

Ground Control Survey Report

Horizontal & Vertical Control, Coordinates and NGS Data Sheets for NV_ClarkCounty_B22\140G0222F0129

CONTRACT: 140G0221D011

CONTRACTOR: Merrick-Surdex JV

TASK ORDER NUMBER: 140G0222F0129

TASK NAME: NV_ClarkCounty_B22

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Contractor Job Number: J65221305 Merrick-Surdex Joint Venture, LLP



USGS CLARK COUNTY NEVADA
LIDAR MAPPING PROJECT
GROUND CONTROL SURVEY REPORT

JOB NO. 65221305
DATE JULY 2022

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**USGS CLARK COUNTY NEVADA
LIDAR MAPPING PROJECT
GROUND CONTROL SURVEY REPORT**

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I. INTRODUCTION

This report summarizes the results of a ground control survey requested by USGS. The survey was conducted in all or part of Clark County Nevada, Mohave County, Arizona, San Bernadino, and Inyo Counties in California. The purpose of the survey of ground control and check points for LIDAR (Light Detection and Ranging) mapping of an area of interest covering approximately 1,974 square miles.

Ground control field observations were performed by Merrick & Company personnel. Field effort commenced on July 6th, 2022, through July 27th, 2022. Equipment used for this project included one Trimble R12i GNSS receiver. Coordinates were derived using Trimble RTX network provided by Trimble Navigation (continuously operating stations broadcasting real time GPS via a satellite). Horizontal and vertical measurements were verified by recovering and observing coordinates from the Trimble GNSS receivers with the RTX service to 18 NGS (National Geodetic Survey) ground stations. The quality of LiDAR data was verified with 211 checkpoints. These checkpoints were collected as Calibration, Non-Vegetated and Vegetated points to verify confidence levels of the LIDAR datasets.

II. HORIZONTAL AND VERTICAL CONTROL

The coordinate system for this project is Nevada State Plane East Zone based on North American Datum of 1983 (NAD83), adjustment of 2011. The geodetic network was tied to CORS (Continuously Operating Reference Stations) via RTX.

Coordinate values measured utilizing the RTX network were checked with occupations on NGS ground stations. The following existing NGS control points were used as horizontal checks to control this survey:

STATION NAME	RECORD VALUES		ELLIPSOID
	NAD83(2011)		HEIGHT
	LATITUDE	LONGITUDE	US FT
B 399	36°00'34.46159"N	115°14'09.97655"W	2413.51
BLUE	36°02'56.29810"N	115°23'54.72981"W	3311.80
C 161	36°26'44.70564"N	114°50'55.92205"W	2010.12
D 368	36°09'16.91346"N	115°21'47.20106"W	3157.46
D 371	36°24'53.33668"N	115°27'05.66611"W	3412.99
FERRY	35°28'33.23197"N	114°48'45.92134"W	2324.67
FOIL	36°28'54.40596"N	114°48'00.42056"W	1984.92
GOVERNMENT ROAD 2	35°06'47.40123"N	114°49'42.05992"W	2170.56
HPGN CA 08 01	35°32'27.71822"N	115°25'22.12451"W	2552.39
J 171	36°20'28.05515"N	114°55'04.37766"W	2320.41
MOAPA LAPLACE	36°40'17.94178"N	114°37'29.80992"W	1578.66
P 364	35°58'30.48106"N	114°54'49.48089"W	2234.33
S 364	35°52'18.82025"N	114°55'42.08187"W	1618.26
SLOAN	35°56'23.98843"N	115°10'59.30021"W	2563.44
V 148	35°52'18.72539"N	114°55'42.05524"W	1619.14
V 169	36°19'41.00801"N	115°17'14.50840"W	2506.49
W 51	36°04'04.42112"N	115°00'51.82751"W	1563.50
Z 405	36°48'14.84149"N	114°04'12.81545"W	1511.35

The following NGS stations were used as vertical checks:

STATION NAME	RECORD ELEVATION
	US FT
B 399	2505.041
BLUE	3401.189
C 161	2099.628
D 368	3246.664
D 371	3500.292
FERRY	2419.766
FOIL	2074.432
GOVERNMENT ROAD 2	2268.528
HPGN CA 08 01	2647.001
J 171	2410.29
MOAPA LAPLACE	1667.326
P 364	2327.269
S 364	1712.329
SLOAN	2655.375
V 148	1713.189
V 169	2596.176
W 51	1656.332
Z 405	1598.488

III. JOB SUMMARY AND EQUIPMENT

The coordinate system is Nevada East Zone State Plane. The units are in us feet. The projection parameters are as follows:

NEVADA EAST ZONE STATE PLANE
PROJECTION: TRANSVERSE MERCATOR
LATITUDE OF ORIGIN = N 34° 45' 00.000000"
LONGITUDE OF ORIGIN = W 115° 35' 00.000000"
FALSE NORTHING =26246666.667
FALSE EASTING =656166.667
SCALE FACTOR =0.9999000000

The data collected was converted and checked with published ground station coordinates. Measurements were stored at or below 0.15 ft precision. Existing NGS published control stations 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.

Satellite data was collected using one Trimble R12i receiver. The coordinates were processed using Trimble Business Center (Version 5.60).

USGS CLARK COUNTY NEVADA
 COMPARISONS NGS GROUND STATIONS
 65221305
 JULY 2022

STATION NAME	RECORD		NAVD 88	MEASURED		NAVD 88	DIFFERENCE		
	NEVADA EAST ZONE		ELEVATION	NEVADA EAST ZONE		ELEVATION	NORTHING	EASTING	ELEVATION
	STATE PLANE		US FT	STATE PLANE		US FT	US FT	US FT	US FT
	NORTHING	EASTING		NORTHING	EASTING				
	US FT	US FT		US FT	US FT				
B 399	26705288.79	758858.62	2505.04	26705288.83	758858.59	2504.95	-0.04	0.03	0.09
BLUE	26719499.06	710792.67	3401.19	26719499.06	710792.72	3401.25	0.00	-0.04	-0.06
C 161	26864704.23	872181.49	2099.63	26864704.76	872180.86	2100.36	N/A	N/A	-0.73
D 368	26758006.20	721177.04	3246.66	26758006.24	721177.01	3246.91	-0.05	0.03	N/A
D 371	26852646.66	694933.68	3500.29	26852646.72	694933.76	3500.15	-0.06	-0.08	0.14
FERRY	26511751.07	885590.74	2419.77	26511751.06	885590.78	2419.74	0.00	-0.04	0.03
FOIL	26877932.63	886413.23	2074.43	26877932.41	886413.09	2074.23	N/A	N/A	0.20
GOVERNMENT ROAD 2	26379692.27	881953.03	2268.53	26379692.24	881952.99	2268.74	0.03	0.04	-0.22
HPGN CA 08 01	26534601.88	703919.56	2647.00	26534601.90	703919.57	2647.10	-0.02	-0.01	-0.10
J 171	26826469.91	852145.45	2410.29	26826469.92	852145.42	2410.17	-0.01	0.02	0.12
MOAPA LAPLACE	26947520.89	937221.07	1667.33	26947520.89	937221.18	1667.50	0.00	-0.11	-0.18
P 364	26693250.05	854282.80	2327.27	26693250.04	854282.77	2327.50	0.01	0.03	-0.23
S 364	26655641.20	850211.62	1712.33	26655641.23	850211.58	1712.09	-0.02	0.04	0.24
SLOAN	26680023.04	774627.05	2655.38	26680023.07	774627.07	2655.47	-0.02	-0.02	-0.09
V 148	26655631.63	850213.88	1713.19	26655631.75	850214.39	1713.10	N/A	N/A	0.09
V 169	26821171.60	743345.47	2596.18	26821171.67	743345.48	2596.05	-0.08	0.00	0.13
W 51	26726826.80	824304.68	1656.33	26726826.84	824304.73	1656.06	-0.04	-0.05	0.27
Z 405	26997847.64	1099144.23	1598.49	26997847.59	1099144.22	1598.22	0.05	0.01	0.27

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
2001	35°11'49.32976"N	114°34'31.51700"W	514.97	26410887.46	957287.31	613.13	LIPT	NVA	7/19/22
2002	35°51'55.59175"N	114°36'20.05932"W	1730.55	26654090.97	945866.24	1823.17	LIPT	NVA	7/14/22
2002A	35°51'43.66970"N	114°38'35.04590"W	972.13	26652776.53	934767.79	1065.19	LIPT	NVA	7/14/22
2003	35°58'52.13358"N	114°42'03.10134"W	1450.25	26695940.64	917251.69	1542.90	LIPT	NVA	7/9/22
2004	35°40'26.58979"N	114°36'21.87695"W	1634.91	26584422.86	946411.28	1729.09	LIPT	NVA	7/17/22
2005	35°56'06.86139"N	114°38'13.36324"W	2094.75	26679406.16	936294.71	2186.98	LIPT	NVA	7/15/22
2006	35°58'23.14244"N	114°39'27.13939"W	2353.01	26693128.04	930097.18	2445.14	LIPT	NVA	7/15/22
2007	35°43'19.05397"N	114°40'53.53815"W	761.67	26601646.45	923838.49	856.13	LIPT	NVA	7/17/22
2007A	35°43'15.98894"N	114°36'36.80417"W	2092.43	26601538.78	945009.99	2186.08	LIPT	NVA	7/17/22
2008	35°15'14.67069"N	114°29'35.06290"W	1663.14	26431908.08	981662.52	1760.20	LIPT	NVA	7/19/22
2008A	35°14'25.24894"N	114°31'09.69906"W	1206.38	26426826.13	973867.57	1303.86	LIPT	NVA	7/19/22
2009	36°00'08.82719"N	114°43'07.58489"W	1296.13	26703648.04	911883.38	1388.81	LIPT	NVA	7/9/22
2010	35°30'06.90516"N	114°31'22.82624"W	2825.86	26522022.27	971758.66	2920.43	LIPT	NVA	7/17/22
2011	35°56'44.96614"N	114°38'45.36025"W	2062.24	26683233.73	933626.52	2154.48	LIPT	NVA	7/14/22
2012	35°14'01.47624"N	114°32'22.85189"W	940.08	26424358.21	967825.01	1037.77	LIPT	NVA	7/19/22
2013	36°01'31.17289"N	114°42'25.49545"W	1353.27	26712005.35	915266.66	1445.69	LIPT	NVA	7/15/22
2013A	36°01'38.80053"N	114°41'12.00541"W	1655.45	26712831.56	921295.93	1747.59	LIPT	NVA	7/15/22
2014	36°00'54.40784"N	114°44'00.31237"W	1218.94	26708218.83	907510.98	1311.66	LIPT	NVA	7/15/22
2015	35°37'07.92790"N	115°23'10.59080"W	2533.26	26562952.10	714732.20	2627.31	LIPT	NVA	7/22/22
2015A	35°36'45.79323"N	115°23'13.81308"W	2517.77	26560713.64	714470.64	2611.87	LIPT	NVA	7/22/22
2016	36°02'05.77275"N	114°40'00.59465"W	2304.68	26715613.47	927135.69	2396.48	LIPT	NVA	7/15/22
2017	35°29'01.53260"N	114°38'30.03083"W	658.65	26515054.22	936500.69	755.10	LIPT	NVA	7/17/22
2018	35°52'33.44268"N	114°39'51.03362"W	564.88	26657749.79	928466.09	658.01	LIPT	NVA	7/14/22
2019	35°49'41.40494"N	114°56'11.93064"W	1735.07	26639708.42	847860.40	1829.26	LIPT	NVA	7/8/22
2020	35°11'30.84010"N	114°38'26.07043"W	1429.72	26408827.10	937839.30	1527.45	LIPT	NVA	7/19/22
2021	35°20'53.62842"N	114°39'38.33395"W	1193.35	26465670.80	931312.60	1290.23	LIPT	NVA	7/21/22
2022	35°48'44.75580"N	115°17'59.70063"W	2919.44	26633469.06	740194.46	3011.98	LIPT	NVA	7/22/22

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
2023	36°14'46.08062"N	115°16'49.25350"W	2319.64	26791355.87	745505.17	2410.02	LIPT	NVA	7/7/22
2024	36°17'27.97148"N	115°04'47.45427"W	2042.33	26807971.84	804540.02	2133.37	LIPT	NVA	7/7/22
2024A	36°16'57.58263"N	115°05'40.26902"W	1956.08	26804876.84	800232.13	2047.31	LIPT	NVA	7/7/22
2025	36°23'48.55880"N	115°23'30.49437"W	2794.63	26846125.87	712532.55	2882.68	LIPT	NVA	7/7/22
2026	36°10'16.45175"N	115°14'06.68371"W	2257.10	26764136.91	758918.50	2348.26	LIPT	NVA	7/7/22
2027	36°12'24.07332"N	115°01'00.40729"W	1889.15	26777345.22	823305.72	1980.78	LIPT	NVA	7/6/22
2028	36°19'15.29158"N	115°12'40.37960"W	2267.38	26818648.68	765784.85	2357.71	LIPT	NVA	7/7/22
2029	35°55'30.98271"N	115°11'44.19498"W	2654.23	26674648.68	770956.88	2746.17	LIPT	NVA	7/22/22
2029A	35°57'40.22723"N	115°10'20.79736"W	2404.97	26687744.82	777760.48	2496.97	LIPT	NVA	7/22/22
2030	35°54'42.94496"N	114°55'35.56568"W	1657.37	26670217.51	850649.94	1751.08	LIPT	NVA	7/8/22
2031	35°51'25.26414"N	115°41'54.58799"W	2607.54	26649596.34	622041.99	2700.41	LIPT	NVA	7/27/22
2032	35°59'39.63612"N	115°07'57.96906"W	2236.45	26699870.34	789445.58	2328.66	LIPT	NVA	7/25/22
2032A	35°59'44.18200"N	115°08'16.63106"W	2220.56	26700322.94	787910.05	2312.74	LIPT	NVA	7/25/22
2033	35°10'43.11246"N	114°50'59.61954"W	2358.91	26403474.54	875334.22	2456.28	LIPT	NVA	7/19/22
2034	36°06'41.46557"N	115°09'44.59657"W	1978.93	26742483.74	780499.74	2070.95	LIPT	NVA	7/8/22
2035	36°25'35.10064"N	114°57'15.32980"W	2511.28	26857446.59	841230.28	2600.15	LIPT	NVA	7/6/22
2035A	36°22'41.56025"N	114°54'00.17128"W	2123.75	26840006.56	857302.60	2213.43	LIPT	NVA	7/6/22
2036	35°28'44.98596"N	114°47'01.01669"W	1876.63	26513008.47	894257.21	1972.02	LIPT	NVA	7/21/22
2036A	35°31'31.23760"N	114°43'37.66982"W	1083.72	26529958.71	910928.41	1179.39	LIPT	NVA	7/21/22
2037	35°42'10.40921"N	114°49'08.87046"W	2734.14	26594359.11	883051.37	2827.70	LIPT	NVA	7/14/22
2038	35°26'51.46790"N	114°46'02.13864"W	1647.79	26501570.98	899221.35	1743.61	LIPT	NVA	7/21/22
2039	36°08'08.00363"N	115°05'00.52702"W	1699.88	26751344.40	803761.73	1792.30	LIPT	NVA	7/8/22
2039A	36°07'48.21967"N	115°06'29.97122"W	1784.70	26749307.14	796435.13	1877.05	LIPT	NVA	7/8/22
2040	35°56'34.47060"N	115°49'09.67472"W	2710.26	26680924.54	586305.52	2803.31	LIPT	NVA	7/27/22
2041	35°26'14.81249"N	114°40'56.82061"W	570.03	26498084.40	924515.32	666.75	LIPT	NVA	7/21/22
2042	36°01'17.38034"N	115°30'32.84324"W	5277.55	26709453.79	678110.79	5365.68	LIPT	NVA	7/26/22
2043	36°05'54.67104"N	114°50'35.13189"W	1374.98	26738315.32	874846.23	1467.36	LIPT	NVA	7/9/22

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
2043A	36°05'48.63933"N	114°49'23.46671"W	1164.98	26737750.79	880731.96	1257.35	LIPT	NVA	7/9/22
2044	35°10'28.20186"N	114°44'15.89279"W	2568.91	26402233.12	908859.57	2666.18	LIPT	NVA	7/19/22
2045	36°17'37.54394"N	115°25'24.64420"W	4043.21	26808592.79	703263.01	4130.49	LIPT	NVA	7/7/22
2046	36°10'42.98914"N	115°21'34.11999"W	3323.52	26766712.16	722229.64	3412.61	LIPT	NVA	7/26/22
2046A	36°09'18.01699"N	115°21'47.86576"W	3138.14	26758117.66	721122.28	3227.34	LIPT	NVA	7/26/22
2047	35°44'38.35301"N	114°57'18.63188"W	2131.34	26609031.11	842564.58	2225.50	LIPT	NVA	7/25/22
2047A	35°44'36.46059"N	114°55'08.55054"W	2736.51	26608910.42	853288.25	2830.27	LIPT	NVA	7/25/22
2048	35°40'48.11552"N	114°45'45.96815"W	1716.92	26586173.48	899854.54	1811.20	LIPT	NVA	7/14/22
2049	36°02'55.67935"N	115°23'04.60471"W	3212.54	26719444.61	714908.63	3302.13	LIPT	NVA	7/26/22
2050	35°40'50.29026"N	114°41'54.64077"W	780.24	26586559.03	918935.99	875.12	LIPT	NVA	7/14/22
2051	36°19'05.99890"N	115°21'54.90004"W	3279.29	26817570.60	720411.70	3367.81	LIPT	NVA	7/7/22
2052	36°19'06.80528"N	114°54'06.62371"W	2491.66	26818286.90	856928.09	2581.79	LIPT	NVA	7/6/22
2053	35°55'41.13808"N	115°04'42.87382"W	3087.35	26675833.84	805601.03	3179.76	LIPT	NVA	7/25/22
2054	36°00'18.91982"N	114°56'23.26065"W	2049.14	26704162.78	846502.74	2142.00	LIPT	NVA	7/8/22
2055	35°24'06.65129"N	114°42'50.81657"W	1206.35	26485042.10	915196.71	1302.84	LIPT	NVA	7/21/22
2056	35°07'05.30669"N	114°38'37.65227"W	414.73	26381972.05	937131.55	513.53	LIPT	NVA	7/19/22
2057	35°57'10.23867"N	114°48'24.89528"W	2225.15	26685370.76	885956.33	2318.27	LIPT	NVA	7/14/22
2058	36°13'17.45074"N	115°09'38.57144"W	2040.37	26782526.01	780819.79	2132.17	LIPT	NVA	7/7/22
2059	35°59'08.97528"N	115°26'38.17642"W	4265.19	26696491.67	697404.78	4354.50	LIPT	NVA	7/26/22
2060	36°02'48.19410"N	115°01'46.63670"W	1704.67	26719093.23	819849.10	1797.45	LIPT	NVA	7/8/22
2061	35°28'24.22228"N	114°51'54.45901"W	3045.36	26510722.56	870004.50	3140.10	LIPT	NVA	7/21/22
2061A	35°28'33.05376"N	114°48'45.80220"W	2323.93	26511733.12	885600.74	2419.02	LIPT	NVA	7/21/22
2062	36°00'42.18682"N	114°46'27.12232"W	1612.33	26706880.43	895460.98	1705.15	LIPT	NVA	7/9/22
2063	36°07'43.21709"N	114°52'26.23920"W	1186.12	26749223.09	865648.50	1278.39	LIPT	NVA	7/9/22
2064	35°59'18.18704"N	115°15'41.20205"W	2561.62	26697550.79	751389.70	2652.96	LIPT	NVA	7/22/22
2065	35°56'34.89125"N	114°50'43.75500"W	2049.60	26681708.09	874567.28	2142.92	LIPT	NVA	7/14/22
2066	35°42'34.35802"N	114°44'23.08737"W	1153.25	26596973.57	906599.52	1247.70	LIPT	NVA	7/14/22

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
2067	35°15'28.26145"N	114°44'07.48499"W	3670.02	26432575.72	909298.61	3766.25	LIPT	NVA	7/21/22
2067A	35°15'14.51350"N	114°43'40.49325"W	3568.78	26431204.97	911548.95	3665.07	LIPT	NVA	7/21/22
2068	35°56'43.81716"N	115°39'25.04638"W	3327.92	26681793.33	634375.01	3418.60	LIPT	NVA	7/27/22
2068A	35°54'17.33765"N	115°40'23.87113"W	3011.80	26666986.79	629524.89	3103.47	LIPT	NVA	7/27/22
2069	35°49'48.02384"N	115°00'09.26282"W	1673.61	26640255.13	828314.22	1767.72	LIPT	NVA	7/25/22
2070	36°03'59.76999"N	114°49'10.95179"W	1215.29	26726750.44	881845.39	1307.75	LIPT	NVA	7/9/22
2071	35°22'29.01574"N	114°40'58.09534"W	1163.00	26475254.10	924617.75	1259.73	LIPT	NVA	7/21/22
2072	35°54'48.72683"N	115°39'28.20109"W	3236.19	26670156.70	634106.75	3327.40	LIPT	NVA	7/27/22
2073	36°05'40.54451"N	115°19'27.74458"W	2715.46	26736156.48	732670.94	2805.68	LIPT	NVA	7/26/22
3001	35°11'47.85847"N	114°34'32.25486"W	505.81	26410738.09	957227.58	603.98	LIPT	VVA	7/19/22
3002	35°51'55.33884"N	114°36'20.37710"W	1729.48	26654065.14	945840.34	1822.11	LIPT	VVA	7/14/22
3002A	35°51'44.08484"N	114°38'35.17108"W	972.41	26652818.41	934757.09	1065.48	LIPT	VVA	7/14/22
3003	35°58'51.75856"N	114°42'02.18268"W	1449.52	26695903.40	917327.53	1542.17	LIPT	VVA	7/9/22
3004	35°40'26.39112"N	114°36'21.69284"W	1635.97	26584402.92	946426.67	1730.15	LIPT	VVA	7/17/22
3005	35°56'08.97158"N	114°38'05.05207"W	2168.00	26679626.17	936976.08	2260.20	LIPT	VVA	7/15/22
3006	35°58'22.81588"N	114°39'27.23881"W	2352.42	26693094.94	930089.32	2444.55	LIPT	VVA	7/15/22
3007	35°43'20.26945"N	114°40'52.39130"W	767.18	26601770.22	923931.92	861.64	LIPT	VVA	7/17/22
3007A	35°43'16.49082"N	114°36'37.95092"W	2090.83	26601588.59	944914.93	2184.48	LIPT	VVA	7/17/22
3008	35°15'13.72046"N	114°29'57.42999"W	1583.31	26431791.69	979808.59	1680.46	LIPT	VVA	7/19/22
3008A	35°14'25.57163"N	114°31'10.25107"W	1205.96	26426858.27	973821.44	1303.45	LIPT	VVA	7/19/22
3009	36°00'08.54473"N	114°43'07.08356"W	1297.12	26703619.85	911924.82	1389.81	LIPT	VVA	7/9/22
3010	35°30'07.34361"N	114°31'22.81648"W	2825.71	26522066.61	971758.99	2920.27	LIPT	VVA	7/17/22
3011	35°56'45.38569"N	114°38'45.05873"W	2063.11	26683276.39	933650.90	2155.35	LIPT	VVA	7/14/22
3012	35°14'01.18400"N	114°32'22.59136"W	940.04	26424328.89	967846.93	1037.73	LIPT	VVA	7/19/22
3013	36°00'45.62311"N	114°43'49.99974"W	1345.32	26707337.97	908365.93	1438.04	LIPT	VVA	7/15/22
3014	35°36'58.13230"N	115°23'10.57388"W	2525.28	26561961.72	714735.58	2619.35	LIPT	VVA	7/22/22
3014A	35°37'50.75218"N	115°23'02.27074"W	2534.48	26567283.25	715410.29	2628.43	LIPT	VVA	7/22/22

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
3015	36°02'05.55799"N	114°40'00.54175"W	2304.89	26715591.80	927140.24	2396.70	LIPT	VVA	7/15/22
3015A	36°01'37.70544"N	114°41'39.64228"W	1470.09	26712700.02	919026.95	1562.35	LIPT	VVA	7/15/22
3016	35°30'09.50121"N	114°38'05.77822"W	821.48	26521945.56	938440.27	917.69	LIPT	VVA	7/17/22
3017	35°52'35.72089"N	114°39'58.00375"W	570.99	26657974.76	927890.33	664.12	LIPT	VVA	7/14/22
3018	35°11'31.30083"N	114°38'13.59842"W	1373.59	26408883.51	938873.98	1471.36	LIPT	VVA	7/19/22
3019	35°20'39.09826"N	114°39'57.26786"W	1242.61	26464187.15	929757.79	1339.43	LIPT	VVA	7/21/22
3020	35°48'45.82678"N	115°18'01.43541"W	2924.04	26633576.93	740051.28	3016.57	LIPT	VVA	7/22/22
3021	36°14'47.02584"N	115°16'54.30067"W	2323.60	26791450.16	745091.48	2413.95	LIPT	VVA	7/7/22
3022	36°16'57.68594"N	115°05'40.08564"W	1957.12	26804887.36	800247.09	2048.35	LIPT	VVA	7/7/22
3022A	36°16'41.75597"N	115°06'26.34386"W	1944.96	26803257.69	796467.92	2036.27	LIPT	VVA	7/7/22
3023	36°23'47.74142"N	115°23'30.65310"W	2796.76	26846043.19	712519.73	2884.80	LIPT	VVA	7/7/22
3024	36°10'18.46465"N	115°14'03.06097"W	2252.98	26764341.51	759214.77	2344.15	LIPT	VVA	7/7/22
3025	36°12'24.57878"N	115°01'00.35542"W	1891.21	26777396.36	823309.68	1982.84	LIPT	VVA	7/6/22
3026	36°19'12.17246"N	115°12'39.57421"W	2269.01	26818333.53	765851.97	2359.35	LIPT	VVA	7/7/22
3027A	35°57'25.27146"N	115°10'22.15488"W	2428.04	26686232.14	777655.25	2520.04	LIPT	VVA	7/22/22
3028	35°54'46.20676"N	114°55'39.79446"W	1667.41	26670544.98	850299.89	1761.11	LIPT	VVA	7/8/22
3029	35°51'27.87768"N	115°41'39.06940"W	2609.54	26649859.12	623319.62	2702.36	LIPT	VVA	7/27/22
3029A	35°54'18.01275"N	115°40'24.36544"W	3012.67	26667055.09	629484.29	3104.33	LIPT	VVA	7/27/22
3030	35°59'44.43795"N	115°08'07.39304"W	2221.26	26700352.29	788669.00	2313.46	LIPT	VVA	7/25/22
3031	35°10'43.09017"N	114°50'58.94677"W	2357.61	26403472.70	875390.08	2454.98	LIPT	VVA	7/19/22
3032	36°06'42.51664"N	115°09'33.09095"W	1971.62	26742594.12	781443.28	2063.67	LIPT	VVA	7/8/22
3033	36°25'35.75124"N	114°57'15.72178"W	2513.04	26857512.17	841197.82	2601.91	LIPT	VVA	7/6/22
3033A	36°22'41.36315"N	114°54'01.40214"W	2123.57	26839985.92	857202.10	2213.25	LIPT	VVA	7/6/22
3034	35°28'41.67865"N	114°47'42.53879"W	2058.13	26512646.46	890825.95	2153.40	LIPT	VVA	7/21/22
3035	35°42'06.73354"N	114°49'10.53638"W	2752.59	26593986.39	882916.87	2846.14	LIPT	VVA	7/14/22
3036	36°08'07.62708"N	115°05'00.45629"W	1700.35	26751306.36	803767.73	1792.77	LIPT	VVA	7/8/22
3036A	36°07'40.90716"N	115°06'19.84304"W	1791.97	26748571.81	797269.55	1884.34	LIPT	VVA	7/8/22

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
3037	35°56'34.66130"N	115°49'09.06350"W	2710.51	26680943.70	586355.83	2803.57	LIPT	VVA	7/27/22
3038	35°26'13.88591"N	114°40'51.34106"W	552.60	26497994.86	924969.58	649.33	LIPT	VVA	7/21/22
3039	36°01'21.35603"N	115°30'28.46967"W	5302.37	26709856.06	678469.72	5390.48	LIPT	VVA	7/26/22
3040	35°10'27.86913"N	114°44'16.16640"W	2569.01	26402199.29	908837.14	2666.28	LIPT	VVA	7/19/22
3041	36°17'04.67916"N	115°26'10.30577"W	4263.95	26805263.69	699530.38	4350.93	LIPT	VVA	7/7/22
3042	36°10'42.32415"N	115°21'34.06066"W	3321.36	26766644.93	722234.66	3410.46	LIPT	VVA	7/26/22
3042A	36°09'19.14646"N	115°21'45.01943"W	3127.05	26758232.39	721355.43	3216.26	LIPT	VVA	7/26/22
3043	35°44'37.61342"N	114°57'11.86149"W	2158.59	26608959.91	843123.13	2252.73	LIPT	VVA	7/25/22
3043A	35°44'36.13165"N	114°55'08.59170"W	2736.99	26608877.14	853285.08	2830.75	LIPT	VVA	7/25/22
3044	35°40'48.21034"N	114°45'45.50958"W	1716.52	26586183.38	899892.29	1810.81	LIPT	VVA	7/14/22
3045	36°02'55.58589"N	115°23'04.78257"W	3211.84	26719435.13	714894.04	3301.43	LIPT	VVA	7/26/22
3046	35°40'51.22046"N	114°41'52.28198"W	759.75	26586654.84	919129.73	854.62	LIPT	VVA	7/14/22
3047	36°19'05.96693"N	115°21'55.47083"W	3281.45	26817567.26	720365.00	3369.96	LIPT	VVA	7/7/22
3048	36°19'06.50826"N	114°54'07.99793"W	2492.54	26818256.07	856815.85	2582.66	LIPT	VVA	7/6/22
3049	35°55'45.97453"N	115°05'23.87994"W	2952.76	26676305.63	802226.33	3045.15	LIPT	VVA	7/25/22
3050	36°00'10.83647"N	114°56'20.21624"W	2063.18	26703347.09	846758.27	2156.05	LIPT	VVA	7/8/22
3051	35°07'05.21683"N	114°38'35.38385"W	412.58	26381964.74	937320.08	511.39	LIPT	VVA	7/19/22
3052	35°59'08.14621"N	115°26'36.13918"W	4247.26	26696408.08	697572.31	4336.58	LIPT	VVA	7/26/22
3053	35°28'24.00344"N	114°51'54.81306"W	3042.64	26510700.22	869975.38	3137.38	LIPT	VVA	7/21/22
3053A	35°28'32.76543"N	114°48'45.55968"W	2322.40	26511704.13	885621.02	2417.50	LIPT	VVA	7/21/22
3054	36°00'43.04982"N	114°46'09.29446"W	1691.72	26706979.89	896924.85	1784.53	LIPT	VVA	7/9/22
3055	36°07'43.58244"N	114°52'27.41006"W	1187.07	26749259.33	865552.19	1279.34	LIPT	VVA	7/9/22
3055A	36°05'54.38480"N	114°50'35.67371"W	1377.36	26738286.04	874801.99	1469.74	LIPT	VVA	7/9/22
3056	35°49'47.56839"N	115°00'03.35744"W	1667.50	26640211.97	828800.74	1761.62	LIPT	VVA	7/25/22
3057	36°04'02.26570"N	114°49'12.82723"W	1218.48	26727001.59	881689.45	1310.93	LIPT	VVA	7/9/22
4001	35°11'48.32253"N	114°34'31.65931"W	509.58	26410785.51	957276.53	607.75	LIPT	CAL	7/19/22
4002	35°51'55.50066"N	114°36'21.00859"W	1724.84	26654080.98	945788.21	1817.46	LIPT	CAL	7/14/22

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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
4002A	35°51'43.77625"N	114°38'35.27290"W	971.09	26652787.13	934749.01	1064.16	LIPT	CAL	7/14/22
4003	35°58'51.91443"N	114°42'01.71473"W	1452.91	26695919.51	917365.85	1545.55	LIPT	CAL	7/9/22
4003A	36°01'49.46809"N	114°42'12.30871"W	1228.03	26713865.05	916333.09	1320.39	LIPT	CAL	7/15/22
4004	35°56'11.24997"N	114°38'00.91371"W	2185.42	26679859.85	937314.15	2277.60	LIPT	CAL	7/15/22
4005	35°43'20.03397"N	114°40'52.33239"W	766.87	26601746.45	923937.00	861.33	LIPT	CAL	7/17/22
4005A	35°43'12.76573"N	114°36'47.75027"W	2039.18	26601203.94	944110.66	2132.87	LIPT	CAL	7/17/22
4006	35°15'13.92938"N	114°29'57.90963"W	1581.81	26431812.38	979768.58	1678.97	LIPT	CAL	7/19/22
4006A	35°14'04.11676"N	114°31'10.64956"W	1191.99	26424688.73	973811.62	1289.53	LIPT	CAL	7/19/22
4007	35°30'05.88682"N	114°31'33.04651"W	2753.75	26521910.23	970914.76	2848.38	LIPT	CAL	7/17/22
4008	36°00'55.87161"N	114°44'00.89838"W	1209.76	26708366.42	907461.55	1302.48	LIPT	CAL	7/15/22
4008A	36°00'44.53377"N	114°43'50.79634"W	1346.46	26707227.24	908301.45	1439.19	LIPT	CAL	7/15/22
4009	35°36'58.76518"N	115°23'13.85203"W	2534.69	26562025.16	714464.81	2628.76	LIPT	CAL	7/22/22
4010	35°30'09.76535"N	114°38'14.49969"W	791.44	26521965.34	937718.94	887.66	LIPT	CAL	7/17/22
4011	35°52'43.46236"N	114°39'54.57615"W	623.30	26658760.18	928165.04	716.41	LIPT	CAL	7/14/22
4012	35°11'12.09417"N	114°37'29.55755"W	1140.71	26406976.69	942547.89	1238.67	LIPT	CAL	7/19/22
4013	35°20'44.83485"N	114°39'52.14840"W	1227.74	26464771.08	930176.51	1324.57	LIPT	CAL	7/21/22
4014	35°48'46.24159"N	115°18'00.11362"W	2923.93	26633619.19	740160.01	3016.47	LIPT	CAL	7/22/22
4015	36°17'24.50675"N	115°05'07.43180"W	2018.03	26807613.04	802906.46	2109.10	LIPT	CAL	7/7/22
4015A	36°16'55.71548"N	115°05'22.02922"W	1954.46	26804695.61	801726.36	2045.70	LIPT	CAL	7/7/22
4016	36°23'48.26440"N	115°23'33.25561"W	2799.63	26846095.65	712306.88	2887.67	LIPT	CAL	7/7/22
4017	36°12'23.91348"N	115°00'55.47905"W	1898.66	26777331.42	823709.68	1990.28	LIPT	CAL	7/6/22
4018	35°56'02.31459"N	115°11'19.56792"W	2586.47	26677824.79	772969.40	2678.42	LIPT	CAL	7/22/22
4018A	35°57'25.30691"N	115°10'22.96018"W	2429.97	26686235.45	777589.03	2521.97	LIPT	CAL	7/22/22
4019	35°54'45.93782"N	114°55'40.04163"W	1667.57	26670517.65	850279.74	1761.26	LIPT	CAL	7/8/22
4020	35°51'25.27318"N	115°41'45.23858"W	2605.53	26649596.36	622811.54	2698.38	LIPT	CAL	7/27/22
4020A	35°54'06.23601"N	115°40'29.65675"W	2967.58	26665864.75	629047.91	3059.33	LIPT	CAL	7/27/22
4021	35°10'34.69456"N	114°50'58.05936"W	2352.88	26402624.44	875470.00	2450.28	LIPT	CAL	7/19/22

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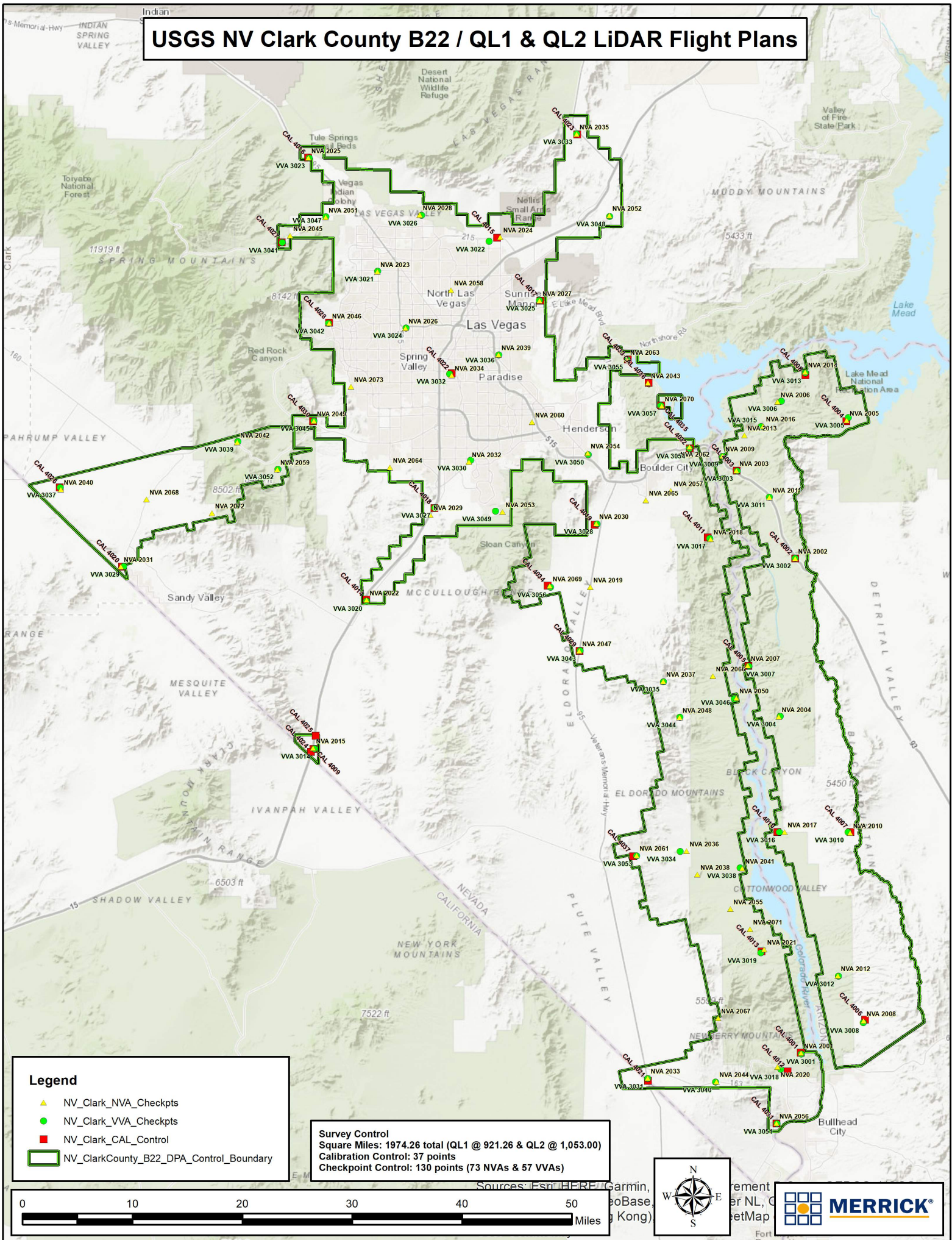
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POINT	NAD83(2011)		ELLIPSOID	NEVADA EAST ZONE		NAVD 88	CODE	NOTE	DATE
NAME	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION			
			US FT	NORTHING	EASTING	GEOID 18			
				US FT	US FT	US FYT			
4022	36°06'41.34963"N	115°09'36.10200"W	1973.48	26742475.04	781196.74	2065.52	LIPT	CAL	7/8/22
4022A	36°07'45.09245"N	115°06'30.81714"W	1787.07	26748990.60	796367.28	1879.43	LIPT	CAL	7/8/22
4023	36°25'33.28096"N	114°57'11.48151"W	2492.99	26857264.64	841545.96	2581.87	LIPT	CAL	7/6/22
4023A	36°22'44.79197"N	114°53'48.17954"W	2112.94	26840340.30	858280.84	2202.62	LIPT	CAL	7/6/22
4024	35°36'45.91769"N	115°23'25.04461"W	2522.64	26560724.39	713543.32	2616.73	LIPT	CAL	7/22/22
4025	35°37'50.97355"N	115°23'02.74505"W	2535.60	26567305.55	715371.09	2629.55	LIPT	CAL	7/22/22
4026	35°56'34.24745"N	115°49'09.40004"W	2710.98	26680901.92	586328.05	2804.03	LIPT	CAL	7/27/22
4027	36°17'05.13521"N	115°26'09.65119"W	4261.73	26805309.89	699583.90	4348.71	LIPT	CAL	7/7/22
4028	36°10'40.34475"N	115°21'37.77218"W	3327.89	26766444.08	721930.86	3416.97	LIPT	CAL	7/26/22
4028A	36°09'18.10604"N	115°21'46.29061"W	3133.38	26758126.95	721251.43	3222.59	LIPT	CAL	7/26/22
4029	35°44'38.74484"N	114°57'19.50614"W	2131.57	26609070.27	842492.27	2225.73	LIPT	CAL	7/25/22
4029A	35°44'37.12319"N	114°55'09.07419"W	2732.80	26608977.12	853244.63	2826.56	LIPT	CAL	7/25/22
4030	36°02'56.19298"N	115°23'09.18361"W	3213.96	26719495.78	714532.54	3303.54	LIPT	CAL	7/26/22
4031	35°06'50.28651"N	114°38'44.76334"W	413.44	26380447.92	936555.13	512.28	LIPT	CAL	7/19/22
4032	36°00'36.47605"N	114°46'25.79929"W	1576.58	26706303.89	895574.47	1669.40	LIPT	CAL	7/9/22
4033	36°07'43.77901"N	114°52'27.58210"W	1187.72	26749279.11	865537.93	1279.99	LIPT	CAL	7/9/22
4034	35°49'49.26100"N	115°00'21.03290"W	1689.97	26640374.48	827344.34	1784.05	LIPT	CAL	7/25/22
4035	36°04'01.54784"N	114°49'12.65891"W	1217.82	26726929.11	881703.83	1310.27	LIPT	CAL	7/9/22
4036	36°05'55.47747"N	114°50'36.90178"W	1380.14	26738395.76	874700.37	1472.52	LIPT	CAL	7/9/22
4036A	36°05'48.81231"N	114°49'27.63533"W	1171.88	26737765.61	880389.73	1264.26	LIPT	CAL	7/9/22
4037	35°28'20.44720"N	114°52'14.00134"W	3105.51	26510329.17	868390.97	3200.23	LIPT	CAL	7/21/22
4037A	35°28'41.16350"N	114°47'42.27553"W	2056.50	26512594.55	890848.14	2151.77	LIPT	CAL	7/21/22

USGS CLARK COUNTY NEVADA
 COMPARISONS NGS GROUND STATIONS
 65221305
 JULY 2022

STATION NAME	RECORD		NAVD 88	MEASURED		NAVD 88	DIFFERENCE		
	NEVADA EAST ZONE		ELEVATION	NEVADA EAST ZONE		ELEVATION	NORTHING	EASTING	ELEVATION
	STATE PLANE		US FT	STATE PLANE		US FT	US FT	US FT	US FT
	NORTHING	EASTING		NORTHING	EASTING				
	US FT	US FT		US FT	US FT				
B 399	26705288.79	758858.62	2505.04	26705288.83	758858.59	2504.95	-0.04	0.03	0.09
BLUE	26719499.06	710792.67	3401.19	26719499.06	710792.72	3401.25	0.00	-0.04	-0.06
C 161	26864704.23	872181.49	2099.63	26864704.76	872180.86	2100.36	N/A	N/A	-0.73
D 368	26758006.20	721177.04	3246.66	26758006.24	721177.01	3246.91	-0.05	0.03	N/A
D 371	26852646.66	694933.68	3500.29	26852646.72	694933.76	3500.15	-0.06	-0.08	0.14
FERRY	26511751.07	885590.74	2419.77	26511751.06	885590.78	2419.74	0.00	-0.04	0.03
FOIL	26877932.63	886413.23	2074.43	26877932.41	886413.09	2074.23	N/A	N/A	0.20
GOVERNMENT ROAD 2	26379692.27	881953.03	2268.53	26379692.24	881952.99	2268.74	0.03	0.04	-0.22
HPGN CA 08 01	26534601.88	703919.56	2647.00	26534601.90	703919.57	2647.10	-0.02	-0.01	-0.10
J 171	26826469.91	852145.45	2410.29	26826469.92	852145.42	2410.17	-0.01	0.02	0.12
MOAPA LAPLACE	26947520.89	937221.07	1667.33	26947520.89	937221.18	1667.50	0.00	-0.11	-0.18
P 364	26693250.05	854282.80	2327.27	26693250.04	854282.77	2327.50	0.01	0.03	-0.23
S 364	26655641.20	850211.62	1712.33	26655641.23	850211.58	1712.09	-0.02	0.04	0.24
SLOAN	26680023.04	774627.05	2655.38	26680023.07	774627.07	2655.47	-0.02	-0.02	-0.09
V 148	26655631.63	850213.88	1713.19	26655631.75	850214.39	1713.10	N/A	N/A	0.09
V 169	26821171.60	743345.47	2596.18	26821171.67	743345.48	2596.05	-0.08	0.00	0.13
W 51	26726826.80	824304.68	1656.33	26726826.84	824304.73	1656.06	-0.04	-0.05	0.27
Z 405	26997847.64	1099144.23	1598.49	26997847.59	1099144.22	1598.22	0.05	0.01	0.27

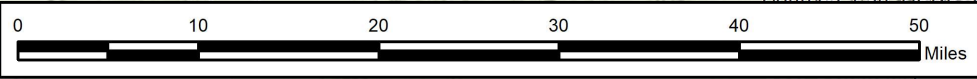
USGS NV Clark County B22 / QL1 & QL2 LiDAR Flight Plans



Legend

- ▲ NV_Clark_NVA_Checkpts
- NV_Clark_VVA_Checkpts
- NV_Clark_CAL_Control
- NV_ClarkCounty_B22_DPA_Control_Boundary

Survey Control
 Square Miles: 1974.26 total (QL1 @ 921.26 & QL2 @ 1,053.00)
 Calibration Control: 37 points
 Checkpoint Control: 130 points (73 NVAs & 57 VVAs)

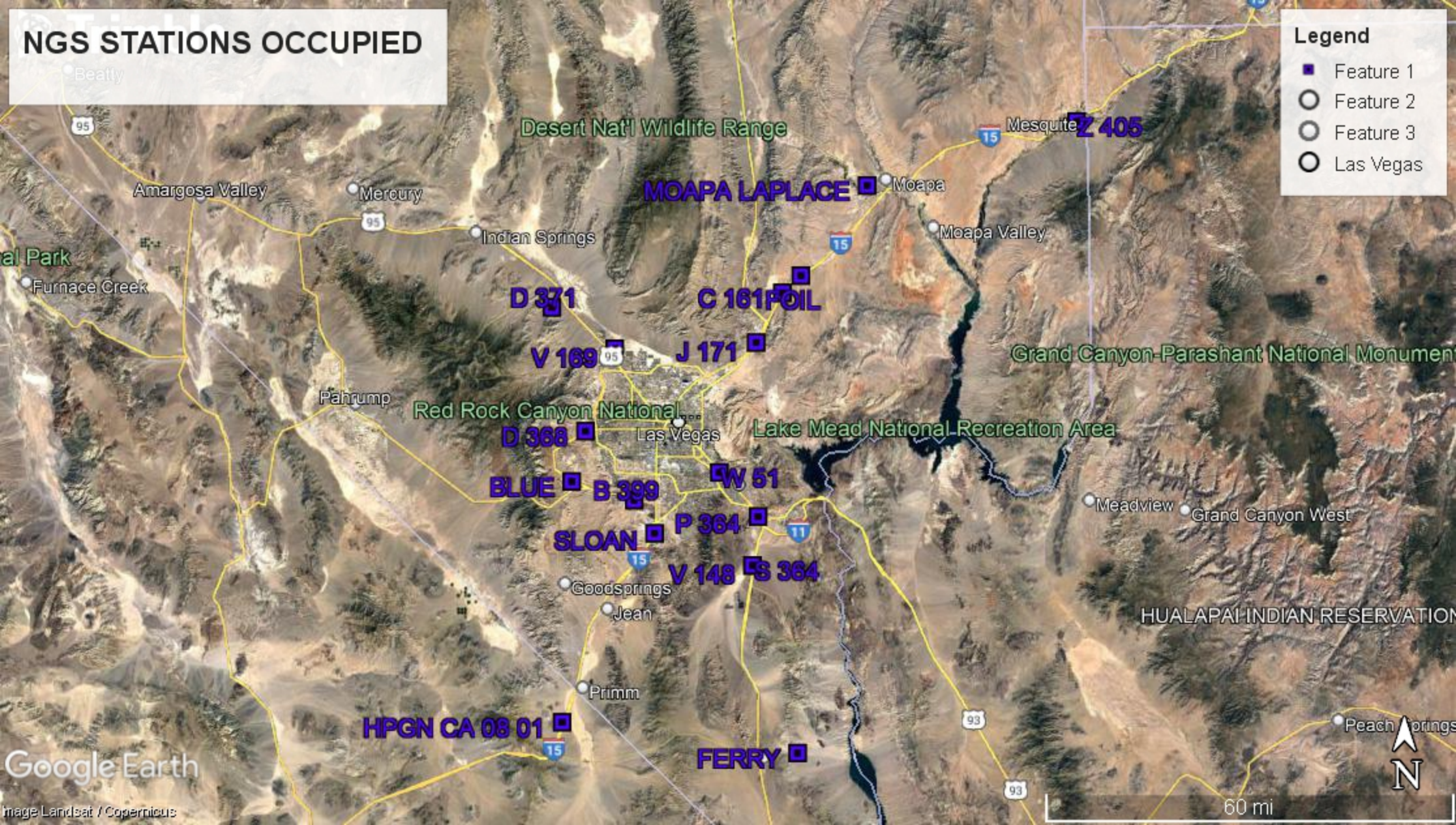


Sources: Esri, HERE, Garmin, DeLorme, GeoBase, Swatch, Swatch, Swatch, Bing, and Mapbox

NGS STATIONS OCCUPIED

Legend

- Feature 1
- Feature 2
- Feature 3
- Las Vegas





P364
E

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1306 *****

GR1306 DESIGNATION - B 399

GR1306 PID - GR1306

GR1306 STATE/COUNTY- NV/CLARK

GR1306 COUNTRY - US

GR1306 USGS QUAD - LAS VEGAS SW (2018)

GR1306

GR1306 *CURRENT SURVEY CONTROL

GR1306

GR1306* NAD 83(2011) POSITION- 36 00 34.46159(N) 115 14 09.97655(W) ADJUSTED

GR1306* NAD 83(2011) ELLIP HT- 735.640 (meters) (06/27/12) ADJUSTED

GR1306* NAD 83(2011) EPOCH - 2010.00

GR1306* NAVD 88 ORTHO HEIGHT - 763.538 (meters) 2505.04 (feet) ADJUSTED

GR1306

GR1306 GEOID HEIGHT - -27.891 (meters) GEOID18

GR1306 NAD 83(2011) X - -2,202,507.863 (meters) COMP

GR1306 NAD 83(2011) Y - -4,672,921.940 (meters) COMP

GR1306 NAD 83(2011) Z - 3,729,483.438 (meters) COMP

GR1306 LAPLACE CORR - -4.48 (seconds) DEFLEC18

GR1306 DYNAMIC HEIGHT - 762.739 (meters) 2502.42 (feet) COMP

GR1306 MODELED GRAVITY - 979,562.2 (mgal) NAVD 88

GR1306

GR1306 VERT ORDER - FIRST CLASS II

GR1306

GR1306 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1306 Standards:

GR1306 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1306 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1306 -----

GR1306 NETWORK 0.96 2.27 0.41 0.37 1.16 0.00394089

GR1306 -----

GR1306 [Click here for local accuracies and other accuracy information.](#)

GR1306

GR1306

GR1306.The horizontal coordinates were established by GPS observations

GR1306.and adjusted by the National Geodetic Survey in June 2012.

GR1306

GR1306.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1306.been affixed to the stable North American tectonic plate. See

GR1306.NA2011 for more information.

GR1306

GR1306.The horizontal coordinates are valid at the epoch date displayed above

GR1306.which is a decimal equivalence of Year/Month/Day.

GR1306

GR1306.The orthometric height was determined by differential leveling and

GR1306.adjusted by the NATIONAL GEODETIC SURVEY

GR1306.in June 1991.

GR1306

GR1306.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1306.GEOID18 height accuracy estimate available here.

GR1306

GR1306.Click photographs - Photos may exist for this station.

GR1306

GR1306.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1306

GR1306.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1306

GR1306.The ellipsoidal height was determined by GPS observations

GR1306.and is referenced to NAD 83.

GR1306

GR1306.The dynamic height is computed by dividing the NAVD 88

GR1306.geopotential number by the normal gravity value computed on the

GR1306.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR1306.degrees latitude ($g = 980.6199$ gals.).

GR1306

GR1306.The modeled gravity was interpolated from observed gravity values.

GR1306

GR1306. The following values were computed from the NAD 83(2011) position.

GR1306

GR1306; North East Units Scale Factor Converg.

GR1306;SPC NV E - 8,139,788.302 231,300.569 MT 0.99991207 +0 12 14.9

GR1306;SPC NV E -26,705,288.79 758,858.62 sFT 0.99991207 +0 12 14.9

GR1306;UTM 11 - 3,986,449.061 658,964.305 MT 0.99991137 +1 02 14.1

GR1306

GR1306! - Elev Factor x Scale Factor = Combined Factor

GR1306!SPC NV E - 0.99988456 x 0.99991207 = 0.99979664

GR1306!UTM 11 - 0.99988456 x 0.99991137 = 0.99979594

GR1306

GR1306: Primary Azimuth Mark

Grid Az

GR1306:SPC NV E - CCPW BEAVE 352 02 45.8

GR1306:UTM 11 - CCPW BEAVE 351 12 46.6

GR1306

GR1306_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV5896486449(NAD 83)

GR1306

GR1306|-----|

GR1306|PID Reference Object Distance Geod. Az |

GR1306| dddmmss.s |

GR1306| AI5108 CCPW BEAVE 417.901 METERS 3521500.7 |

GR1306|-----|

GR1306

GR1306 SUPERSEDED SURVEY CONTROL

GR1306

GR1306 NAD 83(2007)- 36 00 34.46142(N) 115 14 09.97647(W) AD(2007.00) 0

GR1306 ELLIP H (02/10/07) 735.648 (m) GP(2007.00)

GR1306 NAD 83(1999)- 36 00 34.46133(N) 115 14 09.97581(W) AD(1999.37) A

GR1306 ELLIP H (05/16/00) 735.673 (m) GP(1999.37) 4 1

GR1306 NAVD 88 763.54 (m) 2505.0 (f) LEVELING 3

GR1306

GR1306.Superseded values are not recommended for survey control.

GR1306

GR1306.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
GR1306.See file dsdata.pdf to determine how the superseded data were derived.

GR1306

GR1306_MARKER: I = METAL ROD

GR1306_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)

GR1306_STAMPING: B 399 1980

GR1306_MARK LOGO: NGS

GR1306_PROJECTION: FLUSH

GR1306_MAGNETIC: N = NO MAGNETIC MATERIAL

GR1306_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

GR1306+STABILITY: POSITION/ELEVATION WELL

GR1306_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

GR1306+SATELLITE: SATELLITE OBSERVATIONS - October 13, 2011

GR1306_ROD/PIPE-DEPTH: 6.1 meters

GR1306_SLEEVE-DEPTH : 5.8 meters

GR1306

GR1306 HISTORY - Date Condition Report By

GR1306 HISTORY - 1980 MONUMENTED NGS

GR1306 HISTORY - 19991004 GOOD NGS

GR1306 HISTORY - 20030621 GOOD JCLS

GR1306 HISTORY - 20111013 GOOD JCLS

GR1306

GR1306 STATION DESCRIPTION

GR1306

GR1306'DESCRIBED BY NATIONAL GEODETIC SURVEY 1980

GR1306'19.8 KM SOUTH FROM LAS VEGAS.

GR1306'19.8 KILOMETERS (12.3 MILES) SOUTH ALONG THE UNION PACIFIC RAILROAD

GR1306'FROM THE STATION IN LAS VEGAS, 1-1/2 TELEPHONE POLES SOUTH OF MILE

GR1306'POST 322, BETWEEN TWO POWER LINE POLES IN THE CENTER OF A RAILROAD

GR1306'TRIANGLE, 63.6 METERS (209 FEET) WEST OF THE WEST RAIL OF THE MAIN

GR1306'TRACK, 64.1 METERS (210 FEET) SOUTHEAST OF THE SOUTHEAST RAIL OF

GR1306'THE NORTHWEST LEG OF THE TRIANGLE, 25.8 METERS (85 FEET) SOUTHWEST

GR1306'OF THE SOUTHWEST RAIL OF THE NORTHEAST LEG OF THE TRIANGLE, 2.45

GR1306'METERS (8 FEET) NORTH OF A POWER LINE POLE AND 2.35 METERS

GR1306'(7.7 FEET) SOUTH OF A POWER LINE POLE. NOTE--THE DRILLING WAS VERY

GR1306'HARD AT THIS LOCATION. IT WAS STOPPED AT 20 FEET TO AVOID DAMAGING

GR1306'THE AUGERS.

GR1306'THE MARK IS 0.3 METERS N FROM A WITNESS POST.

GR1306'THE MARK IS 1 M BELOW THE RAILS.

GR1306

GR1306 STATION RECOVERY (1999)

GR1306

GR1306'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999 (JGF)

GR1306'TO REACH THE STATION FROM THE JUNCTION OF I 15 AND STATE HWY 160 ON

GR1306'THE SOUTH SIDE OF LAS VEGAS GO WEST ON HWY 160 FRO 2.8 MILES (4.5 KM)

GR1306'TO RAILROAD TRACKS, CONTINUE WEST FOR 0.05 MILE (0.08 KM) TO ARDEN

GR1306'ROAD. TURN LEFT, SOUTH ON ARDEN ROAD AND GO FOR 0.8 MILE (1.3 KM) TO

GR1306'GARY AVE LEFT. TURN LEFT AND GO EAST FOR 0.1 MILE (0.2 KM) TO A

GR1306'GRAVEL ROAD TO RIGHT, GO RIGHT, SOUTH FOR 0.4 MILE (0.6 KM) TO A

GR1306'TRIANGLE FROMED BY RAILROAD TRACKS AND STATION UNDER POWERLINES NEAR

GR1306'THE CENTER OF THE TRIANGLE AND BETWEEN TWO POLES.

GR1306

GR1306 STATION RECOVERY (2003)

GR1306

GR1306'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2003
GR1306'RECOVERED IN GOOD CONDITION.

GR1306

STATION RECOVERY (2011)

GR1306

GR1306

GR1306'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011

GR1306'RECOVERED IN GOOD CONDITION.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

AI5107 *****

AI5107 DESIGNATION - BLUE

AI5107 PID - AI5107

AI5107 STATE/COUNTY- NV/CLARK

AI5107 COUNTRY - US

AI5107 USGS QUAD - BLUE DIAMOND (2018)

AI5107

AI5107 *CURRENT SURVEY CONTROL

AI5107

AI5107* NAD 83(2011) POSITION- 36 02 56.29810(N) 115 23 54.72981(W) ADJUSTED

AI5107* NAD 83(2011) ELLIP HT- 1009.438 (meters) (06/27/12) ADJUSTED

AI5107* NAD 83(2011) EPOCH - 2010.00

AI5107* NAVD 88 ORTHO HEIGHT - 1036.7 (meters) 3401. (feet) GPS OBS

AI5107

AI5107 NAVD 88 orthometric height was determined with geoid model GEOID09

AI5107 GEOID HEIGHT - -27.276 (meters) GEOID09

AI5107 GEOID HEIGHT - -27.247 (meters) GEOID18

AI5107 NAD 83(2011) X - -2,214,738.464 (meters) COMP

AI5107 NAD 83(2011) Y - -4,664,535.956 (meters) COMP

AI5107 NAD 83(2011) Z - 3,733,180.436 (meters) COMP

AI5107 LAPLACE CORR - -7.38 (seconds) DEFLEC18

AI5107

AI5107 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

AI5107 Standards:

AI5107 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

AI5107 Horiz Ellip SD_N SD_E SD_h (unitless)

AI5107 -----

AI5107 NETWORK 0.85 1.94 0.37 0.32 0.99 0.05081555

AI5107 -----

AI5107 [Click here for local accuracies and other accuracy information.](#)

AI5107

AI5107

AI5107.The horizontal coordinates were established by GPS observations

AI5107.and adjusted by the National Geodetic Survey in June 2012.

AI5107

AI5107.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

AI5107.been affixed to the stable North American tectonic plate. See

AI5107.NA2011 for more information.

AI5107

AI5107.The horizontal coordinates are valid at the epoch date displayed above

AI5107.which is a decimal equivalence of Year/Month/Day.

AI5107

AI5107.The orthometric height was determined by GPS observations and a

AI5107.high-resolution geoid model.

AI5107

AI5107.Significant digits in the geoid height do not necessarily reflect accuracy.

AI5107.GEOID18 height accuracy estimate available here.

AI5107

AI5107.Click photographs - Photos may exist for this station.

AI5107

AI5107.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AI5107

AI5107.The Laplace correction was computed from DEFLEC18 derived deflections.

AI5107

AI5107.The ellipsoidal height was determined by GPS observations

AI5107.and is referenced to NAD 83.

AI5107

AI5107. The following values were computed from the NAD 83(2011) position.

AI5107

AI5107; North East Units Scale Factor Converg.

AI5107;SPC NV E - 8,144,119.603 216,650.040 MT 0.99990341 +0 06 31.5

AI5107;SPC NV E -26,719,499.06 710,792.67 sFT 0.99990341 +0 06 31.5

AI5107;UTM 11 - 3,990,566.695 644,252.673 MT 0.99985640 +0 56 33.3

AI5107

AI5107! - Elev Factor x Scale Factor = Combined Factor

AI5107!SPC NV E - 0.99984160 x 0.99990341 = 0.99974502

AI5107!UTM 11 - 0.99984160 x 0.99985640 = 0.99969802

AI5107

AI5107_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV4425290566(NAD 83)

AI5107

AI5107 SUPERSEDED SURVEY CONTROL

AI5107

AI5107 NAD 83(2007)- 36 02 56.29798(N) 115 23 54.72919(W) AD(2007.00) 0

AI5107 ELLIP H (02/10/07) 1009.452 (m) GP(2007.00)

AI5107 NAD 83(1999)- 36 02 56.29787(N) 115 23 54.72884(W) AD(1999.37) A

AI5107 ELLIP H (05/16/00) 1009.480 (m) GP(1999.37) 4 1

AI5107 NAVD 88 (05/16/00) 1036.7 (m) GEOID99 model used GPS OBS

AI5107

AI5107.Superseded values are not recommended for survey control.

AI5107

AI5107.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AI5107.See file dsdata.pdf to determine how the superseded data were derived.

AI5107

AI5107_MARKER: DD = SURVEY DISK

AI5107_SETTING: 66 = SET IN ROCK OUTCROP

AI5107_STAMPING: SNWA PLS 9677 1999 0051

AI5107_MARK LOGO: SOUTH

AI5107_MAGNETIC: N = NO MAGNETIC MATERIAL

AI5107_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

AI5107+STABILITY: POSITION/ELEVATION WELL

AI5107_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AI5107+SATELLITE: SATELLITE OBSERVATIONS - 1999

AI5107

AI5107 HISTORY - Date Condition Report By

AI5107 HISTORY - 1999 MONUMENTED LVDPW

AI5107

AI5107 STATION DESCRIPTION

AI5107

AI5107'DESCRIBED BY LAS VEGAS DEPARTMENT OF PUBLIC WORKS 1999 (TWW)

AI5107'TO LOCATE THE STATION FROM BLUE DIAMOND, NEVADA, COMMENCE AT THE US

AI5107'POST OFFICE ZIP CODE 89004 LOCATED ON DIAMOND STREET WITHIN THE TOWN
AI5107'OF BLUE DIAMOND, PROCEED NORTHWESTERLY ALONG DIAMOND STREET
AI5107'APPROXIMATELY 100 FEET (30.5 M) TO THE INTERSECTION OF CASTALIA
AI5107'STREET, THENCE PROCEED NORTHEASTERLY FROM THERE ALONG CASTALIA STREET
AI5107'APPROXIMATELY 0.2 MILE (0.3 KM) TO THE INTERSECTION OF NEVADA STATE
AI5107'ROUTE 159 (RED ROCK NATIONAL RECREATION ROAD AND OR THE CHARLESTON
AI5107'BOULEVARD EXTENSION AND OR BLUE DIAMOND ROAD) , THENCE PROCEED
AI5107'SOUTHEASTERLY APPROXIMATELY 0.35 MILE (0.56 KM) NOTING A NEVADA
AI5107'HIGHWAY DEPARTMENT BRASS DISK LYING APPROXIMATELY 40 FEET (12.2 M)
AI5107'NORTHERLY OF THE CENTERLINE OF SR 159 STAMPED STA E-151-75 PT 40 AND
AI5107'NEVADA HIGHWAY DEPARTMENT. PROCEED APPROXIMATELY 100 FEET (30.5 M)
AI5107'EASTERLY TO THE BASE OF A SLOPE CUT THROUGH DURING THE CONSTRUCTION OF
AI5107'SR 159 WHICH PROJECTS AT A GRADE OF APPROXIMATELY 20 PERCENT WHICH IS
AI5107'ALL SO ON THE NORTHERLY SIDE OF SR 159. THIS POINT WILL BE
AI5107'HEREINAFTER REFERED TO AS POINT A, PROCEED EASTERLY UP THE 20 PERCENT
AI5107'GRADE FOR APPROXIMATELY 300 FEET (91.4 M) AND FIND STATION BLUE WHICH
AI5107'RESTS APPROXIMATELY 50 FEET (15.2 M) NORTH FROM THE TOP (UPPER CATCH
AI5107'POINT) OF THE NORTHERLY ROADWAY CUT SLOPE (APPROXIMATELY A 1 TO 1
AI5107'SLOPE) . SAID MONUMENT IS ENCASED IN DRYLOCK AND CONSISTS OF A 2 INCH
AI5107'DIAMETER BRASS DISK STAMPED WATER FACILITY CONTROL NETWORK SNWA PLS
AI5107'9677 1999 0051 WITH A WATER DROP FORGED UPON THE DISK. THE MONUMENT
AI5107'IS LOCATED IN A SMALL LIMESTONE ROCK OUTCROPPING WITH CALCITE WHICH
AI5107'HAS A FERROUS CONSTITUENT WHICH LOOKS LIKE REDDISH COLORED ZEBRA
AI5107'STRIPES ON GRAY LIMESTONE BACKDROP. ERECTION OF A CASSONITE POST IS
AI5107'IMPRACTICAL AT THIS POINT DUE TO CALCHE LIKE OUTCROP SURROUNDINGS.
AI5107'USING A Y-CODE DECRYPTED PLGR FOR DIRECTION STATION BLUE RESTS AT A
AI5107'BACK AZIMUTH OF 238 DEGREES AND A DISTANCE OF 2540 FEET (774.2 M) FROM
AI5107'THE US POST OFFICE, BLUE DIAMOND, NEVADA. TO LOCATE STATION BLUE FROM
AI5107'THE INTERSECTION OF STATE ROUTE 159 WITH SR 160, PROCEED NORTHWESTERLY
AI5107'ALONG SR 159 FOR APPROXIMATELY 2.4 MILES (3.9 KM) TO THE POINT HEREIN
AI5107'DESCRIBED ABOVE AS POINT A, THENCE PROCEED WITH THE ABOVE DESCRIBED
AI5107'STATION RECOVERY INFORMATION. USING A CODE DECRYPTED PLGR FOR
AI5107'DIRECTION, STATION BLUE RESTS AT A FORWARD AZIMUTH OF 293 DEGREES AND
AI5107'A DISTANCE OF 2.4 MILES (3.9 KM) FROM SAID INTERSECTIONS OF SR 159
AI5107'WITH SR 160. STATION DESCRIPTION WRITTEN BY RICK ZANINOVICH, PLS,
AI5107'DOI, U.S. BLM, CADASTRIAL SURVEY AND TIM WOLF, PLS, LAS VEGAS VALLEY
AI5107'WATER DISTRICT, LAND SURVEY SECTION ON JULY 23, 1999.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR0642 *****

GR0642 DESIGNATION - C 161

GR0642 PID - GR0642

GR0642 STATE/COUNTY- NV/CLARK

GR0642 COUNTRY - US

GR0642 USGS QUAD - DRY LAKE (2018)

GR0642

GR0642 *CURRENT SURVEY CONTROL

GR0642

GR0642* NAD 83(1994) POSITION- 36 26 44.70564(N) 114 50 55.92205(W) ADJUSTED

GR0642* NAVD 88 ORTHO HEIGHT - 639.968 (meters) 2099.63 (feet) ADJUSTED

GR0642

GR0642 GEOID HEIGHT - -27.283 (meters) GEOID18

GR0642 LAPLACE CORR - -0.05 (seconds) DEFLEC18

GR0642 DYNAMIC HEIGHT - 639.333 (meters) 2097.55 (feet) COMP

GR0642 MODELED GRAVITY - 979,619.8 (mgal) NAVD 88

GR0642

GR0642 HORZ ORDER - THIRD

GR0642 VERT ORDER - FIRST CLASS II

GR0642

GR0642.The horizontal coordinates were established by classical geodetic methods

GR0642.and adjusted by the National Geodetic Survey in June 1998.

GR0642.

GR0642.The orthometric height was determined by differential leveling and

GR0642.adjusted by the NATIONAL GEODETIC SURVEY

GR0642.in June 1991.

GR0642

GR0642.Significant digits in the geoid height do not necessarily reflect accuracy.

GR0642.GEOID18 height accuracy estimate available here.

GR0642

GR0642.Click photographs - Photos may exist for this station.

GR0642

GR0642.The Laplace correction was computed from DEFLEC18 derived deflections.

GR0642

GR0642.The dynamic height is computed by dividing the NAVD 88

GR0642.geopotential number by the normal gravity value computed on the

GR0642.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR0642.degrees latitude (g = 980.6199 gals.).

GR0642

GR0642.The modeled gravity was interpolated from observed gravity values.

GR0642

GR0642. The following values were computed from the NAD 83(1994) position.

GR0642

GR0642; North East Units Scale Factor Converg.

GR0642;SPC NV E - 8,188,378.225 265,841.448 MT 0.99995339 +0 26 10.8

GR0642;SPC NV E -26,864,704.23 872,181.48 sFT 0.99995339 +0 26 10.8

GR0642;UTM 11 - 4,035,541.240 692,793.004 MT 1.00005797 +1 16 41.9

GR0642

GR0642! - Elev Factor x Scale Factor = Combined Factor

GR0642!SPC NV E - 0.99990385 x 0.99995339 = 0.99985725

GR0642!UTM 11 - 0.99990385 x 1.00005797 = 0.99996182

GR0642

GR0642:	Primary Azimuth Mark	Grid Az
GR0642:SPC NV E	- GARNET	187 14 25.6
GR0642:UTM 11	- GARNET	186 23 54.5

GR0642

GR0642_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPA9279335541(NAD 83)

GR0642

GR0642 -----
GR0642 PID Reference Object Distance Geod. Az
GR0642 dddmmss.s
GR0642 GR1791 GARNET APPROX.10.3 KM 1874036.4
GR0642 -----

GR0642

GR0642 SUPERSEDED SURVEY CONTROL

GR0642

GR0642	NAD 83(1994)- 36 26 44.70594(N)	114 50 55.92292(W)	AD() 3
GR0642	NAD 83(1992)- 36 26 44.70337(N)	114 50 55.92353(W)	AD() 3
GR0642	NAD 83(1992)- 36 26 44.70589(N)	114 50 55.92448(W)	AD() 3
GR0642	NAD 83(1986)- 36 26 44.68289(N)	114 50 55.91637(W)	AD() 3
GR0642	NGVD 29 (??/??/92) 639.245 (m)	2097.26 (f)	ADJ UNCH 1 2
GR0642	NGVD 29 639.24 (m)	2097.2 (f)	LEVELING 3

GR0642

GR0642.Superseded values are not recommended for survey control.

GR0642

GR0642.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR0642.See file dsdata.pdf to determine how the superseded data were derived.

GR0642

GR0642_MARKER: DB = BENCH MARK DISK

GR0642_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

GR0642_STAMPING: C 161 1935

GR0642_MARK LOGO: CGS

GR0642_PROJECTION: PROJECTING 9 CENTIMETERS

GR0642_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

GR0642+STABILITY: SURFACE MOTION

GR0642

GR0642	HISTORY	- Date	Condition	Report By
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GR0642	HISTORY	- 1935	MONUMENTED	CGS
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GR0642	HISTORY	- 1951	GOOD	USGS
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GR0642	HISTORY	- 1957	GOOD	CGS
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GR0642	HISTORY	- 1963	GOOD	CGS
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GR0642	HISTORY	- 1983	GOOD	NGS
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GR0642

GR0642 STATION DESCRIPTION

GR0642

GR0642'DESCRIBED BY US GEOLOGICAL SURVEY 1951

GR0642'LOCATED ABOUT 21 MI SW. OF MOAPA. 189 FT. NW. OF NORTH END OF

GR0642'WEST HEADWALL OF CONCRETE BOX CULVERT 361.99, 166.5 FT. N. OF

GR0642'MILEPOLE 362, 39.4 FT. W. OF WEST RAIL, 13 FT. S. OF FIRST POLE

GR0642'N. OF MILEPOLE 362, 3 FT. N. OF CONCRETE WITNESS POST, ABOUT

GR0642'LEVEL WITH TRACK.

GR0642'

GR0642'TO REACH FROM MOAPA RR. STATION, GO 21.3 MI SW. ALONG UNION

GR0642'PACIFIC RR. GO 0.3 MI N. OF SIGN, DRY LAKE ONE MILE. AT SOUTH

GR0642'END OF LONG, ROCKY CUT.

GR0642'

GR0642'STATION MARK--NGS BM DISK STAMPED---C 161 1935---, SET IN TOP OF

GR0642'CONCRETE POST PROJECTING 0.3 FT. ABOVE GROUND.

GR0642'

GR0642'RMS--NONE SET.

GR0642

GR0642 STATION RECOVERY (1957)

GR0642

GR0642'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1957

GR0642'21.3 MI SW FROM MOAPA.

GR0642'21.3 MILES SOUTHWEST ALONG THE UNION PACIFIC RAILROAD FROM THE STATION

GR0642'AT MOAPA, 0.3 MILE NORTH OF A SIGN DRY LAKE ONE MILE, AT THE SOUTH END

GR0642'OF A LONG ROCKY CUTE, 189 FEET FEET NORTHWEST OF THE NORTH END OF THE

GR0642'WEST HEADWALL OF CONCRETE BOX CULVERT 361.99, 166 1/2 FEET NORTH OF

GR0642'MILEPOLE 362, 39.4 FEET WEST OF THE WEST RAIL, 13 FEET SOUTH OF THE

GR0642'1ST POLE NORTH OF MILEPOST 362, 3.0 FEET NORTH OF A CONCRETE WITNESS

GR0642'POST, ABOUT LEVEL WITH THE TRACK, AND SET IN THE TOP OF A CONCRETE

GR0642'POST PROJECTING 0.3 FOOT ABOVE THE GROUND.

GR0642

GR0642 STATION RECOVERY (1963)

GR0642

GR0642'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1963

GR0642'RECOVERED IN GOOD CONDITION.

GR0642

GR0642 STATION RECOVERY (1983)

GR0642

GR0642'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1983

GR0642'RECOVERED IN GOOD CONDITION. NEW DESCRIPTION FOLLOWS.

GR0642'33.75 KM (21.1 MI) SOUTHWEST ALONG INTERSTATE 15 FROM THE SOUTHWEST

GR0642'END OF THE HIGHWAY BRIDGE OVER THE MUDDY RIVER IN GLENDALE, THENCE 0.1

GR0642'KM (0.05 MI) SOUTH ALONG THE UNION PACIFIC RAILROAD, 12.0 METERS (39.5

GR0642'FT) WEST OF THE WEST RAIL, 57.6 METERS (189 FT) NORTH OF THE NORTH END

GR0642'OF THE WEST HEADWALL FOR A BOX CULVERT UNDER THE TRACKS, 40.5 METERS

GR0642'(133 FT) WEST-NORTHWEST ACROSS THE TRACKS FROM MILE POLE 362, 18.4

GR0642'METERS (60.5 FT) EAST OF A FENCE CORNER POST IN THE RIGHT A WAY FENCE,

GR0642'0.9 METER (3 FT) NORTH OF A 5 INCH TRIANGULAR SHAPED CONCRETE POST

GR0642'PROJECTING 2.5 FEET.

GR0642'THE MARK IS 0.45 METERS E FROM A WITNESS POST.

GR0642'THE MARK IS 0.1 M BELOW THE TRACKS.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1237 *****

GR1237 FBN - This is a Federal Base Network Control Station.

GR1237 DESIGNATION - D 368

GR1237 PID - GR1237

GR1237 STATE/COUNTY- NV/CLARK

GR1237 COUNTRY - US

GR1237 USGS QUAD - BLUE DIAMOND NE (2018)

GR1237

GR1237 *CURRENT SURVEY CONTROL

GR1237

GR1237* NAD 83(2011) POSITION- 36 09 16.91346(N) 115 21 47.20106(W) ADJUSTED

GR1237* NAD 83(2011) ELLIP HT- 962.395 (meters) (06/27/12) ADJUSTED

GR1237* NAD 83(2011) EPOCH - 2010.00

GR1237* NAVD 88 ORTHO HEIGHT - 989.6 (meters) 3247. (feet) GPS OBS

GR1237

GR1237 NAVD 88 orthometric height was determined with geoid model GEOID09

GR1237 GEOID HEIGHT - -27.206 (meters) GEOID09

GR1237 GEOID HEIGHT - -27.190 (meters) GEOID18

GR1237 NAD 83(2011) X - -2,208,876.348 (meters) COMP

GR1237 NAD 83(2011) Y - -4,659,622.892 (meters) COMP

GR1237 NAD 83(2011) Z - 3,742,632.902 (meters) COMP

GR1237 LAPLACE CORR - -9.51 (seconds) DEFLEC18

GR1237

GR1237 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1237 Standards:

GR1237 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1237 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1237 -----

GR1237 NETWORK 0.26 0.65 0.11 0.10 0.33 -0.04120326

GR1237 -----

GR1237 Click here for local accuracies and other accuracy information.

GR1237

GR1237

GR1237.The horizontal coordinates were established by GPS observations

GR1237.and adjusted by the National Geodetic Survey in June 2012.

GR1237

GR1237.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1237.been affixed to the stable North American tectonic plate. See

GR1237.NA2011 for more information.

GR1237

GR1237.The horizontal coordinates are valid at the epoch date displayed above

GR1237.which is a decimal equivalence of Year/Month/Day.

GR1237

GR1237.The orthometric height was determined by GPS observations and a

GR1237.high-resolution geoid model.

GR1237

GR1237.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1237.GEOID18 height accuracy estimate available here.

GR1237

GR1237.Click photographs - Photos may exist for this station.

GR1237

GR1237.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1237

GR1237.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1237

GR1237.The ellipsoidal height was determined by GPS observations

GR1237.and is referenced to NAD 83.

GR1237

GR1237. The following values were computed from the NAD 83(2011) position.

GR1237

GR1237;

	North	East	Units	Scale Factor	Converg.
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GR1237;SPC NV E	- 8,155,856.600	219,815.202	MT	0.99990484	+0 07 47.7
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GR1237;SPC NV E	-26,758,006.20	721,177.04	sFT	0.99990484	+0 07 47.7
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GR1237;UTM 11	- 4,002,348.068	647,246.350	MT	0.99986715	+0 57 57.2
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GR1237

GR1237! - Elev Factor x Scale Factor = Combined Factor

GR1237!SPC NV E - 0.99984898 x 0.99990484 = 0.99975383

GR1237!UTM 11 - 0.99984898 x 0.99986715 = 0.99971615

GR1237

GR1237_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPA4724602348(NAD 83)

GR1237

GR1237 SUPERSEDED SURVEY CONTROL

GR1237

GR1237 NAD 83(2007)- 36 09 16.91371(N) 115 21 47.20100(W) AD(2007.00) 0

GR1237 ELLIP H (02/10/07) 962.411 (m) GP(2007.00)

GR1237 NAD 83(1998)- 36 09 16.91324(N) 115 21 47.20078(W) AD(2000.35) A

GR1237 ELLIP H (04/03/01) 962.432 (m) GP(2000.35) 1 1

GR1237 NAD 83(1999)- 36 09 16.91340(N) 115 21 47.20072(W) AD(1999.37) A

GR1237 ELLIP H (05/16/00) 962.426 (m) GP(1999.37) 4 1

GR1237 NAD 83(1994)- 36 09 16.91262(N) 115 21 47.19854(W) AD() B

GR1237 ELLIP H (03/30/95) 962.508 (m) GP() 4 1

GR1237 NAVD 88 (04/03/01) 989.5 (m) UNKNOWN model used GPS OBS

GR1237 NAVD 88 (03/30/95) 989.6 (m) GEOID93 model used GPS OBS

GR1237 NGVD 29 (??/??/92) 988.813 (m) 3244.13 (f) ADJ UNCH 1 2

GR1237

GR1237.Superseded values are not recommended for survey control.

GR1237

GR1237.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR1237.See file dsdata.pdf to determine how the superseded data were derived.

GR1237

GR1237_MARKER: DB = BENCH MARK DISK

GR1237_SETTING: 66 = SET IN ROCK OUTCROP

GR1237_STAMPING: D 368 1963

GR1237_MARK LOGO: CGS

GR1237_MAGNETIC: N = NO MAGNETIC MATERIAL

GR1237_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

GR1237+STABILITY: POSITION/ELEVATION WELL

GR1237_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

GR1237+SATELLITE: SATELLITE OBSERVATIONS - March 30, 2016

GR1237

GR1237 HISTORY	- Date	Condition	Report By
GR1237 HISTORY	- 1963	MONUMENTED	CGS
GR1237 HISTORY	- 1972	GOOD	USGS
GR1237 HISTORY	- 19940318	GOOD	NGS
GR1237 HISTORY	- 19961120	MARK NOT FOUND	USPSQD
GR1237 HISTORY	- 19981210	GOOD	NGS
GR1237 HISTORY	- 20000501	GOOD	NGS
GR1237 HISTORY	- 20020112	GOOD	JCLS
GR1237 HISTORY	- 20060930	GOOD	GEOCAC
GR1237 HISTORY	- 20120524	GOOD	INDIV
GR1237 HISTORY	- 20160330	GOOD	NVDT
GR1237 HISTORY	- 20160330	GOOD	NVDT

GR1237

GR1237 STATION DESCRIPTION

GR1237

GR1237'DESCRIBED BY COAST AND GEODETIC SURVEY 1963

GR1237'13.7 MI W FROM LAS VEGAS.

GR1237'1.0 MILE SOUTH ALONG THE UNION PACIFIC RAILROAD FROM THE STATION AT GR1237'LAS VEGAS, THENCE 12.7 MILES WEST ALONG CHARLESTON BOULEVARD, ON THE GR1237'INSIDE OF A CURVE, IN THE NORTHEAST SLOPE OF AN OUTCROP RIDGE, IN THE GR1237'TOP OF A LONG RIDGE OF OUTCROP WHICH PROJECTS 1.0 FOOT ABOVE THE GR1237'GROUND, 123 FEET SOUTH OF THE CENTER LINE OF THE BOULEVARD, 239.2 FEET GR1237'WEST-SOUTHWEST OF BENCH MARK C 368, AND ABOUT 22 FEET HIGHER THAN THE GR1237'BOULEVARD.

GR1237

GR1237 STATION RECOVERY (1972)

GR1237

GR1237'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1972

GR1237'RECOVERED IN GOOD CONDITION.

GR1237

GR1237 STATION RECOVERY (1994)

GR1237

GR1237'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GRH)

GR1237'STATION IS LOCATED ABOUT 19 KM (11.80 MI) WEST OF DOWNTOWN LAS VEGAS, GR1237'ALONG STATE HIGHWAY 159, JUST WEST OF AN IMPOUNDMENT DAM, ON THE GR1237'NORTHEAST SIDE OF A LOW RIDGE THAT ENDS AT THE HIGHWAY, IN NORTH GR1237'CENTRAL SECTION 3, T 21 S, R 59 E. OWNERSHIP--CLARK COUNTY. TO REACH GR1237'FROM THE UNDERPASS AT THE JUNCTION OF US HIGHWAY 95 AND RAINBOW GR1237'BOULEVARD (8 KM WEST OF DOWNTOWN AND WHERE HIGHWAY 95 MAKES A TURN TO GR1237'THE NORTH), GO SOUTH ON RAINBOW BOULEVARD FOR 2.01 KM (1.25 MI) TO ITS GR1237'JUNCTION WITH CHARLESTON BOULEVARD (HIGHWAY 159). TURN RIGHT, WEST, ON GR1237'CHARLESTON BOULEVARD FOR 10.70 KM (6.65 MI) TO A BRIDGE JUST PAST A GR1237'HIGHWAY CURVE LEFT. CONTINUE AHEAD FOR 0.16 KM (0.10 MI) TO THE RIDGE GR1237'AND THE STATION ON THE LEFT. STATION MARK IS A DISK SET IN A DRILL GR1237'HOLE IN THE SOUTH END OF A 10 M (32.8 FT) LONG SLOPED FLAT OUTCROP ON GR1237'THE NORTHEAST SIDE OF THE RIDGE. IT IS 57.4 M (188.3 FT) (SLOPE) GR1237'SOUTHEAST OF, AND 7 M (23.0 FT) HIGHER THAN THE HIGHWAY CENTER, 1.4 M GR1237'(4.6 FT) NORTH OF THE SOUTH END OF THE OUTCROP, 1.6 M (5.2 FT) EAST OF GR1237'A CAIRN, AND 2.9 M (9.5 FT) NORTH-NORTHWEST OF A FIBERGLASS WITNESS GR1237'POST.

GR1237

GR1237 STATION RECOVERY (1996)

GR1237

GR1237'RECOVERY NOTE BY US POWER SQUADRON 1996

GR1237'MARK NOT FOUND.

GR1237

GR1237 STATION RECOVERY (1998)

GR1237

GR1237'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)

GR1237'RECOVERED AS DESCRIBED.

GR1237

GR1237 STATION RECOVERY (2000)

GR1237

GR1237'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (MEI)

GR1237'THIS STATION WAS OBSERVED IN MAY, 2000 AS PART OF THE HECTOR MINE

GR1237'EARTHQUAKE FBN/CBN REOBSERVATION SURVEY.

GR1237

GR1237 STATION RECOVERY (2002)

GR1237

GR1237'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002 (FJO)

GR1237'RECOVERED IN GOOD CONDITION.

GR1237

GR1237 STATION RECOVERY (2006)

GR1237

GR1237'RECOVERY NOTE BY GEOCACHING 2006 (WS)

GR1237'RECOVERED IN GOOD CONDITION.

GR1237

GR1237 STATION RECOVERY (2012)

GR1237

GR1237'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2012 (DEH)

GR1237'RECOVERED IN GOOD CONDITION.

GR1237

GR1237 STATION RECOVERY (2016)

GR1237

GR1237'RECOVERY NOTE BY NEVADA DEPARTMENT OF TRANSPORTATION 2016 (BAM)

GR1237'

GR1237'MONUMENT RECOVERED BY NDOT FIELD CREW, POINT OBSERVED USING FAST

GR1237'STATIC GPS FOR DETAILED DESCRIPTION AND LOCATION VISIT

GR1237'//MAPS.NEVADADOT.COM/LOIS/ USE LPN 1419 OR POINT NAME OF D 368 TO

GR1237'FIND POINT

GR1237'

GR1237'N 36 9 16.91262 W115 21 47.19852 EL3157.84

GR1237'

GR1237'

GR1237'

GR1237

GR1237 STATION RECOVERY (2016)

GR1237

GR1237'RECOVERY NOTE BY NEVADA DEPARTMENT OF TRANSPORTATION 2016 (BAM)

GR1237'

GR1237'MONUMENT RECOVERED BY NDOT FIELD CREW, POINT OBSERVED USING FAST

GR1237'STATIC GPS FOR DETAILED DESCRIPTION AND LOCATION VISIT

GR1237'//MAPS.NEVADADOT.COM/LOIS/ USE LPN 1419 OR POINT NAME OF D 368 TO

GR1237'FIND POINT

GR1237'

GR1237'N 36 9 16.91262 W115 21 47.19852 EL3157.84

GR1237'

GR1237'

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1173 *****

GR1173 CBN - This is a Cooperative Base Network Control Station.

GR1173 DESIGNATION - D 371

GR1173 PID - GR1173

GR1173 STATE/COUNTY- NV/CLARK

GR1173 COUNTRY - US

GR1173 USGS QUAD -

GR1173

GR1173 *CURRENT SURVEY CONTROL

GR1173

GR1173* NAD 83(2011) POSITION- 36 24 53.33668(N) 115 27 05.66611(W) ADJUSTED

GR1173* NAD 83(2011) ELLIP HT- 1040.281 (meters) (06/27/12) ADJUSTED

GR1173* NAD 83(2011) EPOCH - 2010.00

GR1173* NAVD 88 ORTHO HEIGHT - 1066.891 (meters) 3500.29 (feet) ADJUSTED

GR1173

GR1173 GEOID HEIGHT - -26.595 (meters) GEOID18

GR1173 NAD 83(2011) X - -2,208,753.067 (meters) COMP

GR1173 NAD 83(2011) Y - -4,640,837.438 (meters) COMP

GR1173 NAD 83(2011) Z - 3,765,949.305 (meters) COMP

GR1173 LAPLACE CORR - -9.92 (seconds) DEFLEC18

GR1173 DYNAMIC HEIGHT - 1065.723 (meters) 3496.46 (feet) COMP

GR1173 MODELED GRAVITY - 979,500.5 (mgal) NAVD 88

GR1173

GR1173 VERT ORDER - FIRST CLASS II

GR1173

GR1173 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1173 Standards:

GR1173 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1173 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1173 -----

GR1173 NETWORK 0.56 1.37 0.18 0.26 0.70 -0.04491836

GR1173 -----

GR1173 [Click here for local accuracies and other accuracy information.](#)

GR1173

GR1173

GR1173.The horizontal coordinates were established by GPS observations

GR1173.and adjusted by the National Geodetic Survey in June 2012.

GR1173

GR1173.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1173.been affixed to the stable North American tectonic plate. See

GR1173.NA2011 for more information.

GR1173

GR1173.The horizontal coordinates are valid at the epoch date displayed above

GR1173.which is a decimal equivalence of Year/Month/Day.

GR1173

GR1173.The orthometric height was determined by differential leveling and

GR1173.adjusted by the NATIONAL GEODETIC SURVEY

GR1173.in June 1991.

GR1173

GR1173.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1173.GEOID18 height accuracy estimate available here.

GR1173

GR1173.Click photographs - Photos may exist for this station.

GR1173

GR1173.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1173

GR1173.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1173

GR1173.The ellipsoidal height was determined by GPS observations

GR1173.and is referenced to NAD 83.

GR1173

GR1173.The dynamic height is computed by dividing the NAVD 88

GR1173.geopotential number by the normal gravity value computed on the

GR1173.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR1173.degrees latitude ($g = 980.6199$ gals.).

GR1173

GR1173.The modeled gravity was interpolated from observed gravity values.

GR1173

GR1173. The following values were computed from the NAD 83(2011) position.

GR1173

GR1173;

	North	East	Units	Scale	Factor	Converg.
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GR1173;SPC NV E	- 8,184,703.073	211,816.209	MT	0.99990172	+0 04	41.6
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GR1173;SPC NV E	-26,852,646.67	694,933.68	sFT	0.99990172	+0 04	41.6
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GR1173;UTM 11	- 4,031,072.923	638,826.482	MT	0.99983746	+0 55	09.6
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GR1173

GR1173! - Elev Factor x Scale Factor = Combined Factor

GR1173!SPC NV E - 0.99983676 x 0.99990172 = 0.99973850

GR1173!UTM 11 - 0.99983676 x 0.99983746 = 0.99967425

GR1173

GR1173_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPA3882631072(NAD 83)

GR1173

GR1173 SUPERSEDED SURVEY CONTROL

GR1173

GR1173 NAD 83(2007)- 36 24 53.33642(N) 115 27 05.66599(W) AD(2007.00) 0

GR1173 ELLIP H (02/10/07) 1040.288 (m) GP(2007.00)

GR1173 NAD 83(1999)- 36 24 53.33659(N) 115 27 05.66542(W) AD(1999.37) A

GR1173 ELLIP H (05/16/00) 1040.327 (m) GP(1999.37) 4 1

GR1173 NAD 83(1992)- 36 24 53.33568(N) 115 27 05.66336(W) AD() A

GR1173 NAD 83(1994)- 36 24 53.33568(N) 115 27 05.66336(W) AD() B

GR1173 ELLIP H (03/30/95) 1040.380 (m) GP() 4 1

GR1173 NAVD 88 1066.89 (m) 3500.3 (f) LEVELING 3

GR1173 NGVD 29 (??/??/92) 1066.090 (m) 3497.66 (f) SUPERSEDED 1 2

GR1173 NGVD 29 (05/01/91) 1066.090 (m) 3497.66 (f) ADJUSTED 1 2

GR1173

GR1173.Superseded values are not recommended for survey control.

GR1173

GR1173.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR1173.See file dsdata.pdf to determine how the superseded data were derived.

GR1173

GR1173_MARKER: DB = BENCH MARK DISK

GR1173_SETTING: 66 = SET IN ROCK OUTCROP
GR1173_STAMPING: D 371 1963
GR1173_MARK LOGO: CGS
GR1173_MAGNETIC: N = NO MAGNETIC MATERIAL
GR1173_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
GR1173+STABILITY: POSITION/ELEVATION WELL
GR1173_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
GR1173+SATELLITE: SATELLITE OBSERVATIONS - September 13, 2002

GR1173
GR1173 HISTORY - Date Condition Report By
GR1173 HISTORY - 1963 MONUMENTED CGS
GR1173 HISTORY - 1980 GOOD NGS
GR1173 HISTORY - 1983 GOOD NGS
GR1173 HISTORY - 19940620 GOOD NGS
GR1173 HISTORY - 19991008 GOOD NV0150
GR1173 HISTORY - 20020913 GOOD USGS-R

GR1173
GR1173 STATION DESCRIPTION

GR1173
GR1173'DESCRIBED BY COAST AND GEODETIC SURVEY 1963
GR1173'26.4 MI NW FROM LAS VEGAS.
GR1173'24.65 MILES NORTHWEST ALONG U.S. HIGHWAY 95 FROM THE UNION PACIFIC
GR1173'RAILROAD STATION AT LAS VEGAS, THENCE 1.75 MILES WEST ALONG A TRACK
GR1173'ROAD AND POWER LINE, AT A SADDLE ON A NORTH-SOUTH ROCKY RIDGE, IN THE
GR1173'TOP OF A LEDGE OF OUTCROP, 421 FEET SOUTH OF THE CENTER LINE OF THE
GR1173'ROAD, 155 FEET SOUTHWEST OF BENCH MARK C 371, 90 FEET SOUTH OF THE
GR1173'NORTH END OF THE RIDGE, AND ABOUT 12 FEET HIGHER THAN THE BOTTOM OF
GR1173'THE RIDGE.

GR1173
GR1173 STATION RECOVERY (1980)

GR1173
GR1173'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1980
GR1173'2.1 KILOMETERS (1.3 MILES) WEST ALONG BONANZA ROAD FROM ITS JUNCTION
GR1173'WITH THE INTERSTATE HIGHWAY 15 OVERPASS IN LAS VEGAS, THENCE 34.8
GR1173'KILOMETERS (21.65 MILES) NORTHWEST ALONG RANCHO DRIVE (U. S. HIGHWAY
GR1173'95), THENCE 2.8 KILOMETERS (1.75 MILES) WEST ALONG A GRAVEL ROAD,
GR1173'2.2 KILOMETERS (1.4 MILES) WEST OF AN ELECTRICAL SUBSTATION, AT A
GR1173'SADDLE ON A NORTH-SOUTH ROCKY RIDGE, IN TOP OF A LEDGE OF OUTCROP,
GR1173'128.3 METERS (421 FEET) SOUTH OF THE CENTERLINE OF THE GRAVEL ROAD,
GR1173'47.2 METERS (155 FEET) SOUTHWEST OF BENCH MARK C 371 AND 27.4
GR1173'METERS (90 FEET) SOUTH OF THE NORTH END OF THE RIDGE.
GR1173'THE MARK IS 2.0 M ABOVE ROAD.

GR1173
GR1173 STATION RECOVERY (1983)

GR1173
GR1173'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1983
GR1173'RECOVERED IN GOOD CONDITION.

GR1173
GR1173 STATION RECOVERY (1994)

GR1173
GR1173'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (AJL)
GR1173'RECOVERED AS DESCRIBED.

GR1173
GR1173 STATION RECOVERY (1999)

GR1173

GR1173'RECOVERY NOTE BY CITY OF NORTH LAS VEGAS NEVADA 1999

GR1173'RECOVERED AS DESCRIBED.

GR1173

GR1173 STATION RECOVERY (2002)

GR1173

GR1173'RECOVERY NOTE BY USGS ROCKY MOUNTAIN MAPPING CENTER 2002 (DPB)

GR1173'RECOVERED IN GOOD CONDITION.

*** retrieval complete.

Elapsed Time = 00:00:03

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS0610 *****

FS0610 FBN - This is a Federal Base Network Control Station.

FS0610 DESIGNATION - FERRY

FS0610 PID - FS0610

FS0610 STATE/COUNTY- NV/CLARK

FS0610 COUNTRY - US

FS0610 USGS QUAD - FOURTH OF JULY MOUNTAIN (2018)

FS0610

FS0610 *CURRENT SURVEY CONTROL

FS0610

FS0610* NAD 83(2011) POSITION- 35 28 33.23197(N) 114 48 45.92134(W) ADJUSTED

FS0610* NAD 83(2011) ELLIP HT- 708.561 (meters) (06/27/12) ADJUSTED

FS0610* NAD 83(2011) EPOCH - 2010.00

FS0610* NAVD 88 ORTHO HEIGHT - 737.546 (meters) 2419.77 (feet) POSTED

FS0610

FS0610 GEOID HEIGHT - -28.985 (meters) GEOID18

FS0610 NAD 83(2011) X - -2,182,428.586 (meters) COMP

FS0610 NAD 83(2011) Y - -4,720,447.912 (meters) COMP

FS0610 NAD 83(2011) Z - 3,681,401.821 (meters) COMP

FS0610 LAPLACE CORR - -5.84 (seconds) DEFLEC18

FS0610 DYNAMIC HEIGHT - 736.76 (meters) 2417.2 (feet) COMP

FS0610 MODELED GRAVITY - 979,540.1 (mgal) NAVD 88

FS0610

FS0610 VERT ORDER - * POSTED, SEE BELOW

FS0610

FS0610 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

FS0610 Standards:

FS0610 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

FS0610 Horiz Ellip SD_N SD_E SD_h (unitless)

FS0610 -----

FS0610 NETWORK 0.75 1.59 0.31 0.30 0.81 -0.01295337

FS0610 -----

FS0610 [Click here for local accuracies and other accuracy information.](#)

FS0610

FS0610

FS0610.The horizontal coordinates were established by GPS observations

FS0610.and adjusted by the National Geodetic Survey in June 2012.

FS0610

FS0610.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

FS0610.been affixed to the stable North American tectonic plate. See

FS0610.NA2011 for more information.

FS0610

FS0610.The horizontal coordinates are valid at the epoch date displayed above

FS0610.which is a decimal equivalence of Year/Month/Day.

FS0610

FS0610.The orthometric height was determined by differential leveling

FS0610.and adjusted by the NATIONAL GEODETIC SURVEY in 1992.

FS0610

FS0610.* This is a POSTED BENCH MARK height.

FS0610

FS0610.Significant digits in the geoid height do not necessarily reflect accuracy.

FS0610.GEOID18 height accuracy estimate available here.

FS0610

FS0610.Click photographs - Photos may exist for this station.

FS0610

FS0610.The X, Y, and Z were computed from the position and the ellipsoidal ht.

FS0610

FS0610.The Laplace correction was computed from DEFLEC18 derived deflections.

FS0610

FS0610.The ellipsoidal height was determined by GPS observations

FS0610.and is referenced to NAD 83.

FS0610

FS0610.The dynamic height is computed by dividing the NAVD 88

FS0610.geopotential number by the normal gravity value computed on the

FS0610.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

FS0610.degrees latitude (g = 980.6199 gals.).

FS0610

FS0610.The modeled gravity was interpolated from observed gravity values.

FS0610

FS0610. The following values were computed from the NAD 83(2011) position.

FS0610

FS0610;	North	East	Units	Scale	Factor	Converg.
FS0610;SPC NV E	- 8,080,797.886	269,928.598	MT	0.99996024	+0 26	50.0
FS0610;SPC NV E	-26,511,751.06	885,590.74	sFT	0.99996024	+0 26	50.0
FS0610;UTM 11	- 3,928,019.278	698,443.050	MT	1.00008531	+1 16	11.3

FS0610

FS0610! - Elev Factor x Scale Factor = Combined Factor

FS0610!SPC NV E - 0.99988880 x 0.99996024 = 0.99984904

FS0610!UTM 11 - 0.99988880 x 1.00008531 = 0.99997410

FS0610

FS0610:	Primary Azimuth Mark	Grid Az
FS0610:SPC NV E	- IRETEBA	353 08 17.2
FS0610:UTM 11	- IRETEBA	352 18 55.9

FS0610

FS0610_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV9844328019(NAD 83)

FS0610

FS0610	-----		
FS0610	PID	Reference Object	Distance Geod. Az
FS0610			dddmmss.s
FS0610	FS0613	FERRY RM 1	17.675 METERS 05355
FS0610	FS0611	FERRY RM 2	14.040 METERS 15453
FS0610	FS1172	IRETEBA	APPROX.13.3 KM 3533507.2
FS0610	-----		

FS0610

FS0610 SUPERSEDED SURVEY CONTROL

FS0610

FS0610 NAD 83(2007)- 35 28 33.23163(N) 114 48 45.92109(W) AD(2007.00) 0

FS0610 ELLIP H (02/10/07) 708.561 (m) GP(2007.00)

FS0610 NAD 83(1999)- 35 28 33.23159(N) 114 48 45.92065(W) AD(1999.37) A

FS0610 ELLIP H (05/16/00) 708.591 (m) GP(1999.37) 4 1

FS0610 NAD 83(1994)- 35 28 33.23071(N) 114 48 45.91897(W) AD() B
 FS0610 ELLIP H (03/30/95) 708.655 (m) GP() 4 1
 FS0610 NAD 83(1992)- 35 28 33.23302(N) 114 48 45.91976(W) AD() 1
 FS0610 NAD 83(1992)- 35 28 33.22971(N) 114 48 45.92035(W) AD() 1
 FS0610 NAD 83(1986)- 35 28 33.23081(N) 114 48 45.90855(W) AD() 1
 FS0610 NAD 27 - 35 28 33.26000(N) 114 48 42.99500(W) AD() 1
 FS0610 NAVD 88 737.55 (m) 2419.8 (f) LEVELING 3
 FS0610 NGVD 29 (??/??/92) 736.800 (m) 2417.32 (f) ADJ UNCH 1 2
 FS0610 NGVD 29 736.80 (m) 2417.3 (f) LEVELING 3
 FS0610 NGVD 29 736.82 (m) 2417.4 (f) LEVELING 3

FS0610
 FS0610.Superseded values are not recommended for survey control.

FS0610
 FS0610.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 FS0610.See file dsdata.pdf to determine how the superseded data were derived.

FS0610
 FS0610_MARKER: DS = TRIANGULATION STATION DISK
 FS0610_SETTING: 66 = SET IN ROCK OUTCROP
 FS0610_STAMPING: FERRY 1934
 FS0610_MARK LOGO: CGS
 FS0610_MAGNETIC: N = NO MAGNETIC MATERIAL
 FS0610_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
 FS0610+STABILITY: POSITION/ELEVATION WELL
 FS0610_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 FS0610+SATELLITE: SATELLITE OBSERVATIONS - April 24, 2009

FS0610
 FS0610 HISTORY - Date Condition Report By
 FS0610 HISTORY - 1934 MONUMENTED CGS
 FS0610 HISTORY - 1935 GOOD CGS
 FS0610 HISTORY - 1941 GOOD CGS
 FS0610 HISTORY - 1949 GOOD CGS
 FS0610 HISTORY - 1955 GOOD CGS
 FS0610 HISTORY - 1957 GOOD USGS
 FS0610 HISTORY - 19940318 GOOD NGS
 FS0610 HISTORY - 19981210 GOOD NGS
 FS0610 HISTORY - 20050518 GOOD BOR
 FS0610 HISTORY - 20090424 GOOD ORBITE

FS0610
 FS0610 STATION DESCRIPTION

FS0610
 FS0610'DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (CP)
 FS0610'THE STATION IS LOCATED ABOUT 8 MILES, AIR LINE, W OF WHERE THE
 FS0610'AERIAL FERRY CROSSES THE COLORADO RIVER AND 5 MILES, AIR LINE,
 FS0610'E OF THE TOWN OF SEARCHLIGHT. IT IS ON A SMALL KNOLL LYING
 FS0610'BETWEEN A FORK OF THE AERIAL FERRY ROAD, 100 YARDS E OF THE
 FS0610'FORK. ONE FORK PASSES AROUND THE N BASE OF THIS KNOLL AND
 FS0610'THE OTHER FORK PASSES ABOUT 30 YARDS S OF THE SUMMIT AND
 FS0610'STATION.

FS0610'
 FS0610'THE STATION AND REFERENCE MARKS ARE STANDARD BRONZE DISKS
 FS0610'WEDGED IN DRILL HOLES IN BOULDERS.

FS0610'
 FS0610'TO REACH FROM SEARCHLIGHT AS FOLLOWS--FROM THE NEVADA HOTEL
 FS0610'GO N ON LAS VEGAS ROAD 0.1 MILE, TURN RIGHT ON AERIAL FERRY

FS0610'ROAD AND FOLLOW SIGNS, ASPER FERRY 2.0 MILES, TAKE RIGHT FORK
FS0610'AND GO 0.4 MILE, TAKE LEFT FORK GO 0.5 MILE, TAKE LEFT FORK
FS0610'AND GO 1.3 MILES, TAKE LEFT FORK AND GO 1.0 MILE, TAKE RIGHT
FS0610'CLIMBING OUT OF WASH AND GO 0.5 MILE. HERE TAKE RIGHT FORK
FS0610'AND GO 100 YARDS TO THE TOP OF THE KNOLL AND THE STATION.

FS0610

FS0610 STATION RECOVERY (1935)

FS0610

FS0610'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1935 (GRF)
FS0610'ABOUT 6.2 MILES E ALONG THE ROAD LEADING TO AERIAL FERRY
FS0610'AND CHLORIDE FROM SEARCHLIGHT, ABOUT 118 YARDS E OF A SIGN
FS0610'POINTING TO AERIAL FERRY AT A ROAD INTERSECTION, AT THE TOP OF
FS0610'A SMALL MOUND BETWEEN TWO ROADS, ABOUT 93 FEET SOUTH OF THE
FS0610'CENTER LINE OF THE NORTH ROAD, ABOUT 100 FEET N OF THE CENTER
FS0610'LINE OF THE SOUTH ROAD, IN A ROCK OUTCROP, AND ABOUT LEVEL
FS0610'WITH THE GROUND.

FS0610'

FS0610'A STANDARD TRIANGULATION STATION DISK, STAMPED FERRY 1934.

FS0610'

FS0610'R.M. NO. 1 IS ABOUT 137 YARDS E OF A SIGN POINTING TO AERIAL
FS0610'FERRY AT A ROAD INTERSECTION, AT THE TOP OF A SANDY MOUND
FS0610'BETWEEN TWO ROADS, ABOUT 82 FEET S OF THE CENTER LINE OF THE
FS0610'NORTH ROAD, AND ABOUT 127 FEET N OF THE CENTER LINE OF THE SOUTH
FS0610'ROAD, IN A ROCK OUTCROP.

FS0610'

FS0610'A STANDARD TRIANGULATION STATION REFERENCE MARK DISK, STAMPED
FS0610'R.M. 1 FERRY 1934.

FS0610'

FS0610'R.M. NO. 2 IS ABOUT 118 YARDS E OF A SIGN POINTING TO AERIAL
FS0610'FERRY AT A ROAD INTERSECTION, AT THE TOP OF A SANDY MOUND
FS0610'BERWEEN TWO ROADS, ABOUT 141 FEET S OF THE CENTER LINE OF THE
FS0610'NORTH ROAD, ABOUT 62 FEET N OF THE CENTER LINE OF THE SOUTH
FS0610'ROAD, IN A ROCK OUTCROP, AND ABOUT LEVEL WITH THE GROUND.

FS0610'

FS0610'A STANDARD TRIANGULATION STATION REFERENCE MARK DISK, STAMPED
FS0610'R.M. 2 FERRY 1934.

FS0610

FS0610 STATION RECOVERY (1941)

FS0610

FS0610'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1941 (EHS)
FS0610'THIS STATION WAS RECOVERED AND FOUND TO BE IN GOOD CONDITION.
FS0610'PARTY DID NOT HAVE A COPY OF THE ORIGINAL DESCRIPTION AT THE
FS0610'TIME OF RECOVERY.

FS0610'

FS0610'STATION IS A STANDARD DISK SET HORIZONTALLY IN TOP OF BOULDER
FS0610'FLUSH WITH THE GROUND. IT IS ON THE RIGHT OF WAY OF ROAD TO
FS0610'AERIAL FERRY. IT IS ON TOP OF A SMALL RIDGE, BETWEEN TWO ROADS.
FS0610'ABOUT 118 YARDS EAST OF THE INTERSECTION OF THE ROADS. 100
FS0610'FEET SOUTH OF THE CENTER LINE OF THE ROAD TO AERIAL FERRY.
FS0610'15 FEET NORTH OF THE CENTER LINE OF THE ROAD LEADING TO THE
FS0610'SOUTHEAST. 3 FEET NORTH OF A 4 X 4 INCH WHITE POST PROJECTING
FS0610'ABOUT 2 FEET.

FS0610'

FS0610'R.M. 1 IS A STANDARD DISK SET HORIZONTALLY IN TOP OF A BOULDER

FS0610'PROJECTING ABOUT 1.2 FEET. IT IS 58 FEET NE OF STATION.

FS0610'

FS0610'R.M. 2 IS A STANDARD DISK SET HORIZONTALLY IN TOP OF BOULDER

FS0610'PROJECTING ABOUT 0.4 FEET. IT IS 47 FEET SOUTH OF THE STATION.

FS0610'

FS0610'TO REACH THE STATION FROM SEARCHLIGHT, NEVADA GO 6.3 MILES EAST

FS0610'ON ROAD TO AERIAL FERRY TO SITE OF STATION.

FS0610

FS0610 STATION RECOVERY (1949)

FS0610

FS0610'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1949

FS0610'6.2 MI E FROM SEARCHLIGHT.

FS0610'0.2 MILE NORTH ALONG U.S. HIGHWAY 95 FROM THE POST OFFICE AT

FS0610'SEARCHLIGHT, THENCE 6.0 MILES EAST ALONG THE COTTONWOOD LANDING

FS0610'ROAD, ON THE TOP OF A SMALL HILL, 78 FEET NORTHEAST OF THE

FS0610'CENTER OF THE JUNCTION OF A DIRT ROAD LEADING SOUTHEAST, 146

FS0610'FEET SOUTH OF THE APPROXIMATE CENTER OF A DRY WASH, 58.1 FEET

FS0610'SOUTHWEST OF FERRY RM 1, 14 FEET NORTHWEST OF THE CENTER LINE

FS0610'OF THE ROAD, 2.5 FEET NORTHEAST OF A WITNESS POST, ABOUT LEVEL

FS0610'WITH THE ROAD, AND IN THE TOP OF A BOULDER FLUSH WITH THE

FS0610'GROUND.

FS0610

FS0610 STATION RECOVERY (1955)

FS0610

FS0610'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1955 (FN)

FS0610'THE STATION AND REFERENCE MARKS 1 AND 2 WERE RECOVERED IN GOOD

FS0610'CONDITION. THE DESCRIPTION IS ADEQUATE AND CORRECT.

FS0610

FS0610 STATION RECOVERY (1957)

FS0610

FS0610'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1957

FS0610'RECOVERED AS DESCRIBED BY NGS. ALL MARKS IN GOOD CONDITION. RMS

FS0610'NOT OBSERVED.

FS0610

FS0610 STATION RECOVERY (1994)

FS0610

FS0610'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GRH)

FS0610'STATION IS LOCATED ABOUT 10 KM (6.20 MI) EAST OF SEARCHLIGHT, 12 KM

FS0610'(7.45 MI) EAST OF THE COLORADO RIVER, 200 M (656.2 FT) SOUTH OF A

FS0610'PAVED ROAD, IN A NARROW DIRT STRIP BETWEEN TWO OLD UNUSED GRADED

FS0610'ROADS, IN THE SOUTHEAST 1/4 OF SECTION 27, T 28 S, R 64 E.

FS0610'OWNERSHIP--US BUREAU OF LAND MANAGEMENT. TO REACH FROM THE JUNCTION OF

FS0610'US HIGHWAY 95, STATE HIGHWAY 164 AND COTTONWOOD COVE ROAD IN

FS0610'SEARCHLIGHT, GO EAST ON COTTONWOOD COVE ROAD FOR 1.8 KM (1.10 MI) TO A

FS0610'CATTLE GUARD. CONTINUE AHEAD FOR 7.54 KM (4.70 MI) TO A UTILITY LINE

FS0610'ACROSS THE ROAD AND BENCH MARK W 110 ON THE RIGHT. CONTINUE AHEAD FOR

FS0610'0.36 KM (0.20 MI) TO A DIM ROAD RIGHT JUST BEFORE REACHING MILEPOST 6.

FS0610'BEAR RIGHT, DOWNGRADE, SOUTHEAST, ON OLD GRADED ROAD FOR 0.29 KM (0.20

FS0610'MI) TO THE STATION ON THE RIGHT ON A CUTBANK. STATION MARK IS A DISK

FS0610'SET IN A DRILL HOLE IN AN 0.3 M (1.0 FT) X 0.4 M (1.3 FT) OUTCROP

FS0610'PROJECTING 10 CM ABOVE GROUND. IT IS ABOUT 10 M (32.8 FT) SOUTH OF,

FS0610'AND 1 M (3.3 FT) HIGHER THAN THE UNUSED ROAD, 4.5 M (14.8 FT) NORTH

FS0610'OF, AND 0.5 M (1.6 FT) HIGHER THAN THE CENTER OF A BLOCKED-OFF GRADED

FS0610'ROAD, 2.2 M (7.2 FT) SOUTH OF A FIBERGLASS WITNESS POST, 0.8 M (2.6

FS0610'FT) NORTH OF A METAL WITNESS POST AND SIGN, AND 5.5 M (18.0 FT)
FS0610'WEST-NORTHWEST OF A BROWN BLM FIBERGLASS WITNESS POST IN THE ROAD.

FS0610

STATION RECOVERY (1998)

FS0610

FS0610

FS0610'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)

FS0610'RECOVERED AS DESCRIBED.

FS0610

FS0610

STATION RECOVERY (2005)

FS0610

FS0610'RECOVERY NOTE BY US BUREAU OF RECLAMATION 2005

FS0610'RECOVERED IN GOOD CONDITION.

FS0610

FS0610

STATION RECOVERY (2009)

FS0610

FS0610'RECOVERY NOTE BY ORBITECH INC 2009 (SHG)

FS0610'RECOVERED IN GOOD CONDITION.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR0655 *****

GR0655 DESIGNATION - FOIL

GR0655 PID - GR0655

GR0655 STATE/COUNTY- NV/CLARK

GR0655 COUNTRY - US

GR0655 USGS QUAD - DRY LAKE (2018)

GR0655

GR0655 *CURRENT SURVEY CONTROL

GR0655

GR0655* NAD 83(1994) POSITION- 36 28 54.40596(N) 114 48 00.42056(W) ADJUSTED

GR0655* NAVD 88 ORTHO HEIGHT - 632.288 (meters) 2074.43 (feet) ADJUSTED

GR0655

GR0655 GEOID HEIGHT - -27.285 (meters) GEOID18

GR0655 LAPLACE CORR - -3.34 (seconds) DEFLEC18

GR0655 DYNAMIC HEIGHT - 631.658 (meters) 2072.36 (feet) COMP

GR0655 MODELED GRAVITY - 979,616.5 (mgal) NAVD 88

GR0655

GR0655 HORZ ORDER - SECOND

GR0655 VERT ORDER - FIRST CLASS II

GR0655

GR0655.The horizontal coordinates were established by classical geodetic methods

GR0655.and adjusted by the National Geodetic Survey in June 1998.

GR0655.

GR0655.The orthometric height was determined by differential leveling and

GR0655.adjusted by the NATIONAL GEODETIC SURVEY

GR0655.in June 1991.

GR0655

GR0655.Significant digits in the geoid height do not necessarily reflect accuracy.

GR0655.GEOID18 height accuracy estimate available here.

GR0655

GR0655.Click photographs - Photos may exist for this station.

GR0655

GR0655.The Laplace correction was computed from DEFLEC18 derived deflections.

GR0655

GR0655.The dynamic height is computed by dividing the NAVD 88

GR0655.geopotential number by the normal gravity value computed on the

GR0655.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR0655.degrees latitude (g = 980.6199 gals.).

GR0655

GR0655.The modeled gravity was interpolated from observed gravity values.

GR0655

GR0655. The following values were computed from the NAD 83(1994) position.

GR0655

GR0655; North East Units Scale Factor Converg.

GR0655;SPC NV E - 8,192,410.250 270,179.294 MT 0.99996066 +0 27 56.5

GR0655;SPC NV E -26,877,932.63 886,413.23 sFT 0.99996066 +0 27 56.5

GR0655;UTM 11 - 4,039,637.055 697,071.582 MT 1.00007852 +1 18 30.2

GR0655

GR0655! - Elev Factor x Scale Factor = Combined Factor

GR0655!SPC NV E - 0.99990506 x 0.99996066 = 0.99986572

GR0655!UTM 11 - 0.99990506 x 1.00007852 = 0.99998357

GR0655

GR0655: Primary Azimuth Mark

Grid Az

GR0655:SPC NV E - TONY

217 30 27.2

GR0655:UTM 11 - TONY

216 39 53.5

GR0655

GR0655_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPA9707139637(NAD 83)

GR0655

GR0655|-----|

GR0655|PID Reference Object Distance Geod. Az |

GR0655| dddmmss.s |

GR0655|CC4793 FOIL WP 3.069 METERS 05217 |

GR0655|GR0657 FOIL RM 1 8.473 METERS 16956 |

GR0655|GR1884 TONY APPROX. 4.8 KM 2175823.7 |

GR0655|GR0656 FOIL RM 2 5.855 METERS 23508 |

GR0655|-----|

GR0655

GR0655 SUPERSEDED SURVEY CONTROL

GR0655

GR0655 NAD 83(1994)- 36 28 54.40622(N) 114 48 00.41882(W) AD() 2

GR0655 NAD 83(1992)- 36 28 54.40683(N) 114 48 00.42120(W) AD() 2

GR0655 NAD 83(1992)- 36 28 54.40684(N) 114 48 00.42128(W) AD() 2

GR0655 NAD 83(1986)- 36 28 54.39786(N) 114 48 00.40669(W) AD() 2

GR0655 NAD 27 - 36 28 54.50400(N) 114 47 57.40300(W) AD() 2

GR0655 NGVD 29 (??/??/92) 631.606 (m) 2072.19 (f) ADJ UNCH 1 2

GR0655 NGVD 29 631.61 (m) 2072.2 (f) LEVELING 3

GR0655

GR0655.Superseded values are not recommended for survey control.

GR0655

GR0655.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR0655.See file dsdata.pdf to determine how the superseded data were derived.

GR0655

GR0655_MARKER: DS = TRIANGULATION STATION DISK

GR0655_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

GR0655_STAMPING: FOIL 1957

GR0655_MARK LOGO: CGS

GR0655_PROJECTION: FLUSH

GR0655_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

GR0655+STABILITY: SURFACE MOTION

GR0655

GR0655 HISTORY - Date Condition Report By

GR0655 HISTORY - 1957 MONUMENTED CGS

GR0655 HISTORY - 1957 GOOD CGS

GR0655 HISTORY - 1983 GOOD NGS

GR0655

GR0655 STATION DESCRIPTION

GR0655

GR0655'DESCRIBED BY COAST AND GEODETIC SURVEY 1957 (NES)

GR0655'THE STATION IS LOCATED ABOUT 18 MILES SOUTHWEST OF GLENDALE, IN

GR0655'A LOW FLAT AREA.

GR0655'

GR0655'TO REACH FROM GLENDALE, GO SOUTHWEST ON U.S. HIGHWAY 91 FOR
GR0655'15.4 MILES TO CRYSTAL SERVICE STATION ON THE LEFT. CONTINUE
GR0655'SOUTHWEST ON THE HIGHWAY FOR 2.3 MILES TO A TRACK ROAD LEFT.
GR0655'BEAR LEFT AND GO 0.15 MILE TO STATION ON LEFT.

GR0655'

GR0655'THE STATION MARK, STAMPED FOIL 1957, IS A STANDARD BRONZE DISK
GR0655'SET IN A SQUARE CONCRETE POST WHICH IS FLUSH WITH THE GROUND.
GR0655'IT IS ABOUT 0.1 MILE SOUTHEAST OF THE HIGHWAY, 10.07 FEET SOUTHWEST
GR0655'OF A WHITE WITNESS POST, AND 4 FEET NORTHWEST OF A BARBED WIRE
GR0655'FENCE.

GR0655'

GR0655'REFERENCE MARK NO. 1, STAMPED FOIL NO 1 1957, IS A STANDARD
GR0655'BRONZE DISK SET IN A SQUARE CONCRETE POST WHICH PROJECTS 4
GR0655'INCHES. IT IS 21 FEET SOUTHEAST OF THE FENCE.

GR0655'

GR0655'REFERENCE MARK NO. 2, STAMPED FOIL NO 2 1957, IS A STANDARD
GR0655'BRONZE DISK SET IN A SQUARE CONCRETE POST WHICH PROJECTS 2
GR0655'INCHES. IT IS 4 FEET NORTHWEST OF THE FENCE.

GR0655

GR0655 STATION RECOVERY (1957)

GR0655

GR0655'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1957

GR0655'17.1 MI SW FROM MOAPA.

GR0655'17.1 MILES SOUTHWEST ALONG THE UNION PACIFIC RAILROAD FROM THE STATION
GR0655'AT MOAPA, THENCE 0.15 MILE SOUTHEAST ACROSS COUNTRY, IN T 17 S, R 64
GR0655'E, SOUTHEAST CORNER OF SECTION 2, 352 FEET SOUTHEAST OF CENTER LINE OF
GR0655'U.S. HIGHWAY 91, 10 FEET SOUTHWEST OF WITNESS POST, 4.1 FEET NORTHWEST
GR0655'OF FENCE LINE SET IN TOP OF A CONCRETE POST AND FLUSH WITH THE GROUND.

GR0655

GR0655 STATION RECOVERY (1983)

GR0655

GR0655'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1983

GR0655'RECOVERED IN GOOD CONDITION. NEW DESCRIPTION FOLLOWS.

GR0655'28.05 KM (17.55 MI) SOUTHWEST ALONG INTERSTATE 15 FROM THE SOUTHWEST
GR0655'END OF THE HIGHWAY BRIDGE OVER THE MUDDY RIVER IN GLENDALE, ON TOP OF
GR0655'A LOW RIDGE, 0.2 KM (0.12 MI) NORTHEAST OF MILEPOST 73, 72.7 METERS
GR0655'(238.5 FT) SOUTHEAST OF THE CENTERLINE OF THE NORTH BOUND LANE, 18.3
GR0655'METERS (60 FT) EAST-NORTHEAST OF THE NORTHEAST END OF A PIPE BRACE IN
GR0655'THE RIGHT OF WAY FENCE, 11.6 METERS (38.5 FT) SOUTHEAST OF THE RIGHT
GR0655'OF WAY FENCE, 8.5 METERS (28 FT) NORTH OF RM 1, 5.8 METERS (19 FT)
GR0655'NORTHEAST OF RM 2, 4.7 METERS (15.5 FT) NORTHWEST OF THE CENTER OF A
GR0655'DIRT ROAD.

GR0655'THE MARK IS 0.8 METERS NW FROM A WITNESS POST.

GR0655'THE MARK IS 0.6 M BELOW THE HIGHWAY.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS1408 *****

FS1408 DESIGNATION - GOVERNMENT ROAD 2

FS1408 PID - FS1408

FS1408 STATE/COUNTY- CA/SAN BERNARDINO

FS1408 COUNTRY - US

FS1408 USGS QUAD - EAST OF HOMER MOUNTAIN (2018)

FS1408

FS1408 *CURRENT SURVEY CONTROL

FS1408

FS1408* NAD 83(2011) POSITION- 35 06 47.40123(N) 114 49 42.05992(W) ADJUSTED

FS1408* NAD 83(2011) ELLIP HT- 661.587 (meters) (06/27/12) ADJUSTED

FS1408* NAD 83(2011) EPOCH - 2010.00

FS1408* NAVD 88 ORTHO HEIGHT - 691.4 (meters) 2268. (feet) GPS OBS

FS1408

FS1408 NAVD 88 orthometric height was determined with geoid model GEOID09

FS1408 GEOID HEIGHT - -29.837 (meters) GEOID09

FS1408 GEOID HEIGHT - -29.861 (meters) GEOID18

FS1408 NAD 83(2011) X - -2,193,461.691 (meters) COMP

FS1408 NAD 83(2011) Y - -4,740,923.909 (meters) COMP

FS1408 NAD 83(2011) Z - 3,648,524.728 (meters) COMP

FS1408 LAPLACE CORR - 1.51 (seconds) DEFLEC18

FS1408

FS1408 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

FS1408 Standards:

FS1408 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

FS1408 Horiz Ellip SD_N SD_E SD_h (unitless)

FS1408 -----

FS1408 NETWORK 0.73 1.57 0.31 0.29 0.80 -0.03391034

FS1408 -----

FS1408 [Click here for local accuracies and other accuracy information.](#)

FS1408

FS1408

FS1408.The horizontal coordinates were established by GPS observations

FS1408.and adjusted by the National Geodetic Survey in June 2012.

FS1408

FS1408.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

FS1408.been affixed to the stable North American tectonic plate. See

FS1408.NA2011 for more information.

FS1408

FS1408.The horizontal coordinates are valid at the epoch date displayed above

FS1408.which is a decimal equivalence of Year/Month/Day.

FS1408

FS1408.The orthometric height was determined by GPS observations and a

FS1408.high-resolution geoid model.

FS1408

FS1408.Significant digits in the geoid height do not necessarily reflect accuracy.

FS1408.GEOID18 height accuracy estimate available here.

FS1408

FS1408.Click photographs - Photos may exist for this station.

FS1408

FS1408.The X, Y, and Z were computed from the position and the ellipsoidal ht.

FS1408

FS1408.The Laplace correction was computed from DEFLEC18 derived deflections.

FS1408

FS1408.The ellipsoidal height was determined by GPS observations

FS1408.and is referenced to NAD 83.

FS1408

FS1408. The following values were computed from the NAD 83(2011) position.

FS1408

FS1408; North East Units Scale Factor Converg.

FS1408;SPC CA 5 - 683,503.553 2,289,070.203 MT 0.99994204 +1 48 28.4

FS1408;SPC CA 5 - 2,242,461.24 7,510,057.82 sFT 0.99994204 +1 48 28.4

FS1408;SPC NV E - 8,040,546.285 268,819.822 MT 0.99995835 +0 26 03.4

FS1408;SPC NV E -26,379,692.27 881,953.03 sFT 0.99995835 +0 26 03.4

FS1408;UTM 11 - 3,887,750.919 697,909.605 MT 1.00008274 +1 14 58.3

FS1408

FS1408! - Elev Factor x Scale Factor = Combined Factor

FS1408!SPC CA 5 - 0.99989616 x 0.99994204 = 0.99983821

FS1408!SPC NV E - 0.99989616 x 0.99995835 = 0.99985452

FS1408!UTM 11 - 0.99989616 x 1.00008274 = 0.99997890

FS1408

FS1408_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPU9790987750(NAD 83)

FS1408

SUPERSEDED SURVEY CONTROL

FS1408

FS1408 NAD 83(2007)- 35 06 47.40091(N) 114 49 42.05948(W) AD(2007.00) 0

FS1408 ELLIP H (02/10/07) 661.590 (m) GP(2007.00)

FS1408 NAD 83(1999)- 35 06 47.40088(N) 114 49 42.06020(W) AD(1999.37) A

FS1408 ELLIP H (05/16/00) 661.607 (m) GP(1999.37) 4 1

FS1408 NAD 83(1986)- 35 06 47.40358(N) 114 49 42.06082(W) AD(1984.00) 1

FS1408 NAD 83(1992)- 35 06 47.40020(N) 114 49 42.05786(W) AD(1991.35) B

FS1408 ELLIP H (05/15/92) 661.594 (m) GP(1991.35) 4 2

FS1408 NAVD 88 (05/16/00) 691.4 (m) GEOID99 model used GPS OBS

FS1408 NAVD 88 (05/15/92) 691.3 (m) GEOID90 model used GPS OBS

FS1408

FS1408.Superseded values are not recommended for survey control.

FS1408

FS1408.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

FS1408.See file dsdata.pdf to determine how the superseded data were derived.

FS1408

FS1408_MARKER: DD = SURVEY DISK

FS1408_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

FS1408_STAMPING: GOVERNMENT ROAD 2 1985

FS1408_MARK LOGO: CADT

FS1408_PROJECTION: FLUSH

FS1408_MAGNETIC: N = NO MAGNETIC MATERIAL

FS1408_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

FS1408_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

FS1408+SATELLITE: SATELLITE OBSERVATIONS - November 03, 2007

FS1408

FS1408 HISTORY	- Date	Condition	Report By
FS1408 HISTORY	- 1985	MONUMENTED	CADT
FS1408 HISTORY	- 19910418	GOOD	NGS
FS1408 HISTORY	- 19921126	GOOD	SCEC
FS1408 HISTORY	- 19940622	GOOD	NGS
FS1408 HISTORY	- 19991018	GOOD	NGS
FS1408 HISTORY	- 20071103	GOOD	GEOCAC

FS1408

FS1408 STATION DESCRIPTION

FS1408

FS1408'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991

FS1408'THE STATION IS LOCATED ABOUT 21.3 MI (34.3 KM) NORTHWEST OF NEEDLES,
FS1408'10.7 MI (17.2 KM) WEST OF THE COLORADO RIVER, IN SECTION 20, T12N,
FS1408'R20E, SBM, AT POST MILE 75.9 ON U.S. HIGHWAY 95.

FS1408'TO REACH THE STATION FROM THE JUNCTION OF INTERSTATE HIGHWAY 40 AND
FS1408'U.S. HIGHWAY 95, ABOUT 11 MI (17.7 KM) NORTHWEST OF NEEDLES, GO
FS1408'NORTHERLY ON HIGHWAY 95 FOR 6.55 MI (10.54 KM) TO A RAIROAD CROSSING.
FS1408'CONTINUE NORTH ON HIGHWAY 95 FOR 11.9 MI (19.2 KM) TO A DIRT
FS1408'CROSSROAD. TURN RIGHT AND GO EAST FOR 0.05 MI (0.08 KM) TO A DIRT
FS1408'ROAD AND THE STATION ON THE LEFT.

FS1408'THE STATION IS A CADT BRASS DISK SET IN AN OCTAGON SHAPED CONCRETE
FS1408'POST. LOCATED 267 FT (81.4 M) EAST OF U.S. HIGHWAY 95, 128 FT
FS1408'(39.0 M) NORTH OF GOVERNMENT ROAD, 25.5 FT (7.8 M) WEST OF A DIRT
FS1408'ROAD AND 7.4 FT (2.3 M) SOUTH OF A METAL WITNESS POST.

FS1408

FS1408 STATION RECOVERY (1992)

FS1408

FS1408'RECOVERY NOTE BY SOUTHERN CALIFORNIA EARTHQUAKE CENTER 1992 (MWC)
FS1408'THE STATION IS LOCATED ABOUT 34.3 KM (21.3 MI) NORTHWEST OF NEEDLES,
FS1408'17.2 KM (10.7 MI) WEST OF THE COLORADO RIVER, 3.8 KM (2.4 MI)
FS1408'SOUTHWEST OF THE NEVADA-CALIFORNIA STATE LINE, AT POST MILE 75.9ON
FS1408'U.S. HIGHWAY 95. OWNERSHIP--CALIFORNIA DEPARTMENT OF TRANSPORTATION.
FS1408'TO REACH THE STATION FROM THE JUNCTION OF INTERSTATE HIGHWAY 40 AND
FS1408'U.S. HIGHWAY 95, ABOUT 17.7 KM (11.0 MI) NORTHWEST OF NEEDLES, GO
FS1408'NORTHERLY ON HIGHWAY 95 FOR 10.54 KM (6.55 MI) TO A RAIROAD CROSSING.
FS1408'CONTINUE NORTH ON HIGHWAY 95 FOR 19.2 KM (11.9 MI) TO A DIRT
FS1408'CROSSROAD. TURN RIGHT, EAST, CROSSING A GULLY, FOR 0.08 KM (0.05 MI)
FS1408'TO A SIDE DIRT ROAD LEFT. TURN LEFT, NORTH, FOR 0.08 KM (0.05 MI) AND
FS1408'THE STATION ON THE LEFT, WEST. THE STATION IS SET IN AN OCTAGON-SHAPED
FS1408'CONCRETE MONUMENT THAT IS 37 CM IN DIAMETER AND PROJECTS 4 CM. IT IS
FS1408'LOCATED ABOUT 80 M (262.5 FT) EAST OF U.S. HIGHWAY 95, 39 M (128.0 FT)
FS1408'NORTH OF THE DIRT GOVERNMENT ROAD, 7.4 M (24.3 FT) WEST OF THE CENTER
FS1408'OF A DIRT ROAD, AND 2.3 M (7.5 FT) SOUTH-SOUTHEAST OF A METAL WITNESS
FS1408'POST.

FS1408

FS1408 STATION RECOVERY (1994)

FS1408

FS1408'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (AJL)
FS1408'RECOVERED AS DESCRIBED.

FS1408

FS1408 STATION RECOVERY (1999)

FS1408

FS1408'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999 (JGF)

FS1408'TO REACH THE STATION FROM THE NEVADA, CALIFORNIA STATE LINE ON HWY 95

FS1408'GO SOUTH ON HWY 95 FOR 4.5 MILES (7.2 KM) TO THE STATION ON THE LEFT.

FS1408

FS1408 STATION RECOVERY (2007)

FS1408

FS1408'RECOVERY NOTE BY GEOCACHING 2007 (LJK)

FS1408'STATION MARK RECOVERED IN GOOD CONDITION AT THE DESCRIBED LOCATION. IN
FS1408'ADDITION, TWO REFERENCE MARKS WERE FOUND THAT ARE NOT DOCUMENTED ON
FS1408'THE DATASHEET. USING A FIBERGLASS TAPE MEASURE AND HANDHELD COMPASS,
FS1408'THE REFERENCE MARKS ARE LOCATED AS FOLLOWS -

FS1408'RM1 - 34.75 FEET AT 353 DEGREES MAGNETIC BEARING FROM THE STATION

FS1408'RM2 - 50.50 FEET AT 068 DEGREES MAGNETIC BEARING FROM THE STATION

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS1409 *****

FS1409 FBN - This is a Federal Base Network Control Station.

FS1409 DESIGNATION - HPGN CA 08 01

FS1409 PID - FS1409

FS1409 STATE/COUNTY- CA/SAN BERNARDINO

FS1409 COUNTRY - US

FS1409 USGS QUAD - IVANPAH LAKE (2018)

FS1409

FS1409 *CURRENT SURVEY CONTROL

FS1409

FS1409* NAD 83(2011) POSITION- 35 32 27.71822(N) 115 25 22.12451(W) ADJUSTED

FS1409* NAD 83(2011) ELLIP HT- 777.970 (meters) (06/27/12) ADJUSTED

FS1409* NAD 83(2011) EPOCH - 2010.00

FS1409* NAVD 88 ORTHO HEIGHT - 806.8 (meters) 2647. (feet) GPS OBS

FS1409

FS1409 NAVD 88 orthometric height was determined with geoid model GEOID09

FS1409 GEOID HEIGHT - -28.832 (meters) GEOID09

FS1409 GEOID HEIGHT - -28.837 (meters) GEOID18

FS1409 NAD 83(2011) X - -2,230,786.966 (meters) COMP

FS1409 NAD 83(2011) Y - -4,693,202.980 (meters) COMP

FS1409 NAD 83(2011) Z - 3,687,325.596 (meters) COMP

FS1409 LAPLACE CORR - -2.62 (seconds) DEFLEC18

FS1409

FS1409 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

FS1409 Standards:

FS1409 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

FS1409 Horiz Ellip SD_N SD_E SD_h (unitless)

FS1409 -----

FS1409 NETWORK 0.18 0.47 0.08 0.07 0.24 -0.05029055

FS1409 -----

FS1409 [Click here for local accuracies and other accuracy information.](#)

FS1409

FS1409

FS1409.The horizontal coordinates were established by GPS observations

FS1409.and adjusted by the National Geodetic Survey in June 2012.

FS1409

FS1409.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

FS1409.been affixed to the stable North American tectonic plate. See

FS1409.NA2011 for more information.

FS1409

FS1409.The horizontal coordinates are valid at the epoch date displayed above

FS1409.which is a decimal equivalence of Year/Month/Day.

FS1409

FS1409.The orthometric height was determined by GPS observations and a

FS1409.high-resolution geoid model.

FS1409

FS1409.Significant digits in the geoid height do not necessarily reflect accuracy.

FS1409.GEOID18 height accuracy estimate available here.

FS1409

FS1409.Click photographs - Photos may exist for this station.

FS1409

FS1409.The X, Y, and Z were computed from the position and the ellipsoidal ht.

FS1409

FS1409.The Laplace correction was computed from DEFLEC18 derived deflections.

FS1409

FS1409.The ellipsoidal height was determined by GPS observations

FS1409.and is referenced to NAD 83.

FS1409

FS1409. The following values were computed from the NAD 83(2011) position.

FS1409

FS1409; North East Units Scale Factor Converg.

FS1409;SPC CA 5 - 729,407.601 2,233,686.072 MT 1.00001706 +1 28 08.5

FS1409;SPC CA 5 - 2,393,064.77 7,328,351.72 sFT 1.00001706 +1 28 08.5

FS1409;UTM 11 - 3,934,188.270 642,973.160 MT 0.99985190 +0 55 01.0

FS1409

FS1409! - Elev Factor x Scale Factor = Combined Factor

FS1409!SPC CA 5 - 0.99987791 x 1.00001706 = 0.99989496

FS1409!UTM 11 - 0.99987791 x 0.99985190 = 0.99972982

FS1409

FS1409_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV4297334188(NAD 83)

FS1409

SUPERSEDED SURVEY CONTROL

FS1409

FS1409 NAD 83(2007)- 35 32 27.71815(N) 115 25 22.12328(W) AD(2007.00) 0

FS1409 ELLIP H (02/10/07) 777.987 (m) GP(2007.00)

FS1409 NAD 83(1998)- 35 32 27.71762(N) 115 25 22.12406(W) AD(2000.35) A

FS1409 ELLIP H (04/03/01) 777.992 (m) GP(2000.35) 1 1

FS1409 NAD 83(1998)- 35 32 27.71804(N) 115 25 22.12404(W) AD(1998.50) A

FS1409 ELLIP H (04/06/00) 777.978 (m) GP(1998.50) 3 1

FS1409 NAD 83(1986)- 35 32 27.71994(N) 115 25 22.12322(W) AD(1984.00) 1

FS1409 NAD 83(1992)- 35 32 27.71714(N) 115 25 22.12070(W) AD(1991.35) B

FS1409 ELLIP H (05/15/92) 777.987 (m) GP(1991.35) 4 2

FS1409 NAVD 88 (04/03/01) 806.8 (m) UNKNOWN model used GPS OBS

FS1409 NAVD 88 (04/06/00) 806.8 (m) GEOID99 model used GPS OBS

FS1409 NAVD 88 (05/15/92) 806.7 (m) GEOID90 model used GPS OBS

FS1409

FS1409.Superseded values are not recommended for survey control.

FS1409

FS1409.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

FS1409.See file dsdata.pdf to determine how the superseded data were derived.

FS1409

FS1409_MARKER: DD = SURVEY DISK

FS1409_SETTING: 15 = METAL ROD DRIVEN INTO GROUND. SEE TEXT FOR ADDITIONAL

FS1409+WITH SETTING: INFORMATION.

FS1409_STAMPING: HPGN-CALIF STA. 08-1 1991

FS1409_MARK LOGO: CADT

FS1409_PROJECTION: FLUSH

FS1409_MAGNETIC: N = NO MAGNETIC MATERIAL

FS1409_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY

FS1409_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

FS1409+SATELLITE: SATELLITE OBSERVATIONS - December 28, 2007

FS1409 ROD/PIPE-DEPTH: 2.13 meters

FS1409

FS1409 HISTORY	- Date	Condition	Report By
FS1409 HISTORY	- 1990	MONUMENTED	CADT
FS1409 HISTORY	- 19910507	GOOD	NGS
FS1409 HISTORY	- 19940318	GOOD	NGS
FS1409 HISTORY	- 19980401	GOOD	NGS
FS1409 HISTORY	- 19990426	GOOD	NGS
FS1409 HISTORY	- 20000501	GOOD	NGS
FS1409 HISTORY	- 20050519	GOOD	BOR
FS1409 HISTORY	- 20071228	GOOD	INDIV

FS1409

FS1409 STATION DESCRIPTION

FS1409

FS1409'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991

FS1409'THE STATION IS LOCATED ABOUT 41.7 MI (67.1 KM) NORTHEAST OF BAKER AND
FS1409'4.8 MI (7.7 KM) SOUTH OF THE CALIFORNIA-NEVADA STATE LINE NEAR
FS1409'INTERSTATE HIGHWAY 15.

FS1409'TO REACH THE STATION FROM THE INTERSECTION OF INTERSTATE 15 AND YATES
FS1409'WELL ROAD (AT POST MILE 181.39, 4.8 MI (7.7 KM) SOUTH OF THE
FS1409'CALIFORNIA-NEVADA STATE LINE ON INTERSTATE 15), GO WEST ON YATES WELL
FS1409'ROAD FOR 0.2 MI (0.3 KM) TO THE STATION ON THE RIGHT.

FS1409'THE STATION IS AN ALUMINUM DISK SET ON A BERNTSEN TOP SECURITY ROD
FS1409'MONUMENT, ENCLOSED IN A LOGO CAP. LOCATED 926 FT (282.2 M) WEST OF
FS1409'INTERSTATE 15, 53.4 FT (16.3 M) NORTH OF YATES WELL ROAD AND 4 FT
FS1409'(1.2 M) SOUTH OF A METAL WITNESS POST.

FS1409

FS1409 STATION RECOVERY (1994)

FS1409

FS1409'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GRH)

FS1409'STATION IS LOCATED ABOUT 8 KM (4.95 MI) SOUTHWEST OF THE
FS1409'CALIFORNIA-NEVADA STATE LINE, 0.7 KM (0.45 MI) WEST OF THE YATES WELL
FS1409'ROAD OVER PASS OF INTERSTATE HIGHWAY 15 (SAME EXIT FOR BORDER
FS1409'STATION), ALONG A PAVED ROAD, IN LOW BRUSH. OWNERSHIP--STATE OF
FS1409'CALIFORNIA. TO REACH FROM THE OVERPASS MENTIONED ABOVE, GO WEST ON THE
FS1409'PAVED ROAD FOR 0.19 KM (0.10 MI) TO A CATTLE GUARD. CONTINUE AHEAD
FS1409'FOR 87 M (285.4 FT) TO THE STATION ON THE RIGHT. STATION MARK IS A
FS1409'DISK ON A STEEL ROD ENCASED IN A PVC PIPE WITH LOGO CAP SET IN A
FS1409'CONCRETE POST FLUSH WITH THE GROUND. IT IS 16.2 M (53.1 FT) NORTH OF,
FS1409'AND SLIGHTLY HIGHER THAN THE ROAD CENTER, 1.3 M (4.3 FT) SOUTH OF A
FS1409'METAL WITNESS POST SANS SIGN, AND 1.7 M (5.6 FT) WEST OF A FIBERGLASS
FS1409'WITNESS POST. DESCRIBED BY G.R.HEID

FS1409

FS1409 STATION RECOVERY (1998)

FS1409

FS1409'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)

FS1409'RECOVERED AS DESCRIBED. THE LOGO CAP AND WITNESS SIGN ARE MISSING.

FS1409

FS1409 STATION RECOVERY (1999)

FS1409

FS1409'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999 (CSM)

FS1409'RECOVERED AS DESCRIBED.

FS1409

FS1409 STATION RECOVERY (2000)
FS1409
FS1409'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (MEI)
FS1409'RECOVERED AS DESCRIBED.
FS1409'THIS STATION WAS OBSERVED IN MAY, 2000 AS PART OF THE HECTOR MINE
FS1409'EARTHQUAKE FBN/CBN REOBSERVATION SURVEY.
FS1409'
FS1409
FS1409 STATION RECOVERY (2005)
FS1409
FS1409'RECOVERY NOTE BY US BUREAU OF RECLAMATION 2005
FS1409'RECOVERED IN GOOD CONDITION.
FS1409
FS1409 STATION RECOVERY (2007)
FS1409
FS1409'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2007 (PP)
FS1409'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1392 *****

GR1392 CBN - This is a Cooperative Base Network Control Station.

GR1392 DESIGNATION - J 171

GR1392 PID - GR1392

GR1392 STATE/COUNTY- NV/CLARK

GR1392 COUNTRY - US

GR1392 USGS QUAD - APEX (2018)

GR1392

GR1392 *CURRENT SURVEY CONTROL

GR1392

GR1392* NAD 83(2011) POSITION- 36 20 28.05515(N) 114 55 04.37766(W) ADJUSTED

GR1392* NAD 83(2011) ELLIP HT- 707.261 (meters) (06/27/12) ADJUSTED

GR1392* NAD 83(2011) EPOCH - 2010.00

GR1392* NAVD 88 ORTHO HEIGHT - 734.658 (meters) 2410.29 (feet) ADJUSTED

GR1392

GR1392 GEOID HEIGHT - -27.404 (meters) GEOID18

GR1392 NAD 83(2011) X - -2,167,360.662 (meters) COMP

GR1392 NAD 83(2011) Y - -4,665,365.461 (meters) COMP

GR1392 NAD 83(2011) Z - 3,759,167.393 (meters) COMP

GR1392 LAPLACE CORR - -0.17 (seconds) DEFLEC18

GR1392 DYNAMIC HEIGHT - 733.914 (meters) 2407.85 (feet) COMP

GR1392 MODELED GRAVITY - 979,595.7 (mgal) NAVD 88

GR1392

GR1392 VERT ORDER - FIRST CLASS II

GR1392

GR1392 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1392 Standards:

GR1392 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1392 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1392 -----

GR1392 NETWORK 0.71 1.53 0.30 0.28 0.78 -0.01473085

GR1392 -----

GR1392 [Click here for local accuracies and other accuracy information.](#)

GR1392

GR1392

GR1392.The horizontal coordinates were established by GPS observations

GR1392.and adjusted by the National Geodetic Survey in June 2012.

GR1392

GR1392.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1392.been affixed to the stable North American tectonic plate. See

GR1392.NA2011 for more information.

GR1392

GR1392.The horizontal coordinates are valid at the epoch date displayed above

GR1392.which is a decimal equivalence of Year/Month/Day.

GR1392

GR1392.The orthometric height was determined by differential leveling and

GR1392.adjusted by the NATIONAL GEODETIC SURVEY

GR1392.in June 1991.

GR1392

GR1392.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1392.GEOID18 height accuracy estimate available here.

GR1392

GR1392.Click photographs - Photos may exist for this station.

GR1392

GR1392.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1392

GR1392.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1392

GR1392.The ellipsoidal height was determined by GPS observations

GR1392.and is referenced to NAD 83.

GR1392

GR1392.The dynamic height is computed by dividing the NAVD 88

GR1392.geopotential number by the normal gravity value computed on the

GR1392.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR1392.degrees latitude ($g = 980.6199$ gals.).

GR1392

GR1392.The modeled gravity was interpolated from observed gravity values.

GR1392

GR1392. The following values were computed from the NAD 83(2011) position.

GR1392

GR1392;

	North	East	Units	Scale	Factor	Converg.
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GR1392;SPC NV E	- 8,176,724.383	259,734.451	MT	0.99994395	+0 23 39.7
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GR1392;SPC NV E	-26,826,469.91	852,145.44	sFT	0.99994395	+0 23 39.7
-----------------	----------------	------------	-----	------------	------------

GR1392;UTM 11	- 4,023,797.906	686,857.131	MT	1.00003021	+1 14 03.1
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GR1392

GR1392! - Elev Factor x Scale Factor = Combined Factor

GR1392!SPC NV E - 0.99988901 x 0.99994395 = 0.99983297

GR1392!UTM 11 - 0.99988901 x 1.00003021 = 0.99991922

GR1392

GR1392_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPA8685723797(NAD 83)

GR1392

GR1392 SUPERSEDED SURVEY CONTROL

GR1392

GR1392 NAD 83(2007)- 36 20 28.05507(N) 114 55 04.37881(W) AD(2007.00) 0

GR1392 ELLIP H (02/10/07) 707.261 (m) GP(2007.00)

GR1392 NAD 83(1999)- 36 20 28.05477(N) 114 55 04.37713(W) AD(1999.37) A

GR1392 ELLIP H (05/16/00) 707.297 (m) GP(1999.37) 4 1

GR1392 NAD 83(1994)- 36 20 28.05402(N) 114 55 04.37544(W) AD() B

GR1392 ELLIP H (03/30/95) 707.331 (m) GP() 4 1

GR1392 NAD 83(1992)- 36 20 28.05658(N) 114 55 04.37796(W) AD() 2

GR1392 NAD 83(1992)- 36 20 28.05632(N) 114 55 04.37827(W) AD() 2

GR1392 NAD 83(1986)- 36 20 28.04552(N) 114 55 04.35932(W) AD() 2

GR1392 NAD 27 - 36 20 28.15300(N) 114 55 01.34800(W) AD() 2

GR1392 NAVD 88 734.66 (m) 2410.3 (f) LEVELING 3

GR1392 NGVD 29 (??/??/92) 733.918 (m) 2407.86 (f) ADJ UNCH 1 2

GR1392 NGVD 29 733.92 (m) 2407.9 (f) LEVELING 3

GR1392

GR1392.Superseded values are not recommended for survey control.

GR1392

GR1392.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR1392. See file dsdata.pdf to determine how the superseded data were derived.

GR1392

GR1392_MARKER: DB = BENCH MARK DISK

GR1392_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

GR1392_STAMPING: J 171 1935

GR1392_MARK LOGO: CGS

GR1392_PROJECTION: PROJECTING 30 CENTIMETERS

GR1392_MAGNETIC: N = NO MAGNETIC MATERIAL

GR1392_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

GR1392+STABILITY: SURFACE MOTION

GR1392_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

GR1392+SATELLITE: SATELLITE OBSERVATIONS - October 17, 2003

GR1392

GR1392 HISTORY	- Date	Condition	Report By
GR1392 HISTORY	- 1935	MONUMENTED	CGS
GR1392 HISTORY	- 1957	GOOD	CGS
GR1392 HISTORY	- 19940620	GOOD	NGS
GR1392 HISTORY	- 19991019	GOOD	NV0150
GR1392 HISTORY	- 20030621	GOOD	JCLS
GR1392 HISTORY	- 20031017	GOOD	INDIV

GR1392

GR1392 STATION DESCRIPTION

GR1392

GR1392'DESCRIBED BY COAST AND GEODETIC SURVEY 1957

GR1392'THE STATION IS LOCATED ABOUT 17 MILES NORTHEAST OF LAS VEGAS

GR1392'AND ABOUT 8-1/2 MILES SOUTHWEST OF DRY LAKE, IN A FLAT AREA.

GR1392'

GR1392'TO REACH FROM DRY LAKE, GO SOUTHWEST ON U.S. HIGHWAY 91 FOR

GR1392'8.0 MILES TO RAILROAD CROSSING JUST SOUTH OF THE U.S. LIME

GR1392'PRODUCTS CORPORATION. CONTINUE SOUTHWEST ON THE HIGHWAY FOR

GR1392'1.0 MILE TO STATION.

GR1392'

GR1392'B.M. J 171 IS A COAST AND GEODETIC SURVEY BENCH MARK DISK SET

GR1392'IN A SQUARE CONCRETE POST WHICH PROJECTS ABOUT 12 INCHES.

GR1392'IT IS STAMPED J 171 1935. THE MARK IS 51 FEET NORTHWEST OF

GR1392'THE CENTER OF THE RAILROAD TRACKS AND 8 FEET SOUTHWEST OF

GR1392'A POWER POLE.

GR1392

GR1392 STATION RECOVERY (1994)

GR1392

GR1392'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (AJL)

GR1392'RECOVERED AS DESCRIBED.

GR1392

GR1392 STATION RECOVERY (1999)

GR1392

GR1392'RECOVERY NOTE BY CITY OF NORTH LAS VEGAS NEVADA 1999

GR1392'TO REACH THE STATION FROM INTERSTATE 15 AND LAS VEGAS BOULEVARD AT

GR1392'EXIT 58 (APEX, NELLIS) GO NORTH ON LAS VEGAS BOULEVARD (U.S. HWY 93)

GR1392'FOR 3.1 MILES (5.0 KM) TO MILE POST 60.75 AND STATION ON THE RIGHT

GR1392'APPROXIMATELY 61 METERS (200.1 FT) (EAST) FROM THE CENTERLINE OF LAS

GR1392'VEGAS BOULEVARD AND 16 METERS (52.5 FT) WEST OF THE CENTERLINE OF THE

GR1392'RAILROAD TRACKS. THE MARK PROJECTS 5 INCHES.

GR1392

GR1392 STATION RECOVERY (2003)

GR1392
GR1392'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2003
GR1392'RECOVERED IN GOOD CONDITION.
GR1392
GR1392 STATION RECOVERY (2003)
GR1392
GR1392'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 (DP)
GR1392'RECOVERED AS DESCRIBED

*** retrieval complete.
Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR0724 *****

GR0724 FBN - This is a Federal Base Network Control Station.

GR0724 DESIGNATION - MOAPA LAPLACE

GR0724 PID - GR0724

GR0724 STATE/COUNTY- NV/CLARK

GR0724 COUNTRY - US

GR0724 USGS QUAD - MOAPA WEST (2018)

GR0724

GR0724 *CURRENT SURVEY CONTROL

GR0724

GR0724* NAD 83(2011) POSITION- 36 40 17.94178(N) 114 37 29.80992(W) ADJUSTED

GR0724* NAD 83(2011) ELLIP HT- 481.175 (meters) (06/27/12) ADJUSTED

GR0724* NAD 83(2011) EPOCH - 2010.00

GR0724* NAVD 88 ORTHO HEIGHT - 508.202 (meters) 1667.33 (feet) ADJUSTED

GR0724

GR0724 GEOID HEIGHT - -27.071 (meters) GEOID18

GR0724 NAD 83(2011) X - -2,134,311.420 (meters) COMP

GR0724 NAD 83(2011) Y - -4,656,382.843 (meters) COMP

GR0724 NAD 83(2011) Z - 3,788,516.820 (meters) COMP

GR0724 LAPLACE CORR - -1.01 (seconds) DEFLEC18

GR0724 DYNAMIC HEIGHT - 507.717 (meters) 1665.73 (feet) COMP

GR0724 MODELED GRAVITY - 979,661.9 (mgal) NAVD 88

GR0724

GR0724 VERT ORDER - FIRST CLASS I

GR0724

GR0724 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR0724 Standards:

GR0724 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR0724 Horiz Ellip SD_N SD_E SD_h (unitless)

GR0724 -----

GR0724 NETWORK 0.62 1.25 0.25 0.26 0.64 0.11541803

GR0724 -----

GR0724 [Click here for local accuracies and other accuracy information.](#)

GR0724

GR0724

GR0724.The horizontal coordinates were established by GPS observations

GR0724.and adjusted by the National Geodetic Survey in June 2012.

GR0724

GR0724.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR0724.been affixed to the stable North American tectonic plate. See

GR0724.NA2011 for more information.

GR0724

GR0724.The horizontal coordinates are valid at the epoch date displayed above

GR0724.which is a decimal equivalence of Year/Month/Day.

GR0724

GR0724.The orthometric height was determined by differential leveling and

GR0724.adjusted by the NATIONAL GEODETIC SURVEY

GR0724.in June 1991.

GR0724

GR0724.Significant digits in the geoid height do not necessarily reflect accuracy.

GR0724.GEOID18 height accuracy estimate available here.

GR0724

GR0724.Click photographs - Photos may exist for this station.

GR0724

GR0724.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR0724

GR0724.The Laplace correction was computed from DEFLEC18 derived deflections.

GR0724

GR0724.The ellipsoidal height was determined by GPS observations

GR0724.and is referenced to NAD 83.

GR0724

GR0724.The dynamic height is computed by dividing the NAVD 88

GR0724.geopotential number by the normal gravity value computed on the

GR0724.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR0724.degrees latitude (g = 980.6199 gals.).

GR0724

GR0724.The modeled gravity was interpolated from observed gravity values.

GR0724

GR0724. The following values were computed from the NAD 83(2011) position.

GR0724

GR0724; North East Units Scale Factor Converg.

GR0724;SPC NV E - 8,213,620.794 285,665.554 MT 0.99999038 +0 34 20.7

GR0724;SPC NV E -26,947,520.89 937,221.07 sFT 0.99999038 +0 34 20.7

GR0724;UTM 11 - 4,061,076.609 712,245.634 MT 1.00015503 +1 25 08.3

GR0724

GR0724! - Elev Factor x Scale Factor = Combined Factor

GR0724!SPC NV E - 0.99992449 x 0.99999038 = 0.99991487

GR0724!UTM 11 - 0.99992449 x 1.00015503 = 1.00007951

GR0724

GR0724: Primary Azimuth Mark

Grid Az

GR0724:SPC NV E - DALE 124 40 22.8

GR0724:UTM 11 - DALE 123 49 35.2

GR0724

GR0724_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SQA1224561076(NAD 83)

GR0724

GR0724|-----|

GR0724|PID Reference Object Distance Geod. Az |

GR0724| dddmmss.s |

GR0724| GR0726 I 1 34.289 METERS 00844 |

GR0724| GR1899 MOAPA UNION PACIFIC WATER TANK 272.435 METERS 06037 |

GR0724| GR0725 MOAPA RM 2 12.561 METERS 11216 |

GR0724| GR0823 DALE APPROX. 4.3 KM 1251443.5 |

GR0724|-----|

GR0724

GR0724 SUPERSEDED SURVEY CONTROL

GR0724

GR0724 NAD 83(2007)- 36 40 17.94146(N) 114 37 29.81061(W) AD(2007.00) 0

GR0724 ELLIP H (02/10/07) 481.183 (m) GP(2007.00)

GR0724 NAD 83(1999)- 36 40 17.94125(N) 114 37 29.80955(W) AD(1999.37) A

GR0724 ELLIP H (05/16/00) 481.221 (m) GP(1999.37) 4 1

GR0724 NAD 83(1994)- 36 40 17.94067(N) 114 37 29.81083(W) AD() 2
 GR0724 NAD 83(1994)- 36 40 17.94021(N) 114 37 29.80882(W) AD() 2
 GR0724 NAD 83(1994)- 36 40 17.94050(N) 114 37 29.80725(W) AD() B
 GR0724 ELLIP H (03/30/95) 481.278 (m) GP() 4 1
 GR0724 NAD 83(1992)- 36 40 17.93958(N) 114 37 29.80925(W) AD() 2
 GR0724 NAD 83(1986)- 36 40 17.93282(N) 114 37 29.80291(W) AD() 2
 GR0724 NAD 27 - 36 40 18.02300(N) 114 37 26.83900(W) AD() 2
 GR0724 NAVD 88 (05/16/00) 508.3 (m) GEOID99 model used GPS OBS
 GR0724 NAVD 88 (03/30/95) 508.3 (m) GEOID93 model used GPS OBS
 GR0724 NGVD 29 (??/??/92) 507.539 (m) 1665.15 (f) ADJ UNCH 1 1
 GR0724 NGVD 29 507.58 (m) 1665.3 (f) LEVELING 3
 GR0724

GR0724.Superseded values are not recommended for survey control.

GR0724

GR0724.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR0724.See file dsdata.pdf to determine how the superseded data were derived.

GR0724

GR0724_MARKER: DS = TRIANGULATION STATION DISK

GR0724_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

GR0724_STAMPING: MOAPA LAPLACE 1925

GR0724_MARK LOGO: CGS

GR0724_MAGNETIC: O = OTHER; SEE DESCRIPTION

GR0724_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

GR0724+STABILITY: SURFACE MOTION

GR0724_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

GR0724+SATELLITE: SATELLITE OBSERVATIONS - March 01, 2014

GR0724

GR0724 HISTORY	- Date	Condition	Report By
GR0724 HISTORY	- 1925	MONUMENTED	CGS
GR0724 HISTORY	- 1957	GOOD	CGS
GR0724 HISTORY	- 1963	GOOD	CGS
GR0724 HISTORY	- 1972	GOOD	LAWPC
GR0724 HISTORY	- 1982	MARK NOT FOUND	NGS
GR0724 HISTORY	- 19940320	GOOD	NGS
GR0724 HISTORY	- 19981210	GOOD	NGS
GR0724 HISTORY	- 19990607	GOOD	NGS
GR0724 HISTORY	- 20030621	GOOD	JCLS
GR0724 HISTORY	- 20031017	GOOD	INDIV
GR0724 HISTORY	- 20050719	GOOD	GEOCAC
GR0724 HISTORY	- 20121129	GOOD	NVENGY
GR0724 HISTORY	- 20140301	GOOD	NVDH

GR0724

GR0724 STATION DESCRIPTION

GR0724

GR0724'DESCRIBED BY COAST AND GEODETIC SURVEY 1925 (WM)

GR0724'STATION IS ABOUT 160 METERS SW OF THE UNION PACIFIC DEPOT

GR0724'AT MOAPA, ON LAND BELONGING TO MRS. W.J. POWERS, AND ABOUT

GR0724'10 METERS E OF AN OLD BLACKSMITH SHOP.

GR0724'

GR0724'STATION MARK IS A STANDARD BRONZE DISK SET IN A CONCRETE BLOCK

GR0724'18 INCHES SQUARE AND 30 INCHES DEEP. A HOLE WAS DUG 30 INCHES

GR0724'DEEP TO HARD PAN WHICH COULD NOT BE EXCAVATED WITH TOOLS

GR0724'AT HAND. SEVERAL IRON BARS WERE DRIVEN FIRMLY INTO THE HARD

GR0724'PAN, AND THE CONCRETE CAST AROUND THEM.

GR0724'

GR0724'BENCH MARK I 1 IS A STEEL PIPE WITH BRONZE CAP. THE PIPE
GR0724'WAS RUSTED OFF AT THE TOP OF THE GROUND AND WAS REPLACED AS
GR0724'NEARLY AS POSSIBLE. A HOLE WAS DUG AROUND THE PIPE AND CONCRETE
GR0724'POURED UP ABOVE THE BREAK. THIS BENCH MARK IS SUFFICIENTLY
GR0724'CLOSE FOR POSITION, BUT SHOULD NOT BE USED AS A PRECISE LEVEL
GR0724'BENCH MARK.

GR0724

GR0724 STATION RECOVERY (1957)

GR0724

GR0724'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1957 (NES)
GR0724'THE STATION MARK AND B.M. I-1 WERE RECOVERED IN GOOD CONDITION.
GR0724'THE ORIGINAL DESCRIPTION IS ADEQUATE. A REFERENCE MARK WAS
GR0724'ESTABLISHED AS DESCRIBED BELOW.

GR0724'

GR0724'THE REFERENCE MARK, STAMPED MOAPA NO 2 1957, IS A STANDARD
GR0724'BRONZE DISK SET IN A SQUARE CONCRETE POST WHICH PROJECTS 1 INCH.

GR0724

GR0724 STATION RECOVERY (1963)

GR0724

GR0724'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1963
GR0724'IN MOAPA.

GR0724'AT MOAPA, ALONG THE UNION PACIFIC RAILROAD 0.1 MILE SOUTHWEST OF THE
GR0724'STATION, 43.5 FEET WEST OF THE WEST RAIL, 120 FEET SOUTHWEST OF THE
GR0724'CENTER OF A GULLY, 4.1 FEET NORTH OF A WITNESS POST, ABOUT LEVEL WITH
GR0724'THE TRACK, AND SET IN THE TOP OF A CONCRETE POST FLUSH WITH THE
GR0724'GROUND.

GR0724

GR0724 STATION RECOVERY (1972)

GR0724

GR0724'RECOVERY NOTE BY LA WTR AND PWR COMM 1972 (MSB)
GR0724'MOAPA-GOOD-FOUND BY HELICOPTER.

GR0724

GR0724 STATION RECOVERY (1982)

GR0724

GR0724'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1982
GR0724'MARK NOT FOUND.

GR0724

GR0724 STATION RECOVERY (1994)

GR0724

GR0724'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GRH)
GR0724'STATION IS LOCATED ABOUT 75 KM (46.60 MI) NORTHEAST OF LAS VEGAS, 5 KM
GR0724'(3.10 MI) WEST OF GLENDALE, AT MOAPA, ALONG A DIM ROAD IN A BARE AREA,
GR0724'IN THE SOUTHWEST 1/4 OF SECTION 32, T 14 S, R 66 E. OWNERSHIP--US
GR0724'BUREAU OF LAND MANAGEMENT.

GR0724'

GR0724'TO REACH FROM THE UNDERPASS AT THE GLENDALE
GR0724'EXIT OF INTERSTATE HIGHWAY 15 (EXIT 91), GO NORTH ON PAVED ROAD FOR
GR0724'0.11 KM (0.05 MI) TO A PAVED T-ROAD. TURN LEFT, WEST, ON THE FRONTAGE
GR0724'ROAD FOR 1.34 KM (0.85 MI) TO A CROSSROAD AT UNDERPASS ON THE LEFT.
GR0724'TURN RIGHT, NORTHWEST, ON STATE HIGHWAY 168 FOR 4.68 KM (2.90 MI) TO A
GR0724'RAILROAD UNDERPASS. CONTINUE AHEAD FOR 0.12 KM (0.05 MI) TO A PAVED
GR0724'ROAD LEFT. TURN LEFT, SOUTHWEST, ON POSTAL LANE ROAD FOR 0.52 KM
GR0724'(0.30 MI) TO THE PAVEMENT END JUST PAST THE MOAPA POST OFFICE.

GR0724'CONTINUE AHEAD ON TRACK ROAD FOR 0.25 KM (0.15 MI) TO A DIM ROAD RIGHT
GR0724'JUST PAST A WASH. TURN SHARP RIGHT, NORTH, ON ROAD FOR 0.16 KM (0.10
GR0724'MI) TO THE STATION ON THE RIGHT.

GR0724'

GR0724'STATION MARK IS A DISK SET IN THE TOP
GR0724'OF A 40-CM SQUARE CONCRETE POST FLUSH WITH THE GROUND. IT IS 5.7 M
GR0724'(18.7 FT) EAST OF, AND LEVEL WITH THE ROAD CENTER, 0.9 M (3.0 FT) WEST
GR0724'OF A FIBERGLASS WITNESS POST, 34.2 M (112.2 FT) SOUTH-SOUTHWEST OF
GR0724'BENCH MARK I 1, AND 84.5 M (277.2 FT) SOUTH-SOUTHEAST OF A UTILITY
GR0724'POLE WITH GUY WIRE.

GR0724

GR0724 STATION RECOVERY (1998)

GR0724

GR0724'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)
GR0724'RECOVERED AS DESCRIBED.

GR0724

GR0724 STATION RECOVERY (1999)

GR0724

GR0724'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999 (CSM)
GR0724'RECOVERED AS DESCRIBED.

GR0724

GR0724 STATION RECOVERY (2003)

GR0724

GR0724'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2003
GR0724'RECOVERED IN GOOD CONDITION.

GR0724

GR0724 STATION RECOVERY (2003)

GR0724

GR0724'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 (DP)
GR0724'RECOVERED AS DESCRIBED

GR0724

GR0724 STATION RECOVERY (2005)

GR0724

GR0724'RECOVERY NOTE BY GEOCACHING 2005 (WD)
GR0724'RECOVERED IN GOOD CONDITION.

GR0724

GR0724 STATION RECOVERY (2012)

GR0724

GR0724'RECOVERY NOTE BY NVENERGY 2012 (GE)
GR0724'MARK RECOVERED IN GOOD CONDITION.

GR0724

GR0724 STATION RECOVERY (2014)

GR0724

GR0724'RECOVERY NOTE BY NEVADA DEPARTMENT OF HIGHWAYS 2014 (BAM)
GR0724'MONUMENT RECOVERED BY NDOT FIELD CREW, POINT OBSERVED USING FAST
GR0724'STATIC GPS FOR DETAILED DESCRIPTION AND LOCATION VISIT
GR0724'//MAPS.NEVADADOT.COM/LOIS/ USE LPN 1299 OR POINT NAME MOAPA LA PLACE
GR0724'TO FIND POINT

GR0724'H DATUM NAD 83/94

GR0724'

GR0724'N 36 40' 17.94050 W114 37' 29.80725 1578.76 ' ELLP

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS0003 *****

FS0003 DESIGNATION - P 364

FS0003 PID - FS0003

FS0003 STATE/COUNTY- NV/CLARK

FS0003 COUNTRY - US

FS0003 USGS QUAD - BOULDER CITY NW (2018)

FS0003

FS0003 *CURRENT SURVEY CONTROL

FS0003

FS0003* NAD 83(2011) POSITION- 35 58 30.48106(N) 114 54 49.48089(W) ADJUSTED

FS0003* NAD 83(2011) ELLIP HT- 681.026 (meters) (06/27/12) ADJUSTED

FS0003* NAD 83(2011) EPOCH - 2010.00

FS0003* NAVD 88 ORTHO HEIGHT - 709.353 (meters) 2327.27 (feet) ADJUSTED

FS0003

FS0003 GEOID HEIGHT - -28.334 (meters) GEOID18

FS0003 NAD 83(2011) X - -2,177,109.654 (meters) COMP

FS0003 NAD 83(2011) Y - -4,687,236.630 (meters) COMP

FS0003 NAD 83(2011) Z - 3,726,359.189 (meters) COMP

FS0003 LAPLACE CORR - 0.01 (seconds) DEFLEC18

FS0003 DYNAMIC HEIGHT - 708.623 (meters) 2324.87 (feet) COMP

FS0003 MODELED GRAVITY - 979,581.8 (mgal) NAVD 88

FS0003

FS0003 VERT ORDER - FIRST CLASS II

FS0003

FS0003 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

FS0003 Standards:

FS0003 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

FS0003 Horiz Ellip SD_N SD_E SD_h (unitless)

FS0003 -----

FS0003 NETWORK 0.78 1.84 0.34 0.30 0.94 -0.01174326

FS0003 -----

FS0003 [Click here for local accuracies and other accuracy information.](#)

FS0003

FS0003

FS0003.The horizontal coordinates were established by GPS observations

FS0003.and adjusted by the National Geodetic Survey in June 2012.

FS0003

FS0003.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

FS0003.been affixed to the stable North American tectonic plate. See

FS0003.NA2011 for more information.

FS0003

FS0003.The horizontal coordinates are valid at the epoch date displayed above

FS0003.which is a decimal equivalence of Year/Month/Day.

FS0003

FS0003.The orthometric height was determined by differential leveling and

FS0003.adjusted by the NATIONAL GEODETIC SURVEY

FS0003.in June 1991.

FS0003

FS0003.Significant digits in the geoid height do not necessarily reflect accuracy.

FS0003.GEOID18 height accuracy estimate available here.

FS0003

FS0003.Click photographs - Photos may exist for this station.

FS0003

FS0003.The X, Y, and Z were computed from the position and the ellipsoidal ht.

FS0003

FS0003.The Laplace correction was computed from DEFLEC18 derived deflections.

FS0003

FS0003.The ellipsoidal height was determined by GPS observations

FS0003.and is referenced to NAD 83.

FS0003

FS0003.The dynamic height is computed by dividing the NAVD 88

FS0003.geopotential number by the normal gravity value computed on the

FS0003.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

FS0003.degrees latitude ($g = 980.6199$ gals.).

FS0003

FS0003.The modeled gravity was interpolated from observed gravity values.

FS0003

FS0003. The following values were computed from the NAD 83(2011) position.

FS0003

FS0003; North East Units Scale Factor Converg.

FS0003;SPC NV E - 8,136,118.888 260,385.919 MT 0.99994492 +0 23 36.1

FS0003;SPC NV E -26,693,250.05 854,282.80 sFT 0.99994492 +0 23 36.1

FS0003;UTM 11 - 3,983,202.644 688,101.235 MT 1.00003599 +1 13 33.2

FS0003

FS0003! - Elev Factor x Scale Factor = Combined Factor

FS0003!SPC NV E - 0.99989312 x 0.99994492 = 0.99983805

FS0003!UTM 11 - 0.99989312 x 1.00003599 = 0.99992911

FS0003

FS0003_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV8810183202(NAD 83)

FS0003

FS0003 SUPERSEDED SURVEY CONTROL

FS0003

FS0003 NAD 83(2007)- 35 58 30.48084(N) 114 54 49.48146(W) AD(2007.00) 0

FS0003 ELLIP H (02/10/07) 681.024 (m) GP(2007.00)

FS0003 NAD 83(1999)- 35 58 30.48072(N) 114 54 49.48037(W) AD(1999.37) A

FS0003 ELLIP H (05/16/00) 681.049 (m) GP(1999.37) 4 1

FS0003 NAVD 88 709.35 (m) 2327.3 (f) LEVELING 3

FS0003 NGVD 29 (??/??/92) 708.653 (m) 2324.97 (f) ADJ UNCH 1 2

FS0003

FS0003.Superseded values are not recommended for survey control.

FS0003

FS0003.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

FS0003.See file dsdata.pdf to determine how the superseded data were derived.

FS0003

FS0003_MARKER: DB = BENCH MARK DISK

FS0003_SETTING: 66 = SET IN ROCK OUTCROP

FS0003_STAMPING: P 364 1963

FS0003_MARK LOGO: CGS

FS0003_MAGNETIC: N = NO MAGNETIC MATERIAL

FS0003_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

FS0003+STABILITY: POSITION/ELEVATION WELL

FS0003_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

FS0003+SATELLITE: SATELLITE OBSERVATIONS - January 01, 2015

FS0003

FS0003 HISTORY	- Date	Condition	Report By
FS0003 HISTORY	- 1963	MONUMENTED	CGS
FS0003 HISTORY	- 1980	GOOD	NGS
FS0003 HISTORY	- 1981	GOOD	NGS
FS0003 HISTORY	- 19991025	GOOD	NGS
FS0003 HISTORY	- 20030621	GOOD	JCLS
FS0003 HISTORY	- 20111013	GOOD	JCLS
FS0003 HISTORY	- 20150101	GOOD	INDIV

FS0003

FS0003 STATION DESCRIPTION

FS0003

FS0003'DESCRIBED BY COAST AND GEODETIC SURVEY 1963

FS0003'0.4 MI NW FROM ALUNITE.

FS0003'0.4 MILE NORTHWEST ALONG U.S. HIGHWAY 93 FROM THE JUNCTION OF
FS0003'U.S. HIGHWAY 95 AT ALUNITE, AT THE NORTHWEST SIDE OF A PROMINENT
FS0003'ROCKY KNOLL, IN THE TOP OF A LEDGE OF OUTCROP, 37.4 FEET
FS0003'SOUTH-SOUTHWEST OF BENCH MARK A 169 RESET, 78 1/2 FEET NORTHEAST
FS0003'OF THE CENTER LINE OF THE NORTHEAST TRAFFIC LANES, 42.7 FEET
FS0003'EAST OF THE SOUTHEAST END OF THE NORTHEAST HEAD WALL OF A TWIN
FS0003'48-INCH PIPE CULVERTS, 4.6 FEET WEST OF A WITNESS POST, ABOUT 3
FS0003'FEET HIGHER THAN BENCH MARK A 169 RESET, AND 3 1/2 FEET HIGHER
FS0003'THAN THE HIGHWAY.

FS0003

FS0003 STATION RECOVERY (1980)

FS0003

FS0003'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1980

FS0003'29.9 KILOMETERS (18.6 MILES) SOUTHEAST ALONG U. S. HIGHWAY 93 AND 95
FS0003'FROM THE UNION PACIFIC RAILROAD STATION (UNION PLAZA HOTEL) IN LAS
FS0003'VEGAS, 0.4 KILOMETER (0.25 MILE) SOUTH OF THE CROSSING OF THE
FS0003'UNION PACIFIC RAILROAD, 0.3 KILOMETER (0.2 MILE) NORTH OF THE
FS0003'RAILROAD PASS CASINO, AT THE FIRST OUTCROP SOUTH OF THE RAILROAD
FS0003'CROSSING, IN TOP OF A SMALL, FLAT LEDGE ON THE NORTHWEST SLOPE OF
FS0003'THE HILL, 24.6 METERS (81 FEET) EAST OF THE CENTERLINE OF THE
FS0003'NORTHBOUND LANE OF THE HIGHWAY AND 13.0 METERS (42.6 FEET)
FS0003'SOUTHEAST OF THE SOUTH END OF A DOUBLE METAL PIPE CULVERT HEADWALL.
FS0003'THE MARK IS 1.4 METERS NW FROM A WITNESS POST.
FS0003'THE MARK IS ABOVE LEVEL WITH THE HIGHWAY.

FS0003

FS0003 STATION RECOVERY (1981)

FS0003

FS0003'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1981

FS0003'RECOVERED IN GOOD CONDITION.

FS0003

FS0003 STATION RECOVERY (1999)

FS0003

FS0003'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999

FS0003'RECOVERED AS DESCRIBED.

FS0003

FS0003 STATION RECOVERY (2003)

FS0003

FS0003'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2003
FS0003'RECOVERED IN GOOD CONDITION.

FS0003

STATION RECOVERY (2011)

FS0003

FS0003

FS0003'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011

FS0003'RECOVERED IN GOOD CONDITION.

FS0003

STATION RECOVERY (2015)

FS0003

FS0003

FS0003'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2015 (TFC)

FS0003'FOUND WITH THE FOLLOWING ADDITION - 13.5 FT (4.1 M) EAST OF MILE POST

FS0003'MARKER 2 AND PROJECTS 2 INCHES (5 CM).

*** retrieval complete.

Elapsed Time = 00:00:03

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS0115 *****

FS0115 CBN - This is a Cooperative Base Network Control Station.

FS0115 DESIGNATION - S 364

FS0115 PID - FS0115

FS0115 STATE/COUNTY- NV/CLARK

FS0115 COUNTRY - US

FS0115 USGS QUAD - BOULDER CITY SW (2018)

FS0115

FS0115 *CURRENT SURVEY CONTROL

FS0115

FS0115* NAD 83(2011) POSITION- 35 52 18.82025(N) 114 55 42.08187(W) ADJUSTED

FS0115* NAD 83(2011) ELLIP HT- 493.248 (meters) (06/27/12) ADJUSTED

FS0115* NAD 83(2011) EPOCH - 2010.00

FS0115* NAVD 88 ORTHO HEIGHT - 521.919 (meters) 1712.33 (feet) POSTED

FS0115

FS0115 GEOID HEIGHT - -28.666 (meters) GEOID18

FS0115 NAD 83(2011) X - -2,181,073.790 (meters) COMP

FS0115 NAD 83(2011) Y - -4,692,638.603 (meters) COMP

FS0115 NAD 83(2011) Z - 3,716,971.762 (meters) COMP

FS0115 LAPLACE CORR - -1.11 (seconds) DEFLEC18

FS0115 DYNAMIC HEIGHT - 521.38 (meters) 1710.6 (feet) COMP

FS0115 MODELED GRAVITY - 979,579.4 (mgal) NAVD 88

FS0115

FS0115 VERT ORDER - * POSTED, SEE BELOW

FS0115

FS0115 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

FS0115 Standards:

FS0115 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

FS0115 Horiz Ellip SD_N SD_E SD_h (unitless)

FS0115 -----

FS0115 NETWORK 0.21 0.51 0.09 0.08 0.26 -0.07990603

FS0115 -----

FS0115 [Click here for local accuracies and other accuracy information.](#)

FS0115

FS0115

FS0115.The horizontal coordinates were established by GPS observations

FS0115.and adjusted by the National Geodetic Survey in June 2012.

FS0115

FS0115.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

FS0115.been affixed to the stable North American tectonic plate. See

FS0115.NA2011 for more information.

FS0115

FS0115.The horizontal coordinates are valid at the epoch date displayed above

FS0115.which is a decimal equivalence of Year/Month/Day.

FS0115

FS0115.The orthometric height was determined by differential leveling

FS0115.and adjusted by the NATIONAL GEODETIC SURVEY in 1992.

FS0115

FS0115.* This is a POSTED BENCH MARK height.

FS0115

FS0115.Significant digits in the geoid height do not necessarily reflect accuracy.

FS0115.GEOID18 height accuracy estimate available here.

FS0115

FS0115.Click photographs - Photos may exist for this station.

FS0115

FS0115.The X, Y, and Z were computed from the position and the ellipsoidal ht.

FS0115

FS0115.The Laplace correction was computed from DEFLEC18 derived deflections.

FS0115

FS0115.The ellipsoidal height was determined by GPS observations

FS0115.and is referenced to NAD 83.

FS0115

FS0115.The dynamic height is computed by dividing the NAVD 88

FS0115.geopotential number by the normal gravity value computed on the

FS0115.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

FS0115.degrees latitude ($g = 980.6199$ gals.).

FS0115

FS0115.The modeled gravity was interpolated from observed gravity values.

FS0115

FS0115. The following values were computed from the NAD 83(2011) position.

FS0115

FS0115; North East Units Scale Factor Converg.

FS0115;SPC NV E - 8,124,655.688 259,145.020 MT 0.99994309 +0 23 01.7

FS0115;SPC NV E -26,655,641.20 850,211.62 sFT 0.99994309 +0 23 01.7

FS0115;UTM 11 - 3,971,721.615 687,026.724 MT 1.00003103 +1 12 51.4

FS0115

FS0115! - Elev Factor x Scale Factor = Combined Factor

FS0115!SPC NV E - 0.99992259 x 0.99994309 = 0.99986568

FS0115!UTM 11 - 0.99992259 x 1.00003103 = 0.99995362

FS0115

FS0115_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV8702671721(NAD 83)

FS0115

FS0115 SUPERSEDED SURVEY CONTROL

FS0115

FS0115 NAD 83(2007)- 35 52 18.82030(N) 114 55 42.08218(W) AD(2007.00) 0

FS0115 ELLIP H (02/10/07) 493.268 (m) GP(2007.00)

FS0115 NAD 83(1998)- 35 52 18.81995(N) 114 55 42.08146(W) AD(2000.35) A

FS0115 ELLIP H (04/03/01) 493.272 (m) GP(2000.35) 1 1

FS0115 NAD 83(1999)- 35 52 18.82007(N) 114 55 42.08143(W) AD(1999.37) A

FS0115 ELLIP H (05/16/00) 493.269 (m) GP(1999.37) 4 1

FS0115 NAD 83(1994)- 35 52 18.81927(N) 114 55 42.07939(W) AD() B

FS0115 ELLIP H (03/30/95) 493.364 (m) GP() 4 1

FS0115 NAVD 88 (04/03/01) 521.9 (m) UNKNOWN model used GPS OBS

FS0115 NAVD 88 521.92 (m) 1712.3 (f) LEVELING 3

FS0115 NGVD 29 (??/??/92) 521.216 (m) 1710.02 (f) ADJ UNCH 1 2

FS0115

FS0115.Superseded values are not recommended for survey control.

FS0115

FS0115.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

FS0115.See file dsdata.pdf to determine how the superseded data were derived.

FS0115

FS0115_MARKER: DB = BENCH MARK DISK

FS0115_SETTING: 46 = COPPER-CLAD STEEL ROD W/O SLEEVE (10 FT.+)

FS0115_STAMPING: S 364 1963

FS0115_MARK LOGO: CGS

FS0115_PROJECTION: FLUSH

FS0115_MAGNETIC: N = NO MAGNETIC MATERIAL

FS0115_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

FS0115_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

FS0115+SATELLITE: SATELLITE OBSERVATIONS - January 12, 2002

FS0115_ROD/PIPE-DEPTH: 7.50 meters

FS0115

FS0115 HISTORY	- Date	Condition	Report By
FS0115 HISTORY	- 1963	MONUMENTED	CGS
FS0115 HISTORY	- 19940318	GOOD	NGS
FS0115 HISTORY	- 19991027	GOOD	NGS
FS0115 HISTORY	- 20000501	GOOD	NGS
FS0115 HISTORY	- 20010404	GOOD	JCLS
FS0115 HISTORY	- 20020112	GOOD	JCLS

FS0115

FS0115 STATION DESCRIPTION

FS0115

FS0115'DESCRIBED BY COAST AND GEODETIC SURVEY 1963

FS0115'7.6 MI S FROM ALUNITE.

FS0115'1.7 MILES SOUTH ALONG U.S. HIGHWAY 95 FROM THE JUNCTION OF U.S. HIGHWAY 93 AT ALUNITE, THENCE 5.9 MILES SOUTH ALONG ABANDONED STATE HIGHWAY 5, 0.1 MILE NORTH OF A SEARCHLIGHT 29 SIGN ALONG U.S. HIGHWAY 95, 118 FEET WEST OF THE CENTER LINE OF U.S. HIGHWAY 95, 112 FEET EAST OF THE CENTER LINE OF THE ABANDONED HIGHWAY, 9.8 FEET NORTHWEST OF BENCH MARK V 148, 2.0 FEET NORTH OF A WITNESS POST, ABOUT LEVEL WITH THE HIGHWAY, A DISK ON THE TOP OF A 5/8-INCH COPPER COATED ROD DRIVEN TO GRADUAL REFUSAL AT A DEPTH OF 24 FEET. THE UPPER PORTION OF THE ROD IS ENCASED IN A CONCRETE POST PROJECTING 0.3 FOOT ABOVE THE GROUND.

FS0115'NOTE-- THIS MARK MAY ALSO BE REACHED BY GOING 6.85 MILES SOUTH ALONG U.S. HIGHWAY 95 FROM THE JUNCTION OF U.S. HIGHWAY 93 AT ALUNITE.

FS0115

FS0115 STATION RECOVERY (1994)

FS0115

FS0115'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GRH) MARK IS LOCATED ABOUT 35 KM (21.75 MI) SOUTHEAST OF LAS VEGAS, 16 KM (9.95 MI) SOUTHWEST OF BOULDER CITY, 45 KM (27.95 MI) NORTH OF SEARCHLIGHT, IN ELDORADO VALLEY, ALONG US HIGHWAY 95, ON THE RIGHT-OF-WAY, AT MILE 49.3, AT BENCH MARK S 364, BETWEEN THE HIGHWAY AND A DRY LAKEBED, IN SOUTH CENTRAL SECTION 10, T 24 S, R 63 E. OWNERSHIP--STATE DEPARTMENT OF TRANSPORTATION. TO REACH FROM THE UNDERPASS AT THE JUNCTION OF US HIGHWAYS 93 AND 95 (BETWEEN LAS VEGAS AND BOULDER CITY), GO SOUTH ON HIGHWAY 95 FOR 6.80 KM (4.20 MI) TO A STEEL TOWER POWERLINE CROSSING. CONTINUE AHEAD FOR 5.52 KM (3.40 MI) TO THE MARK ON THE RIGHT, 4.87 KM (3.00 MI) BEFORE REACHING STATE HIGHWAY 165 ON THE LEFT. MARK IS A DISK ON A ROD IN A SLEEVE SET IN A CONCRETE POST PROJECTING 2 CM ABOVE GROUND. IT IS 21.6 M (70.9 FT) WEST OF, AND 0.5 M (1.6 FT) LOWER THAN THE HIGHWAY CENTER, 2.3 M (7.5

FS0115'FT) NORTHWEST OF A WOOD WITNESS POST, 0.6 M (2.0 FT) NORTH OF A METAL
FS0115'WITNESS POST, 4.2 M (13.8 FT) NORTH-NORTHWEST OF A FIBERGLASS WITNESS
FS0115'POST, AND 3.0 M (9.8 FT) NORTHWEST OF BENCH MARK V 148. DESCRIBED BY
FS0115'G.R.HEID

FS0115

FS0115 STATION RECOVERY (1999)

FS0115

FS0115'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999

FS0115'TO REACH FROM THE UNDERPASS AT THE JUNCTION OF U.S. HIGHWAYS 93 AND
FS0115'95, BETWEEN LAS VEGAS AND BOULDER CITY, GO SOUTH ON HIGHWAY 95 FOR 7.0
FS0115'MILES (11.3 KM) TO THE STATION ON THE RIGHT.

FS0115

FS0115 STATION RECOVERY (2000)

FS0115

FS0115'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (MEI)

FS0115'THIS STATION WAS OBSERVED IN MAY, 2000 AS PART OF THE HECTOR MINE
FS0115'EARTHQUAKE FBN/CBN REOBSERVATION SURVEY.

FS0115'

FS0115

FS0115 STATION RECOVERY (2001)

FS0115

FS0115'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2001 (CLG)

FS0115'RECOVERED IN GOOD CONDITION.

FS0115

FS0115 STATION RECOVERY (2002)

FS0115

FS0115'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002 (FJO)

FS0115'THIS STATION IS NOW GPSABLE.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS0183 *****

FS0183 CBN - This is a Cooperative Base Network Control Station.

FS0183 DESIGNATION - SLOAN

FS0183 PID - FS0183

FS0183 STATE/COUNTY- NV/CLARK

FS0183 COUNTRY - US

FS0183 USGS QUAD - SLOAN (2018)

FS0183

FS0183 *CURRENT SURVEY CONTROL

FS0183

FS0183* NAD 83(2011) POSITION- 35 56 23.98843(N) 115 10 59.30021(W) ADJUSTED

FS0183* NAD 83(2011) ELLIP HT- 781.339 (meters) (06/27/12) ADJUSTED

FS0183* NAD 83(2011) EPOCH - 2010.00

FS0183* NAVD 88 ORTHO HEIGHT - 809.360 (meters) 2655.38 (feet) POSTED

FS0183

FS0183 GEOID HEIGHT - -28.032 (meters) GEOID18

FS0183 NAD 83(2011) X - -2,200,132.815 (meters) COMP

FS0183 NAD 83(2011) Y - -4,679,093.890 (meters) COMP

FS0183 NAD 83(2011) Z - 3,723,261.900 (meters) COMP

FS0183 LAPLACE CORR - -4.34 (seconds) DEFLEC18

FS0183 DYNAMIC HEIGHT - 808.51 (meters) 2652.6 (feet) COMP

FS0183 MODELED GRAVITY - 979,556.2 (mgal) NAVD 88

FS0183

FS0183 VERT ORDER - * POSTED, SEE BELOW

FS0183

FS0183 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

FS0183 Standards:

FS0183 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

FS0183 Horiz Ellip SD_N SD_E SD_h (unitless)

FS0183 -----

FS0183 NETWORK 0.72 1.47 0.31 0.28 0.75 -0.00623563

FS0183 -----

FS0183 [Click here for local accuracies and other accuracy information.](#)

FS0183

FS0183

FS0183.The horizontal coordinates were established by GPS observations

FS0183.and adjusted by the National Geodetic Survey in June 2012.

FS0183

FS0183.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

FS0183.been affixed to the stable North American tectonic plate. See

FS0183.NA2011 for more information.

FS0183

FS0183.The horizontal coordinates are valid at the epoch date displayed above

FS0183.which is a decimal equivalence of Year/Month/Day.

FS0183

FS0183.The orthometric height was determined by differential leveling

FS0183.and adjusted by the NATIONAL GEODETIC SURVEY in 1992.

FS0183

FS0183.* This is a POSTED BENCH MARK height.

FS0183

FS0183.Significant digits in the geoid height do not necessarily reflect accuracy.

FS0183.GEOID18 height accuracy estimate available here.

FS0183

FS0183.Click photographs - Photos may exist for this station.

FS0183

FS0183.The X, Y, and Z were computed from the position and the ellipsoidal ht.

FS0183

FS0183.The Laplace correction was computed from DEFLEC18 derived deflections.

FS0183

FS0183.The ellipsoidal height was determined by GPS observations

FS0183.and is referenced to NAD 83.

FS0183

FS0183.The dynamic height is computed by dividing the NAVD 88

FS0183.geopotential number by the normal gravity value computed on the

FS0183.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

FS0183.degrees latitude (g = 980.6199 gals.).

FS0183

FS0183.The modeled gravity was interpolated from observed gravity values.

FS0183

FS0183. The following values were computed from the NAD 83(2011) position.

FS0183

FS0183;	North	East	Units	Scale Factor	Converg.
FS0183;SPC NV E	- 8,132,087.287	236,106.797	MT	0.99991606	+0 14 05.6
FS0183;SPC NV E	-26,680,023.04	774,627.05	sFT	0.99991606	+0 14 05.6
FS0183;UTM 11	- 3,978,818.630	663,881.941	MT	0.99993094	+1 03 59.8

FS0183

FS0183! - Elev Factor x Scale Factor = Combined Factor

FS0183!SPC NV E - 0.99987738 x 0.99991606 = 0.99979345

FS0183!UTM 11 - 0.99987738 x 0.99993094 = 0.99980833

FS0183

FS0183:	Primary Azimuth Mark	Grid Az
FS0183:SPC NV E	- CENTER	200 08 15.7
FS0183:UTM 11	- CENTER	199 18 21.5

FS0183

FS0183_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV6388178818(NAD 83)

FS0183

FS0183	-----		
FS0183	PID	Reference Object	Distance Geod. Az
FS0183			ddmmss.s
FS0183	FS0182	SLOAN RM 1	12.183 METERS 01937
FS0183	FS0181	SLOAN RM 2	10.835 METERS 14317
FS0183	FS1183	CENTER	APPROX. 6.2 KM 2002221.3
FS0183	-----		

FS0183

FS0183 SUPERSEDED SURVEY CONTROL

FS0183

FS0183 NAD 83(2007)- 35 56 23.98830(N) 115 10 59.30018(W) AD(2007.00) 0

FS0183 ELLIP H (02/10/07) 781.334 (m) GP(2007.00)

FS0183 NAD 83(1999)- 35 56 23.98803(N) 115 10 59.29961(W) AD(1999.37) A

FS0183 ELLIP H (05/16/00) 781.361 (m) GP(1999.37) 4 1

FS0183 NAD 83(1994)- 35 56 23.98754(N) 115 10 59.29718(W) AD() B
FS0183 ELLIP H (03/30/95) 781.428 (m) GP() 4 1
FS0183 NAD 83(1992)- 35 56 23.98360(N) 115 10 59.30321(W) AD() 2
FS0183 NAD 83(1992)- 35 56 23.98225(N) 115 10 59.30233(W) AD() 2
FS0183 NAD 83(1986)- 35 56 23.97964(N) 115 10 59.29055(W) AD() 2
FS0183 NAD 27 - 35 56 24.06520(N) 115 10 56.31320(W) AD() 2
FS0183 NAVD 88 809.36 (m) 2655.4 (f) LEVELING 3
FS0183 NGVD 29 (??/??/92) 808.612 (m) 2652.92 (f) ADJ UNCH 2 0
FS0183 NGVD 29 808.61 (m) 2652.9 (f) LEVELING 3

FS0183

FS0183.Superseded values are not recommended for survey control.

FS0183

FS0183.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

FS0183.See file dsdata.pdf to determine how the superseded data were derived.

FS0183

FS0183_MARKER: DS = TRIANGULATION STATION DISK

FS0183_SETTING: 66 = SET IN ROCK OUTCROP

FS0183_STAMPING: SLOAN 1958

FS0183_MARK LOGO: CGS

FS0183_MAGNETIC: N = NO MAGNETIC MATERIAL

FS0183_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

FS0183+STABILITY: POSITION/ELEVATION WELL

FS0183_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

FS0183+SATELLITE: SATELLITE OBSERVATIONS - April 04, 2001

FS0183

FS0183 HISTORY	- Date	Condition	Report By
FS0183 HISTORY	- 1958	MONUMENTED	CGS
FS0183 HISTORY	- 1958	GOOD	CGS
FS0183 HISTORY	- 1973	SEE DESCRIPTION	NGS
FS0183 HISTORY	- 19940620	GOOD	NGS
FS0183 HISTORY	- 19991027	GOOD	NV0150
FS0183 HISTORY	- 20010404	GOOD	JCLS

FS0183

FS0183 STATION DESCRIPTION

FS0183

FS0183'DESCRIBED BY COAST AND GEODETIC SURVEY 1958 (WWH)

FS0183'THE STATION IS 0.75 MILE NORTHEAST OF SLOAN SERVICE STATION,

FS0183'0.1 MILE EAST OF U.S. HIGHWAY 91 AND ON THE SUMMIT OF A SMALL

FS0183'RIDGE JUST SOUTH OF WHERE THE PRESENT HIGHWAY ENTERS A GROUP

FS0183'OF HILLS.

FS0183'

FS0183'THE STATION AND REFERENCE MARKS ARE STANDARD DISKS SET IN

FS0183'DRILL HOLES IN BEDROCK EACH STAMPED SLOAN 1958 AND THE REFERENCE

FS0183'MARKS ARE FURTHER STAMPED NO 1 AND NO 2 RESPECTIVELY.

FS0183

FS0183 STATION RECOVERY (1958)

FS0183

FS0183'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1958

FS0183'0.8 MI NE FROM SLOAN.

FS0183'0.7 MILE NORTHEAST ALONG U.S. HIGHWAY 91 FROM THE SLOAN SERVICE

FS0183'STATION AND CAFE, THENCE 0.05 MILE SOUTHEAST OF HIGHWAY ON THE

FS0183'SUMMIT OF A SMALL HILL, 39.90 FEET SOUTH OF R.M. 1, 35.40 FEET

FS0183'NORTHWEST OF R.M. 2, SET IN A DRILL HOLE IN A ROCK OUTCROP.

FS0183

FS0183 STATION RECOVERY (1973)
FS0183
FS0183'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1973 (EP)
FS0183'STATION AND R.M.S RECOVERED IN GOOD CONDITION
FS0183'
FS0183'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN--2 MILES E
FS0183'OF SLOAN

FS0183
FS0183 STATION RECOVERY (1994)
FS0183
FS0183'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (AJL)
FS0183'RECOVERED AS DESCRIBED.

FS0183
FS0183 STATION RECOVERY (1999)
FS0183
FS0183'RECOVERY NOTE BY CITY OF NORTH LAS VEGAS NEVADA 1999
FS0183'THE STATION IS LOCATED 1.9 MILES (3.1 KM) SOUTH OF THE INTERSECTION OF
FS0183'LAKE MEAD DRIVE AND LAS VEGAS BLVD SOUTH. IT IS ON TOP OF A SMALL
FS0183'HILL, 0.1 MILES (0.2 KM) EAST OF LAS VEGAS BLVD. TO REACH THE STATION
FS0183'FROM INTERSTATE HWY 15 AT EXIT 25 GO EAST ON PAVED STREET FOR 0.05
FS0183'MILE (0.08 KM) TO A T INTERSECTION. TURN LEFT AND GO NORTH FOR 0.8
FS0183'MILE (1.3 KM) TO GRAVEL ROAD RIGHT. TURN RIGHT AND GO EASTERLY FOR
FS0183'0.1 MILE (0.2 KM) TO TOP OF HILL AND STATION.

FS0183
FS0183 STATION RECOVERY (2001)
FS0183
FS0183'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2001 (CLG)
FS0183'
FS0183'

*** retrieval complete.
Elapsed Time = 00:00:03

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

FS0114 *****

FS0114 DESIGNATION - V 148

FS0114 PID - FS0114

FS0114 STATE/COUNTY- NV/CLARK

FS0114 COUNTRY - US

FS0114 USGS QUAD - BOULDER CITY SW (2018)

FS0114

FS0114 *CURRENT SURVEY CONTROL

FS0114

FS0114* NAD 83(1994) POSITION- 35 52 18.72539(N) 114 55 42.05524(W) ADJUSTED

FS0114* NAVD 88 ORTHO HEIGHT - 522.181 (meters) 1713.19 (feet) POSTED

FS0114

FS0114 GEOID HEIGHT - -28.666 (meters) GEOID18

FS0114 LAPLACE CORR - -1.11 (seconds) DEFLEC18

FS0114 DYNAMIC HEIGHT - 521.64 (meters) 1711.4 (feet) COMP

FS0114 MODELED GRAVITY - 979,579.3 (mgal) NAVD 88

FS0114

FS0114 HORZ ORDER - THIRD

FS0114 VERT ORDER - * POSTED, SEE BELOW

FS0114

FS0114.The horizontal coordinates were established by classical geodetic methods

FS0114.and adjusted by the National Geodetic Survey in June 1998.

FS0114.

FS0114.The orthometric height was determined by differential leveling

FS0114.and adjusted by the NATIONAL GEODETIC SURVEY in 1992.

FS0114

FS0114.* This is a POSTED BENCH MARK height.

FS0114

FS0114.Significant digits in the geoid height do not necessarily reflect accuracy.

FS0114.GEOID18 height accuracy estimate available here.

FS0114

FS0114.Click photographs - Photos may exist for this station.

FS0114

FS0114.The Laplace correction was computed from DEFLEC18 derived deflections.

FS0114

FS0114.The dynamic height is computed by dividing the NAVD 88

FS0114.geopotential number by the normal gravity value computed on the

FS0114.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

FS0114.degrees latitude (g = 980.6199 gals.).

FS0114

FS0114.The modeled gravity was interpolated from observed gravity values.

FS0114

FS0114. The following values were computed from the NAD 83(1994) position.

FS0114

FS0114; North East Units Scale Factor Converg.

FS0114;SPC NV E - 8,124,652.769 259,145.708 MT 0.99994309 +0 23 01.7

FS0114;SPC NV E -26,655,631.63 850,213.88 sFT 0.99994309 +0 23 01.7
FS0114;UTM 11 -3,971,718.706 687,027.454 MT 1.00003104 +1 12 51.4

FS0114

FS0114! - Elev Factor x Scale Factor = Combined Factor

FS0114!SPC NV E - 0.99992255 x 0.99994309 = 0.99986564

FS0114!UTM 11 - 0.99992255 x 1.00003104 = 0.99995359

FS0114

FS0114_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV8702771718(NAD 83)

FS0114

FS0114 SUPERSEDED SURVEY CONTROL

FS0114

FS0114 NAD 83(1992)- 35 52 18.72462(N) 114 55 42.05640(W) AD(1991.35) 3

FS0114 NAD 83(1992)- 35 52 18.72399(N) 114 55 42.05658(W) AD() 3

FS0114 NAD 83(1992)- 35 52 18.72362(N) 114 55 42.05613(W) AD() 3

FS0114 NAD 83(1986)- 35 52 18.71800(N) 114 55 42.04425(W) AD() 3

FS0114 NGVD 29 (??/??/92) 521.477 (m) 1710.88 (f) ADJ UNCH 1 1

FS0114 NGVD 29 521.51 (m) 1711.0 (f) LEVELING 3

FS0114

FS0114.Superseded values are not recommended for survey control.

FS0114

FS0114.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

FS0114.See file dsdata.pdf to determine how the superseded data were derived.

FS0114

FS0114_MARKER: DB = BENCH MARK DISK

FS0114_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

FS0114_STAMPING: V 148 1935

FS0114_MARK LOGO: CGS

FS0114_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

FS0114+STABILITY: SURFACE MOTION

FS0114_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

FS0114+SATELLITE: SATELLITE OBSERVATIONS - August 10, 2014

FS0114

FS0114 HISTORY - Date Condition Report By

FS0114 HISTORY - 1935 MONUMENTED CGS

FS0114 HISTORY - 1949 GOOD CGS

FS0114 HISTORY - 1957 GOOD USGS

FS0114 HISTORY - 1969 GOOD CGS

FS0114 HISTORY - 20140810 GOOD GEOCAC

FS0114

FS0114 STATION DESCRIPTION

FS0114

FS0114'DESCRIBED BY COAST AND GEODETIC SURVEY 1949

FS0114'7.6 MI S FROM ALUNITE.

FS0114'1.7 MILES SOUTH ALONG U.S. HIGHWAY 95, FROM THE JUNCTION OF U.S.

FS0114'HIGHWAY 93 AT ALUNITE, THENCE 5.9 MILES SOUTH ALONG OLD ABANDONED

FS0114'STATE HIGHWAY 5, 0.1 MILE NORTH OF A SIGN READING SEARCHLIGHT

FS0114'29 ON HIGHWAY 95, 118 FEET EAST OF THE CENTER LINE OF THE OLD

FS0114'HIGHWAY, 112 FEET WEST OF THE CENTER LINE OF HIGHWAY 95, 3.0

FS0114'FEET SOUTH OF A WITNESS POST, ABOUT LEVEL WITH HIGHWAY 95, AND

FS0114'SET IN THE TOP OF A CONCRETE POST PROJECTING 0.6 FOOT ABOVE

FS0114'THE GROUND.

FS0114

FS0114 STATION RECOVERY (1957)

FS0114

FS0114'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1957

FS0114'DESCRIBED BY NGS IN LEVEL LINE 40 AS FOLLOWS.

FS0114'

FS0114'LOCATED 1.7 MI S. ALONG U.S. HWY. 95 FROM JCT. OF U.S. HWY. 93 AT
FS0114'ALUNITE, THENCE 5.9 MI S. ALONG OLD ABANDONED STATE HWY. 5. 0.1
FS0114'MI N. OF SIGN SEARCHLIGHT 92 ON HWY. 95. 118 FT E. OF CENTER OF
FS0114'OLD HWY., 112 FT W. OF CENTER OF HWY. 95, 3.0 FT S. OF WITNESS
FS0114'POST, ABOUT LEVEL WITH HWY. 95.

FS0114'

FS0114'LOCATED ABOUT 9.0 MI SE. OF HENDERSON, 7.0 MI SW. OF BOULDER
FS0114'CITY. NEAR NORTHEAST EDGE OF DRY LAKE, 112 FT W. OF U.S. HWY. 95.

FS0114'

FS0114'TO REACH FROM JCT. OF U.S. HWYS. 93 AND 466 WITH U.S. HWY. 95 AT
FS0114'RR. PASS, DRIVE 6.6 MI S. ON U.S. HWY. 95 TO POINT WHERE HWY.
FS0114'PASSES ALONG EAST EDGE OF DRY LAKE TO STATION BETWEEN HWY. AND
FS0114'DRY LAKE, 112 FT W. OF HWY.

FS0114'

FS0114'STATION MARK--NGS BM DISK STAMPED---V 148 1935---, IN TOP OF
FS0114'CONCRETE POST PROJECTING 0.6 FT.

FS0114

FS0114 STATION RECOVERY (1969)

FS0114

FS0114'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1969

FS0114'RECOVERED IN GOOD CONDITION.

FS0114

FS0114 STATION RECOVERY (2014)

FS0114

FS0114'RECOVERY NOTE BY GEOCACHING 2014 (LPC)

FS0114'RECOVERED IN GOOD CONDITION.

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1155 *****

GR1155 DESIGNATION - V 169

GR1155 PID - GR1155

GR1155 STATE/COUNTY- NV/CLARK

GR1155 COUNTRY - US

GR1155 USGS QUAD - BLUE DIAMOND SE (2018)

GR1155

GR1155 *CURRENT SURVEY CONTROL

GR1155

GR1155* NAD 83(2011) POSITION- 36 19 41.00801(N) 115 17 14.50840(W) ADJUSTED

GR1155* NAD 83(2011) ELLIP HT- 763.980 (meters) (06/27/12) ADJUSTED

GR1155* NAD 83(2011) EPOCH - 2010.00

GR1155* NAVD 88 ORTHO HEIGHT - 791.316 (meters) 2596.18 (feet) ADJUSTED

GR1155

GR1155 GEOID HEIGHT - -27.330 (meters) GEOID18

GR1155 NAD 83(2011) X - -2,197,787.309 (meters) COMP

GR1155 NAD 83(2011) Y - -4,652,110.282 (meters) COMP

GR1155 NAD 83(2011) Z - 3,758,032.653 (meters) COMP

GR1155 LAPLACE CORR - -5.69 (seconds) DEFLEC18

GR1155 DYNAMIC HEIGHT - 790.477 (meters) 2593.42 (feet) COMP

GR1155 MODELED GRAVITY - 979,547.0 (mgal) NAVD 88

GR1155

GR1155 VERT ORDER - FIRST CLASS I

GR1155

GR1155 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1155 Standards:

GR1155 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1155 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1155 -----

GR1155 NETWORK 0.81 1.90 0.35 0.31 0.97 0.01004255

GR1155 -----

GR1155 [Click here for local accuracies and other accuracy information.](#)

GR1155

GR1155

GR1155. The horizontal coordinates were established by GPS observations

GR1155. and adjusted by the National Geodetic Survey in June 2012.

GR1155

GR1155. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1155. been affixed to the stable North American tectonic plate. See

GR1155. NA2011 for more information.

GR1155

GR1155. The horizontal coordinates are valid at the epoch date displayed above

GR1155. which is a decimal equivalence of Year/Month/Day.

GR1155

GR1155. The orthometric height was determined by differential leveling and

GR1155. adjusted by the NATIONAL GEODETIC SURVEY

GR1155.in June 1991.

GR1155

GR1155.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1155.GEOID18 height accuracy estimate available here.

GR1155

GR1155.Click photographs - Photos may exist for this station.

GR1155

GR1155.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1155

GR1155.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1155

GR1155.The ellipsoidal height was determined by GPS observations

GR1155.and is referenced to NAD 83.

GR1155

GR1155.The dynamic height is computed by dividing the NAVD 88

GR1155.geopotential number by the normal gravity value computed on the

GR1155.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR1155.degrees latitude ($g = 980.6199$ gals.).

GR1155

GR1155.The modeled gravity was interpolated from observed gravity values.

GR1155

GR1155. The following values were computed from the NAD 83(2011) position.

GR1155

GR1155; North East Units Scale Factor Converg.

GR1155;SPC NV E - 8,175,109.452 226,572.153 MT 0.99990870 +0 10 31.2

GR1155;SPC NV E -26,821,171.59 743,345.47 sFT 0.99990870 +0 10 31.2

GR1155;UTM 11 - 4,021,697.115 653,720.921 MT 0.99989115 +1 00 53.2

GR1155

GR1155! - Elev Factor x Scale Factor = Combined Factor

GR1155!SPC NV E - 0.99988011 x 0.99990870 = 0.99978882

GR1155!UTM 11 - 0.99988011 x 0.99989115 = 0.99977128

GR1155

GR1155_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPA5372021697(NAD 83)

GR1155

GR1155 SUPERSEDED SURVEY CONTROL

GR1155

GR1155 NAD 83(2007)- 36 19 41.00801(N) 115 17 14.50852(W) AD(2007.00) 0

GR1155 ELLIP H (02/10/07) 763.987 (m) GP(2007.00)

GR1155 NAD 83(1999)- 36 19 41.00767(N) 115 17 14.50763(W) AD(1999.37) A

GR1155 ELLIP H (05/16/00) 764.014 (m) GP(1999.37) 4 1

GR1155 NAVD 88 791.32 (m) 2596.2 (f) LEVELING 3

GR1155 NGVD 29 (??/??/92) 790.582 (m) 2593.77 (f) ADJ UNCH 1 1

GR1155

GR1155.Superseded values are not recommended for survey control.

GR1155

GR1155.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR1155.See file dsdata.pdf to determine how the superseded data were derived.

GR1155

GR1155_MARKER: DB = BENCH MARK DISK

GR1155_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

GR1155_STAMPING: V 169 1935

GR1155_MARK LOGO: CGS

GR1155_PROJECTION: PROJECTING 10 CENTIMETERS

GR1155_MAGNETIC: N = NO MAGNETIC MATERIAL

GR1155_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
GR1155+STABILITY: SURFACE MOTION
GR1155_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
GR1155+SATELLITE: SATELLITE OBSERVATIONS - November 01, 1999

GR1155
GR1155 HISTORY - Date Condition Report By
GR1155 HISTORY - 1935 MONUMENTED CGS
GR1155 HISTORY - 1963 GOOD CGS
GR1155 HISTORY - 1970 GOOD NGS
GR1155 HISTORY - 1980 GOOD NGS
GR1155 HISTORY - 19991101 GOOD NV0150

GR1155
GR1155 STATION DESCRIPTION

GR1155
GR1155'DESCRIBED BY COAST AND GEODETIC SURVEY 1963
GR1155'14.6 MI NW FROM LAS VEGAS.
GR1155'10.9 MILES NORTHWEST ALONG U.S. HIGHWAY 95 FROM THE UNION PACIFIC
GR1155'RAILROAD STATION AT LAS VEGAS, THENCE 3.7 MILES NORTH ALONG AN OLD
GR1155'HIGHWAY, AT A LARGE GRAVEL WASH, 0.25 MILE SOUTH OF THE CROSSING OF A
GR1155'GRAVELED ROAD, 53 YARDS NORTHEAST OF THE CENTER OF THE Y JUNCTION OF A
GR1155'GRAVEL ROAD LEADING NORTHWEST, 44 FEET EAST OF THE CENTER LINE OF THE
GR1155'OLD HIGHWAY, 36 FEET SOUTHWEST OF THE APPROXIMATE CENTER OF A SHALLOW
GR1155'DITCH, 29 FEET EAST OF POWER LINE POLE 20869, 2.5 FEET SOUTH OF A
GR1155'WITNESS POST, ABOUT LEVEL WITH THE HIGHWAY, AND SET IN THE TOP OF A
GR1155'CONCRETE POST PROJECTING 0.2 FOOT ABOVE THE GROUND.

GR1155
GR1155 STATION RECOVERY (1970)

GR1155
GR1155'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1970
GR1155'RECOVERED IN GOOD CONDITION.

GR1155
GR1155 STATION RECOVERY (1980)

GR1155
GR1155'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1980
GR1155'2.1 KILOMETERS (1.3 MILES) WEST ALONG BONANZA ROAD FROM ITS JUNCTION
GR1155'WITH THE INTERSTATE HIGHWAY 15 OVERPASS IN LAS VEGAS, THENCE 13.5
GR1155'KILOMETERS (8.4 MILES) NORTHWEST ALONG RANCHO DRIVE (U. S. HIGHWAY
GR1155'95), THENCE 6.0 KILOMETERS (3.7 MILES) NORTH ALONG AN OLD RAILROAD
GR1155'GRADE, 1.0 KILOMETER (0.65 MILE) NORTH OF THE JUNCTION OF HOMESTEAD
GR1155'ROAD AND THE OLD RAILROAD GRADE, 13.4 METERS (43.9 FEET) EAST OF THE
GR1155'CENTER OF THE RAILROAD GRADE AND 8.8 METERS (28.8 FEET) EAST OF POWER
GR1155'POLE 20869.

GR1155'THE MARK IS 0.6 METERS W FROM A WITNESS POST.
GR1155'THE MARK IS ABOVE LEVEL WITH RAILROAD GRADE.

GR1155
GR1155 STATION RECOVERY (1999)

GR1155
GR1155'RECOVERY NOTE BY CITY OF NORTH LAS VEGAS NEVADA 1999 (DCP)
GR1155'RECOVERED AS DESCRIBED.

*** retrieval complete.

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1201 *****

GR1201 DESIGNATION - W 51

GR1201 PID - GR1201

GR1201 STATE/COUNTY- NV/CLARK

GR1201 COUNTRY - US

GR1201 USGS QUAD - LAS VEGAS SE (2018)

GR1201

GR1201 *CURRENT SURVEY CONTROL

GR1201

GR1201* NAD 83(2011) POSITION- 36 04 04.42112(N) 115 00 51.82751(W) ADJUSTED

GR1201* NAD 83(2011) ELLIP HT- 476.555 (meters) (06/27/12) ADJUSTED

GR1201* NAD 83(2011) EPOCH - 2010.00

GR1201* NAVD 88 ORTHO HEIGHT - 504.851 (meters) 1656.33 (feet) ADJUSTED

GR1201

GR1201 GEOID HEIGHT - -28.292 (meters) GEOID18

GR1201 NAD 83(2011) X - -2,182,710.725 (meters) COMP

GR1201 NAD 83(2011) Y - -4,677,769.226 (meters) COMP

GR1201 NAD 83(2011) Z - 3,734,564.411 (meters) COMP

GR1201 LAPLACE CORR - -0.56 (seconds) DEFLEC18

GR1201 DYNAMIC HEIGHT - 504.342 (meters) 1654.66 (feet) COMP

GR1201 MODELED GRAVITY - 979,609.6 (mgal) NAVD 88

GR1201

GR1201 VERT ORDER - FIRST CLASS I

GR1201

GR1201 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1201 Standards:

GR1201 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1201 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1201 -----

GR1201 NETWORK 0.81 1.86 0.34 0.32 0.95 0.00911138

GR1201 -----

GR1201 [Click here for local accuracies and other accuracy information.](#)

GR1201

GR1201

GR1201. The horizontal coordinates were established by GPS observations

GR1201. and adjusted by the National Geodetic Survey in June 2012.

GR1201

GR1201. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1201. been affixed to the stable North American tectonic plate. See

GR1201. NA2011 for more information.

GR1201

GR1201. The horizontal coordinates are valid at the epoch date displayed above

GR1201. which is a decimal equivalence of Year/Month/Day.

GR1201

GR1201. The orthometric height was determined by differential leveling and

GR1201. adjusted by the NATIONAL GEODETIC SURVEY

GR1201.in June 1991.

GR1201

GR1201.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1201.GEOID18 height accuracy estimate available here.

GR1201

GR1201.Click photographs - Photos may exist for this station.

GR1201

GR1201.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1201

GR1201.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1201

GR1201.The ellipsoidal height was determined by GPS observations

GR1201.and is referenced to NAD 83.

GR1201

GR1201.The dynamic height is computed by dividing the NAVD 88

GR1201.geopotential number by the normal gravity value computed on the

GR1201.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR1201.degrees latitude (g = 980.6199 gals.).

GR1201

GR1201.The modeled gravity was interpolated from observed gravity values.

GR1201

GR1201. The following values were computed from the NAD 83(2011) position.

GR1201

GR1201; North East Units Scale Factor Converg.

GR1201;SPC NV E - 8,146,353.101 251,248.569 MT 0.99993235 +0 20 05.9

GR1201;SPC NV E -26,726,826.80 824,304.68 sFT 0.99993235 +0 20 05.9

GR1201;UTM 11 - 3,993,303.634 678,815.276 MT 0.99999400 +1 10 09.6

GR1201

GR1201! - Elev Factor x Scale Factor = Combined Factor

GR1201!SPC NV E - 0.99992521 x 0.99993235 = 0.99985757

GR1201!UTM 11 - 0.99992521 x 0.99999400 = 0.99991921

GR1201

GR1201: Primary Azimuth Mark

Grid Az

GR1201:SPC NV E - L 303

318 49 58.7

GR1201:UTM 11 - L 303

317 59 55.0

GR1201

GR1201_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPV7881593303(NAD 83)

GR1201

GR1201|-----|

GR1201|PID Reference Object Distance Geod. Az |

GR1201| dddmmss.s |

GR1201|GR1879 AIRWAY BEACON USA 4 APPROX.12.2 KM 0064557.4 |

GR1201|GR1203 W 51 RM 1 44.530 METERS 11727 |

GR1201|GR1876 HENDERSON BASIC MAGN PLT C STK APPROX. 3.1 KM 1480117.8 |

GR1201|GR1202 W 51 RM 2 38.370 METERS 21649 |

GR1201|GR1200 L 303 3191004.6 |

GR1201|-----|

GR1201

GR1201 SUPERSEDED SURVEY CONTROL

GR1201

GR1201 NAD 83(2007)- 36 04 04.42098(N) 115 00 51.82815(W) AD(2007.00) 0

GR1201 ELLIP H (02/10/07) 476.562 (m) GP(2007.00)

GR1201 NAD 83(1999)- 36 04 04.42085(N) 115 00 51.82698(W) AD(1999.37) A

GR1201 ELLIP H (05/16/00) 476.588 (m) GP(1999.37) 4 1

GR1201 NAD 83(1994)- 36 04 04.41605(N) 115 00 51.82787(W) AD() 1
 GR1201 NAD 83(1992)- 36 04 04.41631(N) 115 00 51.83141(W) AD() 1
 GR1201 NAD 83(1992)- 36 04 04.41557(N) 115 00 51.83102(W) AD() 1
 GR1201 NAD 83(1986)- 36 04 04.40811(N) 115 00 51.81587(W) AD() 1
 GR1201 NAD 27 - 36 04 04.49400(N) 115 00 48.83700(W) AD() 1
 GR1201 NAVD 88 504.85 (m) 1656.3 (f) LEVELING 3
 GR1201 NGVD 29 (??/??/92) 504.141 (m) 1654.00 (f) ADJ UNCH 1 1
 GR1201 NGVD 29 504.14 (m) 1654.0 (f) LEVELING 3

GR1201

GR1201.Superseded values are not recommended for survey control.

GR1201

GR1201.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR1201.See file dsdata.pdf to determine how the superseded data were derived.

GR1201

GR1201_MARKER: DB = BENCH MARK DISK

GR1201_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

GR1201_STAMPING: W 51 1934

GR1201_MARK LOGO: CGS

GR1201_PROJECTION: PROJECTING 20 CENTIMETERS

GR1201_MAGNETIC: N = NO MAGNETIC MATERIAL

GR1201_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

GR1201+STABILITY: SURFACE MOTION

GR1201_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

GR1201+SATELLITE: SATELLITE OBSERVATIONS - June 22, 2016

GR1201

GR1201 HISTORY	- Date	Condition	Report By
GR1201 HISTORY	- 1934	MONUMENTED	CGS
GR1201 HISTORY	- 1947	GOOD	CGS
GR1201 HISTORY	- 1951	GOOD	USGS
GR1201 HISTORY	- 1960	GOOD	CGS
GR1201 HISTORY	- 1963	GOOD	CGS
GR1201 HISTORY	- 1972	GOOD	NGS
GR1201 HISTORY	- 1973	GOOD	NGS
GR1201 HISTORY	- 1980	GOOD	NGS
GR1201 HISTORY	- 1988	GOOD	USPSQD
GR1201 HISTORY	- 19961122	GOOD	USPSQD
GR1201 HISTORY	- 19991103	GOOD	NGS
GR1201 HISTORY	- 20030621	GOOD	JCLS
GR1201 HISTORY	- 20160622	GOOD	INDIV

GR1201

GR1201 STATION DESCRIPTION

GR1201

GR1201'DESCRIBED BY COAST AND GEODETIC SURVEY 1947 (CL)

GR1201'THE STATION IS LOCATED ON THE SOUTHWEST SIDE OF THE RIGHT-OF-WAY

GR1201'OF U.S. HIGHWAY NO. 466, 7-1/2 MILES, AIRLINE, SOUTHEAST OF LAS

GR1201'VEGAS, 3/4 MILE NORTHWEST OF PITTMAN, AND 2-1/2 MILES NORTHWEST

GR1201'OF HENDERSON. IT IS IN A RELATIVELY FLAT AREA.

GR1201'

GR1201'THE STATION MARK IS A STANDARD DISK (USC AND GS BENCH MARK) SET

GR1201'IN THE TOP OF A 10 INCH SQUARE CONCRETE POST WHICH PROJECTS 1

GR1201'FOOT ABOVE THE SURFACE OF THE GROUND. IT IS 3 FEET SOUTHEAST OF A

GR1201'4 INCH SQUARE WHITE WITNESS POST, AND 80 FEET SOUTHWEST OF THE

GR1201'CENTERLINE OF THE SOUTHWEST LANE OF HIGHWAY NO. 466. IT IS

GR1201'STAMPED BM W 51 1934.

GR1201'

GR1201'REFERENCE MARK NO. 1 IS A STANDARD DISK CEMENTED IN A DRILL HOLE
GR1201'IN THE TOP OF A CONCRETE ABUTMENT AT THE SOUTHWEST END OF A
GR1201'CULVERT THAT CROSSES THE HIGHWAY. IT IS 21 FEET SOUTHWEST OF THE
GR1201'SOUTHWEST LANE OF THE HIGHWAY AND IS STAMPED BM W 51 NO 1 1947.

GR1201'

GR1201'REFERENCE MARK NO. 2 IS A STANDARD DISK SET IN THE TOP OF A 10
GR1201'INCH SQUARE CONCRETE POST WHICH PROJECTS 4 INCHES ABOVE THE
GR1201'SURFACE OF THE GROUND. IT IS 2 FEET NORTH OF A POWER LINE POLE,
GR1201'APPROXIMATELY THE SAME ELEVATION AS THE STATION MARK, AND IS
GR1201'STAMPED BM W 51 NO 2 1947.

GR1201'

GR1201'THE AZIMUTH MARK IS A STANDARD USC AND GS BENCH MARK DISK
GR1201'CEMENTED IN A DRILL HOLE IN THE SOUTHWEST END OF A CONCRETE CULVERT
GR1201'0.2 MILE NORTH-NORTHWEST OF THE STATION. IT IS 30 FEET SOUTHWEST
GR1201'OF THE SOUTHWEST LANE OF THE HIGHWAY AND IS STAMPED BM W 51 1947.

GR1201'

GR1201'TO REACH THE STATION FROM THE INTERSECTION OF CHARLESTON BLVD.
GR1201'AND FREMONT STREET IN LAS VEGAS GO SOUTHEAST ON U.S. HIGHWAY
GR1201'NO. 466 FOR 8.35 MILES TO THE STATION SITE ON THE RIGHT. A DRIVE
GR1201'STATION.

GR1201

GR1201 STATION RECOVERY (1951)

GR1201

GR1201'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1951
GR1201'RECOVERED IN GOOD CONDITION.

GR1201

GR1201 STATION RECOVERY (1960)

GR1201

GR1201'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1960 (MKM)
GR1201'STATION RECOVERED IN GOOD CONDITION AS DESCRIBED.

GR1201'

GR1201'R.M. NO. 1 RECOVERED IN GOOD CONDITION AS DESCRIBED.

GR1201'

GR1201'R.M. 2 RECOVERED IN GOOD CONDITION AS DESCRIBED.

GR1201'

GR1201'AZIMUTH MARK WAS SEARCHED FOR AND NOT FOUND.

GR1201

GR1201 STATION RECOVERY (1963)

GR1201

GR1201'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1963
GR1201'0.7 MI NW FROM PITTMAN.

GR1201'0.7 MILE NORTHWEST ALONG U.S. HIGHWAY 93 FROM THE POST OFFICE AT
GR1201'PITTMAN, 0.3 MILE SOUTHEAST OF THE JUNCTION OF A DIRT ROAD LEADING
GR1201'NORTHEAST, 146.2 FEET NORTHWEST OF BENCH MARK W 51 R.M.1, 125.9 FEET
GR1201'NORTHEAST OF BENCH MARK W 51, 15 FEET NORTHWEST OF THE CENTER LINE OF
GR1201'A ROAD LEADING SOUTHWEST TO ELLIOT ROOFING COMPANY, 70.5 FEET
GR1201'SOUTHWEST OF THE CENTER LINE OF THE SOUTHWEST TRAFFIC LANES OF
GR1201'HIGHWAY, 2.5 FEET EAST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD,
GR1201'AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.5 FOOT ABOVE THE
GR1201'GROUND.

GR1201

GR1201 STATION RECOVERY (1972)

GR1201

GR1201'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1972 (LFS)
GR1201'THE STATION MARK AND REFERENCE MARKS 1 AND 2 WERE RECOVERED AND
GR1201'FOUND IN GOOD CONDITION. THE AZIMUTH MARK WAS SEARCHED BUT
GR1201'NOT RECOVERED OR POSSIBLY WAS DESCRIBED IN ERROR IN 1947 * BM
GR1201'L 303 1940 WHICH IS SET IN A DRILL HOLE IN THE WEST HEADWALL
GR1201'OF A CONCRETE CULVERT 0.3 MILE NORTHWEST OF THE STATION WAS USED
GR1201'FOR AN AZIMUTH MARK AT THIS TIME.

GR1201'

GR1201'TO REACH THE STATION FROM THE INTERSECTION OF BOULDER HIGHWAY
GR1201'AND TROPICANA AVENUE IN EAST LAS VEGAS GO SOUTHEAST TOWARD
GR1201'BOULDER CITY FOR 3.1 MILES TO THE STATION ON THE RIGHT 0.05
GR1201'MILE BEFORE REACHING A TEXICO SERVICE STATION WHICH IS ON THE LEFT
GR1201'SIDE OF THE HIGHWAY.

GR1201'

GR1201'*ORIGINAL AZ MK WAS BM L 303 AS VERIFIED BY GH VOLUMES.

GR1201'

GR1201'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN--7-1/2 MILES
GR1201'SOUTHEAST OF LAS VEGAS

GR1201

GR1201 STATION RECOVERY (1973)

GR1201

GR1201'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1973 (EP)

GR1201'STATION RECOVERED IN GOOD CONDITION AS DESCRIBED.

GR1201'

GR1201'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN--7.5 MILES SE
GR1201'OF LAS VEGAS

GR1201

GR1201 STATION RECOVERY (1980)

GR1201

GR1201'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1980

GR1201'16.6 KILOMETERS (10.3 MILES) SOUTHEAST ALONG U. S. HIGHWAY 93 AND 95
GR1201'FROM THE UNION PACIFIC RAILROAD STATION (UNION PLAZA HOTEL) IN LAS
GR1201'VEGAS, 19.9 METERS (65 FEET) SOUTHWEST OF THE CENTERLINE OF THE
GR1201'SOUTHBOUND LANES OF THE HIGHWAY, 86.6 METERS (284 FEET) NORTHWEST
GR1201'OF THE CENTERLINE OF ELLIOTT ROAD AND 42.1 METERS (138 FEET)
GR1201'NORTHWEST OF THE NORTHWEST EDGE OF A TRIPLE BOX CONCRETE CULVERT.
GR1201'THE MARK IS 0.6 METERS SE FROM A WITNESS POST.
GR1201'THE MARK IS ABOVE LEVEL WITH HIGHWAY.

GR1201

GR1201 STATION RECOVERY (1988)

GR1201

GR1201'RECOVERY NOTE BY US POWER SQUADRON 1988 (DH)

GR1201'RECOVERED IN GOOD CONDITION.

GR1201

GR1201 STATION RECOVERY (1996)

GR1201

GR1201'RECOVERY NOTE BY US POWER SQUADRON 1996

GR1201'RECOVERED IN GOOD CONDITION.

GR1201

GR1201 STATION RECOVERY (1999)

GR1201

GR1201'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999

GR1201'RECOVERED AS DESCRIBED.

GR1201

GR1201 STATION RECOVERY (2003)

GR1201

GR1201'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2003

GR1201'RECOVERED IN GOOD CONDITION.

GR1201

GR1201 STATION RECOVERY (2016)

GR1201

GR1201'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2016 (BAM)

GR1201'MONUMENT RECOVERED BY NDOT FIELD CREW, POINT OBSERVED USING FAST

GR1201'STATIC GPS FOR DETAILED DESCRIPTION AND LOCATION VISIT

GR1201'//MAPS.NEVADADOT.COM/LOIS/

GR1201'USE LPN 1501 OR POINT NAME OF W51 TO FIND POINT

GR1201'

GR1201'

*** retrieval complete.

Elapsed Time = 00:00:04

DATASHEETS
The NGS Data Sheet

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

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 10, 2022

GR1365 *****

GR1365 DESIGNATION - Z 405

GR1365 PID - GR1365

GR1365 STATE/COUNTY- NV/CLARK

GR1365 COUNTRY - US

GR1365 USGS QUAD - MESQUITE (2018)

GR1365

GR1365 *CURRENT SURVEY CONTROL

GR1365

GR1365* NAD 83(2011) POSITION- 36 48 14.84149(N) 114 04 12.81545(W) ADJUSTED

GR1365* NAD 83(2011) ELLIP HT- 460.660 (meters) (06/27/12) ADJUSTED

GR1365* NAD 83(2011) EPOCH - 2010.00

GR1365* NAVD 88 ORTHO HEIGHT - 487.220 (meters) 1598.49 (feet) ADJUSTED

GR1365

GR1365 GEOID HEIGHT - -26.530 (meters) GEOID18

GR1365 NAD 83(2011) X - -2,085,536.987 (meters) COMP

GR1365 NAD 83(2011) Y - -4,668,783.710 (meters) COMP

GR1365 NAD 83(2011) Z - 3,800,286.347 (meters) COMP

GR1365 LAPLACE CORR - 4.85 (seconds) DEFLEC18

GR1365 DYNAMIC HEIGHT - 486.735 (meters) 1596.90 (feet) COMP

GR1365 MODELED GRAVITY - 979,624.4 (mgal) NAVD 88

GR1365 OBS GRAVITY - 979,624.2 (mgal) GRAV_OBS

GR1365

GR1365 VERT ORDER - FIRST CLASS II

GR1365

GR1365 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

GR1365 Standards:

GR1365 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

GR1365 Horiz Ellip SD_N SD_E SD_h (unitless)

GR1365 -----

GR1365 NETWORK 0.85 2.18 0.38 0.30 1.11 0.16247220

GR1365 -----

GR1365 [Click here for local accuracies and other accuracy information.](#)

GR1365

GR1365

GR1365. The horizontal coordinates were established by GPS observations

GR1365. and adjusted by the National Geodetic Survey in June 2012.

GR1365

GR1365. NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

GR1365. been affixed to the stable North American tectonic plate. See

GR1365. NA2011 for more information.

GR1365

GR1365. The horizontal coordinates are valid at the epoch date displayed above

GR1365. which is a decimal equivalence of Year/Month/Day.

GR1365

GR1365. The orthometric height was determined by differential leveling and

GR1365.adjusted by the NATIONAL GEODETIC SURVEY

GR1365.in June 1991.

GR1365

GR1365.Significant digits in the geoid height do not necessarily reflect accuracy.

GR1365.GEOID18 height accuracy estimate available here.

GR1365

GR1365.Click photographs - Photos may exist for this station.

GR1365

GR1365.The X, Y, and Z were computed from the position and the ellipsoidal ht.

GR1365

GR1365.The Laplace correction was computed from DEFLEC18 derived deflections.

GR1365

GR1365.The ellipsoidal height was determined by GPS observations

GR1365.and is referenced to NAD 83.

GR1365

GR1365.The dynamic height is computed by dividing the NAVD 88

GR1365.geopotential number by the normal gravity value computed on the

GR1365.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

GR1365.degrees latitude ($g = 980.6199$ gals.).

GR1365

GR1365.The modeled gravity was interpolated from observed gravity values.

GR1365

GR1365.The observed gravity was obtained from relative gravimeter ties

GR1365.to the IGSN71 gravity network.

GR1365

GR1365. The following values were computed from the NAD 83(2011) position.

GR1365

GR1365; North East Units Scale Factor Converg.

GR1365;SPC NV E - 8,228,960.419 335,019.831 MT 1.00012452 +0 54 23.8

GR1365;SPC NV E -26,997,847.64 1,099,144.23 sFT 1.00012452 +0 54 23.8

GR1365;UTM 11 - 4,077,148.912 761,379.302 MT 1.00044175 +1 45 22.2

GR1365;UTM 12 - 4,077,542.433 226,086.869 MT 1.00052443 -1 50 25.7

GR1365

GR1365! - Elev Factor x Scale Factor = Combined Factor

GR1365!SPC NV E - 0.99992771 x 1.00012452 = 1.00005222

GR1365!UTM 11 - 0.99992771 x 1.00044175 = 1.00036943

GR1365!UTM 12 - 0.99992771 x 1.00052443 = 1.00045210

GR1365

GR1365_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SQA6137977148(NAD 83)

GR1365

GR1365 SUPERSEDED SURVEY CONTROL

GR1365

GR1365 NAD 83(2007)- 36 48 14.84090(N) 114 04 12.81558(W) AD(2007.00) A

GR1365 ELLIP H (02/17/09) 460.664 (m) GP(2007.00) 4 1

GR1365

GR1365.Superseded values are not recommended for survey control.

GR1365

GR1365.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

GR1365.See file dsdata.pdf to determine how the superseded data were derived.

GR1365

GR1365_MARKER: F = FLANGE-ENCASED ROD

GR1365_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)

GR1365_STAMPING: Z 405 1982

GR1365_MARK LOGO: NGS

GR1365_PROJECTION: FLUSH

GR1365_MAGNETIC: O = OTHER; SEE DESCRIPTION

GR1365_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

GR1365_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

GR1365+SATELLITE: SATELLITE OBSERVATIONS - September 10, 2008

GR1365_ROD/PIPE-DEPTH: 12.2 meters

GR1365

GR1365 HISTORY	- Date	Condition	Report By
GR1365 HISTORY	- 1982	MONUMENTED	NGS
GR1365 HISTORY	- 19941017	MARK NOT FOUND	USPSQD
GR1365 HISTORY	- 19951007	GOOD	USPSQD
GR1365 HISTORY	- 20080910	GOOD	GEOANA

GR1365

GR1365 STATION DESCRIPTION

GR1365

GR1365'DESCRIBED BY NATIONAL GEODETIC SURVEY 1982

GR1365'IN MESQUITE.

GR1365'IN MESQUITE, IN THE EAST PLANTER BOX AT THE EAST ENTRANCE TO THE GR1365'CHURCH OF LATTER DAY SAINTS, 17.2 METERS (56.5 FT) NORTH OF THE GR1365'BOULEVARD CENTERLINE, 20.2 METERS (66.5 FT) SOUTHEAST OF THE SOUTHEAST GR1365'CORNER OF THE EAST WING OF THE CHURCH, 9.6 METERS (31.5 FT) NORTHWEST GR1365'OF THE NORTHWEST CORNER OF A CONCRETE BRIDGE OVER A DRY WASH, 2.7 GR1365'METERS (9 FT) NORTH OF A POWER LINE T JUNCTION POLE, 0.6 METER (2 FT) GR1365'EAST OF THE EAST CURB OF A DRIVEWAY.

GR1365'THE MARK IS 0.05 M BELOW THE DRIVEWAY CURB.

GR1365

GR1365 STATION RECOVERY (1994)

GR1365

GR1365'RECOVERY NOTE BY US POWER SQUADRON 1994

GR1365'MARK NOT FOUND.

GR1365

GR1365 STATION RECOVERY (1995)

GR1365

GR1365'RECOVERY NOTE BY US POWER SQUADRON 1995

GR1365'RECOVERED IN GOOD CONDITION.

GR1365

GR1365 STATION RECOVERY (2008)

GR1365

GR1365'RECOVERY NOTE BY GEODETIC ANALYSIS LLC 2008 (MLD)

GR1365'RECOVERED IN GOOD CONDITION. A NEW DESCRIPTION BY JASON FOOSE (MOHAVE GR1365'COUNTY) FOLLOWS.

GR1365'

GR1365'THE STATION IS LOCATED ABOUT 9.7 MI (15.6 KM) SOUTHWEST OF GR1365'LITTLEFIELD, 9.5 MI (15.3 KM) EAST-NORTHEAST OF RIVERSIDE AND 0.2 MI GR1365'(0.4 KM) WEST-SOUTHWEST OF MESQUITE.

GR1365'

GR1365'TO REACH FROM THE INTERSECTION OF THISTLE STREET AND WEST MESQUITE GR1365'BOULEVARD (MESQUITE POST OFFICE), GO EAST 0.5 MI (0.8 KM) ON WEST GR1365'MESQUITE BOULEVARD TO A CHANNELIZED FLOODWAY, APPROXIMATELY 200 FT (60 GR1365'M) EAST OF DESERT DRIVE. THE STATION IS AT THE NORTHWEST CORNER OF GR1365'STREET IMPROVEMENTS AND FLOODWAY IMPROVEMENTS IN A VACANT LOT FORMERLY GR1365'THE SITE OF CHURCH OF LATTER DAY SAINTS.

GR1365'

GR1365'NOTE--A DIMPLE WAS DRILLED INTO THE TOP OF THE ROD TO ACCEPT THE TIP

GR1365'OF A FIXED HEIGHT POLE.

*** retrieval complete.
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