WOOLPERT

Mesa County CO QL2 Lidar

USGS/NGTOC/Mesa County Colorado

10/10/2016

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Section 1: Survey Report

Introduction

Report Date:	7/5/2016
Project Name:	MESA COUNTY COLORADO QL2 LiDAR
Client Information:	USGS / NGTOC
Contract Number:	G10PC00057
Requisition/Reference Number:	G15PD00937
Date of Contract:	9/11/2015
Delivery Date:	10/31/2016
Prepared By:	David Kuxhausen, PLS
Woolpert Project Number:	75927

This report contains a comprehensive outline of the LiDAR Ground Control Survey that supported the Mesa County Colorado QL2 LiDAR. All surveys were performed in such a way as to achieve ground control accuracies that meet or exceed the National Mapping Accuracy Standards.

Project Area

The project area consists of approximately 3341 square miles encompassing Mesa County Colorado.

Purpose

The purpose of this survey was to establish three-dimensional coordinates for 70 ground control points (GCPs) and 329 quality control (QC) points spread over 2 land cover classifications Vegetated Vertical Accuracies (VVA) and Non-Vegetated Vertical Accuracies (NVA).
The QC points were collected uniformly dispersed over the project area in the appropriate land cover categories to verify fundamental, supplemental, and consolidated vertical accuracies throughout the task order AOI.

Date of Survey

Ground control field operations took place between the dates of June 6th and June 29th 2016.

Monumentation

Prior to aerial imagery acquisition, Woolpert field crews performed a field reconnaissance to verify the existence and suitability of pre-selected existing National Geodetic Survey (NGS) control stations. These existing bench marks were utilized as checks to ensure that quality x, y, and z coordinate values were computed for each of the newly established photogrammetric control stations. Recovery information sheets for the existing NGS control stations can be found in Section 5 of this report. A control diagram showing the ground control stations used to support this LiDAR mapping project can be found in Section 6 of this report.

Accuracy Standards

The data collected under this task order shall meet the National Standard for spatial Database Accuracy (NSSDA) standards. The NSSDA standards specify that vertical accuracy be reported at the 95 percent confidence level for data tested by an independent source of higher accuracy.
The Fundamental Vertical Accuracy (FVA): 19.6 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSEZ of 10.0 cm in the "open terrain" land cover category.

The Supplemental Vertical Accuracy (SVA): The SVA will be reported for each of the land cover classes within the task order AOI. The target SVA is 29.4 cm at a 95th percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for Lidar Data, i.e., based on the 95th percentile error for each required land cover class.

The Consolidated Vertical Accuracy (CVA): 29.4 cm at a 95th percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for Lidar Data, i.e., based on the 95th percentile error in all land cover categories combined.

Automated and manual filtering for lidar products shall use the following minimum performance for artifact/feature removal from the bare earth model: The bare earth surface model shall have a minimum of 95% of surface canopy artifacts, including buildings, vegetation, bridges or overpass structures removed.

GPS Equipment

Woolpert utilized 2 Trimble Navigation R8 Model 4 GNSS dual-frequency GPS receivers, 2 Trimble Navigation Model R10 GNSS dual-frequency GPS receivers, and 2 TSC3 data collectors for this project.

Methodology

Real-Time Kinematic (RTK) GPS

The field crew utilized Real-Time Kinematic (RTK) GPS surveying throughout most of the ground control data collection process. Using RTK GPS techniques, observations were performed on a total of 70 LiDAR control points and 329 ground control quality check points. The survey was conducted using a 1-second epoch rate, in a fixed solution RTK mode, with each observation lasting between 60 to 180 seconds. Each station was occupied twice to insure the necessary horizontal and vertical accuracies were being met for this photogrammetric project.

VRS Virtual Reference System or RTN Real Time Network.

The "Virtual Reference Station" (VRS) concept is based on having a network (spaced at 50-60kms) of GNSS (GPS or GPS/GLONASS) reference stations permanently connected to the control center via the Internet. The networked stations collectively and precisely, model Ionospheric errors for the individual GNSS rover in the network coverage area. The rover interprets and uses the VRS network-correction data as if it is operating with a single physical base station on a very short baseline which increases the RTK performance. Corrections (vectors) are from the closest base, but because the ionospheric error (which is traditionally baseline dependent) is practically negated, the rover's degradation in accuracy due to baseline length starts when the rover is first initialized, that is, at the work site. Thus accuracies are increased and more consistent throughout the working region

GPS Data Analysis and Processing

The field crew chief processed all session baselines each day using Trimble Navigation's Trimble Business Center (TBC) Version 3.40 baseline processor with the accompanying broadcast ephemeris. Daily processing ensured the integrity of the network as it was constructed, and allowed the field crews to immediately reschedule observations of poor baselines.

Datum Reference and Final Coordinates

The spatial reference system for the Mesa County AOI is UTM 12N and UTM13N, NAD83(HARN) Meter, horizontal and NAVD88 meter vertical using the geoid model of 2012 (GEOID12A). Units for both the horizontal and vertical datums will be expressed in Meters (3) decimal places.

Quality Assurance

Existing NGS published bench marks were surveyed to assure that there were no discrepancies in the field observation data. Close examinations of the residuals showed no distortions in orientation or scale.
The ground control data meets positional accuracies necessary to support 1.0 point per 0.3 meters squared (1' GSD) data at 95% confidence level as outlined in the Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy (NSSDA), published by the Federal Geographic Data Committee (FGDC-STD-007.3-1998).

Section 2: Ground/Geodetic Control Coordinate Listings

Coordinate System: Grid

HORIZONTAL DATUM: NAD83 HARN UTM 12N & 13N
VERTICAL DATUM: NAVD88
GEOID MODEL: GEOID 12A
UNITS: Meters

LiDAR Primary Control and Ground Classification Points UTM 12N Meters

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1001	4340030.977	668271.152	1450.925	PRIMARY CONTROL
1001A	4340028.476	668278.079	1451.280	PRIMARY CONTROL
1002	4359721.534	688283.139	1536.583	PRIMARY CONTROL
1003	4361092.024	743858.700	1550.385	PRIMARY CONTROL
1003A	4361073.709	743861.730	1549.791	PRIMARY CONTROL
1004	4323980.794	757012.044	3304.666	PRIMARY CONTROL
1004A	4324000.616	757015.376	3304.590	PRIMARY CONTROL
1005	4303849.705	733604.565	1630.082	PRIMARY CONTROL
1005A	4303844.561	733608.667	1630.428	PRIMARY CONTROL
1006	4263583.362	683450.244	1439.278	PRIMARY CONTROL
1007	4347544.817	762209.739	1829.262	PRIMARY CONTROL
1008	4362799.653	789065.932	2073.220	PRIMARY CONTROL
1009	4354326.832	782574.346	2262.870	PRIMARY CONTROL
1010	4341596.077	746997.492	1582.268	PRIMARY CONTROL
1010A	4341581.590	747000.851	1582.636	PRIMARY CONTROL
1011	4340270.497	735036.089	1460.565	PRIMARY CONTROL
1012	4333055.280	728290.247	1459.981	PRIMARY CONTROL
1012A	4333038.525	728287.395	1459.130	PRIMARY CONTROL
1013	4332488.214	710807.056	1441.839	PRIMARY CONTROL
1013A	4332498.965	710806.717	1441.766	PRIMARY CONTROL
1015	4283585.150	676236.530	1410.942	PRIMARY CONTROL
1015A	4283583.864	676264.768	1410.393	PRIMARY CONTROL
1016	4302202.499	710681.034	2016.638	PRIMARY CONTROL
1016A	4302184.960	710659.922	2017.250	PRIMARY CONTROL

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1017	4318664.328	721053.372	1422.160	PRIMARY CONTROL
1017A	4318669.316	721061.295	1422.301	PRIMARY CONTROL
1018	4318439.065	684491.976	1980.777	PRIMARY CONTROL
1018A	4318449.733	684504.152	1980.738	PRIMARY CONTROL
1019	4357907.351	800770.162	2866.753	PRIMARY CONTROL
1020	4353431.006	799809.014	2392.816	PRIMARY CONTROL
1021	4340450.828	776726.391	2710.174	PRIMARY CONTROL
1022	4332779.250	762808.614	2955.540	PRIMARY CONTROL
1023	4293352.874	696346.278	2066.629	PRIMARY CONTROL
1023A	4293331.229	696333.473	2066.204	PRIMARY CONTROL
1023B	4293342.673	696338.583	2066.432	PRIMARY CONTROL
1023C	4293330.145	696326.163	2066.290	PRIMARY CONTROL
1024	4272366.097	680709.336	1422.214	PRIMARY CONTROL
1025	4312920.629	668702.691	1938.088	PRIMARY CONTROL
1025A	4312917.606	668713.423	1938.447	PRIMARY CONTROL
1026	4318496.013	695652.741	2105.561	PRIMARY CONTROL
1026A	4318495.479	695666.710	2105.771	PRIMARY CONTROL
1027	4343881.367	678380.571	1453.397	PRIMARY CONTROL
1027A	4343884.859	678390.173	1453.546	PRIMARY CONTROL
1028	4348503.960	688699.220	1446.707	PRIMARY CONTROL
1029	4356456.850	698190.196	1672.834	PRIMARY CONTROL
1029A	4356468.612	698201.644	1673.910	PRIMARY CONTROL
1030	4352398.427	720700.055	1871.458	PRIMARY CONTROL
1030A	4352391.221	720690.492	1871.747	PRIMARY CONTROL
1031	4319528.745	739050.281	2329.513	PRIMARY CONTROL
1032	4328627.312	749393.422	2602.827	PRIMARY CONTROL
1032A	4328624.740	749411.586	2604.132	PRIMARY CONTROL
1033	4350656.751	771781.301	2205.205	PRIMARY CONTROL
1034	4351694.123	778080.343	2201.597	PRIMARY CONTROL
1035	4358878.264	787130.781	2436.554	PRIMARY CONTROL
1036	4350397.858	737277.582	1480.069	PRIMARY CONTROL
1036A	4350403.331	737260.514	1480.056	PRIMARY CONTROL
1037	4358117.252	668176.991	1644.905	PRIMARY CONTROL
1038	4359349.539	673906.857	1516.923	PRIMARY CONTROL
1039	4345373.659	703515.538	1491.545	PRIMARY CONTROL
1040	4360480.330	724981.040	1765.058	PRIMARY CONTROL
1041	4361358.369	751541.222	1756.185	PRIMARY CONTROL
1041A	4361306.141	751549.575	1759.658	PRIMARY CONTROL
1042	4355980.679	797449.039	2320.899	PRIMARY CONTROL

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1043	4359868.152	794474.549	2156.190	PRIMARY CONTROL
1044	4348378.592	787369.222	2491.665	PRIMARY CONTROL
1045	4345277.813	779346.173	2477.333	PRIMARY CONTROL
1046	4308040.918	699821.523	2664.391	PRIMARY CONTROL
1047	4307728.856	679863.408	2467.323	PRIMARY CONTROL
1047A	4307745.458	679857.898	2467.000	PRIMARY CONTROL
1049	4312704.097	725738.165	1475.751	PRIMARY CONTROL
1049A	4312697.504	725744.165	1475.824	PRIMARY CONTROL
1050	4290807.966	669012.261	1376.380	PRIMARY CONTROL
1051	4268383.361	694230.402	1809.609	PRIMARY CONTROL
1051A	4290813.877	669018.022	1376.756	PRIMARY CONTROL
1052	4316369.828	739528.274	1880.885	PRIMARY CONTROL
1053	4296581.034	717756.204	2210.929	PRIMARY CONTROL
1054	4350941.820	713147.110	2190.094	PRIMARY CONTROL
1054A	4350935.810	713159.509	2190.289	PRIMARY CONTROL
1055	4343986.587	716776.780	2097.017	PRIMARY CONTROL
1055A	4343972.093	716784.883	2096.331	PRIMARY CONTROL
1056	4333165.058	746940.507	2044.863	PRIMARY CONTROL
1056A	4333165.119	746957.937	2044.349	PRIMARY CONTROL
1057	4338419.979	753483.779	1888.390	PRIMARY CONTROL
1057A	4338415.287	753468.990	1888.104	PRIMARY CONTROL
1058	4307129.012	695400.576	2658.187	PRIMARY CONTROL
1058A	4307112.279	695402.165	2658.997	PRIMARY CONTROL
1059	4301583.129	687148.091	2772.844	PRIMARY CONTROL
1059A	4301599.510	687146.178	2772.400	PRIMARY CONTROL
1060	4339302.113	793383.010	2741.559	PRIMARY CONTROL
1061	4334488.869	743819.396	2048.278	PRIMARY CONTROL
1062	4341776.133	769591.272	2327.825	PRIMARY CONTROL
1063	4344154.510	772425.317	2323.024	PRIMARY CONTROL
1064	4343921.812	772862.523	2359.830	PRIMARY CONTROL
1065	4320036.955	727308.389	1514.770	PRIMARY CONTROL
1065A	4320026.885	727295.850	1514.849	PRIMARY CONTROL
1066	4344207.198	771236.277	2244.984	PRIMARY CONTROL
1067	4344340.041	771851.290	2275.440	PRIMARY CONTROL
1068	4323251.446	705046.344	1513.122	PRIMARY CONTROL
1068A	4323264.591	705049.366	1512.473	PRIMARY CONTROL
1069	4325261.489	707292.431	1427.782	PRIMARY CONTROL
1069A	4325255.432	707304.207	1427.315	PRIMARY CONTROL
1070	4326819.990	708901.649	1391.863	PRIMARY CONTROL

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1070A	4326821.825	708915.121	1391.676	PRIMARY CONTROL
1071	4326919.500	710342.495	1396.435	PRIMARY CONTROL
1071A	4326919.671	710357.540	1396.436	PRIMARY CONTROL
1072	4326893.440	711570.794	1398.974	PRIMARY CONTROL
1072A	4326888.470	711583.840	1398.743	PRIMARY CONTROL
2001	4264689.305	683832.578	1438.080	NVA
2002	4272950.907	680349.580	1420.189	NVA
2002A	4272370.019	680737.579	1422.177	NVA
2003	4283590.835	676293.735	1408.498	NVA
2004	4292496.761	695363.488	2064.035	NVA
2004A	4293332.210	696330.402	2066.215	NVA
2004B	4293328.192	696335.142	2065.830	NVA
2004C	4292481.185	695350.799	2064.316	NVA
2005	4302201.245	710660.879	2017.051	NVA
2005A	4302194.638	710659.709	2017.149	NVA
2005C	4302478.494	711057.553	1997.602	NVA
2006	4304158.347	733354.093	1607.021	NVA
2006A	4304167.580	733345.080	1606.244	NVA
2007	4312945.985	669807.236	1964.722	NVA
2007A	4312946.582	669799.199	1964.493	NVA
2008	4317804.829	683364.888	1982.830	NVA
2008A	4317815.574	683372.292	1983.020	NVA
2009	4319319.791	695603.858	2093.709	NVA
2009A	4319300.685	695605.225	2093.957	NVA
2010	4340012.854	668299.026	1452.647	NVA
2010A	4340011.949	668314.726	1453.338	NVA
2011	4343840.034	678333.345	1451.479	NVA
2011A	4343826.835	678336.371	1451.388	NVA
2012	4357249.248	668177.136	1598.755	NVA
2012A	4357258.759	668176.517	1599.156	NVA
2013	4357861.215	674204.498	1500.254	NVA
2013A	4357848.886	674209.080	1500.390	NVA
2014	4358076.296	688026.119	1505.000	NVA
2014A	4358081.512	688031.305	1504.841	NVA
2015	4348981.611	688595.569	1454.298	NVA
2015A	4348981.520	688585.883	1454.132	NVA
2016	4336381.587	695807.658	1372.382	NVA
2016A	4336376.211	695799.272	1371.516	NVA
2017	4355910.097	697983.835	1633.582	NVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2017A	4355926.216	697983.541	1634.166	NVA
2018	4345790.251	703681.874	1498.447	NVA
2018A	4345786.011	703690.184	1498.477	NVA
2019	4332494.485	710923.508	1439.085	NVA
2019A	4332486.587	710924.396	1438.969	NVA
2020	4318657.596	721069.680	1422.473	NVA
2020A	4318654.259	721075.273	1422.485	NVA
2021	4319752.537	738746.364	2208.231	NVA
2021A	4319767.335	738738.558	2207.202	NVA
2022	4332026.231	728274.803	1437.566	NVA
2022A	4332031.787	728290.988	1437.584	NVA
2023	4340404.699	735488.164	1473.940	NVA
2024	4350350.042	737239.059	1479.914	NVA
2024A	4350357.067	737228.125	1479.919	NVA
2025	4352342.423	721405.580	1850.188	NVA
2025A	4352347.011	721394.454	1850.094	NVA
2026	4360258.049	724543.401	1775.936	NVA
2027	4360081.922	743193.922	1516.583	NVA
2027A	4360076.319	743177.151	1516.481	NVA
2028	4360495.224	751539.400	1816.746	NVA
2028A	4360482.108	751526.711	1816.674	NVA
2029	4341917.587	746895.704	1577.281	NVA
2029A	4341906.345	746883.359	1577.180	NVA
2029B	4348545.276	747585.539	1844.136	NVA
2029C	4348544.251	747611.491	1846.290	NVA
2030	4328825.821	747252.691	2453.003	NVA
2030A	4328839.498	747257.273	2452.313	NVA
2031	4324093.361	755627.748	3271.316	NVA
2031A	4324093.283	755644.297	3271.472	NVA
2032	4332512.216	763311.968	2991.836	NVA
2032A	4332503.860	763289.324	2988.795	NVA
2033	4348098.307	762783.021	1880.374	NVA
2033A	4348100.382	762805.585	1881.098	NVA
2034	4350719.681	769349.366	2093.907	NVA
2034A	4350736.726	769357.913	2094.082	NVA
2035	4340484.374	776722.720	2710.324	NVA
2035A	4340453.618	776736.617	2710.106	NVA
2036	4345258.679	779385.100	2478.457	NVA
2036A	4345277.324	779383.060	2477.940	NVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2037	4351683.067	778093.269	2201.841	NVA
2037A	4351713.532	778062.445	2201.424	NVA
2038	4354120.600	782407.799	2278.684	NVA
2038A	4354126.918	782424.609	2277.172	NVA
2039	4361997.300	789044.978	2098.883	NVA
2039A	4362015.245	789050.411	2098.116	NVA
2040	4358467.022	786565.541	2421.171	NVA
2040A	4358489.363	786552.194	2420.544	NVA
2041	4349815.280	785439.591	2381.454	NVA
2041A	4349804.950	785448.469	2381.827	NVA
2042	4353422.445	799838.044	2394.268	NVA
2042A	4353434.835	799791.898	2392.214	NVA
2043	4355972.171	797411.288	2320.335	NVA
2043A	4355961.516	797475.269	2318.659	NVA
2044	4359893.684	794475.052	2154.164	NVA
2044A	4359850.989	794490.373	2157.087	NVA
2045	4357908.044	800744.996	2866.762	NVA
2045A	4357895.593	800802.539	2865.656	NVA
2046	4313046.790	675934.264	2082.256	NVA
2046A	4313046.745	675944.890	2082.644	NVA
2047	4317759.103	691674.869	2055.385	NVA
2047A	4317768.673	691683.949	2055.122	NVA
2048	4307037.341	695437.348	2663.585	NVA
2048A	4307048.855	695424.228	2663.288	NVA
2049	4302153.153	686065.777	2765.203	NVA
2049A	4302150.057	686080.693	2765.048	NVA
2050	4307799.381	679839.856	2464.879	NVA
2050A	4307815.388	679833.763	2464.207	NVA
2051	4303167.286	682677.374	2765.658	NVA
2051A	4303170.200	682698.289	2766.391	NVA
2052	4290002.312	671088.816	1382.747	NVA
2052A	4290006.580	671080.632	1382.909	NVA
2053	4332585.659	668615.512	1403.817	NVA
2054	4329001.783	686167.725	2071.806	NVA
2054A	4329004.221	686167.541	2071.669	NVA
2055	4307966.774	716520.408	1821.011	NVA
2055A	4307973.842	716517.111	1820.551	NVA
2056	4351059.600	713362.735	2151.974	NVA
2056A	4351070.457	713361.781	2151.843	NVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2057	4356175.724	707778.235	2202.547	NVA
2057A	4356150.021	707771.547	2204.562	NVA
2058	4344333.607	716382.288	2120.792	NVA
2058A	4344320.848	716393.910	2120.223	NVA
2059	4349003.065	741920.518	1609.972	NVA
2059A	4348987.890	741918.618	1610.453	NVA
2060	4328483.376	751503.437	2843.927	NVA
2060A	4328478.238	751512.497	2845.137	NVA
2061	4316057.498	739648.638	1839.935	NVA
2062	4296158.088	717466.378	2204.845	NVA
2063	4282142.026	706604.888	2527.703	NVA
2064	4276654.694	712124.314	2642.872	NVA
2065	4272167.266	699201.637	2593.716	NVA
2066	4278597.120	688817.703	1976.955	NVA
2067	4338276.048	713387.042	1528.717	NVA
2067A	4338286.359	713392.389	1529.107	NVA
2068	4347030.770	726353.126	1993.315	NVA
2068A	4347043.048	726360.525	1992.557	NVA
2069	4354727.133	747725.351	1727.590	NVA
2069A	4354740.836	747738.288	1728.550	NVA
2070	4337925.832	764742.957	2477.936	NVA
2070A	4337908.810	764758.561	2479.846	NVA
2071	4341788.960	769572.578	2325.715	NVA
2071A	4341761.514	769604.475	2329.014	NVA
2072	4343112.715	766165.604	2069.482	NVA
2072A	4343120.461	766185.948	2067.996	NVA
2073	4346691.304	775281.530	2441.343	NVA
2073A	4346656.792	775283.206	2440.578	NVA
2074	4307549.184	698675.485	2623.829	NVA
2075	4324366.038	711750.966	1415.394	NVA
2075A	4324348.503	711749.096	1415.530	NVA
2076	4323101.860	704837.425	1541.120	NVA
2076A	4323082.960	704841.860	1541.296	NVA
2077	4325927.738	693719.726	2090.239	NVA
2078	4267982.219	693773.325	1781.287	NVA
2079	4338912.994	747168.123	1728.841	NVA
2079A	4338912.404	747154.115	1728.989	NVA
2080	4333440.908	747322.203	2027.762	NVA
2080A	4333427.289	747323.265	2027.580	NVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2081	4330379.911	730957.577	1512.897	NVA
2081A	4330364.021	730956.136	1513.657	NVA
2082	4312633.673	725819.024	1476.406	NVA
2082A	4312629.535	725823.471	1476.539	NVA
2083	4331106.630	720712.011	1457.298	NVA
2083A	4331116.202	720717.998	1457.406	NVA
2084	4353718.798	762543.612	2178.797	NVA
2084A	4353740.192	762539.182	2180.748	NVA
2085	4355934.241	772142.875	2437.287	NVA
2085A	4355956.444	772137.420	2437.429	NVA
2086	4339971.819	793000.755	2749.730	NVA
2086A	4339991.005	792997.505	2749.390	NVA
2087	4344603.742	791764.257	2592.561	NVA
2087A	4344634.392	791763.299	2591.814	NVA
2088	4348208.279	790882.551	2513.840	NVA
2088A	4348179.732	790889.048	2514.237	NVA
2089	4348389.158	787361.853	2491.302	NVA
2089A	4348390.424	787360.621	2491.176	NVA
2090	4342924.799	755152.307	1691.408	NVA
2090A	4342942.192	755160.815	1691.263	NVA
2091	4346783.398	755265.846	1795.893	NVA
2091A	4346793.332	755253.083	1795.830	NVA
2093	4356732.366	737629.582	1541.045	NVA
2093A	4356735.759	737648.932	1541.129	NVA
2094	4353799.841	734980.349	1531.234	NVA
2094A	4353811.024	734974.074	1530.988	NVA
2095	4352480.611	729228.517	1674.922	NVA
2095A	4352474.495	729214.134	1675.026	NVA
2096	4320187.823	728556.175	1535.377	NVA
2096A	4320186.433	728539.332	1535.034	NVA
2097	4317123.818	706955.844	1802.632	NVA
2097A	4317137.189	706953.531	1801.827	NVA
2098	4334406.281	743932.455	2040.236	NVA
2098A	4334412.906	743920.043	2040.291	NVA
2099	4294347.843	685079.570	1899.629	NVA
2099A	4294341.722	685078.724	1899.359	NVA
2099B	4293744.449	684087.083	1831.147	NVA
2100	4338395.055	754268.011	2015.568	NVA
2100A	4338407.948	754272.106	2015.482	NVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3001	4343849.356	678350.310	1451.671	VVA
3001A	4343841.173	678352.590	1450.682	VVA
3002	4348418.070	688692.354	1444.771	VVA
3002A	4348400.006	688692.501	1444.286	VVA
3003	4336874.059	695831.891	1372.967	VVA
3004	4332538.255	710819.575	1440.633	VVA
3005	4331066.776	720690.507	1455.125	VVA
3006	4331952.043	729002.135	1439.671	VVA
3006A	4331974.073	729019.275	1439.943	VVA
3007	4334442.547	744197.677	2024.435	VVA
3007A	4334438.154	744186.103	2025.350	VVA
3008	4357917.945	800736.344	2868.198	VVA
3008A	4357904.224	800802.349	2866.169	VVA
3009	4362778.365	789069.070	2074.160	VVA
3009A	4362804.332	789074.960	2072.595	VVA
3010	4354311.863	782577.329	2262.057	VVA
3010A	4354326.889	782591.412	2262.300	VVA
3011	4344632.794	791758.183	2591.334	VVA
3011A	4344615.489	791756.730	2591.315	VVA
3012	4348389.901	787370.192	2492.231	VVA
3012A	4348377.632	787365.840	2491.515	VVA
3013	4345272.342	779372.640	2477.591	VVA
3013A	4345271.856	779346.879	2477.597	VVA
3014	4346685.023	775270.868	2441.352	VVA
3014A	4346691.942	775302.777	2440.284	VVA
3015	4332774.337	762798.738	2955.202	VVA
3015A	4332761.073	762823.462	2955.473	VVA
3016	4276643.789	712138.110	2642.502	VVA
3017	4268327.909	694165.728	1804.232	VVA
3018	4263615.737	683420.131	1439.480	VVA
3019	4283589.474	676278.470	1409.450	VVA
3019A	4283582.971	676277.374	1409.713	VVA
3020	4303194.589	682715.345	2766.717	VVA
3020A	4303192.676	682698.076	2766.523	VVA
3021	4290019.740	671098.218	1383.549	VVA
3021A	4290023.199	671100.205	1383.609	VVA
3022	4301735.118	687133.089	2771.135	VVA
3022A	4301729.965	687122.968	2771.448	VVA
3024	4282153.640	706622.945	2527.249	VVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3025	4318565.603	720813.857	1417.502	VVA
3025A	4318576.671	720805.436	1417.536	VVA
3026	4313011.742	730451.869	1561.746	VVA
3026A	4313014.667	730439.029	1560.782	VVA
3027	4328528.764	751489.301	2835.536	VVA
3027A	4328533.395	751468.072	2832.915	VVA
3028	4328866.687	747260.514	2450.443	VVA
3028A	4328884.516	747253.268	2448.909	VVA
3029	4319509.502	739026.810	2330.132	VVA
3030	4330364.048	730942.667	1513.546	VVA
3030A	4330346.428	730942.182	1514.286	VVA
3031	4341557.621	746981.102	1583.884	VVA
3031A	4341572.339	746976.615	1583.336	VVA
3032	4353729.023	762552.913	2179.741	VVA
3032A	4353747.893	762550.805	2181.223	VVA
3033	4353418.748	799836.287	2393.953	VVA
3033A	4353427.410	799791.637	2391.916	VVA
3034	4340004.864	792991.045	2749.036	VVA
3034A	4339983.070	793011.320	2749.194	VVA
3035	4355978.843	797464.280	2320.386	VVA
3035A	4356001.134	797439.063	2322.951	VVA
3036	4358861.563	787124.423	2436.438	VVA
3036A	4358882.277	787146.972	2436.305	VVA
3037	4345391.553	703545.359	1491.974	VVA
3037A	4345409.966	703556.514	1492.132	VVA
3038	4356484.780	698149.593	1674.472	VVA
3039	4358063.772	688064.829	1504.931	VVA
3039A	4358049.370	688071.655	1504.772	VVA
3040	4359050.842	673846.324	1514.597	VVA
3040 A	4359061.925	673835.653	1514.799	VVA
3041	4340021.694	668406.598	1458.648	VVA
3041A	4340013.321	668427.674	1459.919	VVA
3042	4312918.410	669040.429	1947.101	VVA
3042A	4312918.382	669048.227	1947.241	VVA
3043	4318471.626	684743.580	1979.139	VVA
3043A	4318471.533	684754.865	1979.276	VVA
3044	4318626.883	695643.737	2104.204	VVA
3044A	4318611.589	695645.071	2104.341	VVA
3045	4307767.923	716455.768	1826.971	VVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3045A	4307773.928	716452.997	1826.203	VVA
3046	4296439.548	717805.806	2204.555	VVA
3047	4302223.321	710682.360	2016.776	VVA
3047A	4302215.247	710670.529	2016.981	VVA
3047B	4302211.135	710666.252	2017.035	VVA
3048	4324341.400	711728.551	1415.465	VVA
3048A	4324359.048	711720.834	1415.124	VVA
3049	4307038.517	695472.323	2665.356	VVA
3049A	4307036.351	695458.026	2665.024	VVA
3050	4323067.719	704890.304	1539.510	VVA
3050A	4323062.840	704903.747	1539.899	VVA
3051	4351049.853	713378.025	2151.304	VVA
3051A	4351054.474	713387.991	2150.394	VVA
3052	4360491.455	724967.710	1764.979	VVA
3053	4352408.653	720685.397	1871.729	VVA
3053A	4352405.116	720671.847	1871.984	VVA
3054	4353724.558	734944.509	1535.740	VVA
3054A	4353734.323	734932.569	1535.611	VVA
3055	4354740.290	747703.698	1727.107	VVA
3055A	4354730.666	747689.285	1726.363	VVA
3056	4346605.994	755340.747	1801.151	VVA
3056A	4346593.421	755354.297	1801.770	VVA
3057	4340473.152	776734.680	2710.152	VVA
3057A	4340477.027	776707.807	2710.376	VVA
3058	4344174.418	716681.613	2114.397	VVA
3058A	4344163.878	716669.304	2117.069	VVA
3059	4329032.816	686170.895	2070.521	VVA
3060	4278428.669	688738.288	1992.906	VVA
3061	4355923.395	772177.935	2436.585	VVA
3061A	4355918.574	772195.899	2439.481	VVA
3062	4272179.549	699189.196	2593.050	VVA
3063	4293332.492	696338.372	2066.151	VVA
3063A	4293324.858	696329.671	2065.741	VVA
3063B	4293344.848	696322.312	2066.717	VVA
3063C	4293324.839	696328.570	2065.846	VVA
3064	4308056.942	699815.038	2663.597	VVA
3065	4347532.166	762218.596	1828.603	VVA
3065A	4347555.320	762229.541	1828.359	VVA
3066	4361300.532	751535.655	1760.583	VVA

Point No.	UTM Zone 12N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3066A	4361285.305	751539.947	1761.647	VVA
3067	4350653.155	771768.296	2204.727	VVA
3067A	4350660.735	771794.816	2205.170	VVA
3068	4351687.287	778065.088	2200.355	VVA
3068A	4351705.073	778087.086	2201.597	VVA
3069	4359908.665	794469.018	2152.684	VVA
3069A	4359848.531	794486.351	2156.960	VVA
3070	4356132.251	707785.359	2208.655	VVA
3070A	4356112.991	707779.882	2207.655	VVA
3071	4347028.210	726364.229	1993.297	VVA
3071A	4347028.863	726379.172	1992.926	VVA
3072	4348987.350	741947.784	1608.858	VVA
3072A	4349005.961	741945.276	1608.377	VVA
3073	4348548.454	747552.853	1844.384	VVA
3073A	4348540.022	747571.428	1844.409	VVA
3074	4333173.825	747074.731	2044.115	VVA
3074A	4333182.665	747087.877	2043.328	VVA
3075	4320149.634	728022.274	1523.089	VVA
3075A	4320148.245	728039.250	1523.367	VVA

LiDAR Primary Control and Ground Classification Points UTM 13N Meters

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1001	4346048.064	150071.071	1450.925	PRIMARY CONTROL
1001A	4346045.107	150077.825	1451.280	PRIMARY CONTROL
1002	4364387.351	171366.304	1536.583	PRIMARY CONTROL
1003	4362062.680	226940.158	1550.385	PRIMARY CONTROL
1003A	4362044.200	226941.965	1549.791	PRIMARY CONTROL
1004	4324158.263	237610.248	3304.666	PRIMARY CONTROL
1004A	4324177.822	237614.879	3304.590	PRIMARY CONTROL
1005	4305607.678	212924.099	1630.082	PRIMARY CONTROL
1005A	4305602.274	212927.856	1630.428	PRIMARY CONTROL
1006	4268684.735	160206.794	1439.278	PRIMARY CONTROL
1007	4347327.240	244353.637	1829.262	PRIMARY CONTROL
1008	4360764.517	272156.390	2073.220	PRIMARY CONTROL
1009	4352743.921	265119.312	2262.870	PRIMARY CONTROL
1010	4342398.212	228780.112	1582.268	PRIMARY CONTROL

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1010A	4342383.532	228782.505	1582.636	PRIMARY CONTROL
1011	4341866.691	216754.441	1460.565	PRIMARY CONTROL
1012	4335110.793	209543.869	1459.981	PRIMARY CONTROL
1012A	4335094.257	209539.915	1459.130	PRIMARY CONTROL
1013	4335700.185	192052.511	1441.839	PRIMARY CONTROL
1013A	4335710.942	192052.884	1441.766	PRIMARY CONTROL
1015	4289136.447	154308.886	1410.942	PRIMARY CONTROL
1015A	4289133.312	154337.010	1410.393	PRIMARY CONTROL
1016	4305469.536	189930.614	2016.638	PRIMARY CONTROL
1016A	4305453.411	189908.382	2017.250	PRIMARY CONTROL
1017	4321222.392	201369.761	1422.160	PRIMARY CONTROL
1017A	4321226.849	201378.000	1422.301	PRIMARY CONTROL
1018	4323408.102	164846.311	1980.777	PRIMARY CONTROL
1018A	4323417.954	164859.176	1980.738	PRIMARY CONTROL
1019	4355108.727	283504.812	2866.753	PRIMARY CONTROL
1020	4350708.307	282249.592	2392.816	PRIMARY CONTROL
1021	4339289.167	258367.127	2710.174	PRIMARY CONTROL
1022	4332555.022	243974.719	2955.540	PRIMARY CONTROL
1023	4297573.865	175035.150	2066.629	PRIMARY CONTROL
1023A	4297553.089	175020.942	2066.204	PRIMARY CONTROL
1023B	4297564.182	175026.796	2066.432	PRIMARY CONTROL
1023C	4297552.486	175013.571	2066.290	PRIMARY CONTROL
1024	4277636.745	158042.587	1422.214	PRIMARY CONTROL
1025	4318936.820	148710.651	1938.088	PRIMARY CONTROL
1025A	4318933.093	148721.173	1938.447	PRIMARY CONTROL
1026	4322728.919	175996.520	2105.561	PRIMARY CONTROL
1026A	4322727.465	176010.435	2105.771	PRIMARY CONTROL
1027	4349224.235	160424.522	1453.397	PRIMARY CONTROL
1027A	4349227.086	160434.345	1453.546	PRIMARY CONTROL
1028	4353156.858	171036.933	1446.707	PRIMARY CONTROL
1029	4360468.846	181042.783	1672.834	PRIMARY CONTROL
1029A	4360479.831	181054.996	1673.910	PRIMARY CONTROL
1030	4354922.603	203247.734	1871.458	PRIMARY CONTROL
1030A	4354916.044	203237.709	1871.747	PRIMARY CONTROL
1031	4320899.179	219391.388	2329.513	PRIMARY CONTROL
1032	4329297.615	230314.108	2602.827	PRIMARY CONTROL
1032A	4329293.849	230332.065	2604.132	PRIMARY CONTROL
1033	4349798.012	254109.316	2205.205	PRIMARY CONTROL
1034	4350415.549	260461.953	2201.597	PRIMARY CONTROL

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1035	4356981.670	269966.007	2436.554	PRIMARY CONTROL
1036	4351826.316	219662.402	1480.069	PRIMARY CONTROL
1036A	4351832.910	219645.730	1480.056	PRIMARY CONTROL
1037	4364121.643	151177.392	1644.905	PRIMARY CONTROL
1038	4364971.609	156982.906	1516.923	PRIMARY CONTROL
1039	4349048.553	185624.984	1491.545	PRIMARY CONTROL
1040	4362706.157	208057.772	1765.058	PRIMARY CONTROL
1041	4361818.227	234624.461	1756.185	PRIMARY CONTROL
1041A	4361765.555	234629.328	1759.658	PRIMARY CONTROL
1042	4353407.474	280064.975	2320.899	PRIMARY CONTROL
1043	4357481.790	277356.246	2156.190	PRIMARY CONTROL
1044	4346493.098	269508.015	2491.665	PRIMARY CONTROL
1045	4343931.125	261299.821	2477.333	PRIMARY CONTROL
1046	4312013.564	179470.864	2664.391	PRIMARY CONTROL
1047	4313015.459	159517.453	2467.323	PRIMARY CONTROL
1047A	4313032.405	159513.042	2467.000	PRIMARY CONTROL
1049	4314963.723	205653.976	1475.751	PRIMARY CONTROL
1049A	4314956.746	205659.532	1475.824	PRIMARY CONTROL
1050	4296825.660	147565.600	1376.380	PRIMARY CONTROL
1051	4272775.255	171287.430	1809.609	PRIMARY CONTROL
1051A	4296831.188	147571.744	1376.756	PRIMARY CONTROL
1052	4317714.800	219660.365	1880.885	PRIMARY CONTROL
1053	4299392.206	196625.531	2210.929	PRIMARY CONTROL
1054	4353969.457	195610.765	2190.094	PRIMARY CONTROL
1054A	4353962.634	195622.745	2190.289	PRIMARY CONTROL
1055	4346785.023	198773.462	2097.017	PRIMARY CONTROL
1055A	4346770.017	198780.591	2096.331	PRIMARY CONTROL
1056	4333988.083	228165.825	2044.863	PRIMARY CONTROL
1056A	4333986.993	228183.223	2044.349	PRIMARY CONTROL
1057	4338799.676	235042.854	1888.390	PRIMARY CONTROL
1057A	4338795.972	235027.786	1888.104	PRIMARY CONTROL
1058	4311393.806	174995.939	2658.187	PRIMARY CONTROL
1058A	4311376.991	174996.425	2658.997	PRIMARY CONTROL
1059	4306397.769	166389.256	2772.844	PRIMARY CONTROL
1059A	4306414.256	166388.422	2772.400	PRIMARY CONTROL
1060	4337042.356	274905.884	2741.559	PRIMARY CONTROL
1061	4335515.457	225138.442	2048.278	PRIMARY CONTROL
1062	4341083.175	251336.546	2327.825	PRIMARY CONTROL
1063	4343268.492	254321.294	2323.024	PRIMARY CONTROL

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
1064	4343007.415	254742.068	2359.830	PRIMARY CONTROL
1065	4322180.358	207704.512	1514.770	PRIMARY CONTROL
1065A	4322171.132	207691.331	1514.849	PRIMARY CONTROL
1066	4343399.734	253138.540	2244.984	PRIMARY CONTROL
1067	4343491.569	253760.897	2275.440	PRIMARY CONTROL
1068	4326857.949	185690.520	1513.122	PRIMARY CONTROL
1068A	4326870.875	185694.405	1512.473	PRIMARY CONTROL
1069	4328716.740	188065.916	1427.782	PRIMARY CONTROL
1069A	4328709.915	188077.274	1427.315	PRIMARY CONTROL
1070	4330166.625	189775.580	1391.863	PRIMARY CONTROL
1070A	4330167.567	189789.153	1391.676	PRIMARY CONTROL
1071	4330170.841	191220.775	1396.435	PRIMARY CONTROL
1071A	4330170.018	191235.808	1396.436	PRIMARY CONTROL
1072	4330063.718	192445.437	1398.974	PRIMARY CONTROL
1072A	4330057.894	192458.135	1398.743	PRIMARY CONTROL
2001	4269764.480	160660.877	1438.080	NVA
2002	4278244.434	157721.460	1420.189	NVA
2002A	4277638.816	158071.055	1422.177	NVA
2003	4289138.377	154366.403	1408.498	NVA
2004	4296783.370	173997.483	2064.035	NVA
2004A	4297554.270	175017.939	2066.215	NVA
2004B	4297549.946	175022.410	2065.830	NVA
2004C	4296768.647	173983.789	2064.316	NVA
2005	4305469.609	189910.408	2017.051	NVA
2005A	4305463.089	189908.805	2017.149	NVA
2005C	4305720.367	190324.697	1997.602	NVA
2006	4305932.217	212694.362	1607.021	NVA
2006A	4305942.026	212685.972	1606.244	NVA
2007	4318889.351	149815.753	1964.722	NVA
2007A	4318890.477	149807.763	1964.493	NVA
2008	4322848.966	163678.749	1982.830	NVA
2008A	4322859.210	163686.853	1983.020	NVA
2009	4323554.806	176002.031	2093.709	NVA
2009A	4323535.635	176002.136	2093.957	NVA
2010	4346028.113	150097.715	1452.647	NVA
2010A	4346026.169	150113.339	1453.338	NVA
2011	4349186.081	160374.612	1451.479	NVA
2011A	4349172.697	160376.759	1451.388	NVA
2012	4363254.549	151119.833	1598.755	NVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2012A	4363264.091	151119.847	1599.156	NVA
2013	4363465.186	157181.262	1500.254	NVA
2013A	4363452.567	157185.019	1500.390	NVA
2014	4362761.357	171000.269	1505.000	NVA
2014A	4362766.222	171005.795	1504.841	NVA
2015	4353640.761	170965.103	1454.298	NVA
2015A	4353641.313	170955.424	1454.132	NVA
2016	4340579.817	177332.690	1372.382	NVA
2016A	4340575.003	177323.959	1371.516	NVA
2017	4359936.585	180800.404	1633.582	NVA
2017A	4359952.700	180801.181	1634.166	NVA
2018	4349453.500	185818.682	1498.447	NVA
2018A	4349448.715	185826.699	1498.477	NVA
2019	4335698.749	192169.196	1439.085	NVA
2019A	4335690.805	192169.560	1438.969	NVA
2020	4321214.596	201385.598	1422.473	NVA
2020A	4321210.896	201390.962	1422.485	NVA
2021	4321142.573	219102.798	2208.231	NVA
2021A	4321157.857	219095.982	2207.202	NVA
2022	4334084.604	209460.455	1437.566	NVA
2022A	4334089.081	209476.978	1437.584	NVA
2023	4341970.727	217214.543	1473.940	NVA
2024	4351781.146	219620.783	1479.914	NVA
2024A	4351788.882	219610.336	1479.919	NVA
2025	4354819.891	203948.329	1850.188	NVA
2025A	4354825.210	203937.526	1850.094	NVA
2026	4362513.346	207606.144	1775.936	NVA
2027	4361098.766	226209.636	1516.583	NVA
2027A	4361094.288	226192.527	1516.481	NVA
2028	4360957.032	234565.323	1816.746	NVA
2028A	4360944.786	234551.790	1816.674	NVA
2029	4342725.803	228699.806	1577.281	NVA
2029A	4342715.401	228686.742	1577.180	NVA
2029B	4349294.265	229827.079	1844.136	NVA
2029C	4349291.523	229852.910	1846.290	NVA
2030	4329637.015	228190.840	2453.003	NVA
2030A	4329650.362	228196.315	2452.313	NVA
2031	4324361.861	236236.326	3271.316	NVA
2031A	4324360.692	236252.835	3271.472	NVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2032	4332255.344	244459.317	2991.836	NVA
2032A	4332248.502	244436.172	2988.795	NVA
2033	4347841.522	244962.291	1880.374	NVA
2033A	4347842.098	244984.942	1881.098	NVA
2034	4350021.920	251687.258	2093.907	NVA
2034A	4350038.359	251696.915	2094.082	NVA
2035	4339322.875	258365.683	2710.324	NVA
2035A	4339291.274	258377.513	2710.106	NVA
2036	4343909.462	261337.387	2478.457	NVA
2036A	4343928.197	261336.585	2477.940	NVA
2037	4350403.664	260474.114	2201.841	NVA
2037A	4350436.096	260445.384	2201.424	NVA
2038	4352549.245	264939.512	2278.684	NVA
2038A	4352554.433	264956.699	2277.172	NVA
2039	4359965.637	272082.230	2098.883	NVA
2039A	4359983.175	272088.840	2098.116	NVA
2040	4356608.978	269374.936	2421.171	NVA
2040A	4356632.147	269363.105	2420.544	NVA
2041	4348053.898	267678.427	2381.454	NVA
2041A	4348043.006	267686.598	2381.827	NVA
2042	4350697.846	282277.976	2394.268	NVA
2042A	4350713.260	282232.776	2392.214	NVA
2043	4353401.492	280026.762	2320.335	NVA
2043A	4353386.624	280089.864	2318.659	NVA
2044	4357507.221	277358.442	2154.164	NVA
2044A	4357463.623	277370.890	2157.087	NVA
2045	4355111.087	283479.761	2866.762	NVA
2045A	4355094.855	283536.321	2865.656	NVA
2046	4318586.249	155942.956	2082.256	NVA
2046A	4318585.504	155953.568	2082.644	NVA
2047	4322255.293	171975.337	2055.385	NVA
2047A	4322264.252	171985.036	2055.122	NVA
2048	4311299.838	175026.631	2663.585	NVA
2048A	4311312.199	175014.286	2663.288	NVA
2049	4307038.256	165345.732	2765.203	NVA
2049A	4307034.183	165360.427	2765.048	NVA
2050	4313087.454	159498.570	2464.879	NVA
2050A	4313103.844	159493.538	2464.207	NVA
2051	4308273.995	162028.040	2765.658	NVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2051A	4308275.530	162049.122	2766.391	NVA
2052	4295884.538	149587.237	1382.747	NVA
2052A	4295889.338	149579.341	1382.909	NVA
2053	4338587.632	149922.139	1403.817	NVA
2054	4333847.197	167217.392	2071.806	NVA
2054A	4333849.644	167217.369	2071.669	NVA
2055	4310840.870	196139.845	1821.011	NVA
2055A	4310848.143	196137.019	1820.551	NVA
2056	4354072.743	195833.853	2151.974	NVA
2056A	4354083.646	195833.621	2151.843	NVA
2057	4359551.367	190597.788	2202.547	NVA
2057A	4359526.148	190589.403	2204.562	NVA
2058	4347157.601	198402.609	2120.792	NVA
2058A	4347144.093	198413.367	2120.223	NVA
2059	4350126.509	224203.821	1609.972	NVA
2059A	4350111.490	224200.919	1610.453	NVA
2060	4329014.718	232410.269	2843.927	NVA
2060A	4329008.993	232418.971	2845.137	NVA
2061	4317395.140	219759.931	1839.935	NVA
2062	4298988.960	196308.411	2204.845	NVA
2063	4285706.172	184544.752	2527.703	NVA
2064	4279865.824	189697.024	2642.872	NVA
2065	4276229.487	176499.385	2593.716	NVA
2066	4283330.210	166549.153	1976.955	NVA
2067	4341308.214	195011.189	1528.717	NVA
2067A	4341318.155	195017.209	1529.107	NVA
2068	4349189.526	208535.027	1993.315	NVA
2068A	4349201.292	208543.226	1992.557	NVA
2069	4355454.131	230376.430	1727.590	NVA
2069A	4355466.948	230390.249	1728.550	NVA
2070	4337562.268	246244.750	2477.936	NVA
2070A	4337544.253	246259.194	2479.846	NVA
2071	4341097.209	251318.744	2325.715	NVA
2071A	4341067.717	251348.751	2329.014	NVA
2072	4342643.297	248007.185	2069.482	NVA
2072A	4342649.680	248027.995	2067.996	NVA
2073	4345610.209	257338.596	2441.343	NVA
2073A	4345575.669	257337.983	2440.578	NVA
2074	4311597.922	178294.055	2623.829	NVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2075	4327528.382	192458.488	1415.394	NVA
2075A	4327510.998	192455.463	1415.530	NVA
2076	4326722.370	185472.038	1541.120	NVA
2076A	4326703.206	185475.220	1541.296	NVA
2077	4330278.203	174556.540	2090.239	NVA
2078	4272404.468	170804.735	1781.287	NVA
2079	4339709.304	228772.905	1728.841	NVA
2079A	4339709.642	228758.887	1728.989	NVA
2080	4334238.158	228564.970	2027.762	NVA
2080A	4334224.496	228565.130	2027.580	NVA
2081	4332264.029	212029.639	1512.897	NVA
2081A	4332248.263	212027.151	1513.657	NVA
2082	4314888.098	205730.060	1476.406	NVA
2082A	4314883.674	205734.227	1476.539	NVA
2083	4333666.279	201850.047	1457.298	NVA
2083A	4333675.439	201856.657	1457.406	NVA
2084	4353465.248	245095.872	2178.797	NVA
2084A	4353486.888	245092.870	2180.748	NVA
2085	4355039.038	254819.855	2437.287	NVA
2085A	4355061.550	254815.885	2437.429	NVA
2086	4337735.569	274568.889	2749.730	NVA
2086A	4337754.919	274566.915	2749.390	NVA
2087	4342437.145	273641.889	2592.561	NVA
2087A	4342467.778	273642.961	2591.814	NVA
2088	4346090.638	273001.007	2513.840	NVA
2088A	4346061.736	273005.598	2514.237	NVA
2089	4346504.125	269501.365	2491.302	NVA
2089A	4346505.469	269500.220	2491.176	NVA
2090	4343184.539	237005.813	1691.408	NVA
2090A	4343201.332	237015.454	1691.263	NVA
2091	4347027.345	237374.546	1795.893	NVA
2091A	4347038.103	237362.468	1795.830	NVA
2093	4358125.242	220433.907	1541.045	NVA
2093A	4358127.344	220453.445	1541.129	NVA
2094	4355374.136	217595.168	1531.234	NVA
2094A	4355385.714	217589.647	1530.988	NVA
2095	4354438.907	211766.540	1674.922	NVA
2095A	4354433.756	211751.778	1675.026	NVA
2096	4322248.704	208960.039	1535.377	NVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
2096A	4322248.427	208943.134	1535.034	NVA
2097	4320613.502	187193.059	1802.632	NVA
2097A	4320627.006	187191.631	1801.827	NVA
2098	4335425.562	225245.819	2040.236	NVA
2098A	4335432.994	225233.869	2040.291	NVA
2099	4299307.081	163847.905	1899.629	NVA
2099A	4299301.023	163846.658	1899.359	NVA
2099B	4298769.552	162816.977	1831.147	NVA
2100	4338722.952	235823.775	2015.568	NVA
2100A	4338735.547	235828.714	2015.482	NVA
3001	4349194.267	160392.175	1451.671	VVA
3001A	4349185.943	160393.910	1450.682	VVA
3002	4353071.536	171024.378	1444.771	VVA
3002A	4353053.486	171023.327	1444.286	VVA
3003	4341070.005	177389.478	1372.967	VVA
3004	4335749.320	192068.318	1440.633	VVA
3005	4333627.913	201825.947	1455.125	VVA
3006	4333962.494	210181.583	1439.671	VVA
3006A	4333983.352	210200.148	1439.943	VVA
3007	4335444.229	225512.909	2024.435	VVA
3007A	4335440.610	225501.068	2025.350	VVA
3008	4355121.535	283471.790	2868.198	VVA
3008A	4355103.475	283536.704	2866.169	VVA
3009	4360743.076	272158.107	2074.160	VVA
3009A	4360768.584	272165.705	2072.595	VVA
3010	4352728.792	265121.296	2262.057	VVA
3010A	4352742.847	265136.340	2262.300	VVA
3011	4342466.523	273637.752	2591.334	VVA
3011A	4342449.359	273635.158	2591.315	VVA
3012	4346504.314	269509.732	2492.231	VVA
3012A	4346492.364	269504.579	2491.515	VVA
3013	4343923.916	261325.861	2477.591	VVA
3013A	4343925.136	261300.131	2477.597	VVA
3014	4345604.649	257327.544	2441.352	VVA
3014A	4345609.439	257359.834	2440.284	VVA
3015	4332550.772	243964.541	2955.202	VVA
3015A	4332535.905	243988.334	2955.473	VVA
3016	4279854.034	189710.086	2642.502	VVA
3017	4272724.096	171219.217	1804.232	VVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3018	4268719.039	160178.827	1439.480	VVA
3019	4289138.018	154351.065	1409.450	VVA
3019A	4289131.594	154349.544	1409.713	VVA
3020	4308298.769	162067.762	2766.717	VVA
3020A	4308297.994	162050.388	2766.523	VVA
3021	4295901.331	149597.773	1383.549	VVA
3021A	4295904.657	149599.985	1383.609	VVA
3022	4306550.558	166384.264	2771.135	VVA
3022A	4306546.077	166373.816	2771.448	VVA
3024	4285716.587	184563.544	2527.249	VVA
3025	4321139.619	201124.141	1417.502	VVA
3025A	4321151.223	201116.463	1417.536	VVA
3026	4314960.534	210379.641	1561.746	VVA
3026A	4314964.299	210367.016	1560.782	VVA
3027	4329060.945	232399.158	2835.536	VVA
3027A	4329066.967	232378.278	2832.915	VVA
3028	4329677.282	228201.345	2450.443	VVA
3028A	4329695.553	228195.290	2448.909	VVA
3029	4320881.519	219366.693	2330.132	VVA
3030	4332249.180	212013.709	1513.546	VVA
3030A	4332231.624	212012.061	1514.286	VVA
3031	4342360.919	228761.211	1583.884	VVA
3031A	4342375.904	228757.707	1583.336	VVA
3032	4353474.833	245105.830	2179.741	VVA
3032A	4353493.801	245104.978	2181.223	VVA
3033	4350694.276	282275.978	2393.953	VVA
3033A	4350705.872	282232.024	2391.916	VVA
3034	4337769.169	274561.388	2749.036	VVA
3034A	4337746.092	274580.170	2749.194	VVA
3035	4353404.633	280080.053	2320.386	VVA
3035A	4353428.535	280056.382	2322.951	VVA
3036	4356965.434	269958.558	2436.438	VVA
3036A	4356984.599	269982.423	2436.305	VVA
3037	4349064.444	185655.946	1491.974	VVA
3037A	4349082.090	185668.305	1492.132	VVA
3038	4360499.433	181004.093	1674.472	VVA
3039	4362746.277	171038.096	1504.931	VVA
3039A	4362731.441	171043.956	1504.772	VVA
3040	4364677.276	156902.581	1514.597	VVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3040 A	4364689.056	156892.659	1514.799	VVA
3041	4346029.817	150205.762	1458.648	VVA
3041A	4346020.056	150226.261	1459.919	VVA
3042	4318912.343	149047.904	1947.101	VVA
3042A	4318911.801	149055.692	1947.241	VVA
3043	4323424.028	165099.758	1979.139	VVA
3043A	4323423.191	165111.023	1979.276	VVA
3044	4322860.206	175996.159	2104.204	VVA
3044A	4322844.845	175996.482	2104.341	VVA
3045	4310646.590	196062.229	1826.971	VVA
3045A	4310652.767	196059.857	1826.203	VVA
3046	4299247.692	196665.767	2204.555	VVA
3047	4305490.239	189933.307	2016.776	VVA
3047A	4305482.955	189920.963	2016.981	VVA
3047B	4305479.131	189916.422	2017.035	VVA
3048	4327505.262	192434.482	1415.465	VVA
3048A	4327523.392	192427.942	1415.124	VVA
3049	4311298.711	175061.636	2665.356	VVA
3049A	4311297.488	175047.216	2665.024	VVA
3050	4326684.790	185522.586	1539.510	VVA
3050A	4326679.031	185535.688	1539.899	VVA
3051	4354061.998	195848.472	2151.304	VVA
3051A	4354065.950	195858.728	2150.394	VVA
3052	4362718.148	208045.205	1764.979	VVA
3053	4354933.784	203233.779	1871.729	VVA
3053A	4354931.152	203220.018	1871.984	VVA
3054	4355301.374	217554.402	1535.740	VVA
3054A	4355311.912	217543.132	1535.611	VVA
3055	4355468.698	230355.694	1727.107	VVA
3055A	4355460.050	230340.673	1726.363	VVA
3056	4346845.362	237437.538	1801.151	VVA
3056A	4346831.919	237450.226	1801.770	VVA
3057	4339310.889	258376.872	2710.152	VVA
3057A	4339316.532	258350.320	2710.376	VVA
3058	4346978.847	198690.894	2114.397	VVA
3058A	4346969.140	198677.907	2117.069	VVA
3059	4333877.981	167222.609	2070.521	VVA
3060	4283167.160	166458.810	1992.906	VVA
3061	4355025.892	254854.112	2436.585	VVA

Point No.	UTM Zone 13N		Ortho Height (NAVD88) (m)	Description
	UTM Northing (m)	UTM Easting (m)		
3061A	4355019.891	254871.714	2439.481	VVA
3062	4276242.566	176487.763	2593.050	VVA
3063	4297554.028	175025.917	2066.151	VVA
3063A	4297546.976	175016.727	2065.741	VVA
3063B	4297567.422	175010.690	2066.717	VVA
3063C	4297547.029	175015.626	2065.846	VVA
3064	4312029.992	179465.442	2663.597	VVA
3065	4347314.031	244361.637	1828.603	VVA
3065A	4347336.408	244374.091	1828.359	VVA
3066	4361760.882	234615.065	1760.583	VVA
3066A	4361745.402	234618.336	1761.647	VVA
3067	4349795.286	254096.104	2204.727	VVA
3067A	4349801.091	254123.063	2205.170	VVA
3068	4350409.740	260446.282	2200.355	VVA
3068A	4350426.025	260469.405	2201.597	VVA
3069	4357522.562	277353.418	2152.684	VVA
3069A	4357461.439	277366.715	2156.960	VVA
3070	4359507.489	190602.014	2208.655	VVA
3070A	4359488.622	190595.266	2207.655	VVA
3071	4349186.235	208545.940	1993.297	VVA
3071A	4349185.896	208560.900	1992.926	VVA
3072	4350109.018	224229.991	1608.858	VVA
3072A	4350127.759	224228.722	1608.377	VVA
3073	4349299.602	229794.670	1844.384	VVA
3073A	4349289.957	229812.649	1844.409	VVA
3074	4333987.965	228300.356	2044.115	VVA
3074A	4333995.919	228314.059	2043.328	VVA
3075	4322245.778	208424.566	1523.089	VVA
3075A	4322243.273	208441.420	1523.367	VVA

Coordinate System: Geodetic

HORIZONTAL DATUM: NAD83 (HARN)
VERTICAL DATUM: NAVD88
UNITS: Meters
DATE: 3/5/2015

LiDAR Primary Control and Ground Classification Points

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
1001	39°11'35.71123"	-109°03'05.38119"	1433.018	PRIMARY CONTROL
1001A	39°11'35.62532"	-109°03'05.09483"	1433.373	PRIMARY CONTROL
1002	39°21'59.21840"	-108°48'51.87050"	1519.665	PRIMARY CONTROL
1003	39°21'53.59400"	-108°10'09.99110"	1534.125	PRIMARY CONTROL
1003A	39°21'52.99750"	-108°10'09.88862"	1533.530	PRIMARY CONTROL
1004	39°01'37.61727"	-108°01'51.79817"	3289.175	PRIMARY CONTROL
1004A	39°01'38.25589"	-108°01'51.63292"	3289.099	PRIMARY CONTROL
1005	38°51'08.90697"	-108°18'28.89183"	1613.432	PRIMARY CONTROL
1005A	38°51'08.73636"	-108°18'28.72810"	1613.778	PRIMARY CONTROL
1006	38°30'06.25273"	-108°53'46.38621"	1420.810	PRIMARY CONTROL
1007	39°14'15.40924"	-107°57'43.14460"	1813.396	PRIMARY CONTROL
1008	39°21'58.72051"	-107°38'41.08442"	2057.757	PRIMARY CONTROL
1009	39°17'32.05098"	-107°43'24.74767"	2247.455	PRIMARY CONTROL
1010	39°11'18.74021"	-108°08'24.71755"	1566.057	PRIMARY CONTROL
1010A	39°11'18.26740"	-108°08'24.59677"	1566.425	PRIMARY CONTROL
1011	39°10'47.72477"	-108°16'44.40813"	1444.115	PRIMARY CONTROL
1012	39°07'00.38132"	-108°21'34.01808"	1443.361	PRIMARY CONTROL
1012A	39°06'59.84107"	-108°21'34.15699"	1442.509	PRIMARY CONTROL
1013	39°06'57.85767"	-108°33'42.00913"	1424.869	PRIMARY CONTROL
1013A	39°06'58.20643"	-108°33'42.01118"	1424.796	PRIMARY CONTROL
1015	38°41'00.01161"	-108°58'25.81101"	1392.667	PRIMARY CONTROL
1015A	38°40'59.94967"	-108°58'24.64413"	1392.119	PRIMARY CONTROL
1016	38°50'36.35580"	-108°34'20.85477"	2000.291	PRIMARY CONTROL
1016A	38°50'35.80550"	-108°34'21.74908"	2000.903	PRIMARY CONTROL
1017	38°59'20.71132"	-108°26'51.89026"	1405.422	PRIMARY CONTROL
1017A	38°59'20.86576"	-108°26'51.55541"	1405.563	PRIMARY CONTROL
1018	38°59'43.89799"	-108°52'10.71179"	1963.916	PRIMARY CONTROL

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
1018A	38°59'44.23459"	-108°52'10.19559"	1963.877	PRIMARY CONTROL
1019	39°19'05.93598"	-107°30'40.73115"	2851.773	PRIMARY CONTROL
1020	39°16'42.19497"	-107°31'27.97442"	2377.733	PRIMARY CONTROL
1021	39°10'09.42067"	-107°47'48.96318"	2694.964	PRIMARY CONTROL
1022	39°06'16.43989"	-107°57'38.82534"	2940.102	PRIMARY CONTROL
1023	38°46'01.41555"	-108°44'24.09269"	2049.963	PRIMARY CONTROL
1023A	38°46'00.72414"	-108°44'24.64503"	2049.536	PRIMARY CONTROL
1023B	38°46'01.09101"	-108°44'24.42174"	2049.765	PRIMARY CONTROL
1023C	38°46'00.69486"	-108°44'24.94880"	2049.622	PRIMARY CONTROL
1024	38°34'53.02486"	-108°55'31.29429"	1403.861	PRIMARY CONTROL
1025	38°56'56.44771"	-109°03'11.60040"	1920.302	PRIMARY CONTROL
1025A	38°56'56.34227"	-109°03'11.15749"	1920.662	PRIMARY CONTROL
1026	38°59'37.01903"	-108°44'27.02933"	2089.062	PRIMARY CONTROL
1026A	38°59'36.99050"	-108°44'26.44963"	2089.272	PRIMARY CONTROL
1027	39°13'33.27759"	-108°56'00.54571"	1435.803	PRIMARY CONTROL
1027A	39°13'33.38368"	-108°56'00.14215"	1435.952	PRIMARY CONTROL
1028	39°15'55.26942"	-108°48'45.83097"	1429.405	PRIMARY CONTROL
1029	39°20'05.42319"	-108°42'01.64184"	1656.074	PRIMARY CONTROL
1029A	39°20'05.79499"	-108°42'01.15152"	1657.151	PRIMARY CONTROL
1030	39°17'34.28031"	-108°26'27.03955"	1855.089	PRIMARY CONTROL
1030A	39°17'34.05556"	-108°26'27.44690"	1855.378	PRIMARY CONTROL
1031	38°59'31.69974"	-108°14'23.53650"	2313.375	PRIMARY CONTROL
1032	39°04'16.10379"	-108°07'02.12671"	2587.119	PRIMARY CONTROL
1032A	39°04'16.00176"	-108°07'01.37515"	2588.425	PRIMARY CONTROL
1033	39°15'45.60777"	-107°50'59.95239"	2189.649	PRIMARY CONTROL
1034	39°16'12.01792"	-107°46'35.96946"	2186.115	PRIMARY CONTROL
1035	39°19'54.05293"	-107°40'07.85589"	2421.170	PRIMARY CONTROL
1036	39°16'13.68260"	-108°14'58.28048"	1463.639	PRIMARY CONTROL
1036A	39°16'13.87675"	-108°14'58.98502"	1463.626	PRIMARY CONTROL
1037	39°21'22.14343"	-109°02'53.04696"	1627.685	PRIMARY CONTROL
1038	39°21'58.00958"	-108°58'52.62200"	1499.791	PRIMARY CONTROL
1039	39°14'01.74545"	-108°38'31.43796"	1474.529	PRIMARY CONTROL
1040	39°21'52.21213"	-108°23'18.76222"	1748.858	PRIMARY CONTROL
1041	39°21'54.29451"	-108°04'48.98992"	1740.052	PRIMARY CONTROL
1041A	39°21'52.59375"	-108°04'48.71180"	1743.525	PRIMARY CONTROL
1042	39°18'07.68104"	-107°33'02.24179"	2305.734	PRIMARY CONTROL
1043	39°20'17.22154"	-107°35'00.08231"	2140.885	PRIMARY CONTROL
1044	39°14'13.74302"	-107°40'14.04054"	2476.441	PRIMARY CONTROL
1045	39°12'42.74378"	-107°45'52.78616"	2462.037	PRIMARY CONTROL

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
1046	38°53'54.72846"	-108°41'44.85317"	2648.257	PRIMARY CONTROL
1047	38°54'00.14312"	-108°55'33.13087"	2450.396	PRIMARY CONTROL
1047A	38°54'00.68542"	-108°55'33.34382"	2450.073	PRIMARY CONTROL
1049	38°56'03.25214"	-108°23'44.43072"	1459.076	PRIMARY CONTROL
1049A	38°56'03.03291"	-108°23'44.18956"	1459.149	PRIMARY CONTROL
1050	38°44'59.27554"	-109°03'18.30417"	1357.873	PRIMARY CONTROL
1051	38°32'33.63649"	-108°46'16.83850"	1791.668	PRIMARY CONTROL
1051A	38°44'59.46325"	-109°03'18.06041"	1358.249	PRIMARY CONTROL
1052	38°57'48.87056"	-108°14'07.67355"	1864.651	PRIMARY CONTROL
1053	38°47'27.96018"	-108°29'34.02530"	2194.479	PRIMARY CONTROL
1054	39°16'53.88300"	-108°31'43.71263"	2173.605	PRIMARY CONTROL
1054A	39°16'53.67723"	-108°31'43.20243"	2173.800	PRIMARY CONTROL
1055	39°13'05.23453"	-108°29'20.40064"	2080.415	PRIMARY CONTROL
1055A	39°13'04.75754"	-108°29'20.07981"	2079.729	PRIMARY CONTROL
1056	39°06'45.63677"	-108°08'38.14627"	2028.931	PRIMARY CONTROL
1056A	39°06'45.62099"	-108°08'37.42133"	2028.417	PRIMARY CONTROL
1057	39°09'29.12300"	-108°03'58.96503"	1872.428	PRIMARY CONTROL
1057A	39°09'28.98651"	-108°03'59.58675"	1872.142	PRIMARY CONTROL
1058	38°53'28.74877"	-108°44'49.17986"	2642.000	PRIMARY CONTROL
1058A	38°53'28.20508"	-108°44'49.13109"	2642.810	PRIMARY CONTROL
1059	38°50'35.42785"	-108°50'36.93447"	2756.266	PRIMARY CONTROL
1059A	38°50'35.96037"	-108°50'36.99774"	2755.822	PRIMARY CONTROL
1060	39°09'12.58127"	-107°36'17.78742"	2726.513	PRIMARY CONTROL
1061	39°07'31.69194"	-108°10'46.24054"	2032.220	PRIMARY CONTROL
1062	39°11'00.41332"	-107°52'43.96250"	2312.371	PRIMARY CONTROL
1063	39°12'14.27110"	-107°50'42.56360"	2307.609	PRIMARY CONTROL
1064	39°12'06.24015"	-107°50'24.70039"	2344.436	PRIMARY CONTROL
1065	38°59'59.42832"	-108°22'30.50628"	1498.121	PRIMARY CONTROL
1065A	38°59'59.11369"	-108°22'31.03911"	1498.200	PRIMARY CONTROL
1066	39°12'17.31656"	-107°51'31.98894"	2229.526	PRIMARY CONTROL
1067	39°12'20.92766"	-107°51'06.19253"	2260.001	PRIMARY CONTROL
1068	39°02'03.41729"	-108°37'51.71232"	1496.369	PRIMARY CONTROL
1068A	39°02'03.84080"	-108°37'51.57249"	1495.719	PRIMARY CONTROL
1069	39°03'06.66010"	-108°36'16.16757"	1410.925	PRIMARY CONTROL
1069A	39°03'06.45373"	-108°36'15.68471"	1410.458	PRIMARY CONTROL
1070	39°03'55.79373"	-108°35'07.55442"	1374.949	PRIMARY CONTROL
1070A	39°03'55.84158"	-108°35'06.99226"	1374.762	PRIMARY CONTROL
1071	39°03'57.77367"	-108°34'07.53994"	1379.520	PRIMARY CONTROL
1071A	39°03'57.76616"	-108°34'06.91425"	1379.521	PRIMARY CONTROL

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
1072	39°03'55.86068"	-108°33'16.50229"	1382.063	PRIMARY CONTROL
1072A	39°03'55.68821"	-108°33'15.96544"	1381.832	PRIMARY CONTROL
2001	38°30'41.82539"	-108°53'29.56581"	1419.635	NVA
2002	38°35'12.24879"	-108°55'45.60928"	1401.843	NVA
2002A	38°34'53.13132"	-108°55'30.12407"	1403.825	NVA
2003	38°41'00.15489"	-108°58'23.43955"	1390.226	NVA
2004	38°45'34.44808"	-108°45'05.65828"	2047.287	NVA
2004A	38°46'00.75840"	-108°44'24.77120"	2049.547	NVA
2004B	38°46'00.62434"	-108°44'24.57901"	2049.162	NVA
2004C	38°45'33.95327"	-108°45'06.19948"	2047.567	NVA
2005	38°50'36.33254"	-108°34'21.69146"	2000.704	NVA
2005A	38°50'36.11940"	-108°34'21.74726"	2000.802	NVA
2005C	38°50'44.97671"	-108°34'04.94492"	1981.245	NVA
2006	38°51'19.14805"	-108°18'38.89513"	1590.370	NVA
2006A	38°51'19.45588"	-108°18'39.25740"	1589.593	NVA
2007	38°56'56.50209"	-109°02'25.71664"	1947.030	NVA
2007A	38°56'56.52705"	-109°02'26.04983"	1946.800	NVA
2008	38°59'24.18954"	-108°52'58.14756"	1965.934	NVA
2008A	38°59'24.53230"	-108°52'57.82961"	1966.125	NVA
2009	39°00'03.76166"	-108°44'28.21044"	2077.179	NVA
2009A	39°00'03.14121"	-108°44'28.17336"	2077.428	NVA
2010	39°11'35.10423"	-109°03'04.23610"	1434.740	NVA
2010A	39°11'35.06395"	-109°03'03.58278"	1435.432	NVA
2011	39°13'31.97257"	-108°56'02.55337"	1433.883	NVA
2011A	39°13'31.54245"	-108°56'02.43982"	1433.792	NVA
2012	39°20'54.00260"	-109°02'53.82414"	1581.488	NVA
2012A	39°20'54.31138"	-109°02'53.84141"	1581.890	NVA
2013	39°21'09.54423"	-108°58'41.58274"	1483.048	NVA
2013A	39°21'09.14124"	-108°58'41.40294"	1483.184	NVA
2014	39°21'06.08904"	-108°49'04.26401"	1488.003	NVA
2014A	39°21'06.25407"	-108°49'04.04222"	1487.844	NVA
2015	39°16'10.83402"	-108°48'49.67199"	1437.005	NVA
2015A	39°16'10.83867"	-108°48'50.07600"	1436.839	NVA
2016	39°09'16.65699"	-108°44'02.06340"	1355.134	NVA
2016A	39°09'16.48951"	-108°44'02.41816"	1354.268	NVA
2017	39°19'47.87152"	-108°42'10.83518"	1616.785	NVA
2017A	39°19'48.39422"	-108°42'10.83034"	1617.370	NVA
2018	39°14'15.10757"	-108°38'24.05306"	1481.446	NVA
2018A	39°14'14.96310"	-108°38'23.71130"	1481.476	NVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2019	39°06'57.95950"	-108°33'37.15713"	1422.117	NVA
2019A	39°06'57.70276"	-108°33'37.12904"	1422.001	NVA
2020	38°59'20.47831"	-108°26'51.22088"	1405.735	NVA
2020A	38°59'20.36508"	-108°26'50.99249"	1405.747	NVA
2021	38°59'39.24989"	-108°14'35.87406"	2192.080	NVA
2021A	38°59'39.73705"	-108°14'36.17957"	2191.051	NVA
2022	39°06'27.04879"	-108°21'35.90571"	1420.929	NVA
2022A	39°06'27.21359"	-108°21'35.22581"	1420.948	NVA
2023	39°10'51.63308"	-108°16'25.41885"	1457.497	NVA
2024	39°16'12.17123"	-108°14'59.94695"	1463.484	NVA
2024A	39°16'12.40961"	-108°15'00.39382"	1463.489	NVA
2025	39°17'31.81720"	-108°25'57.68187"	1833.823	NVA
2025A	39°17'31.97614"	-108°25'58.14047"	1833.729	NVA
2026	39°21'45.41891"	-108°23'37.29993"	1759.740	NVA
2027	39°21'21.54179"	-108°10'39.05651"	1500.292	NVA
2027A	39°21'21.37725"	-108°10'39.76372"	1500.190	NVA
2028	39°21'26.33340"	-108°04'50.23109"	1800.616	NVA
2028A	39°21'25.92177"	-108°04'50.77831"	1800.544	NVA
2029	39°11'29.26102"	-108°08'28.53294"	1561.067	NVA
2029A	39°11'28.90941"	-108°08'29.06170"	1560.966	NVA
2029B	39°15'03.28475"	-108°07'51.06713"	1827.974	NVA
2029C	39°15'03.22489"	-108°07'49.98707"	1830.129	NVA
2030	39°04'24.72740"	-108°08'30.84428"	2437.197	NVA
2030A	39°04'25.16587"	-108°08'30.63596"	2436.507	NVA
2031	39°01'42.72485"	-108°02'49.14267"	3255.807	NVA
2031A	39°01'42.70491"	-108°02'48.45539"	3255.963	NVA
2032	39°06'07.24288"	-107°57'18.26996"	2976.418	NVA
2032A	39°06'06.99680"	-107°57'19.22304"	2973.376	NVA
2033	39°14'32.71467"	-107°57'18.48855"	1864.523	NVA
2033A	39°14'32.75729"	-107°57'17.54566"	1865.248	NVA
2034	39°15'50.37750"	-107°52'41.19263"	2078.292	NVA
2034A	39°15'50.92005"	-107°52'40.81195"	2078.467	NVA
2035	39°10'10.51141"	-107°47'49.06658"	2695.114	NVA
2035A	39°10'09.49932"	-107°47'48.53357"	2694.897	NVA
2036	39°12'42.07902"	-107°45'51.19398"	2463.163	NVA
2036A	39°12'42.68527"	-107°45'51.25120"	2462.645	NVA
2037	39°16'11.64493"	-107°46'35.44733"	2186.359	NVA
2037A	39°16'12.66718"	-107°46'36.68643"	2185.942	NVA
2038	39°17'25.56741"	-107°43'32.00048"	2263.264	NVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2038A	39°17'25.75231"	-107°43'31.29033"	2261.752	NVA
2039	39°21'32.76302"	-107°38'43.20305"	2083.438	NVA
2039A	39°21'33.33760"	-107°38'42.94859"	2082.671	NVA
2040	39°19'41.40978"	-107°40'32.05748"	2405.792	NVA
2040A	39°19'42.14918"	-107°40'32.57973"	2405.165	NVA
2041	39°15'02.56252"	-107°41'32.21065"	2366.159	NVA
2041A	39°15'02.21746"	-107°41'31.85661"	2366.533	NVA
2042	39°16'41.88163"	-107°31'26.77870"	2379.186	NVA
2042A	39°16'42.34028"	-107°31'28.68138"	2377.131	NVA
2043	39°18'07.45223"	-107°33'03.82865"	2305.168	NVA
2043A	39°18'07.02811"	-107°33'01.17911"	2303.495	NVA
2044	39°20'18.04769"	-107°35'00.02102"	2138.859	NVA
2044A	39°20'16.64639"	-107°34'59.44952"	2141.783	NVA
2045	39°19'05.98990"	-107°30'41.77907"	2851.781	NVA
2045A	39°19'05.51479"	-107°30'39.40045"	2850.677	NVA
2046	38°56'55.42078"	-108°58'11.23525"	2065.044	NVA
2046A	38°56'55.41166"	-108°58'10.79410"	2065.432	NVA
2047	38°59'16.29927"	-108°47'13.01117"	2038.822	NVA
2047A	38°59'16.60234"	-108°47'12.62436"	2038.558	NVA
2048	38°53'25.74769"	-108°44'47.74850"	2647.398	NVA
2048A	38°53'26.13141"	-108°44'48.28090"	2647.101	NVA
2049	38°50'54.73370"	-108°51'21.24559"	2748.582	NVA
2049A	38°50'54.62197"	-108°51'20.63021"	2748.428	NVA
2050	38°54'02.44690"	-108°55'34.04149"	2447.951	NVA
2050A	38°54'02.97035"	-108°55'34.27917"	2447.278	NVA
2051	38°51'30.16789"	-108°53'40.75139"	2748.862	NVA
2051A	38°51'30.24672"	-108°53'39.88140"	2749.597	NVA
2052	38°44'31.71388"	-109°01'53.04292"	1364.340	NVA
2052A	38°44'31.85795"	-109°01'53.37794"	1364.502	NVA
2053	39°07'34.08531"	-109°02'57.70540"	1385.841	NVA
2054	39°05'25.03994"	-108°50'50.70766"	2054.708	NVA
2054A	39°05'25.11911"	-108°50'50.71293"	2054.571	NVA
2055	38°53'38.07833"	-108°30'12.30944"	1804.476	NVA
2055A	38°53'38.31032"	-108°30'12.43811"	1804.016	NVA
2056	39°16'57.50908"	-108°31'34.58642"	2135.493	NVA
2056A	39°16'57.86181"	-108°31'34.61380"	2135.362	NVA
2057	39°19'48.21073"	-108°35'21.78891"	2186.098	NVA
2057A	39°19'47.38347"	-108°35'22.09665"	2188.112	NVA
2058	39°13'16.83513"	-108°29'36.43608"	2104.188	NVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2058A	39°13'16.41119"	-108°29'35.96655"	2103.619	NVA
2059	39°15'23.87116"	-108°11'46.54526"	1593.649	NVA
2059A	39°15'23.38139"	-108°11'46.64405"	1594.130	NVA
2060	39°04'09.26155"	-108°05'34.62028"	2828.310	NVA
2060A	39°04'09.08570"	-108°05'34.25057"	2829.520	NVA
2061	38°57'38.63161"	-108°14'03.07166"	1823.700	NVA
2062	38°47'14.50959"	-108°29'46.50770"	2188.405	NVA
2063	38°39'49.58951"	-108°37'31.38170"	2511.029	NVA
2064	38°36'47.02903"	-108°33'49.22247"	2626.158	NVA
2065	38°34'32.34312"	-108°42'47.75153"	2576.344	NVA
2066	38°38'08.96132"	-108°49'50.31071"	1959.217	NVA
2067	39°10'03.18066"	-108°31'48.11459"	1511.844	NVA
2067A	39°10'03.51013"	-108°31'47.88031"	1512.235	NVA
2068	39°14'35.08809"	-108°22'37.77531"	1976.882	NVA
2068A	39°14'35.47902"	-108°22'37.45215"	1976.125	NVA
2069	39°18'23.42388"	-108°07'37.05673"	1711.375	NVA
2069A	39°18'23.85452"	-108°07'36.49907"	1712.335	NVA
2070	39°09'01.05070"	-107°56'11.17556"	2462.408	NVA
2070A	39°09'00.48222"	-107°56'10.55030"	2464.319	NVA
2071	39°11'00.84967"	-107°52'44.72215"	2310.260	NVA
2071A	39°10'59.92506"	-107°52'43.43397"	2313.561	NVA
2072	39°11'47.50756"	-107°55'04.65064"	2053.850	NVA
2072A	39°11'47.73607"	-107°55'03.79276"	2052.365	NVA
2073	39°13'33.19624"	-107°48'39.93934"	2425.936	NVA
2073A	39°13'32.07651"	-107°48'39.92020"	2425.172	NVA
2074	38°53'39.72463"	-108°42'32.90529"	2607.691	NVA
2075	39°02'33.78800"	-108°33'11.84048"	1398.536	NVA
2075A	39°02'33.22131"	-108°33'11.93785"	1398.673	NVA
2076	39°01'58.74509"	-108°38'00.55658"	1524.378	NVA
2076A	39°01'58.12876"	-108°38'00.39268"	1524.554	NVA
2077	39°03'39.47309"	-108°45'39.72411"	2073.457	NVA
2078	38°32'20.99078"	-108°46'36.10653"	1763.302	NVA
2079	39°09'51.63546"	-108°08'21.13997"	1712.683	NVA
2079A	39°09'51.63068"	-108°08'21.72373"	1712.831	NVA
2080	39°06'54.18472"	-108°08'21.91047"	2011.838	NVA
2080A	39°06'53.74237"	-108°08'21.88416"	2011.657	NVA
2081	39°05'31.15636"	-108°19'46.33674"	1496.368	NVA
2081A	39°05'30.64282"	-108°19'46.41610"	1497.128	NVA
2082	38°56'00.89495"	-108°23'41.15916"	1459.732	NVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2082A	38°56'00.75671"	-108°23'40.97955"	1459.865	NVA
2083	39°06'04.25673"	-108°26'51.55717"	1440.480	NVA
2083A	39°06'04.56147"	-108°26'51.29693"	1440.588	NVA
2084	39°17'35.04311"	-107°57'20.58027"	2163.027	NVA
2084A	39°17'35.74098"	-107°57'20.73493"	2164.978	NVA
2085	39°18'36.13746"	-107°50'37.20914"	2421.797	NVA
2085A	39°18'36.86278"	-107°50'37.40426"	2421.939	NVA
2086	39°09'34.73180"	-107°36'32.64379"	2734.682	NVA
2086A	39°09'35.35702"	-107°36'32.74913"	2734.342	NVA
2087	39°12'06.22425"	-107°37'16.89036"	2577.462	NVA
2087A	39°12'07.21794"	-107°37'16.88263"	2576.715	NVA
2088	39°14'04.01544"	-107°37'48.00188"	2498.670	NVA
2088A	39°14'03.08318"	-107°37'47.77560"	2499.068	NVA
2089	39°14'14.09399"	-107°40'14.33120"	2476.078	NVA
2089A	39°14'14.13644"	-107°40'14.38056"	2475.952	NVA
2090	39°11'53.30927"	-108°02'43.42215"	1675.403	NVA
2090A	39°11'53.86376"	-108°02'43.04428"	1675.258	NVA
2091	39°13'58.19396"	-108°02'33.44750"	1779.869	NVA
2091A	39°13'58.52929"	-108°02'33.96564"	1779.806	NVA
2093	39°19'38.58379"	-108°14'35.55401"	1524.656	NVA
2093A	39°19'38.67459"	-108°14'34.74241"	1524.740	NVA
2094	39°18'06.16808"	-108°16'29.76921"	1514.811	NVA
2094A	39°18'06.53657"	-108°16'30.01684"	1514.566	NVA
2095	39°17'28.96974"	-108°20'31.27623"	1658.533	NVA
2095A	39°17'28.78525"	-108°20'31.88350"	1658.637	NVA
2096	39°00'03.14754"	-108°21'38.50367"	1518.759	NVA
2096A	39°00'03.11834"	-108°21'39.20485"	1518.416	NVA
2097	38°58'43.18510"	-108°36'39.04392"	1786.115	NVA
2097A	38°58'43.62048"	-108°36'39.12538"	1785.309	NVA
2098	39°07'28.90212"	-108°10'41.64442"	2024.182	NVA
2098A	39°07'29.12928"	-108°10'42.15217"	2024.236	NVA
2099	38°46'42.43891"	-108°52'09.67674"	1882.422	NVA
2099A	38°46'42.24112"	-108°52'09.71769"	1882.152	NVA
2099B	38°46'23.62470"	-108°52'51.36165"	1813.844	NVA
2100	39°09'27.49209"	-108°03'26.36501"	1999.634	NVA
2100A	39°09'27.90549"	-108°03'26.17719"	1999.548	NVA
3001	39°13'32.26221"	-108°56'01.83741"	1434.076	VVA
3001A	39°13'31.99526"	-108°56'01.75016"	1433.087	VVA
3002	39°15'52.49063"	-108°48'46.20389"	1427.466	VVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
3002A	39°15'51.90496"	-108°48'46.21595"	1426.981	VVA
3003	39°09'32.60061"	-108°44'00.54212"	1355.711	VVA
3004	39°06'59.46863"	-108°33'41.43235"	1423.663	VVA
3005	39°06'02.98472"	-108°26'52.49813"	1438.306	VVA
3006	39°06'23.95808"	-108°21'05.74381"	1423.056	VVA
3006A	39°06'24.65577"	-108°21'05.00417"	1423.329	VVA
3007	39°07'29.80973"	-108°10'30.56506"	2008.384	VVA
3007A	39°07'29.67908"	-108°10'31.05218"	2009.299	VVA
3008	39°19'06.32132"	-107°30'42.12375"	2853.217	VVA
3008A	39°19'05.79449"	-107°30'39.39447"	2851.190	VVA
3009	39°21'58.02736"	-107°38'40.98652"	2058.698	VVA
3009A	39°21'58.86114"	-107°38'40.70053"	2057.132	VVA
3010	39°17'31.56270"	-107°43'24.64593"	2246.642	VVA
3010A	39°17'32.03280"	-107°43'24.03626"	2246.885	VVA
3011	39°12'07.17238"	-107°37'17.09807"	2576.234	VVA
3011A	39°12'06.61374"	-107°37'17.18542"	2576.216	VVA
3012	39°14'14.10811"	-107°40'13.98279"	2477.007	VVA
3012A	39°14'13.71595"	-107°40'14.18282"	2476.291	VVA
3013	39°12'42.53596"	-107°45'51.69242"	2462.296	VVA
3013A	39°12'42.55004"	-107°45'52.76563"	2462.302	VVA
3014	39°13'33.00497"	-107°48'40.39254"	2425.945	VVA
3014A	39°13'33.19266"	-107°48'39.05363"	2424.878	VVA
3015	39°06'16.29144"	-107°57'39.24278"	2939.763	VVA
3015A	39°06'15.83494"	-107°57'38.23330"	2940.035	VVA
3016	38°36'46.66371"	-108°33'48.66449"	2625.788	VVA
3017	38°32'31.88961"	-108°46'19.56361"	1786.284	VVA
3018	38°30'07.32471"	-108°53'47.59811"	1421.013	VVA
3019	38°41'00.12172"	-108°58'24.07222"	1391.177	VVA
3019A	38°40'59.91168"	-108°58'24.12351"	1391.440	VVA
3020	38°51'31.02465"	-108°53'39.15087"	2749.924	VVA
3020A	38°51'30.97555"	-108°53'39.86871"	2749.729	VVA
3021	38°44'32.27237"	-109°01'52.63816"	1365.143	VVA
3021A	38°44'32.38316"	-109°01'52.55282"	1365.203	VVA
3022	38°50'40.36660"	-108°50'37.40757"	2754.561	VVA
3022A	38°50'40.20731"	-108°50'37.83220"	2754.873	VVA
3024	38°39'49.95080"	-108°37'30.62268"	2510.576	VVA
3025	38°59'17.72934"	-108°27'01.95136"	1400.763	VVA
3025A	38°59'18.09567"	-108°27'02.28820"	1400.797	VVA
3026	38°56'08.80974"	-108°20'28.47855"	1545.138	VVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
3026A	38°56'08.91667"	-108°20'29.00779"	1544.174	VVA
3027	39°04'10.74673"	-108°05'35.14741"	2819.918	VVA
3027A	39°04'10.91876"	-108°05'36.02359"	2817.296	VVA
3028	39°04'26.04349"	-108°08'30.46564"	2434.636	VVA
3028A	39°04'26.62853"	-108°08'30.74353"	2433.101	VVA
3029	38°59'31.09926"	-108°14'24.53531"	2313.992	VVA
3030	39°05'30.65654"	-108°19'46.97612"	1497.016	VVA
3030A	39°05'30.08603"	-108°19'47.01784"	1497.756	VVA
3031	39°11'17.51103"	-108°08'25.45045"	1567.673	VVA
3031A	39°11'17.99248"	-108°08'25.61792"	1567.125	VVA
3032	39°17'35.36417"	-107°57'20.17818"	2163.972	VVA
3032A	39°17'35.97775"	-107°57'20.23955"	2165.454	VVA
3033	39°16'41.76413"	-107°31'26.85785"	2378.871	VVA
3033A	39°16'42.10017"	-107°31'28.70414"	2376.833	VVA
3034	39°09'35.81365"	-107°36'32.99626"	2733.988	VVA
3034A	39°09'35.08333"	-107°36'32.18682"	2734.146	VVA
3035	39°18'07.60276"	-107°33'01.60953"	2305.221	VVA
3035A	39°18'08.35570"	-107°33'02.62500"	2307.785	VVA
3036	39°19'53.51969"	-107°40'08.14668"	2421.054	VVA
3036A	39°19'54.16355"	-107°40'07.17454"	2420.921	VVA
3037	39°14'02.30025"	-108°38'30.17572"	1474.959	VVA
3037A	39°14'02.88763"	-108°38'29.69081"	1475.118	VVA
3038	39°20'06.36198"	-108°42'03.30690"	1657.712	VVA
3039	39°21'05.65275"	-108°49'02.66044"	1487.934	VVA
3039A	39°21'05.18058"	-108°49'02.38997"	1487.775	VVA
3040	39°21'48.37010"	-108°58'55.42893"	1497.449	VVA
3040 A	39°21'48.73713"	-108°58'55.86424"	1497.652	VVA
3041	39°11'35.31583"	-109°02'59.74629"	1440.745	VVA
3041A	39°11'35.02965"	-109°02'58.87571"	1442.016	VVA
3042	38°56'56.14155"	-109°02'57.57931"	1929.344	VVA
3042A	38°56'56.13523"	-109°02'57.25557"	1929.484	VVA
3043	38°59'44.76249"	-108°52'00.22770"	1962.288	VVA
3043A	38°59'44.75091"	-108°51'59.75899"	1962.426	VVA
3044	38°59'41.26853"	-108°44'27.26837"	2087.700	VVA
3044A	38°59'40.77169"	-108°44'27.22875"	2087.838	VVA
3045	38°53'31.69079"	-108°30'15.21592"	1810.439	VVA
3045A	38°53'31.88785"	-108°30'15.32404"	1809.671	VVA
3046	38°47'23.33039"	-108°29'32.13191"	2188.105	VVA
3047	38°50'37.02954"	-108°34'20.77684"	2000.429	VVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
3047A	38°50'36.77805"	-108°34'21.27610"	2000.634	VVA
3047B	38°50'36.64847"	-108°34'21.45791"	2000.688	VVA
3048	39°02'33.00901"	-108°33'12.79965"	1398.608	VVA
3048A	39°02'33.58774"	-108°33'13.10063"	1398.267	VVA
3049	38°53'25.75779"	-108°44'46.29662"	2649.170	VVA
3049A	38°53'25.69901"	-108°44'46.89184"	2648.838	VVA
3050	39°01'57.59386"	-108°37'58.39596"	1522.768	VVA
3050A	39°01'57.42437"	-108°37'57.84254"	1523.157	VVA
3051	39°16'57.17965"	-108°31'33.95990"	2134.823	VVA
3051A	39°16'57.32056"	-108°31'33.53904"	2133.913	VVA
3052	39°21'52.58514"	-108°23'19.30526"	1748.779	VVA
3053	39°17'34.62515"	-108°26'27.63882"	1855.360	VVA
3053A	39°17'34.52295"	-108°26'28.20809"	1855.615	VVA
3054	39°18'03.76375"	-108°16'31.35855"	1519.317	VVA
3054A	39°18'04.09181"	-108°16'31.84425"	1519.188	VVA
3055	39°18'23.87247"	-108°07'37.94229"	1710.891	VVA
3055A	39°18'23.57552"	-108°07'38.55608"	1710.147	VVA
3056	39°13'52.36743"	-108°02'30.56896"	1785.129	VVA
3056A	39°13'51.94578"	-108°02'30.02167"	1785.749	VVA
3057	39°10'10.13423"	-107°47'48.58545"	2694.942	VVA
3057A	39°10'10.29053"	-107°47'49.69790"	2695.165	VVA
3058	39°13'11.40735"	-108°29'24.14867"	2097.799	VVA
3058A	39°13'11.07682"	-108°29'24.67368"	2100.470	VVA
3059	39°05'26.04349"	-108°50'50.54520"	2053.422	VVA
3060	38°38'03.56108"	-108°49'53.75783"	1975.154	VVA
3061	39°18'35.74647"	-107°50'35.76317"	2421.096	VVA
3061A	39°18'35.56998"	-107°50'35.02120"	2423.992	VVA
3062	38°34'32.75132"	-108°42'48.25268"	2575.677	VVA
3063	38°46'00.76113"	-108°44'24.44090"	2049.484	VVA
3063A	38°46'00.52066"	-108°44'24.80897"	2049.073	VVA
3063B	38°46'01.17456"	-108°44'25.09321"	2050.050	VVA
3063C	38°46'00.52092"	-108°44'24.85459"	2049.178	VVA
3064	38°53'55.25318"	-108°41'45.10540"	2647.462	VVA
3065	39°14'14.98980"	-107°57'42.79333"	1812.737	VVA
3065A	39°14'15.72794"	-107°57'42.30502"	1812.493	VVA
3066	39°21'52.42661"	-108°04'49.30033"	1744.450	VVA
3066A	39°21'51.92880"	-108°04'49.14179"	1745.514	VVA
3067	39°15'45.50596"	-107°51'00.49946"	2189.171	VVA
3067A	39°15'45.72156"	-107°50'59.38350"	2189.614	VVA

Point No.	Geodetic Coordinates NAD-83 (HARN)		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
3068	39°16'11.81411"	-107°46'36.61526"	2184.873	VVA
3068A	39°16'12.36477"	-107°46'35.67224"	2186.115	VVA
3069	39°20'18.54017"	-107°35'00.24899"	2137.378	VVA
3069A	39°20'16.57175"	-107°34'59.62114"	2141.656	VVA
3070	39°19'46.79561"	-108°35'21.54002"	2192.205	VVA
3070A	39°19'46.17610"	-108°35'21.79005"	2191.204	VVA
3071	39°14'34.99471"	-108°22'37.31572"	1976.864	VVA
3071A	39°14'35.00182"	-108°22'36.69218"	1976.493	VVA
3072	39°15'23.33460"	-108°11'45.42926"	1592.536	VVA
3072A	39°15'23.94015"	-108°11'45.50971"	1592.055	VVA
3073	39°15'03.42129"	-108°07'52.42498"	1828.221	VVA
3073A	39°15'03.12903"	-108°07'51.66207"	1828.247	VVA
3074	39°06'45.78390"	-108°08'32.55261"	2028.188	VVA
3074A	39°06'46.05691"	-108°08'31.99432"	2027.401	VVA
3075	39°00'02.41133"	-108°22'00.72293"	1506.457	VVA
3075A	39°00'02.35041"	-108°22'00.01960"	1506.735	VVA

Section 3: Ground/Geodetic Control Logs and Photos

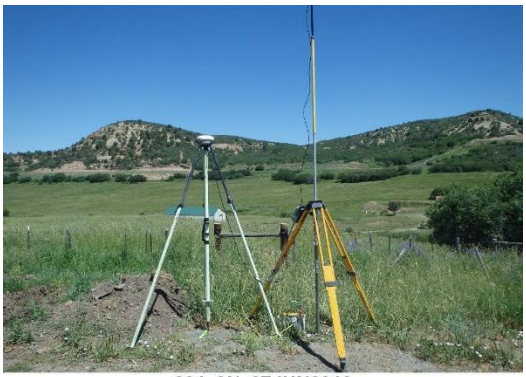
This section contains the station recovery information sheets and photographs for the ground control, geodetic control and checkpoint stations established for the project. The stations appear as they are ordered in the final coordinate listing of Section 2.

The data is assembled on the following pages.

Geodetic Control

201, 2, 27JUN2016

201, 3E, 27JUN2016



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202, 3W, 27JUN2016

5000, 3E, 06JUN2016

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5000, 3W, 06JUN2016

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5001, 3W, 06JUN2016

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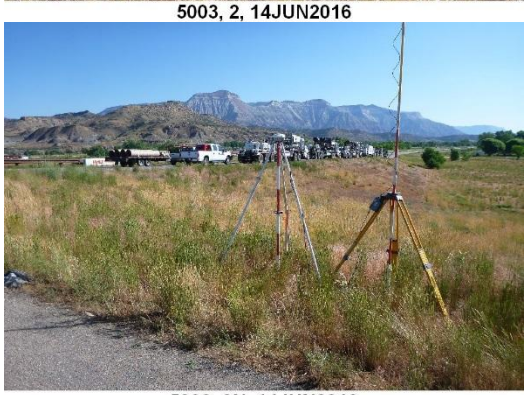

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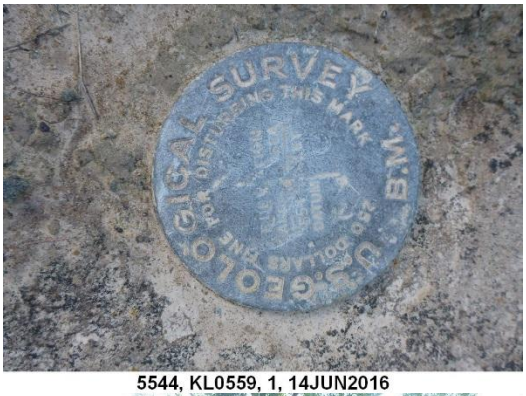

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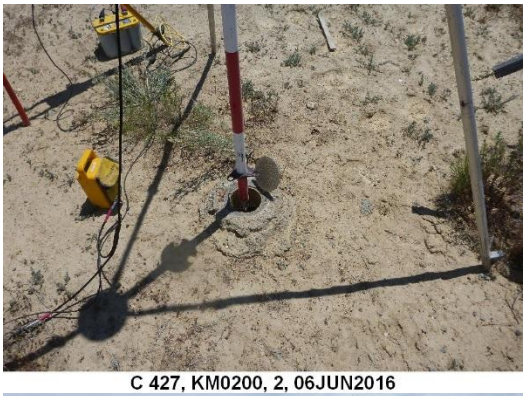

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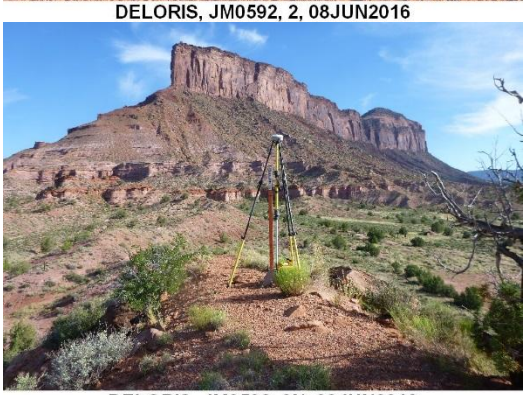
C 427, KM0200, 3W, 06JUN2016


DELORIS, JM0592, 1, 08JUN2016


DELORIS, JM0592, 2, 08JUN2016


DELORIS, JM0592, 3E, 08JUN2016


DELORIS, JM0592, 3N, 08JUN2016


DELORIS, JM0592, 3S, 08JUN2016


DELORIS, JM0592, 3W, 08JUN2016

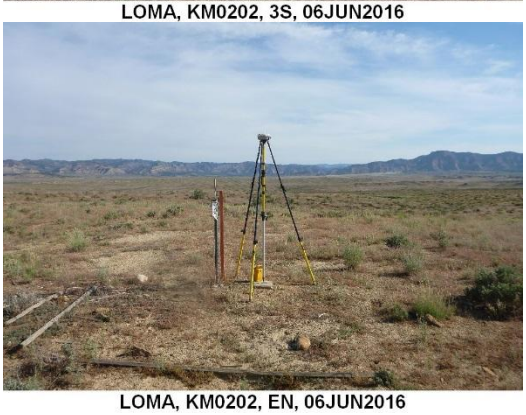
LOMA, KM0202, 1, 06JUN2016


LOMA, KM0202, 2, 06JUN2016


LOMA, KM0202, 3E, 06JUN2016


LOMA, KM0202, 3S, 06JUN2016


LOMA, KM0202, 3W, 06JUN2016


LOMA, KM0202, EN, 06JUN2016


P 427, KM0233, 1, 06JUN2016


P 427, KM0233, 2, 06JUN2016


P 427, KM0233, 3E, 06JUN2016


P 427, KM0233, 3N, 06JUN2016


P 427, KM0233, 3S, 06JUN2016


P 427, KM0233, 3W, 06JUN2016

P6280097

P6280098

P6280099

R 428, KM0215, 1, 06JUN2016

R 428, KM0215, 2, 06JUN2016

R 428, KM0215, 3E, 06JUN2016

R 428, KM0215, 3N, 06JUN2016

R 428, KM0215, 3S, 06JUN2016

R 428, KM0215, 3W, 06JUN2016

U 428, JM0372, 1, 12JUN2016

U 428, JM0372, 2, 12JUN2016

U 428, JM0372, 3E, 12JUN2016

U 428, JM0372, 3N, 12JUN2016

U 428, JM0372, 3S, 12JUN2016

U 428, JM0372, 3W, 12JUN2016

Ground Control


1002, LIDAR CONTROL, 3S, 06JUN2016


1002, LIDAR CONTROL, 3W, 06JUN2016


1003, LIDAR CONTROL, 3E, 14JUN2016


1003, LIDAR CONTROL, 3N, 14JUN2016


1004, LIDAR CONTROL, 3N, 12JUN2016


1004, LIDAR CONTROL, 3W, 12JUN2016


1006, LIDAR CONTROL, 3E, 09JUN2016


1006, LIDAR CONTROL, 3N, 09JUN2016


1007, LIDAR CONTROL, 3E, 27JUN2016


1007, LIDAR CONTROL, 3N, 27JUN2016


1008, LIDAR CONTROL, 3E, 28JUN2016

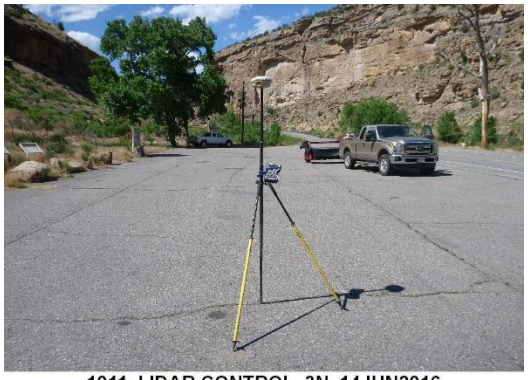

1008, LIDAR CONTROL, 3S, 28JUN2016


1009, LIDAR CONTROL, 3N, 28JUN2016


1009, LIDAR CONTROL, 3W, 28JUN2016


1010, LIDAR CONTROL, 3S, 12JUN2016


1010, LIDAR CONTROL, 3W, 12JUN2016


1011, LIDAR CONTROL, 3N, 14JUN2016


1011, LIDAR CONTROL, 3W, 14JUN2016


1012, LIDAR CONTROL, 3S, 11JUN2016


1012, LIDAR CONTROL, 3W, 11JUN2016


1016, LIDAR CONTROL, 3E, 07JUN2016


1016, LIDAR CONTROL, 3N, 07JUN2016


1018, LIDAR CONTROL, 3N, 11JUN2016


1018, LIDAR CONTROL, 3W, 11JUN2016


1019, LIDAR CONTROL, 3N, 28JUN2016


1019, LIDAR CONTROL, 3W, 28JUN2016


1020, LIDAR CONTROL, 3N, 28JUN2016


1020, LIDAR CONTROL, 3W, 28JUN2016


1021, LIDAR CONTROL, 3S, 28JUN2016


1021, LIDAR CONTROL, 3W, 28JUN2016


1022, LIDAR CONTROL, 3N, 27JUN2016


1022, LIDAR CONTROL, 3W, 27JUN2016


1023, LIDAR CONTROL, 3E, 07JUN2016


1023, LIDAR CONTROL, 3N, 07JUN2016


1024, LIDAR CONTROL, 3E, 09JUN2016


1024, LIDAR CONTROL, 3N, 09JUN2016


1025, LIDAR CONTROL, 3E, 10JUN2016


1025, LIDAR CONTROL, 3N, 10JUN2016


1026, LIDAR CONTROL, 3N, 11JUN2016


1026, LIDAR CONTROL, 3W, 11JUN2016


1028, LIDAR CONTROL, 3E, 06JUN2016


1028, LIDAR CONTROL, 3N, 06JUN2016


1029, LIDAR CONTROL, 3S, 07JUN2016


1029, LIDAR CONTROL, 3W, 07JUN2016


1030, LIDAR CONTROL, 3S, 13JUN2016


1030, LIDAR CONTROL, 3W, 13JUN2016


1031, LIDAR CONTROL, 3E, 12JUN2016


1031, LIDAR CONTROL, 3N, 12JUN2016

1032, LIDAR CONTROL, 3E, 12JUN2016

1032, LIDAR CONTROL, 3S, 12JUN2016

1033, LIDAR CONTROL, 3E, 27JUN2016

1033, LIDAR CONTROL, 3N, 27JUN2016

1034, LIDAR CONTROL, 3E, 27JUN2016

1034, LIDAR CONTROL, 3N, 27JUN2016

1035, LIDAR CONTROL, 3E, 28JUN2016

1035, LIDAR CONTROL, 3S, 28JUN2016


1036, LIDAR CONTROL, 3S, 14JUN2016


1036, LIDAR CONTROL, 3W, 14JUN2016


1037, LIDAR CONTROL, 3E, 06JUN26


1037, LIDAR CONTROL, 3N, 06JUN26


1038, LIDAR CONTROL, 3E, 06JUN2016


1038, LIDAR CONTROL, 3N, 06JUN2016


1039, LIDAR CONTROL, 3E, 07JUN2016


1039, LIDAR CONTROL, 3N, 07JUN2016


1040, LIDAR CONTROL, 3E, 14JUN2016


1040, LIDAR CONTROL, 3N, 14JUN2016


1041, LIDAR CONTROL, 3E, 14JUN2016


1041, LIDAR CONTROL, 3N, 14JUN2016


1042, LIDAR CONTROL, 3E, 28JUN2016


1042, LIDAR CONTROL, 3N, 28JUN2016


1043, LIDAR CONTROL, 3N, 28JUN2016


1043, LIDAR CONTROL, 3W, 28JUN2016


1044, LIDAR CONTROL, 3E, 28JUN2016


1044, LIDAR CONTROL, 3N, 28JUN2016


1045, LIDAR CONTROL, 3N, 28JUN2016


1045, LIDAR CONTROL, 3W, 28JUN2016


1046, LIDAR CONTROL, 3S, 10JUN2016


1046, LIDAR CONTROL, 3W, 10JUN2016


1047, LIDAR CONTROL, 3E, 10JUN2016


1047, LIDAR CONTROL, 3N, 10JUN2016


1051, LIDAR CONTROL, 3E, 09JUN2016


1051, LIDAR CONTROL, 3N, 09JUN2016


1052, LIDAR CONTROL, 3E, 12JUN2016


1052, LIDAR CONTROL, 3S, 12JUN2016


1053, LIDAR CONTROL, 3E, 09JUN2016


1053, LIDAR CONTROL, 3N, 09JUN2016

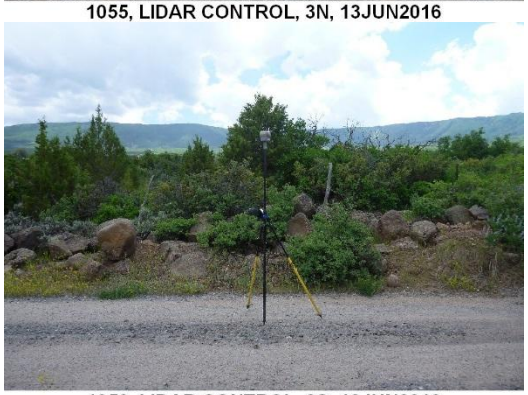

1054, LIDAR CONTROL, 3S, 13JUN2016


1054, LIDAR CONTROL, 3W, 13JUN2016


1055, LIDAR CONTROL, 3E, 13JUN2016


1055, LIDAR CONTROL, 3N, 13JUN2016


1056, LIDAR CONTROL, 3E, 12JUN2016


1056, LIDAR CONTROL, 3S, 12JUN2016


1057, LIDAR CONTROL, 3E, 12JUN2016


1057, LIDAR CONTROL, 3N, 12JUN2016


1058, LIDAR CONTROL, 3S, 10JUN2016


1058, LIDAR CONTROL, 3W, 10JUN2016


1059, LIDAR CONTROL, 3E, 10JUN2016

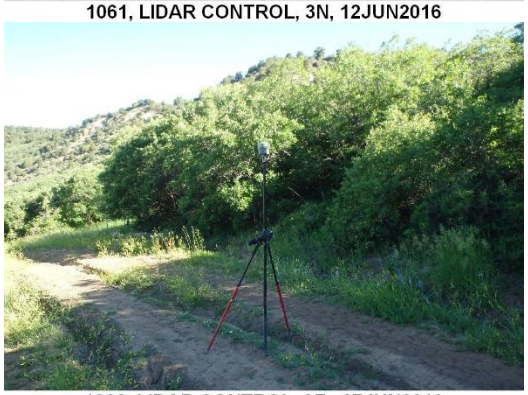

1059, LIDAR CONTROL, 3N, 10JUN2016


1060, LIDAR CONTROL, 3E, 29JUNE2016


1060, LIDAR CONTROL, 3S, 29JUNE2016


1061, LIDAR CONTROL, 3N, 12JUN2016


1061, LIDAR CONTROL, 3W, 12JUN2016


1062, LIDAR CONTROL, 3E, 27JUN2016


1062, LIDAR CONTROL, 3N, 27JUN2016


1063, LIDAR CONTROL, 3E, 27JUN2016


1063, LIDAR CONTROL, 3S, 27JUN2016


1064, LIDAR CONTROL, 3E, 27JUN2016


1064, LIDAR CONTROL, 3S, 27JUN2016


1065, LIDAR CONTROL, 3S, 12JUN2016


1065, LIDAR CONTROL, 3W, 12JUN2016


1066, LIDAR CONTROL, 3N, 27JUN2016


1066, LIDAR CONTROL, 3W, 27JUN2016


1067, LIDAR CONTROL, 3N, 27JUN2016


1067, LIDAR CONTROL, 3W, 27JUN2016


1068, LIDAR CONTROL, 3E, 11JUN2016


1068, LIDAR CONTROL, 3N, 11JUN2016


1069, LIDAR CONTROL, 3E, 11JUN2016


1069, LIDAR CONTROL, 3N, 11JUN2016


1070, LIDAR CONTROL, 3N, 11JUN2016


1070, LIDAR CONTROL, 3W, 11JUN2016

1071, LIDAR CONTROL, 3E, 11JUN2016

1071, LIDAR CONTROL, 3N, 11JUN2016

1072, LIDAR CONTROL, 3E, 11JUN2016

1072, LIDAR CONTROL, 3N, 11JUN2016

Control Logs

Section 4: Existing NGS Data Sheets

This section contains the published National Geodetic Survey (NGS) Data Sheets used in the final control network for this project.

The NGS Data Sheet

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

```
PROGRAM = datasheet95, VERSION = 8.9
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 DE6238 ***********************************************************************
 DE6238  CORS         -  This is a GPS Continuously Operating Reference Station.
 DE6238  DESIGNATION -  MESA CNTY COOP CORS ARP
 DE6238  CORS_ID      -  MC01
 DE6238  PID          -  DE6238
 DE6238  STATE/COUNTY-  CO/MESA
 DE6238  COUNTRY      -  US
 DE6238  USGS QUAD    -  GRAND JUNCTION (1973)
 DE6238
 DE6238                        *CURRENT SURVEY CONTROL
 DE6238 ______________________________________________________________________
 DE6238* NAD 83(2011) POSITION- 39 05 28.39210(N) 108 31 41.26977(W)   ADJUSTED
 DE6238* NAD 83(2011) ELLIP HT-  1438.008 (meters)        (08/??/11)   ADJUSTED
 DE6238* NAD 83(2011) EPOCH   -  2010.00
 DE6238* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DE6238 ______________________________________________________________________
 DE6238  NAD 83(2011) X  - -1,575,525.102 (meters)                     COMP
 DE6238  NAD 83(2011) Y  - -4,701,076.504 (meters)                     COMP
 DE6238  NAD 83(2011) Z  -  4,001,088.783 (meters)                     COMP
 DE6238  GEOID HEIGHT    -        -16.918 (meters)                     GEOID12B
 DE6238
 DE6238.Formal positional accuracy estimates are not available for this CORS
 DE6238.because its coordinates were determined in part using modeled
 DE6238.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DE6238.and ellipsoid height can be obtained from the short-term time series.
 DE6238.Additional information regarding modeled velocities is available on
 DE6238.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
 DE6238
 DE6238.The coordinates were established by GPS observations
 DE6238.and adjusted by the National Geodetic Survey in August 2011.
 DE6238
 DE6238.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 DE6238.been affixed to the stable North American Tectonic Plate.
 DE6238
 DE6238.The coordinates are valid at the epoch date displayed above
 DE6238.which is a decimal equivalence of Year/Month/Day.
 DE6238
 DE6238.Significant digits in the geoid height do not necessarily reflect accuracy.
 DE6238.GEOID12B height accuracy estimate available here.
 DE6238
 DE6238.The PID for the CORS L1 Phase Center is DE6239.
 DE6238
 DE6238.The XYZ, and position/ellipsoidal ht. are equivalent.
 DE6238
 DE6238.The ellipsoidal height was determined by GPS observations
 DE6238.and is referenced to NAD 83.
```

```
 DE6238
 DE6238. The following values were computed from the NAD 83(2011) position.
 DE6238
 DE6238;                    North         East     Units Scale Factor Converg.
 DE6238;SPC CO C     -   448,800.593   652,488.220   MT  0.99993592   -1 54 35.3
 DE6238;SPC CO C     - 1,472,439.95  2,140,705.10   sFT  0.99993592   -1 54 35.3
 DE6238;UTM  12      - 4,329,808.277   713,782.134   MT  1.00016278   +1 33 33.3
 DE6238
 DE6238!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DE6238!SPC CO C     -   0.99977444  x   0.99993592  =   0.99971037
 DE6238!UTM  12      -   0.99977444  x   1.00016278  =   0.99993718
 DE6238
 DE6238                          SUPERSEDED SURVEY CONTROL
 DE6238
 DE6238  NAD 83(CORS)-  39 05 28.39176(N)    108 31 41.27007(W) AD(2002.00) c
 DE6238  ELLIP H (02/??/02) 1438.015  (m)                      GP(2002.00) c c
 DE6238
 DE6238.Superseded values are not recommended for survey control.
 DE6238
 DE6238.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DE6238.See file dsdata.txt to determine how the superseded data were derived.
 DE6238
 DE6238_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SYJ1378229808(NAD 83)
 DE6238
 DE6238_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DE6238
 DE6238                          STATION DESCRIPTION
 DE6238
 DE6238'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
 DE6238'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DE6238'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DE6238'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DE6238'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DE6238'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DE6238'   ftp://cors.ngs.noaa.gov/cors/station_log
 DE6238'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 DH6912 ***********************************************************************
 DH6912  CORS         -  This is a GPS Continuously Operating Reference Station.
 DH6912  DESIGNATION -  MESA CNTY 02 COOP CORS ARP
 DH6912  CORS_ID      -  MC02
 DH6912  PID          -  DH6912
 DH6912  STATE/COUNTY-  CO/MESA
 DH6912  COUNTRY      -  US
 DH6912  USGS QUAD    -  CLIFTON (1973)
 DH6912
 DH6912                         *CURRENT SURVEY CONTROL
 DH6912  ______________________________________________________________________
 DH6912* NAD 83(2011) POSITION- 39 00 52.89774(N) 108 29 24.11237(W)   ADJUSTED
 DH6912* NAD 83(2011) ELLIP HT-  1491.262 (meters)        (08/??/11)   ADJUSTED
 DH6912* NAD 83(2011) EPOCH   -  2010.00
 DH6912* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DH6912  ______________________________________________________________________
 DH6912  NAD 83(2011) X  - -1,574,109.764 (meters)                       COMP
 DH6912  NAD 83(2011) Y  - -4,707,239.803 (meters)                       COMP
 DH6912  NAD 83(2011) Z  -  3,994,523.384 (meters)                       COMP
```

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DH6912  GEOID HEIGHT    -        -16.793 (meters)                    GEOID12B
DH6912
DH6912.Formal positional accuracy estimates are not available for this CORS
DH6912.because its coordinates were determined in part using modeled
DH6912.velocities. Approximate one-sigma accuracies for latitude, longitude,
DH6912.and ellipsoid height can be obtained from the short-term time series.
DH6912.Additional information regarding modeled velocities is available on
DH6912.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DH6912
DH6912.The coordinates were established by GPS observations
DH6912.and adjusted by the National Geodetic Survey in August 2011.
DH6912
DH6912.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DH6912.been affixed to the stable North American Tectonic Plate.
DH6912
DH6912.The coordinates are valid at the epoch date displayed above
DH6912.which is a decimal equivalence of Year/Month/Day.
DH6912
DH6912.Significant digits in the geoid height do not necessarily reflect accuracy.
DH6912.GEOID12B height accuracy estimate available here.
DH6912
DH6912.The PID for the CORS L1 Phase Center is DH6913.
DH6912
DH6912.The XYZ, and position/ellipsoidal ht. are equivalent.
DH6912
DH6912.The ellipsoidal height was determined by GPS observations
DH6912.and is referenced to NAD 83.
DH6912
DH6912. The following values were computed from the NAD 83(2011) position.
DH6912
DH6912;                    North         East     Units Scale Factor Converg.
DH6912;SPC CO C     -   440,200.912   655,502.812   MT  0.99993704   -1 53 08.8
DH6912;SPC CO C     - 1,444,225.83  2,150,595.48   sFT  0.99993704   -1 53 08.8
DH6912;UTM  12      - 4,321,404.705   717,312.208   MT  1.00018153   +1 34 50.5
DH6912
DH6912!             -  Elev Factor  x  Scale Factor =   Combined Factor
DH6912!SPC CO C     -   0.99976608  x   0.99993704  =   0.99970314
DH6912!UTM  12      -   0.99976608  x   1.00018153  =   0.99994757
DH6912
DH6912                          SUPERSEDED SURVEY CONTROL
DH6912
DH6912  NAD 83(CORS)-  39 00 52.89782(N)    108 29 24.11265(W) AD(2002.00) c
DH6912  ELLIP H (11/??/05) 1491.251  (m)                      GP(2002.00) c c
DH6912
DH6912.Superseded values are not recommended for survey control.
DH6912
DH6912.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DH6912.See file dsdata.txt to determine how the superseded data were derived.
DH6912
DH6912_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SYJ1731221404(NAD 83)
DH6912
DH6912_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DH6912
DH6912                          STATION DESCRIPTION
DH6912
DH6912'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
```

```
 DH6912'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DH6912'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DH6912'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DH6912'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DH6912'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DH6912'   ftp://cors.ngs.noaa.gov/cors/station_log
 DH6912'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 DH6914 ***********************************************************************
 DH6914  CORS        -  This is a GPS Continuously Operating Reference Station.
 DH6914  DESIGNATION -  MESA CNTY 03 COOP CORS ARP
 DH6914  CORS_ID     -  MC03
 DH6914  PID         -  DH6914
 DH6914  STATE/COUNTY-  CO/MESA
 DH6914  COUNTRY     -  US
 DH6914  USGS QUAD   -  FRUITA (1973)
 DH6914
 DH6914                        *CURRENT SURVEY CONTROL
 DH6914  ______________________________________________________________________
 DH6914* NAD 83(2011) POSITION- 39 11 23.78512(N) 108 43 50.18033(W)   ADJUSTED
 DH6914* NAD 83(2011) ELLIP HT-  1379.992 (meters)        (08/??/11)   ADJUSTED
 DH6914* NAD 83(2011) EPOCH   -  2010.00
 DH6914* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DH6914  ______________________________________________________________________
 DH6914  NAD 83(2011) X  - -1,589,891.704 (meters)                      COMP
 DH6914  NAD 83(2011) Y  - -4,688,883.736 (meters)                      COMP
 DH6914  NAD 83(2011) Z  -  4,009,554.416 (meters)                      COMP
 DH6914  GEOID HEIGHT    -        -17.269 (meters)                      GEOID12B
 DH6914
 DH6914.Formal positional accuracy estimates are not available for this CORS
 DH6914.because its coordinates were determined in part using modeled
 DH6914.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DH6914.and ellipsoid height can be obtained from the short-term time series.
 DH6914.Additional information regarding modeled velocities is available on
 DH6914.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
 DH6914
 DH6914.The coordinates were established by GPS observations
 DH6914.and adjusted by the National Geodetic Survey in August 2011.
 DH6914
 DH6914.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 DH6914.been affixed to the stable North American Tectonic Plate.
 DH6914
 DH6914.The coordinates are valid at the epoch date displayed above
 DH6914.which is a decimal equivalence of Year/Month/Day.
 DH6914
 DH6914.Significant digits in the geoid height do not necessarily reflect accuracy.
 DH6914.GEOID12B height accuracy estimate available here.
 DH6914
 DH6914.The PID for the CORS L1 Phase Center is DH6915.
 DH6914
 DH6914.The XYZ, and position/ellipsoidal ht. are equivalent.
 DH6914
 DH6914.The ellipsoidal height was determined by GPS observations
 DH6914.and is referenced to NAD 83.
 DH6914
 DH6914. The following values were computed from the NAD 83(2011) position.
```

```
 DH6914
 DH6914;                    North         East      Units Scale Factor Converg.
 DH6914;SPC CO C     -   460,355.963   635,372.221   MT  0.99993711   -2 02 15.0
 DH6914;SPC CO C     - 1,510,351.19  2,084,550.36   sFT  0.99993711   -2 02 15.0
 DH6914;UTM  12      - 4,340,308.226   695,994.795   MT  1.00007301   +1 26 04.1
 DH6914
 DH6914!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DH6914!SPC CO C     -   0.99978354  x   0.99993711  =   0.99972066
 DH6914!UTM  12      -   0.99978354  x   1.00007301  =   0.99985653
 DH6914
 DH6914                          SUPERSEDED SURVEY CONTROL
 DH6914
 DH6914  NAD 83(CORS)-  39 11 23.78495(N)    108 43 50.18045(W) AD(2002.00) c
 DH6914  ELLIP H (11/??/05) 1379.983  (m)                      GP(2002.00) c c
 DH6914
 DH6914.Superseded values are not recommended for survey control.
 DH6914
 DH6914.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DH6914.See file dsdata.txt to determine how the superseded data were derived.
 DH6914
 DH6914_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ9599440308(NAD 83)
 DH6914
 DH6914_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DH6914
 DH6914                           STATION DESCRIPTION
 DH6914
 DH6914'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
 DH6914'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DH6914'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DH6914'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DH6914'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DH6914'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DH6914'   ftp://cors.ngs.noaa.gov/cors/station_log
 DH6914'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 DH6916 ***********************************************************************
 DH6916  CORS        -  This is a GPS Continuously Operating Reference Station.
 DH6916  DESIGNATION -  MESA CNTY 04 COOP CORS ARP
 DH6916  CORS_ID     -  MC04
 DH6916  PID         -  DH6916
 DH6916  STATE/COUNTY-  CO/MESA
 DH6916  COUNTRY     -  US
 DH6916  USGS QUAD   -  GATEWAY (1973)
 DH6916
 DH6916                        *CURRENT SURVEY CONTROL
 DH6916  ______________________________________________________________________
 DH6916* NAD 83(2011) POSITION- 38 41 02.97515(N) 108 58 25.82374(W)   ADJUSTED
 DH6916* NAD 83(2011) ELLIP HT-  1401.691 (meters)        (08/??/11)   ADJUSTED
 DH6916* NAD 83(2011) EPOCH   -  2010.00
 DH6916* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DH6916  ______________________________________________________________________
 DH6916  NAD 83(2011) X  - -1,621,264.014 (meters)                       COMP
 DH6916  NAD 83(2011) Y  - -4,715,485.568 (meters)                       COMP
 DH6916  NAD 83(2011) Z  -  3,965,883.988 (meters)                       COMP
 DH6916  GEOID HEIGHT    -        -18.273 (meters)                       GEOID12B
 DH6916
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```
DH6916.Formal positional accuracy estimates are not available for this CORS
DH6916.because its coordinates were determined in part using modeled
DH6916.velocities. Approximate one-sigma accuracies for latitude, longitude,
DH6916.and ellipsoid height can be obtained from the short-term time series.
DH6916.Additional information regarding modeled velocities is available on
DH6916.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DH6916
DH6916.The coordinates were established by GPS observations
DH6916.and adjusted by the National Geodetic Survey in August 2011.
DH6916
DH6916.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DH6916.been affixed to the stable North American Tectonic Plate.
DH6916
DH6916.The coordinates are valid at the epoch date displayed above
DH6916.which is a decimal equivalence of Year/Month/Day.
DH6916
DH6916.Significant digits in the geoid height do not necessarily reflect accuracy.
DH6916.GEOID12B height accuracy estimate available here.
DH6916
DH6916.The PID for the CORS L1 Phase Center is DH6917.
DH6916
DH6916.The XYZ, and position/ellipsoidal ht. are equivalent.
DH6916
DH6916.The ellipsoidal height was determined by GPS observations
DH6916.and is referenced to NAD 83.
DH6916
DH6916. The following values were computed from the NAD 83(2011) position.
DH6916
DH6916;                    North         East     Units Scale Factor Converg.
DH6916;SPC CO C     -   405,026.524   612,227.380   MT  0.99996222   -2 11 27.3
DH6916;SPC CO C     - 1,328,824.52  2,008,616.00   sFT  0.99996222   -2 11 27.3
DH6916;UTM  12      - 4,283,676.503   676,234.202   MT  0.99998248   +1 16 00.2
DH6916
DH6916!             -  Elev Factor  x  Scale Factor =   Combined Factor
DH6916!SPC CO C     -   0.99978012  x   0.99996222  =   0.99974235
DH6916!UTM  12      -   0.99978012  x   0.99998248  =   0.99976260
DH6916
DH6916                          SUPERSEDED SURVEY CONTROL
DH6916
DH6916  NAD 83(CORS)-  38 41 02.97478(N)    108 58 25.82419(W) AD(2002.00) c
DH6916  ELLIP H (11/??/05) 1401.686  (m)                       GP(2002.00) c c
DH6916
DH6916.Superseded values are not recommended for survey control.
DH6916
DH6916.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DH6916.See file dsdata.txt to determine how the superseded data were derived.
DH6916
DH6916_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXH7623483676(NAD 83)
DH6916
DH6916_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DH6916
DH6916                          STATION DESCRIPTION
DH6916
DH6916'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DH6916'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DH6916'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
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 DH6916'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DH6916'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DH6916'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DH6916'   ftp://cors.ngs.noaa.gov/cors/station_log
 DH6916'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 DL3522 ***********************************************************************
 DL3522  CORS        -  This is a GPS Continuously Operating Reference Station.
 DL3522  DESIGNATION -  MACK CORS ARP
 DL3522  CORS_ID     -  MC06
 DL3522  PID         -  DL3522
 DL3522  STATE/COUNTY-  CO/MESA
 DL3522  COUNTRY     -  US
 DL3522  USGS QUAD   -  MACK (1973)
 DL3522
 DL3522                        *CURRENT SURVEY CONTROL
 DL3522  ______________________________________________________________________
 DL3522* NAD 83(2011) POSITION- 39 13 21.09183(N) 108 51 05.90441(W)   ADJUSTED
 DL3522* NAD 83(2011) ELLIP HT-  1393.278 (meters)        (08/??/11)   ADJUSTED
 DL3522* NAD 83(2011) EPOCH   -  2010.00
 DL3522* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DL3522  ______________________________________________________________________
 DL3522  NAD 83(2011) X  - -1,599,057.462 (meters)                    COMP
 DL3522  NAD 83(2011) Y  - -4,683,359.916 (meters)                    COMP
 DL3522  NAD 83(2011) Z  -  4,012,366.608 (meters)                    COMP
 DL3522  GEOID HEIGHT    -        -17.462 (meters)                    GEOID12B
 DL3522
 DL3522.Formal positional accuracy estimates are not available for this CORS
 DL3522.because its coordinates were determined in part using modeled
 DL3522.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DL3522.and ellipsoid height can be obtained from the short-term time series.
 DL3522.Additional information regarding modeled velocities is available on
 DL3522.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
 DL3522
 DL3522.The coordinates were established by GPS observations
 DL3522.and adjusted by the National Geodetic Survey in August 2011.
 DL3522
 DL3522.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 DL3522.been affixed to the stable North American Tectonic Plate.
 DL3522
 DL3522.The coordinates are valid at the epoch date displayed above
 DL3522.which is a decimal equivalence of Year/Month/Day.
 DL3522
 DL3522.Significant digits in the geoid height do not necessarily reflect accuracy.
 DL3522.GEOID12B height accuracy estimate available here.
 DL3522
 DL3522.The PID for the CORS L1 Phase Center is DL3523.
 DL3522
 DL3522.The XYZ, and position/ellipsoidal ht. are equivalent.
 DL3522
 DL3522.The ellipsoidal height was determined by GPS observations
 DL3522.and is referenced to NAD 83.
 DL3522
 DL3522. The following values were computed from the NAD 83(2011) position.
 DL3522
 DL3522;                    North         East     Units Scale Factor Converg.
```

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 DL3522;SPC CO C     -   464,349.577   625,056.477   MT  0.99993815   -2 06 49.8
 DL3522;SPC CO C     - 1,523,453.57  2,050,706.12   sFT  0.99993815   -2 06 49.8
 DL3522;UTM  12      - 4,343,670.087   685,454.944   MT  1.00002350   +1 21 31.9
 DL3522
 DL3522!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DL3522!SPC CO C     -   0.99978145  x   0.99993815  =   0.99971962
 DL3522!UTM  12      -   0.99978145  x   1.00002350  =   0.99980495
 DL3522
 DL3522                          SUPERSEDED SURVEY CONTROL
 DL3522
 DL3522  NAD 83(CORS)-  39 13 21.09134(N)    108 51 05.90469(W) AD(2002.00) c
 DL3522  ELLIP H (07/??/09) 1393.280  (m)                      GP(2002.00) c c
 DL3522
 DL3522.Superseded values are not recommended for survey control.
 DL3522
 DL3522.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DL3522.See file dsdata.txt to determine how the superseded data were derived.
 DL3522
 DL3522_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ8545443670(NAD 83)
 DL3522
 DL3522_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DL3522
 DL3522                           STATION DESCRIPTION
 DL3522
 DL3522'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
 DL3522'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DL3522'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DL3522'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DL3522'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DL3522'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DL3522'   ftp://cors.ngs.noaa.gov/cors/station_log
 DL3522'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 DL3524 ***********************************************************************
 DL3524  CORS        -  This is a GPS Continuously Operating Reference Station.
 DL3524  DESIGNATION -  COLLBRAN CORS ARP
 DL3524  CORS_ID     -  MC08
 DL3524  PID         -  DL3524
 DL3524  STATE/COUNTY-  CO/MESA
 DL3524  COUNTRY     -  US
 DL3524  USGS QUAD   -  COLLBRAN (1982)
 DL3524
 DL3524                        *CURRENT SURVEY CONTROL
 DL3524  ______________________________________________________________________
 DL3524* NAD 83(2011) POSITION- 39 14 08.56069(N) 107 58 39.51335(W)   ADJUSTED
 DL3524* NAD 83(2011) ELLIP HT-  1835.773 (meters)        (08/??/11)   ADJUSTED
 DL3524* NAD 83(2011) EPOCH   -  2010.00
 DL3524* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DL3524  ______________________________________________________________________
 DL3524  NAD 83(2011) X  - -1,527,253.572 (meters)                      COMP
 DL3524  NAD 83(2011) Y  - -4,706,651.550 (meters)                      COMP
 DL3524  NAD 83(2011) Z  -  4,013,780.699 (meters)                      COMP
 DL3524  GEOID HEIGHT    -        -15.906 (meters)                      GEOID12B
 DL3524
 DL3524.Formal positional accuracy estimates are not available for this CORS
 DL3524.because its coordinates were determined in part using modeled
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```
DL3524.velocities. Approximate one-sigma accuracies for latitude, longitude,
DL3524.and ellipsoid height can be obtained from the short-term time series.
DL3524.Additional information regarding modeled velocities is available on
DL3524.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DL3524
DL3524.The coordinates were established by GPS observations
DL3524.and adjusted by the National Geodetic Survey in August 2011.
DL3524
DL3524.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DL3524.been affixed to the stable North American Tectonic Plate.
DL3524
DL3524.The coordinates are valid at the epoch date displayed above
DL3524.which is a decimal equivalence of Year/Month/Day.
DL3524
DL3524.Significant digits in the geoid height do not necessarily reflect accuracy.
DL3524.GEOID12B height accuracy estimate available here.
DL3524
DL3524.The PID for the CORS L1 Phase Center is DL3525.
DL3524
DL3524.The XYZ, and position/ellipsoidal ht. are equivalent.
DL3524
DL3524.The ellipsoidal height was determined by GPS observations
DL3524.and is referenced to NAD 83.
DL3524
DL3524. The following values were computed from the NAD 83(2011) position.
DL3524
DL3524;                    North         East     Units Scale Factor Converg.
DL3524;SPC CO C     -   463,391.967   700,526.137   MT  0.99993866   -1 33 45.4
DL3524;SPC CO C     - 1,520,311.81  2,298,309.50   sFT  0.99993866   -1 33 45.4
DL3524;UTM  13      - 4,347,160.422   242,995.017   MT  1.00041336   -1 53 03.9
DL3524;UTM  12      - 4,347,288.380   760,865.104   MT  1.00043798   +1 54 45.9
DL3524
DL3524!             -  Elev Factor  x  Scale Factor =   Combined Factor
DL3524!SPC CO C     -   0.99971206  x   0.99993866  =   0.99965074
DL3524!UTM  13      -   0.99971206  x   1.00041336  =   1.00012531
DL3524!UTM  12      -   0.99971206  x   1.00043798  =   1.00014992
DL3524
DL3524                          SUPERSEDED SURVEY CONTROL
DL3524
DL3524  NAD 83(CORS)-  39 14 08.56071(N)    107 58 39.51370(W) AD(2002.00) c
DL3524  ELLIP H (07/??/09) 1835.769  (m)                       GP(2002.00) c c
DL3524
DL3524.Superseded values are not recommended for survey control.
DL3524
DL3524.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL3524.See file dsdata.txt to determine how the superseded data were derived.
DL3524
DL3524_U.S. NATIONAL GRID SPATIAL ADDRESS: 13SBD4299547160(NAD 83)
DL3524
DL3524_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DL3524
DL3524                          STATION DESCRIPTION
DL3524
DL3524'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL3524'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL3524'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
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```
 DL3524'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DL3524'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DL3524'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DL3524'   ftp://cors.ngs.noaa.gov/cors/station_log
 DL3524'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

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

```
PROGRAM = datasheet95, VERSION = 8.9
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KL0559 ***********************************************************************
 KL0559  DESIGNATION -  5544
 KL0559  PID         -  KL0559
 KL0559  STATE/COUNTY-  CO/GARFIELD
 KL0559  COUNTRY     -  US
 KL0559  USGS QUAD   -  RIFLE (1982)
 KL0559
 KL0559                        *CURRENT SURVEY CONTROL
 KL0559  ______________________________________________________________________
 KL0559* NAD 83(2011) POSITION- 39 34 24.17703(N) 107 46 14.02014(W)   ADJUSTED
 KL0559* NAD 83(2011) ELLIP HT-  1674.735 (meters)        (06/27/12)   ADJUSTED
 KL0559* NAD 83(2011) EPOCH   -  2010.00
 KL0559* NAVD 88 ORTHO HEIGHT -  1690.483 (meters)     5546.19  (feet) ADJUSTED
 KL0559  ______________________________________________________________________
 KL0559  NAD 83(2011) X  - -1,502,929.361 (meters)                      COMP
 KL0559  NAD 83(2011) Y  - -4,689,353.521 (meters)                      COMP
 KL0559  NAD 83(2011) Z  -  4,042,653.809 (meters)                      COMP
 KL0559  LAPLACE CORR    -          1.76  (seconds)                     DEFLEC12B
 KL0559  GEOID HEIGHT    -        -15.779 (meters)                      GEOID12B
 KL0559  DYNAMIC HEIGHT  -       1688.742 (meters)     5540.48  (feet) COMP
 KL0559  MODELED GRAVITY -    979,538.5   (mgal)                        NAVD 88
 KL0559
 KL0559  VERT ORDER      -  SECOND    CLASS 0
 KL0559
 KL0559  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 KL0559  Standards:
 KL0559         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 KL0559            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 KL0559  ------------------------------------------------------------------
 KL0559  NETWORK    0.97   0.86           0.41   0.38   0.44      0.11499012
 KL0559  ------------------------------------------------------------------
 KL0559  Click here for local accuracies and other accuracy information.
 KL0559
 KL0559
 KL0559.The horizontal coordinates were established by GPS observations
 KL0559.and adjusted by the National Geodetic Survey in June 2012.
 KL0559
 KL0559.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 KL0559.been affixed to the stable North American tectonic plate. See
 KL0559.NA2011 for more information.
 KL0559
 KL0559.The horizontal coordinates are valid at the epoch date displayed above
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```
KL0559.which is a decimal equivalence of Year/Month/Day.
KL0559
KL0559.The orthometric height was determined by differential leveling and
KL0559.adjusted by the NATIONAL GEODETIC SURVEY
KL0559.in June 1991.
KL0559
KL0559.Significant digits in the geoid height do not necessarily reflect accuracy.
KL0559.GEOID12B height accuracy estimate available here.
KL0559
KL0559.Photographs are available for this station.
KL0559
KL0559.The X, Y, and Z were computed from the position and the ellipsoidal ht.
KL0559
KL0559.The Laplace correction was computed from DEFLEC12B derived deflections.
KL0559
KL0559.The ellipsoidal height was determined by GPS observations
KL0559.and is referenced to NAD 83.
KL0559
KL0559.The dynamic height is computed by dividing the NAVD 88
KL0559.geopotential number by the normal gravity value computed on the
KL0559.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KL0559.degrees latitude (g = 980.6199 gals.).
KL0559
KL0559.The modeled gravity was interpolated from observed gravity values.
KL0559
KL0559. The following values were computed from the NAD 83(2011) position.
KL0559
KL0559;                    North         East     Units Scale Factor Converg.
KL0559;SPC CO C     -   500,400.623   719,334.827   MT  0.99996983   -1 25 55.3
KL0559;SPC CO C     - 1,641,731.04  2,360,017.68   sFT  0.99996983   -1 25 55.3
KL0559;UTM  13      - 4,384,075.684   262,022.919   MT  1.00029731   -1 45 57.1
KL0559
KL0559!             -  Elev Factor  x  Scale Factor =   Combined Factor
KL0559!SPC CO C     -   0.99973733  x   0.99996983  =   0.99970716
KL0559!UTM  13      -   0.99973733  x   1.00029731  =   1.00003456
KL0559
KL0559                          SUPERSEDED SURVEY CONTROL
KL0559
KL0559  NAD 83(2007)-  39 34 24.17666(N)    107 46 14.02045(W) AD(2002.00) 0
KL0559  ELLIP H (02/10/07) 1674.764  (m)                       GP(2002.00)
KL0559  ELLIP H (12/03/02) 1674.764  (m)                       GP(       ) 4 2
KL0559  NAD 83(1992)-  39 34 24.17646(N)    107 46 14.01946(W) AD(       ) 1
KL0559  ELLIP H (06/16/98) 1674.767  (m)                       GP(       ) 3 1
KL0559  NAVD 88 (06/16/98) 1690.48   (m)         5546.2    (f) LEVELING    3
KL0559  NGVD 29 (??/??/92) 1689.273  (m)         5542.22   (f) ADJ UNCH    2 0
KL0559
KL0559.Superseded values are not recommended for survey control.
KL0559
KL0559.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
KL0559.See file dsdata.txt to determine how the superseded data were derived.
KL0559
KL0559_U.S. NATIONAL GRID SPATIAL ADDRESS: 13SBD6202284075(NAD 83)
KL0559
KL0559_MARKER: DB = BENCH MARK DISK
KL0559_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
KL0559_STAMPING: 5544
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 KL0559_MARK LOGO: USGS
 KL0559_MAGNETIC: O = OTHER; SEE DESCRIPTION
 KL0559_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 KL0559+STABILITY: SURFACE MOTION
 KL0559_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 KL0559+SATELLITE: SATELLITE OBSERVATIONS - March 16, 2010
 KL0559
 KL0559  HISTORY     - Date     Condition        Report By
 KL0559  HISTORY     - UNK      MONUMENTED       USGS
 KL0559  HISTORY     - 1934     GOOD             CGS
 KL0559  HISTORY     - 19960529 GOOD             CODOT
 KL0559  HISTORY     - 20100316 GOOD             CODOT
 KL0559
 KL0559                          STATION DESCRIPTION
 KL0559
 KL0559'DESCRIBED BY COAST AND GEODETIC SURVEY 1934
 KL0559'2.9 MI N FROM RIFLE.
 KL0559'2.9 MILES NORTH ALONG STATE HIGHWAY 13 FROM THE CITY PARK AT RIFLE, AT
 KL0559'THE J.C. COOK RANCH, ABOUT 60 FEET SOUTH OF A YARD FENCE CORNER, 15
 KL0559'FEET EAST OF THE EDGE OF THE HIGHWAY, ON THE SLOPE OF A BANK, IN THE
 KL0559'TOP OF A CONCRETE BLOCK, AND ABOUT 2 FEET HIGHER THAN THE HIGHWAY.
 KL0559
 KL0559                          STATION RECOVERY (1996)
 KL0559
 KL0559'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 1996 (RSC)
 KL0559'THE STATION IS LOCATED AT THE NORTHERN MOST PART OF THE CITY OF RIFLE,
 KL0559'IN THE NORTHEAST 1/4 OF SECTION 36, T 5 S, R 93 W. OWNERSHIP--GARFIELD
 KL0559'COUNTY RIGHT-OF-WAY  TO REACH THE STATION FROM THE INTERSECTION OF
 KL0559'STATE HIGHWAY 13 AND STATE HIGHWAY 325 ABOUT 2.5 MILES (4.0 KM) NORTH
 KL0559'OF RIFLE, GO EAST ON STATE HIGHWAY 325 FOR 0.05 MI (0.08 KM) TO A SIDE
 KL0559'ROAD RIGHT, COUNTY ROAD 296.  TURN RIGHT, SOUTH FOR 0.1 MI (0.2 KM) TO
 KL0559'THE STATION ON THE LEFT, ABOUT HALF WAY UP A ROAD CUT  THE MARK IS AN
 KL0559'STANDARD ALUMINUM DISK SET IN THE TOP OF A 50 CM BY 50 CM CONCRETE
 KL0559'POST FLUSH WITH THE GROUND.  IT IS 32.8 M (107.6 FT) SOUTH FROM A
 KL0559'POWER POLE WITH TRANSFORMER, 26.6 M (87.3 FT) NORTH FROM A GATE TO A
 KL0559'FIELD, 9.7 M (31.8 FT) SOUTH-SOUTHEAST FROM A PHONE BOX, 7.8 M (25.6
 KL0559'FT) NORTH FROM THE CENTER OF A ROAD CULVERT, 7.7 M (25.3 FT) EAST FROM
 KL0559'THE CENTER OF COUNTY ROAD 296, 6.2 M (20.3 FT) WEST FROM A
 KL0559'RIGHT-OF-WAY FENCE, 0.25 M (0.82 FT) NORTHEAST FROM A WITNESS POST AND
 KL0559'ABOUT 0.6 M (2.0 FT) ABOVE THE ROAD.
 KL0559
 KL0559                          STATION RECOVERY (2010)
 KL0559
 KL0559'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 2010 (MCW)
 KL0559'TAKE FIRST RIGHT AFTER TURNING ON SH 325 OFF OF SH 13.  TURN ON TO
 KL0559'DIRT ROAD WITH NO SIGN. MARK IS ON THE EAST SIDE OF THE ROAD WITH A
 KL0559'ORANGE CARSONITE MARKER.
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KM0232 ***********************************************************************
 KM0232  DESIGNATION -  C 416
 KM0232  PID         -  KM0232
 KM0232  STATE/COUNTY-  CO/MESA
 KM0232  COUNTRY     -  US
 KM0232  USGS QUAD   -  FRUITA (1973)
 KM0232
 KM0232                         *CURRENT SURVEY CONTROL
 KM0232  _____________________________________________________________________
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KM0232* NAD 83(1986) POSITION- 39 09 21.78   (N) 108 44 01.50   (W)   HD_HELD1
KM0232* NAVD 88 ORTHO HEIGHT -  1372.152 (meters)     4501.80  (feet) ADJUSTED
KM0232  ____________________________________________________________________
KM0232  GEOID HEIGHT    -        -17.250 (meters)                      GEOID12B
KM0232  DYNAMIC HEIGHT  -       1370.853 (meters)     4497.54  (feet) COMP
KM0232  MODELED GRAVITY -    979,633.6   (mgal)                        NAVD 88
KM0232
KM0232  VERT ORDER      -  FIRST     CLASS II
KM0232
KM0232.The horizontal coordinates were determined by differentially corrected
KM0232.hand held GPS observations or other comparable positioning techniques
KM0232.and have an estimated accuracy of +/- 3 meters.
KM0232.
KM0232.The orthometric height was determined by differential leveling and
KM0232.adjusted by the NATIONAL GEODETIC SURVEY
KM0232.in June 1991.
KM0232
KM0232.Significant digits in the geoid height do not necessarily reflect accuracy.
KM0232.GEOID12B height accuracy estimate available here.
KM0232
KM0232.The dynamic height is computed by dividing the NAVD 88
KM0232.geopotential number by the normal gravity value computed on the
KM0232.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KM0232.degrees latitude (g = 980.6199 gals.).
KM0232
KM0232.The modeled gravity was interpolated from observed gravity values.
KM0232
KM0232;                    North         East     Units  Estimated Accuracy
KM0232;SPC CO C     -   456,605.8     634,966.9     MT  (+/- 3 meters HH1 GPS)
KM0232
KM0232                          SUPERSEDED SURVEY CONTROL
KM0232
KM0232.No superseded survey control is available for this station.
KM0232
KM0232_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ9581736539(NAD 83)
KM0232
KM0232_MARKER: I = METAL ROD
KM0232_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
KM0232_STAMPING: C 416 1984
KM0232_MARK LOGO: NGS
KM0232_PROJECTION: FLUSH
KM0232_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
KM0232_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
KM0232+SATELLITE: SATELLITE OBSERVATIONS - May 23, 2009
KM0232_ROD/PIPE-DEPTH: 12.2 meters
KM0232
KM0232  HISTORY     - Date     Condition        Report By
KM0232  HISTORY     - 1984     MONUMENTED       NGS
KM0232  HISTORY     - 20030628 GOOD             USPSQD
KM0232  HISTORY     - 20090523 GOOD             GEOCAC
KM0232
KM0232                          STATION DESCRIPTION
KM0232
KM0232'DESCRIBED BY NATIONAL GEODETIC SURVEY 1984
KM0232'IN FRUITA.
KM0232'IN FRUITA, AT THE INTERSECTION OF U.S. HIGHWAY 50 AND SOUTH MESA,
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 KM0232'14.1 M (46.3 FT) SOUTHWEST OF THE CENTERLINE OF THE HIGHWAY, 6.8 M
 KM0232'(22.3 FT) WEST OF THE CENTER OF SOUTH MESA, AND 0.7 M (2.3 FT)
 KM0232'NORTHEAST OF A STREET LIGHT POLE.  NOTE--ACCESS TO DATUM POINT IS HAD
 KM0232'THROUGH A 5-INCH LOGO CAP.
 KM0232'THE MARK IS 0.3 METERS  SE FROM  A WITNESS POST
 KM0232'THE MARK IS 0.5 M BELOW THE HIGHWAY.
 KM0232
 KM0232                          STATION RECOVERY (2003)
 KM0232
 KM0232'RECOVERY NOTE BY US POWER SQUADRON 2003 (AFA)
 KM0232'RECOVERED IN GOOD CONDITION.
 KM0232
 KM0232                          STATION RECOVERY (2009)
 KM0232
 KM0232'RECOVERY NOTE BY GEOCACHING 2009 (WS)
 KM0232'RECOVERED IN GOOD CONDITION.
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KM0200 ***********************************************************************
 KM0200  DESIGNATION -  C 427
 KM0200  PID         -  KM0200
 KM0200  STATE/COUNTY-  CO/MESA
 KM0200  COUNTRY     -  US
 KM0200  USGS QUAD   -  HIGHLINE LAKE (1968)
 KM0200
 KM0200                         *CURRENT SURVEY CONTROL
 KM0200  ______________________________________________________________________
 KM0200* NAD 83(1986) POSITION- 39 20 04.     (N) 108 49 17.     (W)    SCALED
 KM0200* NAVD 88 ORTHO HEIGHT -  1517.345 (meters)     4978.16  (feet) ADJUSTED
 KM0200  ______________________________________________________________________
 KM0200  GEOID HEIGHT    -        -17.081 (meters)                      GEOID12B
 KM0200  DYNAMIC HEIGHT  -       1515.904 (meters)     4973.43  (feet) COMP
 KM0200  MODELED GRAVITY -    979,624.5   (mgal)                        NAVD 88
 KM0200
 KM0200  VERT ORDER      -  FIRST     CLASS II
 KM0200
 KM0200.The horizontal coordinates were scaled from a topographic map and have
 KM0200.an estimated accuracy of +/- 6 seconds.
 KM0200.
 KM0200.The orthometric height was determined by differential leveling and
 KM0200.adjusted by the NATIONAL GEODETIC SURVEY
 KM0200.in June 1991.
 KM0200
 KM0200.Significant digits in the geoid height do not necessarily reflect accuracy.
 KM0200.GEOID12B height accuracy estimate available here.
 KM0200
 KM0200.The dynamic height is computed by dividing the NAVD 88
 KM0200.geopotential number by the normal gravity value computed on the
 KM0200.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 KM0200.degrees latitude (g = 980.6199 gals.).
 KM0200
 KM0200.The modeled gravity was interpolated from observed gravity values.
 KM0200
 KM0200;                    North         East     Units  Estimated Accuracy
 KM0200;SPC CO C     -   476,670.      628,120.      MT  (+/- 180 meters Scaled)
 KM0200
 KM0200                          SUPERSEDED SURVEY CONTROL
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 KM0200
 KM0200.No superseded survey control is available for this station.
 KM0200
 KM0200_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ877561(NAD 83)
 KM0200
 KM0200_MARKER: I = METAL ROD
 KM0200_SETTING: 15 = METAL ROD DRIVEN INTO GROUND. SEE TEXT FOR ADDITIONAL
 KM0200+WITH SETTING: INFORMATION.
 KM0200_STAMPING: C 427 1984
 KM0200_MARK LOGO: NGS
 KM0200_PROJECTION: FLUSH
 KM0200_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
 KM0200_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 KM0200+SATELLITE: SATELLITE OBSERVATIONS - October 03, 2012
 KM0200_ROD/PIPE-DEPTH: 1.9  meters
 KM0200
 KM0200  HISTORY     - Date     Condition        Report By
 KM0200  HISTORY     - 1984     MONUMENTED       NGS
 KM0200  HISTORY     - 20050604 GOOD             GEOCAC
 KM0200  HISTORY     - 20121003 GOOD             CODOT
 KM0200
 KM0200                          STATION DESCRIPTION
 KM0200
 KM0200'DESCRIBED BY NATIONAL GEODETIC SURVEY 1984
 KM0200'15.4 KM (9.55 MI) NORTH FROM LOMA.
 KM0200'15.4 KM (9.55 MI) NORTHERLY ALONG STATE HIGHWAY 139 FROM THE POST
 KM0200'OFFICE IN LOMA, 3.5 KM (2.2 MI) SOUTH OF THE MESA-GARFIELD COUNTY
 KM0200'LINE, 51.2 M (168.0 FT) SOUTH OF THE CENTER OF A TRACK ROAD LEADING
 KM0200'EAST, 20.9 M (68.6 FT) EAST OF THE CENTERLINE OF THE HIGHWAY, 7.3 M
 KM0200'(24.0 FT) EAST OF A FENCE CORNER, AND 0.4 M (1.3 FT) NORTH OF A FENCE.
 KM0200'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
 KM0200'THE MARK IS 0.1 METERS  W FROM  A WITNESS POST
 KM0200'THE MARK IS 1.3 M ABOVE THE HIGHWAY.
 KM0200
 KM0200                          STATION RECOVERY (2005)
 KM0200
 KM0200'RECOVERY NOTE BY GEOCACHING 2005 (BAB)
 KM0200'MARK IN THE MIDDLE OF A GATE IN THE EAST-WEST FENCE. WITNESS POST
 KM0200'BROKEN OFF FLUSH WITH LOGO CAP
 KM0200
 KM0200                          STATION RECOVERY (2012)
 KM0200
 KM0200'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 2012 (MCW)
 KM0200'17 FEET EAST OF ROW FENCE
 KM0200'1 FOOT NORTH OF BARBED WIRE GATE
 KM0200'SET ORANGE CARSONITE POST 5 FEET WEST
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 JM0592 ***********************************************************************
 JM0592  CBN         -  This is a Cooperative Base Network Control Station.
 JM0592  DESIGNATION -  DELORIS
 JM0592  PID         -  JM0592
 JM0592  STATE/COUNTY-  CO/MESA
 JM0592  COUNTRY     -  US
 JM0592  USGS QUAD   -  GATEWAY (1973)
 JM0592
 JM0592                         *CURRENT SURVEY CONTROL
 JM0592  ______________________________________________________________________
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JM0592* NAD 83(2011) POSITION- 38 40 59.60411(N) 108 58 31.98257(W)   ADJUSTED
JM0592* NAD 83(2011) ELLIP HT-  1412.431 (meters)        (06/27/12)   ADJUSTED
JM0592* NAD 83(2011) EPOCH   -  2010.00
JM0592* NAVD 88 ORTHO HEIGHT -  1430.7   (meters)     4694.    (feet) GPS OBS
JM0592  ____________________________________________________________________
JM0592  NAVD 88 orthometric height was determined with geoid model    GEOID93
JM0592  GEOID HEIGHT    -         -18.00 (meters)                     GEOID93
JM0592  GEOID HEIGHT    -        -18.282 (meters)                     GEOID12B
JM0592  NAD 83(2011) X  - -1,621,428.669 (meters)                     COMP
JM0592  NAD 83(2011) Y  - -4,715,506.538 (meters)                     COMP
JM0592  NAD 83(2011) Z  -  3,965,809.539 (meters)                     COMP
JM0592  LAPLACE CORR    -          8.75  (seconds)                    DEFLEC12B
JM0592
JM0592  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
JM0592  Standards:
JM0592         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
JM0592            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
JM0592  ------------------------------------------------------------------
JM0592  NETWORK    0.61   1.08           0.28   0.21   0.55     -0.08962733
JM0592  ------------------------------------------------------------------
JM0592  Click here for local accuracies and other accuracy information.
JM0592
JM0592
JM0592.The horizontal coordinates were established by GPS observations
JM0592.and adjusted by the National Geodetic Survey in June 2012.
JM0592
JM0592.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
JM0592.been affixed to the stable North American tectonic plate. See
JM0592.NA2011 for more information.
JM0592
JM0592.The horizontal coordinates are valid at the epoch date displayed above
JM0592.which is a decimal equivalence of Year/Month/Day.
JM0592
JM0592.The orthometric height was determined by GPS observations and a
JM0592.high-resolution geoid model.
JM0592
JM0592.Significant digits in the geoid height do not necessarily reflect accuracy.
JM0592.GEOID12B height accuracy estimate available here.
JM0592
JM0592.The X, Y, and Z were computed from the position and the ellipsoidal ht.
JM0592
JM0592.The Laplace correction was computed from DEFLEC12B derived deflections.
JM0592
JM0592.The ellipsoidal height was determined by GPS observations
JM0592.and is referenced to NAD 83.
JM0592
JM0592. The following values were computed from the NAD 83(2011) position.
JM0592
JM0592;                    North         East     Units Scale Factor Converg.
JM0592;SPC CO C     -   404,928.346   612,074.663   MT  0.99996233   -2 11 31.2
JM0592;SPC CO C     - 1,328,502.42  2,008,114.96   sFT  0.99996233   -2 11 31.2
JM0592;SPC CO S     -   534,244.739   612,042.600   MT  1.00005517   -2 07 54.6
JM0592;SPC CO S     - 1,752,767.95  2,008,009.76   sFT  1.00005517   -2 07 54.6
JM0592;UTM  12      - 4,283,569.292   676,087.681   MT  0.99998184   +1 15 56.3
JM0592
JM0592!             -  Elev Factor  x  Scale Factor =   Combined Factor
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JM0592!SPC CO C     -   0.99977844  x   0.99996233  =   0.99974077
JM0592!SPC CO S     -   0.99977844  x   1.00005517  =   0.99983359
JM0592!UTM  12      -   0.99977844  x   0.99998184  =   0.99976028
JM0592
JM0592                          SUPERSEDED SURVEY CONTROL
JM0592
JM0592  NAD 83(2007)-  38 40 59.60372(N)    108 58 31.98304(W) AD(2002.00) 0
JM0592  ELLIP H (02/10/07) 1412.455  (m)                       GP(2002.00)
JM0592  ELLIP H (10/21/02) 1412.509  (m)                       GP(       ) 4 2
JM0592  NAD 83(1986)-  38 40 59.58711(N)    108 58 31.97056(W) AD(       ) 3
JM0592  NAD 83(1992)-  38 40 59.60260(N)    108 58 31.98358(W) AD(       ) B
JM0592  ELLIP H (05/26/92) 1412.541  (m)                       GP(       ) 4 1
JM0592  NAVD 88 (05/26/92) 1430.9    (m)  UNKNOWN model used   GPS OBS
JM0592  NGVD 29 (06/11/92) 1429.7    (m)  GEOID90 model used   GPS OBS
JM0592
JM0592.Superseded values are not recommended for survey control.
JM0592
JM0592.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JM0592.See file dsdata.txt to determine how the superseded data were derived.
JM0592
JM0592_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXH7608783569(NAD 83)
JM0592
JM0592_MARKER: DH = HORIZONTAL CONTROL DISK
JM0592_SETTING: 66 = SET IN ROCK OUTCROP
JM0592_STAMPING: DELORIS 1988
JM0592_MARK LOGO: CO-077
JM0592_MAGNETIC: O = OTHER; SEE DESCRIPTION
JM0592_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
JM0592+STABILITY: POSITION/ELEVATION WELL
JM0592_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
JM0592+SATELLITE: SATELLITE OBSERVATIONS - July 13, 1995
JM0592
JM0592  HISTORY     - Date     Condition        Report By
JM0592  HISTORY     - 1988     MONUMENTED       CO-077
JM0592  HISTORY     - 19910802 GOOD
JM0592  HISTORY     - 19940829 GOOD             NGS
JM0592  HISTORY     - 19950713 GOOD             CODOT
JM0592
JM0592                           STATION DESCRIPTION
JM0592
JM0592'DESCRIBED BY MESA COUNTY COLORADO 1988
JM0592'STATION IS LOCATED ABOUT 60 KM (37.3 MI) SOUTHWEST OF GRAND JUNCTION,
JM0592'10 KM (6.2 MI) EAST OF THE COLORADO-UTAH STATE LINE, AT GATEWAY,
JM0592'ABOUT 0.2 KM (0.1 MI) WEST OF THE COMMUNITY BUILDING (HOUSING THE
JM0592'POST OFFICE, POLICE AND FIRE DEPARTMENTS), ON A LOW, SHORT RIDGE
JM0592'ALONGSIDE STATE HIGHWAY 141, IN THE SOUTHWEST 1/4 OF SECTION 15, T 51
JM0592'N, R 19 W. OWNERSHIP--MESA COUNTY.
JM0592'NOTE-130 FT. PACK TO STATION.
JM0592'TO REACH FROM THE HIGHWAY 141 BRIDGE OVER THE DOLORES RIVER IN
JM0592'GATEWAY, GO NORTHEAST ON HIGHWAY 141 FOR 0.4 MI (0.6 KM) TO THE WEST
JM0592'PAVED ENTRANCE TO THE COMMUNITY BUILDING ON THE LEFT.  TURN LEFT,
JM0592'NORTH, FOR 100 FT (30.5 M) TO A DIRT ROAD LEFT.  TURN LEFT, WEST, ON
JM0592'ROAD ALONG FENCE FOR 0.1 MI (0.2 KM) TO A SADDLE AND THE END OF TRUCK
JM0592'TRAVEL.  PACK SOUTHEAST ON RIDGE SPINE FOR ABOUT 40 M (131.2 FT) TO
JM0592'HIGH GROUND AND STATION.
JM0592'STATION MARK IS SET IN A DRILL HOLE IN THE WEST END OF AN 0.4 M
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 JM0592'(1.3 FT) X 0.5 M (1.6 FT) X 0.2 M (0.7 FT) HIGH BOULDER ON THE
 JM0592'HIGHEST PART OF THE 2 M (6.6 FT) WIDE RIDGE.  IT IS ABOUT 40 M
 JM0592'(131.2 FT) NORTH OF, AND 20 M (65.6 FT) HIGHER THAN THE HIGHWAY, 3.6
 JM0592'M (11.8 FT) WEST-NORTHWEST OF A LONE 15-CM CEDAR TREE, AND 1.1 M
 JM0592'(3.6 FT) SOUTHEAST OF A 2.5 M (8.2 FT) HIGH WHITE TUBULAR PLASTIC
 JM0592'WITNESS POST.
 JM0592'DESCRIBED BY G.R.HEID
 JM0592
 JM0592                          STATION RECOVERY (1991)
 JM0592
 JM0592'RECOVERED 1991
 JM0592'RECOVERED IN GOOD CONDITION.
 JM0592
 JM0592                          STATION RECOVERY (1994)
 JM0592
 JM0592'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (RSC)
 JM0592'RECOVERED AS DESCRIBED.
 JM0592
 JM0592                          STATION RECOVERY (1995)
 JM0592
 JM0592'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 1995 (LJ)
 JM0592'RECOVERED AS DESCRIBED.
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KM0202 ***********************************************************************
 KM0202  CBN         -  This is a Cooperative Base Network Control Station.
 KM0202  DESIGNATION -  LOMA
 KM0202  PID         -  KM0202
 KM0202  STATE/COUNTY-  CO/MESA
 KM0202  COUNTRY     -  US
 KM0202  USGS QUAD   -  HIGHLINE LAKE (1968)
 KM0202
 KM0202                        *CURRENT SURVEY CONTROL
 KM0202  ______________________________________________________________________
 KM0202* NAD 83(2011) POSITION- 39 18 33.75982(N) 108 49 14.75391(W)   ADJUSTED
 KM0202* NAD 83(2011) ELLIP HT-  1494.561 (meters)        (06/27/12)   ADJUSTED
 KM0202* NAD 83(2011) EPOCH   -  2010.00
 KM0202* NAVD 88 ORTHO HEIGHT -  1511.748 (meters)     4959.79  (feet) ADJUSTED
 KM0202  ______________________________________________________________________
 KM0202  NAD 83(2011) X  - -1,594,589.507 (meters)                     COMP
 KM0202  NAD 83(2011) Y  - -4,678,517.277 (meters)                     COMP
 KM0202  NAD 83(2011) Z  -  4,019,897.697 (meters)                     COMP
 KM0202  LAPLACE CORR    -          3.97  (seconds)                    DEFLEC12B
 KM0202  GEOID HEIGHT    -        -17.183 (meters)                     GEOID12B
 KM0202  DYNAMIC HEIGHT  -       1510.312 (meters)     4955.08  (feet) COMP
 KM0202  MODELED GRAVITY -    979,624.6   (mgal)                       NAVD 88
 KM0202
 KM0202  VERT ORDER      -  FIRST     CLASS II
 KM0202
 KM0202  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 KM0202  Standards:
 KM0202         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 KM0202            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 KM0202  ------------------------------------------------------------------
 KM0202  NETWORK    0.84   1.37           0.38   0.30   0.70     -0.10572335
 KM0202  ------------------------------------------------------------------
 KM0202  Click here for local accuracies and other accuracy information.
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KM0202
KM0202
KM0202.The horizontal coordinates were established by GPS observations
KM0202.and adjusted by the National Geodetic Survey in June 2012.
KM0202
KM0202.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
KM0202.been affixed to the stable North American tectonic plate. See
KM0202.NA2011 for more information.
KM0202
KM0202.The horizontal coordinates are valid at the epoch date displayed above
KM0202.which is a decimal equivalence of Year/Month/Day.
KM0202
KM0202.The orthometric height was determined by differential leveling and
KM0202.adjusted by the NATIONAL GEODETIC SURVEY
KM0202.in June 1991.
KM0202
KM0202.Significant digits in the geoid height do not necessarily reflect accuracy.
KM0202.GEOID12B height accuracy estimate available here.
KM0202
KM0202.Photographs are available for this station.
KM0202
KM0202.The X, Y, and Z were computed from the position and the ellipsoidal ht.
KM0202
KM0202.The Laplace correction was computed from DEFLEC12B derived deflections.
KM0202
KM0202.The ellipsoidal height was determined by GPS observations
KM0202.and is referenced to NAD 83.
KM0202
KM0202.The dynamic height is computed by dividing the NAVD 88
KM0202.geopotential number by the normal gravity value computed on the
KM0202.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KM0202.degrees latitude (g = 980.6199 gals.).
KM0202
KM0202.The modeled gravity was interpolated from observed gravity values.
KM0202
KM0202. The following values were computed from the NAD 83(2011) position.
KM0202
KM0202;                    North         East     Units Scale Factor Converg.
KM0202;SPC CO C     -   473,887.057   628,073.084   MT  0.99994250   -2 05 39.7
KM0202;SPC CO C     - 1,554,744.45  2,060,603.11   sFT  0.99994250   -2 05 39.7
KM0202;UTM  12      - 4,353,373.697   687,888.291   MT  1.00003468   +1 22 51.5
KM0202
KM0202!             -  Elev Factor  x  Scale Factor =   Combined Factor
KM0202!SPC CO C     -   0.99976557  x   0.99994250  =   0.99970809
KM0202!UTM  12      -   0.99976557  x   1.00003468  =   0.99980024
KM0202
KM0202:                Primary Azimuth Mark                    Grid Az
KM0202:SPC CO C     -  LOMA AZ MK                              173 33 38.3
KM0202:UTM  12      -  LOMA AZ MK                              170 05 07.1
KM0202
KM0202|---------------------------------------------------------------------|
KM0202| PID    Reference Object                    Distance      Geod. Az  |
KM0202|                                                          dddmmss.s |
KM0202| CM7572 LOMA RM 1                          6.588 METERS  09436     |
KM0202| CM7571 LOMA AZ MK                                       1712758.6 |
KM0202| CM7573 LOMA RM 2                          7.340 METERS  20129     |
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KM0202|----------------------------------------------------------------------|
KM0202
KM0202                          SUPERSEDED SURVEY CONTROL
KM0202
KM0202  NAD 83(2007)-  39 18 33.75946(N)    108 49 14.75442(W) AD(2002.00) 0
KM0202  ELLIP H (02/10/07) 1494.584  (m)                       GP(2002.00)
KM0202  ELLIP H (10/21/02) 1494.617  (m)                       GP(       ) 4 2
KM0202  NAD 83(1992)-  39 18 33.75891(N)    108 49 14.75434(W) AD(       ) B
KM0202  ELLIP H (05/26/92) 1494.636  (m)                       GP(       ) 4 1
KM0202  NAD 83(1986)-  39 18 33.73930(N)    108 49 14.75201(W) AD(       ) 3
KM0202  NAD 27      -  39 18 33.81900(N)    108 49 12.38500(W) AD(       ) 3
KM0202  NAVD 88 (05/26/92) 1511.75   (m)         4959.8    (f) LEVELING    3
KM0202  NGVD 29 (06/11/92) 1510.50   (m)         4955.7    (f) LEVELING    3
KM0202  NGVD 29 (07/19/86) 1510.0    (m)         4954.     (f) VERT ANG
KM0202
KM0202.Superseded values are not recommended for survey control.
KM0202
KM0202.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
KM0202.See file dsdata.txt to determine how the superseded data were derived.
KM0202
KM0202_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ8788853373(NAD 83)
KM0202
KM0202_MARKER: DS = TRIANGULATION STATION DISK
KM0202_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
KM0202_STAMPING: LOMA 1937
KM0202_MARK LOGO: CGS
KM0202_PROJECTION: PROJECTING 5 CENTIMETERS
KM0202_MAGNETIC: O = OTHER; SEE DESCRIPTION
KM0202_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
KM0202+STABILITY: SURFACE MOTION
KM0202_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
KM0202+SATELLITE: SATELLITE OBSERVATIONS - October 03, 2012
KM0202
KM0202  HISTORY     - Date     Condition        Report By
KM0202  HISTORY     - 1937     MONUMENTED       CGS
KM0202  HISTORY     - 1981     GOOD             LOCENG
KM0202  HISTORY     - 1984     GOOD             NGS
KM0202  HISTORY     - 19910703 GOOD             NGS
KM0202  HISTORY     - 19940829 GOOD             NGS
KM0202  HISTORY     - 19980108 GOOD             CODOT
KM0202  HISTORY     - 20011101 GOOD             NGS
KM0202  HISTORY     - 20030419 GOOD             GEOCAC
KM0202  HISTORY     - 20050604 GOOD             GEOCAC
KM0202  HISTORY     - 20121003 GOOD             CODOT
KM0202
KM0202                          STATION DESCRIPTION
KM0202
KM0202'DESCRIBED BY COAST AND GEODETIC SURVEY 1937 (FGJ)
KM0202'STATION IS 8.3 MILES N OF LOMA, COLORADO, ON LOW FLAT DESERT
KM0202'LAND.
KM0202'
KM0202'SURFACE, UNDERGROUND, REFERENCE, AND AZIMUTH MARKS ARE STANDARD
KM0202'DISKS SET IN CONCRETE.
KM0202'
KM0202'STATION MARK PROJECTS 3 INCHES ABOVE GROUND.
KM0202'
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KM0202'REFERENCE MARK NO. 1 PROJECTS ABOUT 5 INCHES ABOVE GROUND AND IS
KM0202'1 FOOT LOWER THAN STATION.
KM0202'
KM0202'REFERENCE MARK NO. 2 PROJECTS ABOUT 4 INCHES ABOVE GROUND
KM0202'AND IS 6 INCHES LOWER THAN STATION.
KM0202'
KM0202'AZIMUTH MARK IS APPROXIMATELY 1.9 MILES (MEASURED IN A NEARLY
KM0202'STRAIGHT EQUAL DISTANCE ALONG THE ROAD WITH THE SPEEDOMETER ON
KM0202'TRUCK U.S. 477) S OF THE STATION AND 14 METERS SW (PACED DISTANCE)
KM0202'OF THE CENTER LINE OF THE ROAD, AND PROJECTS 3 INCHES ABOVE
KM0202'GROUND. IT IS ABOUT 300 YARDS DOWN HILL (NOT MEASURED) FROM THE
KM0202'LOW SUMMIT WHERE THE HIGHWAY DROPS SHARPLY INTO THE FLAT DESERT
KM0202'VALLEY.
KM0202'
KM0202'FROM THE INTERSECTION OF U.S. HIGHWAY 50 AND STATE HIGHWAY 139
KM0202'GO N ON STATE HIGHWAY 139 8.3 MILES TO A CORRUGATED IRON
KM0202'CULVERT CROSSING THE ROAD. TURN LEFT AND GO 0.1 MILE (135
KM0202'METERS PACED DISTANCE) TO STATION AT TOP OF LOW FLAT KNOLL THAT
KM0202'IS ABOUT 25 FEET HIGHER THAN ROAD. THERE IS A DIM TRAIL ROAD
KM0202'35 METERS (PACED DISTANCE) N OF STATION.
KM0202
KM0202   STATION RECOVERY (1981)
KM0202
KM0202'RECOVERY NOTE BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1981 (NC)
KM0202'LOMA-1937 RECOVERED EXCELLENT - BOTH REFERENCE MARKS RECOVERED AND
KM0202'AZIMUTH MARK 1.9 MILES S. ALONG OLD HWY 139, AND 250 METERS EAST OF
KM0202'EXISTING HWY ALSO RECOVERED.
KM0202'STEEL POST AND SIGN PLACED ON LOMA AND AZIMUTH MARK 5 NOV 81.
KM0202'
KM0202'135 M WEST OF HWY 139 AND 30 M SOUTH OF DIRT ROAD.
KM0202
KM0202   STATION RECOVERY (1984)
KM0202
KM0202'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1984
KM0202'12.6 KM (7.8 MI) NORTH FROM LOMA.
KM0202'THE MARK IS 2.5 M ABOVE THE HIGHWAY.
KM0202'12.6 KM (7.8 MI) NORTHERLY ALONG STATE HIGHWAY 139 FROM THE POST
KM0202'OFFICE IN LOMA, 0.4 KM (0.25 MI) NORTH OF MILEPOST 9, 141.0 M (462.6
KM0202'FT) WEST OF THE CENTERLINE OF THE HIGHWAY, AND 31.4 M (103.0 FT) SOUTH
KM0202'OF THE CENTER OF A DIRT ROAD LEADING WEST.
KM0202'THE MARK IS 0.7 METERS E FROM A WITNESS POST
KM0202
KM0202   STATION RECOVERY (1991)
KM0202
KM0202'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991
KM0202'STATION IS LOCATED ABOUT 35 KM (21.7 MI) NORTHWEST OF GRAND JUNCTION,
KM0202'12 KM (7.5 MI) NORTH OF LOMA, 6.5 KM (4.0 MI) SOUTH OF THE
KM0202'MESA-GARFIELD COUNTY LINE, 0.15 KM (0.09 MI) WEST OF STATE HIGHWAY
KM0202'139, ON THE SECOND MAJOR RIDGE NORTH OF LOMA, ON LOCAL HIGH GROUND,
KM0202'IN THE NORTHWEST 1/4 OF SECTION 6, T 9 S, R 102 W. OWNERSHIP--US
KM0202'BUREAU OF LAND MANAGEMENT.
KM0202'TO REACH FROM THE JUNCTION OF INTERSTATE HIGHWAY 70 AND STATE HIGHWAY
KM0202'139 (EXIT 15), GO NORTH ON HIGHWAY 139 (PASSING THROUGH LOMA) FOR
KM0202'6.05 MI (9.74 KM) TO THE GOVERNMENT HIGHLINE CANAL. CONTINUE AHEAD
KM0202'FOR 3.3 MI (5.3 KM) TO A GRADED ROAD LEFT (AT MILE 9.3) ON TOP OF
KM0202'RIDGE. TURN LEFT, WEST, ON GRADED ROAD FOR 0.1 MI (0.2 KM) TO THE
KM0202'STATION ON THE LEFT.

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 KM0202'STATION MARK IS SET IN THE TOP OF A 30-CM SQUARE CONCRETE POST
 KM0202'PROJECTING 5 CM ABOVE GROUND.  IT IS 31.5 M (103.3 FT) SOUTH OF THE
 KM0202'ROAD CENTER AND 0.7 M (2.3 FT) EAST-SOUTHEAST OF A METAL WITNESS
 KM0202'POST.
 KM0202'DESCRIBED BY G.R.HEID
 KM0202
 KM0202                          STATION RECOVERY (1994)
 KM0202
 KM0202'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (RSC)
 KM0202'RECOVERED AS DESCRIBED.
 KM0202
 KM0202                          STATION RECOVERY (1998)
 KM0202
 KM0202'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 1998 (RSC)
 KM0202'RECOVERED AS DESCRIBED.
 KM0202
 KM0202                          STATION RECOVERY (2001)
 KM0202
 KM0202'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2001 (RSC)
 KM0202'RECOVERED AS DESCRIBED.
 KM0202'
 KM0202
 KM0202                          STATION RECOVERY (2003)
 KM0202
 KM0202'RECOVERY NOTE BY GEOCACHING 2003 (PJM)
 KM0202'FOUND BENCHMARK AND TWO REFERENCE POINTS, AS DESCRIBED.
 KM0202'ADD THE FOLLOWING DESCRIPTION FOR AZIMUTH MARK. FOLLOW HWY 139 NORTH
 KM0202'5.5 MILES FROM LOMA POST OFFICE TO ROAD ON THE RIGHT AT TOP OF HILL.
 KM0202'FOLLOW DIRT TRACK TO LEFT FOR APPROX 0.5 MILES TO STATION ON THE LEFT.
 KM0202
 KM0202                          STATION RECOVERY (2005)
 KM0202
 KM0202'RECOVERY NOTE BY GEOCACHING 2005 (BAB)
 KM0202'RECOVERED IN GOOD CONDITION.
 KM0202
 KM0202                          STATION RECOVERY (2012)
 KM0202
 KM0202'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 2012 (MCW)
 KM0202'CATTLE GUARD LEADING WEST VISIBLE FROM SH 138
 KM0202'APPROXIMATELY MILE POST 9.2
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 AA3704 ***********************************************************************
 AA3704  DESIGNATION -  MOSTON
 AA3704  PID         -  AA3704
 AA3704  STATE/COUNTY-  CO/MESA
 AA3704  COUNTRY     -  US
 AA3704  USGS QUAD   -  BITTER CREEK WELL (1970)
 AA3704
 AA3704                        *CURRENT SURVEY CONTROL
 AA3704 ______________________________________________________________________
 AA3704* NAD 83(2011) POSITION- 39 11 32.98977(N) 109 02 50.02633(W)   ADJUSTED
 AA3704* NAD 83(2011) ELLIP HT-  1452.608 (meters)        (06/27/12)   ADJUSTED
 AA3704* NAD 83(2011) EPOCH   -  2010.00
 AA3704* NAVD 88 ORTHO HEIGHT -  1470.5   (meters)     4824.    (feet) GPS OBS
 AA3704 ______________________________________________________________________
 AA3704  NAVD 88 orthometric height was determined with geoid model    GEOID96
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AA3704  GEOID HEIGHT    -        -17.863 (meters)                    GEOID96
AA3704  GEOID HEIGHT    -        -17.897 (meters)                    GEOID12B
AA3704  NAD 83(2011) X  - -1,615,738.490 (meters)                    COMP
AA3704  NAD 83(2011) Y  - -4,679,909.847 (meters)                    COMP
AA3704  NAD 83(2011) Z  -  4,009,820.355 (meters)                    COMP
AA3704  LAPLACE CORR    -          5.90  (seconds)                   DEFLEC12B
AA3704
AA3704  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AA3704  Standards:
AA3704         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AA3704            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AA3704  ------------------------------------------------------------------
AA3704  NETWORK    0.94   1.45           0.43   0.32   0.74     -0.10844805
AA3704  ------------------------------------------------------------------
AA3704  Click here for local accuracies and other accuracy information.
AA3704
AA3704
AA3704.The horizontal coordinates were established by GPS observations
AA3704.and adjusted by the National Geodetic Survey in June 2012.
AA3704
AA3704.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AA3704.been affixed to the stable North American tectonic plate. See
AA3704.NA2011 for more information.
AA3704
AA3704.The horizontal coordinates are valid at the epoch date displayed above
AA3704.which is a decimal equivalence of Year/Month/Day.
AA3704
AA3704.The orthometric height was determined by GPS observations and a
AA3704.high-resolution geoid model.
AA3704
AA3704.Significant digits in the geoid height do not necessarily reflect accuracy.
AA3704.GEOID12B height accuracy estimate available here.
AA3704
AA3704.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA3704
AA3704.The Laplace correction was computed from DEFLEC12B derived deflections.
AA3704
AA3704.The ellipsoidal height was determined by GPS observations
AA3704.and is referenced to NAD 83.
AA3704
AA3704. The following values were computed from the NAD 83(2011) position.
AA3704
AA3704;                    North         East     Units Scale Factor Converg.
AA3704;SPC CO C     -   461,659.716   608,049.560   MT  0.99993718   -2 14 13.9
AA3704;SPC CO C     - 1,514,628.58  1,994,909.26   sFT  0.99993718   -2 14 13.9
AA3704;UTM  12      - 4,339,955.003   668,641.331   MT  0.99995019   +1 14 03.5
AA3704
AA3704!             -  Elev Factor  x  Scale Factor =   Combined Factor
AA3704!SPC CO C     -   0.99977215  x   0.99993718  =   0.99970934
AA3704!UTM  12      -   0.99977215  x   0.99995019  =   0.99972235
AA3704
AA3704                          SUPERSEDED SURVEY CONTROL
AA3704
AA3704  NAD 83(2007)-  39 11 32.98939(N)    109 02 50.02683(W) AD(2002.00) 0
AA3704  ELLIP H (02/10/07) 1452.631  (m)                       GP(2002.00)
AA3704  ELLIP H (11/14/01) 1452.695  (m)                       GP(       ) 4 2
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AA3704  NAD 83(1994)-  39 11 32.98859(N)    109 02 50.02641(W) AD(       ) B
AA3704  ELLIP H (04/21/95) 1452.732  (m)                        GP(       ) 4 1
AA3704  NAVD 88 (04/21/95) 1470.5    (m)  GEOID93 model used   GPS OBS
AA3704
AA3704.Superseded values are not recommended for survey control.
AA3704
AA3704.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA3704.See file dsdata.txt to determine how the superseded data were derived.
AA3704
AA3704_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ6864139955(NAD 83)
AA3704
AA3704_MARKER: DH = HORIZONTAL CONTROL DISK
AA3704_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AA3704_STAMPING: MOSTON 1994
AA3704_MARK LOGO: NGS
AA3704_PROJECTION: FLUSH
AA3704_MAGNETIC: O = OTHER; SEE DESCRIPTION
AA3704_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AA3704+STABILITY: SURFACE MOTION
AA3704_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA3704+SATELLITE: SATELLITE OBSERVATIONS - May 23, 2009
AA3704
AA3704  HISTORY     - Date     Condition        Report By
AA3704  HISTORY     - 1994     MONUMENTED       NGS
AA3704  HISTORY     - 19980108 GOOD             CODOT
AA3704  HISTORY     - 20050322 GOOD             GEOCAC
AA3704  HISTORY     - 20090523 GOOD             GEOCAC
AA3704
AA3704                          STATION DESCRIPTION
AA3704
AA3704'DESCRIBED BY NATIONAL GEODETIC SURVEY 1994 (RSC)
AA3704'THE STATION IS LOCATED ABOUT 28 MI (45.1 KM) NORTHEAST OF CISCO, UTAH,
AA3704'18 MI (29.0 KM) WEST-NORTHWEST OF FRUITA, CO. AND AT THE COLORADO-UTAH
AA3704'STATE LINE, IN THE NORTHWEST 1/4 OF SECTION 18, T 9 S, R 104 W, AT
AA3704'INTERSTATE HIGHWAY MILEPOST 0.2.  OWNERSHIP--COLORADO DEPT. OF
AA3704'TRANSPORTATION RIGHT-OF-WAY. TO REACH THE STATION FROM THE STATE LINE
AA3704'AND INTERSTATE 70, GO EAST ON THE INTERSTATE FOR 0.2 MI (0.3 KM) TO
AA3704'THE FIRST CROSSOVER BETWEEN THE CENTER DIVIDERS AND TAKE THE CROSSOVER
AA3704'IN THE CENTER DIVIDER TO THE STATION ON THE LEFT. THE STATION IS A
AA3704'STANDARD DISK SET IN A CONCRETE POST 35 CM IN DIAMETER AND PROJECTING
AA3704'10 CM ABOVE THE GROUND.  IT IS 72.1 M (236.5 FT) NORTH OF THE CENTER
AA3704'LINE OF THE EASTBOUND INTERSTATE 70, 45.6 M (149.6 FT) WEST OF THE
AA3704'CENTER OF DIRT CROSSOVER, 27.1 M (88.9 FT) SOUTH OF THE CENTER LINE OF
AA3704'THE WESTBOUND INTERSTATE 70, 0.9 M (3.0 FT) SOUTH OF A WITNESS POST,
AA3704'0.85 M (2.79 FT) WEST OF A WITNESS POST AND ABOUT THE SAME LEVEL AS
AA3704'THE WEST BOUND LANES.
AA3704
AA3704                          STATION RECOVERY (1998)
AA3704
AA3704'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 1998 (RSC)
AA3704'RECOVERED AS DESCRIBED.
AA3704
AA3704                          STATION RECOVERY (2005)
AA3704
AA3704'RECOVERY NOTE BY GEOCACHING 2005 (BAB)
AA3704'RECOVERED IN GOOD CONDITION.
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 AA3704
 AA3704                          STATION RECOVERY (2009)
 AA3704
 AA3704'RECOVERY NOTE BY GEOCACHING 2009 (WS)
 AA3704'RECOVERED IN GOOD CONDITION.
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KM0233 ***********************************************************************
 KM0233  DESIGNATION -  P 427
 KM0233  PID         -  KM0233
 KM0233  STATE/COUNTY-  CO/MESA
 KM0233  COUNTRY     -  US
 KM0233  USGS QUAD   -  MACK (1973)
 KM0233
 KM0233                        *CURRENT SURVEY CONTROL
 KM0233  ______________________________________________________________________
 KM0233* NAD 83(1986) POSITION- 39 10 01.     (N) 108 45 24.     (W)    SCALED
 KM0233* NAVD 88 ORTHO HEIGHT -  1366.846 (meters)     4484.39  (feet) ADJUSTED
 KM0233  ______________________________________________________________________
 KM0233  GEOID HEIGHT    -        -17.299 (meters)                     GEOID12B
 KM0233  DYNAMIC HEIGHT  -       1365.550 (meters)     4480.14  (feet) COMP
 KM0233  MODELED GRAVITY -    979,632.3   (mgal)                       NAVD 88
 KM0233
 KM0233  VERT ORDER      -  FIRST     CLASS II
 KM0233
 KM0233.The horizontal coordinates were scaled from a topographic map and have
 KM0233.an estimated accuracy of +/- 6 seconds.
 KM0233.
 KM0233.The orthometric height was determined by differential leveling and
 KM0233.adjusted by the NATIONAL GEODETIC SURVEY
 KM0233.in June 1991.
 KM0233
 KM0233.Significant digits in the geoid height do not necessarily reflect accuracy.
 KM0233.GEOID12B height accuracy estimate available here.
 KM0233
 KM0233.The dynamic height is computed by dividing the NAVD 88
 KM0233.geopotential number by the normal gravity value computed on the
 KM0233.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 KM0233.degrees latitude (g = 980.6199 gals.).
 KM0233
 KM0233.The modeled gravity was interpolated from observed gravity values.
 KM0233
 KM0233;                    North         East     Units  Estimated Accuracy
 KM0233;SPC CO C     -   457,890.      633,030.      MT  (+/- 180 meters Scaled)
 KM0233
 KM0233                          SUPERSEDED SURVEY CONTROL
 KM0233
 KM0233.No superseded survey control is available for this station.
 KM0233
 KM0233_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SXJ938376(NAD 83)
 KM0233
 KM0233_MARKER: I = METAL ROD
 KM0233_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
 KM0233_STAMPING: P 427 1984
 KM0233_MARK LOGO: NGS
 KM0233_PROJECTION: FLUSH
 KM0233_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
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 KM0233_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 KM0233+SATELLITE: SATELLITE OBSERVATIONS - May 23, 2009
 KM0233_ROD/PIPE-DEPTH: 13.1 meters
 KM0233
 KM0233  HISTORY     - Date     Condition        Report By
 KM0233  HISTORY     - 1984     MONUMENTED       NGS
 KM0233  HISTORY     - 20030628 GOOD             USPSQD
 KM0233  HISTORY     - 20090523 GOOD             GEOCAC
 KM0233
 KM0233                          STATION DESCRIPTION
 KM0233
 KM0233'DESCRIBED BY NATIONAL GEODETIC SURVEY 1984
 KM0233'5.8 KM (3.6 MI) SE FROM LOMA.
 KM0233'5.8 KM (3.6 MI) SOUTHEASTERLY ALONG U.S. HIGHWAY 50 FROM ITS
 KM0233'JUNCTION WITH STATE HIGHWAY 139 IN LOMA, 69.6 M (228.3 FT) SOUTHWEST
 KM0233'OF THE CENTERLINE OF THE HIGHWAY, 25.4 M (83.3 FT) SOUTHWEST OF THE
 KM0233'NEAR RAIL OF THE DENVER AND RIO GRANDE WESTERN RAILROAD, 18.8 M (61.7
 KM0233'FT) SOUTHEAST OF THE CENTER OF COUNTY ROAD 16, 6.9 M (22.6 FT)
 KM0233'SOUTHEAST OF A FENCE CORNER, AND 1.5 M (4.9 FT) NORTHWEST OF A
 KM0233'UTILITY POLE WITH TWO GUY WIRES.  NOTE--ACCESS TO DATUM POINT IS HAD
 KM0233'THROUGH A 5-INCH LOGO CAP.
 KM0233'THE MARK IS 0.1 METERS  NE FROM  A WITNESS POST AND FENCE
 KM0233'THE MARK IS 0.9 M BELOW THE COUNTY ROAD.
 KM0233
 KM0233                          STATION RECOVERY (2003)
 KM0233
 KM0233'RECOVERY NOTE BY US POWER SQUADRON 2003 (AFA)
 KM0233'RECOVERED IN GOOD CONDITION.
 KM0233
 KM0233                          STATION RECOVERY (2009)
 KM0233
 KM0233'RECOVERY NOTE BY GEOCACHING 2009 (WS)
 KM0233'RECOVERED IN GOOD CONDITION.
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KM0215 ***********************************************************************
 KM0215  DESIGNATION -  R 428
 KM0215  PID         -  KM0215
 KM0215  STATE/COUNTY-  CO/MESA
 KM0215  COUNTRY     -  US
 KM0215  USGS QUAD   -  CLIFTON (1973)
 KM0215
 KM0215                        *CURRENT SURVEY CONTROL
 KM0215 ______________________________________________________________________
 KM0215* NAD 83(1986) POSITION- 39 01 23.1    (N) 108 29 51.8    (W)    HD_HELD2
 KM0215* NAVD 88 ORTHO HEIGHT -  1461.039 (meters)     4793.43  (feet) ADJUSTED
 KM0215 ______________________________________________________________________
 KM0215  GEOID HEIGHT    -        -16.810 (meters)                      GEOID12B
 KM0215  DYNAMIC HEIGHT  -       1459.623 (meters)     4788.78  (feet) COMP
 KM0215  MODELED GRAVITY -    979,608.0   (mgal)                        NAVD 88
 KM0215
 KM0215  VERT ORDER      -  FIRST     CLASS II
 KM0215
 KM0215.The horizontal coordinates were established by autonomous hand held GPS
 KM0215.observations and have an estimated accuracy of +/- 10 meters.
 KM0215.
 KM0215.The orthometric height was determined by differential leveling and
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KM0215.adjusted by the NATIONAL GEODETIC SURVEY
KM0215.in June 1991.
KM0215
KM0215.Significant digits in the geoid height do not necessarily reflect accuracy.
KM0215.GEOID12B height accuracy estimate available here.
KM0215
KM0215.The dynamic height is computed by dividing the NAVD 88
KM0215.geopotential number by the normal gravity value computed on the
KM0215.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KM0215.degrees latitude (g = 980.6199 gals.).
KM0215
KM0215.The modeled gravity was interpolated from observed gravity values.
KM0215
KM0215;   North   East   Units Estimated Accuracy
KM0215;SPC CO C   -   441,154.   654,868.   MT (+/- 10 meters HH2 GPS)
KM0215
KM0215   SUPERSEDED SURVEY CONTROL
KM0215
KM0215.No superseded survey control is available for this station.
KM0215
KM0215_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SYJ1662022317(NAD 83)
KM0215
KM0215_MARKER: I = METAL ROD
KM0215_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
KM0215_STAMPING: R 428 1984
KM0215_MARK LOGO: NGS
KM0215_PROJECTION: FLUSH
KM0215_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
KM0215_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
KM0215+SATELLITE: SATELLITE OBSERVATIONS - November 10, 2014
KM0215_ROD/PIPE-DEPTH: 6.7 meters
KM0215
KM0215 HISTORY   - Date   Condition   Report By
KM0215 HISTORY   - 1984   MONUMENTED   NGS
KM0215 HISTORY   - 20050529 GOOD   GEOCAC
KM0215 HISTORY   - 20141110 GOOD   CODOT
KM0215
KM0215   STATION DESCRIPTION
KM0215
KM0215'DESCRIBED BY NATIONAL GEODETIC SURVEY 1984
KM0215'10.5 KM (6.5 MI) SE FROM GRAND JUNCTION.
KM0215'10.5 KM (6.5 MI) SOUTHEASTERLY ALONG U.S. HIGHWAY 50 FROM ITS
KM0215'JUNCTION WITH U.S. HIGHWAY 6 IN GRAND JUNCTION, 50.6 M (166.0 FT)
KM0215'SOUTHWEST OF THE CENTERLINE OF THE HIGHWAY, 28.3 M (92.8 FT)
KM0215'SOUTHEAST OF THE CENTER OF BURNS DRIVE, 17.1 M (56.1 FT) SOUTHWEST OF
KM0215'THE CENTERLINE OF A FRONTAGE ROAD, AND 1.4 M (4.6 FT) NORTHWEST OF A
KM0215'UTILITY POLE WITH TWO GUY WIRES. NOTE--ACCESS TO DATUM POINT IS HAD
KM0215'THROUGH A 5-INCH LOGO CAP.
KM0215'THE MARK IS 0.3 METERS SE FROM A WITNESS POST
KM0215'THE MARK IS 1.6 M BELOW THE HIGHWAY.
KM0215
KM0215   STATION RECOVERY (2005)
KM0215
KM0215'RECOVERY NOTE BY GEOCACHING 2005 (BAB)
KM0215'RECOVERED IN GOOD CONDITION.
KM0215

KM0215 STATION RECOVERY (2014)
KM0215
KM0215'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 2014 (MCW)
KM0215'RECOVERED IN GOOD CONDITION.
1 National Geodetic Survey, Retrieval Date = JULY 6, 2016
JM0372 **********
JM0372 DESIGNATION - U 428
JM0372 PID - JM0372
JM0372 STATE/COUNTY- CO/MESA
JM0372 COUNTRY - US
JM0372 USGS QUAD - WHITEWATER (1969)
JM0372
JM0372 *CURRENT SURVEY CONTROL
JM0372 ______
JM0372* NAD 83(2011) POSITION- 38 56 39.06489(N) 108 24 22.14474(W) ADJUSTED
JM0372* NAD 83(2011) ELLIP HT- 1468.426 (meters) (06/27/12) ADJUSTED
JM0372* NAD 83(2011) EPOCH - 2010.00
JM0372* NAVD 88 ORTHO HEIGHT - 1485.102 (meters) 4872.37 (feet) ADJUSTED
JM0372 ______
JM0372 NAD 83(2011) X - -1,568,766.246 (meters) COMP
JM0372 NAD 83(2011) Y - -4,714,195.442 (meters) COMP
JM0372 NAD 83(2011) Z - 3,988,422.667 (meters) COMP
JM0372 LAPLACE CORR - 1.29 (seconds) DEFLEC12B
JM0372 GEOID HEIGHT - -16.681 (meters) GEOID12B
JM0372 DYNAMIC HEIGHT - 1483.644 (meters) 4867.59 (feet) COMP
JM0372 MODELED GRAVITY - 979,593.9 (mgal) NAVD 88
JM0372
JM0372 VERT ORDER - FIRST CLASS II
JM0372
JM0372 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
JM0372 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
JM0372	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)
JM0372 NETWORK	1.00	1.72	0.45	0.36	0.88	-0.05248160

JM0372 Click here for local accuracies and other accuracy information.
JM0372
JM0372
JM0372.The horizontal coordinates were established by GPS observations
JM0372.and adjusted by the National Geodetic Survey in June 2012.
JM0372
JM0372.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
JM0372.been affixed to the stable North American tectonic plate. See
JM0372.NA2011 for more information.
JM0372
JM0372.The horizontal coordinates are valid at the epoch date displayed above
JM0372.which is a decimal equivalence of Year/Month/Day.
JM0372
JM0372.The orthometric height was determined by differential leveling and
JM0372.adjusted by the NATIONAL GEODETIC SURVEY
JM0372.in June 1991.
JM0372
JM0372.Significant digits in the geoid height do not necessarily reflect accuracy.
JM0372.GEOID12B height accuracy estimate available here.
JM0372

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JM0372.The X, Y, and Z were computed from the position and the ellipsoidal ht.
JM0372
JM0372.The Laplace correction was computed from DEFLEC12B derived deflections.
JM0372
JM0372.The ellipsoidal height was determined by GPS observations
JM0372.and is referenced to NAD 83.
JM0372
JM0372.The dynamic height is computed by dividing the NAVD 88
JM0372.geopotential number by the normal gravity value computed on the
JM0372.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
JM0372.degrees latitude (g = 980.6199 gals.).
JM0372
JM0372.The modeled gravity was interpolated from observed gravity values.
JM0372
JM0372. The following values were computed from the NAD 83(2011) position.
JM0372
JM0372;                     North         East     Units Scale Factor Converg.
JM0372;SPC CO C     -   432,142.129   662,512.896   MT  0.99993964   -1 49 58.4
JM0372;SPC CO C     - 1,417,786.30  2,173,594.39   sFT  0.99993964   -1 49 58.4
JM0372;UTM  12      - 4,313,782.357   724,798.544   MT  1.00022230   +1 37 51.9
JM0372
JM0372!             -  Elev Factor  x  Scale Factor =   Combined Factor
JM0372!SPC CO C     -   0.99976966  x   0.99993964  =   0.99970931
JM0372!UTM  12      -   0.99976966  x   1.00022230  =   0.99999191
JM0372
JM0372                          SUPERSEDED SURVEY CONTROL
JM0372
JM0372  NAD 83(2007)-  38 56 39.06452(N)    108 24 22.14515(W) AD(2002.00) 0
JM0372  ELLIP H (02/10/07) 1468.452  (m)                       GP(2002.00)
JM0372  ELLIP H (12/03/02) 1468.464  (m)                       GP(       ) 4 2
JM0372  NAD 83(1992)-  38 56 39.06375(N)    108 24 22.14572(W) AD(       ) 1
JM0372  ELLIP H (06/19/96) 1468.510  (m)                       GP(       ) 3 1
JM0372  NAVD 88 (06/19/96) 1485.10   (m)         4872.4    (f) LEVELING    3
JM0372
JM0372.Superseded values are not recommended for survey control.
JM0372
JM0372.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JM0372.See file dsdata.txt to determine how the superseded data were derived.
JM0372
JM0372_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SYJ2479813782(NAD 83)
JM0372
JM0372_MARKER: I = METAL ROD
JM0372_SETTING: 15 = METAL ROD DRIVEN INTO GROUND. SEE TEXT FOR ADDITIONAL
JM0372+WITH SETTING: INFORMATION.
JM0372_STAMPING: U 428 1984
JM0372_MARK LOGO: NGS
JM0372_PROJECTION: FLUSH
JM0372_MAGNETIC: I = MARKER IS A STEEL ROD
JM0372_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
JM0372_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
JM0372+SATELLITE: SATELLITE OBSERVATIONS - May 29, 2005
JM0372_ROD/PIPE-DEPTH: 2.5  meters
JM0372
JM0372  HISTORY     - Date     Condition        Report By
JM0372  HISTORY     - 1984     MONUMENTED       NGS
JM0372  HISTORY     - 19950713 GOOD             CODOT
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 JM0372  HISTORY     - 20050529 GOOD             GEOCAC
 JM0372
 JM0372                           STATION DESCRIPTION
 JM0372
 JM0372'DESCRIBED BY NATIONAL GEODETIC SURVEY 1984
 JM0372'22.5 KM (14.0 MI) SE FROM GRAND JUNCTION.
 JM0372'22.5 KM (14.0 MI) SOUTHEASTERLY ALONG U.S. HIGHWAY 50 FROM ITS
 JM0372'JUNCTION WITH U.S. HIGHWAY 6 IN GRAND JUNCTION, 4.2 KM (2.6 MI)
 JM0372'SOUTHEAST OF THE INTERSECTION OF STATE HIGHWAY 141, 59.1 M (193.9 FT)
 JM0372'NORTHEAST OF THE CENTERLINE OF THE HIGHWAY, 12.8 M (42.0 FT)
 JM0372'SOUTHEAST OF A FENCE CORNER, AND 5.2 M (17.1 FT) NORTHWEST OF THE
 JM0372'CENTER OF A PAVED ROAD LEADING SOUTHEAST.  NOTE--ACCESS TO DATUM
 JM0372'POINT IS HAD THROUGH A 5-INCH LOGO CAP.
 JM0372'THE MARK IS 0.3 METERS  SW FROM  A WITNESS POST AND FENCE
 JM0372'THE MARK IS 1.6 M ABOVE THE HIGHWAY.
 JM0372
 JM0372                           STATION RECOVERY (1995)
 JM0372
 JM0372'RECOVERY NOTE BY COLORADO DEPARTMENT OF TRANSPORTATION 1995 (LJ)
 JM0372'THE STATION IS LOCATED ABOUT 12.8 MI (20.6 KM) SOUTHEAST OF GRAND
 JM0372'JUNCTION, 3.9 MI (6.3 KM) SOUTHEAST OF WHITEWATER AND 3.5 MI (5.6 KM)
 JM0372'SOUTHEAST OF THE INTERSECTION OF STATE HIGHWAY 141 AND U.S. HIGHWAY
 JM0372'50, IN THE NORTHEAST 1/4 OF SECTION 31, T 2 S, R 1 E, AT U. S.
 JM0372'HIGHWAY MILEPOST 44.75.  OWNERSHIP--COLORADO DEPT.  OF TRANSPORTATION
 JM0372'RIGHT-OF-WAY.  TO REACH THE STATION FROM U.S. HIGHWAY 6 AND U.S.
 JM0372'HIGHWAY 50 IN GRAND JUNCTION, GO SOUTHEASTERLY ON U.S. HIGHWAY 50 FOR
 JM0372'14.0 MI (22.5 KM) TO THE STATION ON THE LEFT.  THE STATION IS A PUNCH
 JM0372'MARK TOP CENTER ON A STAINLESS STEEL ROD DRIVEN TO REFUSAL, ENCASED IN
 JM0372'A 5-INCH PVC PIPE WITH A LOGO CAP SET IN A 0.7 M (2.3 FT) CONCRETE
 JM0372'COLLAR FLUSH WITH THE GROUND.  IT IS 59.7 M (195.9 FT) NORTHEAST OF
 JM0372'THE CENTER LINE OF U.S. HIGHWAY 50, 13.1 M (43.0 FT) EAST-SOUTHEAST OF
 JM0372'A CDOH RIGHT-OF-WAY MARKER STAMPED--STA753+50 ELEV4871.91--, 11.7 M
 JM0372'(38.4 FT) SOUTHEAST OF THE CENTER OF A GATE TO A FIELD, 5.0 M (16.4
 JM0372'FT) NORTHWEST OF THE CENTER OF A GATE AND ROAD TO HOUSES, 0.25 M (0.82
 JM0372'FT) SOUTHWEST OF THE RIGHT-OF-WAY FENCE, 0.25 M (0.82 FT) SOUTHWEST OF
 JM0372'A WITNESS POST, ABOUT 2.0 M (6.6 FT) ABOVE THE HIGHWAY AND BELOW A
 JM0372'SIGN FOR 4490 HIGHWAY 50.
 JM0372
 JM0372                           STATION RECOVERY (2005)
 JM0372
 JM0372'RECOVERY NOTE BY GEOCACHING 2005 (BAB)
 JM0372'MARK IS ABOUT 1METER NW OF BLM ACCESS CATTLE GUARD.
1        National Geodetic Survey,   Retrieval Date = JULY  6, 2016
 KL0828 ***********************************************************************
 KL0828  CBN         -  This is a Cooperative Base Network Control Station.
 KL0828  DESIGNATION -  BM BOR
 KL0828  PID         -  KL0828
 KL0828  STATE/COUNTY-  CO/MESA
 KL0828  COUNTRY     -  US
 KL0828  USGS QUAD   -  VEGA RESERVOIR (1982)
 KL0828
 KL0828                          *CURRENT SURVEY CONTROL
 KL0828  ______________________________________________________________________
 KL0828* NAD 83(2011) POSITION- 39 13 32.74305(N) 107 48 39.18775(W)   NO CHECK
 KL0828* NAD 83(2011) ELLIP HT-  2425.503 (meters)        (06/27/12)   NO CHECK
 KL0828* NAD 83(2011) EPOCH   -  2010.00
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KL0828* NAVD 88 ORTHO HEIGHT -  2440.6   (meters)     8007.    (feet) GPS OBS
KL0828  ____________________________________________________________________
KL0828  NAVD 88 orthometric height was determined with an earlier geoid model
KL0828  NAD 83(2011) X  - -1,513,902.077 (meters)                    COMP
KL0828  NAD 83(2011) Y  - -4,712,176.858 (meters)                    COMP
KL0828  NAD 83(2011) Z  -  4,013,297.775 (meters)                    COMP
KL0828  LAPLACE CORR    -          4.37  (seconds)                   DEFLEC12B
KL0828  GEOID HEIGHT    -        -15.407 (meters)                    GEOID12B
KL0828
KL0828  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
KL0828  Standards:
KL0828         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
KL0828            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
KL0828  ------------------------------------------------------------------
KL0828  NETWORK    4.55   7.66           1.81   1.63   3.91      0.74040359
KL0828  ------------------------------------------------------------------
KL0828  Click here for local accuracies and other accuracy information.
KL0828
KL0828
KL0828.The horizontal coordinates were established by GPS observations
KL0828.and adjusted by the National Geodetic Survey in June 2012.
KL0828
KL0828.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
KL0828.been affixed to the stable North American tectonic plate. See
KL0828.NA2011 for more information.
KL0828
KL0828.The horizontal coordinates are valid at the epoch date displayed above
KL0828.which is a decimal equivalence of Year/Month/Day.
KL0828
KL0828.No horizontal observational check was made to the station.
KL0828.
KL0828.The orthometric height was determined by GPS observations and a
KL0828.high-resolution geoid model.
KL0828
KL0828.Significant digits in the geoid height do not necessarily reflect accuracy.
KL0828.GEOID12B height accuracy estimate available here.
KL0828
KL0828.The X, Y, and Z were computed from the position and the ellipsoidal ht.
KL0828
KL0828.The Laplace correction was computed from DEFLEC12B derived deflections.
KL0828
KL0828.The ellipsoidal height was determined by GPS observations
KL0828.and is referenced to NAD 83.
KL0828
KL0828. The following values were computed from the NAD 83(2011) position.
KL0828
KL0828;                    North         East     Units Scale Factor Converg.
KL0828;SPC CO C     -   461,908.436   714,889.677   MT  0.99993827   -1 27 26.8
KL0828;SPC CO C     - 1,515,444.59  2,345,433.88   sFT  0.99993827   -1 27 26.8
KL0828;UTM  13      - 4,345,595.676   257,356.187   MT  1.00032499   -1 46 42.3
KL0828
KL0828!             -  Elev Factor  x  Scale Factor =   Combined Factor
KL0828!SPC CO C     -   0.99961960  x   0.99993827  =   0.99955790
KL0828!UTM  13      -   0.99961960  x   1.00032499  =   0.99994447
KL0828
KL0828                         SUPERSEDED SURVEY CONTROL
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KL0828
KL0828  NAD 83(2007)-  39 13 32.74270(N)    107 48 39.18819(W) AD(2002.00) 0
KL0828  ELLIP H (02/10/07) 2425.529  (m)                       GP(2002.00)
KL0828  ELLIP H (10/21/02) 2425.467  (m)                       GP(       ) 4 2
KL0828  NAD 83(1986)-  39 13 32.72543(N)    107 48 39.18247(W) AD(       ) 3
KL0828  NAD 83(1992)-  39 13 32.74302(N)    107 48 39.18753(W) AD(       ) B
KL0828  ELLIP H (05/26/92) 2425.483  (m)                       GP(       ) 4 1
KL0828  NGVD 29 (06/11/92) 2439.3    (m)  GEOID90 model used   GPS OBS
KL0828
KL0828.Superseded values are not recommended for survey control.
KL0828
KL0828.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
KL0828.See file dsdata.txt to determine how the superseded data were derived.
KL0828
KL0828_U.S. NATIONAL GRID SPATIAL ADDRESS: 13SBD5735645595(NAD 83)
KL0828
KL0828_MARKER: DB = BENCH MARK DISK
KL0828_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
KL0828_MARK LOGO: BOR
KL0828_MAGNETIC: N = NO MAGNETIC MATERIAL
KL0828_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
KL0828+STABILITY: SURFACE MOTION
KL0828_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
KL0828+SATELLITE: SATELLITE OBSERVATIONS - 1991
KL0828
KL0828  HISTORY     - Date     Condition        Report By
KL0828  HISTORY     - 1991     MONUMENTED       BOR
KL0828
KL0828                          STATION DESCRIPTION
KL0828
KL0828'DESCRIBED BY US BUREAU OF RECLAMATION 1991
KL0828'NOTE--STATION HAS SOME GPS BLOCKAGES AND WILL GET WORSE WITH TIME.
KL0828'DISK IS UNSTAMPED.  A PUNCH HOLE IN A PUNCHED TRIANGLE WAS ADDED TO
KL0828'THE DISK.
KL0828'STATION IS LOCATED ABOUT 15 KM (9.3 MI) EAST OF COLLBRAN, IN THE VEGA
KL0828'STATE RECREATION AREA, AT THE NORTH END OF THE VEGA RESERVOIR DAM, ON
KL0828'THE EAST SIDE OF A SMALL GRAVEL PARKING LOT, IN A SMALL CLEARING, IN
KL0828'NORTH CENTRAL SECTION 6, T 10 S, R 93 W.  OWNERSHIP--STATE DIVISION
KL0828'OF PARKS AND RECREATION, C/O BUTCH DANIEL, PARK RANGER.  PHONE IS
KL0828'303-487-3407.  (CALL FOR PERMISSION TO TRIM TREES AND HIGH BRUSH IF
KL0828'NECESSARY).
KL0828'TO REACH FROM THE POST OFFICE IN COLLBRAN (ON THE EAST SIDE OF MAIN
KL0828'STREET), GO NORTH ON MAIN STREET FOR 0.1 MI (0.2 KM) TO A T-ROAD.
KL0828'TURN RIGHT, EAST, UPHILL, ON PAVED ROAD FOR 6.5 MI (10.5 KM) TO A
KL0828'FORK. KEEP RIGHT, SOUTHEAST, FOR 3.65 MI (5.87 KM) TO A GRAVEL ROAD
KL0828'RIGHT AT TOP OF GRADE AND PERMIT BOOTH ON THE RIGHT.  TURN RIGHT,
KL0828'SOUTH, FOR 0.05 MI (0.08 KM) TO PARKING LOT ON THE LEFT.  BEAR LEFT
KL0828'INTO LOT FOR 30.48 M (100.00 FT) TO STATION ON THE LEFT.
KL0828'STATION MARK IS SET IN THE TOP OF A 15-CM SQUARE CONCRETE POST
KL0828'PROJECTING 15 CM ABOVE GROUND.  IT IS 21.2 M (69.6 FT) EAST OF THE
KL0828'ROAD CENTER, 1.3 M (4.3 FT) EAST OF EAST EDGE OF LOT, 0.7 M (2.3 FT)
KL0828'NORTHWEST OF A FIBERGLASS WITNESS POST AND 8.5 M (27.9 FT) NORTH OF
KL0828'THE SOUTHEAST CORNER OF THE LOT.
KL0828'DESCRIBED BY G.R.HEID

*** retrieval complete.
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Elapsed Time = 00:00:10
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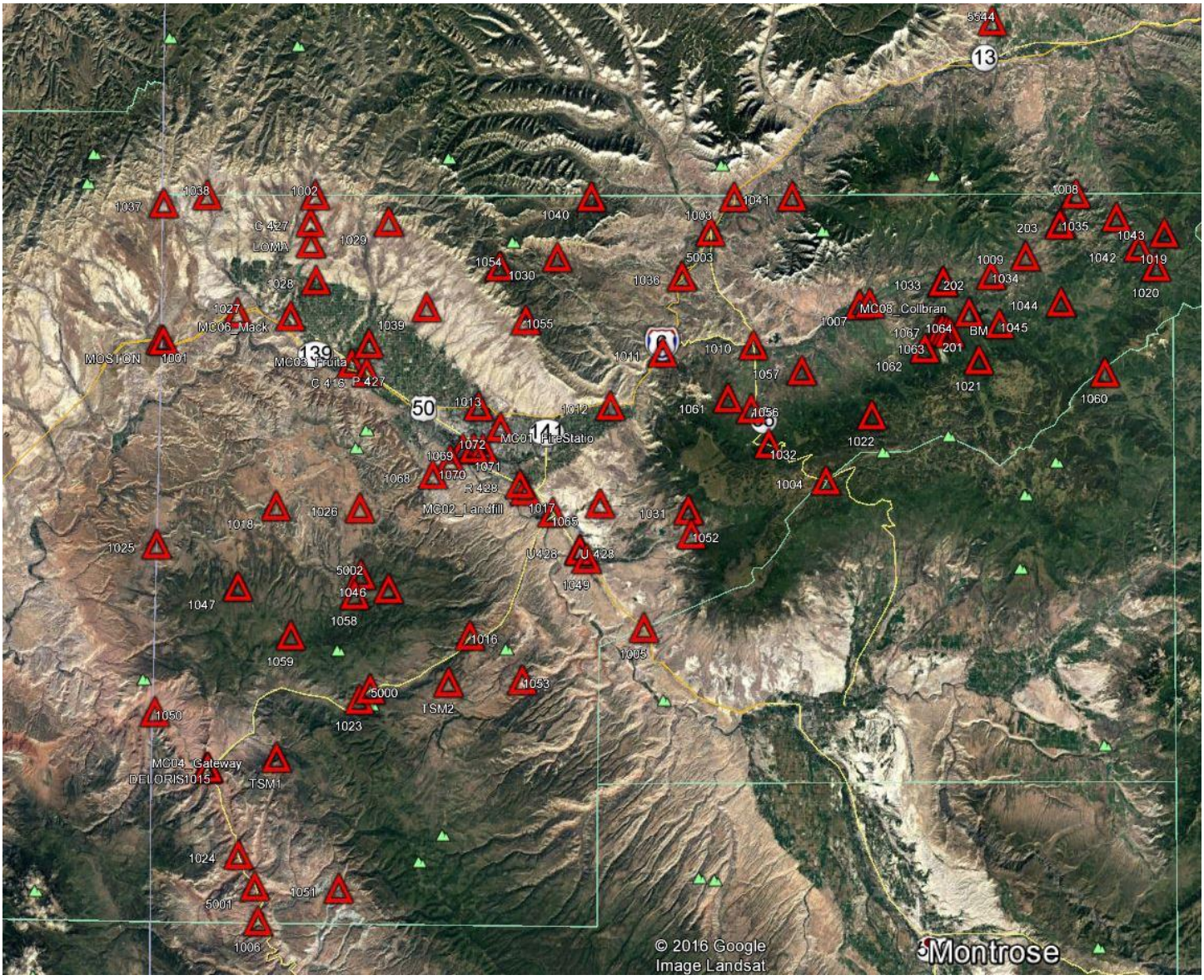
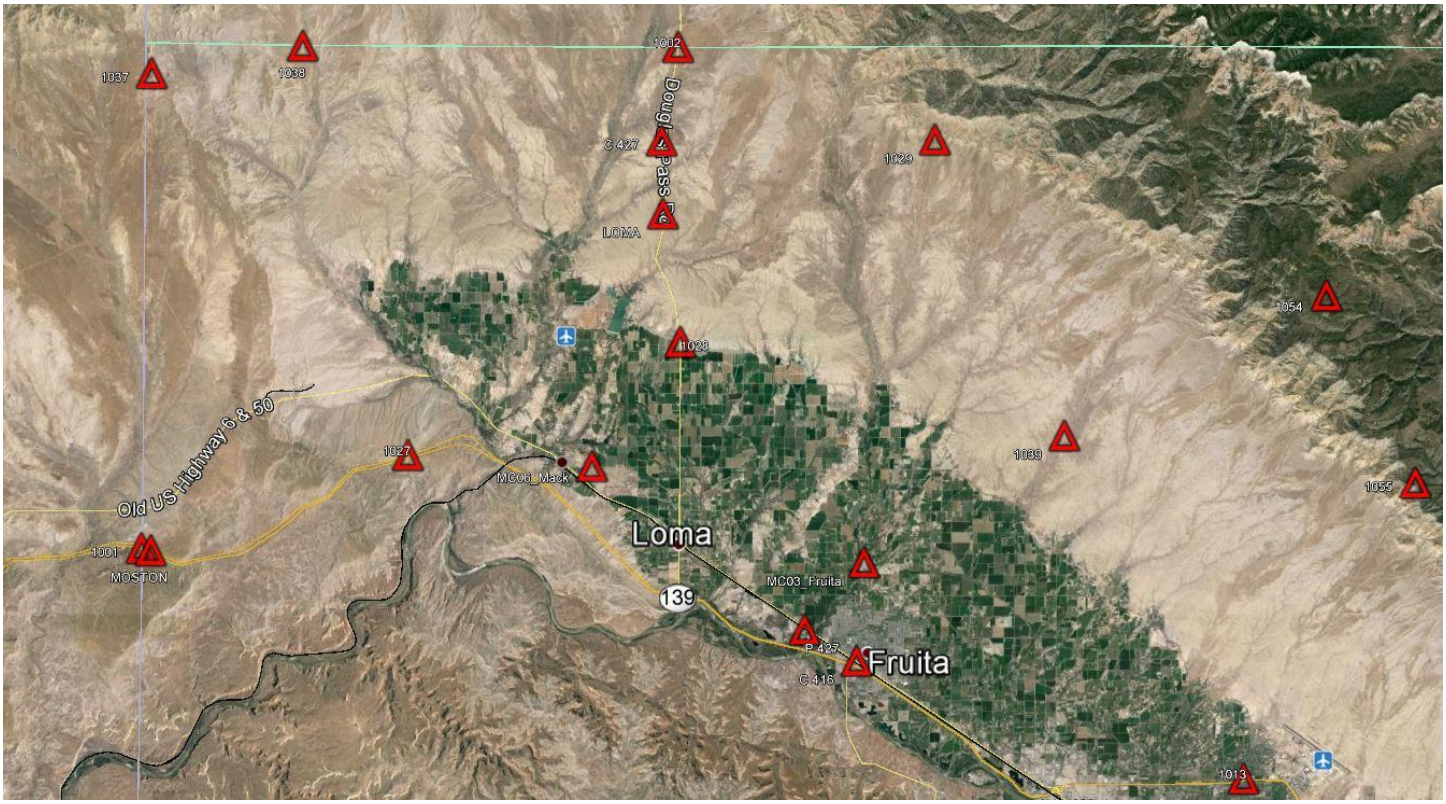
Section 5: GPS Control Diagram

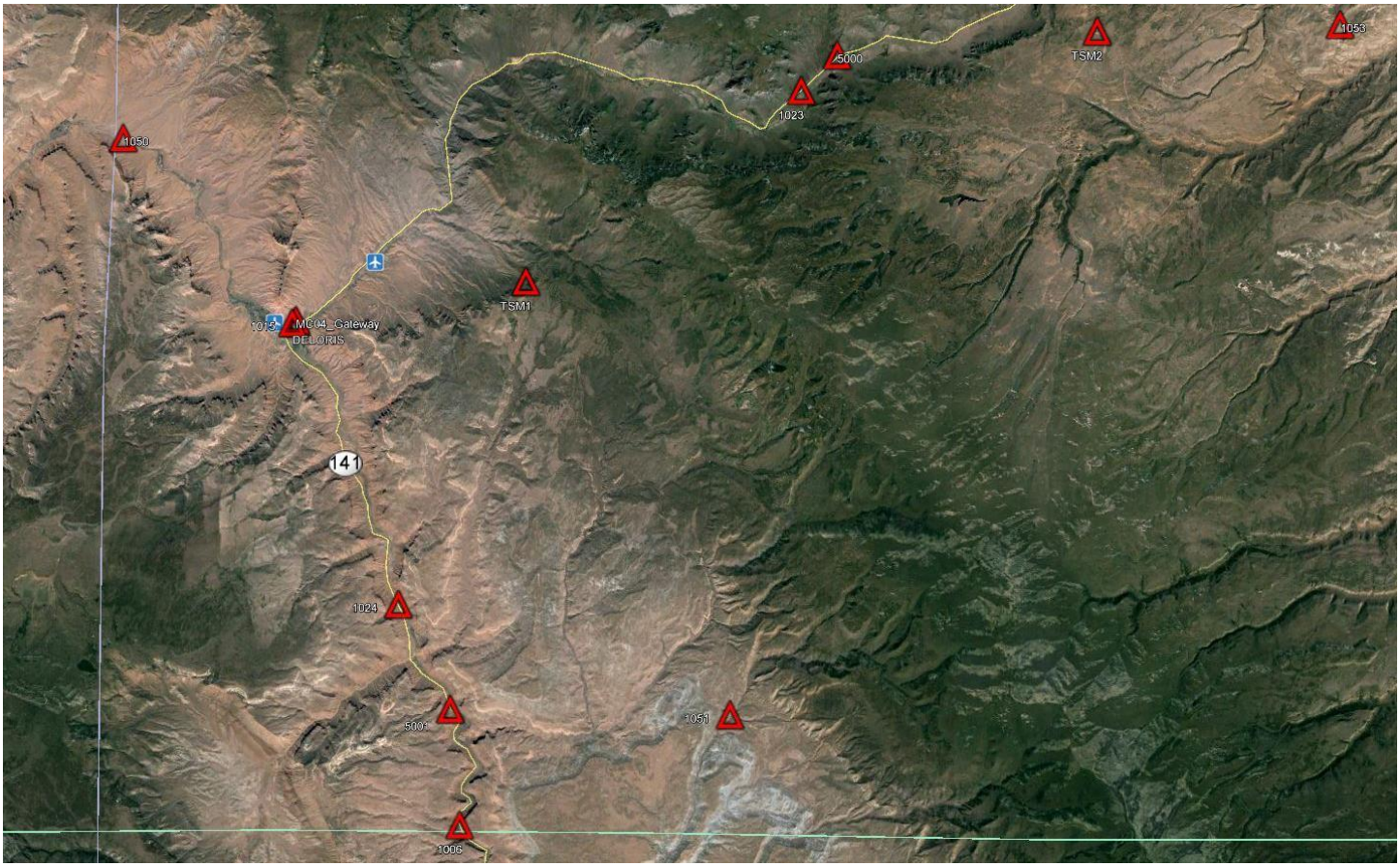
This section contains a graphical representation of the new and existing control stations used for the project.

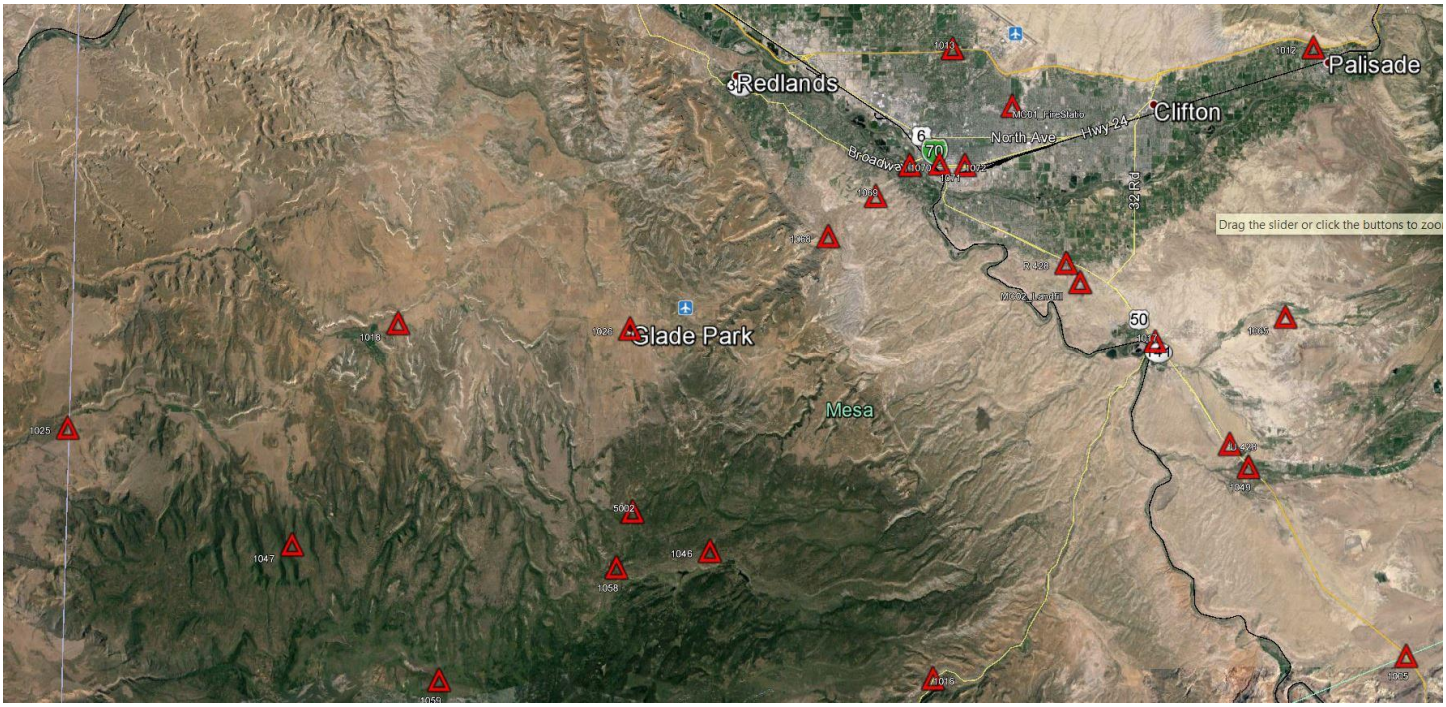
GPS Control Diagram Overview

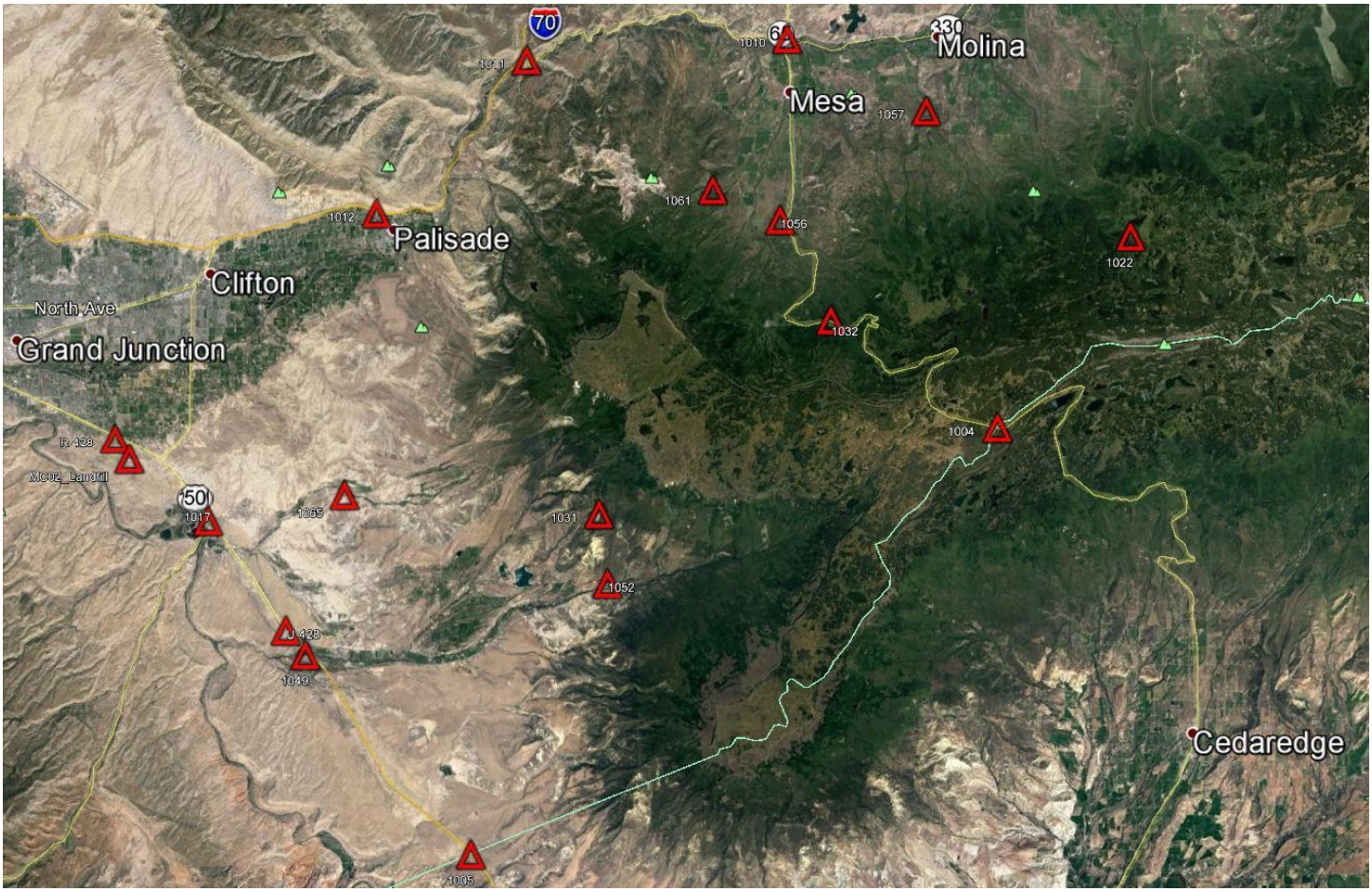


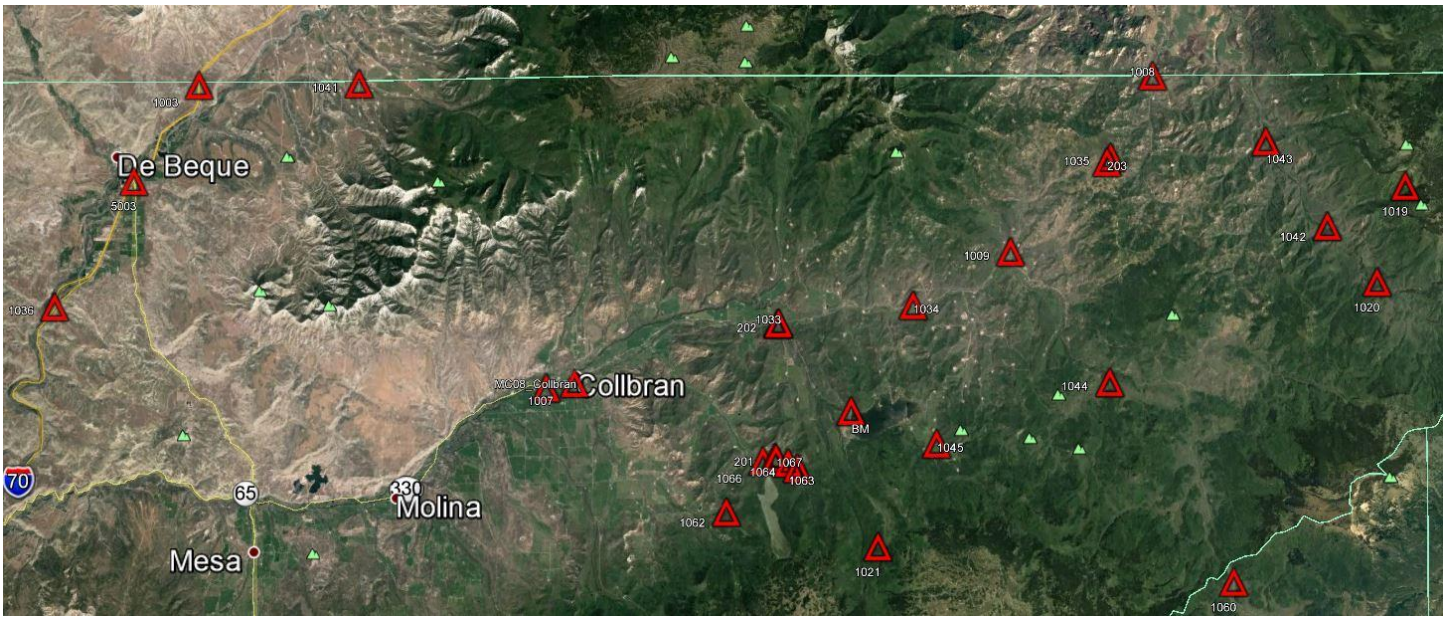
GPS Control Diagram Details

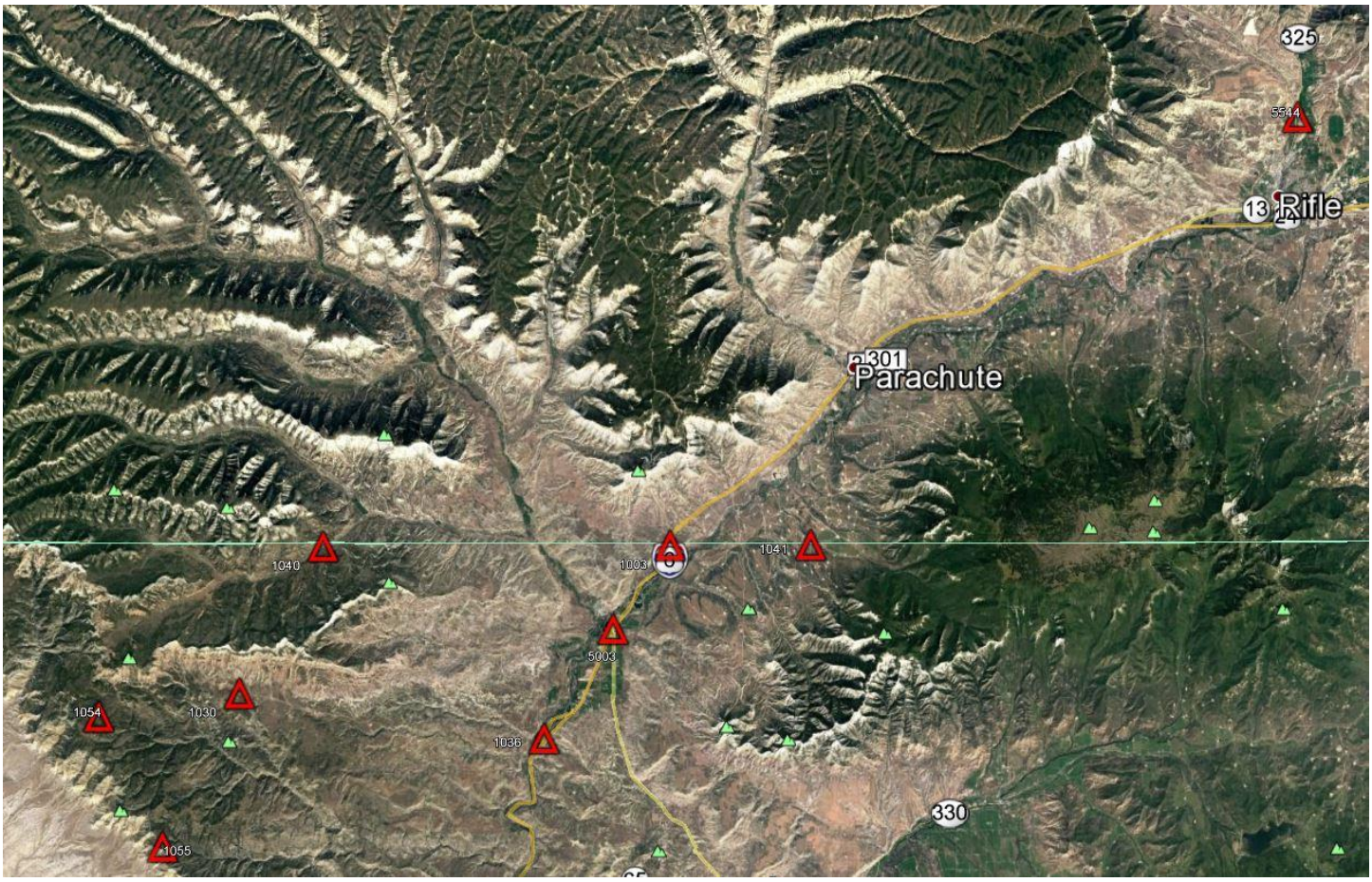



1053
5000
TSM2
1023
1050
TSM1
MC04_Gateway
DELORIS
141
1024
5001
1051
1006


Redlands
Palisade
Clifton
MC01_FireState
North Ave
Hwy 24
Broadway
6
70
Drag the slider or click the buttons to zoo
Glade Park
Mesa
50
1018
1025
5002
1047
1046
1058
1059
1016
1015


70
6
330
Molina
Mesa
1057
1061
1012
Palisade
1056
1022
Clifton
North Ave
Grand Junction
1032
1004
R 429
MC02_Landfill
50
1017
1065
1031
1052
1049
Cedaredge
1005


1003
1041
1008
De Beque
5003
1035
203
1043
1019
1042
1009
1038
1034
1020
202
1033
MC08 - Collbran
1007
Collbran
1044
BM
1045
70
65
330
Molina
1062
1066
1064
1067
1063
201
Mesa
1021
1060


325
5544
13
Rifle
301
Parachute
1040
1003
1041
5003
1054
1030
1036
330
1055