

MnDOT Geodetic Web-based Products

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2012 MSPS Conference

Bloomington

February 17, 2012



Overview

- 1) Geodetic Unit Webpage (M = 76K - 19K)
 - 1) Products
 - 2) Programs
- 2) Download Geodetic Station Data Files
 - a) Image/Program Files for Geodetic Database County Products
 - b) Digital Input Files for Certain Mapping Software
- 3) Interactive Geodetic Monument Viewer
 - 1) Location maps
 - 2) Datasheets
 - 3) CSV files



Geodetic Unit Webpage

<http://www.dot.state.mn.us/surveying/Geodetics/geodetics.html>

Minnesota Department of Transportation

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Geodetics
Establishing accurate survey control throughout the state

OLM Home | Surveying Home | GPS CORS Network | Tools & Tech | Geodetics | Photogrammetry | Mapping | Plans & Comm. Orders | Right of Way | Contact Us

Disclaimer

Conditions For Release Of Electronic Data From the MnDOT Office Of Land Management

In order to access MnDOT OLM Database products, the user must accept the conditions expressed in [Disclaimer and Legal](#).

☒ I accept these conditions.

Finding Geodetic Database Information on the "Geodetic Station Data Files" Page

To locate information on a specific mark or for information on marks in general, you will need to know which county and which sheet from that county you need to search. See Sheet Numbering System - [PDF](#) (751 KB) for details or click the MN button on the page.

[View our download section for PDFs](#)

What we do

The Geodetic Unit works with Engineers and Land Surveyors, both public and private, to develop the following services:

- Establishing and maintaining horizontal and vertical control for all MnDOT projects statewide. This work is performed to the standards and specifications of the National Geodetic Survey office for inclusion in the National Geodetic Spatial Reference System.
- Developing and providing technical support for new technology in precise surveying and mapping applications. Provide instruction and hands-on training in the use of precise leveling instruments and proper procedures for the use and adjustment of geodetic coordinates.
- Developing a statewide geodetic database and providing technical support for Geographic Information Systems (GIS) and Land Information Systems (LIS).

Geodetic Database Products

- [Interactive Geodetic Monument Viewer](#)
- [Geodetic Station Data Files](#) * New * [PDF Maps With Control Point Names](#)
- [Delorme Street Atlas USA® Input Files](#)
- [Maptech Terrain Navigator Pro® Input Files](#)
- [KML Input Files in KML Format](#)

* New * How To Use The Geodetic Feature Service
(Stream live monument data from the Geodetic Database to ArcMap®.)

Publications

- [2012 Survey Technical Workshop Information and Registration](#)
- [Right of Way Mapping and Monitoring](#)
- [Right of Way Map Order Form](#)
- [Geodetic Monument Viewer](#)
- [CORS Network Status](#) (May take up to 1 minute to display)
- [Surveying and Mapping Manuals](#)
- [OLM ftp site](#)
- [Geodetic Database Documentation Booklet](#) - [PDF](#) (3.5 MB) - Published in 2000
- [2007 Adjustment of the National Spatial Reference System in Minnesota](#) - [PDF](#) (135 KB) - Explanation and graphical representation
- [History of Geodetics in Minnesota](#) - [PDF](#) (7.4 MB) - Overview and

Geodetic Database – Files and Viewer

- 1) Download Geodetic Station Data Image Files(Day-old)*
 - 1) County Data Sheets in PDF plus related programs
 - 2) County Map Sheets(Manual update by Batch PDF Conversion)
 - 3) County Index Sheets in PDF
 - 4) Station Photos in JPEG
- 2) Download Input Files(Day-old)*
 - 1) Delorme Street Atlas USA
 - 2) Maptech Terrain Navigator Pro
 - 3) Google Earth
 - 4) ArcMap Shapefiles (Hotlinked Layers & datasheets)
- 3) Interactive Geodetic Monument Viewer(Day-old)

* Auto-updated by Virtual Chuck

Geodetic Database County Products

Reference Sheets For Geodetic Database County Products

Note: The [Interactive Geodetic Monument Viewer](#) is now online. Click the link to try it.
This interface will allow you to quickly and easily identify the survey control in your area of interest.

Reference Maps ☐ GSID Links

Overview

MN

IA

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MN Map Legend

County Data Sheets

Aitkin Sheet 1
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Becker Sheet 1
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County Map Sheets**

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[Full Form](#) [Brief Form](#) [CSV](#)

Map by [GSID](#) [Name](#)

[Get This Index Sheet](#)

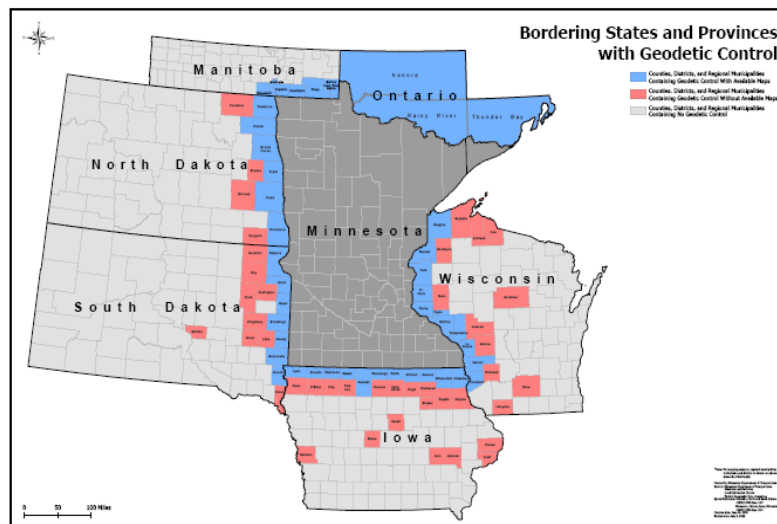
[Open This County](#)

**These maps no longer contain date stamps, but they are current with the database contents.
Maps are now available in two formats: Control points denoted by GSID or control points denoted by Name.
The Reference Maps above are linked to the Name County Maps (by default) or to the GSID Maps if 'GSID Links' is checked.

Note: non-Minnesota counties are toward the bottom of each scroll control.



Overview Map



Minnesota Map Sheets

Reference Sheets For Geodetic Database County Products

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Map by GSID Name

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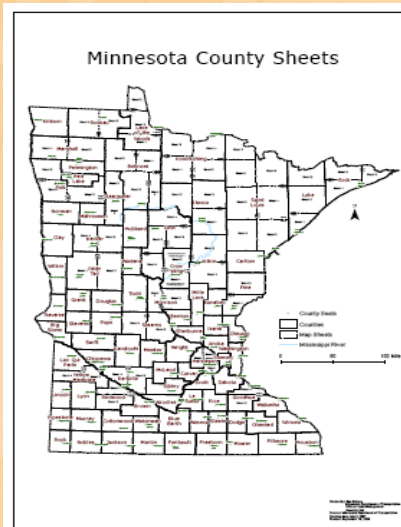
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Minnesota Map Sheet Reference

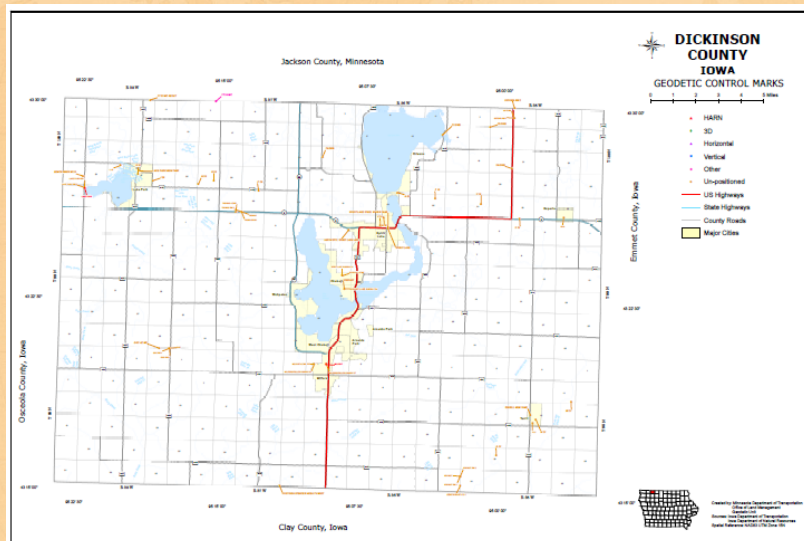


Map Sheet Numbering

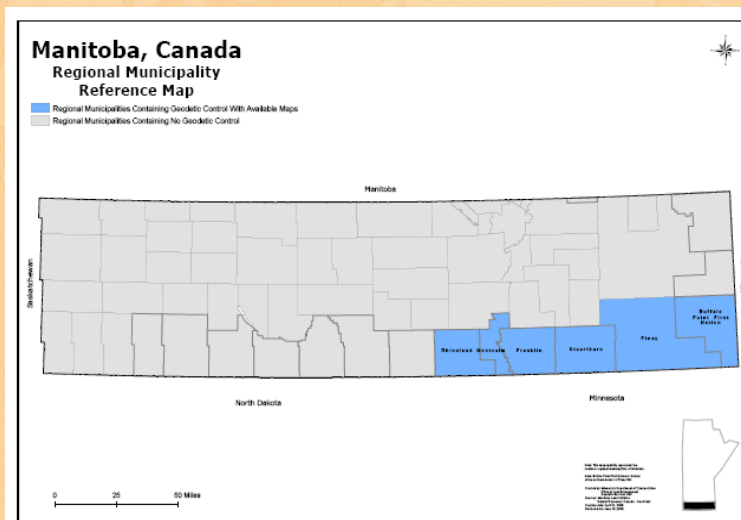
The map displays the state of Minnesota divided into counties, each labeled with its name. A grid of map sheets is overlaid on the map, with sheet numbers indicating the specific area covered by each sheet. The counties shown include Todd, Morrison, Stearns, Meeker, McLeod, Carver, Wright, Sherburne, Benton, Kanabec, Isanti, Anoka, Washington, Ramsey, Hennepin, and Chisago. Major cities like Brainerd, Little Falls, Saint Cloud, Foley, Mora, Pine City, Cambridge, Elk River, Anoka, Saint Paul, Minneapolis, Chaska, Stillwater, and Willmar are marked with green dots. The map also shows the Mississippi River and the Red River. A scale bar at the bottom left indicates 19.00 x 28.00 in. A URL 'http://ftp.olmweb.dot.s' is visible on the right side.

Minnesota County Map Sheet

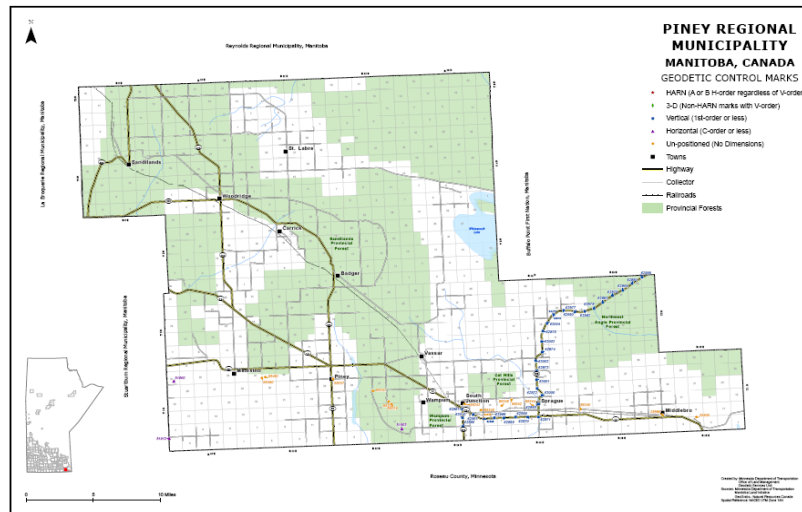
Iowa County Map Sheet



Manitoba Reference Map



Regional Municipality Map Sheet



MN Map Legend

Reference Sheets For Geodetic Database County Products

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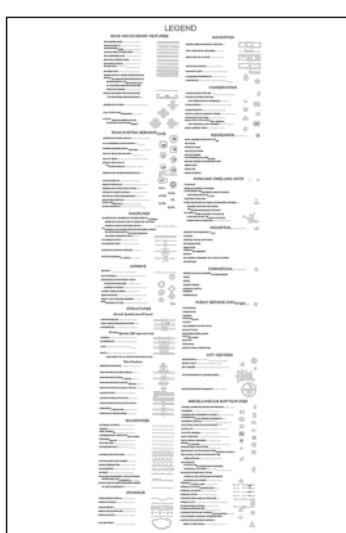
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Background CAD Layer Symbols



County Data Sheets

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County Data Sheet- Full Form

Geodetic Data Sheet (Full Form) for Station 0502 J, Benton County, MN. The form displays coordinates in NAD83(2007) and NAD83(1996) systems, station photos, and state plane and UTM coordinates.

Lat/Lon and County Coordinates (Feet)									
NAD83(2007)									
Latitude	Longitude	X	Y	Acc	Order	Determination Method	Year	Reference	Project
45 36 15.92312	94 09 20.93075	472915.493	116521.209	.010		ADJUSTMENT	2007	GPS2300	
NAD83(1996)									
Station Photos									
Type	Location	File Name	Dir	Date					
Monument		http://ftp.clmweb.dot.state.mn.us/prod/StationPhotos/Benton/0502_J-QP0222-22APR2008.jpg	NW	Apr 22, 2008					
Disk		http://ftp.clmweb.dot.state.mn.us/prod/StationPhotos/Benton/0502_J-QP0222-2-22APR2008.jpg		Apr 22, 2008					
** All station images can be viewed at: http://ftp.clmweb.dot.state.mn.us/prod/StationPhotos **									
State Plane and UTM Coordinates (Feet)									
NAD83(2007)									
MN State Plane - Central Zone					UTM - Zone 15				
X	Y	X	Y	Acc	Order	Determination Method	Year	Reference	Project
2648773.528	548504.238	1344705.750	16570660.240	.010		ADJUSTMENT	2007	GPS2300	
NAD83(1996)									
MN State Plane - Central Zone					UTM - Zone 15				
X	Y	X	Y	Acc	Order	Determination Method	Year	Reference	Project
2648773.528	548504.205	1344705.750	16570660.207	.033	C	ADJUSTMENT	2003	GPS1873	
2648773.529	548504.204	1344705.751	16570660.207	.033	C	GPS - STATIC	2002	HLTL	

County Data Sheet- Brief Form

Geodetic Data Sheet (Brief Form) for Station 0502 J, Benton County, MN. The form provides a summary of station data, including coordinates, monument type, and leveling information.

Station: 0502 J
County: BENTON, MN (Sheet 1)
NGS Name: 0502 J

Reference: 453615.92
Longitude: 940920.93
Y: 2
X: C

Agency: MNDT
Year Set: 1971
Last Recovery: 2008
Condition: GOOD
GPSable: YES
Photos: YES
Bridge Num: PROJECTS 5 IN
E/P/R: STEEL ROD IMBED IN MON

Monument Type: CONCRETE MONUMENT
Disk Type: BENCH MARK DISK

Description: (2000) Stamping: 0502 J 1971
2.5 MILES SOUTHEAST OF SARTELL, 1.1 MILES SOUTHEAST OF JUNCTION OF TRUNK HIGHWAY 10 AND COUNTY ROAD 29, AT TRUNK HIGHWAY 10 MILEPOINT 174.9, 93 FEET SOUTHWEST OF SOUTHBOUND TRUNK HIGHWAY 10, 88.3 FEET EAST-SOUTHEAST OF NORTHEAST CORNER OF WAREHOUSE, 228.3 FEET NORTHWEST OF SOUTHWEST LEG OF 3 SAUK RAPIDS SIGN, 6 FEET NORTHEAST OF FENCE, 1.0 FEET SOUTH OF WITNESS POST.

Station Notes: CONCRETE AROUND MARK IS MISSING BUT STILL SOLID.

Leveling Derived Orthometric Heights (Elevations)									
Vertical Datum	Orthometric Height	Orthometric Accuracy	Survey Order/Class	Year	Reference				
NAVD88	1110.093	0.016	2	2007	00000511				
NGVD29	1109.712	0.007	1	1978	L24262				

Geodetic Position and Benton County Coordinates									
Datum and Adjustment	Geodetic Positions	County (Feet)	County (Meters)	Ellipsoid Hgt (m)	Surf Hgt (m)	Project Info			
	Latitude	Longitude	X	Y	X	Y	Year	Reference	Project
NAD83 (2007)	45 36 15.92312	94 09 20.93075	472915.493	116521.209	144144.931	35515.736	2007	GPS2300	
NAD83 (1996)	45 36 15.92279	94 09 20.93074	472915.494	116521.176	144144.931	35515.725	2003	GPS1873	

Station Photos

Type	Location	File Name	Dir	Date
Monument		http://ftp.clmweb.dot.state.mn.us/prod/StationPhotos/Benton/0502_J-QP0222-22APR2008.jpg	NW	Apr 22, 2008
Disk		http://ftp.clmweb.dot.state.mn.us/prod/StationPhotos/Benton/0502_J-QP0222-2-22APR2008.jpg		Apr 22, 2008

County Data Sheets - CSV

Mn/DOT Office of Land Management - Surveying Tools and Technology - Windows Internet Explorer

http://www.dot.state.mn.us/surveying/Geodetics/geod/

File Edit View Favorites Tools Help

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Reference Sheets For Geodetic Database County Products

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Reference Maps ☐ GSID Links ☒ Overview ☒ MN ☐ IA ☐ ND ☐ SD ☐ WI ☐ MB ☐ ON ☐ MN Map Legend

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- Atkin Sheet 2
- Anoka
- Becker Sheet 1
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Full Form Brief Form **CSV** Map by ☒ GSID ☐ Name [Get This Index Sheet](#) [Open This County](#)

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[Return To Previous Page](#)

A Full Form data sheet lists the history of every coordinate value contained in the Geodetic Database for that particular station. A Brief Form data sheet contains a single coordinate value for each datum/adjustment combination, which is selected by applying certain criteria to the set of all values in the database. In either case, the user of the data is responsible for determining the proper position values to use for any given project.

CSV files contains all the coordinate values from the brief data sheets of the same name, in a comma-delimited text format. The CSV button opens an FTP page where the user can download any of them by right-clicking its file name and selecting 'Save Target As...' or 'Save Link As...', depending on the browser. [Using CSV Control Files](#) shows how to manipulate these files in MnCon. Double-clicking the downloaded CSV files will open them in a spreadsheet.



County Data Sheets - CSV

FTP Directory: <ftp://ftp.olmweb.dot.state.mn.us/geod/csv.coords/>

Atkin_Sheet1.csv	01-01-12 07:04AM	200	32
Atkin_Sheet2.csv	01-01-12 07:04AM	278	32
Anoka_Sheet1.csv	01-01-12 10:28AM	7767	32
Anoka_Sheet2.csv	01-09-12 09:10PM	828	32
Becker_Sheet1.csv	01-01-12 10:41AM	294	32
Becker_Sheet2.csv	01-01-12 10:41AM	607	32
Beltrami_Sheet1.csv	01-01-12 07:08AM	278	32
Beltrami_Sheet2.csv	01-01-12 07:08AM	179	32
Beltrami_Sheet3.csv	01-01-12 07:08AM	208	32
Beltrami_Sheet4.csv	01-09-12 09:10PM	532	32
Benton_Sheet1.csv	01-01-12 07:13AM	188	32
Benton_Sheet2.csv	01-01-12 07:13AM	128	32
Benton_Sheet3.csv	01-01-12 07:13AM	848	32
Benton_Sheet4.csv	10-12-11 10:18AM	209	32
Benton_Sheet5.csv	01-01-12 07:13AM	249	32
BigStone_Sheet1.csv	01-09-12 09:10PM	808	32
BlueEarth_Sheet1.csv	01-01-12 10:28AM	819	32
BlueEarth_Sheet2.csv	01-01-12 10:41AM	149	32
Brown_Sheet1.csv	01-01-12 07:13AM	318	32
Brown_Sheet2.csv	01-01-12 10:40AM	2077	32
Brown_Sheet3.csv	01-01-12 10:41AM	188	32
Brown_Sheet4.csv	01-04-12 09:10PM	188	32
Brown_Sheet5.csv	01-01-12 07:08AM	948	32
Brown_Sheet6.csv	01-01-12 07:08AM	818	32
Brown_Sheet7.csv	01-01-12 10:28AM	628	32
Brown_Sheet8.csv	01-01-12 07:08AM	178	32
Brown_Sheet9.csv	01-09-12 09:10PM	368	32
Brown_Sheet10.csv	01-01-12 07:08AM	208	32
Brown_Sheet11.csv	01-01-12 07:08AM	248	32
Brown_Sheet12.csv	01-01-12 10:40AM	188	32
Brown_Sheet13.csv	01-01-12 10:28AM	1878	32
Brown_Sheet14.csv	01-01-12 10:28AM	1278	32



Using CSV Files in MnCon

Using CSV Control Files

File Format

The CSV control files are comma-delimited text files. This is their format:

```
Name,NAD83Easting,Lat,NAD83Longitude,NAD83Easting,NAD83Longitude,
NAD27_Lat,NAD27_Long,NAD27_Lat,NAD27_Long,NAD83Easting,NAD83Longitude
```

Fields in these files can contain as many as five latitude/longitude values and two elevations. The MnCon program can handle this kind of file, but the proper formats must be added to the MnCon CSV file in order to extract the proper data/output values for any particular project.

AddressCsvFormats

AddressCsvFormats is a reformatting archive created to assist with new formats to the MnCon CSV file in a computer. [Download](#) the file and move it into the folder containing MnCon.exe. For MnCon version 3 or higher, it is in C:\Programs and Settings\TUI\TUI Application\Tools\MapDataTools. For earlier versions, it is in C:\Program Files\MnCon\, by default. Once AddressCsvFormats is in the proper folder, double-click it to extract the file, and then double-click the extracted file Address.csv to modify MnCon.csv. When MnCon is run, the new formats will be available.

Downloading the Files

CSV Control Files are another file extracted from the archive above that the user can move to the desktop for examples. It is a shortcut that opens the CSV file location on the PPP file using Windows Explorer, which will allow the user to drag CSV files directly into a user folder.

The files can also be obtained by clicking the "Selected Data File" link in the Geographic page, <http://www.dnr.state.mn.us/geomatics/Geomatics/geomatics.asp>. Click the "Data File" button on the "Selected Data File" page to access the PPP folder. Right-click any of the file names and select "Save Target As..." or "Save Link As..." (depending on the browser) to download the file.

MnCon Operation

Select the CSV file as the input file and click "Custom Delimited File" as the source format. The Source map projection should be "Latitude & Longitude" (NAD83 > NAD27 if needed) and U.S. Survey Foot for the Units. The Target can be set to any projection, units, or file format. When ready to convert, click the "Convert" button and select the appropriate input coordinates format on the delimited format dialog.

```

MnConCSV27 > NAD83 (2007 Adjustment)
MnConCSV83 > NAD83 (2011 Adjustment)
MnConCSV83 > NAD83 (2011 Adjustment)
MnConCSV27 > NAD27
MnConCSV27 > Selected Delimited Reference Coordinates

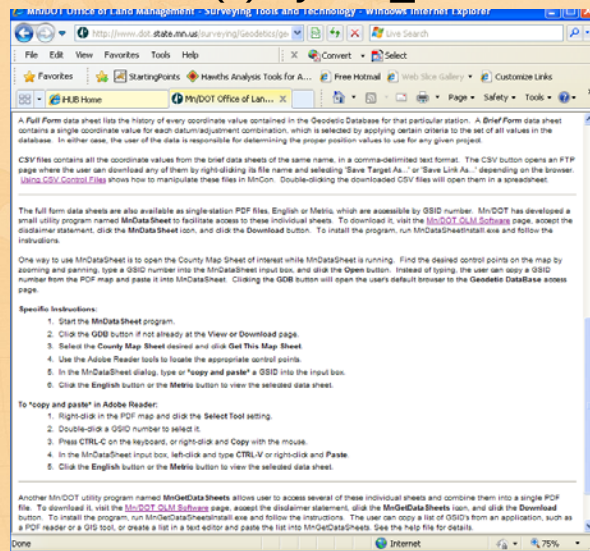
```

MnCon Example

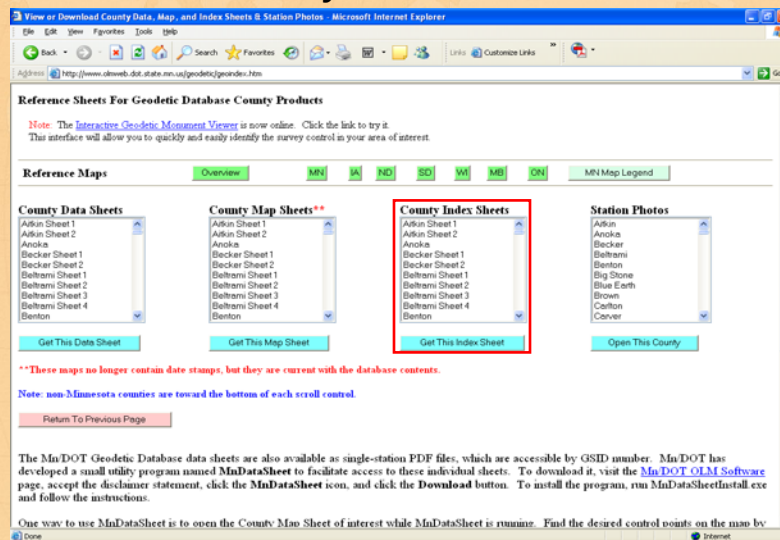
This example shows a conversion to an English delimited file in NAD83(96) Ramsey County Coordinates.

MnDOT OLM Softwares

Invoke Datasheet(s) by GS_ID in County Map



County Index Sheets



Specific County Index Sheet

GS ID	Station Name	Stamping	H Ord	ACRN	V Ord	Set Date	Recs Date	Cond	Mon - Disk
1903	0503 Q	05 1976		QP0048	2	4/1976	4/2008	G	BA - DB
1904	0502 A	0502 A 1947	C	QP0912	1	4/1947	10/2000	G	BA - DB
1905	0502 B	0502 B 1950			3	4/1950	4/2000	N	CM - DD
1906	0502 C	0502 C 1950			3	4/1950	4/2000	N	CM - DD
1907	0502 D	0502 D 1950			3	4/1950	4/2000	N	CM - DD
1908	0502 E	0502 E 1950			3	4/1950	4/1950	G	CM - DD
1909	0502 F	0502 F 1971		QP0226	1	4/1971	6/2008	G	BA - DB
1910	0502 G	0502 G 1971		QP0225	1	4/1971	6/2008	G	BA - DB
1911	0502 H	0502 H 1971		QP0224	1	4/1971	6/2008	G	CM - DB
1912	0502 I	0502 I 1971		QP0223	1	4/1971	6/2008	G	BA - DB
1913	0502 J	0502 J 1971	C	QP0225	2	4/1971	6/2008	G	CM - DB



Station Photos

View or Download County Data, Map, and Index Sheets & Station Photos - Microsoft Internet Explorer

Address: http://www.dotweb.dot.state.mn.us/geodetic/geodetic.htm

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Reference Maps: Overview, MN, IA, ND, SD, WI, MI, ON, MN Map Legend

County Data Sheets: Aikin Sheet 1, Aikin Sheet 2, Anoka, Becker Sheet 1, Becker Sheet 2, Beltrami Sheet 1, Beltrami Sheet 2, Beltrami Sheet 3, Beltrami Sheet 4, Benton

County Map Sheets: Aikin Sheet 1, Aikin Sheet 2, Anoka, Becker Sheet 1, Becker Sheet 2, Beltrami Sheet 1, Beltrami Sheet 2, Beltrami Sheet 3, Beltrami Sheet 4, Benton

County Index Sheets: Aikin Sheet 1, Aikin Sheet 2, Anoka, Becker Sheet 1, Becker Sheet 2, Beltrami Sheet 1, Beltrami Sheet 2, Beltrami Sheet 3, Beltrami Sheet 4, Benton

Station Photos: Aikin, Anoka, Becker, Beltrami, Benton, Big Stone, Blue Earth, Brown, Carlton, Carver

Get This Data Sheet, Get This Map Sheet, Get This Index Sheet, Open This County

**These maps no longer contain date stamps, but they are current with the database contents.

Note: non-Minnesota counties are toward the bottom of each scroll control.

Return To Previous Page

The Mn/DOT Geodetic Database data sheets are also available as single-station PDF files, which are accessible by GSID number. Mn/DOT has developed a small utility program named [MnDataSheet](#) to facilitate access to these individual sheets. To download it, visit the [Mn/DOT OLM Software](#) page, accept the disclaimer statement, click the [MnDataSheet](#) icon, and click the [Download](#) button. To install the program, run [MnDataSheetInstall.exe](#) and follow the instructions.

One way to use MnDataSheet is to open the County Map Sheet of interest while MnDataSheet is running. Find the desired control points on the map by:



Station Photos

FTP Directory: <ftp://ftp.olmweb.dot.state.mn.us/geod/StationPhotos/Aitkin/>

[illegible]

Photo 1 - Disk



Photo 2 - Monument



Photo 3 - Location



Geodetic Database – Files and Viewer

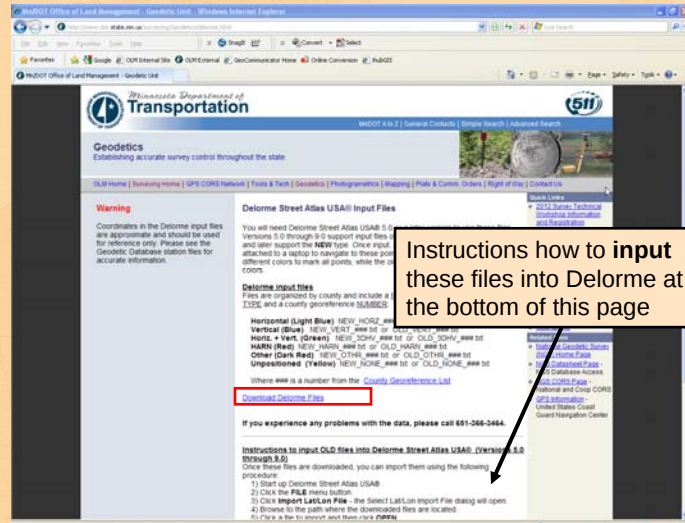
- 1) Download Geodetic Database Data Files(Day-old)
 - 1) County Data Sheets*
 - 2) County Map Sheets(Manual update by Batch PDF Conversion)
 - 3) County Index Sheets*
 - 4) Station Photos*
- 2) Download Input Files(Day-old)
 - 1) Delorme Street Atlas USA
 - 2) Maptech Terrain Navigator Pro
 - 3) Google Earth
 - 4) ArcMap
- 3) Interactive Geodetic Monument Viewer(Day-old)

The logo of the University of Minnesota is located in the bottom center of the slide. It is a circular seal with a blue border. Inside the border, the words "UNIVERSITY OF MINNESOTA" are written in a circle around the top, and "1862" is at the bottom. In the center of the seal is a stylized white "M" with a blue star above it.

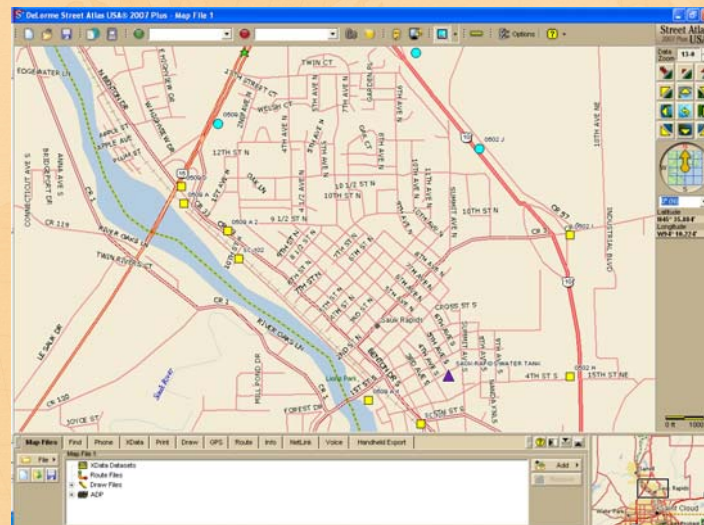
- # Download Delorme Street Atlas USA Input Files

Download Delorme Street Atlas USA Input Files

Download Delorme Files



Viewing Marks in Delorme

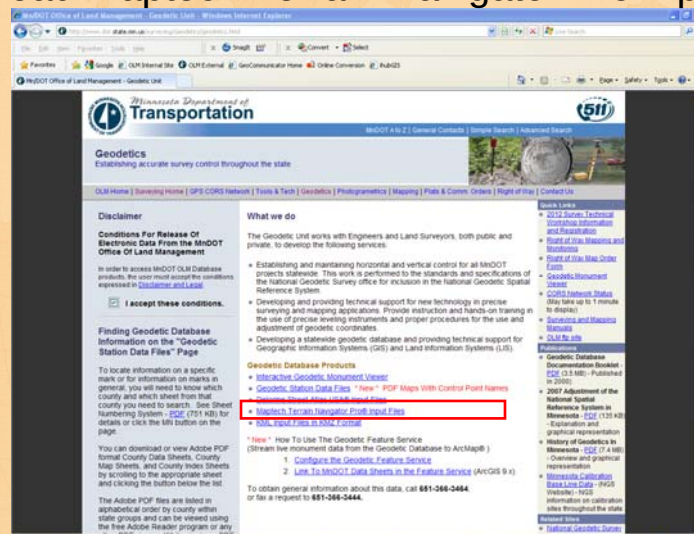


Geodetic Database – Files and Viewer

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Download Maptech Terrain Navigator Pro Input File



Download the Maptech File

Warning
Coordinates in the Maptech input files are approximate and should be used for reference only. Please see the Geodetic Database station files for accurate information.

Maptech Terrain Navigator Pro! Input Files
These three Maptech files should be valid for any version of Maptech Terrain Navigator Pro! See instructions for using the input files below.
The **maptech.mtf** file contains all current control points in the database that have horizontal- or vertical-ordrs. These points are colored red in Maptech.
The **maptech_u.mtf** file contains the current unpositioned points from **maptech.mtf** plus all the current unpositioned points, which have neither horizontal- or vertical-ordrs. The unpositioned points are colored green in Maptech.
The **maptech_all.mtf** file contains all database points, including **maptech_u.mtf** plus all 'lost', 'destroyed', and 'not found' points, which are colored blue in Maptech.

Download the Maptech Files

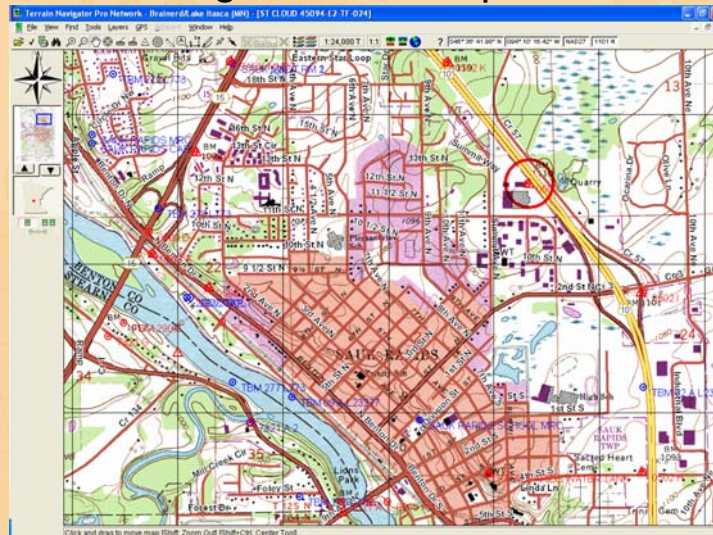
If you experience any problems with the data, please call 651-280-3464.

To input maptech.mtf into Maptech Terrain Navigator Pro!
1. Start Maptech Terrain Navigator Pro!
2. Open any 7.5' quadrangle sheet.
3. Select the File menu option.
4. Select Import from Markers.
5. Browse to the downloaded maptech.mtf file.
6. Select maptech.mtf and click OK.

Instructions on how to input the file into Maptech



Viewing Marks in Maptech

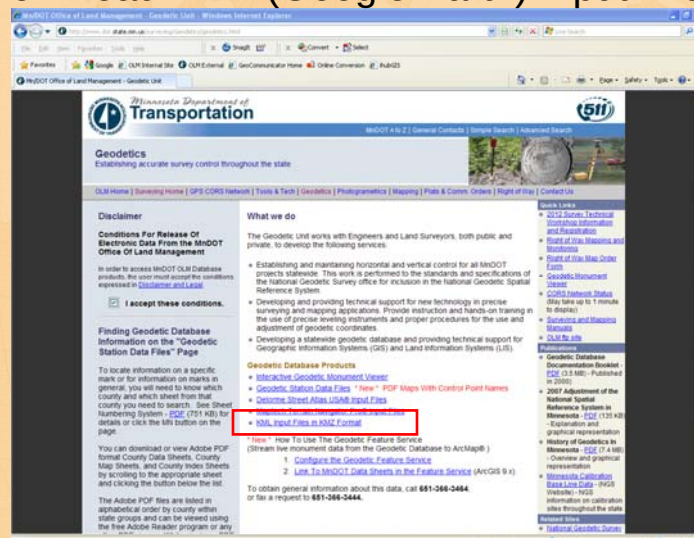


Geodetic Database – Files and Viewer

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Download KMZ (Google Earth) Input Files



Download the KMZ (Google Earth) Files

The screenshot shows the Minnesota Department of Transportation Geodetics website. The main content area is titled "KML Input Files in KMZ Format". It provides instructions on how to download and use KMZ files. Two red arrows point to specific links: one to "Geodetic Control File" and another to "CORS Network File".

Warning: Coordinates in the KMZ input files are approximate and should be used for reference only. Please see the Geodetic Database station files for accurate information.

KML Help Resources: HELP for Google Earth users - EDC (101 KB)

KML Input Files in KMZ Format: Several companies, such as Google, Bentley, ESRI, and Microsoft, have software products that can display or otherwise use KML files. You will need to install one of them to view this file. You can get a copy of **MADOT_Geodetic_Control.kmz** using one of the three methods below:

1. Click the direct link on this page, which will give a choice of opening or saving the file. Depending upon your computer settings, this link may also open the default viewer with the Geodetic control points in view.
2. Put the "KMZ Download" link on your desktop. Clicking it works the same as above.
3. Install "MiniViewControl". It compares the newest KMZ with the local copy.

To Obtain KMZ Files:

1. Download or Open the [Geodetic Control KMZ File](#) ← **Geodetic Control File**
2. Left-click and drag this shortcut **KMZ Download** onto your desktop. If dragging does not work, right-click → copy shortcut, then right-click on desktop → paste shortcut.
3. Download and install **MiniViewControl**. This will take you to the document page. Click "I accept these conditions" to proceed. Click "MiniViewControl" at the top of the software page to proceed with the download.

If you experience any problems with the data, please call 651-265-3454.

Viewing Geodetic Control in Google Earth

The screenshot shows Google Earth with a map of a city area. A list of geodetic control points is visible on the left side of the interface. A pop-up window shows details for a specific control point, including its name, coordinates, and a link to the data sheet.

Geodetic Control Points:

- 0592 J
- H = V Control Mark
- Order: H = C, V = 2
- MuDOT Data Sheet
- Directions: [To here](#) - [from here](#)

Geodetic Data Sheet (Print): 0592 J, 05/07/2009

Station Name: 0592 J

County: BECKER, MN

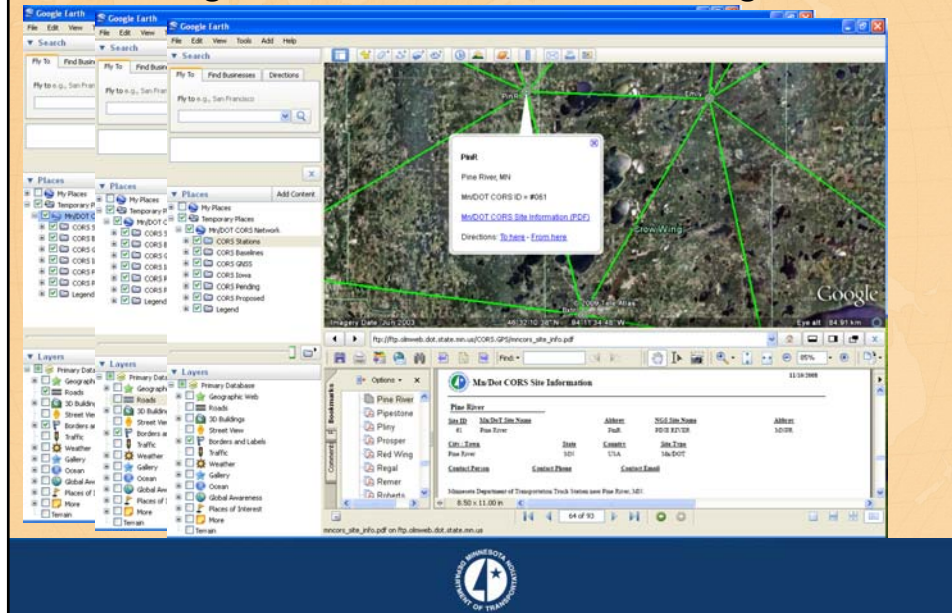
County Map Sheet: 1

NGA MGRN: QP022

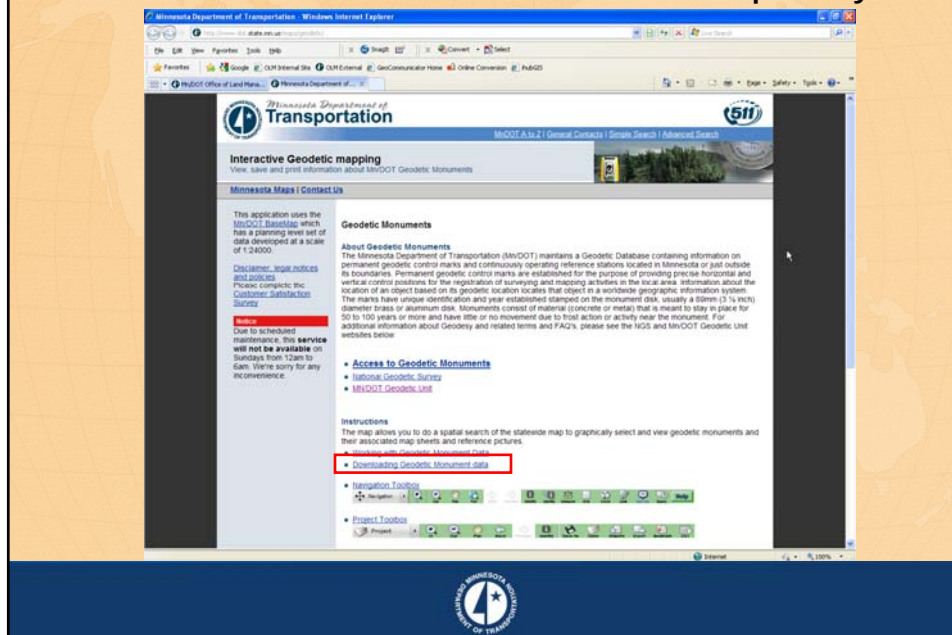
NGA Quad: 1553 Zone Sheet

NGA Quad Map: 1553 Zone Sheet

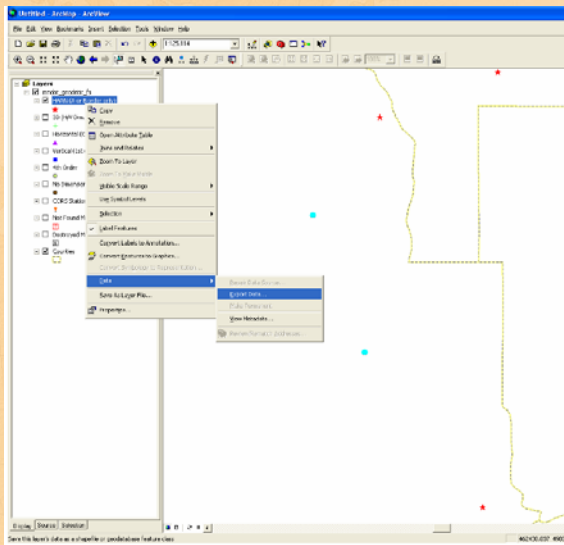
Viewing the CORS Network in Google Earth



Geodetic Feature Service in ArcMap Only



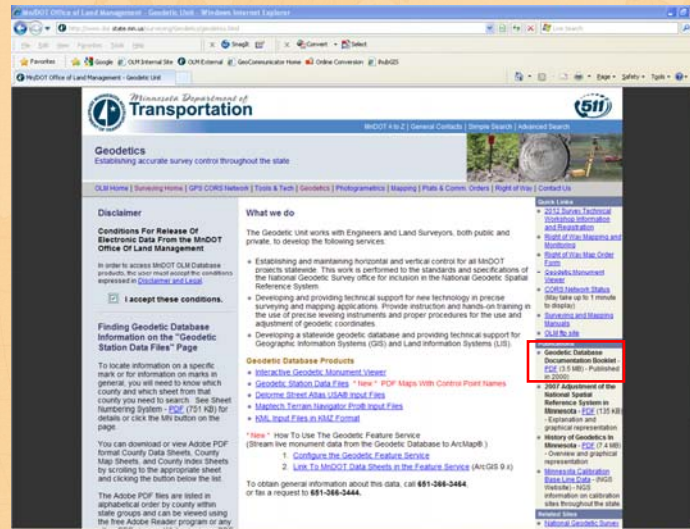
Add or Export Geodetic Data



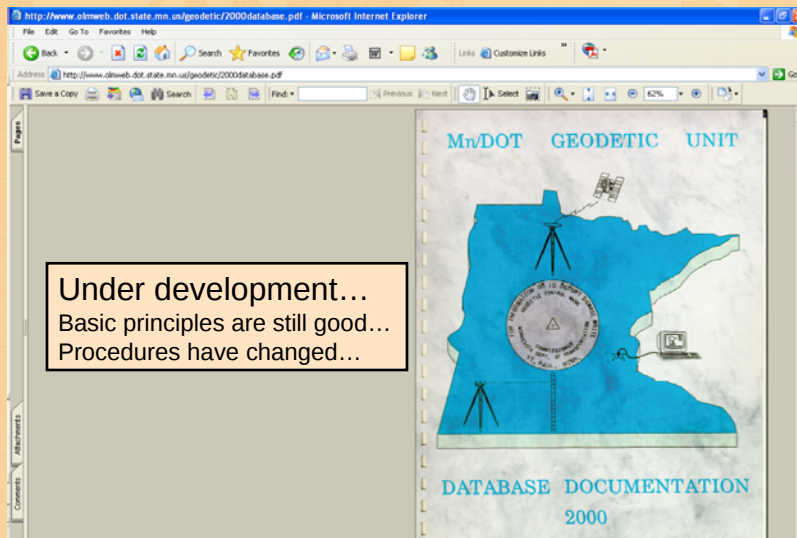
(Other than ArcMap, request us to send you shapefiles. If you want MN basemap layers, go to the TDA website: <http://www.dot.state.mn.us/maps/gisbase/html/datafiles.html>)



Database Manual



Geodetic Database Manual as of 2000



Geodetic Database – Files and Viewer

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Interactive Geodetic Monument Viewer

Splash Page

Minnesota Department of Transportation - Windows Internet Explorer

File Edit View Favorites Tools Help

Address: http://www.mn.gov/transportation/

Search

Home | General Contacts | Simple Search | Advanced Search

Interactive Geodetic mapping
View, save and print information about MnDOT Geodetic Monuments

Minnesota Maps | Contact Us

This application uses the MnDOT database which has a planning level set of data developed at a scale of 1:24000.

Disclaimer, legal notices and policies
Publics connects the Customer Satisfaction Society

Access

Due to scheduled maintenance, this service will not be available on Sundays from 12am to 6am. We're sorry for any inconvenience.

Geodetic Monuments

About Geodetic Monuments
The Minnesota Department of Transportation (MnDOT) maintains a Geodetic Database containing information on permanent geodetic control marks and continuously operating reference stations located in Minnesota or just outside its boundaries. Permanent geodetic control marks are established for the purpose of providing precise horizontal and vertical control positions for the registration of surveying and mapping activities in the local area information about the location of an object based on its geodetic location scales that object in a worldwide geographic information system. The marks have unique identification and year established stamped on the monument disk, usually a 50mm (2 1/8 inch) diameter brass or aluminum disk. Monuments consist of material (concrete or metal) that is meant to stay in place for 50 to 100 years or more and have little or no movement due to frost action or activity near the monument. For additional information about Geodesy and related terms and FAQs, please see the FAQs and MnDOT Geodetic Unit websites below.

Access to Geodetic Monuments

- National Geodetic Survey
- MnDOT Geodetic Unit

Instructions
The map allows you to do a spatial search of the statewide map to graphically select and view geodetic monuments and their associated map sheets and reference pictures.

- Working with Geodetic Monument Data
- Downloading Geodetic Monument data

Navigation Toolbars

Navigation: Home, Back, Forward, Stop, Reload, Print, Zoom In, Zoom Out, Full Screen, Help

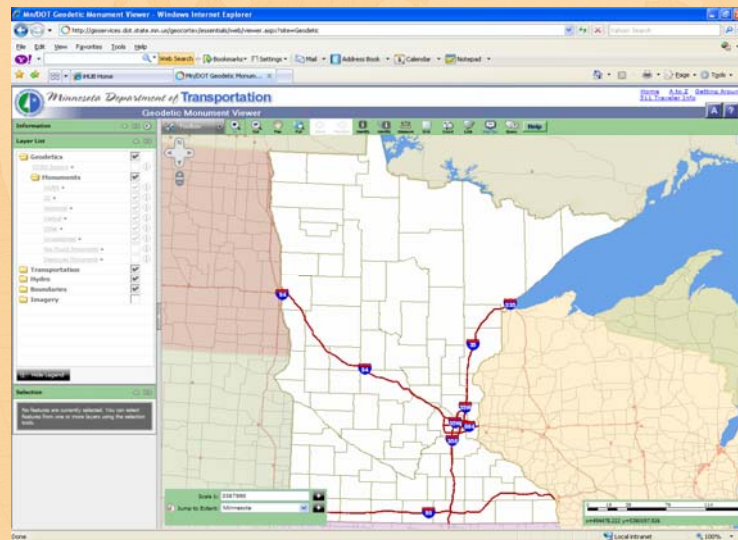
Project Toolbar

Project: New, Open, Save, Print, Copy, Paste, Undo, Redo, Find, Help

Internet

100%

Geodetic Monument Viewer



Geodetic Monument Viewer

- <http://www.dot.state.mn.us/maps/geodetic/>
- Free - viewed in your web browser
- Software driven by ArcGIS Server & GeoCortex
- Statewide spatial search (view scale $\leq 180,000$ & label scale $\leq 70,000$)
- View, select, & download geodetic monuments
- Monument data updated every night

Geodetic Monument Matrix

ORDER	VERTICAL				
HORIZONTAL	1	2	3	4	NULL
A	HARN	HARN	HARN	HARN	HARN
B	HARN	HARN	HARN	HARN	HARN
C	3D	3D	Horizontal	Horizontal	Horizontal
1	Vertical	Vertical	Other	Other	Other
2	Vertical	Vertical	Other	Other	Other
3	Vertical	Vertical	Other	Other	Other
4	Vertical	Vertical	Other	Other	Other
NULL	Vertical	Vertical	Other	Other	Unpositioned



Report Format- Summary

Minnesota Department of Transportation

Geodetic Monument Matrix

Layer List

- Geodetics
 - Points Station
 - Monuments
 - 3D
 - Horizontal
 - Vertical
 - Other
 - Unpositioned
- Not Found Monuments
- Destroyed Monuments
- Transportation
- Hydro
- Boundaries
- Imagery

Selection

Zoom To All

Report

Clear

Vertical List

- Zoom to selected features
- Unhighlight selected features
- Select features within buffer
- Select Report List
- Select Report Table
- Summary Report
- Export Selection to CSV

Report

Vertical

Compact Report

Zoom To All

Select All

Displaying results for 23 features in the Vertical layer.

#	Feature Actions	OBJECTID	DATA SHEET PDF	MINDOT STATION NAME	NGS STATION NAME	COUNTY	MAP SH
1		1301	GSID_24900	6282 N 1	6282 N 1	RAMSEY, MN	1
2		1302	GSID_24902	6282 N 3	6282 N 3	RAMSEY, MN	1
3		1303	GSID_24901	6282 N 2	6282 N 2	RAMSEY, MN	1
4		29276	GSID_24891	6282 E	6282 E	RAMSEY, MN	1
5		29277	GSID_24890	6282 D	6282 D	RAMSEY, MN	1
6		33833	GSID_24892	6282 F	6282 F	RAMSEY, MN	1
7		33839	GSID_24893	6282 G	6282 G	RAMSEY, MN	1
8		42619	GSID_24895	6282 J	6282 J	RAMSEY, MN	1
9		42820	GSID_24894	6282 H	6282 H	RAMSEY, MN	1
10		51788	GSID_24903	6282 P	6282 P	RAMSEY, MN	1
11		51789	GSID_24904	6282 Q	6282 Q	RAMSEY, MN	1
12		61288	GSID_24806	6242 D 4	6242 D 4	RAMSEY, MN	1
13		61289	GSID_24907	6282 S 1	6282 S 1	RAMSEY, MN	1
14		61790	GSID_24805	6242 D 1	6242 D 1	RAMSEY, MN	1



Watch for MnDOT Survey Tech Conference

Announcing the
Minnesota Department of
Transportation's
**2012 SURVEY
TECHNICAL WORKSHOP**
March 20 - 22



Breezy Point Conference Center
9252 Breezy Point Drive
Breezy Point MN 56472

Please visit this website in late December of 2011 for
more detailed information regarding this event at:
<http://www.olmsted.dot.state.mn.us>

OR contact:
Cheryl Hunstock at:
MnDOT - 365 630
395 John Ireland Boulevard
St. Paul, Minnesota 55135
Phone: 651-366-3432
Fax: 651-355-3450
Email: cheryl.hunstock@dot.state.mn.us

TOPIC IDEAS?
Please send them to Cheryl Hunstock ASAP!



Any questions?

If not, we have review questions for you.

- 1) Does MnDOT keep record of only MnDOT set marks?
Answer: ... No
- 2) Is Minnesota the only state or providence MnDOT has Marks in?
Answer: ... No
- 3) What form a data viewing is live?
Answer: ... ArcMap database link
- 4) What are the 6 categories of monuments?
Answer: ... HARN, 3D, Horizontal, Vertical, Other,
Un-positioned. (See Slide 55)
- 5) How many report formats are there in the Interactive viewer?
Answer: ... 3



Want to Talk to Us?

Important Website Addresses:

For Geodetic control marks, go to

<http://www.olmweb.dot.state.mn.us/geodetic/home.html>

For MN basemap layers, go to

<http://www.dot.state.mn.us/maps/gisbase/html/datafiles.html>

Contact Information:

Mar Alojado, SLS

Office Phone: 651-366-3416

Email: mar.alojado@state.mn.us

Theo Brown, LSIT

Office Phone: 651-366-3437

Email: theodore.brown@state.mn.us

Fax number: 651-366-3444

