



CONTRACT NUMBER G16PC00029  
TASK ORDER 140G0221F0034  
LIDAR MAPPING PROJECT  
GROUND CONTROL SURVEY REPORT

JOB NO. 65220804  
DATE MARCH 2021

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**USGS NEBRASKA CHERRY BROWN CUSTER  
LIDAR MAPPING PROJECT  
GROUND CONTROL SURVEY REPORT**

I. INTRODUCTION

II. HORIZONTAL AND VERTICAL CONTROL

III. JOB SUMMARY AND EQUIPMENT

A. COORDINATES

NAD-83 (North American Datum of 1983) 2011 GEODETIC SYSTEM

NAD-83 UTM ZONE 14 NORTH

NAVD-88 (North American Vertical Datum of 1988) GEOID 18

B. BASE MAPS AND SAMPLE OCCUPATION PHOTO

C. EXISTING NGS (NATIONAL GEODETIC SURVEY) HORIZONTAL AND  
VERTICAL CONTROL DATA SHEETS

## I. INTRODUCTION

This report summarizes the results of a ground control survey requested by USGS. The survey was conducted in Cherry, Brown, and Custer Counties in Nebraska. The purpose of the survey of ground control and check points for LIDAR (Light Detection and Ranging) mapping of an area of interest covering approximately 3183.63 square miles.

Ground control field observations were performed by Merrick & Company personnel. Field effort commenced on January 26th, 2021 through February 2nd, 2021. Equipment used for this project included two Trimble R10 GNSS receivers with RTX service provided by Trimble (A satellite-based service using worldwide continuously operating reference stations). Horizontal and vertical measurements were verified by recovering and observing coordinates from the Trimble R10 GNSS receiver with the RTX service to 11 NGS (National Geodetic Survey) ground stations. The quality of LiDAR data was verified with 248 checkpoints. These checkpoints were utilized to verify confidence levels of the LIDAR datasets.

## II. HORIZONTAL AND VERTICAL CONTROL

The coordinate system for this project is UTM ZONE 14 NORTH based on North American Datum of 1983 (NAD83), adjustment of 2011. The geodetic network was tied to CORS (Continuously Operating Reference Stations) via RTX and NGS ground stations. RTX coordinates are observed in International Terrestrial Reference Frame datum with the realization year of 2014 (ITRF (2014)).

Coordinate values measured utilizing the RTX network were converted into NAD83(2011) values using the HTDP (Horizontal Time Dependent Positioning) program version 3.2.9. NAVD 88 elevations were computed using Geoid 18. HTDP program is provided by the National Geodetic Survey. The following existing NGS control points were used as horizontal checks to control this survey:

<b>NGS Primary Horizontal Control Checkpoints</b>		
<b>PT# (NGS NAME)</b>	<b>RECORD POSITION NAD-83 (2011)</b>	
	<b>LATITUDE</b>	<b>LONGITUDE</b>
ANW A	42°35'10.07174"N	099°59'50.38831"W
BROWN	42°17'13.27731"N	099°52'02.28659"W
G 321	41°09'02.46168"N	099°46'41.63052"W
H 16	41°02'56.12263"N	099°23'45.27861"W
J 432	42°39'08.08757"N	100°38'06.81944"W
L 227	42°37'59.10485"N	100°13'29.59743"W
MRRN B	42°54'16.55504"N	101°42'02.72240"W
V 319	41°38'37.88258"N	099°51'52.99926"W
Y 28	42°26'31.45383"N	101°43'44.70701"W
Y 431	42°28'40.82153"N	100°53'41.10295"W

<b>NGS Primary Control Horizontal NAD-83 (2011) Comparisons: Record Versus Measured</b>		
<b>PT# (NGS NAME)</b>	<b>NORTH (meters)</b>	<b>EAST (meters)</b>
ANW A	+0.075	+0.030
BROWN	+0.065	+0.004
G 321	+0.079	+0.010
H 16	+0.056	+0.041
J 432	+0.038	+0.019
L 227	+0.066	+0.007
MRRN B	+0.046	-0.005
V 319	+0.075	+0.026
Y 28	+0.068	+0.042
Y 431	+0.053	+0.019

<b>NGS Primary Vertical Control checks</b>		
<b>Comparisons: Record Versus Measured</b>		
<b>PT# (NGS NAME)</b>	<b>RECORD</b>	<b>MEASURED</b>
	<b>NAVD 88 elevation in meters</b>	<b>Difference in meters</b>
ANW A	787.60	-0.03
BROWN	820.4	0,0
D 227	800.922	+0.089
G 321	787.098	-0.088
H 16	679.013	-0.068
J 432	895.019	-0.044
L 227	817.260	-0.015
MRRN B	994.423	-0.010
V 319	807.356	-0.090
Y 28	1096.895	-0.013
Y 431	936.249	+0.006

### III. JOB SUMMARY AND EQUIPMENT

The coordinate system is UTM Zone 14 North. The units are in meters for the projection parameters are as follows:

UTM ZONE 14 NORTH  
PROJECTION: TRANSVERSE MERCATOR  
LATITUDE OF ORIGIN = N 0° 00' 00.000000"  
LONGITUDE OF ORIGIN = W 99° 00' 00.000000"  
FALSE NORTHING = 0.000 meters  
FALSE EASTING = 500000.000 meters  
SCALE FACTOR = 0.9996000000

The data collected was converted and checked with published ground station coordinates. The specifications for accuracy with RTX are 2 centimeters horizontally and 5 centimeters vertically. Existing NGS published control stations were surveyed to assure that there were no discrepancies in the field observation data. Subsidence in some areas affects elevations due to the extraction of ground water. Crustal movement to the north is apparent. Close examinations of the residuals showed no distortions in orientation or scale.

Satellite data was collected using two Trimble R10 receivers. The coordinates were processed using Trimble Business Center (Version 5.40).

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
1001	41°13'03.54655"N	99°41'26.40599"W	727.759	4563148.870	442105.048	750.695	LIPT	CAL	
1002	41°02'57.74100"N	99°40'46.07965"W	733.695	4544460.257	442898.297	757.114	LIPT	CAL	
1003	41°09'28.35256"N	99°56'38.94054"W	853.567	4556712.574	420784.811	876.355	LIPT	CAL	
1003A	41°08'42.71215"N	99°59'54.19298"W	886.874	4555355.916	416218.086	909.603	LIPT	CAL	
1004	41°13'17.71093"N	100°11'46.88808"W	908.364	4564045.678	399721.224	930.663	LIPT	CAL	
1005	41°03'24.56521"N	100°10'25.04136"W	828.811	4545728.512	401380.400	851.531	LIPT	CAL	
1006	41°10'03.33498"N	99°48'03.17549"W	770.219	4557670.854	432815.194	793.172	LIPT	CAL	
1007	42°43'05.03328"N	101°42'45.18288"W	1020.146	4733075.306	277889.534	1039.392	LIPT	CAL	
1008	42°44'35.61601"N	100°47'23.54928"W	850.551	4733854.518	353502.314	871.770	LIPT	CAL	
1009	42°29'51.41980"N	101°52'19.67196"W	1104.580	4709026.371	263990.350	1123.411	LIPT	CAL	
1010	42°30'59.66806"N	101°09'44.05248"W	966.078	4709399.017	322380.569	986.285	LIPT	CAL	
1011	42°31'20.35088"N	100°32'10.37256"W	864.163	4708914.880	373818.756	885.772	LIPT	CAL	
1011A	42°34'28.62210"N	100°32'10.23540"W	855.871	4714722.101	373927.198	877.494	LIPT	CAL	
1012	42°28'50.52623"N	101°35'01.35600"W	1041.151	4706385.071	287634.828	1060.414	LIPT	CAL	
1012A	42°29'13.26134"N	101°40'14.97792"W	1056.579	4707308.293	280495.967	1075.678	LIPT	CAL	
1013	42°38'51.64364"N	99°51'10.90069"W	726.749	4722043.998	430074.944	749.597	LIPT	CAL	
1014	42°37'08.95602"N	100°11'22.75476"W	787.877	4719209.852	402435.936	809.986	LIPT	CAL	
1015	42°27'58.99882"N	101°18'29.37852"W	995.006	4704142.257	310241.196	1014.882	LIPT	CAL	
1016	42°38'53.94124"N	100°39'20.58624"W	855.797	4723091.002	364276.420	877.256	LIPT	CAL	
1016A	42°39'27.06217"N	100°39'49.09896"W	853.780	4724125.394	363647.270	875.222	LIPT	CAL	
1017	42°30'38.06431"N	100°06'56.69712"W	786.703	4707070.256	408338.137	808.775	LIPT	CAL	
1018	42°29'57.93796"N	100°14'31.21728"W	815.139	4705976.801	397947.626	837.013	LIPT	CAL	
1019	42°25'44.13810"N	101°05'04.86348"W	945.689	4699506.624	328512.238	966.004	LIPT	CAL	
1020	42°31'20.34667"N	100°21'31.85460"W	832.591	4708665.928	388387.467	854.331	LIPT	CAL	
1021	42°25'26.60444"N	99°52'38.56570"W	784.072	4697233.343	427821.697	806.458	LIPT	CAL	
1021A	42°25'45.27523"N	99°52'29.53708"W	780.186	4697807.096	428033.950	802.585	LIPT	CAL	
1022	42°40'54.35425"N	101°03'17.13996"W	895.522	4727523.195	331655.097	916.059	LIPT	CAL	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
1023	42°34'08.71378"N	100°06'10.31076"W	757.177	4713553.838	409481.264	779.378	LIPT	CAL	
1023A	42°34'10.54988"N	100°05'48.33852"W	771.079	4713603.967	409982.945	793.294	LIPT	CAL	
1024	42°44'02.50314"N	101°26'51.21888"W	949.454	4734184.786	299640.120	969.179	LIPT	CAL	
1025	42°29'40.34652"N	99°52'17.57669"W	762.462	4705054.863	428381.707	784.975	LIPT	CAL	
1026	42°26'20.34902"N	100°01'49.84824"W	802.258	4699032.559	415244.009	824.392	LIPT	CAL	
1027	42°27'44.16732"N	101°42'37.32912"W	1088.209	4704663.169	277158.107	1107.244	LIPT	CAL	
1027A	42°28'36.25900"N	101°42'34.43904"W	1067.118	4706267.930	277275.464	1086.153	LIPT	CAL	
1028	42°34'13.95667"N	101°18'23.66820"W	967.095	4715704.791	310686.457	987.031	LIPT	CAL	
1028A	42°36'52.16425"N	101°16'38.69004"W	928.702	4720520.155	313211.292	948.722	LIPT	CAL	
1029	42°27'50.35975"N	101°47'25.96056"W	1087.310	4705067.998	270572.048	1106.214	LIPT	CAL	
1030	42°32'15.52380"N	100°43'22.75860"W	887.702	4710911.707	358511.783	908.948	LIPT	CAL	
1031	42°24'00.48121"N	100°47'24.15084"W	894.826	4695756.168	352683.134	915.792	LIPT	CAL	
1032	42°44'48.15330"N	99°50'46.52581"W	671.770	4733035.101	430740.118	694.925	LIPT	CAL	
1033	42°35'57.34496"N	100°53'18.85668"W	887.550	4718043.806	345066.680	908.458	LIPT	CAL	
1033A	42°35'43.74038"N	100°53'24.63144"W	886.327	4717627.098	344925.706	907.225	LIPT	CAL	
1034	42°33'06.35868"N	99°45'18.36788"W	716.311	4711317.422	438007.221	739.132	LIPT	CAL	
1035	42°35'07.20074"N	99°54'40.62935"W	750.502	4715170.873	425224.786	773.093	LIPT	CAL	
1035A	42°35'35.17408"N	99°55'52.31921"W	753.554	4716051.487	423600.241	776.125	LIPT	CAL	
1036	42°40'54.74590"N	101°39'27.00612"W	1023.755	4728912.808	282270.847	1043.058	LIPT	CAL	
1037	42°46'49.45865"N	99°58'41.06723"W	638.116	4736893.454	419995.163	661.077	LIPT	CAL	
1037A	42°46'53.55671"N	99°58'47.88131"W	623.614	4737021.659	419841.802	646.574	LIPT	CAL	
1038	42°25'50.44606"N	101°00'48.02040"W	935.120	4699559.525	334385.997	955.587	LIPT	CAL	
1038A	42°25'04.95271"N	101°01'32.44296"W	943.652	4698180.414	333337.440	964.086	LIPT	CAL	
1039	42°30'46.86620"N	100°55'47.88192"W	915.360	4708543.447	341452.306	936.055	LIPT	CAL	
1040	42°24'22.00493"N	100°31'42.82752"W	868.576	4695999.700	374214.767	890.140	LIPT	CAL	
1041	42°50'13.71196"N	100°10'37.19784"W	654.703	4743401.767	403811.215	677.409	LIPT	CAL	
1042	42°40'36.80299"N	100°19'11.55360"W	805.437	4725779.396	391856.303	827.379	LIPT	CAL	



USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
1043	42°35'46.67370"N	101°42'31.94028"W	1055.519	4719543.219	277757.220	1074.641	LIPT	CAL	
1044	42°23'15.59378"N	101°33'49.85100"W	1055.135	4696004.013	288955.353	1074.474	LIPT	CAL	
1044A	42°22'50.52079"N	101°33'08.11476"W	1058.296	4695201.861	289886.489	1077.662	LIPT	CAL	
1045	42°23'17.42197"N	101°51'06.54444"W	1116.809	4696816.264	265251.072	1135.594	LIPT	CAL	
1045A	42°22'37.51842"N	101°51'06.60276"W	1124.242	4695585.406	265208.405	1143.027	LIPT	CAL	
1046	42°45'16.60262"N	100°25'17.26680"W	815.358	4734545.096	383677.943	837.232	LIPT	CAL	
2001	41°13'11.29087"N	99°41'11.70614"W	730.142	4563384.974	442449.216	753.077	LIPT	VVA	
2002	41°04'09.46358"N	99°58'13.91786"W	802.002	4546903.279	418461.715	824.991	LIPT	VVA	
2003	41°03'18.51966"N	99°41'03.00779"W	734.248	4545104.088	442508.146	757.655	LIPT	VVA	
2004	41°09'26.74393"N	99°57'00.47552"W	855.416	4556668.429	420282.372	878.196	LIPT	VVA	
2005	41°13'08.90080"N	100°11'46.56120"W	906.530	4563773.885	399725.096	928.834	LIPT	VVA	
2006	41°03'10.21568"N	100°10'15.03012"W	822.738	4545282.872	401608.144	845.473	LIPT	VVA	
2007	41°10'38.77302"N	99°48'53.99064"W	773.262	4558774.660	431641.304	796.165	LIPT	VVA	
2007A	41°09'05.22295"N	99°46'44.43708"W	763.303	4555862.188	434633.964	786.339	LIPT	VVA	
2008	41°08'22.52422"N	100°11'21.23736"W	869.280	4554934.564	400194.047	891.752	LIPT	VVA	
2009	41°13'36.30104"N	99°57'05.60081"W	812.906	4564365.469	420247.102	835.531	LIPT	VVA	
2009A	41°12'19.03655"N	99°56'59.60126"W	808.155	4561981.283	420360.752	830.827	LIPT	VVA	
2010	42°42'25.94556"N	101°42'57.27060"W	1023.964	4731878.371	277575.781	1043.194	LIPT	VVA	
2011	42°44'34.71544"N	100°47'36.98844"W	847.805	4733833.226	353196.169	869.018	LIPT	VVA	
2012	42°29'51.64998"N	101°52'11.90352"W	1098.878	4709027.463	264167.923	1117.712	LIPT	VVA	
2013	42°31'28.26761"N	101°09'32.24088"W	950.292	4710274.329	322672.579	970.513	LIPT	VVA	
2014	42°31'20.79638"N	100°32'11.32656"W	863.854	4708929.016	373797.238	885.463	LIPT	VVA	
2014A	42°35'46.62686"N	100°32'24.99468"W	856.131	4717134.307	373634.504	877.749	LIPT	VVA	
2015	42°28'48.85439"N	101°33'59.35860"W	1035.108	4706290.505	289048.854	1054.406	LIPT	VVA	
2016	42°34'22.24441"N	100°41'02.10588"W	872.015	4714755.959	361797.943	893.402	LIPT	VVA	
2017	42°39'37.91261"N	99°51'10.97719"W	727.780	4723471.189	430087.601	750.662	LIPT	VVA	
2018	42°37'10.09668"N	100°11'23.98920"W	787.915	4719245.432	402408.309	810.024	LIPT	VVA	

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65220804

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PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
2019	42°28'12.71320"N	101°18'30.90132"W	993.131	4704566.239	310217.934	1013.006	LIPT	VVA	
2020	42°39'05.75482"N	100°38'30.30072"W	864.112	4723433.073	365428.533	885.592	LIPT	VVA	
2021	42°30'20.07666"N	100°06'57.56040"W	789.952	4706515.693	408311.134	812.016	LIPT	VVA	
2022	42°30'21.73097"N	100°14'48.20856"W	813.347	4706716.380	397570.597	835.220	LIPT	VVA	
2023	42°25'56.38800"N	101°08'19.14180"W	956.038	4699994.920	324082.270	976.249	LIPT	VVA	
2024	42°31'25.94741"N	100°21'31.93524"W	831.437	4708838.712	388388.396	853.178	LIPT	VVA	
2025	42°24'47.96831"N	99°52'37.68377"W	789.262	4696041.444	427829.544	811.631	LIPT	VVA	
2026	42°40'51.19925"N	101°02'44.17476"W	893.926	4727407.666	332402.993	914.487	LIPT	VVA	
2027	42°34'11.20559"N	100°06'08.61696"W	755.081	4713630.195	409520.881	777.285	LIPT	VVA	
2028	42°33'41.72180"N	101°42'55.37088"W	1058.715	4715705.894	277099.523	1077.788	LIPT	VVA	
2029	42°44'14.93930"N	101°27'53.94384"W	954.330	4734609.933	298224.943	974.026	LIPT	VVA	
2029A	42°42'35.91572"N	101°23'35.19240"W	943.727	4731385.927	304022.080	963.544	LIPT	VVA	
2030	42°29'30.16903"N	99°51'52.76225"W	757.986	4704735.147	428944.925	780.507	LIPT	VVA	
2031	42°26'35.25767"N	100°01'44.32512"W	800.413	4699490.874	415375.766	822.553	LIPT	VVA	
2031A	42°27'36.17874"N	100°01'36.92892"W	795.170	4701367.891	415567.466	817.333	LIPT	VVA	
2032	42°31'34.75657"N	100°53'28.43628"W	908.393	4709948.922	344667.465	929.187	LIPT	VVA	
2033	42°28'37.04128"N	101°42'35.31924"W	1067.340	4706292.704	277256.136	1086.375	LIPT	VVA	
2033A	42°31'51.37435"N	101°42'36.28764"W	1061.630	4712288.026	277425.741	1080.683	LIPT	VVA	
2034	42°34'00.14646"N	101°19'06.09564"W	971.468	4715305.219	309707.451	991.377	LIPT	VVA	
2035	42°28'16.38782"N	101°48'53.78688"W	1092.224	4705937.190	268592.796	1111.098	LIPT	VVA	
2036	42°32'03.41167"N	100°43'31.90512"W	889.493	4710542.349	358295.532	910.728	LIPT	VVA	
2037	42°23'41.15332"N	100°46'26.28444"W	893.029	4695132.249	353993.582	914.037	LIPT	VVA	
2038	42°45'04.61743"N	99°50'46.69739"W	625.940	4733542.987	430741.310	649.109	LIPT	VVA	
2038A	42°45'09.24214"N	99°51'01.79996"W	596.119	4733689.090	430399.428	619.283	LIPT	VVA	
2039	42°35'44.26044"N	100°53'25.76760"W	885.598	4717643.718	344900.171	906.496	LIPT	VVA	
2040	42°32'25.68480"N	99°45'19.11697"W	715.594	4710063.008	437978.954	738.393	LIPT	VVA	
2041	42°27'54.99637"N	101°05'57.34176"W	948.732	4703572.584	327412.906	969.035	LIPT	VVA	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
2042	42°35'29.29016"N	99°54'40.69390"W	750.130	4715852.234	425230.649	772.734	LIPT	VVA	
2043	42°41'15.84312"N	101°37'18.86736"W	1011.879	4729472.456	285207.445	1031.252	LIPT	VVA	
2044	42°47'09.50561"N	99°58'49.66543"W	629.936	4737514.089	419806.983	652.905	LIPT	VVA	
2045	42°26'25.48871"N	100°58'31.80576"W	927.323	4700567.298	337523.711	947.879	LIPT	VVA	
2045A	42°25'51.66779"N	101°00'47.48004"W	934.731	4699596.917	334399.238	955.199	LIPT	VVA	
2046	42°38'00.83861"N	101°42'52.74468"W	1065.597	4723697.085	277415.931	1084.751	LIPT	VVA	
2047	42°31'30.26946"N	100°57'47.43648"W	914.026	4709944.914	338755.043	934.661	LIPT	VVA	
2048	42°24'08.81251"N	100°30'58.90428"W	865.227	4695574.790	375211.534	886.802	LIPT	VVA	
2049	42°39'57.89610"N	100°41'50.92980"W	855.307	4725131.644	360892.604	876.685	LIPT	VVA	
2049A	42°38'20.25384"N	100°42'31.32828"W	861.515	4722138.301	359912.085	882.874	LIPT	VVA	
2050	42°36'48.56843"N	100°20'34.88280"W	818.405	4718769.258	389847.917	840.224	LIPT	VVA	
2051	42°50'28.91594"N	100°11'27.29004"W	655.821	4743886.734	402680.687	678.508	LIPT	VVA	
2052	42°41'03.16856"N	101°13'47.02764"W	922.943	4728158.627	317326.650	943.043	LIPT	VVA	
2053	42°41'04.76941"N	100°19'40.05228"W	804.662	4726652.201	391221.228	826.602	LIPT	VVA	
2054	42°41'34.19340"N	100°03'59.55048"W	734.758	4727256.564	412635.740	757.308	LIPT	VVA	
2054A	42°41'07.84500"N	100°04'08.35608"W	749.784	4726446.367	412425.095	772.312	LIPT	VVA	
2055	42°26'54.64111"N	99°48'46.45238"W	761.385	4699895.959	433151.891	783.918	LIPT	VVA	
2056	42°44'36.29497"N	100°32'11.42304"W	831.267	4733466.767	374240.827	852.903	LIPT	VVA	
2057	42°40'09.72134"N	100°50'47.41152"W	856.905	4725752.469	348687.926	877.987	LIPT	VVA	
2057A	42°40'34.71640"N	100°50'38.09976"W	855.083	4726518.846	348916.715	876.174	LIPT	VVA	
2058	42°39'09.51224"N	100°34'59.11896"W	852.708	4723457.265	370239.199	874.265	LIPT	VVA	
2059	42°39'03.97062"N	100°16'06.54312"W	797.846	4722851.445	396024.165	819.845	LIPT	VVA	
2060	42°36'08.28842"N	101°42'35.65080"W	1047.735	4720212.689	277694.015	1066.862	LIPT	VVA	
2061	42°27'23.10440"N	100°19'04.02960"W	839.902	4701295.000	391646.593	861.650	LIPT	VVA	
2062	42°42'24.91150"N	101°20'21.97392"W	934.644	4730923.275	308408.198	954.540	LIPT	VVA	
2063	42°22'50.30911"N	101°33'09.39024"W	1057.940	4695196.208	289857.124	1077.306	LIPT	VVA	
2063A	42°22'55.78198"N	101°22'17.65848"W	1013.941	4694933.042	304766.451	1033.695	LIPT	VVA	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
2064	42°24'40.65296"N	100°12'44.14176"W	826.788	4696154.958	400251.791	848.653	LIPT	VVA	
2065	42°23'12.85656"N	101°16'27.62076"W	993.692	4695240.833	312785.382	1013.667	LIPT	VVA	
2065A	42°26'05.45068"N	101°14'02.11704"W	980.947	4700476.335	316252.631	1000.984	LIPT	VVA	
2066	42°44'01.04006"N	101°07'02.67276"W	888.151	4733408.621	326666.618	908.541	LIPT	VVA	
2067	42°22'51.87220"N	101°51'07.43796"W	1147.920	4696028.817	265204.171	1166.704	LIPT	VVA	
2067A	42°23'16.60607"N	101°51'07.40376"W	1117.273	4696791.756	265230.576	1136.058	LIPT	VVA	
2068	42°45'16.49959"N	99°44'43.73678"W	644.058	4733831.692	438995.546	667.443	LIPT	VVA	
2069	42°45'05.52467"N	100°24'53.52696"W	814.751	4734194.314	384211.860	836.633	LIPT	VVA	
3001	41°13'06.03286"N	99°41'11.34744"W	726.978	4563222.765	442456.288	749.918	LIPT	NVA	
3002	41°04'07.10641"N	99°57'40.90824"W	798.406	4546822.058	419231.276	821.412	LIPT	NVA	
3003	41°03'18.16596"N	99°41'01.32392"W	734.932	4545092.873	442547.366	758.339	LIPT	NVA	
3004	41°09'25.86510"N	99°57'00.15725"W	857.327	4556641.247	420289.494	880.108	LIPT	NVA	
3005	41°13'10.21181"N	100°11'46.56372"W	908.045	4563814.315	399725.594	930.348	LIPT	NVA	
3006	41°03'09.70513"N	100°10'13.06704"W	822.445	4545266.513	401653.758	845.181	LIPT	NVA	
3007	41°10'17.52114"N	99°48'20.84292"W	770.278	4558112.117	432407.548	793.211	LIPT	NVA	
3007A	41°09'05.54677"N	99°46'45.17494"W	763.738	4555872.328	434616.855	786.774	LIPT	NVA	
3008	41°04'21.69656"N	99°45'38.73676"W	795.008	4547105.559	436088.988	818.309	LIPT	NVA	
3009	41°11'29.24318"N	100°03'18.05508"W	837.346	4560547.366	411528.171	859.882	LIPT	NVA	
3010	41°07'39.65300"N	100°11'24.04176"W	870.462	4553613.412	400110.603	892.962	LIPT	NVA	
3011	41°13'50.15723"N	99°57'00.52380"W	805.066	4564791.470	420369.974	827.686	LIPT	NVA	
3011A	41°12'18.44482"N	99°56'57.76944"W	810.774	4561962.569	420403.214	833.447	LIPT	NVA	
3012	42°43'05.05556"N	101°42'44.61660"W	1019.858	4733075.580	277902.437	1039.104	LIPT	NVA	
3013	42°44'32.18705"N	100°47'31.79652"W	850.459	4733752.726	353312.558	871.674	LIPT	NVA	
3014	42°29'44.46596"N	101°51'22.14252"W	1096.858	4708767.477	265296.363	1115.704	LIPT	NVA	
3015	42°31'16.25714"N	101°09'47.07648"W	954.525	4709912.486	322324.626	974.734	LIPT	NVA	
3016	42°31'20.37900"N	100°32'12.68880"W	863.678	4708916.705	373765.923	885.286	LIPT	NVA	
3017	42°28'49.37617"N	101°33'24.13728"W	1032.687	4706282.302	289853.553	1052.007	LIPT	NVA	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
3018	42°34'19.03732"N	100°40'30.93024"W	875.541	4714642.934	362506.736	896.948	LIPT	NVA	
3019	42°39'05.80871"N	99°51'11.74334"W	726.217	4722481.115	430060.166	749.075	LIPT	NVA	
3020	42°37'31.28549"N	100°12'13.69008"W	791.967	4719915.024	401285.381	814.056	LIPT	NVA	
3021	42°28'01.47115"N	101°18'38.70036"W	994.665	4704224.316	310030.384	1014.535	LIPT	NVA	
3022	42°42'46.98623"N	100°32'10.90680"W	840.801	4730094.796	374191.203	862.410	LIPT	NVA	
3023	42°39'01.64250"N	100°39'14.93964"W	855.822	4723326.038	364409.645	877.283	LIPT	NVA	
3024	42°30'20.04026"N	100°07'14.15748"W	790.312	4706519.567	407932.336	812.368	LIPT	NVA	
3025	42°30'46.88762"N	100°15'05.59332"W	812.400	4707498.177	397185.294	834.274	LIPT	NVA	
3026	42°25'55.76970"N	101°08'18.37212"W	955.649	4699975.405	324099.377	975.860	LIPT	NVA	
3027	42°31'42.13960"N	100°21'28.85472"W	832.366	4709337.033	388466.684	854.110	LIPT	NVA	
3028	42°24'40.35215"N	99°52'38.99798"W	791.809	4695806.842	427797.080	814.175	LIPT	NVA	
3028A	42°25'36.01542"N	99°52'35.67774"W	782.957	4697522.933	427890.688	805.349	LIPT	NVA	
3029	42°40'19.33442"N	101°01'44.74668"W	895.190	4726392.127	333731.923	915.790	LIPT	NVA	
3030	42°34'10.03890"N	100°06'05.23692"W	760.289	4713593.206	409597.475	782.494	LIPT	NVA	
3031	42°33'40.85370"N	101°42'54.41040"W	1059.995	4715678.412	277120.566	1079.069	LIPT	NVA	
3032	42°44'15.73940"N	101°27'54.61164"W	954.658	4734635.058	298210.479	974.354	LIPT	NVA	
3033	42°29'30.64096"N	99°52'16.62409"W	759.214	4704755.278	428400.376	781.723	LIPT	NVA	
3034	42°26'38.70514"N	100°01'41.93004"W	800.784	4699596.545	415431.769	822.926	LIPT	NVA	
3035	42°31'34.73681"N	100°53'38.42340"W	909.503	4709953.402	344439.591	930.291	LIPT	NVA	
3036	42°38'48.96913"N	101°15'27.99360"W	953.992	4724080.024	314918.231	974.049	LIPT	NVA	
3037	42°29'08.95031"N	101°42'29.84652"W	1066.113	4707273.009	277412.548	1085.150	LIPT	NVA	
3037A	42°29'38.90699"N	101°42'22.06548"W	1058.454	4708191.411	277619.702	1077.495	LIPT	NVA	
3038	42°34'04.90303"N	101°18'47.17440"W	968.849	4715440.141	310142.888	988.770	LIPT	NVA	
3039	42°28'10.21778"N	101°48'41.87448"W	1092.138	4705737.835	268858.526	1111.016	LIPT	NVA	
3040	42°41'18.80138"N	101°36'55.48788"W	1009.262	4729547.213	285742.329	1028.648	LIPT	NVA	
3041	42°32'04.25350"N	100°43'31.98864"W	888.474	4710568.355	358294.156	909.709	LIPT	NVA	
3042	42°23'40.35872"N	100°46'16.84128"W	893.630	4695103.234	354208.971	914.645	LIPT	NVA	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
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			METERS	METERS	METERS	GEOID 18			
						METERS			
3043	42°44'59.60706"N	99°50'40.25249"W	647.002	4733386.971	430886.272	670.171	LIPT	NVA	
3044	42°36'59.65175"N	101°16'39.98460"W	934.446	4720751.914	313188.017	954.466	LIPT	NVA	
3045	42°35'38.90594"N	100°53'23.64000"W	884.748	4717477.470	344944.971	905.645	LIPT	NVA	
3046	42°33'25.84220"N	99°45'19.77350"W	716.083	4711918.669	437980.525	738.913	LIPT	NVA	
3047	42°28'24.82918"N	101°05'46.15872"W	948.408	4704486.483	327691.045	968.724	LIPT	NVA	
3048	42°35'35.20367"N	99°55'25.89283"W	750.319	4716045.801	424202.516	772.903	LIPT	NVA	
3049	42°41'39.61928"N	101°35'58.73640"W	1003.091	4730149.518	287053.602	1022.510	LIPT	NVA	
3050	42°47'20.79348"N	99°58'50.83385"W	636.075	4737862.583	419784.486	659.051	LIPT	NVA	
3051	42°27'39.56483"N	100°57'39.90420"W	930.104	4702824.707	338762.303	950.701	LIPT	NVA	
3052	42°38'32.10029"N	101°42'56.26332"W	1052.174	4724664.010	277366.769	1071.336	LIPT	NVA	
3053	42°24'32.61013"N	100°32'20.76648"W	868.149	4696342.474	373353.455	889.701	LIPT	NVA	
3054	42°32'02.81249"N	100°59'39.06276"W	912.977	4711008.205	336231.804	933.556	LIPT	NVA	
3055	42°24'11.66962"N	100°29'52.96488"W	863.246	4695636.171	376720.470	884.840	LIPT	NVA	
3056	42°39'58.68673"N	100°41'52.11024"W	855.305	4725156.572	360866.222	876.683	LIPT	NVA	
3056A	42°38'05.21196"N	100°42'37.23876"W	862.984	4721677.042	359768.095	884.339	LIPT	NVA	
3057	42°36'50.33304"N	100°20'31.42896"W	818.228	4718822.439	389927.470	840.049	LIPT	NVA	
3058	42°50'29.53316"N	100°11'26.88684"W	656.222	4743905.644	402690.108	678.909	LIPT	NVA	
3059	42°40'57.72155"N	101°12'58.56804"W	922.093	4727961.580	318425.096	942.224	LIPT	NVA	
3060	42°41'12.30821"N	100°19'45.46596"W	805.833	4726886.678	391101.686	827.774	LIPT	NVA	
3061	42°41'54.82057"N	100°03'57.97296"W	736.767	4727892.368	412679.664	759.330	LIPT	NVA	
3061A	42°41'02.55775"N	100°04'07.28004"W	753.989	4726282.969	412447.520	776.515	LIPT	NVA	
3062	42°26'54.01871"N	99°48'42.00844"W	761.679	4699875.791	433253.220	784.214	LIPT	NVA	
3063	42°29'10.37558"N	101°38'04.49376"W	1050.015	4707126.051	283472.262	1069.178	LIPT	NVA	
3063A	42°29'14.44520"N	101°39'40.47336"W	1052.851	4707320.036	281284.882	1071.966	LIPT	NVA	
3064	42°44'34.91513"N	100°32'10.92048"W	830.997	4733423.996	374251.478	852.632	LIPT	NVA	
3065	42°40'34.02545"N	100°50'37.97232"W	856.663	4726497.469	348919.151	877.754	LIPT	NVA	
3065A	42°41'30.34280"N	100°50'29.90328"W	856.291	4728230.649	349140.677	877.394	LIPT	NVA	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
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			METERS	METERS	METERS	GEOID 18			
						METERS			
3066	42°39'07.61670"N	100°35'29.74236"W	861.012	4723411.887	369540.832	882.560	LIPT	NVA	
3066A	42°39'08.02055"N	100°36'56.52468"W	853.641	4723461.826	367565.100	875.160	LIPT	NVA	
3067	42°39'12.72712"N	100°16'32.86524"W	799.850	4723130.561	395428.903	821.838	LIPT	NVA	
3068	42°36'22.23756"N	101°42'37.26828"W	1048.590	4720644.166	277670.944	1067.721	LIPT	NVA	
3069	42°27'20.74990"N	100°19'01.21800"W	840.865	4701221.379	391709.683	862.614	LIPT	NVA	
3070	42°38'44.79493"N	99°57'04.90874"W	751.164	4721918.748	422011.671	773.818	LIPT	NVA	
3071	42°33'36.72864"N	100°00'12.49740"W	765.010	4712465.813	417627.403	787.383	LIPT	NVA	
3071A	42°33'36.25218"N	100°00'30.15540"W	765.814	4712455.898	417224.585	788.177	LIPT	NVA	
3072	42°42'22.12412"N	101°20'14.14140"W	936.076	4730832.357	308584.008	955.976	LIPT	NVA	
3073	42°26'12.73250"N	100°49'18.23268"W	905.703	4699890.912	350162.599	926.596	LIPT	NVA	
3074	42°38'44.46654"N	100°11'16.65168"W	783.406	4722153.951	402616.347	805.569	LIPT	NVA	
3075	42°23'56.68141"N	101°33'50.78232"W	1051.600	4697272.059	288972.323	1070.931	LIPT	NVA	
3076	42°23'22.00254"N	101°44'02.95152"W	1094.208	4696638.987	274941.948	1113.213	LIPT	NVA	
3077	42°24'29.22516"N	100°12'46.67652"W	830.761	4695803.303	400188.821	852.625	LIPT	NVA	
3078	42°23'12.31278"N	101°15'55.25856"W	992.825	4695204.286	313524.951	1012.819	LIPT	NVA	
3078A	42°26'05.68558"N	101°14'01.97556"W	979.935	4700483.495	316256.055	999.972	LIPT	NVA	
3079	42°31'52.12697"N	101°42'35.92692"W	1062.601	4712310.979	277434.713	1081.655	LIPT	NVA	
3080	42°23'53.22462"N	101°01'50.42784"W	923.576	4695977.756	332873.490	943.996	LIPT	NVA	
3080A	42°24'00.08338"N	101°01'49.45800"W	923.011	4696188.787	332900.720	943.432	LIPT	NVA	
3081	42°44'26.66609"N	101°07'03.73188"W	893.805	4734199.712	326662.371	914.199	LIPT	NVA	
3082	42°44'36.86820"N	100°04'08.74416"W	721.023	4732893.934	412497.881	743.687	LIPT	NVA	
3082A	42°44'13.45682"N	100°04'10.06824"W	728.156	4732172.173	412458.629	750.802	LIPT	NVA	
3083	42°27'28.14458"N	100°32'41.08200"W	873.016	4701765.213	372987.606	894.585	LIPT	NVA	
3084	42°23'18.41323"N	101°25'50.25324"W	1027.473	4695768.543	299924.683	1047.094	LIPT	NVA	
3084A	42°22'55.34137"N	101°22'17.29200"W	1015.289	4694919.217	304774.453	1035.044	LIPT	NVA	
3085	42°22'51.44819"N	101°51'08.07660"W	1147.710	4696016.228	265189.127	1166.494	LIPT	NVA	
3085A	42°21'21.26063"N	101°51'35.12412"W	1163.145	4693255.021	264476.902	1181.923	LIPT	NVA	

USGS NEBRASKA CHERRY BROWN CUSTER CHECKPOINTS

65220804

FEBRUARY 2021

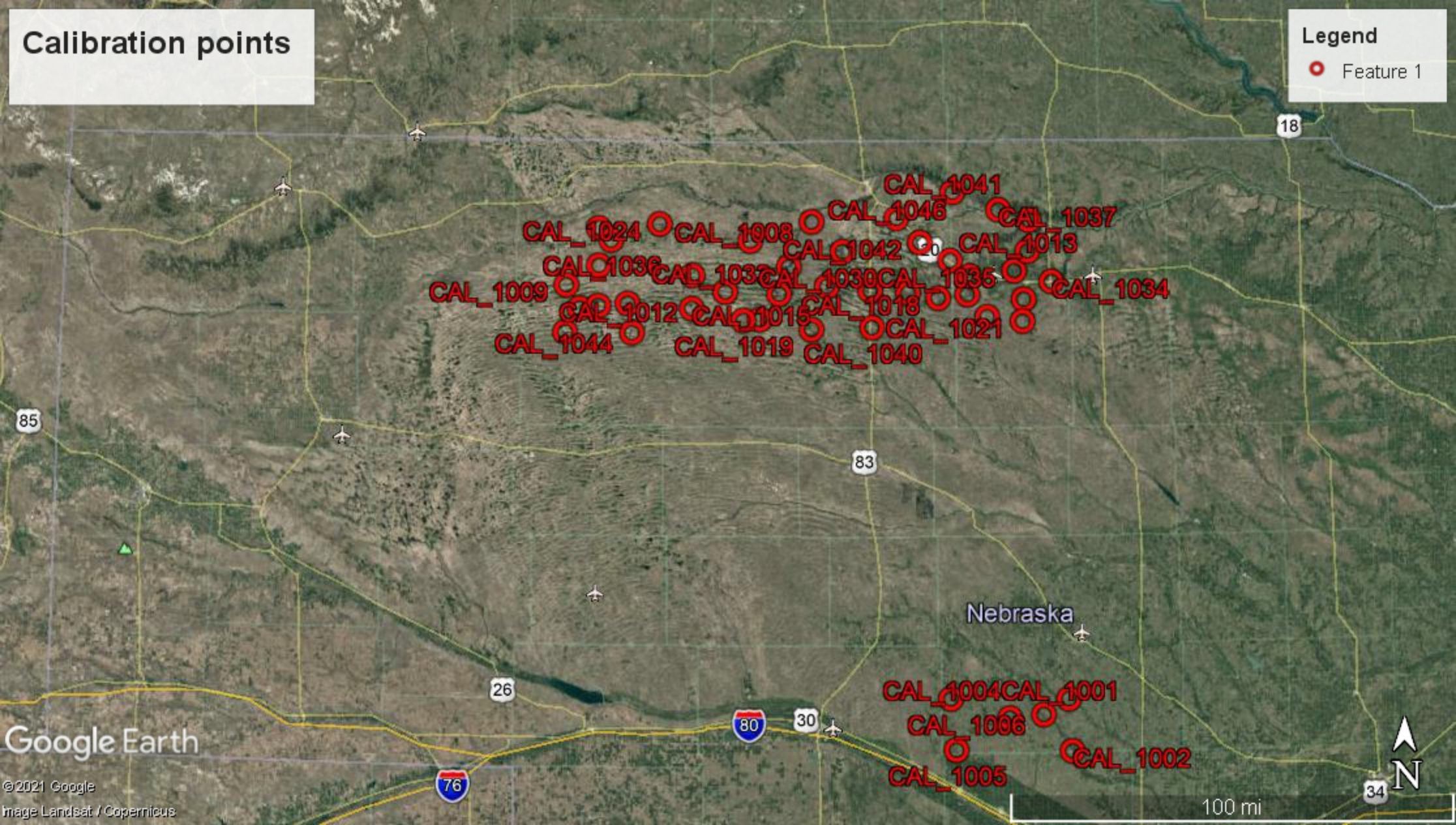
PT#	NAD83(2011)		ELLIPSOID	UTM ZONE 14 NORTH		NAVD 88	CODE	NOTE	
	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION			
			METERS	METERS	METERS	GEOID 18			
						METERS			
3086	42°35'44.39612"N	100°32'20.34420"W	860.005	4717063.571	373739.235	881.623	LIPT	NVA	
3087	42°44'38.27220"N	99°44'32.73457"W	609.880	4732650.341	439235.269	633.242	LIPT	NVA	
3088	42°45'10.00994"N	100°25'09.49476"W	814.766	4734338.763	383851.194	836.641	LIPT	NVA	
3089	42°32'53.57782"N	100°20'21.65028"W	823.592	4711516.144	390034.728	845.372	LIPT	NVA	
3090	42°37'18.91052"N	100°18'08.52732"W	809.427	4719653.044	393196.759	831.322	LIPT	NVA	
3091	42°34'43.80996"N	99°51'09.98597"W	729.249	4714399.371	430018.735	751.939	LIPT	NVA	
ANW A	42°35'10.07419"N	99°59'50.38703"W	765.132	4715339.087	418165.481	787.570	NGS GROUND STATION		
BROWN	42°17'13.27942"N	99°52'02.28644"W	798.100	4682008.907	428495.552	820.421	NGS GROUND STATION		
D227	42°34'48.66964"N	100°07'05.40408"W	778.641	4714802.747	408241.457	800.833	NGS GROUND STATION		
G321	41°09'02.46424"N	99°46'41.63012"W	763.961	4555776.532	434698.629	787.001	NGS GROUND STATION		
H16	41°02'56.12446"N	99°23'45.27686"W	655.280	4544263.544	466727.938	678.945	NGS GROUND STATION		
J432	42°39'08.08880"N	100°38'06.81864"W	873.485	4723494.705	365964.600	894.975	NGS GROUND STATION		
L227	42°37'59.10701"N	100°13'29.59716"W	795.189	4720798.009	399568.742	817.245	NGS GROUND STATION		
MRRN B	42°54'16.55654"N	101°42'02.72268"W	975.090	4753759.745	279519.441	994.413	NGS GROUND STATION		
V319	41°38'37.88502"N	99°51'52.99816"W	784.894	4610596.413	427987.549	807.266	NGS GROUND STATION		
Y28	42°26'31.45607"N	101°43'44.70528"W	1077.876	4702469.601	275547.074	1096.882	NGS GROUND STATION		
Y431	42°28'40.82326"N	100°53'41.10216"W	915.509	4704590.308	344258.574	936.255	NGS GROUND STATION		



# Calibration points

**Legend**

- Feature 1



Google Earth

# NVA points

## Legend

1 Feature 1

NVA\_3012 NVA\_3081 NVA\_3088 NVA\_3043 NVA\_3058 NVA\_3087  
NVA\_3036 NVA\_3056 NVA\_3074 NVA\_3091  
NVA\_3079 NVA\_3035 NVA\_3089 NVA\_3033 NVA\_3046  
NVA\_3021 NVA\_3034  
NVA\_3076 NVA\_3042 NVA\_3077 NVA\_3028  
NVA\_3075

NVA\_3005 NVA\_3001  
NVA\_3004 NVA\_3007  
NVA\_3008 NVA\_3003

Google Earth

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Image Landsat / Copernicus

Nebraska

100 mi



26

80

83

30

76

34

# VVA points

**Legend**

- Feature 1

- VVA\_2051
- VVA\_2029
- VVA\_2052
- VVA\_2062
- VVA\_2044
- VVA\_2068
- VVA\_2017
- VVA\_2034
- VVA\_2016
- VVA\_2027
- VVA\_2040
- VVA\_2033
- VVA\_2041
- VVA\_2048
- VVA\_2055
- VVA\_2067
- VVA\_2063
- VVA\_2025
- VVA\_2005
- VVA\_2009
- VVA\_2001
- VVA\_2006
- VVA\_2002
- VVA\_2003

Google Earth

100 mi

# NEBRASKA CHERRY BROWN CUSTER NGS POINTS

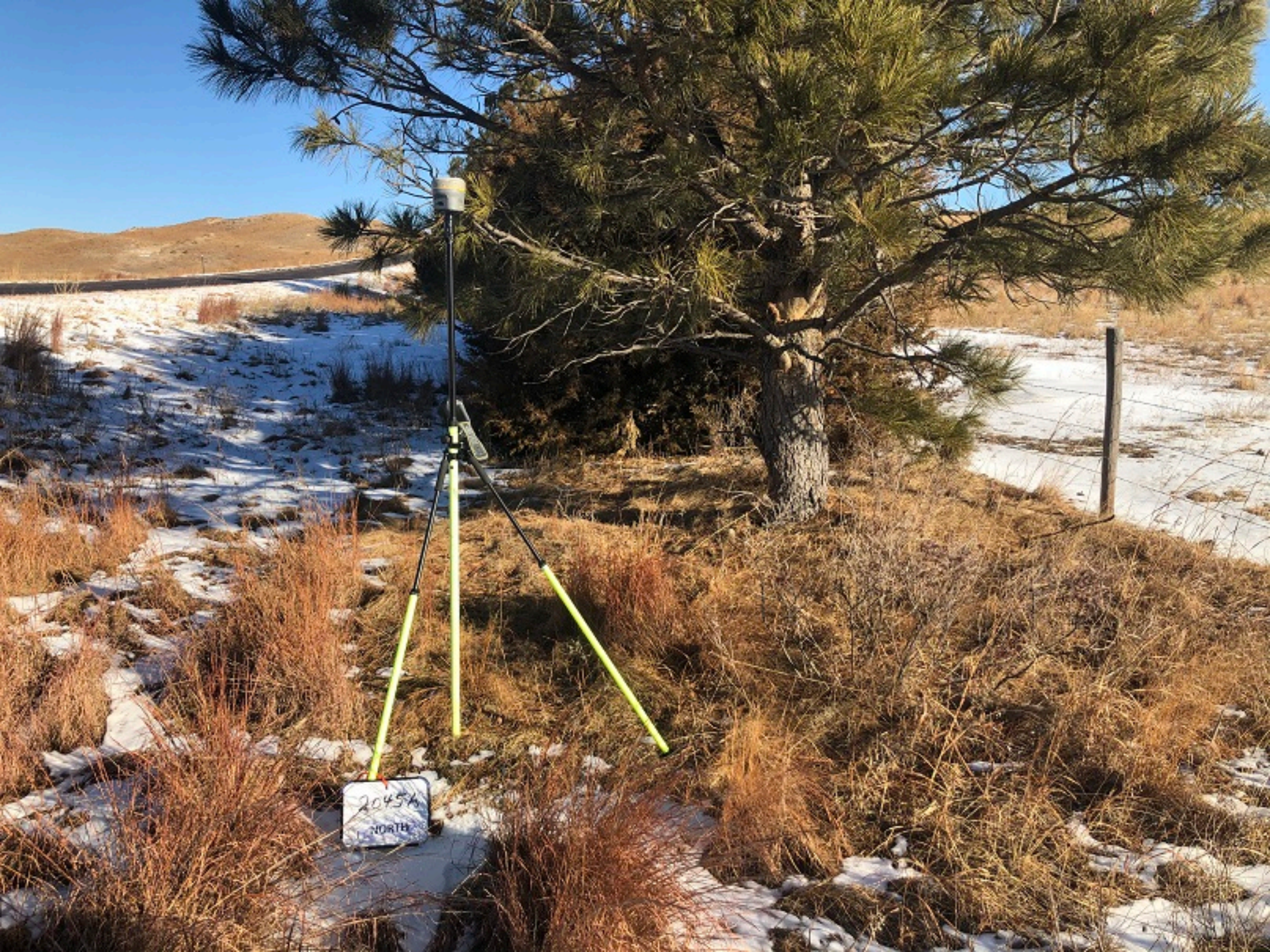
**Legend**  
■ Feature 1



Google Earth

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Lincoln



2045A  
NORTH

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

AB4104 \*\*\*\*\*

AB4104 CBN - This is a Cooperative Base Network Control Station.

AB4104 PACS - This is a Primary Airport Control Station.

AB4104 DESIGNATION - ANW A

AB4104 PID - AB4104

AB4104 STATE/COUNTY- NE/BROWN

AB4104 COUNTRY - US

AB4104 USGS QUAD - AINSWORTH SW (2017)

AB4104

AB4104 \*CURRENT SURVEY CONTROL

AB4104

---

AB4104\* NAD 83(2011) POSITION- 42 35 10.07174(N) 099 59 50.38831(W) ADJUSTED

AB4104\* NAD 83(2011) ELLIP HT- 765.131 (meters) (06/27/12) ADJUSTED

AB4104\* NAD 83(2011) EPOCH - 2010.00

AB4104\* NAVD 88 ORTHO HEIGHT - 787.60 (meters) 2584.0 (feet) GPS OBS

AB4104

---

AB4104 NAVD 88 orthometric height was determined with geoid model GEOID93

AB4104 GEOID HEIGHT - -22.081 (meters) GEOID93

AB4104 GEOID HEIGHT - -22.438 (meters) GEOID18

AB4104 NAD 83(2011) X - -816,581.861 (meters) COMP

AB4104 NAD 83(2011) Y - -4,632,328.119 (meters) COMP

AB4104 NAD 83(2011) Z - 4,294,281.729 (meters) COMP

AB4104 LAPLACE CORR - -4.15 (seconds) DEFLEC18

AB4104

AB4104 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

AB4104 Standards:

AB4104 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

AB4104 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

AB4104 -----

AB4104 NETWORK 0.64 1.67 0.30 0.20 0.85 -0.00822855

AB4104 -----

AB4104 [Click here for local accuracies and other accuracy information.](#)

AB4104

AB4104

AB4104.This mark is at Ainsworth Municipal Airport (ANW)

AB4104

AB4104.The horizontal coordinates were established by GPS observations

AB4104.and adjusted by the National Geodetic Survey in June 2012.

AB4104

AB4104.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

AB4104.been affixed to the stable North American tectonic plate. See

AB4104.NA2011 for more information.

AB4104

AB4104.The horizontal coordinates are valid at the epoch date displayed above

AB4104.which is a decimal equivalence of Year/Month/Day.

AB4104

AB4104.The orthometric height was determined by GPS observations and a  
AB4104.high-resolution geoid model.

AB4104

AB4104.GPS derived orthometric heights for airport stations designated as  
AB4104.PACS or SACS are published to 2 decimal places. This maintains  
AB4104.centimeter relative accuracy between the PACS and SACS. It does  
AB4104.not indicate centimeter accuracy relative to other marks which are  
AB4104.part of the NAVD 88 network.

AB4104

AB4104.Significant digits in the geoid height do not necessarily reflect accuracy.  
AB4104.GEOID18 height accuracy estimate available here.

AB4104

AB4104.Click photographs - Photos may exist for this station.

AB4104

AB4104.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AB4104

AB4104.The Laplace correction was computed from DEFLEC18 derived deflections.

AB4104

AB4104.The ellipsoidal height was determined by GPS observations  
AB4104.and is referenced to NAD 83.

AB4104

AB4104. The following values were computed from the NAD 83(2011) position.

AB4104

AB4104; North East Units Scale Factor Converg.

AB4104;SPC NE - 305,649.035 500,219.127 MT 0.99983664 +0 00 06.4

AB4104;SPC NE - 1,002,783.54 1,641,135.59 sFT 0.99983664 +0 00 06.4

AB4104;UTM 14 - 4,715,339.012 418,165.451 MT 0.99968239 -0 40 29.7

AB4104

AB4104! - Elev Factor x Scale Factor = Combined Factor

AB4104!SPC NE - 0.99988002 x 0.99983664 = 0.99971668

AB4104!UTM 14 - 0.99988002 x 0.99968239 = 0.99956245

AB4104

AB4104\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TMN1816515339(NAD 83)

AB4104

AB4104 SUPERSEDED SURVEY CONTROL

AB4104

AB4104 NAD 83(2007)- 42 35 10.07172(N) 099 59 50.38904(W) AD(2002.00) 0

AB4104 ELLIP H (02/10/07) 765.160 (m) GP(2002.00)

AB4104 ELLIP H (09/24/01) 765.128 (m) GP( ) 4 1

AB4104 NAD 83(1995)- 42 35 10.07132(N) 099 59 50.38898(W) AD( ) B

AB4104 ELLIP H (06/25/96) 765.180 (m) GP( ) 1 1

AB4104

AB4104.Superseded values are not recommended for survey control.

AB4104

AB4104.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AB4104.See file dsdata.pdf to determine how the superseded data were derived.

AB4104

AB4104\_MARKER: I = METAL ROD

AB4104\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)

AB4104\_STAMPING: ANW A 1995

AB4104\_MARK LOGO: NGS

AB4104\_PROJECTION: FLUSH

AB4104\_MAGNETIC: N = NO MAGNETIC MATERIAL

AB4104\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

AB4104\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AB4104+SATELLITE: SATELLITE OBSERVATIONS - July 15, 2015

AB4104\_ROD/PIPE-DEPTH: 17.8 meters

AB4104\_SLEEVE-DEPTH : 1 meters

AB4104

AB4104 HISTORY	- Date	Condition	Report By
AB4104 HISTORY	- 1995	MONUMENTED	NGS
AB4104 HISTORY	- 19970715	GOOD	NGS
AB4104 HISTORY	- 20070821	GOOD	NEDR
AB4104 HISTORY	- 20110830	GOOD	INDIV
AB4104 HISTORY	- 20150715	GOOD	NEGS

AB4104

AB4104 STATION DESCRIPTION

AB4104

AB4104'DESCRIBED BY NATIONAL GEODETIC SURVEY 1995 (CFS)

AB4104'THE STATION IS LOCATED ABOUT 8.0 MI (12.9 KM) WEST-NORTHWEST OF  
AB4104'AINSWORTH, 3.0 MI (4.8 KM) EAST OF JOHNSTOWN AND AT THE AINSWORTH  
AB4104'MUNICIPAL AIRPORT NEAR THE APPROACH END OF RUNWAY 17 AND IN LINE WITH  
AB4104'THE THRESHOLD LIGHTS. OWNERSHIP--AINSWORTH AIRPORT AUTHORITY, PO BOX  
AB4104'165, AINSWORTH NE 69210. AIRPORT MANAGER IS LANCE SCHIPPORIT, PHONE  
AB4104'(402) 387-1491. TO REACH THE STATION FROM THE JUNCTION OF U.S.  
AB4104'HIGHWAY 20 AND STATE HIGHWAY 7 SOUTH ON THE WEST SIDE OF AINSWORTH, GO  
AB4104'WEST ON U.S. HIGHWAY 20 FOR 7.6 MI (12.2 KM) TO A INTERSECTION, TURN  
AB4104'RIGHT AND GO NORTH ON A PAVED ROAD FOR 1.25 MI (2.01 KM) TO AN  
AB4104'INTERSECTION, TURN RIGHT AND GO EAST ON A GRAVEL ROAD FOR 0.4 MI (0.6  
AB4104'KM) TO A FORK RIGHT, CONTINUE AHEAD AND GO EAST ON A DIRT ROAD FOR 0.1  
AB4104'MI (0.2 KM) (PASSING THROUGH A GATE) TO A PAVED TAXIWAY, TURN LEFT AND  
AB4104'GO NORTH ON THE PARALLEL TAXIWAY FOR 0.45 MI (0.72 KM) TO A CURVE  
AB4104'RIGHT, BEAR RIGHT FOLLOWING THE TAXIWAY NORTHEAST FOR 0.15 MI (0.24  
AB4104'KM) TO THE STATION ON THE RIGHT. THE STATION IS 181.5 FT (55.3 M)  
AB4104'WEST OF THE RUNWAY CENTER, 87.2 FT (26.6 M) WEST OF THE MOST WESTERLY  
AB4104'THRESHOLD LIGHT, 30.4 FT (9.3 M) SOUTHEAST OF THE TAXIWAY CENTER AND  
AB4104'1.6 FT (0.5 M) NORTH OF A WITNESS POST. NOTE--THIS STATION WAS USED  
AB4104'AS AN AREA NAVIGATION APPROACH PRIMARY AIRPORT CONTROL STATION.

AB4104

AB4104 STATION RECOVERY (1997)

AB4104

AB4104'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (AJL)

AB4104'RECOVERED AS DESCRIBED.

AB4104

AB4104 STATION RECOVERY (2007)

AB4104

AB4104'RECOVERY NOTE BY NEBRASKA ROADS DEPARTMENT 2007 (PS)

AB4104'RECOVERED IN GOOD CONDITION.

AB4104

AB4104 STATION RECOVERY (2011)

AB4104

AB4104'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (JPH)

AB4104'RECOVERED IN GOOD CONDITION.

AB4104

AB4104 STATION RECOVERY (2015)

AB4104

AB4104'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2015 (MH)

AB4104'RECOVERED IN GOOD CONDITION.



\*\*\* retrieval complete.  
Elapsed Time = 00:00:01

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

NN0773 \*\*\*\*\*

NN0773 CBN - This is a Cooperative Base Network Control Station.

NN0773 DESIGNATION - BROWN

NN0773 PID - NN0773

NN0773 STATE/COUNTY- NE/BROWN

NN0773 COUNTRY - US

NN0773 USGS QUAD - RAVEN (2017)

NN0773

NN0773 \*CURRENT SURVEY CONTROL

NN0773

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NN0773\* NAD 83(2011) POSITION- 42 17 13.27731(N) 099 52 02.28659(W) ADJUSTED

NN0773\* NAD 83(2011) ELLIP HT- 798.127 (meters) (06/27/12) ADJUSTED

NN0773\* NAD 83(2011) EPOCH - 2010.00

NN0773\* NAVD 88 ORTHO HEIGHT - 820.4 (meters) 2692. (feet) GPS OBS

NN0773

---

NN0773 NAVD 88 orthometric height was determined with geoid model GEOID93

NN0773 GEOID HEIGHT - -21.977 (meters) GEOID93

NN0773 GEOID HEIGHT - -22.321 (meters) GEOID18

NN0773 NAD 83(2011) X - -809,913.710 (meters) COMP

NN0773 NAD 83(2011) Y - -4,656,284.160 (meters) COMP

NN0773 NAD 83(2011) Z - 4,269,779.682 (meters) COMP

NN0773 LAPLACE CORR - -2.81 (seconds) DEFLEC18

NN0773

NN0773 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

NN0773 Standards:

NN0773 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

NN0773 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

NN0773 -----

NN0773 NETWORK 0.56 1.57 0.27 0.16 0.80 -0.02596114

NN0773 -----

NN0773 Click here for local accuracies and other accuracy information.

NN0773

NN0773

NN0773.The horizontal coordinates were established by GPS observations

NN0773.and adjusted by the National Geodetic Survey in June 2012.

NN0773

NN0773.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

NN0773.been affixed to the stable North American tectonic plate. See

NN0773.NA2011 for more information.

NN0773

NN0773.The horizontal coordinates are valid at the epoch date displayed above

NN0773.which is a decimal equivalence of Year/Month/Day.

NN0773

NN0773.The orthometric height was determined by GPS observations and a

NN0773.high-resolution geoid model.

NN0773



NN0773\_MARKER: DS = TRIANGULATION STATION DISK  
NN0773\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
NN0773\_STAMPING: BROWN 1949  
NN0773\_MARK LOGO: CGS  
NN0773\_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT  
NN0773\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
NN0773+STABILITY: SURFACE MOTION  
NN0773\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
NN0773+SATELLITE: SATELLITE OBSERVATIONS - October 03, 2017

NN0773

NN0773 HISTORY	- Date	Condition	Report By
NN0773 HISTORY	- 19490913	MONUMENTED	CGS
NN0773 HISTORY	- 19620511	GOOD	CGS
NN0773 HISTORY	- 19950524	GOOD	NGS
NN0773 HISTORY	- 20070821	GOOD	NEDR
NN0773 HISTORY	- 20171003	GOOD	INDIV

NN0773

NN0773 STATION DESCRIPTION

NN0773

NN0773'DESCRIBED BY COAST AND GEODETIC SURVEY 1949 (RLE)  
NN0773'THE STATION IS LOCATED ABOUT 18.0 MILES SOUTH OF AINSWORTH  
NN0773'AND 7-1/4 MILES NORTH OF THE CALAMUS RIVER ON THE WEST  
NN0773'RIGHT-OF-WAY OF STATE ROUTE NO 7. IT IS 35 FEET WEST OF  
NN0773'THE CENTER OF STATE ROUTE NO 7, 4 FEET EAST OF WITNESS POST  
NN0773'AND 4-1/2 FEET EAST OF TRIANGULAR BLAZED TELEPHONE POLE.  
NN0773'IT IS STAMPED BROWN 1949 AND PROJECTS 2 INCHES.

NN0773'

NN0773'REFERENCE MARK NO 1 IS NORTHEAST OF THE STATION, 35 FEET EAST  
NN0773'OF THE CENTER OF STATE ROUTE NO 7 AND 1 FOOT EAST OF NORTH-SOUTH  
NN0773'FENCE LINE. IT IS STAMPED BROWN NO 1 1949 AND PROJECTS 3  
NN0773'INCHES.

NN0773'

NN0773'REFERENCE MARK NO 2 IS SOUTH-SOUTHEAST OF THE STATION, 33  
NN0773'FEET WEST OF THE CENTER OF STATE ROUTE NO 7. IT IS STAMPED  
NN0773'BROWN NO 2 1949 AND PROJECTS 3 INCHES.

NN0773'

NN0773'THE AZIMUTH MARK IS ABOUT 0.65 MILE NORTH OF THE STATION, 35  
NN0773'FEET EAST OF THE CENTER OF STATE ROUTE NO 7, 3 FEET SOUTH  
NN0773'OF WITNESS POST AND 1 FOOT WEST OF NORTH-SOUTH FENCE LINE.  
NN0773'IT IS STAMPED BROWN 1949 AND PROJECTS 3 INCHES.

NN0773'

NN0773'TO REACH THE STATION FROM THE RAILROAD STATION IN AINSWORTH,  
NN0773'GO SOUTH ON STATE ROUTE NO 7 FOR 17.7 MILES TO THE AZIMUTH  
NN0773'MARK ON THE EAST SIDE AS DESCRIBED, CONTINUE SOUTH ON STATE ROUTE  
NN0773'NO 7 FOR 0.65 MILE TO THE STATION ON THE WEST SIDE AS DESCRIBED.

NN0773'

NN0773'A 4 FOOT SIGNAL AT STATION ROUND IS VISIBLE AT 4 FEET

NN0773'

NN0773'A 74 FOOT SIGNAL AT STATION MIDVALE IS VISIBLE AT 4 FEET.

NN0773'

NN0773'HEIGHT OF LIGHT ABOVE STATION MARK 1.4 METERS.

NN0773

NN0773 STATION RECOVERY (1962)

NN0773



NN0773'ABOUT 0.2 FT (6.1 CM) ABOVE THE GROUND. IT IS 116.0 FT (35.4 M) WEST  
NN0773'OF THE CENTERLINE OF THE HIGHWAY, 92.0 FT (28.0 M) SOUTH OF THE  
NN0773'CENTERLINE OF THE DRIVE, 52.8 FT (16.1 M) SOUTH-SOUTHEAST OF THE SOUTH  
NN0773'GATEPOST OF A GATE INTO A PASTURE, 34.6 FT (10.5 M) SOUTH-SOUTHEAST OF  
NN0773'A METAL UNDERGROUND CABLE WARNING POST, 6.9 FT (2.1 M) NORTHEAST OF A  
NN0773'UTILITY POLE, 6.5 FT (2.0 M) EAST OF THE WEST RIGHT-OF-WAY FENCE, 3.8  
NN0773'FT (1.2 M) EAST-SOUTHEAST OF A WITNESS POST AND ABOUT LEVEL WITH THE  
NN0773'HIGHWAY. REBAR WAS DRIVEN ALONG THE EAST SIDE OF THE MARK.

NN0773

STATION RECOVERY (2007)

NN0773

NN0773

NN0773'RECOVERY NOTE BY NEBRASKA ROADS DEPARTMENT 2007 (PS)

NN0773'RECOVERED IN GOOD CONDITION.

NN0773

STATION RECOVERY (2017)

NN0773

NN0773

NN0773'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2017 (LLB)

NN0773'RECOVERED AS DESCRIBED.

\*\*\* retrieval complete.

Elapsed Time = 00:00:02

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

NO0013 \*\*\*\*\*

NO0013 DESIGNATION - D 227

NO0013 PID - NO0013

NO0013 STATE/COUNTY- NE/BROWN

NO0013 COUNTRY - US

NO0013 USGS QUAD - JOHNSTOWN (2017)

NO0013

NO0013 \*CURRENT SURVEY CONTROL

NO0013

NO0013\* NAD 83(1995) POSITION- 42 34 48.66849(N) 100 07 05.40861(W) ADJUSTED

NO0013\* NAD 83(1995) ELLIP HT- 778.730 (meters) (06/27/02) ADJUSTED

NO0013\* NAVD 88 ORTHO HEIGHT - 800.922 (meters) 2627.69 (feet) ADJUSTED

NO0013

NO0013 GEOID HEIGHT - -22.192 (meters) GEOID18

NO0013 NAD 83(1995) X - -826,430.071 (meters) COMP

NO0013 NAD 83(1995) Y - -4,631,045.467 (meters) COMP

NO0013 NAD 83(1995) Z - 4,293,804.595 (meters) COMP

NO0013 LAPLACE CORR - -4.84 (seconds) DEFLEC18

NO0013 DYNAMIC HEIGHT - 800.584 (meters) 2626.58 (feet) COMP

NO0013 MODELED GRAVITY - 980,172.6 (mgal) NAVD 88

NO0013

NO0013 HORZ ORDER - FIRST

NO0013 VERT ORDER - FIRST CLASS II

NO0013 ELLP ORDER - FOURTH CLASS I

NO0013

NO0013.The horizontal coordinates were established by GPS observations

NO0013.and adjusted by the National Geodetic Survey in August 1997.

NO0013

NO0013.The orthometric height was determined by differential leveling and

NO0013.adjusted by the NATIONAL GEODETIC SURVEY

NO0013.in June 1991.

NO0013

NO0013.Significant digits in the geoid height do not necessarily reflect accuracy.

NO0013.GEOID18 height accuracy estimate available here.

NO0013

NO0013.Click photographs - Photos may exist for this station.

NO0013

NO0013.The X, Y, and Z were computed from the position and the ellipsoidal ht.

NO0013

NO0013.The Laplace correction was computed from DEFLEC18 derived deflections.

NO0013

NO0013.The ellipsoidal height was determined by GPS observations

NO0013.and is referenced to NAD 83.

NO0013

NO0013.The dynamic height is computed by dividing the NAVD 88

NO0013.geopotential number by the normal gravity value computed on the

NO0013.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
NO0013.degrees latitude (g = 980.6199 gals.).

NO0013

NO0013.The modeled gravity was interpolated from observed gravity values.

NO0013

NO0013. The following values were computed from the NAD 83(1995) position.

NO0013

NO0013; North East Units Scale Factor Converg.

NO0013;SPC NE - 304,995.332 490,300.648 MT 0.99983468 -0 04 41.9

NO0013;SPC NE - 1,000,638.85 1,608,594.71 sFT 0.99983468 -0 04 41.9

NO0013;UTM 14 - 4,714,802.712 408,241.353 MT 0.99970359 -0 45 23.9

NO0013

NO0013! - Elev Factor x Scale Factor = Combined Factor

NO0013!SPC NE - 0.99987789 x 0.99983468 = 0.99971259

NO0013!UTM 14 - 0.99987789 x 0.99970359 = 0.99958151

NO0013

NO0013\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TMN0824114802(NAD 83)

NO0013

NO0013 SUPERSEDED SURVEY CONTROL

NO0013

NO0013 ELLIP H (08/18/97) 778.777 (m) GP( ) 4 1

NO0013 NAD 83(1986)- 42 34 48.67466(N) 100 07 05.42037(W) AD( ) 1

NO0013 NGVD 29 (??/??/92) 800.629 (m) 2626.73 (f) ADJ UNCH 1 2

NO0013 NGVD 29 (02/23/90) 801. (m) RAPSU86 model used GPS OBS

NO0013

NO0013.Superseded values are not recommended for survey control.

NO0013

NO0013.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

NO0013.See file dsdata.pdf to determine how the superseded data were derived.

NO0013

NO0013\_MARKER: DB = BENCH MARK DISK

NO0013\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

NO0013\_STAMPING: D 227 1946

NO0013\_MARK LOGO: CGS

NO0013\_MAGNETIC: N = NO MAGNETIC MATERIAL

NO0013\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

NO0013+STABILITY: SURFACE MOTION

NO0013\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

NO0013+SATELLITE: SATELLITE OBSERVATIONS - May 02, 1989

NO0013

NO0013 HISTORY - Date Condition Report By

NO0013 HISTORY - 1946 MONUMENTED CGS

NO0013 HISTORY - 1975 GOOD NGS

NO0013 HISTORY - 19890502 GOOD NGS

NO0013

NO0013 STATION DESCRIPTION

NO0013

NO0013'DESCRIBED BY COAST AND GEODETIC SURVEY 1946

NO0013'3.7 MI W FROM JOHNSTOWN.

NO0013'3.7 MILES WEST ALONG U.S. HIGHWAY 20 FROM THE CHICAGO AND NORTH

NO0013'WESTERN RAILWAY STATION AT JOHNSTOWN, BROWN COUNTY, 109 FEET

NO0013'EAST OF A CURVE SIGN, 76 FEET NORTHEAST OF THE CENTERLINE OF THE

NO0013'HIGHWAY, 58 FEET SOUTHWEST OF THE CENTERLINE OF THE C. AND N.W.

NO0013'RY. TRACK, 18 FEET SOUTHWEST OF A POLE, 1 FOOT SOUTHEAST OF A



NO0013'WHITE WOODEN WITNESS POST, AND 2 FEET HIGHER THAN THE HIGHWAY.

NO0013'A STANDARD DISK, STAMPED D 227 1946 AND SET IN THE TOP OF A

NO0013'CONCRETE POST PROJECTING 4 INCHES ABOVE GROUND.

NO0013

STATION RECOVERY (1975)

NO0013

NO0013'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1975

NO0013'RECOVERED IN GOOD CONDITION.

NO0013

NO0013

STATION RECOVERY (1989)

NO0013

NO0013'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989

NO0013'THE STATION IS LOCATED 5 KM (3.10 MI) WEST OF JOHNSTOWN, 1.6 KM

NO0013'(1.00 MI) NORTHWEST OF THE JUNCTION OF US HIGHWAY 20 AND PLUM CREEK,

NO0013'IN A GRASSY MEDIAN OF THE HIGHWAY AND A RAILROAD TRACK.

NO0013'OWNERSHIP--CHICAGO AND NORTHWESTERN RAILWAY.

NO0013'TO REACH THE STATION FROM THE JUNCTION OF US HIGHWAY 20 AND MAIN

NO0013'STREET AT A SMALL PARK IN JOHNSTOWN, GO WEST ON US HIGHWAY 20 FOR 3.96

NO0013'KM (2.45 MI) TO A BRIDGE OVER PLUM CREEK. CONTINUE AHEAD FOR 1.69 KM

NO0013'(1.05 MI) TO THE STATION ON THE RIGHT.

NO0013'THE STATION IS SET 23.0 M (75.5 FT) NORTHEAST OF THE HIGHWAY

NO0013'CENTERLINE, 16.9 M (55.4 FT) SOUTHWEST OF AND 2 M (6.6 FT) HIGHER THAN

NO0013'THE SOUTHWEST RAIL OF THE TRACK, 4.8 M (15.7 FT) SOUTH-SOUTHWEST OF A

NO0013'UTILITY POLE, 0.4 M (1.3 FT) SOUTHEAST OF A WOODEN WITNESS POST, 0.3 M

NO0013'(1.0 FT) NORTHWEST OF A METAL WITNESS POST, 1 M (3.3 FT) HIGHER THAN

NO0013'THE LEVEL OF THE HIGHWAY AND PROJECTS 1 CM.

NO0013'DESCRIBED BY G.R.HEID, TYPED BY R.D.BALL.

\*\*\* retrieval complete.

Elapsed Time = 00:00:02

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

ML0781 \*\*\*\*\*

ML0781 CBN - This is a Cooperative Base Network Control Station.

ML0781 DESIGNATION - G 321

ML0781 PID - ML0781

ML0781 STATE/COUNTY- NE/CUSTER

ML0781 COUNTRY - US

ML0781 USGS QUAD - OCONTO (2017)

ML0781

ML0781 \*CURRENT SURVEY CONTROL

ML0781

ML0781\* NAD 83(2011) POSITION- 41 09 02.46168(N) 099 46 41.63052(W) ADJUSTED

ML0781\* NAD 83(2011) ELLIP HT- 764.046 (meters) (06/27/12) ADJUSTED

ML0781\* NAD 83(2011) EPOCH - 2010.00

ML0781\* NAVD 88 ORTHO HEIGHT - 787.098 (meters) 2582.34 (feet) ADJUSTED

ML0781

ML0781 GEOID HEIGHT - -23.040 (meters) GEOID18

ML0781 NAD 83(2011) X - -816,935.815 (meters) COMP

ML0781 NAD 83(2011) Y - -4,740,291.310 (meters) COMP

ML0781 NAD 83(2011) Z - 4,175,541.018 (meters) COMP

ML0781 LAPLACE CORR - -3.02 (seconds) DEFLEC18

ML0781 DYNAMIC HEIGHT - 786.660 (meters) 2580.90 (feet) COMP

ML0781 MODELED GRAVITY - 980,040.8 (mgal) NAVD 88

ML0781

ML0781 VERT ORDER - SECOND CLASS 0

ML0781

ML0781 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

ML0781 Standards:

ML0781 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

ML0781 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

ML0781 -----

ML0781 NETWORK 0.42 1.16 0.20 0.13 0.59 -0.01890195

ML0781 -----

ML0781 [Click here for local accuracies and other accuracy information.](#)

ML0781

ML0781

ML0781.The horizontal coordinates were established by GPS observations

ML0781.and adjusted by the National Geodetic Survey in June 2012.

ML0781

ML0781.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

ML0781.been affixed to the stable North American tectonic plate. See

ML0781.NA2011 for more information.

ML0781

ML0781.The horizontal coordinates are valid at the epoch date displayed above

ML0781.which is a decimal equivalence of Year/Month/Day.

ML0781

ML0781.The orthometric height was determined by differential leveling and

ML0781.adjusted by the NATIONAL GEODETIC SURVEY  
ML0781.in June 1991.  
ML0781  
ML0781.Significant digits in the geoid height do not necessarily reflect accuracy.  
ML0781.GEOID18 height accuracy estimate available here.  
ML0781  
ML0781.Click photographs - Photos may exist for this station.  
ML0781  
ML0781.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
ML0781  
ML0781.The Laplace correction was computed from DEFLEC18 derived deflections.  
ML0781  
ML0781.The ellipsoidal height was determined by GPS observations  
ML0781.and is referenced to NAD 83.  
ML0781  
ML0781.The dynamic height is computed by dividing the NAVD 88  
ML0781.geopotential number by the normal gravity value computed on the  
ML0781.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
ML0781.degrees latitude (g = 980.6199 gals.).  
ML0781  
ML0781.The modeled gravity was interpolated from observed gravity values.  
ML0781  
ML0781. The following values were computed from the NAD 83(2011) position.  
ML0781  
ML0781;  
ML0781;SPC NE        North        East        Units Scale Factor Converg.  
ML0781;SPC NE       - 146,283.789 518,610.022 MT 0.99967770 +0 08 49.1  
ML0781;SPC NE       - 479,932.73 1,701,473.05 sFT 0.99967770 +0 08 49.1  
ML0781;UTM 14       - 4,555,776.453 434,698.619 MT 0.99965248 -0 30 43.7  
ML0781  
ML0781!               - Elev Factor x Scale Factor = Combined Factor  
ML0781!SPC NE       - 0.99988017 x 0.99967770 = 0.99955791  
ML0781!UTM 14       - 0.99988017 x 0.99965248 = 0.99953269  
ML0781  
ML0781\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TML3469855776(NAD 83)  
ML0781  
ML0781                                SUPERSEDED SURVEY CONTROL  
ML0781  
ML0781 NAD 83(2007)- 41 09 02.46161(N) 099 46 41.63114(W) AD(2002.00) 0  
ML0781 ELLIP H (02/10/07) 764.070 (m) GP(2002.00)  
ML0781 ELLIP H (09/24/01) 764.046 (m) GP( ) 4 1  
ML0781 NAD 83(1995)- 41 09 02.46131(N) 099 46 41.63061(W) AD( ) B  
ML0781 ELLIP H (06/25/96) 764.106 (m) GP( ) 1 1  
ML0781 NAD 83(1986)- 41 09 02.46779(N) 099 46 41.63418(W) AD( ) 1  
ML0781 NAVD 88                787.10 (m) 2582.3 (f) LEVELING 3  
ML0781 NGVD 29 (??/??/92) 786.822 (m) 2581.43 (f) ADJ UNCH 2 0  
ML0781 NGVD 29 (02/23/90) 787. (m) RAPSU86 model used GPS OBS  
ML0781  
ML0781.Superseded values are not recommended for survey control.  
ML0781  
ML0781.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
ML0781.See file dsdata.pdf to determine how the superseded data were derived.  
ML0781  
ML0781\_MARKER: DB = BENCH MARK DISK  
ML0781\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

ML0781\_STAMPING: G 321 1950

ML0781\_MARK LOGO: CGS

ML0781\_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT

ML0781\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

ML0781+STABILITY: SURFACE MOTION

ML0781\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

ML0781+SATELLITE: SATELLITE OBSERVATIONS - May 22, 1995

ML0781

ML0781 HISTORY	- Date	Condition	Report By
ML0781 HISTORY	- 1950	MONUMENTED	CGS
ML0781 HISTORY	- 1983	GOOD	LOCSUR
ML0781 HISTORY	- 1985	GOOD	LOCSUR
ML0781 HISTORY	- 19890518	GOOD	NGS
ML0781 HISTORY	- 19950522	GOOD	NGS

ML0781

ML0781 STATION DESCRIPTION

ML0781

ML0781'DESCRIBED BY COAST AND GEODETIC SURVEY 1950

ML0781'1 MI NW FROM OCONTO.

ML0781'1.0 MILE NORTHWEST ALONG STATE HIGHWAY 40 FROM THE UNION PACIFIC  
ML0781'RAILROAD STATION AT OCONTO, 500 FEET NORTHWEST OF A SMALL BRIDGE,  
ML0781'39 FEET NORTHEAST OF THE CENTER LINE OF THE HIGHWAY, 43 FEET  
ML0781'SOUTHWEST OF THE SOUTHWEST RAIL OF THE UNION PACIFIC RAILROAD,  
ML0781'13.6 FEET NORTH OF A TELEPHONE POLE, 5.4 FEET NORTHEAST OF A  
ML0781'FENCE, 2 FEET SOUTHEAST OF A WITNESS POST, SET IN THE TOP OF A  
ML0781'CONCRETE POST WHICH PROJECTS 0.3 FOOT ABOVE THE GROUND.

ML0781

ML0781 STATION RECOVERY (1983)

ML0781

ML0781'RECOVERY NOTE BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1983

ML0781'RECOVERED IN GOOD CONDITION.

ML0781

ML0781 STATION RECOVERY (1985)

ML0781

ML0781'RECOVERY NOTE BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1985

ML0781'NOTE: WITNESS POST PLACED AT MARK.

ML0781

ML0781 STATION RECOVERY (1989)

ML0781

ML0781'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989

ML0781'THE STATION IS LOCATED ABOUT 40.0 KM (24.85 MI) NORTH OF LEXINGTON, 34  
ML0781'KM (21.15 MI) SOUTH-SOUTHWEST OF BROKEN BOW, 1.6 KM (1.00 MI) WEST OF  
ML0781'OCONTO, ON THE RIGHT-OF-WAY OF STATE HIGHWAY 40. OWNERSHIP--NE DEPT  
ML0781'OF ROADS.

ML0781'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAYS 40 AND 21 ON  
ML0781'THE SOUTH EDGE OF OCONTO, GO NORTHWEST ON STATE HIGHWAY 40 FOR 2.2 KM  
ML0781'(1.35 MI) TO THE STATION ON THE RIGHT, ABOUT 0.10 KM (0.05 MI)  
ML0781'SOUTHEAST OF A GRAVEL ROAD LEADING NORTH.

ML0781'THE STATION MARK IS SET 17.0 M (55.8 FT) NORTHEAST OF THE HIGHWAY  
ML0781'CENTERLINE, 0.61 M (2.0 FT) SOUTHEAST OF A 4 X 4 INCH POST, 0.15 M  
ML0781'(0.5 FT) WEST OF A CARSONITE WITNESS POST, ABOUT 0.9 M (3.0 FT) HIGHER  
ML0781'THAN THE HIGHWAY AND PROJECTS 3 CM ABOVE THE SURFACE.

ML0781'DESCRIBED BY R.D.BALL.

ML0781

ML0781 STATION RECOVERY (1995)

ML0781

ML0781'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)

ML0781'THE MARK IS LOCATED ABOUT 21.0 MI (33.8 KM) SOUTH-SOUTHWEST OF BROKEN  
ML0781'BOW, 1.0 MI (1.6 KM) WEST OF OCONTO, ON THE RIGHT-OF-WAY OF STATE  
ML0781'HIGHWAY 40 AND IN THE SW1/4, SEC30, T14N, R21W. TO REACH THE MARK  
ML0781'FROM THE JUNCTION OF STATE HIGHWAYS 21 AND 40 AT THE SOUTHEAST SIDE OF  
ML0781'OCONTO, GO NORTHWEST ON HIGHWAY 40 FOR 1.4 MI (2.3 KM) TO THE MARK ON  
ML0781'THE RIGHT, JUST BEFORE REACHING A SIDE ROAD ON THE RIGHT, WHICH LEADS  
ML0781'NORTH. THE DISK IS SET INTO THE TOP OF A ROUND CONCRETE MONUMENT THAT  
ML0781'PROJECTS ABOUT 0.1 FT (3.0 CM) ABOVE THE GROUND. IT IS 362.5 FT  
ML0781'(110.5 M) SOUTHEAST OF THE CENTERLINE OF THE ROAD LEADING NORTH, 168.1  
ML0781'FT (51.2 M) NORTHWEST OF A BURIED CABLE JUNCTION BOX AND SUPPORT POLE,  
ML0781'56.0 FT (17.1 M) NORTH OF THE CENTERLINE OF THE HIGHWAY, 2.5 FT (0.8  
ML0781'M) WEST OF A CARSONITE WITNESS POST, 2.0 FT (0.6 M) SOUTHEAST OF A  
ML0781'WOODEN WITNESS POST AND IS ABOUT 3.0 FT (0.9 M) HIGHER THAN THE  
ML0781'HIGHWAY. REBAR WAS DRIVEN ALONG THE SOUTH SIDE OF THE MARK.

\*\*\* retrieval complete.

Elapsed Time = 00:00:02

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

ML0648 \*\*\*\*\*

ML0648 CBN - This is a Cooperative Base Network Control Station.

ML0648 DESIGNATION - H 16

ML0648 PID - ML0648

ML0648 STATE/COUNTY- NE/CUSTER

ML0648 COUNTRY - US

ML0648 USGS QUAD - MASON CITY SW (2017)

ML0648

ML0648 \*CURRENT SURVEY CONTROL

ML0648

ML0648\* NAD 83(2011) POSITION- 41 02 56.12263(N) 099 23 45.27861(W) ADJUSTED

ML0648\* NAD 83(2011) ELLIP HT- 655.336 (meters) (06/27/12) ADJUSTED

ML0648\* NAD 83(2011) EPOCH - 2010.00

ML0648\* NAVD 88 ORTHO HEIGHT - 679.013 (meters) 2227.73 (feet) ADJUSTED

ML0648

ML0648 GEOID HEIGHT - -23.665 (meters) GEOID18

ML0648 NAD 83(2011) X - -786,486.716 (meters) COMP

ML0648 NAD 83(2011) Y - -4,752,886.324 (meters) COMP

ML0648 NAD 83(2011) Z - 4,166,952.458 (meters) COMP

ML0648 LAPLACE CORR - -1.75 (seconds) DEFLEC18

ML0648 DYNAMIC HEIGHT - 678.640 (meters) 2226.50 (feet) COMP

ML0648 MODELED GRAVITY - 980,052.3 (mgal) NAVD 88

ML0648

ML0648 VERT ORDER - FIRST CLASS II

ML0648

ML0648 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

ML0648 Standards:

ML0648 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

ML0648 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

ML0648 -----

ML0648 NETWORK 0.49 1.33 0.23 0.15 0.68 -0.03142239

ML0648 -----

ML0648 [Click here for local accuracies and other accuracy information.](#)

ML0648

ML0648

ML0648. The horizontal coordinates were established by GPS observations

ML0648. and adjusted by the National Geodetic Survey in June 2012.

ML0648

ML0648. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

ML0648. been affixed to the stable North American tectonic plate. See

ML0648. NA2011 for more information.

ML0648

ML0648. The horizontal coordinates are valid at the epoch date displayed above

ML0648. which is a decimal equivalence of Year/Month/Day.

ML0648

ML0648. The orthometric height was determined by differential leveling and



ML0648\_PROJECTION: RECESSED 21 CENTIMETERS  
ML0648\_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT  
ML0648\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
ML0648+STABILITY: SURFACE MOTION  
ML0648\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
ML0648+SATELLITE: SATELLITE OBSERVATIONS - September 17, 2018

ML0648

ML0648 HISTORY	- Date	Condition	Report By
ML0648 HISTORY	- 1933	MONUMENTED	CGS
ML0648 HISTORY	- 1968	GOOD	CGS
ML0648 HISTORY	- 19950605	GOOD	NGS
ML0648 HISTORY	- 20100407	GOOD	NEGS
ML0648 HISTORY	- 20170113	GOOD	NEGS
ML0648 HISTORY	- 20180917	GOOD	NEGS

ML0648

ML0648 STATION DESCRIPTION

ML0648

ML0648'DESCRIBED BY COAST AND GEODETIC SURVEY 1968

ML0648'17.8 MI S FROM ANSLEY.

ML0648'TO REACH FROM THE JUNCTION OF U.S. HIGHWAY 183 AND STATE  
ML0648'HIGHWAY 40 AT MILLER, GO SOUTH ON U.S. HIGHWAY 183 FOR 9.05  
ML0648'MILE TO A SIDE ROAD ON THE LEFT. TURN LEFT AND GO NORTHWEST  
ML0648'ON OLD U.S. HIGHWAY 183 FOR 0.9 MILE TO THE MARK ON THE LEFT  
ML0648'ABOUT 275 FEET WEST OF THE BRIDGE OVER LITTLE CAT CREEK.

ML0648'A METAL WITNESS POST WAS SET 1 FOOT WEST OF THE MARK AND THE MARK  
ML0648'IS ABOUT 3 INCHES BELOW THE SURFACE OF THE GROUND. NOTE-- U.S.  
ML0648'HIGHWAY 183 HAS BEEN CHANGED BUT ALL OLD TIES REMAIN THE SAME.

ML0648

ML0648 STATION RECOVERY (1995)

ML0648

ML0648'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)

ML0648'THE MARK IS LOCATED ABOUT 8.5 MI (13.7 KM) NORTH OF MILLER, 0.9 MI  
ML0648'(1.4 KM) WEST OF U.S. HIGHWAY 183, JUST NORTH OF THE BUFFALO-CUSTER  
ML0648'COUNTY LINE, ON THE SOUTH RIGHT-OF-WAY OF A GRAVELED COUNTY ROAD AND  
ML0648'IN THE SW1/4, SEC33, T13N, R18W. TO REACH THE MARK FROM THE JUNCTION  
ML0648'OF U.S. HIGHWAY 183 AND STATE HIGHWAY 40 AT MILLER, GO NORTH ON  
ML0648'HIGHWAY 183 FOR 8.3 MI (13.4 KM) TO A SIDE ROAD ON THE LEFT, ABOUT  
ML0648'0.25 MI (0.40 KM) NORTH OF THE SOUTH LOUP RIVER AND AT THE  
ML0648'CUSTER-BUFFALO COUNTY LINE. TURN LEFT AND GO WEST AND NORTHWEST ON A  
ML0648'GRAVELED ROAD FOR 0.9 MI (1.4 KM) TO THE MARK ON THE LEFT, JUST AFTER  
ML0648'CROSSING A SMALL BRIDGE OVER THE LITTLE CAT CREEK. THE DISK IS SET  
ML0648'INTO THE TOP OF A SQUARE CONCRETE MONUMENT THAT IS RECESSED ABOUT 0.7  
ML0648'FT (21.3 CM) BELOW THE GROUND SURFACE. IT IS 309.0 FT (94.2 M) WEST  
ML0648'OF THE CENTER OF THE BRIDGE OVER THE CREEK, 164.5 FT (50.1 M) WEST OF  
ML0648'THE CENTERLINE OF A FIELD ENTRANCE, 36.5 FT (11.1 M) SOUTH OF THE  
ML0648'CENTERLINE OF THE ROAD, 2.5 FT (0.8 M) WEST-NORTHWEST OF A FIBERGLASS  
ML0648'WITNESS POST, 1.50 FT (0.46 M) NORTH OF THE SOUTH RIGHT-OF-WAY FENCE,  
ML0648'1.1 FT (0.3 M) EAST OF A METAL WITNESS POST AND ABOUT 2 FT (0.6 M)  
ML0648'LOWER THAN THE ROAD. REBAR WAS DRIVEN ALONG THE EAST SIDE OF THE  
ML0648'MARK.

ML0648

ML0648 STATION RECOVERY (2010)

ML0648

ML0648'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2010 (JPC)



ML0648'RECOVERED IN GOOD CONDITION.

ML0648

ML0648 STATION RECOVERY (2017)

ML0648

ML0648'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2017 (PS)

ML0648'RECOVERED IN GOOD CONDITION

ML0648

ML0648 STATION RECOVERY (2018)

ML0648

ML0648'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2018 (MH)

ML0648'RECOVERED IN GOOD CONDITION.

\*\*\* retrieval complete.

Elapsed Time = 00:00:02

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

NO0533 \*\*\*\*\*

NO0533 FBN - This is a Federal Base Network Control Station.

NO0533 DESIGNATION - J 432

NO0533 PID - NO0533

NO0533 STATE/COUNTY- NE/CHERRY

NO0533 COUNTRY - US

NO0533 USGS QUAD - HUDSON LAKE (2017)

NO0533

NO0533 \*CURRENT SURVEY CONTROL

NO0533

NO0533\* NAD 83(2011) POSITION- 42 39 08.08757(N) 100 38 06.81944(W) ADJUSTED

NO0533\* NAD 83(2011) ELLIP HT- 873.543 (meters) (06/27/12) ADJUSTED

NO0533\* NAD 83(2011) EPOCH - 2010.00

NO0533\* NAVD 88 ORTHO HEIGHT - 895.019 (meters) 2936.41 (feet) ADJUSTED

NO0533

NO0533 GEOID HEIGHT - -21.490 (meters) GEOID18

NO0533 NAD 83(2011) X - -867,200.597 (meters) COMP

NO0533 NAD 83(2011) Y - -4,618,139.977 (meters) COMP

NO0533 NAD 83(2011) Z - 4,299,760.405 (meters) COMP

NO0533 LAPLACE CORR - -3.64 (seconds) DEFLEC18

NO0533 DYNAMIC HEIGHT - 894.618 (meters) 2935.09 (feet) COMP

NO0533 MODELED GRAVITY - 980,142.7 (mgal) NAVD 88

NO0533

NO0533 VERT ORDER - FIRST CLASS II

NO0533

NO0533 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

NO0533 Standards:

NO0533 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

NO0533 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

NO0533 -----

NO0533 NETWORK 0.32 0.84 0.14 0.12 0.43 -0.03335401

NO0533 -----

NO0533 [Click here for local accuracies and other accuracy information.](#)

NO0533

NO0533

NO0533.The horizontal coordinates were established by GPS observations

NO0533.and adjusted by the National Geodetic Survey in June 2012.

NO0533

NO0533.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

NO0533.been affixed to the stable North American tectonic plate. See

NO0533.NA2011 for more information.

NO0533

NO0533.The horizontal coordinates are valid at the epoch date displayed above

NO0533.which is a decimal equivalence of Year/Month/Day.

NO0533

NO0533.The orthometric height was determined by differential leveling and



NO0533\_PROJECTION: RECESSED 3 CENTIMETERS  
NO0533\_MAGNETIC: N = NO MAGNETIC MATERIAL  
NO0533\_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD  
NO0533+STABILITY: POSITION/ELEVATION WELL  
NO0533\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
NO0533+SATELLITE: SATELLITE OBSERVATIONS - May 10, 2000  
NO0533\_ROD/PIPE-DEPTH: 17.5 meters  
NO0533\_SLEEVE-DEPTH : 7.9 meters

NO0533  
NO0533 HISTORY - Date Condition Report By  
NO0533 HISTORY - 1991 MONUMENTED NGS  
NO0533 HISTORY - 19950524 GOOD NGS  
NO0533 HISTORY - 19960730 GOOD NGS  
NO0533 HISTORY - 20000510 GOOD NGS

NO0533  
NO0533 STATION DESCRIPTION

NO0533  
NO0533'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991  
NO0533'27.0 KM (16.75 MI) SOUTHERLY ALONG U.S. HIGHWAY 83 FROM THE JUNCTION  
NO0533'OF U.S. HIGHWAY 20 IN VALENTINE, THENCE 8.1 KM (5.05 MI) WESTERLY  
NO0533'ALONG STATE HIGHWAY SPUR 16B, 63.6 M (208.7 FT) WEST OF THE CENTER OF  
NO0533'A FIELD ENTRANCE, 32.5 M (106.6 FT) WEST-SOUTHWEST OF A UTILITY POLE,  
NO0533'29.0 M (95.1 FT) EAST-SOUTHEAST OF A UTILITY POLE, 13.3 M (43.6 FT)  
NO0533'NORTH OF AND LEVEL WITH THE HIGHWAY CENTERLINE, AND 0.9 M (3.0 FT)  
NO0533'SOUTH OF A WITNESS POST AND FENCE. NOTE--ACCESS TO THE DATUM POINT  
NO0533'IS THROUGH A 5-INCH LOGO CAP.

NO0533  
NO0533 STATION RECOVERY (1995)

NO0533  
NO0533'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)  
NO0533'THE MARK IS LOCATED ABOUT 16.0 MI (25.7 KM) SOUTH-SOUTHWEST OF  
NO0533'VALENTINE, 6.0 MI (9.7 KM) NORTH OF THE VALENTINE NATIONAL WILDLIFE  
NO0533'REFUGE, 5.0 MI (8.0 KM) WEST OF U.S. HIGHWAY 83, ON THE NORTH  
NO0533'RIGHT-OF-WAY OF STATE ROAD 16B SPUR AND NEAR THE NORTHWEST CORNER OF  
NO0533'SEC20, T31N, R28W. TO REACH THE MARK FROM THE SOUTH JUNCTION OF U.S.  
NO0533'HIGHWAYS 20 AND 83, ABOUT 5.0 MI (8.0 KM) SOUTHEAST OF VALENTINE, GO  
NO0533'SOUTH ON HIGHWAY 83 FOR 11.55 MI (18.59 KM) TO STATE ROAD 16B SPUR ON  
NO0533'THE RIGHT. TURN RIGHT AND GO WEST ON STATE ROAD 16B SPUR FOR 5.1 MI  
NO0533'(8.2 KM) TO THE MARK ON THE RIGHT, ABOUT 300 FT (91.4 M) EAST OF WHERE  
NO0533'A POWERLINE CROSSES OVER THE ROAD AT THE CREST OF A HILL. THE MARK IS  
NO0533'A DEEP SLEEVED, STAINLESS STEEL ROD SET WITHIN A 5-INCH PVC PIPE WITH  
NO0533'A LOGO CAP THAT IS RECESSED ABOUT 0.1 FT (3.0 CM) BELOW THE GROUND  
NO0533'SURFACE. IT IS 208.5 FT (63.6 M) WEST OF THE CENTERLINE OF A PASTURE  
NO0533'ENTRANCE ON THE NORTH SIDE OF THE ROAD, 69.0 FT (21.0 M) EAST OF THE  
NO0533'EXTENSION OF A FENCE LEADING SOUTH ON THE SOUTH SIDE OF THE ROAD,  
NO0533'106.5 FT (32.5 M) WEST-SOUTHWEST OF A UTILITY POLE, 95.1 FT (29.0 M)  
NO0533'EAST-SOUTHEAST OF A UTILITY POLE, 43.0 FT (13.1 M) NORTH OF THE  
NO0533'CENTERLINE OF THE ROAD, 3.0 FT (0.9 M) SOUTH OF A WITNESS POST AND THE  
NO0533'NORTH RIGHT-OF WAY FENCE AND IT IS ABOUT LEVEL WITH THE ROAD.

NO0533  
NO0533 STATION RECOVERY (1996)

NO0533  
NO0533'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1996 (DFC)  
NO0533'RECOVERED AS DESCRIBED.

NO0533

NO0533

STATION RECOVERY (2000)

NO0533

NO0533'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (JAO)

NO0533'RECOVERED AS DESCRIBED.

\*\*\* retrieval complete.

Elapsed Time = 00:00:02

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

NO0020 \*\*\*\*\*

NO0020 CBN - This is a Cooperative Base Network Control Station.

NO0020 DESIGNATION - L 227

NO0020 PID - NO0020

NO0020 STATE/COUNTY- NE/CHERRY

NO0020 COUNTRY - US

NO0020 USGS QUAD - WOOD LAKE (2017)

NO0020

NO0020 \*CURRENT SURVEY CONTROL

NO0020

NO0020\* NAD 83(2011) POSITION- 42 37 59.10485(N) 100 13 29.59743(W) ADJUSTED

NO0020\* NAD 83(2011) ELLIP HT- 795.210 (meters) (06/27/12) ADJUSTED

NO0020\* NAD 83(2011) EPOCH - 2010.00

NO0020\* NAVD 88 ORTHO HEIGHT - 817.260 (meters) 2681.29 (feet) ADJUSTED

NO0020

NO0020 GEOID HEIGHT - -22.056 (meters) GEOID18

NO0020 NAD 83(2011) X - -834,350.336 (meters) COMP

NO0020 NAD 83(2011) Y - -4,625,594.737 (meters) COMP

NO0020 NAD 83(2011) Z - 4,298,141.344 (meters) COMP

NO0020 LAPLACE CORR - -4.75 (seconds) DEFLEC18

NO0020 DYNAMIC HEIGHT - 816.919 (meters) 2680.18 (feet) COMP

NO0020 MODELED GRAVITY - 980,176.5 (mgal) NAVD 88

NO0020

NO0020 VERT ORDER - FIRST CLASS II

NO0020

NO0020 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

NO0020 Standards:

NO0020 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

NO0020 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

NO0020 -----

NO0020 NETWORK 0.64 1.72 0.30 0.20 0.88 0.00261682

NO0020 -----

NO0020 Click here for local accuracies and other accuracy information.

NO0020

NO0020

NO0020.The horizontal coordinates were established by GPS observations

NO0020.and adjusted by the National Geodetic Survey in June 2012.

NO0020

NO0020.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

NO0020.been affixed to the stable North American tectonic plate. See

NO0020.NA2011 for more information.

NO0020

NO0020.The horizontal coordinates are valid at the epoch date displayed above

NO0020.which is a decimal equivalence of Year/Month/Day.

NO0020

NO0020.The orthometric height was determined by differential leveling and

NO0020.adjusted by the NATIONAL GEODETIC SURVEY  
NO0020.in June 1991.  
NO0020  
NO0020.Significant digits in the geoid height do not necessarily reflect accuracy.  
NO0020.GEOID18 height accuracy estimate available here.  
NO0020  
NO0020.Click photographs - Photos may exist for this station.  
NO0020  
NO0020.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
NO0020  
NO0020.The Laplace correction was computed from DEFLEC18 derived deflections.  
NO0020  
NO0020.The ellipsoidal height was determined by GPS observations  
NO0020.and is referenced to NAD 83.  
NO0020  
NO0020.The dynamic height is computed by dividing the NAVD 88  
NO0020.geopotential number by the normal gravity value computed on the  
NO0020.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
NO0020.degrees latitude (g = 980.6199 gals.).  
NO0020  
NO0020.The modeled gravity was interpolated from observed gravity values.  
NO0020  
NO0020. The following values were computed from the NAD 83(2011) position.  
NO0020  
NO0020;  
NO0020;          North    East    Units Scale Factor Converg.  
NO0020;SPC NE    - 310,888.060 481,556.407 MT 0.99985250 -0 08 56.5  
NO0020;SPC NE    - 1,019,971.91 1,579,906.31 sFT 0.99985250 -0 08 56.5  
NO0020;UTM 14    - 4,720,797.943 399,568.735 MT 0.99972409 -0 49 46.9  
NO0020  
NO0020!          - Elev Factor x Scale Factor = Combined Factor  
NO0020!SPC NE    - 0.99987530 x 0.99985250 = 0.99972782  
NO0020!UTM 14    - 0.99987530 x 0.99972409 = 0.99959943  
NO0020  
NO0020\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TLN9956820797(NAD 83)  
NO0020  
NO0020                          SUPERSEDED SURVEY CONTROL  
NO0020  
NO0020 NAD 83(2007)- 42 37 59.10472(N) 100 13 29.59859(W) AD(2002.00) 0  
NO0020 ELLIP H (02/10/07) 795.238 (m) GP(2002.00)  
NO0020 ELLIP H (09/24/01) 795.209 (m) GP( ) 4 1  
NO0020 NAD 83(1995)- 42 37 59.10435(N) 100 13 29.59842(W) AD( ) B  
NO0020 ELLIP H (06/25/96) 795.267 (m) GP( ) 1 1  
NO0020 NAVD 88 817.26 (m) 2681.3 (f) LEVELING 3  
NO0020 NGVD 29 (??/??/92) 816.969 (m) 2680.34 (f) ADJ UNCH 1 2  
NO0020  
NO0020.Superseded values are not recommended for survey control.  
NO0020  
NO0020.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
NO0020.See file dsdata.pdf to determine how the superseded data were derived.  
NO0020  
NO0020\_MARKER: DB = BENCH MARK DISK  
NO0020\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
NO0020\_STAMPING: L 227 1946  
NO0020\_MARK LOGO: CGS

NO0020\_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT  
NO0020\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
NO0020+STABILITY: SURFACE MOTION  
NO0020\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
NO0020+SATELLITE: SATELLITE OBSERVATIONS - April 06, 1995

NO0020  
NO0020 HISTORY - Date Condition Report By  
NO0020 HISTORY - 1946 MONUMENTED CGS  
NO0020 HISTORY - 1975 GOOD NGS  
NO0020 HISTORY - 19950406 GOOD NGS

NO0020  
NO0020 STATION DESCRIPTION

NO0020'DESCRIBED BY COAST AND GEODETIC SURVEY 1946  
NO0020'0.3 MI S FROM WOOD LAKE.  
NO0020'0.3 MILE SOUTH ALONG A GRAVEL STREET FROM THE POST OFFICE AT  
NO0020'WOOD LAKE, CHERRY COUNTY, THENCE 0.7 MILE EAST ALONG U.S. HIGHWAY  
NO0020'20, 1 POLE WEST OF CHICAGO AND NORTH WESTERN RAILWAY MILEPOST  
NO0020'243, AT THE JUNCTION OF A DIRT ROAD LEADING NORTH, 76 FEET  
NO0020'NORTH OF THE CENTERLINE OF THE HIGHWAY, 56 FEET SOUTH OF THE  
NO0020'CENTERLINE OF THE C. AND N.W. RY. TRACK, 22 FEET EAST OF THE  
NO0020'CENTERLINE OF THE DIRT ROAD, 1 FOOT EAST OF A WHITE WOODEN WITNESS  
NO0020'POST, AND 3 FEET LOWER THAN THE HIGHWAY. A STANDARD DISK,  
NO0020'STAMPED L 227 1946 AND SET IN THE TOP OF A CONCRETE POST PROJECTING  
NO0020'4 INCHES ABOVE GROUND.

NO0020  
NO0020 STATION RECOVERY (1975)

NO0020  
NO0020'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1975  
NO0020'RECOVERED IN GOOD CONDITION.

NO0020  
NO0020 STATION RECOVERY (1995)

NO0020  
NO0020'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)  
NO0020'TO REACH THE MARK FROM THE WOOD LAKE POST OFFICE, GO SOUTH FOR 0.3 MI  
NO0020'(0.5 KM) TO U.S. HIGHWAY 20. TURN LEFT AND GO SOUTHEAST ON THE  
NO0020'HIGHWAY FOR 0.65 MI (1.05 KM) TO AN ENTRANCE ROAD INTO A PASTURE, A  
NO0020'WINDMILL AND THE MARK ON THE LEFT, ON THE NORTHEAST RIGHT-OF-WAY OF  
NO0020'THE HIGHWAY, ADJACENT TO AN ABANDONED RAILROAD GRADE, NOW OWNED BY THE  
NO0020'NEBRASKA GAMES AND PARKS COMMISSION, ABOUT 350 FT (106.7 M)  
NO0020'SOUTH-SOUTHEAST FROM THE WINDMILL, IN THE NE1/4, SEC27, T31N, R25W.  
NO0020'THE DISK IS SET INTO THE TOP OF A SQUARE CONCRETE MONUMENT THAT IS  
NO0020'FLUSH WITH THE GROUND. IT IS 73.5 FT (22.4 M) NORTHEAST FROM THE  
NO0020'CENTERLINE OF THE HIGHWAY, 155.6 FT (47.4 M) SOUTH FROM THE WEST  
NO0020'GATEPOST OF A WIRE GATE INTO THE PASTURE, 27.5 FT (8.4 M) SOUTHEAST  
NO0020'FROM THE CENTERLINE OF THE ENTRANCE ROAD, 1.5 FT (0.5 M) EAST OF A  
NO0020'FIBERGLASS WITNESS POST AND 1.0 FT (0.3 M) WEST FROM A METAL WITNESS  
NO0020'POST. A LENGTH OF REBAR WAS DRIVEN ALONG THE WEST SIDE OF THE MARK.

\*\*\* retrieval complete.

Elapsed Time = 00:00:01



DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

AI2510 \*\*\*\*\*

AI2510 DESIGNATION - MRRN B

AI2510 PID - AI2510

AI2510 STATE/COUNTY- NE/CHERRY

AI2510 COUNTRY - US

AI2510 USGS QUAD - MERRIMAN (2017)

AI2510

AI2510 \*CURRENT SURVEY CONTROL

AI2510

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AI2510\* NAD 83(2011) POSITION- 42 54 16.55504(N) 101 42 02.72240(W) ADJUSTED

AI2510\* NAD 83(2011) ELLIP HT- 975.092 (meters) (06/27/12) ADJUSTED

AI2510\* NAD 83(2011) EPOCH - 2010.00

AI2510\* NAVD 88 ORTHO HEIGHT - 994.423 (meters) 3262.54 (feet) ADJUSTED

AI2510

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AI2510 GEOID HEIGHT - -19.322 (meters) GEOID18

AI2510 NAD 83(2011) X - -949,082.543 (meters) COMP

AI2510 NAD 83(2011) Y - -4,582,641.659 (meters) COMP

AI2510 NAD 83(2011) Z - 4,320,408.454 (meters) COMP

AI2510 LAPLACE CORR - -3.41 (seconds) DEFLEC18

AI2510 DYNAMIC HEIGHT - 993.986 (meters) 3261.10 (feet) COMP

AI2510 MODELED GRAVITY - 980,147.2 (mgal) NAVD 88

AI2510

AI2510 VERT ORDER - FIRST CLASS II

AI2510

AI2510 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

AI2510 Standards:

AI2510 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

AI2510 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

AI2510 -----

AI2510 NETWORK 0.21 0.43 0.09 0.08 0.22 0.05872223

AI2510 -----

AI2510 [Click here for local accuracies and other accuracy information.](#)

AI2510

AI2510

AI2510.This is a reference station for the MERRIMAN

AI2510.National Continuously Operating Reference Station (MRRN).

AI2510

AI2510.The horizontal coordinates were established by GPS observations

AI2510.and adjusted by the National Geodetic Survey in June 2012.

AI2510

AI2510.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

AI2510.been affixed to the stable North American tectonic plate. See

AI2510.NA2011 for more information.

AI2510

AI2510.The horizontal coordinates are valid at the epoch date displayed above

AI2510.which is a decimal equivalence of Year/Month/Day.

AI2510

AI2510.The orthometric height was determined by differential leveling and

AI2510.adjusted by the NATIONAL GEODETIC SURVEY

AI2510.in July 2002.

AI2510

AI2510.No vertical observational check was made to the station.

AI2510

AI2510.Significant digits in the geoid height do not necessarily reflect accuracy.

AI2510.GEOID18 height accuracy estimate available here.

AI2510

AI2510.Click photographs - Photos may exist for this station.

AI2510

AI2510.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AI2510

AI2510.The Laplace correction was computed from DEFLEC18 derived deflections.

AI2510

AI2510.The ellipsoidal height was determined by GPS observations

AI2510.and is referenced to NAD 83.

AI2510

AI2510.The dynamic height is computed by dividing the NAVD 88

AI2510.geopotential number by the normal gravity value computed on the

AI2510.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AI2510.degrees latitude ( $g = 980.6199$  gals.).

AI2510

AI2510.The modeled gravity was interpolated from observed gravity values.

AI2510

AI2510. The following values were computed from the NAD 83(2011) position.

AI2510

AI2510;	North	East	Units	Scale Factor	Converg.
AI2510;SPC NE	- 342,389.188	361,119.170	MT	0.99995763	-1 07 37.5
AI2510;SPC NE	- 1,123,321.86	1,184,771.81	sFT	0.99995763	-1 07 37.5
AI2510;UTM 14	- 4,753,759.699	279,519.446	MT	1.00019807	-1 50 21.7

AI2510

AI2510! - Elev Factor x Scale Factor = Combined Factor

AI2510!SPC NE - 0.99984710 x 0.99995763 = 0.99980474

AI2510!UTM 14 - 0.99984710 x 1.00019807 = 1.00004514

AI2510

AI2510\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TKN7951953759(NAD 83)

AI2510

AI2510	PID	Reference Object	Distance	Geod. Az
AI2510			dddmmss.s	
AI2510	AH8657	MERRIMAN CORS ARP	356.756 METERS	09542

AI2510

SUPERSEDED SURVEY CONTROL

AI2510

AI2510 NAD 83(2007)- 42 54 16.55489(N) 101 42 02.72352(W) AD(2002.00) 0

AI2510 ELLIP H (02/10/07) 975.123 (m) GP(2002.00)

AI2510 ELLIP H (09/24/01) 975.110 (m) GP( ) 4 2

AI2510 NAD 83(1995)- 42 54 16.55483(N) 101 42 02.72358(W) AD( ) B

AI2510 ELLIP H (05/18/00) 975.109 (m) GP( ) 3 2

AI2510 NAVD 88 994.42 (m) 3262.5 (f) LEVELING 3

AI2510

AI2510.Superseded values are not recommended for survey control.

AI2510

AI2510.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AI2510.See file dsdata.pdf to determine how the superseded data were derived.

AI2510

AI2510\_MARKER: F = FLANGE-ENCASED ROD

AI2510\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)

AI2510\_STAMPING: MRRN B 1999

AI2510\_MARK LOGO: NGS

AI2510\_PROJECTION: FLUSH

AI2510\_MAGNETIC: I = MARKER IS A STEEL ROD

AI2510\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

AI2510\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AI2510+SATELLITE: SATELLITE OBSERVATIONS - 1999

AI2510\_ROD/PIPE-DEPTH: 19.5 meters

AI2510\_SLEEVE-DEPTH : 0.9 meters

AI2510

AI2510 HISTORY - Date Condition Report By

AI2510 HISTORY - 1999 MONUMENTED NGS

AI2510

AI2510 STATION DESCRIPTION

AI2510

AI2510'DESCRIBED BY NATIONAL GEODETIC SURVEY 1999 (GAS)

AI2510'1.7 KM (1.05 MI) SOUTHERLY ALONG STATE HIGHWAY 61 FROM THE POST OFFICE

AI2510'IN MERRIMAN, 28.9 M (94.8 FT) SOUTH OF THE CENTER OF A DRIVEWAY

AI2510'LEADING EAST TO THE MORELAND RANCH, 15.2 M (49.9 FT) EAST OF THE

AI2510'HIGHWAY CENTERLINE, 1.2 M (3.9 FT) ABOVE THE LEVEL OF THE HIGHWAY, AND

AI2510'0.4 M (1.3 FT) WEST OF A WITNESS POST AND FENCE. NOTE--ACCESS TO THE

AI2510'DATUM POINT IS THROUGH A 5-INCH LOGO CAP. THE SLEEVE DEPTH DOES NOT

AI2510'MEET THE SPECIFICATIONS FOR A CLASS A MARK. THE MONUMENT IS ON

AI2510'HIGHWAY RIGHT-OF-WAY.

\*\*\* retrieval complete.

Elapsed Time = 00:00:02

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

ML0963 \*\*\*\*\*

ML0963 CBN - This is a Cooperative Base Network Control Station.

ML0963 DESIGNATION - V 319

ML0963 PID - ML0963

ML0963 STATE/COUNTY- NE/CUSTER

ML0963 COUNTRY - US

ML0963 USGS QUAD - ANSELMO NE (2017)

ML0963

ML0963 \*CURRENT SURVEY CONTROL

ML0963

ML0963\* NAD 83(2011) POSITION- 41 38 37.88258(N) 099 51 52.99926(W) ADJUSTED

ML0963\* NAD 83(2011) ELLIP HT- 785.001 (meters) (06/27/12) ADJUSTED

ML0963\* NAD 83(2011) EPOCH - 2010.00

ML0963\* NAVD 88 ORTHO HEIGHT - 807.356 (meters) 2648.80 (feet) ADJUSTED

ML0963

ML0963 GEOID HEIGHT - -22.372 (meters) GEOID18

ML0963 NAD 83(2011) X - -817,887.323 (meters) COMP

ML0963 NAD 83(2011) Y - -4,703,379.697 (meters) COMP

ML0963 NAD 83(2011) Z - 4,216,646.947 (meters) COMP

ML0963 LAPLACE CORR - -2.35 (seconds) DEFLEC18

ML0963 DYNAMIC HEIGHT - 806.942 (meters) 2647.44 (feet) COMP

ML0963 MODELED GRAVITY - 980,082.9 (mgal) NAVD 88

ML0963

ML0963 VERT ORDER - SECOND CLASS 0

ML0963

ML0963 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

ML0963 Standards:

ML0963 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

ML0963 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

ML0963 -----

ML0963 NETWORK 0.46 1.27 0.22 0.14 0.65 -0.01250921

ML0963 -----

ML0963 [Click here for local accuracies and other accuracy information.](#)

ML0963

ML0963

ML0963. The horizontal coordinates were established by GPS observations

ML0963. and adjusted by the National Geodetic Survey in June 2012.

ML0963

ML0963. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

ML0963. been affixed to the stable North American tectonic plate. See

ML0963. NA2011 for more information.

ML0963

ML0963. The horizontal coordinates are valid at the epoch date displayed above

ML0963. which is a decimal equivalence of Year/Month/Day.

ML0963

ML0963. The orthometric height was determined by differential leveling and

ML0963.adjusted by the NATIONAL GEODETIC SURVEY

ML0963.in June 1991.

ML0963

ML0963.Significant digits in the geoid height do not necessarily reflect accuracy.

ML0963.GEOID18 height accuracy estimate available here.

ML0963

ML0963.Click photographs - Photos may exist for this station.

ML0963

ML0963.The X, Y, and Z were computed from the position and the ellipsoidal ht.

ML0963

ML0963.The Laplace correction was computed from DEFLEC18 derived deflections.

ML0963

ML0963.The ellipsoidal height was determined by GPS observations

ML0963.and is referenced to NAD 83.

ML0963

ML0963.The dynamic height is computed by dividing the NAVD 88

ML0963.geopotential number by the normal gravity value computed on the

ML0963.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

ML0963.degrees latitude ( $g = 980.6199$  gals.).

ML0963

ML0963.The modeled gravity was interpolated from observed gravity values.

ML0963

ML0963. The following values were computed from the NAD 83(2011) position.

ML0963

ML0963;                    North      East    Units Scale Factor Converg.

ML0963;SPC NE       - 201,022.823 511,266.342 MT 0.99966148 +0 05 22.7

ML0963;SPC NE       - 659,522.38 1,677,379.66 sFT 0.99966148 +0 05 22.7

ML0963;UTM 14       - 4,610,596.338 427,987.523 MT 0.99966381 -0 34 28.7

ML0963

ML0963!               - Elev Factor x Scale Factor = Combined Factor

ML0963!SPC NE       - 0.99987689 x 0.99966148 = 0.99953841

ML0963!UTM 14       - 0.99987689 x 0.99966381 = 0.99954074

ML0963

ML0963\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TMM2798710596(NAD 83)

ML0963

ML0963    SUPERSEDED SURVEY CONTROL

ML0963

ML0963 NAD 83(2007)- 41 38 37.88251(N) 099 51 52.99990(W) AD(2002.00) 0

ML0963 ELLIP H (02/10/07) 785.028 (m) GP(2002.00)

ML0963 ELLIP H (09/24/01) 785.006 (m) GP( ) 4 1

ML0963 NAD 83(1995)- 41 38 37.88225(N) 099 51 52.99957(W) AD( ) B

ML0963 ELLIP H (06/25/96) 785.041 (m) GP( ) 1 1

ML0963 NAVD 88                    807.36 (m)                    2648.8 (f) LEVELING 3

ML0963 NGVD 29 (??/??/92) 807.074 (m)                    2647.88 (f) ADJ UNCH 2 0

ML0963

ML0963.Superseded values are not recommended for survey control.

ML0963

ML0963.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

ML0963.See file dsdata.pdf to determine how the superseded data were derived.

ML0963

ML0963\_MARKER: DB = BENCH MARK DISK

ML0963\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

ML0963\_STAMPING: V 319 1950

ML0963\_MARK LOGO: CGS

ML0963\_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT  
ML0963\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
ML0963+STABILITY: SURFACE MOTION  
ML0963\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
ML0963+SATELLITE: SATELLITE OBSERVATIONS - May 24, 1995

ML0963

ML0963 HISTORY	- Date	Condition	Report By
ML0963 HISTORY	- 1950	MONUMENTED	CGS
ML0963 HISTORY	- 19950524	GOOD	NGS

ML0963

ML0963 STATION DESCRIPTION

ML0963

ML0963'DESCRIBED BY COAST AND GEODETIC SURVEY 1950

ML0963'1.8 MI N FROM ANSELMO.

ML0963'1.8 MILES NORTH ALONG A GRAVELED ROAD FROM THE CHICAGO, BURLINGTON  
ML0963'AND QUINCY RAILROAD STATION AT ANSELMO, AT A JUNCTION WITH A  
ML0963'DIRT ROAD LEADING EAST, 105 FEET EAST OF THE CENTER LINE OF THE  
ML0963'GRAVELED ROAD, 69 FEET EAST OF A FENCE CORNER, 18 FEET SOUTH OF  
ML0963'THE CENTER LINE OF THE DIRT ROAD LEADING EAST, 1.3 FEET NORTH  
ML0963'OF A FENCE, 1.3 FEET WEST OF A WITNESS POST, SET IN THE TOP  
ML0963'OF A CONCRETE POST WHICH PROJECTS 0.3 FOOT ABOVE THE GROUND.

ML0963

ML0963 STATION RECOVERY (1995)

ML0963

ML0963'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)

ML0963'THE MARK IS LOCATED ABOUT 1.75 MI (2.82 KM) NORTH OF ANSELMO, 1.25 MI  
ML0963'(2.01 KM) NORTHEAST OF STATE HIGHWAY 2, ON COUNTY ROAD RIGHT-OF-WAY  
ML0963'AND IN THE SW1/4, SEC4, T19N, R22W. TO REACH THE MARK FROM THE  
ML0963'JUNCTION OF STATE HIGHWAY 2 AND STATE ROAD 21A SPUR AT ANSELMO, GO  
ML0963'EAST ON ROAD 21A SPUR FOR 0.05 MI (0.08 KM), CROSSING A RAILROAD  
ML0963'TRACK, TO A PAVED STREET ON THE LEFT. TURN LEFT AND GO NORTH ON THE  
ML0963'PAVED STREET FOR 0.25 MI (0.40 KM) TO THE END OF PAVEMENT. CONTINUE  
ML0963'NORTH ON A GRAVELED COUNTY ROAD FOR 1.50 MI (2.41 KM) TO A SIDE ROAD  
ML0963'ON THE RIGHT AND THE MARK IN THE SOUTHEAST ANGLE OF THE INTERSECTION.  
ML0963'THE DISK IS SET INTO THE TOP OF A ROUND CONCRETE MONUMENT THAT IS  
ML0963'RECESSED ABOUT 1.1 FT (0.3 M) BELOW THE GROUND SURFACE. IT IS 98.5 FT  
ML0963'(30.0 M) EAST OF THE CENTERLINE OF THE NORTH-SOUTH ROAD, 76.5 FT (23.3  
ML0963'M) EAST-NORTHEAST OF A BURIED CABLE MARKER POST, 84.6 FT (25.8 M) WEST  
ML0963'OF A UTILITY POLE, 24.0 FT (7.3 M) SOUTH OF THE CENTERLINE OF THE ROAD  
ML0963'LEADING EAST, 1.3 FT (0.4 M) NORTH OF A WITNESS POST SET IN AN  
ML0963'EAST-WEST FENCE AND ABOUT 2.0 FT (0.6 M) LOWER THAN THE ROAD. REBAR  
ML0963'WAS DRIVEN ALONG THE NORTH SIDE OF THE MARK.

\*\*\* retrieval complete.

Elapsed Time = 00:00:01

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

NO0282 \*\*\*\*\*

NO0282 CBN - This is a Cooperative Base Network Control Station.

NO0282 DESIGNATION - Y 28

NO0282 PID - NO0282

NO0282 STATE/COUNTY- NE/CHERRY

NO0282 COUNTRY - US

NO0282 USGS QUAD - STEVERSON LAKE (2017)

NO0282

NO0282 \*CURRENT SURVEY CONTROL

NO0282

NO0282\* NAD 83(2011) POSITION- 42 26 31.45383(N) 101 43 44.70701(W) ADJUSTED

NO0282\* NAD 83(2011) ELLIP HT- 1077.886 (meters) (06/27/12) ADJUSTED

NO0282\* NAD 83(2011) EPOCH - 2010.00

NO0282\* NAVD 88 ORTHO HEIGHT - 1096.895 (meters) 3598.73 (feet) ADJUSTED

NO0282

NO0282 GEOID HEIGHT - -19.006 (meters) GEOID18

NO0282 NAD 83(2011) X - -958,444.448 (meters) COMP

NO0282 NAD 83(2011) Y - -4,616,350.711 (meters) COMP

NO0282 NAD 83(2011) Z - 4,282,695.596 (meters) COMP

NO0282 LAPLACE CORR - -4.51 (seconds) DEFLEC18

NO0282 DYNAMIC HEIGHT - 1096.347 (meters) 3596.93 (feet) COMP

NO0282 MODELED GRAVITY - 980,083.8 (mgal) NAVD 88

NO0282

NO0282 VERT ORDER - SECOND CLASS 0

NO0282

NO0282 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

NO0282 Standards:

NO0282 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

NO0282 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

NO0282 -----

NO0282 NETWORK 0.52 1.33 0.24 0.17 0.68 -0.22140464

NO0282 -----

NO0282 [Click here for local accuracies and other accuracy information.](#)

NO0282

NO0282

NO0282. The horizontal coordinates were established by GPS observations

NO0282. and adjusted by the National Geodetic Survey in June 2012.

NO0282

NO0282. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

NO0282. been affixed to the stable North American tectonic plate. See

NO0282. NA2011 for more information.

NO0282

NO0282. The horizontal coordinates are valid at the epoch date displayed above

NO0282. which is a decimal equivalence of Year/Month/Day.

NO0282

NO0282. The orthometric height was determined by differential leveling and

NO0282.adjusted by the NATIONAL GEODETIC SURVEY  
 NO0282.in June 1991.  
 NO0282  
 NO0282.Significant digits in the geoid height do not necessarily reflect accuracy.  
 NO0282.GEOID18 height accuracy estimate available here.  
 NO0282  
 NO0282.Click photographs - Photos may exist for this station.  
 NO0282  
 NO0282.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
 NO0282  
 NO0282.The Laplace correction was computed from DEFLEC18 derived deflections.  
 NO0282  
 NO0282.The ellipsoidal height was determined by GPS observations  
 NO0282.and is referenced to NAD 83.  
 NO0282  
 NO0282.The dynamic height is computed by dividing the NAVD 88  
 NO0282.geopotential number by the normal gravity value computed on the  
 NO0282.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
 NO0282.degrees latitude (g = 980.6199 gals.).  
 NO0282  
 NO0282.The modeled gravity was interpolated from observed gravity values.  
 NO0282  
 NO0282. The following values were computed from the NAD 83(2011) position.  
 NO0282  
 NO0282;  

	North	East	Units	Scale	Factor	Converg.
NO0282;SPC NE	- 291,071.484	357,778.816	MT	0.99979221	-1 08	45.1
NO0282;SPC NE	- 954,957.03	1,173,812.67	sFT	0.99979221	-1 08	45.1
NO0282;UTM 14	- 4,702,469.533	275,547.032	MT	1.00021989	-1 50	32.9

  
 NO0282!  

- Elev Factor x Scale Factor = Combined Factor
NO0282!SPC NE - 0.99983098 x 0.99979221 = 0.99962322
NO0282!UTM 14 - 0.99983098 x 1.00021989 = 1.00005083

  
 NO0282  
 NO0282\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TKN7554702469(NAD 83)  
 NO0282  
 NO0282  
 NO0282 SUPERSEDED SURVEY CONTROL  
 NO0282  
 NO0282 NAD 83(2007)- 42 26 31.45369(N) 101 43 44.70808(W) AD(2002.00) 0  
 NO0282 ELLIP H (02/10/07) 1077.914 (m) GP(2002.00)  
 NO0282 ELLIP H (09/24/01) 1077.896 (m) GP( ) 4 1  
 NO0282 NAD 83(1995)- 42 26 31.45302(N) 101 43 44.70824(W) AD( ) B  
 NO0282 ELLIP H (06/25/96) 1077.953 (m) GP( ) 1 1  
 NO0282 NAVD 88 1096.90 (m) 3598.7 (f) LEVELING 3  
 NO0282 NGVD 29 (??/??/92) 1096.451 (m) 3597.27 (f) ADJ UNCH 2 0  
 NO0282  
 NO0282.Superseded values are not recommended for survey control.  
 NO0282  
 NO0282.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 NO0282.See file dsdata.pdf to determine how the superseded data were derived.  
 NO0282  
 NO0282\_MARKER: DB = BENCH MARK DISK  
 NO0282\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 NO0282\_STAMPING: Y 28 1934  
 NO0282\_MARK LOGO: CGS



NO0282\_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT  
NO0282\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
NO0282+STABILITY: SURFACE MOTION  
NO0282\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
NO0282+SATELLITE: SATELLITE OBSERVATIONS - January 28, 2020

NO0282

NO0282 HISTORY	- Date	Condition	Report By
NO0282 HISTORY	- 1934	MONUMENTED	CGS
NO0282 HISTORY	- 1948	GOOD	CGS
NO0282 HISTORY	- 19950518	GOOD	NGS
NO0282 HISTORY	- 20130812	GOOD	INDIV
NO0282 HISTORY	- 20160912	GOOD	NEGS
NO0282 HISTORY	- 20200128	GOOD	NEGS

NO0282

NO0282 STATION DESCRIPTION

NO0282

NO0282'DESCRIBED BY COAST AND GEODETIC SURVEY 1948

NO0282'36.7 MI N FROM HYANNIS.

NO0282'IN CHERRY COUNTY, 36.7 MILES NORTH ALONG STATE HIGHWAY 61 FROM  
NO0282'HYANNIS, GRANT COUNTY, 0.6 MILE FROM THE OLD MULLIGAN RANCH  
NO0282'HOUSE, IN THE CORNER AT THE INTERSECTION OF A NORTH-AND-SOUTH  
NO0282'FENCE AND AN EAST-AND-WEST SECTION-LINE FENCE, AND 30 YARDS EAST  
NO0282'OF A DRAINAGE DITCH. A STANDARD DISK, STAMPED Y 28 1934 AND SET  
NO0282'IN THE TOP OF A CONCRETE POST. 30.8 MILES (AIR LINE) NORTH OF  
NO0282'HYANNIS 1.6 MILES WEST AND SOUTHWEST ALONG RANCH ROAD FROM COLE  
NO0282'RANCH HOUSE, 0.6 MILE NORTH OF JIM DOWNING RANCH HOUSE, 0.25  
NO0282'MILES EAST OF SOUTH CORNER SECS. 35 AND 36, T. 29 N., R. 38 W.,  
NO0282'0.15 MILE WEST OF NORTH CORNER SECS. 2 AND 3, T. 28 N., R. 38 W.,  
NO0282'0.3 MILES NORTHEAST OF WINDMILL, 100 FEET EAST OF DRAINAGE  
NO0282'DITCH, 73 FEET WEST OF AUTO GATE, 3 FEET NORTHEAST OF T-FENCE N.

NO0282

NO0282 STATION RECOVERY (1995)

NO0282

NO0282'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)

NO0282'THE MARK IS LOCATED ABOUT 35.0 MI (56.3 KM) SOUTH OF MERRIMAN, 31.0 MI  
NO0282'(49.9 KM) NORTH OF HYANNIS, 0.25 MI (0.40 KM) EAST OF A SMALL CHURCH,  
NO0282'500 FT (152.4 M) NORTHWEST OF STATE HIGHWAY 61, AT THE SOUTHWEST  
NO0282'CORNER OF A PASTURE, IN THE SW1/4, SEC36, T29N, R38W AND ON PROPERTY  
NO0282'OWNED BY MR. AND MRS. ROBERT H. COLE WHO RESIDE ABOUT 1.0 MI (1.6 KM)  
NO0282'NORTH OF THE MARK. TELEPHONE 308-282-2457, GORDON EXCHANGE. TO REACH  
NO0282'THE MARK FROM THE JUNCTION OF STATE HIGHWAYS 2 AND 61 AT HYANNIS, GO  
NO0282'NORTH ON HIGHWAY 61 FOR 25.0 MI (40.2 KM) TO A SIDE ROAD ON THE LEFT,  
NO0282'IN SURVEY VALLEY. CONTINUE NORTHERLY ON THE HIGHWAY FOR 4.35 MI (7.00  
NO0282'KM) TO A SIDE ROAD ON THE RIGHT. CONTINUE NORTHERLY ON THE HIGHWAY  
NO0282'FOR 2.7 MI (4.3 KM) TO A SIDE ROAD ON THE LEFT, A SIGN FOR FAWNS LAKE  
NO0282'RANCH, THE CHURCH ABOUT 0.25 MI (0.40 KM) WEST ALONG THE ROAD AND THE  
NO0282'MARK ABOUT 0.1 MI (0.2 KM) TO THE NORTH. PERMISSION WAS NOT OBTAINED  
NO0282'TO CROSS PRIVATE PROPERTY AT THIS POINT, THEREFORE, CONTINUE NORTHEAST  
NO0282'ON THE HIGHWAY FOR 0.5 MI (0.8 KM) TO FIELD GATES ON EITHER SIDE OF  
NO0282'THE HIGHWAY, 0.15 MILE (0.24 KM) SOUTHWEST OF HIGHWAY MILEPOST 191.  
NO0282'TURN LEFT AND GO NORTHWEST FOR 0.05 MI (0.08 KM) TO A GATE. PASS  
NO0282'THROUGH THE GATE, TURN LEFT, AND GO SOUTHWEST ACROSS A MEADOW, TOWARDS  
NO0282'THE EAST END OF A LINE OF TREES, AND PARALLELING THE HIGHWAY, FOR 0.4  
NO0282'MI (0.6 KM) TO A FENCE CORNER AND THE MARK. THE DISK IS SET INTO THE

NO0282'TOP OF A SQUARE CONCRETE MONUMENT THAT PROJECTS ABOUT 0.1 FT (3.0 CM)  
NO0282'ABOVE THE GROUND. IT IS 83.5 FT (25.5 M) EAST OF THE EAST BANK OF A  
NO0282'SMALL CANAL, 13.7 FT (4.2 M) SOUTH OF A BURIED CABLE MARKER POST, 2.2  
NO0282'FT (0.7 M) NORTHEAST OF A FENCE CORNER POST, 2.0 FT (0.6 M) NORTH OF A  
NO0282'METAL WITNESS POST AND A FENCE LEADING EAST AND 1.6 FT (0.5 M) EAST OF  
NO0282'A FIBERGLASS WITNESS POST AND A FENCE LEADING NORTH. REBAR WAS SET AT  
NO0282'THE EAST SIDE OF THE MARK.

NO0282

STATION RECOVERY (2013)

NO0282

NO0282'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2013 (LLB)

NO0282'FOUND GOOD CONDITION

NO0282

STATION RECOVERY (2016)

NO0282

NO0282'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2016 (LB)

NO0282'FOUND GOOD

NO0282

STATION RECOVERY (2020)

NO0282

NO0282'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2020 (PS)

NO0282'TO REACH FROM THE WEST JUNCTION OF N-2 AND N-61 IN HYANNIS, GO NORTH

NO0282'ON N-61 APPROXIMATELY 32.0 MI (51.5 KM) TO A SIDE ROAD TO THE LEFT

NO0282'(FAWN LAKE RD). TURN LEFT (NORTHWEST) ON FAWN LAKE ROAD, TAKE RIGHT

NO0282'FORK AND CROSS OVER A CATTLE GUARD. CONTINUE NORTHEAST, THEN NORTH

NO0282'APPROXIMATELY 450 FT (137.2 M) ON A TRAIL. TURN RIGHT (EAST) AND

NO0282'CROSS OVER A SMALL CREEK/DITCH. TURN LEFT (NORTH) AND PROCEED

NO0282'APPROXIMATELY 160 FT (48.8 M) TO THE BENCH MARK LOCATED AT A FENCE

NO0282'CORNER.

\*\*\* retrieval complete.

Elapsed Time = 00:00:01

DATASHEETS Data Sheet Retrieval  
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.11

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = FEBRUARY 15, 2021

NO0544 \*\*\*\*\*

NO0544 CBN - This is a Cooperative Base Network Control Station.

NO0544 DESIGNATION - Y 431

NO0544 PID - NO0544

NO0544 STATE/COUNTY- NE/CHERRY

NO0544 COUNTRY - US

NO0544 USGS QUAD - SQUARE LAKE (2017)

NO0544

NO0544 \*CURRENT SURVEY CONTROL

NO0544

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NO0544\* NAD 83(2011) POSITION- 42 28 40.82153(N) 100 53 41.10295(W) ADJUSTED

NO0544\* NAD 83(2011) ELLIP HT- 915.508 (meters) (06/27/12) ADJUSTED

NO0544\* NAD 83(2011) EPOCH - 2010.00

NO0544\* NAVD 88 ORTHO HEIGHT - 936.249 (meters) 3071.68 (feet) ADJUSTED

NO0544

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NO0544 GEOID HEIGHT - -20.746 (meters) GEOID18

NO0544 NAD 83(2011) X - -890,590.400 (meters) COMP

NO0544 NAD 83(2011) Y - -4,627,053.296 (meters) COMP

NO0544 NAD 83(2011) Z - 4,285,531.378 (meters) COMP

NO0544 LAPLACE CORR - -5.02 (seconds) DEFLEC18

NO0544 DYNAMIC HEIGHT - 935.815 (meters) 3070.25 (feet) COMP

NO0544 MODELED GRAVITY - 980,126.2 (mgal) NAVD 88

NO0544

NO0544 VERT ORDER - FIRST CLASS II

NO0544

NO0544 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

NO0544 Standards:

NO0544 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

NO0544 Horiz Ellip SD\_N SD\_E SD\_h (unitless)

NO0544 -----

NO0544 NETWORK 0.54 1.55 0.26 0.16 0.79 -0.02957432

NO0544 -----

NO0544 [Click here for local accuracies and other accuracy information.](#)

NO0544

NO0544

NO0544. The horizontal coordinates were established by GPS observations

NO0544. and adjusted by the National Geodetic Survey in June 2012.

NO0544

NO0544. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

NO0544. been affixed to the stable North American tectonic plate. See

NO0544. NA2011 for more information.

NO0544

NO0544. The horizontal coordinates are valid at the epoch date displayed above

NO0544. which is a decimal equivalence of Year/Month/Day.

NO0544

NO0544. The orthometric height was determined by differential leveling and

NO0544.adjusted by the NATIONAL GEODETIC SURVEY

NO0544.in June 1994.

NO0544

NO0544.Significant digits in the geoid height do not necessarily reflect accuracy.

NO0544.GEOID18 height accuracy estimate available here.

NO0544

NO0544.Click photographs - Photos may exist for this station.

NO0544

NO0544.The X, Y, and Z were computed from the position and the ellipsoidal ht.

NO0544

NO0544.The Laplace correction was computed from DEFLEC18 derived deflections.

NO0544

NO0544.The ellipsoidal height was determined by GPS observations

NO0544.and is referenced to NAD 83.

NO0544

NO0544.The dynamic height is computed by dividing the NAVD 88

NO0544.geopotential number by the normal gravity value computed on the

NO0544.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

NO0544.degrees latitude ( $g = 980.6199$  gals.).

NO0544

NO0544.The modeled gravity was interpolated from observed gravity values.

NO0544

NO0544. The following values were computed from the NAD 83(2011) position.

NO0544

NO0544;

	North	East	Units	Scale Factor	Converg.
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NO0544;SPC NE	- 294,020.902	426,442.426	MT	0.99980269	-0 35 34.6
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NO0544;SPC NE	- 964,633.58	1,399,086.53	sFT	0.99980269	-0 35 34.6
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NO0544;UTM 14	- 4,704,590.255	344,258.555	MT	0.99989843	-1 16 47.3
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NO0544

NO0544! - Elev Factor x Scale Factor = Combined Factor

NO0544!SPC NE - 0.99985644 x 0.99980269 = 0.99965916

NO0544!UTM 14 - 0.99985644 x 0.99989843 = 0.99975488

NO0544

NO0544\_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TLN4425804590(NAD 83)

NO0544

NO0544 SUPERSEDED SURVEY CONTROL

NO0544

NO0544 NAD 83(2007)- 42 28 40.82139(N) 100 53 41.10401(W) AD(2002.00) 0

NO0544 ELLIP H (02/10/07) 915.535 (m) GP(2002.00)

NO0544 ELLIP H (09/24/01) 915.511 (m) GP( ) 4 1

NO0544 NAD 83(1995)- 42 28 40.82099(N) 100 53 41.10386(W) AD( ) B

NO0544 ELLIP H (06/25/96) 915.558 (m) GP( ) 1 1

NO0544 NAVD 88 936.25 (m) 3071.7 (f) LEVELING 3

NO0544 NGVD 29 (02/14/92) 935.955 (m) 3070.71 (f) ADJUSTED 1 2

NO0544

NO0544.Superseded values are not recommended for survey control.

NO0544

NO0544.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

NO0544.See file dsdata.pdf to determine how the superseded data were derived.

NO0544

NO0544\_MARKER: F = FLANGE-ENCASED ROD

NO0544\_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)

NO0544\_STAMPING: Y 431 1991

NO0544\_MARK LOGO: NGS

NO0544\_PROJECTION: RECESSED 3 CENTIMETERS  
NO0544\_MAGNETIC: N = NO MAGNETIC MATERIAL  
NO0544\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
NO0544\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
NO0544+SATELLITE: SATELLITE OBSERVATIONS - July 08, 2020  
NO0544\_ROD/PIPE-DEPTH: 11.9 meters

NO0544  
NO0544 HISTORY - Date Condition Report By  
NO0544 HISTORY - 1991 MONUMENTED NGS  
NO0544 HISTORY - 19950407 GOOD NGS  
NO0544 HISTORY - 20200708 GOOD NEGS

NO0544  
NO0544 STATION DESCRIPTION

NO0544  
NO0544'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991  
NO0544'58.7 KM (36.45 MI) NORTHERLY ALONG STATE HIGHWAY 97 FROM THE JUNCTION  
NO0544'OF STATE HIGHWAY 2 IN MULLEN, 16.6 M (54.5 FT) WEST OF AND LEVEL WITH  
NO0544'THE HIGHWAY CENTERLINE, 12.2 M (40.0 FT) SOUTH OF THE CENTER OF A  
NO0544'CATTLE GUARD AND DIRT ROAD, AND 0.3 M (1.0 FT) EAST OF A WITNESS POST  
NO0544'AND FENCE. NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO  
NO0544'CAP.

NO0544  
NO0544 STATION RECOVERY (1995)

NO0544  
NO0544'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JAO)  
NO0544'THE MARK IS LOCATED ABOUT 38.75 MI (62.36 KM) SOUTHWEST OF VALENTINE,  
NO0544'36.5 MI (58.7 KM) NORTH OF MULLEN, ON THE WEST RIGHT-OF-WAY OF STATE  
NO0544'HIGHWAY 97 AND IN THE NE1/4, SEC24, T29N, R31W. TO REACH THE MARK  
NO0544'FROM THE JUNCTION OF STATE HIGHWAYS 2 AND 97 AT MULLEN, GO NORTH ON  
NO0544'HIGHWAY 97 FOR 58.7 KM (36.45 MI) TO THE MARK ON THE LEFT, AT A RANCH  
NO0544'ENTRANCE AND ON THE WEST RIGHT-OF-WAY OF THE HIGHWAY. THE MARK IS A  
NO0544'STAINLESS STEEL ROD SET WITHIN A PVC PIPE WITH A LOGO CAP THAT IS  
NO0544'FLUSH WITH THE GROUND. IT IS 16.6 M (54.5 FT) WEST FROM THE  
NO0544'CENTERLINE OF THE HIGHWAY, 12.2 M (40.0 FT) SOUTH FROM THE CENTER OF A  
NO0544'CATTLE GUARD AND THE CENTERLINE OF THE RANCH ROAD AND 0.3 M (1.0 FT)  
NO0544'EAST FROM A WITNESS POST AND THE WEST RIGHT-OF-WAY FENCE. ACCESS TO  
NO0544'THE MARK IS THROUGH THE LOGO CAP.

NO0544  
NO0544 STATION RECOVERY (2020)

NO0544  
NO0544'RECOVERY NOTE BY NEBRASKA GEODETIC SURVEY 2020 (BO)  
NO0544'TO REACH FROM THE JUNCTION OF U.S. HIGHWAY 20 AND NE. HIGHWAY 97 IN  
NO0544'VALENTINE, NE., GO SOUTHWEST ON NE. HIGHWAY 97 FOR 37.50 MI (60.34 KM)  
NO0544'TO THE BENCH MARK ON THE RIGHT (WEST) SIDE OF THE HIGHWAY.  
NO0544'  
NO0544'THE MARK IS 40.0 FT (12.2 M) SOUTH FROM THE CENTERLINE OF A PRIVATE  
NO0544'DRIVE WEST, 1.0 FT (0.3 M) EAST FROM ORANGE FIBERGLASS WITNESS POST  
NO0544'AND 54.5 FT (16.6 M) WEST OF THE CENTERLINE OF NE. HIGHWAY 97.

\*\*\* retrieval complete.  
Elapsed Time = 00:00:02