03 = -89.793**

# ALVA MNDT RESET



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23899 | 94 19 33.64536 | 579670.987 | 253812.240 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 52 39.23899 | 94 19 33.64536 | 579670.987 | 253812.240 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 52 39.23882 | 94 19 33.64538 | 579670.985 | 253812.223 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 52 39.23918 | 94 19 33.64532 | 579670.989 | 253812.259 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 52 39.23922 | 94 19 33.64485 | 579671.023 | 253812.264 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 52 39.23882 | 94 19 33.64459 | 579671.042 | 253812.223 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 52 39.23899 | 94 19 33.64536 | 579670.987 | 253812.240 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23891 | 94 19 33.64654 | 579670.902 | 253812.232 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 52 39.23905 | 94 19 33.64637 | 579670.914 | 253812.246 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 52 39.23905 | 94 19 33.64637 | 579670.914 | 253812.246 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.23849 | 94 19 33.64551 | 579670.976 | 253812.190 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 52 39.23849 | 94 19 33.64579 | 579670.956 | 253812.190 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 52 39.23909 | 94 19 33.64580 | 579670.955 | 253812.250 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.226 | 1012703.630 | 1296806.904 | 16306414.006 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2540158.226 | 1012703.630 | 1296806.904 | 16306414.006 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2540158.225 | 1012703.613 | 1296806.902 | 16306413.988 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2540158.229 | 1012703.650 | 1296806.907 | 16306414.025 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2540158.263 | 1012703.654 | 1296806.941 | 16306414.028 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2540158.282 | 1012703.613 | 1296806.959 | 16306413.987 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2540158.226 | 1012703.630 | 1296806.904 | 16306414.006 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.141 | 1012703.623 | 1296806.819 | 16306413.999 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2540158.154 | 1012703.637 | 1296806.831 | 16306414.013 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2540158.154 | 1012703.637 | 1296806.831 | 16306414.013 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540158.215 | 1012703.580 | 1296806.892 | 16306413.955 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2540158.195 | 1012703.580 | 1296806.872 | 16306413.955 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2540158.195 | 1012703.641 | 1296806.872 | 16306414.016 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ALVA_RESET-DL9771-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ALVA_RESET-DL9771-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ALVA_RESET-DL9771-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# AMBERG



**Mn/DOT Name:** AMBERG **NGS Name:** AMBERG

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9899 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 17 | 115 N | 27 W | 444604.48 | 940529.40 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2015) **Stamping:** AMBERG 2015

2.5 MILES EAST OF GLENCOE, 3.4 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 123.3, 65.6 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212, 106.1 FEET WEST OF COUNTY ROAD 1(DAIRY AVENUE), 13.2 FEET NORTH OF A BIKE PATH, 1.5 FEET WEST OF A WITNESS POST.

**Station Pair:** BUFFALO CREEK MN085 - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 992.980 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 992.977 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 993.039 | .262 | | 902.426 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 992.977 | | | 902.403 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 992.977 | .131 | | 902.626 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 992.977 | | | 902.403 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 992.882 | .262 | | 902.259 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.613 12B = -90.626 09 = -90.531 03 = -90.397**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.47849 | 94 05 29.40128 | 640732.188 | 214148.823 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 04.47799 | 94 05 29.40105 | 640732.205 | 214148.773 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 04.47799 | 94 05 29.40105 | 640732.205 | 214148.773 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 04.47732 | 94 05 29.40053 | 640732.243 | 214148.705 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.47782 | 94 05 29.40150 | 640732.172 | 214148.755 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2600903.290 | 972571.141 | 1357039.397 | 16265545.457 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2600903.307 | 972571.091 | 1357039.413 | 16265545.407 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2600903.307 | 972571.091 | 1357039.413 | 16265545.407 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2600903.344 | 972571.023 | 1357039.450 | 16265545.338 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2600903.275 | 972571.074 | 1357039.380 | 16265545.390 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# AMBERG



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/AMBERG-DP9899-3W-21SEP2025.jpg | W | Sep 21, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/AMBERG-DP9899-2-21SEP2025.jpg | | Sep 21, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/AMBERG-DP9899-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** ANTS
**NGS Name:** ANTS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DR3195 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 35 | 117 N | 27 W | 445421.72 | 940212.31 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2019 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2019)
**Stamping:** ANTS 2019

1.2 MILES NORTH OF LESTER PRAIRIE, 0.75 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 1, AT TRUNK HIGHWAY 7 MILEPOINT 158.75, 69.0 FEET SOUTH OF TRUNK HIGHWAY 7, 5.0 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 993.679 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 993.728 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 993.679 | | | 903.522 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 993.679 | | | 903.522 | .008 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 993.807 | .262 | | 903.604 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 993.758 | .262 | | 903.522 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |

**Geoid Separations(ft): GEOID18 = -90.207 12B = -90.236 09 = -90.147 03 = -900000**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.71929 | 94 02 12.31170 | 654582.605 | 264607.566 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 21.71929 | 94 02 12.31170 | 654582.605 | 264607.566 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 21.71898 | 94 02 12.31217 | 654582.571 | 264607.534 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 21.71949 | 94 02 12.31135 | 654582.630 | 264607.587 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 21.71909 | 94 02 12.31203 | 654582.581 | 264607.546 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2615144.192 | 1022915.599 | 1371895.267 | 16315698.115 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2615144.192 | 1022915.599 | 1371895.267 | 16315698.115 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2615144.158 | 1022915.567 | 1371895.233 | 16315698.084 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2615144.217 | 1022915.619 | 1371895.293 | 16315698.135 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2615144.168 | 1022915.578 | 1371895.243 | 16315698.095 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ANTS-DR3195-3S-20JUN2024.jpg | S | Jun 20, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ANTS-DR3195-2-20JUN2024.jpg | | Jun 20, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ANTS-DR3195-1-20JUN2024.jpg | | Jun 20, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# APPY MNDT



**Mn/DOT Name:** APPY MNDT **NGS Name:** APPY

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6192 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 116 N | 30 W | 445326.38 | 942337.55 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

**Monument Type**
BRIDGE ABUTMENT

**Disk Type**
HORIZONTAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (2001) **Stamping:** APPY 1992

AT THE WEST EDGE OF HUTCHINSON, IN THE SOUTHWEST CORNER OF A SCHOOL ROAD BRIDGE OVER OTTER LAKE, 1.35 MILES WEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15, THEN 0.2 MILE SOUTH ON SCHOOL ROAD, 20.0 FEET WEST-SOUTHWEST OF SCHOOL ROAD, 8.2 FEET NORTH OF THE NORTHEAST CORNER OF A METAL CONTROL BOX, 3.2 FEET EAST OF THE SOUTHWEST CORNER OF A BRIDGE ABUTMENT, 3.0 FEET WEST OF THE FACE OF A CURB, 5.6 FEET EAST-SOUTHEAST OF A WITNESS POST.

**Station Notes**
THE TOP OF THE DISK IS GONE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 972.590 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 972.708 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1062.301 | .131 | | 972.810 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1062.301 | .131 | | 972.810 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1062.301 | .131 | | 972.810 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |
| 1062.301 | .131 | | 972.810 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.809 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.714 12B = -89.705 09 = -89.563 03 = -89.468**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 26.38019 | 94 23 37.55273 | 562092.700 | 258527.752 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 26.38027 | 94 23 37.55338 | 562092.653 | 258527.760 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 26.37976 | 94 23 37.55293 | 562092.686 | 258527.709 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 53 26.37976 | 94 23 37.55293 | 562092.686 | 258527.709 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 26.37976 | 94 23 37.55293 | 562092.685 | 258527.708 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 44 53 26.37976 | 94 23 37.55293 | 562092.686 | 258527.709 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 26.37448 | 94 23 37.54855 | 562093.003 | 258527.177 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522618.775 | 1017554.954 | 1279332.230 | 16311480.501 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522618.728 | 1017554.962 | 1279332.184 | 16311480.510 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522618.761 | 1017554.910 | 1279332.215 | 16311480.458 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2522618.761 | 1017554.910 | 1279332.215 | 16311480.458 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2522618.761 | 1017554.910 | 1279332.215 | 16311480.457 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 2522618.761 | 1017554.910 | 1279332.215 | 16311480.458 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2522619.074 | 1017554.374 | 1279332.521 | 16311479.918 | .033 | C | GPS - STATIC | 1992 | HHUTC |

# B 125



**Mn/DOT Name:** B 125 **NGS Name:** B 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0019 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 17 | 116 N | 27 W | 445116.90 | 940528.60 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (1996) **Stamping:** B-125 1934

3.25 MILES SOUTHWEST OF LESTER PRAIRIE, 4.7 MILES SOUTH ALONG TRUNK HIGHWAY 261 FROM THE WATER TANK IN LESTER PRAIRIE, 50.0 FEET EAST OF TRUNK HIGHWAY 261, 24.0 FEET SOUTH OF 165TH STREET, 2.5 FEET WEST OF A TELEPHONE POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 996.366 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 995.926 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.361 12B = -90.390 09 = -90.292 03 = -90.138**

*** No Horizontal Positions in the Database ***

# BAMBI MN085



**Mn/DOT Name:** BAMBI MN085 **NGS Name:** BAMBI

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9945 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 15 | 117 N | 28 W | 445608.74 | 941107.67 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2020 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 11 FT) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** BAMBI

2.5 MILES NORTH-NORTHEAST OF SILVER LAKE, 0.5 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND LAKE AVENUE IN SILVER LAKE, THEN 0.8 MILE NORTH ON COUNTY ROAD 92, THEN 1.2 MILES NORTH ON HILTON AVENUE, AT THE JUNCTION OF 220TH STREET AND HILTON AVENUE (SOUTH), 0.5 MILE WEST OF THE JUNCTION OF COUNTY ROAD 2 AND 220TH STREET, 38.0 FEET NORTH OF 220TH STREET, 3.0 FEET EAST OF HILTON AVENUE EXTENDED NORTH, ON THE SOUTH EDGE OF A PLOWED FIELD, 26.0 FEET NORTHEAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 975.077 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1065.296 | .262 | | 975.142 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1065.319 | .131 | | 975.178 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1065.319 | .131 | | 975.178 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1065.319 | .131 | | 975.297 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1065.319 | .131 | | 975.297 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 975.178 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1065.287 | .131 | | 975.297 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS2086 |
| 1065.287 | .131 | | 975.297 | .066 | 1996 | GPS - STATIC | 2005 | HWRIG |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.696 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.229 12B = -90.236 09 = -90.154 03 = -89.987**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 08.74227 | 94 11 07.66576 | 615990.641 | 275199.770 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 08.74191 | 94 11 07.66692 | 615990.558 | 275199.733 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 56 08.74240 | 94 11 07.66636 | 615990.598 | 275199.783 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 56 08.74240 | 94 11 07.66636 | 615990.598 | 275199.783 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 56 08.74240 | 94 11 07.66636 | 615990.598 | 275199.783 | .007 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 08.74188 | 94 11 07.66605 | 615990.621 | 275199.731 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 56 08.74188 | 94 11 07.66605 | 615990.621 | 275199.731 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 56 08.74188 | 94 11 07.66605 | 615990.621 | 275199.731 | .033 | C | ADJUSTMENT | 2005 | GPS2086 |
| 44 56 08.74188 | 94 11 07.66605 | 615990.621 | 275199.731 | .033 | C | GPS - STATIC | 2005 | HWRIG |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 08.73672 | 94 11 07.66190 | 615990.924 | 275199.210 | .033 | C | GPS - STATIC | 1993 | CO43 |

# BAMBI MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576639.385 | 1033806.429 | 1333537.479 | 16327060.187 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576639.301 | 1033806.393 | 1333537.395 | 16327060.152 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2576639.342 | 1033806.443 | 1333537.436 | 16327060.200 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2576639.342 | 1033806.443 | 1333537.436 | 16327060.200 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2576639.342 | 1033806.443 | 1333537.436 | 16327060.200 | .007 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576639.364 | 1033806.390 | 1333537.457 | 16327060.148 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2576639.364 | 1033806.390 | 1333537.457 | 16327060.148 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2576639.364 | 1033806.390 | 1333537.457 | 16327060.148 | .033 | C | ADJUSTMENT | 2005 | GPS2086 |
| 2576639.364 | 1033806.390 | 1333537.457 | 16327060.148 | .033 | C | GPS - STATIC | 2005 | HWRIG |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576639.661 | 1033805.866 | 1333537.748 | 16327059.621 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BAMBI-DG9945-3N-10MAY2011.jpg | N | May 10, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BAMBI-DG9945-2-10MAY2011.jpg | | May 10, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BAMBI-DG9945-1-10MAY2011.jpg | | May 10, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BARBER MNDT



**Mn/DOT Name:** BARBER MNDT
**NGS Name:** BARBER
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9247 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 115 N | 28 W | 444752.07 | 940905.84 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2007) **Stamping:** BARBER 2000

1.5 MILES NORTH OF GLENCOE, 0.4 MILE NORTH ALONG TRUNK HIGHWAY 22 (HENNEPIN AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 22 (HENNEPIN AVENUE) AND 10TH STREET IN GLENCOE, THEN 1.0 MILE NORTH ON HENNEPIN AVENUE, THEN 0.55 MILE NORTH ON GARDEN AVENUE, 27.0 FEET EAST OF GARDEN AVENUE, 25.8 FEET SOUTH OF A POWER POLE, 11.0 FEET NORTH OF AN ENTRANCE, 7.5 FEET SOUTH OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.295 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1028.298 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 937.613 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1028.210 | .262 | | 937.620 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1028.279 | .131 | | 937.669 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1028.312 | .131 | | 937.669 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1028.312 | .131 | | 937.829 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1028.312 | .131 | | 937.829 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 937.669 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1028.312 | .131 | | 937.829 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1028.312 | .131 | | 937.829 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.659 12B = -90.663 09 = -90.590 03 = -90.420**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 52.06683 | 94 09 05.83970 | 625052.272 | 224946.935 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 52.06688 | 94 09 05.84042 | 625052.220 | 224946.939 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 52.06686 | 94 09 05.84033 | 625052.226 | 224946.937 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 47 52.06686 | 94 09 05.84033 | 625052.226 | 224946.937 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 47 52.06686 | 94 09 05.84033 | 625052.226 | 224946.937 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 52.06638 | 94 09 05.83986 | 625052.260 | 224946.889 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 47 52.06638 | 94 09 05.83986 | 625052.260 | 224946.889 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 47 52.06638 | 94 09 05.83986 | 625052.260 | 224946.889 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 52.06638 | 94 09 05.83986 | 625052.260 | 224946.889 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# BARBER MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585309.405 | 983489.661 | 1341584.685 | 16276652.359 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585309.353 | 983489.666 | 1341584.633 | 16276652.365 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2585309.360 | 983489.664 | 1341584.639 | 16276652.363 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2585309.360 | 983489.664 | 1341584.639 | 16276652.363 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2585309.360 | 983489.664 | 1341584.639 | 16276652.363 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585309.393 | 983489.616 | 1341584.673 | 16276652.313 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2585309.393 | 983489.616 | 1341584.673 | 16276652.313 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2585309.393 | 983489.616 | 1341584.673 | 16276652.313 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2585309.393 | 983489.616 | 1341584.673 | 16276652.313 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BARBER-DF9247-3N-27APR2011.jpg | N | Apr 27, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BARBER-DF9247-2-27APR2011.jpg | | Apr 27, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BARBER-DF9247-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BARBER MNDT RESET



**Mn/DOT Name:** BARBER MNDT RESET
**NGS Name:** BARBER RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9900 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 1 | 115 N | 28 W | 444752.07 | 940905.84 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** BARBER 2000 2015

1.5 MILES NORTH OF GLENCOE, 0.2 MILE NORTH ALONG TRUNK HIGHWAY 22 (HENNEPIN AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 22 (HENNEPIN AVENUE) AND 10TH STREET IN GLENCOE, THEN CONTINUE 1.25 MILES NORTH ON HENNEPIN AVENUE, THEN CONTINUE 0.55 MILE NORTH ON GARDEN AVENUE, 27.0 FEET EAST OF GARDEN AVENUE, 25.8 FEET SOUTH OF A POWER POLE, 11.0 FEET NORTH OF A FIELD ENTRANCE, 7.5 FEET SOUTH OF A WITNESS POST.

**Station Pair:** KARG MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.102 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1028.098 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.098 | | | 937.459 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1028.098 | .131 | | 937.685 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1028.098 | | | 937.459 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1028.062 | .262 | | 937.400 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.659 12B = -90.663 09 = -90.590 03 = -90.420**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 52.06698 | 94 09 05.83979 | 625052.265 | 224946.950 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 47 52.06698 | 94 09 05.83979 | 625052.265 | 224946.950 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 47 52.06638 | 94 09 05.83866 | 625052.347 | 224946.889 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 52.06680 | 94 09 05.84024 | 625052.233 | 224946.931 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585309.398 | 983489.676 | 1341584.679 | 16276652.374 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2585309.398 | 983489.676 | 1341584.679 | 16276652.374 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2585309.480 | 983489.615 | 1341584.759 | 16276652.312 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585309.366 | 983489.658 | 1341584.646 | 16276652.356 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# BARBER MNDT RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BARBER_RESET-DP9900-3E-14APR2015.jpg | E | Apr 14, 2015 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BARBER_RESET-DP9900-2-14APR2015.jpg | | Apr 14, 2015 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BARBER_RESET-DP9900-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BECKLER



**Mn/DOT Name:** BECKLER **NGS Name:** BECKLER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9901 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 27 W | 444606.57 | 940155.47 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** BECKLER 2015

0.4 MILE SOUTHEAST OF PLATO, 0.4 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 NORTH IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 126.25, 91.2 FEET NORTH OF WESTBOUND TRUNK HIGHWAY 212, 27.6 FEET WEST-SOUTHWEST OF A RIGHT-OF-WAY POST, 1.5 FEET SOUTH OF A WITNESS POST.

**Station Pair:** LEACH - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.433 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1003.436 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.407 | .262 | | 912.980 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1003.436 | | | 913.017 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1003.436 | .131 | | 913.243 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1003.436 | | | 913.017 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1003.410 | .262 | | 912.967 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.426 12B = -90.443 09 = -90.341 03 = -90.226**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.56672 | 94 01 55.47420 | 656164.813 | 214468.656 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 06.56669 | 94 01 55.47433 | 656164.804 | 214468.653 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 06.56669 | 94 01 55.47433 | 656164.804 | 214468.653 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 06.56630 | 94 01 55.47484 | 656164.767 | 214468.614 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.56651 | 94 01 55.47478 | 656164.772 | 214468.635 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2616336.310 | 972770.947 | 1372469.910 | 16265555.491 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2616336.301 | 972770.944 | 1372469.900 | 16265555.489 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2616336.301 | 972770.944 | 1372469.900 | 16265555.489 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2616336.264 | 972770.905 | 1372469.863 | 16265555.449 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2616336.269 | 972770.926 | 1372469.868 | 16265555.471 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BECKLER-DP9901-3N-21SEP2025.jpg | N | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BECKLER-DP9901-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BECKLER-DP9901-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BERGEN MN085



**Mn/DOT Name:** BERGEN MN085 **NGS Name:** BERGEN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9684 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 27 | 116 N | 27 W | 444921.10 | 940411.00 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2007 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | SURVEY DISK | MNDT |

**Description:** (2015) **Stamping:** BERGEN 2007

5.0 MILES NORTHEAST OF GLENCOE, 3.5 MILES NORTH ALONG COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND TRUNK HIGHWAY 212, THE JUNCTION IS 3.0 MILES EAST OF GLENCOE, THEN 1.1 MILES EAST ON COUNTY ROAD 74, THEN 0.1 MILE NORTHEAST ON COUNTY ROAD 84/ BERGEN ROAD, 22.0 FEET SOUTHEAST OF COUNTY ROAD 84/ BERGEN ROAD, 9.0 FEET NORTHEAST OF A FIELD ENTRANCE, 53.0 FEET NORTHEAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1000.129 | | | 909.709 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1000.106 | .131 | | 909.946 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1000.129 | | | 909.709 | .009 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1000.093 | .262 | | 909.677 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 909.709 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1000.073 | .262 | | 909.755 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1000.129 | .131 | | 909.805 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1000.129 | .131 | | 909.805 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1000.129 | .131 | | 909.946 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1000.129 | .131 | | 909.946 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.384 12B = -90.413 09 = -90.318 03 = -90.170**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 21.10463 | 94 04 11.00453 | 646250.434 | 234100.920 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 49 21.10458 | 94 04 11.00433 | 646250.448 | 234100.915 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 49 21.10385 | 94 04 11.00437 | 646250.446 | 234100.841 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 49 21.10463 | 94 04 11.00453 | 646250.434 | 234100.920 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 21.10378 | 94 04 11.00541 | 646250.371 | 234100.833 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 49 21.10478 | 94 04 11.00533 | 646250.376 | 234100.934 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 49 21.10478 | 94 04 11.00533 | 646250.376 | 234100.934 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 21.10434 | 94 04 11.00485 | 646250.411 | 234100.890 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 49 21.10434 | 94 04 11.00485 | 646250.411 | 234100.890 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 49 21.10434 | 94 04 11.00485 | 646250.411 | 234100.890 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# BERGEN MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2606575.902 | 992477.672 | 1362955.033 | 16285375.826 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2606575.917 | 992477.667 | 1362955.047 | 16285375.821 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2606575.914 | 992477.593 | 1362955.043 | 16285375.746 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2606575.902 | 992477.672 | 1362955.033 | 16285375.826 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2606575.839 | 992477.586 | 1362954.969 | 16285375.741 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2606575.845 | 992477.687 | 1362954.976 | 16285375.842 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2606575.845 | 992477.687 | 1362954.976 | 16285375.842 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2606575.879 | 992477.643 | 1362955.010 | 16285375.797 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2606575.879 | 992477.643 | 1362955.010 | 16285375.797 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2606575.879 | 992477.643 | 1362955.010 | 16285375.797 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BERGEN-DI9684-3SE-14APR2015.jpg | SE | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BERGEN-DI9684-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BERGEN-DI9684-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BISC MNDT



**Mn/DOT Name:** BISC MNDT **NGS Name:** BISC

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9248 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 23 | 116 N | 29 W | 445028.34 | 941721.92 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** BISC 2000

2.0 MILES NORTHWEST OF BISCAY, 1.35 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY TO TRUNK HIGHWAY 22 MILEPOINT 116.45, THEN 0.35 MILE EAST ON COUNTY ROAD 11(155TH ST), 100.7 FEET WEST OF A POWER POLE, 46.0 FEET SOUTH OF COUNTY ROAD 11, 17.0 FEET WEST OF AN ENTRANCE, 3.9 FEET EAST OF A WITNESS POST.

**Station Pair:** HOOK - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.334 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1027.334 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.334 | | | 936.950 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1027.334 | | | 936.950 | .007 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1027.482 | .262 | | 937.108 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1027.432 | .262 | | 937.072 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1027.370 | .262 | | 937.009 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 936.950 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1027.255 | .262 | | 936.999 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 937.049 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1027.295 | .131 | | 937.196 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1027.295 | .131 | | 937.196 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.374 12B = -90.361 09 = -90.256 03 = -90.098**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 28.34054 | 94 17 21.92324 | 589212.526 | 240592.802 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 50 28.34054 | 94 17 21.92324 | 589212.526 | 240592.802 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 50 28.34114 | 94 17 21.92230 | 589212.593 | 240592.863 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 50 28.34063 | 94 17 21.92239 | 589212.587 | 240592.811 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 50 28.34004 | 94 17 21.92256 | 589212.575 | 240592.751 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 50 28.34054 | 94 17 21.92324 | 589212.526 | 240592.802 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 28.34095 | 94 17 21.92368 | 589212.494 | 240592.843 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 50 28.34066 | 94 17 21.92366 | 589212.495 | 240592.814 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 28.34008 | 94 17 21.92307 | 589212.538 | 240592.755 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 50 28.34012 | 94 17 21.92305 | 589212.539 | 240592.760 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 50 28.34012 | 94 17 21.92305 | 589212.539 | 240592.760 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549595.912 | 999411.832 | 1306077.954 | 16293009.614 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2549595.912 | 999411.832 | 1306077.954 | 16293009.614 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2549595.980 | 999411.892 | 1306078.022 | 16293009.673 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2549595.973 | 999411.840 | 1306078.015 | 16293009.622 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2549595.961 | 999411.781 | 1306078.002 | 16293009.563 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2549595.912 | 999411.832 | 1306077.954 | 16293009.614 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549595.880 | 999411.873 | 1306077.923 | 16293009.656 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2549595.882 | 999411.844 | 1306077.924 | 16293009.627 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2549595.924 | 999411.785 | 1306077.965 | 16293009.567 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2549595.925 | 999411.789 | 1306077.967 | 16293009.571 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2549595.925 | 999411.789 | 1306077.967 | 16293009.571 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BISC-DF9248-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BISC-DF9248-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BISC-DF9248-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BISCAY MNDT



**Mn/DOT Name:** BISCAY MNDT
**NGS Name:** BISCAY
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1173 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 116 N | 30 W | 445002.74 | 942239.99 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2007 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** BISCAY 1984

3.7 MILES SOUTH OF HUTCHINSON, 4.5 MILES SOUTH-SOUTHWEST ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 500.0 FEET WEST ON COUNTY ROAD 72, 39.5 FEET EAST OF A FIELD ENTRANCE, 37.04 FEET NORTHEAST OF BISCAY MNDT RM 2, 36.58 FEET NORTHWEST OF STATION 4304 L 1984, 34.7 FEET NORTHWEST OF A POWER POLE, 18.0 FEET SOUTH OF COUNTY ROAD 72, 36.1 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.586 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1071.225 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1990 | 17351 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.120 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.520 | .197 | | 981.684 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.193 12B = -90.170 09 = -90.046 03 = -89.918**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 02.73892 | 94 22 39.99078 | 566301.650 | 237915.503 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 02.73471 | 94 22 39.98683 | 566301.935 | 237915.079 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 50 02.73508 | 94 22 39.98741 | 566301.894 | 237915.115 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 02.87099 | 94 22 39.04742 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |
| 44 50 02.87200 | 94 22 39.04760 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# BISCAY MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526667.251 | 996912.707 | 1283124.868 | 16290793.880 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526667.534 | 996912.279 | 1283125.146 | 16290793.449 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2526667.492 | 996912.317 | 1283125.104 | 16290793.487 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902065.743 | 668835.657 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |
| 1902065.731 | 668835.756 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# BISCAY MNDT RM 2



**Mn/DOT Name:** BISCAY MNDT RM 2 **NGS Name:** BISCAY RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1527 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 116 N | 30 W | 445002.45 | 942240.31 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (1984) **Stamping:** BISCAY NO 2 1984

3.25 MILES SOUTH OF HUTCHINSON, 4.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 97.15, THEN 500.0 FEET WEST ON COUNTY ROAD 72, 46.5 FEET SOUTH OF COUNTY ROAD 72, 45.9 FEET WEST OF STATION 4304 L, 44.2 FEET WEST OF A POWER POLE, 37.0 FEET SOUTHWEST OF STATION BISCAY MNDT, 17.5 FEET EAST OF AN ENTRANCE, 47.1 FEET WEST OF A WITNESS POST.

**Station Notes**

FOUND THE ROD BENT AND THE CAP LOOSE - RESET MARK. THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.220 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.754 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.193 12B = -90.170 09 = -90.046 03 = -89.918**

*** No Horizontal Positions in the Database ***

# BISCAY MNDT RM 2 RESET



**Mn/DOT Name:** BISCAY MNDT RM 2 RESET **NGS Name:** BISCAY RM 2 RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9910 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 116 N | 30 W | 445002.45 | 942240.31 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 12 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** BISCAY NO 2 1985 2011

3.25 MILES SOUTH OF HUTCHINSON, 4.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 97.15, THEN 500.0 FEET WEST ALONG COUNTY ROAD 18 (150TH STREET), 58.8 FEET EAST OF A POWER POLE, 46.5 FEET SOUTH OF COUNTY ROAD 18, 17.5 FEET EAST OF A FIELD ENTRANCE, 9.0 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.817 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1068.817 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.817 | | | 978.630 | .018 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1068.817 | | | 978.630 | .018 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1068.830 | .131 | | 978.899 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1068.764 | .262 | | 978.719 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.193 12B = -90.170 09 = -90.046 03 = -89.918**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 02.45226 | 94 22 40.30878 | 566278.824 | 237886.398 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 50 02.45226 | 94 22 40.30878 | 566278.824 | 237886.398 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 02.45130 | 94 22 40.31090 | 566278.671 | 237886.300 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 02.45192 | 94 22 40.30922 | 566278.792 | 237886.364 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526644.202 | 996883.783 | 1283101.469 | 16290765.248 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2526644.202 | 996883.783 | 1283101.469 | 16290765.248 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526644.049 | 996883.686 | 1283101.315 | 16290765.153 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526644.170 | 996883.749 | 1283101.437 | 16290765.214 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# BISCAY MNDT RM 2 RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BISCAY_RM_2_RESET-DO9910-3S-12APR2011.jpg | S | Apr 12, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BISCAY_RM_2_RESET-DO9910-2-12APR2011.jpg | | Apr 12, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BISCAY_RM_2_RESET-DO9910-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BOHE MNDT



**Mn/DOT Name:** BOHE MNDT
**NGS Name:** BOHE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6193 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 116 N | 28 W | 445316.15 | 941357.90 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 6 IN. | MARKER W/BAR MAGNET |

**Monument Type:** UNKNOWN
**Disk Type:** HORIZONTAL CONTROL DISK
**Mon. Agency:** MNDT

**Description:** (1989) **Stamping:** BOHE 1989

2.0 MILES SOUTHWEST OF SILVER LAKE, 1.45 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, TO TRUNK HIGHWAY 7 MILEPOINT 148.8, THEN 0.3 MILE SOUTH ON COUNTY ROAD 90, 99.5 FEET SOUTHWEST OF A POWER POLE, 97.4 FEET SOUTHWEST OF BOHE MNDT RM 1,46.2 FEET NORTHWEST OF BOHE MNDT RM 2, 20.5 FEET WEST OF COUNTY ROAD 90, 6.0 FEET SOUTH OF A FIELD ENTRANCE, 97.7 FEET SOUTHWEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.225 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1061.205 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.772 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 970.950 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1061.222 | .262 | | 971.038 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 971.058 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1061.218 | .131 | | 971.186 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1061.218 | .131 | | 971.186 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.275 12B = -90.289 09 = -90.184 03 = -90.013**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.14652 | 94 13 57.90500 | 603829.812 | 257655.341 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.14605 | 94 13 57.90548 | 603829.777 | 257655.293 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 16.14658 | 94 13 57.90595 | 603829.743 | 257655.346 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.14599 | 94 13 57.90535 | 603829.787 | 257655.287 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 16.14599 | 94 13 57.90535 | 603829.786 | 257655.285 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.14081 | 94 13 57.90239 | 603830.003 | 257654.764 | .033 | C | GPS - STATIC | 1989 | HSILV |

# BOHE MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564343.805 | 1016358.666 | 1321030.449 | 16309769.576 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564343.771 | 1016358.619 | 1321030.414 | 16309769.529 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2564343.737 | 1016358.672 | 1321030.381 | 16309769.583 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564343.780 | 1016358.612 | 1321030.424 | 16309769.523 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2564343.780 | 1016358.612 | 1321030.424 | 16309769.523 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564343.992 | 1016358.087 | 1321030.629 | 16309768.995 | .033 | C | GPS - STATIC | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE-DF6193-3W-09MAY2011.jpg | W | May 9, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE-DF6193-2-09MAY2011.jpg | | May 9, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE-DF6193-1-09MAY2011.jpg | | May 9, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BOHE MNDT RESET



**Mn/DOT Name:** BOHE MNDT RESET
**NGS Name:** BOHE RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4223 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 116 N | 28 W | 445316.15 | 941357.91 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 5 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** BOHE 1989 2015

2.0 MILES SOUTHWEST OF SILVER LAKE, 1.45 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE TO TRUNK HIGHWAY 7 MILEPOINT 148.80, THEN 0.3 MILE SOUTH ON COUNTY ROAD 90, 20.5 FEET WEST OF COUNTY ROAD 90 (KALE AVENUE), 99.5 FEET SOUTHWEST OF A POWER POLE, 97.4 FEET SOUTHWEST OF BOHE MNDT RM 1, 46.2 FEET NORTHWEST OF BOHE MNDT RM 2, 6.0 FEET SOUTH OF A FIELD ENTRANCE, 97.7 FEET SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.077 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1061.077 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.077 | | | 970.822 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1061.077 | | | 970.822 | .017 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1061.245 | .262 | | 970.972 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1061.008 | .262 | | 970.723 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.275 12B = -90.289 09 = -90.184 03 = -90.013**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.14639 | 94 13 57.90474 | 603829.830 | 257655.328 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 16.14639 | 94 13 57.90474 | 603829.830 | 257655.328 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 16.14594 | 94 13 57.90448 | 603829.849 | 257655.282 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 16.14651 | 94 13 57.90386 | 603829.894 | 257655.340 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.14587 | 94 13 57.90500 | 603829.812 | 257655.275 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564343.824 | 1016358.653 | 1321030.468 | 16309769.563 | .013 | | ADJUSTMENT | 2025 | GPS3788 |
| 2564343.824 | 1016358.653 | 1321030.468 | 16309769.563 | .013 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2564343.843 | 1016358.607 | 1321030.486 | 16309769.517 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2564343.887 | 1016358.665 | 1321030.531 | 16309769.574 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564343.805 | 1016358.600 | 1321030.448 | 16309769.510 | .066 | | NCAT | 2024 | HHUTCH1 |

# BOHE MNDT RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RESET-DQ4223-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RESET-DQ4223-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RESET-DQ4223-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BOHE MNDT RM 1



**Mn/DOT Name:** BOHE MNDT RM 1 **NGS Name:** BOHE RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9144 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 116 N | 28 W | 445316.97 | 941357.20 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2015) **Stamping:** BOHE NO 1 1989

2.0 MILES SOUTHWEST OF SILVER LAKE, 1.45 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE TO TRUNK HIGHWAY 7 MILEPOINT 148.80, THEN 0.3 MILE SOUTH ON COUNTY ROAD 90, 105.4 FEET NORTH-NORTHEAST OF BOHE MNDT RM 2, 97.4 FEET NORTHEAST OF BOHE MNDT RESET, 2.3 FEET SOUTH-SOUTHWEST OF A POWER POLE, 1.5 FOOT SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1057.439 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1057.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1057.419 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.989 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.590 | .262 | | 967.318 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1057.268 | .262 | | 966.980 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1057.390 | .262 | | 967.206 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.275 12B = -90.289 09 = -90.184 03 = -90.013**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.96506 | 94 13 57.19597 | 603880.453 | 257738.494 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 16.96439 | 94 13 57.19628 | 603880.431 | 257738.426 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 16.96442 | 94 13 57.19730 | 603880.358 | 257738.428 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564395.086 | 1016441.415 | 1321082.735 | 16309851.668 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2564395.063 | 1016441.347 | 1321082.712 | 16309851.600 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564394.990 | 1016441.351 | 1321082.638 | 16309851.604 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

# BOHE MNDT RM 1



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_1-DG9144-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_1-DG9144-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_1-DG9144-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BOHE MNDT RM 2



**Mn/DOT Name:** BOHE MNDT RM 2 **NGS Name:** BOHE RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9143 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 6 | 116 N | 28 W | 445315.93 | 941357.34 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 12 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** BOHE NO 2 1989

2.0 MILES SOUTHWEST OF SILVER LAKE, 1.45 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT WEST EDGE OF SILVER LAKE TO TRUNK HIGHWAY 7 MILEPOINT 148.80, THEN 0.3 MILE SOUTH ON COUNTY ROAD 90, 107.7 FEET SOUTH-SOUTHWEST OF A POWER POLE, 105.4 FEET SOUTH-SOUTHWEST OF BOHE MNDT RM 1, 46.2 FEET SOUTHEAST OF BOHE MNDT RESET, 105.7 FEET SOUTH-SOUTHWEST OF A WITNESS POST, 5.0 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.375 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1060.375 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1060.375 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1060.355 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.926 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.529 | .262 | | 970.251 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1060.303 | .262 | | 970.014 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1060.303 | .262 | | 970.119 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.275 12B = -90.289 09 = -90.184 03 = -90.013**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 15.92684 | 94 13 57.34085 | 603870.539 | 257633.291 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 15.92696 | 94 13 57.34167 | 603870.480 | 257633.303 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 15.92735 | 94 13 57.34294 | 603870.388 | 257633.342 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564384.356 | 1016336.303 | 1321070.713 | 16309746.720 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2564384.297 | 1016336.315 | 1321070.653 | 16309746.733 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564384.206 | 1016336.355 | 1321070.563 | 16309746.774 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

# BOHE MNDT RM 2



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_2-DG9143-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_2-DG9143-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_2-DG9143-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BOHE MNDT RM 3



**Mn/DOT Name:** BOHE MNDT RM 3 **NGS Name:** BOHE RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6194 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 5 | 116 N | 28 W | 445329.96 | 941357.12 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (1989) **Stamping:** BOHE NO 3 1989

2.0 MILES SOUTHWEST OF SILVER LAKE, 1.45 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE, TO TRUNK HIGHWAY 7 MILEPOINT 148.80, THEN 300.0 FEET SOUTH ON COUNTY ROAD 90, 29.5 FEET EAST OF COUNTY ROAD 90, 2.8 FEET NORTHWEST OF A POWER POLE, 2.2 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.282 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1063.282 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1063.282 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1063.262 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.829 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.302 | .262 | | 973.033 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 973.039 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1063.243 | .262 | | 973.075 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 973.141 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1063.252 | .131 | | 973.269 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1063.252 | .131 | | 973.269 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.259 12B = -90.272 09 = -90.167 03 = -89.997**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 29.96071 | 94 13 57.11701 | 603879.659 | 259054.723 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 53 29.96081 | 94 13 57.11735 | 603879.634 | 259054.734 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 29.96093 | 94 13 57.11775 | 603879.605 | 259054.746 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 29.96091 | 94 13 57.11812 | 603879.579 | 259054.743 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 29.96029 | 94 13 57.11766 | 603879.612 | 259054.681 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 29.96029 | 94 13 57.11766 | 603879.612 | 259054.682 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 29.95511 | 94 13 57.11443 | 603879.845 | 259054.157 | .033 | C | GPS - STATIC | 1989 | HSILV |

# BOHE MNDT RM 3



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564404.514 | 1017757.484 | 1321108.395 | 16311167.219 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2564404.490 | 1017757.494 | 1321108.370 | 16311167.230 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564404.461 | 1017757.506 | 1321108.342 | 16311167.242 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2564404.435 | 1017757.504 | 1321108.315 | 16311167.240 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564404.467 | 1017757.441 | 1321108.347 | 16311167.177 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2564404.467 | 1017757.441 | 1321108.347 | 16311167.177 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564404.698 | 1017756.916 | 1321108.572 | 16311166.649 | .033 | C | GPS - STATIC | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_3-DF6194-3E-09MAY2011.jpg | E | May 9, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_3-DF6194-2-09MAY2011.jpg | | May 9, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BOHE_RM_3-DF6194-1-09MAY2011.jpg | | May 9, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BR 43004 SE



**Mn/DOT Name:** BR 43004 SE
**NGS Name:** BR 43004 SE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2202 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 13 | 115 N | 28 W | 444555.74 | 940905.52 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1971 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43004 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:**

**Stamping:** BR 43004 SE 1971

IN GLENCOE, IN AN ABUTMENT IN THE SOUTHEAST CORNER OF COUNTY ROAD 2 BRIDGE NUMBER 43004 OVER TRUNK HIGHWAY 212 AND BUFFALO CREEK, 0.25 MILE SOUTH ALONG COUNTY ROAD 2 FROM THE JUNCTION OF COUNTY ROAD 2 AND TRUNK HIGHWAY 22(10TH STREET) IN GLENCOE, 29.7 FEET EAST OF COUNTY ROAD 2.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.298 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1012.291 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.229 | .262 | | 921.458 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.774 12B = -90.774 09 = -90.695 03 = -90.535**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 55.74379 | 94 09 05.52342 | 625144.792 | 213166.180 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585310.372 | 971709.774 | 1341440.745 | 16264876.083 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43004_SE-DQ2202-3N-14APR2015.jpg | N | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43004_SE-DQ2202-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43004_SE-DQ2202-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BR 43008 SE



**Mn/DOT Name:** BR 43008 SE
**NGS Name:** BR 43008 SE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2199 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 15 | 115 N | 27 W | 444604.55 | 940337.73 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1970 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43008 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:**

**Stamping:** BR 43008 SE 1970

1.5 MILES WEST OF PLATO, IN AN ABUTMENT IN THE SOUTHEAST CORNER OF EASTBOUND TRUNK HIGHWAY 212 BRIDGE NUMBER 43008 OVER BUFFALO CREEK, 0.9 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 124.85, 25.0 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 985.346 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 985.346 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

**Geoid Separations(ft): GEOID18 = -90.515 12B = -90.531 09 = -90.430 03 = -90.305**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43008_SE-DQ2199-3W-14APR2015.jpg | W | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43008_SE-DQ2199-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43008_SE-DQ2199-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BR 43009 NW



**Mn/DOT Name:** BR 43009 NW
**NGS Name:** BR 43009 NW
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 28 W | 444527.54 | 942228.63 | | 3 |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1998 | 2014 | GOOD | Horz=NO Vert=NO | YES | 43009 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | SURVEY DISK | MNDT |

**Description:**

**Stamping:** BR 43009 NW 1998

2.0 MILES NORTHWEST OF BROWNTON, IN AN ABUTMENT IN THE NORTHWEST CORNER OF TRUNK HIGHWAY 15 BRIDGE NUMBER 43009 OVER BUFFALO CREEK, 2.3 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 91.85, 26.0 FEET WEST OF TRUNK HIGHWAY 15.

**Station Notes**

IF THE COORDINATES AND/OR ELEVATIONS ARE ESTABLISHED OR PUBLISHED ON THIS GEODETIC CONTROL DISK, THEY SHOULD BE USED WITH CAUTION. THE GEODETIC CONTROL DISK IS LOCATED ON AN INTEGRAL ABUTMENT AND/OR A JOINTLESS BRIDGE AND IS SUBJECT TO MOVEMENT BEYOND GEODETIC TOLERANCES.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.430 | .262 | | 927.862 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.567 12B = -90.567 09 = -90.426 03 = -90.285**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 27.54099 | 94 22 28.62635 | 567209.203 | 210046.346 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527358.433 | 969040.230 | 1283472.469 | 16262920.288 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43009_NW-3W-30DEC2014.jpg | W | Dec 30, 2014 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43009_NW-2-30DEC2014.jpg | | Dec 30, 2014 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43009_NW-1-30DEC2014.jpg | | Dec 30, 2014 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BR 43011 SE



**Mn/DOT Name:** BR 43011 SE
**NGS Name:** BR 43011 SE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4209 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 23 | 116 N | 29 W | 445010.34 | 941715.37 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2016 | GOOD | Horz=NO Vert=NO | YES | 43011 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | VERTICAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** BR 43011 SE 1989

0.85 MILE NORTHWEST OF BISCAY, IN AN ABUTMENT IN THE SOUTHEAST CORNER OF TRUNK HIGHWAY 22 BRIDGE NUMBER 43011 OVER THE SOUTH FORK OF THE CROW RIVER, 0.85 MILE NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 115.95, 25.0 FEET NORTHEAST OF TRUNK HIGHWAY 22.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.010 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1028.010 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

**Geoid Separations(ft): GEOID18 = -90.403 12B = -90.390 09 = -90.285 03 = -90.128**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43011_SE-DQ4209-3NE-27JUL2015.jpg | NE | Jul 27, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43011_SE-DQ4209-2-27JUL2015.jpg | | Jul 27, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BR_43011_SE-DQ4209-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BREMER MNDT



**Mn/DOT Name:** BREMER MNDT
**NGS Name:** BREMER
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9344 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 30 | 114 N | 29 W | 443933.83 | 942232.43 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2019 | NOT FOUND | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 33 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2006) **Stamping:** BREMER 1992

5.2 MILES SOUTHWEST OF BROWNTON, 4.5 MILES SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 84.95, 104.5 FEET EAST OF TRUNK HIGHWAY 15, 68.3 FEET SOUTH-SOUTHEAST OF A POWER POLE, 53.7 FEET WEST-NORTHWEST OF A POWER POLE, 36.1 FEET EAST-NORTHEAST OF A POWER POLE, 27.6 FEET NORTH-NORTHEAST OF THE NORTHWEST CORNER OF A FENCE, 19.1 FEET SOUTH OF COUNTY ROAD 17, 11.0 FEET WEST OF AN ENTRANCE, 32.0 FEET NORTHEAST OF A WITNESS POST/RIGHT-OF-WAY POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.537 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1027.455 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.085 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 936.511 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 936.652 | .027 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1027.459 | .131 | | 936.744 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1027.459 | .131 | | 936.744 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 936.639 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1027.459 | .131 | | 936.750 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1027.459 | .131 | | 936.750 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |

**Geoid Separations(ft): GEOID18 = -90.987 12B = -90.991 09 = -90.859 03 = -90.731**

# BREMER MNDT



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.82851 | 94 22 32.42589 | 567048.389 | 174222.439 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.82905 | 94 22 32.42482 | 567048.466 | 174222.493 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 39 33.82842 | 94 22 32.42698 | 567048.310 | 174222.429 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.82810 | 94 22 32.42613 | 567048.371 | 174222.397 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 39 33.82810 | 94 22 32.42613 | 567048.371 | 174222.397 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 39 33.82857 | 94 22 32.42500 | 567048.453 | 174222.445 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 39 33.82857 | 94 22 32.42500 | 567048.453 | 174222.445 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.82420 | 94 22 32.42395 | 567048.531 | 174222.001 | .033 | C | GPS - STATIC | 1993 | H1993 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526919.667 | 933222.568 | 1282593.462 | 16227117.274 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526919.744 | 933222.622 | 1282593.540 | 16227117.328 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 2526919.588 | 933222.559 | 1282593.383 | 16227117.267 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526919.649 | 933222.526 | 1282593.444 | 16227117.233 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2526919.649 | 933222.526 | 1282593.444 | 16227117.233 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2526919.731 | 933222.574 | 1282593.526 | 16227117.279 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2526919.731 | 933222.574 | 1282593.526 | 16227117.279 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526919.805 | 933222.131 | 1282593.595 | 16227116.835 | .033 | C | GPS - STATIC | 1993 | H1993 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BREMER-DG9344-3NE-01MAR2006.jpg | NE | Mar 1, 2006 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BREMER-DG9344-2-01MAR2006.jpg | | Mar 1, 2006 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BREMER-DG9344-1-01MAR2006.jpg | | Mar 1, 2006 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** BREW
**NGS Name:** BREW
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI1762 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 29 | 115 N | 28 W | 444422.53 | 941306.14 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2006 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | SURVEY DISK | MNDT |

**Description:** (2015) **Stamping:** BREW 2006

3.9 MILES SOUTHWEST OF GLENCOE, AT THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 SOUTH (THE JUNCTION IS 3.5 MILES WEST OF GLENCOE), AT TRUNK HIGHWAY 212 MILEPOINT 116.0, 32.8 FEET SOUTH OF TRUNK HIGHWAY 212, 32.7 FEET EAST-SOUTHEAST OF MILEPOST 116, 15.4 FEET WEST OF A FIELD ENTRANCE, 14.9 FEET NORTH-NORTHEAST OF A WITNESS POST.

**Station Pair:** POSL - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.827 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1018.827 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1018.827 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2010 | 00000663 |
| 1018.830 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2006 | VGAYL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.856 | .262 | | 927.967 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1018.827 | | | 928.007 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1018.827 | .131 | | 928.276 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1018.827 | | | 927.994 | .010 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1018.896 | .262 | | 928.003 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 928.007 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1018.774 | .262 | | 927.984 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1018.830 | .131 | | 928.276 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1018.830 | .131 | | 928.276 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 928.154 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |

**Geoid Separations(ft): GEOID18 = -90.889 12B = -90.889 09 = -90.791 03 = -90.626**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 22.53387 | 94 13 06.13781 | 607832.419 | 203630.530 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 44 22.53541 | 94 13 06.13776 | 607832.421 | 203630.687 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 22.53505 | 94 13 06.13786 | 607832.415 | 203630.650 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 22.53461 | 94 13 06.13786 | 607832.415 | 203630.606 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 22.53541 | 94 13 06.13776 | 607832.421 | 203630.687 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 22.53490 | 94 13 06.13877 | 607832.349 | 203630.634 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 44 22.53559 | 94 13 06.13897 | 607832.334 | 203630.704 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 22.53505 | 94 13 06.13831 | 607832.382 | 203630.650 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 22.53505 | 94 13 06.13831 | 607832.382 | 203630.650 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 44 22.53505 | 94 13 06.13831 | 607832.382 | 203630.650 | .033 | C | GPS - STATIC | 2006 | HGAYL |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567926.283 | 962309.922 | 1323946.275 | 16255692.796 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2567926.287 | 962310.077 | 1323946.281 | 16255692.952 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2567926.280 | 962310.041 | 1323946.273 | 16255692.915 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2567926.280 | 962309.996 | 1323946.272 | 16255692.871 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2567926.287 | 962310.077 | 1323946.281 | 16255692.952 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567926.215 | 962310.026 | 1323946.207 | 16255692.901 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2567926.200 | 962310.096 | 1323946.194 | 16255692.971 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2567926.248 | 962310.041 | 1323946.240 | 16255692.916 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2567926.248 | 962310.041 | 1323946.240 | 16255692.916 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2567926.248 | 962310.041 | 1323946.240 | 16255692.916 | .033 | C | GPS - STATIC | 2006 | HGAYL |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BREW-DI1762-3S-06MAY2024.jpg | S | May 6, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BREW-DI1762-2-06MAY2024.jpg | | May 6, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BREW-DI1762-1-06MAY2024.jpg | | May 6, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BROWNTON METH CH SPIRE



**Mn/DOT Name:** BROWNTON METH CH SPIRE
**NGS Name:** BROWNTON METH CH SPIRE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0661 Get Map
**NGS Quad / Sta Num :** 44094142/1020
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 17 | 115 N | 29 W | 444557.84 | 942053.01 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH SPIRE | NGS |

**Description:** (2016)

**Stamping:**

IN BROWNTON, 0.2 MILE NORTH ALONG COUNTY ROAD 25 FROM THE JUNCTION OF COUNTY ROAD 25 AND TRUNK HIGHWAY 212, THEN 0.1 MILE EAST ON 6TH STREET, THEN 0.4 MILE NORTH ON 7TH AVENUE, 64.52 FEET NORTHEAST OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 32 AND 7TH AVENUE, 56.95 FEET NORTH OF THE CENTERLINE OF COUNTY ROAD 32 (DIVISION STREET).

**Station Notes**

THE NATIONAL GEODETIC SURVEY (NGS) PUBLISHED 1927 LATITUDE AND LONGITUDE OF 444557.95 AND 942052.07 AND THE 1983 LATITUDE AND LONGITUDE OF 444557.83016 AND 942053.00601 ARE IN ERROR BY ABOUT 2 MINUTES OF LATITUDE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.584 12B = -90.584 09 = -90.453 03 = -90.302**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 57.83606 | 94 20 53.01041 | 574098.204 | 213137.623 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 57.83016 | 94 20 53.00601 | 574098.523 | 213137.027 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 57.95000 | 94 20 52.07000 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534270.486 | 972077.627 | 1290420.076 | 16265871.797 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534270.801 | 972077.029 | 1290420.384 | 16265871.194 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1909669.060 | 643998.974 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# BROWNTON MUNICIPAL TANK



**Mn/DOT Name:** BROWNTON MUNICIPAL TANK
**NGS Name:** BROWNTON MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0658 Get Map
**NGS Quad / Sta Num :** 44094142/1021
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 17 | 115 N | 29 W | 444550.04 | 942053.75 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (1935)

**Stamping:**

IN THE WEST CENTRAL PART OF BROWNTON, 1.0 MILE NORTH ALONG COUNTY ROAD 25/PLUM AVENUE FROM THE JUNCTION OF COUNTY ROAD 25/PLUM AVENUE AND 90TH STREET/RIDGE ROAD IN BROWNTON, THEN 0.2 MILE EAST OF 10TH STREET, THEN 0.2 MILE NORTH ON A TEE-ROAD.

**Station Notes**

THE NATIONAL GEODETIC SURVEY (NGS) 1927 LATITUDE AND LONGITUDE OF 444550.15 AND 942052.81 AND THE 1983 LATITUDE AND LONGITUDE OF 444550.02928 AND 942053.74629 ARE IN ERROR BY ABOUT 2 MINUTES.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.590 12B = -90.594 09 = -90.459 03 = -90.311**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 50.03510 | 94 20 53.75067 | 574047.560 | 212347.369 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 50.02928 | 94 20 53.74629 | 574047.877 | 212346.781 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 50.15000 | 94 20 52.81000 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534213.716 | 971287.873 | 1290353.600 | 16265082.954 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534214.030 | 971287.283 | 1290353.906 | 16265082.359 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1909612.310 | 643209.324 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# BROWNTON WATER TANK



**Mn/DOT Name:** BROWNTON WATER TANK

**NGS Name:** BROWNTON WATER TANK

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 29 | 115 N | 29 W | 444401.80 | 942059.59 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | WATER TOWER | MNDT |

**Description:** (2016)

**Stamping:**

IN THE NORTH PART OF BROWNTON, 0.6 MILE NORTH ON COUNTY ROAD 25 FROM THE JUNCTION OF COUNTY ROAD 25 AND TRUNK HIGHWAY 212, THEN 243.0 FEET EAST ON 3RD STREET, AT THE SOUTHWEST CORNER OF 6TH AVENUE NORTH AND 3RD STREET NORTH, 113.3 FEET WEST OF THE CENTERLINE OF 6TH AVENUE, 55.4 FEET SOUTH OF THE CENTERLINE OF 3RD STREET.

**Station Notes**

NO COORDINATES WERE COMPUTED FOR THIS STATION.
04-21-11 NEW WATER TOWER IN PLACE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.718 12B = -90.718 09 = -90.584 03 = -90.436**

# BRUIN MN085



**Mn/DOT Name:** BRUIN MN085 **NGS Name:** BRUIN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 36 | 114 N | 30 W | 444338.54 | 942346.98 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (1993) **Stamping:** BRUIN 1993

2.0 MILES WEST OF BROWNTON, 1.25 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, THEN 965.0 FEET NORTH ON TAGUS AVENUE, 18.0 FEET EAST OF TAGUS AVENUE, 12.0 FEET SOUTH OF A RAILROAD.

**Station Notes**

THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.653 12B = -90.656 09 = -90.518 03 = -90.380**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 38.54063 | 94 23 46.98381 | 561586.964 | 198989.802 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521651.178 | 958028.825 | 1277631.195 | 16251981.959 | .033 | C | GPS - STATIC | 1993 | CO43 |

**Mn/DOT Name:** BRWN **NGS Name:** BRWN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK6548 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 31 | 115 N | 29 W | 444349.95 | 942121.83 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2004 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:** BRWN 2004

0.38 MILE SOUTHWEST OF BROWNTON, 0.3 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), TO TRUNK HIGHWAY 15 MILEPOINT 89.85, THEN 0.8 MILE EAST ON COUNTY ROAD 32 (DIVISION STREET), THEN 0.1 MILE SOUTH ON 1ST AVENUE SOUTH, 147.1 FEET NORTH OF 3RD STREET SOUTH EXTENDED, 58.1 FEET WEST OF 1ST AVENUE SOUTH, 43.9 FEET NORTHEAST OF THE NORTHEAST CORNER OF A MAINTENANCE BUILDING, 1.4 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.573 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1017.573 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1017.573 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1017.577 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1017.573 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1017.573 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2005 | VBRWN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.596 | .262 | | 926.872 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1017.495 | .262 | | 926.773 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1017.524 | .262 | | 926.803 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1017.573 | | | 926.812 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1017.573 | | | 926.812 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1017.583 | .131 | | 927.137 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1017.459 | .262 | | 926.872 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.722 12B = -90.718 09 = -90.587 03 = -90.439**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.94821 | 94 21 21.83048 | 572062.926 | 200178.227 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 49.94832 | 94 21 21.83033 | 572062.937 | 200178.238 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 49.94766 | 94 21 21.83031 | 572062.939 | 200178.171 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 49.94816 | 94 21 21.83026 | 572062.942 | 200178.222 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 49.94816 | 94 21 21.83026 | 572062.942 | 200178.222 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.94695 | 94 21 21.83240 | 572062.788 | 200178.099 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.94770 | 94 21 21.83080 | 572062.903 | 200178.175 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# BRWN



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532134.914 | 959135.799 | 1288125.827 | 16252959.691 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2532134.925 | 959135.810 | 1288125.838 | 16252959.702 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2532134.927 | 959135.743 | 1288125.838 | 16252959.635 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2532134.930 | 959135.794 | 1288125.843 | 16252959.685 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2532134.930 | 959135.794 | 1288125.843 | 16252959.685 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532134.775 | 959135.672 | 1288125.686 | 16252959.566 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532134.891 | 959135.747 | 1288125.803 | 16252959.639 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BRWN-DK6548-3W-17SEP2025.jpg | W | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BRWN-DK6548-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BRWN-DK6548-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BUFFALO CREEK MN085



**Mn/DOT Name:** BUFFALO CREEK MN085 **NGS Name:** BUFFALO CREEK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9685 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 16 | 115 N | 27 W | 444540.03 | 940526.57 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2007 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:** BUFFALO CREEK 2007

3.0 MILES EAST OF GLENCOE, 3.3 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 (IN GLENCOE) TO TRUNK HIGHWAY 212 MILEPOINT 123.3, THEN 0.5 MILE SOUTH ON COUNTY ROAD 1 (DAIRY AVENUE), 85.6 FEET EAST OF COUNTY ROAD 1 (DAIRY AVENUE), 49.3 FEET NORTH OF 100TH STREET, 15.3 FEET EAST OF A WITNESS POST.

**Station Pair:** AMBERG - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 993.420 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 993.417 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 993.509 | .262 | | 902.872 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 993.417 | | | 902.761 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 993.417 | .131 | | 903.000 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 993.417 | | | 902.767 | .007 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 993.364 | .262 | | 902.718 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 902.761 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 993.397 | .262 | | 902.843 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 993.371 | .131 | | 902.833 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2011 | GPS2760 |
| 993.371 | .131 | | 902.833 | .066 | 2007 | GPS - STATIC | 2010 | HCOLN |
| 993.436 | .131 | | 902.833 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 993.436 | .131 | | 902.833 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 993.338 | .131 | | 903.000 | .066 | 1996 | GPS - STATIC | 2008 | HCOLN |
| 993.436 | .131 | | 903.000 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 993.436 | .131 | | 903.000 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.636 12B = -90.646 09 = -90.554 03 = -90.420**

# BUFFALO CREEK MN085



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.02572 | 94 05 26.57407 | 640952.668 | 211673.690 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 45 40.02587 | 94 05 26.57423 | 640952.656 | 211673.705 | .003 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 45 40.02587 | 94 05 26.57420 | 640952.658 | 211673.705 | .003 | C | GPS - STATIC | 2015 | HPLAT |
| 44 45 40.02618 | 94 05 26.57411 | 640952.664 | 211673.736 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 45 40.02587 | 94 05 26.57423 | 640952.656 | 211673.705 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.02575 | 94 05 26.57471 | 640952.621 | 211673.692 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 45 40.02601 | 94 05 26.57537 | 640952.574 | 211673.719 | .033 | C | ADJUSTMENT | 2011 | GPS2760 |
| 44 45 40.02601 | 94 05 26.57537 | 640952.574 | 211673.719 | .033 | C | GPS - STATIC | 2010 | HCOLN |
| 44 45 40.02601 | 94 05 26.57537 | 640952.574 | 211673.719 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 45 40.02601 | 94 05 26.57537 | 640952.574 | 211673.719 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.02561 | 94 05 26.57477 | 640952.617 | 211673.678 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 45 40.02561 | 94 05 26.57477 | 640952.617 | 211673.678 | .033 | C | GPS - STATIC | 2008 | HCOLN |
| 44 45 40.02561 | 94 05 26.57477 | 640952.617 | 211673.678 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 45 40.02561 | 94 05 26.57477 | 640952.617 | 211673.678 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2601104.500 | 970094.630 | 1357210.099 | 16263067.256 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2601104.489 | 970094.645 | 1357210.088 | 16263067.272 | .003 | | ADJUSTMENT | 2015 | GPS3118 |
| 2601104.491 | 970094.645 | 1357210.090 | 16263067.272 | .003 | C | GPS - STATIC | 2015 | HPLAT |
| 2601104.498 | 970094.677 | 1357210.097 | 16263067.303 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2601104.489 | 970094.645 | 1357210.088 | 16263067.272 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2601104.454 | 970094.633 | 1357210.053 | 16263067.260 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2601104.407 | 970094.660 | 1357210.006 | 16263067.287 | .033 | C | ADJUSTMENT | 2011 | GPS2760 |
| 2601104.407 | 970094.660 | 1357210.006 | 16263067.287 | .033 | C | GPS - STATIC | 2010 | HCOLN |
| 2601104.407 | 970094.660 | 1357210.006 | 16263067.287 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2601104.407 | 970094.660 | 1357210.006 | 16263067.287 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2601104.450 | 970094.619 | 1357210.048 | 16263067.246 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2601104.450 | 970094.619 | 1357210.048 | 16263067.246 | .033 | C | GPS - STATIC | 2008 | HCOLN |
| 2601104.450 | 970094.619 | 1357210.048 | 16263067.246 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2601104.450 | 970094.619 | 1357210.048 | 16263067.246 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BUFFALO_CREEK-DI9685-3N-21SEP2025.jpg | N | Sep 21, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BUFFALO_CREEK-DI9685-2-21SEP2025.jpg | | Sep 21, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BUFFALO_CREEK-DI9685-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# BUMPS MNDT



**Mn/DOT Name:** BUMPS MNDT
**NGS Name:** BUMPS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9249 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 115 N | 27 W | 444607.61 | 940745.38 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** BUMPS 2000

IN GLENCOE, 0.1 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET EAST AT THE EAST SIDE OF GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 121.4, 28.5 FEET NORTH OF EASTBOUND TRUNK HIGHWAY 212, 23.0 FEET SOUTH OF WESTBOUND TRUNK HIGHWAY 212, 2.3 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.279 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1013.279 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 922.544 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 922.593 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1013.285 | .131 | | 922.862 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1013.285 | .131 | | 922.862 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 922.705 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1013.285 | .131 | | 922.761 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1013.285 | .131 | | 922.761 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.718 12B = -90.718 09 = -90.640 03 = -90.489**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 07.61129 | 94 07 45.38477 | 630919.389 | 214403.090 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 07.61148 | 94 07 45.38581 | 630919.314 | 214403.109 | .020 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 46 07.61148 | 94 07 45.38581 | 630919.314 | 214403.109 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 07.61102 | 94 07 45.38531 | 630919.351 | 214403.062 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 46 07.61102 | 94 07 45.38531 | 630919.351 | 214403.062 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 46 07.61102 | 94 07 45.38531 | 630919.351 | 214403.062 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 07.61102 | 94 07 45.38531 | 630919.352 | 214403.062 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# BUMPS MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2591093.798 | 972901.642 | 1347237.044 | 16265996.465 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2591093.723 | 972901.661 | 1347236.970 | 16265996.486 | .020 | | ADJUSTMENT | 2007 | GPS2300 |
| 2591093.723 | 972901.661 | 1347236.970 | 16265996.486 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2591093.759 | 972901.615 | 1347237.005 | 16265996.438 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2591093.759 | 972901.615 | 1347237.005 | 16265996.438 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2591093.759 | 972901.615 | 1347237.005 | 16265996.438 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2591093.759 | 972901.615 | 1347237.005 | 16265996.438 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BUMPS-DF9249-3S-26JUL2006.jpg | S | Jul 26, 2006 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BUMPS-DF9249-2-26JUL2006.jpg | | Jul 26, 2006 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BUMPS-DF9249-1-26JUL2006.jpg | | Jul 26, 2006 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** C 125 **NGS Name:** C 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0020 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 29 | 116 N | 27 W | 444925.00 | 940529.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | 91500 | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** C-125 1934

6.1 MILES NORTHEAST OF THE DEPOT AT GLENCOE, 1.5 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET IN GLENCOE, THEN 4.3 MILES NORTH ON TRUNK HIGHWAY 261, ALONG THE HOWARD LAKE-GLENCOE ROAD AT A CONCRETE BRIDGE, SET ON THE SOUTHWEST WING WALL, 10.0 FEET WEST OF THE CENTERLINE OF A BRIDGE AND LEVEL WITH THE ROAD.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 983.597 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.436 12B = -90.466 09 = -90.364 03 = -90.213**

*** No Horizontal Positions in the Database ***

# C 125 RESET



**Mn/DOT Name:** C 125 RESET

**NGS Name:** C 125 RESET

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 29 | 116 N | 27 W | 444925.00 | 940529.00 | | |

**NGS ACRN:** PQ0021 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1940 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | 91500 | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | BENCH MARK DISK | NGS |

**Description:** (2016)

**Stamping:** C 125 RESET 1940

6.1 MILES NORTHEAST OF THE RAILROAD STATION AT GLENCOE, 1.5 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET IN GLENCOE, THEN 4.3 MILES NORTH ON TRUNK HIGHWAY 261, IN THE SOUTHWEST CORNER OF A CONCRETE WING WALL OF TRUNK HIGHWAY 261 BRIDGE NUMBER 91500 OVER COUNTY DITCH 30, 10.0 FEET WEST OF TRUNK HIGHWAY 261.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 983.561 | .066 | 3 | | | | VERTICAL CONTROL SURVEY | 1987 | L24645 |
| 983.558 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.436 12B = -90.466 09 = -90.364 03 = -90.213**

*** No Horizontal Positions in the Database ***

# CABLE MN085



**Mn/DOT Name:** CABLE MN085 **NGS Name:** CABLE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9686 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 16 | 116 N | 27 W | 445143.12 | 940419.91 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2007 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)
**Disk Type:** SURVEY DISK
**Mon. Agency:** MNDT

**Description:** (2010) **Stamping:** CABLE 2007

1.5 MILES SOUTHWEST OF LESTER PRAIRIE, 3.0 MILES SOUTH AND WEST ALONG COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND TRUNK HIGHWAY 7 IN LESTER PRAIRIE TO TRUNK HIGHWAY 7 MILEPOINT 157.8, THEN 1.0 MILE SOUTH ON CABLE AVENUE, THEN 0.05 MILE WEST ON 170TH STREET, 27.3 FEET SOUTH OF 170TH STREET, 7.4 FEET EAST OF A FIELD ENTRANCE, 8.7 FEET WEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 996.881 | | | 906.534 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 996.881 | | | 906.534 | .008 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 996.871 | .262 | | 906.566 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 996.766 | .262 | | 906.461 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 996.888 | .262 | | 906.583 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 996.901 | .262 | | 906.563 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 906.534 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 996.757 | .262 | | 906.517 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 996.881 | .131 | | 906.609 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 996.881 | .131 | | 906.609 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 996.881 | .131 | | 906.753 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 996.881 | .131 | | 906.753 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.305 12B = -90.338 09 = -90.243 03 = -90.092**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 43.11962 | 94 04 19.91025 | 645509.391 | 248479.474 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 51 43.11962 | 94 04 19.91025 | 645509.391 | 248479.474 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 51 43.11955 | 94 04 19.90976 | 645509.426 | 248479.468 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 51 43.11976 | 94 04 19.91024 | 645509.391 | 248479.489 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 51 43.11936 | 94 04 19.91053 | 645509.371 | 248479.448 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 51 43.11926 | 94 04 19.91031 | 645509.386 | 248479.438 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 51 43.11962 | 94 04 19.91025 | 645509.391 | 248479.474 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 43.11927 | 94 04 19.91146 | 645509.304 | 248479.438 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 51 43.11985 | 94 04 19.91095 | 645509.340 | 248479.497 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 51 43.11985 | 94 04 19.91095 | 645509.340 | 248479.497 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 43.11936 | 94 04 19.91053 | 645509.371 | 248479.448 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 51 43.11937 | 94 04 19.91053 | 645509.371 | 248479.449 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 51 43.11937 | 94 04 19.91053 | 645509.371 | 248479.449 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# CABLE MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605946.739 | 1006860.111 | 1362503.122 | 16299761.300 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2605946.739 | 1006860.111 | 1362503.122 | 16299761.300 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2605946.774 | 1006860.104 | 1362503.158 | 16299761.293 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2605946.740 | 1006860.125 | 1362503.123 | 16299761.315 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2605946.719 | 1006860.085 | 1362503.102 | 16299761.274 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2605946.734 | 1006860.075 | 1362503.118 | 16299761.264 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2605946.739 | 1006860.111 | 1362503.122 | 16299761.300 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605946.652 | 1006860.076 | 1362503.035 | 16299761.266 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2605946.688 | 1006860.135 | 1362503.072 | 16299761.324 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2605946.688 | 1006860.135 | 1362503.072 | 16299761.324 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605946.719 | 1006860.085 | 1362503.102 | 16299761.274 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2605946.719 | 1006860.086 | 1362503.102 | 16299761.275 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2605946.719 | 1006860.086 | 1362503.102 | 16299761.275 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CABLE-DI9686-3S-20JUN2024.jpg | S | Jun 20, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CABLE-DI9686-2-20JUN2024.jpg | | Jun 20, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CABLE-DI9686-1-20JUN2024.jpg | | Jun 20, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# CAMPBELL MNDT



**Mn/DOT Name:** CAMPBELL MNDT **NGS Name:** CAMPBELL

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AH5869 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 117 N | 29 W | 445659.53 | 942235.30 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2019 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | STEEL SPIKE IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** CAMPBELL 1986

3.5 MILES NORTH OF HUTCHINSON, 3.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.4 MILE WEST ON 230TH STREET, 0.5 MILE EAST OF CAMPBELLS LAKE, 36.05 FEET WEST-SOUTHWEST OF CAMPBELL RM 1, 32.30 FEET NORTH OF CAMPBELL RM 2, 13.5 FEET NORTH OF 230TH STREET, 3.0 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1116.304 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1116.307 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1116.330 | .262 | | 1027.006 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| | | | 1026.966 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1116.304 | .131 | | 1027.075 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1116.304 | .131 | | 1027.180 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1116.304 | .131 | | 1027.075 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1116.162 | .262 | | 1027.062 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1116.304 | .197 | | 1027.268 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1114.991 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.321 12B = -89.317 09 = -89.189 03 = -89.101**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.53139 | 94 22 35.30266 | 566506.331 | 280129.716 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 56 59.53160 | 94 22 35.30241 | 566506.349 | 280129.737 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.53154 | 94 22 35.30305 | 566506.303 | 280129.731 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 56 59.53154 | 94 22 35.30305 | 566506.303 | 280129.731 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.53104 | 94 22 35.30266 | 566506.332 | 280129.681 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 59.53174 | 94 22 35.30346 | 566506.274 | 280129.751 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 59.53248 | 94 22 35.30226 | 566506.360 | 280129.826 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.52719 | 94 22 35.29581 | 566506.825 | 280129.292 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 56 59.52643 | 94 22 35.29644 | 566506.780 | 280129.213 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.66480 | 94 22 34.35430 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527199.467 | 1039119.970 | 1284178.147 | 16332982.909 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2527199.485 | 1039119.991 | 1284178.165 | 16332982.930 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527199.439 | 1039119.985 | 1284178.119 | 16332982.925 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2527199.439 | 1039119.985 | 1284178.119 | 16332982.925 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527199.467 | 1039119.934 | 1284178.146 | 16332982.874 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2527199.410 | 1039120.005 | 1284178.089 | 16332982.946 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2527199.496 | 1039120.080 | 1284178.177 | 16332983.019 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527199.957 | 1039119.542 | 1284178.632 | 16332982.476 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2527199.912 | 1039119.465 | 1284178.585 | 16332982.400 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902598.191 | 711042.706 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL-AH5869-3N-07NOV2019.jpg | N | Nov 7, 2019 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL-AH5869-2-07NOV2019.jpg | | Nov 7, 2019 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL-AH5869-1-07NOV2019.jpg | | Nov 7, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# CAMPBELL RM 1



**Mn/DOT Name:** CAMPBELL RM 1 **NGS Name:** CAMPBELL RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AH5874 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 117 N | 30 W | 445659.63 | 942234.82 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1982 | 2010 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (2007) **Stamping:** CAMPBELL NO 1 1986

4.3 MILES NORTH OF HUTCHINSON, 3.8 MILES NORTH ALONG TRUNK HIGHWAY 15 (MAIN STREET) FROM THE JUNCTION OF TRUNK HIGHWAY 15 (MAIN STREET) AND TRUNK HIGHWAY 7 (4TH AVENUE) IN HUTCHINSON, THEN 0.4 MILE WEST ON 230TH STREET, 22.0 FEET NORTH OF 230TH STREET, 36.05 FEET EAST-NORTHEAST OF STATION CAMPBELL MNDT, 35.7 FEET EAST-NORTHEAST OF A WITNESS POST. THE DISK WAS SET IN THE MONUMENT WHEN BUILT IN 1982, THEN STAMPED WHEN USED IN 1986.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1114.214 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1114.214 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1114.043 | .262 | | 1024.942 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1114.827 | .197 | | 1025.792 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.324 12B = -89.317 09 = -89.189 03 = -89.101**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.63353 | 94 22 34.82205 | 566540.865 | 280140.170 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 59.63413 | 94 22 34.82211 | 566540.861 | 280140.231 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.62885 | 94 22 34.81566 | 566541.326 | 280139.697 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527234.077 | 1039130.155 | 1284212.873 | 16332992.663 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2527234.073 | 1039130.215 | 1284212.870 | 16332992.724 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527234.535 | 1039129.679 | 1284213.325 | 16332992.182 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL_RM_1-AH5874-3N-04NOV2010.jpg | N | Nov 4, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL_RM_1-AH5874-2-04NOV2010.jpg | | Nov 4, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL_RM_1-AH5874-1-04NOV2010.jpg | | Nov 4, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# CAMPBELL RM 2



**Mn/DOT Name:** CAMPBELL RM 2 **NGS Name:** CAMPBELL RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AH5875 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 117 N | 29 W | 445659.22 | 942235.26 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1982 | 2010 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (2007) **Stamping:** CAMPBELL NO 2 1986

4.3 MILES NORTH OF HUTCHINSON, 3.8 MILES NORTH ALONG TRUNK HIGHWAY 15 (MAIN STREET) FROM THE JUNCTION OF TRUNK HIGHWAY 15 (MAIN STREET) AND TRUNK HIGHWAY 7 (4TH AVENUE) IN HUTCHINSON, THEN 0.4 MILE WEST ON 230TH STREET, 19.5 FEET SOUTH OF 230TH STREET, 32.30 FEET SOUTH OF STATION CAMPBELL MNDT, 35.4 FEET SOUTH OF A WITNESS POST. THE DISK WAS SET IN THE MONUMENT WHEN BUILT IN 1982, THEN STAMPED WHEN USED IN 1986.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1114.873 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1114.876 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1114.709 | .262 | | 1025.608 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1114.827 | .197 | | 1025.792 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.324 12B = -89.317 09 = -89.189 03 = -89.101**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.21404 | 94 22 35.25786 | 566509.655 | 280097.584 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 59.21537 | 94 22 35.25752 | 566509.679 | 280097.719 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 59.21007 | 94 22 35.25108 | 566510.144 | 280097.184 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527202.541 | 1039087.816 | 1284180.822 | 16332950.727 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2527202.566 | 1039087.951 | 1284180.848 | 16332950.861 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527203.026 | 1039087.412 | 1284181.302 | 16332950.317 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL_RM_2-AH5875-3S-04NOV2010.jpg | S | Nov 4, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL_RM_2-AH5875-2-04NOV2010.jpg | | Nov 4, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CAMPBELL_RM_2-AH5875-1-04NOV2010.jpg | | Nov 4, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# CHATAHOCHE MN085



**Mn/DOT Name:** CHATAHOCHE MN085 **NGS Name:** CHATAHOCHE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 16 | 116 N | 27 W | 445130.13 | 940528.94 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2005 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (1993) **Stamping:** CHATAHOCHE 1993

3.0 MILES SOUTHWEST OF LESTER PRAIRIE, 1.25 MILES SOUTH OF THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 22, AT THE JUNCTION OF TRUNK HIGHWAY 261 AND 167TH STREET, 32.0 FEET EAST OF TRUNK HIGHWAY 261, 23.0 FEET SOUTH OF 167TH STREET, 9.0 FEET NORTHEAST OF A POWER POLE.

**Station Notes**

THE ROAD LOOKS LIKE IT WAS REGRADED.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.354 12B = -90.384 09 = -90.285 03 = -90.131**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 30.12938 | 94 05 28.93757 | 640546.104 | 247130.159 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2600973.606 | 1005549.555 | 1357515.480 | 16298512.418 | .033 | C | GPS - STATIC | 1993 | CO43 |

**Mn/DOT Name:** CHRIS
**NGS Name:** CHRIS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9908 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 116 N | 30 W | 444857.83 | 942233.54 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT)

**Disk Type**
METAL ROD (WITH REMOVABLE ID DISK)

**Mon. Agency**
MNDT

**Description:** (2011)

**Stamping:** CHRIS 2011

4.8 MILES SOUTH OF HUTCHINSON, 5.75 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 / TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 95.95, 76.2 FEET WEST OF TRUNK HIGHWAY 15, 24.7 FEET NORTH OF DRIVEWAY NUMBER 13769, 13.0 FEET NORTHWEST OF CABLE BOX NUMBER SD7/7, 1.4 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.330 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1061.330 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.330 | | | 971.038 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1061.330 | | | 971.038 | .016 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1061.317 | .131 | | 971.307 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1061.209 | .262 | | 971.051 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.302 12B = -90.282 09 = -90.157 03 = -90.023**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.82991 | 94 22 33.53677 | 566787.544 | 231343.016 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 48 57.82991 | 94 22 33.53677 | 566787.544 | 231343.016 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.82981 | 94 22 33.53804 | 566787.452 | 231343.006 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.82950 | 94 22 33.53725 | 566787.509 | 231342.975 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527102.082 | 990337.315 | 1283478.515 | 16284214.890 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527102.082 | 990337.315 | 1283478.515 | 16284214.890 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527101.990 | 990337.305 | 1283478.423 | 16284214.882 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527102.047 | 990337.273 | 1283478.479 | 16284214.850 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CHRIS-DO9908-3W-02MAY2011.jpg | W | May 2, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CHRIS-DO9908-2-02MAY2011.jpg | | May 2, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CHRIS-DO9908-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# CHRISTY C MN085



**Mn/DOT Name:** CHRISTY C MN085 **NGS Name:** CHRISTY C

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9688 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 3 | 117 N | 30 W | 445806.18 | 942513.95 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2007 | 2020 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | SURVEY DISK | MNDT |

**Description:** (2007) **Stamping:** CHRISTY C 2007

6.0 MILES NORTH OF HUTCHINSON, 0.7 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, TO TRUNK HIGHWAY 15 MILEPOINT 102.4, THEN 4.9 MILES WEST AND NORTH ON COUNTY ROAD 12, THEN 1.45 MILES WESTERLY ON COUNTY ROAD 60 (BELLE LAKE ROAD), 114.3 FEET NORTH OF COUNTY ROAD 60 (BELLE LAKE ROAD), 174.6 FEET EAST OF THE SOUTH POST OF THE PEIPENBERG PARK SIGN, 2.0 FEET SOUTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1092.357 | .262 | | 1003.361 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1092.288 | .262 | | 1003.292 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1092.380 | .262 | | 1003.384 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 1003.335 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1092.353 | .131 | | 1003.459 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1092.321 | .131 | | 1003.459 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1092.321 | .131 | | 1003.561 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1092.321 | .131 | | 1003.459 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1092.353 | .131 | | 1003.459 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1092.258 | .262 | | 1003.482 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1092.353 | .131 | | 1003.561 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1092.353 | .131 | | 1003.561 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -88.996 12B = -88.996 09 = -88.858 03 = -88.776**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 06.18164 | 94 25 13.95448 | 555078.119 | 286847.326 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 58 06.18208 | 94 25 13.95426 | 555078.134 | 286847.370 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 58 06.18190 | 94 25 13.95379 | 555078.168 | 286847.352 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 58 06.18188 | 94 25 13.95399 | 555078.154 | 286847.350 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 06.18195 | 94 25 13.95489 | 555078.089 | 286847.357 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 58 06.18195 | 94 25 13.95489 | 555078.089 | 286847.357 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 58 06.18195 | 94 25 13.95489 | 555078.089 | 286847.357 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 58 06.18195 | 94 25 13.95489 | 555078.089 | 286847.357 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 06.18145 | 94 25 13.95448 | 555078.119 | 286847.307 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 58 06.18116 | 94 25 13.95483 | 555078.094 | 286847.277 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 58 06.18145 | 94 25 13.95448 | 555078.119 | 286847.307 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 58 06.18145 | 94 25 13.95448 | 555078.119 | 286847.307 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# CHRISTY C MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515824.771 | 1045925.423 | 1272890.835 | 16339927.167 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2515824.788 | 1045925.467 | 1272890.852 | 16339927.211 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2515824.821 | 1045925.449 | 1272890.885 | 16339927.192 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2515824.807 | 1045925.447 | 1272890.871 | 16339927.190 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515824.742 | 1045925.454 | 1272890.806 | 16339927.198 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2515824.742 | 1045925.454 | 1272890.806 | 16339927.198 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2515824.742 | 1045925.454 | 1272890.806 | 16339927.198 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2515824.742 | 1045925.454 | 1272890.806 | 16339927.198 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2515824.771 | 1045925.404 | 1272890.835 | 16339927.147 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2515824.746 | 1045925.374 | 1272890.809 | 16339927.118 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2515824.771 | 1045925.404 | 1272890.835 | 16339927.147 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2515824.771 | 1045925.404 | 1272890.835 | 16339927.147 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CHRISTY_C-DI9688-3N-01APR2020.jpg | N | Apr 1, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CHRISTY_C-DI9688-2-01APR2020.jpg | | Apr 1, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/CHRISTY_C-DI9688-1-01APR2020.jpg | | Apr 1, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# COLIN MNDT



**Mn/DOT Name:** COLIN MNDT
**NGS Name:** COLIN
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9345 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 114 N | 30 W | 443933.60 | 942300.40 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2019 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** COLIN 1992

5.25 MILES SOUTHWEST OF BROWNTON, 4.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 84.95, 0.35 MILE WEST ON COUNTY ROAD 17, 30.5 FEET SOUTH OF COUNTY ROAD 17, 12.2 FEET NORTHEAST OF A POWER POLE, 7.0 FEET WEST OF AN ENTRANCE, 5.8 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.109 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1034.027 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.656 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 943.082 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 943.223 | .027 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1034.020 | .131 | | 943.318 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1034.020 | .131 | | 943.318 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |

**Geoid Separations(ft): GEOID18 = -90.978 12B = -90.984 09 = -90.850 03 = -90.718**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.59615 | 94 23 00.39873 | 565026.490 | 174192.604 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.59611 | 94 23 00.39906 | 565026.466 | 174192.600 | .030 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.59565 | 94 23 00.39933 | 565026.447 | 174192.553 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 39 33.59565 | 94 23 00.39933 | 565026.447 | 174192.553 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.59118 | 94 23 00.39808 | 565026.541 | 174192.099 | .033 | C | GPS - STATIC | 1993 | H1993 |

# COLIN MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524897.825 | 933208.426 | 1280571.961 | 16227127.964 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524897.802 | 933208.422 | 1280571.937 | 16227127.960 | .030 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524897.782 | 933208.375 | 1280571.917 | 16227127.914 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2524897.782 | 933208.375 | 1280571.917 | 16227127.914 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524897.870 | 933207.922 | 1280571.999 | 16227127.460 | .033 | C | GPS - STATIC | 1993 | H1993 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/COLIN-DG9345-3W-01DEC2010.jpg | W | Dec 1, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/COLIN-DG9345-2-01DEC2010.jpg | | Dec 1, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/COLIN-DG9345-1-01DEC2010.jpg | | Dec 1, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# COLIN MNDT RESET



**Mn/DOT Name:** COLIN MNDT RESET
**NGS Name:** COLIN RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DR6196 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 114 N | 30 W | 443933.60 | 942300.40 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2019 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 6 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2020) **Stamping:** COLIN 1992 2019

5.25 MILES SOUTHWEST OF BROWNTON, 4.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 84.95, 0.35 MILE WEST ON COUNTY ROAD 17, 30.5 FEET SOUTH OF COUNTY ROAD 17, 12.2 FEET NORTHEAST OF A POWER POLE, 7.0 FEET WEST OF AN ENTRANCE, 5.8 FEET EAST OF A WITNESS POST.

**Station Pair:** MILL MNDT RM 2 - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.919 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1033.919 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.919 | .262 | | 942.941 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1033.932 | .262 | | 942.948 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |

**Geoid Separations(ft): GEOID18 = -90.978 12B = -90.984 09 = -90.850 03 = -90.718**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 33.59636 | 94 23 00.39814 | 565026.533 | 174192.625 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 39 33.59648 | 94 23 00.39900 | 565026.470 | 174192.637 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524897.868 | 933208.447 | 1280572.004 | 16227127.984 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2524897.806 | 933208.459 | 1280571.942 | 16227127.997 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/COLIN_RESET-DR6196-3S-22MAY2024.jpg | S | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/COLIN_RESET-DR6196-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/COLIN_RESET-DR6196-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# COLLINS



**Mn/DOT Name:** COLLINS
**NGS Name:** COLLINS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0668 Get Map
**NGS Quad / Sta Num :** 44094143/1001
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 30 W | 444539.41 | 942951.60 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | UNSPECIFIC DISK TYPE (SEE TEXT) | NGS |

**Description:** (1985) **Stamping:** COLLINS 1956

0.5 MILE WEST AND 2.5 MILES NORTH OF STEWART, 4.0 MILES NORTHEAST AND NORTH ON COUNTY ROAD 7 FROM THE JUNCTION OF COUNTY ROAD 7 AND TRUNK HIGHWAY 212 AT THE EAST EDGE OF STEWART, THEN 2.0 MILES WEST ON COUNTY ROAD 53 TO THE CROSSROADS, 187.6 FEET WEST OF COLLINS RM 1, 113.4 FEET EAST OF COLLINS RM 2, 96.4 FEET SOUTHEAST OF A POWER POLE, 93.0 FEET EAST-SOUTHEAST OF THE CROSSROADS, 82.0 FEET EAST OF A NORTH-SOUTH GRAVEL ROAD (COUNTY LINE ROAD), 49.0 FEET SOUTH OF EAST-WEST GRAVEL ROAD (COUNTY ROAD 53), 33.4 FEET EAST-NORTHEAST OF TT 143 ES, 19.0 FEET SOUTHWEST OF A TELEPHONE POLE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.428 | .197 | | 966.451 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.396 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.289 12B = -90.305 09 = -90.154 03 = -90.026**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 39.40800 | 94 29 51.60401 | 535241.367 | 211170.802 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 39.40349 | 94 29 51.59884 | 535241.740 | 211170.346 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 39.54020 | 94 29 50.64900 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495403.667 | 970412.493 | 1251542.558 | 16264685.675 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495404.037 | 970412.034 | 1251542.922 | 16264685.211 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1870802.191 | 642335.579 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# COLLINS AZ MK



**Mn/DOT Name:** COLLINS AZ MK

**NGS Name:** COLLINS AZ MK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8367 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 30 W | 444543.00 | 942952.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2007) **Stamping:** COLLINS 1956

2.89 MILES NORTH OF STEWART, 2.0 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, THEN 2.5 MILES NORTH ON COUNTY ROAD 20, THEN 1.0 MILE WEST ON 810TH AVENUE, THEN 325.0 FEET NORTH ON ZANE AVENUE, 0.07 MILE NORTH OF STATION TT 143 ES USGS, 51.57 FEET EAST OF THE CENTERLINE OF ZANE AVENUE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.285 12B = -90.298 09 = -90.147 03 = -90.023**

# COLLINS RM 1



**Mn/DOT Name:** COLLINS RM 1

**NGS Name:** COLLINS RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8368 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 30 W | 444539.60 | 942949.02 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** COLLINS NO 1 1956

0.5 MILE WEST AND 2.5 MILES NORTH OF STEWART, 4.0 MILES NORTHEAST AND NORTH ON COUNTY ROAD 7 FROM THE JUNCTION OF COUNTY ROAD 7 AND TRUNK HIGHWAY 212 AT THE EAST EDGE OF STEWART, THEN 2.0 MILES WEST ON COUNTY ROAD 53 TO THE CROSSROADS, 32.0 FEET SOUTH OF THE CENTER OF COUNTY ROAD 53, 2.0 FEET WEST OF THE SECOND TELEPHONE POLE EAST OF THE ROAD INTERSECTION.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.292 12B = -90.305 09 = -90.154 03 = -90.029**

# COLLINS RM 2



**Mn/DOT Name:** COLLINS RM 2 **NGS Name:** COLLINS RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8369 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 30 W | 444539.62 | 942953.15 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** COLLINS NO 2 1956

2.6 MILES NORTHWEST OF STEWART, 4.0 MILES NORTHEAST AND NORTH ON COUNTY ROAD 7 FROM THE JUNCTION OF COUNTY ROAD 7 AND TRUNK HIGHWAY 212 AT THE EAST EDGE OF STEWART, THEN 2.0 MILES WEST ON COUNTY ROAD 53 TO THE CROSSROADS, 47.5 FEET SOUTH OF A TELEPHONE POLE WITH LINES RUNNING NORTH, SOUTH, AND WEST, 40.0 FEET SOUTHWEST OF THE CENTER OF A ROAD INTERSECTION, AND 1.5 FEET WEST-NORTHWEST OF A FENCE CORNER.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.292 12B = -90.305 09 = -90.154 03 = -90.029**

# CUEN MNDT TEMP



**Mn/DOT Name:** CUEN MNDT TEMP
**NGS Name:** CUEN TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1174 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 116 N | 29 W | 445203.78 | 942231.45 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | MNDT |

**Description:** (2016) **Stamping:** CUEN 1985

1.5 MILES SOUTH OF HUTCHINSON, 2.2 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, 224.6 FEET NORTH-NORTHWEST OF A NAIL AND DISK IN A POWER POLE, 54.0 FEET SOUTHWEST OF A NAIL AND DISK IN A POWER POLE, 31.5 FEET EAST OF TRUNK HIGHWAY 15, 7.0 FEET NORTH OF AN ENTRANCE EAST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.302 | .197 | | 974.667 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.810 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.967 12B = -89.947 09 = -89.823 03 = -89.708**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 03.78464 | 94 22 31.45317 | 566878.085 | 250176.959 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 03.78004 | 94 22 31.44761 | 566878.486 | 250176.494 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 52 03.78101 | 94 22 31.44902 | 566878.385 | 250176.592 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 03.91730 | 94 22 30.50840 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527338.754 | 1009168.098 | 1283947.379 | 16303037.663 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527339.152 | 1009167.631 | 1283947.771 | 16303037.190 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527339.051 | 1009167.729 | 1283947.671 | 16303037.290 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902737.326 | 681091.006 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** D 125 **NGS Name:** D 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0022 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 5 | 115 N | 27 W | 444802.00 | 940530.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | NONE | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** D-125 1934

4.5 MILES NORTHEAST OF THE DEPOT AT GLENCOE, 1.5 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 (10TH STREET) IN GLENCOE, THEN 2.7 MILES NORTH ON TRUNK HIGHWAY 261, ALONG THE HOWARD LAKE-GLENCOE ROAD AT A CONCRETE BRIDGE, SET ON THE SOUTHWEST WING WALL, 10.0 FEET WEST OF THE CENTERLINE OF THE BRIDGE AND ABOUT LEVEL WITH THE SURFACE OF THE ROAD.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1001.868 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.502 12B = -90.525 09 = -90.433 03 = -90.285**

*** No Horizontal Positions in the Database ***

# D 125 RESET



**Mn/DOT Name:** D 125 RESET

**NGS Name:** D 125 RESET

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 5 | 115 N | 27 W | 444802.00 | 940530.00 | | |

**NGS ACRN:** PQ0023 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1940 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | NONE | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (1940)

**Stamping:** D 125 RESET 1940

4.5 MILES NORTHEAST OF THE RAILROAD STATION AT GLENCOE, 2.7 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND TRUNK HIGHWAY 212 IN GLENCOE, 10.0 FEET WEST OF TRUNK HIGHWAY 261, IN THE SOUTHWEST WING WALL OF A TRUNK HIGHWAY 261 CONCRETE BRIDGE.

**Station Notes**

IN 04-26-11 A NEW CULVERT / BRIDGE HAS BEEN INSTALLED.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1001.573 | .066 | 3 | | | | VERTICAL CONTROL SURVEY | 1987 | L24645 |
| 1001.566 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.502 12B = -90.525 09 = -90.433 03 = -90.285**

*** No Horizontal Positions in the Database ***

# DANZER



**Mn/DOT Name:** DANZER **NGS Name:** DANZER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9903 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 26 | 115 N | 29 W | 444401.27 | 941732.43 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 44 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** DANZER 2015

2.8 MILES EAST OF BROWNTON, 4.05 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 112.2, 73.0 FEET SOUTHEAST OF TRUNK HIGHWAY 212, 3.1 FEET WEST OF A RIGHT-OF-WAY POST, 1.5 FEET NORTHWEST OF A WITNESS POST.

**Station Pair:** LEWI MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.944 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1016.944 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.944 | | | 926.166 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1016.944 | .131 | | 926.386 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1016.944 | | | 926.166 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1016.855 | .262 | | 926.038 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.823 12B = -90.817 09 = -90.705 03 = -90.551**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 01.27113 | 94 17 32.42854 | 588619.726 | 201387.862 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 01.27113 | 94 17 32.42854 | 588619.726 | 201387.862 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 01.27071 | 94 17 32.42794 | 588619.770 | 201387.820 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 01.27094 | 94 17 32.42903 | 588619.691 | 201387.843 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548698.821 | 960216.754 | 1304698.545 | 16253836.643 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2548698.821 | 960216.754 | 1304698.545 | 16253836.643 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2548698.864 | 960216.711 | 1304698.588 | 16253836.599 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548698.785 | 960216.735 | 1304698.510 | 16253836.624 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# DANZER



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DANZER-DP9903-3SE-12MAY2015.jpg | SE | May 12, 2015 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DANZER-DP9903-2-12MAY2015.jpg | | May 12, 2015 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DANZER-DP9903-1-21MAY2015.jpg | | May 21, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# DEAD DOG MN085



**Mn/DOT Name:** DEAD DOG MN085 **NGS Name:** DEAD DOG

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI1764 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 114 N | 29 W | 443908.08 | 941552.52 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2013 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** DEAD DOG 1993

7.0 MILES SOUTHEAST OF BROWNTON, 0.5 MILE SOUTH ALONG ORANGE AVENUE FROM THE JUNCTION OF ORANGE AVENUE AND TRUNK HIGHWAY 212, THEN 0.4 MILE EAST ON COUNTY ROAD 13, THEN 4.5 MILES SOUTH CONTINUED ON COUNTY ROAD 13, THEN 2.6 MILES EAST ON COUNTY ROAD 17, THEN 0.8 MILE SOUTH ON LEAF AVENUE, 1.5 MILES NORTH AND 0.5 MILE WEST OF THE SOUTH CORNER OF MCLEOD COUNTY, 0.7 MILE SOUTH OF THE JUNCTION OF COUNTY ROAD 17 AND LEAF AVENUE, 1502.0 FEET NORTH OF THE JUNCTION OF LEAF AVENUE AND 20TH STREET, NEAR THE CENTER OF SECTION 25, 26.0 FEET EAST OF LEAF AVENUE, 6.0 FEET NORTH OF A FIELD DRIVE, 5.9 FEET SOUTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 927.370 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1018.410 | .262 | | 927.387 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 927.482 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1018.469 | .131 | | 927.620 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1018.469 | .131 | | 927.620 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1018.535 | .131 | | 927.620 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1018.535 | .131 | | 927.620 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 927.482 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.108 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -91.145 12B = -91.142 09 = -91.020 03 = -90.905**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 08.08172 | 94 15 52.52184 | 595966.531 | 171726.106 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 08.08140 | 94 15 52.52016 | 595966.653 | 171726.074 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 39 08.08164 | 94 15 52.52286 | 595966.458 | 171726.097 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 39 08.08164 | 94 15 52.52285 | 595966.459 | 171726.097 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 08.08118 | 94 15 52.52174 | 595966.539 | 171726.051 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 39 08.08118 | 94 15 52.52174 | 595966.539 | 171726.051 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 39 08.08118 | 94 15 52.52174 | 595966.539 | 171726.051 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 39 08.08118 | 94 15 52.52174 | 595966.539 | 171726.051 | .033 | C | GPS - STATIC | 2006 | HGAYL |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 08.07668 | 94 15 52.52217 | 595966.511 | 171725.595 | .033 | C | GPS - STATIC | 1993 | CO43 |

# DEAD DOG MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555814.294 | 930502.126 | 1311446.999 | 16224042.831 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555814.416 | 930502.093 | 1311447.120 | 16224042.797 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2555814.220 | 930502.118 | 1311446.925 | 16224042.824 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2555814.221 | 930502.118 | 1311446.926 | 16224042.824 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555814.301 | 930502.072 | 1311447.005 | 16224042.776 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2555814.301 | 930502.072 | 1311447.005 | 16224042.776 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2555814.301 | 930502.072 | 1311447.005 | 16224042.776 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2555814.301 | 930502.072 | 1311447.005 | 16224042.776 | .033 | C | GPS - STATIC | 2006 | HGAYL |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2555814.269 | 930501.616 | 1311446.967 | 16224042.321 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DEAD_DOG-DI1764-3E-19APR2011.jpg | E | Apr 19, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DEAD_DOG-DI1764-2-19APR2011.jpg | | Apr 19, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DEAD_DOG-DI1764-1-19APR2011.jpg | | Apr 19, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# DOLS MNDT



**Mn/DOT Name:** DOLS MNDT
**NGS Name:** DOLS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6195 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 30 W | 445424.26 | 942649.77 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2001) **Stamping:** DOLS 1992

4.0 MILES WEST-NORTHWEST OF HUTCHINSON, 4.0 MILES WEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 0.25 MILE WEST ON 200TH STREET, AT TOP OF A HILL, 14.5 FEET SOUTH OF 200TH STREET, 9.0 FEET EAST OF A FIELD ENTRANCE, ON THE SOUTH SHOULDER OF 200TH STREET, 14.6 FEET NORTHWEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1089.525 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1089.525 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1089.525 | | | 1000.096 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1089.525 | | | 1000.119 | .005 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 1000.096 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1089.532 | .131 | | 1000.392 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1089.371 | .262 | | 1000.159 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1089.499 | .131 | | 1000.211 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1089.499 | .131 | | 1000.283 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1089.499 | .131 | | 1000.211 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1089.306 | .262 | | 1000.172 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| | | | 1000.211 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1089.434 | .131 | | 1000.283 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1089.434 | .131 | | 1000.283 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1089.105 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.367 12B = -89.367 09 = -89.212 03 = -89.134**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.26122 | 94 26 49.77032 | 548240.437 | 264353.840 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 24.26126 | 94 26 49.77037 | 548240.433 | 264353.844 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 54 24.26122 | 94 26 49.77032 | 548240.437 | 264353.840 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.26185 | 94 26 49.77080 | 548240.402 | 264353.904 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 24.26143 | 94 26 49.77122 | 548240.372 | 264353.861 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 54 24.26143 | 94 26 49.77122 | 548240.372 | 264353.861 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 24.26143 | 94 26 49.77122 | 548240.372 | 264353.861 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.26093 | 94 26 49.77079 | 548240.403 | 264353.811 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 54 24.26092 | 94 26 49.77080 | 548240.403 | 264353.810 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 24.26128 | 94 26 49.77156 | 548240.348 | 264353.846 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 54 24.26092 | 94 26 49.77080 | 548240.403 | 264353.810 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 24.26092 | 94 26 49.77080 | 548240.403 | 264353.809 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.25511 | 94 26 49.76576 | 548240.767 | 264353.221 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508813.461 | 1023487.762 | 1265603.910 | 16317582.282 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2508813.457 | 1023487.766 | 1265603.907 | 16317582.287 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2508813.461 | 1023487.762 | 1265603.910 | 16317582.282 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508813.426 | 1023487.826 | 1265603.877 | 16317582.347 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2508813.396 | 1023487.783 | 1265603.846 | 16317582.305 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2508813.396 | 1023487.783 | 1265603.846 | 16317582.305 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2508813.396 | 1023487.783 | 1265603.846 | 16317582.305 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508813.427 | 1023487.733 | 1265603.876 | 16317582.254 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2508813.426 | 1023487.732 | 1265603.875 | 16317582.253 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2508813.371 | 1023487.768 | 1265603.821 | 16317582.290 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2508813.426 | 1023487.732 | 1265603.875 | 16317582.253 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2508813.426 | 1023487.731 | 1265603.875 | 16317582.253 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508813.785 | 1023487.141 | 1265604.227 | 16317581.658 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DOLS-DF6195-3S-13APR2011.jpg | S | Apr 13, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DOLS-DF6195-2-13APR2011.jpg | | Apr 13, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DOLS-DF6195-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# DUKE MN085



**Mn/DOT Name:** DUKE MN085 **NGS Name:** DUKE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9904 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 115 N | 30 W | 444311.12 | 942841.64 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2015) **Stamping:** DUKE 1993

IN STEWART, 0.1 MILE SOUTH ALONG COUNTY ROAD 7 FROM THE JUNCTION OF COUNTY ROAD 7 AND TRUNK HIGHWAY 212 IN STEWART, 29.5 FEET WEST OF COUNTY ROAD 7, 11.3 FEET SOUTH OF A DRIVEWAY, 9.0 FEET NORTH OF A WITNESS POST. UNKNOWN ROD DEPTH.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.625 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1066.625 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.625 | | | 976.110 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1066.625 | .131 | | 976.330 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1066.625 | | | 976.110 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1066.510 | .262 | | 975.972 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1066.510 | .262 | | 976.100 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.107 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.528 12B = -90.538 09 = -90.407 03 = -90.275**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 11.11946 | 94 28 41.63964 | 540318.414 | 196161.426 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 11.11946 | 94 28 41.63964 | 540318.414 | 196161.426 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 11.11920 | 94 28 41.63890 | 540318.468 | 196161.400 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 11.11920 | 94 28 41.64057 | 540318.347 | 196161.399 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 11.11926 | 94 28 41.64010 | 540318.381 | 196161.406 | .033 | C | GPS - STATIC | 2015 | HPLAT |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 11.11635 | 94 28 41.63817 | 540318.522 | 196161.110 | .033 | C | GPS - STATIC | 1993 | CO43 |

# DUKE MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500363.635 | 955365.810 | 1256316.125 | 16249581.482 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2500363.635 | 955365.810 | 1256316.125 | 16249581.482 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2500363.688 | 955365.783 | 1256316.178 | 16249581.455 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500363.568 | 955365.784 | 1256316.057 | 16249581.457 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500363.601 | 955365.790 | 1256316.091 | 16249581.462 | .033 | C | GPS - STATIC | 2015 | HPLAT |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500363.739 | 955365.494 | 1256316.225 | 16249581.165 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DUKE-DP9904-3W-16APR2015.jpg | W | Apr 16, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DUKE-DP9904-2-16APR2015.jpg | | Apr 16, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/DUKE-DP9904-1-16APR2015.jpg | | Apr 16, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** E 125 **NGS Name:** E 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0024 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 8 | 115 N | 27 W | 444722.00 | 940604.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** 1006.205 E 125 1934

3.3 MILES NORTHEAST OF THE RAILROAD STATION AT GLENCOE, 1.5 MILES EAST ON TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET IN GLENCOE, THEN 1.5 MILES NORTH ON TRUNK HIGHWAY 261, AT THE JUNCTION OF A ROAD SOUTH, IN THE CENTER OF THE NORTH HEADWALL ON THE WEST SIDE OF A CULVERT UNDER A SIDE ROAD.

**Station Notes**

IN 1996 THE ENGINEERING FIRM BRW REPORTED THAT THE HEADWALL WAS GONE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1006.632 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1006.205 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.567 12B = -90.581 09 = -90.495 03 = -90.348**

*** No Horizontal Positions in the Database ***

# EL 548.54



**Mn/DOT Name:** EL 548.54 **NGS Name:** EL 548.54

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1496 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 117 N | 29 W | 445344.00 | 942209.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | 5235 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE WALKWAY | SEE DESCRIPTION | MNDT |

**Description:** (1984) **Stamping:** EL 548.54

IN HUTCHINSON, 0.15 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 15 MILEPOINT 101.5, THE STATION IS A BRASS PLUG IN THE WALKWAY AT THE SOUTHEAST CORNER OF TRUNK HIGHWAY 15 BRIDGE NUMBER 5235 OVER THE CROW RIVER, 25.7 FEET EAST OF TRUNK HIGHWAY 15, 4.1 FEET NORTH-NORTHWEST OF THE SOUTHWEST CORNER OF A LIGHT STANDARD, 0.8 FOOT NORTH-NORTHWEST OF THE SOUTHEAST CORNER OF A BRIDGE.

**Station Notes**
NEW BRIDGE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.376 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1040.936 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.764 12B = -89.754 09 = -89.626 03 = -89.521**

*** No Horizontal Positions in the Database ***

# ELEM MNDT TEMP



**Mn/DOT Name:** ELEM MNDT TEMP
**NGS Name:** ELEM TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1175 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445323.95 | 942220.81 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | NAIL | MNDT |

**Description:** (2016) **Stamping:** ELEM 1985

IN THE CENTER PART OF HUTCHINSON, 0.2 MILE SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND WASHINGTON AVENUE, THEN 0.2 MILE WEST ON 2ND AVENUE, 105.5 FEET WEST OF GLEN STREET, 64.2 FEET NORTH-NORTHEAST OF A NAIL AND DISK IN A POWER POLE, 58.1 FEET SOUTHEAST OF A NAIL AND DISK IN A GUY POLE, 12.4 FEET NORTH OF 2ND AVENUE SOUTHWEST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.161 | .197 | | 983.682 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.898 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.796 12B = -89.787 09 = -89.655 03 = -89.550**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 23.94596 | 94 22 20.80894 | 567618.713 | 258298.192 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 23.94079 | 94 22 20.80447 | 567619.035 | 258297.669 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 53 23.94110 | 94 22 20.80416 | 567619.058 | 258297.701 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 24.07860 | 94 22 19.86480 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528142.305 | 1017282.545 | 1284850.879 | 16311139.958 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528142.624 | 1017282.021 | 1284851.191 | 16311139.429 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2528142.646 | 1017282.052 | 1284851.214 | 16311139.460 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903540.828 | 689205.389 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** F 123 **NGS Name:** F 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0047 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 115 N | 30 W | 444323.58 | 942920.98 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (1990) **Stamping:** F 123 1934

IN STEWART, 0.2 MILE NORTH ALONG BOWMAN STREET FROM THE JUNCTION OF BOWMAN STREET AND TRUNK HIGHWAY 212, 49.5 FEET WEST ALONG A RAILROAD FROM THE RAILROAD STATION, 71.0 FEET WEST OF A ROAD, 33.0 FEET NORTH OF THE RAILROAD TRACKS, 4.0 FEET WEST OF A POLE.

**Station Notes**

THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.357 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1062.376 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1062.465 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.002 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1061.897 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |
| 1062.002 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |
| 1062.002 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1062.002 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.492 12B = -90.499 09 = -90.371 03 = -90.239**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** F 125 **NGS Name:** F 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0025 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 115 N | 27 W | 444725.00 | 940750.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** F-125 1934

1.8 MILES NORTHEAST OF THE RAILROAD STATION AT GLENCOE, 0.4 MILE NORTH ALONG UNION AVENUE FROM THE JUNCTION OF UNION AVENUE AND 10TH STREET IN GLENCOE, THEN 1.1 MILES NORTH ON COUNTY ROAD 3, THEN 217.0 FEET EAST ON 120TH STREET, AT THE CROSSROADS (FALCON AVENUE/COUNTY ROAD 3 AND 120TH STREET), 35.0 FEET NORTH OF 120TH STREET, 30.0 FEET EAST OF FALCON AVENUE, 5.0 FEET NORTHEAST OF A POWER POLE.

**Station Notes**
THE TIES FALL ON THE SHOULDER 7-26-2006.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.262 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1016.799 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |
| 1016.842 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.646 12B = -90.649 09 = -90.574 03 = -90.416**

*** No Horizontal Positions in the Database ***

# FALCON MNDT



**Mn/DOT Name:** FALCON MNDT
**NGS Name:** FALCON
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9250 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 18 | 115 N | 27 W | 444608.02 | 940717.19 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** FALCON 2000

0.5 MILE EAST OF GLENCOE, 0.5 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET EAST AT THE EAST SIDE OF GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 121.8, 91.0 FEET EAST OF FALCON AVENUE, 54.0 FEET SOUTH OF WESTBOUND TRUNK HIGHWAY 212, 30.0 FEET NORTH OF EASTBOUND TRUNK HIGHWAY 212, 206.0 FEET SOUTH OF A WITNESS POST.

**Station Notes**
FOUND THE CAP OFF - RESET AS: FALCON MNDT RESET.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.770 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1002.770 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 912.045 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 912.101 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1002.754 | .131 | | 912.269 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1002.754 | .131 | | 912.269 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.699 12B = -90.702 09 = -90.620 03 = -90.469**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01516 | 94 07 17.18929 | 632953.331 | 214456.684 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01534 | 94 07 17.19026 | 632953.260 | 214456.702 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01487 | 94 07 17.18975 | 632953.297 | 214456.654 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 08.01487 | 94 07 17.18975 | 632953.298 | 214456.654 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# FALCON MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.880 | 972939.422 | 1349270.958 | 16266009.222 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.810 | 972939.440 | 1349270.888 | 16266009.241 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.847 | 972939.392 | 1349270.924 | 16266009.193 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2593127.847 | 972939.392 | 1349270.925 | 16266009.192 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON-DF9250-3N-26JUL2006.jpg | N | Jul 26, 2006 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON-DF9250-2-26JUL2006.jpg | | Jul 26, 2006 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON-DF9250-1-26JUL2006.jpg | | Jul 26, 2006 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# FALCON MNDT RESET



**Mn/DOT Name:** FALCON MNDT RESET
**NGS Name:** FALCON RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9690 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 18 | 115 N | 27 W | 444608.01 | 940717.19 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2006 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 12 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2007) **Stamping:** FALCON 2000 2006

0.5 MILE EAST OF GLENCOE, 0.5 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET EAST AT THE EAST SIDE OF GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 121.8, 91.0 FEET EAST OF FALCON AVENUE, 54.0 FEET SOUTH OF WESTBOUND TRUNK HIGHWAY 212, 30.0 FEET NORTH OF EASTBOUND TRUNK HIGHWAY 212, 2.6 FEET SOUTH OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.737 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1002.737 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 912.013 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1002.754 | .131 | | 912.088 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1002.721 | .131 | | 912.088 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1002.754 | .131 | | 912.259 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1002.721 | .131 | | 912.259 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.699 12B = -90.702 09 = -90.620 03 = -90.469**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01490 | 94 07 17.18922 | 632953.335 | 214456.657 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01503 | 94 07 17.19019 | 632953.266 | 214456.670 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 46 08.01503 | 94 07 17.19019 | 632953.266 | 214456.670 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01462 | 94 07 17.18960 | 632953.308 | 214456.629 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 46 08.01462 | 94 07 17.18960 | 632953.308 | 214456.629 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# FALCON MNDT RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.885 | 972939.395 | 1349270.963 | 16266009.195 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.815 | 972939.408 | 1349270.893 | 16266009.209 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2593127.815 | 972939.408 | 1349270.893 | 16266009.209 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.858 | 972939.367 | 1349270.935 | 16266009.167 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2593127.858 | 972939.367 | 1349270.935 | 16266009.167 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON_RESET-DI9690-3N-27APR2011.jpg | N | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON_RESET-DI9690-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON_RESET-DI9690-1-27MAR2007.jpg | | Mar 27, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# FALCON MNDT RESET 2



**Mn/DOT Name:** FALCON MNDT RESET 2 **NGS Name:** FALCON RESET 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9906 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 18 | 115 N | 27 W | 444608.01 | 940717.19 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 15 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** FALCON 2006 2015

IN GLENCOE, 0.5 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND MORNINGSIDE DRIVE IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 121.8, 91.0 FEET EAST OF FALCON AVENUE, 54.0 FEET SOUTH OF WESTBOUND TRUNK HIGHWAY 212, 30.0 FEET NORTH OF EASTBOUND TRUNK HIGHWAY 212, 2.6 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.560 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1002.557 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.528 | .262 | | 911.826 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1002.557 | | | 911.875 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1002.557 | .131 | | 912.101 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1002.557 | | | 911.875 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1002.528 | .262 | | 911.826 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.699 12B = -90.702 09 = -90.620 03 = -90.469**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01461 | 94 07 17.18910 | 632953.344 | 214456.628 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 08.01479 | 94 07 17.18932 | 632953.329 | 214456.646 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 08.01479 | 94 07 17.18932 | 632953.329 | 214456.646 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 08.01436 | 94 07 17.18988 | 632953.288 | 214456.603 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 08.01461 | 94 07 17.18976 | 632953.297 | 214456.628 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.894 | 972939.366 | 1349270.971 | 16266009.166 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2593127.878 | 972939.384 | 1349270.956 | 16266009.184 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2593127.878 | 972939.384 | 1349270.956 | 16266009.184 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2593127.837 | 972939.341 | 1349270.915 | 16266009.141 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2593127.846 | 972939.366 | 1349270.924 | 16266009.166 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# FALCON MNDT RESET 2



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON_RESET_2-DP9906-3N-21SEP2025.jpg | N | Sep 21, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON_RESET_2-DP9906-2-21SEP2025.jpg | | Sep 21, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FALCON_RESET_2-DP9906-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# FINNISH MN085



**Mn/DOT Name:** FINNISH MN085 **NGS Name:** FINNISH

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6206 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 27 W | 445413.05 | 940425.03 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2008 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2005) **Stamping:** FINNISH

2.25 MILES NORTHWEST OF LESTER PRAIRIE, 1.0 MILE WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 261 IN LESTER PRAIRIE, THEN 0.2 MILE SOUTH ON COUNTY ROAD 63 (CABLE AVENUE), 970.0 FEET SOUTH OF TRUNK HIGHWAY 7 MILEPOINT 156.9, 26.0 FEET WEST OF CABLE AVENUE, 8.0 FEET NORTH OF A FIELD DRIVE, 10.9 FEET SOUTHEAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 938.151 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1028.443 | .131 | | 938.246 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1028.443 | .131 | | 938.246 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1028.443 | .131 | | 938.374 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1028.443 | .131 | | 938.374 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 938.246 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1028.410 | .131 | | 938.374 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1028.410 | .131 | | 938.374 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.885 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.252 12B = -90.282 09 = -90.190 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.04753 | 94 04 25.03468 | 645035.892 | 263661.463 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.04773 | 94 04 25.03525 | 645035.851 | 263661.483 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 54 13.04773 | 94 04 25.03525 | 645035.851 | 263661.483 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 54 13.04773 | 94 04 25.03525 | 645035.851 | 263661.483 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.04730 | 94 04 25.03494 | 645035.873 | 263661.439 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 54 13.04730 | 94 04 25.03494 | 645035.873 | 263661.439 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 54 13.04730 | 94 04 25.03494 | 645035.873 | 263661.439 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 13.04730 | 94 04 25.03494 | 645035.872 | 263661.438 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.04084 | 94 04 25.03306 | 645036.013 | 263660.785 | .033 | C | GPS - STATIC | 1993 | CO43 |

# FINNISH MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605591.329 | 1022043.841 | 1362334.885 | 16314944.370 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605591.288 | 1022043.861 | 1362334.844 | 16314944.391 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2605591.288 | 1022043.861 | 1362334.844 | 16314944.391 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2605591.288 | 1022043.861 | 1362334.844 | 16314944.391 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605591.310 | 1022043.818 | 1362334.866 | 16314944.347 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2605591.310 | 1022043.818 | 1362334.866 | 16314944.347 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2605591.310 | 1022043.818 | 1362334.866 | 16314944.347 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2605591.310 | 1022043.818 | 1362334.866 | 16314944.347 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605591.445 | 1022043.164 | 1362334.993 | 16314943.692 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FINNISH-DF6206-3W-19MAR2007.jpg | W | Mar 19, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FINNISH-DF6206-2-19MAR2007.jpg | | Mar 19, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/FINNISH-DF6206-1-19MAR2007.jpg | | Mar 19, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** G 123 **NGS Name:** G 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0048 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 115 N | 30 W | 444319.51 | 942822.15 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2015 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | SURVEY DISK | NGS |

**Description:** (2016) **Stamping:** G 123 1934

0.8 MILE EAST OF STEWART, 0.3 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 103.1, 23.6 FEET NORTH OF TRUNK HIGHWAY 212, IN THE CENTER OF THE NORTH HEADWALL OF A TRUNK HIGHWAY 212 BOX CULVERT.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.524 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1062.524 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1062.452 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1062.488 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1062.452 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.993 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1061.993 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |
| 1061.993 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1061.993 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.495 | .262 | | 971.957 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.528 12B = -90.538 09 = -90.403 03 = -90.275**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 19.51487 | 94 28 22.15368 | 541723.790 | 197014.422 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2501775.430 | 956207.789 | 1257737.945 | 16250405.892 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/G_123-PQ0048-3N-18APR2011.jpg | N | Apr 18, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/G_123-PQ0048-2-18APR2011.jpg | | Apr 18, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/G_123-PQ0048-1-18APR2011.jpg | | Apr 18, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# G 125



**Mn/DOT Name:** G 125 **NGS Name:** G 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0026 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 22 | 115 N | 28 W | 444446.00 | 941111.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - SMALL | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** G-125 1934

2.28 MILES SOUTHWEST OF GLENCOE, 1.8 MILES SOUTHWEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET IN GLENCOE, 0.18 MILE WEST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 212 AND HILTON AVENUE, 0.05 MILE NORTH OF SOUTHBOUND TRUNK HIGHWAY 212.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.289 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 998.879 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L43 MINN |

**Geoid Separations(ft): GEOID18 = -90.873 12B = -90.873 09 = -90.784 03 = -90.620**

*** No Horizontal Positions in the Database ***

# G 125 RESET



**Mn/DOT Name:** G 125 RESET
**NGS Name:** G 125 RESET
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 22 | 115 N | 28 W | 444449.00 | 941110.00 | 2 | |

**NGS ACRN:** PQ0027 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1963 | 2015 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 3 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE POST (PREFABRICATED) | BENCH MARK DISK | NGS |

**Description:** (2015) **Stamping:** G 125 RESET 1963

2.0 MILES WEST OF GLENCOE, 1.7 MILES WEST-SOUTHWEST ALONG TRUNK HIGHWAY 212/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 212/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 2 IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 117.9, 97.5 FEET NORTH OF WESTBOUND TRUNK HIGHWAY 212, 1.0 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1006.110 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1006.110 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1006.110 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1005.694 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1005.648 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.869 12B = -90.866 09 = -90.777 03 = -90.613**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/G_125_RESET-PQ0027-3N-15APR2015.jpg | N | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/G_125_RESET-PQ0027-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/G_125_RESET-PQ0027-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# GARDEN MN085



**Mn/DOT Name:** GARDEN MN085 **NGS Name:** GARDEN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9691 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 24 | 116 N | 28 W | 445016.87 | 940905.85 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2007 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | SURVEY DISK | MNDT |

**Description:** (2010) **Stamping:** GARDEN 2007

4.5 MILES NORTH OF GLENCOE, 4.5 MILES NORTH ALONG HENNEPIN AVENUE/GARDEN AVENUE (COUNTY ROAD 83) FROM THE JUNCTION OF HENNEPIN AVENUE AND COUNTY ROAD 105 IN GLENCOE, 17.8 FEET EAST OF GARDEN AVENUE, 9.0 FEET NORTH OF A FIELD ENTRANCE, 0.25 MILE SOUTH OF 155TH STREET (COUNTY ROAD 55), 8.0 FEET SOUTHWEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.785 | | | 935.228 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1025.785 | | | 935.228 | .009 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1025.756 | .262 | | 935.234 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1025.762 | .262 | | 935.241 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1025.779 | .262 | | 935.257 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1025.779 | .262 | | 935.247 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 935.228 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1025.716 | .262 | | 935.261 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1025.785 | .131 | | 935.310 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1025.785 | .131 | | 935.310 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1025.785 | .131 | | 935.448 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1025.785 | .131 | | 935.448 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.521 12B = -90.531 09 = -90.459 03 = -90.289**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 16.86740 | 94 09 05.84981 | 624964.778 | 239612.054 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 50 16.86740 | 94 09 05.84981 | 624964.778 | 239612.054 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 50 16.86756 | 94 09 05.84914 | 624964.826 | 239612.071 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 50 16.86757 | 94 09 05.84953 | 624964.798 | 239612.071 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 50 16.86725 | 94 09 05.84971 | 624964.785 | 239612.039 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 50 16.86718 | 94 09 05.84946 | 624964.803 | 239612.032 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 50 16.86740 | 94 09 05.84981 | 624964.778 | 239612.054 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 16.86706 | 94 09 05.85067 | 624964.716 | 239612.019 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 50 16.86761 | 94 09 05.85051 | 624964.727 | 239612.075 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 50 16.86761 | 94 09 05.85051 | 624964.727 | 239612.075 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 16.86710 | 94 09 05.85007 | 624964.759 | 239612.024 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 50 16.86710 | 94 09 05.85008 | 624964.759 | 239612.024 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 50 16.86710 | 94 09 05.85008 | 624964.759 | 239612.024 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# GARDEN MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585335.876 | 998153.523 | 1341791.663 | 16291311.332 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2585335.876 | 998153.523 | 1341791.663 | 16291311.332 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2585335.924 | 998153.539 | 1341791.711 | 16291311.347 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2585335.896 | 998153.540 | 1341791.684 | 16291311.349 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2585335.883 | 998153.507 | 1341791.670 | 16291311.317 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2585335.901 | 998153.500 | 1341791.688 | 16291311.309 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2585335.876 | 998153.523 | 1341791.663 | 16291311.332 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585335.814 | 998153.488 | 1341791.601 | 16291311.298 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2585335.825 | 998153.544 | 1341791.613 | 16291311.354 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2585335.825 | 998153.544 | 1341791.613 | 16291311.354 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585335.857 | 998153.492 | 1341791.644 | 16291311.302 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2585335.857 | 998153.492 | 1341791.643 | 16291311.302 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2585335.857 | 998153.492 | 1341791.643 | 16291311.302 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GARDEN-DI9691-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GARDEN-DI9691-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GARDEN-DI9691-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# Geodetic Data Sheet (Feet)
**GSID Station # 103529**

# GASS

**04/28/2026**
Sheet Help

**Mn/DOT Name:** GASS
**NGS Name:** GASS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9908 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 115 N | 30 W | 444318.09 | 942750.31 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 34 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** GASS 2015

1.1 MILES EAST OF STEWART, 0.7 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 103.5, 53.2 FEET SOUTH OF TRUNK HIGHWAY 212, 42.1 FEET WEST OF A FIELD ENTRANCE, 1.5 FEET WEST OF A WITNESS POST.

**Station Pair:** KARNIK - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.264 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1056.264 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.264 | | | 965.697 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1056.264 | .131 | | 965.913 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1056.264 | | | 965.697 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1056.209 | .262 | | 965.654 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.548 12B = -90.554 09 = -90.423 03 = -90.292**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 18.09149 | 94 27 50.30595 | 544023.674 | 196874.923 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 18.09149 | 94 27 50.30595 | 544023.674 | 196874.923 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 18.09091 | 94 27 50.30526 | 544023.724 | 196874.864 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 18.09129 | 94 27 50.30642 | 544023.640 | 196874.903 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2504073.913 | 956050.475 | 1260033.944 | 16250220.336 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2504073.913 | 956050.475 | 1260033.944 | 16250220.336 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2504073.963 | 956050.416 | 1260033.992 | 16250220.276 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2504073.880 | 956050.454 | 1260033.909 | 16250220.316 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GASS-DP9908-3S-12MAY2015.jpg | S | May 12, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GASS-DP9908-2-12MAY2015.jpg | | May 12, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GASS-DP9908-1-12MAY2015.jpg | | May 12, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# GLENCOE



**Mn/DOT Name:** GLENCOE
**NGS Name:** GLENCOE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0612 Get Map
**NGS Quad / Sta Num :** 44094113/1002
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444627.35 | 940931.72 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** GLENCOE 1956 1966

IN THE SOUTHEAST CORNER OF BLOCK 8 IN GLENCOE, 0.2 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 0.3 MILE WEST ON 13TH STREET, THEN 0.2 MILE NORTH ON CHANDLER AVENUE, 143.2 FEET EAST OF THE SOUTHEAST CORNER OF A BASE FOR THE EAST LEG OF A WATER TANK, 101.88 FEET SOUTHWEST OF GLENCOE RM 1, 94.03 FEET NORTHEAST OF GLENCOE RM 2, 77.5 FEET NORTH OF A CURB ON THE NORTH SIDE OF WEST 15TH STREET, 55.0 FEET WEST OF A CURB ON THE WEST SIDE OF CHANDLER STREET, 24.5 FEET SOUTH OF THE SOUTHWEST CORNER OF A HOUSE, 17.4 FEET NORTH OF THE NORTH CORNER OF THE BASE OF THE NORTHWEST LEG OF A WATER TANK.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.462 | .197 | | 943.085 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.495 | | | | | | RECIPROCAL VERTICAL ANGLE | 1935 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.754 12B = -90.751 09 = -90.676 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.34883 | 94 09 31.71998 | 623236.042 | 216355.949 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.34366 | 94 09 31.71602 | 623236.331 | 216355.427 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.48000 | 94 09 30.80200 | | | .100 | 2 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583426.666 | 974913.942 | 1339597.021 | 16268102.438 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583426.950 | 974913.418 | 1339597.299 | 16268101.911 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1958825.032 | 646837.164 | | | .100 | 2 | CLASSICAL SURVEY | 1939 | 03760 |

# GLENCOE AZ MK



**Mn/DOT Name:** GLENCOE AZ MK
**NGS Name:** GLENCOE AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8555 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444631.00 | 940933.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** GLENCOE 1956

IN GLENCOE, 0.4 MILE NORTH ON HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET, THEN 0.4 MILE WEST ON 16TH STREET, 34.0 FEET NORTHEAST OF THE CENTERLINE OF 16TH STREET, 3.0 FEET SOUTHEAST OF A TELEPHONE POLE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.751 12B = -90.748 09 = -90.672 03 = -90.508**

# GLENCOE FIRST EV LUTH CH



**Mn/DOT Name:** GLENCOE FIRST EV LUTH CH **NGS Name:** GLENCOE FIRST EV LUTH CH

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0616 Get Map
**NGS Quad / Sta Num :** 44094113/1024
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 13 | 115 N | 28 W | 444622.50 | 940900.73 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH CROSS | NGS |

**Description:** (2016)

**Stamping:**

IN THE CENTRAL PART OF GLENCOE, 0.2 MILE NORTH ON HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 351.0 FEET EAST ON 13TH STREET, THEN 308.0 FEET NORTH ON IVES AVENUE, 78.94 FEET SOUTHEAST OF THE CENTER OF THE JUNCTION IVES AVENUE AND 14TH STREET, 61.20 FEET EAST OF THE CENTERLINE OF IVES AVENUE, 53.59 FEET SOUTH OF THE CENTERLINE OF 14TH STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.745 12B = -90.745 09 = -90.669 03 = -90.508**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 22.49906 | 94 09 00.73489 | 625474.208 | 215877.924 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 22.49373 | 94 09 00.73085 | 625474.503 | 215877.386 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 22.62900 | 94 08 59.81900 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585660.815 | 974418.590 | 1341824.393 | 16267579.759 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585661.105 | 974418.050 | 1341824.677 | 16267579.215 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1961059.096 | 646341.699 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# GLENCOE GREEN GIANT CO RAD MST



**Mn/DOT Name:** GLENCOE GREEN GIANT CO RAD MST
**NGS Name:** GLENCOE GREEN GIANT CO RAD MST
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0610 Get Map
**NGS Quad / Sta Num :** 44094113/1025
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 14 | 115 N | 28 W | 444553.92 | 941005.32 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | RADIO/TV MAST | NGS |

**Description:** (2016)

**Stamping:**

IN THE SOUTHWEST PART OF GLENCOE, 0.3 MILE WEST ALONG 10TH STREET FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE IN GLENCOE, THEN 0.1 MILE CONTINUED WEST ON 10TH STREET, THEN 351.0 FEET NORTH ON ARMSTRONG AVENUE, THEN 0.3 MILE WEST ON 11TH STREET, THEN 0.1 MILE SOUTH ON FIR AVENUE, 0.27 MILE SOUTHWEST OF STATION GLENCOE GREEN GIANT CO TANK, 0.24 MILE SOUTH OF THE SOUTHERN TIP OF FIR AVENUE, 0.15 MILE SOUTH OF THE RAILROAD TRACKS.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.797 12B = -90.797 09 = -90.715 03 = -90.551**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 53.92071 | 94 10 05.31633 | 620831.757 | 212956.455 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 53.91471 | 94 10 05.31360 | 620831.957 | 212955.849 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 54.05200 | 94 10 04.40100 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2580996.293 | 971533.589 | 1337125.813 | 16264753.006 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2580996.489 | 971532.981 | 1337126.002 | 16264752.395 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1956394.409 | 643456.845 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# GLENCOE GREEN GIANT CO STACK



**Mn/DOT Name:** GLENCOE GREEN GIANT CO STACK **NGS Name:** GLENCOE GREEN GIANT CO STACK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0614 Get Map
**NGS Quad / Sta Num :** 44094113/1026
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 14 | 115 N | 28 W | 444603.06 | 940949.62 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | STACK | NGS |

**Description:** (2016)

**Stamping:**

AT THE WEST EDGE OF GLENCOE, 0.5 MILE WEST ALONG TRUNK HIGHWAY 22 (10TH STREET/CHANDLER AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND HENNEPIN AVENUE IN GLENCOE, THEN 0.2 MILE WEST ON 8TH STREET, 0.14 MILE NORTHWEST OF THE CENTER OF THE JUNCTION OF 8TH STREET AND ARMSTRONG AVENUE, 0.05 MILE SOUTH OF THE RAILROAD TRACKS, 43.04 FEET NORTH OF STATION GLENCOE GREEN GIANT CO TANK.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.784 12B = -90.784 09 = -90.702 03 = -90.541**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 03.06106 | 94 09 49.61847 | 621959.038 | 213888.665 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 03.05516 | 94 09 49.61468 | 621959.315 | 213888.069 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 03.19400 | 94 09 48.70100 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2582130.664 | 972456.914 | 1338271.195 | 16265662.099 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2582130.936 | 972456.316 | 1338271.460 | 16265661.498 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1957528.964 | 644380.333 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# GLENCOE GREEN GIANT CO TANK



**Mn/DOT Name:** GLENCOE GREEN GIANT CO TANK **NGS Name:** GLENCOE GREEN GIANT CO TANK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0613 Get Map
**NGS Quad / Sta Num :** 44094113/1027
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 14 | 115 N | 28 W | 444602.65 | 940949.59 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | FINIAL | NGS |

**Description:** (2016)

**Stamping:**

AT THE WEST EDGE OF GLENCOE, 0.5 MILE WEST ALONG TRUNK HIGHWAY 22 (10TH STREET/CHANDLER AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND HENNEPIN AVENUE, THEN 0.2 MILE WEST ON 8TH STREET, 0.14 MILE WEST-NORTHWEST OF THE CENTER OF THE JUNCTION OF 8TH STREET AND ARMSTRONG AVENUE, 0.06 MILE SOUTH OF THE RAILROAD TRACKS, 38.55 FEET SOUTH OF STATION GLENCOE GREEN GIANT COMPANY STACK.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.784 12B = -90.784 09 = -90.705 03 = -90.541**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 02.65256 | 94 09 49.58836 | 621961.449 | 213847.306 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 02.64668 | 94 09 49.58457 | 621961.726 | 213846.712 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 02.78600 | 94 09 48.67000 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2582132.753 | 972415.542 | 1338272.775 | 16265620.714 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2582133.025 | 972414.946 | 1338273.040 | 16265620.115 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1957531.118 | 644339.011 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# GLENCOE MUNICIPAL TANK



**Mn/DOT Name:** GLENCOE MUNICIPAL TANK
**NGS Name:** GLENCOE MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0617 Get Map
**NGS Quad / Sta Num :** 44094113/1028
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444626.99 | 940931.45 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (2016)

**Stamping:**

IN THE NORTHWEST PART OF GLENCOE, IN BLOCK 8, 0.2 MILE NORTH ON HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 0.3 MILE WEST ON 13TH STREET, THEN 0.1 MILE NORTH ON CHANDLER AVENUE, 85.09 FEET NORTHWEST OF THE CENTER OF THE JUNCTION OF CHANDLER AVENUE AND 15TH STREET, 68.31 FEET NORTH OF CENTERLINE OF 15TH STREET, 46.56 FEET WEST OF THE CENTERLINE OF CHANDLER AVENUE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.754 12B = -90.751 09 = -90.676 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 26.99045 | 94 09 31.45067 | 623255.682 | 216319.767 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 26.98468 | 94 09 31.44664 | 623255.976 | 216319.184 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.11900 | 94 09 30.53400 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583446.021 | 974877.612 | 1339615.924 | 16268065.881 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583446.311 | 974877.027 | 1339616.207 | 16268065.293 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1958844.294 | 646800.569 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# GLENCOE NEW MUNICIPAL TANK



**Mn/DOT Name:** GLENCOE NEW MUNICIPAL TANK **NGS Name:** GLENCOE NEW MUNICIPAL TANK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0611 Get Map
**NGS Quad / Sta Num :** 44094113/1029
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444627.39 | 940934.12 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | GOOD | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (1975)

**Stamping:**

IN THE NORTH PART OF GLENCOE, 0.2 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 0.4 MILE WEST ON 13TH STREET, THEN 0.2 MILE NORTH ON BAXTER AVENUE, NORTH OF WEST 15TH STREET BETWEEN BAXTER AVENUE NORTH AND CHANDLER AVENUE NORTH, 144.56 FEET NORTHEAST OF THE JUNCTION OF 15TH STREET AND BAXTER AVENUE, 115.42 FEET NORTH OF 15TH STREET, 97.80 FEET EAST OF BAXTER AVENUE. STATION GLENCOE NEW MUNICIPAL TANK IS THE FINIAL ATOP A METAL TANK WITH A SIX LEG STRUCTURE AND APPROXIMATELY 100.0 FEET HIGH.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.754 12B = -90.751 09 = -90.676 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.38631 | 94 09 34.11767 | 623063.052 | 216358.738 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.38026 | 94 09 34.11397 | 623063.322 | 216358.127 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.53200 | 94 09 33.20000 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583253.720 | 974918.074 | 1339424.179 | 16268108.696 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583253.986 | 974917.461 | 1339424.438 | 16268108.080 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1958652.062 | 646842.766 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# GLENCOE RM 1



**Mn/DOT Name:** GLENCOE RM 1 **NGS Name:** GLENCOE RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8556 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444627.71 | 940930.40 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2016 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** GLENCOE NO 1 1935

IN GLENCOE, IN THE SOUTHEAST CORNER OF BLOCK 8, 0.2 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET, THEN 0.3 MILE WEST ON 13TH STREET, THEN 0.1 MILE NORTH ON CHANDLER AVENUE, 22.0 FEET EAST OF CHANDLER AVENUE, 24.5 FEET SOUTH OF THE SOUTHWEST CORNER OF A HOUSE AT 1514 CHANDLER AVENUE, 12.2 FEET SOUTH OF THE SOUTH EDGE OF A SIDEWALK TO A HOUSE, 5.8 FEET WEST OF THE WEST EDGE OF A SIDEWALK, 1.3 FEET EAST OF THE EAST EDGE OF A CURB.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.861 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1031.855 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1031.855 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.763 | .262 | | 941.087 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.751 12B = -90.751 09 = -90.676 03 = -90.512**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.70813 | 94 09 30.40107 | 623330.976 | 216392.893 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583521.873 | 974950.143 | 1339692.645 | 16268137.457 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GLENCOE_RM_1-CO8556-3E-26APR2011.jpg | E | Apr 26, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GLENCOE_RM_1-CO8556-2-26APR2011.jpg | | Apr 26, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GLENCOE_RM_1-CO8556-1-26APR2011.jpg | | Apr 26, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# GLENCOE RM 2



**Mn/DOT Name:** GLENCOE RM 2

**NGS Name:** GLENCOE RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8557 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444626.62 | 940932.53 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | RECESSED 2 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2016)

**Stamping:** GLENCOE NO 2 1935

IN THE SOUTHEAST CORNER OF BLOCK 8 IN GLENCOE, 0.2 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET, THEN 0.3 MILE WEST ON 13TH STREET, THEN 0.1 MILE NORTH ON CHANDLER AVENUE, 24.5 FEET SOUTH OF THE SOUTHWEST CORNER OF A HOUSE, 17.4 FEET NORTH OF THE NORTH CORNER OF THE BASE OF THE NORTHWEST LEG OF A WATER TANK, 4.8 FEET SOUTH OF THE SOUTH EDGE OF A SIDEWALK, 4.7 FEET NORTH OF THE EDGE OF A CURB ON THE NORTH SIDE OF 15TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.754 12B = -90.751 09 = -90.676 03 = -90.512**

# GLENCOE ST JOHNS CATH CH CROSS



**Mn/DOT Name:** GLENCOE ST JOHNS CATH CH CROSS **NGS Name:** GLENCOE ST JOHNS CATH CH CROSS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0618 Get Map
**NGS Quad / Sta Num :** 44094113/1030
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 11 | 115 N | 28 W | 444631.26 | 940906.70 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH CROSS | NGS |

**Description:** (2016)

**Stamping:**

IN THE NORTH PART OF GLENCOE, 0.4 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 39.0 FEET EAST ON 16TH STREET, THEN 62.0 FEET NORTH ON HENNEPIN AVENUE, 0.07 MILE SOUTH OF THE CENTER OF THE JUNCTION OF HENNEPIN AVENUE AND 17TH STREET, 0.07 MILE EAST-NORTHEAST OF THE CENTER OF THE JUNCTION OF 16TH STREET AND GREELEY AVENUE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.741 12B = -90.738 09 = -90.663 03 = -90.502**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 31.26066 | 94 09 06.69723 | 625038.830 | 216762.726 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 31.25537 | 94 09 06.69320 | 625039.124 | 216762.192 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 31.39100 | 94 09 05.78000 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585232.371 | 975306.656 | 1341407.004 | 16268472.822 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585232.661 | 975306.120 | 1341407.287 | 16268472.283 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1960630.734 | 647229.797 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# GLENCOE STS PETER-PAUL CATH CH



**Mn/DOT Name:** GLENCOE STS PETER-PAUL CATH CH **NGS Name:** GLENCOE ST PETER PAUL CATH CH

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0615 Get Map
**NGS Quad / Sta Num :** 44094113/1031
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 13 | 115 N | 28 W | 444611.65 | 940850.93 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | GOOD | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | CHURCH CROSS | NGS |

**Description:** (2016)

**Stamping:**

IN SOUTH GLENCOE, 0.2 MILE EAST ALONG 10TH STREET FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE IN GLENCOE, THEN 292.0 FEET NORTH ON KNIGHT AVENUE, 0.06 MILE WEST-SOUTHWEST OF THE JUNCTION OF LOUDEN AVENUE AND 11TH STREET, 70.71 FEET SOUTH OF 11TH STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.751 12B = -90.748 09 = -90.676 03 = -90.515**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 11.65316 | 94 08 50.93422 | 626187.796 | 214783.690 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 11.64784 | 94 08 50.93021 | 626188.088 | 214783.152 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 11.65200 | 94 08 50.06800 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2586365.803 | 973318.959 | 1342515.641 | 16266471.796 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2586366.091 | 973318.420 | 1342515.923 | 16266471.253 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1961760.501 | 645228.810 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# GNAT MN085



**Mn/DOT Name:** GNAT MN085 **NGS Name:** GNAT

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9692 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 28 | 115 N | 29 W | 444448.13 | 941909.45 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2015 | POOR | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT)

**Disk Type**
SURVEY DISK

**Mon. Agency**
MN-085

**Description:** (2006)

**Stamping:** GNAT 1993

1.75 MILES NORTHEAST OF BROWNTON, 1.0 MILE NORTH ALONG ORANGE STREET FROM THE JUNCTION OF ORANGE STREET AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 0.3 MILE EAST ON 90TH STREET, 19.0 FEET SOUTH OF 90TH STREET, 9.0 FEET EAST OF A FIELD DRIVE, 14.0 FEET WEST-NORTHWEST OF A WITNESS POST.

**Station Notes**
THE CAP IS LOOSE; DON'T USE FOR GEODETIC WORK.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 938.735 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1029.375 | .262 | | 938.781 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1029.460 | .131 | | 938.896 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1029.460 | .131 | | 938.896 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1029.427 | .131 | | 938.974 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1029.427 | .131 | | 938.974 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.001 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.722 12B = -90.722 09 = -90.594 03 = -90.439**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.13128 | 94 19 09.44892 | 581597.450 | 206105.571 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.13083 | 94 19 09.44952 | 581597.407 | 206105.525 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 44 48.13157 | 94 19 09.45002 | 581597.371 | 206105.600 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 44 48.13157 | 94 19 09.45002 | 581597.371 | 206105.600 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.13093 | 94 19 09.44919 | 581597.431 | 206105.535 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 44 48.13093 | 94 19 09.44919 | 581597.431 | 206105.535 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 48.12697 | 94 19 09.44802 | 581597.518 | 206105.132 | .033 | C | GPS - STATIC | 1993 | CO43 |

# GNAT MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2541714.132 | 964988.328 | 1297774.466 | 16258692.814 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2541714.088 | 964988.282 | 1297774.422 | 16258692.769 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2541714.052 | 964988.357 | 1297774.387 | 16258692.845 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2541714.052 | 964988.357 | 1297774.387 | 16258692.845 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2541714.112 | 964988.292 | 1297774.446 | 16258692.779 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2541714.112 | 964988.292 | 1297774.446 | 16258692.779 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2541714.195 | 964987.891 | 1297774.524 | 16258692.377 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GNAT-DI9692-3S-21APR2011.jpg | S | Apr 21, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GNAT-DI9692-2-21APR2011.jpg | | Apr 21, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/GNAT-DI9692-1-21APR2011.jpg | | Apr 21, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** H 123 **NGS Name:** H 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0049 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 34 | 115 N | 30 W | 444328.44 | 942553.94 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | PROJECTS 2 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2011) **Stamping:** H 123 1934

2.25 MILES EAST OF STEWART, 2.35 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 105.1, 115.4 FEET NORTH-NORTHEAST OF TRUNK HIGHWAY 212, 101.0 FEET SOUTHEAST OF A TELEPHONE POLE, 61.5 FEET SOUTHWEST OF A TELEPHONE POLE, 35.5 FEET WEST-NORTHWEST OF AN ENTRANCE, 32.4 FEET SOUTH-SOUTHWEST OF THE SOUTH RAIL OF THE RAILROAD TRACKS, 2.0 FEET SOUTH OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.025 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1047.025 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1047.025 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.576 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1046.576 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |
| 1046.576 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1046.576 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.966 | .262 | | 956.501 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.597 12B = -90.600 09 = -90.466 03 = -90.328**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.43607 | 94 25 53.93571 | 552423.712 | 197941.745 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2512481.063 | 957051.998 | 1268451.367 | 16251118.185 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/H_123-PQ0049-3NE-18APR2011.jpg | NE | Apr 18, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/H_123-PQ0049-2-18APR2011.jpg | | Apr 18, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/H_123-PQ0049-1-18APR2011.jpg | | Apr 18, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** H 125 **NGS Name:** H 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0028 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 28 | 115 N | 28 W | 444421.22 | 941236.67 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** H 125 1934

2.75 MILES SOUTHWEST OF GLENCOE, 3.1 MILES SOUTHWEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 (CHANDLER AVENUE) IN GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 116.4, AT THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212, IN THE MEDIAN, 143.0 FEET EAST-SOUTHEAST OF A CROSSOVER, 51.0 FEET NORTH OF EASTBOUND TRUNK HIGHWAY 22, 0.9 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.885 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2010 | 00000663 |
| 1012.885 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2006 | VGAYL |
| 1012.921 | .007 | 1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1012.921 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1012.511 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1012.511 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1012.511 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1985 | VLORD |
| 1012.511 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L43 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 922.013 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1012.892 | .131 | | 922.282 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1012.892 | .131 | | 922.282 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 922.157 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |

**Geoid Separations(ft): GEOID18 = -90.895 12B = -90.895 09 = -90.797 03 = -90.633**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.21805 | 94 12 36.66563 | 609960.502 | 203508.218 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.21821 | 94 12 36.66681 | 609960.417 | 203508.233 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.21769 | 94 12 36.66621 | 609960.460 | 203508.181 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 44 21.21769 | 94 12 36.66621 | 609960.460 | 203508.181 | .033 | C | GPS - STATIC | 2006 | HGAYL |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2570053.124 | 962171.096 | 1326070.786 | 16255527.863 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2570053.039 | 962171.112 | 1326070.701 | 16255527.881 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2570053.082 | 962171.060 | 1326070.744 | 16255527.827 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2570053.082 | 962171.060 | 1326070.744 | 16255527.827 | .033 | C | GPS - STATIC | 2006 | HGAYL |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/H_125-PQ0028-3N-01MAR2006.jpg | N | Mar 1, 2006 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/H_125-PQ0028-2-01MAR2006.jpg | | Mar 1, 2006 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/H_125-PQ0028-1-01MAR2006.jpg | | Mar 1, 2006 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HAGEN



**Mn/DOT Name:** HAGEN **NGS Name:** HAGEN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4218 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 3 | 116 N | 29 W | 445332.57 | 941829.04 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** HAGEN 2015

2.75 MILES WEST OF HUTCHINSON, 1.35 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE WEST JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 145.15, 71.2 FEET SOUTH OF TRUNK HIGHWAY 7, 3.0 FEET NORTH OF A RIGHT-OF-WAY POST, 3.0 FEET NORTH OF A WITNESS POST.

**Station Pair:** KOMENSKY - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.003 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1063.003 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.003 | | | 973.020 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1063.003 | | | 973.020 | .012 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1063.085 | .262 | | 973.072 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1063.020 | .262 | | 973.007 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.013 12B = -90.010 09 = -89.888 03 = -89.754**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.56804 | 94 18 29.04389 | 584301.476 | 259231.505 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 32.56804 | 94 18 29.04389 | 584301.476 | 259231.505 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 32.56780 | 94 18 29.04364 | 584301.495 | 259231.481 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 32.56788 | 94 18 29.04327 | 584301.521 | 259231.489 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 32.56754 | 94 18 29.04385 | 584301.480 | 259231.455 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2544830.192 | 1018086.261 | 1301543.955 | 16311737.429 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2544830.192 | 1018086.261 | 1301543.955 | 16311737.429 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2544830.210 | 1018086.236 | 1301543.973 | 16311737.405 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2544830.237 | 1018086.244 | 1301544.000 | 16311737.412 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2544830.195 | 1018086.210 | 1301543.958 | 16311737.378 | .066 | | NCAT | 2024 | HHUTCH1 |

# HAGEN



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HAGEN-DQ4218-3S-16JUN2024.jpg | S | Jun 16, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HAGEN-DQ4218-2-16JUN2024.jpg | | Jun 16, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HAGEN-DQ4218-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALE MNDT



**Mn/DOT Name:** HALE MNDT
**NGS Name:** HALE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AC4877 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 117 N | 28 W | 445423.14 | 941108.61 | 2 | B |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 18 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2008) **Stamping:** HALE 1989

IN SILVER LAKE, 1.15 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN THE WEST EDGE OF SILVER LAKE, IN THE SOUTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 92, AT TRUNK HIGHWAY 7 MILEPOINT 151.55, 152.5 FEET SOUTH OF TRUNK HIGHWAY 7, 49.5 FEET WEST OF COUNTY ROAD 92, 30.22 FEET NORTH OF HALE MNDT RM 1 RESET, 27.27 FEET EAST-SOUTHEAST OF HALE MNDT RM 2 RESET, 6.1 FEET NORTH OF A RIGHT-OF-WAY POST, 3.0 FEET SOUTH OF A WITNESS POST.

**Station Pair:** HALE MNDT RM 3 - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.957 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1061.957 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1061.957 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1061.957 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1061.957 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1061.927 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.481 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

# HALE MNDT



## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.957 | | | 971.625 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1061.957 | | | 971.625 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1061.957 | | | 971.625 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1061.957 | | | 971.625 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1061.957 | | | 971.625 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2024 | GPS3754 |
| 1061.957 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2024 | HJOBE |
| 1061.957 | | | 971.625 | .006 | 2011 | GPS - STATIC | 2024 | HJOBE |
| 1061.901 | .262 | | 971.589 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1061.983 | .262 | | 971.671 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1061.983 | .262 | | 971.671 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1061.924 | .262 | | 971.609 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1061.957 | | | 971.625 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2018 | GPS3119 |
| 1061.957 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2017 | HMNCORS07 |
| 1061.957 | | | 971.625 | .005 | 2011 | GPS - STATIC | 2017 | HMNPH |
| 1061.845 | .262 | | 971.530 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1061.802 | .262 | | 971.488 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 971.852 | .066 | 1996 | GPS - STATIC | 2014 | HMNCORS06 |
| | | | 971.625 | .004 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1061.875 | .262 | | 971.645 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1061.940 | .131 | | 971.724 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1061.940 | .131 | | 971.724 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 971.724 | .006 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1061.907 | .098 | | 971.852 | .049 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2243 |
| 1061.940 | .098 | | 971.852 | .049 | 1996 | GPS - STATIC | 2005 | GPS2036 |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS2086 |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2005 | HWRIG |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2004 | GPS2022 |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2004 | HMEEK |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1061.875 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2003 | HWAVE |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |
| 1061.875 | .131 | | 971.852 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1941 |
| 1061.940 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |
| 1061.815 | .098 | | 971.852 | .049 | 1996 | GPS - STATIC | 1997 | GPS805-B |
| 1061.815 | .131 | | 971.852 | .066 | 1996 | GPS - STATIC | 1997 | GPS805-C |

**Geoid Separations(ft): GEOID18 = -90.311 12B = -90.315 09 = -90.233 03 = -90.062**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | | ADJUSTMENT | 2024 | GPS3754 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | C | GPS - STATIC | 2024 | HJOBE |
| 44 54 23.13711 | 94 11 08.60670 | 615981.752 | 264503.642 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 23.13702 | 94 11 08.60612 | 615981.794 | 264503.633 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 23.13702 | 94 11 08.60612 | 615981.794 | 264503.633 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 23.13700 | 94 11 08.60761 | 615981.687 | 264503.631 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | | ADJUSTMENT | 2018 | GPS3119 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | C | GPS - STATIC | 2017 | HMNPH |
| 44 54 23.13708 | 94 11 08.60806 | 615981.654 | 264503.639 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 54 23.13720 | 94 11 08.60721 | 615981.716 | 264503.651 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 54 23.13719 | 94 11 08.60700 | 615981.731 | 264503.650 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.13690 | 94 11 08.60765 | 615981.684 | 264503.621 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 23.13731 | 94 11 08.60768 | 615981.681 | 264503.662 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 54 23.13731 | 94 11 08.60768 | 615981.681 | 264503.662 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 54 23.13731 | 94 11 08.60768 | 615981.681 | 264503.662 | .007 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.13673 | 94 11 08.60737 | 615981.704 | 264503.604 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 54 23.13673 | 94 11 08.60737 | 615981.704 | 264503.604 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2024 | HJOBE |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2014 | HMNCORS06 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .016 | B | ADJUSTMENT | 2006 | GPS2243 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .016 | B | GPS - STATIC | 2005 | GPS2036 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | ADJUSTMENT | 2005 | GPS2086 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2005 | HWRIG |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2004 | HMEEK |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2003 | HWAVE |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | ADJUSTMENT | 2003 | GPS1941 |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .016 | B | GPS - STATIC | 1997 | GPS805-B |
| 44 54 23.13674 | 94 11 08.60735 | 615981.706 | 264503.605 | .033 | C | GPS - STATIC | 1997 | GPS805-C |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.13116 | 94 11 08.60503 | 615981.875 | 264503.041 | .033 | C | GPS - STATIC | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | | ADJUSTMENT | 2025 | GPS3788 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | | ADJUSTMENT | 2024 | GPS3754 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | C | GPS - STATIC | 2024 | HJOBE |
| 2576547.401 | 1023111.708 | 1333313.562 | 16316369.994 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576547.443 | 1023111.699 | 1333313.604 | 16316369.985 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576547.443 | 1023111.699 | 1333313.604 | 16316369.985 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576547.335 | 1023111.697 | 1333313.497 | 16316369.984 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | | ADJUSTMENT | 2018 | GPS3119 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | C | GPS - STATIC | 2017 | HMNPH |
| 2576547.303 | 1023111.705 | 1333313.464 | 16316369.993 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2576547.364 | 1023111.717 | 1333313.526 | 16316370.004 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2576547.379 | 1023111.716 | 1333313.541 | 16316370.003 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576547.332 | 1023111.687 | 1333313.494 | 16316369.974 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2576547.330 | 1023111.729 | 1333313.492 | 16316370.016 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2576547.330 | 1023111.729 | 1333313.492 | 16316370.016 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2576547.330 | 1023111.729 | 1333313.492 | 16316370.016 | .007 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576547.352 | 1023111.670 | 1333313.513 | 16316369.957 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2576547.352 | 1023111.670 | 1333313.513 | 16316369.957 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2024 | HJOBE |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2014 | HMNCORS06 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .016 | B | ADJUSTMENT | 2006 | GPS2243 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .016 | B | GPS - STATIC | 2005 | GPS2036 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | ADJUSTMENT | 2005 | GPS2086 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2005 | HWRIG |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2004 | HMEEK |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2003 | HWAVE |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | ADJUSTMENT | 2003 | GPS1941 |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .016 | B | GPS - STATIC | 1997 | GPS805-B |
| 2576547.354 | 1023111.671 | 1333313.515 | 16316369.958 | .033 | C | GPS - STATIC | 1997 | GPS805-C |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576547.520 | 1023111.105 | 1333313.674 | 16316369.390 | .033 | C | GPS - STATIC | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE-AC4877-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE-AC4877-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE-AC4877-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALE MNDT RM 1



**Mn/DOT Name:** HALE MNDT RM 1 **NGS Name:** HALE RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9130 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 117 N | 28 W | 445422.84 | 941108.56 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** HALE NO 1 1989

IN SILVER LAKE, 1.15 MILES EAST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 151.45, IN THE SOUTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 2, 183.5 FEET SOUTH OF TRUNK HIGHWAY 7, 114.9 FEET SOUTH-SOUTHEAST OF A POWER POLE NUMBER 24 WITH A BURIED CABLE BOX, 45.5 FEET WEST OF COUNTY ROAD 2, 30.22 FEET SOUTH OF STATION HALE MNDT, 24.9 FEET SOUTH-SOUTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET NORTH OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.130 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1062.101 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.651 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.104 | .262 | | 971.871 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.308 12B = -90.315 09 = -90.233 03 = -90.062**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.84105 | 94 11 08.55573 | 615985.586 | 264473.677 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576551.001 | 1023081.717 | 1333316.791 | 16316339.969 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_1-DG9130-3W-10MAY2011.jpg | W | May 10, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_1-DG9130-2-10MAY2011.jpg | | May 10, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_1-DG9130-1-10MAY2011.jpg | | May 10, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALE MNDT RM 1 RESET



**Mn/DOT Name:** HALE MNDT RM 1 RESET
**NGS Name:** HALE RM 1 RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4226 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 117 N | 28 W | 445422.84 | 941108.56 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 18 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** HALE NO 1 1989 2015

IN SILVER LAKE, 1.15 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN THE WEST EDGE OF SILVER LAKE, IN THE SOUTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 92, 49.8 FEET SOUTHEAST OF HALE MNDT RM 2 RESET, 45.5 FEET WEST OF COUNTY ROAD 92, 30.22 FEET SOUTH OF STATION HALE MNDT, 24.9 FEET SOUTH-SOUTHEAST OF A RIGHT-OF-WAY POST, 1.5 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.973 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1061.973 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1061.973 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1061.973 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.943 | .262 | | 971.635 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1062.016 | .262 | | 971.701 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1061.835 | .262 | | 971.520 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.308 12B = -90.315 09 = -90.233 03 = -90.062**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 22.84103 | 94 11 08.55550 | 615985.602 | 264473.675 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 22.84114 | 94 11 08.55561 | 615985.594 | 264473.687 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 22.84103 | 94 11 08.55669 | 615985.516 | 264473.675 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576551.017 | 1023081.715 | 1333316.808 | 16316339.967 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576551.010 | 1023081.726 | 1333316.800 | 16316339.978 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2576550.932 | 1023081.715 | 1333316.722 | 16316339.968 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_1_RESET-DQ4226-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_1_RESET-DQ4226-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_1_RESET-DQ4226-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALE MNDT RM 2



**Mn/DOT Name:** HALE MNDT RM 2 **NGS Name:** HALE RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9129 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 117 N | 28 W | 445423.24 | 941108.96 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 18 FT)

**Disk Type**
REFERENCE MARK DISK

**Mon. Agency**
MNDT

**Description:** (1989) **Stamping:** HALE NO 2 1989

1.1 MILES NORTHEAST OF SILVER LAKE, 1.15 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 151.45, IN THE SOUTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 2, 144.0 FEET SOUTH OF TRUNK HIGHWAY 7, 74.5 FEET WEST OF COUNTY ROAD 2, 72.0 FEET SOUTH OF A POWER POLE NUMBER 24 WITH A BURIED CABLE BOX, 29.0 FEET NORTHWEST OF A RIGHT-OF-WAY POST, 27.3 FEET WEST-NORTHWEST OF STATION HALE MNDT, 1.6 FEET EAST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.540 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1061.507 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.061 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.438 | .262 | | 971.205 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.308 12B = -90.315 09 = -90.229 03 = -90.062**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.23833 | 94 11 08.95838 | 615956.384 | 264513.755 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576522.114 | 1023122.016 | 1333288.411 | 16316380.612 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_2-DG9129-3W-10MAY2011.jpg | W | May 10, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_2-DG9129-2-10MAY2011.jpg | | May 10, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_2-DG9129-1-10MAY2011.jpg | | May 10, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# Geodetic Data Sheet (Feet)
**GSID Station # 104171**

# HALE MNDT RM 2 RESET

**04/28/2026**
Sheet Help

**Mn/DOT Name:** HALE MNDT RM 2 RESET
**NGS Name:** HALE RM 2 RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4227 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 117 N | 28 W | 445423.24 | 941108.96 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 18 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** HALE NO 2 1989 2015

IN SILVER LAKE, 1.15 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN THE WEST EDGE OF SILVER LAKE, IN THE SOUTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 92, 74.5 FEET WEST OF COUNTY ROAD 92, 49.8 FEET NORTHWEST OF HALE MNDT RM 1 RESET, 27.27 FEET WEST-NORTHWEST OF STATION HALE MNDT, 1.6 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.409 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1061.409 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1061.409 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1061.409 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1061.359 | .262 | | 971.048 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1061.356 | .262 | | 971.041 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1061.343 | .262 | | 971.028 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.308 12B = -90.315 09 = -90.229 03 = -90.062**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.23828 | 94 11 08.95750 | 615956.447 | 264513.750 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 23.23889 | 94 11 08.95803 | 615956.409 | 264513.812 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 23.23816 | 94 11 08.95845 | 615956.379 | 264513.737 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576522.177 | 1023122.011 | 1333288.474 | 16316380.606 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576522.139 | 1023122.073 | 1333288.436 | 16316380.668 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2576522.109 | 1023121.999 | 1333288.405 | 16316380.595 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_2_RESET-DQ4227-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_2_RESET-DQ4227-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_2_RESET-DQ4227-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALE MNDT RM 3



**Mn/DOT Name:** HALE MNDT RM 3 **NGS Name:** HALE RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6196 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 27 | 117 N | 28 W | 445447.60 | 941107.38 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 12 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 18 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** HALE NO 3 1989

0.8 MILE NORTHEAST OF SILVER LAKE, 1.15 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE TO TRUNK HIGHWAY 7 MILEPOINT 151.55, THEN 0.4 MILE NORTH ON COUNTY ROAD 2, 29.5 FEET EAST OF COUNTY ROAD 2, 6.0 FEET SOUTH OF A FIELD ENTRANCE, 24.0 FEET NORTHWEST OF A WITNESS POST.

**Station Pair:** HALE MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.634 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1059.634 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1059.634 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1059.634 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1059.634 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1059.601 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.155 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.634 | | | 969.325 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1059.634 | | | 969.325 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1059.919 | .262 | | 969.627 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1059.637 | .262 | | 969.342 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1059.480 | .262 | | 969.184 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 969.325 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1059.607 | .262 | | 969.394 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 969.427 | .007 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1059.611 | .131 | | 969.555 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1059.611 | .131 | | 969.555 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.292 12B = -90.295 09 = -90.213 03 = -90.046**

# HALE MNDT RM 3



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 47.59934 | 94 11 07.37811 | 616056.549 | 266981.672 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 47.59934 | 94 11 07.37811 | 616056.549 | 266981.672 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 47.59932 | 94 11 07.37684 | 616056.641 | 266981.670 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 47.59903 | 94 11 07.37784 | 616056.569 | 266981.641 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 47.59871 | 94 11 07.37856 | 616056.518 | 266981.608 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 54 47.59934 | 94 11 07.37811 | 616056.549 | 266981.672 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 47.59918 | 94 11 07.37937 | 616056.459 | 266981.655 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 47.59947 | 94 11 07.37884 | 616056.497 | 266981.685 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 47.59889 | 94 11 07.37849 | 616056.522 | 266981.626 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 54 47.59889 | 94 11 07.37849 | 616056.522 | 266981.626 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 47.59889 | 94 11 07.37849 | 616056.524 | 266981.625 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 47.59362 | 94 11 07.37650 | 616056.668 | 266981.093 | .033 | C | GPS - STATIC | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576641.440 | 1025588.845 | 1333438.130 | 16318845.189 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2576641.440 | 1025588.845 | 1333438.130 | 16318845.189 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2576641.531 | 1025588.843 | 1333438.221 | 16318845.185 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2576641.459 | 1025588.813 | 1333438.149 | 16318845.157 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2576641.407 | 1025588.781 | 1333438.097 | 16318845.125 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2576641.440 | 1025588.845 | 1333438.130 | 16318845.189 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576641.349 | 1025588.829 | 1333438.039 | 16318845.174 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2576641.387 | 1025588.858 | 1333438.078 | 16318845.202 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576641.413 | 1025588.799 | 1333438.102 | 16318845.143 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2576641.413 | 1025588.799 | 1333438.102 | 16318845.143 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2576641.413 | 1025588.799 | 1333438.102 | 16318845.143 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2576641.555 | 1025588.265 | 1333438.237 | 16318844.608 | .033 | C | GPS - STATIC | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_3-DF6196-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_3-DF6196-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALE_RM_3-DF6196-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALVA MNDT



**Mn/DOT Name:** HALVA MNDT
**NGS Name:** HALVA
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6197 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 116 N | 29 W | 445320.03 | 941511.58 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT)

**Disk Type**
HORIZONTAL CONTROL DISK

**Mon. Agency**
MNDT

**Description:** (2016)

**Stamping:** HALVA 1989

3.0 MILES SOUTHWEST OF SILVER LAKE, 2.5 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE TO TRUNK HIGHWAY 7 MILEPOINT 147.80, THEN 0.3 MILE SOUTH ON COUNTY ROAD 71, 22.5 FEET EAST OF COUNTY ROAD 71, 107.0 FEET NORTHEAST OF A POWER POLE, 8.0 FEET NORTH OF A FIELD ENTRANCE, 104.5 FEET NORTHEAST OF HALVA MNDT RM 1, 69.1 FEET EAST OF HALVA MNDT RM 2, 14.5 FEET SOUTHWEST OF A WITNESS POST.

**Station Pair:** JENN - MCLEOD, MN

**Station Notes**
FOUND CAP LOOSE. USE WITH CAUTION.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.698 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1057.698 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1057.698 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1057.685 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.255 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.570 | .262 | | 967.347 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 967.492 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1057.613 | .262 | | 967.501 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1057.708 | .131 | | 967.596 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1057.708 | .131 | | 967.596 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1057.708 | .131 | | 967.724 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1057.708 | .131 | | 967.596 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1057.708 | .131 | | 967.596 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1057.554 | .262 | | 967.606 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1057.708 | .131 | | 967.724 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1057.708 | .131 | | 967.724 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 967.596 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1057.675 | .131 | | 967.724 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1057.675 | .131 | | 967.724 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.213 12B = -90.223 09 = -90.111 03 = -89.947**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.03482 | 94 15 11.58328 | 598523.229 | 258023.716 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 53 20.03487 | 94 15 11.58455 | 598523.138 | 258023.721 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.03443 | 94 15 11.58467 | 598523.129 | 258023.676 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 20.03489 | 94 15 11.58558 | 598523.063 | 258023.722 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 53 20.03489 | 94 15 11.58558 | 598523.063 | 258023.722 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 53 20.03489 | 94 15 11.58558 | 598523.063 | 258023.722 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 20.03489 | 94 15 11.58558 | 598523.063 | 258023.722 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 53 20.03489 | 94 15 11.58558 | 598523.063 | 258023.722 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.03431 | 94 15 11.58497 | 598523.108 | 258023.664 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 20.03446 | 94 15 11.58526 | 598523.087 | 258023.679 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 53 20.03431 | 94 15 11.58497 | 598523.108 | 258023.664 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 53 20.03431 | 94 15 11.58497 | 598523.108 | 258023.664 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 53 20.03431 | 94 15 11.58497 | 598523.108 | 258023.664 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 20.03431 | 94 15 11.58497 | 598523.107 | 258023.664 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.02928 | 94 15 11.58186 | 598523.334 | 258023.155 | .033 | C | GPS - STATIC | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559040.759 | 1016768.205 | 1315734.059 | 16310244.409 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2559040.668 | 1016768.211 | 1315733.968 | 16310244.415 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559040.659 | 1016768.166 | 1315733.958 | 16310244.371 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2559040.594 | 1016768.213 | 1315733.894 | 16310244.418 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2559040.594 | 1016768.213 | 1315733.894 | 16310244.418 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2559040.594 | 1016768.213 | 1315733.894 | 16310244.418 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2559040.594 | 1016768.213 | 1315733.894 | 16310244.418 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2559040.594 | 1016768.213 | 1315733.894 | 16310244.418 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559040.637 | 1016768.154 | 1315733.937 | 16310244.359 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2559040.616 | 1016768.169 | 1315733.916 | 16310244.375 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2559040.637 | 1016768.154 | 1315733.937 | 16310244.359 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2559040.637 | 1016768.154 | 1315733.937 | 16310244.359 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2559040.637 | 1016768.154 | 1315733.937 | 16310244.359 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2559040.637 | 1016768.154 | 1315733.937 | 16310244.359 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559040.860 | 1016767.644 | 1315734.153 | 16310243.846 | .033 | C | GPS - STATIC | 1989 | HSILV |

# HALVA MNDT



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA-DF6197-3E-28JUL2015.jpg | E | Jul 28, 2015 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA-DF6197-2-28JUL2015.jpg | | Jul 28, 2015 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA-DF6197-1-28JUL2015.jpg | | Jul 28, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALVA MNDT RESET



**Mn/DOT Name:** HALVA MNDT RESET
**NGS Name:** HALVA RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS3061 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 116 N | 29 W | 445320.03 | 941511.58 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2024) **Stamping:** HALVA 1989 2024

3.0 MILES SOUTHWEST OF SILVER LAKE, 2.5 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE TO TRUNK HIGHWAY 7 MILEPOINT 147.80, THEN 0.3 MILE SOUTH ON COUNTY ROAD 71, 22.5 FEET EAST OF COUNTY ROAD 71, 107.0 FEET NORTHEAST OF A POWER POLE, 8.0 FEET NORTH OF A FIELD ENTRANCE, 104.5 FEET NORTHEAST OF HALVA MNDT RM 1, 69.1 FEET EAST OF HALVA MNDT RM 2, 14.5 FEET SOUTHWEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.531 | | | 967.350 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1057.531 | | | 967.350 | .012 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1057.941 | .262 | | 967.728 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**Geoid Separation(ft): GEOID18 = -90.213**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.03466 | 94 15 11.58405 | 598523.174 | 258023.700 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 20.03466 | 94 15 11.58405 | 598523.174 | 258023.700 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 20.03476 | 94 15 11.58472 | 598523.125 | 258023.710 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.03411 | 94 15 11.58442 | 598523.147 | 258023.644 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559040.704 | 1016768.189 | 1315734.003 | 16310244.394 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2559040.704 | 1016768.189 | 1315734.003 | 16310244.394 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2559040.656 | 1016768.200 | 1315733.955 | 16310244.404 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559040.677 | 1016768.134 | 1315733.976 | 16310244.338 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RESET-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RESET-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RESET-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALVA MNDT RM 1



**Mn/DOT Name:** HALVA MNDT RM 1 **NGS Name:** HALVA RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9125 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 116 N | 29 W | 445319.29 | 941512.59 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** HALVA NO 1 1989

3.2 MILES NORTHWEST OF SILVER LAKE, 2.5 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE, THEN 0.3 MILE SOUTH ON COUNTY ROAD 71, 48.0 FEET WEST OF COUNTY ROAD 71, 2.4 FEET NORTH-NORTHWEST OF A POWER POLE, 104.5 FEET SOUTHWEST OF STATION HALVA MNDT, 1.3 FEET SOUTH-SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.657 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1055.657 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1055.657 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1055.641 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.211 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.818 | .262 | | 965.608 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1055.618 | .262 | | 965.398 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1055.657 | .262 | | 965.546 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.213 12B = -90.223 09 = -90.111 03 = -89.947**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 19.28989 | 94 15 12.58859 | 598451.201 | 257947.932 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 19.28998 | 94 15 12.58732 | 598451.293 | 257947.941 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 19.28963 | 94 15 12.58910 | 598451.165 | 257947.905 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558968.152 | 1016692.990 | 1315660.546 | 16310170.112 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2558968.244 | 1016692.999 | 1315660.637 | 16310170.119 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558968.115 | 1016692.964 | 1315660.509 | 16310170.086 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

# HALVA MNDT RM 1



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RM_1-DG9125-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RM_1-DG9125-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RM_1-DG9125-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALVA MNDT RM 2



**Mn/DOT Name:** HALVA MNDT RM 2 **NGS Name:** HALVA RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9124 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 116 N | 29 W | 445320.12 | 941512.54 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** HALVA NO 2 1989

3.0 MILES SOUTHWEST OF SILVER LAKE, 2.5 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16, AT THE WEST EDGE OF SILVER LAKE, THEN 0.3 MILE SOUTH ON COUNTY ROAD 71, 46.0 FEET WEST OF COUNTY ROAD 71, 86.5 FEET NORTH-NORTHEAST OF A POWER POLE, 69.1 FEET WEST OF STATION HALVA MNDT, 1.2 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.361 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1054.361 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1054.371 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1054.355 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1053.925 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.502 | .262 | | 964.293 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1054.378 | .262 | | 964.168 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1054.381 | .262 | | 964.161 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1054.279 | .262 | | 964.056 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1054.315 | .262 | | 964.207 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.210 12B = -90.220 09 = -90.108 03 = -89.947**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.11819 | 94 15 12.53665 | 598454.549 | 258031.840 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 20.11805 | 94 15 12.53707 | 598454.519 | 258031.825 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 20.11702 | 94 15 12.53691 | 598454.531 | 258031.721 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 53 20.11808 | 94 15 12.53574 | 598454.615 | 258031.829 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 20.11729 | 94 15 12.53726 | 598454.506 | 258031.748 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

# HALVA MNDT RM 2



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558972.151 | 1016776.861 | 1315665.579 | 16310253.908 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2558972.121 | 1016776.847 | 1315665.548 | 16310253.895 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2558972.132 | 1016776.743 | 1315665.558 | 16310253.790 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2558972.217 | 1016776.850 | 1315665.644 | 16310253.896 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558972.107 | 1016776.770 | 1315665.533 | 16310253.818 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RM_2-DG9124-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RM_2-DG9124-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HALVA_RM_2-DG9124-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HALVA MNDT RM 3



**Mn/DOT Name:** HALVA MNDT RM 3 **NGS Name:** HALVA RM 3

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 12 | 116 N | 29 W | 445212.84 | 941514.06 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2011 | NOT FOUND | Horz=YES Vert=YES | NO | | RECESSED 2 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** HALVA NO 3 1989

3.5 MILES WEST-SOUTHWEST OF SILVER LAKE, 1.6 MILES SOUTH ON COUNTY ROAD 71 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 71 IN SILVER LAKE, 47.0 FEET WEST OF COUNTY ROAD 71, 24.2 FEET NORTH-NORTHWEST OF THE SOUTH END OF A METAL CULVERT, 10.5 FEET SOUTHWEST OF THE NORTH END OF A METAL CULVERT, 8.0 FEET NORTH OF A FIELD ENTRANCE, 10.2 FEET SOUTHWEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.305 12B = -90.311 09 = -90.203 03 = -90.036**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 12.84297 | 94 15 14.06059 | 598376.582 | 251217.687 | .066 | 2 | CLASSICAL SURVEY | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558841.279 | 1009964.186 | 1315450.716 | 16303444.887 | .066 | 2 | CLASSICAL SURVEY | 1989 | HSILV |

# HAS MNDT TEMP



**Mn/DOT Name:** HAS MNDT TEMP
**NGS Name:** HAS TEMP
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 116 N | 28 W | 445147.16 | 941513.58 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | SURVEY DISK | MNDT |

**Description:** (1989)
**Stamping:**

6.0 MILES EAST-SOUTHEAST OF HUTCHINSON, AT THE NORTHEAST CORNER OF THE JUNCTION OF COUNTY ROAD 71 AND 170TH STREET, 106.3 FEET NORTH OF A POWER POLE, 70.0 FEET NORTH OF A GRAVEL ROAD, 20.5 FEET EAST OF COUNTY ROAD 71.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.341 12B = -90.344 09 = -90.239 03 = -90.072**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 47.16426 | 94 15 13.58514 | 598422.950 | 248617.114 | .066 | 2 | CLASSICAL SURVEY | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558867.445 | 1007363.586 | 1315444.806 | 16300844.738 | .066 | 2 | CLASSICAL SURVEY | 1989 | HSILV |

# HASSAN



**Mn/DOT Name:** HASSAN **NGS Name:** HASSAN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0660 Get Map
**NGS Quad / Sta Num :** 44094142/1003
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 29 W | 445140.08 | 941514.58 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** HASSAN 1956

2.59 MILES NORTHEAST OF BISCAY, 0.9 MILE NORTH ALONG COUNTY ROAD 4 FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, THEN 1.0 MILE EAST ON COUNTY ROAD 11, THEN 1.4 MILES NORTH ON COUNTY ROAD 71, 0.12 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 71 AND 170TH STREET, 0.06 MILE WEST OF STATION HASSAN 2, 48.57 FEET WEST OF THE CENTERLINE OF COUNTY ROAD 71.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1075.129 | .197 | | 985.156 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.801 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.351 12B = -90.354 09 = -90.249 03 = -90.079**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 40.08403 | 94 15 14.58019 | 598354.616 | 247899.695 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 40.07948 | 94 15 14.57486 | 598355.002 | 247899.236 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 40.21590 | 94 15 13.65030 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558793.550 | 1006646.792 | 1315362.096 | 16300129.069 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558793.933 | 1006646.330 | 1315362.472 | 16300128.602 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1934191.964 | 678569.743 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# HASSAN 2



**Mn/DOT Name:** HASSAN 2 **NGS Name:** HASSAN 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0662 Get Map
**NGS Quad / Sta Num :** 44094142/1003
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 116 N | 28 W | 445140.10 | 941510.01 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1974 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 8 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | HORIZONTAL CONTROL DISK | NGS |

**Description:** (2007) **Stamping:** HASSAN 2 1974

6.0 MILES OF SOUTHEAST OF HUTCHINSON, 5.8 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 2.15 MILES SOUTH ON COUNTY ROAD 71, 284.0 FEET EAST OF COUNTY ROAD 71, 219.0 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A LARGE METAL BARN, 45.64 FEET WEST-NORTHWEST OF HASSAN 2 RM 3, 36.08 FEET SOUTH OF HASSAN 2 RM 4, 2.4 FEET NORTHEAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1076.113 | .262 | | 986.140 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1076.015 | | | | | | RECIPROCAL VERTICAL ANGLE | 1974 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.351 12B = -90.357 09 = -90.252 03 = -90.082**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 40.10085 | 94 15 10.01135 | 598683.711 | 247902.935 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 40.09630 | 94 15 10.00627 | 598684.079 | 247902.476 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 40.23270 | 94 15 09.08162 | | | .100 | 3 | CLASSICAL SURVEY | 1986 | 10744 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559122.627 | 1006647.475 | 1315691.084 | 16300125.694 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2559122.992 | 1006647.013 | 1315691.442 | 16300125.228 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1934521.039 | 678570.425 | | | .100 | 3 | CLASSICAL SURVEY | 1986 | 10744 |

# HASSAN 2



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2-PQ0662-3N-19MAR2007.jpg | N | Mar 19, 2007 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2-PQ0662-2-19MAR2007.jpg | | Mar 19, 2007 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2-PQ0662-1-19MAR2007.jpg | | Mar 19, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HASSAN 2 RM 3



**Mn/DOT Name:** HASSAN 2 RM 3 **NGS Name:** HASSAN 2 RM 3

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 116 N | 28 W | 445139.92 | 941509.43 | | |

**NGS ACRN:** CO8614 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1974 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 3 IN. | STEEL SPIKE IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** HASSAN 2 NO 3 1974

6.0 MILES EAST-SOUTHEAST OF HUTCHINSON, 5.8 MILES EAST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, TO TRUNK HIGHWAY 7 MILEPOINT 147.85, THEN 2.0 MILES SOUTH ON COUNTY ROAD 71, 310.0 FEET EAST OF COUNTY ROAD 71, 45.6 FEET EAST-SOUTHEAST OF HASSAN 2, 1.6 FEET NORTHEAST OF A WITNESS POST.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.354 12B = -90.357 09 = -90.252 03 = -90.082**

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2_RM_3-CO8614-3S-19MAR2007.jpg | S | Mar 19, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2_RM_3-CO8614-2-19MAR2007.jpg | | Mar 19, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2_RM_3-CO8614-1-19MAR2007.jpg | | Mar 19, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HASSAN 2 RM 4



**Mn/DOT Name:** HASSAN 2 RM 4 **NGS Name:** HASSAN 2 RM 4

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 116 N | 28 W | 445140.44 | 941510.17 | | |

**NGS ACRN:** CO8615 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1974 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 4 IN. | STEEL SPIKE IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** HASSAN 2 NO 4 1974

6.0 MILES EAST-SOUTHEAST OF HUTCHINSON, 5.8 MILES EAST ALONG TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 1.95 MILES SOUTH ON COUNTY ROAD 71, 280.0 FEET EAST OF COUNTY ROAD 71, 36.1 FEET NORTHWEST OF HASSAN 2, 2.0 FEET NORTH OF A WITNESS POST.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.351 12B = -90.357 09 = -90.252 03 = -90.082**

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2_RM_4-CO8615-3W-19MAR2007.jpg | W | Mar 19, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2_RM_4-CO8615-2-19MAR2007.jpg | | Mar 19, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HASSAN_2_RM_4-CO8615-1-19MAR2007.jpg | | Mar 19, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HASSAN AZ MK



**Mn/DOT Name:** HASSAN AZ MK
**NGS Name:** HASSAN AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8611 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 29 W | 445144.00 | 941514.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** HASSAN 1956

2.58 MILES NORTHEAST OF BISCAY, 0.9 MILE NORTH ALONG COUNTY ROAD 4 FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, THEN 1.0 MILE EAST ON COUNTY ROAD 11, THEN 1.4 MILES NORTH ON COUNTY ROAD 71, 0.12 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 71 AND 170TH STREET, 0.05 MILE WEST OF STATION HASSAN 2.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.344 12B = -90.351 09 = -90.246 03 = -90.075**

# HASSAN RM 1



**Mn/DOT Name:** HASSAN RM 1

**NGS Name:** HASSAN RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8612 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 29 W | 445140.00 | 941514.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** HASSAN NO 1 1956

2.58 MILES NORTHEAST OF BISCAY, 0.9 MILE NORTH ALONG COUNTY ROAD 4 FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, THEN 1.0 MILE EAST ON COUNTY ROAD 11, THEN 1.4 MILES NORTH ON COUNTY ROAD 71, 0.12 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 71 AND 170TH STREET, 0.06 MILE WEST OF STATION HASSAN 2, 46.68 FEET WEST OF THE CENTERLINE OF COUNTY ROAD 71.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.351 12B = -90.354 09 = -90.249 03 = -90.079**

# HASSAN RM 2



**Mn/DOT Name:** HASSAN RM 2

**NGS Name:** HASSAN RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8613 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 29 W | 445140.00 | 941514.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** HASSAN NO 2 1956

2.58 MILES NORTHEAST OF BISCAY, 0.9 MILE NORTH ALONG COUNTY ROAD 4 FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, THEN 1.0 MILE EAST ON COUNTY ROAD 11, THEN 1.4 MILES NORTH ON COUNTY ROAD 71, 0.13 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 71 AND 170TH STREET, 0.05 MILE WEST OF STATION HASSAN 2.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.351 12B = -90.354 09 = -90.249 03 = -90.079**

# HOOK



**Mn/DOT Name:** HOOK **NGS Name:** HOOK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4211 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 23 | 116 N | 29 W | 445029.50 | 941742.66 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 27 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** HOOK 2015

2.1 MILES NORTHWEST OF BISCAY, 1.35 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY TO TRUNK HIGHWAY 22 MILEPOINT 116.45, THEN 0.05 MILE EAST ON COUNTY ROAD 11, 69.5 FEET NORTH OF COUNTY ROAD 11(155TH ST), 47.5 FEET EAST OF NATURE AVENUE, 4.7 FEET SOUTHWEST OF A FENCE LINE.

**Station Pair:** BISC MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.122 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1029.122 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.122 | | | 938.771 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1029.122 | | | 938.771 | .017 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1029.217 | .262 | | 938.856 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1029.079 | .262 | | 938.735 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.357 12B = -90.344 09 = -90.239 03 = -90.085**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 29.49674 | 94 17 42.65756 | 587717.988 | 240703.643 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 50 29.49674 | 94 17 42.65756 | 587717.988 | 240703.643 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 50 29.49713 | 94 17 42.65852 | 587717.919 | 240703.683 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 50 29.49664 | 94 17 42.65693 | 587718.033 | 240703.633 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 29.49626 | 94 17 42.65741 | 587717.999 | 240703.595 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548102.430 | 999534.261 | 1304586.410 | 16293150.419 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2548102.430 | 999534.261 | 1304586.410 | 16293150.419 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2548102.360 | 999534.301 | 1304586.341 | 16293150.460 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2548102.475 | 999534.251 | 1304586.455 | 16293150.408 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548102.440 | 999534.213 | 1304586.420 | 16293150.370 | .066 | | NCAT | 2024 | HHUTCH2 |

# HOOK



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOK-DQ4211-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOK-DQ4211-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOK-DQ4211-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HOOTER MN085



**Mn/DOT Name:** HOOTER MN085 **NGS Name:** HOOTER4

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9694 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 8 | 116 N | 28 W | 445232.63 | 941357.55 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** HOOTER

2.75 MILES SOUTHWEST OF SILVER LAKE, 1.5 MILES SOUTHWEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, 1.15 MILES SOUTH ON COUNTY ROAD 90 (KALE AVENUE), 50.0 FEET SOUTH OF A DRIVEWAY AT FIRE NUMBER 17898/WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.333 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1055.333 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.375 | .262 | | 965.044 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1055.346 | .262 | | 965.005 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1055.336 | .262 | | 964.995 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 965.014 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1055.224 | .262 | | 964.985 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1055.346 | .131 | | 965.116 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1055.346 | .131 | | 965.116 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1055.346 | .131 | | 965.251 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1055.346 | .131 | | 965.251 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1054.886 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.331 12B = -90.341 09 = -90.239 03 = -90.065**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.62660 | 94 13 57.55379 | 603876.789 | 253247.767 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 52 32.62724 | 94 13 57.55343 | 603876.815 | 253247.832 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 52 32.62651 | 94 13 57.55356 | 603876.806 | 253247.758 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 52 32.62688 | 94 13 57.55338 | 603876.819 | 253247.796 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.62624 | 94 13 57.55450 | 603876.738 | 253247.730 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 52 32.62699 | 94 13 57.55414 | 603876.764 | 253247.806 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 52 32.62699 | 94 13 57.55414 | 603876.764 | 253247.806 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.62645 | 94 13 57.55367 | 603876.798 | 253247.752 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 52 32.62645 | 94 13 57.55367 | 603876.798 | 253247.752 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.62144 | 94 13 57.55136 | 603876.968 | 253247.246 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564356.546 | 1011951.291 | 1320988.829 | 16305363.382 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2564356.572 | 1011951.355 | 1320988.856 | 16305363.446 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2564356.562 | 1011951.282 | 1320988.846 | 16305363.372 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2564356.575 | 1011951.319 | 1320988.859 | 16305363.410 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564356.495 | 1011951.254 | 1320988.778 | 16305363.346 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2564356.521 | 1011951.330 | 1320988.805 | 16305363.422 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2564356.521 | 1011951.330 | 1320988.805 | 16305363.422 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564356.554 | 1011951.276 | 1320988.838 | 16305363.367 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2564356.554 | 1011951.276 | 1320988.838 | 16305363.367 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564356.719 | 1011950.768 | 1320988.996 | 16305362.857 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOTER4-DI9694-3E-29MAR2020.jpg | E | Mar 29, 2020 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOTER4-DI9694-2-29MAR2020.jpg | | Mar 29, 2020 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOTER4-DI9694-1-29MAR2020.jpg | | Mar 29, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HOOTER MN085 RESET



**Mn/DOT Name:** HOOTER MN085 RESET
**NGS Name:** HOOTER RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS3062 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 8 | 116 N | 28 W | 445232.63 | 941357.55 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 11 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MN-085 |

**Description:** (2024) **Stamping:** HOOTER 1993 2024

2.75 MILES SOUTHWEST OF SILVER LAKE, 1.5 MILES SOUTHWEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, 1.15 MILES SOUTH ON COUNTY ROAD 90 (KALE AVENUE), 50.0 FEET SOUTH OF A DRIVEWAY AT FIRE NUMBER 17898/WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.175 | | | 964.877 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1055.175 | | | 964.877 | .017 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1055.460 | .262 | | 965.133 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**Geoid Separation(ft): GEOID18 = -90.331**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.62643 | 94 13 57.55330 | 603876.825 | 253247.750 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 52 32.62643 | 94 13 57.55330 | 603876.825 | 253247.750 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 52 32.62630 | 94 13 57.55295 | 603876.850 | 253247.737 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.62595 | 94 13 57.55350 | 603876.811 | 253247.702 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564356.581 | 1011951.273 | 1320988.865 | 16305363.364 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2564356.581 | 1011951.273 | 1320988.865 | 16305363.364 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2564356.606 | 1011951.260 | 1320988.890 | 16305363.350 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2564356.566 | 1011951.225 | 1320988.849 | 16305363.316 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOTER_RESET-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOTER_RESET-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HOOTER_RESET-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUESSER



**Mn/DOT Name:** HUESSER **NGS Name:** HUESSER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0631 Get Map
**NGS Quad / Sta Num :** 44094124/1005
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 26 | 115 N | 28 W | 444436.67 | 940926.09 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1990 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 8 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** HUESSER 1935

1.75 MILES SOUTH OF GLENCOE, 1.6 MILES SOUTH ALONG COUNTY ROAD 2 FROM THE JUNCTION OF COUNTY ROAD 2 AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.25 MILE WEST ON 88TH STREET, 194.0 FEET NORTH OF 88TH STREET (GRAVEL ROAD), 167.0 FEET NORTH OF A FENCE LINE, 165.82 FEET EAST-SOUTHEAST OF HUESSER RM 1, 137.30 FEET NORTH-NORTHEAST OF HUESSER RM 2, 125.0 FEET EAST OF A FENCE LINE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 939.795 | .051 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 939.998 | .071 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1030.641 | .131 | | 940.070 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1030.641 | .131 | | 940.070 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |
| 1030.182 | .131 | | 939.700 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.788 | | | | | | GPS - STATIC | 1990 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.859 12B = -90.856 09 = -90.771 03 = -90.617**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 36.67486 | 94 09 26.08824 | 623707.855 | 205149.598 | .039 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 36.67521 | 94 09 26.09003 | 623707.726 | 205149.633 | .046 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 36.67564 | 94 09 26.09200 | 623707.583 | 205149.676 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 44 36.67564 | 94 09 26.09200 | 623707.583 | 205149.676 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 44 44 36.67312 | 94 09 26.09056 | 623707.689 | 205149.421 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 36.66778 | 94 09 26.08671 | 623707.970 | 205148.882 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 36.80300 | 94 09 25.17300 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

# HUESSER



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583811.341 | 963705.451 | 1339843.760 | 16256892.630 | .039 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583811.212 | 963705.487 | 1339843.631 | 16256892.667 | .046 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583811.070 | 963705.531 | 1339843.490 | 16256892.713 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2583811.070 | 963705.531 | 1339843.490 | 16256892.713 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 2583811.173 | 963705.275 | 1339843.590 | 16256892.456 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583811.450 | 963704.734 | 1339843.860 | 16256891.911 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1959209.556 | 635628.463 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

# HUESSER AZ MK



**Mn/DOT Name:** HUESSER AZ MK
**NGS Name:** HUESSER AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8673 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 26 | 115 N | 28 W | 444434.00 | 940927.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1990 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** HUESSER 1935

1.8 MILES SOUTH OF GLENCOE, 1.6 MILES SOUTH ALONG COUNTY ROAD 2 FROM THE JUNCTION OF COUNTY ROAD 2 AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.3 MILE WEST ON 88TH STREET, 118.71 FEET NORTH OF 88TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.863 12B = -90.859 09 = -90.774 03 = -90.617**

# HUESSER AZ MK 2



**Mn/DOT Name:** HUESSER AZ MK 2 **NGS Name:** HUESSER AZ MK 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8674 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 26 | 115 N | 28 W | 444434.00 | 940924.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1990 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** HUESSER 1935 RESET 19566

1.8 MILES SOUTH OF GLENCOE, 1.6 MILES SOUTH ALONG COUNTY ROAD 2 FROM THE JUNCTION OF COUNTY ROAD 2 AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.3 MILE WEST ON 88TH STREET, 118.71 FEET NORTH OF 88TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.863 12B = -90.859 09 = -90.774 03 = -90.617**

# HUESSER RM 1



**Mn/DOT Name:** HUESSER RM 1 **NGS Name:** HUESSER RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8675 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 26 | 115 N | 28 W | 444435.00 | 940927.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1990 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** HUESSER NO 1 1935

1.8 MILES SOUTH OF GLENCOE, 1.6 MILES SOUTH ALONG COUNTY ROAD 2 FROM THE JUNCTION OF COUNTY ROAD 2 AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.3 MILE WEST ON 88TH STREET, 118.71 FEET NORTH OF 88TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.863 12B = -90.859 09 = -90.774 03 = -90.617**

# HUESSER RM 2



**Mn/DOT Name:** HUESSER RM 2 **NGS Name:** HUESSER RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8676 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 26 | 115 N | 28 W | 444436.00 | 940926.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1990 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** HUESSER NO 2 1935

1.8 MILES SOUTH OF GLENCOE, 1.6 MILES SOUTH ALONG COUNTY ROAD 2 FROM THE JUNCTION OF COUNTY ROAD 2 AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 0.3 MILE WEST ON 88TH STREET, 118.71 FEET NORTH OF 88TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.859 12B = -90.856 09 = -90.771 03 = -90.617**

# HUTCH MNDT



**Mn/DOT Name:** HUTCH MNDT
**NGS Name:** HUTCH
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1176 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 116 N | 29 W | 445147.70 | 942116.55 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 1992 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (1992) **Stamping:** HUTCH 1984

1.0 MILE SOUTH-SOUTHEAST OF HUTCHINSON, 2.55 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 1.0 MILE EAST ON COUNTY ROAD 89 TO THE JUNCTION OF COUNTY ROAD 89 AND COUNTY ROAD 25, 120.0 FEET SOUTH-SOUTHEAST OF THE SOUTHWEST CORNER OF A HOUSE, 114.0 FEET EAST-NORTHEAST OF COUNTY ROAD 25, 39.79 FEET WEST OF HUTCH MNDT RM 2, 30.84 FEET SOUTH OF HUTCH MNDT RM 1, 12.5 FEET SOUTH OF A GRAVEL ROAD, 85.4 FEET SOUTHWEST OF A POWER POLE, 39.9 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.498 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1072.340 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1990 | 17351 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.042 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.406 | .197 | | 982.688 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.065 12B = -90.049 09 = -89.924 03 = -89.803**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 47.70269 | 94 21 16.55335 | 572278.260 | 248565.953 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 47.69850 | 94 21 16.54927 | 572278.554 | 248565.530 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 51 47.69883 | 94 21 16.54949 | 572278.539 | 248565.564 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 47.83445 | 94 21 15.61123 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |
| 44 51 47.83570 | 94 21 15.61230 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# HUTCH MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532725.731 | 1007515.394 | 1289312.479 | 16301318.939 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532726.023 | 1007514.969 | 1289312.766 | 16301318.510 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2532726.008 | 1007515.002 | 1289312.750 | 16301318.544 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1908124.273 | 679438.245 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |
| 1908124.193 | 679438.368 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# HUTCH MNDT RM 1



**Mn/DOT Name:** HUTCH MNDT RM 1 **NGS Name:** HUTCH RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1522 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 8 | 116 N | 29 W | 445148.00 | 942116.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 1992 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | REFERENCE MARK DISK | MNDT |

**Description:** (1992) **Stamping:** HUTCH NO 1 1984

1.0 MILE SOUTHEAST OF HUTCHINSON, 2.55 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 1.0 MILE EAST ON COUNTY ROAD 89, IN THE NORTHEAST QUADRANT OF THE JUNCTION OF COUNTY ROAD 89 AND COUNTY ROAD 25, 94.8 FEET SOUTH-SOUTHEAST OF THE SOUTHWEST CORNER OF A HOUSE, 70.3 FEET WEST-SOUTHWEST OF A POWER POLE, 50.4 FEET NORTHWEST OF HUTCH MNDT RM 2, 30.8 FEET NORTH OF STATION HUTCH MNDT, 18.0 FEET NORTH OF COUNTY ROAD 89, 49.2 FEET NORTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.186 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1070.729 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.065 12B = -90.049 09 = -89.924 03 = -89.803**

*** No Horizontal Positions in the Database ***

# HUTCH MNDT RM 2



**Mn/DOT Name:** HUTCH MNDT RM 2 **NGS Name:** HUTCH RM 2

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 116 N | 29 W | 445148.00 | 942116.00 | 2 | |

**NGS ACRN:** PQ1523 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 1992 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | REFERENCE MARK DISK | MNDT |

**Description:** (1992) **Stamping:** HUTCH NO 2 1984

1.0 MILE SOUTHEAST OF HUTCHINSON, 2.55 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 1.0 MILE EAST ON COUNTY ROAD 89, IN THE SOUTHEAST QUADRANT OF THE JUNCTION OF COUNTY ROAD 89 AND COUNTY ROAD 25, 144.4 FEET SOUTH-SOUTHEAST OF THE SOUTHWEST CORNER OF A HOUSE, 59.9 FEET SOUTH-SOUTHWEST OF A POWER POLE, 50.4 FEET SOUTHEAST OF HUTCH MNDT RM 1, 39.8 FEET EAST OF STATION HUTCH MNDT, 13.5 FEET SOUTH OF COUNTY ROAD 89, 3.2 FEET WEST OF A DEAD END SIGN, 2.2 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.546 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.090 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.065 12B = -90.049 09 = -89.924 03 = -89.803**

*** No Horizontal Positions in the Database ***

# HUTCHINSON



**Mn/DOT Name:** HUTCHINSON
**NGS Name:** HUTCHINSON
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0653 Get Map
**NGS Quad / Sta Num :** 44094141/1006
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445318.63 | 942225.07 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** HUTCHINSON 1956

IN HUTCHINSON, 0.5 MILE SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AT THE WEST SIDE OF HUTCHINSON, THEN 0.3 MILE WEST ON COUNTY ROAD 7 (2ND AVENUE), THEN 0.1 MILE SOUTH ON GROVE STREET, IN A CITY PARK, IN THE SOUTHEAST QUADRANT OF THE JUNCTION OF 2ND AVENUE AND GROVE STREET, 166.31 FEET EAST-SOUTHEAST OF HUTCHINSON RM 2, 150.0 FEET NORTHWEST OF A PARK PICNIC SHELTER, 145.0 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF A BRICK BUILDING, 89.46 FEET SOUTH-SOUTHWEST OF HUTCHINSON RM 1, 81.0 FEET SOUTHEAST OF A GRAVEL PATH, 39.0 FEET SOUTH-SOUTHWEST OF A ROCK PICNIC TABLE IN A BARBEQUE PIT.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.535 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1083.535 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1083.535 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1083.535 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1083.535 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.088 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1083.088 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.433 | .262 | | 993.771 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1083.528 | .197 | | 994.050 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.806 12B = -89.793 09 = -89.662 03 = -89.560**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.62556 | 94 22 25.06829 | 567313.773 | 257758.357 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.62587 | 94 22 25.06964 | 567313.676 | 257758.388 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.62053 | 94 22 25.06524 | 567313.994 | 257757.848 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.75830 | 94 22 24.12540 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# HUTCHINSON



## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527833.215 | 1016745.145 | 1284535.239 | 16310606.523 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527833.118 | 1016745.177 | 1284535.142 | 16310606.556 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527833.432 | 1016744.635 | 1284535.450 | 16310606.010 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903231.640 | 688668.003 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON-PQ0653-3N-11APR2011.jpg | N | Apr 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON-PQ0653-2-11APR2011.jpg | | Apr 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON-PQ0653-1-11APR2011.jpg | | Apr 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUTCHINSON CABLE TV MAST



**Mn/DOT Name:** HUTCHINSON CABLE TV MAST
**NGS Name:** HUTCHINSON CABLE TV MAST
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1177 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 5 | 116 N | 29 W | 445303.23 | 942007.20 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2015 | GOOD | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | RADIO/TV MAST | MNDT |

**Description:** (1986)

**Stamping:**

1.0 MILE EAST OF HUTCHINSON, 0.2 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 0.3 MILE SOUTHEAST ON 4TH AVENUE, THEN 1.5 MILES SOUTHEAST ON ARCH STREET, 0.09 MILE NORTH OF THE JUNCTION OF ARCH STREET AND PAGE AVENUE, 0.45 MILE NORTH OF STATION NOBLE MNDT.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.974 12B = -89.964 09 = -89.839 03 = -89.718**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.23034 | 94 20 07.20083 | 577245.702 | 256233.115 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.22488 | 94 20 07.19859 | 577245.866 | 256232.562 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.36340 | 94 20 06.26210 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537752.042 | 1015143.020 | 1294431.509 | 16308882.397 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537752.201 | 1015142.466 | 1294431.661 | 16308881.842 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1913150.456 | 687065.955 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_CABLE_TV_MAST-PQ1177-3W-27JUL2015.jpg | W | Jul 27, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUTCHINSON MARTY ROOFING MAST



**Mn/DOT Name:** HUTCHINSON MARTY ROOFING MAST **NGS Name:** HUTCHINSON MARTY ROOFING MAST

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1178 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 117 N | 29 W | 445342.33 | 942035.75 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | MICROWAVE MAST | MNDT |

**Description:** (2016)

**Stamping:**

AT THE EAST EDGE OF HUTCHINSON, 1.25 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, 0.5 MILE WEST-SOUTHWEST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 (SOUTH), 0.21 MILE EAST-SOUTHEAST OF STATION 4302 X, 0.05 MILE SOUTH OF THE CENTERLINE OF TRUNK HIGHWAY 7, ON THE SOUTH SIDE OF THE MARTY ROOFING COMPANY BUILDING.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.865 12B = -89.859 09 = -89.731 03 = -89.616**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 42.32959 | 94 20 35.74769 | 575176.118 | 260185.694 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 42.32533 | 94 20 35.74122 | 575176.586 | 260185.264 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 42.46470 | 94 20 34.80350 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2535713.398 | 1019111.159 | 1292442.430 | 16312874.577 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2535713.862 | 1019110.726 | 1292442.888 | 16312874.138 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1911112.135 | 691034.257 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

# HUTCHINSON MUNICIPAL TANK



**Mn/DOT Name:** HUTCHINSON MUNICIPAL TANK
**NGS Name:** HUTCHINSON MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0654 Get Map
**NGS Quad / Sta Num :** 44094141/1034
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445318.84 | 942222.76 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (2016)

**Stamping:**

IN HUTCHINSON, 0.5 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.1 MILE WEST ON 3RD AVENUE, THEN 95.0 FEET SOUTH ON GLEN STREET, 250.0 FEET WEST OF GLEN STREET, 75.0 FEET SOUTH OF 3RD AVENUE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.806 12B = -89.796 09 = -89.665 03 = -89.560**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.83993 | 94 22 22.76270 | 567479.702 | 257780.599 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.83534 | 94 22 22.75747 | 567480.080 | 257780.135 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |
| 44 53 18.84122 | 94 22 22.74763 | 567480.787 | 257780.732 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 18.98400 | 94 22 21.81400 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527999.296 | 1016766.096 | 1284701.532 | 16310625.418 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527999.670 | 1016765.630 | 1284701.901 | 16310624.947 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |
| 2528000.381 | 1016766.222 | 1284702.619 | 16310625.530 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903398.149 | 688690.101 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# HUTCHINSON NW WATER TANK



**Mn/DOT Name:** HUTCHINSON NW WATER TANK
**NGS Name:** HUTCHINSON NW WATER TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1179 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 36 | 117 N | 30 W | 445414.79 | 942328.22 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | STANDPIPE TANK | MNDT |

**Description:** (2016)

**Stamping:**

IN THE NORTHWEST PART OF HUTCHINSON, 0.5 MILE WEST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15, THEN 0.1 MILE NORTH ON KOUWE STREET, THEN 0.7 MILE NORTHWEST ON COUNTY ROAD 12, 500.0 FEET NORTH OF SCHOOL ROAD NORTH, 150.0 FEET WEST OF COUNTY ROAD 12.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.609 12B = -89.603 09 = -89.462 03 = -89.370**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 14.79315 | 94 23 28.22333 | 562749.793 | 263433.059 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 14.79498 | 94 23 28.22523 | 562749.656 | 263433.244 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 14.93680 | 94 23 27.28340 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2523313.844 | 1022454.542 | 1280087.628 | 16316370.163 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2523313.709 | 1022454.727 | 1280087.495 | 16316370.350 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1898711.909 | 694378.445 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

# HUTCHINSON PROMINENT CH SPIRE



**Mn/DOT Name:** HUTCHINSON PROMINENT CH SPIRE **NGS Name:** HUTCHINSON PROMINENT CH SPIRE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0655 Get Map
**NGS Quad / Sta Num :** 44094141/1035
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445315.20 | 942217.46 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH SPIRE | NGS |

**Description:** (2016)

**Stamping:**

IN HUTCHINSON, 0.6 MILE SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, THEN 0.1 MILE WEST ON 4TH AVENUE, 152.22 FEET SOUTHEAST OF THE CENTER OF THE JUNCTION OF GLEN STREET AND 4TH AVENUE, 128.46 FEET EAST OF THE CENTERLINE OF GLEN STREET, 51.50 FEET SOUTH OF THE CENTERLINE OF 4TH AVENUE, STATION HUTCHINSON PROMINENT CH SPIRE IS THE TALLEST CHURCH IN TOWN.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.819 12B = -89.810 09 = -89.678 03 = -89.573**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 15.20072 | 94 22 17.46038 | 567862.645 | 257413.240 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 15.19544 | 94 22 17.45488 | 567863.043 | 257412.707 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 15.34000 | 94 22 16.52000 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528379.339 | 1016395.814 | 1285076.899 | 16310250.545 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528379.733 | 1016395.277 | 1285077.286 | 16310250.003 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903777.604 | 688319.340 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# HUTCHINSON RAD STA KDUZ TOWER



**Mn/DOT Name:** HUTCHINSON RAD STA KDUZ TOWER **NGS Name:** HUTCHINSON RAD STA KDUZ TOWER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0657 Get Map
**NGS Quad / Sta Num :** 44094141/1036
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 30 | 117 N | 29 W | 445433.01 | 942200.77 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | RADIO/TV TOWER | NGS |

**Description:** (2016)

**Stamping:**

AT THE NORTH EDGE OF HUTCHINSON, 0.9 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15, 0.19 MILE NORTHEAST OF STATION 4305 A, 0.17 MILE NORTHEAST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 15 AND HIGH DRIVE, 239.62 FEET EAST OF THE CENTERLINE OF TRUNK HIGHWAY 15.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.665 12B = -89.659 09 = -89.531 03 = -89.429**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 33.01180 | 94 22 00.76990 | 569038.561 | 265297.928 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 33.00943 | 94 22 00.76217 | 569039.119 | 265297.690 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 33.14800 | 94 21 59.82200 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529616.291 | 1024270.379 | 1286410.757 | 16318107.640 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529616.846 | 1024270.136 | 1286411.308 | 16318107.390 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1905015.104 | 696193.530 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# HUTCHINSON RM 1



**Mn/DOT Name:** HUTCHINSON RM 1 **NGS Name:** HUTCHINSON RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1519 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445319.44 | 942224.60 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 4 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** HUTCHINSON NO 1 1956

IN HUTCHINSON, 0.5 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.3 MILE WEST ON COUNTY ROAD 7, THEN 390.0 FEET SOUTH ON GROVE STREET IN A CITY PARK IN THE SOUTHEAST QUADRANT OF THE JUNCTION OF COUNTY ROAD 7 AND GROVE STREET, 278.2 FEET EAST OF GROVE STREET, 184.2 FEET EAST-NORTHEAST OF HUTCHINSON RM 2, 130.5 FEET WEST-SOUTHWEST OF THE SOUTHWEST CORNER OF A BRICK BUILDING, 89.46 FEET NORTH-NORTHEAST OF STATION HUTCHINSON, 77.5 FEET NORTH-NORTHWEST OF A LIGHT POLE, 69.0 FEET NORTHWEST OF FRISBEE GOLF POLE NUMBER 2, 47.0 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A BRICK BUILDING.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.230 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1084.230 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1084.230 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.784 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1083.784 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.099 | .262 | | 994.440 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.803 12B = -89.793 09 = -89.662 03 = -89.557**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 19.44314 | 94 22 24.60246 | 567347.048 | 257841.269 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527867.129 | 1016827.789 | 1284570.164 | 16310688.725 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_RM_1-PQ1519-3S-11APR2011.jpg | S | Apr 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_RM_1-PQ1519-2-11APR2011.jpg | | Apr 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_RM_1-PQ1519-1-11APR2011.jpg | | Apr 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUTCHINSON RM 2



**Mn/DOT Name:** HUTCHINSON RM 2
**NGS Name:** HUTCHINSON RM 2
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1518 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445319.32 | 942227.17 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 2 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** HUTCHINSON NO 2 1956

IN HUTCHINSON, 0.5 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY7 /TRUNK HIGHWAY 22 AT A CITY PARK IN THE WEST PART OF HUTCHINSON, THEN 0.3 MILE WEST ON COUNTY ROAD 7, THEN 489.0 FEET SOUTH ON GROVE STREET, IN THE SOUTHEAST QUADRANT OF THE JUNCTION OF COUNTY ROAD 7 AND GROVE STREET, 184.2 FEET WEST-SOUTHWEST OF HUTCHINSON RM 1, 166.31 FEET WEST-NORTHWEST OF STATION HUTCHINSON, 94.0 FEET EAST OF GROVE STREET, 47.0 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A BRICK BUILDING.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1081.760 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1081.760 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1081.760 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1081.313 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1081.313 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.800 12B = -89.790 09 = -89.659 03 = -89.554**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_RM_2-PQ1518-3E-11APR2011.jpg | E | Apr 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_RM_2-PQ1518-2-11APR2011.jpg | | Apr 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_RM_2-PQ1518-1-11APR2011.jpg | | Apr 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUTCHINSON S WATER TANK



**Mn/DOT Name:** HUTCHINSON S WATER TANK
**NGS Name:** HUTCHINSON S WATER TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1180 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 116 N | 29 W | 445227.26 | 942210.84 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=? | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | STANDPIPE TANK | MNDT |

**Description:** (2016)

**Stamping:**

AT THE SOUTH EDGE OF HUTCHINSON, 1.7 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, THEN 0.2 MILE EAST ON CENTURY AVENUE, THEN 300.0 FEET SOUTH ON BRADFORD STREET, 0.26 MILE EAST OF STATION 4304 Q, 199.29 FEET WEST OF THE CENTERLINE OF BRADFORD STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.934 12B = -89.918 09 = -89.790 03 = -89.678**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 27.25843 | 94 22 10.84408 | 568354.740 | 252559.150 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 27.25954 | 94 22 10.83609 | 568355.314 | 252559.264 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 27.39620 | 94 22 09.89540 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528833.704 | 1011538.524 | 1285471.175 | 16305388.988 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528834.280 | 1011538.634 | 1285471.752 | 16305389.090 | .328 | 4 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1904232.597 | 683461.941 | | | .100 | 4 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTCHINSON_S_WATER_TANK-PQ1180-3E-09JUL2007.jpg | E | Jul 9, 2007 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUTCHINSON/BUTLER RNWY 15



**Mn/DOT Name:** HUTCHINSON/BUTLER RNWY 15 **NGS Name:** HUTCHINSON/BUTLER RNWY 15

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1251 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 30 W | 445146.07 | 942304.73 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | AIRPORT BEACON | UNK |

**Description:** (2007)

**Stamping:**

1.9 MILES SOUTHWEST OF HUTCHINSON, 2.5 MILES SOUTHERLY ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.3 MILE WEST ON COUNTY ROAD 8, 0.39 MILE SOUTH OF THE MOST NORTHERLY POINT OF THE CURVE IN COUNTY ROAD 8, 86.04 FEET NORTHEAST OF STATION HUTPORT AZ MK, STATION HUTCHINSON/BUTLER RNWY 15 IS ON THE NORTH SIDE OF THE RUNWAY.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.149 | .262 | | 965.500 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.977 12B = -89.957 09 = -89.829 03 = -89.711**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 46.07012 | 94 23 04.72708 | 564487.037 | 248375.369 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 46.00000 | 94 23 03.00000 | | | .100 | | CLASSICAL SURVEY | 1991 | 17504 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524934.035 | 1007385.294 | 1281521.313 | 16301285.020 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1900388.793 | 679287.411 | | | .100 | | CLASSICAL SURVEY | 1991 | 17504 |

# HUTCHINSON/BUTLER RNWY 33



**Mn/DOT Name:** HUTCHINSON/BUTLER RNWY 33 **NGS Name:** HUTCHINSON/BUTLER RNWY 33

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1252 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 116 N | 30 W | 445118.05 | 942244.19 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | AIRWAY BEACON | UNK |

**Description:** (2016)

**Stamping:**

2.0 MILES SOUTHWEST OF HUTCHINSON, 3.1 MILES SOUTHERLY ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, 0.16 MILE WEST OF THE CENTERLINE OF TRUNK HIGHWAY 15, 83.89 FEET EAST-NORTHEAST OF STATION HUTPORT, STATION HUTCHINSON/BUTLER RNWY 33 IS ON THE SOUTH SIDE OF THE RUNWAY.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.972 | .262 | | 970.274 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.052 12B = -90.029 09 = -89.905 03 = -89.783**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 18.05274 | 94 22 44.18997 | 565975.198 | 245542.333 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 18.00000 | 94 22 43.00000 | | | .100 | | CLASSICAL SURVEY | 1991 | 17504 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526400.021 | 1004541.077 | 1282951.806 | 16298423.485 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1901816.158 | 676445.165 | | | .100 | | CLASSICAL SURVEY | 1991 | 17504 |

# HUTPORT



**Mn/DOT Name:** HUTPORT
**NGS Name:** HUTPORT
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1253 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 116 N | 30 W | 445117.67 | 942245.25 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 24 IN. | MARKER IS STEEL ROD |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STEEL ROD (IN SLEEVE) (DEPTH 32 FT) | METAL ROD | NGS |

**Description:** (1994) **Stamping:** HUTPORT 1989

3.0 MILES SOUTH OF HUTCHINSON, AT THE AIRPORT, AT THE SOUTH END OF RUNWAY 33, 0.4 MILE SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND COUNTY ROAD 89 EAST IN HUTCHINSON, 0.2 MILE WEST OF THE CENTERLINE OF TRUNK HIGHWAY 15, 0.2 MILE SOUTH OF THE AIRPORT OFFICE, 184.0 FEET SOUTH-SOUTHEAST OF THE END LIGHT ON THE WEST SIDE OF A RUNWAY, 85.5 FEET WEST-SOUTHWEST OF A RUNWAY, 42.2 FEET NORTHWEST OF THE BASE OF A STROBE LIGHT, 39.5 FEET WEST-SOUTHWEST OF THE END LIGHT AT THE SOUTH END OF A RUNWAY. MAY BE DIFFICULT TO USE A FIXED HEIGHT TRIPOD. CONTACT THE AIRPORT MANAGER BEFORE USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.518 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1057.518 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.518 | | | 967.462 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1057.518 | | | 967.459 | .007 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 967.462 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1057.511 | .131 | | 967.734 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1057.511 | .131 | | 967.629 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1057.511 | .131 | | 967.629 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1057.511 | .131 | | 967.695 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1057.511 | .131 | | 967.629 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1057.511 | .131 | | 967.629 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1057.478 | .131 | | 967.695 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1057.478 | .131 | | 967.695 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| 1057.478 | .197 | | 967.774 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.084 | | | | | | GPS - STATIC | 1991 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.052 12B = -90.029 09 = -89.905 03 = -89.783**

# HUTPORT



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 17.67342 | 94 22 45.24679 | 565899.185 | 245503.678 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 51 17.67343 | 94 22 45.24680 | 565899.184 | 245503.679 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 51 17.67342 | 94 22 45.24679 | 565899.185 | 245503.678 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 17.67381 | 94 22 45.24817 | 565899.085 | 245503.717 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 51 17.67381 | 94 22 45.24817 | 565899.085 | 245503.717 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 51 17.67381 | 94 22 45.24817 | 565899.085 | 245503.717 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 51 17.67381 | 94 22 45.24817 | 565899.085 | 245503.717 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 17.67312 | 94 22 45.24744 | 565899.138 | 245503.647 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 51 17.67313 | 94 22 45.24742 | 565899.139 | 245503.648 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 51 17.67313 | 94 22 45.24742 | 565899.139 | 245503.648 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 51 17.67313 | 94 22 45.24742 | 565899.139 | 245503.648 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 51 17.67394 | 94 22 45.24942 | 565898.995 | 245503.730 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 17.67000 | 94 22 45.24570 | 565899.264 | 245503.331 | .066 | 2 | ADJUSTMENT | 1991 | GPS194 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 17.80588 | 94 22 44.30488 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526323.718 | 1004503.016 | 1282875.054 | 16298386.376 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2526323.717 | 1004503.017 | 1282875.053 | 16298386.377 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2526323.718 | 1004503.016 | 1282875.054 | 16298386.376 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526323.619 | 1004503.056 | 1282874.955 | 16298386.417 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2526323.619 | 1004503.056 | 1282874.955 | 16298386.417 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2526323.619 | 1004503.056 | 1282874.955 | 16298386.417 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2526323.619 | 1004503.056 | 1282874.955 | 16298386.417 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526323.671 | 1004502.986 | 1282875.006 | 16298386.346 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2526323.672 | 1004502.987 | 1282875.008 | 16298386.347 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2526323.672 | 1004502.987 | 1282875.008 | 16298386.347 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2526323.672 | 1004502.987 | 1282875.008 | 16298386.347 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2526323.529 | 1004503.069 | 1282874.865 | 16298386.432 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526323.795 | 1004502.669 | 1282875.126 | 16298386.028 | .066 | 2 | ADJUSTMENT | 1991 | GPS194 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1901722.070 | 676425.942 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |

# HUTPORT



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTPORT-PQ1253-3S-27MAR2007.jpg | S | Mar 27, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTPORT-PQ1253-2-27MAR2007.jpg | | Mar 27, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTPORT-PQ1253-1-27MAR2007.jpg | | Mar 27, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# HUTPORT AZ MK



**Mn/DOT Name:** HUTPORT AZ MK
**NGS Name:** HUTPORT AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1254 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 30 W | 445145.68 | 942305.78 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2011 | GOOD | Horz=NO Vert=NO | YES | | RECESSED 8 IN. | MARKER IS STEEL ROD |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STEEL ROD (IN SLEEVE) (DEPTH 36 FT) | METAL ROD | NGS |

**Description:** (1994) **Stamping:** HUTPORT AZ MK 1989

3.0 MILES SOUTH OF HUTCHINSON, AT THE AIRPORT, 0.4 MILE SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND COUNTY ROAD 89 EAST, THEN 0.2 MILE WEST ON COUNTY ROAD 8, 0.5 MILE NORTH-NORTHWEST OF THE AIRPORT OFFICE, 800.0 FEET SOUTHEAST OF THE NORTHWEST END OF A RUNWAY, 100.9 FEET NORTHWEST OF THE WEST END OF A 6.0 INCH DIAMETER CULVERT UNDER A RUNWAY, 85.5 FEET WEST-SOUTHWEST OF A RUNWAY. THE ACCESS COVER HAS BEEN HIT AND IS GONE, THE STEEL ROD APPEARS TO BE IN GOOD CONDITION. CONTACT THE AIRPORT MANAGER BEFORE USE.

**Station Notes**
THE SURVEY MARK IS ON PRIVATE PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1052.616 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1052.616 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1052.616 | | | 962.626 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1052.616 | | | 962.626 | .006 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 962.626 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1052.623 | .131 | | 962.905 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1052.511 | .262 | | 962.685 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1052.590 | .131 | | 962.787 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1052.590 | .131 | | 962.787 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1052.590 | .131 | | 962.859 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1052.590 | .131 | | 962.787 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1052.590 | .131 | | 962.787 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1052.413 | .262 | | 962.698 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1052.590 | .131 | | 962.859 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1052.590 | .131 | | 962.859 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| 1052.590 | .197 | | 962.941 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1052.196 | | | | | | GPS - STATIC | 1991 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.977 12B = -89.957 09 = -89.829 03 = -89. 711**

# HUTPORT AZ MK



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 45.68464 | 94 23 05.78285 | 564411.108 | 248336.096 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 51 45.68465 | 94 23 05.78288 | 564411.106 | 248336.097 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 51 45.68464 | 94 23 05.78285 | 564411.108 | 248336.096 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 45.68530 | 94 23 05.78238 | 564411.142 | 248336.163 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 51 45.68497 | 94 23 05.78446 | 564410.992 | 248336.129 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 51 45.68497 | 94 23 05.78446 | 564410.992 | 248336.129 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 51 45.68497 | 94 23 05.78446 | 564410.992 | 248336.129 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 51 45.68497 | 94 23 05.78446 | 564410.992 | 248336.129 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 45.68427 | 94 23 05.78376 | 564411.043 | 248336.058 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 51 45.68428 | 94 23 05.78378 | 564411.041 | 248336.059 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 51 45.68491 | 94 23 05.78316 | 564411.086 | 248336.123 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 51 45.68428 | 94 23 05.78378 | 564411.041 | 248336.059 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 51 45.68428 | 94 23 05.78378 | 564411.041 | 248336.059 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 51 45.68503 | 94 23 05.78505 | 564410.950 | 248336.135 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 45.68110 | 94 23 05.78147 | 564411.209 | 248335.738 | .066 | 2 | ADJUSTMENT | 1991 | GPS194 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 45.81702 | 94 23 04.83974 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |

# HUTPORT AZ MK



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524857.811 | 1007346.614 | 1281444.633 | 16301247.292 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2524857.809 | 1007346.615 | 1281444.630 | 16301247.293 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2524857.811 | 1007346.614 | 1281444.633 | 16301247.292 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524857.846 | 1007346.681 | 1281444.667 | 16301247.358 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2524857.696 | 1007346.648 | 1281444.517 | 16301247.328 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2524857.696 | 1007346.648 | 1281444.517 | 16301247.328 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2524857.696 | 1007346.648 | 1281444.517 | 16301247.328 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2524857.696 | 1007346.648 | 1281444.517 | 16301247.328 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524857.746 | 1007346.577 | 1281444.566 | 16301247.256 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2524857.744 | 1007346.578 | 1281444.565 | 16301247.257 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2524857.789 | 1007346.642 | 1281444.611 | 16301247.320 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2524857.744 | 1007346.578 | 1281444.565 | 16301247.257 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2524857.744 | 1007346.578 | 1281444.565 | 16301247.257 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2524857.653 | 1007346.655 | 1281444.475 | 16301247.334 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524857.909 | 1007346.255 | 1281444.726 | 16301246.932 | .066 | 2 | ADJUSTMENT | 1991 | GPS194 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1900256.198 | 679269.504 | | | .100 | 2 | CLASSICAL SURVEY | 1991 | 17504 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTPORT_AZ_MK-PQ1254-3N-27MAR2007.jpg | N | Mar 27, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTPORT_AZ_MK-PQ1254-2-27MAR2007.jpg | | Mar 27, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/HUTPORT_AZ_MK-PQ1254-1-27MAR2007.jpg | | Mar 27, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# IMMANUEL EVAN LUTH CH TOWER



**Mn/DOT Name:** IMMANUEL EVAN LUTH CH TOWER **NGS Name:** IMMANUEL EVAN LUTH CH TOWER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0670 Get Map
**NGS Quad / Sta Num :** 44094144/1037
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 28 | 117 N | 30 W | 445510.90 | 942736.74 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH CROSS | NGS |

**Description:** (2016)

**Stamping:**

5.0 MILES NORTHWEST OF HUTCHINSON, 5.2 MILES NORTHWEST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 0.2 MILE NORTH ON WALDEN AVENUE, 0.18 MILE SOUTH OF THE CENTER OF THE JUNCTION OF WALDEN AVENUE AND 210TH STREET, 0.15 MILE NORTH-NORTHEAST OF STATION 4308 K, 111.26 FEET EAST OF THE CENTERLINE OF WALDEN AVENUE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.199 12B = -89.199 09 = -89.042 03 = -88.970**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 10.90311 | 94 27 36.73559 | 544850.026 | 269070.353 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 10.89718 | 94 27 36.72794 | 544850.578 | 269069.753 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 11.03500 | 94 27 35.77100 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505460.055 | 1028229.978 | 1262310.010 | 16322364.710 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505460.603 | 1028229.374 | 1262310.550 | 16322364.100 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1880859.358 | 700152.580 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

**Mn/DOT Name:** J 123 **NGS Name:** J 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0050 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 27 | 115 N | 30 W | 444338.90 | 942348.56 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (1990) **Stamping:** J 123 1934

2.0 MILES WEST OF BROWNTON, ON A RAILROAD RIGHT-OF-WAY, 1.3 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 WEST OF BROWNTON, THEN 0.2 MILE NORTH ON COUNTY ROAD 54, 95.5 FEET WEST OF COUNTY ROAD 54, 34.2 FEET NORTH OF THE NORTH RAIL OF A RAILROAD, 0.6 FOOT SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.965 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1039.929 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |
| 1039.929 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.483 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1039.483 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |
| 1039.483 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1039.483 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.965 | | | 949.306 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1039.965 | | | 949.306 | .012 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1039.926 | .131 | | 949.552 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1039.817 | .262 | | 949.303 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.653 12B = -90.656 09 = -90.518 03 = -90.377**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 38.89811 | 94 23 48.55698 | 561473.278 | 199025.676 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 38.89811 | 94 23 48.55698 | 561473.278 | 199025.676 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 38.89868 | 94 23 48.55875 | 561473.150 | 199025.734 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 38.89770 | 94 23 48.55732 | 561473.254 | 199025.634 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521537.786 | 958065.577 | 1277518.284 | 16252020.096 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2521537.786 | 958065.577 | 1277518.284 | 16252020.096 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521537.659 | 958065.635 | 1277518.158 | 16252020.156 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521537.761 | 958065.535 | 1277518.259 | 16252020.055 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/J_123-PQ0050-3N-19APR2011.jpg | N | Apr 19, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/J_123-PQ0050-2-19APR2011.jpg | | Apr 19, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/J_123-PQ0050-1-19APR2011.jpg | | Apr 19, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# J 125



**Mn/DOT Name:** J 125 **NGS Name:** J 125

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0029 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 32 | 115 N | 28 W | 444328.00 | 941331.00 | 1 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2006 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| WALL - LIGHT RETAINING | BENCH MARK DISK | NGS |

**Description:** (1985) **Stamping:** J 125 1934

3.0 MILES NORTH OF NEW AUBURN, 1.3 MILES SOUTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 212 IN NEW AUBURN, AT TRUNK HIGHWAY 22 MILEPOINT 102.15, 300.0 FEET SOUTHEAST OF A FARM ENTRANCE NORTHWEST, 21.6 FEET NORTHWEST OF A TRUNK HIGHWAY 22, IN THE CENTER OF THE NORTHWEST HEADWALL OF TRUNK HIGHWAY 22 BOX CULVERT.

**Station Notes**

THE CULVERT WAS REPLACED BY A REINFORCED CONCRETE PIPE (RCP).

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.405 | .007 | 1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1010.405 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.998 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1985 | VLORD |
| 1009.998 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L43 MINN |

**Geoid Separations(ft): GEOID18 = -90.938 12B = -90.938 09 = -90.836 03 = -90.679**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** JAEGER **NGS Name:** JAEGER

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 115 N | 30 W | 444614.05 | 942233.94 | 2 | C |

**NGS ACRN:** DO9905 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** JAEGER 2011

2.9 MILES NORTHWEST OF BROWNTON, 3.2 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212, THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 92.80, 89.2 FEET WEST OF TRUNK HIGHWAY 15, 1.6 FEET NORTH OF A WITNESS POST.

**Station Pair:** ZACHARY - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.905 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1043.905 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.836 | .262 | | 953.325 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1043.955 | .262 | | 953.443 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1043.830 | .262 | | 953.318 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1043.905 | | | 953.377 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1043.905 | | | 953.377 | .013 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1043.896 | .131 | | 953.676 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1043.833 | .262 | | 953.463 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.508 12B = -90.512 09 = -90.371 03 = -90.229**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 14.04754 | 94 22 33.94452 | 566810.557 | 214755.234 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 46 14.04655 | 94 22 33.94428 | 566810.574 | 214755.133 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 46 14.04650 | 94 22 33.94389 | 566810.603 | 214755.128 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 46 14.04748 | 94 22 33.94392 | 566810.600 | 214755.228 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 46 14.04748 | 94 22 33.94392 | 566810.600 | 214755.228 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 14.04589 | 94 22 33.94495 | 566810.526 | 214755.066 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 14.04687 | 94 22 33.94448 | 566810.560 | 214755.166 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# JAEGER



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526996.379 | 973751.572 | 1283168.511 | 16267634.849 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2526996.396 | 973751.471 | 1283168.527 | 16267634.748 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2526996.425 | 973751.466 | 1283168.555 | 16267634.743 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2526996.423 | 973751.565 | 1283168.555 | 16267634.842 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2526996.423 | 973751.565 | 1283168.555 | 16267634.842 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526996.348 | 973751.405 | 1283168.478 | 16267634.683 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526996.382 | 973751.504 | 1283168.513 | 16267634.781 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JAEGER-DO9905-3W-31MAR2020.jpg | W | Mar 31, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JAEGER-DO9905-2-31MAR2020.jpg | | Mar 31, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JAEGER-DO9905-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** JENN **NGS Name:** JENN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4221 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 117 N | 28 W | 445333.97 | 941512.23 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** JENN 2015

3.0 MILES SOUTHWEST OF SILVER LAKE, 2.55 MILES WEST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 147.80, 86.6 FEET NORTH OF WESTBOUND TRUNK HIGHWAY 7, 50.5 FEET WEST OF A FIELD ENTRANCE, 16.4 FEET NORTHEAST OF A POWER POLE, 1.5 FEET SOUTH OF A WITNESS POST.

**Station Pair:** HALVA MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.088 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1048.088 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.088 | | | 957.911 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1048.088 | | | 957.911 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1048.056 | .262 | | 957.866 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1048.069 | .262 | | 957.866 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.193 12B = -90.203 09 = -90.088 03 = -89.928**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.96697 | 94 15 12.22840 | 598470.197 | 259434.552 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 33.96697 | 94 15 12.22840 | 598470.197 | 259434.552 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 33.96695 | 94 15 12.22874 | 598470.173 | 259434.550 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 33.96650 | 94 15 12.22861 | 598470.183 | 259434.504 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.96644 | 94 15 12.22869 | 598470.177 | 259434.499 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558998.690 | 1018179.274 | 1315709.412 | 16311655.572 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2558998.690 | 1018179.274 | 1315709.412 | 16311655.572 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2558998.666 | 1018179.272 | 1315709.387 | 16311655.570 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2558998.675 | 1018179.226 | 1315709.396 | 16311655.525 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558998.669 | 1018179.220 | 1315709.390 | 16311655.518 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JENN-DQ4221-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JENN-DQ4221-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JENN-DQ4221-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** JETFIRE **NGS Name:** JETFIRE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9775 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 6 | 117 N | 29 W | 445751.32 | 942154.93 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2019 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** JETFIRE 2009

4.65 MILES NORTH OF HUTCHINSON, 4.65 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON TO TRUNK HIGHWAY 15 MILEPOINT 106.4, THEN 0.15 MILE EAST ON COUNTY ROAD 60 (240TH STREET), 28.0 FEET NORTH OF COUNTY ROAD 60, 0.9 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1115.421 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1115.421 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1115.332 | .262 | | 1026.045 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| | | | 1026.127 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1115.352 | .262 | | 1026.192 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1115.418 | .131 | | 1026.232 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1115.418 | .131 | | 1026.337 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1115.418 | .131 | | 1026.232 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1115.227 | .262 | | 1026.156 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.288 12B = -89.281 09 = -89.160 03 = -89.068**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 51.32102 | 94 21 54.92966 | 569392.768 | 285384.458 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 57 51.32071 | 94 21 54.92930 | 569392.794 | 285384.427 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 51.32009 | 94 21 54.93014 | 569392.734 | 285384.364 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 57 51.32065 | 94 21 54.92996 | 569392.747 | 285384.421 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 57 51.32065 | 94 21 54.92996 | 569392.747 | 285384.421 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 51.32015 | 94 21 54.92957 | 569392.775 | 285384.370 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 51.32089 | 94 21 54.93028 | 569392.724 | 285384.445 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# JETFIRE



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530126.326 | 1044351.670 | 1287168.870 | 16338176.914 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2530126.352 | 1044351.638 | 1287168.895 | 16338176.882 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530126.291 | 1044351.576 | 1287168.833 | 16338176.820 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2530126.304 | 1044351.633 | 1287168.848 | 16338176.877 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2530126.304 | 1044351.633 | 1287168.848 | 16338176.877 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530126.332 | 1044351.582 | 1287168.875 | 16338176.826 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2530126.281 | 1044351.657 | 1287168.825 | 16338176.902 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JETFIRE-DL9775-3N-07NOV2019.jpg | N | Nov 7, 2019 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JETFIRE-DL9775-2-07NOV2019.jpg | | Nov 7, 2019 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JETFIRE-DL9775-1-07NOV2019.jpg | | Nov 7, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** JOLT **NGS Name:** JOLT

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9776 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 6 | 117 N | 29 W | 445751.38 | 942204.34 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** JOLT 2009

4.5 MILES NORTH OF HUTCHINSON, 4.65 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 106.40, 76.3 FEET EAST OF TRUNK HIGHWAY 15, 56.3 FEET NORTH OF COUNTY ROAD 60 (240TH STREET), 24.2 FEET NORTH OF A CABLE PEDESTAL, 1.1 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1101.281 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1101.281 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1012.006 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1101.287 | .262 | | 1012.144 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1101.277 | .131 | | 1012.111 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1101.277 | .131 | | 1012.216 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1101.277 | .131 | | 1012.111 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1101.103 | .262 | | 1012.045 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.271 12B = -89.268 09 = -89.147 03 = -89.055**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 51.38543 | 94 22 04.33611 | 568716.385 | 285388.766 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 51.38510 | 94 22 04.33732 | 568716.298 | 285388.732 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 57 51.38537 | 94 22 04.33677 | 568716.337 | 285388.760 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 57 51.38537 | 94 22 04.33677 | 568716.337 | 285388.760 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 51.38487 | 94 22 04.33638 | 568716.366 | 285388.709 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 51.38568 | 94 22 04.33671 | 568716.342 | 285388.791 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# JOLT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529450.058 | 1044361.226 | 1286492.915 | 16338194.832 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529449.971 | 1044361.193 | 1286492.828 | 16338194.800 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529450.011 | 1044361.220 | 1286492.868 | 16338194.826 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529450.011 | 1044361.220 | 1286492.868 | 16338194.826 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529450.039 | 1044361.169 | 1286492.895 | 16338194.775 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529450.015 | 1044361.251 | 1286492.873 | 16338194.858 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JOLT-DL9776-3NE-12MAY2011.jpg | NE | May 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JOLT-DL9776-2-12MAY2011.jpg | | May 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JOLT-DL9776-1-12MAY2011.jpg | | May 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# JONES MNDT



**Mn/DOT Name:** JONES MNDT
**NGS Name:** JONES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9346 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 115 N | 29 W | 444328.46 | 942208.69 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2025 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** JONES 1992

1.13 MILES SOUTHWEST OF BROWNTON, 0.1 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 108.25, 155.8 FEET EAST OF A POWER POLE, 64.7 FEET WEST-NORTHWEST OF A POWER POLE, 61.5 FEET SOUTH OF TRUNK HIGHWAY 212, 25.0 FEET WEST OF AN ENTRANCE, 2.2 FEET NORTH OF A WITNESS POST.

**Station Pair:** ADDI MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.098 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1038.098 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1038.098 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1038.098 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1038.098 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1038.098 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1038.098 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1038.029 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1037.596 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.098 | .262 | | 947.373 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1038.079 | .262 | | 947.357 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1038.102 | .262 | | 947.380 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1038.098 | | | 947.344 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1038.098 | .131 | | 947.652 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1038.098 | | | 947.350 | .009 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1038.069 | .262 | | 947.350 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1038.098 | | | 947.344 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1038.098 | | | 947.354 | .009 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 947.344 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1038.088 | .131 | | 947.652 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1037.961 | .262 | | 947.367 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 947.528 | .034 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1038.023 | .131 | | 947.665 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1038.023 | .131 | | 947.665 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |

**Geoid Separations(ft): GEOID18 = -90.725 12B = -90.722 09 = -90.590 03 = -90.446**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.45622 | 94 22 08.69126 | 568686.885 | 197990.320 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 28.45665 | 94 22 08.69102 | 568686.902 | 197990.363 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 28.45611 | 94 22 08.69065 | 568686.929 | 197990.309 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 43 28.45628 | 94 22 08.69101 | 568686.903 | 197990.326 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 28.45638 | 94 22 08.69104 | 568686.901 | 197990.336 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 28.45622 | 94 22 08.69119 | 568686.890 | 197990.320 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 28.45628 | 94 22 08.69101 | 568686.903 | 197990.326 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 28.45659 | 94 22 08.69086 | 568686.914 | 197990.357 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 43 28.45628 | 94 22 08.69101 | 568686.903 | 197990.326 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.45629 | 94 22 08.69358 | 568686.718 | 197990.326 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 28.45655 | 94 22 08.69232 | 568686.808 | 197990.353 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.45614 | 94 22 08.69120 | 568686.889 | 197990.312 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 28.45614 | 94 22 08.69120 | 568686.889 | 197990.312 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 43 28.45680 | 94 22 08.69362 | 568686.714 | 197990.378 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 43 28.45680 | 94 22 08.69362 | 568686.714 | 197990.378 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 28.45232 | 94 22 08.69036 | 568686.950 | 197989.926 | .033 | C | GPS - STATIC | 1993 | H1993 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528742.362 | 956974.392 | 1284707.581 | 16250840.577 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2528742.379 | 956974.436 | 1284707.599 | 16250840.621 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2528742.406 | 956974.381 | 1284707.624 | 16250840.566 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2528742.380 | 956974.398 | 1284707.599 | 16250840.583 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2528742.378 | 956974.409 | 1284707.597 | 16250840.593 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2528742.367 | 956974.392 | 1284707.585 | 16250840.577 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2528742.380 | 956974.398 | 1284707.599 | 16250840.583 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2528742.391 | 956974.430 | 1284707.610 | 16250840.614 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2528742.380 | 956974.398 | 1284707.599 | 16250840.583 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528742.194 | 956974.400 | 1284707.413 | 16250840.587 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2528742.285 | 956974.426 | 1284707.504 | 16250840.612 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528742.366 | 956974.384 | 1284707.584 | 16250840.569 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2528742.366 | 956974.384 | 1284707.584 | 16250840.569 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2528742.192 | 956974.452 | 1284707.411 | 16250840.639 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2528742.192 | 956974.452 | 1284707.411 | 16250840.639 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528742.425 | 956973.997 | 1284707.639 | 16250840.181 | .033 | C | GPS - STATIC | 1993 | H1993 |

# JONES MNDT



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JONES-DG9346-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JONES-DG9346-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JONES-DG9346-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# JUDSON MNDT



**Mn/DOT Name:** JUDSON MNDT
**NGS Name:** JUDSON
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1504 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 117 N | 29 W | 445607.41 | 942216.46 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** JUDSON 1986

2.5 MILES NORTH OF HUTCHINSON, 2.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 IN HUTCHINSON, THEN 0.2 MILE WEST ON 220TH STREET, 169.0 FEET SOUTHWEST OF A POWER POLE, 45.5 FEET SOUTH OF 220TH STREET, 6.0 FEET EAST OF AN ENTRANCE, 75.65 FEET SOUTH OF JUDSON MNDT RM 1, 36.22 FEET EAST OF JUDSON MNDT RM 2, 8.2 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1104.538 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1104.538 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1104.525 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1998 | 17353 |
| 1104.538 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1104.135 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1015.090 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1104.525 | .131 | | 1015.208 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1104.525 | .131 | | 1015.208 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1104.525 | .131 | | 1015.310 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1104.525 | .131 | | 1015.208 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1104.525 | .131 | | 1015.208 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1104.381 | .262 | | 1015.159 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1104.525 | .131 | | 1015.310 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1104.525 | .131 | | 1015.310 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| 1104.525 | .197 | | 1015.385 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.449 12B = -89.442 09 = -89.314 03 = -89.222**

# JUDSON MNDT



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.40810 | 94 22 16.46053 | 567878.489 | 274854.876 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.40803 | 94 22 16.46106 | 567878.451 | 274854.869 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 56 07.40803 | 94 22 16.46106 | 567878.451 | 274854.869 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 56 07.40803 | 94 22 16.46106 | 567878.451 | 274854.869 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 07.40803 | 94 22 16.46106 | 567878.451 | 274854.869 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.40753 | 94 22 16.46066 | 567878.480 | 274854.818 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 07.40804 | 94 22 16.46142 | 567878.425 | 274854.870 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 07.40753 | 94 22 16.46066 | 567878.480 | 274854.818 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 56 07.40753 | 94 22 16.46066 | 567878.480 | 274854.818 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 56 07.40869 | 94 22 16.46071 | 567878.476 | 274854.936 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.40421 | 94 22 16.45442 | 567878.930 | 274854.483 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 56 07.40296 | 94 22 16.45500 | 567878.890 | 274854.358 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.54100 | 94 22 15.51450 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528530.524 | 1033835.134 | 1285443.488 | 16327683.117 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528530.486 | 1033835.127 | 1285443.449 | 16327683.110 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2528530.486 | 1033835.127 | 1285443.449 | 16327683.110 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2528530.486 | 1033835.127 | 1285443.449 | 16327683.110 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2528530.486 | 1033835.127 | 1285443.449 | 16327683.110 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528530.515 | 1033835.077 | 1285443.477 | 16327683.059 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2528530.460 | 1033835.129 | 1285443.424 | 16327683.112 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2528530.515 | 1033835.077 | 1285443.477 | 16327683.059 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2528530.515 | 1033835.077 | 1285443.477 | 16327683.059 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2528530.511 | 1033835.194 | 1285443.476 | 16327683.177 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528530.962 | 1033834.738 | 1285443.920 | 16327682.715 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2528530.920 | 1033834.612 | 1285443.877 | 16327682.589 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903929.141 | 705757.872 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# JUDSON MNDT



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JUDSON-PQ1504-3S-04NOV2010.jpg | S | Nov 4, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JUDSON-PQ1504-2-04NOV2010.jpg | | Nov 4, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JUDSON-PQ1504-1-04NOV2010.jpg | | Nov 4, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# JUDSON MNDT RM 1



**Mn/DOT Name:** JUDSON MNDT RM 1 **NGS Name:** JUDSON RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1505 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 18 | 117 N | 29 W | 445608.15 | 942216.45 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | MNDT |

**Description:** (1986) **Stamping:** JUDSON NO 1 1986

2.5 MILES NORTH OF HUTCHINSON, 2.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.2 MILE WEST ON 220TH STREET, 151.0 FEET WEST OF A POWER POLE, 81.6 FEET NORTH-NORTHEAST OF JUDSON MNDT RM 2, 75.6 FEET NORTH OF STATION JUDSON MNDT, 30.0 FEET NORTH OF 220TH STREET, 0.9 FOOT SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1100.362 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1099.958 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1100.359 | .262 | | 1011.212 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.449 12B = -89.442 09 = -89.311 03 = -89.222**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 08.15473 | 94 22 16.45195 | 567878.863 | 274930.498 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 08.15025 | 94 22 16.44566 | 567879.317 | 274930.046 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528531.485 | 1033910.744 | 1285445.383 | 16327758.693 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528531.935 | 1033910.288 | 1285445.827 | 16327758.232 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

# JUDSON MNDT RM 2



**Mn/DOT Name:** JUDSON MNDT RM 2 **NGS Name:** JUDSON RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1506 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 117 N | 29 W | 445607.43 | 942216.96 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (1986) **Stamping:** JUDSON NO 2 1986

2.5 MILES NORTH OF HUTCHINSON, 2.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 IN HUTCHINSON, THEN 0.2 MILE WEST ON 220TH STREET, 87.8 FEET EAST OF A CABLE MARKER, 42.5 FEET SOUTH OF 220TH STREET, 32.0 FEET WEST OF AN ENTRANCE, 81.6 FEET SOUTH-SOUTHWEST OF JUDSON MNDT RM 1, 36.2 FEET WEST OF STATION JUDSON MNDT, 1.4 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1101.586 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1101.586 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1101.573 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1101.169 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1012.140 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1101.573 | .131 | | 1012.258 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1101.573 | .131 | | 1012.360 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1101.573 | .131 | | 1012.258 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1101.464 | .262 | | 1012.242 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1101.573 | .262 | | 1012.423 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.449 12B = -89.442 09 = -89.314 03 = -89.222**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.43552 | 94 22 16.96225 | 567842.387 | 274857.537 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.43549 | 94 22 16.96296 | 567842.336 | 274857.534 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 56 07.43549 | 94 22 16.96296 | 567842.336 | 274857.534 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.43498 | 94 22 16.96250 | 567842.369 | 274857.482 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 56 07.43559 | 94 22 16.96319 | 567842.319 | 274857.544 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 56 07.43605 | 94 22 16.96135 | 567842.451 | 274857.591 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 07.43157 | 94 22 16.95508 | 567842.904 | 274857.139 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

# JUDSON MNDT RM 2



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528494.447 | 1033838.075 | 1285407.457 | 16327686.502 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528494.396 | 1033838.072 | 1285407.406 | 16327686.500 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2528494.396 | 1033838.072 | 1285407.406 | 16327686.500 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528494.429 | 1033838.021 | 1285407.438 | 16327686.448 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2528494.379 | 1033838.083 | 1285407.389 | 16327686.511 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2528494.512 | 1033838.129 | 1285407.522 | 16327686.555 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528494.961 | 1033837.673 | 1285407.965 | 16327686.094 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JUDSON_RM_2-PQ1506-3S-04NOV2010.jpg | S | Nov 4, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JUDSON_RM_2-PQ1506-2-04NOV2010.jpg | | Nov 4, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/JUDSON_RM_2-PQ1506-1-04NOV2010.jpg | | Nov 4, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# K 123



**Mn/DOT Name:** K 123 **NGS Name:** K 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0051 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 29 | 115 N | 29 W | 444359.00 | 942114.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** K 123 1934

IN BROWNTON, 0.2 MILE WEST ON COUNTY ROAD 32 FROM THE JUNCTION OF COUNTY ROAD 32 AND COUNTY ROAD 25 IN BROWNTON, 50.0 FEET WEST ALONG A RAILROAD FROM THE RAILROAD STATION, 30.0 FEET SOUTH OF A RAILROAD, 132.0 FEET WEST OF RAILROAD MILEPOST 61.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.543 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1021.487 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.045 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1021.045 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1021.045 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |
| 1021.045 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1021.045 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.715 12B = -90.712 09 = -90.581 03 = -90.430**

*** No Horizontal Positions in the Database ***

# KARG MNDT



**Mn/DOT Name:** KARG MNDT **NGS Name:** KARG

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9251 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 2 | 115 N | 28 W | 444731.58 | 940906.40 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** KARG 2000

1.0 MILE NORTH OF GLENCOE, 2.6 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 AT THE NORTHWEST EDGE OF GLENCOE, TO TRUNK HIGHWAY 22 MILEPOINT 110.6, THEN 2.6 MILES EAST ON COUNTY ROAD 15, THEN 0.15 MILE NORTH ON GARDEN AVENUE, 41.9 FEET NORTH OF A TELEPHONE POLE, 28.0 FEET WEST OF GARDEN AVENUE, 13.0 FEET SOUTH OF AN ENTRANCE, 5.3 FEET NORTHWEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.579 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1026.583 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 935.900 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1026.602 | .262 | | 935.996 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 935.959 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1026.573 | .131 | | 936.120 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1026.573 | .131 | | 936.120 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.679 12B = -90.682 09 = -90.607 03 = -90.439**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 31.57874 | 94 09 06.40043 | 625024.110 | 222871.710 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 31.57858 | 94 09 06.40164 | 625024.023 | 222871.694 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 47 31.57885 | 94 09 06.40110 | 625024.062 | 222871.721 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 31.57837 | 94 09 06.40063 | 625024.096 | 222871.673 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 31.57837 | 94 09 06.40063 | 625024.094 | 222871.674 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# KARG MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585265.121 | 981414.933 | 1341514.887 | 16274578.817 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585265.034 | 981414.917 | 1341514.799 | 16274578.802 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2585265.073 | 981414.945 | 1341514.839 | 16274578.828 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585265.107 | 981414.896 | 1341514.872 | 16274578.780 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2585265.107 | 981414.896 | 1341514.872 | 16274578.780 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARG-DF9251-3N-27APR2011.jpg | N | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARG-DF9251-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARG-DF9251-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KARG MNDT RESET



**Mn/DOT Name:** KARG MNDT RESET
**NGS Name:** KARG RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9909 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 2 | 115 N | 28 W | 444731.58 | 940906.40 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 8 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** KARG 2000 2015

1.0 MILE NORTH OF GLENCOE, 0.2 MILE NORTH ALONG TRUNK HIGHWAY 22(HENNEPIN AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 22(HENNEPIN AVENUE) AND 10TH STREET IN GLENCOE, THEN CONTINUE 1.25 MILES NORTH ON HENNEPIN AVENUE, THEN 0.15 MILE NORTH ON GARDEN AVENUE, 28.0 FEET WEST OF GARDEN AVENUE, 13.0 FEET SOUTH OF A FIELD ENTRANCE, 5.3 FEET NORTH OF A WITNESS POST.

**Station Pair:** BARBER MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.415 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1026.412 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1026.412 | | | 935.808 | .023 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1026.412 | .131 | | 936.035 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1026.412 | | | 935.808 | .023 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1026.376 | .262 | | 935.697 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.679 12B = -90.682 09 = -90.607 03 = -90.439**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 31.57868 | 94 09 06.40140 | 625024.040 | 222871.704 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 47 31.57868 | 94 09 06.40140 | 625024.040 | 222871.704 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 44 47 31.57810 | 94 09 06.40028 | 625024.121 | 222871.646 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 31.57849 | 94 09 06.40183 | 625024.009 | 222871.685 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585265.052 | 981414.928 | 1341514.817 | 16274578.812 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 2585265.052 | 981414.928 | 1341514.817 | 16274578.812 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 2585265.132 | 981414.869 | 1341514.897 | 16274578.752 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585265.020 | 981414.908 | 1341514.785 | 16274578.793 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# KARG MNDT RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARG_RESET-DP9909-3W-14APR2015.jpg | W | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARG_RESET-DP9909-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARG_RESET-DP9909-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KARNIK



**Mn/DOT Name:** KARNIK **NGS Name:** KARNIK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9910 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 115 N | 30 W | 444319.53 | 942728.72 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 24 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** KARNIK 2015

1.5 MILES EAST OF STEWART, 1.0 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 103.8, 60.8 FEET SOUTH OF TRUNK HIGHWAY 212, 66.0 FEET WEST OF WALDEN AVENUE, 1.5 FEET NORTH OF A WITNESS POST.

**Station Pair:** GASS - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.228 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1055.224 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1055.224 | | | 964.670 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1055.224 | .131 | | 964.887 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1055.224 | | | 964.670 | .016 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1055.195 | .262 | | 964.631 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.561 12B = -90.564 09 = -90.430 03 = -90.298**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 19.52774 | 94 27 28.71979 | 545582.012 | 197023.683 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 19.52774 | 94 27 28.71979 | 545582.012 | 197023.683 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 19.52695 | 94 27 28.71864 | 545582.095 | 197023.603 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 19.52754 | 94 27 28.72026 | 545581.978 | 197023.663 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505633.190 | 956187.128 | 1261594.526 | 16250337.773 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2505633.190 | 956187.128 | 1261594.526 | 16250337.773 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2505633.272 | 956187.048 | 1261594.607 | 16250337.691 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505633.156 | 956187.108 | 1261594.492 | 16250337.753 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARNIK-DP9910-3S-20MAY2015.jpg | S | May 20, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARNIK-DP9910-2-20MAY2015.jpg | | May 20, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KARNIK-DP9910-1-20MAY2015.jpg | | May 20, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KJONAAS MN085



**Mn/DOT Name:** KJONAAS MN085 **NGS Name:** KJONAAS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9695 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 5 | 117 N | 29 W | 445753.35 | 942023.73 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2007) **Stamping:** KJONAAS

5.0 MILES NORTH AND 1.5 MILES EAST OF HUTCHINSON, NEAR THE SOUTHEAST CORNER OF TODD LAKE, 4.7 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 IN HUTCHINSON, THEN 1.5 MILES EAST ON COUNTY ROAD 60 (240TH STREET), AT THE SOUTHEAST CORNER OF A FARM SITE WITH FIRE NUMBER 17128 ON THE MAILBOX, 27.6 FEET NORTH OF COUNTY ROAD 60 (240TH STREET), 87.0 FEET EAST OF DRIVEWAY NUMBER 17128, 10.4 FEET WEST-SOUTHWEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1109.798 | .262 | | 1020.385 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1109.919 | .262 | | 1020.506 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1109.785 | .262 | | 1020.375 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 1020.231 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1109.643 | .131 | | 1020.342 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1109.643 | .131 | | 1020.342 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1109.643 | .131 | | 1020.444 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1109.643 | .131 | | 1020.342 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1109.643 | .131 | | 1020.342 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1109.502 | .262 | | 1020.306 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1109.643 | .131 | | 1020.444 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1109.643 | .131 | | 1020.444 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1109.512 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.413 12B = -89.406 09 = -89.291 03 = -89.199**

# KJONAAS MN085



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 53.34772 | 94 20 23.73356 | 575949.399 | 285612.338 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 57 53.34739 | 94 20 23.73353 | 575949.401 | 285612.305 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 57 53.34783 | 94 20 23.73439 | 575949.339 | 285612.349 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 57 53.34835 | 94 20 23.73397 | 575949.369 | 285612.402 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 53.34824 | 94 20 23.73466 | 575949.320 | 285612.390 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 57 53.34824 | 94 20 23.73466 | 575949.320 | 285612.390 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 57 53.34824 | 94 20 23.73466 | 575949.320 | 285612.390 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 53.34824 | 94 20 23.73466 | 575949.320 | 285612.390 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 53.34774 | 94 20 23.73425 | 575949.349 | 285612.340 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 53.34787 | 94 20 23.73456 | 575949.327 | 285612.353 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 57 53.34774 | 94 20 23.73425 | 575949.349 | 285612.340 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 57 53.34774 | 94 20 23.73425 | 575949.349 | 285612.340 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 53.34328 | 94 20 23.72898 | 575949.731 | 285611.889 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2536683.925 | 1044528.638 | 1293726.747 | 16338272.728 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2536683.927 | 1044528.604 | 1293726.749 | 16338272.695 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2536683.865 | 1044528.649 | 1293726.688 | 16338272.740 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2536683.895 | 1044528.702 | 1293726.719 | 16338272.793 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2536683.846 | 1044528.691 | 1293726.669 | 16338272.782 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2536683.846 | 1044528.691 | 1293726.669 | 16338272.782 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2536683.846 | 1044528.691 | 1293726.669 | 16338272.782 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2536683.846 | 1044528.691 | 1293726.669 | 16338272.782 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2536683.875 | 1044528.640 | 1293726.698 | 16338272.731 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2536683.853 | 1044528.653 | 1293726.676 | 16338272.745 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2536683.875 | 1044528.640 | 1293726.698 | 16338272.731 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2536683.875 | 1044528.640 | 1293726.698 | 16338272.731 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2536684.252 | 1044528.187 | 1293727.069 | 16338272.274 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KJONAAS-DI9695-3N-30MAR2020.jpg | N | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KJONAAS-DI9695-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KJONAAS-DI9695-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KKJR MNDT



**Mn/DOT Name:** KKJR MNDT **NGS Name:** KKJR

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1499 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 31 | 117 N | 29 W | 445424.58 | 942219.00 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (1986) **Stamping:** KKJR 1986

AT THE NORTH EDGE OF HUTCHINSON, 0.7 MILE NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.2 MILE WEST ON COUNTY ROAD 76, 70.2 FEET WEST-NORTHWEST OF A POWER POLE, 66.14 FEET WEST-NORTHWEST OF KKJR MNDT RM 1, 33.7 FEET NORTHEAST OF KKJR MNDT RM 2, 20.0 FEET SOUTH OF COUNTY ROAD 76, 11.5 FEET WEST OF THE QAN ENTRANCE, 66.4 FEET WEST-NORTHWEST OF A WITNESS POST, 34.4 FEET NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.296 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.866 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.283 | .197 | | 994.942 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.662 12B = -89.655 09 = -89.524 03 = -89.426**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.57638 | 94 22 18.99780 | 567729.394 | 264439.325 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.57273 | 94 22 18.99216 | 567729.801 | 264438.957 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 54 24.57098 | 94 22 18.99174 | 567729.832 | 264438.779 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.70930 | 94 22 18.05250 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528300.626 | 1023422.043 | 1285084.980 | 16317275.793 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528301.030 | 1023421.671 | 1285085.380 | 16317275.417 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2528301.059 | 1023421.494 | 1285085.407 | 16317275.239 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1903699.218 | 695344.865 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# KKJR MNDT RM 1



**Mn/DOT Name:** KKJR MNDT RM 1 **NGS Name:** KKJR RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1498 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 31 | 117 N | 29 W | 445424.32 | 942218.15 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (1986) **Stamping:** KKJR NO 1 1986

AT THE NORTH EDGE OF HUTCHINSON, 0.7 MILE NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, THEN 0.2 MILE WEST ON COUNTY ROAD 12, 83.4 FEET EAST OF KKJR MNDT RM 2, 66.1 FEET EAST-SOUTHEAST OF STATION KKJR MNDT, 53.0 FEET EAST OF THE ENTRANCE, 45.5 FEET SOUTH OF COUNTY ROAD 12, 1.0 FOOT NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.086 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1080.086 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1080.086 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1079.657 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.086 | | | 990.388 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1080.086 | | | 990.405 | .006 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 990.388 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1080.083 | .131 | | 990.661 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1080.054 | .262 | | 990.530 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1080.083 | .131 | | 990.497 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1080.083 | .131 | | 990.598 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1080.083 | .131 | | 990.497 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1079.890 | .262 | | 990.464 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1080.083 | .262 | | 990.730 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.665 12B = -89.655 09 = -89.527 03 = -89.426**

# KKJR MNDT RM 1



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32431 | 94 22 18.14746 | 567790.680 | 264413.992 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 24.32435 | 94 22 18.14754 | 567790.674 | 264413.996 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 54 24.32431 | 94 22 18.14746 | 567790.680 | 264413.992 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32372 | 94 22 18.14962 | 567790.525 | 264413.932 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 24.32434 | 94 22 18.14834 | 567790.617 | 264413.995 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 54 24.32434 | 94 22 18.14834 | 567790.617 | 264413.995 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32381 | 94 22 18.14784 | 567790.653 | 264413.941 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 54 24.32381 | 94 22 18.14784 | 567790.653 | 264413.941 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 24.32441 | 94 22 18.14861 | 567790.597 | 264414.002 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 54 24.32533 | 94 22 18.14981 | 567790.510 | 264414.095 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32168 | 94 22 18.14417 | 567790.918 | 264413.726 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528361.707 | 1023396.237 | 1285145.726 | 16317249.240 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2528361.701 | 1023396.241 | 1285145.720 | 16317249.244 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2528361.707 | 1023396.237 | 1285145.726 | 16317249.240 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528361.551 | 1023396.178 | 1285145.569 | 16317249.183 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2528361.644 | 1023396.240 | 1285145.663 | 16317249.244 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2528361.644 | 1023396.240 | 1285145.663 | 16317249.244 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528361.679 | 1023396.186 | 1285145.698 | 16317249.190 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2528361.679 | 1023396.186 | 1285145.698 | 16317249.190 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2528361.624 | 1023396.247 | 1285145.643 | 16317249.252 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2528361.538 | 1023396.341 | 1285145.559 | 16317249.346 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528361.943 | 1023395.970 | 1285145.958 | 16317248.970 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KKJR_RM_1-PQ1498-3S-11APR2011.jpg | S | Apr 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KKJR_RM_1-PQ1498-2-11APR2011.jpg | | Apr 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KKJR_RM_1-PQ1498-1-11APR2011.jpg | | Apr 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KKJR MNDT RM 2



**Mn/DOT Name:** KKJR MNDT RM 2 **NGS Name:** KKJR RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1500 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 31 | 117 N | 29 W | 445424.33 | 942219.31 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (1986) **Stamping:** KKJR NO 2 1986

AT THE NORTH EDGE OF HUTCHINSON, 0.7 MILE NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, THEN 0.2 MILE WEST ON COUNTY ROAD 12, 83.4 FEET EAST OF KKJR MNDT RM 1, 45.0 FEET SOUTH OF COUNTY ROAD 12, 33.7 FEET SOUTHWEST OF STATION KKJR MNDT, 30.0 FEET WEST OF AN ENTRANCE, 0.9 FOOT NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.119 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1080.119 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |
| 1080.139 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1079.709 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1080.021 | .262 | | 990.497 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1079.880 | .262 | | 990.454 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1080.149 | .262 | | 990.785 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.662 12B = -89.655 09 = -89.524 03 = -89.426**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32589 | 94 22 19.30882 | 567707.090 | 264413.884 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32612 | 94 22 19.30649 | 567707.257 | 264413.908 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 54 24.32871 | 94 22 19.30668 | 567707.243 | 264414.170 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.32507 | 94 22 19.30104 | 567707.650 | 264413.802 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

# KKJR MNDT RM 2



## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528278.127 | 1023396.777 | 1285062.175 | 16317250.813 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528278.294 | 1023396.800 | 1285062.343 | 16317250.833 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2528278.282 | 1023397.062 | 1285062.334 | 16317251.095 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2528278.686 | 1023396.692 | 1285062.734 | 16317250.720 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KKJR_RM_2-PQ1500-3S-11APR2011.jpg | S | Apr 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KKJR_RM_2-PQ1500-2-11APR2011.jpg | | Apr 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KKJR_RM_2-PQ1500-1-11APR2011.jpg | | Apr 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KOMENSKY



**Mn/DOT Name:** KOMENSKY
**NGS Name:** KOMENSKY RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0656 Get Map
**NGS Quad / Sta Num :** 44094141/1007
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 33 | 117 N | 29 W | 445333.74 | 941905.51 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | HORIZONTAL CONTROL DISK | NGS |

**Description:** (2015) **Stamping:** KOMENSKY 1956 1984

2.75 MILES NORTHEAST OF HUTCHINSON, 2.5 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 144.50, 51.5 FEET SOUTH OF TRUNK HIGHWAY 7, 133.5 FEET EAST OF A TELEPHONE CABLE PEDESTAL, 31.5 FEET WEST OF A FIELD ENTRANCE, 2.0 FEET EAST OF A WITNESS POST.

**Station Pair:** HAGEN - MCLEOD, MN

**Station Notes**

IN 1985 A NEW SURFACE STATION DISK WAS SET OVER THE UNDERGROUND MARK, SEE THE NATIONAL GEODETIC SURVEY (NGS) DATA SHEET FOR MORE DETAILS.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.819 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1072.819 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1072.819 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1072.819 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 1072.819 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.380 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 1072.376 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.819 | | | 982.852 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1072.819 | | | 982.852 | .005 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1072.892 | .262 | | 982.915 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1072.639 | .262 | | 982.669 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 982.852 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1072.701 | .262 | | 982.856 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1072.832 | .131 | | 982.954 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1072.832 | .131 | | 983.066 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1072.832 | .131 | | 982.954 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| | | | 982.967 | .007 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1072.832 | .131 | | 983.092 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1072.832 | .131 | | 983.092 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1072.832 | .131 | | 983.092 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |
| 1072.832 | .131 | | 983.092 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |
| 1072.668 | .131 | | 983.039 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.977 12B = -89.970 09 = -89.846 03 = -89.718**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.73927 | 94 19 05.51263 | 581675.511 | 259339.803 | .003 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 53 33.73927 | 94 19 05.51263 | 581675.511 | 259339.803 | .003 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 53 33.73907 | 94 19 05.51241 | 581675.527 | 259339.783 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 53 33.73904 | 94 19 05.51271 | 581675.505 | 259339.780 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 53 33.73927 | 94 19 05.51263 | 581675.511 | 259339.803 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.73906 | 94 19 05.51318 | 581675.471 | 259339.781 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 53 33.73925 | 94 19 05.51380 | 581675.427 | 259339.801 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 53 33.73925 | 94 19 05.51380 | 581675.427 | 259339.801 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 33.73945 | 94 19 05.51288 | 581675.493 | 259339.821 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.73882 | 94 19 05.51246 | 581675.523 | 259339.757 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 53 33.73870 | 94 19 05.51323 | 581675.468 | 259339.745 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 53 33.73888 | 94 19 05.51215 | 581675.546 | 259339.763 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 53 33.73888 | 94 19 05.51214 | 581675.546 | 259339.763 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 33.73888 | 94 19 05.51214 | 581675.546 | 259339.763 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 44 53 33.73888 | 94 19 05.51214 | 581675.546 | 259339.763 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 44 53 33.73918 | 94 19 05.51463 | 581675.367 | 259339.793 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.73441 | 94 19 05.50862 | 581675.801 | 259339.312 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.86959 | 94 19 04.57377 | | | .100 | 1 | CLASSICAL SURVEY | 1991 | 17504 |
| 44 53 33.87200 | 94 19 04.57580 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

# KOMENSKY



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542205.400 | 1018214.929 | 1298921.511 | 16311898.458 | .003 | | ADJUSTMENT | 2025 | GPS3788 |
| 2542205.400 | 1018214.929 | 1298921.511 | 16311898.458 | .003 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2542205.416 | 1018214.908 | 1298921.527 | 16311898.438 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2542205.395 | 1018214.905 | 1298921.505 | 16311898.435 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2542205.400 | 1018214.929 | 1298921.511 | 16311898.458 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542205.361 | 1018214.908 | 1298921.471 | 16311898.438 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2542205.316 | 1018214.927 | 1298921.427 | 16311898.458 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2542205.316 | 1018214.927 | 1298921.427 | 16311898.458 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2542205.383 | 1018214.947 | 1298921.494 | 16311898.477 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542205.413 | 1018214.883 | 1298921.523 | 16311898.413 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2542205.357 | 1018214.871 | 1298921.467 | 16311898.401 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2542205.435 | 1018214.889 | 1298921.545 | 16311898.418 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2542205.436 | 1018214.889 | 1298921.546 | 16311898.418 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2542205.436 | 1018214.889 | 1298921.546 | 16311898.418 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 2542205.436 | 1018214.889 | 1298921.546 | 16311898.418 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 2542205.256 | 1018214.920 | 1298921.367 | 16311898.452 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2542205.687 | 1018214.436 | 1298921.792 | 16311897.962 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1917603.944 | 690137.575 | | | .100 | 1 | CLASSICAL SURVEY | 1991 | 17504 |
| 1917603.799 | 690137.820 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KOMENSKY_RESET-PQ0656-3SW-16JUN2024.jpg | SW | Jun 16, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KOMENSKY_RESET-PQ0656-2-16JUN2024.jpg | | Jun 16, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KOMENSKY_RESET-PQ0656-1-16JUN2024.jpg | | Jun 16, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KOMENSKY AZ MK



**Mn/DOT Name:** KOMENSKY AZ MK
**NGS Name:** KOMENSKY AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1181 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 33 | 117 N | 29 W | 445346.98 | 941949.25 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 10 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | MNDT |

**Description:** (2000) **Stamping:** KOMENSKY 1956

2.0 MILES EAST OF HUTCHINSON, 1.9 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.95, 0.65 MILE WEST OF STATION KOMENSKY, 72.0 FEET NORTH OF TRUNK HIGHWAY 7, 37.7 FEET EAST OF A POWER POLE, 1.3 FEET WEST OF A WITNESS POST.

**Station Notes**
PULLED THE TIES AND USED THE REAL TIME REFERENCE NETWORK (RTRN) (6-10-09).

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.667 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1065.670 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.228 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.271 | .197 | | 976.704 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.598 | | | | | | RECIPROCAL VERTICAL ANGLE | 1989 | HORZ |
| 1065.910 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.905 12B = -89.898 09 = -89.773 03 = -89.652**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.98193 | 94 19 49.25468 | 578521.399 | 260669.076 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.97773 | 94 19 49.24808 | 578521.874 | 260668.652 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 53 46.97768 | 94 19 49.24837 | 578521.855 | 260668.648 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.11560 | 94 19 48.31390 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# KOMENSKY AZ MK



## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539062.007 | 1019568.516 | 1295795.731 | 16313290.461 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539062.480 | 1019568.089 | 1295796.198 | 16313290.029 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2539062.459 | 1019568.084 | 1295796.178 | 16313290.024 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1914460.594 | 691491.481 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# KOMENSKY RM 1



**Mn/DOT Name:** KOMENSKY RM 1
**NGS Name:** KOMENSKY RM 1
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9134 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 33 | 117 N | 29 W | 445333.32 | 941904.47 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** KOMENSKY NO 1 1956

2.81 MILES NORTHEAST OF HUTCHINSON, 2.6 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, 140.58 FEET SOUTH OF CENTERLINE OF TRUNK HIGHWAY 7, 100.93 FEET SOUTH OF STATION KOMENSKY RM 3.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.977 12B = -89.974 09 = -89.849 03 = -89.721**

# KOMENSKY RM 2



**Mn/DOT Name:** KOMENSKY RM 2 **NGS Name:** KOMENSKY RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1515 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 4 | 117 N | 29 W | 445334.01 | 941906.76 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 24 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (1956) **Stamping:** KOMENSKY NO 2 1956

1.3 MILES EAST OF HUTCHINSON, 2.5 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 144.5, 209.0 FEET WEST-NORTHWEST OF KOMENSKY RM 3, 158.0 FEET EAST OF AN ENTRANCE, 143.6 FEET SOUTHWEST OF A POWER POLE, 93.7 FEET WEST OF STATION KOMENSKY, 59.5 FEET SOUTH OF TRUNK HIGHWAY 7, 39.8 FEET EAST OF A TELEPHONE CABLE PEDESTAL, 1.0 FOOT SOUTHWEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.476 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.037 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.974 12B = -89.970 09 = -89.846 03 = -89.718**

*** No Horizontal Positions in the Database ***

# KOMENSKY RM 3



**Mn/DOT Name:** KOMENSKY RM 3 **NGS Name:** KOMENSKY RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1516 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 33 | 117 N | 29 W | 445333.12 | 941904.14 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (1990) **Stamping:** KOMENSKY NO 3 1956 1984

1.5 MILES EAST OF HUTCHINSON, 2.5 MILES EAST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 144.5, 209.0 FEET EAST-SOUTHEAST OF KOMENSKY RM 2, 117.2 FEET EAST-SOUTHEAST OF STATION KOMENSKY, 90.0 FEET EAST OF AN ENTRANCE, 79.5 FEET SOUTH OF TRUNK HIGHWAY 7, 1.1 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1070.063 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1070.063 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 1070.063 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.621 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 1069.621 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -89.977 12B = -89.974 09 = -89.849 03 = -89.721**

*** No Horizontal Positions in the Database ***

# KOSEK MNDT TEMP



**Mn/DOT Name:** KOSEK MNDT TEMP
**NGS Name:** KOSEK TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1182 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 1 | 115 N | 30 W | 444742.71 | 942231.73 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| PIPE (<10 FT) | UNMONUMENTED | MNDT |

**Description:** (1984) **Stamping:** KOSEK 1984

5.0 MILES NORTH OF BROWNTON, 5.0 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 94.45, 67.5 FEET EAST OF TRUNK HIGHWAY 15, 9.8 FEET WEST-SOUTHWEST OF A RIGHT-OF-WAY POST, 7.0 FEET SOUTHWEST OF A POWER POLE, 3.2 FEET WEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.943 | .197 | | 975.884 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1065.385 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.407 12B = -90.394 09 = -90.266 03 = -90.128**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 42.70880 | 94 22 31.72519 | 566942.233 | 223735.232 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 42.70415 | 94 22 31.72136 | 566942.511 | 223734.763 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 47 42.70465 | 94 22 31.72149 | 566942.501 | 223734.812 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 42.84140 | 94 22 30.78160 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527197.718 | 982729.341 | 1283480.371 | 16276607.766 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527197.992 | 982728.868 | 1283480.639 | 16276607.290 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527197.983 | 982728.919 | 1283480.630 | 16276607.341 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902596.291 | 654652.461 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** KUJAS
**NGS Name:** KUJAS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0645 Get Map
**NGS Quad / Sta Num :** 44094134/1008
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 30 W | 444447.38 | 942302.27 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2025 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** KUJAS 1956

1.5 MILES WEST AND 1.0 MILE NORTH OF BROWNTON, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, TO TRUNK HIGHWAY 15 MILEPOINT 91.0, THEN 0.7 MILE WEST ON A GRAVEL ROAD (90TH STREET), 47.6 FEET EAST OF A FIELD ENTRANCE, 33.0 FEET EAST-NORTHEAST OF A POWER POLE, 25.0 FEET SOUTH OF 90TH STREET, 12.3 FEET NORTHEAST OF THE EAST GUY WIRE ANCHOR, 272.07 FEET EAST OF STATION KUJAS RM 1, 182.22 FEET SOUTH-SOUTHEAST OF KUJAS RM 2, 14.0 FEET NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.742 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1074.742 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.749 | .262 | | 984.152 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1074.742 | | | 984.115 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1074.742 | | | 984.138 | .010 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 984.115 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1074.735 | .131 | | 984.427 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1074.644 | .262 | | 984.191 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 984.312 | .035 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1074.670 | .131 | | 984.355 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1074.670 | .131 | | 984.355 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 984.312 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1074.703 | .131 | | 984.414 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1074.637 | .131 | | 984.414 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1074.703 | .131 | | 984.414 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |
| 1074.637 | .131 | | 984.414 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |
| 1074.801 | .197 | | 984.552 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.210 | | | | | | GPS - STATIC | 1990 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.597 12B = -90.597 09 = -90.453 03 = -90.315**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.38372 | 94 23 02.26826 | 564794.021 | 205971.720 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 44 47.38387 | 94 23 02.26835 | 564794.014 | 205971.735 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 44 47.38394 | 94 23 02.26849 | 564794.004 | 205971.742 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 44 44 47.38387 | 94 23 02.26835 | 564794.014 | 205971.735 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.38329 | 94 23 02.27069 | 564793.845 | 205971.676 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 44 47.38415 | 94 23 02.26982 | 564793.908 | 205971.763 | .023 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 44 47.38415 | 94 23 02.26982 | 564793.908 | 205971.763 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.38337 | 94 23 02.26864 | 564793.993 | 205971.685 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 44 47.38338 | 94 23 02.26866 | 564793.992 | 205971.685 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 44 47.38338 | 94 23 02.26866 | 564793.992 | 205971.685 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 44 47.38446 | 94 23 02.27115 | 564793.812 | 205971.794 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 44 47.38446 | 94 23 02.27115 | 564793.812 | 205971.794 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 44 47.38446 | 94 23 02.27115 | 564793.812 | 205971.794 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 44 44 47.38446 | 94 23 02.27115 | 564793.811 | 205971.793 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 44 44 47.38496 | 94 23 02.27208 | 564793.744 | 205971.845 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.38015 | 94 23 02.26804 | 564794.038 | 205971.359 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.51680 | 94 23 01.32750 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524911.964 | 964984.900 | 1280976.728 | 16258896.126 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2524911.958 | 964984.915 | 1280976.722 | 16258896.141 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2524911.948 | 964984.923 | 1280976.711 | 16258896.148 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 2524911.958 | 964984.915 | 1280976.722 | 16258896.141 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524911.789 | 964984.858 | 1280976.552 | 16258896.085 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2524911.852 | 964984.944 | 1280976.616 | 16258896.171 | .023 | | ADJUSTMENT | 2007 | GPS2300 |
| 2524911.852 | 964984.944 | 1280976.616 | 16258896.171 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524911.937 | 964984.865 | 1280976.700 | 16258896.091 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2524911.935 | 964984.866 | 1280976.698 | 16258896.092 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2524911.935 | 964984.866 | 1280976.698 | 16258896.092 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2524911.756 | 964984.976 | 1280976.520 | 16258896.204 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2524911.756 | 964984.976 | 1280976.520 | 16258896.204 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2524911.756 | 964984.976 | 1280976.520 | 16258896.204 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 2524911.756 | 964984.976 | 1280976.521 | 16258896.204 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 2524911.689 | 964985.027 | 1280976.454 | 16258896.256 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524911.979 | 964984.539 | 1280976.738 | 16258895.764 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1900310.327 | 636908.217 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS-PQ0645-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS-PQ0645-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS-PQ0645-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KUJAS AZ MK



**Mn/DOT Name:** KUJAS AZ MK **NGS Name:** KUJAS AZ MK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0652 Get Map
**NGS Quad / Sta Num :** 44094134/1008
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 25 | 115 N | 30 W | 444447.26 | 942344.16 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1985 | DESTROYED | Horz=NO Vert=NO | NO | | PROJECTS 24 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** KUJAS 1956

2.5 MILES NORTHWEST OF BROWNTON, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.2 MILES WEST ON 90TH STREET TO THE JUNCTION OF COUNTY ROAD 54, 195.0 FEET EAST-SOUTHEAST OF THE JUNCTION OF COUNTY ROAD 54 AND 90TH STREET, 30.0 FEET SOUTH OF 90TH STREET, 2.0 FEET EAST OF A GUYED POWER POLE, 2.0 FEET WEST-NORTHWEST OF A 4.0 INCH DIAMETER SQUARE WOOD WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1037.399 | .262 | | 947.167 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1037.006 | | | | | | RECIPROCAL VERTICAL ANGLE | 1975 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.574 09 = -90.433 03 = -90.295**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.26258 | 94 23 44.16375 | 561770.248 | 205950.406 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.25774 | 94 23 44.15970 | 561770.541 | 205949.917 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.39457 | 94 23 43.21783 | | | .100 | 3 | CLASSICAL SURVEY | 1977 | 16059 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521888.440 | 964987.050 | 1277954.010 | 16258935.484 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521888.730 | 964986.559 | 1277954.294 | 16258934.989 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1897287.087 | 636910.245 | | | .100 | 3 | CLASSICAL SURVEY | 1977 | 16059 |

# KUJAS RM 1



**Mn/DOT Name:** KUJAS RM 1 **NGS Name:** KUJAS RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9140 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 30 W | 444447.26 | 942306.03 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2025 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 2 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** KUJAS NO 1 1956

1.5 MILES WEST AND 1.0 MILE NORTH OF BROWNTON, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, TO TRUNK HIGHWAY 15 MILEPOINT 91.0, THEN 0.7 MILE WEST ON A GRAVEL ROAD (90TH STREET), 38.0 FEET SOUTH OF 90TH STREET, 3.0 FEET EAST OF A POWER LINE POLE, 272.07 FEET EAST OF STATION KUJAS, 306.95 FEET SOUTHWEST OF KUJAS RM 2, 2.0 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.265 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1067.268 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.229 | .262 | | 976.635 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1067.130 | .262 | | 976.681 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.597 12B = -90.594 09 = -90.453 03 = -90.315**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.26261 | 94 23 06.03423 | 564522.249 | 205958.624 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 47.26194 | 94 23 06.03576 | 564522.139 | 205958.555 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524640.129 | 964973.914 | 1280704.827 | 16258888.488 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524640.018 | 964973.847 | 1280704.715 | 16258888.422 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS_RM_1-CO9140-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS_RM_1-CO9140-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS_RM_1-CO9140-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# KUJAS RM 2



**Mn/DOT Name:** KUJAS RM 2 **NGS Name:** KUJAS RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9141 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 30 W | 444449.16 | 942302.71 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | GOOD | Horz=NO Vert=NO | YES | | PROJECTS 7 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** KUJAS NO 2 1956

1.5 MILES WEST AND 1.0 MILE NORTH OF BROWNTON, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, TO TRUNK HIGHWAY 15 MILEPOINT 91.0, THEN 0.7 MILE WEST ON A GRAVEL ROAD (90TH STREET), 153.0 FEET NORTH OF 90TH STREET, 129.0 FEET SOUTH OF THE SOUTHWEST CORNER OF A BARN, 17.0 FEET EAST OF DRIVEWAY NUMBER 19396, 181.22 FEET NORTH-NORTHWEST OF STATION KUJAS, 306.95 FEET NORTHEAST OF KUJAS RM 1, 2.0 FEET SOUTH OF A POWER POLE.

**Station Notes**

THE SURVEY MARK IS ON PRIVATE PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.531 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1072.531 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.465 | .262 | | 982.016 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.597 12B = -90.594 09 = -90.449 03 = -90.311**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 49.15572 | 94 23 02.71384 | 564761.311 | 206151.086 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2524880.651 | 965164.496 | 1280947.633 | 16259076.060 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS_RM_2-CO9141-3N-19APR2011.jpg | N | Apr 19, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS_RM_2-CO9141-2-19APR2011.jpg | | Apr 19, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/KUJAS_RM_2-CO9141-1-19APR2011.jpg | | Apr 19, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** L 123 **NGS Name:** L 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0052 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 29 | 115 N | 29 W | 444405.02 | 942058.82 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | RR | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2011) **Stamping:** L 123 1934

AT THE NORTHEAST EDGE OF BROWNTON, 0.2 MILE NORTH ALONG COUNTY ROAD 25 / 5TH AVENUE NORTH FROM THE JUNCTION OF COUNTY ROAD 25 / 5TH AVENUE NORTH AND DIVISION STREET IN BROWNTON, THEN WALK ABOUT 350.0 FEET EAST ALONG THE RAILROAD TRACKS TO A BRIDGE, 23.0 FEET SOUTH OF THE RAILROAD TRACKS, 33.0 FEET EAST OF RAILROAD MILEPOST 61, IN THE EAST CONCRETE ABUTMENT OF A RAILROAD BRIDGE OVER BUFFALO CREEK.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1019.017 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1018.889 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.522 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1018.449 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |
| 1018.449 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1018.449 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.987 | .262 | | 928.407 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.715 12B = -90.715 09 = -90.581 03 = -90.433**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 05.02176 | 94 20 58.81632 | 573719.110 | 201710.563 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533802.762 | 960655.071 | 1289811.920 | 16254458.045 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/L_123-PQ0052-3S-12APR2011.jpg | S | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/L_123-PQ0052-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/L_123-PQ0052-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LACE MNDT



**Mn/DOT Name:** LACE MNDT **NGS Name:** LACE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9252 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 116 N | 29 W | 444857.44 | 941515.33 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** LACE 2000

2.0 MILES SOUTHEAST OF BISCAY, 1.75 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY TO TRUNK HIGHWAY 22 MILEPOINT 113.4, THEN 0.5 MILE NORTH ON COUNTY ROAD 71 (LACE AVENUE), 45.8 FEET SOUTH-SOUTHEAST OF A CABLE MARKER, 40.0 FEET WEST OF COUNTY ROAD 71, 32.5 FEET NORTH OF A POWER POLE, 15.0 FEET SOUTH OF AN ENTRANCE, 2.0 FEET NORTH OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 935.444 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1025.969 | .262 | | 935.507 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1026.015 | .131 | | 935.533 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1026.015 | .131 | | 935.533 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1026.015 | .131 | | 935.687 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1026.015 | .131 | | 935.687 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 935.533 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1026.015 | .131 | | 935.687 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1026.015 | .131 | | 935.687 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.561 12B = -90.558 09 = -90.462 03 = -90.285**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.43745 | 94 15 15.33141 | 598377.198 | 231426.730 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.43739 | 94 15 15.33229 | 598377.135 | 231426.723 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 48 57.43764 | 94 15 15.33202 | 598377.154 | 231426.749 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 48 57.43764 | 94 15 15.33202 | 598377.154 | 231426.749 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 48 57.43764 | 94 15 15.33202 | 598377.154 | 231426.749 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.43714 | 94 15 15.33151 | 598377.191 | 231426.698 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 48 57.43714 | 94 15 15.33151 | 598377.191 | 231426.698 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 48 57.43714 | 94 15 15.33151 | 598377.191 | 231426.698 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 48 57.43714 | 94 15 15.33151 | 598377.192 | 231426.699 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# LACE MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558688.210 | 990175.804 | 1315053.809 | 16283664.229 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558688.147 | 990175.798 | 1315053.746 | 16283664.224 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2558688.166 | 990175.823 | 1315053.766 | 16283664.249 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2558688.166 | 990175.823 | 1315053.766 | 16283664.249 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2558688.166 | 990175.823 | 1315053.766 | 16283664.249 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558688.203 | 990175.773 | 1315053.802 | 16283664.198 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2558688.203 | 990175.773 | 1315053.802 | 16283664.198 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2558688.203 | 990175.773 | 1315053.802 | 16283664.198 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2558688.203 | 990175.773 | 1315053.802 | 16283664.198 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LACE-DF9252-3W-02MAY2011.jpg | W | May 2, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LACE-DF9252-2-02MAY2011.jpg | | May 2, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LACE-DF9252-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LACE MNDT RESET



**Mn/DOT Name:** LACE MNDT RESET
**NGS Name:** LACE RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4205 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 36 | 116 N | 29 W | 444857.44 | 941515.33 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 5 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2015)
**Stamping:** LACE 2000 2015

2.0 MILES SOUTHEAST OF BISCAY, 1.75 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY TO TRUNK HIGHWAY 22 MILEPOINT 113.40, THEN 0.5 MILE NORTH ON COUNTY ROAD 71, 40.0 FEET WEST OF COUNTY ROAD 71 (LACE AVENUE), 45.8 FEET SOUTH-SOUTHEAST OF A CABLE BOX, 32.5 FEET NORTH OF A POWER POLE WITH GUY WIRES, 15.0 FEET SOUTH OF A FIELD ENTRANCE, 2.0 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.805 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1025.808 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1025.805 | | | 935.241 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1025.805 | | | 935.241 | .013 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1025.877 | .262 | | 935.316 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1025.782 | .262 | | 935.225 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.561 12B = -90.558 09 = -90.462 03 = -90.285**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.43744 | 94 15 15.33132 | 598377.205 | 231426.729 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 48 57.43744 | 94 15 15.33132 | 598377.205 | 231426.729 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 48 57.43814 | 94 15 15.33137 | 598377.201 | 231426.800 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 48 57.43719 | 94 15 15.33131 | 598377.206 | 231426.703 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 57.43718 | 94 15 15.33130 | 598377.206 | 231426.702 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558688.217 | 990175.803 | 1315053.816 | 16283664.228 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2558688.217 | 990175.803 | 1315053.816 | 16283664.228 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2558688.213 | 990175.874 | 1315053.813 | 16283664.299 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2558688.217 | 990175.778 | 1315053.816 | 16283664.203 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558688.218 | 990175.777 | 1315053.817 | 16283664.202 | .066 | | NCAT | 2024 | HHUTCH2 |

# LACE MNDT RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LACE_RESET-DQ4205-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LACE_RESET-DQ4205-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LACE_RESET-DQ4205-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** LARSEN **NGS Name:** LARSEN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9777 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 30 | 117 N | 29 W | 445425.50 | 942204.58 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** LARSEN 2009

IN HUTCHINSON, 0.75 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAYS 7/ TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 15 MILEPOINT 102.40, 64.8 FEET NORTH OF WESTBOUND COUNTY ROAD 12, 52.0 FEET EAST OF NORTHBOUND TRUNK HIGHWAY 15, 58.9 FEET SOUTHWEST OF THE WEST LEG OF THE SHELL GAS STATION SIGN, 1.2 FEET WEST OF A WITNESS POST.

**Station Pair:** TIGERCAT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.043 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1084.043 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.063 | .262 | | 994.391 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1084.014 | .262 | | 994.342 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1084.043 | | | 994.378 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1084.043 | | | 994.362 | .006 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 994.378 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1084.053 | .131 | | 994.604 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1083.882 | .262 | | 994.339 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1084.053 | .131 | | 994.493 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1084.053 | .131 | | 994.594 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1084.053 | .131 | | 994.493 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1083.873 | .262 | | 994.434 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.678 12B = -89.668 09 = -89.541 03 = -89.439**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.50464 | 94 22 04.57514 | 568767.167 | 264536.699 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 54 25.50433 | 94 22 04.57440 | 568767.220 | 264536.668 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 54 25.50483 | 94 22 04.57516 | 568767.165 | 264536.718 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 25.50485 | 94 22 04.57512 | 568767.168 | 264536.720 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 54 25.50483 | 94 22 04.57516 | 568767.165 | 264536.718 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.50402 | 94 22 04.57520 | 568767.163 | 264536.636 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 25.50482 | 94 22 04.57594 | 568767.109 | 264536.717 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 54 25.50482 | 94 22 04.57594 | 568767.109 | 264536.717 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.50429 | 94 22 04.57546 | 568767.144 | 264536.664 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 54 25.50430 | 94 22 04.57547 | 568767.143 | 264536.664 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 25.50443 | 94 22 04.57574 | 568767.124 | 264536.678 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# LARSEN



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529339.023 | 1023511.351 | 1286124.191 | 16317352.250 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2529339.076 | 1023511.319 | 1286124.243 | 16317352.218 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2529339.022 | 1023511.370 | 1286124.189 | 16317352.269 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2529339.025 | 1023511.372 | 1286124.192 | 16317352.271 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2529339.022 | 1023511.370 | 1286124.189 | 16317352.269 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529339.018 | 1023511.288 | 1286124.185 | 16317352.187 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529338.966 | 1023511.370 | 1286124.133 | 16317352.269 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529338.966 | 1023511.370 | 1286124.133 | 16317352.269 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529339.000 | 1023511.316 | 1286124.167 | 16317352.215 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2529338.999 | 1023511.317 | 1286124.166 | 16317352.216 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529338.980 | 1023511.330 | 1286124.147 | 16317352.229 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LARSEN-DL9777-3E-30MAR2020.jpg | E | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LARSEN-DL9777-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LARSEN-DL9777-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LASSIE MN085



**Mn/DOT Name:** LASSIE MN085 **NGS Name:** LASSIE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9696 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 10 | 116 N | 30 W | 445156.76 | 942613.42 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2010 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** LASSIE 1993

4.0 MILES SOUTHWEST OF THE CENTER OF HUTCHINSON, 2.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, TO TRUNK HIGHWAY 15 MILEPOINT 99.15, THEN 3.5 MILES WEST ALONG COUNTY ROAD 8, THEN 0.75 MILE NORTH ALONG COUNTY ROAD 59 (VALE AVENUE), AT THE SOUTHWEST CORNER OF A FARM SITE WITH FIRE NUMBER 17186 ON THE MAILBOX, 21.0 FEET EAST OF COUNTY ROAD 59, 2.0 FEET SOUTH OF A FIELD DRIVE, 10.5 FEET NORTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 993.472 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1083.233 | .131 | | 993.630 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1083.233 | .131 | | 993.630 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1083.233 | .131 | | 993.702 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1083.233 | .131 | | 993.702 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.003 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.783 12B = -89.767 09 = -89.632 03 = -89.527**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 56.75824 | 94 26 13.41628 | 550893.063 | 249420.730 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 56.75854 | 94 26 13.41778 | 550892.955 | 249420.760 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 51 56.75854 | 94 26 13.41778 | 550892.955 | 249420.760 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 56.75785 | 94 26 13.41709 | 550893.005 | 249420.690 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 51 56.75785 | 94 26 13.41709 | 550893.005 | 249420.690 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 56.75421 | 94 26 13.41347 | 550893.265 | 249420.321 | .033 | C | GPS - STATIC | 1993 | CO43 |

# LASSIE MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511349.923 | 1008535.979 | 1267955.010 | 16302603.076 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511349.815 | 1008536.010 | 1267954.903 | 16302603.108 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2511349.815 | 1008536.010 | 1267954.903 | 16302603.108 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511349.864 | 1008535.940 | 1267954.951 | 16302603.037 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2511349.864 | 1008535.940 | 1267954.951 | 16302603.037 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511350.123 | 1008535.570 | 1267955.205 | 16302602.664 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LASSIE-DI9696-3W-12JUN2007.jpg | W | Jun 12, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LASSIE-DI9696-2-12JUN2007.jpg | | Jun 12, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LASSIE-DI9696-1-12JUN2007.jpg | | Jun 12, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LEACH



**Mn/DOT Name:** LEACH **NGS Name:** LEACH

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9911 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 14 | 115 N | 27 W | 444604.08 | 940232.99 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 19 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** LEACH 2015

0.25 MILE SOUTHWEST OF PLATO, 0.1 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 NORTH IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 125.7, 66.7 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212, 30.4 FEET NORTHEAST OF CABLE BOX NUMBER LP1 7000 1, 1.5 FEET NORTH OF A WITNESS POST.

**Station Pair:** BECKLER - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.199 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1002.203 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.199 | .262 | | 911.740 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1002.203 | | | 911.734 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1002.203 | .131 | | 911.960 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1002.203 | | | 911.734 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1002.147 | .262 | | 911.671 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.459 12B = -90.476 09 = -90.374 03 = -90.256**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.08305 | 94 02 32.99234 | 653459.852 | 214197.304 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 46 04.08318 | 94 02 32.99227 | 653459.857 | 214197.317 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 46 04.08318 | 94 02 32.99227 | 653459.857 | 214197.317 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 46 04.08272 | 94 02 32.99278 | 653459.820 | 214197.270 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 04.08300 | 94 02 32.99272 | 653459.825 | 214197.299 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2613629.606 | 972520.665 | 1369761.010 | 16265338.558 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2613629.611 | 972520.678 | 1369761.016 | 16265338.571 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2613629.611 | 972520.678 | 1369761.016 | 16265338.571 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2613629.574 | 972520.632 | 1369760.978 | 16265338.525 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2613629.579 | 972520.660 | 1369760.983 | 16265338.554 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEACH-DP9911-3S-21SEP2025.jpg | S | Sep 21, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEACH-DP9911-2-21SEP2025.jpg | | Sep 21, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEACH-DP9911-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** LEE
**NGS Name:** LEE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4204 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 115 N | 28 W | 444813.19 | 941443.54 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 34 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** LEE 2015

2.2 MILES SOUTHEAST OF BISCAY, 2.3 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 4 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 112.85, 52.2 FEET NORTHEAST OF TRUNK HIGHWAY 22, 41.4 FEET SOUTH OF A POWER POLE, 1.5 FEET SOUTHWEST OF A WITNESS POST.

**Station Pair:** 4307 E - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.470 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1029.473 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1029.470 | | | 938.850 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1029.470 | | | 938.850 | .014 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1029.516 | .262 | | 938.892 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1029.434 | .262 | | 938.810 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.623 12B = -90.623 09 = -90.525 03 = -90.351**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 13.19305 | 94 14 43.53613 | 600690.611 | 226956.518 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 48 13.19305 | 94 14 43.53613 | 600690.611 | 226956.518 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 48 13.19295 | 94 14 43.53526 | 600690.674 | 226956.508 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 48 13.19295 | 94 14 43.53663 | 600690.575 | 226956.507 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 13.19271 | 94 14 43.53619 | 600690.607 | 226956.483 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2560966.602 | 985688.220 | 1317276.269 | 16279149.897 | .010 | | ADJUSTMENT | 2025 | GPS3789 |
| 2560966.602 | 985688.220 | 1317276.269 | 16279149.897 | .010 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2560966.664 | 985688.209 | 1317276.332 | 16279149.886 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2560966.566 | 985688.210 | 1317276.233 | 16279149.888 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2560966.597 | 985688.185 | 1317276.264 | 16279149.863 | .066 | | NCAT | 2024 | HHUTCH2 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEE-DQ4204-3NE-17JUN2024.jpg | NE | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEE-DQ4204-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEE-DQ4204-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LENNY MN085



**Mn/DOT Name:** LENNY MN085 **NGS Name:** LENNY

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9697 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 16 | 115 N | 30 W | 444628.40 | 942651.26 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 8 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2007) **Stamping:** LENNY

4.0 MILES NORTHEAST OF STEWART, 4.95 MILES NORTH ALONG COUNTY ROAD 7 FROM TRUNK HIGHWAY 212 MILEPOINT 102.75, 0.8 MILE NORTH OF COUNTY ROAD 26 IN STEWART, 27.0 FEET WEST OF COUNTY ROAD 7, 9.0 FEET SOUTH OF A FIELD ENTRANCE, 17.8 FEET NORTHEAST OF A WITNESS POST. THE ROD HAS THE ABILITY TO TWIST 1/2 INCH, UNABLE TO TIGHTEN DUE TO A METAL STABILIZER.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.329 | .262 | | 973.988 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1064.414 | .262 | | 974.070 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1064.368 | | | 974.047 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1064.368 | | | 974.043 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 974.047 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1064.368 | .131 | | 974.309 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1064.263 | .262 | | 974.060 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1064.368 | .131 | | 974.207 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1064.368 | .131 | | 974.207 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1064.368 | .131 | | 974.296 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1064.368 | .131 | | 974.296 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.909 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.341 12B = -90.344 09 = -90.200 03 = -90.065**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 28.39699 | 94 26 51.26392 | 548242.892 | 216158.023 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 46 28.39647 | 94 26 51.26387 | 548242.896 | 216157.971 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 46 28.39693 | 94 26 51.26361 | 548242.915 | 216158.017 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 46 28.39690 | 94 26 51.26361 | 548242.915 | 216158.014 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 44 46 28.39693 | 94 26 51.26361 | 548242.915 | 216158.017 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 28.39775 | 94 26 51.26475 | 548242.832 | 216158.100 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 46 28.39721 | 94 26 51.26477 | 548242.831 | 216158.045 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 46 28.39721 | 94 26 51.26477 | 548242.831 | 216158.045 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 28.39651 | 94 26 51.26410 | 548242.880 | 216157.975 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 46 28.39650 | 94 26 51.26411 | 548242.879 | 216157.974 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 46 28.39650 | 94 26 51.26411 | 548242.879 | 216157.974 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 28.39410 | 94 26 51.26153 | 548243.064 | 216157.730 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508442.107 | 975298.215 | 1264638.029 | 16269409.606 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2508442.110 | 975298.162 | 1264638.032 | 16269409.554 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2508442.129 | 975298.209 | 1264638.051 | 16269409.600 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2508442.129 | 975298.206 | 1264638.051 | 16269409.597 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 2508442.129 | 975298.209 | 1264638.051 | 16269409.600 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508442.047 | 975298.292 | 1264637.970 | 16269409.685 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2508442.045 | 975298.237 | 1264637.968 | 16269409.630 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2508442.045 | 975298.237 | 1264637.968 | 16269409.630 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508442.094 | 975298.166 | 1264638.015 | 16269409.558 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2508442.093 | 975298.165 | 1264638.014 | 16269409.557 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2508442.093 | 975298.165 | 1264638.014 | 16269409.557 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2508442.278 | 975297.921 | 1264638.196 | 16269409.311 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LENNY-DI9697-3W-31MAR2020.jpg | W | Mar 31, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LENNY-DI9697-2-31MAR2020.jpg | | Mar 31, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LENNY-DI9697-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LESTER PRAIRIE MUNICIPAL TANK



**Mn/DOT Name:** LESTER PRAIRIE MUNICIPAL TANK **NGS Name:** LESTER PRAIRIE MUNICIPAL TANK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0607 Get Map
**NGS Quad / Sta Num :** 44094111/1038
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 2 | 116 N | 27 W | 445306.03 | 940220.32 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (2016)

**Stamping:**

IN THE CENTRAL PART OF LESTER PRAIRIE, 0.6 MILE EAST ON COUNTY ROAD 23 FROM THE JUNCTION OF COUNTY ROAD 23 AND TRUNK HIGHWAY 261 (BABCOCK AVENUE) IN LESTER PRAIRIE, THEN 354.0 FEET SOUTH ON OAK STREET, 171.39 FEET NORTH OF THE CENTERLINE OF COUNTY ROAD 109, 165.65 FEET WEST OF STATION Y 124 RESET, 126.52 FEET EAST OF THE CENTERLINE OF OAK STREET.

**Station Notes**

2011- THE OLD TOWER WAS REMOVED, AND A NEW TOWER INSTALLED IN A NEW LOCATION.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.226 12B = -90.252 09 = -90.161 03 = -90.020**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 06.03417 | 94 02 20.32405 | 654061.872 | 256938.046 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 06.02790 | 94 02 20.31953 | 654062.202 | 256937.414 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 06.16300 | 94 02 19.43200 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2614563.888 | 1015251.101 | 1371220.740 | 16308043.365 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2614564.213 | 1015250.466 | 1371221.057 | 16308042.726 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1989961.156 | 687173.847 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# LESTER PRAIRIE ST PETERS CH



**Mn/DOT Name:** LESTER PRAIRIE ST PETERS CH
**NGS Name:** LESTER PRAIRIE ST PETERS CH
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0605 Get Map
**NGS Quad / Sta Num :** 44094111/1039
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 4 | 116 N | 27 W | 445301.28 | 940417.99 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH SPIRE | NGS |

**Description:** (2016)

**Stamping:**

1.5 MILES WEST OF LESTER PRAIRIE, 1.6 MILES SOUTH AND WEST ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 0.5 MILE NORTH ON COUNTY ROAD 63, 0.56 MILE SOUTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 63 AND 190TH STREET, 62.78 FEET WEST OF THE CENTERLINE OF COUNTY ROAD 63.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.269 12B = -90.305 09 = -90.207 03 = -90.059**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 01.28372 | 94 04 17.98605 | 645593.379 | 256396.782 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 01.27746 | 94 04 17.98183 | 645593.688 | 256396.151 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 01.41300 | 94 04 17.07700 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2606092.268 | 1014775.750 | 1362746.101 | 16307672.528 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2606092.571 | 1014775.115 | 1362746.396 | 16307671.890 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1981490.517 | 686698.519 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

**Mn/DOT Name:** LEVEE MN085 **NGS Name:** LEVEE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI1769 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 114 N | 29 W | 443750.27 | 942112.03 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) | SURVEY DISK | MN-085 |

**Description:** (2006) **Stamping:** LEVEE 1993

7.0 MILES SOUTH OF BROWNTON, 6.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.1 MILES EAST ON COUNTY ROAD 58, 16.0 FEET NORTH OF COUNTY ROAD 58, 10.0 FEET EAST OF A FIELD ENTRANCE, 20.0 FEET SOUTHWEST OF A POWER POLE AND A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.230 | .262 | | 942.085 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1033.138 | .262 | | 941.993 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 942.049 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1033.088 | .262 | | 942.072 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 942.157 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1033.102 | .131 | | 942.285 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1033.102 | .131 | | 942.285 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1033.167 | .131 | | 942.285 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1033.167 | .131 | | 942.285 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 942.157 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.708 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -91.145 12B = -91.145 09 = -91.017 03 = -90.895**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 50.26840 | 94 21 12.02936 | 572895.784 | 163753.458 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 37 50.26858 | 94 21 12.02866 | 572895.835 | 163753.476 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 37 50.26837 | 94 21 12.02896 | 572895.813 | 163753.455 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 50.26841 | 94 21 12.02977 | 572895.754 | 163753.459 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 37 50.26800 | 94 21 12.02976 | 572895.755 | 163753.417 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 37 50.26800 | 94 21 12.02976 | 572895.755 | 163753.417 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 50.26800 | 94 21 12.02912 | 572895.802 | 163753.417 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 37 50.26800 | 94 21 12.02912 | 572895.802 | 163753.417 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 37 50.26800 | 94 21 12.02912 | 572895.802 | 163753.417 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 37 50.26800 | 94 21 12.02912 | 572895.802 | 163753.417 | .033 | C | GPS - STATIC | 2006 | HGAYL |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 50.26439 | 94 21 12.02983 | 572895.751 | 163753.052 | .033 | C | GPS - STATIC | 1993 | CO43 |

# LEVEE MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532684.982 | 922709.717 | 1288228.252 | 16216536.351 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2532685.033 | 922709.735 | 1288228.303 | 16216536.368 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2532685.011 | 922709.714 | 1288228.281 | 16216536.347 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532684.953 | 922709.718 | 1288228.223 | 16216536.352 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2532684.953 | 922709.677 | 1288228.223 | 16216536.311 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2532684.953 | 922709.677 | 1288228.223 | 16216536.311 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532685.000 | 922709.677 | 1288228.269 | 16216536.310 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2532685.000 | 922709.677 | 1288228.269 | 16216536.310 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2532685.000 | 922709.677 | 1288228.269 | 16216536.310 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2532685.000 | 922709.677 | 1288228.269 | 16216536.310 | .033 | C | GPS - STATIC | 2006 | HGAYL |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532684.947 | 922709.311 | 1288228.212 | 16216535.945 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEVEE-DI1769-3N-31MAR2020.jpg | N | Mar 31, 2020 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEVEE-DI1769-2-31MAR2020.jpg | | Mar 31, 2020 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEVEE-DI1769-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LEVEE MN085 RESET



**Mn/DOT Name:** LEVEE MN085 RESET
**NGS Name:** LEVEE RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 114 N | 29 W | 443750.27 | 942112.03 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MN-085 |

**Description:** (2024) **Stamping:** LEVEE 1993 2024

7.0 MILES SOUTH OF BROWNTON, 6.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.1 MILES EAST ON COUNTY ROAD 58, 16.0 FEET NORTH OF COUNTY ROAD 58, 10.0 FEET EAST OF A FIELD ENTRANCE, 20.0 FEET SOUTHWEST OF A POWER POLE AND A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.993 | .262 | | 941.845 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**No Geoid Separations Available**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 50.26763 | 94 21 12.02941 | 572895.781 | 163753.380 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532684.978 | 922709.639 | 1288228.247 | 16216536.273 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEVEE_RESET-3N-22MAY2024.jpg | N | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEVEE_RESET-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEVEE_RESET-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LEWI MNDT



**Mn/DOT Name:** LEWI MNDT **NGS Name:** LEWI

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF8429 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 27 | 115 N | 29 W | 444355.89 | 941754.20 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** LEWI 1990

2.5 MILES EAST OF BROWNTON, 3.75 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 111.9, 53.7 FEET SOUTH OF TRUNK HIGHWAY 212, 97.0 FEET EAST-NORTHEAST OF A CABLE MARKER POST, 13.0 FEET WEST OF A FIELD ENTRANCE, 93.6 FEET EAST-NORTHEAST OF A RIGHT-OF-WAY POST/WITNESS POST.

**Station Pair:** DANZER - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.443 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1033.443 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.443 | | | 942.613 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1033.443 | .131 | | 942.875 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1033.443 | | | 942.636 | .013 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1033.403 | .262 | | 942.590 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 942.613 | .016 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1033.364 | .262 | | 942.662 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 942.810 | .059 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1033.397 | .131 | | 942.875 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1033.397 | .131 | | 942.875 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 942.810 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1033.430 | .131 | | 942.882 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1033.430 | .131 | | 942.882 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.708 | | | | | | GPS - STATIC | 1990 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.820 12B = -90.813 09 = -90.702 03 = -90.548**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.89051 | 94 17 54.19655 | 587050.521 | 200836.404 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 55.89048 | 94 17 54.19668 | 587050.511 | 200836.401 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 55.89034 | 94 17 54.19586 | 587050.571 | 200836.387 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 55.89051 | 94 17 54.19655 | 587050.521 | 200836.404 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.89033 | 94 17 54.19740 | 587050.459 | 200836.386 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 55.89101 | 94 17 54.19825 | 587050.398 | 200836.454 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 43 55.89101 | 94 17 54.19825 | 587050.398 | 200836.454 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.89009 | 94 17 54.19696 | 587050.491 | 200836.361 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 55.89009 | 94 17 54.19696 | 587050.491 | 200836.361 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 43 55.89009 | 94 17 54.19696 | 587050.491 | 200836.361 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 43 55.89143 | 94 17 54.20022 | 587050.255 | 200836.496 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 43 55.89143 | 94 17 54.20022 | 587050.256 | 200836.495 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2547125.550 | 959677.554 | 1303119.079 | 16253316.939 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2547125.541 | 959677.551 | 1303119.070 | 16253316.936 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2547125.600 | 959677.537 | 1303119.129 | 16253316.921 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2547125.550 | 959677.554 | 1303119.079 | 16253316.939 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2547125.488 | 959677.536 | 1303119.018 | 16253316.921 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2547125.427 | 959677.606 | 1303118.957 | 16253316.991 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 2547125.427 | 959677.606 | 1303118.957 | 16253316.991 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2547125.520 | 959677.512 | 1303119.049 | 16253316.897 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2547125.520 | 959677.512 | 1303119.049 | 16253316.897 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2547125.520 | 959677.512 | 1303119.049 | 16253316.897 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2547125.285 | 959677.649 | 1303118.816 | 16253317.036 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2547125.285 | 959677.649 | 1303118.816 | 16253317.036 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEWI-DF8429-3S-15APR2015.jpg | S | Apr 15, 2015 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEWI-DF8429-2-15APR2015.jpg | | Apr 15, 2015 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LEWI-DF8429-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LLIN MNDT



**Mn/DOT Name:** LLIN MNDT
**NGS Name:** LLIN
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF8430 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 115 N | 30 W | 444329.80 | 942538.18 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2011 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 28 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2001) **Stamping:** LLIN 1990

2.5 MILES EAST OF STEWART, 2.55 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 105.3, 129.0 FEET NORTH OF TRUNK HIGHWAY 212, 78.8 FEET SOUTH-SOUTHEAST OF A TELEPHONE POLE, 54.5 FEET NORTH-NORTHWEST OF A POWER POLE, 41.0 FEET WEST OF UNIT AVENUE, 19.0 FEET SOUTH OF THE SOUTH RAIL OF A RAILROAD, 6.8 FEET NORTH OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1049.480 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1049.476 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1049.027 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 958.896 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1049.411 | .262 | | 958.942 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 959.073 | .050 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1049.473 | .131 | | 959.139 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1049.473 | .131 | | 959.139 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 959.073 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1049.473 | .131 | | 959.247 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1049.473 | .131 | | 959.247 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |

**Geoid Separations(ft): GEOID18 = -90.607 12B = -90.610 09 = -90.469 03 = -90.334**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.79562 | 94 25 38.17559 | 553561.283 | 198082.286 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.79536 | 94 25 38.17593 | 553561.258 | 198082.260 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 29.79602 | 94 25 38.17688 | 553561.189 | 198082.327 | .026 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 43 29.79602 | 94 25 38.17688 | 553561.189 | 198082.327 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.79512 | 94 25 38.17592 | 553561.259 | 198082.235 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 43 29.79512 | 94 25 38.17592 | 553561.259 | 198082.235 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 43 29.79590 | 94 25 38.17790 | 553561.116 | 198082.314 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 43 29.79590 | 94 25 38.17790 | 553561.117 | 198082.314 | .033 | C | GPS - STATIC | 2003 | HOLIV |

# LLIN MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2513619.566 | 957183.696 | 1269591.208 | 16251235.845 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2513619.542 | 957183.670 | 1269591.183 | 16251235.819 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2513619.473 | 957183.737 | 1269591.116 | 16251235.887 | .026 | | ADJUSTMENT | 2007 | GPS2300 |
| 2513619.473 | 957183.737 | 1269591.116 | 16251235.887 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2513619.542 | 957183.646 | 1269591.184 | 16251235.794 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2513619.542 | 957183.646 | 1269591.184 | 16251235.794 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2513619.400 | 957183.725 | 1269591.042 | 16251235.876 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2513619.400 | 957183.725 | 1269591.042 | 16251235.876 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LLIN-DF8430-3N-18APR2011.jpg | N | Apr 18, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LLIN-DF8430-2-18APR2011.jpg | | Apr 18, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LLIN-DF8430-1-18APR2011.jpg | | Apr 18, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# LONG HORN MN085



**Mn/DOT Name:** LONG HORN MN085 **NGS Name:** LONG HORN

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9253 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 35 | 116 N | 28 W | 444818.24 | 940925.01 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2011 | POOR | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 10 FT)
**Disk Type:** SURVEY DISK
**Mon. Agency:** MN-085

**Description:** (2016) **Stamping:** LONG HORN

2.49 MILES NORTH OF GLENCOE, 0.4 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 39.0 FEET EAST ON 16TH STREET, THEN 1.0 MILE NORTH ON HENNEPIN AVENUE, THEN 1.1 MILES NORTH ON GARDEN AVENUE, THEN 0.3 MILE WEST ON 130TH STREET, 25.0 FEET NORTH OF 130TH STREET, 7.0 FEET EAST OF A FIELD DRIVE EAST OF A BROWN HOUSE WITH FIRE NUMBER 8262, 18.5 FEET WEST OF A WITNESS POST.

**Station Notes**

04-26-11 THE DISK SURFACE IS BADLY BEATEN. THE CAP WAS OFF THE ALUMINUM ROD AND WOULDN'T REMOUNT COMPLETELY ON THE ROD.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 945.976 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 946.058 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1036.612 | .131 | | 946.212 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1036.612 | .131 | | 946.212 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1036.284 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.640 12B = -90.646 09 = -90.571 03 = -90.400**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 18.24390 | 94 09 25.00913 | 623654.446 | 227589.957 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 18.24398 | 94 09 25.01003 | 623654.381 | 227589.965 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 18.24350 | 94 09 25.00955 | 623654.416 | 227589.916 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 48 18.24350 | 94 09 25.00955 | 623654.415 | 227589.916 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 18.23837 | 94 09 25.00941 | 623654.429 | 227589.397 | .033 | C | GPS - STATIC | 1993 | CO43 |

# LONG HORN MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583932.303 | 986143.193 | 1340240.663 | 16279322.017 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583932.238 | 986143.201 | 1340240.598 | 16279322.027 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583932.272 | 986143.152 | 1340240.633 | 16279321.977 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2583932.272 | 986143.152 | 1340240.633 | 16279321.977 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583932.281 | 986142.633 | 1340240.635 | 16279321.458 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LONG_HORN-DF9253-3NW-27APR2011.jpg | NW | Apr 27, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LONG_HORN-DF9253-2-27APR2011.jpg | | Apr 27, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LONG_HORN-DF9253-1-27APR2011.jpg | | Apr 27, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** LUCKY **NGS Name:** LUCKY

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DR3194 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 117 N | 27 W | 445423.16 | 940426.79 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2019 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 46 FT)
**Disk Type:** METAL ROD (WITH REMOVABLE ID DISK)
**Mon. Agency:** MNDT

**Description:** (2019) **Stamping:** LUCKY 2019

2.25 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 1.0 MILE WEST ON TRUNK HIGHWAY 7, AT TRUNK HIGHWAY 7 MILEPOINT 156.9, 63.2 FEET NORTH OF TRUNK HIGHWAY 7, 151.0 FEET WEST OF CABLE AVENUE, 18.1 FEET SOUTHWEST OF A CABLE BOX, 1.5 FEET SOUTH OF A WITNESS POST.

**Station Pair:** 4302 U - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1008.863 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1008.915 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1008.863 | | | 918.660 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1008.863 | | | 918.660 | .011 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1008.797 | .262 | | 918.545 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1008.955 | .262 | | 918.673 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |

**Geoid Separations(ft): GEOID18 = -90.252 12B = -90.282 09 = -90.187 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.16369 | 94 04 26.78840 | 644902.625 | 264685.153 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 23.16369 | 94 04 26.78840 | 644902.625 | 264685.153 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 23.16328 | 94 04 26.78863 | 644902.609 | 264685.112 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 23.16349 | 94 04 26.78866 | 644902.607 | 264685.133 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 23.16345 | 94 04 26.78871 | 644902.603 | 264685.129 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605466.037 | 1023068.439 | 1362222.263 | 16315970.170 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2605466.037 | 1023068.439 | 1362222.263 | 16315970.170 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2605466.020 | 1023068.397 | 1362222.246 | 16315970.128 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2605466.018 | 1023068.418 | 1362222.244 | 16315970.150 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605466.015 | 1023068.414 | 1362222.240 | 16315970.146 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LUCKY-DR3194-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LUCKY-DR3194-2-17JUN2024.jpg | | Jun 17, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/LUCKY-DR3194-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** LYNN
**NGS Name:** LYNN
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0669 Get Map
**NGS Quad / Sta Num :** 44094144/1009
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 5 | 116 N | 30 W | 445306.79 | 942840.58 | | 1 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2005 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | UNSPECIFIC DISK TYPE (SEE TEXT) | NGS |

**Description:** (2016) **Stamping:** LYNN 1956

5.16 MILES WEST OF HUTCHINSON, 2.8 MILES WEST ON TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 2.7 MILES WEST ON COUNTY ROAD 14, THEN 0.5 MILE SOUTH ON COUNTY ROAD 58, AT THE TOP OF A HILL, 145.9 FEET SOUTH OF LYNN RM 2, 92.5 FEET NORTHEAST OF A POWER POLE, 90.4 FEET NORTHEAST OF LYNN RM 1, 84.0 FEET NORTH OF A TELEPHONE POLE, 52.5 FEET SOUTH OF A TELEPHONE POLE, 27.0 FEET EAST OF COUNTY ROAD 58.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1115.483 | .131 | | 1026.307 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1115.516 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.462 12B = -89.455 09 = -89.308 03 = -89.229**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 06.79237 | 94 28 40.58238 | 540279.616 | 256490.958 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 06.78746 | 94 28 40.57629 | 540280.055 | 256490.462 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 06.92760 | 94 28 39.62640 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500792.669 | 1015687.615 | 1257488.796 | 16309883.269 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500793.104 | 1015687.116 | 1257489.225 | 16309882.764 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1876191.263 | 687610.648 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

# LYNN RM 1



**Mn/DOT Name:** LYNN RM 1 **NGS Name:** LYNN RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9207 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 5 | 116 N | 30 W | 445306.00 | 942840.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2005 | DESTROYED | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** LYNN NO 1 1956

5.16 MILES WEST OF HUTCHINSON, 2.8 MILES WEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 2.7 MILES WEST ON COUNTY ROAD 14, THEN 0.5 MILE SOUTH ON COUNTY ROAD 58, AT THE TOP OF A HILL, 145.9 FEET SOUTH OF LYNN RM 2, 92.5 FEET NORTHEAST OF A POWER POLE, 90.4 FEET SOUTHEAST OF STATION LYNN, 84.0 FEET NORTH OF A TELEPHONE POLE, 52.5 FEET SOUTH OF A TELEPHONE POLE, 27.0 FEET EAST OF COUNTY ROAD 58.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.465 12B = -89.458 09 = -89.311 03 = -89.232**

# LYNN RM 2



**Mn/DOT Name:** LYNN RM 2 **NGS Name:** LYNN RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9208 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 5 | 116 N | 30 W | 445306.00 | 942840.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2005 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** LYNN NO 2 1956

5.16 MILES WEST OF HUTCHINSON, 2.8 MILES WEST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 2.7 MILES WEST ON COUNTY ROAD 14, THEN 0.5 MILE SOUTH ON COUNTY ROAD 58, AT THE TOP OF A HILL, 145.9 FEET NORTH OF STATION LYNN, 92.5 FEET NORTHEAST OF A POWER POLE, 84.0 FEET NORTH OF A TELEPHONE POLE, 52.5 FEET SOUTH OF A TELEPHONE POLE, 27.0 FEET EAST OF COUNTY ROAD 58.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.465 12B = -89.458 09 = -89.311 03 = -89.232**

**Mn/DOT Name:** M 123 **NGS Name:** M 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0053 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 115 N | 29 W | 444421.93 | 941930.60 | 1 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | RECESSED 1 IN. | SEE DESCRIPTION |

**Monument Type**
CONCRETE MONUMENT (CAST-IN-PLACE)

**Disk Type**
BENCH MARK DISK

**Mon. Agency**
NGS

**Description:** (1986) **Stamping:** M 123 1934

1.0 MILE EAST-NORTHEAST OF BROWNTON, 2.45 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 0.5 MILE NORTH ON ORANGE AVENUE TO THE RAILROAD TRACKS, 70.0 FEET EAST OF ORANGE AVENUE, 38.0 FEET NORTH OF THE RAILROAD TRACKS, 4.0 FEET SOUTHWEST OF A POLE, 0.8 FOOT WEST OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.380 | .007 | 1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1032.380 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.943 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1031.943 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1031.943 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1031.943 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.298 | .262 | | 941.681 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.741 12B = -90.741 09 = -90.617 03 = -90.462**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.93181 | 94 19 30.60348 | 580080.671 | 203446.316 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540176.920 | 962341.210 | 1296205.109 | 16256065.327 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/M_123-PQ0053-3E-21APR2011.jpg | E | Apr 21, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/M_123-PQ0053-2-21APR2011.jpg | | Apr 21, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/M_123-PQ0053-1-21APR2011.jpg | | Apr 21, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MALL MNDT TEMP



**Mn/DOT Name:** MALL MNDT TEMP
**NGS Name:** MALL TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1183 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 116 N | 29 W | 445231.93 | 942231.54 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | MNDT |

**Description:** (2016) **Stamping:** MALL 1985

AT THE SOUTH EDGE OF HUTCHINSON, 1.7 MILES SOUTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 IN HUTCHINSON, 230.98 FEET NORTH OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 15AND CENTURY AVENUE, 41.3 FEET WEST OF A NAIL AND DISK IN A CABLE MARKER POST, 32.2 FEET EAST OF TRUNK HIGHWAY 15.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.927 | .197 | | 977.347 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.402 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.905 12B = -89.888 09 = -89.760 03 = -89.649**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 31.93313 | 94 22 31.53895 | 566862.876 | 253027.833 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 31.92815 | 94 22 31.53370 | 566863.256 | 253027.329 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 52 31.92905 | 94 22 31.53456 | 566863.193 | 253027.420 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 32.06560 | 94 22 30.59420 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527345.668 | 1012018.724 | 1283989.476 | 16305887.422 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527346.044 | 1012018.217 | 1283989.845 | 16305886.911 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527345.982 | 1012018.309 | 1283989.785 | 16305887.004 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902744.227 | 683941.591 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# MARION MNDT TEMP



**Mn/DOT Name:** MARION MNDT TEMP
**NGS Name:** MARION TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1184 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 12 | 115 N | 30 W | 444652.58 | 942232.81 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2010 | NOT FOUND | Horz=NO Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| PIPE (<10 FT) | UNMONUMENTED | MNDT |

**Description:** (1984) **Stamping:** MARION 1984

4.0 MILES NORTH OF BROWNTON, 4.0 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 93.45, 71.5 FEET WEST OF TRUNK HIGHWAY 15, 14.6 FEET SOUTHWEST OF A NAIL AND A DISK IN A POWER POLE WITH A LIGHT, 8.0 FEET NORTHWEST OF A NAIL AND A DISK IN A POWER POLE WITH A TRANSFORMER, 5.9 FEET NORTH OF A NAIL AND A DISK IN THE EAST POST OF A SIGN, ON THE WEST SIDE OF TRUNK HIGHWAY 15 BETWEEN THE LAKE MARION BALLROOM AND SUPPER CLUB.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1051.507 | .197 | | 961.392 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1050.884 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.469 12B = -90.462 09 = -90.325 03 = -90.187**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.57545 | 94 22 32.81174 | 566879.938 | 218657.541 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.57083 | 94 22 32.80792 | 566880.215 | 218657.073 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 46 52.57108 | 94 22 32.80788 | 566880.218 | 218657.099 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 52.70780 | 94 22 31.86780 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527096.031 | 977652.814 | 1283316.178 | 16271533.836 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527096.305 | 977652.345 | 1283316.446 | 16271533.364 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527096.308 | 977652.370 | 1283316.449 | 16271533.389 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902494.641 | 649575.952 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# MATTHEW MNDT



**Mn/DOT Name:** MATTHEW MNDT
**NGS Name:** MATTHEW
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9348 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 114 N | 29 W | 444157.34 | 942231.60 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2006 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** MATTHEW 1992

2.6 MILES SOUTHWEST OF BROWNTON, 1.75 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 87.75, 137.3 FEET EAST OF TRUNK HIGHWAY 15, 86.0 FEET SOUTHEAST OF A POWER POLE, 24.0 FEET SOUTH OF 57TH STREET, 13.0 FEET WEST OF AN ENTRANCE, 5.9 FEET NORTHEAST OF A WITNESS POST.

**Station Notes**
FOUND THE DISK MISSING AND THE ROD BENT OVER.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.723 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1030.651 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.241 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 939.857 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 940.041 | .033 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1030.641 | .131 | | 940.175 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1030.641 | .131 | | 940.175 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |

**Geoid Separations(ft): GEOID18 = -90.820 12B = -90.813 09 = -90.692 03 = -90.558**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.34022 | 94 22 31.60097 | 567061.981 | 188757.031 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.34049 | 94 22 31.60225 | 567061.888 | 188757.058 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.34074 | 94 22 31.60350 | 567061.798 | 188757.083 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 41 57.34074 | 94 22 31.60350 | 567061.798 | 188757.083 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.33623 | 94 22 31.60032 | 567062.029 | 188756.627 | .033 | C | GPS - STATIC | 1993 | H1993 |

# MATTHEW MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527046.037 | 947754.998 | 1282898.341 | 16241644.428 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527045.945 | 947755.026 | 1282898.249 | 16241644.457 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527045.854 | 947755.052 | 1282898.159 | 16241644.484 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2527045.854 | 947755.052 | 1282898.159 | 16241644.484 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527046.082 | 947754.594 | 1282898.381 | 16241644.024 | .033 | C | GPS - STATIC | 1993 | H1993 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | | S | Nov 30, 2011 |
| Monument: | | | Nov 30, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MATTHEW-DG9348-1-30NOV2011.jpg | | Nov 30, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MATTHEW MNDT RESET



**Mn/DOT Name:** MATTHEW MNDT RESET
**NGS Name:** MATTHEW RESET
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 114 N | 29 W | 444157.34 | 942231.60 | 2 | C |

**NGS ACRN:** DP9913 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** MATTHEW 1992 2015

2.6 MILES SOUTHWEST OF BROWNTON, 1.75 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 87.75, 137.3 FEET EAST OF TRUNK HIGHWAY 15, 24.0 FEET SOUTH OF 57TH STREET, 13.0 FEET WEST OF A FIELD ENTRANCE, 10.7 FEET EAST OF A WITNESS POST.

**Station Pair:** ROBIN MNDT - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.379 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1030.379 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1030.379 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1030.379 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.434 | .262 | | 939.614 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1030.418 | .262 | | 939.598 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1030.395 | .262 | | 939.578 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1030.379 | | | 939.562 | .019 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1030.379 | .131 | | 939.782 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1030.379 | | | 939.562 | .019 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1030.339 | .262 | | 939.522 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.820 12B = -90.813 09 = -90.692 03 = -90.558**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.33884 | 94 22 31.60075 | 567061.997 | 188756.891 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 41 57.33948 | 94 22 31.60065 | 567062.004 | 188756.956 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 41 57.33887 | 94 22 31.60049 | 567062.016 | 188756.894 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 41 57.33938 | 94 22 31.60104 | 567061.976 | 188756.946 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 41 57.33938 | 94 22 31.60104 | 567061.976 | 188756.946 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 44 41 57.33965 | 94 22 31.60064 | 567062.005 | 188756.973 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.33918 | 94 22 31.60154 | 567061.940 | 188756.925 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# MATTHEW MNDT RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527046.052 | 947754.858 | 1282898.354 | 16241644.289 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2527046.060 | 947754.923 | 1282898.363 | 16241644.353 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2527046.071 | 947754.861 | 1282898.373 | 16241644.291 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2527046.032 | 947754.913 | 1282898.334 | 16241644.343 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 2527046.032 | 947754.913 | 1282898.334 | 16241644.343 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 2527046.060 | 947754.940 | 1282898.364 | 16241644.370 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527045.995 | 947754.893 | 1282898.298 | 16241644.324 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MATTHEW_RESET-DP9913-3S-17SEP2025.jpg | S | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MATTHEW_RESET-DP9913-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MATTHEW_RESET-DP9913-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MICH MNDT TEMP



**Mn/DOT Name:** MICH MNDT TEMP
**NGS Name:** MICH TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1185 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 32 | 117 N | 29 W | 445342.83 | 942114.06 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2000 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | MNDT |

**Description:** (2016) **Stamping:** MICH 1985

IN THE EAST PART OF HUTCHINSON, 0.8 MILE EAST ON TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 80.0 FEET SOUTH ON MICHIGAN STREET, 68.4 FEET SOUTHWEST OF A NAIL AND A DISK IN A POWER POLE, 58.4 FEET NORTHWEST OF A FIRE HYDRANT, 25.5 FEET WEST OF MICHIGAN STREET.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.817 | .197 | | 984.319 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.193 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.823 12B = -89.816 09 = -89.688 03 = -89.580**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 42.82685 | 94 21 14.05602 | 572418.126 | 260226.412 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 42.82203 | 94 21 14.05102 | 572418.488 | 260225.926 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 53 42.82253 | 94 21 14.05082 | 572418.501 | 260225.976 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 42.96000 | 94 21 13.11390 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532956.071 | 1019173.276 | 1289686.648 | 16312970.722 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532956.429 | 1019172.787 | 1289687.000 | 16312970.228 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2532956.444 | 1019172.837 | 1289687.015 | 16312970.279 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1908354.583 | 691096.172 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# MILL MNDT



**Mn/DOT Name:** MILL MNDT
**NGS Name:** MILL
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0649 Get Map
**NGS Quad / Sta Num :** 44094134/1059
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 19 | 114 N | 29 W | 443943.27 | 942233.05 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1975 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | STEEL ROD IMBED IN MON |

**Monument Type:** CONCRETE MONUMENT (CAST-IN-PLACE)
**Disk Type:** HORIZONTAL CONTROL DISK
**Mon. Agency:** MNDT

**Description:** (1985)
**Stamping:** MILL 1975

5.0 MILES SOUTH OF BROWNTON, 4.3 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 85.15, 64.5 FEET EAST OF TRUNK HIGHWAY 15, 87.5 FEET NORTH OF A POWER POLE, 30.0 FEET NORTH OF A DRIVEWAY, 134.75 FEET EAST OF MILL MNDT RM 2, 1.8 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

### NAVD88

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1040.392 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1040.392 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1040.447 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1040.365 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

### NGVD29

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.995 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

### NAVD88

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1040.526 | .262 | | 949.552 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1040.444 | .262 | | 949.463 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| | | | 949.421 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1040.451 | .131 | | 949.601 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1040.451 | .131 | | 949.601 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| | | | 949.601 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1040.352 | .131 | | 949.647 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1040.352 | .131 | | 949.647 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1040.352 | .131 | | 949.647 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1040.352 | .131 | | 949.647 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 949.608 | .029 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1040.352 | .131 | | 949.647 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1040.352 | .131 | | 949.647 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 949.608 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1040.352 | .131 | | 949.706 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1040.352 | .131 | | 949.706 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |
| 1040.024 | .197 | | 949.375 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

### NGVD29

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.893 | | | | | | RECIPROCAL VERTICAL ANGLE | 1975 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.978 12B = -90.981 09 = -90.850 03 = -90.718**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.26845 | 94 22 33.04684 | 567000.481 | 175178.341 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 39 43.26974 | 94 22 33.04646 | 567000.508 | 175178.471 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 39 43.26918 | 94 22 33.04703 | 567000.467 | 175178.414 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.26893 | 94 22 33.04816 | 567000.385 | 175178.389 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 39 43.26893 | 94 22 33.04816 | 567000.385 | 175178.389 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 39 43.26893 | 94 22 33.04816 | 567000.385 | 175178.389 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 39 43.26895 | 94 22 33.04826 | 567000.378 | 175178.391 | .033 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 39 43.26895 | 94 22 33.04826 | 567000.378 | 175178.391 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.26891 | 94 22 33.04736 | 567000.443 | 175178.387 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 39 43.26891 | 94 22 33.04736 | 567000.443 | 175178.387 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 39 43.26891 | 94 22 33.04736 | 567000.443 | 175178.387 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 39 43.26891 | 94 22 33.04736 | 567000.443 | 175178.387 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 39 43.26891 | 94 22 33.04736 | 567000.443 | 175178.387 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 39 43.26891 | 94 22 33.04736 | 567000.443 | 175178.387 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 39 43.26844 | 94 22 33.04844 | 567000.365 | 175178.339 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 39 43.26844 | 94 22 33.04844 | 567000.365 | 175178.339 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 44 39 43.26982 | 94 22 33.05047 | 567000.218 | 175178.478 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.26406 | 94 22 33.04688 | 567000.480 | 175177.896 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.39830 | 94 22 32.10809 | | | .100 | 2 | CLASSICAL SURVEY | 1977 | 16059 |

# MILL MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526879.183 | 934178.705 | 1282564.730 | 16228073.665 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2526879.211 | 934178.835 | 1282564.760 | 16228073.795 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2526879.170 | 934178.779 | 1282564.718 | 16228073.739 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526879.088 | 934178.754 | 1282564.636 | 16228073.715 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2526879.088 | 934178.754 | 1282564.636 | 16228073.715 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2526879.088 | 934178.754 | 1282564.636 | 16228073.715 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2526879.080 | 934178.756 | 1282564.628 | 16228073.717 | .033 | | ADJUSTMENT | 2007 | GPS2300 |
| 2526879.080 | 934178.756 | 1282564.628 | 16228073.717 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526879.146 | 934178.752 | 1282564.693 | 16228073.712 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2526879.146 | 934178.752 | 1282564.693 | 16228073.712 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2526879.146 | 934178.752 | 1282564.693 | 16228073.712 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2526879.146 | 934178.752 | 1282564.693 | 16228073.712 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2526879.146 | 934178.752 | 1282564.693 | 16228073.712 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2526879.146 | 934178.752 | 1282564.693 | 16228073.712 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2526879.067 | 934178.704 | 1282564.615 | 16228073.666 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2526879.067 | 934178.704 | 1282564.615 | 16228073.666 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 2526878.921 | 934178.845 | 1282564.470 | 16228073.808 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526879.178 | 934178.261 | 1282564.720 | 16228073.220 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902277.559 | 606101.965 | | | .100 | 2 | CLASSICAL SURVEY | 1977 | 16059 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MILL-PQ0649-3E-22MAY2024.jpg | E | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MILL-PQ0649-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MILL-PQ0649-1-22MAY2024.jpg | | May 22, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MILL MNDT RM 2



**Mn/DOT Name:** MILL MNDT RM 2 **NGS Name:** MILL RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0651 Get Map
**NGS Quad / Sta Num :** 44094134/1060
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 24 | 114 N | 30 W | 443943.35 | 942234.91 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1975 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (1985) **Stamping:** MILL NO 2 1975

5.0 MILES SOUTH OF BROWNTON, 4.3 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 85.15, 134.75 FEET WEST OF STATION MILL MNDT, 69.5 FEET WEST OF TRUNK HIGHWAY 15, 1.8 FEET SOUTH OF A WITNESS POST.

**Station Pair:** COLIN MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.119 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1039.119 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1039.119 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1039.037 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.666 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.266 | .262 | | 948.292 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1039.092 | .262 | | 948.112 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1039.040 | .197 | | 948.390 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.007 | | | | | | RECIPROCAL VERTICAL ANGLE | 1975 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.978 12B = -90.981 09 = -90.846 03 = -90.718**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.34862 | 94 22 34.90705 | 566865.999 | 175186.035 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 39 43.34867 | 94 22 34.90737 | 566865.976 | 175186.040 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.34959 | 94 22 34.91154 | 566865.674 | 175186.132 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.34382 | 94 22 34.90796 | 566865.935 | 175185.549 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 39 43.47807 | 94 22 33.96911 | | | .100 | 2 | CLASSICAL SURVEY | 1977 | 16059 |

# MILL MNDT RM 2



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526744.780 | 934187.442 | 1282430.469 | 16228084.050 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2526744.757 | 934187.447 | 1282430.446 | 16228084.055 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526744.456 | 934187.542 | 1282430.146 | 16228084.154 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526744.712 | 934186.956 | 1282430.395 | 16228083.565 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902143.093 | 606110.661 | | | .100 | 2 | CLASSICAL SURVEY | 1977 | 16059 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MILL_RM_2-PQ0651-3W-22MAY2024.jpg | W | May 22, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MILL_RM_2-PQ0651-2-22MAY2024.jpg | | May 22, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/MILL_RM_2-PQ0651-1-04JUN2019.jpg | | Jun 4, 2019 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MNCORS BRWN BROWNTON ARP



**Mn/DOT Name:** MNCORS BRWN BROWNTON ARP
**NGS Name:** BROWNTON MNCORS ARP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS2270 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 31 | 115 N | 29 W | 444349.46 | 942122.34 | 3 | B |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2004 | 2024 | GOOD | Horz=YES Vert=? | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | SEE DESCRIPTION | MNDT |

**Description:** (2012)

**Stamping:**

IN BROWNTON, 0.3 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 TO TRUNK HIGHWAY 15 MILEPOINT 89.85, THEN 0.8 MILE EAST ON COUNTY ROAD 32 (DIVISION STREET), THEN 0.1 MILE SOUTH ON 1ST AVENUE SOUTH, AT THE MCLEOD COUNTY MAINTENANCE BUILDING. THE ANTENNA IS AFFIXED TO A NUT AND BOLT WELDED TO A STEEL MAST ATTACHED TO THE EAST SIDE OF THE BUILDING.

**Station Notes**

NATIONAL GEODETIC SURVEY (NGS) SITE ID IS MNBR.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.665 | .033 | 3 | | | | NON-RECIPROCAL VERTICAL ANGLE | 2006 | VTRIG1 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.537 | | | 956.878 | .004 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1047.537 | | | 956.878 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1047.537 | | | 956.878 | .004 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1047.537 | | | 956.878 | .005 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1047.550 | | | 956.878 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2024 | GPS3750 |
| 1047.550 | | | 956.878 | .010 | 2011 | GPS - STATIC | 2024 | HMNARP3 |
| 1047.524 | .131 | | 957.075 | .066 | 1996 | GPS - STATIC | 2017 | HMNCORS07 |
| | | | 956.885 | .006 | 2011 | GPS - STATIC | 2015 | HMNCORS15 |
| | | | 957.075 | .066 | 1996 | GPS - STATIC | 2014 | HMNCORS06 |
| 1047.636 | .098 | | 956.911 | .049 | 2011 | GPS - STATIC | 2012 | HMNCORS05 |
| 1047.570 | .098 | | 956.973 | .049 | 1996 | GPS - STATIC | 2006 | HMNCORS02 |
| 1047.537 | .098 | | 957.055 | .049 | 1996 | GPS - STATIC | 2005 | HMNCORS01 |

**Geoid Separations(ft): GEOID18 = -90.722 12B = -90.722 09 = -90.587 03 = -90.439**

# MNCORS BRWN BROWNTON ARP



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.46492 | 94 21 22.33697 | 572026.527 | 200129.156 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 43 49.46492 | 94 21 22.33697 | 572026.527 | 200129.156 | .003 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 43 49.46492 | 94 21 22.33697 | 572026.527 | 200129.156 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 43 49.46492 | 94 21 22.33697 | 572026.527 | 200129.156 | .003 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 43 49.46492 | 94 21 22.33697 | 572026.527 | 200129.156 | .007 | | ADJUSTMENT | 2024 | GPS3750 |
| 44 43 49.46492 | 94 21 22.33697 | 572026.527 | 200129.156 | .007 | C | GPS - STATIC | 2024 | HMNARP3 |
| 44 43 49.46492 | 94 21 22.33712 | 572026.516 | 200129.156 | .003 | A | GPS - STATIC | 2015 | HMNCORS15 |
| 44 43 49.46483 | 94 21 22.33686 | 572026.535 | 200129.147 | .016 | B | GPS - STATIC | 2012 | HMNCORS05 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 49.46496 | 94 21 22.33851 | 572026.415 | 200129.159 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 43 49.46496 | 94 21 22.33851 | 572026.415 | 200129.159 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 43 49.46474 | 94 21 22.33698 | 572026.526 | 200129.138 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |
| 44 43 49.46474 | 94 21 22.33698 | 572026.526 | 200129.138 | .033 | C | GPS - STATIC | 2014 | HMNCORS06 |
| 44 43 49.46482 | 94 21 22.33800 | 572026.452 | 200129.146 | .016 | B | GPS - STATIC | 2006 | HMNCORS02 |
| 44 43 49.46506 | 94 21 22.33752 | 572026.487 | 200129.170 | .016 | B | GPS - STATIC | 2005 | HMNCORS01 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532098.139 | 959087.017 | 1288088.462 | 16252911.374 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 2532098.139 | 959087.017 | 1288088.462 | 16252911.374 | .003 | | ADJUSTMENT | 2025 | GPS3788 |
| 2532098.139 | 959087.017 | 1288088.462 | 16252911.374 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2532098.139 | 959087.017 | 1288088.462 | 16252911.374 | .003 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2532098.139 | 959087.017 | 1288088.462 | 16252911.374 | .007 | | ADJUSTMENT | 2024 | GPS3750 |
| 2532098.139 | 959087.017 | 1288088.462 | 16252911.374 | .007 | C | GPS - STATIC | 2024 | HMNARP3 |
| 2532098.128 | 959087.017 | 1288088.451 | 16252911.374 | .003 | A | GPS - STATIC | 2015 | HMNCORS15 |
| 2532098.147 | 959087.008 | 1288088.469 | 16252911.365 | .016 | B | GPS - STATIC | 2012 | HMNCORS05 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2532098.028 | 959087.021 | 1288088.351 | 16252911.380 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2532098.028 | 959087.021 | 1288088.351 | 16252911.380 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2532098.139 | 959086.999 | 1288088.461 | 16252911.356 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |
| 2532098.139 | 959086.999 | 1288088.461 | 16252911.356 | .033 | C | GPS - STATIC | 2014 | HMNCORS06 |
| 2532098.065 | 959087.007 | 1288088.387 | 16252911.366 | .016 | B | GPS - STATIC | 2006 | HMNCORS02 |
| 2532098.100 | 959087.031 | 1288088.422 | 16252911.389 | .016 | B | GPS - STATIC | 2005 | HMNCORS01 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_MNCORS_ARP-DS2270-3SW-24JUL2024.jpg | SW | Jul 24, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_MNCORS_ARP-DS2270-2-24JUL2024.jpg | | Jul 24, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_MNCORS_ARP-DS2270-1-24JUL2024.jpg | | Jul 24, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MNCORS BRWN BROWNTON L1PC1



**Mn/DOT Name:** MNCORS BRWN BROWNTON L1PC1 **NGS Name:** BROWNTON CORS L1 PHASE CENTER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** !95648 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 31 | 115 N | 29 W | 444349.46 | 942122.34 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2004 | 2008 | DESTROYED | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | SEE DESCRIPTION | MNDT |

**Description:** (2012)

**Stamping:**

IN BROWNTON, 0.3 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212, TO TRUNK HIGHWAY 15 MILEPOINT 89.85, THEN 0.8 MILE EAST ON COUNTY ROAD 32 (DIVISION STREET), THEN 0.1 MILE SOUTH ON 1ST AVENUE SOUTH, AT THE MCLEOD COUNTY MAINTENANCE BUILDING, ATTACHED TO THE EAST SIDE OF THE BUILDING. THE STATION IS IN A ZEPHYR GEODETIC ANTENNA SERIAL NUMBER 12518049.

**Station Notes**

NATIONAL GEODETIC SURVEY (NGS) SITE ID IS MNBR.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.722 12B = -90.722 09 = -90.587 03 = -90.439**

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_CORS_L1_PHASE_CENTER-!95648-3W-16AUG2006.jpg | W | Aug 16, 2006 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_CORS_L1_PHASE_CENTER-!95648-2-16AUG2006.jpg | | Aug 16, 2006 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_CORS_L1_PHASE_CENTER-!95648-1-15AUG2006.jpg | | Aug 15, 2006 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MNCORS BRWN BROWNTON L1PC2



**Mn/DOT Name:** MNCORS BRWN BROWNTON L1PC2 **NGS Name:** BROWNTON CORS L1 PHASE CENTER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** !95649 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 31 | 115 N | 29 W | 444349.46 | 942122.34 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2008 | 2008 | GOOD | Horz=YES Vert=? | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | SEE DESCRIPTION | MNDT |

**Description:** (2012) **Stamping:**

IN BROWNTON, 0.3 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212, TO TRUNK HIGHWAY 15 MILEPOINT 89.85, THEN 0.8 MILE EAST ON COUNTY ROAD 32 (DIVISION STREET), THEN 0.1 MILE SOUTH ON 1ST AVENUE SOUTH, AT THE MCLEOD COUNTY MAINTENANCE BUILDING, ATTACHED TO THE EAST SIDE OF THE BUILDING. STATION MNCORS BRWN BROWNTON L1PC2 IS IN A ZEPHYR GEODETIC LF MODEL 2 ANTENNA SERIAL NUMBER 30973309.

**Station Notes**

NATIONAL GEODETIC SURVEY (NGS) SITE ID IS MNBR.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.722 12B = -90.722 09 = -90.587 03 = -90.439**

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_CORS_L1_PHASE_CENTER-3W-16AUG2006.jpg | W | Aug 16, 2006 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_CORS_L1_PHASE_CENTER-2-16AUG2006.jpg | | Aug 16, 2006 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/BROWNTON_CORS_L1_PHASE_CENTER-!95649-1-19FEB2009.jpg | | Feb 19, 2009 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# MOB MNDT TEMP



**Mn/DOT Name:** MOB MNDT TEMP **NGS Name:** MOB TEMP

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1186 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 6 | 116 N | 29 W | 445248.49 | 942228.33 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | MNDT |

**Description:** (2016) **Stamping:** MOB 1985

IN THE SOUTH PART OF HUTCHINSON, 1.3 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 IN HUTCHINSON, 71.2 FEET WEST OF A STREET SIGNPOST, 35.3 FEET NORTHWEST OF TRUNK HIGHWAY 15, ALONG A TRUNK HIGHWAY 15 CURVE, 26.0 FEET SOUTHWEST OF GROVE STREET, 30.1 FEET SOUTH-SOUTHEAST OF A NAIL AND DISK IN A LIGHT POLE, 26.0 FEET SOUTHWEST OF GROVE STREET.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.473 | .197 | | 984.923 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1074.112 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.869 12B = -89.855 09 = -89.724 03 = -89.619**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 48.49171 | 94 22 28.32646 | 567088.891 | 254705.630 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 48.48658 | 94 22 28.32149 | 567089.250 | 254705.111 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 52 48.48719 | 94 22 28.32202 | 567089.212 | 254705.173 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 48.62410 | 94 22 27.38190 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527584.673 | 1013694.553 | 1284249.103 | 16307559.840 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527585.029 | 1013694.031 | 1284249.452 | 16307559.315 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527584.991 | 1013694.093 | 1284249.414 | 16307559.377 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902983.220 | 685617.403 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# MURP MNDT TEMP



**Mn/DOT Name:** MURP MNDT TEMP
**NGS Name:** MURP TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1187 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 5 | 116 N | 29 W | 445324.34 | 942112.31 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | MNDT |

**Description:** (2016) **Stamping:** MURP 1985

IN THE EAST PART OF HUTCHINSON, 0.8 MILE EAST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 0.4 MILE SOUTH ON MICHIGAN STREET, 51.7 FEET WEST OF A FLAGPOLE, 34.2 FEET NORTH OF A LIGHT POLE, 27.67 FEET EAST OF THE CENTER OF THE JUNCTION OF MICHIGAN STREET AND 2ND AVENUE, 27.5 FEET EAST OF MICHIGAN STREET.

**Station Notes**
THE DISTANCES TO THE STREETS WERE HARD TO READ AND MAY BE IN ERROR.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1064.630 | .197 | | 975.093 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.909 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.865 12B = -89.855 09 = -89.731 03 = -89.616**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 24.34227 | 94 21 12.31348 | 572550.007 | 258354.708 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 24.33773 | 94 21 12.30833 | 572550.380 | 258354.250 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 53 24.33752 | 94 21 12.30826 | 572550.384 | 258354.228 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 24.47560 | 94 21 11.37100 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533073.411 | 1017300.787 | 1289780.835 | 16311097.310 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533073.779 | 1017300.325 | 1289781.198 | 16311096.844 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2533073.784 | 1017300.304 | 1289781.203 | 16311096.823 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1908471.952 | 689223.712 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** N 123 **NGS Name:** N 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0054 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 26 | 115 N | 29 W | 444422.58 | 941713.79 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | PROJECTS 6 IN. | SEE DESCRIPTION |

**Monument Type**
CONCRETE MONUMENT (CAST-IN-PLACE)

**Disk Type**
REFERENCE MARK DISK

**Mon. Agency**
NGS

**Description:** (2016)

**Stamping:** N 123 1934

3.3 MILES NORTHEAST OF BROWNTON, 4.5 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, 100.0 FEET WEST OF A FIELD ENTRANCE, 36.0 FEET NORTH OF THE RAILROAD TRACKS, 6.0 FEET EAST OF A POWER POLE, 1.0 FOOT WEST OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.474 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1021.297 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.867 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1021.041 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1020.867 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1020.867 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1021.340 | .262 | | 930.648 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.804 12B = -90.804 09 = -90.689 03 = -90.531**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 22.57804 | 94 17 13.78789 | 589956.232 | 203551.448 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2550051.940 | 962369.666 | 1306077.765 | 16255972.316 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/N_123-PQ0054-3N-22APR2011.jpg | N | Apr 22, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/N_123-PQ0054-2-22APR2011.jpg | | Apr 22, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/N_123-PQ0054-1-22APR2011.jpg | | Apr 22, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# NOBLE MNDT



**Mn/DOT Name:** NOBLE MNDT **NGS Name:** NOBLE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9254 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 116 N | 29 W | 445239.81 | 942004.83 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT)
**Disk Type:** SURVEY DISK
**Mon. Agency:** MNDT

**Description:** (2000) **Stamping:** NOBLE 2000

1.5 MILES SOUTHEAST OF HUTCHINSON, 1.3 MILES SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 ON THE EAST SIDE OF HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 119.9, 83.5 FEET WEST OF TRUNK HIGHWAY 22, 60.0 FEET SOUTH OF NOBLE ROAD, 34.6 FEET SOUTHWEST OF A CABLE MARKER, 30.2 FEET SOUTHWEST OF A POWER POLE, 27.0 FEET EAST OF A DRIVEWAY, 2.9 FEET WEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 977.675 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 977.790 | .007 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1067.714 | .131 | | 977.918 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1067.682 | .131 | | 977.918 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.023 12B = -90.013 09 = -89.892 03 = -89.764**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.80850 | 94 20 04.83035 | 577425.087 | 253861.563 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.80864 | 94 20 04.83056 | 577425.072 | 253861.578 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.80808 | 94 20 04.82985 | 577425.123 | 253861.521 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 52 39.80808 | 94 20 04.82985 | 577425.121 | 253861.520 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537912.997 | 1012770.380 | 1294563.136 | 16306508.443 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537912.982 | 1012770.394 | 1294563.121 | 16306508.457 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537913.032 | 1012770.337 | 1294563.171 | 16306508.400 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2537913.033 | 1012770.337 | 1294563.171 | 16306508.400 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# NOBLE MNDT RESET



**Mn/DOT Name:** NOBLE MNDT RESET
**NGS Name:** NOBLE RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9779 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 116 N | 29 W | 445239.81 | 942004.83 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015)
**Stamping:** NOBLE RESET 2000 2009

1.5 MILES SOUTHEAST OF HUTCHINSON, 1.3 MILES SOUTH ALONG TRUNK HIGHWAY 22 FROM THE EAST JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 119.90, 83.5 FEET WEST OF TRUNK HIGHWAY 22, 60.0 FEET SOUTH OF NOBLE ROAD EXTENDED, 34.6 FEET SOUTHWEST OF A CABLE MARKER, 30.2 FEET SOUTHWEST OF A POWER POLE, 27.0 FEET EAST OF DRIVEWAY NUMBER 1030.

**Station Pair:** ALVA MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1067.439 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1067.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1067.442 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.439 | | | 977.413 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1067.439 | | | 977.413 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1067.439 | | | 977.413 | .007 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1067.439 | | | 977.413 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1067.531 | .262 | | 977.508 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1067.495 | .262 | | 977.472 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1067.403 | .262 | | 977.393 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1067.376 | .262 | | 977.367 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 977.413 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1067.258 | .262 | | 977.370 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1067.452 | .131 | | 977.537 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1067.452 | .131 | | 977.639 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1067.452 | .131 | | 977.537 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1067.239 | .262 | | 977.475 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -90.023 12B = -90.013 09 = -89.892 03 = -89.764**

# NOBLE MNDT RESET



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.80874 | 94 20 04.83079 | 577425.055 | 253861.588 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 52 39.80874 | 94 20 04.83079 | 577425.055 | 253861.588 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 52 39.80874 | 94 20 04.83079 | 577425.055 | 253861.588 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 52 39.80874 | 94 20 04.83079 | 577425.055 | 253861.588 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 52 39.80799 | 94 20 04.83093 | 577425.045 | 253861.512 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 52 39.80852 | 94 20 04.83115 | 577425.029 | 253861.565 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 52 39.80827 | 94 20 04.83107 | 577425.035 | 253861.540 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 52 39.80773 | 94 20 04.83099 | 577425.041 | 253861.485 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 52 39.80874 | 94 20 04.83079 | 577425.055 | 253861.588 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.80871 | 94 20 04.83049 | 577425.077 | 253861.585 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 52 39.80887 | 94 20 04.83189 | 577424.976 | 253861.601 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 52 39.80887 | 94 20 04.83189 | 577424.976 | 253861.601 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 39.80826 | 94 20 04.83099 | 577425.041 | 253861.539 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 52 39.80826 | 94 20 04.83099 | 577425.041 | 253861.539 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 52 39.80830 | 94 20 04.83126 | 577425.021 | 253861.543 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 52 39.80836 | 94 20 04.83101 | 577425.039 | 253861.549 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537912.965 | 1012770.404 | 1294563.104 | 16306508.468 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2537912.965 | 1012770.404 | 1294563.104 | 16306508.468 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2537912.965 | 1012770.404 | 1294563.104 | 16306508.468 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2537912.965 | 1012770.404 | 1294563.104 | 16306508.468 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2537912.955 | 1012770.328 | 1294563.093 | 16306508.392 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2537912.939 | 1012770.382 | 1294563.078 | 16306508.446 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2537912.945 | 1012770.357 | 1294563.083 | 16306508.420 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2537912.950 | 1012770.302 | 1294563.088 | 16306508.366 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2537912.965 | 1012770.404 | 1294563.104 | 16306508.468 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537912.987 | 1012770.401 | 1294563.126 | 16306508.464 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2537912.886 | 1012770.417 | 1294563.025 | 16306508.482 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2537912.886 | 1012770.417 | 1294563.025 | 16306508.482 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537912.951 | 1012770.355 | 1294563.089 | 16306508.419 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2537912.951 | 1012770.355 | 1294563.089 | 16306508.419 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2537912.931 | 1012770.360 | 1294563.070 | 16306508.424 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2537912.949 | 1012770.366 | 1294563.088 | 16306508.429 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/NOBLE_RESET-DL9779-3W-17JUN2024.jpg | W | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/NOBLE_RESET-DL9779-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/NOBLE_RESET-DL9779-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# NUTT MNDT



**Mn/DOT Name:** NUTT MNDT **NGS Name:** NUTT

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AC4881 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 115 N | 30 W | 444321.59 | 942728.41 | 2 | B |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2013 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2003) **Stamping:** NUTT 1990

1.0 MILE EAST OF STEWART, 1.0 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, AT TRUNK HIGHWAY 212 MILEPOINT 103.85, 144.7 FEET NORTH OF TRUNK HIGHWAY 212, 26.0 FEET WEST OF A FIELD ENTRANCE, 16.5 FEET NORTH OF THE NORTH RAIL OF THE RAILROAD TRACKS, 3.0 FEET SOUTH OF A WITNESS POST.

**Station Notes**

THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.188 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1060.211 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1059.732 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1060.188 | | | 969.680 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1060.188 | | | 969.680 | .008 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1060.237 | .262 | | 969.677 | .197 | 2011 | GPS - RTRN | 2013 | RTRN2013 |
| | | | 969.680 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1060.152 | .262 | | 969.726 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1060.201 | .131 | | 969.778 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1060.201 | .131 | | 969.778 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| | | | 969.778 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 969.778 | .012 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 969.778 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1060.201 | .098 | | 969.913 | .049 | 1996 | GPS - STATIC | 2005 | GPS2036 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2004 | GPS2022 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | GPS - STATIC | 2004 | HMEEK |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1060.201 | .131 | | 969.913 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |
| 1060.208 | .098 | | 969.913 | .049 | 1996 | GPS - STATIC | 1997 | GPS805-B |

**Geoid Separations(ft): GEOID18 = -90.558 12B = -90.561 09 = -90.426 03 = -90.298**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 21.59221 | 94 27 28.40577 | 545604.236 | 197232.817 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 43 21.59213 | 94 27 28.40572 | 545604.239 | 197232.809 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 43 21.59178 | 94 27 28.40474 | 545604.310 | 197232.773 | .131 | 3 | GPS - RTRN | 2013 | RTRN2013 |
| 44 43 21.59221 | 94 27 28.40577 | 545604.236 | 197232.817 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 21.59164 | 94 27 28.40647 | 545604.185 | 197232.759 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 21.59255 | 94 27 28.40666 | 545604.171 | 197232.851 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 43 21.59255 | 94 27 28.40666 | 545604.171 | 197232.851 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 43 21.59255 | 94 27 28.40666 | 545604.171 | 197232.851 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 43 21.59255 | 94 27 28.40666 | 545604.171 | 197232.851 | .010 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 43 21.59255 | 94 27 28.40666 | 545604.171 | 197232.851 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 21.59161 | 94 27 28.40614 | 545604.209 | 197232.756 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .016 | B | GPS - STATIC | 2005 | GPS2036 |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | GPS - STATIC | 2004 | HMEEK |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 44 43 21.59161 | 94 27 28.40613 | 545604.210 | 197232.756 | .016 | B | GPS - STATIC | 1997 | GPS805-B |

# NUTT MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505657.032 | 956396.061 | 1261620.933 | 16250546.361 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2505657.036 | 956396.053 | 1261620.936 | 16250546.353 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2505657.106 | 956396.017 | 1261621.007 | 16250546.317 | .131 | 3 | GPS - RTRN | 2013 | RTRN2013 |
| 2505657.032 | 956396.061 | 1261620.933 | 16250546.361 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505656.981 | 956396.003 | 1261620.881 | 16250546.305 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2505656.968 | 956396.095 | 1261620.869 | 16250546.397 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2505656.968 | 956396.095 | 1261620.869 | 16250546.397 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2505656.968 | 956396.095 | 1261620.869 | 16250546.397 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2505656.968 | 956396.095 | 1261620.869 | 16250546.397 | .010 | | ADJUSTMENT | 2007 | GPS2300 |
| 2505656.968 | 956396.095 | 1261620.869 | 16250546.397 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2505657.005 | 956396.000 | 1261620.905 | 16250546.301 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .016 | B | GPS - STATIC | 2005 | GPS2036 |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | GPS - STATIC | 2004 | HMEEK |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 2505657.006 | 956396.000 | 1261620.906 | 16250546.301 | .016 | B | GPS - STATIC | 1997 | GPS805-B |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/NUTT-AC4881-3N-18APR2011.jpg | N | Apr 18, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/NUTT-AC4881-2-18APR2011.jpg | | Apr 18, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/NUTT-AC4881-1-18APR2011.jpg | | Apr 18, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ONE WAY MN085



**Mn/DOT Name:** ONE WAY MN085 **NGS Name:** ONE WAY

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 30 | 117 N | 29 W | 445424.90 | 942146.75 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2004 | DESTROYED | Horz=NO Vert=NO | NO | | | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** ONE WAY 1993

AT THE NORTH EDGE OF HUTCHINSON, 0.7 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.3 MILE EAST ON COUNTY ROAD 76, AT THE JUNCTION OF COUNTY ROAD 76 (NORTH HIGH DRIVE) AND MAPLE STREET (SOUTH), 27.0 FEET NORTH OF COUNTY ROAD 76, 29.0 FEET EAST OF A ONE WAY DRIVEWAY TO BURNS MANOR AND MAPLE STREET EXTENDED NORTH.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -89.698 12B = -89.691 09 = -89.563 03 = -89.462**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.89835 | 94 21 46.75365 | 570050.077 | 264479.514 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2530621.327 | 1023444.217 | 1287405.306 | 16317269.295 | .033 | C | GPS - STATIC | 1993 | CO43 |

# ONION MN085



**Mn/DOT Name:** ONION MN085 **NGS Name:** ONION

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 12 | 117 N | 30 W | 445721.59 | 942355.79 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** ONION 1993

4.5 MILES NORTH OF HUTCHINSON, 0.7 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 IN HUTCHINSON, THEN 1.8 MILES NORTHWEST ON COUNTY ROAD 76, THEN 2.8 MILES NORTH ON COUNTY ROAD 12, 1.0 MILE EAST OF STAHL LAKE, 0.45 MILE NORTH AND 23.0 FEET EAST OF THE JUNCTION OF COUNTY ROAD 73 (230TH STREET) AND COUNTY ROAD 12 (TAGUS AVENUE), 422.0 FEET SOUTH AND 23.0 FEET EAST OF THE JUNCTION OF COUNTY ROAD 12 AND 235TH STREET, 4.0 FEET NORTH OF A FIELD DRIVE.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -89.173 12B = -89.173 09 = -89.035 03 = -88.953**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 21.59095 | 94 23 55.79465 | 560710.745 | 282346.496 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521421.794 | 1041381.444 | 1278430.074 | 16335315.203 | .033 | C | GPS - STATIC | 1993 | CO43 |

**Mn/DOT Name:** OPITZ
**NGS Name:** OPITZ
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 114 N | 29 W | 443841.69 | 941929.15 | | C |

**NGS ACRN:** PQ0632 Get Map
**NGS Quad / Sta Num :** 44094131/1011
**USGS Quad:** BROWNTON

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | HORIZONTAL CONTROL DISK | NGS |

**Description:** (1998) **Stamping:** OPITZ 1935

6.15 MILES SOUTHEAST OF BROWNTON, 5.3 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 2.6 MILES EAST ON 20TH STREET, 107.98 FEET SOUTHWEST OF OPITZ RM 1, 103.15 FEET SOUTHEAST OF OPITZ RM 2, 64.0 FEET SOUTH-SOUTHWEST OF A POWER POLE, 28.0 FEET SOUTH OF 20TH STREET, 23.0 FEET WEST OF AN ENTRANCE, 6.0 FEET EAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 949.221 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 949.345 | .025 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1040.254 | .131 | | 949.440 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1040.254 | .131 | | 949.440 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |
| 1039.040 | .131 | | 948.256 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.893 | | | | | | GPS - STATIC | 1993 | HORZ |
| 1039.040 | | | | | | DIGITIZED FROM MAP | 1975 | HORZ |

**Geoid Separations(ft): GEOID18 = -91.115 12B = -91.112 09 = -90.991 03 = -90.869**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 41.68844 | 94 19 29.14685 | 580316.411 | 168987.961 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 41.68821 | 94 19 29.14741 | 580316.370 | 168987.938 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 41.68769 | 94 19 29.14750 | 580316.364 | 168987.885 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 38 41.68769 | 94 19 29.14750 | 580316.364 | 168987.885 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 44 38 41.68962 | 94 19 29.15040 | 580316.153 | 168988.079 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 41.68466 | 94 19 29.14659 | 580316.431 | 168987.578 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 41.81700 | 94 19 28.21400 | | | .100 | 1 | CLASSICAL SURVEY | 1939 | 03760 |

# OPITZ



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540145.164 | 927885.872 | 1295750.005 | 16221619.601 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540145.123 | 927885.849 | 1295749.964 | 16221619.578 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540145.116 | 927885.796 | 1295749.956 | 16221619.526 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2540145.116 | 927885.796 | 1295749.956 | 16221619.526 | .033 | C | GPS - STATIC | 2003 | HBROWN |
| 2540144.908 | 927885.992 | 1295749.750 | 16221619.724 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2540145.181 | 927885.489 | 1295750.017 | 16221619.217 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1915543.514 | 599809.098 | | | .100 | 1 | CLASSICAL SURVEY | 1939 | 03760 |

# OPITZ AZ MK



**Mn/DOT Name:** OPITZ AZ MK
**NGS Name:** OPITZ AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9345 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 114 N | 29 W | 443842.00 | 941927.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2001 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016)

**Stamping:**

6.21 MILES SOUTH OF BROWNTON, 5.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 2.5 MILES EAST ON 20TH STREET, 0.45 MILE WEST OF THE CENTER OF THE JUNCTION OF 20TH STREET AND COUNTY ROAD 13, 0.34 MILE SOUTHWEST OF STATION ST. MATHEUS KIRCHE SPIRE, 98.99 FEET SOUTH OF THE CENTERLINE OF 20TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -91.119 12B = -91.112 09 = -90.991 03 = -90.869**

# OPITZ RM 1



**Mn/DOT Name:** OPITZ RM 1

**NGS Name:** OPITZ RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9346 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 114 N | 29 W | 443841.00 | 941929.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016)

**Stamping:**

6.21 MILES SOUTH OF BROWNTON, 5.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 2.5 MILES EAST ON 20TH STREET, 0.45 MILE WEST OF THE CENTER OF THE JUNCTION OF 20TH STREET AND COUNTY ROAD 13, 0.34 MILE SOUTHWEST OF STATION ST. MATHEUS KIRCHE SPIRE, 98.99 FEET SOUTH OF THE CENTERLINE OF 20TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -91.119 12B = -91.112 09 = -90.991 03 = -90.869**

# OPITZ RM 2



**Mn/DOT Name:** OPITZ RM 2

**NGS Name:** OPITZ RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9347 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 114 N | 29 W | 443841.00 | 941929.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016)

**Stamping:**

6.21 MILES SOUTH OF BROWNTON, 5.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 2.5 MILES EAST ON 20TH STREET, 0.45 MILE WEST OF THE CENTER OF THE JUNCTION OF 20TH STREET AND COUNTY ROAD 13, 0.34 MILE SOUTHWEST OF STATION ST. MATHEUS KIRCHE SPIRE, 98.99 FEET SOUTH OF THE CENTERLINE OF 20TH STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -91.119 12B = -91.112 09 = -90.991 03 = -90.869**

# OTAY MN085



**Mn/DOT Name:** OTAY MN085 **NGS Name:** OTAY

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AC4882 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 30 | 115 N | 27 W | 444404.46 | 940753.76 | 2 | B |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | SURVEY DISK | MN-085 |

**Description:** (2015) **Stamping:** OTAY

2.5 MILES SOUTHEAST OF GLENCOE, 0.55 MILE SOUTH ALONG COUNTY ROAD 15 (MORNINGSIDE ROAD) FROM THE JUNCTION OF COUNTY ROAD 15 AND TRUNK HIGHWAY 212 IN GLENCOE, THEN 1.85 MILES SOUTH ON FALCON AVENUE, 20.0 FEET EAST OF COUNTY ROAD 68/FALCON AVENUE, 43.8 FEET SOUTH-SOUTHWEST OF NORTHERN STATE POWER POLE NUMBER 30, 9.0 FEET SOUTH OF A FIELD ENTRANCE, 41.4 FEET SOUTH-SOUTHWEST OF A WITNESS POST. THE YEAR IS UNSTAMPED ON THE DISK.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.279 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1018.279 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1018.279 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1018.276 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.279 | | | 927.410 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1018.279 | | | 927.410 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1018.279 | | | 927.410 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2018 | GPS3119 |
| 1018.279 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2017 | HMNCORS07 |
| 1018.279 | | | 927.410 | .007 | 2011 | GPS - STATIC | 2017 | HMNPH |
| 1018.279 | | | 927.410 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1018.279 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1018.279 | | | 927.413 | .006 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1018.157 | .262 | | 927.318 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1018.157 | .262 | | 927.314 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 927.410 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1018.249 | .262 | | 927.492 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1018.272 | .131 | | 927.508 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1018.272 | .131 | | 927.508 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| | | | 927.508 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1018.272 | .131 | | 927.688 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1018.272 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1018.272 | .131 | | 927.688 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1018.272 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 927.508 | .007 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1018.239 | .131 | | 927.688 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1018.239 | .098 | | 927.688 | .049 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2243 |
| 1018.239 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 927.508 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1018.272 | .098 | | 927.688 | .049 | 1996 | GPS - STATIC | 2005 | GPS2036 |
| 1018.239 | .131 | | 927.688 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2004 | GPS2043 |
| 1018.239 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2004 | HHAMB |
| 1018.174 | .131 | | 927.688 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1934 |
| 1018.272 | .131 | | 927.688 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1018.174 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2003 | HWINT |
| 1018.272 | .131 | | 927.688 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |
| 1018.194 | .098 | | 927.688 | .049 | 1996 | GPS - STATIC | 1997 | GPS805-B |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.108 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.843 09 = -90.754 03 = -90.610**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 04.45709 | 94 07 53.75533 | 630392.346 | 201926.717 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 44 04.45709 | 94 07 53.75533 | 630392.346 | 201926.717 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 44 04.45709 | 94 07 53.75533 | 630392.346 | 201926.717 | .003 | | ADJUSTMENT | 2018 | GPS3119 |
| 44 44 04.45709 | 94 07 53.75533 | 630392.346 | 201926.717 | .003 | C | GPS - STATIC | 2017 | HMNPH |
| 44 44 04.45709 | 94 07 53.75533 | 630392.346 | 201926.717 | .003 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 04.45707 | 94 07 53.75535 | 630392.345 | 201926.715 | .003 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 04.45676 | 94 07 53.75538 | 630392.343 | 201926.684 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 04.45642 | 94 07 53.75523 | 630392.353 | 201926.650 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 04.45709 | 94 07 53.75533 | 630392.346 | 201926.717 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 04.45660 | 94 07 53.75611 | 630392.290 | 201926.667 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 44 04.45726 | 94 07 53.75632 | 630392.274 | 201926.734 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 44 04.45726 | 94 07 53.75632 | 630392.274 | 201926.734 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 44 04.45726 | 94 07 53.75632 | 630392.274 | 201926.734 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 44 04.45727 | 94 07 53.75628 | 630392.277 | 201926.735 | .007 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 44 04.45727 | 94 07 53.75628 | 630392.277 | 201926.735 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 04.45685 | 94 07 53.75569 | 630392.320 | 201926.693 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .016 | B | ADJUSTMENT | 2006 | GPS2243 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .016 | B | GPS - STATIC | 2005 | GPS2036 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | ADJUSTMENT | 2004 | GPS2043 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2004 | HHAMB |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | ADJUSTMENT | 2003 | GPS1934 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2003 | HWINT |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 44 44 04.45687 | 94 07 53.75569 | 630392.320 | 201926.695 | .016 | B | GPS - STATIC | 1997 | GPS805-B |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 04.45092 | 94 07 53.75713 | 630392.220 | 201926.092 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

### NAD83(2011)

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590469.868 | 960431.070 | 1346460.012 | 16253537.413 | .003 | | ADJUSTMENT | 2025 | GPS3789 |
| 2590469.868 | 960431.070 | 1346460.012 | 16253537.413 | .003 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2590469.868 | 960431.070 | 1346460.012 | 16253537.413 | .003 | | ADJUSTMENT | 2018 | GPS3119 |
| 2590469.868 | 960431.070 | 1346460.012 | 16253537.413 | .003 | C | GPS - STATIC | 2017 | HMNPH |
| 2590469.868 | 960431.070 | 1346460.012 | 16253537.413 | .003 | | ADJUSTMENT | 2015 | GPS3118 |
| 2590469.867 | 960431.068 | 1346460.010 | 16253537.411 | .003 | C | GPS - STATIC | 2015 | HPLAT |
| 2590469.865 | 960431.037 | 1346460.008 | 16253537.380 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2590469.875 | 960431.002 | 1346460.018 | 16253537.345 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2590469.868 | 960431.070 | 1346460.012 | 16253537.413 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

### NAD83(2007)

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590469.812 | 960431.021 | 1346459.955 | 16253537.365 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2590469.797 | 960431.088 | 1346459.941 | 16253537.432 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2590469.797 | 960431.088 | 1346459.941 | 16253537.432 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2590469.797 | 960431.088 | 1346459.941 | 16253537.432 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2590469.800 | 960431.089 | 1346459.944 | 16253537.432 | .007 | | ADJUSTMENT | 2007 | GPS2300 |
| 2590469.800 | 960431.089 | 1346459.944 | 16253537.432 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

### NAD83(1996)

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590469.842 | 960431.046 | 1346459.986 | 16253537.389 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .016 | B | ADJUSTMENT | 2006 | GPS2243 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .016 | B | GPS - STATIC | 2005 | GPS2036 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | ADJUSTMENT | 2004 | GPS2043 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2004 | HHAMB |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | ADJUSTMENT | 2003 | GPS1934 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2003 | HWINT |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 2590469.842 | 960431.048 | 1346459.986 | 16253537.391 | .016 | B | GPS - STATIC | 1997 | GPS805-B |

### NAD83(1986)

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2590469.737 | 960430.446 | 1346459.873 | 16253536.790 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/OTAY-AC4882-3NE-14APR2015.jpg | NE | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/OTAY-AC4882-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/OTAY-AC4882-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# OVE MNDT TEMP



**Mn/DOT Name:** OVE MNDT TEMP
**NGS Name:** OVE TEMP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1188 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 6 | 116 N | 29 W | 445313.23 | 942228.65 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | MNDT |

**Description:** (2016) **Stamping:** OVE 1985

IN HUTCHINSON, 0.6 MILE SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22, THEN 0.3 MILE WEST ON 4TH AVENUE, THEN 262.0 FEET SOUTH ON GROVE STREET, 169.0 FEET NORTH OF 5TH AVENUE SOUTHWEST, 55.2 FEET WEST-SOUTHWEST OF A NAIL AND A DISK IN A POWER POLE, 35.2 FEET SOUTH-SOUTHEAST OF A NAIL AND DISK IN A 15.0 INCH DIAMETER ELM TREE, 19.0 FEET WEST OF GROVE STREET.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1073.161 | .197 | | 983.669 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1072.603 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.813 12B = -89.800 09 = -89.672 03 = -89.567**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.23223 | 94 22 28.64582 | 567057.932 | 257211.296 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.22677 | 94 22 28.64132 | 567058.259 | 257210.745 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 53 13.22728 | 94 22 28.64119 | 567058.267 | 257210.795 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 13.36450 | 94 22 27.70150 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527573.162 | 1016200.139 | 1284268.528 | 16310064.878 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527573.483 | 1016199.584 | 1284268.843 | 16310064.320 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527573.493 | 1016199.636 | 1284268.853 | 16310064.371 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902971.687 | 688122.952 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

**Mn/DOT Name:** P 123 **NGS Name:** P 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0055 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444422.00 | 941549.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** P-123 1934

4.26 MILES EAST OF BROWNTON, 5.6 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, THEN 167.0 FEET NORTH ON LEAF AVENUE, 0.32 MILE SOUTH OF THE CENTER OF THE JUNCTION OF LEAF AVENUE AND 88TH STREET, 0.2 MILE WEST OF STATION SUMTER, 16.47 FEET WEST OF THE CENTERLINE OF LEAF AVENUE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.782 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.349 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.840 12B = -90.843 09 = -90.728 03 = -90.567**

*** No Horizontal Positions in the Database ***

# P 123 RESET 1942



**Mn/DOT Name:** P 123 RESET 1942 **NGS Name:** P 123 RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0056 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444423.31 | 941548.78 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1942 | 2011 | GOOD | Horz=NO Vert=NO | YES | | PROJECTS 4 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (1986) **Stamping:** P 123 1934 RESET 1942

3.8 MILES EAST-NORTHEAST OF BROWNTON, 5.65 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, AT TRUNK HIGHWAY 212 MILEPOINT 113.75, 76.5 FEET NORTH OF TRUNK HIGHWAY 212, 45.5 FEET NORTH OF THE NORTH RAIL OF THE RAILROAD TRACKS, 9.2 FEET EAST-SOUTHEAST OF A TELEPHONE POLE, 1.0 FOOT WEST OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.569 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.142 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |
| 1030.142 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1942 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.480 | .262 | | 939.752 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.836 12B = -90.843 09 = -90.728 03 = -90.567**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.31445 | 94 15 48.78368 | 596091.773 | 203653.007 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2556187.426 | 962423.573 | 1312212.191 | 16255950.754 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/P_123_RESET-PQ0056-3N-12MAY2011.jpg | N | May 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/P_123_RESET-PQ0056-2-12MAY2011.jpg | | May 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/P_123_RESET-PQ0056-1-12MAY2011.jpg | | May 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# PESINA MN085



**Mn/DOT Name:** PESINA MN085 **NGS Name:** PESINA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9698 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 19 | 116 N | 28 W | 445028.46 | 941403.88 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2007) **Stamping:** PESINA

2.0 MILES EAST-NORTHEAST OF BISCAY, 0.95 MILE NORTH ALONG COUNTY ROAD 4 FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 115.1, THEN 2.0 MILES EAST ON COUNTY ROAD 11, 106.3 FEET WEST OF A FIELD ENTRANCE, 47.3 FEET SOUTH OF COUNTY ROAD 11, 8.2 FEET EAST OF A POWER POLE, 7.0 FEET EAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1040.779 | | | 950.277 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1040.779 | | | 950.277 | .008 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1040.700 | .262 | | 950.215 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1040.818 | .262 | | 950.336 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1040.680 | .262 | | 950.195 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 950.277 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1040.805 | .262 | | 950.411 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1040.779 | .131 | | 950.385 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1040.779 | .131 | | 950.385 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1040.779 | .131 | | 950.526 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1040.779 | .131 | | 950.526 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.482 12B = -90.485 09 = -90.394 03 = -90.213**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 28.45936 | 94 14 03.87939 | 603482.875 | 240669.934 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 50 28.45936 | 94 14 03.87939 | 603482.875 | 240669.934 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 50 28.45925 | 94 14 03.87952 | 603482.865 | 240669.923 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 50 28.45903 | 94 14 03.87956 | 603482.863 | 240669.901 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 50 28.45910 | 94 14 03.87898 | 603482.904 | 240669.908 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 50 28.45936 | 94 14 03.87939 | 603482.875 | 240669.934 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 28.45912 | 94 14 03.88040 | 603482.802 | 240669.909 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 50 28.45952 | 94 14 03.88003 | 603482.828 | 240669.950 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 50 28.45952 | 94 14 03.88003 | 603482.828 | 240669.950 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 50 28.45900 | 94 14 03.87951 | 603482.866 | 240669.898 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 50 28.45900 | 94 14 03.87953 | 603482.865 | 240669.898 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 50 28.45900 | 94 14 03.87953 | 603482.865 | 240669.898 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# PESINA MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563864.997 | 999378.144 | 1320342.440 | 16292800.074 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2563864.997 | 999378.144 | 1320342.440 | 16292800.074 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2563864.988 | 999378.133 | 1320342.430 | 16292800.064 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2563864.985 | 999378.110 | 1320342.427 | 16292800.041 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2563865.027 | 999378.118 | 1320342.469 | 16292800.048 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2563864.997 | 999378.144 | 1320342.440 | 16292800.074 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563864.924 | 999378.120 | 1320342.367 | 16292800.051 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2563864.951 | 999378.160 | 1320342.394 | 16292800.091 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2563864.951 | 999378.160 | 1320342.394 | 16292800.091 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2563864.988 | 999378.108 | 1320342.431 | 16292800.038 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2563864.987 | 999378.108 | 1320342.429 | 16292800.038 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2563864.987 | 999378.108 | 1320342.429 | 16292800.038 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PESINA-DI9698-3S-17JUN2024.jpg | S | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PESINA-DI9698-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PESINA-DI9698-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# PHASIANUS MN085



**Mn/DOT Name:** PHASIANUS MN085 **NGS Name:** PHASIANUS

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 116 N | 29 W | 444831.06 | 941742.17 | | C |

**NGS ACRN:** DF9255 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 10 FT) | SURVEY DISK | MN-085 |

**Description:** (2007) **Stamping:** PHASIANUS

1.61 MILES SOUTHWEST OF BISCAY, 2.6 MILES SOUTH ALONG COUNTY ROAD 4 FROM THE JUNCTION OF COUNTY ROAD 4 AND TRUNK HIGHWAY 22 IN BISCAY, AT TRUNK HIGHWAY 22 MILEPOINT 115.1, THEN 1.25 MILES WEST AND NORTH ALONG COUNTY ROAD 62, 38.0 FEET EAST OF COUNTY ROAD 62, 6.0 FEET SOUTH OF A FIELD DRIVE AT THE NORTHWEST CORNER OF A WILDLIFE REFUGE, 8.2 FEET NORTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.554 | | | 958.030 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1048.554 | | | 958.030 | .006 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1048.538 | .262 | | 958.023 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| | | | 958.030 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1048.456 | .262 | | 958.059 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1048.554 | .131 | | 958.115 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1048.554 | .131 | | 958.115 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1048.554 | .131 | | 958.263 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1048.554 | .131 | | 958.263 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 958.115 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1048.554 | .131 | | 958.263 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1048.554 | .131 | | 958.263 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.095 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.515 12B = -90.505 09 = -90.400 03 = -90.239**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 31.06448 | 94 17 42.16663 | 587803.199 | 228709.074 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 48 31.06448 | 94 17 42.16663 | 587803.199 | 228709.074 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 48 31.06434 | 94 17 42.16585 | 587803.255 | 228709.060 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 48 31.06448 | 94 17 42.16663 | 587803.199 | 228709.074 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 31.06451 | 94 17 42.16695 | 587803.176 | 228709.077 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 48 31.06482 | 94 17 42.16695 | 587803.176 | 228709.109 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 48 31.06482 | 94 17 42.16695 | 587803.176 | 228709.109 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 48 31.06482 | 94 17 42.16695 | 587803.176 | 228709.109 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 31.06423 | 94 17 42.16648 | 587803.210 | 228709.049 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 48 31.06431 | 94 17 42.16642 | 587803.214 | 228709.057 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 48 31.06431 | 94 17 42.16642 | 587803.214 | 228709.057 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 48 31.06431 | 94 17 42.16642 | 587803.214 | 228709.057 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 48 31.06431 | 94 17 42.16642 | 587803.214 | 228709.057 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 48 31.05966 | 94 17 42.16571 | 587803.267 | 228708.585 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548094.511 | 987540.610 | 1304430.698 | 16281160.283 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2548094.511 | 987540.610 | 1304430.698 | 16281160.283 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2548094.567 | 987540.595 | 1304430.754 | 16281160.268 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2548094.511 | 987540.610 | 1304430.698 | 16281160.283 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548094.488 | 987540.613 | 1304430.675 | 16281160.286 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2548094.488 | 987540.644 | 1304430.676 | 16281160.318 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2548094.488 | 987540.644 | 1304430.676 | 16281160.318 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2548094.488 | 987540.644 | 1304430.676 | 16281160.318 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548094.521 | 987540.584 | 1304430.708 | 16281160.257 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2548094.526 | 987540.592 | 1304430.713 | 16281160.266 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2548094.526 | 987540.592 | 1304430.713 | 16281160.266 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2548094.526 | 987540.592 | 1304430.713 | 16281160.266 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2548094.526 | 987540.592 | 1304430.713 | 16281160.266 | .033 | C | GPS - STATIC | 2003 | HGLEN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2548094.575 | 987540.121 | 1304430.756 | 16281159.794 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PHASIANUS-DF9255-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PHASIANUS-DF9255-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PHASIANUS-DF9255-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# PLAINS MNDT



**Mn/DOT Name:** PLAINS MNDT
**NGS Name:** PLAINS
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1189 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 33 | 117 N | 29 W | 445347.04 | 942007.37 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 4 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | VERTICAL CONTROL DISK | MNDT |

**Description:** (2000) **Stamping:** PLAINS 1984

2.0 MILES EAST OF HUTCHINSON, 1.65 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.8, 131.11 FEET NORTH-NORTHWEST OF PLAINS MNDT RM 2, 110.7 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A CONCRETE SLAB, 93.7 FEET WEST OF A TELEPHONE CABLE PEDESTAL, 85.96 FEET WEST OF PLAINS MNDT RM 1, 69.0 FEET NORTH OF TRUNK HIGHWAY 7, 2.8 FEET NORTH-NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1070.559 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1070.559 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1070.559 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1070.405 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1990 | 17351 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1070.116 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1070.116 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 980.687 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 980.802 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1070.569 | .131 | | 980.920 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1070.569 | .131 | | 980.920 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |
| 1070.569 | .197 | | 981.009 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.885 12B = -89.878 09 = -89.754 03 = -89.632**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.04027 | 94 20 07.37153 | 577217.174 | 260670.172 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.04039 | 94 20 07.37198 | 577217.141 | 260670.184 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.03983 | 94 20 07.37134 | 577217.188 | 260670.128 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 47.03983 | 94 20 07.37134 | 577217.188 | 260670.128 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 44 53 47.03988 | 94 20 07.37335 | 577217.043 | 260670.132 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.03537 | 94 20 07.36767 | 577217.454 | 260669.676 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 53 47.03549 | 94 20 07.36762 | 577217.457 | 260669.689 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.17330 | 94 20 06.43280 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537757.956 | 1019579.735 | 1294492.190 | 16313317.777 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537757.923 | 1019579.747 | 1294492.158 | 16313317.789 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537757.969 | 1019579.690 | 1294492.203 | 16313317.732 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2537757.969 | 1019579.690 | 1294492.203 | 16313317.732 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 2537757.824 | 1019579.696 | 1294492.059 | 16313317.739 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537758.231 | 1019579.237 | 1294492.460 | 16313317.276 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2537758.235 | 1019579.250 | 1294492.464 | 16313317.288 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1913156.355 | 691502.630 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# PLAINS MNDT RM 1



**Mn/DOT Name:** PLAINS MNDT RM 1 **NGS Name:** PLAINS RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1514 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 33 | 117 N | 29 W | 445347.00 | 942006.18 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | MNDT |

**Description:** (1996) **Stamping:** PLAINS NO 1 1984

0.5 MILE EAST OF HUTCHINSON, 1.65 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.65, 232.0 FEET WEST OF THE ENTRANCE TO GREAT PLAINS LUMBER, 146.0 FEET NORTHEAST OF PLAINS MNDT RM 2, 108.7 FEET SOUTH-SOUTHEAST OF SOUTHWEST CORNER OF CONCRETE SLAB, 86.0 FEET EAST OF STATION PLAINS MNDT, 65.5 FEET NORTHWEST OF TRUNK HIGHWAY 7, 7.8 FEET WEST OF A TELEPHONE CABLE PEDESTAL, 86.5 FEET EAST OF A WITNESS POST.

**Station Notes**
PULLED THE TIES AND USED THE REAL TIME REFERENCE NETWORK (RTRN) (6-10-9).

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1069.023 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1069.027 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1068.991 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.584 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |
| 1068.551 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.994 | .262 | | 979.440 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.888 12B = -89.882 09 = -89.754 03 = -89.636**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.00152 | 94 20 06.18063 | 577302.919 | 260666.562 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 46.99714 | 94 20 06.17494 | 577303.331 | 260666.119 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537843.662 | 1019575.459 | 1294577.820 | 16313312.444 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537844.070 | 1019575.014 | 1294578.222 | 16313311.994 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

# PLAINS MNDT RM 2



**Mn/DOT Name:** PLAINS MNDT RM 2 **NGS Name:** PLAINS RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1513 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 117 N | 29 W | 445345.75 | 942007.19 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | REFERENCE MARK DISK | MNDT |

**Description:** (1996) **Stamping:** PLAINS NO 2 1984

0.5 MILE EAST OF HUTCHINSON, 1.65 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.65, 146.0 FEET SOUTHWEST OF PLAINS MNDT RM 1, 131.1 FEET SOUTH-SOUTHEAST OF STATION PLAINS MNDT, 79.2 FEET WEST-NORTHWEST OF A TELEPHONE CABLE PEDESTAL, 61.5 FEET SOUTH OF TRUNK HIGHWAY 7, 1.7 FEET NORTHWEST OF A POWER POLE, 2.0 FEET EAST-NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.082 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.642 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.075 | .262 | | 978.532 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -89.888 12B = -89.882 09 = -89.757 03 = -89.636**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 45.75188 | 94 20 07.19237 | 577230.549 | 260539.730 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 45.74753 | 94 20 07.18666 | 577230.962 | 260539.291 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537770.317 | 1019449.206 | 1294502.936 | 16313187.132 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537770.726 | 1019448.763 | 1294503.340 | 16313186.685 | .131 | 3 | ADJUSTMENT | 1998 | 17353 |

# PLAINS MNDT RM 2 RESET



**Mn/DOT Name:** PLAINS MNDT RM 2 RESET
**NGS Name:** PLAINS RM 2 RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8112 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 117 N | 29 W | 445346.00 | 942006.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1996 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | REFERENCE MARK DISK | MNDT |

**Description:** (1996) **Stamping:** PLAINS NO 2 1984 RESET 1996

0.5 MILE EAST OF HUTCHINSON, 1.65 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 7 MILEPOINT 143.65, 146.0 FEET SOUTHWEST OF PLAINS MNDT RM 1, 131.1 FEET SOUTH-SOUTHEAST OF STATION PLAINS MNDT, 79.2 FEET WEST-NORTHWEST OF A TELEPHONE CABLE PEDESTAL, 61.5 FEET SOUTH OF TRUNK HIGHWAY 7, 1.7 FEET NORTHWEST OF A POWER POLE, 2.0 FEET EAST-NORTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.062 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1068.062 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.619 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**Geoid Separations(ft): GEOID18 = -89.888 12B = -89.882 09 = -89.757 03 = -89.636**

*** No Horizontal Positions in the Database ***

# PLAINS MNDT RM 3



**Mn/DOT Name:** PLAINS MNDT RM 3 **NGS Name:** PLAINS RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AH5868 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 33 | 117 N | 29 W | 445424.81 | 942006.18 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | MNDT |

**Description:** (2016) **Stamping:** PLAINS 1984 NO 3 1986

2.0 MILES EAST-NORTHEAST OF HUTCHINSON, 0.7 MILE NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 0.8 MILE EAST ON NORTH HIGH DRIVE, THEN 0.8 MILE CONTINUED EAST ON COUNTY ROAD 79, 38.0 FEET SOUTH OF COUNTY ROAD 79, 13.8 FEET WEST-NORTHWEST OF A POWER POLE, 12.0 FEET EAST OF AN ENTRANCE, 10.4 FEET WEST-NORTHWEST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1092.911 | .197 | | 1003.430 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1092.911 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.813 12B = -89.806 09 = -89.685 03 = -89.567**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.81189 | 94 20 06.17847 | 577289.046 | 264496.035 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.80751 | 94 20 06.17236 | 577289.487 | 264495.593 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 44 54 24.80701 | 94 20 06.17275 | 577289.459 | 264495.541 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.94510 | 94 20 05.23770 | | | .100 | | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537859.512 | 1023404.556 | 1294640.946 | 16317140.250 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537859.950 | 1023404.110 | 1294641.379 | 16317139.799 | .066 | 2 | ADJUSTMENT | 1998 | 17353 |
| 2537859.922 | 1023404.060 | 1294641.350 | 16317139.749 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1913258.051 | 695327.438 | | | .100 | | CLASSICAL SURVEY | 1950 | UNK |

# PLATO DEUTSCH EVAN ST PAUL CH



**Mn/DOT Name:** PLATO DEUTSCH EVAN ST PAUL CH **NGS Name:** PLATO DEUTSCH EVAN ST PAUL CH

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 27 W | 444625.50 | 940209.73 | | 4 |

**NGS ACRN:** PQ0608 Get Map
**NGS Quad / Sta Num :** 44094112/1040
**USGS Quad:** PLATO

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | GOOD | Horz=NO Vert=NO | YES | | | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | CHURCH CROSS | NGS |

**Description:** (2016)

**Stamping:**

IN THE NORTHEAST PART OF PLATO, 0.4 MILE NORTH ON COUNTY ROAD 9 FROM THE JUNCTION OF COUNTY ROAD 9 AND TRUNK HIGHWAY 212 IN PLATO, THEN 0.2 MILE EAST ON 1ST STREET, 145.09 FEET NORTHEAST OF THE JUNCTION OF 1ST STREET AND 3RD AVENUE, 132.85 FEET EAST OF 3RD AVENUE, 73.73 FEET NORTH OF 1ST STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.423 12B = -90.439 09 = -90.338 03 = -90.223**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 25.50203 | 94 02 09.73117 | 655122.161 | 216378.782 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 25.49629 | 94 02 09.72772 | 655122.414 | 216378.202 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 25.63400 | 94 02 08.82900 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2615308.652 | 974688.922 | 1371466.161 | 16267485.471 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2615308.901 | 974688.340 | 1371466.403 | 16267484.887 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1990706.795 | 646612.325 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PLATO_DEUTSCH_EVAN_ST_PAUL_CH-PQ0608-3W-14APR2015.jpg | W | Apr 14, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# PLATO MUNICIPAL TANK



**Mn/DOT Name:** PLATO MUNICIPAL TANK
**NGS Name:** PLATO MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0609 Get Map
**NGS Quad / Sta Num :** 44094112/1041
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 14 | 115 N | 27 W | 444627.51 | 940230.65 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | GOOD | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | ELEVATED TANK | NGS |

**Description:** (2016)

**Stamping:**

AT THE NORTHWEST EDGE OF PLATO, 0.5 MILE NORTH ALONG COUNTY ROAD 9 FROM THE JUNCTION OF COUNTY ROAD 9 AND TRUNK HIGHWAY 212, THEN 427.0 FEET WEST ON 2ND STREET, THEN 312.0 FEET SOUTH ON 1ST AVENUE, WEST OF A SCHOOLHOUSE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.436 12B = -90.456 09 = -90.354 03 = -90.233**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.51185 | 94 02 30.65039 | 653611.579 | 216571.312 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.50607 | 94 02 30.64730 | 653611.806 | 216570.728 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.63900 | 94 02 29.75100 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2613799.772 | 974893.172 | 1369960.283 | 16267708.202 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2613799.994 | 974892.586 | 1369960.499 | 16267707.614 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1989197.670 | 646816.081 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PLATO_MUNICIPAL_TANK-PQ0609-3SW-14APR2015.jpg | SW | Apr 14, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# PORK CHOP MN085



**Mn/DOT Name:** PORK CHOP MN085 **NGS Name:** PORK CHOP

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6207 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 8 | 117 N | 30 W | 445701.69 | 942843.89 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2007) **Stamping:** PORK CHOP

6.5 MILES NORTHWEST OF HUTCHINSON, 2.18 MILES NORTHEAST OF CEDAR MILLS, 1.15 MILES EAST ALONG 230TH STREET (COUNTY ROAD 20) FROM THE JUNCTION OF 230TH STREET AND TRUNK HIGHWAY 22 IN CEDAR MILLS, 2.0 MILES SOUTH AND 1.0 MILE EAST OF THE NORTHWEST CORNER OF MCLEOD COUNTY, 0.75 MILE SOUTHWEST OF THE SOUTHWEST CORNER OF CEDAR LAKE, 37.0 FEET NORTH OF 230TH STREET, 7.0 FEET EAST OF A FIELD DRIVE, ACROSS THE ROAD FROM A FARM WITH FIRE NUMBER 23889, 13.3 FEET WEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1105.063 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1105.063 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1105.063 | | | 1016.195 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1105.063 | | | 1016.199 | .006 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 1016.195 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1105.050 | .131 | | 1016.396 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1104.952 | .262 | | 1016.225 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1105.083 | .131 | | 1016.317 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1105.083 | .131 | | 1016.317 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1105.083 | .131 | | 1016.389 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1105.083 | .131 | | 1016.389 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 1016.317 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1105.050 | .131 | | 1016.389 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1105.050 | .131 | | 1016.389 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1105.313 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -88.878 12B = -88.878 09 = -88.727 03 = -88.668**

# PORK CHOP MN085



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 01.69279 | 94 28 43.89249 | 539996.141 | 280281.664 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 57 01.69281 | 94 28 43.89245 | 539996.144 | 280281.666 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 57 01.69279 | 94 28 43.89249 | 539996.141 | 280281.664 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 01.69136 | 94 28 43.89276 | 539996.122 | 280281.519 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 57 01.69282 | 94 28 43.89332 | 539996.081 | 280281.667 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 57 01.69282 | 94 28 43.89332 | 539996.081 | 280281.667 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 57 01.69282 | 94 28 43.89332 | 539996.081 | 280281.667 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 01.69229 | 94 28 43.89291 | 539996.111 | 280281.614 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 57 01.69228 | 94 28 43.89290 | 539996.112 | 280281.613 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 57 01.69228 | 94 28 43.89290 | 539996.112 | 280281.613 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 57 01.69228 | 94 28 43.89290 | 539996.112 | 280281.613 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 57 01.69228 | 94 28 43.89290 | 539996.112 | 280281.611 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 01.68857 | 94 28 43.88808 | 539996.459 | 280281.237 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500693.717 | 1039477.540 | 1257684.061 | 16333668.291 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2500693.719 | 1039477.542 | 1257684.064 | 16333668.293 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2500693.717 | 1039477.540 | 1257684.061 | 16333668.291 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500693.696 | 1039477.396 | 1257684.039 | 16333668.147 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2500693.657 | 1039477.544 | 1257684.002 | 16333668.296 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2500693.657 | 1039477.544 | 1257684.002 | 16333668.296 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2500693.657 | 1039477.544 | 1257684.002 | 16333668.296 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500693.686 | 1039477.490 | 1257684.030 | 16333668.241 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2500693.687 | 1039477.489 | 1257684.031 | 16333668.240 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2500693.687 | 1039477.489 | 1257684.031 | 16333668.240 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2500693.687 | 1039477.489 | 1257684.031 | 16333668.240 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2500693.687 | 1039477.489 | 1257684.031 | 16333668.240 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500694.031 | 1039477.111 | 1257684.370 | 16333667.858 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PORK_CHOP-DF6207-3N-13APR2011.jpg | N | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PORK_CHOP-DF6207-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PORK_CHOP-DF6207-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** POSL **NGS Name:** POSL

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9918 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 28 | 115 N | 28 W | 444420.35 | 941247.05 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 19 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** POSL 2015

3.5 MILES SOUTHWEST OF GLENCOE, 0.1 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 SOUTH (THE JUNCTION IS 3.5 MILES SOUTHWEST OF GLENCOE), AT TRUNK HIGHWAY 212 MILEPOINT 116.25, 88.5 FEET SOUTH OF EASTBOUND TRUNK HIGHWAY 212, 49.0 FEET EAST OF A RIGHT-OF-WAY POST, 1.5 FEET NORTH OF A WITNESS POST.

**Station Pair:** BREW - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.767 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1017.767 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.760 | .262 | | 926.868 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1017.767 | | | 926.911 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1017.767 | .131 | | 927.131 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1017.767 | | | 926.911 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1017.741 | .262 | | 926.849 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.895 12B = -90.895 09 = -90.797 03 = -90.633**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 20.35054 | 94 12 47.04931 | 609211.425 | 203416.477 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 44 20.35036 | 94 12 47.05076 | 609211.321 | 203416.458 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 44 20.35036 | 94 12 47.05076 | 609211.321 | 203416.458 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 44 20.34986 | 94 12 47.05037 | 609211.349 | 203416.407 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 20.35017 | 94 12 47.05125 | 609211.286 | 203416.439 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2569303.438 | 962085.186 | 1325320.264 | 16255451.195 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2569303.333 | 962085.168 | 1325320.159 | 16255451.178 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2569303.333 | 962085.168 | 1325320.159 | 16255451.178 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2569303.361 | 962085.117 | 1325320.186 | 16255451.127 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2569303.298 | 962085.149 | 1325320.123 | 16255451.160 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/POSL-DP9918-3S-06MAY2024.jpg | S | May 6, 2024 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/POSL-DP9918-2-06MAY2024.jpg | | May 6, 2024 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/POSL-DP9918-1-06MAY2024.jpg | | May 6, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** PRES MNDT
**NGS Name:** PRES
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6200 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 36 | 117 N | 30 W | 445333.08 | 942359.11 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2001) **Stamping:** PRES 1992

1.5 MILES WEST OF HUTCHINSON, 1.5 MILES WEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 123.6, OPPOSITE SHADY RIDGE LANE, 115.0 FEET SOUTHEAST OF A POWER POLE, 105.5 FEET WEST OF A 40.0 MILES PER HOUR SIGN POST, 69.0 FEET EAST-NORTHEAST OF A TELEPHONE CABLE PEDESTAL, 53.5 FEET NORTH-NORTHWEST OF A STEEL POST AT THE END OF A CULVERT, 30.0 FEET SOUTH OF TRUNK HIGHWAY 22, 7.0 FEET NORTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 969.450 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 969.565 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1059.119 | .131 | | 969.670 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1059.119 | .131 | | 969.670 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.594 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.675 12B = -89.668 09 = -89.524 03 = -89.432**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.08298 | 94 23 59.11065 | 560538.674 | 259202.108 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.08308 | 94 23 59.11129 | 560538.628 | 259202.118 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.08254 | 94 23 59.11082 | 560538.662 | 259202.064 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 53 33.08254 | 94 23 59.11082 | 560538.662 | 259202.064 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.07662 | 94 23 59.10669 | 560538.961 | 259201.467 | .033 | C | GPS - STATIC | 1992 | HHUTC |

# PRES MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.179 | 1018241.281 | 1277792.531 | 16312185.767 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.133 | 1018241.291 | 1277792.485 | 16312185.778 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.166 | 1018241.236 | 1277792.519 | 16312185.723 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2521070.166 | 1018241.237 | 1277792.518 | 16312185.723 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.461 | 1018240.635 | 1277792.805 | 16312185.118 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PRES-DF6200-3S-03NOV2010.jpg | S | Nov 3, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PRES-DF6200-2-03NOV2010.jpg | | Nov 3, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PRES-DF6200-1-03NOV2010.jpg | | Nov 3, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# PRES MNDT RESET



**Mn/DOT Name:** PRES MNDT RESET
**NGS Name:** PRES RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9918 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 36 | 117 N | 30 W | 445333.08 | 942359.11 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** PRES 1992 2011

1.5 MILES WEST OF HUTCHINSON, 1.5 MILES WEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 15 IN HUTCHINSON, AT TRUNK HIGHWAY 22 MILEPOINT 123.6, 115.0 FEET SOUTHEAST OF A POWER POLE, 105.5 FEET WEST OF A 40.0 MILES PER HOUR SIGN POST, 69.0 FEET EAST-NORTHEAST OF A CABLE BOX, 53.5 FEET NORTH-NORTHWEST OF A STEEL POST AT THE END OF A CULVERT, 42.0 FEET EAST OF SHADY RIDGE ROAD EXTENDED, 30.0 FEET SOUTH OF TRUNK HIGHWAY 22, 7.0 FEET NORTH OF A WITNESS POST. UNKNOWN ROD DEPTH.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.827 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1058.797 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1058.827 | | | 969.138 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1058.827 | | | 969.138 | .011 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1058.791 | .131 | | 969.365 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1058.682 | .262 | | 969.158 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.675 12B = -89.668 09 = -89.524 03 = -89.432**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.08428 | 94 23 59.11078 | 560538.664 | 259202.240 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 53 33.08428 | 94 23 59.11078 | 560538.664 | 259202.240 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.08386 | 94 23 59.10991 | 560538.727 | 259202.197 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 33.08379 | 94 23 59.11129 | 560538.628 | 259202.190 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# PRES MNDT RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.170 | 1018241.413 | 1277792.524 | 16312185.899 | .013 | | ADJUSTMENT | 2015 | GPS3052 |
| 2521070.170 | 1018241.413 | 1277792.524 | 16312185.899 | .013 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.232 | 1018241.370 | 1277792.586 | 16312185.856 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2521070.133 | 1018241.363 | 1277792.487 | 16312185.850 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PRES_RESET-DO9918-3S-13APR2011.jpg | S | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PRES_RESET-DO9918-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/PRES_RESET-DO9918-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** Q 123 **NGS Name:** Q 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0057 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 20 | 115 N | 28 W | 444507.00 | 941321.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | RR | FLUSH | SEE DESCRIPTION |

**Monument Type**
CULVERT - ANY SIZE, ANY TYPE

**Disk Type**
BENCH MARK DISK

**Mon. Agency**
NGS

**Description:** (1985)

**Stamping:** Q 123 1934

2.8 MILES WEST-SOUTHWEST OF GLENCOE, 3.8 MILES WEST-SOUTHWEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND CHANDLER AVENUE IN GLENCOE, THEN 0.85 MILE NORTH ON JET AVENUE, 119.0 FEET EAST OF JET AVENUE, 15.5 FEET SOUTH OF THE SOUTH RAIL OF THE RAILROAD TRACKS, IN THE CENTER OF THE SOUTH HEADWALL OF A RAILROAD BOX CULVERT.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.752 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1014.814 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.388 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1014.342 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1985 | VLORD |
| 1014.299 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |
| 1014.388 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1014.388 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.840 12B = -90.846 09 = -90.741 03 = -90.574**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Q_123-PQ0057-3E-22APR2011.jpg | E | Apr 22, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Q_123-PQ0057-2-22APR2011.jpg | | Apr 22, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Q_123-PQ0057-1-22APR2011.jpg | | Apr 22, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** R 123 **NGS Name:** R 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0058 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 21 | 115 N | 28 W | 444529.00 | 941214.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** R 123 1934

2.69 MILES SOUTHWEST OF GLENCOE, 1.0 MILE SOUTHWEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND CHANDLER AVENUE IN GLENCOE, THEN 1.5 MILES WEST ALONG 95TH STREET, THEN 0.3 MILE NORTH ALONG IMPERIAL AVENUE, 502.0 FEET WEST OF IMPERIAL AVENUE, 459.5 FEET WEST OF A WITNESS POST, 20.5 FEET SOUTH OF THE SOUTH RAIL, IN THE CENTER OF THE SOUTH HEADWALL OF A RAILROAD BOX CULVERT.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1015.113 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.693 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1014.693 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1014.693 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.830 12B = -90.833 09 = -90.738 03 = -90.571**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/R_123-PQ0058-3S-25APR2011.jpg | S | Apr 25, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/R_123-PQ0058-2-25APR2011.jpg | | Apr 25, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/R_123-PQ0058-1-25APR2011.jpg | | Apr 25, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# REID O MN085



**Mn/DOT Name:** REID O MN085 **NGS Name:** REID O

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9699 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 27 | 116 N | 30 W | 444911.94 | 942612.17 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2007 | 2011 | POOR | Horz=NO Vert=NO | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT)

**Disk Type**
SURVEY DISK

**Mon. Agency**
MNDT

**Description:** (2016) **Stamping:** REID O 2007

7.0 MILES SOUTHWEST OF HUTCHINSON, 4.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, TO TRUNK HIGHWAY 15 MILEPOINT 97.2, THEN 3.0 MILES WEST ON COUNTY ROAD 18, THEN 1.0 MILE SOUTH ON VALE AVENUE, 20.4 FEET EAST OF VALE AVENUE, 12.5 FEET NORTH OF A FIELD ROAD, 9.8 FEET SOUTH OF A WITNESS POST.

**Station Notes**
FOUND CAP LOOSE. USE WITH CAUTION.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1057.314 | | | 967.193 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1057.314 | | | 967.196 | .009 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 967.193 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1057.314 | .131 | | 967.459 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1057.196 | .262 | | 967.219 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1057.281 | .131 | | 967.344 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1057.281 | .131 | | 967.344 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1057.281 | .131 | | 967.426 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1057.281 | .131 | | 967.426 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**Geoid Separations(ft): GEOID18 = -90.128 12B = -90.118 09 = -89.977 03 = -89.855**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 11.93842 | 94 26 12.16808 | 551023.278 | 232727.981 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 49 11.93839 | 94 26 12.16805 | 551023.280 | 232727.978 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 44 49 11.93842 | 94 26 12.16808 | 551023.278 | 232727.981 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 11.93812 | 94 26 12.16726 | 551023.337 | 232727.951 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 49 11.93862 | 94 26 12.16933 | 551023.188 | 232728.001 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 49 11.93862 | 94 26 12.16933 | 551023.188 | 232728.001 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 11.93797 | 94 26 12.16871 | 551023.233 | 232727.936 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 49 11.93796 | 94 26 12.16872 | 551023.232 | 232727.935 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 49 11.93796 | 94 26 12.16872 | 551023.232 | 232727.935 | .033 | C | GPS - STATIC | 2007 | HMCLD |

# REID O MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511350.643 | 991844.396 | 1267749.771 | 16285915.780 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2511350.645 | 991844.393 | 1267749.774 | 16285915.777 | .010 | C | GPS - STATIC | 2014 | HHEAT |
| 2511350.643 | 991844.396 | 1267749.771 | 16285915.780 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511350.702 | 991844.365 | 1267749.830 | 16285915.749 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2511350.553 | 991844.417 | 1267749.682 | 16285915.802 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2511350.553 | 991844.417 | 1267749.682 | 16285915.802 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2511350.597 | 991844.351 | 1267749.725 | 16285915.735 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2511350.596 | 991844.350 | 1267749.724 | 16285915.734 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2511350.596 | 991844.350 | 1267749.724 | 16285915.734 | .033 | C | GPS - STATIC | 2007 | HMCLD |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/REID_O-DI9699-3E-12APR2011.jpg | E | Apr 12, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/REID_O-DI9699-2-12APR2011.jpg | | Apr 12, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/REID_O-DI9699-1-12APR2011.jpg | | Apr 12, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# RELL MNDT



**Mn/DOT Name:** RELL MNDT **NGS Name:** RELL

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6201 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 20 | 117 N | 30 W | 445522.28 | 942851.91 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** RELL 1992

2.0 MILES SOUTHEAST OF CEDAR MILLS, ON THE SOUTH SHOULDER OF YATCH AVENUE, 1.7 MILES SOUTHEAST ON TRUNK HIGHWAY 22 /TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 NEAR CEDAR MILLS, TO TRUNK HIGHWAY 22 MILEPOINT 128.45, THEN 0.2 MILE SOUTH ON YATCH AVENUE, ON THE SOUTH SHOULDER OF YATCH AVENUE, AT THE TOP OF A HILL, 21.8 FEET SOUTHWEST OF A POWER POLE, 14.5 FEET EAST OF YATCH AVENUE, 26.2 FEET SOUTHWEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1102.137 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1102.117 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1102.137 | | | 1013.115 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1102.137 | | | 1013.092 | .007 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 1013.115 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1102.130 | .131 | | 1013.243 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1101.943 | .262 | | 1013.003 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 1013.233 | .008 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1102.196 | .131 | | 1013.305 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1102.196 | .131 | | 1013.305 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1101.901 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.094 12B = -89.098 09 = -88.940 03 = -88.874**

# RELL MNDT



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 22.27731 | 94 28 51.90708 | 539438.548 | 270211.546 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 55 22.27731 | 94 28 51.90700 | 539438.554 | 270211.546 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 55 22.27731 | 94 28 51.90708 | 539438.548 | 270211.546 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 22.27654 | 94 28 51.90700 | 539438.554 | 270211.467 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 55 22.27741 | 94 28 51.90794 | 539438.486 | 270211.555 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 22.27688 | 94 28 51.90749 | 539438.519 | 270211.502 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 55 22.27689 | 94 28 51.90749 | 539438.519 | 270211.503 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 55 22.27689 | 94 28 51.90749 | 539438.518 | 270211.504 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 22.27098 | 94 28 51.90167 | 539438.938 | 270210.906 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500058.104 | 1029412.994 | 1256924.091 | 16323614.223 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2500058.109 | 1029412.993 | 1256924.097 | 16323614.222 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2500058.104 | 1029412.994 | 1256924.091 | 16323614.223 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500058.109 | 1029412.916 | 1256924.095 | 16323614.145 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2500058.042 | 1029413.004 | 1256924.029 | 16323614.234 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500058.074 | 1029412.950 | 1256924.061 | 16323614.180 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2500058.074 | 1029412.951 | 1256924.061 | 16323614.181 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2500058.074 | 1029412.951 | 1256924.061 | 16323614.181 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500058.489 | 1029412.350 | 1256924.468 | 16323613.575 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/RELL-DF6201-3E-13APR2011.jpg | E | Apr 13, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/RELL-DF6201-2-13APR2011.jpg | | Apr 13, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/RELL-DF6201-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** RICH **NGS Name:** RICH

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0619 Get Map
**NGS Quad / Sta Num :** 44094113/1012
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 28 W | 445146.67 | 940809.58 | | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | TRIANGULATION STATION DISK | NGS |

**Description:** (1956) **Stamping:** RICH 1956

2.75 MILES SOUTH AND 3.0 MILES EAST OF SILVER LAKE, 3.0 MILES EAST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, THEN 3.0 MILES SOUTH ON FALCON AVENUE, THEN 0.25 MILE WEST ON 170TH STREET, 110.98 FEET NORTHWEST OF RICH RM 1, 64.26 FEET SOUTHEAST OF RICH RM 2, 60.0 FEET SOUTH OF 170TH STREET, 46.6 FEET SOUTHWEST OF A COTTONWOOD TREE WITH TRIANGLE BLAZE, 23.0 FEET WEST OF A FENCE LINE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.305 | .262 | | 953.233 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.305 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.426 12B = -90.439 09 = -90.371 03 = -90.203**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 46.66934 | 94 08 09.58339 | 628963.793 | 248731.451 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 46.66288 | 94 08 09.58038 | 628964.014 | 248730.798 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 51 46.79810 | 94 08 08.66920 | | | .100 | 3 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589405.236 | 1007240.659 | 1345971.669 | 16300345.472 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589405.452 | 1007240.005 | 1345971.877 | 16300344.815 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1964803.398 | 679163.387 | | | .100 | 3 | CLASSICAL SURVEY | 1958 | 11592 |

# RICH AZ MK



**Mn/DOT Name:** RICH AZ MK

**NGS Name:** RICH AZ MK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9448 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 28 W | 445146.00 | 940809.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | AZIMUTH MARK DISK | NGS |

**Description:** (2016)

**Stamping:** RICH 1956

4.26 MILES SOUTHEAST OF SILVER LAKE, 2.5 MILES EAST ON TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 92 IN SILVER LAKE, THEN 3.1 MILES SOUTH ON FALCON AVENUE, THEN 0.2 MILE WEST ON 170TH STREET, 0.4 MILE NORTHEAST OF STATION RICH, 65.0 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF MR. MAYNARD EHRKES HOUSE, 13.0 FEET EAST OF THE CENTER OF A DRIVEWAY, 2.0 FEET WEST OF A POWER LINE POLE WITH A TRANSFORMER, 1.5 FEET SOUTH OF A WITNESS POST. STATION RICH AZ MK IS ON PRIVATE PROPERTY.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.426 12B = -90.439 09 = -90.371 03 = -90.203**

# RICH RM 1



**Mn/DOT Name:** RICH RM 1 **NGS Name:** RICH RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9449 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 28 W | 445146.67 | 940809.58 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** RICH NO 1 1956

2.75 MILES SOUTH AND 3.0 MILES EAST OF SILVER LAKE, 3.0 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, THEN 3.0 MILES SOUTH ON COUNTY ROAD 15, THEN 0.2 MILE WEST ON 170TH STREET, 73.0 FEET EAST OF A LARGE ELM TREE, 2.0 FEET WEST OF A FENCE LINE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.426 12B = -90.439 09 = -90.371 03 = -90.203**

# RICH RM 2



**Mn/DOT Name:** RICH RM 2 **NGS Name:** RICH RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO9450 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 13 | 116 N | 28 W | 445147.00 | 940810.34 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** RICH NO 2 1956

4.0 MILES SOUTHEAST OF SILVER LAKE, 3.0 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, THEN 3.0 MILES SOUTH ON FALCON AVENUE, THEN 0.2 MILE WEST ON 170TH STREET, 80.0 FEET WEST OF A LARGE COTTONWOOD TREE WITH A TRIANGLE BLAZE, 25.0 FEET SOUTH OF THE CENTER OF 170TH STREET, 1.0 FOOT EAST OF A WITNESS POST.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.426 12B = -90.439 09 = -90.371 03 = -90.203**

# ROACH MNDT



**Mn/DOT Name:** ROACH MNDT
**NGS Name:** ROACH
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6202 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 117 N | 27 W | 445430.47 | 940425.11 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1998 | 2024 | POOR | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 15 FT) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:** ROACH 1998

2.25 MILES NORTHWEST OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 1.0 MILE WEST ALONG TRUNK HIGHWAY 7 TO TRUNK HIGHWAY 7 MILEPOINT 156.9, THEN 0.15 MILE NORTH ON CABLE AVENUE, 30.0 FEET WEST OF CABLE AVENUE, 4.6 FEET NORTHEAST OF A POWER POLE, 4.3 FEET NORTHEAST OF A WITNESS POST.

**Station Notes**
CAP IS NO LONGER ON THE ROD, USE WITH CAUTION

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.932 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1018.981 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.932 | | | 928.705 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1018.932 | | | 928.705 | .008 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1019.293 | .262 | | 929.043 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1018.830 | .262 | | 928.581 | .197 | 2011 | GPS - OPUS | 2019 | GPSBM |
| 1019.027 | .262 | | 928.745 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| | | | 928.705 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1018.892 | .262 | | 928.705 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 928.791 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1018.928 | .131 | | 928.922 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1018.928 | .131 | | 928.922 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.249 12B = -90.279 09 = -90.187 03 = -90.036**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 30.46839 | 94 04 25.10716 | 645018.546 | 265425.801 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 30.46839 | 94 04 25.10716 | 645018.546 | 265425.801 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 30.46799 | 94 04 25.10595 | 645018.634 | 265425.761 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 30.46838 | 94 04 25.10713 | 645018.549 | 265425.800 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 44 54 30.46758 | 94 04 25.10661 | 645018.586 | 265425.719 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 30.46839 | 94 04 25.10716 | 645018.546 | 265425.801 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 30.46779 | 94 04 25.10785 | 645018.497 | 265425.740 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 30.46857 | 94 04 25.10782 | 645018.499 | 265425.819 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 30.46813 | 94 04 25.10749 | 645018.523 | 265425.774 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 54 30.46812 | 94 04 25.10750 | 645018.522 | 265425.773 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 30.46812 | 94 04 25.10750 | 645018.523 | 265425.775 | .033 | C | GPS - STATIC | 2002 | HLEST |

# ROACH MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605587.702 | 1023808.091 | 1362353.003 | 16316708.076 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2605587.702 | 1023808.091 | 1362353.003 | 16316708.076 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2605587.788 | 1023808.051 | 1362353.090 | 16316708.034 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2605587.704 | 1023808.091 | 1362353.005 | 16316708.075 | .131 | 3 | GPS - OPUS | 2019 | GPSBM |
| 2605587.741 | 1023808.009 | 1362353.041 | 16316707.993 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2605587.702 | 1023808.091 | 1362353.003 | 16316708.076 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605587.652 | 1023808.031 | 1362352.952 | 16316708.015 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2605587.654 | 1023808.110 | 1362352.956 | 16316708.094 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605587.678 | 1023808.065 | 1362352.979 | 16316708.049 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2605587.677 | 1023808.064 | 1362352.978 | 16316708.048 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2605587.677 | 1023808.064 | 1362352.978 | 16316708.049 | .033 | C | GPS - STATIC | 2002 | HLEST |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ROACH-DF6202-3W-20JUN2024.jpg | W | Jun 20, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ROACH-DF6202-2-20JUN2024.jpg | | Jun 20, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ROACH-DF6202-1-02JUN2025.jpg | | Jun 2, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ROBIN MNDT



**Mn/DOT Name:** ROBIN MNDT
**NGS Name:** ROBIN
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9349 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 7 | 114 N | 29 W | 444157.79 | 942157.74 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2025 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 25 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** ROBIN 1992

2.46 MILES SOUTHWEST OF BROWNTON, 1.75 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), TO TRUNK HIGHWAY 15 MILEPOINT 87.75, THEN 0.5 MILE EAST ON 57TH STREET, 48.5 FEET WEST OF ROBIN AVENUE, 21.0 FEET NORTH OF 57TH STREET, 15.2 FEET WEST-SOUTHWEST OF A POWER POLE, 2.4 FEET EAST OF A WITNESS POST.

**Station Pair:** MATTHEW MNDT RESET - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.148 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2021 | 00000967 |
| 1038.148 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2020 | VNIC2 |
| 1038.148 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1038.148 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1038.148 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1038.075 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1037.669 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.187 | .262 | | 947.347 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1038.157 | .262 | | 947.321 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1038.151 | .262 | | 947.321 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| 1038.148 | | | 947.268 | .012 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1038.148 | .131 | | 947.537 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1038.148 | | | 947.288 | .012 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1038.069 | .262 | | 947.239 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 947.268 | .014 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1038.105 | .262 | | 947.393 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 947.449 | .034 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1038.088 | .131 | | 947.587 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1038.088 | .131 | | 947.587 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |

**Geoid Separations(ft): GEOID18 = -90.836 12B = -90.830 09 = -90.712 03 = -90.577**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.78906 | 94 21 57.74105 | 569507.660 | 188810.376 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 41 57.78877 | 94 21 57.74026 | 569507.718 | 188810.347 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 41 57.78953 | 94 21 57.73996 | 569507.739 | 188810.424 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 41 57.78912 | 94 21 57.74121 | 569507.649 | 188810.382 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 41 57.78893 | 94 21 57.74106 | 569507.660 | 188810.363 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 44 41 57.78859 | 94 21 57.74007 | 569507.731 | 188810.329 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 41 57.78912 | 94 21 57.74121 | 569507.649 | 188810.382 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.78904 | 94 21 57.74158 | 569507.622 | 188810.374 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 41 57.78939 | 94 21 57.74248 | 569507.557 | 188810.409 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.78870 | 94 21 57.74151 | 569507.627 | 188810.340 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 41 57.78963 | 94 21 57.74371 | 569507.468 | 188810.433 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 41 57.78963 | 94 21 57.74371 | 569507.468 | 188810.433 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 41 57.78510 | 94 21 57.74057 | 569507.696 | 188809.973 | .033 | C | GPS - STATIC | 1993 | H1993 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529491.788 | 947789.358 | 1285343.882 | 16241648.718 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2529491.845 | 947789.329 | 1285343.938 | 16241648.688 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2529491.867 | 947789.406 | 1285343.961 | 16241648.764 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2529491.776 | 947789.365 | 1285343.870 | 16241648.724 | .010 | | ADJUSTMENT | 2015 | GPS3118 |
| 2529491.787 | 947789.345 | 1285343.881 | 16241648.705 | .010 | C | GPS - STATIC | 2015 | HPLAT |
| 2529491.858 | 947789.310 | 1285343.952 | 16241648.670 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2529491.776 | 947789.365 | 1285343.870 | 16241648.724 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529491.749 | 947789.356 | 1285343.843 | 16241648.717 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529491.685 | 947789.392 | 1285343.779 | 16241648.753 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529491.754 | 947789.322 | 1285343.848 | 16241648.682 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2529491.596 | 947789.417 | 1285343.691 | 16241648.779 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2529491.596 | 947789.417 | 1285343.691 | 16241648.779 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529491.821 | 947788.957 | 1285343.910 | 16241648.317 | .033 | C | GPS - STATIC | 1993 | H1993 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ROBIN-DG9349-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ROBIN-DG9349-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ROBIN-DG9349-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** RUEHLE **NGS Name:** RUEHLE

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444557.99 | 940908.39 | 2 | C |

**NGS ACRN:** DP9920 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 29 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** RUEHLE 2015

IN GLENCOE, 0.3 MILE NORTHEAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 119.95, 38.8 FEET NORTH-NORTHWEST OF WESTBOUND TRUNK HIGHWAY 212, 1.5 FEET WEST OF A WITNESS POST.

**Station Pair:** SCHULTE - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.394 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 989.385 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.398 | .262 | | 898.624 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 989.394 | | | 898.624 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 989.394 | | | 898.624 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 989.106 | .262 | | 898.332 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 989.385 | | | 898.624 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 989.385 | .131 | | 898.850 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 989.385 | | | 898.624 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 989.329 | .262 | | 898.558 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.774 12B = -90.771 09 = -90.695 03 = -90.535**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 57.99125 | 94 09 08.39385 | 624936.345 | 213392.572 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 45 57.99144 | 94 09 08.39361 | 624936.362 | 213392.591 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 45 57.99144 | 94 09 08.39361 | 624936.362 | 213392.591 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 45 57.99048 | 94 09 08.39346 | 624936.373 | 213392.494 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 45 57.99144 | 94 09 08.39361 | 624936.362 | 213392.591 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 45 57.99144 | 94 09 08.39361 | 624936.362 | 213392.591 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 45 57.99095 | 94 09 08.39299 | 624936.407 | 213392.542 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 57.99117 | 94 09 08.39412 | 624936.325 | 213392.564 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 45 57.99125 | 94 09 08.39409 | 624936.328 | 213392.572 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# RUEHLE



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585103.712 | 971937.754 | 1341236.952 | 16265106.535 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2585103.730 | 971937.774 | 1341236.969 | 16265106.554 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2585103.730 | 971937.774 | 1341236.969 | 16265106.554 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2585103.740 | 971937.677 | 1341236.979 | 16265106.457 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2585103.730 | 971937.774 | 1341236.969 | 16265106.554 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2585103.730 | 971937.774 | 1341236.969 | 16265106.554 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2585103.774 | 971937.724 | 1341237.013 | 16265106.504 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2585103.693 | 971937.746 | 1341236.932 | 16265106.527 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2585103.695 | 971937.754 | 1341236.934 | 16265106.536 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/RUEHLE-DP9920-3N-21SEP2025.jpg | N | Sep 21, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/RUEHLE-DP9920-2-21SEP2025.jpg | | Sep 21, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/RUEHLE-DP9920-1-21SEP2025.jpg | | Sep 21, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# S 123



**Mn/DOT Name:** S 123 **NGS Name:** S 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0059 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444606.00 | 940951.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** S 123 1934

IN GLENCOE, 0.4 MILE WEST ALONG 10TH STREET FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE IN GLENCOE, THEN 351.0 FEET NORTH ON ARMSTRONG AVENUE, THEN 0.1 MILE WEST ON 11TH STREET, 0.5 MILE WEST ALONG A RAILROAD FROM THE RAILROAD STATION, AT THE CITY LIMITS, 180.0 FEET WEST OF A ROAD CROSSING, 108.0 FEET WEST OF A RAILROAD SWITCH, 39.0 FEET NORTH OF A RAILROAD, 8.0 FEET NORTHWEST OF A POLE.

**Station Notes**

THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.519 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1014.099 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1014.099 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1014.099 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.781 12B = -90.781 09 = -90.702 03 = -90.538**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** S 124 **NGS Name:** S 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0003 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445830.00 | 940312.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1942 | DESTROYED | Horz=NO Vert=NO | NO | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | SEE DESCRIPTION | NGS |

**Description:** (2016) **Stamping:** S-124 1934

1.0 MILE NORTH OF THE WINSTED CITY HALL, 0.2 MILE NORTH ALONG COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND COUNTY ROAD 6 IN WINSTED, ALONG THE HOWARD LAKE-GLENCOE ROAD AT A CONCRETE BRIDGE, SET ON THE SOUTHWEST WING WALL, 11.0 FEET WEST OF THE CENTERLINE OF A BRIDGE AND LEVEL WITH THE ROAD SURFACE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1009.339 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.252 12B = -90.279 09 = -90.184 03 = -90.036**

*** No Horizontal Positions in the Database ***

# S 124 RESET



**Mn/DOT Name:** S 124 RESET

**NGS Name:** S 124 RESET

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445830.00 | 940311.00 | 2 | |

**NGS ACRN:** PQ0004 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1942 | 2010 | NOT FOUND | Horz=? Vert=YES | NO | NONE | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2016)

**Stamping:** S 124 RESET 1942

1.0 MILE NORTH OF WINSTED, 0.2 MILE NORTH ALONG COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND COUNTY ROAD 6 IN WINSTED, IN THE SOUTHWEST CORNER OF A COUNTY ROAD 1 BRIDGE, ON COUNTY ROAD 1 TO HOWARD LAKE, 13.5 FEET WEST OF COUNTY ROAD 1.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.081 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1010.805 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1010.805 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1972 | L54 MINN |
| 1010.805 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.252 12B = -90.279 09 = -90.184 03 = -90.036**

*** No Horizontal Positions in the Database ***

# SCHULTE



**Mn/DOT Name:** SCHULTE **NGS Name:** SCHULTE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DP9923 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 14 | 115 N | 28 W | 444548.09 | 940931.65 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 4 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 44 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** SCHULTE 2015

IN GLENCOE, AT THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 22 NORTH IN GLENCOE, AT TRUNK HIGHWAY 212 MILEPOINT 119.45, 96.8 FEET NORTHWEST OF WESTBOUND TRUNK HIGHWAY 212, 180.0 FEET WEST OF TRUNK HIGHWAY 22 NORTH (CHANDLER AVENUE NORTH), 36.2 FEET SOUTHEAST OF LINDBERG TRAIL, 1.0 FEET SOUTHEAST OF A WITNESS POST.

**Station Pair:** RUEHLE - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 990.533 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 990.523 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 990.533 | | | 899.755 | .015 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 990.533 | | | 899.755 | .015 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 990.631 | .262 | | 899.837 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 990.523 | | | 899.755 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 990.523 | .131 | | 899.985 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 990.523 | | | 899.755 | .017 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 990.467 | .262 | | 899.673 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.794 12B = -90.791 09 = -90.712 03 = -90.551**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 48.08799 | 94 09 31.65254 | 623264.082 | 212379.751 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 45 48.08799 | 94 09 31.65254 | 623264.082 | 212379.751 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 45 48.08828 | 94 09 31.65260 | 623264.078 | 212379.781 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 45 48.08799 | 94 09 31.65254 | 623264.082 | 212379.751 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 45 48.08799 | 94 09 31.65254 | 623264.082 | 212379.751 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 45 48.08781 | 94 09 31.65230 | 623264.100 | 212379.733 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 48.08771 | 94 09 31.65305 | 623264.046 | 212379.723 | .066 | | NCAT | 2024 | HHUTCH2 |
| 44 45 48.08781 | 94 09 31.65302 | 623264.048 | 212379.733 | .033 | C | GPS - STATIC | 2015 | HPLAT |

# SCHULTE



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583423.807 | 970938.065 | 1339545.266 | 16264127.810 | .007 | | ADJUSTMENT | 2025 | GPS3789 |
| 2583423.807 | 970938.065 | 1339545.266 | 16264127.810 | .007 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2583423.803 | 970938.095 | 1339545.262 | 16264127.839 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2583423.807 | 970938.065 | 1339545.266 | 16264127.810 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2583423.807 | 970938.065 | 1339545.266 | 16264127.810 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2583423.824 | 970938.047 | 1339545.283 | 16264127.791 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2583423.770 | 970938.037 | 1339545.229 | 16264127.782 | .066 | | NCAT | 2024 | HHUTCH2 |
| 2583423.772 | 970938.047 | 1339545.231 | 16264127.792 | .033 | C | GPS - STATIC | 2015 | HPLAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SCHULTE-DP9923-3NW-17JUN2024.jpg | NW | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SCHULTE-DP9923-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SCHULTE-DP9923-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SEVEN DOGS MN085



**Mn/DOT Name:** SEVEN DOGS MN085 **NGS Name:** SEVEN DOGS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9700 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 15 | 114 N | 30 W | 444028.08 | 942613.61 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** SEVEN DOGS 1993

6.0 MILES SOUTHWEST OF BROWNTON, 4.6 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212, THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON, THEN 2.05 MILES WEST ON COUNTY ROAD 17, THEN 1.0 MILE NORTH ON COUNTY ROAD 57 (ULM AVENUE), THEN 1.0 MILE WEST ON COUNTY ROAD 51 (40TH STREET), THEN 310.0 FEET NORTH ON VALE AVENUE, 18.0 FEET EAST OF VALE AVENUE, 2.5 FEET NORTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1048.348 | .262 | | 957.531 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1048.262 | .262 | | 957.432 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1048.230 | .262 | | 957.400 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 957.452 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1048.266 | .262 | | 957.574 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1048.259 | .131 | | 957.554 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1048.259 | .131 | | 957.554 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| | | | 957.554 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1048.193 | .131 | | 957.695 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1048.193 | .131 | | 957.695 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| 1048.226 | .131 | | 957.695 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1048.226 | .131 | | 957.695 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1047.800 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.817 12B = -90.830 09 = -90.695 03 = -90.558**

# SEVEN DOGS MN085



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 40 28.07548 | 94 26 13.61479 | 551046.856 | 179671.834 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 40 28.07554 | 94 26 13.61408 | 551046.907 | 179671.840 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 40 28.07520 | 94 26 13.61363 | 551046.940 | 179671.806 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 40 28.07567 | 94 26 13.61462 | 551046.868 | 179671.853 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 40 28.07576 | 94 26 13.61562 | 551046.796 | 179671.862 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 40 28.07570 | 94 26 13.61543 | 551046.810 | 179671.856 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 40 28.07570 | 94 26 13.61543 | 551046.810 | 179671.856 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 40 28.07570 | 94 26 13.61543 | 551046.810 | 179671.856 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 40 28.07540 | 94 26 13.61524 | 551046.824 | 179671.826 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 40 28.07540 | 94 26 13.61524 | 551046.824 | 179671.826 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 40 28.07540 | 94 26 13.61524 | 551046.824 | 179671.826 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 40 28.07540 | 94 26 13.61524 | 551046.824 | 179671.826 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 40 28.07211 | 94 26 13.61426 | 551046.897 | 179671.494 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2510962.687 | 938795.326 | 1266708.905 | 16232884.651 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2510962.739 | 938795.332 | 1266708.956 | 16232884.656 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2510962.771 | 938795.298 | 1266708.988 | 16232884.621 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2510962.700 | 938795.346 | 1266708.918 | 16232884.670 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2510962.628 | 938795.355 | 1266708.846 | 16232884.680 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2510962.641 | 938795.349 | 1266708.859 | 16232884.674 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2510962.641 | 938795.349 | 1266708.859 | 16232884.674 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2510962.641 | 938795.349 | 1266708.859 | 16232884.674 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2510962.655 | 938795.319 | 1266708.872 | 16232884.643 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2510962.655 | 938795.319 | 1266708.872 | 16232884.643 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2510962.655 | 938795.319 | 1266708.872 | 16232884.643 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2510962.655 | 938795.319 | 1266708.872 | 16232884.643 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2510962.724 | 938794.985 | 1266708.937 | 16232884.309 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SEVEN_DOGS-DI9700-3E-31MAR2020.jpg | E | Mar 31, 2020 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SEVEN_DOGS-DI9700-2-31MAR2020.jpg | | Mar 31, 2020 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SEVEN_DOGS-DI9700-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SHTA MNDT



**Mn/DOT Name:** SHTA MNDT **NGS Name:** SHTA

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CJ8108 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 5 | 116 N | 29 W | 445252.00 | 942005.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2015 | DESTROYED | Horz=NO Vert=NO | YES | | | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MNDT |

**Description:** (2001) **Stamping:** SHTA 1992

1.5 MILES EAST-SOUTHEAST OF HUTCHINSON, 0.3 MILE EAST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 IN HUTCHINSON, THEN 0.3 MILE SOUTHEAST ON 4TH AVENUE, THEN 1.6 MILES EAST-SOUTHEAST ON ARCH STREET, THEN 0.1 MILE SOUTH ON PAGE AVENUE, 47.5 FEET NORTH-NORTHEAST OF A POWER POLE, 25.5 FEET WEST OF PAGE AVENUE, 7.5 FEET SOUTH OF FIELD ENTRANCE, 9.0 FEET NORTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.468 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2004 | 00000442 |
| 1071.468 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.025 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1996 | VHUTB |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1071.094 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.997 12B = -89.987 09 = -89.865 03 = -89.741**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 52 52.01543 | 94 20 06.36330 | 577310.168 | 255097.482 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537807.685 | 1014007.033 | 1294473.116 | 16307746.045 | .033 | C | GPS - STATIC | 1992 | HHUTC |

# SILVER LAKE



**Mn/DOT Name:** SILVER LAKE
**NGS Name:** SILVER LAKE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0623 Get Map
**NGS Quad / Sta Num :** 44094114/1014
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445413.58 | 941154.44 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** SILVER LAKE 1956

IN SILVER LAKE, 0.2 MILE SOUTH ON PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 253.0 FEET EAST ON CENTER STREET, 229.58 FEET NORTH OF THE CENTERLINE OF COUNTY ROAD 16 (MAIN STREET), 94.69 FEET SOUTH OF THE CENTERLINE OF CENTER STREET, 18.20 FEET EAST OF STATION SILVER LAKE 2 RESET.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.271 | .197 | | 976.350 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.304 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.295 12B = -90.305 09 = -90.213 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.57653 | 94 11 54.44028 | 612688.035 | 263517.466 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.57096 | 94 11 54.43822 | 612688.186 | 263516.902 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.70730 | 94 11 53.51920 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573246.438 | 1022151.243 | 1330001.788 | 16315450.550 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573246.585 | 1022150.678 | 1330001.929 | 16315449.984 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1948644.584 | 694074.001 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# SILVER LAKE 2



**Mn/DOT Name:** SILVER LAKE 2 **NGS Name:** SILVER LAKE 2

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445414.00 | 941155.00 | | |

**NGS ACRN:** PQ0624 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1957 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** SILVER LAKE 2 1957

IN SILVER LAKE, 0.2 MILE SOUTH ALONG PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 230.0 FEET EAST ON CENTER STREET, 60.21 FEET SOUTH OF CENTER OF THE JUNCTION OF THE CENTER STREET AND QUEENS AVENUE, 50.50 FEET NORTH OF STATION SILVER LAKE 2 RESET, 49.15 FEET SOUTH OF THE CENTERLINE OF CENTER STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.295 12B = -90.305 09 = -90.213 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD27**

| Geodetic Position Latitude | Longitude | X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 44 54 13.67850 | 94 11 53.76720 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD27**

| MN State Plane - South Zone X | Y | X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 1948626.727 | 694071.128 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# SILVER LAKE 2 RESET



**Mn/DOT Name:** SILVER LAKE 2 RESET
**NGS Name:** SILVER LAKE 2 RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** AC5044 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445413.55 | 941154.69 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 1 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (1994) **Stamping:** SILVER LAKE 2 1957 1965

IN SILVER LAKE, 0.2 MILE SOUTH ALONG PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 230.0 FEET EAST ON CENTER STREET, 98.0 FEET SOUTH OF CENTER STREET NORTHWEST, 78.6 FEET SOUTH-SOUTHWEST OF A LIGHT POLE, 75.7 FEET WEST-NORTHWEST OF LIGHT POLE NUMBER 37-41, 51.2 FEET NORTH OF THE NORTHWEST CORNER OF THE AUDITORIUM BUILDING, 80.2 FEET NORTHWEST OF THE NORTHEAST CORNER OF THE AUDITORIUM BUILDING, 45.3 FEET NORTH-NORTHEAST OF A POWER POLE NUMBER 37-42, 25.7 FEET WEST-NORTHWEST OF THE SOUTHWEST CORNER OF A BRICK BUILDING, 25.5 FEET WEST OF A BRICK STORAGE BUILDING, 51.69 FEET NORTH-NORTHEAST OF SILVER LAKE RM 2.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.258 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1067.258 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1067.281 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1067.255 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1066.812 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.193 | .262 | | 976.888 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 976.953 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1067.121 | .262 | | 976.907 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 977.052 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1067.255 | .131 | | 977.186 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1067.255 | .131 | | 977.186 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |
| 1067.124 | .131 | | 977.203 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |
| 1067.130 | .131 | | 977.186 | .066 | 1996 | GPS - STATIC | 1997 | GPS805-C |

**Geoid Separations(ft): GEOID18 = -90.295 12B = -90.305 09 = -90.213 03 = -90.039**

# SILVER LAKE 2 RESET



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.54745 | 94 11 54.68766 | 612670.245 | 263514.425 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 54 13.54833 | 94 11 54.68791 | 612670.226 | 263514.514 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.54849 | 94 11 54.68960 | 612670.104 | 263514.530 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 13.54844 | 94 11 54.68865 | 612670.173 | 263514.525 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.54776 | 94 11 54.68824 | 612670.203 | 263514.457 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 13.54776 | 94 11 54.68824 | 612670.203 | 263514.457 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 44 54 13.54776 | 94 11 54.68824 | 612670.203 | 263514.457 | .033 | C | ADJUSTMENT | 1999 | 17648 |
| 44 54 13.54776 | 94 11 54.68824 | 612670.203 | 263514.457 | .033 | C | GPS - STATIC | 1997 | GPS805-C |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.54220 | 94 11 54.68619 | 612670.353 | 263513.894 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.67850 | 94 11 53.76720 | | | .100 | C | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573228.626 | 1022148.341 | 1329983.947 | 16315447.869 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2573228.609 | 1022148.430 | 1329983.930 | 16315447.958 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573228.487 | 1022148.447 | 1329983.809 | 16315447.976 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2573228.556 | 1022148.442 | 1329983.877 | 16315447.970 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573228.585 | 1022148.373 | 1329983.905 | 16315447.901 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2573228.585 | 1022148.373 | 1329983.905 | 16315447.901 | .033 | C | GPS - STATIC | 2002 | HLEST |
| 2573228.585 | 1022148.373 | 1329983.905 | 16315447.901 | .033 | C | ADJUSTMENT | 1999 | 17648 |
| 2573228.585 | 1022148.373 | 1329983.905 | 16315447.901 | .033 | C | GPS - STATIC | 1997 | GPS805-C |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573228.731 | 1022147.809 | 1329984.044 | 16315447.336 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1948626.730 | 694071.120 | | | .100 | C | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_2_RESET-AC5044-3W-09MAY2011.jpg | W | May 9, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_2_RESET-AC5044-2-09MAY2011.jpg | | May 9, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_2_RESET-AC5044-1-09MAY2011.jpg | | May 9, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SILVER LAKE MOBLE TEL MAST



**Mn/DOT Name:** SILVER LAKE MOBLE TEL MAST
**NGS Name:** SILVER LAKE MOBLE TEL MAST
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CS4595 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 35 | 117 N | 29 W | 445347.52 | 941639.50 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1985 | 2015 | GOOD | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | RADIO/TV MAST | MNDT |

**Description:** (1990)

**Stamping:**

4.5 MILES EAST OF HUTCHINSON, 4.6 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7/ TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 0.3 MILE NORTH ON COUNTY ROAD 4 (MAJOR AVENUE), 0.73 MILE SOUTH OF THE JUNCTION OF COUNTY ROAD 4 AND COUNTY ROAD 79, AT STATION KOMENSKY, 0.39 MILE NORTHWEST OF STATION 4302 G, 150.0 FEET WEST OF COUNTY ROAD 4.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.092 12B = -90.102 09 = -89.983 03 = -89.832**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 47.52476 | 94 16 39.49929 | 592181.332 | 260779.311 | .328 | 4 | CLASSICAL SURVEY | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552721.065 | 1019572.693 | 1309450.857 | 16313126.037 | .328 | 4 | CLASSICAL SURVEY | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_MOBLE_TEL_MAST-CS4595-3W-28JUL2015.jpg | W | Jul 28, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SILVER LAKE MUNICIPAL TANK



**Mn/DOT Name:** SILVER LAKE MUNICIPAL TANK
**NGS Name:** SILVER LAKE MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0621 Get Map
**NGS Quad / Sta Num :** 44094114/1043
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445409.32 | 941154.82 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (2015)

**Stamping:**

IN CENTRAL SILVER LAKE, 0.2 MILE SOUTH ALONG PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 194.0 FEET EAST ON MAIN STREET, THEN 233.0 FEET SOUTH ON TOWER AVENUE, THEN 43.0 FEET EAST ON AN ALLEY, 35.43 FEET NORTH OF AN ALLEY.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.298 12B = -90.308 09 = -90.216 03 = -90.042**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position Latitude | Longitude | McLeod County X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 44 54 09.31661 | 94 11 54.82173 | 612662.883 | 263085.873 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position Latitude | Longitude | McLeod County X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 44 54 09.31445 | 94 11 54.79523 | 612664.792 | 263085.665 | .328 | 4 | CLASSICAL SURVEY | 1989 | HSILV |
| 44 54 09.31769 | 94 11 54.81743 | 612663.192 | 263085.984 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position Latitude | Longitude | X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 44 54 09.46200 | 94 11 53.90000 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone X | Y | UTM - Zone 15 X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 2573217.937 | 1021719.900 | 1329967.975 | 16315019.694 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone X | Y | UTM - Zone 15 X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 2573219.843 | 1021719.677 | 1329969.878 | 16315019.447 | .328 | 4 | CLASSICAL SURVEY | 1989 | HSILV |
| 2573218.246 | 1021720.009 | 1329968.286 | 16315019.799 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone X | Y | X | Y | Acc | Order | Determination Method | Project Info Year | Reference |
|---|---|---|---|---|---|---|---|---|
| 1948616.133 | 693644.142 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_MUNICIPAL_TANK-PQ0621-3W-28JUL2015.jpg | W | Jul 28, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SILVER LAKE RM 1



**Mn/DOT Name:** SILVER LAKE RM 1 **NGS Name:** SILVER LAKE RM 1

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445413.14 | 941153.48 | | |

**NGS ACRN:** CO8749 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** SILVER LAKE NO 1 1956

IN SILVER LAKE, 0.2 MILE SOUTH ON PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7, THEN 253.0 FEET EAST ON CENTER STREET, 171.29 FEET NORTH OF THE CENTERLINE OF COUNTY ROAD 16, 152.94 FEET SOUTH OF THE CENTERLINE OF CENTER STREET, 75.74 FEET SOUTHEAST OF STATION SILVER LAKE 2 RESET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.295 12B = -90.305 09 = -90.213 03 = -90.042**

# SILVER LAKE RM 2



**Mn/DOT Name:** SILVER LAKE RM 2 **NGS Name:** SILVER LAKE RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8750 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445413.04 | 941154.75 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2015) **Stamping:** SILVER LAKE NO 2 1956

IN SILVER LAKE, 0.2 MILE SOUTH ALONG PARK AVENUE FROM THE JUNCTION OF PARK AVENUE AND TRUNK HIGHWAY 7 IN SILVER LAKE, THEN 230.0 FEET EAST ON CENTER STREET, AT THE NORTH SIDE OF A CITY AUDITORIUM, 150.0 FEET SOUTH OF CENTER STREET NORTHWEST, 56.8 FEET SOUTHWEST OF THE CORNER OF A BRICK STORAGE BUILDING, 7.8 FEET SOUTH-SOUTHEAST OF A POWER POLE NUMBER 37-42, 6.8 FEET WEST OF THE NORTHWEST CORNER OF AN AUDITORIUM, 51.7 FEET SOUTH-SOUTHWEST OF SILVER LAKE 2 RESET.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1068.082 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1068.082 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |
| 1068.115 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1068.088 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.646 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.823 | .262 | | 977.518 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.295 12B = -90.305 09 = -90.213 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 13.04017 | 94 11 54.74842 | 612666.146 | 263463.025 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573224.129 | 1022096.979 | 1329978.816 | 16315396.578 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_RM_2-CO8750-3S-09MAY2011.jpg | S | May 9, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_RM_2-CO8750-2-09MAY2011.jpg | | May 9, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SILVER_LAKE_RM_2-CO8750-1-09MAY2011.jpg | | May 9, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SILVER LAKE ST JOSEPHS CH CR



**Mn/DOT Name:** SILVER LAKE ST JOSEPHS CH CR
**NGS Name:** SILVER LAKE ST JOSEPHS CH CR
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8751 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 33 | 117 N | 28 W | 445413.00 | 941154.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| | 2011 | DESTROYED | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH CROSS | UNK |

**Description:**

IN SILVER LAKE, 177.0 FEET NORTH OF THE JUNCTION OF COUNTY ROAD 16 (MAIN STREET) AND CENTER STREET NORTHWEST.

**Stamping:**

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.295 12B = -90.305 09 = -90.213 03 = -90.042**

# SKEETER MN085



**Mn/DOT Name:** SKEETER MN085 **NGS Name:** SKEETER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI9701 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 21 | 117 N | 29 W | 445517.83 | 941942.38 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT)
**Disk Type:** SURVEY DISK
**Mon. Agency:** MN-085

**Description:** (2016) **Stamping:** SKEETER 1993

3.0 MILES NORTHEAST OF HUTCHINSON, 0.7 MILE NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 22/ TRUNK HIGHWAY 7 IN HUTCHINSON, THEN 0.8 MILE EAST ON COUNTY ROAD 76, THEN 0.6 MILE CONTINUED EAST ON COUNTY ROAD 7, THEN 1.3 MILES NORTH-NORTHEAST CONTINUED ON COUNTY ROAD 7, THEN 381.0 FEET EAST ON 210TH STREET, 389.0 FEET EAST AND 20.0 FEET NORTH OF THE JUNCTION OF COUNTY ROAD 7 AND 210TH STREET, 8.0 FEET WEST OF A FIELD DRIVE NEXT TO A POWER POLE NUMBER 250, 27.8 FEET SOUTHEAST OF A WITNESS POST.

**Station Notes**

THE NATIONAL GEODETIC SURVEY (NGS) DESCRIPTION SAYS THE ROD DEPTH IS 8.9 FEET, 6-10-2009 -THE CAP WAS MISSING AND NEEDS TO BE RESET.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1009.463 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1099.210 | .131 | | 1009.575 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1099.210 | .131 | | 1009.575 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1099.210 | .131 | | 1009.683 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1099.210 | .131 | | 1009.683 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1098.685 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.737 12B = -89.734 09 = -89.616 03 = -89.504**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82607 | 94 19 42.38499 | 578981.483 | 269871.722 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82608 | 94 19 42.38559 | 578981.440 | 269871.723 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 55 17.82608 | 94 19 42.38559 | 578981.440 | 269871.723 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82555 | 94 19 42.38518 | 578981.470 | 269871.669 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 55 17.82555 | 94 19 42.38518 | 578981.470 | 269871.669 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82092 | 94 19 42.38034 | 578981.821 | 269871.202 | .033 | C | GPS - STATIC | 1993 | CO43 |

# SKEETER MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.462 | 1028766.432 | 1296440.621 | 16322479.163 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.419 | 1028766.433 | 1296440.577 | 16322479.165 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2539593.419 | 1028766.433 | 1296440.577 | 16322479.165 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.448 | 1028766.379 | 1296440.606 | 16322479.111 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2539593.448 | 1028766.379 | 1296440.606 | 16322479.111 | .033 | C | GPS - STATIC | 2007 | HMCLD |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.794 | 1028765.909 | 1296440.947 | 16322478.636 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKEETER-DI9701-3E-12JUN2007.jpg | E | Jun 12, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKEETER-DI9701-2-12JUN2007.jpg | | Jun 12, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKEETER-DI9701-1-12JUN2007.jpg | | Jun 12, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SKEETER MN085 RESET



**Mn/DOT Name:** SKEETER MN085 RESET
**NGS Name:** SKEETER RESET
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 21 | 117 N | 29 W | 445517.83 | 941942.39 | | C |

**NGS ACRN:** DL9781 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (<10 FT) (DEPTH 9 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2009) **Stamping:** SKEETER RESET 1993 2009

3.0 MILES NORTHEAST OF HUTCHINSON, 2.9 MILES NORTHEAST ALONG COUNTY ROAD 7 FROM THE JUNCTION OF COUNTY ROAD 7 AND TRUNK HIGHWAY 7 IN HUTCHINSON, 389.0 FEET EAST OF COUNTY ROAD 7, 28.6 FEET SOUTHEAST OF A POWER POLE NUMBER 250, 21.2 FEET NORTH OF 210TH STREET, 7.5 FEET WEST OF A FIELD ENTRANCE, 27.8 FEET SOUTHEAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1099.053 | .262 | | 1009.316 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1099.023 | .262 | | 1009.286 | .197 | 2011 | GPS - OPUS | 2021 | GPSBM |
| 1099.053 | .262 | | 1009.319 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 1009.332 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1098.951 | .262 | | 1009.335 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1099.079 | .131 | | 1009.447 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1099.079 | .131 | | 1009.552 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1099.079 | .131 | | 1009.447 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1098.872 | .262 | | 1009.368 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.737 12B = -89.734 09 = -89.616 03 = -89.504**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82613 | 94 19 42.38609 | 578981.404 | 269871.728 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 55 17.82653 | 94 19 42.38591 | 578981.417 | 269871.768 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 44 55 17.82581 | 94 19 42.38541 | 578981.453 | 269871.695 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 55 17.82600 | 94 19 42.38524 | 578981.465 | 269871.715 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82564 | 94 19 42.38562 | 578981.438 | 269871.678 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 55 17.82597 | 94 19 42.38604 | 578981.407 | 269871.712 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 55 17.82597 | 94 19 42.38604 | 578981.407 | 269871.712 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 17.82545 | 94 19 42.38556 | 578981.442 | 269871.659 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 55 17.82601 | 94 19 42.38595 | 578981.414 | 269871.716 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# SKEETER MN085 RESET



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.383 | 1028766.439 | 1296440.542 | 16322479.171 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2539593.396 | 1028766.479 | 1296440.555 | 16322479.211 | .131 | 3 | GPS - OPUS | 2021 | GPSBM |
| 2539593.432 | 1028766.406 | 1296440.590 | 16322479.138 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2539593.444 | 1028766.425 | 1296440.603 | 16322479.157 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.417 | 1028766.389 | 1296440.575 | 16322479.121 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2539593.386 | 1028766.422 | 1296440.545 | 16322479.155 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2539593.386 | 1028766.422 | 1296440.545 | 16322479.155 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2539593.421 | 1028766.370 | 1296440.579 | 16322479.101 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2539593.393 | 1028766.426 | 1296440.551 | 16322479.158 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKEETER_RESET-DL9781-3N-30MAR2020.jpg | N | Mar 30, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKEETER_RESET-DL9781-2-30MAR2020.jpg | | Mar 30, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKEETER_RESET-DL9781-1-30MAR2020.jpg | | Mar 30, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SKIPPY MN085



**Mn/DOT Name:** SKIPPY MN085 **NGS Name:** SKIPPY

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG7280 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 117 N | 28 W | 445715.38 | 941521.87 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

**Monument Type:** ALUMINUM ALLOY ROD (NO SLEEVE)
**Disk Type:** SURVEY DISK
**Mon. Agency:** MN-085

**Description:** (2003) **Stamping:** SKIPPY 1993

4.5 MILES NORTHWEST OF SILVER LAKE, 4.0 MILES NORTH AND WEST ALONG COUNTY ROAD 16 FROM THE JUNCTION OF HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, THEN 1.5 MILES WEST ALONG COUNTY ROAD 5, THEN 0.25 MILE NORTH ALONG COUNTY ROAD 71, 1.85 MILES SOUTH OF THE NORTH COUNTY LINE, 28.0 FEET EAST OF COUNTY ROAD 71 (LACE AVENUE), 14.0 FEET NORTH OF A FIELD DRIVE, 8.9 FEET SOUTHWEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

**Station Notes**

THE ROD DEPTH IS UNKNOWN.
FOUND CAP LOOSE. USE WITH CAUTION.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 996.967 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1086.874 | .131 | | 997.055 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1086.842 | .131 | | 997.055 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1086.842 | .131 | | 997.163 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1086.842 | .131 | | 997.055 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1086.874 | .131 | | 997.055 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1086.681 | .262 | | 997.026 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |
| 1086.874 | .131 | | 997.163 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1086.874 | .131 | | 997.163 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 997.055 | .012 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1086.809 | .131 | | 997.163 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2004 | GPS2022 |
| 1086.809 | .131 | | 997.163 | .066 | 1996 | GPS - STATIC | 2004 | HMEEK |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1086.415 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.892 12B = -89.901 09 = -89.793 03 = -89.652**

# SKIPPY MN085



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 15.37971 | 94 15 21.87311 | 597671.943 | 281856.255 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 15.37981 | 94 15 21.87377 | 597671.896 | 281856.264 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 57 15.37981 | 94 15 21.87377 | 597671.896 | 281856.264 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 57 15.37981 | 94 15 21.87377 | 597671.896 | 281856.264 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 15.37981 | 94 15 21.87377 | 597671.896 | 281856.264 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 57 15.37981 | 94 15 21.87377 | 597671.896 | 281856.264 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 15.37931 | 94 15 21.87353 | 597671.913 | 281856.214 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 57 15.37978 | 94 15 21.87457 | 597671.838 | 281856.261 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 44 57 15.37931 | 94 15 21.87353 | 597671.913 | 281856.214 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 57 15.37931 | 94 15 21.87353 | 597671.913 | 281856.214 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 57 15.37931 | 94 15 21.87353 | 597671.913 | 281856.214 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 44 57 15.37931 | 94 15 21.87353 | 597671.913 | 281856.214 | .033 | C | GPS - STATIC | 2004 | HMEEK |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 15.37399 | 94 15 21.86853 | 597672.276 | 281855.676 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558374.650 | 1040604.374 | 1315362.427 | 16334081.540 | .003 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558374.602 | 1040604.385 | 1315362.380 | 16334081.551 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2558374.602 | 1040604.385 | 1315362.380 | 16334081.551 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2558374.602 | 1040604.385 | 1315362.380 | 16334081.551 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2558374.602 | 1040604.385 | 1315362.380 | 16334081.551 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2558374.602 | 1040604.385 | 1315362.380 | 16334081.551 | .010 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558374.619 | 1040604.334 | 1315362.397 | 16334081.500 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2558374.545 | 1040604.382 | 1315362.322 | 16334081.549 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |
| 2558374.619 | 1040604.334 | 1315362.397 | 16334081.500 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2558374.619 | 1040604.334 | 1315362.397 | 16334081.500 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2558374.619 | 1040604.334 | 1315362.397 | 16334081.500 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 2558374.619 | 1040604.334 | 1315362.397 | 16334081.500 | .033 | C | GPS - STATIC | 2004 | HMEEK |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558374.977 | 1040603.794 | 1315362.748 | 16334080.956 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKIPPY-DG7280-3E-19AUG2003.jpg | E | Aug 19, 2003 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKIPPY-DG7280-2-19AUG2003.jpg | | Aug 19, 2003 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKIPPY-DG7280-1-19AUG2003.jpg | | Aug 19, 2003 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SKIPPY MN085 RESET



**Mn/DOT Name:** SKIPPY MN085 RESET
**NGS Name:** SKIPPY RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DS3063 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 7 | 117 N | 28 W | 445715.38 | 941521.87 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2024 | 2024 | GOOD | Horz=YES Vert=YES | NO | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2024) **Stamping:** SKIPPY 1993 2024

4.5 MILES NORTHWEST OF SILVER LAKE, 4.0 MILES NORTH AND WEST ALONG COUNTY ROAD 16 FROM THE JUNCTION OF HIGHWAY 7 AND COUNTY ROAD 16 IN SILVER LAKE, THEN 1.5 MILES WEST ALONG COUNTY ROAD 5, THEN 0.25 MILE NORTH ALONG COUNTY ROAD 71, 1.85 MILES SOUTH OF THE NORTH COUNTY LINE, 28.0 FEET EAST OF COUNTY ROAD 71 (LACE AVENUE), 14.0 FEET NORTH OF A FIELD DRIVE, 8.9 FEET SOUTHWEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

**Station Notes**
THE ROD DEPTH IS UNKNOWN.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1086.743 | | | 996.888 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1086.743 | | | 996.888 | .017 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1086.783 | .262 | | 996.888 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |

**Geoid Separation(ft): GEOID18 = -89.892**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 15.37943 | 94 15 21.87300 | 597671.951 | 281856.226 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 57 15.37943 | 94 15 21.87300 | 597671.951 | 281856.226 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 57 15.37951 | 94 15 21.87260 | 597671.980 | 281856.235 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 15.37900 | 94 15 21.87339 | 597671.923 | 281856.182 | .066 | | NCAT | 2024 | HHUTCH1 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558374.658 | 1040604.346 | 1315362.435 | 16334081.512 | .010 | | ADJUSTMENT | 2025 | GPS3788 |
| 2558374.658 | 1040604.346 | 1315362.435 | 16334081.512 | .010 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2558374.686 | 1040604.354 | 1315362.463 | 16334081.519 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2558374.629 | 1040604.303 | 1315362.406 | 16334081.469 | .066 | | NCAT | 2024 | HHUTCH1 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKIPPY_RESET-3E-17JUN2024.jpg | E | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKIPPY_RESET-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SKIPPY_RESET-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SPIERING



**Mn/DOT Name:** SPIERING

**NGS Name:** SPIERING

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444607.00 | 942051.00 | | |

**NGS ACRN:** DI4810 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** SPIERING 1935

2.25 MILES NORTH OF BROWNTON, 3.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.4 MILES EAST ON COUNTY ROAD 3, 0.6 MILE NORTHWEST OF SPIERING AZ MK, 102.05 FEET SOUTHWEST OF SPIERING RM 1, 101.0 FEET SOUTH OF THE SOUTH EDGE OF A GROVE OF TREES, 101.0 FEET SOUTH OF AN EAST-WEST FENCE LINE, ON A SMALL ROUND-TOPPED HILL OWNED BY OTTO SPIERING.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.577 09 = -90.443 03 = -90.295**

# SPIERING AZ MK



**Mn/DOT Name:** SPIERING AZ MK

**NGS Name:** SPIERING AZ MK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8771 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444605.00 | 942050.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016)

**Stamping:**

2.44 MILES NORTH OF BROWNTON, 3.5 MILES NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.4 MILES EAST ON COUNTY ROAD 3, 0.48 MILE SOUTH OF THE CENTERLINE OF COUNTY ROAD 3, 0.18 MILE NORTH OF STATION BROWNTON METHODOX CHURCH SPIRE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.577 12B = -90.577 09 = -90.446 03 = -90.295**

# SPIERING AZ MK 2



**Mn/DOT Name:** SPIERING AZ MK 2 **NGS Name:** SPIERING AZ MK 2

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444604.00 | 942052.00 | | |

**NGS ACRN:** CO8772 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2006 | GOOD | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** SPIERING 1935 RESET 1956

2.43 MILES NORTH OF BROWNTON, 3.5 MILES NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.4 MILES EAST ON COUNTY ROAD 3, 26.0 FEET WEST OF THE CENTER OF A GRAVEL ROAD, 23.5 FEET SOUTH OF THE CENTER OF A GRAVEL ROAD, 2.0 FEET WEST OF A TELEPHONE POLE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.574 09 = -90.443 03 = -90.292**

# SPIERING RESET



**Mn/DOT Name:** SPIERING RESET
**NGS Name:** SPIERING RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0659 Get Map
**NGS Quad / Sta Num :** 44094142/1015
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444606.90 | 942052.31 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | NOT FOUND | Horz=YES Vert=YES | YES | | RECESSED 24 IN. | STEEL ROD IMBED IN MON |

**Monument Type:** CONCRETE MONUMENT (CAST-IN-PLACE)
**Disk Type:** HORIZONTAL CONTROL DISK
**Mon. Agency:** NGS

**Description:** (2016) **Stamping:** SPIERING 1935 1984

2.25 MILES NORTH OF BROWNTON, 2.7 MILES NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212, TO TRUNK HIGHWAY 15 MILEPOINT 92.1, THEN 1.35 MILES EAST ON COUNTY ROAD 26, THEN 0.25 MILE EAST ON COUNTY ROAD 25, THEN 0.5 MILE NORTH ON BULLARD DRIVE, 0.1 MILE WEST OF A FARM DRIVE, 141.09 FEET SOUTH-SOUTHWEST OF STATION SPIERING RM 2, 108.0 FEET SOUTH OF A FENCE LINE, 101.83 FEET SOUTH-SOUTHEAST OF STATION SPIERING RM 1, STATION SPIERING RESET FALLS IN A CULTIVATED FIELD ON THE WEST SIDE OF A HILL, 107.9 FEET SOUTH OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 977.131 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1067.714 | .131 | | 977.350 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1067.714 | .131 | | 977.350 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1067.682 | .131 | | 977.373 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1067.682 | .131 | | 977.373 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 977.350 | .048 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1067.682 | .131 | | 977.416 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1067.682 | .131 | | 977.416 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |
| 1066.927 | .131 | | 976.711 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1067.189 | | | | | | GPS - STATIC | 1990 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.574 09 = -90.443 03 = -90.292**

# SPIERING RESET



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.90464 | 94 20 52.31011 | 574145.510 | 214056.250 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.90510 | 94 20 52.31161 | 574145.402 | 214056.296 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 46 06.90510 | 94 20 52.31161 | 574145.402 | 214056.296 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 46 06.90510 | 94 20 52.31161 | 574145.402 | 214056.296 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.90423 | 94 20 52.31053 | 574145.480 | 214056.209 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 46 06.90423 | 94 20 52.31053 | 574145.480 | 214056.209 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 46 06.90553 | 94 20 52.31373 | 574145.249 | 214056.339 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 46 06.90553 | 94 20 52.31373 | 574145.249 | 214056.340 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 44 46 06.90553 | 94 20 52.31373 | 574145.249 | 214056.339 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 06.90075 | 94 20 52.30932 | 574145.569 | 214055.856 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 07.03700 | 94 20 51.37300 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534324.916 | 972995.762 | 1290485.794 | 16266789.015 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534324.808 | 972995.810 | 1290485.686 | 16266789.063 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2534324.808 | 972995.810 | 1290485.686 | 16266789.063 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2534324.808 | 972995.810 | 1290485.686 | 16266789.063 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534324.886 | 972995.721 | 1290485.763 | 16266788.974 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2534324.886 | 972995.721 | 1290485.763 | 16266788.974 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2534324.655 | 972995.854 | 1290485.534 | 16266789.110 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2534324.655 | 972995.854 | 1290485.534 | 16266789.109 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 2534324.655 | 972995.854 | 1290485.534 | 16266789.110 | .033 | 1 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2534324.971 | 972995.368 | 1290485.844 | 16266788.621 | .033 | 1 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1909723.258 | 644918.968 | | | .100 | 1 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RESET-PQ0659-3N-27MAR2007.jpg | N | Mar 27, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RESET-PQ0659-2-27MAR2007.jpg | | Mar 27, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RESET-PQ0659-1-27MAR2007.jpg | | Mar 27, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SPIERING RESET 1956



**Mn/DOT Name:** SPIERING RESET 1956 **NGS Name:** SPIERING RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DI4809 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444607.00 | 942051.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** SPIERING 1935 1956

2.25 MILES NORTH OF BROWNTON, 3.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.4 MILES EAST ON COUNTY ROAD 3, 0.6 MILE NORTHWEST OF SPIERING AZ MK, 102.05 FEET SOUTHWEST OF SPIERING RM 1, 101.0 FEET SOUTH OF THE SOUTH EDGE OF A GROVE OF TREES, 101.0 FEET SOUTH OF AN EAST-WEST FENCE LINE, ON A SMALL ROUND-TOPPED HILL OWNED BY OTTO SPIERING.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.577 09 = -90.443 03 = -90.295**

# SPIERING RESET 1975



**Mn/DOT Name:** SPIERING RESET 1975 **NGS Name:** SPIERING RESET

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444606.00 | 942051.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1975 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON POST | SEE DESCRIPTION | NGS |

**Description:** (2016) **Stamping:**

2.25 MILES NORTH OF BROWNTON, 3.5 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 1.4 MILES EAST ON COUNTY ROAD 3, 0.6 MILE NORTHWEST OF SPIERING AZ MK, 102.05 FEET SOUTHWEST OF SPIERING RM 1, 101.0 FEET SOUTH OF THE SOUTH EDGE OF A GROVE OF TREES, 101.0 FEET SOUTH OF THE EAST-WEST FENCE LINE, ON A SMALL ROUND-TOPPED HILL OWNED BY OTTO SPIERING.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.577 09 = -90.443 03 = -90.295**

# SPIERING RM 1



**Mn/DOT Name:** SPIERING RM 1 **NGS Name:** SPIERING RM 1

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444608.07 | 942051.24 | | |

**NGS ACRN:** CO8773 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 2 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** SPIERING NO 1 1935

2.25 MILES NORTH OF BROWNTON, 2.7 MILES NORTH ON TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, TO TRUNK HIGHWAY 15 MILEPOINT 92.1, THEN 1.4 MILES EAST ON COUNTY ROAD 3, 2.0 FEET SOUTH OF A FENCE LINE, ON THE NORTH SIDE OF A FIELD ROAD, 52.6 FEET EAST-SOUTHEAST OF A WITNESS POST.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.574 09 = -90.443 03 = -90.292**

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RM_1-CO8773-3N-21APR2011.jpg | N | Apr 21, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RM_1-CO8773-2-21APR2011.jpg | | Apr 21, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RM_1-CO8773-1-21APR2011.jpg | | Apr 21, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SPIERING RM 2



**Mn/DOT Name:** SPIERING RM 2 **NGS Name:** SPIERING RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8774 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 29 W | 444607.84 | 942052.81 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2007) **Stamping:** SPIERING NO 2 1935

2.25 MILES NORTH OF BROWNTON, 2.7 MILES NORTH ON TRUNK HIGHWAY 15 THE FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, TO TRUNK HIGHWAY 15 MILEPOINT 92.1, THEN 1.4 MILES EAST ON COUNTY ROAD 3, ON THE NORTH SIDE OF A FIELD ROAD, 4.0 FEET EAST OF A 2.0 FEET BY 3.0 FEET ROCK, 1.3 FEET SOUTH OF A FENCE LINE, 62.8 FEET WEST-NORTHWEST OF A STEEL WITNESS POST.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.574 12B = -90.574 09 = -90.443 03 = -90.292**

# SPIERING RM 3



**Mn/DOT Name:** SPIERING RM 3 **NGS Name:** SPIERING RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1190 Get Map
**NGS Quad / Sta Num :** 44094142/1015
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 17 | 115 N | 29 W | 444540.31 | 942109.93 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2020 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2007) **Stamping:** SPIERING NO 3 1935 1984

2.0 MILES NORTH OF BROWNTON, 1.15 MILES EAST ALONG COUNTY ROAD 26 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND COUNTY ROAD 26 IN BROWNTON, ON THE NORTH RIGHT-OF-WAY OF COUNTY ROAD 26, 52.0 FEET WEST-NORTHWEST OF A POWER POLE, 48.5 FEET NORTH OF COUNTY ROAD 26, 21.5 FEET WEST OF DRIVEWAY NUMBER 17828, 21.7 FEET SOUTH-SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.642 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1046.642 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |
| 1045.372 | .197 | 2 | | | | VERTICAL ADJUSTMENT | 1990 | 17351 |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1046.704 | .262 | | 956.110 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 1046.658 | .262 | | 956.061 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 1046.642 | | | 956.025 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1046.642 | | | 956.028 | .007 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 956.025 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1046.651 | .131 | | 956.330 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1046.583 | .262 | | 956.120 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1046.619 | .131 | | 956.205 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1046.619 | .131 | | 956.205 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1046.586 | .131 | | 956.268 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1046.586 | .131 | | 956.268 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| 1045.930 | .197 | | 955.690 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.405 | | | | | | RECIPROCAL VERTICAL ANGLE | 1986 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.594 12B = -90.597 09 = -90.459 03 = -90.311**

# SPIERING RM 3



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.31039 | 94 21 09.93240 | 572883.388 | 211358.413 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 45 40.31029 | 94 21 09.93171 | 572883.438 | 211358.403 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 45 40.31053 | 94 21 09.93207 | 572883.412 | 211358.427 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 45 40.31056 | 94 21 09.93205 | 572883.414 | 211358.430 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 45 40.31053 | 94 21 09.93207 | 572883.412 | 211358.427 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.30964 | 94 21 09.93197 | 572883.420 | 211358.337 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 45 40.31081 | 94 21 09.93336 | 572883.319 | 211358.455 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 45 40.31081 | 94 21 09.93336 | 572883.319 | 211358.455 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.31011 | 94 21 09.93246 | 572883.384 | 211358.385 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 45 40.31011 | 94 21 09.93245 | 572883.385 | 211358.385 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 45 40.31011 | 94 21 09.93245 | 572883.385 | 211358.385 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 45 40.31165 | 94 21 09.93573 | 572883.148 | 211358.540 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.30705 | 94 21 09.93133 | 572883.467 | 211358.075 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 45 40.30688 | 94 21 09.93136 | 572883.465 | 211358.058 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 40.44310 | 94 21 08.99470 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# SPIERING RM 3



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533042.028 | 970308.086 | 1289170.166 | 16264117.851 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2533042.078 | 970308.076 | 1289170.216 | 16264117.840 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2533042.052 | 970308.100 | 1289170.190 | 16264117.865 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2533042.054 | 970308.103 | 1289170.191 | 16264117.868 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2533042.052 | 970308.100 | 1289170.190 | 16264117.865 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533042.059 | 970308.010 | 1289170.196 | 16264117.775 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2533041.959 | 970308.129 | 1289170.098 | 16264117.895 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2533041.959 | 970308.129 | 1289170.098 | 16264117.895 | .033 | C | GPS - STATIC | 2010 | HMCLD |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533042.024 | 970308.058 | 1289170.161 | 16264117.822 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2533042.024 | 970308.058 | 1289170.162 | 16264117.822 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2533042.024 | 970308.058 | 1289170.162 | 16264117.822 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2533041.789 | 970308.215 | 1289169.928 | 16264117.983 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2533042.104 | 970307.748 | 1289170.238 | 16264117.511 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2533042.102 | 970307.731 | 1289170.235 | 16264117.494 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1908440.386 | 642231.347 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RM_3-PQ1190-3N-31MAR2020.jpg | N | Mar 31, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RM_3-PQ1190-2-31MAR2020.jpg | | Mar 31, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SPIERING_RM_3-PQ1190-1-31MAR2020.jpg | | Mar 31, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ST MATHEUS KIRCHE SPIRE



**Mn/DOT Name:** ST MATHEUS KIRCHE SPIRE
**NGS Name:** ST MATHEUS KIRCHE SPIRE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0633 Get Map
**NGS Quad / Sta Num :** 44094131/1042
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 114 N | 29 W | 443845.85 | 941905.13 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH SPIRE | NGS |

**Description:** (2016)

**Stamping:**

8.0 MILES NORTH OF WINTHROP, 7.0 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 19 IN WINTHROP, THEN 2.9 MILES EAST ON 20TH STREET, 0.15 MILE NORTHWEST OF THE CENTER OF THE JUNCTION OF 20TH STREET AND COUNTY ROAD 13, 0.12 MILE WEST OF THE CENTERLINE OF COUNTY ROAD 13.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -91.119 12B = -91.112 09 = -90.991 03 = -90.873**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 45.85245 | 94 19 05.13269 | 582051.030 | 169416.327 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 45.84734 | 94 19 05.12906 | 582051.295 | 169415.810 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 38 45.98000 | 94 19 04.19400 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2541882.859 | 928300.712 | 1297492.330 | 16222013.002 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2541883.119 | 928300.193 | 1297492.584 | 16222012.481 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1917281.679 | 600223.835 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

# ST PETER



**Mn/DOT Name:** ST PETER
**NGS Name:** ST PETER
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0602 Get Map
**NGS Quad / Sta Num :** 44094111/1013
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 4 | 116 N | 27 W | 445301.97 | 940421.84 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** ST PETER 1956

1.5 MILES WEST OF LESTER PRAIRIE, 1.6 MILES SOUTH AND WEST ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 0.5 MILE NORTH ON COUNTY ROAD 63, 198.0 FEET WEST-NORTHWEST OF THE NORTHWEST CORNER OF THE SAINT PETER CHURCH AND SCHOOL , 107.18 FEET NORTH OF ST PETER RM 2, 72.75 FEET WEST-NORTHWEST OF ST PETER RM 1, 50.0 FEET SOUTH OF THE SOUTH RAIL OF THE RAILROAD TRACKS, 41.0 FEET NORTH OF A CEMETERY DRIVEWAY, 25.0 FEET WEST OF A MAPLE TREE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.182 | .197 | | 940.267 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1030.214 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.272 12B = -90.305 09 = -90.210 03 = -90.062**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 01.97152 | 94 04 21.84457 | 645315.075 | 256464.527 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 01.96533 | 94 04 21.84033 | 645315.385 | 256463.902 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 02.10100 | 94 04 20.93500 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605814.526 | 1014845.649 | 1362469.312 | 16307745.826 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2605814.830 | 1014845.022 | 1362469.608 | 16307745.196 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1981212.804 | 686768.437 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# ST PETER AZ MK



**Mn/DOT Name:** ST PETER AZ MK

**NGS Name:** ST PETER AZ MK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8799 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 4 | 116 N | 27 W | 445234.00 | 940416.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016)

**Stamping:** ST PETER 1956

1.13 MILES SOUTHWEST OF LESTER PRAIRIE, 0.6 MILE SOUTH ALONG TRUNK HIGHWAY 261 (BABCOCK AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 261 (BABCOCK AVENUE) AND LINCOLN AVENUE, THEN 1.0 MILE WEST ON TRUNK HIGHWAY 261 (COUNTY ROAD 1/180TH STREET), THEN 256.0 FEET SOUTH ON COUNTY ROAD 63 (CABLE AVENUE), 0.46 MILE NORTH OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 63 AND 175TH STREET, 45.83 FEET EAST OF THE CENTERLINE OF COUNTY ROAD 63.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.282 12B = -90.311 09 = -90.216 03 = -90.069**

# ST PETER RM 1



**Mn/DOT Name:** ST PETER RM 1
**NGS Name:** ST PETER RM 1
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8800 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 4 | 116 N | 27 W | 445302.00 | 940421.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** ST PETER NO 1 1956

1.06 MILES WEST OF LESTER PRAIRIE, 0.6 MILE SOUTH ON TRUNK HIGHWAY 261 (BABCOCK AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 261 (BABCOCK AVENUE) AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 1.0 MILE WEST ON TRUNK HIGHWAY 261 (COUNTY ROAD 1), THEN 0.5 MILE NORTH ON COUNTY ROAD 63, 0.05 MILE WEST OF THE CENTERLINE OF COUNTY ROAD 63, 216.23 FEET WEST OF STATION LESTER PRAIRIE ST. PETERS S CHURCH.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.272 12B = -90.305 09 = -90.210 03 = -90.059**

# ST PETER RM 2



**Mn/DOT Name:** ST PETER RM 2

**NGS Name:** ST PETER RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8801 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 4 | 116 N | 27 W | 445302.00 | 940421.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1998 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** ST PETER NO 2 1956

1.06 MILES WEST OF LESTER PRAIRIE, 0.6 MILE SOUTH ON TRUNK HIGHWAY 261 (BABCOCK AVENUE) FROM THE JUNCTION OF TRUNK HIGHWAY 261 (BABCOCK AVENUE) AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 1.0 MILE WEST ON TRUNK HIGHWAY 261 (COUNTY ROAD 1), THEN 0.5 MILE NORTH ON COUNTY ROAD 63, 0.05 MILE WEST OF THE CENTERLINE OF COUNTY ROAD 63, 216.23 FEET WEST OF STATION LESTER PRAIRIE SAINT PETERS CHURCH.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.272 12B = -90.305 09 = -90.210 03 = -90.059**

# STA 1073+20



**Mn/DOT Name:** STA 1073+20 **NGS Name:** STA 1073+20

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 17 | 115 N | 27 W | 444602.79 | 940627.23 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | GOOD | Horz=NO Vert=NO | YES | NONE | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:** (2016) **Stamping:**

2.0 MILES EAST OF GLENCOE, IN THE NORTHEAST CORNER OF A BRIDGE ABUTMENT OF A BRIDGE OVER BUFFALO CREEK, 1.25 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND MORNINGSIDE DRIVE IN GLENCOE, TO TRUNK HIGHWAY 212 MILEPOINT 122.5, AT TRUNK HIGHWAY 212 STATION 1073+20, THEN 200.0 FEET SOUTH ON A TRAIL, 290.0 FEET SOUTH OF TRUNK HIGHWAY 212.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 980.848 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.666 12B = -90.669 09 = -90.584 03 = -90.443**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STA_1073+20-3S-14APR2015.jpg | S | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STA_1073+20-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STA_1073+20-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STA 1144+93



**Mn/DOT Name:** STA 1144+93 **NGS Name:** STA 1144+93

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 16 | 115 N | 28 W | 444606.00 | 940510.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (1965) **Stamping:**

3.22 MILES EAST OF GLENCOE, 0.5 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 261 IN GLENCOE, 149.0 FEET NORTH OF TRUNK HIGHWAY 212, AT TRUNK HIGHWAY 212 STATION 1144+93.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1000.014 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.594 12B = -90.610 09 = -90.515 03 = -90.380**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** STA 119+00 **NGS Name:** STA 119+00

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 1 | 117 N | 31 W | 445828.00 | 943006.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (1956) **Stamping:**

2.34 MILES NORTHEAST OF CEDAR MILLS, 1.1 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 26 IN CEDAR MILLS, THEN 2.2 MILES NORTH ON TRUNK HIGHWAY 22, 70.0 FEET EAST OF TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 22 STATION 119+00.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1102.301 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1956 | CS4308 |

**Geoid Separations(ft): GEOID18 = -88.635 12B = -88.642 09 = -88.497 03 = -88.435**

*** No Horizontal Positions in the Database ***

# STA 1211+16



**Mn/DOT Name:** STA 1211+16 **NGS Name:** STA 1211+16

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 15 | 115 N | 27 W | 444604.00 | 940338.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | 4345 | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:**

1.0 MILE WEST OF PLATO, 0.9 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 IN PLATO, AT THE SOUTH END OF THE EAST ABUTMENT OF TRUNK HIGHWAY 212 BRIDGE NUMBER 4345, 18.0 FEET SOUTH OF TRUNK HIGHWAY 212, AT TRUNK HIGHWAY 212 STATION 1211+16.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 981.583 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.515 12B = -90.531 09 = -90.430 03 = -90.305**

*** No Horizontal Positions in the Database ***

# STA 1211+42



**Mn/DOT Name:** STA 1211+42 **NGS Name:** STA 1211+42

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2200 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 15 | 115 N | 27 W | 444604.00 | 940338.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | GOOD | Horz=NO Vert=NO | YES | 43005 | FLUSH | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE ABUTMENT | BENCH MARK DISK | MNDT |

**Description:** (2016) **Stamping:** 3701 1948

1.0 MILE WEST OF PLATO, 0.9 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 IN PLATO, AT TRUNK HIGHWAY 212 MILEPOINT 124.85, IN THE SOUTHEAST CORNER OF WESTBOUND TRUNK HIGHWAY 212 BRIDGE NUMBER 43005 OVER BUFFALO CREEK, 18.0 FEET SOUTH OF WESTBOUND TRUNK HIGHWAY 212, AT TRUNK HIGHWAY 212 STATION 1211+42.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 983.636 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 983.636 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 983.249 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.512 12B = -90.528 09 = -90.430 03 = -90.302**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STA_1211+42-DQ2200-3W-14APR2015.jpg | W | Apr 14, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STA_1211+42-DQ2200-2-14APR2015.jpg | | Apr 14, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STA_1211+42-DQ2200-1-14APR2015.jpg | | Apr 14, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STA 1316+00



**Mn/DOT Name:** STA 1316+00 **NGS Name:** STA 1316+00

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 13 | 115 N | 27 W | 444606.00 | 940112.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:**

0.5 MILE EAST OF PLATO, 1.0 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 IN PLATO, 0.33 MILE EAST OF TRUNK HIGHWAY 212 STATION 1342+25, 98.0 FEET NORTH OF TRUNK HIGHWAY 212, AT TRUNK HIGHWAY 212 STATION 1316+00.

**Station Notes**

THE MONUMENT IS BROKEN OFF.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 989.608 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.394 12B = -90.410 09 = -90.315 03 = -90.200**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** STA 1342+25 **NGS Name:** STA 1342+25

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 115 N | 27 W | 444604.00 | 940136.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1965 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:**

1.0 MILE EAST OF PLATO, 0.7 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 IN PLATO, 210.0 FEET SOUTH OF TRUNK HIGHWAY 212, AT TRUNK HIGHWAY 212 STATION 1342+25.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.709 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1965 | CS4310 |

**Geoid Separations(ft): GEOID18 = -90.413 12B = -90.430 09 = -90.331 03 = -90.216**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** STA 1359+15 **NGS Name:** STA 1359+15

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 115 N | 28 W | 444723.00 | 941206.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:**

2.0 MILES NORTHWEST OF GLENCOE, 0.2 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 2.9 MILES NORTHWEST ON TRUNK HIGHWAY 22, 0.12 MILE EAST-SOUTHEAST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 22 AND 120TH STREET, 174.65 FEET NORTH OF STATION 4307 T, 75.0 FEET NORTH OF TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 22 STATION 1359+15.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.781 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.718 12B = -90.718 09 = -90.630 03 = -90.453**

*** No Horizontal Positions in the Database ***

# STA 1510+23



**Mn/DOT Name:** STA 1510+23 **NGS Name:** STA 1510+23

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 116 N | 28 W | 444830.00 | 941510.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1948 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CULVERT - ANY SIZE, ANY TYPE | SURVEY DISK | MNDT |

**Description:** (2016)

**Stamping:**

5.0 MILES NORTHWEST OF GLENCOE, 0.2 MILE NORTH ALONG HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET IN GLENCOE, THEN 5.8 MILES NORTHWEST ON TRUNK HIGHWAY 22, 0.08 MILE SOUTHEAST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 71, IN THE SOUTHEAST CORNER OF A TRUNK HIGHWAY 22 BOX CULVERT, AT TRUNK HIGHWAY 22 STATION 1510+23.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1011.701 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1949 | CS4307 |

**Geoid Separations(ft): GEOID18 = -90.594 12B = -90.594 09 = -90.495 03 = -90.318**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** STA 237+70 **NGS Name:** STA 237+70

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 117 N | 31 W | 445634.00 | 943007.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094411/
**USGS Quad:** CEDAR MILLS

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:**

1.01 MILES EAST OF CEDAR MILLS, 1.0 MILE EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND 620TH AVENUE IN CEDAR MILLS, 140.0 FEET SOUTH OF TRUNK HIGHWAY 22 ON MEEKER MCLEOD AVENUE, 50.52 FEET EAST OF CENTERLINE OF MEEKER MCLEOD AVENUE, AT TRUNK HIGHWAY 22 STATION 237+70/TRUNK HIGHWAY 7 STATION 650+00.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1107.839 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1956 | CS4308 |

**Geoid Separations(ft): GEOID18 = -88.858 12B = -88.855 09 = -88.707 03 = -88.655**

*** No Horizontal Positions in the Database ***

# STA 721+55



**Mn/DOT Name:** STA 721+55 **NGS Name:** STA 721+55

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 19 | 117 N | 30 W | 445540.00 | 942910.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (1956) **Stamping:**

2.10 MILES SOUTHEAST OF CEDAR MILLS, 1.2 MILES SOUTH ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 22 EAST OF CEDAR MILLS, 73.0 FEET NORTH OF TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 22 STATION 721+55.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1087.390 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1956 | CS4308 |

**Geoid Separations(ft): GEOID18 = -89.035 12B = -89.035 09 = -88.881 03 = -88.819**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** STA 844+50 **NGS Name:** STA 844+50

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 28 | 117 N | 30 W | 445427.00 | 942633.00 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:**

2.0 MILES NORTHWEST OF HUTCHINSON, 4.0 MILES NORTHWEST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, ON THE NORTH SIDE OF TRUNK HIGHWAY 22, AT TRUNK HIGHWAY 22 STATION 844+50, 0.06 MILE NORTHWEST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND 200TH STREET.

**Station Notes**

04-13-11 THE AREA HAS BEEN REDITCHED.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.258 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1956 | CS4308 |

**Geoid Separations(ft): GEOID18 = -89.376 12B = -89.376 09 = -89.222 03 = -89.144**

*** No Horizontal Positions in the Database ***

# STED MNDT



**Mn/DOT Name:** STED MNDT **NGS Name:** STED

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6203 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 30 | 117 N | 27 W | 445425.23 | 940804.60 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2007) **Stamping:** STED 1989

3.1 MILES EAST OF SILVER LAKE, 3.6 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 153.9, IN THE NORTHEAST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 (FALCON AVENUE AND COUNTY ROAD 15), 129.2 FEET NORTH OF TRUNK HIGHWAY 7, 81.0 FEET NORTHEAST OF A POWER POLE NUMBER 285 WITH A TRANSFORMER, 41.0 FEET NORTH OF A FIELD ENTRANCE, 19.0 FEET EAST OF FALCON AVENUE, 40.4 FEET EAST-NORTHEAST OF STED MNDT RM 2, 30.9 FEET NORTH OF STED MNDT RM 1, 8.6 FEET WEST OF A WITNESS POST.

**Station Pair:** 109 ES - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.062 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2020 | 00000781-R |
| 1042.085 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2019 | VHOLLY |
| 1042.085 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1042.045 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.586 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.062 | | | 951.721 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1042.062 | | | 951.721 | .011 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1042.186 | .262 | | 951.852 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1042.022 | .262 | | 951.681 | .197 | 2011 | GPS - RTRN | 2019 | RTRN2019 |
| | | | 951.711 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1041.970 | .262 | | 951.701 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1042.091 | .131 | | 951.796 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1042.091 | .131 | | 951.796 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1042.091 | .131 | | 951.931 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1042.091 | .131 | | 951.931 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 951.796 | .009 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1042.058 | .131 | | 951.931 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1042.058 | .131 | | 951.931 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**Geoid Separations(ft): GEOID18 = -90.334 12B = -90.341 09 = -90.272 03 = -90.111**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.22803 | 94 08 04.59445 | 629224.776 | 264792.380 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 54 25.22803 | 94 08 04.59445 | 629224.776 | 264792.380 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 54 25.22756 | 94 08 04.59444 | 629224.777 | 264792.332 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 54 25.22792 | 94 08 04.59539 | 629224.708 | 264792.368 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 44 54 25.22798 | 94 08 04.59606 | 629224.660 | 264792.374 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.22797 | 94 08 04.59525 | 629224.718 | 264792.373 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 25.22814 | 94 08 04.59703 | 629224.590 | 264792.390 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 54 25.22814 | 94 08 04.59703 | 629224.590 | 264792.390 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 54 25.22814 | 94 08 04.59703 | 629224.590 | 264792.390 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.22765 | 94 08 04.59505 | 629224.733 | 264792.341 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 54 25.22761 | 94 08 04.59670 | 629224.614 | 264792.336 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 54 25.22761 | 94 08 04.59670 | 629224.614 | 264792.336 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 54 25.22761 | 94 08 04.59670 | 629224.614 | 264792.336 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 25.22761 | 94 08 04.59670 | 629224.614 | 264792.335 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 25.22184 | 94 08 04.59300 | 629224.883 | 264791.754 | .033 | C | GPS - STATIC | 1989 | HSILV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589790.998 | 1023297.511 | 1346555.214 | 16316392.405 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2589790.998 | 1023297.511 | 1346555.214 | 16316392.405 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2589790.999 | 1023297.463 | 1346555.214 | 16316392.358 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2589790.931 | 1023297.500 | 1346555.146 | 16316392.395 | .131 | 3 | GPS - RTRN | 2019 | RTRN2019 |
| 2589790.882 | 1023297.506 | 1346555.098 | 16316392.402 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589790.941 | 1023297.505 | 1346555.156 | 16316392.400 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2589790.813 | 1023297.522 | 1346555.029 | 16316392.419 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2589790.813 | 1023297.522 | 1346555.029 | 16316392.419 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2589790.813 | 1023297.522 | 1346555.029 | 16316392.419 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589790.955 | 1023297.472 | 1346555.170 | 16316392.367 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2589790.836 | 1023297.468 | 1346555.052 | 16316392.365 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2589790.836 | 1023297.468 | 1346555.052 | 16316392.365 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2589790.836 | 1023297.468 | 1346555.052 | 16316392.365 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2589790.836 | 1023297.468 | 1346555.052 | 16316392.365 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2589791.102 | 1023296.884 | 1346555.310 | 16316391.777 | .033 | C | GPS - STATIC | 1989 | HSILV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED-DF6203-3N-17JUN2024.jpg | N | Jun 17, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED-DF6203-2-17JUN2024.jpg | | Jun 17, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED-DF6203-1-17JUN2024.jpg | | Jun 17, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STED MNDT RM 1



**Mn/DOT Name:** STED MNDT RM 1 **NGS Name:** STED RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9134 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 31 | 117 N | 27 W | 445424.00 | 940804.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2009 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT)

**Disk Type**
REFERENCE MARK DISK

**Mon. Agency**
MNDT

**Description:** (2001) **Stamping:** STED NO 1 1989

3.0 MILES EAST OF SILVER LAKE, 3.6 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 153.9, IN THE NORTHEAST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 88 (NORTH) /COUNTY ROAD 15 (SOUTH), 97.0 FEET NORTH OF TRUNK HIGHWAY 7, 68.7 FEET NORTHEAST OF A POWER POLE NUMBER 285 WITH A TRANSFORMER, 30.9 FEET SOUTH OF STATION STED MNDT, 26.0 FEET EAST OF COUNTY ROAD 88, 9.5 FEET NORTH OF A FIELD ENTRANCE, 60.4 FEET SOUTHEAST OF A WITNESS POST, 31.2 FEET SOUTH-SOUTHWEST OF A WITNESS POST.

**Station Notes**
THE DISK WAS TURNED IN TO THE OFFICE BY THE DISTRICT 4/24/2009.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.206 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1042.167 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.707 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.334 12B = -90.341 09 = -90.272 03 = -90.111**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED_RM_1-DG9134-3N-05OCT2005.jpg | N | Oct 5, 2005 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED_RM_1-DG9134-2-05OCT2005.jpg | | Oct 5, 2005 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED_RM_1-DG9134-1-05OCT2005.jpg | | Oct 5, 2005 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STED MNDT RM 2



**Mn/DOT Name:** STED MNDT RM 2 **NGS Name:** STED RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9133 Get Map
**NGS Quad / Sta Num :** 44094114/
**USGS Quad:** SILVER LAKE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 25 | 117 N | 28 W | 445428.00 | 940806.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1989 | 2008 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2005) **Stamping:** STED NO 2 1989

3.0 MILES EAST OF SILVER LAKE, 3.6 MILES EAST ALONG TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 16 AT THE WEST EDGE OF SILVER LAKE, AT TRUNK HIGHWAY 7 MILEPOINT 153.9, IN THE NORTHWEST QUADRANT OF THE JUNCTION OF TRUNK HIGHWAY 7 AND COUNTY ROAD 88 (NORTH) /COUNTY ROAD 15 (SOUTH), 128.5 FEET NORTH OF TRUNK HIGHWAY 7, 58.6 FEET NORTHEAST OF A POWER POLE NUMBER 285 WITH A TRANSFORMER, 42.0 FEET NORTH OF AN ENTRANCE, 40.4 FEET WEST-SOUTHWEST OF STATION STED MNDT, 22.0 FEET WEST OF COUNTY ROAD 88, 49.0 FEET WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.947 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 1041.907 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1041.445 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |

**Geoid Separations(ft): GEOID18 = -90.334 12B = -90.338 09 = -90.272 03 = -90.111**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED_RM_2-DG9133-3E-05OCT2005.jpg | E | Oct 5, 2005 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED_RM_2-DG9133-2-05OCT2005.jpg | | Oct 5, 2005 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STED_RM_2-DG9133-1-05OCT2005.jpg | | Oct 5, 2005 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STEW MNDT



**Mn/DOT Name:** STEW MNDT **NGS Name:** STEW

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF8436 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 31 | 115 N | 30 W | 444322.39 | 942903.57 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2011 | NOT FOUND | Horz=NO Vert=NO | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2001) **Stamping:** STEW 1990

IN STEWART, 0.3 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7, THEN 0.1 MILE NORTH ON HERBERT STREET, AT THE JUNCTION OF HERBERT STREET AND POWERS STREET, 154.5 FEET NORTH OF POWERS STREET, 19.2 FEET SOUTH OF THE SOUTH RAIL OF THE MAIN RAILROAD TRACKS, 3.0 FEET WEST OF HERBERT STREET EXTENDED, 15.4 FEET NORTH OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1063.439 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1063.462 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBIRD |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1062.980 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VBIRD |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 972.984 | .036 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 973.131 | .038 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1063.449 | .131 | | 973.236 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1063.449 | .131 | | 973.236 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |

**Geoid Separations(ft): GEOID18 = -90.502 12B = -90.512 09 = -90.380 03 = -90.249**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 22.38587 | 94 29 03.56820 | 538732.897 | 197299.506 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 22.38621 | 94 29 03.56907 | 538732.835 | 197299.541 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 22.38561 | 94 29 03.56892 | 538732.845 | 197299.480 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 43 22.38561 | 94 29 03.56892 | 538732.845 | 197299.480 | .033 | C | GPS - STATIC | 2003 | HOLIV |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 22.38260 | 94 29 03.56730 | 538732.965 | 197299.176 | .033 | C | GPS - STATIC | 1993 | CO43 |
| 44 43 22.38164 | 94 29 03.56521 | 538733.115 | 197299.077 | .033 | C | GPS - STATIC | 1990 | HOLIV |

# STEW MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498787.163 | 956516.027 | 1254754.177 | 16250750.825 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498787.100 | 956516.062 | 1254754.115 | 16250750.860 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498787.110 | 956516.001 | 1254754.124 | 16250750.800 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2498787.110 | 956516.001 | 1254754.124 | 16250750.800 | .033 | C | GPS - STATIC | 2003 | HOLIV |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498787.226 | 956515.696 | 1254754.236 | 16250750.493 | .033 | C | GPS - STATIC | 1993 | CO43 |
| 2498787.376 | 956515.597 | 1254754.385 | 16250750.393 | .033 | C | GPS - STATIC | 1990 | HOLIV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STEW-DF8436-3N-27MAR2007.jpg | N | Mar 27, 2007 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STEW-DF8436-2-27MAR2007.jpg | | Mar 27, 2007 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STEW-DF8436-1-27MAR2007.jpg | | Mar 27, 2007 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STEWART LUTH CH SPIRE



**Mn/DOT Name:** STEWART LUTH CH SPIRE
**NGS Name:** STEWART LUTH CH SPIRE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0647 Get Map
**NGS Quad / Sta Num :** 44094134/1044
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 31 | 115 N | 30 W | 444329.11 | 942902.41 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2015 | GOOD | Horz=NO Vert=NO | YES | | | NO MAG MATERIAL |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH SPIRE | NGS |

**Description:** (2015)

**Stamping:**

IN STEWART, 0.25 MILE NORTH ALONG PRIOR STREET FROM THE JUNCTION OF PRIOR STREET AND TRUNK HIGHWAY 212 IN STEWART, THEN 0.15 MILE EAST ON MAIN STREET, 74.59 FEET EAST OF HERBERT STREET, 64.93 FEET NORTH OF MAIN STREET.

**Station Notes**

THE CHURCH IS ST. BONIFACE CHURCH, 4-16-2015)

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.495 12B = -90.502 09 = -90.371 03 = -90.243**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.10735 | 94 29 02.40758 | 538815.451 | 197980.397 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.10313 | 94 29 02.40264 | 538815.809 | 197979.970 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 29.23600 | 94 29 01.45300 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498874.985 | 957196.183 | 1254850.347 | 16251429.741 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2498875.339 | 957195.754 | 1254850.696 | 16251429.307 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1874273.621 | 629119.034 | | | .100 | 4 | CLASSICAL SURVEY | 1939 | 03760 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STEWART_LUTH_CH_SPIRE-PQ0647-3NE-16APR2015.jpg | NE | Apr 16, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STEWART MUNICIPAL TANK



**Mn/DOT Name:** STEWART MUNICIPAL TANK
**NGS Name:** STEWART MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0646 Get Map
**NGS Quad / Sta Num :** 44094134/1045
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 115 N | 30 W | 444321.71 | 942923.28 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1935 | 2015 | GOOD | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (2016)

**Stamping:**

IN STEWART, 0.6 MILE WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7, THEN 0.2 MILE NORTH ON GROVE STREET, NEAR THE NORTHEAST CORNER OF POWERS STREET AND GROVE STREET, 236.18 FEET WEST OF BOWMAN STREET, 149.0 FEET EAST OF GROVE STREET, 91.99 FEET NORTH OF POWERS STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.495 12B = -90.502 09 = -90.374 03 = -90.243**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 21.71257 | 94 29 23.27927 | 537309.787 | 197228.759 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 21.70777 | 94 29 23.27409 | 537310.162 | 197228.274 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 21.83700 | 94 29 22.32100 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2497363.701 | 956456.325 | 1253330.315 | 16250708.652 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2497364.072 | 956455.836 | 1253330.679 | 16250708.159 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1872762.560 | 628378.748 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STEWART_MUNICIPAL_TANK-PQ0646-3N-16APR2015.jpg | N | Apr 16, 2015 |
| Monument: | | | |
| Disk: | | | |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# STRE MNDT



**Mn/DOT Name:** STRE MNDT
**NGS Name:** STRE
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF8437 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 33 | 115 N | 29 W | 444355.03 | 942008.07 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2025 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 23 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2015) **Stamping:** STRE 1990

0.5 MILE EAST OF BROWNTON, 1.95 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 110.05, 114.5 FEET NORTH-NORTHWEST OF TRUNK HIGHWAY 212, 85.2 FEET SOUTH OF COUNTY ROAD 32, 47.96 FEET WEST-SOUTHWEST OF STATION 4309 F, 45.8 FEET WEST-SOUTHWEST OF A POWER POLE, 24.05 FEET FROM STRE MNDT RM 1, 48.2 FEET WEST-SOUTHWEST OF A WITNESS POST, 24.8 FEET WEST-SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.853 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1038.853 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.873 | .262 | | 948.115 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1038.853 | | | 948.069 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3118 |
| 1038.853 | .131 | | 948.325 | .066 | 1996 | GPS - STATIC | 2015 | HPLAT |
| 1038.853 | | | 948.076 | .010 | 2011 | GPS - STATIC | 2015 | HPLAT |
| 1038.823 | .262 | | 948.069 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 948.069 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1038.777 | .262 | | 948.148 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 948.263 | .049 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1038.777 | .131 | | 948.325 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1038.777 | .131 | | 948.325 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 948.263 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1038.777 | .131 | | 948.335 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1038.777 | .131 | | 948.335 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.187 | | | | | | GPS - STATIC | 1990 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.758 12B = -90.751 09 = -90.626 03 = -90.476**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.03379 | 94 20 08.06803 | 577386.305 | 200712.086 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 55.03388 | 94 20 08.06790 | 577386.315 | 200712.096 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 44 43 55.03385 | 94 20 08.06794 | 577386.312 | 200712.093 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 55.03402 | 94 20 08.06693 | 577386.385 | 200712.110 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 43 55.03388 | 94 20 08.06790 | 577386.315 | 200712.096 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.03375 | 94 20 08.06884 | 577386.247 | 200712.082 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 43 55.03410 | 94 20 08.06939 | 577386.207 | 200712.118 | .026 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 43 55.03410 | 94 20 08.06939 | 577386.207 | 200712.118 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.03343 | 94 20 08.06829 | 577386.286 | 200712.050 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 44 43 55.03343 | 94 20 08.06829 | 577386.286 | 200712.050 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 43 55.03343 | 94 20 08.06829 | 577386.286 | 200712.050 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 43 55.03451 | 94 20 08.07133 | 577386.067 | 200712.159 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 43 55.03451 | 94 20 08.07133 | 577386.066 | 200712.158 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537461.703 | 959628.270 | 1293457.255 | 16253386.515 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2537461.712 | 959628.280 | 1293457.264 | 16253386.524 | .007 | | ADJUSTMENT | 2015 | GPS3118 |
| 2537461.709 | 959628.277 | 1293457.262 | 16253386.521 | .007 | C | GPS - STATIC | 2015 | HPLAT |
| 2537461.782 | 959628.293 | 1293457.335 | 16253386.537 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2537461.712 | 959628.280 | 1293457.264 | 16253386.524 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537461.644 | 959628.267 | 1293457.196 | 16253386.512 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2537461.605 | 959628.302 | 1293457.157 | 16253386.548 | .026 | | ADJUSTMENT | 2007 | GPS2300 |
| 2537461.605 | 959628.302 | 1293457.157 | 16253386.548 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537461.684 | 959628.234 | 1293457.236 | 16253386.479 | .033 | C | GPS - STATIC | 2015 | HPLAT |
| 2537461.684 | 959628.234 | 1293457.236 | 16253386.479 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2537461.684 | 959628.234 | 1293457.236 | 16253386.479 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2537461.465 | 959628.345 | 1293457.018 | 16253386.592 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2537461.465 | 959628.345 | 1293457.018 | 16253386.592 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STRE-DF8437-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STRE-DF8437-2-17SEP2025.jpg | | Sep 17, 2025 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STRE-DF8437-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# Geodetic Data Sheet (Feet)
## GSID Station # 50844

# STRE MNDT RM 1

04/28/2026
Sheet Help

**Mn/DOT Name:** STRE MNDT RM 1 **NGS Name:** STRE RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DK6549 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 32 | 115 N | 29 W | 444355.27 | 942008.01 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | REFERENCE MARK DISK | MNDT |

**Description:** (2015) **Stamping:** STRE NO 1 1990

0.5 MILE EAST OF BROWNTON, 1.95 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 (THE JUNCTION IS 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 212 MILEPOINT 110.05, 120.0 FEET NORTH-NORTHWEST OF TRUNK HIGHWAY 212, 60.0 FEET SOUTH OF COUNTY ROAD 32, 35.0 FEET WEST OF A POWER POLE, 37.4 FEET WEST OF STATION 4309 F, 2.0 FEET WEST OF A WITNESS POST. UNKNOWN ROD DEPTH.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.542 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1039.542 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1039.542 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1039.542 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2005 | VBRWN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1039.548 | .262 | | 948.791 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1039.493 | .262 | | 948.742 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1039.473 | .262 | | 948.847 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.758 12B = -90.751 09 = -90.626 03 = -90.476**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.26776 | 94 20 08.01198 | 577390.265 | 200735.797 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 55.26779 | 94 20 08.01119 | 577390.322 | 200735.801 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 55.26759 | 94 20 08.01297 | 577390.194 | 200735.780 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537465.846 | 959651.947 | 1293461.688 | 16253410.134 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2537465.903 | 959651.950 | 1293461.745 | 16253410.136 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2537465.774 | 959651.930 | 1293461.616 | 16253410.118 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STRE_RM_1-DK6549-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STRE_RM_1-DK6549-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/STRE_RM_1-DK6549-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SUMTER



**Mn/DOT Name:** SUMTER
**NGS Name:** SUMTER
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0634 Get Map
**NGS Quad / Sta Num :** 44094131/1017
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444423.11 | 941533.37 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 2 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | TRIANGULATION STATION DISK | NGS |

**Description:** (2016) **Stamping:** SUMTER 1956

4.5 MILES EAST OF BROWNTON, 5.85 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15, 189.0 FEET SOUTH OF THE SOUTH RAIL OF THE RAILROAD TRACKS, 155.7 FEET NORTHWEST OF MILEPOST 114, 49.0 FEET NORTH OF TRUNK HIGHWAY 212, 25.0 FEET WEST OF DRIVEWAY NUMBER 13256, 37.47 FEET SOUTHEAST OF SUMTER RM 5, 31.36 FEET SOUTHWEST OF SUMTER RM 4, 12.0 FEET SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.239 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1032.239 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1032.239 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.812 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.167 | .262 | | 941.320 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 941.435 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1032.173 | .262 | | 941.438 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1032.249 | .131 | | 941.619 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2357-B |
| 1032.249 | .131 | | 941.619 | .066 | 2007 | GPS - STATIC | 2010 | HMCLD |
| 1032.249 | .131 | | 941.721 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2007 | GPS2357 |
| 1032.249 | .131 | | 941.721 | .066 | 1996 | GPS - STATIC | 2007 | HMCLD |
| | | | 941.619 | .058 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1032.249 | .131 | | 941.721 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1032.249 | .131 | | 941.721 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 941.619 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1032.249 | .131 | | 941.691 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1032.249 | .131 | | 941.691 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |
| 1032.249 | .262 | | 941.770 | .197 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.846 09 = -90.735 03 = -90.574**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.10725 | 94 15 33.36661 | 597204.719 | 203637.106 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 23.10738 | 94 15 33.36760 | 597204.648 | 203637.119 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.10719 | 94 15 33.36825 | 597204.601 | 203637.100 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 44 23.10770 | 94 15 33.36967 | 597204.498 | 203637.151 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 44 44 23.10770 | 94 15 33.36967 | 597204.498 | 203637.151 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 44 44 23.10770 | 94 15 33.36967 | 597204.498 | 203637.151 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 44 23.10770 | 94 15 33.36966 | 597204.499 | 203637.151 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.10698 | 94 15 33.36815 | 597204.608 | 203637.078 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 44 44 23.10698 | 94 15 33.36815 | 597204.608 | 203637.078 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 44 44 23.10698 | 94 15 33.36815 | 597204.608 | 203637.078 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 44 23.10698 | 94 15 33.36815 | 597204.608 | 203637.078 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 44 23.10812 | 94 15 33.37164 | 597204.356 | 203637.193 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 44 23.10812 | 94 15 33.37164 | 597204.357 | 203637.191 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 44 44 23.10708 | 94 15 33.37113 | 597204.393 | 203637.087 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.10177 | 94 15 33.36969 | 597204.499 | 203636.550 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.23700 | 94 15 32.44460 | | | .100 | 3 | CLASSICAL SURVEY | 1958 | 11592 |

# SUMTER



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557300.096 | 962399.032 | 1313324.243 | 16255912.538 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2557300.024 | 962399.045 | 1313324.172 | 16255912.552 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557299.977 | 962399.026 | 1313324.124 | 16255912.534 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2557299.875 | 962399.078 | 1313324.023 | 16255912.587 | .033 | C | ADJUSTMENT | 2010 | GPS2357-B |
| 2557299.875 | 962399.078 | 1313324.023 | 16255912.587 | .033 | C | GPS - STATIC | 2010 | HMCLD |
| 2557299.875 | 962399.078 | 1313324.023 | 16255912.587 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 2557299.876 | 962399.078 | 1313324.023 | 16255912.587 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557299.984 | 962399.005 | 1313324.131 | 16255912.512 | .033 | C | ADJUSTMENT | 2007 | GPS2357 |
| 2557299.984 | 962399.005 | 1313324.131 | 16255912.512 | .033 | C | GPS - STATIC | 2007 | HMCLD |
| 2557299.984 | 962399.005 | 1313324.131 | 16255912.512 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2557299.984 | 962399.005 | 1313324.131 | 16255912.512 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2557299.733 | 962399.121 | 1313323.881 | 16255912.631 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2557299.733 | 962399.121 | 1313323.881 | 16255912.632 | .033 | C | GPS - STATIC | 2003 | HOLIV |
| 2557299.770 | 962399.016 | 1313323.916 | 16255912.526 | .131 | 3 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557299.872 | 962398.478 | 1313324.012 | 16255911.986 | .131 | 3 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1932698.042 | 634322.136 | | | .100 | 3 | CLASSICAL SURVEY | 1958 | 11592 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER-PQ0634-3N-15APR2015.jpg | N | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER-PQ0634-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER-PQ0634-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SUMTER AZ MK



**Mn/DOT Name:** SUMTER AZ MK
**NGS Name:** SUMTER AZ MK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1547 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 26 | 115 N | 29 W | 444421.01 | 941635.46 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 8 IN. | STEEL SPIKE ADJ TO MON |

**Monument Type:** CONCRETE MONUMENT (CAST-IN-PLACE)
**Disk Type:** AZIMUTH MARK DISK
**Mon. Agency:** NGS

**Description:** (2015)
**Stamping:** SUMTER 1956

3.5 MILES EAST OF BROWNTON, 5.0 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 212 MILEPOINT 113.1, 43.0 FEET SOUTH OF TRUNK HIGHWAY 212, 81.0 FEET EAST OF DRIVEWAY NUMBER 14121, 34.2 FEET NORTH OF A CABLE MARKER, 1.6 FEET EAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.952 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1034.952 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1034.962 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.532 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1034.916 | .262 | | 944.093 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 944.132 | .009 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1034.909 | .262 | | 944.198 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 944.355 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2009 | GPS2397-B |
| 1034.972 | .131 | | 944.414 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2008 | GPS2397 |
| 1034.972 | .131 | | 944.414 | .066 | 1996 | GPS - STATIC | 2007 | HSIBL |
| | | | 944.358 | .059 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1034.972 | .131 | | 944.414 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258 |
| 1034.972 | .131 | | 944.414 | .066 | 1996 | GPS - STATIC | 2006 | HGAYL |
| | | | 944.358 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2006 | GPS2258-B |
| 1034.972 | .131 | | 944.427 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1918 |
| 1034.972 | .131 | | 944.427 | .066 | 1996 | GPS - STATIC | 2003 | HOLIV |

**Geoid Separations(ft): GEOID18 = -90.820 12B = -90.823 09 = -90.708 03 = -90.551**

# SUMTER AZ MK



## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.01158 | 94 16 35.45656 | 592723.809 | 203404.746 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 44 21.01261 | 94 16 35.45659 | 592723.806 | 203404.850 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.01237 | 94 16 35.45738 | 592723.749 | 203404.826 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 44 21.01298 | 94 16 35.45831 | 592723.682 | 203404.887 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 44 44 21.01301 | 94 16 35.45840 | 592723.675 | 203404.890 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 44 44 21.01301 | 94 16 35.45838 | 592723.676 | 203404.890 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 21.01223 | 94 16 35.45699 | 592723.777 | 203404.812 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 44 44 21.01223 | 94 16 35.45699 | 592723.777 | 203404.812 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 44 44 21.01223 | 94 16 35.45699 | 592723.777 | 203404.812 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 44 44 21.01223 | 94 16 35.45699 | 592723.777 | 203404.812 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 44 44 21.01342 | 94 16 35.46036 | 592723.533 | 203404.931 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 44 44 21.01342 | 94 16 35.46036 | 592723.532 | 203404.931 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552817.997 | 962201.497 | 1308840.980 | 16255770.176 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2552817.995 | 962201.601 | 1308840.980 | 16255770.281 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552817.938 | 962201.577 | 1308840.922 | 16255770.257 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2552817.871 | 962201.639 | 1308840.856 | 16255770.320 | .033 | C | ADJUSTMENT | 2009 | GPS2397-B |
| 2552817.864 | 962201.642 | 1308840.850 | 16255770.323 | .030 | | ADJUSTMENT | 2007 | GPS2300 |
| 2552817.866 | 962201.642 | 1308840.851 | 16255770.323 | .033 | C | ADJUSTMENT | 2006 | GPS2258-B |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2552817.966 | 962201.563 | 1308840.950 | 16255770.243 | .033 | C | ADJUSTMENT | 2008 | GPS2397 |
| 2552817.966 | 962201.563 | 1308840.950 | 16255770.243 | .033 | C | GPS - STATIC | 2007 | HSIBL |
| 2552817.966 | 962201.563 | 1308840.950 | 16255770.243 | .033 | C | ADJUSTMENT | 2006 | GPS2258 |
| 2552817.966 | 962201.563 | 1308840.950 | 16255770.243 | .033 | C | GPS - STATIC | 2006 | HGAYL |
| 2552817.723 | 962201.684 | 1308840.709 | 16255770.367 | .033 | C | ADJUSTMENT | 2003 | GPS1918 |
| 2552817.723 | 962201.684 | 1308840.709 | 16255770.367 | .033 | C | GPS - STATIC | 2003 | HOLIV |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_AZ_MK-PQ1547-3S-15APR2015.jpg | S | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_AZ_MK-PQ1547-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_AZ_MK-PQ1547-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SUMTER RM 1



**Mn/DOT Name:** SUMTER RM 1 **NGS Name:** SUMTER RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8849 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444423.84 | 941533.20 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | GOOD | Horz=NO Vert=YES | YES | | PROJECTS 6 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2015) **Stamping:** SUMTER NO 1 1956

4.5 MILES EAST OF BROWNTON, 5.85 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 212 MILEPOINT 114.0, 122.3 FEET NORTH OF TRUNK HIGHWAY 212, 116.0 FEET SOUTH OF THE SOUTH RAIL OF THE RAILROAD TRACKS, 76.0 FEET NORTH-NORTHEAST OF STATION SUMTER, 48.0 FEET NORTH OF SUMTER RM 4.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.258 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1032.258 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.846 09 = -90.735 03 = -90.574**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_1-CO8849-3N-15APR2015.jpg | N | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_1-CO8849-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_1-CO8849-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SUMTER RM 2



**Mn/DOT Name:** SUMTER RM 2 **NGS Name:** SUMTER RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8850 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444422.93 | 941534.36 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** SUMTER NO 2 1956

4.5 MILES EAST OF BROWNTON, 5.85 MILES EAST ON TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, 189.0 FEET SOUTH OF THE SOUTH RAIL OF THE RAILROAD TRACKS, 45.0 FEET NORTH OF THE CENTERLINE OF THE HIGHWAY, 1.0 FOOT EAST OF A TELEPHONE POLE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.850 09 = -90.735 03 = -90.574**

# SUMTER RM 3



**Mn/DOT Name:** SUMTER RM 3

**NGS Name:** SUMTER RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8851 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444423.78 | 941532.41 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1960 | 2015 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | REFERENCE MARK DISK | MNDT |

**Description:** (2016)

**Stamping:** SUMTER NO 3 1960

4.47 MILES EAST OF BROWNTON, 5.8 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15 IN BROWNTON, 0.24 MILE WEST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 65, 158.0 FEET SOUTH OF THE CENTERLINE OF A RAILROAD TRACK, 112.0 FEET NORTH OF TRUNK HIGHWAY 212.

**Station Notes**

FALLS UNDER A DRIVEWAY PER THE TIES.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.846 12B = -90.850 09 = -90.735 03 = -90.574**

# SUMTER RM 4



**Mn/DOT Name:** SUMTER RM 4 **NGS Name:** SUMTER RM 4

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1549 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444423.37 | 941533.14 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | GOOD | Horz=NO Vert=YES | YES | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2015) **Stamping:** SUMTER NO 4 1956 1986

4.5 MILES EAST OF BROWNTON, 5.85 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 212 MILEPOINT 113.95, 74.3 FEET NORTH OF TRUNK HIGHWAY 212, 31.36 FEET NORTHEAST OF STATION SUMTER, 13.6 FEET SOUTHWEST OF A 36.0 INCH DIAMETER OAK TREE, 45.45 FEET EAST OF SUMTER RM 5, 1.4 FEET WEST OF A RIGHT-OF-WAY POST AND A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.692 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1032.692 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1032.692 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.268 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.632 | .262 | | 941.783 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.846 09 = -90.735 03 = -90.574**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 44 23.37189 | 94 15 33.13922 | 597221.010 | 203663.984 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2557316.593 | 962425.779 | 1313341.064 | 16255939.075 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_4-PQ1549-3N-15APR2015.jpg | N | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_4-PQ1549-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_4-PQ1549-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# SUMTER RM 5



**Mn/DOT Name:** SUMTER RM 5 **NGS Name:** SUMTER RM 5

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1548 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 25 | 115 N | 29 W | 444423.00 | 941532.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2015 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (2015) **Stamping:** SUMTER NO 5 1956 1986

4.5 MILES EAST OF BROWNTON, 5.85 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND TRUNK HIGHWAY 15, AT TRUNK HIGHWAY 212 MILEPOINT 113.95, 74.5 FEET NORTH OF TRUNK HIGHWAY 212, 56.3 FEET WEST-SOUTHWEST OF A 36.0 INCH DIAMETER OAK TREE, 45.45 FEET WEST OF SUMTER RM 4, 37.47 FEET NORTHWEST OF STATION SUMTER, 1.0 FOOT OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.140 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1032.140 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |
| 1032.140 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1031.714 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.843 12B = -90.846 09 = -90.735 03 = -90.574**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_5-PQ1548-3N-15APR2015.jpg | N | Apr 15, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_5-PQ1548-2-15APR2015.jpg | | Apr 15, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/SUMTER_RM_5-PQ1548-1-15APR2015.jpg | | Apr 15, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** T 123 **NGS Name:** T 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0060 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 28 W | 444614.00 | 940919.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2008 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SEE DESCRIPTION | NGS |

**Description:** (2016) **Stamping:** T 123 1934

IN GLENCOE, 0.2 MILE WEST ALONG 10TH STREET FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE, THEN 0.1 MILE NORTH ON ELLIOTT AVENUE, THEN 207.0 FEET EAST ON 12TH STREET, 189.25 FEET NORTH OF THE CENTERLINE OF 11TH STREET, 172.51 FEET SOUTH OF THE CENTERLINE OF 12TH STREET.

**Station Notes**

GRAVITY VALUE: G=980 497.93 +/-0.2 MGAL
NOAA 07-01-1973.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1005.398 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1004.982 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1004.982 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.761 12B = -90.761 09 = -90.686 03 = -90.521**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** T 124 **NGS Name:** T 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0005 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 2 | 117 N | 27 W | 445801.00 | 940245.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** T 124 1934

IN WINSTED, 0.2 MILE NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 (EAST) /MAIN AVENUE (WEST), THEN 0.3 MILE EAST ON ANDY AVENUE, THEN 230.0 FEET NORTH ON COUNTY ROAD 64, IN A SIDEWALK AT THE NORTHWEST CORNER OF THE CITY HALL, 1.0 FOOT EAST OF THE WEST WALL OF A BUILDING, 0.4 FOOT NORTH OF THE NORTH WALL OF A BUILDING.

**Station Notes**
BELOW THE ACCESS CAP IN THE SIDEWALK.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.737 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.462 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1972 | L54 MINN |
| 1027.462 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.243 12B = -90.266 09 = -90.174 03 = -90.026**

*** No Horizontal Positions in the Database ***

# TBM 1 L3070



**Mn/DOT Name:** TBM 1 L3070 **NGS Name:** TBM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** BK9491 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 32 | 115 N | 30 W | 444322.00 | 942730.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1934 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | NGS |

**Description:** (2016) **Stamping:**

1.43 MILES EAST OF STEWART, 1.0 MILE EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 AT THE EAST EDGE OF STEWART, 0.05 MILE NORTHWEST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 212 AND WALDEN AVENUE, 199.81 FEET NORTH OF THE CENTERLINE OF TRUNK HIGHWAY 212, 122.86 FEET WEST-NORTHWEST OF STATION NUTT MNDT.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.554 12B = -90.561 09 = -90.426 03 = -90.295**

# TBM 1 L3076



**Mn/DOT Name:** TBM 1 L3076 **NGS Name:** TBM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** BK8210 Get Map
**NGS Quad / Sta Num :** 44094124/
**USGS Quad:** NEW AUBURN

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 22 | 115 N | 28 W | 444457.00 | 941054.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1934 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| IRON ROD | UNMONUMENTED | NGS |

**Description:** (2016)

**Stamping:**

2.01 MILES SOUTHWEST OF GLENCOE, 0.7 MILE WEST AND SOUTH ON TRUNK HIGHWAY 22 (10TH STREET/CHANDLER AVENUE) FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE IN GLENCOE, THEN 1.5 MILES SOUTHWEST ON TRUNK HIGHWAY 212, 0.27 MILE NORTHEAST OF STATION G 125 RESET, 0.07 MILE NORTH OF THE CENTERLINE OF SOUTHBOUND TRUNK HIGHWAY 212.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.863 12B = -90.859 09 = -90.771 03 = -90.610**

# THOMAS MNDT



**Mn/DOT Name:** THOMAS MNDT
**NGS Name:** THOMAS
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 31 | 114 N | 29 W | 443749.95 | 942224.44 | 2 | C |

**NGS ACRN:** DG9351 Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2019 | DESTROYED | Horz=NO Vert=NO | YES | | FLUSH | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** THOMAS 1992

5.95 MILES NORTH OF WINTHROP, 6.0 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 19 IN WINTHROP, AT TRUNK HIGHWAY 15 MILEPOINT 83.00, THEN 0.1 MILE EAST ON COUNTY ROAD 58, 124.9 FEET WEST OF A STOP AHEAD SIGN POST, 28.5 FEET NORTH OF COUNTY ROAD 58, 8.0 FEET WEST OF AN ENTRANCE, 6.8 FEET EAST OF A WITNESS POST.

**Station Notes**
DO NOT RESET BECAUSE OF THE PROXIMITY TO A FARMER'S FIELD ENTRANCE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.528 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000570 |
| 1028.456 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VBROW |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1028.108 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1993 | VBROW |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 937.403 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 937.521 | .023 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1028.443 | .131 | | 937.620 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS1973 |
| 1028.443 | .131 | | 937.620 | .066 | 1996 | GPS - STATIC | 2003 | HBROWN |

**Geoid Separations(ft): GEOID18 = -91.122 12B = -91.125 09 = -90.991 03 = -90.866**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 49.94927 | 94 22 24.44330 | 567658.977 | 163703.775 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 49.94897 | 94 22 24.44396 | 567658.929 | 163703.745 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 49.94848 | 94 22 24.44401 | 567658.925 | 163703.695 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 44 37 49.94848 | 94 22 24.44401 | 567658.925 | 163703.695 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 37 49.94352 | 94 22 24.44406 | 567658.924 | 163703.193 | .033 | C | GPS - STATIC | 1993 | H1993 |

# THOMAS MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527448.547 | 922700.680 | 1282993.047 | 16216591.571 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527448.500 | 922700.649 | 1282992.999 | 16216591.541 | .026 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527448.496 | 922700.600 | 1282992.995 | 16216591.492 | .033 | C | ADJUSTMENT | 2005 | GPS1973 |
| 2527448.496 | 922700.600 | 1282992.995 | 16216591.492 | .033 | C | GPS - STATIC | 2003 | HBROWN |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527448.490 | 922700.098 | 1282992.983 | 16216590.990 | .033 | C | GPS - STATIC | 1993 | H1993 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/THOMAS-DG9351-3W-30NOV2010.jpg | W | Nov 30, 2010 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/THOMAS-DG9351-2-30NOV2010.jpg | | Nov 30, 2010 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/THOMAS-DG9351-1-30NOV2010.jpg | | Nov 30, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# TIGERCAT



**Mn/DOT Name:** TIGERCAT **NGS Name:** TIGERCAT

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DL9783 Get Map
**NGS Quad / Sta Num :** 44094141/
**USGS Quad:** HUTCHINSON EAST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 30 | 117 N | 29 W | 445442.88 | 942204.63 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2009 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 35 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** TIGERCAT 2009

IN HUTCHINSON, 1.05 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/ 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 102.70, 54.2 FEET WEST OF TRUNK HIGHWAY 15, 73.6 FEET SOUTH OF DRIVEWAY NUMBER 20377, 17.0 FEET EAST OF A NORTH-SOUTH FENCE LINE, 13.7 FEET SOUTHEAST OF POWER CABINET NUMBER 24 405, 16.2 FEET EAST OF A WITNESS POST.

**Station Pair:** LARSEN - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.144 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2011 | 00000683 |
| 1083.144 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2010 | VDASL |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1083.085 | .262 | | 993.449 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| | | | 993.512 | .006 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1083.013 | .262 | | 993.509 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| 1083.134 | .131 | | 993.627 | .066 | 2007 | HORIZONTAL ADJUSTMENT | 2010 | GPS2681 |
| 1083.134 | .131 | | 993.732 | .066 | 1996 | GPS - STATIC | 2010 | HDASL |
| 1083.134 | .131 | | 993.627 | .066 | 2007 | GPS - STATIC | 2010 | HDASL |
| 1082.993 | .262 | | 993.591 | .197 | 1996 | GPS - RTRN | 2009 | RTRN2009 |

**Geoid Separations(ft): GEOID18 = -89.639 12B = -89.632 09 = -89.501 03 = -89.403**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 42.88081 | 94 22 04.63137 | 568757.383 | 266296.567 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 54 42.88104 | 94 22 04.63252 | 568757.300 | 266296.590 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 42.88136 | 94 22 04.63515 | 568757.111 | 266296.622 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 42.88101 | 94 22 04.63323 | 568757.250 | 266296.587 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 44 54 42.88101 | 94 22 04.63323 | 568757.250 | 266296.587 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 42.88050 | 94 22 04.63278 | 568757.282 | 266296.536 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 44 54 42.88104 | 94 22 04.63329 | 568757.245 | 266296.590 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

# TIGERCAT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529342.897 | 1025271.074 | 1286149.802 | 16319111.432 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2529342.815 | 1025271.098 | 1286149.719 | 16319111.456 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529342.626 | 1025271.131 | 1286149.531 | 16319111.492 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2529342.763 | 1025271.095 | 1286149.669 | 16319111.454 | .033 | C | ADJUSTMENT | 2010 | GPS2681 |
| 2529342.763 | 1025271.095 | 1286149.669 | 16319111.454 | .033 | C | GPS - STATIC | 2010 | HDASL |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2529342.796 | 1025271.043 | 1286149.700 | 16319111.402 | .033 | C | GPS - STATIC | 2010 | HDASL |
| 2529342.759 | 1025271.098 | 1286149.664 | 16319111.457 | .131 | 3 | GPS - RTRN | 2009 | RTRN2009 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TIGERCAT-DL9783-3W-27JUL2015.jpg | W | Jul 27, 2015 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TIGERCAT-DL9783-2-27JUL2015.jpg | | Jul 27, 2015 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TIGERCAT-DL9783-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** TOPHER **NGS Name:** TOPHER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9909 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 25 | 116 N | 30 W | 444919.89 | 942233.68 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | FLUSH | BAR MAG IN DRILL HOLE |

**Monument Type**
ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT)

**Disk Type**
METAL ROD (WITH REMOVABLE ID DISK)

**Mon. Agency**
MNDT

**Description:** (2011)

**Stamping:** TOPHER 2011

4.5 MILES SOUTH OF HUTCHINSON, 5.35 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7 /TRUNK HIGHWAY 22 IN HUTCHINSON, AT TRUNK HIGHWAY 15 MILEPOINT 96.35, 91.6 FEET WEST OF TRUNK HIGHWAY 15, 37.8 FEET NORTH OF A FIELD ENTRANCE, 1.6 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.914 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1056.914 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.914 | | | 966.661 | .017 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1056.914 | | | 966.661 | .017 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1056.920 | .131 | | 966.924 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1056.825 | .262 | | 966.704 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.269 12B = -90.246 09 = -90.124 03 = -89.990**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 19.89046 | 94 22 33.67775 | 566770.320 | 233577.263 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 49 19.89046 | 94 22 33.67775 | 566770.320 | 233577.263 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 19.88957 | 94 22 33.67862 | 566770.257 | 233577.173 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 49 19.89012 | 94 22 33.67819 | 566770.288 | 233577.228 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527102.197 | 992571.400 | 1283506.170 | 16286448.376 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2527102.197 | 992571.400 | 1283506.170 | 16286448.376 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527102.134 | 992571.310 | 1283506.105 | 16286448.287 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527102.165 | 992571.366 | 1283506.137 | 16286448.342 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TOPHER-DO9909-3W-02MAY2011.jpg | W | May 2, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TOPHER-DO9909-2-02MAY2011.jpg | | May 2, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TOPHER-DO9909-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# TROOP MNDT



**Mn/DOT Name:** TROOP MNDT
**NGS Name:** TROOP
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF9256 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 115 N | 28 W | 444707.89 | 941144.04 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2000 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 1 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | SURVEY DISK | MNDT |

**Description:** (2000) **Stamping:** TROOP 2000

2.5 MILES WEST-NORTHWEST OF GLENCOE, 2.05 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 AT THE NORTHWEST SIDE OF GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 110.05, 212.0 FEET NORTH OF MILEPOINT 110, 64.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 23.0 FEET SOUTHEAST OF AN ENTRANCE, 2.5 FEET NORTHWEST OF A WITNESS POST.

**Station Notes**
05-11-11 THE CAP POPPED OFF. NEEDS TO BE RESET.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.964 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1027.967 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 937.226 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 937.298 | .010 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1027.951 | .131 | | 937.462 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1027.951 | .131 | | 937.462 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.735 12B = -90.735 09 = -90.649 03 = -90.472**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 07.89435 | 94 11 44.04147 | 613668.331 | 220408.825 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 07.89450 | 94 11 44.04220 | 613668.279 | 220408.839 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 07.89401 | 94 11 44.04169 | 613668.316 | 220408.790 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 47 07.89401 | 94 11 44.04169 | 613668.317 | 220408.791 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# TROOP MNDT



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573891.731 | 979040.604 | 1330115.742 | 16272345.153 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573891.678 | 979040.619 | 1330115.690 | 16272345.169 | .016 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573891.715 | 979040.570 | 1330115.726 | 16272345.119 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2573891.715 | 979040.570 | 1330115.726 | 16272345.119 | .033 | C | GPS - STATIC | 2003 | HGLEN |

# TROOP MNDT RESET



**Mn/DOT Name:** TROOP MNDT RESET
**NGS Name:** TROOP RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ4200 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 9 | 115 N | 28 W | 444707.89 | 941144.04 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** TROOP 2000 2011

2.5 MILES NORTHWEST OF GLENCOE, 2.05 MILES NORTHWEST ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND COUNTY ROAD 3 AT THE NORTHWEST SIDE OF GLENCOE, AT TRUNK HIGHWAY 22 MILEPOINT 110.05, 212.0 FEET NORTH OF MILEPOST 110, 64.0 FEET NORTHEAST OF TRUNK HIGHWAY 22, 23.0 FEET SOUTHEAST OF A FIELD ENTRANCE, 2.5 FEET NORTHWEST OF A WITNESS POST.

**Station Pair:** 4307 T - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.793 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1027.793 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2016 | VHUTS |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1027.793 | | | 937.065 | .018 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3789 |
| 1027.793 | | | 937.065 | .018 | 2011 | GPS - STATIC | 2024 | HHUTCH2 |
| 1027.767 | .262 | | 937.032 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1027.744 | .262 | | 937.009 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.731 12B = -90.735 09 = -90.649 03 = -90.472**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 07.89403 | 94 11 44.04177 | 613668.310 | 220408.792 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 44 47 07.89403 | 94 11 44.04177 | 613668.310 | 220408.792 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 44 47 07.89379 | 94 11 44.04144 | 613668.334 | 220408.768 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 47 07.89356 | 94 11 44.04045 | 613668.405 | 220408.745 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 07.89368 | 94 11 44.04200 | 613668.293 | 220408.756 | .066 | | NCAT | 2024 | HHUTCH2 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573891.709 | 979040.572 | 1330115.720 | 16272345.122 | .013 | | ADJUSTMENT | 2025 | GPS3789 |
| 2573891.709 | 979040.572 | 1330115.720 | 16272345.122 | .013 | C | GPS - STATIC | 2024 | HHUTCH2 |
| 2573891.733 | 979040.547 | 1330115.744 | 16272345.097 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2573891.804 | 979040.524 | 1330115.815 | 16272345.072 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2573891.693 | 979040.536 | 1330115.703 | 16272345.086 | .066 | | NCAT | 2024 | HHUTCH2 |

# TROOP MNDT RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TROOP_RESET-DQ4200-3NE-27JUL2015.jpg | NE | Jul 27, 2015 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TROOP_RESET-DQ4200-2-27JUL2015.jpg | | Jul 27, 2015 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/TROOP_RESET-DQ4200-1-27JUL2015.jpg | | Jul 27, 2015 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# TT 143 ES USGS



**Mn/DOT Name:** TT 143 ES USGS **NGS Name:** 143 ES

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0667 Get Map
**NGS Quad / Sta Num :** 44094143/1001
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 19 | 115 N | 30 W | 444539.28 | 942952.03 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | USGS |

**Description:** (2016) **Stamping:** 1955 1057 143 ES TT

2.5 MILES NORTH AND 0.5 MILE WEST OF STEWART, 1.5 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND BOWMAN STREET IN STEWART, THEN 2.5 MILES NORTH ON COUNTY ROAD 20, THEN 1.0 MILE EAST ON 810TH AVENUE, 62.0 FEET SOUTH AND 51.0 FEET EAST OF THE CROSSROADS, ALONG THE WEST COUNTY LINE, 50.5 FEET SOUTHWEST OF A TELEPHONE POLE, 33.38 FEET WEST-SOUTHWEST OF STATION COLLINS.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.609 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1963 | USGS-VERT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1056.428 | .197 | | 966.451 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.289 12B = -90.305 09 = -90.154 03 = -90.026**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 39.27537 | 94 29 52.02751 | 535210.830 | 211157.318 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 39.27085 | 94 29 52.02234 | 535211.204 | 211156.861 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 39.40760 | 94 29 51.07250 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495373.030 | 970399.248 | 1251511.765 | 16264672.810 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2495373.401 | 970398.788 | 1251512.130 | 16264672.346 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1870771.554 | 642322.338 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# TT 7 WM



**Mn/DOT Name:** TT 7 WM

**NGS Name:** TT 7 WM

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094131/
**USGS Quad:** BROWNTON

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 25 | 114 N | 29 W | 443912.00 | 941551.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1955 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | SURVEY DISK | USGS |

**Description:** (2016) **Stamping:** TT 7 WM 1955

2.2 MILES SOUTHWEST OF NEW AUBURN, 0.5 MILE SOUTH ALONG TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND 5TH STREET IN NEW AUBURN, THEN 1.3 MILES WEST ON COUNTY ROAD 15, THEN 0.6 MILE CONTINUED SOUTH AND WEST ON COUNTY ROAD 17, THEN 0.7 MILE SOUTH ON LEAF AVENUE, 407.0 FEET NORTH AND 28.0 FEET EAST OF THE CENTERLINE OF A ROAD AT A FENCE WEST, 4.0 FEET NORTH AND 1.0 FOOT WEST OF A TELEPHONE POLE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -91.142 12B = -91.138 09 = -91.017 03 = -90.902**

# TWO DOGS MN085



**Mn/DOT Name:** TWO DOGS MN085 **NGS Name:** TWO DOGS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 10 | 115 N | 27 W | 444722.41 | 940415.89 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2006 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** TWO DOGS 1993

2.0 MILES NORTHWEST OF PLATO, 1.5 MILES NORTH ALONG COUNTY ROAD 9 FROM THE JUNCTION OF COUNTY ROAD 9 AND TRUNK HIGHWAY 212 IN PLATO, THEN 1.5 MILES WEST ON COUNTY ROAD 3, 51.0 FEET SOUTH OF THE JUNCTION OF COUNTY ROAD 3 (120TH STREET) AND CABLE AVENUE (NORTH), 128.0 FEET EAST OF A DRIVEWAY AT FIRE NUMBER 4083, 6.0 FEET SOUTH OF A TELEPHONE PEDESTAL.

**Station Notes**
THE ROD DEPTH IS UNKNOWN.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.476 12B = -90.499 09 = -90.403 03 = -90.266**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 47 22.41399 | 94 04 15.89303 | 645981.087 | 222077.827 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2606213.119 | 980458.274 | 1362444.510 | 16273364.781 | .033 | C | GPS - STATIC | 1993 | CO43 |

**Mn/DOT Name:** U 123 **NGS Name:** U 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0061 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 13 | 115 N | 28 W | 444610.00 | 940904.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1986 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - SMALL | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** U 123 1934

IN GLENCOE, 328.0 FEET EAST ON 10TH STREET FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE, THEN 141.0 FEET NORTH ON IVES AVENUE, 232.51 FEET SOUTH OF THE CENTERLINE OF 11TH STREET, 131.30 FEET WEST OF THE CENTERLINE OF IVES AVENUE.

**Station Notes**

GRAVITY VALUE: G=980 512.87 +/-? MGAL.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.370 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1001.953 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1959 | USGS-VERT |
| 1001.953 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1001.953 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.761 12B = -90.758 09 = -90.682 03 = -90.521**

*** No Horizontal Positions in the Database ***

# U 123 RESET



**Mn/DOT Name:** U 123 RESET

**NGS Name:** U 123 RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1582 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 13 | 115 N | 28 W | 444612.00 | 940903.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1986 | 2008 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE/BITUMINOUS SLAB | SURVEY DISK | MNDT |

**Description:** (2016) **Stamping:** U 123 RESET 1986

IN GLENCOE, 374.0 FEET NORTH ON HENNEPIN AVENUE FROM THE JUNCTION OF HENNEPIN AVENUE AND 10TH STREET, THEN 305.0 FEET EAST ON 11TH STREET, AT THE SOUTHEAST CORNER OF 11TH STREET EAST AND HENNEPIN AVENUE (TRUNK HIGHWAY 22), IN A CONCRETE PLATFORM AT THE LIBRARY ENTRANCE, 95.0 FEET EAST OF HENNEPIN AVENUE, 56.0 FEET SOUTH OF 11TH STREET EAST, 12.0 FEET WEST OF THE MAIN LIBRARY ENTRANCE, 0.8 FOOT NORTH OF THE NORTH WALL, 0.7 FOOT EAST OF THE WEST RAILING.

**Station Notes**

GRAVITY VALUE: G=980 498.40 +/-0.1 MGAL
NOAA 07-01-1973.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.400 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1001.973 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1001.973 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1986 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.758 12B = -90.754 09 = -90.679 03 = -90.518**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** U 124 **NGS Name:** U 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0007 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 10 | 117 N | 27 W | 445725.00 | 940311.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | CGS |

**Description:** (2016) **Stamping:** U 124 1934

0.9 MILE SOUTH OF WINSTED, 0.6 MILE SOUTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND ANDY AVENUE IN WINSTED, 0.9 MILE SOUTH OF THE WINSTED CITY HALL, ALONG THE HOWARD LAKE-GLENCOE ROAD AT A RAILROAD CROSSING, SET IN A POST OF A TRACKS LINE POLE, 60.0 FEET NORTH OF THE RAILROAD TRACKS, 36.0 FEET EAST OF A ROAD, 6.0 FEET EAST OF A POWER LINE POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.125 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.236 12B = -90.262 09 = -90.167 03 = -90.020**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** UNIT
**NGS Name:** UNIT
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DQ2204 Get Map
**NGS Quad / Sta Num :** 44094134/
**USGS Quad:** STEWART

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 34 | 115 N | 30 W | 444331.12 | 942539.23 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2015 | 2025 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 19 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2016) **Stamping:** UNIT 2015

2.5 MILES EAST OF STEWART, 2.55 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 7 IN STEWART, TO TRUNK HIGHWAY 212 MILEPOINT 105.30, THEN 0.05 MILE NORTH ON UNIT AVENUE, 117.4 FEET WEST OF UNIT AVENUE, 43.6 FEET NORTH OF 75TH STREET, 2.5 FEET SOUTH OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.710 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2017 | 00000898 |
| 1045.710 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2015 | VPLAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1045.743 | .262 | | 955.139 | .197 | 2011 | GPS - RTRN | 2025 | RTRN2025 |
| 1045.753 | .262 | | 955.149 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1045.710 | | | 955.057 | .019 | 2011 | HORIZONTAL ADJUSTMENT | 2018 | GPS3119 |
| 1045.710 | .131 | | 955.261 | .066 | 1996 | GPS - STATIC | 2017 | HMNCORS07 |
| 1045.710 | | | 955.057 | .019 | 2011 | GPS - STATIC | 2017 | HMNPH |
| 1045.716 | .262 | | 955.113 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |

**Geoid Separations(ft): GEOID18 = -90.603 12B = -90.607 09 = -90.469 03 = -90.331**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 31.11637 | 94 25 39.22682 | 553485.044 | 198215.857 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 44 43 31.11580 | 94 25 39.22716 | 553485.019 | 198215.799 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 43 31.11589 | 94 25 39.22644 | 553485.072 | 198215.808 | .010 | | ADJUSTMENT | 2018 | GPS3119 |
| 44 43 31.11589 | 94 25 39.22644 | 553485.072 | 198215.808 | .010 | C | GPS - STATIC | 2017 | HMNPH |
| 44 43 31.11536 | 94 25 39.22516 | 553485.164 | 198215.755 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 43 31.11559 | 94 25 39.22673 | 553485.051 | 198215.778 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2513544.374 | 957317.840 | 1269517.685 | 16251370.880 | .131 | 3 | GPS - RTRN | 2025 | RTRN2025 |
| 2513544.349 | 957317.782 | 1269517.659 | 16251370.823 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2513544.401 | 957317.791 | 1269517.712 | 16251370.831 | .010 | | ADJUSTMENT | 2018 | GPS3119 |
| 2513544.401 | 957317.791 | 1269517.712 | 16251370.831 | .010 | C | GPS - STATIC | 2017 | HMNPH |
| 2513544.493 | 957317.737 | 1269517.803 | 16251370.775 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2513544.380 | 957317.761 | 1269517.690 | 16251370.801 | .033 | C | GPS - STATIC | 2017 | HMNCORS07 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/UNIT-DQ2204-3N-17SEP2025.jpg | N | Sep 17, 2025 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/UNIT-DQ2204-2-17SEP2025.jpg | | Sep 17, 2025 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/UNIT-DQ2204-1-17SEP2025.jpg | | Sep 17, 2025 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** V 123 **NGS Name:** V 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0062 Get Map
**NGS Quad / Sta Num :** 44094113/
**USGS Quad:** GLENCOE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 13 | 115 N | 28 W | 444618.25 | 940842.50 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2004) **Stamping:** V 123 1934

IN GLENCOE, 0.3 MILE EAST ALONG 10TH STREET FROM THE JUNCTION OF 10TH STREET AND HENNEPIN AVENUE, THEN 0.2 MILE NORTH ON MCLEOD AVENUE, 0.3 MILE EAST OF THE JUNCTION OF HENNEPIN AVENUE AND 13TH STREET EAST, THEN 200.0 FEET SOUTH, 30.0 FEET NORTH OF THE RAILROAD TRACKS, 26.0 FEET WEST OF MCLEOD AVENUE NORTH, 21.2 FEET SOUTH OF A POWER POLE WITH A LIGHT, 16.9 FEET NORTHWEST OF A WITNESS POST.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.666 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1013.666 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000535 |
| 1013.666 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |
| 1013.666 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VGLBP |
| 1013.666 | .007 | 1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |
| 1013.666 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1013.249 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1013.249 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1987 | VGLEN |
| 1013.249 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1013.249 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 922.918 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1013.636 | .262 | | 922.971 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 922.971 | .011 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1013.679 | .131 | | 923.138 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1013.679 | .131 | | 923.138 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |

**Geoid Separations(ft): GEOID18 = -90.741 12B = -90.738 09 = -90.666 03 = -90.505**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 18.25147 | 94 08 42.49591 | 626792.570 | 215455.588 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 18.25075 | 94 08 42.49680 | 626792.506 | 215455.515 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 46 18.25164 | 94 08 42.49681 | 626792.505 | 215455.606 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 18.25117 | 94 08 42.49631 | 626792.541 | 215455.558 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 46 18.25117 | 94 08 42.49631 | 626792.542 | 215455.557 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2586975.716 | 973986.068 | 1343133.571 | 16267131.198 | .013 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2586975.652 | 973985.995 | 1343133.506 | 16267131.126 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2586975.652 | 973986.085 | 1343133.507 | 16267131.216 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2586975.688 | 973986.038 | 1343133.542 | 16267131.168 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2586975.688 | 973986.038 | 1343133.542 | 16267131.168 | .033 | C | GPS - STATIC | 2003 | HGLEN |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/V_123-PQ0062-3N-26APR2011.jpg | N | Apr 26, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/V_123-PQ0062-2-26APR2011.jpg | | Apr 26, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/V_123-PQ0062-1-26APR2011.jpg | | Apr 26, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** V 124 **NGS Name:** V 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0009 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 23 | 117 N | 27 W | 445559.00 | 940312.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1942 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** V-124 1934

2.5 MILES SOUTH OF THE WINSTED CITY HALL, 2.3 MILES SOUTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND ANDY AVENUE IN WINSTED, ALONG THE HOWARD LAKE-GLENCOE ROAD AT A CONCRETE BRIDGE, SET IN THE CENTER OF THE WEST HEADWALL.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1020.192 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.252 09 = -90.154 03 = -90.006**

*** No Horizontal Positions in the Database ***

# V 124 RESET



**Mn/DOT Name:** V 124 RESET

**NGS Name:** V 124 RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0010 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 23 | 117 N | 27 W | 445559.00 | 940312.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1942 | 1989 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| STRUCTURE (MASSIVE) | BENCH MARK DISK | NGS |

**Description:** (1989) **Stamping:** V 124 RESET 1942

2.5 MILES SOUTH OF WINSTED, 2.3 MILES SOUTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND ANDY AVENUE IN WINSTED, IN THE SOUTHWEST CORNER OF A TRUNK HIGHWAY 261 BRIDGE OVER CRANE CREEK, 15.0 FEET WEST OF TRUNK HIGHWAY 261.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1018.033 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1017.754 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1972 | L54 MINN |
| 1017.754 | .016 | 2 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.252 09 = -90.154 03 = -90.006**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** W 123 **NGS Name:** W 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0063 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 17 | 115 N | 27 W | 444624.40 | 940606.59 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | | PROJECTS 2 IN. | STEEL ROD IMBED IN MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (1934) **Stamping:** W 123 1934

2.49 MILES EAST-NORTHEAST OF GLENCOE, 1.5 MILES EAST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND 10TH STREET AT THE EAST END OF GLENCOE, THEN 0.4 MILE NORTH ON TRUNK HIGHWAY 261, 2.8 MILES EAST ALONG THE RAILROAD TRACKS FROM THE RAILROAD STATION AT GLENCOE, 148.5 FEET WEST OF RAILROAD MILEPOST 48, 96.0 FEET WEST OF A ROAD, 40.0 FEET SOUTH OF THE RAILROAD TRACKS, 5.0 FEET NORTHWEST OF A POLE.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1008.108 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2008 | 00000425-31 |
| 1008.108 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2007 | VOTAY |
| 1008.108 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1007.698 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 1007.698 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 1007.698 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1008.098 | .262 | | 917.551 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.626 12B = -90.633 09 = -90.548 03 = -90.407**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 24.39786 | 94 06 06.59105 | 638035.882 | 216148.507 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2598222.893 | 974591.512 | 1354384.688 | 16267598.146 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/W_123-PQ0063-3W-28APR2011.jpg | W | Apr 28, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/W_123-PQ0063-2-28APR2011.jpg | | Apr 28, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/W_123-PQ0063-1-28APR2011.jpg | | Apr 28, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** W 124 **NGS Name:** W 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0012 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 34 | 117 N | 27 W | 445424.00 | 940310.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1949 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** W-124 1934

1.6 MILES NORTH OF LESTER PRAIRIE, 1.5 MILES NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, 0.05 MILE NORTHEAST OF THE CENTER OF THE JUNCTION OF TRUNK HIGHWAY 261 AND TRUNK HIGHWAY 7, 166.27 FEET EAST OF THE CENTERLINE OF TRUNK HIGHWAY 261, 101.27 FEET NORTH OF STATION 4302 W.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1004.437 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1004.089 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1977 | L54 MINN |
| 1003.978 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.256 09 = -90.161 03 = -90.013**

*** No Horizontal Positions in the Database ***

# W 124 RESET



**Mn/DOT Name:** W 124 RESET

**NGS Name:** W 124 RESET

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0013 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 34 | 117 N | 27 W | 445424.00 | 940310.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1949 | 2001 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** W-124 RESET 1949

1.65 MILES NORTHWEST OF LESTER PRAIRIE, 1.4 MILES NORTH OF THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 23 IN LESTER PRAIRIE, AT THE JUNCTION OF TRUNK HIGHWAY 261 AND TRUNK HIGHWAY 7, 101.5 FEET EAST OF TRUNK HIGHWAY 261, 70.0 FEET SOUTHEAST OF THE SOUTHWEST CORNER AND 37.0 FEET SOUTHWEST OF THE SOUTHEAST CORNER OF A CHAIN LINK FENCE AROUND THE POWER COUNTY SUBSTATION, 63.0 FEET NORTH OF TRUNK HIGHWAY 7 AT STATION 843+56, 11.0 FEET WEST OF A POWER POLE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1003.033 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1002.744 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1973 | L22905 |
| 1002.744 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1973 | L114 MINN |
| 1002.744 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1972 | L54 MINN |
| 1002.744 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1971 | L22187 |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.256 09 = -90.161 03 = -90.013**

*** No Horizontal Positions in the Database ***

# WIENER MN085



**Mn/DOT Name:** WIENER MN085 **NGS Name:** WIENER

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DG9946 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 16 | 117 N | 27 W | 445658.73 | 940449.19 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2024 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 8 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 11 FT) | SURVEY DISK | MN-085 |

**Description:** (2005) **Stamping:** WEINER

2.0 MILES SOUTHWEST OF WINSTED, 2.0 MILES SOUTH AND 3.0 MILES WEST OF THE NORTHEAST CORNER OF MCLEOD COUNTY, 1.3 MILES WEST ALONG COUNTY ROAD 5 (230TH STREET) FROM THE JUNCTION OF COUNTY ROAD 5 AND COUNTY ROAD I, 20.0 FEET SOUTH OF COUNTY ROAD 5, 12.0 FEET EAST-SOUTHEAST OF THE MAILBOXES, 11.0 FEET WEST OF A DRIVEWAY AT FIRE NUMBER 4331, 12.0 FEET EAST-SOUTHEAST OF A WITNESS POST.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1036.911 | | | 946.642 | .010 | 2011 | HORIZONTAL ADJUSTMENT | 2025 | GPS3788 |
| 1036.911 | | | 946.642 | .010 | 2011 | GPS - STATIC | 2024 | HHUTCH1 |
| 1037.088 | .262 | | 946.832 | .197 | 2011 | GPS - RTRN | 2024 | RTRN2024 |
| 1036.960 | .262 | | 946.681 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| | | | 946.642 | .019 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1036.966 | .262 | | 946.773 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 946.740 | .021 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1036.907 | .131 | | 946.858 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2005 | GPS2086 |
| 1036.907 | .131 | | 946.858 | .066 | 1996 | GPS - STATIC | 2005 | HWRIG |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1036.514 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.256 12B = -90.279 09 = -90.193 03 = -90.039**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 58.72674 | 94 04 49.18777 | 643183.424 | 280429.564 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 44 56 58.72674 | 94 04 49.18777 | 643183.424 | 280429.564 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 44 56 58.72644 | 94 04 49.19094 | 643183.196 | 280429.532 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 44 56 58.72655 | 94 04 49.18784 | 643183.419 | 280429.545 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 44 56 58.72674 | 94 04 49.18777 | 643183.424 | 280429.564 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 58.72616 | 94 04 49.18889 | 643183.344 | 280429.505 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 56 58.72688 | 94 04 49.18845 | 643183.375 | 280429.578 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 58.72644 | 94 04 49.18816 | 643183.396 | 280429.534 | .066 | | NCAT | 2024 | HHUTCH1 |
| 44 56 58.72644 | 94 04 49.18816 | 643183.396 | 280429.534 | .033 | C | ADJUSTMENT | 2005 | GPS2086 |
| 44 56 58.72644 | 94 04 49.18816 | 643183.396 | 280429.534 | .033 | C | GPS - STATIC | 2005 | HWRIG |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 56 58.72105 | 94 04 49.18499 | 643183.628 | 280428.990 | .033 | C | GPS - STATIC | 1993 | CO43 |

# WIENER MN085



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2603869.448 | 1038824.252 | 1360820.484 | 16331740.360 | .007 | | ADJUSTMENT | 2025 | GPS3788 |
| 2603869.448 | 1038824.252 | 1360820.484 | 16331740.360 | .007 | C | GPS - STATIC | 2024 | HHUTCH1 |
| 2603869.220 | 1038824.222 | 1360820.256 | 16331740.333 | .131 | 3 | GPS - RTRN | 2024 | RTRN2024 |
| 2603869.443 | 1038824.233 | 1360820.479 | 16331740.341 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |
| 2603869.448 | 1038824.252 | 1360820.484 | 16331740.360 | .016 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2603869.367 | 1038824.193 | 1360820.403 | 16331740.303 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2603869.399 | 1038824.266 | 1360820.436 | 16331740.375 | .020 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2603869.420 | 1038824.222 | 1360820.456 | 16331740.331 | .066 | | NCAT | 2024 | HHUTCH1 |
| 2603869.420 | 1038824.222 | 1360820.456 | 16331740.331 | .033 | C | ADJUSTMENT | 2005 | GPS2086 |
| 2603869.420 | 1038824.222 | 1360820.456 | 16331740.331 | .033 | C | GPS - STATIC | 2005 | HWRIG |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2603869.647 | 1038823.676 | 1360820.677 | 16331739.782 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/WIENER-DG9946-3W-20JUN2024.jpg | W | Jun 20, 2024 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/WIENER-DG9946-2-20JUN2024.jpg | | Jun 20, 2024 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/WIENER-DG9946-1-20JUN2024.jpg | | Jun 20, 2024 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# WINSTED



**Mn/DOT Name:** WINSTED
**NGS Name:** WINSTED
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0606 Get Map
**NGS Quad / Sta Num :** 44094111/1018
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445817.56 | 940301.05 | | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | DESTROYED | Horz=NO Vert=NO | NO | | RECESSED 15 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| UNKNOWN | TRIANGULATION STATION DISK | NGS |

**Description:** (1971) **Stamping:** WINSTED 1956

IN THE NORTH PART OF WINSTED, AT THE NORTHEAST CORNER OF LINDEN AVENUE AND 4TH STREET, 133.0 FEET NORTHEAST OF A MANHOLE IN LINDEN AVENUE, 109.92 FEET EAST-NORTHEAST OF WINSTED RM 3, 109.50 FEET NORTHWEST OF WINSTED RM 1, 104.0 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF THE ERWIN SEXTON HOME, IN A GARDEN, 68.0 FEET EAST OF A DRIVEWAY, 62.0 FEET NORTH OF LINDEN AVENUE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1033.462 | .197 | | 943.551 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.413 | | | | | | GPS - STATIC | 1992 | HORZ |
| 1033.495 | | | | | | RECIPROCAL VERTICAL ANGLE | 1956 | HORZ |

**Geoid Separations(ft): GEOID18 = -90.249 12B = -90.275 09 = -90.180 03 = -90.033**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 17.55560 | 94 03 01.04923 | 650903.675 | 288467.652 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 17.54950 | 94 03 01.04481 | 650903.997 | 288467.036 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 17.68430 | 94 03 00.14010 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611651.246 | 1046801.333 | 1368698.019 | 16339618.702 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611651.564 | 1046800.715 | 1368698.329 | 16339618.080 | .066 | 2 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1987049.562 | 718723.800 | | | .100 | 2 | CLASSICAL SURVEY | 1958 | 11592 |

# WINSTED AZ MK



**Mn/DOT Name:** WINSTED AZ MK

**NGS Name:** WINSTED AZ MK

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8957 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445820.00 | 940302.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1971 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** WINSTED 1956

0.37 MILE NORTH-NORTHEAST OF WINSTED, 0.5 MILE NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 IN WINSTED, THEN 0.2 MILE EAST ON COUNTY ROAD 6, 125.07 FEET EAST OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 6 AND COUNTY ROAD 116, 54.56 FEET SOUTH OF STATION WINSTED.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.249 12B = -90.275 09 = -90.180 03 = -90.033**

# WINSTED AZ MK 2



**Mn/DOT Name:** WINSTED AZ MK 2

**NGS Name:** WINSTED AZ MK 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8958 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445817.00 | 940301.00 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1971 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | AZIMUTH MARK DISK | NGS |

**Description:** (2016) **Stamping:** WINSTED 1956 1971

0.38 MILE NORTHEAST OF WINSTED, 0.5 MILE NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 IN WINSTED, THEN 0.2 MILE EAST ON COUNTY ROAD 6, 207.0 FEET WEST OF COUNTY ROAD 21, 43.0 FEET NORTH OF THE CENTER OF COUNTY ROAD 56, 12.0 FEET WEST OF THE CENTER OF A DRIVEWAY INTO THE FARM HOME OF MR. ALBERT FIECKE, 1.6 FEET WEST OF A 4.0 INCH DIAMETER BY 5.0 FEET ALUMINUM GATE POST.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.246 12B = -90.272 09 = -90.180 03 = -90.033**

# WINSTED CH HOLY TRINITY CROSS



**Mn/DOT Name:** WINSTED CH HOLY TRINITY CROSS **NGS Name:** WINSTED CH HOLY TRINITY CROSS

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0603 Get Map
**NGS Quad / Sta Num :** 44094111/1046
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 2 | 117 N | 27 W | 445753.90 | 940249.12 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | CHURCH CROSS | NGS |

**Description:** (2016)

**Stamping:**

IN THE EAST PART OF WINSTED, 0.3 MILE EAST ON COUNTY ROAD 64 FROM THE JUNCTION OF COUNTY ROAD 64 AND TRUNK HIGHWAY 261, THEN 295.0 FEET NORTH CONTINUED ON COUNTY ROAD 64, 107.87 FEET SOUTHWEST OF THE CENTER OF THE JUNCTION OF WINSTED AVENUE AND COUNTY ROAD 64, 62.95 FEET WEST OF THE CENTERLINE OF COUNTY ROAD 64, AT THE SOUTHWEST CORNER OF WINSTED AVENUE AND 1ST STREET.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.239 12B = -90.266 09 = -90.170 03 = -90.026**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 53.89979 | 94 02 49.11837 | 651778.681 | 286077.935 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 53.89329 | 94 02 49.11389 | 651779.008 | 286077.279 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 57 54.02800 | 94 02 48.21100 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2612507.565 | 1044405.104 | 1369524.480 | 16337212.741 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2612507.887 | 1044404.446 | 1369524.793 | 16337212.079 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1987905.786 | 716327.544 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# WINSTED MUNICIPAL TANK



**Mn/DOT Name:** WINSTED MUNICIPAL TANK
**NGS Name:** WINSTED MUNICIPAL TANK
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0604 Get Map
**NGS Quad / Sta Num :** 44094111/1047
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 2 | 117 N | 27 W | 445806.62 | 940245.75 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | ELEVATED TANK | NGS |

**Description:** (2016)

**Stamping:**

IN THE NORTH PART OF WINSTED, 0.2 MILE NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64, THEN 0.3 MILE EAST ON ANDY AVENUE, THEN 0.2 MILE NORTH ON COUNTY ROAD 64, THEN 141.0 FEET EAST ON LAKE AVENUE, 293.75 FEET NORTHEAST OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 64 AND ALBERT AVENUE, 103.43 FEET SOUTH OF THE CENTERLINE OF LAKE AVENUE.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.243 12B = -90.269 09 = -90.174 03 = -90.029**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 06.61895 | 94 02 45.75051 | 652011.544 | 287367.885 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 06.61275 | 94 02 45.74603 | 652011.871 | 287367.259 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 58 06.74800 | 94 02 44.84300 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2612750.430 | 1045693.086 | 1369783.148 | 16338497.280 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2612750.751 | 1045692.458 | 1369783.462 | 16338496.648 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1988148.664 | 717615.601 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

# WINSTED RM 1



**Mn/DOT Name:** WINSTED RM 1

**NGS Name:** WINSTED RM 1

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445816.65 | 940300.23 | | |

**NGS ACRN:** CO8959 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** WINSTED NO 1 1956

IN THE NORTH PART OF WINSTED, 0.5 MILE NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64, THEN 0.2 MILE EAST ON COUNTY ROAD 6, 90.0 FEET NORTHWEST OF THE NORTHWEST CORNER OF A GARAGE ATTACHED TO THE HOSPITAL, 31.0 FEET SOUTH OF THE CENTER OF LINDEN AVENUE, 10.0 FEET SOUTH OF THE SOUTH CURB OF THE STREET.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.246 12B = -90.272 09 = -90.180 03 = -90.033**

# WINSTED RM 2



**Mn/DOT Name:** WINSTED RM 2

**NGS Name:** WINSTED RM 2

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8960 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445817.27 | 940302.52 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 1971 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** WINSTED NO 2 1956

0.38 MILE NORTHEAST OF WINSTED, 0.5 MILE NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 IN WINSTED, THEN 0.2 MILE EAST ON COUNTY ROAD 6, 112.85 FEET EAST OF THE CENTER OF THE JUNCTION OF COUNTY ROAD 6 AND COUNTY ROAD 116, 56.05 FEET SOUTH OF STATION WINSTED.

**Station Notes**

THE STATION WAS REMOVED AND WINSTED RM 3.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.246 12B = -90.272 09 = -90.180 03 = -90.033**

# WINSTED RM 3



**Mn/DOT Name:** WINSTED RM 3 **NGS Name:** WINSTED RM 3

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** CO8961 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 117 N | 27 W | 445817.27 | 940302.52 | | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1971 | 1971 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | REFERENCE MARK DISK | NGS |

**Description:** (2016) **Stamping:** WINSTED 1956 NO 3 1971

0.38 MILE NORTHEAST OF WINSTED, 0.5 MILE NORTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 IN WINSTED, THEN 0.2 MILE EAST ON COUNTY ROAD 116, 39.0 FEET WEST OF A DRIVEWAY, 35.0 FEET NORTH-NORTHEAST OF THE CENTER OF A MANHOLE, 5.0 FEET NORTH-NORTHEAST OF A POWER POLE.

*** No Horizontal or Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -90.246 12B = -90.272 09 = -90.180 03 = -90.033**

# WINSTED WATER TANK



**Mn/DOT Name:** WINSTED WATER TANK

**NGS Name:** WINSTED WATER TANK

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 11 | 117 N | 27 W | 445729.50 | 940247.89 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1990 | 2011 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | SURVEY DISK | MNDT |

**Description:** (2016)

**Stamping:**

IN THE SOUTH PART OF WINSTED, 0.5 MILE SOUTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND COUNTY ROAD 64 IN WINSTED, THEN 0.3 MILE EAST ON COUNTY ROAD 9, THEN 259.0 FEET NORTH ON 1ST STREET, THEN 10.0 FEET EAST ON ARTHUR AVENUE, AT THE SOUTH EDGE OF THE HAINLIN MEMORIAL PARK, 400.0 FEET EAST OF TRUNK HIGHWAY 261.

*** No Leveling-Derived Orthometric Heights in the Database ***

**Geoid Separations(ft): GEOID18 = -90.233 12B = -90.259 09 = -90.164 03 = -90.020**

*** No Horizontal Positions in the Database ***

# WOLE MNDT



**Mn/DOT Name:** WOLE MNDT **NGS Name:** WOLE

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1191 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 115 N | 29 W | 444627.78 | 942228.16 | 2 | 2 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2010 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (1984) **Stamping:** WOLE 1984

3.0 MILES NORTH-NORTHWEST OF BROWNTON, 3.6 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, THEN 350.0 FEET EAST ON COUNTY ROAD 3, 99.3 FEET WEST-NORTHWEST OF A TELEPHONE POLE, 58.5 FEET EAST OF A FIELD ENTRANCE, 54.6 FEET SOUTHWEST OF A CORNER FENCE POST, 50.52 FEET NORTHEAST OF WOLE MNDT RM 1, 45.3 FEET SOUTH-SOUTHEAST OF A POWER POLE, 44.83 FEET SOUTH-SOUTHEAST OF STATION 4304 F, 15.0 FEET SOUTH OF COUNTY ROAD 3, 45.9 FEET SOUTH-SOUTHEAST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.121 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1042.639 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1043.108 | .197 | | 952.974 | .131 | 1996 | HORIZONTAL ADJUSTMENT | 1999 | 17648 |

**Geoid Separations(ft): GEOID18 = -90.499 12B = -90.499 09 = -90.357 03 = -90.220**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.78059 | 94 22 28.15579 | 567223.763 | 216147.419 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.77592 | 94 22 28.15196 | 567224.039 | 216146.946 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 44 46 27.77598 | 94 22 28.15182 | 567224.051 | 216146.953 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| Geodetic Position | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 27.91270 | 94 22 27.21200 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527420.333 | 975140.362 | 1283609.454 | 16269018.054 | .066 | 2 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2527420.607 | 975139.888 | 1283609.722 | 16269017.576 | 3.281 | | CLASSICAL SURVEY | 1991 | H1991 |
| 2527420.617 | 975139.894 | 1283609.732 | 16269017.582 | .066 | 2 | ADJUSTMENT | 1990 | 17351 |

**NAD27**

| MN State Plane - South Zone | | | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 1902818.954 | 647063.500 | | | .100 | 2 | CLASSICAL SURVEY | 1950 | UNK |

# WOLE MNDT RM 1



**Mn/DOT Name:** WOLE MNDT RM 1 **NGS Name:** WOLE RM 1

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ1534 Get Map
**NGS Quad / Sta Num :** 44094142/
**USGS Quad:** BISCAY

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 18 | 115 N | 29 W | 444628.00 | 942228.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1984 | 2011 | NOT FOUND | Horz=? Vert=YES | NO | | | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 30 FT) | REFERENCE MARK DISK | MNDT |

**Description:** (1984) **Stamping:** WOLE NO 1 1984

2.75 MILES NORTH-NORTHWEST OF BROWNTON, 3.6 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 IN BROWNTON, AT TRUNK HIGHWAY 15 MILEPOINT 93.2, THEN 300.0 FEET EAST ON COUNTY ROAD 3, 140.1 FEET WEST OF A POWER POLE, 100.8 FEET SOUTHWEST OF A CORNER FENCE POST, 75.6 FEET SOUTH-SOUTHWEST OF STATION 4304 F, 70.0 FEET SOUTHWEST OF A TELEPHONE POLE, 50.5 FEET SOUTHWEST OF STATION WOLE MNDT, 40.0 FEET SOUTH OF COUNTY ROAD 3, 15.5 FEET EAST OF AN ENTRANCE, 77.1 FEET SOUTH-SOUTHWEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.955 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 1995 | 00000135 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1038.472 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1986 | VHUCH |

**Geoid Separations(ft): GEOID18 = -90.499 12B = -90.499 09 = -90.361 03 = -90.220**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** X 123 **NGS Name:** X 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0064 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 15 | 115 N | 27 W | 444620.31 | 940329.19 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | GOOD | Horz=NO Vert=NO | YES | RR | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| BRIDGE HEADWALL | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** X 123 1934

0.91 MILE NORTHWEST OF PLATO, IN A BRIDGE HEADWALL IN THE SOUTHWEST CORNER OF A RAILROAD BRIDGE OVER A CREEK, 1.2 MILES WEST ALONG TRUNK HIGHWAY 212 FROM THE JUNCTION OF TRUNK HIGHWAY 212 AND COUNTY ROAD 9 IN PLATO, THEN 0.5 MILE NORTH-NORTHEAST ON BOONE ROAD, 0.8 MILE WEST ON THE RAILROAD TRACKS FROM THE RAILROAD STATION AT PLATO, 1.0 POLE EAST OF RAILROAD MILEPOST 46, 6.0 FEET SOUTH OF THE RAILROAD TRACKS.

**Station Notes**
THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 986.812 | .016 | 2/2 | | | | VERTICAL ADJUSTMENT | 2000 | 00000341 |
| 986.812 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 986.419 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 986.419 | .016 | 2/2 | | | | VERTICAL CONTROL SURVEY | 1979 | V1012 |
| 986.419 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 986.419 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 986.842 | .262 | | 896.435 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.492 12B = -90.508 09 = -90.410 03 = -90.282**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 46 20.30622 | 94 03 29.18648 | 649394.004 | 215811.296 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2609576.858 | 974166.051 | 1365729.799 | 16267033.228 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/X_123-PQ0064-3E-28APR2011.jpg | E | Apr 28, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/X_123-PQ0064-2-28APR2011.jpg | | Apr 28, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/X_123-PQ0064-1-28APR2011.jpg | | Apr 28, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# X 124



**Mn/DOT Name:** X 124 **NGS Name:** X 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0014 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 117 N | 27 W | 445357.00 | 940312.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1942 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** X-124 1934

1.5 MILES NORTH OF THE CITY WATER TANK AT LESTER PRAIRIE, 1.0 MILE NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE, ALONG THE HOWARD LAKE-GLENCOE ROAD AT A CONCRETE BRIDGE, SET ON THE SOUTHEAST WING WALL, 13.0 FEET EAST OF THE CENTERLINE OF A BRIDGE, ABOUT 6.0 INCH DIAMETER BELOW THE SURFACE OF THE ROAD.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1000.510 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**Geoid Separations(ft): GEOID18 = -90.226 12B = -90.262 09 = -90.164 03 = -90.020**

*** No Horizontal Positions in the Database ***

# X 124 RESET



**Mn/DOT Name:** X 124 RESET

**NGS Name:** X 124 RESET

**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 35 | 117 N | 27 W | 445357.00 | 940312.00 | | |

**NGS ACRN:** PQ0015 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1942 | 2005 | DESTROYED | Horz=NO Vert=NO | NO | 6952 | FLUSH | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - SMALL | BENCH MARK DISK | NGS |

**Description:** (2016)

**Stamping:** X 124 RESET 1942

1.5 MILES NORTH OF THE WATER TANK AT LESTER PRAIRIE, 1.0 MILE NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, AT THE NORTH END OF TRUNK HIGHWAY 261 WOOD BRIDGE NUMBER 6952 OVER OTTER CREEK, IN THE NORTHWEST CORNER OF A CURB, 25.8 FEET WEST OF TRUNK HIGHWAY 261.

**Station Notes**

IN 1996 BRW COULD NOT FIND THE CURB OR THE STATION, THE BRIDGE WAS REMOVED.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 999.736 | .066 | 3 | | | | VERTICAL CONTROL SURVEY | 1987 | L24645 |
| 999.745 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1942 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.226 12B = -90.262 09 = -90.164 03 = -90.020**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** Y 123 **NGS Name:** Y 123

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0065 Get Map
**NGS Quad / Sta Num :** 44094112/
**USGS Quad:** PLATO

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 14 | 115 N | 27 W | 444619.00 | 940219.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2011 | NOT FOUND | Horz=NO Vert=NO | NO | | PROJECTS 2 IN. | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (1979) **Stamping:** Y 123 1934

IN PLATO, 395.0 FEET EAST ALONG A RAILROAD FROM THE COUNTY ROAD 9 CROSSING, 133.0 FEET NORTHEAST OF THE NORTHEAST CORNER OF A WALL AROUND THE GAS TANKS, 72.5 FEET NORTHWEST OF THE NORTHWEST CORNER OF A METAL BUILDING, 30.0 FEET EAST OF 4TH TELEPHONE POLE EAST OF ROAD, 16.0 FEET SOUTH OF A RAILROAD.

**Station Notes**

THE SURVEY MARK IS ON RAILROAD PROPERTY AND HAS BEEN ABANDONED FOR MNDOT GEODETIC USE.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 995.848 | .016 | 2/2 | | | | VERTICAL ADJUSTMENT | 2000 | 00000341 |
| 995.848 | .016 | 2/0 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 995.451 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 995.451 | .016 | 2/2 | | | | VERTICAL CONTROL SURVEY | 1979 | V1012 |
| 995.451 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1940 | L52 MINN |
| 995.451 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1934 | L52 MINN |

**Geoid Separations(ft): GEOID18 = -90.436 12B = -90.453 09 = -90.351 03 = -90.233**

*** No Horizontal Positions in the Database ***

**Mn/DOT Name:** Y 124 **NGS Name:** Y 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0016 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 2 | 116 N | 27 W | 445306.00 | 940219.00 | 2 | |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 1995 | DESTROYED | Horz=NO Vert=NO | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOUNDATION | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** 981.389 Y 124 1934

IN LESTER PRAIRIE, 0.3 MILE EAST ALONG LINCOLN AVENUE FROM THE JUNCTION OF LINCOLN AVENUE AND TRUNK HIGHWAY 261, THEN 243.0 FEET SOUTH ON ELM STREET, THEN 0.4 MILE EAST ON COUNTY ROAD 109, THEN 157.0 FEET NORTH ON COUNTY ROAD 23, IN THE BASE OF THE SOUTHWEST LEG OF THE CITY WATER TANK, 110.0 FEET EAST OF OAK STREET NORTH, 46.0 FEET NORTH OF AN ALLEY, 19.0 FEET EAST-NORTHEAST OF A POLICE BUILDING, 16.0 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF A FIRE BUILDING.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 981.940 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 981.901 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 981.835 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 981.389 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 981.389 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.223 12B = -90.252 09 = -90.161 03 = -90.020**

*** No Horizontal Positions in the Database ***

# Y 124 RESET



**Mn/DOT Name:** Y 124 RESET
**NGS Name:** Y 124 RESET
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NE | 2 | 116 N | 27 W | 445310.60 | 940208.90 | | |

**NGS ACRN:** Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1995 | 2011 | GOOD | Horz=NO Vert=YES | YES | | FLUSH | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE FOOTING - SMALL | VERTICAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** Y 124 95 RESET

IN LESTER PRAIRIE, 266.0 FEET NORTH ON TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE IN LESTER PRAIRIE, THEN 0.6 MILE EAST ON COUNTY ROAD 23, THEN 354.0 FEET SOUTH CONTINUED ON COUNTY ROAD 23, IN THE BASE FOR THE SOUTH-SOUTHEAST LEG OF THE NEW CITY WATER TANK, 9.0 BLOCKS EAST ALONG 1ST AVENUE NORTH FROM THE JUNCTION OF 1ST AVENUE NORTH AND TRUNK HIGHWAY 261, 170.0 FEET NORTH OF 1ST AVENUE NORTH, 62.5 FEET NORTH OF A FIRE HYDRANT WHICH IS 5.0 FEET WEST OF A STEEL STORAGE SHED, 4.1 FEET EAST OF THE HINGE ON A DOOR ON THE SOUTH SIDE OF A WATER TOWER.

**Station Notes**

DISTRICT 8 SURVEYS SET THE STATION IN 1995 BEFORE DESTROYING BENCHMARK Y 124, DIFFERENCE IN ELEVATION FROM BENCHMARK Y 124 TO BENCHMARK Y 124 RESET IS -5.689 FEET.

## Leveling-Derived Orthometric Heights (Feet)

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 975.700 | .033 | 3 | | | | VERTICAL CONTROL SURVEY | 1995 | L54 MINN |

**Geoid Separations(ft): GEOID18 = -90.220 12B = -90.246 09 = -90.157 03 = -90.016**

*** No Horizontal Positions in the Database ***

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Y_124_RESET-3N-11MAY2011.jpg | N | May 11, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Y_124_RESET-2-11MAY2011.jpg | | May 11, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Y_124_RESET-1-11MAY2011.jpg | | May 11, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** YACH MNDT
**NGS Name:** YACH
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6204 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 20 | 117 N | 30 W | 445542.43 | 942852.22 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1992 | 2011 | DESTROYED | Horz=NO Vert=NO | YES | | RECESSED 4 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | HORIZONTAL CONTROL DISK | MNDT |

**Description:** (2016) **Stamping:** YACH 1992

2.0 MILES SOUTHWEST OF CEDAR MILLS, 1.7 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN CEDAR MILLS, THEN 0.15 MILE NORTH ON YACHT AVENUE, 110.5 FEET SOUTH OF A POWER POLE, 78.0 FEET SOUTH OF 215TH STREET, 68.8 FEET SOUTHEAST OF A TELEPHONE CABLE PEDESTAL, 18.0 FEET EAST OF YACHT AVENUE, 10.5 FEET WEST OF A WITNESS POST.

**Station Notes**
04-13-11 FOUND THE CAP LOOSE AND RESET THE MARK. THE DISK WAS TURNED IN TO THE OFFICE.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| | | | 1008.167 | .005 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| | | | 1008.289 | .007 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1097.209 | .131 | | 1008.361 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2004 | GPS2022 |
| 1097.209 | .131 | | 1008.361 | .066 | 1996 | GPS - STATIC | 2004 | HMEEK |
| 1097.176 | .131 | | 1008.361 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1935 |
| 1097.176 | .131 | | 1008.361 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1097.176 | .131 | | 1008.361 | .066 | 1996 | GPS - STATIC | 2003 | HGLEN |
| 1097.176 | .131 | | 1008.361 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1096.914 | | | | | | GPS - STATIC | 1992 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.045 12B = -89.045 09 = -88.894 03 = -88.829**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42656 | 94 28 52.21855 | 539412.322 | 272252.262 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42665 | 94 28 52.21929 | 539412.269 | 272252.270 | .007 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42616 | 94 28 52.21884 | 539412.301 | 272252.221 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 44 55 42.42616 | 94 28 52.21884 | 539412.301 | 272252.221 | .033 | C | GPS - STATIC | 2004 | HMEEK |
| 44 55 42.42616 | 94 28 52.21884 | 539412.301 | 272252.221 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 44 55 42.42616 | 94 28 52.21884 | 539412.301 | 272252.221 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 55 42.42616 | 94 28 52.21884 | 539412.300 | 272252.221 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 44 55 42.42616 | 94 28 52.21884 | 539412.301 | 272252.221 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42005 | 94 28 52.21291 | 539412.730 | 272251.604 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500047.706 | 1031453.659 | 1256938.937 | 16325654.490 | .007 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500047.652 | 1031453.668 | 1256938.884 | 16325654.500 | .007 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500047.685 | 1031453.618 | 1256938.915 | 16325654.450 | .033 | C | ADJUSTMENT | 2004 | GPS2022 |
| 2500047.685 | 1031453.618 | 1256938.915 | 16325654.450 | .033 | C | GPS - STATIC | 2004 | HMEEK |
| 2500047.685 | 1031453.618 | 1256938.915 | 16325654.450 | .033 | C | ADJUSTMENT | 2003 | GPS1935 |
| 2500047.685 | 1031453.618 | 1256938.915 | 16325654.450 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2500047.685 | 1031453.618 | 1256938.915 | 16325654.450 | .033 | C | GPS - STATIC | 2003 | HGLEN |
| 2500047.685 | 1031453.618 | 1256938.915 | 16325654.450 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500048.108 | 1031452.997 | 1256939.330 | 16325653.823 | .033 | C | GPS - STATIC | 1992 | HHUTC |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACH-DF6204-3S-08NOV2010.jpg | S | Nov 8, 2010 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACH-DF6204-2-08NOV2010.jpg | | Nov 8, 2010 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACH-DF6204-1-08NOV2010.jpg | | Nov 8, 2010 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# YACH MNDT RESET



**Mn/DOT Name:** YACH MNDT RESET
**NGS Name:** YACH RESET
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DO9927 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SW | 20 | 117 N | 30 W | 445542.43 | 942852.22 | 2 | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 5 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2011) **Stamping:** YACH 1992 2011

2.0 MILES SOUTHWEST OF CEDAR MILLS, 1.7 MILES SOUTHEAST ALONG TRUNK HIGHWAY 22/TRUNK HIGHWAY 7 FROM THE JUNCTION OF TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 7 IN CEDAR MILLS, AT TRUNK HIGHWAY 22 MILEPOINT 128.45, THEN 0.15 MILE NORTH ON YACHT AVENUE, 78.0 FEET SOUTH OF 215TH STREET, 68.8 FEET SOUTHEAST OF A CABLE BOX, 18.5 FEET SOUTHWEST OF A POWER POLE NUMBER 2002, 18.0 FEET EAST OF YACHT AVENUE, 10.5 FEET WEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1096.983 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1096.963 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1096.983 | | | 1007.947 | .013 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1096.983 | | | 1007.947 | .013 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1096.979 | .131 | | 1008.134 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1096.746 | .262 | | 1007.856 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -89.045 12B = -89.045 09 = -88.894 03 = -88.829**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42675 | 94 28 52.21889 | 539412.297 | 272252.281 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 55 42.42675 | 94 28 52.21889 | 539412.297 | 272252.281 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42562 | 94 28 52.21845 | 539412.329 | 272252.166 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 55 42.42633 | 94 28 52.21928 | 539412.270 | 272252.238 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500047.681 | 1031453.678 | 1256938.913 | 16325654.510 | .016 | | ADJUSTMENT | 2015 | GPS3052 |
| 2500047.681 | 1031453.678 | 1256938.913 | 16325654.510 | .016 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500047.712 | 1031453.563 | 1256938.942 | 16325654.395 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500047.653 | 1031453.636 | 1256938.884 | 16325654.468 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# YACH MNDT RESET



## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACH_RESET-DO9927-3E-13APR2011.jpg | E | Apr 13, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACH_RESET-DO9927-2-13APR2011.jpg | | Apr 13, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACH_RESET-DO9927-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# YACHT MN085



**Mn/DOT Name:** YACHT MN085 **NGS Name:** YACHT

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** DF6208 Get Map
**NGS Quad / Sta Num :** 44094144/
**USGS Quad:** HUTCHINSON WEST

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 32 | 117 N | 30 W | 445424.75 | 942851.98 | | C |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1993 | 2011 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 3 IN. | MARKER W/BAR MAGNET |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) | SURVEY DISK | MN-085 |

**Description:** (2016) **Stamping:** YACHT

6.0 MILES WEST AND 1.0 MILE NORTH OF HUTCHINSON, 4.0 MILES NORTHWEST ALONG TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 FROM THE JUNCTION OF TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 AND TRUNK HIGHWAY 15 IN HUTCHINSON, THEN 2.0 MILES WEST ALONG 200TH STREET, 5.0 MILES SOUTH AND 1.0 MILE EAST OF THE NORTHWEST CORNER OF MCLEOD COUNTY, AT THE JUNCTION OF 200TH STREET AND YACHT AVENUE, 65.0 FEET EAST OF YACHT AVENUE EXTENDED SOUTH, 27.0 FEET SOUTH OF 200TH STREET, 9.0 FEET EAST OF A FIELD DRIVE, 10.8 FEET WEST OF A WITNESS POST. THE ROD DEPTH IS UNKNOWN.

*** No Leveling-Derived Orthometric Heights in the Database ***

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.643 | | | 995.379 | .007 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1084.643 | | | 995.365 | .007 | 2011 | GPS - STATIC | 2014 | HHEAT |
| | | | 995.379 | .008 | 2011 | HORIZONTAL ADJUSTMENT | 2012 | GPS2800 |
| 1084.611 | .131 | | 995.592 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1084.460 | .262 | | 995.372 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |
| | | | 995.497 | .009 | 2007 | HORIZONTAL ADJUSTMENT | 2007 | GPS2300 |
| 1084.611 | .131 | | 995.569 | .066 | 1996 | HORIZONTAL ADJUSTMENT | 2003 | GPS1793 |
| 1084.611 | .131 | | 995.569 | .066 | 1996 | GPS - STATIC | 2002 | HLEST |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1084.611 | | | | | | GPS - STATIC | 1993 | HORZ |

**Geoid Separations(ft): GEOID18 = -89.242 12B = -89.245 09 = -89.088 03 = -89.016**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.75144 | 94 28 51.98104 | 539444.119 | 264385.210 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 54 24.75139 | 94 28 51.98119 | 539444.109 | 264385.205 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 44 54 24.75144 | 94 28 51.98104 | 539444.119 | 264385.210 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.75199 | 94 28 51.98257 | 539444.009 | 264385.266 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 44 54 24.75156 | 94 28 51.98191 | 539444.057 | 264385.223 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.75105 | 94 28 51.98150 | 539444.086 | 264385.171 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 44 54 24.75105 | 94 28 51.98148 | 539444.088 | 264385.171 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 44 54 24.75105 | 94 28 51.98148 | 539444.088 | 264385.170 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 54 24.74727 | 94 28 51.97726 | 539444.394 | 264384.789 | .033 | C | GPS - STATIC | 1993 | CO43 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500018.494 | 1023587.346 | 1256812.455 | 16317790.559 | .007 | | ADJUSTMENT | 2015 | GPS3052 |
| 2500018.484 | 1023587.341 | 1256812.444 | 16317790.554 | .007 | C | GPS - STATIC | 2014 | HHEAT |
| 2500018.494 | 1023587.346 | 1256812.455 | 16317790.559 | .010 | | ADJUSTMENT | 2012 | GPS2800 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500018.384 | 1023587.402 | 1256812.345 | 16317790.617 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |
| 2500018.432 | 1023587.359 | 1256812.392 | 16317790.572 | .013 | | ADJUSTMENT | 2007 | GPS2300 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500018.461 | 1023587.307 | 1256812.421 | 16317790.520 | .033 | C | GPS - STATIC | 2011 | HHEAT |
| 2500018.463 | 1023587.307 | 1256812.422 | 16317790.520 | .033 | C | ADJUSTMENT | 2003 | GPS1793 |
| 2500018.462 | 1023587.307 | 1256812.422 | 16317790.520 | .033 | C | GPS - STATIC | 2002 | HLEST |

**NAD83(1986)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2500018.764 | 1023586.922 | 1256812.719 | 16317790.132 | .033 | C | GPS - STATIC | 1993 | CO43 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| **Location:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACHT-DF6208-3S-13APR2011.jpg | S | Apr 13, 2011 |
| **Monument:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACHT-DF6208-2-13APR2011.jpg | | Apr 13, 2011 |
| **Disk:** | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/YACHT-DF6208-1-13APR2011.jpg | | Apr 13, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

**Mn/DOT Name:** Z 124 **NGS Name:** Z 124

**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0017 Get Map
**NGS Quad / Sta Num :** 44094111/
**USGS Quad:** WINSTED

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 2 | 116 N | 27 W | 445303.19 | 940302.63 | 2 | 3 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1934 | 2020 | GOOD | Horz=YES Vert=YES | YES | | PROJECTS 6 IN. | STEEL SPIKE ADJ TO MON |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| CONCRETE MONUMENT (CAST-IN-PLACE) | BENCH MARK DISK | NGS |

**Description:** (2016) **Stamping:** Z 124 1934 985.572

AT THE WEST EDGE OF LESTER PRAIRIE, 367.0 FEET SOUTH ALONG TRUNK HIGHWAY 261 FROM THE JUNCTION OF TRUNK HIGHWAY 261 AND LINCOLN AVENUE, AT THE NORTHEAST CORNER OF THE JUNCTION OF COUNTY ROAD 1 AND A RAILROAD, 1.6 MILES SOUTH ON COUNTY ROAD 1 FROM THE JUNCTION OF COUNTY ROAD 1 AND TRUNK HIGHWAY 7, 45.0 FEET EAST OF TRUNK HIGHWAY 261, 0.3 FOOT WEST OF A WITNESS POST.

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 986.058 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2005 | 00000472 |
| 986.018 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2001 | VSILV |
| 986.018 | .016 | 2 | | | | VERTICAL ADJUSTMENT | 1991 | 00000025 |

**NGVD29**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 985.572 | .016 | 2/0 | | | | UNKNOWN/APPROXIMATE | 1992 | UNCHECKD |
| 985.513 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 1990 | VSILV |
| 985.572 | .007 | 1 | | | | VERTICAL CONTROL SURVEY | 1939 | L54 MINN |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 986.035 | .262 | | 895.795 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 986.064 | .262 | | 895.825 | .197 | 2011 | GPS - OPUS | 2020 | GPSBM |
| 986.087 | .262 | | 895.818 | .197 | 2011 | GPS - RTRN | 2020 | RTRN2020 |
| 985.972 | .262 | | 895.795 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.239 12B = -90.269 09 = -90.177 03 = -90.033**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.18872 | 94 03 02.63408 | 651017.562 | 256627.844 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 03.18847 | 94 03 02.63426 | 651017.549 | 256627.819 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 44 53 03.18886 | 94 03 02.63332 | 651017.617 | 256627.859 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 53 03.18851 | 94 03 02.63497 | 651017.498 | 256627.823 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611517.555 | 1014964.610 | 1368171.902 | 16307794.493 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2611517.541 | 1014964.585 | 1368171.889 | 16307794.468 | .131 | 3 | GPS - OPUS | 2020 | GPSBM |
| 2611517.609 | 1014964.624 | 1368171.957 | 16307794.507 | .131 | 3 | GPS - RTRN | 2020 | RTRN2020 |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2611517.490 | 1014964.589 | 1368171.838 | 16307794.473 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Z_124-PQ0017-3E-29MAR2020.jpg | E | Mar 29, 2020 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Z_124-PQ0017-2-29MAR2020.jpg | | Mar 29, 2020 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/Z_124-PQ0017-1-29MAR2020.jpg | | Mar 29, 2020 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ZACHARY



**Mn/DOT Name:** ZACHARY
**NGS Name:** ZACHARY
**County:** MCLEOD, MN (Sheet 1)

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| SE | 13 | 115 N | 30 W | 444554.56 | 942233.95 | 2 | C |

**NGS ACRN:** DO9904 Get Map
**NGS Quad / Sta Num :** 44094143/
**USGS Quad:** HEATWOLE

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 2011 | 2015 | GOOD | Horz=YES Vert=YES | YES | | RECESSED 2 IN. | BAR MAG IN DRILL HOLE |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| ALUMINUM ALLOY ROD (NO SLEEVE) (DEPTH 20 FT) | METAL ROD (WITH REMOVABLE ID DISK) | MNDT |

**Description:** (2015) **Stamping:** ZACHARY 2011

2.5 MILES NORTHWEST OF BROWNTON, 2.85 MILES NORTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 212 (THE JUNCTION 1.0 MILE SOUTHWEST OF BROWNTON), AT TRUNK HIGHWAY 15 MILEPOINT 92.45, 77.5 FEET WEST OF TRUNK HIGHWAY 15, 35.5 FEET SOUTH OF A FIELD ENTRANCE, 1.2 FEET NORTH OF A WITNESS POST.

**Station Pair:** JAEGER - MCLEOD, MN

## Leveling-Derived Orthometric Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.518 | .016 | 2/1 | | | | VERTICAL ADJUSTMENT | 2014 | 00000815 |
| 1032.518 | .016 | 2/1 | | | | VERTICAL CONTROL SURVEY | 2011 | VHEAT |

## Non Leveling-Derived Orthometric and Ellipsoid Heights (Feet)

**NAVD88**

| Orthometric Height | | | Ellipsoid (NAD83) | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Height | Acc | Order (/Class) | Height | Acc | Adj | Determination Method | Year | Reference |
| 1032.459 | .262 | | 941.924 | .197 | 2011 | GPS - RTRN | 2015 | RTRN2015 |
| 1032.518 | | | 941.963 | .011 | 2011 | HORIZONTAL ADJUSTMENT | 2015 | GPS3052 |
| 1032.518 | | | 941.963 | .011 | 2011 | GPS - STATIC | 2014 | HHEAT |
| 1032.511 | .131 | | 942.265 | .066 | 1996 | GPS - STATIC | 2011 | HHEAT |
| 1032.426 | .262 | | 942.036 | .197 | 2007 | GPS - RTRN | 2011 | RTRN2011 |

**Geoid Separations(ft): GEOID18 = -90.531 12B = -90.535 09 = -90.394 03 = -90.252**

## Lat/Lon and County Coordinates (Feet)

**NAD83(2011)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 54.55589 | 94 22 33.95302 | 566816.180 | 212781.149 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 44 45 54.55655 | 94 22 33.95323 | 566816.165 | 212781.216 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 44 45 54.55655 | 94 22 33.95323 | 566816.165 | 212781.216 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 54.55512 | 94 22 33.95387 | 566816.119 | 212781.071 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| Geodetic Position | | McLeod County | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| Latitude | Longitude | X | Y | Acc | Order | Determination Method | Year | Reference |
| 44 45 54.55590 | 94 22 33.95384 | 566816.121 | 212781.150 | .033 | C | GPS - STATIC | 2011 | HHEAT |

# ZACHARY



## State Plane and UTM Coordinates (Feet)

**NAD83(2011)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526986.685 | 971777.711 | 1283134.517 | 16265661.627 | .131 | 3 | GPS - RTRN | 2015 | RTRN2015 |
| 2526986.670 | 971777.778 | 1283134.503 | 16265661.694 | .010 | | ADJUSTMENT | 2015 | GPS3052 |
| 2526986.670 | 971777.778 | 1283134.503 | 16265661.694 | .010 | C | GPS - STATIC | 2014 | HHEAT |

**NAD83(2007)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526986.623 | 971777.634 | 1283134.454 | 16265661.550 | .131 | 3 | GPS - RTRN | 2011 | RTRN2011 |

**NAD83(1996)**

| MN State Plane - South Zone | | UTM - Zone 15 | | | | | Project Info | |
|---|---|---|---|---|---|---|---|---|
| X | Y | X | Y | Acc | Order | Determination Method | Year | Reference |
| 2526986.625 | 971777.712 | 1283134.458 | 16265661.629 | .033 | C | GPS - STATIC | 2011 | HHEAT |

## Station Photos

| Type | File Name | Dir | Date |
|---|---|---|---|
| Location: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ZACHARY-DO9904-3W-02MAY2011.jpg | W | May 2, 2011 |
| Monument: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ZACHARY-DO9904-2-02MAY2011.jpg | | May 2, 2011 |
| Disk: | https://www.olmweb.dot.state.mn.us/geod/StationPhotos/mcleod/ZACHARY-DO9904-1-02MAY2011.jpg | | May 2, 2011 |

** All station images can be viewed at: ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos **

# ZION EVAN LUTH CH FINIAL



**Mn/DOT Name:** ZION EVAN LUTH CH FINIAL
**NGS Name:** ZION EVAN LUTH CH FINIAL
**County:** MCLEOD, MN (Sheet 1)

**NGS ACRN:** PQ0666 Get Map
**NGS Quad / Sta Num :** 44094143/1050
**USGS Quad:** HEATWOLE

| 1/4 | Sec | Twp | Rng | Reference Latitude | Reference Longitude | Vert Order | Horz Order |
|---|---|---|---|---|---|---|---|
| NW | 15 | 116 N | 30 W | 445123.07 | 942605.25 | | 4 |

| Year Set | Last Recovery | Condition | Geodetic Usability | Photos | Bridge Num | F/P/R | Magnetic Properties |
|---|---|---|---|---|---|---|---|
| 1956 | 2010 | NOT FOUND | Horz=? Vert=? | NO | | | SEE DESCRIPTION |

| Monument Type | Disk Type | Mon. Agency |
|---|---|---|
| SEE DESCRIPTIVE TEXT | FINIAL | NGS |

**Description:** (2016)

**Stamping:**

4.0 MILES SOUTHWEST OF HUTCHINSON, 2.5 MILES SOUTH ALONG TRUNK HIGHWAY 15 FROM THE JUNCTION OF TRUNK HIGHWAY 15 AND TRUNK HIGHWAY 7/TRUNK HIGHWAY 22 IN HUTCHINSON, THEN 3.4 MILES WEST ON COUNTY ROAD 8, AT THE JUNCTION OF COUNTY ROAD 76 AND COUNTY ROAD 8.

*** No Vertical Positions in the Database ***

**Geoid Separations(ft): GEOID18 = -89.869 12B = -89.852 09 = -89.718 03 = -89.609**

## Lat/Lon and County Coordinates (Feet)

**NAD83(1996)**

| Geodetic Position Latitude | Geodetic Position Longitude | McLeod County X | McLeod County Y | Acc | Order | Determination Method | Project Info Year | Project Info Reference |
|---|---|---|---|---|---|---|---|---|
| 44 51 23.06849 | 94 26 05.24929 | 551489.625 | 246010.042 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| Geodetic Position Latitude | Geodetic Position Longitude | McLeod County X | McLeod County Y | Acc | Order | Determination Method | Project Info Year | Project Info Reference |
|---|---|---|---|---|---|---|---|---|
| 44 51 23.06340 | 94 26 05.24348 | 551490.045 | 246009.528 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| Geodetic Position Latitude | Geodetic Position Longitude | X | Y | Acc | Order | Determination Method | Project Info Year | Project Info Reference |
|---|---|---|---|---|---|---|---|---|
| 44 51 23.20400 | 94 26 04.30200 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |

## State Plane and UTM Coordinates (Feet)

**NAD83(1996)**

| MN State Plane - South Zone X | MN State Plane - South Zone Y | UTM - Zone 15 X | UTM - Zone 15 Y | Acc | Order | Determination Method | Project Info Year | Project Info Reference |
|---|---|---|---|---|---|---|---|---|
| 2511919.953 | 1005121.104 | 1268482.737 | 16299182.051 | .328 | 4 | ADJUSTMENT | 1999 | 17648 |

**NAD83(1986)**

| MN State Plane - South Zone X | MN State Plane - South Zone Y | UTM - Zone 15 X | UTM - Zone 15 Y | Acc | Order | Determination Method | Project Info Year | Project Info Reference |
|---|---|---|---|---|---|---|---|---|
| 2511920.368 | 1005120.587 | 1268483.146 | 16299181.528 | .328 | 4 | ADJUSTMENT | 1986 | 17289 |

**NAD27**

| MN State Plane - South Zone X | MN State Plane - South Zone Y | X | Y | Acc | Order | Determination Method | Project Info Year | Project Info Reference |
|---|---|---|---|---|---|---|---|---|
| 1887318.277 | 677044.289 | | | .100 | 4 | CLASSICAL SURVEY | 1958 | 11592 |