Ground Control Survey Report

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UNITED STATES GEOLOGICAL SURVEY
CA CENTRAL VALLEY LIDAR 2016

TASK ORDER NUMBER: G16PD01047

Contractor: Woolpert, Inc.
Woolpert Project # 76982

March 2017

Ground Control Survey Report

UNITED STATES GEOLOGICAL SURVEY CA CENTRAL VALLEY LIDAR 2016

Task Order G16PD01047

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Section 1: Survey Report

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This report contains a comprehensive outline of the Ground Control Survey that supported the California Central Valley airborne LiDAR collection. All surveys were performed in such a way as to achieve ground control accuracies that meet or exceed the National Mapping Accuracy Standards.

Project Area

The project area consists of approximately 1,399 square miles in the Central Valley located east of Sacrament CA.

Purpose

The purpose of this survey was to establish three-dimensional coordinates for 42 LiDAR primary control points and 165 ground classification check points. The points were collected per the flight layout and were uniformly dispersed over the project area.

Date of Survey

Multiple ground control field missions took place February 22nd through March 14th, 2017.

Monumentation

Prior to aerial acquisition, Woolpert field crews performed a field reconnaissance to verify the existence and suitability of pre-selected existing National Geodetic Survey (NGS) control stations. These existing NSRS control stations were utilized as checks to ensure that quality x, y, and z coordinate values were computed for each of the newly established LiDAR control stations and photo identifiable points. Recovery information sheets for the existing NGS control stations can be found in Section 4 of this report. A control diagram showing the ground control stations used to support this mapping project can be found in Section 5 of this report.

Accuracy Standards

The relative accuracy of the lidar data will be ≤ 8 cm RMSEZ between adjacent swaths with a maximum difference of ± 16 cm. The data collected shall meet the National Standard for Spatial Database Accuracy (NSSDA) accuracy standards. The NSSDA standards specify that vertical accuracy be reported at the 95 percent confidence level for data tested by an independent source of higher accuracy. The accuracy (ACCz) for the derived DEM shall be calculated in three ways, and reported in the metadata accordingly. The RMSEZ (Non-Vegetated) is required to meet ≤10.0 cm. The Non-Vegetated Vertical Accuracy (NVA) is required to meet ≤19.6 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSEZ of 10.0 cm in the “open terrain” and/or “urban” land cover categories. The Vegetated Vertical Accuracy (VVA) is required to meet ≤29.4 cm at a 95th percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for Lidar Data, i.e., based on the 95th percentile error in Vegetated land cover categories combined (Brush Lands/Trees and Forested Areas).

GPS Equipment

Woolpert utilized 2 Trimble Navigation R8 Model 3 GNSS dual-frequency GPS receivers, 1 Trimble Navigation R10 Model GNSS dual-frequency GPS receiver and 1 TSC3 data collector for this project.

Methodology

Real-Time Kinematic (RTK) GPS

The field crew utilized Real-Time Kinematic (RTK) and GPS Rapid Static methods throughout the ground control data collection process. Using these techniques, observations were performed on a total of 42 LiDAR primary control points and 165 ground classification check points. The survey was conducted using a 1-second epoch rate, in a fixed solution RTK mode, with each observation lasting between 60 to 180 seconds. Each station was occupied twice to insure the necessary horizontal and vertical accuracies were being met for this LiDAR / photogrammetric project.

GPS Data Analysis and Processing

The field crew chief processed all session baselines each day using Trimble Navigation's Trimble Business Center (TBC) Version 3.82 baseline processor with the accompanying broadcast ephemeris. Daily processing ensured the integrity of the network as it was constructed, and allowed the field crews to immediately reschedule observations of poor baselines.

Datum Reference and Final Coordinates

The spatial reference system for this project is will be UTM Zone 14 North. The datum shall be NAD83 (2011) meters to 2 decimal places horizontal and NAVD88 U.S Feet vertical using the latest geoid model (GEOID12B) Units for both the horizontal and vertical datum will be expressed in meters to two (2) decimal places.

Quality Assurance

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

Section 2: Ground Control / Geodetic Control Coordinate Listings

- Coordinate System: Grid
- Horizontal Datum: NAD83 2011 UTM 10 North
- Vertical Datum: NAVD88
- Geoid Model: GEOID 12B
- Horizontal Units: Meter
- Vertical Units: US Feet

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
1000	4245151.92	653232.10	66.62	LiDAR Control
1001	4246203.01	656318.73	83.48	LiDAR Control
1002	4244697.64	660879.19	105.37	LiDAR Control
1003	4246395.12	664784.60	151.46	LiDAR Control
1004	4248176.50	668039.66	191.54	LiDAR Control
1005	4250543.18	672201.59	210.95	LiDAR Control
1006	4214068.80	674536.11	159.23	LiDAR Control
1007	4214218.31	678624.13	155.29	LiDAR Control
1008	4215847.00	681420.46	181.06	LiDAR Control
1009	4185295.90	672701.57	98.15	LiDAR Control
1010	4184866.07	677584.21	123.61	LiDAR Control
1011	4184869.36	683675.33	157.11	LiDAR Control
1012	4182161.79	689625.33	154.23	LiDAR Control
1013	4183309.04	695066.94	242.30	LiDAR Control
1014	4186407.73	700857.93	202.90	LiDAR Control
1015	4168362.58	699921.71	179.43	LiDAR Control
1016	4169130.29	704492.87	189.98	LiDAR Control
1017	4168659.46	710501.25	217.40	LiDAR Control
1018	4168512.55	716039.21	259.80	LiDAR Control
1019	4171299.49	724097.92	307.83	LiDAR Control

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
1020	4144911.37	708210.22	179.16	LiDAR Control
1021	4150255.55	712529.54	215.00	LiDAR Control
1021 A	4150241.32	712479.58	215.79	LiDAR Control
1022	4152323.19	718775.77	190.54	LiDAR Control
1023	4155892.45	726720.44	263.70	LiDAR Control
1024	4155581.84	733652.20	322.51	LiDAR Control
1025	4131044.22	737916.45	232.66	LiDAR Control
1026	4133751.63	741892.27	281.60	LiDAR Control
1026 A	4133785.80	741896.72	282.00	LiDAR Control
1027	4136425.15	746223.13	368.62	LiDAR Control
1028	4107771.82	745466.97	231.92	LiDAR Control
1029	4107038.92	749830.88	250.12	LiDAR Control
1030	4109587.44	754726.81	290.98	LiDAR Control
1031	4104906.23	760139.43	297.70	LiDAR Control
1032	4105051.24	765169.48	328.03	LiDAR Control
1033	4098929.17	768681.80	314.60	LiDAR Control
1034	4100353.63	772043.00	354.97	LiDAR Control
1035	4100546.97	777130.40	379.84	LiDAR Control
1035 A	4100533.20	777205.78	379.43	LiDAR Control
1036	4100665.93	781184.77	428.05	LiDAR Control
1038	4095252.27	787459.95	412.60	LiDAR Control
1039	4187233.52	705481.37	327.68	LiDAR Control
2000	4262465.56	657242.83	103.63	NVA
2001	4262556.78	664601.09	153.53	NVA
2002	4256226.93	670328.10	218.31	NVA
2002 A	4256227.13	670362.76	219.21	NVA
2003	4279058.29	664246.10	438.80	NVA
2003 A	4279003.36	664260.22	440.04	NVA
2004	4245338.22	653036.77	67.35	NVA
2005	4252028.79	659664.36	134.40	NVA
2006	4246298.87	662497.05	121.77	NVA
2007	4236866.31	672524.04	265.65	NVA
2008	4250473.57	670899.43	212.71	NVA

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
2009	4228840.53	667721.67	131.46	NVA
2010	4230133.96	672997.79	181.31	NVA
2010 A	4230139.08	673035.74	184.53	NVA
2011	4214456.89	679958.40	162.97	NVA
2012	4224139.96	672369.51	283.30	NVA
2013	4201748.51	683806.36	196.50	NVA
2014	4201696.47	691448.50	241.46	NVA
2015	4207365.02	680465.26	273.22	NVA
2015 A	4207315.44	680464.70	267.34	NVA
2016	4219811.64	666068.34	108.39	NVA
2017	4191902.76	680660.86	141.08	NVA
2018	4192921.90	689743.57	237.43	NVA
2019	4187961.51	706276.05	338.14	NVA
2020	4186846.07	702619.55	263.42	NVA
2021	4183611.15	696753.47	192.38	NVA
2022	4172744.37	690144.58	166.42	NVA
2023	4168771.91	707707.67	210.70	NVA
2024	4159157.50	714781.10	240.15	NVA
2024 A	4159185.07	714816.34	238.17	NVA
2025	4169213.93	720631.62	175.01	NVA
2026	4162239.27	727321.79	279.24	NVA
2026 A	4162243.43	727340.66	277.71	NVA
2027	4173694.83	705320.64	217.56	NVA
2028	4155145.25	725119.46	247.11	NVA
2028 A	4155110.51	725108.12	246.59	NVA
2029	4150974.83	714506.13	227.55	NVA
2029 A	4150943.55	714465.25	226.34	NVA
2030	4157504.97	702840.88	213.55	NVA
2030 A	4157481.17	702874.44	210.98	NVA
2031	4144102.31	719854.47	237.41	NVA
2031 A	4144088.30	719885.53	236.62	NVA
2032	4132298.62	739608.10	253.95	NVA
2033	4134765.65	743510.66	313.49	NVA

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
2033 A	4134709.40	743513.12	312.40	NVA
2034	4127491.10	748486.51	306.90	NVA
2035	4120832.68	753536.80	319.73	NVA
2035 A	4120826.25	753485.59	316.53	NVA
2036	4115357.24	759801.29	356.33	NVA
2037	4108024.45	748093.86	244.75	NVA
2038	4109652.47	756769.68	302.47	NVA
2038 A	4109644.61	756726.94	302.44	NVA
2039	4105884.68	766562.89	334.34	NVA
2040	4100245.46	778333.06	383.12	NVA
2041	4100225.63	771659.03	349.76	NVA
2042	4098480.88	766902.57	303.22	NVA
2043	4089947.51	784886.70	378.00	NVA
2043 A	4089912.30	784885.05	377.60	NVA
2044	4090980.09	776520.40	327.33	NVA
2045	4086085.22	776961.23	311.86	NVA
2045 A	4086061.86	776935.63	311.44	NVA
2046	4142548.12	725983.31	258.21	NVA
2046 A	4142594.59	726068.34	259.90	NVA
2047	4179471.23	701758.44	207.13	NVA
2048	4185102.62	676829.38	121.00	NVA
2049	4204761.64	675687.39	152.36	NVA
2051	4219112.95	669431.56	166.55	NVA
2052	4233788.64	670616.33	175.15	NVA
2053	4241553.85	655543.28	74.41	NVA
2053 A	4241607.99	655572.11	74.37	NVA
2054	4271759.77	662889.45	218.14	NVA
2055	4267547.25	670461.60	502.92	NVA
2056	4244591.15	666634.59	259.23	NVA
2056 A	4244621.36	666648.33	260.39	NVA
2057	4218311.30	680212.99	212.28	NVA
2058	4185543.61	687847.01	185.06	NVA
2059	4178816.53	711807.27	226.81	NVA

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
2060	4156285.77	735988.75	349.49	NVA
2061	4147479.30	703380.41	162.51	NVA
2062	4138595.24	727870.56	248.39	NVA
2062 A	4138557.59	728058.14	253.62	NVA
2063	4188748.48	683681.01	154.89	NVA
2064	4148645.93	710665.67	179.56	NVA
2065	4124249.63	746140.14	267.93	NVA
2065 A	4124322.42	746138.78	268.57	NVA
2066	4101370.55	748862.28	221.16	NVA
2066 A	4101374.40	748894.18	220.88	NVA
2067	4150985.04	725913.62	288.67	NVA
2068	4209564.39	675551.78	203.46	NVA
3000	4279047.20	664208.79	438.95	VVA
3000 A	4279101.25	664236.39	436.36	VVA
3001	4271774.37	662901.68	219.25	VVA
3002	4262564.16	664568.23	153.98	VVA
3003	4252128.45	659634.68	135.44	VVA
3004	4250396.08	670952.07	218.76	VVA
3005	4241517.28	655494.68	73.91	VVA
3005 A	4241577.42	655505.93	76.78	VVA
3006	4244528.80	666723.74	260.57	VVA
3006 A	4244594.47	666695.98	259.54	VVA
3007	4228843.71	667696.16	130.28	VVA
3008	4244753.67	664076.62	162.28	VVA
3008 A	4244719.80	664084.77	165.85	VVA
3009	4230146.22	673065.68	183.43	VVA
3009 A	4230152.19	673096.36	178.71	VVA
3010	4219831.89	666103.11	107.13	VVA
3011	4218346.71	680226.90	210.67	VVA
3012	4209619.97	675508.97	201.88	VVA
3013	4201461.03	680626.49	138.81	VVA
3014	4201113.24	692723.46	226.88	VVA
3015	4188722.15	683803.54	153.93	VVA

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
3016	4187905.77	706272.58	331.46	VVA
3017	4183623.01	696791.95	191.95	VVA
3018	4178780.59	711801.20	224.16	VVA
3019	4172714.21	690103.95	165.32	VVA
3020	4171574.87	723903.47	244.31	VVA
3021	4168793.22	707685.03	206.45	VVA
3022	4148610.21	710810.18	168.93	VVA
3023	4144134.42	719839.93	234.78	VVA
3023 A	4144161.67	719819.29	230.93	VVA
3024	4142528.00	726013.51	258.10	VVA
3024 A	4142550.54	726050.61	258.65	VVA
3025	4132251.93	739606.19	252.83	VVA
3026	4124292.32	746150.91	267.72	VVA
3026 A	4124216.58	746152.16	267.63	VVA
3027	4120786.57	753524.25	319.87	VVA
3027 A	4120786.06	753490.79	316.07	VVA
3028	4108012.20	748073.71	245.36	VVA
3028 A	4107995.97	748047.59	246.03	VVA
3029	4105885.51	766589.45	332.31	VVA
3030	4098477.98	766874.24	302.41	VVA
3030 A	4098507.68	766948.76	302.38	VVA
3031	4100195.01	778346.10	384.84	VVA
3032	4091628.03	776599.01	331.00	VVA
3033	4266240.01	668005.58	331.75	VVA
3033 A	4266277.11	668008.80	335.31	VVA
3034	4262379.02	657525.98	103.42	VVA
3035	4245351.43	652988.99	61.68	VVA
3036	4233729.45	670984.03	189.51	VVA
3037	4207332.18	680428.31	271.79	VVA
3037 A	4207370.20	680434.48	273.78	VVA
3038	4204803.01	675691.12	151.41	VVA
3039	4224161.78	673591.10	284.73	VVA
3040	4191897.90	680731.87	138.96	VVA

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (usFT)	Description
	UTM Northing (m)	UTM Easting (m)		
3041	4184895.18	676707.37	118.54	VVA
3041 A	4184818.02	676784.26	120.61	VVA
3042	4155141.13	725081.82	244.38	VVA
3042 A	4155090.06	725087.76	242.48	VVA
3043	4115307.81	759820.10	353.77	VVA
3044	4086083.16	776889.08	314.21	VVA
3044 A	4086049.50	776877.80	312.35	VVA
3045	4159154.57	714828.10	243.71	VVA
3045 A	4159196.38	714856.74	237.19	VVA
3046	4191143.17	686609.07	209.41	VVA
3046 A	4191165.80	686588.29	208.12	VVA
3047	4158458.47	702049.95	206.20	VVA
3047 A	4158458.22	702013.22	206.14	VVA
3048	4138591.04	727924.24	246.76	VVA
3048 A	4138548.86	728129.38	246.37	VVA
3049	4214669.58	680138.36	159.49	VVA
3050	4280994.20	665593.84	540.62	VVA
3051	4185520.37	687872.59	183.86	VVA
3052	4109656.54	756694.69	302.34	VVA
3052 A	4109692.68	756750.99	303.75	VVA
3053	4164391.50	725564.83	337.09	VVA
3053 A	4164363.17	725587.12	336.74	VVA

- Coordinate System: Geodetic
- Horizontal Datum: NAD83 (2011) Epoch 2010.00
- Vertical Datum: NAVD88
- Units: Meter

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
1000	38°20'29.10527"	-121°14'47.79524"	-10.23	LiDAR Control
1001	38°21'01.27081"	-121°12'39.86334"	-4.95	LiDAR Control
1002	38°20'09.54724"	-121°09'33.30265"	1.84	LiDAR Control
1003	38°21'02.03618"	-121°06'51.08879"	16.06	LiDAR Control
1004	38°21'57.62204"	-121°04'35.52512"	28.40	LiDAR Control
1005	38°23'11.51380"	-121°01'42.03227"	34.46	LiDAR Control
1006	38°03'27.18422"	-121°00'38.15209"	17.58	LiDAR Control
1007	38°03'29.16031"	-120°57'50.36788"	16.52	LiDAR Control
1008	38°04'19.96780"	-120°55'54.20515"	24.53	LiDAR Control
1009	37°47'55.41213"	-121°02'18.23153"	-1.87	LiDAR Control
1010	37°47'38.10320"	-120°58'59.07118"	6.00	LiDAR Control
1011	37°47'33.87412"	-120°54'50.16859"	16.36	LiDAR Control
1012	37°46'01.70589"	-120°50'49.59713"	15.61	LiDAR Control
1013	37°46'34.78285"	-120°47'06.22705"	42.69	LiDAR Control
1014	37°48'10.73345"	-120°43'06.58789"	31.04	LiDAR Control
1015	37°38'26.40449"	-120°44'02.69509"	23.35	LiDAR Control
1016	37°38'47.67274"	-120°40'55.54505"	26.78	LiDAR Control
1017	37°38'27.52151"	-120°36'51.04984"	35.37	LiDAR Control
1018	37°38'18.13056"	-120°33'05.43110"	48.48	LiDAR Control
1019	37°39'41.52430"	-120°27'33.84136"	63.54	LiDAR Control
1020	37°25'39.45266"	-120°38'48.69675"	22.96	LiDAR Control
1021	37°28'29.18204"	-120°35'47.55464"	34.18	LiDAR Control
1021 A	37°28'28.76211"	-120°35'49.60161"	34.42	LiDAR Control
1022	37°29'30.96549"	-120°31'31.26166"	26.94	LiDAR Control
1023	37°31'19.77097"	-120°26'04.07786"	49.56	LiDAR Control
1024	37°31'03.47715"	-120°21'22.32518"	67.70	LiDAR Control
1025	37°17'44.19424"	-120°18'57.23316"	39.17	LiDAR Control

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
1026	37°19'08.25912"	-120°16'12.75041"	54.29	LiDAR Control
1026 A	37°19'09.36253"	-120°16'12.52999"	54.41	LiDAR Control
1027	37°20'30.81901"	-120°13'13.79571"	81.10	LiDAR Control
1028	37°05'02.80312"	-120°14'18.42524"	38.07	LiDAR Control
1029	37°04'34.89765"	-120°11'22.75351"	43.64	LiDAR Control
1030	37°05'52.75468"	-120°08'01.59767"	56.20	LiDAR Control
1031	37°03'15.68713"	-120°04'28.43772"	58.23	LiDAR Control
1032	37°03'15.31826"	-120°01'04.86436"	67.58	LiDAR Control
1033	36°59'53.32626"	-119°58'50.71202"	63.50	LiDAR Control
1034	37°00'36.00758"	-119°56'33.06255"	75.95	LiDAR Control
1035	37°00'36.92263"	-119°53'07.24318"	83.77	LiDAR Control
1035 A	37°00'36.39622"	-119°53'04.21568"	83.65	LiDAR Control
1036	37°00'36.44255"	-119°50'23.26827"	98.68	LiDAR Control
1038	36°57'34.20527"	-119°46'17.15992"	94.16	LiDAR Control
1039	37°48'33.80340"	-120°39'56.82728"	69.35	LiDAR Control
2000	38°29'48.05072"	-121°11'48.70704"	1.53	NVA
2001	38°29'46.22357"	-121°06'45.01543"	16.96	NVA
2002	38°26'17.10265"	-121°02'54.25669"	36.77	NVA
2002 A	38°26'17.08554"	-121°02'52.82780"	37.04	NVA
2003	38°38'41.53200"	-121°06'45.67464"	104.19	NVA
2003 A	38°38'39.74127"	-121°06'45.13739"	104.57	NVA
2004	38°20'35.26709"	-121°14'55.69248"	-10.01	NVA
2005	38°24'08.06327"	-121°10'17.33695"	10.84	NVA
2006	38°21'00.42003"	-121°08'25.36633"	6.94	NVA
2007	38°15'47.81288"	-121°01'40.77900"	50.73	NVA
2008	38°23'10.15601"	-121°02'35.73766"	34.96	NVA
2009	38°11'30.83544"	-121°05'05.11927"	9.39	NVA
2010	38°12'09.18301"	-121°01'27.20641"	24.78	NVA
2010 A	38°12'09.32280"	-121°01'25.64230"	25.76	NVA
2011	38°03'35.94476"	-120°56'55.43407"	18.92	NVA
2012	38°08'55.25392"	-121°01'58.25274"	55.65	NVA
2013	37°56'41.09474"	-120°54'29.34986"	28.85	NVA
2014	37°56'33.72637"	-120°49'16.50116"	42.91	NVA

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2015	37°59'45.62487"	-120°56'41.07729"	52.29	NVA
2015 A	37°59'44.01774"	-120°56'41.14494"	50.50	NVA
2016	38°06'39.15142"	-121°06'20.63092"	2.03	NVA
2017	37°51'24.10684"	-120°56'47.02637"	11.56	NVA
2018	37°51'50.50799"	-120°50'34.61781"	41.28	NVA
2019	37°48'56.76002"	-120°39'23.60744"	72.61	NVA
2020	37°48'23.54420"	-120°41'54.16450"	49.60	NVA
2021	37°46'43.27709"	-120°45'57.03971"	27.55	NVA
2022	37°40'55.95874"	-120°50'37.25033"	19.16	NVA
2023	37°38'33.45669"	-120°38'44.83052"	33.22	NVA
2024	37°33'15.90794"	-120°34'06.60072"	42.18	NVA
2024 A	37°33'16.77234"	-120°34'05.13681"	41.58	NVA
2025	37°38'36.93857"	-120°29'57.45665"	22.83	NVA
2026	37°34'44.97758"	-120°25'32.52507"	54.57	NVA
2026 A	37°34'45.09573"	-120°25'31.75202"	54.10	NVA
2027	37°41'14.99674"	-120°40'17.16803"	35.36	NVA
2028	37°30'56.96046"	-120°27'10.06169"	44.43	NVA
2028 A	37°30'55.84415"	-120°27'10.56168"	44.27	NVA
2029	37°28'50.85708"	-120°34'26.39568"	38.08	NVA
2029 A	37°28'49.87709"	-120°34'28.09143"	37.71	NVA
2030	37°32'32.06955"	-120°42'14.50032"	33.63	NVA
2030 A	37°32'31.27104"	-120°42'13.15741"	32.85	NVA
2031	37°25'03.53189"	-120°30'56.19923"	40.96	NVA
2031 A	37°25'03.05132"	-120°30'54.95159"	40.72	NVA
2032	37°18'23.29132"	-120°17'47.14164"	45.74	NVA
2033	37°19'39.60493"	-120°15'05.87186"	64.11	NVA
2033 A	37°19'37.77934"	-120°15'05.83861"	63.77	NVA
2034	37°15'39.08403"	-120°11'52.67172"	61.75	NVA
2035	37°11'58.38342"	-120°08'36.03665"	65.34	NVA
2035 A	37°11'58.22530"	-120°08'38.11912"	64.36	NVA
2036	37°08'54.73172"	-120°04'29.08400"	76.41	NVA
2037	37°05'08.50185"	-120°12'31.84835"	42.00	NVA
2038	37°05'52.85481"	-120°06'38.86082"	59.73	NVA

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2038 A	37°05'52.64229"	-120°06'40.59992"	59.72	NVA
2039	37°03'40.90638"	-120°00'07.45982"	69.56	NVA
2040	37°00'25.87334"	-119°52'19.04977"	84.83	NVA
2041	37°00'32.25948"	-119°56'48.74405"	74.34	NVA
2042	36°59'40.62254"	-120°00'03.17004"	59.98	NVA
2043	36°54'45.13752"	-119°48'08.24637"	83.41	NVA
2043 A	36°54'43.99856"	-119°48'08.36076"	83.29	NVA
2044	36°55'27.56117"	-119°53'44.49804"	67.62	NVA
2045	36°52'48.47886"	-119°53'33.14615"	62.87	NVA
2045 A	36°52'47.74904"	-119°53'34.20930"	62.74	NVA
2046	37°24'07.83810"	-120°26'48.80891"	47.35	NVA
2046 A	37°24'09.26989"	-120°26'45.30264"	47.87	NVA
2047	37°44'25.12601"	-120°42'36.73363"	32.18	NVA
2048	37°47'46.30112"	-120°59'29.70901"	5.18	NVA
2049	37°58'24.58347"	-120°59'59.14727"	15.22	NVA
2051	38°06'14.24592"	-121°04'03.19369"	19.83	NVA
2052	38°14'09.32748"	-121°03'01.90486"	22.97	NVA
2053	38°18'30.98968"	-121°13'15.48479"	-7.88	NVA
2053 A	38°18'32.72727"	-121°13'14.25536"	-7.89	NVA
2054	38°34'45.77389"	-121°07'47.91522"	36.73	NVA
2055	38°32'24.07024"	-121°02'38.83420"	123.78	NVA
2056	38°20'02.30751"	-121°05'36.44453"	48.90	NVA
2056 A	38°20'03.27768"	-121°05'35.85319"	49.26	NVA
2057	38°05'40.74180"	-120°56'41.49504"	34.09	NVA
2058	37°47'52.68306"	-120°51'59.08163"	25.02	NVA
2059	37°43'55.72883"	-120°35'47.17799"	38.63	NVA
2060	37°31'24.15358"	-120°19'46.42786"	76.04	NVA
2061	37°27'06.57927"	-120°42'02.50897"	17.82	NVA
2062	37°21'58.03359"	-120°25'36.50430"	44.21	NVA
2062 A	37°21'56.64744"	-120°25'28.92749"	45.81	NVA
2063	37°49'39.65401"	-120°54'46.39502"	15.78	NVA
2064	37°27'38.53237"	-120°37'05.03248"	23.27	NVA
2065	37°13'56.26300"	-120°13'31.67627"	49.65	NVA

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
2065 A	37°13'58.62358"	-120°13'31.64472"	49.84	NVA
2066	37°01'32.09668"	-120°12'08.68706"	34.71	NVA
2066 A	37°01'32.19112"	-120°12'07.39297"	34.62	NVA
2067	37°28'41.40100"	-120°26'42.34086"	56.97	NVA
2068	38°01'00.41513"	-121°00'00.47341"	30.94	NVA
3000	38°38'41.19727"	-121°06'47.22640"	104.23	VVA
3000 A	38°38'42.93133"	-121°06'46.03953"	103.44	VVA
3001	38°34'46.23921"	-121°07'47.39795"	37.06	VVA
3002	38°29'46.48465"	-121°06'46.36510"	17.10	VVA
3003	38°24'11.31402"	-121°10'18.47871"	11.16	VVA
3004	38°23'07.60714"	-121°02'33.63701"	36.81	VVA
3005	38°18'29.83422"	-121°13'17.51391"	-8.03	VVA
3005 A	38°18'31.77749"	-121°13'17.00304"	-7.16	VVA
3006	38°20'00.22571"	-121°05'32.82725"	49.31	VVA
3006 A	38°20'02.37401"	-121°05'33.91438"	49.00	VVA
3007	38°11'30.95557"	-121°05'06.16463"	9.03	VVA
3008	38°20'09.27686"	-121°07'21.61642"	19.29	VVA
3008 A	38°20'08.17315"	-121°07'21.30938"	20.38	VVA
3009	38°12'09.53362"	-121°01'24.40613"	25.43	VVA
3009 A	38°12'09.70610"	-121°01'23.14009"	23.99	VVA
3010	38°06'39.78484"	-121°06'19.18703"	1.65	VVA
3011	38°05'41.88015"	-120°56'40.89212"	33.60	VVA
3012	38°01'02.24710"	-121°00'02.17899"	30.46	VVA
3013	37°56'34.06856"	-120°56'39.81293"	11.14	VVA
3014	37°56'13.84620"	-120°48'24.86440"	38.51	VVA
3015	37°49'38.71136"	-120°54'41.41006"	15.49	VVA
3016	37°48'54.95590"	-120°39'23.80653"	70.57	VVA
3017	37°46'43.63188"	-120°45'55.45611"	27.42	VVA
3018	37°43'54.56891"	-120°35'47.46357"	37.82	VVA
3019	37°40'55.01117"	-120°50'38.93609"	18.82	VVA
3020	37°39'50.62185"	-120°27'41.46623"	44.19	VVA
3021	37°38'34.16608"	-120°38'45.73206"	31.93	VVA
3022	37°27'37.25584"	-120°36'59.19181"	20.04	VVA

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
3023	37°25'04.58546"	-120°30'56.75585"	40.16	VVA
3023 A	37°25'05.48657"	-120°30'57.56559"	38.98	VVA
3024	37°24'07.15939"	-120°26'47.60396"	47.32	VVA
3024 A	37°24'07.85754"	-120°26'46.07175"	47.49	VVA
3025	37°18'21.77971"	-120°17'47.27336"	45.40	VVA
3026	37°13'57.63669"	-120°13'31.18892"	49.58	VVA
3026 A	37°13'55.18045"	-120°13'31.22824"	49.55	VVA
3027	37°11'56.90141"	-120°08'36.60142"	65.38	VVA
3027 A	37°11'56.91742"	-120°08'37.95746"	64.22	VVA
3028	37°05'08.12410"	-120°12'32.67834"	42.19	VVA
3028 A	37°05'07.62290"	-120°12'33.75415"	42.39	VVA
3029	37°03'40.90612"	-120°00'06.38501"	68.94	VVA
3030	36°59'40.55737"	-120°00'04.31844"	59.73	VVA
3030 A	36°59'41.44379"	-120°00'01.26995"	59.72	VVA
3031	37°00'24.22467"	-119°52'18.59022"	85.35	VVA
3032	36°55'48.47437"	-119°53'40.47298"	68.75	VVA
3033	38°31'43.36520"	-121°04'21.36131"	71.46	VVA
3033 A	38°31'44.56601"	-121°04'21.19624"	72.55	VVA
3034	38°29'45.06435"	-121°11'37.09326"	1.47	VVA
3035	38°20'35.72482"	-121°14'57.64971"	-11.74	VVA
3036	38°14'07.15656"	-121°02'46.83918"	27.35	VVA
3037	37°59'44.58669"	-120°56'42.62084"	51.85	VVA
3037 A	37°59'45.81501"	-120°56'42.33396"	52.46	VVA
3038	37°58'25.92228"	-120°59'58.95829"	14.93	VVA
3039	38°08'55.11787"	-121°01'08.07269"	56.13	VVA
3040	37°51'23.89847"	-120°56'44.12639"	10.92	VVA
3041	37°47'39.65926"	-120°59'34.87722"	4.43	VVA
3041 A	37°47'37.10350"	-120°59'31.80298"	5.06	VVA
3042	37°30'56.85999"	-120°27'11.59831"	43.60	VVA
3042 A	37°30'55.19914"	-120°27'11.41269"	43.02	VVA
3043	37°08'53.11089"	-120°04'28.38433"	75.63	VVA
3044	36°52'48.48831"	-119°53'36.05902"	63.58	VVA
3044 A	36°52'47.40948"	-119°53'36.55819"	63.01	VVA

Point No.	Geodetic Coordinates NAD-83 (2011) Epoch 2010.00		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
3045	37°33'15.77346"	-120°34'04.69003"	43.27	VVA
3045 A	37°33'17.10484"	-120°34'03.47960"	41.28	VVA
3046	37°50'55.16324"	-120°52'44.47157"	32.56	VVA
3046 A	37°50'55.91209"	-120°52'45.29999"	32.17	VVA
3047	37°33'03.60991"	-120°42'45.76081"	31.38	VVA
3047 A	37°33'03.63090"	-120°42'47.25712"	31.36	VVA
3048	37°21'57.85002"	-120°25'34.32874"	43.71	VVA
3048 A	37°21'56.30137"	-120°25'26.04361"	43.60	VVA
3049	38°03'42.71235"	-120°56'47.86111"	17.87	VVA
3050	38°39'43.40047"	-121°05'48.29018"	135.36	VVA
3051	37°47'51.91042"	-120°51'58.05790"	24.66	VVA
3052	37°05'53.06065"	-120°06'41.88986"	59.69	VVA
3052 A	37°05'54.17644"	-120°06'39.56769"	60.12	VVA
3053	37°35'56.30078"	-120°26'41.70143"	72.23	VVA
3053 A	37°35'55.36266"	-120°26'40.82471"	72.13	VVA

Section 3: Ground / Geodetic Control Photos

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

The data is assembled on the following pages.

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**23-Feb-17**
Station Name	**1000**	File Name	**LGC_022317_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°20'29.10580"**
Longitude	**W121°14'47.79500"**
Ellipsoidal Height	**-33.726**

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS
Start Time :		Stop Time :
PDOP Begin :		PDOP End :
Start Time :		Stop Time :
PDOP Begin :		PDOP End :

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 50°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1000

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**23-Feb-17**
Station Name	**1001**	File Name	**LGC_022317_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°21'01.27134"**
Longitude	**W121°12'39.86309"**
Ellipsoidal Height	**-16.395**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 50°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1001

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**23-Feb-17**
Station Name	**1002**	File Name	**LGC_022317_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°20'09.54776"**	Receiver :		
Longitude	**W121°09'33.30240"**	R10	**9670**	
Ellipsoidal Height	**5.871**	R8		
		Other, specify		
Type of Mark		Antenna Height:	**6.562**	USFT
			2.000	METERS
Mark Stamping				
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :

Weather Conditions: **SUNNY 46°**

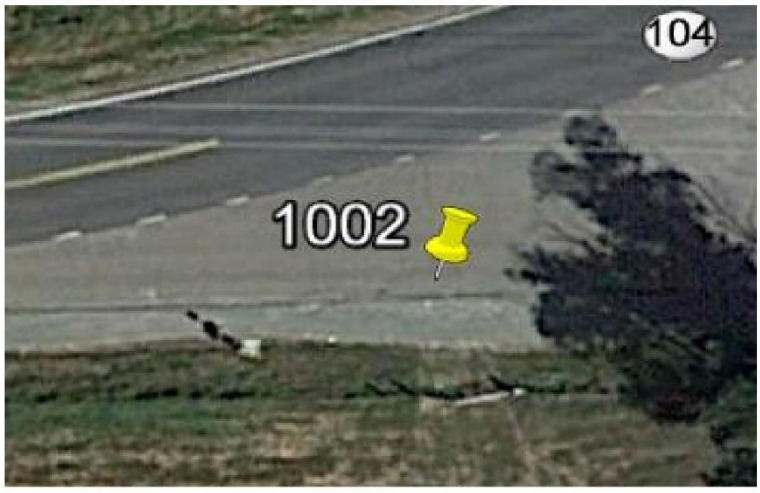
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1002

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**23-Feb-17**
Station Name	**1003**	File Name	**LGC_022317_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N38°21'02.03671"**
Longitude	**W121°06'51.08854"**
Ellipsoidal Height	**52.531**

Type of Mark

Mark Stamping

Receiver :

R10	**9670**
R8	
Other, specify	

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 53°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1003

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**24-Feb-17**
Station Name	**1004**	File Name	**LGC_022417_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°21'57.62224"**	Receiver :		
Longitude	**W121°04'35.52492"**	R10	**9670**	
Ellipsoidal Height	**93.419**	R8		
		Other, specify		
Type of Mark		Antenna Height:	**6.562**	USFT
			2.000	METERS
Mark Stamping				
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :

Weather Conditions: **SUNNY 46°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1004

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**24-Feb-17**
Station Name	**1005**	File Name	**LGC_022417_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°23'11.51399"**
Longitude	**W121°01'42.03207"**
Ellipsoidal Height	**113.277**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark _____

Mark Stamping _____

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 48°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1005

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**25-Feb-17**
Station Name	**1006**	File Name	**LGC_022517_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°03'27.18424"**
Longitude	**W121°00'38.15198"**
Ellipsoidal Height	**57.802**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark _____

Mark Stamping _____

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : _____ Stop Time : _____
PDOP Begin : _____ PDOP End : _____
Start Time : _____ Stop Time : _____
PDOP Begin : _____ PDOP End : _____

Weather Conditions: **SUNNY 55°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1006

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**25-Feb-17**
Station Name	**1007**	File Name	**LGC_022517_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N38°03'29.16033"**
Longitude	**W120°57'50.36778"**
Ellipsoidal Height	**54.309**

Type of Mark

Mark Stamping

Receiver :

R10	**9670**
R8	
Other, specify	

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : Stop Time :
PDOP Begin : PDOP End :
Start Time : Stop Time :
PDOP Begin : PDOP End :

Weather Conditions: **SUNNY 55°**

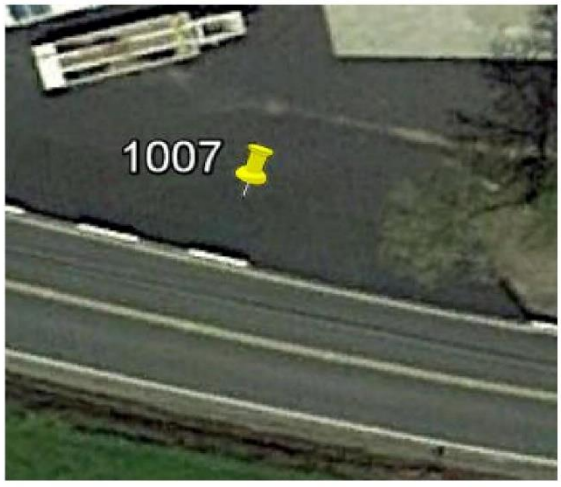
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1007

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**25-Feb-17**
Station Name	**1008**	File Name	**LGC_022517_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N38°04'19.96782"**
Longitude	**W120°55'54.20504"**
Ellipsoidal Height	**80.612**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : Stop Time :
PDOP Begin : PDOP End :
Start Time : Stop Time :
PDOP Begin : PDOP End :

Weather Conditions: **SUNNY 51°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1008

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**27-Feb-17**
Station Name	**1009**	File Name	**LGC_022717_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°47'55.39822"**
Longitude	**W121°02'18.22342"**
Ellipsoidal Height	**-6.264**

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS

Type of Mark _____

Mark Stamping _____

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 50°**

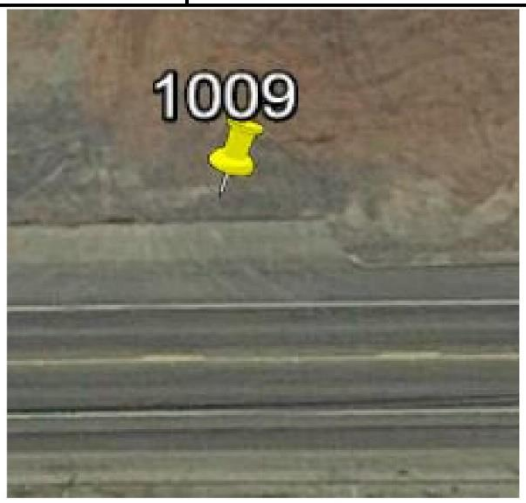
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1009

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**27-Feb-17**
Station Name	**1010**	File Name	**LGC_022717_EN**

Methodology	RTK base	X	Photo Control Point (PCP)		
	RTK VRS		LiDAR Control Point (LCP)	X	
	Rapid Static		LiDAR QC Point (LQC)		
			Control Station		
			Session #		

WGS 84 COORDINATES:

Latitude	**N37°47'38.08929"**
Longitude	**W120°58'59.06308"**
Ellipsoidal Height	**19.536**

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS

Type of Mark _____

Mark Stamping _____

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 51°**

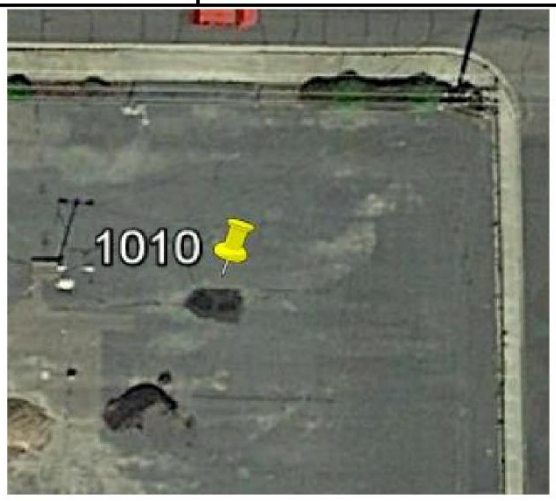
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1010

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**27-Feb-17**
Station Name	**1011**	File Name	**LGC_022717_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°47'33.86020"**
Longitude	**W120°54'50.16050"**
Ellipsoidal Height	**53.546**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 53°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1011

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**26-Feb-17**
Station Name	**1012**	File Name	**LGC_022617_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°46'01.69197"**	Receiver :		
Longitude	**W120°50'49.58905"**	R10	**9670**	
Ellipsoidal Height	**51.085**	R8		
		Other, specify		
Type of Mark		Antenna Height:	**6.562**	USFT
			2.000	METERS
Mark Stamping				
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :

Weather Conditions: **SUNNY 56°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1012

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**27-Feb-17**
Station Name	**1013**	File Name	**LGC_022717_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°46'34.76893"**
Longitude	**W120°47'06.21898"**
Ellipsoidal Height	**139.919**

Receiver :			
R10	**9670**		
R8			
Other, specify			
Antenna Height:	**6.562**	USFT	
	2.000	METERS	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 54°**

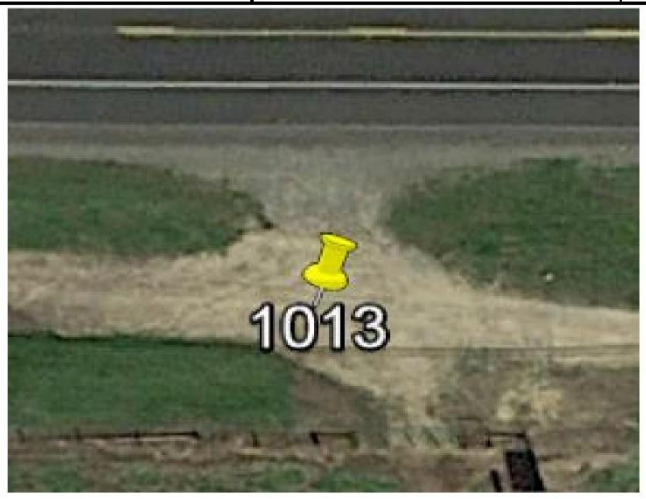
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1013

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**27-Feb-17**
Station Name	**1014**	File Name	**LGC_022717_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°48'10.71952"**
Longitude	**W120°43'06.57983"**
Ellipsoidal Height	**101.717**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : Stop Time :
PDOP Begin : PDOP End :
Start Time : Stop Time :
PDOP Begin : PDOP End :

Weather Conditions: **SUNNY 55°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1014

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**28-Feb-17**
Station Name	**1015**	File Name	**LGC_022817_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°38'26.35648"**
Longitude	**W120°44'02.73118"**
Ellipsoidal Height	**81.521**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark _____

Mark Stamping _____

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 56°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1015

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**28-Feb-17**
Station Name	**1016**	File Name	**LGC_022817_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°38'47.62473"**
Longitude	**W120°40'55.58122"**
Ellipsoidal Height	**92.765**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 56°**

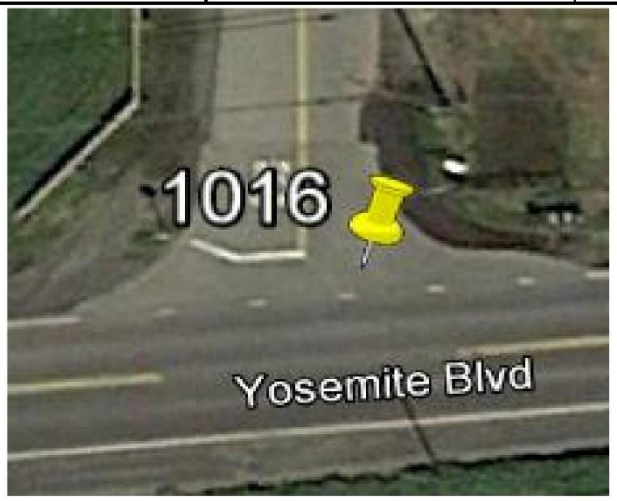
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1016

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**28-Feb-17**
Station Name	**1017**	File Name	**LGC_022817_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°38'27.47353"**
Longitude	**W120°36'51.08611"**
Ellipsoidal Height	**120.93**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 55°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1017

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**28-Feb-17**
Station Name	**1018**	File Name	**LGC_022817_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°38'18.08260"**
Longitude	**W120°33'05.46746"**
Ellipsoidal Height	**163.942**

Type of Mark

Mark Stamping

Receiver :

R10	**9670**
R8	
Other, specify	

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 60°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1018

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**28-Feb-17**
Station Name	**1019**	File Name	**LGC_022817_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°39'41.47635"**
Longitude	**W120°27'33.87787"**
Ellipsoidal Height	**213.362**

Type of Mark

Mark Stamping

Receiver :

R10	**9670**
R8	
Other, specify	

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1019

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Mar-17**
Station Name	**1020**	File Name	**LGC_030917_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°25'39.45333"**
Longitude	**W120°38'48.69611"**
Ellipsoidal Height	**75.79**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 72°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1020

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Mar-17**
Station Name	**1021 A**	File Name	**LGC_030917_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°28'28.76278"**
Longitude	**W120°35'49.60098"**
Ellipsoidal Height	**113.377**

Receiver :			
R10	**9670**		
R8			
Other, specify			
Type of Mark		Antenna Height:	**6.562** USFT
			2.000 METERS
Mark Stamping			
		Start Time :	Stop Time :
		PDOP Begin :	PDOP End :
		Start Time :	Stop Time :
		PDOP Begin :	PDOP End :

Weather Conditions: **SUNNY 67°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1021 A

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Mar-17**
Station Name	**1021**	File Name	**LGC_030917_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°28'29.18271"**
Longitude	**W120°35'47.55400"**
Ellipsoidal Height	**112.594**

Type of Mark

Mark Stamping

Receiver :			
R10	**9670**		
R8			
Other, specify			
Antenna Height:	**6.562**	USFT	
	2.000	METERS	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 67°**

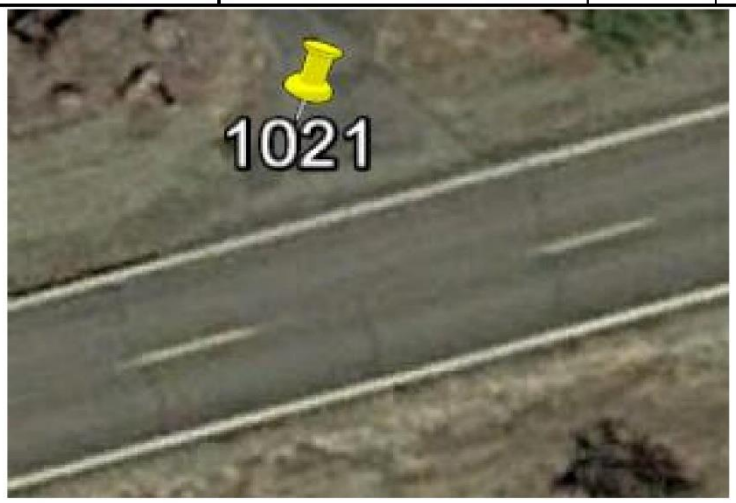
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1021

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**02-Mar-17**
Station Name	**1022**	File Name	**LGC_030217_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°29'30.96615"**
Longitude	**W120°31'31.26103"**
Ellipsoidal Height	**88.84**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : Stop Time :
PDOP Begin : PDOP End :
Start Time : Stop Time :
PDOP Begin : PDOP End :

Weather Conditions: **SUNNY 66°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1022

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**02-Mar-17**
Station Name	**1023**	File Name	**LGC_030217_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°31'19.77163"**
Longitude	**W120°26'04.07724"**
Ellipsoidal Height	**163.061**

Type of Mark

Mark Stamping

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS
Start Time :		Stop Time :
PDOP Begin :		PDOP End :
Start Time :		Stop Time :
PDOP Begin :		PDOP End :

Weather Conditions: **SUNNY 60°**

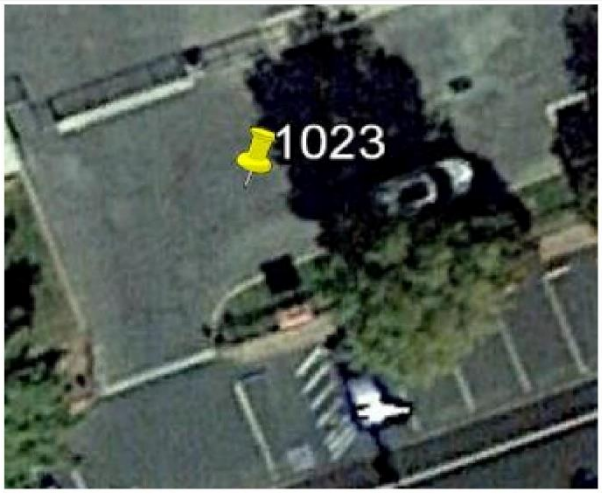
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1023

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**02-Mar-17**
Station Name	**1024**	File Name	**LGC_030217_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°31'03.47781"**	Receiver :		
Longitude	**W120°21'22.32456"**	R10	**9670**	
Ellipsoidal Height	**222.561**	R8		
		Other, specify		
Type of Mark		Antenna Height:	**6.562**	USFT
			2.000	METERS
Mark Stamping				
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :
		Weather Conditions:	**SUNNY 60°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1024

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Mar-17**
Station Name	**1025**	File Name	**LGC_031117_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°17'44.19348"**
Longitude	**W120°18'57.23140"**
Ellipsoidal Height	**128.775**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 71°**

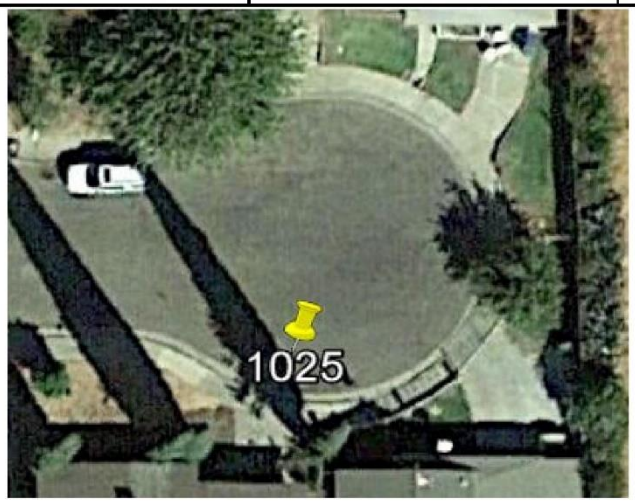
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1025

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Mar-17**
Station Name	**1026 A**	File Name	**LGC_031117_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°19'09.36176"**
Longitude	**W120°16'12.52823"**
Ellipsoidal Height	**178.796**

Type of Mark

Mark Stamping

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS
Start Time :		Stop Time :
PDOP Begin :		PDOP End :
Start Time :		Stop Time :
PDOP Begin :		PDOP End :

Weather Conditions: **SUNNY 71°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1026 A

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Mar-17**
Station Name	**1026**	File Name	**LGC_031117_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°19'08.25835"**
Longitude	**W120°16'12.74865"**
Ellipsoidal Height	**178.386**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 71°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1026

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Mar-17**
Station Name	**1027**	File Name	**LGC_031117_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°20'30.81824"**
Longitude	**W120°13'13.79395"**
Ellipsoidal Height	**266.353**

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS
Start Time :		Stop Time :
PDOP Begin :		PDOP End :
Start Time :		Stop Time :
PDOP Begin :		PDOP End :

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 71°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1027

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Mar-17**
Station Name	**1028**	File Name	**LGC_031217_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°05'02.80404"**
Longitude	**W120°14'18.42584"**
Ellipsoidal Height	**125.949**

Receiver :			
R10	**9670**		
R8			
Other, specify			
Antenna Height:	**6.562**	USFT	
	2.000	METERS	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 77°**

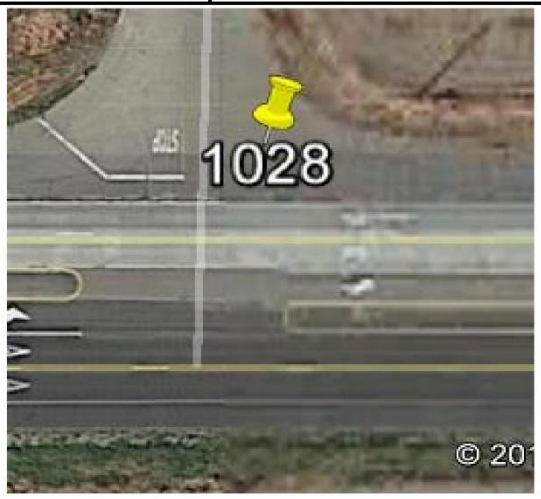
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1028

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Mar-17**
Station Name	**1029**	File Name	**LGC_031217_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°04'34.89858"**
Longitude	**W120°11'22.75412"**
Ellipsoidal Height	**144.197**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : Stop Time :
PDOP Begin : PDOP End :
Start Time : Stop Time :
PDOP Begin : PDOP End :

Weather Conditions: **SUNNY 74°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1029

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Mar-17**
Station Name	**1030**	File Name	**LGC_031217_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°05'52.75560"**
Longitude	**W120°08'01.59829"**
Ellipsoidal Height	**185.402**

Type of Mark

Mark Stamping

Receiver :			
R10	**9670**		
R8			
Other, specify			
Antenna Height:	**6.562**	USFT	
	2.000	METERS	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 74°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1030

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Mar-17**
Station Name	**1031**	File Name	**LGC_031317_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°03'15.68806"**
Longitude	**W120°04'28.43835"**
Ellipsoidal Height	**192.066**

Receiver :		
R10	**9670**	
R8		
Other, specify		
Antenna Height:	**6.562**	USFT
	2.000	METERS
Start Time :		Stop Time :
PDOP Begin :		PDOP End :
Start Time :		Stop Time :
PDOP Begin :		PDOP End :

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 64°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1031

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Mar-17**
Station Name	**1032**	File Name	**LGC_031317_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°03'15.31920"**
Longitude	**W120°01'04.86500"**
Ellipsoidal Height	**222.741**

Type of Mark

Mark Stamping

Receiver :

R10	**9670**
R8	
Other, specify	

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 68°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1032

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Mar-17**
Station Name	**1033**	File Name	**LGC_031317_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N36°59'53.34303"**
Longitude	**W119°58'50.75988"**
Ellipsoidal Height	**193.745**

Receiver :			
R10	**9670**		
R8			
Other, specify			
Antenna Height:	**6.562**	USFT	
	2.000	METERS	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 81°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1033

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Mar-17**
Station Name	**1034**	File Name	**LGC_031317_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°00'36.02440"**
Longitude	**W119°56'33.11031"**
Ellipsoidal Height	**234.578**

Type of Mark

Mark Stamping

Receiver :

R10	**9670**
R8	
Other, specify	

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 81°**

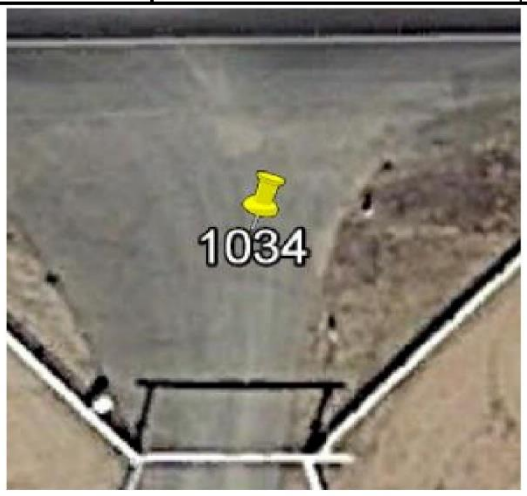
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1034

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Mar-17**
Station Name	**1035 A**	File Name	**LGC_031317_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°00'36.41306"**
Longitude	**W119°53'04.26329"**
Ellipsoidal Height	**259.837**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 81°**

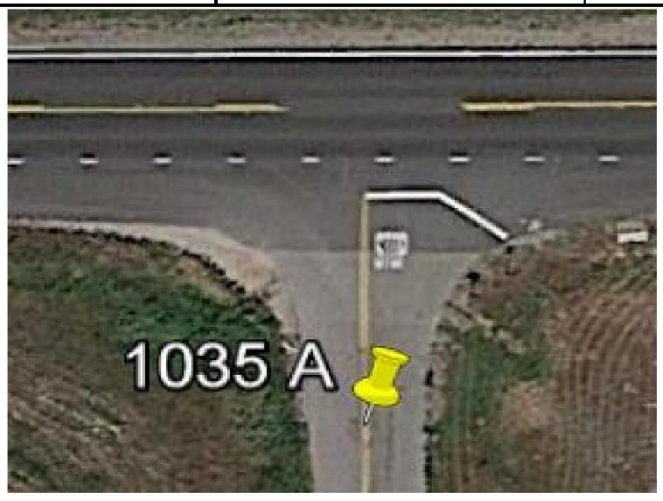
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1035 A

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Mar-17**
Station Name	**1035**	File Name	**LGC_031317_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°00'36.93947"**
Longitude	**W119°53'07.29078"**
Ellipsoidal Height	**260.244**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time : Stop Time :
PDOP Begin : PDOP End :
Start Time : Stop Time :
PDOP Begin : PDOP End :

Weather Conditions: **SUNNY 81°**

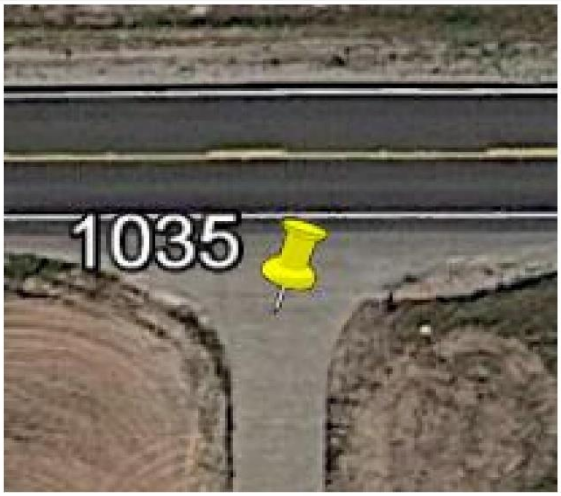
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1035

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**14-Mar-17**
Station Name	**1036**	File Name	**LGC_031417_EN**

Methodology

RTK base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (LCP)	X
Rapid Static		LiDAR QC Point (LQC)	
		Control Station	
		Session #	

WGS 84 COORDINATES:

Latitude	**N37°00'36.45941"**
Longitude	**W119°50'23.31575"**
Ellipsoidal Height	**309.159**

Receiver :

R10	**9670**
R8	
Other, specify	

Type of Mark

Mark Stamping

Antenna Height: **6.562** USFT / **2.000** METERS

Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Weather Conditions: **SUNNY 71°**

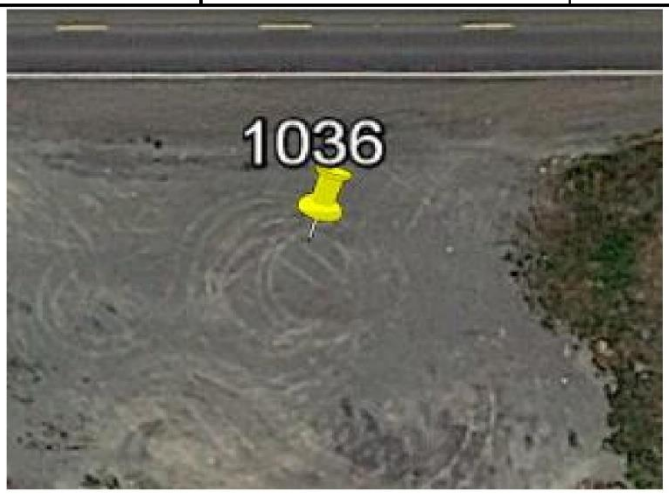
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



1036

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**14-Mar-17**
Station Name	**1038**	File Name	**LGC_031417_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N36°57'34.22203"**	Receiver :		
Longitude	**W119°46'17.20718"**	R10	**9670**	
Ellipsoidal Height	**294.338**	R8		
		Other, specify		
Type of Mark		Antenna Height:	**6.562**	USFT
			2.000	METERS
Mark Stamping				
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :
		Start Time :		Stop Time :
		PDOP Begin :		PDOP End :

Weather Conditions: **SUNNY 72°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1038

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Central Valley LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**27-Feb-17**
Station Name	**1039**	File Name	**LGC_022717_EN**

Methodology				
	RTK base	X	Photo Control Point (PCP)	
	RTK VRS		LiDAR Control Point (LCP)	X
	Rapid Static		LiDAR QC Point (LQC)	
			Control Station	
			Session #	

WGS 84 COORDINATES:

Latitude	**N37°48'33.78947"**
Longitude	**W120°39'56.81922"**
Ellipsoidal Height	**227.394**

Receiver :			
R10	**9670**		
R8			
Other, specify			
Antenna Height:	**6.562**	USFT	
	2.000	METERS	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	
Start Time :		Stop Time :	
PDOP Begin :		PDOP End :	

Type of Mark

Mark Stamping

Weather Conditions: **SUNNY 55°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

1039

Section 4: Existing NGS Datasheets

This section contains the published National Geodetic Survey (NGS) datasheets for those existing monumented control stations that were used to establish 3-dimensional coordinates for each of the newly established ground control survey points for the project.

```
        National Geodetic Survey,   Retrieval Date = MARCH  9, 2017
AA4255 ***********************************************************************
AA4255  DESIGNATION -  1 JD 365
AA4255  PID         -  AA4255
AA4255  STATE/COUNTY-  CA/MERCED
AA4255  COUNTRY     -  US
AA4255  USGS QUAD   -  OWENS RESERVOIR (1978)
AA4255
AA4255                        *CURRENT SURVEY CONTROL
AA4255  ______________________________________________________________________
AA4255* NAD 83(2011) POSITION- 37 20 31.45802(N) 120 13 14.30475(W)   NO CHECK
AA4255* NAD 83(2011) ELLIP HT-    80.676 (meters)        (06/27/12)   NO CHECK
AA4255* NAD 83(2011) EPOCH    -  2010.00
AA4255* NAVD 88 ORTHO HEIGHT -   112.3   (meters)      368.    (feet) GPS OBS
AA4255  ______________________________________________________________________
AA4255  NAVD 88 orthometric height was determined with geoid model    GEOID93
AA4255  GEOID HEIGHT    -        -30.739 (meters)                     GEOID93
AA4255  GEOID HEIGHT    -        -31.255 (meters)                     GEOID12B
AA4255  NAD 83(2011) X  - -2,555,473.176 (meters)                     COMP
AA4255  NAD 83(2011) Y  - -4,387,106.531 (meters)                     COMP
AA4255  NAD 83(2011) Z  -  3,847,692.638 (meters)                     COMP
AA4255  LAPLACE CORR    -          5.49  (seconds)                    DEFLEC12B
AA4255
AA4255  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AA4255  Standards:
AA4255         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
AA4255            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AA4255  ------------------------------------------------------------------
AA4255  NETWORK    1.89   3.86           0.88   0.61   1.97      0.09105047
AA4255  ------------------------------------------------------------------
AA4255  Click here for local accuracies and other accuracy information.
AA4255
AA4255
AA4255.The horizontal coordinates were established by GPS observations
AA4255.and adjusted by the National Geodetic Survey in June 2012.
AA4255
AA4255.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AA4255.been affixed to the stable North American tectonic plate. See
AA4255.NA2011 for more information.
AA4255
AA4255.The horizontal coordinates are valid at the epoch date displayed above
AA4255.which is a decimal equivalence of Year/Month/Day.
AA4255
AA4255.No horizontal observational check was made to the station.
AA4255.
AA4255.The orthometric height was determined by GPS observations and a
AA4255.high-resolution geoid model.
```

```
AA4255
AA4255.Significant digits in the geoid height do not necessarily reflect accuracy.
AA4255.GEOID12B height accuracy estimate available here.
AA4255
AA4255.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA4255
AA4255.The Laplace correction was computed from DEFLEC12B derived deflections.
AA4255
AA4255.The ellipsoidal height was determined by GPS observations
AA4255.and is referenced to NAD 83.
AA4255
AA4255. The following values were computed from the NAD 83(2011) position.
AA4255
AA4255;                    North         East     Units Scale Factor Converg.
AA4255;SPC CA 3     -   593,490.772 2,024,753.282   MT  0.99995450   +0 10 15.7
AA4255;SPC CA 3     - 1,947,144.31  6,642,878.06   sFT  0.99995450   +0 10 15.7
AA4255;UTM  10      - 4,136,444.480   746,210.021   MT  1.00034678   +1 41 12.2
AA4255
AA4255!             -  Elev Factor  x  Scale Factor =   Combined Factor
AA4255!SPC CA 3     -   0.99998734  x   0.99995450  =   0.99994184
AA4255!UTM  10      -   0.99998734  x   1.00034678  =   1.00033412
AA4255
AA4255_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGG4621036444(NAD 83)
AA4255
AA4255                           SUPERSEDED SURVEY CONTROL
AA4255
AA4255  NAD 83(2007)-  37 20 31.45778(N)    120 13 14.30317(W) AD(2007.00) 0
AA4255  ELLIP H (02/10/07)   80.760  (m)                       GP(2007.00)
AA4255  NAD 83(1992)-  37 20 31.45274(N)    120 13 14.29771(W) AD(1991.35) 1
AA4255  ELLIP H (10/14/94)   81.010  (m)                       GP(1991.35) 4 2
AA4255
AA4255.Superseded values are not recommended for survey control.
AA4255
AA4255.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA4255.See file dsdata.pdf to determine how the superseded data were derived.
AA4255
AA4255_MARKER: DB = BENCH MARK DISK
AA4255_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AA4255_STAMPING: 1 JD 365 1960
AA4255_MARK LOGO: USGS
AA4255_MAGNETIC: N = NO MAGNETIC MATERIAL
AA4255_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AA4255+STABILITY: SURFACE MOTION
AA4255_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA4255+SATELLITE: SATELLITE OBSERVATIONS - September 28, 2011
AA4255
AA4255  HISTORY     - Date     Condition        Report By
AA4255  HISTORY     - 1960     MONUMENTED       USGS
AA4255  HISTORY     - 19931228 GOOD             CADT
AA4255  HISTORY     - 20050416 GOOD             GEOCAC
AA4255  HISTORY     - 20110928 GOOD             ATKNA
AA4255
AA4255                           STATION DESCRIPTION
AA4255
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AA4255'DESCRIBED BY CALTRANS 1993 (DBS)
AA4255'THE STATION IS LOCATED ALONG STATE HIGHWAY 140 AT THE MERCED/MARIPOSA
AA4255'COUNTY LINE, ABOUT 13 MI (20.9 KM) EAST-NORTHEAST OF MERCED.
AA4255'
AA4255'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 99 AND STATE
AA4255'HIGHWAY 140 IN MERCED, GO EAST ON HIGHWAY 140 FOR 7.9 MI (12.7 KM) TO
AA4255'THE INTERSECTION WITH PLAINSBURG ROAD IN THE TOWN OF PLANADA. CONTINUE
AA4255'EAST THEN NORTHEAST ON HIGHWAY 140 FOR 6.6 MI (10.6 KM) TO THE STATION
AA4255'ON THE LEFT AT THE MERCED/MARIPOSA COUNTY LINE.
AA4255'
AA4255'THE STATION IS 37.8 FT (11.5 M) NORTHWEST OF THE CENTERLINE OF HIGHWAY
AA4255'140, 5.2 FT (1.6 M) NORTHEAST OF A GATE POST, 2.0 FT (0.6 M) SOUTHEAST
AA4255'OF A CONCRETE HIGHWAY RIGHT-OF-WAY MONUMENT, 1.6 FT (0.5 M) SOUTHEAST
AA4255'OF AN ANGLE POINT IN THE BARBED WIRE RIGHT-OF-WAY FENCE, 1.0 FT (0.3
AA4255'M) SOUTHEAST OF THE FENCE, PROJECTS 0.5 FT (0.2 M) ABOVE THE GROUND,
AA4255'AND ABOUT 1 FT (0.3 M) LOWER THAN THE HIGHWAY.
AA4255'
AA4255'THE STATION WAS OCCUPIED AS PART OF A CALIFORNIA HPGN DENSIFICATION
AA4255'SURVEY.  THE STATION IS LOCATED WITHIN THE CALIFORNIA DEPARTMENT OF
AA4255'TRANSPORTATION (CALTRANS) HIGHWAY RIGHT-OF-WAY.  USERS MUST OBTAIN AN
AA4255'ENCROACHMENT PERMIT FROM CALTRANS BEFORE USING THE STATION.  TO OBTAIN
AA4255'AN ENCROACHMENT PERMIT, CONTACT THE DISTRICT PERMITS OFFICE IN
AA4255'STOCKTON AT (209) 948-7891.
AA4255
AA4255                          STATION RECOVERY (2005)
AA4255
AA4255'RECOVERY NOTE BY GEOCACHING 2005 (PFW)
AA4255'RECOVERED IN GOOD CONDITION.
AA4255
AA4255                          STATION RECOVERY (2011)
AA4255
AA4255'RECOVERY NOTE BY ATKINS NORTH AMERICA INC 2011 (MZ)
AA4255'RECOVERED IN GOOD CONDITION
      National Geodetic Survey,   Retrieval Date = MARCH 12, 2017
HS1194 ***********************************************************************
HS1194  HT_MOD      -  This is a Height Modernization Survey Station.
HS1194  DESIGNATION -  249.835 USGS
HS1194  PID         -  HS1194
HS1194  STATE/COUNTY-  CA/MADERA
HS1194  COUNTRY     -  US
HS1194  USGS QUAD   -  BERENDA (1987)
HS1194
HS1194                        *CURRENT SURVEY CONTROL
HS1194  ______________________________________________________________________
HS1194* NAD 83(2011) POSITION- 37 03 22.53738(N) 120 10 23.38187(W)   ADJUSTED
HS1194* NAD 83(2011) ELLIP HT-    44.052 (meters)        (06/27/12)   ADJUSTED
HS1194* NAD 83(2011) EPOCH   -  2010.00
HS1194* NAVD 88 ORTHO HEIGHT -    76.71  (meters)      251.7   (feet) GPS OBS
HS1194  ______________________________________________________________________
HS1194  NAVD 88 orthometric height was determined with geoid model    GEOID03
HS1194  GEOID HEIGHT    -        -32.512 (meters)                     GEOID03
HS1194  GEOID HEIGHT    -        -32.623 (meters)                     GEOID12B
HS1194  NAD 83(2011) X  - -2,561,461.139 (meters)                     COMP
HS1194  NAD 83(2011) Y  - -4,405,776.583 (meters)                     COMP
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HS1194  NAD 83(2011) Z  -  3,822,404.280 (meters)                    COMP
HS1194  LAPLACE CORR    -          1.74  (seconds)                   DEFLEC12B
HS1194
HS1194  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
HS1194  Standards:
HS1194         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
HS1194            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
HS1194  ------------------------------------------------------------------
HS1194  NETWORK    0.76   1.45           0.35   0.26   0.74     -0.00022250
HS1194  ------------------------------------------------------------------
HS1194  Click here for local accuracies and other accuracy information.
HS1194
HS1194
HS1194.The horizontal coordinates were established by GPS observations
HS1194.and adjusted by the National Geodetic Survey in June 2012.
HS1194
HS1194.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
HS1194.been affixed to the stable North American tectonic plate. See
HS1194.NA2011 for more information.
HS1194
HS1194.The horizontal coordinates are valid at the epoch date displayed above
HS1194.which is a decimal equivalence of Year/Month/Day.
HS1194
HS1194.The orthometric height was determined by GPS observations and a
HS1194.high-resolution geoid model using precise GPS observation and
HS1194.processing techniques.
HS1194
HS1194.Significant digits in the geoid height do not necessarily reflect accuracy.
HS1194.GEOID12B height accuracy estimate available here.
HS1194
HS1194.Photographs are available for this station.
HS1194
HS1194.The X, Y, and Z were computed from the position and the ellipsoidal ht.
HS1194
HS1194.The Laplace correction was computed from DEFLEC12B derived deflections.
HS1194
HS1194.The ellipsoidal height was determined by GPS observations
HS1194.and is referenced to NAD 83.
HS1194
HS1194. The following values were computed from the NAD 83(2011) position.
HS1194
HS1194;                     North         East     Units Scale Factor Converg.
HS1194;SPC CA 3     -   561,785.612 2,029,070.985   MT  1.00000217   +0 12 00.4
HS1194;SPC CA 3     - 1,843,124.96  6,657,043.72   sFT  1.00000217   +0 12 00.4
HS1194;UTM  10      - 4,104,851.909   751,363.693   MT  1.00037843   +1 42 15.6
HS1194
HS1194!             -  Elev Factor  x  Scale Factor =   Combined Factor
HS1194!SPC CA 3     -   0.99999309  x   1.00000217  =   0.99999526
HS1194!UTM  10      -   0.99999309  x   1.00037843  =   1.00037151
HS1194
HS1194_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGG5136304851(NAD 83)
HS1194
HS1194                           SUPERSEDED SURVEY CONTROL
HS1194
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HS1194  NAD 83(2007)-  37 03 22.53658(N)    120 10 23.38027(W) AD(2007.00) 0
HS1194  ELLIP H (02/10/07)   44.136  (m)                       GP(2007.00)
HS1194  NAD 83(1998)-  37 03 22.53574(N)    120 10 23.38029(W) AD(2004.50) B
HS1194  ELLIP H (06/30/05)   44.157  (m)                       GP(2004.50) 4 1
HS1194  NGVD 29 (??/??/??)   76.05   (m)          249.5    (f) RESET       3
HS1194
HS1194.Superseded values are not recommended for survey control.
HS1194
HS1194.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HS1194.See file dsdata.pdf to determine how the superseded data were derived.
HS1194
HS1194_MARKER: DB = BENCH MARK DISK
HS1194_SETTING: 17 = SET INTO TOP OF METAL PIPE DRIVEN INTO GROUND
HS1194_STAMPING: 249.835 BB 1901
HS1194_MAGNETIC: N = NO MAGNETIC MATERIAL
HS1194_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
HS1194_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HS1194+SATELLITE: SATELLITE OBSERVATIONS - December 03, 2010
HS1194
HS1194  HISTORY     - Date     Condition        Report By
HS1194  HISTORY     - 1901     MONUMENTED       USGS
HS1194  HISTORY     - 1958     GOOD             CGS
HS1194  HISTORY     - 20040901 GOOD             CSRC
HS1194  HISTORY     - 20101203 GOOD             GEOCAC
HS1194
HS1194                          STATION DESCRIPTION
HS1194
HS1194'DESCRIBED BY COAST AND GEODETIC SURVEY 1958
HS1194'6.5 MI SE FROM CHOWCHILLA.
HS1194'6.5 MILES SOUTHEAST ALONG THE SOUTHERN PACIFIC COMPANY RAILROAD
HS1194'FROM THE STATION AT CHOWCHILLA, IN R16E T10S S13, 8 POLES
HS1194'NORTHWEST OF MILEPOLE 175, 47.0 FEET NORTHEAST OF THE NORTHEAST RAIL,
HS1194'31 FEET SOUTHWEST OF THE CENTER LINE OF FAIRMEAD BOULEVARD, 11 FEET
HS1194'NORTH OF TELEGRAPH POLE 50 G4, 1.3 FEET SOUTHWEST OF A WITNESS
HS1194'POST, ABOUT 1 1/2 FEET LOWER THAN THE TRACK, AND RIVETED ON TOP
HS1194'OF A 3 1/2-INCH IRON PIPE PROJECTING 0.4 FOOT ABOVE THE GROUND.
HS1194
HS1194                          STATION RECOVERY (2004)
HS1194
HS1194'RECOVERY NOTE BY CALIFORNIA SPATIAL REFERENCE CENTER 2004 (JG)
HS1194'STATION IS LOCATED SOUTH OF CHOWCHILLA IN FAIRMEAD.  TO REACH FROM
HS1194'INTERSECTION OF HWY 99 AND AVE. 20,  GO EAST 0.2 KM (0.15 MILES) ON
HS1194'AVE. 20 TO  FAIRMEAD BLVD. GO LEFT (NORTHEAST) ON FAIRMEAD BLVD. 1.9
HS1194'KM (1.15 MILES) TO THE STATION ON  THE LEFT.  STATION IS LOCATED 14.3
HS1194'M (46.8 FT) EAST OF THE EAST RAIL OF THE RAILROAD TRACKS, 3.4 M (11.2
HS1194'FT) FROM A TELEGRAPH POLE, AND 8.5 M (28.0 FT) WEST OF THE CENTERLINE
HS1194'OF THE ROAD.  THIS STATION WAS OBSERVED AS PART OF THE SAN JOAQUIN
HS1194'VALLEY HEIGHT MODERNIZATION  SURVEY, A CSRC PROJECT.
HS1194
HS1194                          STATION RECOVERY (2010)
HS1194
HS1194'RECOVERY NOTE BY GEOCACHING 2010 (TDG)
HS1194'RECOVERED IN GOOD CONDITION AT N 37  03.377 W 120  10.389 AT AN
HS1194'ELEVATION OF 245'.
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      National Geodetic Survey,   Retrieval Date = FEBRUARY 22, 2017
JS1497 ***********************************************************************
JS1497  HT_MOD      -  This is a Height Modernization Survey Station.
JS1497  DESIGNATION -  H 17 USGS
JS1497  PID         -  JS1497
JS1497  STATE/COUNTY-  CA/SAN JOAQUIN
JS1497  COUNTRY     -  US
JS1497  USGS QUAD   -  CLEMENTS (1993)
JS1497
JS1497                        *CURRENT SURVEY CONTROL
JS1497
JS1497* NAD 83(2011) POSITION- 38 08 53.74346(N) 121 04 40.41339(W)   ADJUSTED
JS1497* NAD 83(2011) ELLIP HT-    27.531 (meters)        (06/27/12)   ADJUSTED
JS1497* NAD 83(2011) EPOCH   -  2010.00
JS1497* NAVD 88 ORTHO HEIGHT -    58.37  (meters)      191.5   (feet) GPS OBS
JS1497
JS1497  NAVD 88 orthometric height was determined with geoid model    GEOID09
JS1497  GEOID HEIGHT    -        -30.842 (meters)                     GEOID09
JS1497  GEOID HEIGHT    -        -30.817 (meters)                     GEOID12B
JS1497  NAD 83(2011) X  - -2,592,527.077 (meters)                     COMP
JS1497  NAD 83(2011) Y  - -4,301,432.874 (meters)                     COMP
JS1497  NAD 83(2011) Z  -  3,918,415.967 (meters)                     COMP
JS1497  LAPLACE CORR    -          4.47  (seconds)                    DEFLEC12B
JS1497
JS1497  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
JS1497  Standards:
JS1497         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
JS1497            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
JS1497  ------------------------------------------------------------------
JS1497  NETWORK    0.46   0.69           0.21   0.16   0.35      0.02080905
JS1497  ------------------------------------------------------------------
JS1497  Click here for local accuracies and other accuracy information.
JS1497
JS1497
JS1497.The horizontal coordinates were established by GPS observations
JS1497.and adjusted by the National Geodetic Survey in June 2012.
JS1497
JS1497.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
JS1497.been affixed to the stable North American tectonic plate. See
JS1497.NA2011 for more information.
JS1497
JS1497.The horizontal coordinates are valid at the epoch date displayed above
JS1497.which is a decimal equivalence of Year/Month/Day.
JS1497
JS1497.The orthometric height was determined by GPS observations and a
JS1497.high-resolution geoid model using precise GPS observation and
JS1497.processing techniques.
JS1497
JS1497.Significant digits in the geoid height do not necessarily reflect accuracy.
JS1497.GEOID12B height accuracy estimate available here.
JS1497
JS1497.The X, Y, and Z were computed from the position and the ellipsoidal ht.
JS1497
JS1497.The Laplace correction was computed from DEFLEC12B derived deflections.
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JS1497
JS1497.The ellipsoidal height was determined by GPS observations
JS1497.and is referenced to NAD 83.
JS1497
JS1497. The following values were computed from the NAD 83(2011) position.
JS1497
JS1497;                    North         East     Units Scale Factor Converg.
JS1497;SPC CA 3     -   683,085.031 1,949,347.325   MT  0.99995315   -0 21 13.7
JS1497;SPC CA 3     - 2,241,088.14  6,395,483.68   sFT  0.99995315   -0 21 13.7
JS1497;UTM  10      - 4,224,010.614   668,423.135   MT  0.99994937   +1 11 15.2
JS1497
JS1497!             -  Elev Factor  x  Scale Factor =   Combined Factor
JS1497!SPC CA 3     -   0.99999568  x   0.99995315  =   0.99994883
JS1497!UTM  10      -   0.99999568  x   0.99994937  =   0.99994505
JS1497
JS1497_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SFH6842324010(NAD 83)
JS1497
JS1497                           SUPERSEDED SURVEY CONTROL
JS1497
JS1497  NAD 83(2007)-  38 08 53.74177(N)    121 04 40.41327(W) AD(2007.00) 0
JS1497  ELLIP H (02/10/07)   27.507  (m)                        GP(2007.00)
JS1497  NAD 83(1998)-  38 08 53.74103(N)    121 04 40.41070(W) AD(2002.86) 1
JS1497  ELLIP H (10/28/05)   27.531  (m)                        GP(2002.86) 4 1
JS1497  NAD 83(1992)-  38 08 53.73963(N)    121 04 40.40884(W) AD(1997.30) B
JS1497  ELLIP H (07/10/98)   27.539  (m)                        GP(1997.30) 4 1
JS1497  NAD 83(1992)-  38 08 53.73928(N)    121 04 40.40923(W) AD(1997.30) B
JS1497  ELLIP H (05/14/98)   27.630  (m)                        GP(1997.30) 3 1
JS1497  NAVD 88 (10/28/05)   58.30   (m)  GEOID03 model used   GPS OBS
JS1497  NAVD 88 (07/10/98)   58.39   (m)  UNKNOWN model used   GPS OBS
JS1497  NAVD 88 (05/14/98)   58.38   (m)  GEOID96 model used   GPS OBS
JS1497  NGVD 29 (??/??/??)   57.59   (m)          188.9    (f) RESET       3
JS1497
JS1497.Superseded values are not recommended for survey control.
JS1497
JS1497.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JS1497.See file dsdata.txt to determine how the superseded data were derived.
JS1497
JS1497_MARKER: DB = BENCH MARK DISK
JS1497_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
JS1497_STAMPING: H 17 1932
JS1497_MARK LOGO: USGS
JS1497_PROJECTION: PROJECTING 10 CENTIMETERS
JS1497_MAGNETIC: N = NO MAGNETIC MATERIAL
JS1497_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
JS1497+STABILITY: SURFACE MOTION
JS1497_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
JS1497+SATELLITE: SATELLITE OBSERVATIONS - April 01, 2011
JS1497
JS1497  HISTORY     - Date     Condition        Report By
JS1497  HISTORY     - 1932     MONUMENTED       USGS
JS1497  HISTORY     - 1963     GOOD             CGS
JS1497  HISTORY     - 19971028 GOOD             BOR
JS1497  HISTORY     - 20020626 GOOD             NGS
JS1497  HISTORY     - 20021001 GOOD             CADWR
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JS1497  HISTORY     - 20110401 GOOD             CADWR
JS1497
JS1497                           STATION DESCRIPTION
JS1497
JS1497'DESCRIBED BY COAST AND GEODETIC SURVEY 1963
JS1497'3.7 MI S FROM CLEMENTS.
JS1497'0.5 MILE EAST ALONG STATE HIGHWAY NO. 12 FROM THE POST OFFICE
JS1497'AT CLEMENTS, THENCE 3.2 MILES SOUTH ALONG CLEMENTS ROAD, 90
JS1497'FEET NORTHWEST OF THE INTERSECTION OF BRANDT ROAD, 87 FEET NORTH
JS1497'OF THE CENTER LINE OF BRANDT ROAD, 29 FEET WEST OF THE CENTER
JS1497'LINE OF CLEMENTS ROAD, 0.7 FOOT EAST OF A FENCE, 1.5 FEET
JS1497'SOUTHWEST OF A WITNESS POST, ABOUT 3 1/2 FEET HIGHER THAN THE
JS1497'ROADS, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.3 FOOT
JS1497'ABOVE THE GROUND.
JS1497
JS1497                           STATION RECOVERY (1997)
JS1497
JS1497'RECOVERY NOTE BY US BUREAU OF RECLAMATION 1997 (DWS)
JS1497'THE STATION WAS RECOVERED AND A COMPLETE NEW DESCRIPTION FOLLOWS.  THE
JS1497'STATION IS ABOUT 17.8 MI (28.6 KM) NORTHEAST OF STOCKTON, 10.6 MI
JS1497'(17.1 KM) EAST OF LODI, AND 3.1 MI (5.0 KM) SOUTH OF CLEMENTS.  TO
JS1497'REACH THE STATION FROM THE US POST OFFICE IN CLEMENTS, GO EAST ON
JS1497'STATE HIGHWAYS 12 AND 88 FOR ABOUT 0.5 MI (0.8 KM) TO THE INTERSECTION
JS1497'OF CLEMENTS ROAD TO THE RIGHT.  TURN RIGHT AND GO SOUTH ON CLEMENTS
JS1497'ROAD FOR 3.1 MI (5.0 KM) TO THE INTERSECTION OF BRANDT ROAD AND THE
JS1497'STATION ON THE RIGHT (NORTHWEST QUADRANT) .  TO REACH THE STATION FROM
JS1497'THE INTERSECTION OF STATE HIGHWAYS 99 AND 12 NEAR LODI, TRAVEL EAST ON
JS1497'STATE HIGHWAY 12 FOR ABOUT 5.2 MI (8.4 KM) TO THE INTERSECTION OF
JS1497'STATE HIGHWAYS 88 AND 12.  TURN LEFT AND GO NORTH FOR 0.6 MI (1.0 KM)
JS1497'TO THE INTERSECTION OF BRANDT ROAD.  TURN RIGHT AND GO EAST ON BRANDT
JS1497'ROAD FOR 4.4 MI (7.1 KM) TO THE INTERSECTION OF CLEMENTS ROAD AND THE
JS1497'STATION ON THE LEFT.  THE STATION IS A USGS BENCH MARK DISK, SET IN
JS1497'THE TOP OF A 10-INCH DIAMETER CONCRETE POST, 106.5 FT (32.5 M)
JS1497'NORTHEAST OF A POWER POLE IN THE SAME QUADRANT AS THE STATION, 91.5 FT
JS1497'(27.9 M) AT 324 DEGREES FROM THE SECTION CORNER 34/35/2/3 IN THE
JS1497'CENTER OF THE INTERSECTION, ABOUT 87 FT (26.5 M) NORTH OF CENTERLINE
JS1497'OF BRANDT ROAD, 64.6 FT (19.7 M) FROM A TRANSFORMER POWER POLE, 28.75
JS1497'FT (8.76 M) WEST OF CENTERLINE OF CLEMENTS ROAD, ABOUT 3.5 FT (1.1 M)
JS1497'HIGHER THAN THE LEVEL OF THE ROAD, 0.7 FT (0.2 M) EAST OF A WIRE
JS1497'FENCE, AND PROJECTING 0.3 FT (0.1 M) ABOVE THE GROUND.  THE STATION
JS1497'WAS OCCUPIED AS PART OF THE SAN JOAQUIN-SACRAMENTO RIVER DELTA
JS1497'GPS/VERTICAL PROJECT.  (RWK)
JS1497
JS1497                           STATION RECOVERY (2002)
JS1497
JS1497'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2002 (MEI)
JS1497'RECOVERED IN GOOD CONDITION.
JS1497
JS1497                           STATION RECOVERY (2002)
JS1497
JS1497'RECOVERY NOTE BY CA DEPT OF WATER RES 2002 (WLB)
JS1497'RECOVERED AS DESCRIBED. THE STATION WAS OBSERVED AS PART OF THE DWR
JS1497'DELTA 2002 SUBSIDENCE NETWORK HEIGHT  MODERNIZATION SURVEY.
JS1497
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JS1497                          STATION RECOVERY (2011)
JS1497
JS1497'RECOVERY NOTE BY CA DEPT OF WATER RES 2011 (GS)
 National Geodetic Survey,   Retrieval Date = MARCH 11, 2017
HR2837 ***********************************************************************
HR2837  DESIGNATION -  HILDRETH
HR2837  PID         -  HR2837
HR2837  STATE/COUNTY-  CA/MADERA
HR2837  COUNTRY     -  US
HR2837  USGS QUAD   -  DAULTON (1981)
HR2837
HR2837                        *CURRENT SURVEY CONTROL
HR2837  ______________________________________________________________________
HR2837* NAD 83(1992) POSITION- 37 00 36.42412(N) 119 54 50.55855(W)   ADJUSTED
HR2837* NAD 83(1992) EPOCH   -  1991.35
HR2837* NAVD 88 ORTHO HEIGHT -   112.9   (meters)      370.    (feet) VERTCON
HR2837  ______________________________________________________________________
HR2837  GEOID HEIGHT    -        -32.136 (meters)                    GEOID12B
HR2837  LAPLACE CORR    -          7.47  (seconds)                   DEFLEC12B
HR2837  HORZ ORDER      -  SECOND
HR2837
HR2837.The horizontal coordinates were established by classical geodetic methods
HR2837.and adjusted by the National Geodetic Survey in March 1994.
HR2837.
HR2837.The NAVD 88 height was computed by applying the VERTCON shift value to
HR2837.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
HR2837
HR2837.Significant digits in the geoid height do not necessarily reflect accuracy.
HR2837.GEOID12B height accuracy estimate available here.
HR2837
HR2837.The Laplace correction was computed from DEFLEC12B derived deflections.
HR2837
HR2837. The following values were computed from the NAD 83(1992) position.
HR2837
HR2837;                   North         East     Units Scale Factor Converg.
HR2837;SPC CA 3     -   556,777.251 2,052,150.302   MT  1.00001217   +0 21 31.5
HR2837;SPC CA 3     - 1,826,693.36  6,732,763.12   sFT  1.00001217   +0 21 31.5
HR2837;UTM  11      - 4,099,965.654   240,723.135   MT  1.00042823   -1 45 18.4
HR2837
HR2837!             -  Elev Factor  x  Scale Factor =   Combined Factor
HR2837!SPC CA 3     -   0.99998732  x   1.00001217  =   0.99999949
HR2837!UTM  11      -   0.99998732  x   1.00042823  =   1.00041555
HR2837
HR2837:                Primary Azimuth Mark                    Grid Az
HR2837:SPC CA 3     -  HILDRETH AZ MK                          089 23 44.5
HR2837:UTM  11      -  HILDRETH AZ MK                          091 30 34.4
HR2837
HR2837|----------------------------------------------------------------------|
HR2837| PID    Reference Object                    Distance      Geod. Az  |
HR2837|                                                          dddmmss.s |
HR2837| HR2836 HILDRETH AZ MK                    APPROX. 0.7 KM 0894516.0 |
HR2837| DB1890 HILDRETH RM 1                      24.274 METERS 09029     |
HR2837| DB1891 HILDRETH RM 2                      23.679 METERS 35441     |
HR2837|----------------------------------------------------------------------|
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HR2837
HR2837                          SUPERSEDED SURVEY CONTROL
HR2837
HR2837  NAD 83(1986)-  37 00 36.42316(N)    119 54 50.55501(W) AD(1984.00) 2
HR2837  NAD 27      -  37 00 36.60995(N)    119 54 46.99542(W) AD(       ) 2
HR2837  NGVD 29 (07/19/86)  112.2    (m)          368.     (f) VERT ANG
HR2837
HR2837.Superseded values are not recommended for survey control.
HR2837
HR2837.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HR2837.See file dsdata.txt to determine how the superseded data were derived.
HR2837
HR2837_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SKA4072399965(NAD 83)
HR2837
HR2837_MARKER: Z = SEE DESCRIPTION
HR2837_SETTING: 0 = UNSPECIFIED SETTING
HR2837_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HR2837+SATELLITE: SATELLITE OBSERVATIONS - March 11, 2011
HR2837
HR2837  HISTORY     - Date     Condition        Report By
HR2837  HISTORY     - 1972     MONUMENTED       CADH
HR2837  HISTORY     - 20110311 GOOD             GEOCAC
HR2837
HR2837                           STATION DESCRIPTION
HR2837
HR2837'DESCRIBED BY CA DIV OF HIGHWAYS 1972 (HF)
HR2837'HILDRETH (CDH) IS LOCATED ON HIGHWAY 145, 9.5 MILES EAST OF
HR2837'MADERA.  TO REACH FROM MADERA--FROM THE INTERSECTION OF STATE
HR2837'HIGHWAYS 99 BUSINESS AND 145, GO EAST ON HIGHWAY 145, 9.4
HR2837'MILES TO STATION ON RIGHT AS DESCRIBED.
HR2837'
HR2837'TO REACH AZIMUTH MARK FROM STATION, CONTINUE 0.4 MILE
HR2837'EAST OF HIGHWAY 145 TO THE AZIMUTH MARK ON THE RIGHT AS DESCRIBED.
HR2837'
HR2837'STATION--STAMPED HILDRETH 1972.  A CDH BRASS TABLET SET IN A
HR2837'14 IN DIAM. CONCRETE POST FLUSH.  UNDERGROUND MONUMENT IS A CDH
HR2837'BRASS TABLET STAMPED AS PRECEDING, SET IN CONCRETE DOWN 4.0
HR2837'FEET AND 5.5 FEET ABOVE CENTER OF ROADWAY.
HR2837'
HR2837'39.0 FT S OF CENTER OF HIGHWAY 145
HR2837'
HR2837'2.2 FT N OF A FENCE LINE
HR2837'
HR2837'2.4 FT NE OF A FENCE POST
HR2837'
HR2837'4.2 FT W OF A STEEL WITNESS POST
HR2837'
HR2837'AZIMUTH MARK--STAMPED HILDRETH 1972 AZIMUTH MARK.  A CDH BRASS
HR2837'TABLET SET IN A 12 IN DIAMETER CONCRETE POST PROJECTING 8 IN
HR2837'AND 6.5 FT ABOVE CENTER OF ROADWAY.
HR2837'
HR2837'41.0 FT S OF CENTER OF HIGHWAY 145
HR2837'
HR2837'1.3 FT N OF FENCE LINE
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HR2837'
HR2837'2.0 FT NW OF FENCE POST
HR2837'
HR2837'16.0 FT ENE OF FENCE POST
HR2837'
HR2837'R.M. 1--STAMPED HILDRETH NO. 1 1972.  A CDH BRASS TABLET
HR2837'SET IN A 12 IN DIAMETER CONCRETE POST PROJECTING 5 IN AND 4.0
HR2837'FT ABOVE CENTER OF ROADWAY.
HR2837'
HR2837'39.5 FT S OF CENTER OF HIGHWAY 145
HR2837'
HR2837'2.0 FT NE OF A FENCE POST
HR2837'
HR2837'16.0 FT WNW OF A FENCE POST
HR2837'
HR2837'1.3 FT N OF A FENCE LINE
HR2837'
HR2837'R.M. 2--STAMPED HILDRETH NO. 2 1972.  A CDH BRASS TABLET
HR2837'SET IN A 12 IN DIAMETER CONCRETE POST PROJECTING 6 IN AND 7.0 FT
HR2837'ABOVE CENTER OF ROADWAY.
HR2837'
HR2837'39.0 FT N OF CENTER OF HIGHWAY 145
HR2837'
HR2837'18.0 FT ESE OF A FENCE POST
HR2837'
HR2837'2.4 FT SW OF A FENCE POST
HR2837'
HR2837'1.7 FT S OF A FENCE LINE
HR2837'
HR2837'HEIGHT OF LIGHT ABOVE STATION MARK 1.56 METERS.
HR2837
HR2837                          STATION RECOVERY (2011)
HR2837
HR2837'RECOVERY NOTE BY GEOCACHING 2011 (RT)
HR2837'RECOVERED HILDRETH STATION IN GOOD REPAIR. RM 2 ALSO RECOVERED.
HR2837'RM 1 WAS NOT FOUND.
       National Geodetic Survey,   Retrieval Date = MARCH 12, 2017
HS5409 ***********************************************************************
HS5409  HT_MOD      -  This is a Height Modernization Survey Station.
HS5409  DESIGNATION -  HPGN CA 06 03
HS5409  PID         -  HS5409
HS5409  STATE/COUNTY-  CA/MADERA
HS5409  COUNTRY     -  US
HS5409  USGS QUAD   -  BERENDA (1987)
HS5409
HS5409                        *CURRENT SURVEY CONTROL
HS5409  ______________________________________________________________________
HS5409* NAD 83(2011) POSITION- 37 05 04.11565(N) 120 13 39.14411(W)   ADJUSTED
HS5409* NAD 83(2011) ELLIP HT-    39.758 (meters)        (06/27/12)   ADJUSTED
HS5409* NAD 83(2011) EPOCH    -  2010.00
HS5409* NAVD 88 ORTHO HEIGHT -    72.39  (meters)      237.5   (feet) GPS OBS
HS5409  ______________________________________________________________________
HS5409  NAVD 88 orthometric height was determined with geoid model    GEOID03
HS5409  GEOID HEIGHT    -        -32.491 (meters)                     GEOID03
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HS5409  GEOID HEIGHT    -        -32.609 (meters)                    GEOID12B
HS5409  NAD 83(2011) X  - -2,564,689.415 (meters)                    COMP
HS5409  NAD 83(2011) Y  - -4,401,709.647 (meters)                    COMP
HS5409  NAD 83(2011) Z  -  3,824,900.242 (meters)                    COMP
HS5409  LAPLACE CORR    -          0.83  (seconds)                   DEFLEC12B
HS5409
HS5409  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
HS5409  Standards:
HS5409         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
HS5409            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
HS5409  ------------------------------------------------------------------
HS5409  NETWORK    0.64   1.63           0.29   0.23   0.83     -0.04470333
HS5409  ------------------------------------------------------------------
HS5409  Click here for local accuracies and other accuracy information.
HS5409
HS5409
HS5409.The horizontal coordinates were established by GPS observations
HS5409.and adjusted by the National Geodetic Survey in June 2012.
HS5409
HS5409.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
HS5409.been affixed to the stable North American tectonic plate. See
HS5409.NA2011 for more information.
HS5409
HS5409.The horizontal coordinates are valid at the epoch date displayed above
HS5409.which is a decimal equivalence of Year/Month/Day.
HS5409
HS5409.The orthometric height was determined by GPS observations and a
HS5409.high-resolution geoid model using precise GPS observation and
HS5409.processing techniques.
HS5409
HS5409.Significant digits in the geoid height do not necessarily reflect accuracy.
HS5409.GEOID12B height accuracy estimate available here.
HS5409
HS5409.The X, Y, and Z were computed from the position and the ellipsoidal ht.
HS5409
HS5409.The Laplace correction was computed from DEFLEC12B derived deflections.
HS5409
HS5409.The ellipsoidal height was determined by GPS observations
HS5409.and is referenced to NAD 83.
HS5409
HS5409. The following values were computed from the NAD 83(2011) position.
HS5409
HS5409;                    North         East     Units Scale Factor Converg.
HS5409;SPC CA 3     -   564,901.512 2,024,225.139   MT  0.99999637   +0 10 00.5
HS5409;SPC CA 3     - 1,853,347.71  6,641,145.31   sFT  0.99999637   +0 10 00.5
HS5409;UTM  10      - 4,107,840.548   746,435.887   MT  1.00034820   +1 40 21.4
HS5409
HS5409!             -  Elev Factor  x  Scale Factor =   Combined Factor
HS5409!SPC CA 3     -   0.99999376  x   0.99999637  =   0.99999013
HS5409!UTM  10      -   0.99999376  x   1.00034820  =   1.00034196
HS5409
HS5409_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGG4643507840(NAD 83)
HS5409
HS5409                          SUPERSEDED SURVEY CONTROL
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HS5409
HS5409  NAD 83(2007)-  37 05 04.11487(N)    120 13 39.14272(W) AD(2007.00) 0
HS5409  ELLIP H (02/10/07)   39.841  (m)                        GP(2007.00)
HS5409  NAD 83(1998)-  37 05 04.11399(N)    120 13 39.14260(W) AD(2004.50) B
HS5409  ELLIP H (06/30/05)   39.862  (m)                        GP(2004.50) 4 1
HS5409  ELLIP H (11/17/92)   40.115  (m)                        GP(       ) 5 1
HS5409  NAD 83(1986)-  37 05 04.10474(N)    120 13 39.13143(W) AD(1984.00) 1
HS5409  NAD 83(1992)-  37 05 04.10992(N)    120 13 39.13690(W) AD(1991.35) B
HS5409  ELLIP H (05/15/92)   40.115  (m)                        GP(1991.35) 4 2
HS5409  NAVD 88 (10/14/94)   72.5    (m)  GEOID93 model used   GPS OBS
HS5409  NAVD 88 (05/15/92)   72.7    (m)  GEOID90 model used   GPS OBS
HS5409
HS5409.Superseded values are not recommended for survey control.
HS5409
HS5409.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HS5409.See file dsdata.pdf to determine how the superseded data were derived.
HS5409
HS5409_MARKER: DD = SURVEY DISK
HS5409_SETTING: 15 = METAL ROD DRIVEN INTO GROUND. SEE TEXT FOR ADDITIONAL
HS5409+WITH SETTING: INFORMATION.
HS5409_STAMPING: HPGN-CALIF. STA. 06-03 1991
HS5409_MARK LOGO: CADT
HS5409_PROJECTION: FLUSH
HS5409_MAGNETIC: N = NO MAGNETIC MATERIAL
HS5409_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
HS5409_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HS5409+SATELLITE: SATELLITE OBSERVATIONS - September 01, 2004
HS5409_ROD/PIPE-DEPTH: 2.00 meters
HS5409
HS5409  HISTORY     - Date     Condition        Report By
HS5409  HISTORY     - 1991     MONUMENTED       CADT
HS5409  HISTORY     - 19910516 GOOD             NGS
HS5409  HISTORY     - 19920504 GOOD             NGS
HS5409  HISTORY     - 19930119 GOOD             CADT
HS5409  HISTORY     - 19940111 GOOD             CADT
HS5409  HISTORY     - 19940214 GOOD             NGS
HS5409  HISTORY     - 19951127 GOOD             CADT
HS5409  HISTORY     - 20001001 GOOD             CADT
HS5409  HISTORY     - 20040901 GOOD             CSRC
HS5409
HS5409                          STATION DESCRIPTION
HS5409
HS5409'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991
HS5409'THE STATION IS LOCATED NEAR THE INTERSECTION OF STATE HIGHWAYS 152 AND
HS5409'99 AND ABOUT 2.5 MI (4.0 KM) SOUTH OF CHOWCHILLA.
HS5409'TO REACH THE STATION FROM THE JUNCTION OF HIGHWAYS 152 AND 99, GO WEST
HS5409'ON HIGHWAY 152 FOR 1.0 MI (1.6 KM) TO ROAD 17 1/2 ON THE RIGHT.  TURN
HS5409'RIGHT, NORTH, FOR 0.15 MI (0.24 KM) TO ROAD 18 ON THE RIGHT. TURN
HS5409'RIGHT, EAST, FOR 0.15 MI (0.24 KM) TO THE STATION ON THE RIGHT.
HS5409'THE STATION IS AN ALUMINUM DISK CEMENTED TO AN ALUMINUM ALLOY ROD AND
HS5409'ENCLOSED IN A LOGO CAP.  LOCATED 230.0 FT (70.1 M) SOUTH OF THE
HS5409'CENTERLINE OF ROAD 18, 170.0 FT (51.8 M) NORTH OF THE NORTH EDGE OF
HS5409'HIGHWAY 152, 2.0 FT (0.6 M) SOUTH OF THE RIGHT-OF-WAY FENCE FOR
HS5409'HIGHWAY 152 AND 2.0 FT (0.6 M) NORTH OF A FIBERGLASS WITNESS POST.
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HS5409'THE BENCHMARK IS AT THE INTERSECTION OF HIGHWAYS 99/152, IT IS LOCATED
HS5409'IN THE SOUTH END OF THE SOUTHWEST ABUTMENT OF A RAILROAD BRIDGE OVER
HS5409'NORTHBOUND HIGHWAY 99.  BENCHMARK P85.
HS5409
HS5409                          STATION RECOVERY (1992)
HS5409
HS5409'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992
HS5409'STATION IS LOCATED ABOUT 4 KM (2.5 MI) SOUTH OF CHOWCHILLA, 1.5 KM
HS5409'(0.9 MI) WEST OF THE JUNCTION OF STATE HIGHWAYS 99 AND 152, 0.17 KM
HS5409'(0.11 MI) EAST OF ROAD 17 1/2, ON HIGHWAY RIGHT-OF-WAY.
HS5409'OWNERSHIP--CALIFORNIA DEPARTMENT OF TRANSPORTATION.
HS5409'TO REACH FROM THE JUNCTION OF STATE HIGHWAYS 99 AND 152, ABOUT 6 KM
HS5409'(3.7 MI) SOUTHEAST OF CHOWCHILLA, GO WEST ON HIGHWAY 152 FOR 1.55 KM
HS5409'(0.96 MI) TO A LARGE SIGN  FRONTAGE ROAD .  (IF DRY, BEAR RIGHT,
HS5409'WESTERLY, ALONG RIGHT-OF-WAY FENCE FOR 0.08 KM (0.05 MI) TO THE
HS5409'STATION).  CONTINUE AHEAD FOR 0.07 KM (0.04 MI) TO THE STATION ON THE
HS5409'RIGHT.
HS5409'STATION MARK IS A DISK SET ON A ROD ENCASED IN PVC PIPE WITH LOGO CAP
HS5409'SET IN A CONCRETE POST FLUSH WITH THE GROUND.  IT IS 55.0 M
HS5409'(180.4 FT) NORTH OF THE CENTER OF THE WESTBOUND HIGHWAY LANES, 73.2 M
HS5409'(240.2 FT) ALONG FENCE FROM A FENCE CORNER, 0.7 M (2.3 FT) SOUTHWEST
HS5409'OF THE FENCE AND 0.6 M (2.0 FT) NORTHEAST OF A FIBERGLASS WITNESS
HS5409'POST.
HS5409
HS5409                          STATION RECOVERY (1993)
HS5409
HS5409'RECOVERY NOTE BY CALTRANS 1993 (NT)
HS5409'RECOVERED AS DESCRIBED.
HS5409
HS5409                          STATION RECOVERY (1994)
HS5409
HS5409'RECOVERY NOTE BY CALTRANS 1994 (DBS)
HS5409'RECOVERED AS DESCRIBED.
HS5409
HS5409                          STATION RECOVERY (1994)
HS5409
HS5409'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (AJL)
HS5409'THE STATION IS LOCATED ABOUT 4 KM (2.5 MI) SOUTH OF CHOWCHILLA, 1.5 KM
HS5409'(0.9 MI) WEST OF STATE HIGHWAYS 99 AND 152 JUNCTION, AND EAST OF ROAD
HS5409'17 1/2.  OWNERSHIP--CALIFORNIA DEPARTMENT OF TRANSPORTATION. TO REACH
HS5409'FROM THE JUNCTION OF STATE HIGHWAYS 99 AND 152 SOUTHEAST OF
HS5409'CHOWCHILLA, GO WEST ON HIGHWAY 152 FOR 1.55 KM (0.96 MI) TO A LARGE
HS5409'SIGN FRONTAGE ROAD.  IF DRY, BEAR RIGHT, NORTHWEST, ALONG R-O-W FENCE
HS5409'FOR 0.08 KM (0.05 MI) TO THE STATION. IF WET, CONTINUE AHEAD FOR 0.08
HS5409'KM (0.05 MI) TO THE STATION ON THE RIGHT. STATION MARK IS A STANDARD
HS5409'CADT SURVEY DISK ATOP AN ALUMINUM ALLOY ROD ENCASED IN A PIPE WITH
HS5409'LOGO CAP SURROUNDED BY CONCRETE SET FLUSH WITH THE GROUND.  IT IS 55.0
HS5409'M (180.4 FT) NORTH OF THE CENTER OF THE WESTBOUND HIGHWAY LANES, 73.2
HS5409'M (240.2 FT) SOUTH-SOUTHEAST ALONG FENCE FROM A FENCE CORNER, 0.7 M
HS5409'(2.3 FT) SOUTHWEST OF THE FENCE, AND 0.6 M (2.0 FT) NORTHEAST OF A
HS5409'FIBERGLASS WITNESS POST.
HS5409
HS5409                          STATION RECOVERY (1995)
HS5409
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HS5409'RECOVERY NOTE BY CALTRANS 1995 (RGD)
HS5409'RECOVERED AS DESCRIBED.
HS5409
HS5409                          STATION RECOVERY (2000)
HS5409
HS5409'RECOVERY NOTE BY CALTRANS 2000 (WGF)
HS5409'RECOVERED IN GOOD CONDITION.
HS5409
HS5409                          STATION RECOVERY (2004)
HS5409
HS5409'RECOVERY NOTE BY CALIFORNIA SPATIAL REFERENCE CENTER 2004 (JG)
HS5409'RECOVERED IN GOOD CONDITION AS DESCRIBED.  THIS STATION WAS OBSERVED
HS5409'AS PART OF THE SAN JOAQUIN VALLEY HEIGHT MODERNIZATION  SURVEY, A CSRC
HS5409'PROJECT.
       National Geodetic Survey,   Retrieval Date = MARCH  1, 2017
HS5411 ***********************************************************************
HS5411  FBN         -  This is a Federal Base Network Control Station.
HS5411  DESIGNATION -  HPGN CA 10 03
HS5411  PID         -  HS5411
HS5411  STATE/COUNTY-  CA/MERCED
HS5411  COUNTRY     -  US
HS5411  USGS QUAD   -  YOSEMITE LAKE (1987)
HS5411
HS5411                         *CURRENT SURVEY CONTROL
HS5411  ______________________________________________________________________
HS5411* NAD 83(2011) POSITION- 37 29 36.97582(N) 120 30 03.75291(W)   ADJUSTED
HS5411* NAD 83(2011) ELLIP HT-    31.762 (meters)        (06/27/12)   ADJUSTED
HS5411* NAD 83(2011) EPOCH   -  2010.00
HS5411* NAVD 88 ORTHO HEIGHT -    63.0   (meters)      207.    (feet) GPS OBS
HS5411  ______________________________________________________________________
HS5411  NAVD 88 orthometric height was determined with geoid model    GEOID99
HS5411  GEOID HEIGHT    -        -31.122 (meters)                     GEOID99
HS5411  GEOID HEIGHT    -        -31.081 (meters)                     GEOID12B
HS5411  NAD 83(2011) X  - -2,571,706.296 (meters)                     COMP
HS5411  NAD 83(2011) Y  - -4,365,709.292 (meters)                     COMP
HS5411  NAD 83(2011) Z  -  3,861,020.262 (meters)                     COMP
HS5411  LAPLACE CORR    -          3.83  (seconds)                    DEFLEC12B
HS5411
HS5411  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
HS5411  Standards:
HS5411         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
HS5411            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
HS5411  ------------------------------------------------------------------
HS5411  NETWORK    0.49   1.51           0.22   0.18   0.77     -0.07114725
HS5411  ------------------------------------------------------------------
HS5411  Click here for local accuracies and other accuracy information.
HS5411
HS5411
HS5411.The horizontal coordinates were established by GPS observations
HS5411.and adjusted by the National Geodetic Survey in June 2012.
HS5411
HS5411.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
HS5411.been affixed to the stable North American tectonic plate. See
HS5411.NA2011 for more information.
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HS5411
HS5411.The horizontal coordinates are valid at the epoch date displayed above
HS5411.which is a decimal equivalence of Year/Month/Day.
HS5411
HS5411.The orthometric height was determined by GPS observations and a
HS5411.high-resolution geoid model.
HS5411
HS5411.Significant digits in the geoid height do not necessarily reflect accuracy.
HS5411.GEOID12B height accuracy estimate available here.
HS5411
HS5411.The X, Y, and Z were computed from the position and the ellipsoidal ht.
HS5411
HS5411.The Laplace correction was computed from DEFLEC12B derived deflections.
HS5411
HS5411.The ellipsoidal height was determined by GPS observations
HS5411.and is referenced to NAD 83.
HS5411
HS5411. The following values were computed from the NAD 83(2011) position.
HS5411
HS5411;                    North         East     Units Scale Factor Converg.
HS5411;SPC CA 3     -   610,270.857 1,999,907.816   MT  0.99993922   -0 00 02.3
HS5411;SPC CA 3     - 2,002,196.97  6,561,364.23   sFT  0.99993922   -0 00 02.3
HS5411;UTM  10      - 4,152,565.272   720,920.193   MT  1.00020121   +1 31 18.0
HS5411
HS5411!             -  Elev Factor  x  Scale Factor =   Combined Factor
HS5411!SPC CA 3     -   0.99999502  x   0.99993922  =   0.99993424
HS5411!UTM  10      -   0.99999502  x   1.00020121  =   1.00019622
HS5411
HS5411_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGG2092052565(NAD 83)
HS5411
HS5411                           SUPERSEDED SURVEY CONTROL
HS5411
HS5411  NAD 83(2007)-  37 29 36.97492(N)    120 30 03.74925(W) AD(2007.00) 0
HS5411  ELLIP H (02/10/07)   31.751  (m)                       GP(2007.00)
HS5411  NAD 83(1998)-  37 29 36.97196(N)    120 30 03.74889(W) AD(1998.50) A
HS5411  ELLIP H (04/06/00)   31.793  (m)                       GP(1998.50) 3 1
HS5411  ELLIP H (11/17/92)   31.839  (m)                       GP(       ) 5 1
HS5411  NAD 83(1986)-  37 29 36.95810(N)    120 30 03.73379(W) AD(1984.00) 1
HS5411  NAD 83(1992)-  37 29 36.96961(N)    120 30 03.74584(W) AD(1991.35) B
HS5411  ELLIP H (05/15/92)   31.839  (m)                       GP(1991.35) 4 2
HS5411  NAVD 88 (07/22/97)   62.9    (m)  GEOID96 model used   GPS OBS
HS5411  NAVD 88 (05/15/92)   63.1    (m)  GEOID90 model used   GPS OBS
HS5411  NGVD 29              62.11   (m)          203.8    (f) LEVELING    3
HS5411
HS5411.Superseded values are not recommended for survey control.
HS5411
HS5411.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HS5411.See file dsdata.txt to determine how the superseded data were derived.
HS5411
HS5411_MARKER: DD = SURVEY DISK
HS5411_SETTING: 50 = ALUMINUM ALLOY ROD W/O SLEEVE (10 FT.+)
HS5411_STAMPING: HPGN-CALIF. STA.10-03 1991
HS5411_MARK LOGO: CADT
HS5411_PROJECTION: FLUSH
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HS5411_MAGNETIC: N = NO MAGNETIC MATERIAL
HS5411_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
HS5411_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HS5411+SATELLITE: SATELLITE OBSERVATIONS - November 13, 2014
HS5411_ROD/PIPE-DEPTH: 3.4  meters
HS5411
HS5411  HISTORY     - Date     Condition        Report By
HS5411  HISTORY     - 1991     MONUMENTED       CADT
HS5411  HISTORY     - 19910530 GOOD             NGS
HS5411  HISTORY     - 19920504 GOOD             NGS
HS5411  HISTORY     - 19921117 GOOD             CADT
HS5411  HISTORY     - 19930802 GOOD             CADT
HS5411  HISTORY     - 19940201 GOOD             NGS
HS5411  HISTORY     - 19950710 GOOD             CADT
HS5411  HISTORY     - 19980502 GOOD             NGS
HS5411  HISTORY     - 20141113 GOOD             WATER
HS5411
HS5411                          STATION DESCRIPTION
HS5411
HS5411'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991
HS5411'THE STATION IS LOCATED ABOUT 10 MI (16.1 KM)  NORTH OF MERCED AND 4 MI
HS5411'(6.4 KM)  SOUTHWEST OF SNELLING.
HS5411'TO REACH THE STATION FROM THE POST OFFICE IN SNELLING, GO 4.1 MI
HS5411'(6.6 KM)  WEST ON STATE HIGHWAY 59 TO TURLOCK ROAD AND THE STATION ON
HS5411'THE RIGHT.
HS5411'THE STATION IS A 2.5 IN DIAMETER CADT ALUMINUM DISK RECESSED 3 INCHES
HS5411'BELOW GROUND.  LOCATED 175 FT (53.3 M)  NORTH-NORTHEAST OF THE CENTER
HS5411'OF THE INTERSECTION OF HIGHWAY 59 AND TURLOCK ROAD, 45.5 FT (13.9 M)
HS5411'NORTH OF THE NORTHBOUND HIGHWAY 59 EDGE OF PAVEMENT, 4.7 FT (1.4 M)
HS5411'SOUTH OF WIREMESH AND BARBED WIRE FENCE AND 4.5 FT (1.4 M)  SOUTH OF A
HS5411'FIBERGLASS WITNESS POST.
HS5411
HS5411                          STATION RECOVERY (1992)
HS5411
HS5411'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992
HS5411'STATION IS LOCATED ABOUT 20 KM (12.4 MI) NORTH OF MERCED, 6 KM
HS5411'(3.7 MI) WEST OF SNELLING, ALONG STATE HIGHWAY 59, ON THE
HS5411'RIGHT-OF-WAY, ABOUT 50 M (164.0 FT) EAST OF THE JUNCTION OF HIGHWAY
HS5411'59 AND TURLOCK ROAD (COUNTY ROAD J 17). OWNERSHIP--CALIFORNIA
HS5411'DEPARTMENT OF TRANSPORTATION.
HS5411'TO REACH FROM THE SNELLING POST OFFICE, GO WEST ON STATE HIGHWAY 59
HS5411'FOR 6.61 KM (4.11 MI) TO THE STATION ON THE RIGHT JUST BEFORE
HS5411'REACHING THE ROAD JUNCTION.
HS5411'STATION MARK IS A DISK SET ON A ROD ENCASED IN PVC PIPE WITH LOGO CAP
HS5411'SET IN A CONCRETE POST FLUSH WITH THE GROUND.  IT IS 14.0 M
HS5411'(45.9 FT) NORTH OF AND 1 M (3.3 FT) LOWER THAN THE NORTH PAVEMENT
HS5411'EDGE OF HIGHWAY, 1.4 M (4.6 FT) SOUTH OF A FIBERGLASS WITNESS POST
HS5411'SET IN THE RIGHT-OF-WAY FENCE, 58.9 M (193.2 FT) WEST OF UTILITY POLE
HS5411'4411, 16 M (52.5 FT) EAST OF THE EAST EDGE OF A SMALL SWAMP AREA AND
HS5411'ACROSS FENCE FROM A TURN IN AN IRRIGATION DITCH.
HS5411
HS5411                          STATION RECOVERY (1992)
HS5411
HS5411'RECOVERY NOTE BY CALTRANS 1992 (PDG)
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HS5411'RECOVERED AS DESCRIBED.
HS5411
HS5411                          STATION RECOVERY (1993)
HS5411
HS5411'RECOVERY NOTE BY CALTRANS 1993 (PDG)
HS5411'RECOVERED AS DESCRIBED.
HS5411
HS5411                          STATION RECOVERY (1994)
HS5411
HS5411'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (AJL)
HS5411'THE STATION IS LOCATED ABOUT 20 KM (12.4 MI) NORTH OF MERCED, 6 KM
HS5411'(3.7 MI) WEST OF SNELLING, ALONG STATE HIGHWAY 59, ABOUT 50 M (164.0
HS5411'FT) EAST OF THE JUNCTION OF SH 59 AND TURLOCK ROAD (COUNTY ROAD J 17).
HS5411'OWNERSHIP--CALIFORNIA DEPARTMENT OF TRANSPORTATION. TO REACH FROM THE
HS5411'POST OFFICE IN SNELLING, GO WEST ON STATE HIGHWAY 59 FOR 6.6 KM (4.1
HS5411'MI) TO THE STATION ON THE RIGHT JUST BEFORE REACHING THE ROAD JUNCTION
HS5411'OF TURLOCK ROAD TO THE RIGHT. STATION MARK IS A STANDARD CADT ALUMINUM
HS5411'SURVEY DISK ATOP AN ALUMINUM ALLOY ROD ENCASED IN A PIPE WITH LOGO CAP
HS5411'SURROUNDED BY CONCRETE SET FLUSH WITH THE GROUND.  IT IS 14.0 M (45.9
HS5411'FT) NORTH OF, AND 1 M (3.3 FT) LOWER THAN, THE NORTH PAVEMENT EDGE OF
HS5411'HIGHWAY, 58.9 M (193.2 FT) WEST OF UTILITY POLE 4411, 16 M (52.5 FT)
HS5411'EAST OF THE EAST EDGE OF A SMALL SWAMP AREA, AND 1.4 SOUTH OF A
HS5411'FIBERGLASS WITNESS POST.
HS5411
HS5411                          STATION RECOVERY (1995)
HS5411
HS5411'RECOVERY NOTE BY CALTRANS 1995 (RGD)
HS5411'RECOVERED AS DESCRIBED.
HS5411
HS5411                          STATION RECOVERY (1998)
HS5411
HS5411'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)
HS5411'RECOVERED AS DESCRIBED.  THE LOGO CAP IS MISSING.
HS5411
HS5411                          STATION RECOVERY (2014)
HS5411
HS5411'RECOVERY NOTE BY WATERSHED SCIENCES 2014 (EG)
HS5411'RECOVERED IN GOOD CONDITION.
       National Geodetic Survey,   Retrieval Date = FEBRUARY 23, 2017
JS1336 ***********************************************************************
JS1336  HT_MOD      -  This is a Height Modernization Survey Station.
JS1336  DESIGNATION -  N 794
JS1336  PID         -  JS1336
JS1336  STATE/COUNTY-  CA/SACRAMENTO
JS1336  COUNTRY     -  US
JS1336  USGS QUAD   -  GALT (1980)
JS1336
JS1336                        *CURRENT SURVEY CONTROL
JS1336 ______________________________________________________________________
JS1336* NAD 83(2011) POSITION- 38 17 05.46776(N) 121 15 51.79809(W)   ADJUSTED
JS1336* NAD 83(2011) ELLIP HT-    -9.920 (meters)        (06/27/12)   ADJUSTED
JS1336* NAD 83(2011) EPOCH    -  2010.00
JS1336* NAVD 88 ORTHO HEIGHT -    20.83  (meters)       68.3   (feet) GPS OBS
JS1336 ______________________________________________________________________
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JS1336  NAVD 88 orthometric height was determined with geoid model    GEOID09
JS1336  GEOID HEIGHT    -        -30.771 (meters)                     GEOID09
JS1336  GEOID HEIGHT    -        -30.758 (meters)                     GEOID12B
JS1336  NAD 83(2011) X  - -2,601,631.213 (meters)                     COMP
JS1336  NAD 83(2011) Y  - -4,284,928.942 (meters)                     COMP
JS1336  NAD 83(2011) Z  -  3,930,304.933 (meters)                     COMP
JS1336  LAPLACE CORR    -          5.42  (seconds)                    DEFLEC12B
JS1336
JS1336  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
JS1336  Standards:
JS1336         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
JS1336            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
JS1336  ------------------------------------------------------------------
JS1336  NETWORK    0.30   0.61           0.14   0.10   0.31      0.00485048
JS1336  ------------------------------------------------------------------
JS1336  Click here for local accuracies and other accuracy information.
JS1336
JS1336
JS1336.The horizontal coordinates were established by GPS observations
JS1336.and adjusted by the National Geodetic Survey in June 2012.
JS1336
JS1336.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
JS1336.been affixed to the stable North American tectonic plate. See
JS1336.NA2011 for more information.
JS1336
JS1336.The horizontal coordinates are valid at the epoch date displayed above
JS1336.which is a decimal equivalence of Year/Month/Day.
JS1336
JS1336.The orthometric height was determined by GPS observations and a
JS1336.high-resolution geoid model using precise GPS observation and
JS1336.processing techniques.
JS1336
JS1336.Significant digits in the geoid height do not necessarily reflect accuracy.
JS1336.GEOID12B height accuracy estimate available here.
JS1336
JS1336.The X, Y, and Z were computed from the position and the ellipsoidal ht.
JS1336
JS1336.The Laplace correction was computed from DEFLEC12B derived deflections.
JS1336
JS1336.The ellipsoidal height was determined by GPS observations
JS1336.and is referenced to NAD 83.
JS1336
JS1336. The following values were computed from the NAD 83(2011) position.
JS1336
JS1336;                    North         East      Units Scale Factor Converg.
JS1336;SPC CA 2     -   568,883.816 2,064,359.891   MT  1.00001135   +0 27 49.6
JS1336;SPC CA 2     - 1,866,412.99  6,772,820.74   sFT  1.00001135   +0 27 49.6
JS1336;UTM  10      - 4,238,845.438   651,796.203   MT  0.99988378   +1 04 31.9
JS1336
JS1336!             -  Elev Factor  x  Scale Factor =   Combined Factor
JS1336!SPC CA 2     -   1.00000156  x   1.00001135  =   1.00001291
JS1336!UTM  10      -   1.00000156  x   0.99988378  =   0.99988534
JS1336
JS1336_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SFH5179638845(NAD 83)
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JS1336
JS1336                          SUPERSEDED SURVEY CONTROL
JS1336
JS1336  NAD 83(2007)-  38 17 05.46626(N)    121 15 51.79783(W) AD(2007.00) 0
JS1336  ELLIP H (02/10/07)   -9.942  (m)                       GP(2007.00)
JS1336  NAD 83(1998)-  38 17 05.46543(N)    121 15 51.79523(W) AD(2002.86) B
JS1336  NAD 83(1998)-  38 17 05.46543(N)    121 15 51.79522(W) AD(2002.86) B
JS1336  ELLIP H (10/28/05)   -9.904  (m)                       GP(2002.86) 4 1
JS1336  NAD 83(1998)-  38 17 05.46606(N)    121 15 51.79620(W) AD(2004.69) B
JS1336  NAD 83(1992)-  38 17 05.46362(N)    121 15 51.79279(W) AD(1997.30) B
JS1336  ELLIP H (07/10/98)   -9.936  (m)                       GP(1997.30) 4 1
JS1336  NAD 83(1992)-  38 17 05.46328(N)    121 15 51.79318(W) AD(1997.30) B
JS1336  ELLIP H (05/14/98)   -9.846  (m)                       GP(1997.30) 3 1
JS1336  NAVD 88 (10/28/05)   20.86   (m)  GEOID03 model used   GPS OBS
JS1336  NAVD 88 (10/28/05)   20.83   (m)  UNKNOWN model used   GPS OBS
JS1336  NAVD 88 (07/10/98)   20.87   (m)  UNKNOWN model used   GPS OBS
JS1336  NAVD 88 (05/14/98)   20.86   (m)  GEOID96 model used   GPS OBS
JS1336  NGVD 29 (??/??/92)   20.154  (m)           66.12   (f) ADJ UNCH    1 2
JS1336
JS1336.Superseded values are not recommended for survey control.
JS1336
JS1336.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JS1336.See file dsdata.txt to determine how the superseded data were derived.
JS1336
JS1336_MARKER: DB = BENCH MARK DISK
JS1336_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
JS1336_STAMPING: N 794 1946
JS1336_MARK LOGO: CGS
JS1336_PROJECTION: PROJECTING 6 CENTIMETERS
JS1336_MAGNETIC: N = NO MAGNETIC MATERIAL
JS1336_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
JS1336+STABILITY: SURFACE MOTION
JS1336_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
JS1336+SATELLITE: SATELLITE OBSERVATIONS - April 01, 2011
JS1336
JS1336  HISTORY     - Date     Condition        Report By
JS1336  HISTORY     - 1946     MONUMENTED       CGS
JS1336  HISTORY     - 1958     GOOD             CGS
JS1336  HISTORY     - 19970829 GOOD             BOR
JS1336  HISTORY     - 20021105 GOOD             CADWR
JS1336  HISTORY     - 20021122 GOOD             CADWR
JS1336  HISTORY     - 20040408 GOOD             CADT
JS1336  HISTORY     - 20041005 GOOD             CADT
JS1336  HISTORY     - 20110401 GOOD             CADWR
JS1336
JS1336                          STATION DESCRIPTION
JS1336
JS1336'DESCRIBED BY COAST AND GEODETIC SURVEY 1958
JS1336'3.4 MI NE FROM GALT.
JS1336'3.4 MILES NORTHEAST ALONG THE SOUTHERN PACIFIC COMPANY RAILROAD
JS1336'FROM THE STATION AT GALT, IN R6E T5N S13, 47 1/2 FEET SOUTH OF
JS1336'THE CENTER OF THE CROSSING OF CHEROKEE LANE (RAILROAD CROSSING
JS1336'115.2 D.G.), 14.0 FEET SOUTHEAST OF THE SOUTHEAST RAIL, 29 FEET
JS1336'SOUTHWEST OF THE CENTER LINE OF THE LANE, 61 FEET NORTHWEST OF
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JS1336'A POWER LINE POLE WITH TWO GUY WIRES, 1.0 FOOT NORTHWEST OF A
JS1336'WITNESS POST, ABOUT 2 FEET HIGHER THAN THE TRACK, AND SET IN
JS1336'THE TOP OF A CONCRETE POST PROJECTING 0.2 FOOT ABOVE THE GROUND.
JS1336
JS1336                          STATION RECOVERY (1997)
JS1336
JS1336'RECOVERY NOTE BY US BUREAU OF RECLAMATION 1997 (DWS)
JS1336'THE STATION WAS RECOVERED AND A COMPLETE NEW DESCRIPTION FOLLOWS.  THE
JS1336'STATION IS ABOUT 23.7 MI (38.1 KM) SOUTHEAST OF THE STATE CAPITOL IN
JS1336'SACRAMENTO.  TO REACH THE STATION FROM THE INTERSECTION OF STATE
JS1336'HIGHWAY 99 AND TWIN CITIES ROAD, GO EAST ON TWIN CITIES ROAD FOR 1.6
JS1336'MI (2.6 KM) TO THE INTERSECTION OF MARENGO ROAD.  CONTINUE EAST FOR
JS1336'1.0 MI (1.6 KM) TO THE INTERSECTION OF CHEROKEE LANE.  TURN RIGHT AND
JS1336'GO SOUTH ON CHEROKEE LANE FOR 0.45 MI (0.72 KM) TO THE CROSSING OF THE
JS1336'SOUTHERN PACIFIC RAILROAD TRACKS AND THE STATION ON THE RIGHT JUST
JS1336'SOUTH OF THE TRACKS.  IF HEADING NORTHBOUND ON STATE HIGHWAY 99, TAKE
JS1336'THE SIMMERHORN EXIT.  FROM THE INTERSECTION OF THE OFFRAMP AND
JS1336'SIMMERHORN ROAD, GO EAST ON SIMMERHORN ROAD FOR 1.55 MI (2.49 KM) TO
JS1336'THE INTERSECTION OF CHEROKEE LANE.  TURN LEFT AND GO NORTH ON CHEROKEE
JS1336'LANE FOR 1.55 MI (2.49 KM) TO THE RAILROAD TRACKS AND THE STATION ON
JS1336'THE LEFT.  THE STATION IS A BENCH MARK DISK SET IN THE TOP OF A
JS1336'CHIPPED 12-INCH SQUARE CONCRETE POST, PROJECTING ABOUT 0.1 FT (0.0 M)
JS1336'AND TILTING 8 DEGREES TO THE SOUTHWEST, ON THE EAST EDGE OF A PILE OF
JS1336'BALLAST ROCK, IN A SLIGHTLY RAISED AREA.  THE STATION IS 81.3 FT (24.8
JS1336'M) SOUTH OF A TELEPHONE POLE, 61.0 FT (18.6 M) NORTH OF TELEPHONE POLE
JS1336'NUMBER 12996, 24.4 FT (7.4 M) WEST OF CENTERLINE OF CHEROKEE LANE, 14
JS1336'FT (4.3 M) SOUTH OF THE SOUTH RAIL OF THE RAILROAD TRACKS, AND ABOUT
JS1336'1.2 FT (0.4 M) ABOVE THE LEVEL OF THE LANE.  IF THE BALLAST ROCK IS
JS1336'MOVED OR REMOVED, OR THE AREA LEVELED, THE STATION MAY BE DISTURBED.
JS1336'THE STATION WAS OCCUPIED AS PART OF THE SAN JOAQUIN-SACRAMENTO RIVER
JS1336'DELTA GPS/VERTICAL PROJECT.
JS1336
JS1336                          STATION RECOVERY (2002)
JS1336
JS1336'RECOVERY NOTE BY CA DEPT OF WATER RES 2002 (WLB)
JS1336'RECOVERED AS DESCRIBED. THE STATION WAS OBSERVED AS PART OF THE DWR
JS1336'DELTA 2002 SUBSIDENCE NETWORK HEIGHT  MODERNIZATION SURVEY.
JS1336
JS1336                          STATION RECOVERY (2002)
JS1336
JS1336'RECOVERY NOTE BY CA DEPT OF WATER RES 2002 (WLB)
JS1336'RECOVERED AS DESCRIBED. THE STATION WAS OBSERVED AS PART OF THE DWR
JS1336'DELTA 2002 SUBSIDENCE NETWORK HEIGHT  MODERNIZATION SURVEY.
JS1336
JS1336                          STATION RECOVERY (2004)
JS1336
JS1336'RECOVERY NOTE BY CALTRANS 2004 (RLM)
JS1336'RECOVERED IN GOOD CONDITION.
JS1336
JS1336                          STATION RECOVERY (2004)
JS1336
JS1336'RECOVERY NOTE BY CALTRANS 2004 (DWM)
JS1336'THE STATION WAS RECOVERED AS DESCRIBED. THIS STATION WAS OCCUPIED AS
JS1336'PART OF A  CALTRANS NORTH REGION OFFICE OF SURVEYORS GPS HEIGHT
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JS1336'MODERNIZATION PROJECT.
JS1336
JS1336                          STATION RECOVERY (2011)
JS1336
JS1336'RECOVERY NOTE BY CA DEPT OF WATER RES 2011 (GS)
JS1336'RECOVERED AS DESCRIBED.
       National Geodetic Survey,   Retrieval Date = FEBRUARY 26, 2017
HS2272 ***********************************************************************
HS2272  DESIGNATION -  P 959 RESET 1968
HS2272  PID         -  HS2272
HS2272  STATE/COUNTY-  CA/STANISLAUS
HS2272  COUNTRY     -  US
HS2272  USGS QUAD   -  OAKDALE (1987)
HS2272
HS2272                         *CURRENT SURVEY CONTROL
HS2272 ______________________________________________________________________
HS2272* NAD 83(1986) POSITION- 37 48 09.     (N) 120 52 06.     (W)    SCALED
HS2272* NAVD 88 ORTHO HEIGHT -    56.08  (+/-2cm)      184.0    (feet) VERTCON
HS2272 ______________________________________________________________________
HS2272  GEOID HEIGHT    -        -31.377 (meters)                     GEOID12B
HS2272  VERT ORDER      -  THIRD (See Below)
HS2272
HS2272.The horizontal coordinates were scaled from a topographic map and have
HS2272.an estimated accuracy of +/- 6 seconds.
HS2272.
HS2272.The NAVD 88 height was computed by applying the VERTCON shift value to
HS2272.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
HS2272
HS2272.Significant digits in the geoid height do not necessarily reflect accuracy.
HS2272.GEOID12B height accuracy estimate available here.
HS2272
HS2272.The vertical order pertains to the NGVD 29 superseded value.
HS2272
HS2272;                    North         East     Units  Estimated Accuracy
HS2272;SPC CA 3     -   644,620.    1,967,560.      MT  (+/- 180 meters Scaled)
HS2272
HS2272_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SFG876860(NAD 83)
HS2272
HS2272                          SUPERSEDED SURVEY CONTROL
HS2272
HS2272  NGVD 29 (10/27/16)   55.32   (m)          181.5    (f) RESET       3
HS2272
HS2272.Superseded values are not recommended for survey control.
HS2272
HS2272.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HS2272.See file dsdata.txt to determine how the superseded data were derived.
HS2272
HS2272_MARKER: DB = BENCH MARK DISK
HS2272_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
HS2272_STAMPING: P 959 RESET 1968
HS2272_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
HS2272+STABILITY: SURFACE MOTION
HS2272
HS2272  HISTORY     - Date     Condition        Report By
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HS2272  HISTORY     - 1968     MONUMENTED       CADPW
HS2272  HISTORY     - 1968     GOOD             CGS
HS2272
HS2272                          STATION DESCRIPTION
HS2272
HS2272'DESCRIBED BY COAST AND GEODETIC SURVEY 1968
HS2272'2.9 MI NW FROM OAKDALE.
HS2272'ABOUT 1.8 MILES NORTHWEST ALONG STATE HIGHWAY 120 FROM THE SOUTHERN
HS2272'PACIFIC RAILROAD STATION AT OAKDALE, THENCE 1.1 MILES NORTH ALONG
HS2272'TWENTY-SIX MILE ROAD, ABOUT 0.05 MILE NORTH-NORTHWEST OF A T
HS2272'JUNCTION OF A POWER LINE, 30 FEET EAST-NORTHEAST OF THE CENTER
HS2272'LINE OF THE ROAD, 3.2 FEET SOUTH-SOUTHEAST OF A POWER POLE, 0.6
HS2272'FOOT WEST-SOUTHWEST OF A WIRE MESH FENCE, 24.3 FEET SOUTH OF AN
HS2272'8-INCH CONCRETE STANDPIPE, 59.1 FEET EAST OF A POWER POLE, ABOUT
HS2272'1 1/2 FEET BELOW THE LEVEL OF THE ROAD, AND SET IN THE TOP OF A
HS2272'CONCRETE POST LEVEL WITH THE GROUND.
       National Geodetic Survey,   Retrieval Date = FEBRUARY 14, 2017
JS1177 ***********************************************************************
JS1177  HT_MOD      -  This is a Height Modernization Survey Station.
JS1177  DESIGNATION -  SHELDON
JS1177  PID         -  JS1177
JS1177  STATE/COUNTY-  CA/SACRAMENTO
JS1177  COUNTRY     -  US
JS1177  USGS QUAD   -  SLOUGHHOUSE (1993)
JS1177
JS1177                         *CURRENT SURVEY CONTROL
JS1177  ______________________________________________________________________
JS1177* NAD 83(2011) POSITION- 38 29 36.45612(N) 121 12 38.99193(W)   ADJUSTED
JS1177* NAD 83(2011) ELLIP HT-    29.418 (meters)        (06/27/12)   ADJUSTED
JS1177* NAD 83(2011) EPOCH    -  2010.00
JS1177* NAVD 88 ORTHO HEIGHT -    59.51  (meters)      195.2   (feet) GPS OBS
JS1177  ______________________________________________________________________
JS1177  NAVD 88 orthometric height was determined with an earlier geoid model
JS1177  GEOID HEIGHT    -        -30.102 (meters)                    GEOID12B
JS1177  NAD 83(2011) X  - -2,590,189.135 (meters)                    COMP
JS1177  NAD 83(2011) Y  - -4,275,086.545 (meters)                    COMP
JS1177  NAD 83(2011) Z  -  3,948,479.525 (meters)                    COMP
JS1177  LAPLACE CORR    -          6.03  (seconds)                   DEFLEC12B
JS1177
JS1177  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
JS1177  Standards:
JS1177         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
JS1177            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
JS1177  ------------------------------------------------------------------
JS1177  NETWORK    0.17   0.41           0.08   0.06   0.21     -0.01310209
JS1177  ------------------------------------------------------------------
JS1177  Click here for local accuracies and other accuracy information.
JS1177
JS1177
JS1177.The horizontal coordinates were established by GPS observations
JS1177.and adjusted by the National Geodetic Survey in June 2012.
JS1177
JS1177.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
JS1177.been affixed to the stable North American tectonic plate. See
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JS1177.NA2011 for more information.
JS1177
JS1177.The horizontal coordinates are valid at the epoch date displayed above
JS1177.which is a decimal equivalence of Year/Month/Day.
JS1177
JS1177.The orthometric height was determined by GPS observations and a
JS1177.high-resolution geoid model using precise GPS observation and
JS1177.processing techniques.
JS1177
JS1177.Significant digits in the geoid height do not necessarily reflect accuracy.
JS1177.GEOID12B height accuracy estimate available here.
JS1177
JS1177.The X, Y, and Z were computed from the position and the ellipsoidal ht.
JS1177
JS1177.The Laplace correction was computed from DEFLEC12B derived deflections.
JS1177
JS1177.The ellipsoidal height was determined by GPS observations
JS1177.and is referenced to NAD 83.
JS1177
JS1177. The following values were computed from the NAD 83(2011) position.
JS1177
JS1177;                    North         East     Units Scale Factor Converg.
JS1177;SPC CA 2     -   592,078.261 2,068,844.511   MT  0.99996754   +0 29 51.2
JS1177;SPC CA 2     - 1,942,510.09  6,787,534.03   sFT  0.99996754   +0 29 51.2
JS1177;UTM  10      - 4,262,084.365   656,031.600   MT  0.99989982   +1 06 49.9
JS1177
JS1177!             -  Elev Factor  x  Scale Factor =   Combined Factor
JS1177!SPC CA 2     -   0.99999538  x   0.99996754  =   0.99996292
JS1177!UTM  10      -   0.99999538  x   0.99989982  =   0.99989520
JS1177
JS1177:                Primary Azimuth Mark                    Grid Az
JS1177:SPC CA 2     -  SHELDON AZ MK                           213 20 17.7
JS1177:UTM  10      -  SHELDON AZ MK                           212 43 19.0
JS1177
JS1177_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SFH5603162084(NAD 83)
JS1177
JS1177|-----------------------------------------------------------------------|
JS1177| PID    Reference Object                     Distance      Geod. Az   |
JS1177|                                                           dddmmss.s |
JS1177| JS1178 SHELDON RM 1                         24.023 METERS 09054     |
JS1177| JS1180 SHELDON AZ MK                                      2135008.9 |
JS1177| JS1179 SHELDON RM 2                         19.254 METERS 22738     |
JS1177| DB5140 109                                                2503004.8 |
JS1177| JS4114 MATHER AFB HOUSING AUTHORTY TK      APPROX. 8.2 KM 3130129.5 |
JS1177|-----------------------------------------------------------------------|
JS1177
JS1177                          SUPERSEDED SURVEY CONTROL
JS1177
JS1177  NAD 83(2007)-  38 29 36.45481(N)    121 12 38.99171(W) AD(2007.00) 0
JS1177  ELLIP H (02/10/07)   29.407  (m)                       GP(2007.00)
JS1177  NAD 83(1998)-  38 29 36.45388(N)    121 12 38.98940(W) AD(2002.86) 1
JS1177  ELLIP H (10/28/05)   29.438  (m)                       GP(2002.86) 4 1
JS1177  NAD 83(1998)-  38 29 36.45431(N)    121 12 38.98999(W) AD(2004.69) A
JS1177  ELLIP H (09/13/05)   29.402  (m)                       GP(2004.69) 4 1
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JS1177  NAD 83(1992)-  38 29 36.45157(N)    121 12 38.98610(W) AD(1997.30) 1
JS1177  ELLIP H (07/10/98)   29.395  (m)                       GP(1997.30) 4 1
JS1177  NAD 83(1992)-  38 29 36.45121(N)    121 12 38.98649(W) AD(1997.30) 1
JS1177  ELLIP H (05/14/98)   29.483  (m)                       GP(1997.30) 3 1
JS1177  NAD 83(1992)-  38 29 36.44994(N)    121 12 38.98231(W) AD(1991.35) 1
JS1177  ELLIP H (06/13/97)   29.516  (m)                       GP(1991.35) 4 2
JS1177  NAD 83(1992)-  38 29 36.44537(N)    121 12 38.98255(W) AD(1991.35) 2
JS1177  NAD 83(1986)-  38 29 36.43658(N)    121 12 38.97814(W) AD(1984.00) 2
JS1177  NAD 27      -  38 29 36.76600(N)    121 12 35.16700(W) AD(       ) 2
JS1177  NAVD 88 (10/28/05)   59.49   (m)  UNKNOWN model used   GPS OBS
JS1177  NAVD 88 (07/10/98)   59.53   (m)  UNKNOWN model used   GPS OBS
JS1177  NAVD 88 (05/14/98)   59.53   (m)  UNKNOWN model used   GPS OBS
JS1177  NAVD 88 (06/13/97)   59.6    (m)  GEOID96 model used   GPS OBS
JS1177  NGVD 29 (??/??/92)   58.770  (m)          192.81   (f) ADJ UNCH    2 0
JS1177  NGVD 29              58.58   (m)          192.2    (f) LEVELING    3
JS1177
JS1177.Superseded values are not recommended for survey control.
JS1177
JS1177.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JS1177.See file dsdata.txt to determine how the superseded data were derived.
JS1177
JS1177_MARKER: DS = TRIANGULATION STATION DISK
JS1177_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
JS1177_STAMPING: SHELDON 1939
JS1177_MARK LOGO: CGS
JS1177_PROJECTION: PROJECTING 6 CENTIMETERS
JS1177_MAGNETIC: N = NO MAGNETIC MATERIAL
JS1177_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
JS1177+STABILITY: SURFACE MOTION
JS1177_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
JS1177+SATELLITE: SATELLITE OBSERVATIONS - April 01, 2011
JS1177
JS1177  HISTORY     - Date     Condition        Report By
JS1177  HISTORY     - 1939     MONUMENTED       CGS
JS1177  HISTORY     - 1941     GOOD             CGS
JS1177  HISTORY     - 1949     GOOD             CASLC
JS1177  HISTORY     - 1954     GOOD             CGS
JS1177  HISTORY     - 1960     GOOD             CGS
JS1177  HISTORY     - 1960     GOOD             CGS
JS1177  HISTORY     - 1962     GOOD             CGS
JS1177  HISTORY     - 1970     GOOD             NGS
JS1177  HISTORY     - 1983     POOR             DMA
JS1177  HISTORY     - 1984     GOOD             LOCENG
JS1177  HISTORY     - 19850315 GOOD             NGS
JS1177  HISTORY     - 19940204 GOOD             CADT
JS1177  HISTORY     - 19970827 GOOD             BOR
JS1177  HISTORY     - 20020319 GOOD             FAA
JS1177  HISTORY     - 20021105 GOOD             CADWR
JS1177  HISTORY     - 20030828 GOOD             CADT
JS1177  HISTORY     - 20040408 GOOD             CADT
JS1177  HISTORY     - 20041005 GOOD             CADT
JS1177  HISTORY     - 20050701 GOOD             FRAME
JS1177  HISTORY     - 20080101 GOOD             FRAME
JS1177  HISTORY     - 20080201 GOOD             CONDOR
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JS1177  HISTORY     - 20110401 GOOD             CADWR
JS1177
JS1177                          STATION DESCRIPTION
JS1177
JS1177'DESCRIBED BY COAST AND GEODETIC SURVEY 1939 (FGJ)
JS1177'STATION IS ABOUT 11.0 MILES, AIRLINE, EAST-SOUTHEAST OF PERKINS,
JS1177'10 MILES EAST OF FLORIN AND ABOUT 0.75 MILE WEST-SOUTHWEST OF
JS1177'SLOUTH HOUSE POST OFFICE.  BELIEVED TO BE IN SEC. 4, T. 7 N., R. 7
JS1177'E., ON LAND OWNED AND OCCUPIED BY WILLIAM J. SHELDON.
JS1177'
JS1177'REACHED FROM THE POST OFFICE IN PERKINS BY GOING SOUTHEASTERLY
JS1177'ON STATE HIGHWAY 16 FOR 11.3 MILES TO A PAVED ROAD LEADING RIGHT,
JS1177'TURN RIGHT 0.35 MILE TO A DIRT ROAD LEADING LEFT ACROSS CATTLE
JS1177'GUARD AND STATION AT RIGHT, BETWEEN DIRT ROAD LEADING TO THE
JS1177'SHELDON HOUSE AND PAVED ROAD.  IT IS 18-1/2 FEET SOUTHEAST OF
JS1177'NORTHEAST-SOUTHWEST FENCE LINE, AND 36 FEET SOUTH OF CENTER OF
JS1177'DIRT ROAD, IN PASTURE LAND.
JS1177'
JS1177'SURFACE, UNDERGROUND AND REFERENCE MARKS ARE STANDARD BRONZE
JS1177'DISKS SET AS DESCRIBED RESPECTIVELY.
JS1177'
JS1177'REFERENCE MARK NO. 1 IS 1.5 FEET INSIDE NORTHWEST-SOUTHEAST FENCE
JS1177'LINE, AND NO. 2 IS 1.5 FEET INSIDE NORTHEAST-SOUTHWEST FENCE LINE.
JS1177'
JS1177'AZIMUTH MARK IS IN PASTURE ON OPPOSITE SIDE OF PAVED ROAD AT
JS1177'BASE OF LONE, 4-1/2-FOOT EUCALYPTUS TREE, ABOUT 0.4 MILE
JS1177'WEST-SOUTHWEST OF STATION.  IT IS A U.S. GEOLOGICAL SURVEY
JS1177'BENCH MARK DATED 1908, ELEVATION INSCRIBED AS 190 FEET.
JS1177'
JS1177'HEIGHT OF LIGHT ABOVE STATION MARK - 4.5 METERS.
JS1177
JS1177                          STATION RECOVERY (1941)
JS1177
JS1177'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1941 (LBL)
JS1177'ALL MARKS FOUND AS DESCRIBED.  TABLET AT STATION IS LOOSE IN
JS1177'POST.
JS1177
JS1177                          STATION RECOVERY (1949)
JS1177
JS1177'RECOVERY NOTE BY CALIFORNIA STATE LANDS COMMISSION 1949 (JDK)
JS1177'RECOVERED STATION MARK AND REFERENCE MARKS 1 AND 2 AS DESCRIBED.
JS1177'OTHER AZIMUTH MARKS WERE NOT SEARCHED FOR.
JS1177
JS1177                          STATION RECOVERY (1954)
JS1177
JS1177'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1954 (LSB)
JS1177'THE STATION AND REFERENCE MARKS WERE RECOVERED IN GOOD CONDITION.
JS1177'THE USGS MARK THAT WAS USED FOR THE AZIMUTH FROM THE STATION WAS
JS1177'RECOVERED IN POOR CONDITION AND OBSTRUCTED FROM THE STATION.
JS1177'A NEW AZIMUTH MARK WAS ESTABLISHED.  THE DISTANCES AND DIRECTIONS
JS1177'TO THE REFERENCE MARKS WERE FOUND TO AGREE WITH THE 1939 DATA.  A
JS1177'COMPLETE DESCRIPTION FOLLOWS.
JS1177'
JS1177'THE STATION IS LOCATED ON THE SUMMIT OF A GRASSY RIDGE, AND ALONG
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JS1177'THE SOUTHEAST SIDE OF THE SHELDON ROAD.  IT IS ABOUT 12 MILES
JS1177'AIRLINE EAST-SOUTHEAST OF PERKINS, ABOUT 6-1/2 MILES AIRLINE
JS1177'NORTHEAST OF SHELDON, AND ABOUT 1 MILE AIRLINE WEST-SOUTHWEST
JS1177'OF SLOUGHHOUSE.
JS1177'
JS1177'TO REACH THE STATION FROM THE POST OFFICE IN SLOUGHHOUSE GO
JS1177'WESTERLY ON STATE HIGHWAY 16 FOR 0.65 MILE TO A PAVED ROAD LEFT.
JS1177'TURN LEFT, SOUTHWEST, AND GO 0.4 MILE TO THE STATION ON THE LEFT.
JS1177'
JS1177'THE STATION, REFERENCE, AND AZIMUTH MARKS ARE STANDARD DISKS
JS1177'SET IN THE TOP OF SQUARE CONCRETE MONUMENTS.
JS1177'
JS1177'THE STATION, STAMPED SHELDON 1939, IS 48 FEET SOUTHEAST OF THE
JS1177'CENTER LINE OF THE PAVED ROAD, 38 FEET WEST OF THE CENTER LINE
JS1177'OF THE GRAVELED FARM ROAD, 5 FEET NORTH-NORTHEAST OF A WITNESS
JS1177'POST.
JS1177'
JS1177'REFERENCE MARK 1, STAMPED SHELDON NO 1 1939, IS 38 FEET EAST OF
JS1177'THE CENTER LINE OF THE GRAVELED ROAD, AND 1 FOOT SOUTHWEST OF A
JS1177'WIRE FENCE.  IT PROJECTS 3 INCHES AND IS ABOUT THE SAME ELEVATION
JS1177'AS THE STATION.
JS1177'
JS1177'REFERENCE MARK 2, STAMPED SHELDON NO 2 1939, IS 38 FEET SOUTHEAST
JS1177'OF THE CENTER LINE OF THE PAVED ROAD, AND 1 FOOT SOUTHEAST OF A
JS1177'WIRE FENCE.  IT PROJECTS 4 INCHES AND IS ABOUT THE SAME ELEVATION
JS1177'AS THE STATION.
JS1177'
JS1177'THE AZIMUTH MARK, STAMPED SHELDON 1939, IS 30 FEET NORTHWEST OF
JS1177'THE CENTER LINE OF THE PAVED ROAD, AND 2 FEET NORTHEAST OF A
JS1177'WHITE WITNESS POST AND A TELEPHONE POLE THAT IS JUST SOUTHEAST
JS1177'OF A T-FENCE CORNER.  THE MARK IS FLUSH WITH THE GROUND.  TO
JS1177'REACH THE MARK FROM THE STATION GO SOUTHWESTERLY ON THE PAVED
JS1177'ROAD FOR 0.5 MILE TO THE MARK ON THE RIGHT.
JS1177'
JS1177'OBSERVATIONS TAKEN FROM AN 8-FOOT WOOD STAND.
JS1177'
JS1177'ALL MEASURMENTS ARE HORIZONTAL DISTANCES.
JS1177
JS1177                          STATION RECOVERY (1960)
JS1177
JS1177'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1960 (OSR)
JS1177'ALL MARKS RECOVERED AS DESCRIBED IN GOOD CONDITION.  THE AZIMUTH
JS1177'MARK WAS FOUND TO BE STAMPED SHELDON 1939 RESET 1954 INSTEAD OF
JS1177'SHELDON 1939.
JS1177'
JS1177'HEIGHT OF STAND-1 METER.
JS1177
JS1177                          STATION RECOVERY (1960)
JS1177
JS1177'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1960 (IRR)
JS1177'THE STATION MARK, REFERENCE MARKS, AND THE AZIMUTH MARK SET IN
JS1177'1954 WERE RECOVERED IN GOOD CONDITION AND THE 1954 DESCRIPTION IS
JS1177'ADEQUATE.
JS1177'
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JS1177'NOTE--THE AZIMUTH MARK WAS RESTAMPED SHELDON 1939 RESET 1954
JS1177'ON THIS DATE.
JS1177
JS1177                          STATION RECOVERY (1962)
JS1177
JS1177'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1962
JS1177'1 MI SW FROM SLOUGHHOUSE.
JS1177'0.6 MILE WEST ALONG STATE HIGHWAY 16 FROM THE POST OFFICE AT
JS1177'SLOUGHHOUSE, THENCE 0.4 MILE SOUTHWEST ALONG SLOUGHHOUSE ROAD,
JS1177'AT THE JUNCTION OF A DRIVEWAY SOUTH-SOUTHEAST, 50 FEET SOUTHEAST
JS1177'OF THE CENTER LINE OF THE ROAD, 43 FEET WEST-SOUTHWEST OF THE
JS1177'CENTER LINE OF THE DRIVEWAY, 38 FEET SOUTH-SOUTHWEST OF THE
JS1177'SOUTHWEST END OF A GATE, 18.0 FEET SOUTHEAST OF A FENCE, 17.6
JS1177'FEET SOUTHEAST OF A WITNESS POST, ABOUT 1 1/2 FEET HIGHER THAN
JS1177'THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2
JS1177'FOOT ABOVE THE GROUND.
JS1177
JS1177                          STATION RECOVERY (1970)
JS1177
JS1177'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1970 (LS)
JS1177'THE STATION MARK, AZIMUTH MARK SET IN 1954, AND REFERENCE MARKS
JS1177'1 AND 2 WERE RECOVERED IN GOOD CONDITION AND THE PREVIOUS
JS1177'DESCRIPTIONS ARE ADEQUATE.
JS1177
JS1177                          STATION RECOVERY (1983)
JS1177
JS1177'RECOVERY NOTE BY DEFENSE MAP AGENCY 1983 (PJB)
JS1177'SHELDON 1939 RECOVERED POOR - RECOMMEND STATION RESET.
JS1177'
JS1177'1954 RECOVERY NOTE IS ADEQUATE.  THE NAME OF THE ROAD OFF
JS1177'HIGHWAY 16, AND WHEN STATION IS LOCATED IS SLOUGHHOUSE ROAD.
JS1177'RM 1 AND 2 WERE RECOVERED IN GOOD CONDITION.  WITNESS POST AND SIGN
JS1177'ARE NO LONGER THERE.
JS1177
JS1177                          STATION RECOVERY (1984)
JS1177
JS1177'RECOVERY NOTE BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1984 (FTE)
JS1177'SHELDON 1939 RECOVERED FAIR.
JS1177'
JS1177'THE STATION MARK WAS RECOVERED WITH THE STATION DESCRIPTION.  THE
JS1177'REFERENCE MARKS AND AZIMUTH MARKS WERE NOT SEARCHED FOR.
JS1177
JS1177                          STATION RECOVERY (1985)
JS1177
JS1177'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1985 (CLN)
JS1177'THE STATION MARK, REFERENCE MARKS 1, 2 AND THE AZIMUTH MARK WERE
JS1177'RECOVERED IN GOOD CONDITION.  DISTANCES AND DIRECTIONS TO THE MARKS
JS1177'AGREED WITH PREVIOUS OBSERVATIONS.  THE ORIGINAL DESCRIPTION STATES
JS1177'THERE IS AN UNDERGROUND.  THE STATION IS LOCATED 17.6 KM (10.95 MI)
JS1177'EAST-SOUTHEAST OF PERKINS, 16 KM (9.95 MI) EAST OF FLORIN, 1.2 KM
JS1177'(0.75 MI) WEST SOUTHWEST OF SLOUGHHOUSE, IN SECTION 4, T 7 N, R 7 E, 1
JS1177'KM (0.60 MI) SOUTHWEST OF STATE HIGHWAY 16 (JACKSON ROAD) , METERS
JS1177'SOUTHEAST OF SLOUGHHOUSE ROAD, METERS WEST OF THE ENTRANCE DRIVE TO
JS1177'7303 SLOUGHHOUSE ROAD, 0.1 KM (0.05 MI) SOUTHWEST AND ACROSS THE ROAD
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JS1177'FROM THE ENTRANCE DRIVE TO THE SLOUGHHOUSE FIRE PROTECTION DISTRICT
JS1177'BUILDINGS. TO REACH THE STATION FROM THE SLOUGHHOUSE IN AND POST
JS1177'OFFICE, GO WEST ON STATE HIGHWAY 16 (JACKSON ROAD) FOR 1 KM (0.60 MI)
JS1177'TO A SIDE ROAD LEFT. TURN LEFT, SOUTH ON SLOUGHHOUSE ROAD FOR 0.6 KM
JS1177'(0.35 MI) TO THE STATION ON THE LEFT. THE STATION IS A STANDARD CGS
JS1177'DISK STAMPED--SHELDON 1939--, SET INTO THE TOP OF A SQUARE CONCRETE
JS1177'MONUMENT, 30 CM IN DIAMETER FLUSH WITH GROUND. LOCATED 14.63 METERS
JS1177'(48.00 FT) SOUTHEAST FROM THE CENTER OF SLOUGHHOUSE ROAD, 11.58 METERS
JS1177'(37.99 FT) WEST FROM THE CENTER OF A DRIVE WAY, 0.3 METER (1.0 FT)
JS1177'SOUTHEAST FROM A WITNESS POST, 5.64 METERS (18.50 FT) SOUTHEAST FROM A
JS1177'FENCE AND 10.97 METERS (35.99 FT) SOUTH FROM THE CENTER OF THE
JS1177'DRIVEWAY. REFERENCE MARK NO.1 IS A STANDARD CGS DISK STAMPED--SHELDON
JS1177'1939 NO 1--, SET INTO THE TOP OF A SQUARE CONCRETE MONUMENT, 30 CM IN
JS1177'DIAMETER, FLUSH WITH GROUND. LOCATED 11.58 METERS (37.99 FT) EAST
JS1177'FROM THE CENTER OF THE DRIVEWAY, 0.3 METER (1.0 FT) SOUTHWEST FROM A
JS1177'FENCE AND 0.3 METER (1.0 FT) SOUTHWEST FROM A WITNESS POST. REFERENCE
JS1177'MARK NO.2 IS A STANDARD CGS DISK STAMPED--SHELDON 1939 NO 2--, SET
JS1177'INTO THE TOP OF A SQUARE CONCRETE MONUMENT, 30 CM IN DIAMETER, FLUSH
JS1177'WITH GROUND. LOCATED 11.58 METERS (37.99 FT) SOUTHEAST FROM THE
JS1177'CENTER OF SLOUGHHOUSE ROAD, 0.3 METER (1.0 FT) SOUTHEAST FROM A FENCE
JS1177'AND 0.3 METER (1.0 FT) SOUTHEAST FROM A WITNESS POST. AZIMUTH MARK NO
JS1177'2 IS A STANDARD CGS DISK STAMPED--SHELDON 1939 RESET 1954--, SET INTO
JS1177'THE TOP OF ROUND CONCRETE MONUMENT, 30 CM IN DIAMETER, FLUSH WITH
JS1177'GROUND. LOCATED 9.14 METERS (29.99 FT) NORTHWEST FROM THE CENTER OF
JS1177'SLOUGHHOUSE ROAD, 1 METER (3.3 FT) NORTH FROM POWERPOLE NUMBER 3582,
JS1177'(THE NUMBER IS HIGH ON THE POLE) 0.7 METER (2.3 FT) SOUTHWEST FROM A
JS1177'WITNESS POST, 0.7 METER (2.3 FT) NORTHEAST FROM A WITNESS POST AND 0.3
JS1177'METER (1.0 FT) SOUTHEAST FROM A FENCE. TO REACH THE AZIMUTH MARK FROM
JS1177'THE STATION, GO SOUTH ON SLOUGHHOUSE ROAD FOR 0.8 KM (0.50 MI) TO THE
JS1177'MARK ON THE RIGHT, WEST SIDE OF ROAD AT POWER POLE NUMBER 3582 AND A
JS1177'T-FENCE WEST.
JS1177
JS1177   STATION RECOVERY (1994)
JS1177
JS1177'RECOVERY NOTE BY CALTRANS 1994 (JCB)
JS1177'THE STATION MARK, REFERENCE MARKS 1 AND 2, AND THE AZIMUTH MARK WERE
JS1177'RECOVERED. A COMPLETE NEW DESCRIPTION FOLLOWS. THE STATION IS
JS1177'LOCATED NEAR THE COMMUNITY OF SLOUGHHOUSE, ABOUT 16 MI (25.7 KM)
JS1177'EAST-SOUTHEAST OF SACRAMENTO AND 13 MI (20.9 KM) SOUTH OF FOLSOM. TO
JS1177'REACH THE STATION FROM THE U.S. HIGHWAY 50/SUNRISE BLVD INTERCHANGE
JS1177'IN RANCHO CORDOVA, GO SOUTH ON SUNRISE BLVD FOR 7.6 MI (12.2 KM) TO
JS1177'THE INTERSECTION WITH JACKSON ROAD, STATE HIGHWAY 16. TURN LEFT AND
JS1177'GO EAST ON JACKSON ROAD FOR 2.0 MI (3.2 KM) TO A SIDE ROAD RIGHT,
JS1177'SLOUGHHOUSE ROAD. TURN RIGHT AND GO SOUTHWEST ON SLOUGHHOUSE ROAD FOR
JS1177'0.4 MI (0.6 KM) TO THE STATION ON THE LEFT. THE STATION IS LOCATED IN
JS1177'A GRASSY FIELD, ABOUT 400 FT (121.9 M) SOUTH OF AND ACROSS SLOUGHHOUSE
JS1177'ROAD FROM THE AMERICAN RIVER FIRE PROTECTION DISTRICT STATION NO 58
JS1177'(KIP WILLIAM BOLLIG STATION) , 64 FT (19.5 M) SOUTH-SOUTHWEST OF THE
JS1177'CENTER OF A GRAVELED FARM ROAD WHERE IS PASSES THROUGH THE FENCE ON
JS1177'THE SOUTHEAST SIDE OF SLOUGHHOUSE ROAD, 49.0 FT (14.9 M) SOUTHEAST OF
JS1177'THE CENTERLINE OF SLOUGHHOUSE ROAD, 18.4 FT (5.6 M) SOUTHEAST OF A
JS1177'BARBED WIRE FENCE, 1.4 FT (0.4 M) SOUTHEAST OF A CARSONITE WITNESS
JS1177'POST, ABOUT 1 FT (0.3 M) HIGHER THAN SLOUGHHOUSE ROAD AND PROJECTS 0.3
JS1177'FT (0.1 M) ABOVE GROUND. THIS STATION WAS OCCUPIED AS PART OF A

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JS1177'CALIFORNIA HPGN DENSIFICATION SURVEY
JS1177
JS1177                          STATION RECOVERY (1997)
JS1177
JS1177'RECOVERY NOTE BY US BUREAU OF RECLAMATION 1997 (DWS)
JS1177'THE STATION MARK AND REFERENCE MARKS 1 AND 2 WERE RECOVERED.  THE
JS1177'STATION WAS OCCUPIED AS PART OF THE SAN JOAQUIN-SACRAMENTO RIVER DELTA
JS1177'GPS/VERTICAL PROJECT.
JS1177
JS1177                          STATION RECOVERY (2002)
JS1177
JS1177'RECOVERY NOTE BY FEDERAL AVIATION ADMINISTRATION 2002 (TJD)
JS1177'RECOVERED IN GOOD CONDITION.
JS1177
JS1177                          STATION RECOVERY (2002)
JS1177
JS1177'RECOVERY NOTE BY CA DEPT OF WATER RES 2002 (WLB)
JS1177'RECOVERED AS DESCRIBED. THE STATION WAS OBSERVED AS PART OF THE DWR
JS1177'DELTA 2002 SUBSIDENCE NETWORK HEIGHT  MODERNIZATION SURVEY.
JS1177
JS1177                          STATION RECOVERY (2003)
JS1177
JS1177'RECOVERY NOTE BY CALTRANS 2003 (DWM)
JS1177'THE STATION AND REFERENCE MARK NO.2 WERE RECOVERED AS DESCRIBED AND
JS1177'FOUND IN GOOD  CONDITION. REFERENCE MARK NO. 1 WAS FOUND DESTROYED.
JS1177'THIS STATION WAS OCCUPIED AS PART  OF A CALTRANS NORTH REGION OFFICE
JS1177'OF SURVEYORS GPS HEIGHT MODERNIZATION PROJECT.
JS1177
JS1177                          STATION RECOVERY (2004)
JS1177
JS1177'RECOVERY NOTE BY CALTRANS 2004 (RLM)
JS1177'RECOVERED IN GOOD CONDITION.
JS1177
JS1177                          STATION RECOVERY (2004)
JS1177
JS1177'RECOVERY NOTE BY CALTRANS 2004 (DWM)
JS1177'THE STATION AND REFERENCE MARK NO.2 WERE RECOVERED AS DESCRIBED AND
JS1177'FOUND IN GOOD  CONDITION. REFERENCE MARK NO. 1 WAS FOUND DESTROYED.
JS1177'THIS STATION WAS OCCUPIED AS PART  OF A CALTRANS NORTH REGION OFFICE
JS1177'OF SURVEYORS GPS HEIGHT MODERNIZATION PROJECT.
JS1177
JS1177                          STATION RECOVERY (2005)
JS1177
JS1177'RECOVERY NOTE BY FRAME SURVEYING AND MAPPING 2005 (ZZZ)
JS1177'RECOVERED AS DESCRIBED.
JS1177
JS1177                          STATION RECOVERY (2008)
JS1177
JS1177'RECOVERY NOTE BY FRAME SURVEYING AND MAPPING 2008 (JHF)
JS1177'RECOVERED AS DESCRIBED.
JS1177
JS1177                          STATION RECOVERY (2008)
JS1177
JS1177'RECOVERY NOTE BY CONDOR TECHNOLOGIES 2008 (DLS)
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JS1177'RECOVERED IN GOOD CONDITION.
JS1177
JS1177                          STATION RECOVERY (2011)
JS1177
JS1177'RECOVERY NOTE BY CA DEPT OF WATER RES 2011 (GS)
JS1177'RECOVERED AS DESCRIBED.
       National Geodetic Survey,   Retrieval Date = FEBRUARY 27, 2017
HS2178 ***********************************************************************
HS2178  DESIGNATION -  T 679
HS2178  PID         -  HS2178
HS2178  STATE/COUNTY-  CA/STANISLAUS
HS2178  COUNTRY     -  US
HS2178  USGS QUAD   -  COOPERSTOWN (1968)
HS2178
HS2178                         *CURRENT SURVEY CONTROL
HS2178  ______________________________________________________________________
HS2178* NAD 83(2011) POSITION- 37 38 40.39153(N) 120 36 47.85372(W)   ADJUSTED
HS2178* NAD 83(2011) ELLIP HT-    35.328 (meters)        (06/27/12)   ADJUSTED
HS2178* NAD 83(2011) EPOCH   -  2010.00
HS2178* NAVD 88 ORTHO HEIGHT -    66.4   (meters)      218.    (feet) GPS OBS
HS2178  ______________________________________________________________________
HS2178  NAVD 88 orthometric height was determined with geoid model    GEOID93
HS2178  GEOID HEIGHT    -        -30.375 (meters)                     GEOID93
HS2178  GEOID HEIGHT    -        -30.882 (meters)                     GEOID12B
HS2178  NAD 83(2011) X  - -2,575,053.921 (meters)                     COMP
HS2178  NAD 83(2011) Y  - -4,351,873.764 (meters)                     COMP
HS2178  NAD 83(2011) Z  -  3,874,301.687 (meters)                     COMP
HS2178  LAPLACE CORR    -          5.95  (seconds)                    DEFLEC12B
HS2178
HS2178  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
HS2178  Standards:
HS2178         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
HS2178            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
HS2178  ------------------------------------------------------------------
HS2178  NETWORK    1.95   4.92           0.92   0.60   2.51     -0.05458670
HS2178  ------------------------------------------------------------------
HS2178  Click here for local accuracies and other accuracy information.
HS2178
HS2178
HS2178.The horizontal coordinates were established by GPS observations
HS2178.and adjusted by the National Geodetic Survey in June 2012.
HS2178
HS2178.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
HS2178.been affixed to the stable North American tectonic plate. See
HS2178.NA2011 for more information.
HS2178
HS2178.The horizontal coordinates are valid at the epoch date displayed above
HS2178.which is a decimal equivalence of Year/Month/Day.
HS2178
HS2178.The orthometric height was determined by GPS observations and a
HS2178.high-resolution geoid model.
HS2178
HS2178.Significant digits in the geoid height do not necessarily reflect accuracy.
HS2178.GEOID12B height accuracy estimate available here.
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HS2178
HS2178.The X, Y, and Z were computed from the position and the ellipsoidal ht.
HS2178
HS2178.The Laplace correction was computed from DEFLEC12B derived deflections.
HS2178
HS2178.The ellipsoidal height was determined by GPS observations
HS2178.and is referenced to NAD 83.
HS2178
HS2178. The following values were computed from the NAD 83(2011) position.
HS2178
HS2178;                    North         East     Units Scale Factor Converg.
HS2178;SPC CA 3     -   627,029.368 1,990,002.080   MT  0.99993090   -0 04 09.7
HS2178;SPC CA 3     - 2,057,178.85  6,528,865.16   sFT  0.99993090   -0 04 09.7
HS2178;UTM  10      - 4,169,058.167   710,569.498   MT  1.00014617   +1 27 29.7
HS2178
HS2178!             -  Elev Factor  x  Scale Factor =   Combined Factor
HS2178!SPC CA 3     -   0.99999446  x   0.99993090  =   0.99992536
HS2178!UTM  10      -   0.99999446  x   1.00014617  =   1.00014063
HS2178
HS2178_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGG1056969058(NAD 83)
HS2178
HS2178                          SUPERSEDED SURVEY CONTROL
HS2178
HS2178  NAD 83(2007)-  37 38 40.39066(N)    120 36 47.85122(W) AD(2007.00) 0
HS2178  ELLIP H (02/10/07)   35.329  (m)                       GP(2007.00)
HS2178  NAD 83(1992)-  37 38 40.38569(N)    120 36 47.84659(W) AD(1991.35) 1
HS2178  ELLIP H (10/14/94)   35.418  (m)                       GP(1991.35) 4 2
HS2178  NGVD 29 (??/??/92)   65.480  (m)          214.83   (f) ADJ UNCH    1 2
HS2178
HS2178.Superseded values are not recommended for survey control.
HS2178
HS2178.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HS2178.See file dsdata.txt to determine how the superseded data were derived.
HS2178
HS2178_MARKER: DB = BENCH MARK DISK
HS2178_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
HS2178_STAMPING: T 679 1943
HS2178_MARK LOGO: CGS
HS2178_MAGNETIC: N = NO MAGNETIC MATERIAL
HS2178_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
HS2178+STABILITY: SURFACE MOTION
HS2178_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HS2178+SATELLITE: SATELLITE OBSERVATIONS - September 20, 2004
HS2178
HS2178  HISTORY     - Date     Condition        Report By
HS2178  HISTORY     - 1943     MONUMENTED       CGS
HS2178  HISTORY     - 1958     GOOD             CGS
HS2178  HISTORY     - 19931208 GOOD             CADT
HS2178  HISTORY     - 20040920 GOOD             WOOROD
HS2178
HS2178                           STATION DESCRIPTION
HS2178
HS2178'DESCRIBED BY COAST AND GEODETIC SURVEY 1958
HS2178'15.6 MI  S  FROM KNIGHTS FERRY.
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HS2178'1.1 MILES SOUTHEAST ALONG A PAVED ROAD FROM THE POST OFFICE AT
HS2178'KNIGHTS FERRY, THENCE 7.2 MILES SOUTHEAST ALONG KNIGHTS FERRY-LA
HS2178'GRANGE ROAD, THENCE 0.45 MILE SOUTHWEST ALONG WARNERSVILLE ROAD,
HS2178'THENCE 6.8 MILES SOUTH ALONG CRABTREE ROAD, IN R12E T3S S26, AT THE
HS2178'JUNCTION OF STATE HIGHWAY 132, ABOUT 76 YARDS SOUTHWEST OF A LARGE
HS2178'CORRUGATED METAL BUILDING, 33 FEET WEST OF THE CENTER LINE OF THE
HS2178'ROAD, 45 FEET NORTHWEST OF THE CENTER LINE OF THE HIGHWAY, 74
HS2178'FEET NORTHWEST AND ACROSS THE HIGHWAY AND ROAD FROM POWER LINE
HS2178'POLE 103 29-4 29-7, 41 1/2 FEET NORTHEAST OF A GUY POLE, 1.0 FOOT
HS2178'NORTHEAST OF A WITNESS POST, ABOUT LEVEL WITH THE HIGHWAY AND SET
HS2178'IN THE TOP OF A CONCRETE POST PROJECTING 0.1 FOOT ABOVE THE GROUND.
HS2178
HS2178                          STATION RECOVERY (1993)
HS2178
HS2178'RECOVERY NOTE BY CALTRANS 1993 (PDG)
HS2178'THE STATION WAS RECOVERED. A COMPLETE NEW DESCRIPTION FOLLOWS.
HS2178'
HS2178'THE STATION IS LOCATED AT THE INTERSECTION OF STATE HIGHWAY 132 AND
HS2178'CRABTREE ROAD, ABOUT 22 MI (35.4 KM) EAST OF THE CITY OF MODESTO,
HS2178'ABOUT 12 MI (19.3 KM) WEST OF NEW DON PEDRO DAM AND ABOUT 9 MI (14.5
HS2178'KM) EAST OF THE CITY OF WATERFORD.
HS2178'
HS2178'TO REACH THE STATION FROM THE INTERSECTION OF STATE HIGHWAY 132 AND
HS2178'HICKMAN ROAD TO THE SOUTH AND F STREET (COUNTY ROAD J9) TO THE NORTH
HS2178'IN WATERFORD, GO EAST ON HIGHWAY 132 FOR 7.9 MI (12.7 KM) TO A SIDE
HS2178'ROAD RIGHT, ROBERTS FERRY ROAD. CONTINUE EAST THEN NORTH ON HIGHWAY
HS2178'132 FOR 0.6 MI (1.0 KM) TO A SIDE ROAD LEFT, CRABTREE ROAD, AND THE
HS2178'STATION ON THE LEFT AT POST MILE 36.6.
HS2178'
HS2178'THE STATION IS ABOUT 225 FT (68.6 M) SOUTHWEST OF A LARGE CORRUGATED
HS2178'METAL BUILDING, 74.0 FT (22.6 M) NORTHWEST OF AND ACROSS THE HIGHWAY
HS2178'FROM POWER POLE NO. K 15 20734 4 29-27, 43.0 FT (13.1 M) NORTHWEST OF
HS2178'THE CENTERLINE OF HIGHWAY 132, 2.0 FT (0.6 M) NORTHEAST OF A CARSONITE
HS2178'WITNESS POST, 1.0 FT (0.3 M) SOUTHEAST OF A WOODEN WITNESS POST AND
HS2178'PROJECTS 0.1 FT (0.0 M) ABOVE THE GROUND.
HS2178'
HS2178'THE STATION WAS OCCUPIED AS PART OF A CALIFORNIA HPGN DENSIFICATION
HS2178'SURVEY.
HS2178
HS2178                          STATION RECOVERY (2004)
HS2178
HS2178'RECOVERY NOTE BY WOOD RODGERS INC 2004 (MJS)
HS2178'RECOVERED IN GOOD CONDITION.
       National Geodetic Survey,   Retrieval Date = MARCH  2, 2017
AH2571 ***********************************************************************
AH2571  DESIGNATION -  U 236 RESET
AH2571  PID         -  AH2571
AH2571  STATE/COUNTY-  CA/MERCED
AH2571  COUNTRY     -  US
AH2571  USGS QUAD   -  YOSEMITE LAKE (1987)
AH2571
AH2571                        *CURRENT SURVEY CONTROL
AH2571 ______________________________________________________________________
AH2571* NAD 83(1986) POSITION- 37 29 58.     (N) 120 28 42.     (W)   SCALED
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AH2571* NAVD 88 ORTHO HEIGHT -    67.78   (+/-2cm)      222.4    (feet) VERTCON
AH2571  _____________________________________________________________________
AH2571  GEOID HEIGHT    -        -31.008 (meters)                    GEOID12B
AH2571  VERT ORDER      -  THIRD (See Below)
AH2571
AH2571.The horizontal coordinates were scaled from a topographic map and have
AH2571.an estimated accuracy of +/- 6 seconds.
AH2571.
AH2571.The NAVD 88 height was computed by applying the VERTCON shift value to
AH2571.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
AH2571
AH2571.Significant digits in the geoid height do not necessarily reflect accuracy.
AH2571.GEOID12B height accuracy estimate available here.
AH2571
AH2571.The vertical order pertains to the NGVD 29 superseded value.
AH2571
AH2571;                    North         East     Units  Estimated Accuracy
AH2571;SPC CA 3     -   610,920.    2,001,920.      MT  (+/- 180 meters Scaled)
AH2571
AH2571_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGG229532(NAD 83)
AH2571
AH2571                          SUPERSEDED SURVEY CONTROL
AH2571
AH2571  NGVD 29 (10/27/16)   67.07    (m)           220.0    (f) RESET       3
AH2571
AH2571.Superseded values are not recommended for survey control.
AH2571
AH2571.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AH2571.See file dsdata.txt to determine how the superseded data were derived.
AH2571
AH2571_MARKER: DV = VERTICAL CONTROL DISK
AH2571_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE
AH2571_SP_SET: CULVERT HEADWALL
AH2571_STAMPING: U 236 RESET 1975
AH2571_MARK LOGO: NGS
AH2571_PROJECTION: FLUSH
AH2571_MAGNETIC: N = NO MAGNETIC MATERIAL
AH2571_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AH2571+STABILITY: SURFACE MOTION
AH2571_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AH2571+SATELLITE: SATELLITE OBSERVATIONS - August 06, 2003
AH2571
AH2571  HISTORY     - Date     Condition        Report By
AH2571  HISTORY     - 1975     MONUMENTED       NGS
AH2571  HISTORY     - 20030806 GOOD             INDIV
AH2571
AH2571                          STATION DESCRIPTION
AH2571
AH2571'DESCRIBED BY NATIONAL GEODETIC SURVEY 1975
AH2571'2.7 MILES (4.3 KM) SOUTHWEST ALONG STATE HIGHWAY 59 TOWARDS MERCED
AH2571'FROM THE POST OFFICE AT SNELLING, SET IN THE TOP OF THE SOUTHEAST
AH2571'CONCRETE HEADWALL OF A 36 NCH CONCRETE PIPE CULVERT UNDER THE HIGHWAY,
AH2571'28.0 FEET (8.5 M) NORTHWEST OF A FENCE LINE, 22.5 FEET (6.9 M)
AH2571'SOUTHEAST OF THE CENTERLINE OF THE HIGHWAY, 0.9 FEET (27.4 CM)
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AH2571'NORTHEAST OF THE SOUTHWEST END OF THE HEADWALL AND ABOUT 2 FEET (0.6
AH2571'M) LOWER THAN THE HIGHWAY.
AH2571
AH2571                          STATION RECOVERY (2003)
AH2571
AH2571'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 (SLB)
AH2571'FOUND 4-INCH BRASS DISK IN THE SW END OF A CONCRETE CULVERT HEADWALL,
AH2571'ON THE SW SIDE OF HWY NO. 59. 6FT. SE OF THE SE EDGE OF PAVEMENT.
AH2571'APPROXIMATELY 2FT. BELOW THE HWY. LOCATED 0.12 MILES NE ALONG HWY NO.
AH2571'59 AT THE INTERSECTION OF THE HWY AND TURLOCK ROAD. MARK IN EXCELLENT
AH2571'CONDITION.
       National Geodetic Survey,   Retrieval Date = FEBRUARY 24, 2017
HS2265 ***********************************************************************
HS2265  DESIGNATION -  WOODWARD
HS2265  PID         -  HS2265
HS2265  STATE/COUNTY-  CA/STANISLAUS
HS2265  COUNTRY     -  US
HS2265  USGS QUAD   -  ESCALON (1976)
HS2265
HS2265                         *CURRENT SURVEY CONTROL
HS2265  ______________________________________________________________________
HS2265* NAD 83(1992) POSITION- 37 51 14.11699(N) 120 52 49.18916(W)   ADJUSTED
HS2265* NAD 83(1992) EPOCH   -  1991.35
HS2265* NAVD 88 ORTHO HEIGHT -    67.47  (+/-2cm)      221.4    (feet) VERTCON
HS2265  ______________________________________________________________________
HS2265  GEOID HEIGHT    -       -31.254 (meters)                    GEOID12B
HS2265  LAPLACE CORR    -         5.96  (seconds)                   DEFLEC12B
HS2265  HORZ ORDER      -  FIRST
HS2265  VERT ORDER      -  SECOND    CLASS 0 (See Below)
HS2265
HS2265.The horizontal coordinates were established by classical geodetic methods
HS2265.and adjusted by the National Geodetic Survey in March 1994.
HS2265.
HS2265.The NAVD 88 height was computed by applying the VERTCON shift value to
HS2265.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
HS2265
HS2265.Significant digits in the geoid height do not necessarily reflect accuracy.
HS2265.GEOID12B height accuracy estimate available here.
HS2265
HS2265.The vertical order pertains to the NGVD 29 superseded value.
HS2265
HS2265.The Laplace correction was computed from DEFLEC12B derived deflections.
HS2265
HS2265. The following values were computed from the NAD 83(1992) position.
HS2265
HS2265;                   North         East     Units Scale Factor Converg.
HS2265;SPC CA 3     -   650,327.831 1,966,530.906   MT  0.99993078   -0 13 58.3
HS2265;SPC CA 3     - 2,133,617.23  6,451,860.15   sFT  0.99993078   -0 13 58.3
HS2265;UTM  10      - 4,191,724.795   686,480.488   MT  1.00002833   +1 18 04.0
HS2265
HS2265!             -  Elev Factor  x  Scale Factor =   Combined Factor
HS2265!SPC CA 3     -   0.99999432  x   0.99993078  =   0.99992510
HS2265!UTM  10      -   0.99999432  x   1.00002833  =   1.00002265
HS2265
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HS2265:                 Primary Azimuth Mark                      Grid Az
HS2265:SPC CA 3     -   TRIGO                                     331 10 33.7
HS2265:UTM  10      -   TRIGO                                     329 38 31.4
HS2265
HS2265_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SFG8648091724(NAD 83)
HS2265
HS2265|---------------------------------------------------------------------|
HS2265| PID    Reference Object                    Distance      Geod. Az   |
HS2265|                                                          dddmmss.s |
HS2265| HS2264 WOODWARD RM 1                       25.985 METERS 14752      |
HS2265| DB2704 WOODWARD AZ MK                                    1763406.1 |
HS2265| DB2705 WOODWARD RM 2                       29.130 METERS 26344      |
HS2265| HS2249 TRIGO                              APPROX. 9.7 KM 3305635.4 |
HS2265|---------------------------------------------------------------------|
HS2265
HS2265                          SUPERSEDED SURVEY CONTROL
HS2265
HS2265  NAD 83(1986)-  37 51 14.10806(N)    120 52 49.19283(W) AD(1984.00) 1
HS2265  NAD 27      -  37 51 14.37100(N)    120 52 45.42600(W) AD(       ) 1
HS2265  NGVD 29 (??/??/92)   66.723  (m)          218.91   (f) ADJ UNCH    2 0
HS2265  NGVD 29              66.72   (m)          218.9    (f) LEVELING    3
HS2265
HS2265.Superseded values are not recommended for survey control.
HS2265
HS2265.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HS2265.See file dsdata.txt to determine how the superseded data were derived.
HS2265
HS2265_MARKER: DS = TRIANGULATION STATION DISK
HS2265_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
HS2265_STAMPING: WOODWARD 1943
HS2265_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
HS2265+STABILITY: SURFACE MOTION
HS2265
HS2265  HISTORY     - Date     Condition        Report By
HS2265  HISTORY     - 1943     MONUMENTED       CGS
HS2265  HISTORY     - 1961     SEE DESCRIPTION  CGS
HS2265  HISTORY     - 1963     GOOD             CGS
HS2265  HISTORY     - 1989     POOR             USPSQD
HS2265
HS2265                          STATION DESCRIPTION
HS2265
HS2265'DESCRIBED BY COAST AND GEODETIC SURVEY 1943 (JCS)
HS2265'STATION IS LOCATED ABOUT 7 MILES, AIR LINE, NNW OF OAKDALE AND
HS2265'ABOUT 8 MILES, AIR LINE, NE OF ESCALON.  IT IS ON THE W BANK
HS2265'OF A LARGE RESERVOIR, 0.25 MILE S OF RAY BRADLEYS RESIDENCE.
HS2265'BRADLEY IS THE WATCHMAN AT THE RESERVOIR.  THE STATION IS 215 FEET E
HS2265'OF AN ABANDONED CABIN AND 103 FEET ESE OF THE CENTER LINE OF
HS2265'AN OILED ROAD.  THE MARK PROJECTS ABOUT 4 INCHES AND IS STAMPED
HS2265'WOODWARD 1943.  THERE IS A WHITE REFERENCE POST 3.5 FEET NE OF
HS2265'THE STATION.  THE ELEVATION OF THE STATION IS ABOUT 220 FEET.
HS2265'
HS2265'SURFACE, UNDERGROUND, REFERENCE, AND AZIMUTH MARKS ARE BRONZE
HS2265'DISKS SET IN CONCRETE, AS DESCRIBED IN NOTES 1A, 7A, AND 11A.
HS2265'
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HS2265'REFERENCE MARK NO. 1 IS 35 FEET N OF THE BANK OF THE RESERVOIR
HS2265'AND 120 FEET NE OF THE N END OF CONCRETE FILL MAKING UP PART
HS2265'OF THE LEVEE.  THE MARK PROJECTS ABOUT 4 INCHES AND IS STAMPED
HS2265'WOODWARD NO. 1, 1943.
HS2265'
HS2265'REFERENCE MARK NO. 2 IS 21 FEET E OF THE CENTER LINE OF THE
HS2265'ROAD, 1 FOOT E OF FENCE LINE, AT A WIRE GATE.  THE MARK PROJECTS
HS2265'ABOUT 4 INCHES AND IS STAMPED WOODWARD NO. 2, 1943.
HS2265'
HS2265'THE AZIMUTH MARK IS ABOUT 0.45 MILE S OF THE STATION, 22 FEET
HS2265'E OF THE CENTER LINE OF THE ROAD, 1 FOOT E OF FENCE LINE, AT A
HS2265'CURVE IN THE ROAD.  THE MARK PROJECTS ABOUT 4 INCHES AND IS
HS2265'STAMPED WOODWARD 1943.
HS2265'
HS2265'NO WITNESS MARK WAS SET.
HS2265'
HS2265'TO REACH THE STATION FROM OAKDALE, GO N ON STATE HIGHWAY 120
HS2265'FOR 1.6 MILES TO JOG IN ROAD.  TURN RIGHT, CROSS RAILROAD
HS2265'TRACKS, THENCE TURN LEFT AND GO N TOWARD EUGENE AND MILTON FOR
HS2265'4.1 MILES.  ROAD BEARS NNW AT THIS POINT, GOING AROUND RESERVOIR.
HS2265'CONTINUE 0.65 MILE TO THE AZIMUTH MARK ON THE RIGHT SIDE OF THE
HS2265'ROAD.  CONTINUE FOR 0.45 MILE TO THE ABANDONED CABIN AND THE
HS2265'STATION.
HS2265'
HS2265'HEIGHT OF LIGHT ABOVE STATION MARK - 18 METERS.
HS2265
HS2265                          STATION RECOVERY (1961)
HS2265
HS2265'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1961 (IRR)
HS2265'THE STATION MARK AND REFERENCE MARK NUMBER 1 WERE RECOVERED IN
HS2265'GOOD CONDITION BUT THE AZIMUTH MARK AND REFERENCE MARK NUMBER
HS2265'2 WERE FOUND TO HAVE BEEN DESTROYED BY ROAD CONSTRUCTION.
HS2265'
HS2265'THE STATION MARK IS ON A SLIGHT RISE AND IS BETWEEN TWO 14-INCH
HS2265'WOODEN POLES THAT PROJECT 5 FEET OUT OF THE GROUND, AND IS 8.5
HS2265'FEET NORTH OF THE SOUTH POLE, 8.2 FEET SOUTH OF THE NORTH POLE,
HS2265'36 FEET EAST-SOUTHEAST OF THE CENTERLINE OF A PAVED RESERVOIR
HS2265'ROAD, AND 98.2 FEET EAST-SOUTHEAST OF THE CENTERLINE OF 26 MILE
HS2265'ROAD.
HS2265'
HS2265'TO REACH THE STATION FROM THE INTERSECTION OF STATE HIGHWAYS 108
HS2265'AND 120 AT OAKDALE GO NORTHWEST ON STATE HIGHWAY 120 FOR 1.8
HS2265'MILES TO A SIDE ROAD ON THE RIGHT.  TURN RIGHT AS PER SIGN
HS2265'WOODWARD RESERVOIR 4 AND GO NORTH ON 26 MILE ROAD 5.1 MILES
HS2265'TO THE TOP OF A SLIGHT RISE AND THE STATION ON THE RIGHT.
HS2265
HS2265                          STATION RECOVERY (1963)
HS2265
HS2265'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1963
HS2265'4.8 MI SW FROM EUGENE.
HS2265'1.9 MILES WEST ALONG SONORA ROAD FROM THE JUNCTION OF MILTON
HS2265'ROAD AT EUGENE, THENCE 2.9 MILES SOUTH ALONG TWENTYSIX MILE ROAD,
HS2265'0.25 MILE SOUTH OF THE JUNCTION OF DODDS ROAD, ON THE TOP OF A
HS2265'SMALL HILL, 98 FEET EAST-SOUTHEAST OF THE CENTER LINE OF THE ROAD,
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HS2265'85.4 FEET NORTH-NORTHWEST OF WOODWARD RM 1, 1.0 FOOT WEST OF
HS2265'A WITNESS POST, ABOUT 5 FEET HIGHER THAN THE ROAD, AND SET IN
HS2265'THE TOP OF A CONCRETE POST PROJECTING 0.1 FOOT ABOVE THE GROUND.
HS2265
HS2265                          STATION RECOVERY (1989)
HS2265
HS2265'RECOVERY NOTE BY US POWER SQUADRON 1989 (PDG)
HS2265'MARK RECOVERED IN POOR CONDITION.
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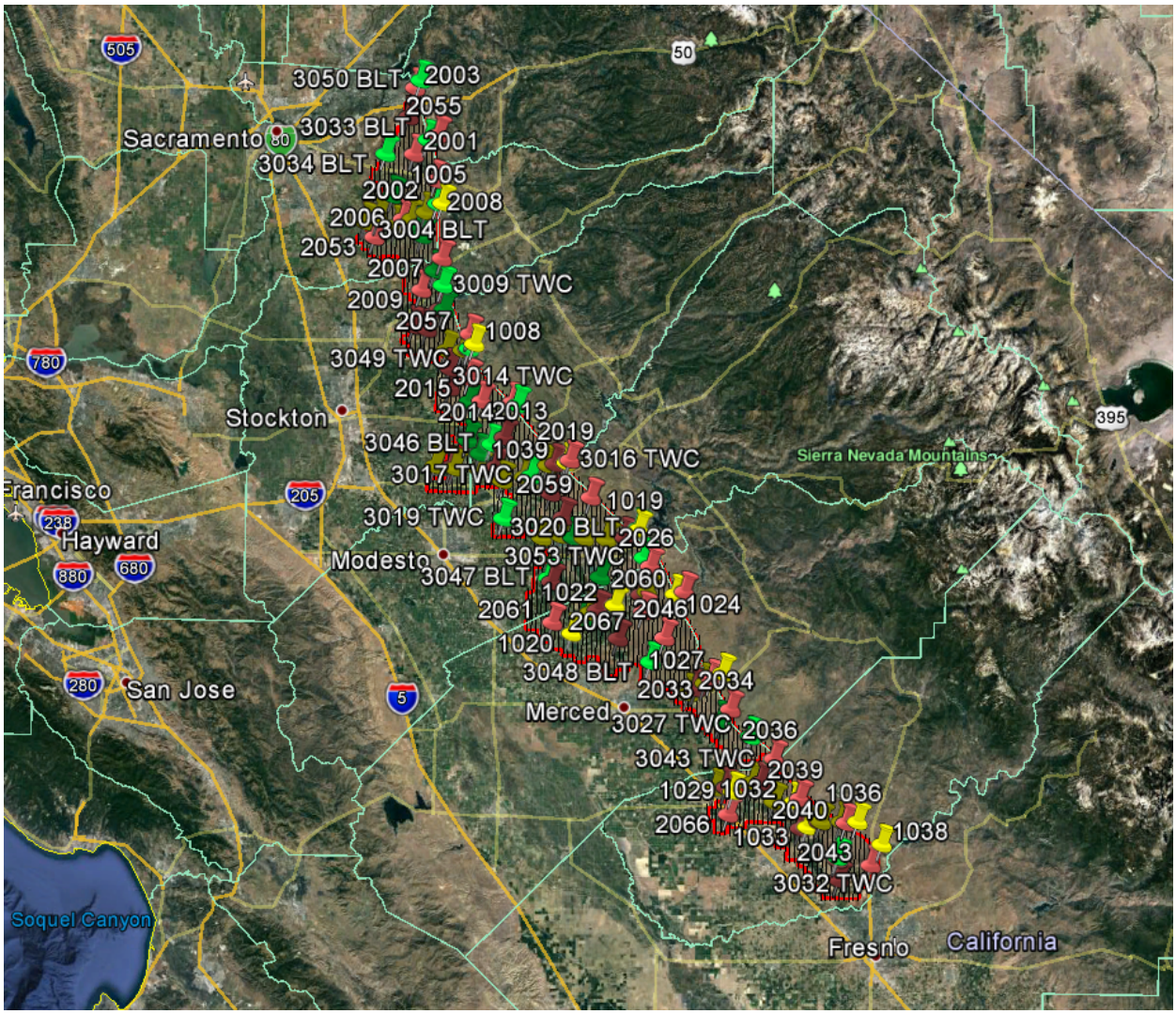
Section 5: GPS Control Diagram

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

Overview of Control Network



N

Not to Scale