Ground Control Survey Report

UNITED STATES GEOLOGICAL SURVEY
CA Sacramento River Delta

TASK ORDER NUMBER: G16PD01047

Contractor: Woolpert, Inc.
Woolpert Project # 76982

March 2017

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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 Sacramento Delta airborne LiDAR and Imagery 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 1,312 square miles in the Sacramento River Delta.

Purpose

The purpose of this survey was to establish three-dimensional coordinates for ninety-six (96) Photo Identifiable Points, thirty-five (35) LiDAR primary control points, and ninety-two (92) quality control ground classification check points. The points were collected per the flight layout and were uniformly dispersed over the project area.

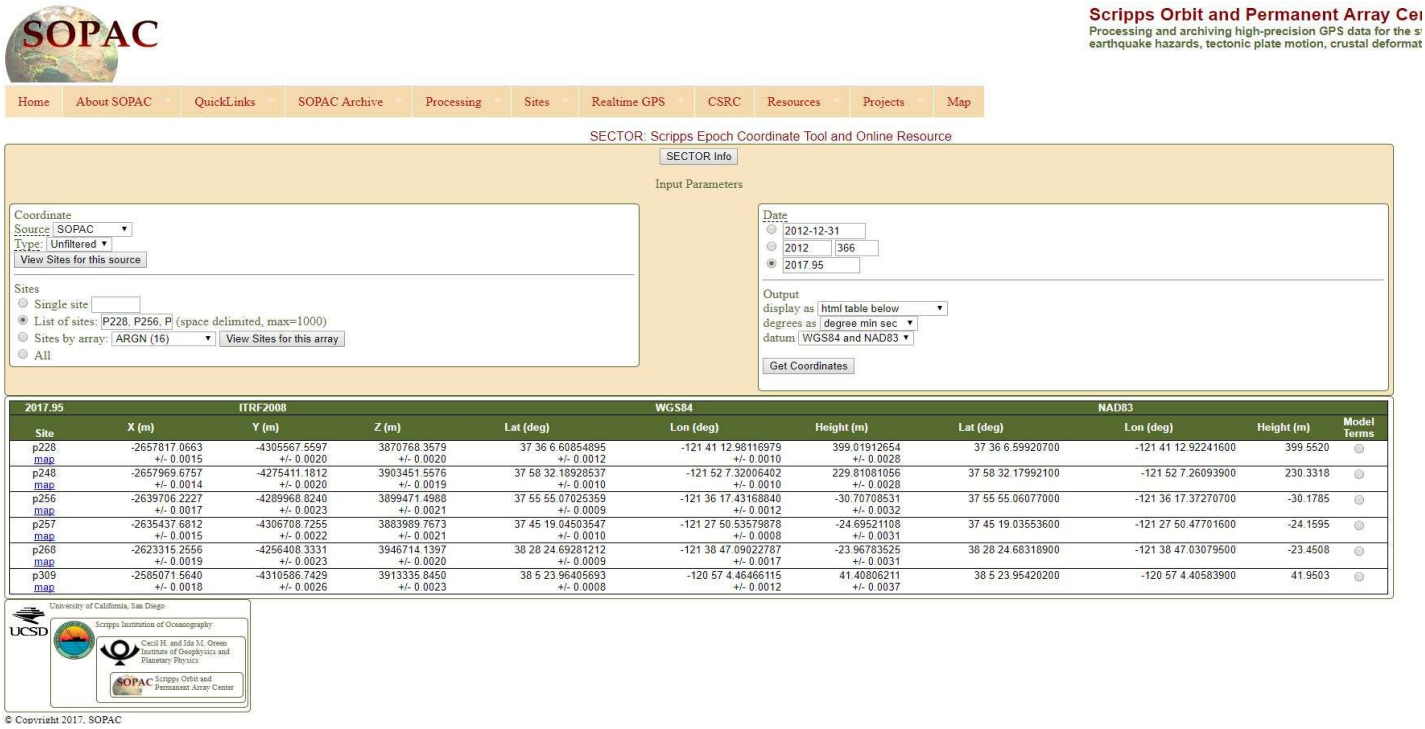
Date of Survey

Multiple ground control field missions took place February 2nd through February 14th, 2017.

Monumentation

Prior to aerial acquisition, Woolpert was instructed by the California Department of Water Resources and the USGS to incorporate the below CSRC Continuously Operating Reference Stations into our survey efforts. These sites were selected from the list of sites and updated to the 2017.95 epoch using SOPAC SECTOR GPS Site as seen below. Scripps Orbit and Permanent Array Center.

site	Description
p228	CSRC DelValle_CN2005
p256	CSRC FallmanPrp_CN2005
p257	CSRC TomPainSlg_CN2005
p268	CSRC FinchFarms_CN2005
p309	CSRC Calaveras_CN2005
p248	CSRC BlkDiamond_CN2007



The above sites and the associated coordinate output from the SOPAC site were used as the basis of this survey. Each of the CORS sites and their associated site IDs listed above were selected for input into the SOPAC SECTOR GPS site and updated to the current project epoch of 2017.95. The resulting coordinates from the SOPAC output were entered into TBC as control coordinates. Then, the CORS raw rinex data collected on julian day 2017_JD_046 was selected and downloaded for all the CORS sites that were utilized as ground control base stations and or aerial acquisition ABGPS support. Both a minimally constrained adjustment and a fully constrained adjustment were performed in order to assign NAD83 NSRS2007 epoch 2017.95 values on the non-CSRC CORS NGS sites listed in the table below (not highlighted). The NGS CORS stations not highlighted were assigned new values based on the 2017.95 epoch CSRC sites that were constrained in the final adjustment.

Point No.	NAD83 NSRS2007 epoch 2011.00 --> 2017.95		Ellipsoid Height (m)	Description
	Latitude (N)	Longitude (W)		
P228	37°36'06.59921"	-121°41'12.92242"	399.552	CSRC DelValle_CN2005
P248	37°58'32.17992"	-121°52'07.26094"	230.332	CSRC BlkDiamond_CN2007
P256	37°55'55.06077"	-121°36'17.37271"	-30.179	CSRC FallmanPrp_CN2005
P257	37°45'19.03554"	-121°27'50.47702"	-24.16	CSRC TomPainSlg_CN2005
P262	38°01'30.52519"	-122°05'46.06874"	-8.059	Waterbird_CN2005
P268	38°28'24.68319"	-121°38'47.03080"	-23.451	CSRC FinchFarms_CN2005
P309	38°05'23.95420"	-120°57'04.40584"	41.95	CSRC Calaveras_CN2005
PLSB	38°41'06.13223"	-121°45'45.14589"	-7.366	WOODLAND COOP
PTRO	38°12'34.17198"	-121°56'38.94941"	28.549	Potrero Hills
SACR	38°39'17.97297"	-121°21'15.19570"	7.454	SACRAMENTO COOP
TRLK	37°27'59.90330"	-120°49'43.08490"	3.088	Turlock Rest Area

Sites above in green were constrained in the final adjustment Lat, Long, El. Ht.

Accuracy Standards

The data collected under this task order will meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (Edition 1, Version 1.0) Guidelines. These standards specify that vertical accuracy be reported at the 95 percent confidence level for data tested by an independent source of higher accuracy. For example, the metadata statement will read, “Tested _ (meters, feet) vertical accuracy at 95 percent confidence level.”

GPS Equipment

Woolpert utilized 2 Trimble Navigation R-Series Model 10 GNSS dual-frequency GPS receivers, and 1 TSC3 data collector for this project.

Methodology

VRS Virtual Reference System or RTN Real Time Network

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

GPS Data Analysis and Processing

The field crew chief processed all session baselines each day using Trimble Navigation’s Trimble Business Center (TBC) Version 4.10 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 UTM Zone 10 North. The datum shall be NAD83 NSRS2007 Epoch 2011 updated to the current epoch of 2017.95 meters to 3 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 three (3) decimal places.

Quality Assurance

Existing CSRC 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

Grid Coordinates:

- Coordinate System: UTM Grid Zone 10 North
- Horizontal Datum: NAD83 NSRS2007 epoch 2017.95
- Vertical Datum: NAVD88
- Geoid Model: GEOID 12B
- Horizontal Units: Meter
- Vertical Units: US Survey Feet

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
1	38°34'46.93783"	-121°30'41.83286"	-65.09	Photo ID Point
2	38°13'21.18109"	-121°21'24.59940"	-74.57	Photo ID Point
3	37°57'29.36709"	-121°17'29.27524"	-91.91	Photo ID Point
4	37°42'34.74258"	-121°12'54.48416"	-71.27	Photo ID Point
5	37°38'38.40271"	-121°21'40.09248"	71.78	Photo ID Point
6	37°45'30.83643"	-121°32'51.22003"	7.23	Photo ID Point
7	37°54'20.54309"	-121°43'30.34966"	36.21	Photo ID Point
8	37°59'53.48534"	-121°53'33.48780"	65.10	Photo ID Point
9	38°01'29.61052"	-122°08'15.95608"	-98.43	Photo ID Point
9 A	38°01'31.93707"	-122°08'15.44429"	-97.81	Photo ID Point
10	38°13'15.15173"	-122°07'42.07628"	-84.07	Photo ID Point
11	38°13'24.83993"	-121°53'30.86409"	-80.26	Photo ID Point
12	38°22'59.80742"	-121°49'23.89566"	-60.58	Photo ID Point
13	38°30'22.95732"	-121°40'07.14007"	-71.98	Photo ID Point
14	38°20'33.65291"	-121°35'04.56941"	-97.80	Photo ID Point
15	38°12'48.38968"	-121°36'23.96361"	-93.89	Photo ID Point
15 A	38°12'48.26239"	-121°36'25.63646"	-95.27	Photo ID Point
16	38°05'59.43726"	-121°42'19.75212"	-98.69	Photo ID Point
17	37°56'04.94101"	-121°25'50.44776"	-94.54	Photo ID Point
18	37°45'10.77338"	-121°21'04.85837"	-81.72	Photo ID Point
19	38°11'18.74772"	-121°58'33.59964"	-94.81	Photo ID Point

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
1001	38°11'37.74713"	-122°08'49.89336"	-43.93	Lidar Control
1002	38°06'23.08127"	-122°06'07.28940"	-98.26	Lidar Control
1003	38°11'34.98983"	-122°04'49.97289"	-105.03	Lidar Control
1004	38°11'49.78278"	-122°00'17.92878"	-94.94	Lidar Control
1005	38°06'48.34356"	-121°58'52.59777"	-95.63	Lidar Control
1006	38°13'42.30645"	-121°56'37.88995"	-89.37	Lidar Control
1007	38°09'30.39210"	-121°54'20.43653"	-84.69	Lidar Control
1008	38°05'28.06942"	-121°52'42.37011"	-95.97	Lidar Control
1009	38°20'12.94333"	-121°51'22.87656"	-57.88	Lidar Control
1010	38°19'46.31072"	-121°48'44.65557"	-77.65	Lidar Control
1011	38°19'45.60606"	-121°45'45.85945"	-90.60	Lidar Control
1012	38°11'00.40475"	-121°45'15.97797"	-4.54	Lidar Control
1013	38°10'56.33559"	-121°42'30.14377"	-70.27	Lidar Control
1014	38°08'56.54275"	-121°39'24.23882"	-120.61	Lidar Control
1015	38°09'45.39395"	-121°36'12.20585"	-100.93	Lidar Control
1016	38°06'52.96602"	-121°33'14.02918"	-109.08	Lidar Control
1017	38°06'50.01417"	-121°30'18.38483"	-104.40	Lidar Control
1018	38°06'55.12031"	-121°27'22.25110"	-107.41	Lidar Control
1019	38°06'57.64982"	-121°24'29.98585"	-89.02	Lidar Control
1020	38°06'57.08403"	-121°21'42.12676"	-79.97	Lidar Control
1021	37°55'01.84779"	-121°35'18.54255"	-90.91	Lidar Control
1022	37°53'35.58225"	-121°29'09.72833"	-100.90	Lidar Control
1023	37°43'16.30313"	-121°11'12.25909"	-57.51	Lidar Control
1024	37°43'29.47083"	-121°14'10.44526"	-76.98	Lidar Control
1025	37°40'41.47739"	-121°16'22.81768"	-67.86	Lidar Control
1026	37°48'47.25652"	-121°18'54.72089"	-94.72	Lidar Control
1027	38°01'50.46653"	-121°52'36.18022"	-93.45	Lidar Control
1028	38°00'55.29911"	-121°49'30.46149"	-89.31	Lidar Control
1029	38°00'44.38248"	-121°46'34.40662"	-74.77	Lidar Control
1030	38°00'27.15465"	-121°43'30.41636"	-95.28	Lidar Control
1031	37°53'21.83701"	-121°38'29.50530"	-77.09	Lidar Control
1031 A	37°53'21.83478"	-121°38'32.18131"	-76.73	Lidar Control
1032	37°46'49.76326"	-121°32'28.65433"	-38.56	Lidar Control
1033	38°34'37.13761"	-121°34'14.07303"	-88.99	Lidar Control
1034	38°34'35.55970"	-121°31'04.48746"	-80.56	Lidar Control
2001	38°12'44.58508"	-122°07'38.90074"	-92.08	Photo ID Point
2002	38°13'57.76569"	-122°02'32.09596"	-99.88	Photo ID Point

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
2003	38°13'27.47605"	-121°53'43.44335"	-93.35	Photo ID Point
2004	38°11'19.85926"	-121°58'34.17297"	-94.63	Photo ID Point
2005	38°07'13.89386"	-121°57'17.82831"	-98.09	Photo ID Point
2005 A	38°07'13.11022"	-121°57'18.75831"	-98.05	Photo ID Point
2006	38°05'24.62256"	-121°51'22.94318"	-80.61	Photo ID Point
2007	38°00'56.45903"	-121°55'56.20808"	39.20	Photo ID Point
2008	38°00'19.40605"	-121°53'58.74385"	40.60	Photo ID Point
2009	37°59'23.11119"	-121°49'55.59712"	4.12	Photo ID Point
2010	37°59'10.68683"	-121°45'54.99371"	28.34	Photo ID Point
2011	37°54'22.44979"	-121°43'21.95832"	37.82	Photo ID Point
2012	37°59'53.54279"	-121°42'51.92885"	-87.28	Photo ID Point
2013	38°00'58.47711"	-121°38'25.65053"	-104.71	Photo ID Point
2014	37°53'26.56137"	-121°37'36.53149"	-92.52	Photo ID Point
2015	37°47'26.71764"	-121°33'17.35332"	-50.49	Photo ID Point
2017	37°44'20.51029"	-121°27'32.66971"	-61.56	Photo ID Point
2018	37°40'49.07534"	-121°14'00.45347"	-74.47	Photo ID Point
2019	37°46'57.68242"	-121°15'53.86903"	-85.35	Photo ID Point
2020	37°53'50.82207"	-121°18'24.02757"	-96.29	Photo ID Point
2021	38°03'22.48828"	-121°22'35.26799"	-99.63	Photo ID Point
2022	38°13'36.28775"	-121°25'39.86942"	-90.61	Photo ID Point
2023	38°24'23.63440"	-121°28'55.36401"	-84.54	Photo ID Point
2024	38°32'41.85840"	-121°34'11.84794"	-90.40	Photo ID Point
2024 A	38°32'42.18771"	-121°34'09.82652"	-90.24	Photo ID Point
2025	38°23'14.37889"	-121°46'33.13010"	-74.07	Photo ID Point
2026	38°11'43.29200"	-121°42'50.24890"	-90.05	Photo ID Point
2027	37°41'25.43610"	-121°21'40.82427"	-24.02	Photo ID Point
2028	37°58'35.34386"	-121°21'14.47735"	-104.33	Photo ID Point
2029	38°09'39.01112"	-121°36'29.04301"	-106.34	Photo ID Point
2030	38°19'47.92876"	-121°34'03.43618"	-96.60	Photo ID Point
2031	38°04'58.86436"	-122°06'24.80982"	-94.00	Photo ID Point
2031 A	38°05'01.06743"	-122°06'23.62206"	-92.16	Photo ID Point
2032	38°14'41.17205"	-121°30'57.62402"	-99.85	Photo ID Point
2033	37°57'18.48220"	-121°17'45.08736"	-88.81	Photo ID Point
2034	37°42'35.29176"	-121°12'53.20573"	-69.71	Photo ID Point
2035	37°38'36.43869"	-121°21'40.97070"	74.20	Photo ID Point
2036	38°23'00.45914"	-121°49'23.35992"	-60.32	Photo ID Point
2036 A	38°23'01.55827"	-121°49'24.39281"	-60.64	Photo ID Point

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
2037	38°30'06.35711"	-121°39'22.45075"	-78.18	Photo ID Point
2038	38°12'52.21902"	-121°36'14.59342"	-107.38	Photo ID Point
2039	38°05'53.15085"	-121°42'22.62690"	-88.37	Photo ID Point
2040	37°56'05.06244"	-121°25'55.91813"	-93.91	Photo ID Point
2041	37°45'09.20337"	-121°21'05.22620"	-82.69	Photo ID Point
2041 A	37°45'09.21929"	-121°21'05.27533"	-82.08	Photo ID Point
2041 B	37°45'09.06293"	-121°21'06.54438"	-81.44	Photo ID Point
2042	38°04'47.91562"	-121°50'01.81273"	-65.92	Photo ID Point
2043	38°15'28.22049"	-121°49'26.39771"	-85.01	Photo ID Point
2044	38°21'37.79065"	-121°41'05.00882"	-84.30	Photo ID Point
2045	38°25'49.45031"	-121°41'37.40264"	-79.73	Photo ID Point
2045 A	38°25'49.50692"	-121°41'38.69320"	-81.66	Photo ID Point
2046	38°28'09.26599"	-121°34'58.74953"	-71.40	Photo ID Point
2047	37°49'13.34112"	-121°26'57.42182"	-82.52	Photo ID Point
2048	37°52'37.83360"	-121°23'31.64989"	-101.46	Photo ID Point
2049	37°51'07.70479"	-121°30'00.10308"	-108.26	Photo ID Point
2050	38°02'36.77836"	-121°29'52.77969"	-93.84	Photo ID Point
2051	37°59'07.36200"	-121°34'46.59499"	-96.75	Photo ID Point
2051 A	37°59'05.64473"	-121°34'47.14051"	-95.45	Photo ID Point
2052	37°57'55.74407"	-121°39'11.94860"	-86.57	Photo ID Point
2052 A	37°57'56.78120"	-121°39'11.87563"	-86.73	Photo ID Point
2053	37°58'01.63515"	-121°31'48.82616"	-92.93	Photo ID Point
2053 A	37°58'03.31956"	-121°31'47.22503"	-92.70	Photo ID Point
2054	38°09'26.95080"	-121°26'57.85760"	-102.69	Photo ID Point
2055	38°11'07.73221"	-121°30'30.56410"	-113.40	Photo ID Point
2056	38°02'37.68170"	-121°25'00.46457"	-90.60	Photo ID Point
2057	38°07'58.72959"	-121°31'22.29380"	-118.58	Photo ID Point
2057 A	38°07'59.12439"	-121°31'23.87374"	-117.86	Photo ID Point
2058	38°02'46.27507"	-121°38'25.01836"	-93.63	Photo ID Point
2059	38°04'52.81604"	-121°28'04.72119"	-92.83	Photo ID Point
2060	38°24'11.36680"	-121°34'57.35064"	-99.91	Photo ID Point
2061	38°18'22.50736"	-121°41'36.87351"	-80.25	Photo ID Point
2061 A	38°18'21.40419"	-121°41'36.87961"	-80.69	Photo ID Point
2062	38°16'40.92447"	-121°35'20.32254"	-79.84	Photo ID Point
2063	38°20'05.84901"	-121°26'46.70790"	-82.18	Photo ID Point
2064	37°50'57.39874"	-121°19'20.25199"	-77.73	Photo ID Point
3001	38°12'41.76256"	-122°07'43.01668"	-95.57	CHK

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
3003	38°13'25.91747"	-121°53'42.77832"	-93.28	CHK
3004	38°11'18.87313"	-121°58'37.57773"	-97.07	CHK
3005	38°07'13.44686"	-121°57'19.18933"	-99.61	CHK
3005 A	38°07'14.27427"	-121°57'18.25082"	-99.05	CHK
3006	38°05'23.68421"	-121°51'28.70504"	-72.36	CHK
3007	38°00'56.23015"	-121°56'23.05116"	75.71	CHK
3008	38°00'18.61645"	-121°54'00.21625"	40.70	CHK
3009	37°59'20.37660"	-121°50'06.95088"	26.66	CHK
3010	37°59'11.75931"	-121°45'45.26891"	119.79	CHK
3011	37°54'24.47697"	-121°43'22.41101"	33.85	CHK
3012	37°59'55.35123"	-121°42'55.44216"	-92.27	CHK
3013	38°00'53.35570"	-121°38'33.23625"	-108.61	CHK
3013 A	38°00'53.10105"	-121°38'30.12436"	-107.98	CHK
3014	37°53'14.43581"	-121°37'22.64826"	-93.63	CHK
3015	37°47'46.63191"	-121°33'11.32138"	-61.18	CHK
3015 A	37°47'45.63415"	-121°33'09.88892"	-60.76	CHK
3016	37°45'33.20839"	-121°32'51.50855"	5.03	CHK
3016 A	37°45'34.93645"	-121°32'51.52070"	3.26	CHK
3017	37°44'02.17137"	-121°27'54.65123"	-52.63	CHK
3018	37°40'50.61844"	-121°13'40.50616"	-73.05	CHK
3019	37°46'58.78307"	-121°15'53.70324"	-84.68	CHK
3020	37°53'04.55260"	-121°18'09.98735"	-92.64	CHK
3020 A	37°53'05.95610"	-121°18'10.01464"	-92.52	CHK
3021	38°03'22.65317"	-121°21'55.60494"	-96.24	CHK
3022	38°13'36.75411"	-121°25'44.45054"	-91.70	CHK
3022 A	38°13'35.98231"	-121°25'44.53255"	-89.24	CHK
3023	38°24'32.30922"	-121°29'03.52407"	-74.89	CHK
3024	38°32'05.78889"	-121°34'23.26573"	-89.89	CHK
3025	38°23'14.59689"	-121°46'29.78704"	-76.14	CHK
3026	38°11'51.21157"	-121°42'51.09056"	-83.21	CHK
3026 A	38°11'52.68476"	-121°42'51.06361"	-82.55	CHK
3027	37°41'01.22794"	-121°20'41.67082"	-32.40	CHK
3028	37°58'45.72870"	-121°22'11.49025"	-97.74	CHK
3029	38°09'28.70772"	-121°36'40.75433"	-109.30	CHK
3030	38°20'01.29517"	-121°34'02.96159"	-91.49	CHK
3030 A	38°20'02.28503"	-121°34'01.80741"	-92.36	CHK
3031	38°05'02.53917"	-122°06'21.68928"	-91.35	CHK

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
3031 A	38°05'02.51395"	-122°06'19.93959"	-99.27	CHK
3032	38°14'49.66978"	-121°30'31.45982"	-82.40	CHK
3032 A	38°14'51.17172"	-121°30'31.62560"	-80.53	CHK
3033	37°57'22.24887"	-121°17'58.85742"	-93.28	CHK
3034	37°42'22.80016"	-121°12'53.52433"	-71.53	CHK
3035	37°38'41.07501"	-121°18'10.41751"	-1.47	CHK
3036	38°23'03.27678"	-121°49'20.18218"	-61.53	CHK
3036 A	38°23'04.36320"	-121°49'20.01675"	-61.41	CHK
3037	38°29'49.35704"	-121°39'30.08489"	-83.25	CHK
3038	38°12'13.89161"	-121°35'42.67801"	-114.81	CHK
3038 A	38°12'07.21718"	-121°35'41.72597"	-112.39	CHK
3039	38°06'16.09030"	-121°42'09.09025"	-104.09	CHK
3039 A	38°06'00.08652"	-121°42'18.52584"	-102.59	CHK
3040	37°56'01.00615"	-121°26'02.29267"	-99.67	CHK
3041	37°45'06.57453"	-121°21'10.86703"	-79.57	CHK
3042	38°21'38.10225"	-121°41'03.23659"	-94.80	CHK
3043	38°28'22.05628"	-121°34'53.36916"	-73.32	CHK
3043 A	38°28'21.03627"	-121°34'54.41561"	-83.99	CHK
3044	37°49'13.14739"	-121°26'58.63231"	-81.46	CHK
3045	37°52'36.84596"	-121°23'01.41764"	-83.43	CHK
3047	38°02'44.75276"	-121°38'25.08242"	-109.58	CHK
3048	38°14'09.47168"	-121°36'08.12505"	-92.10	CHK
3049	37°50'57.17255"	-121°19'17.22629"	-93.62	CHK
3050	38°07'22.79703"	-122°06'39.81119"	-9.74	CHK
3051	37°41'40.10254"	-121°12'24.73393"	-70.25	CHK
3051 A	37°41'38.54467"	-121°12'26.17210"	-59.45	CHK
3052	38°18'38.71234"	-121°31'00.86418"	-76.10	CHK
3052 A	38°18'38.21623"	-121°31'00.00601"	-76.75	CHK
QC1	38°14'38.36201"	-122°01'46.29059"	-94.33	QC1
QC2	38°01'46.36973"	-121°53'45.69189"	-97.65	QC2
QC3	37°59'51.26093"	-121°42'49.93156"	-81.96	QC3
QC4	37°53'27.04889"	-121°37'35.97213"	-91.78	QC4
QC5	37°47'19.18159"	-121°33'20.21895"	-43.84	QC5
QC6	37°44'26.92705"	-121°27'20.76804"	-67.11	QC6
QC7	37°40'49.88697"	-121°14'03.39424"	-75.30	QC7
QC8	37°46'55.61919"	-121°15'47.47706"	-84.24	QC8
QC9	37°53'50.31279"	-121°18'24.87461"	-94.21	QC9

Point No.	NAD83 NSRS2007 EPOCH 2011.00 -> 2017.95		Ellipsoid Ht. (sFT)	Description
	Latitude (N)	Longitude (W)		
QC10	38°03'22.55887"	-121°22'33.64641"	-99.65	QC10
QC11	38°13'35.95156"	-121°25'41.21140"	-91.70	QC11
QC12	38°24'24.08852"	-121°28'42.86886"	-87.01	QC12
QC13	38°32'42.11166"	-121°34'10.40122"	-90.13	QC13
QC13 A	38°32'41.58614"	-121°34'12.12012"	-88.71	QC13 A
QC14	38°23'13.10271"	-121°46'31.64696"	-74.38	QC14
QC14 A	38°23'14.01095"	-121°46'31.65029"	-74.12	QC14 A
QC15	38°11'35.66350"	-121°43'02.09831"	-82.78	QC15
QC16	37°41'19.11831"	-121°21'40.74312"	-24.22	QC16
QC17	37°58'35.27331"	-121°21'15.30701"	-104.40	QC17
QC18	38°09'40.63495"	-121°36'29.68715"	-103.55	QC18
QC19	38°19'50.52651"	-121°33'58.40887"	-95.98	QC19
QC20	38°05'17.60129"	-122°06'51.45940"	55.52	QC20
QC21	38°00'59.46343"	-121°38'25.26647"	-105.99	QC21
QC22	38°14'40.50749"	-121°30'55.75231"	-98.86	QC22

Geodetic Coordinates:

- Horizontal Datum: NAD83 NSRS2007 2011 Epoch 2017.95
- Vertical Datum: NAVD88
- Units: Meter
- Geoid Model: GEOID 12B
- Horizontal Units: Meter
- Vertical Units: US Survey Feet

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
1	4271187.880	629643.679	36.10	Photo ID Point
2	4231784.193	643833.258	27.75	Photo ID Point
3	4202549.252	650095.437	12.52	Photo ID Point
4	4175100.130	657328.719	34.37	Photo ID Point
5	4167580.492	644585.655	177.27	Photo ID Point
6	4180021.037	627940.650	112.66	Photo ID Point
7	4196119.183	612078.527	141.87	Photo ID Point
8	4206192.710	597227.514	170.32	Photo ID Point

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
9	4208927.607	575676.979	6.82	Photo ID Point
9 A	4208999.429	575688.792	7.44	Photo ID Point
10	4230681.162	576298.740	20.28	Photo ID Point
11	4231201.036	596992.971	25.12	Photo ID Point
12	4248997.431	602772.397	43.87	Photo ID Point
13	4262840.807	616083.024	30.48	Photo ID Point
14	4244785.231	623690.550	5.64	Photo ID Point
15	4230414.819	621979.270	10.91	Photo ID Point
15 A	4230410.283	621938.647	9.53	Photo ID Point
16	4217684.224	613502.871	7.36	Photo ID Point
17	4199731.769	637908.435	10.76	Photo ID Point
18	4179689.153	645236.325	23.99	Photo ID Point
19	4227229.837	589674.945	10.48	Photo ID Point
1001	4227663.611	574677.376	60.50	Lidar Control
1002	4218002.437	578726.538	6.94	Lidar Control
1003	4227634.439	580514.168	-0.10	Lidar Control
1004	4228158.754	587126.712	10.24	Lidar Control
1005	4218890.351	589304.337	9.99	Lidar Control
1006	4231686.250	592439.305	15.75	Lidar Control
1007	4223960.464	595872.962	20.89	Lidar Control
1008	4216520.088	598349.846	9.87	Lidar Control
1009	4243817.823	599949.424	46.92	Lidar Control
1010	4243045.397	603801.160	27.28	Lidar Control
1011	4243080.657	608142.599	14.27	Lidar Control
1012	4226902.082	609086.059	101.23	Lidar Control
1013	4226831.889	613122.336	35.38	Lidar Control
1014	4223203.825	617698.752	-14.96	Lidar Control
1015	4224778.614	622350.226	4.26	Lidar Control
1016	4219530.329	626769.190	-4.00	Lidar Control
1017	4219507.118	631047.953	0.18	Lidar Control
1018	4219734.727	635334.621	-3.28	Lidar Control
1019	4219883.564	639528.304	14.75	Lidar Control
1020	4219937.263	643616.317	23.46	Lidar Control
1021	4197565.287	624069.675	15.15	Lidar Control
1022	4195047.709	633118.376	4.87	Lidar Control
1023	4176429.220	659807.101	47.97	Lidar Control
1024	4176751.734	655436.884	28.64	Lidar Control

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
1025	4171513.414	652291.634	37.92	Lidar Control
1026	4186418.387	648300.848	10.75	Lidar Control
1027	4209815.003	598581.700	12.20	Lidar Control
1028	4208170.598	603130.849	16.53	Lidar Control
1029	4207889.479	607428.261	31.28	Lidar Control
1030	4207418.741	611922.229	10.88	Lidar Control
1031	4194413.511	619451.785	28.81	Lidar Control
1031 A	4194412.490	619386.421	29.17	Lidar Control
1032	4182462.259	628454.889	67.05	Lidar Control
1033	4270804.224	624512.872	12.37	Lidar Control
1034	4270828.282	629101.170	20.67	Lidar Control
2001	4229739.764	576384.831	12.35	Photo ID Point
2002	4232069.073	583822.496	4.88	Photo ID Point
2003	4231278.633	596686.137	12.01	Photo ID Point
2004	4227263.943	589660.619	10.66	Photo ID Point
2005	4219703.515	591603.246	7.54	Photo ID Point
2005 A	4219679.106	591580.873	7.59	Photo ID Point
2006	4216437.446	600285.922	25.29	Photo ID Point
2007	4208092.963	593724.317	144.47	Photo ID Point
2008	4206984.316	596602.075	145.87	Photo ID Point
2009	4205321.500	602553.599	109.68	Photo ID Point
2010	4205014.314	608427.682	134.30	Photo ID Point
2011	4196180.755	612282.645	143.50	Photo ID Point
2012	4206395.675	612875.143	18.87	Photo ID Point
2013	4208489.402	619340.511	1.40	Photo ID Point
2014	4194578.071	620743.603	13.42	Photo ID Point
2015	4183582.744	627245.977	55.14	Photo ID Point
2017	4177978.191	635771.271	44.06	Photo ID Point
2018	4171812.606	655774.750	31.31	Photo ID Point
2019	4183121.976	652785.852	20.10	Photo ID Point
2020	4195788.640	648881.631	8.66	Photo ID Point
2021	4213299.936	642437.864	4.46	Photo ID Point
2022	4232142.046	637618.070	12.31	Photo ID Point
2023	4252016.660	632536.786	17.43	Photo ID Point
2024	4267251.565	624622.011	11.19	Photo ID Point
2024 A	4267262.477	624670.788	11.35	Photo ID Point
2025	4249500.483	606909.534	30.29	Photo ID Point

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
2026	4228272.417	612613.108	15.56	Photo ID Point
2027	4172728.398	644477.722	81.65	Photo ID Point
2028	4204483.864	644563.525	0.29	Photo ID Point
2029	4224575.714	621943.432	-1.09	Photo ID Point
2030	4243398.713	625196.478	6.77	Photo ID Point
2031	4215402.636	578324.818	11.22	Photo ID Point
2031 A	4215470.816	578353.100	13.06	Photo ID Point
2032	4234014.483	629859.828	3.78	Photo ID Point
2033	4202206.674	649715.687	15.66	Photo ID Point
2034	4175117.654	657359.701	35.93	Photo ID Point
2035	4167519.582	644565.189	179.68	Photo ID Point
2036	4249017.685	602785.138	44.13	Photo ID Point
2036 A	4249051.245	602759.647	43.81	Photo ID Point
2037	4262344.847	617172.916	24.26	Photo ID Point
2038	4230536.284	622205.364	-2.61	Photo ID Point
2039	4217489.485	613435.551	17.69	Photo ID Point
2040	4199733.263	637774.830	11.40	Photo ID Point
2041	4179640.604	645228.176	23.02	Photo ID Point
2041 A	4179641.074	645226.965	23.64	Photo ID Point
2041 B	4179635.707	645195.993	24.27	Photo ID Point
2042	4215330.643	602276.421	40.05	Photo ID Point
2043	4235077.292	602888.866	20.44	Photo ID Point
2044	4246632.822	614912.420	19.90	Photo ID Point
2045	4254378.803	614016.369	23.80	Photo ID Point
2045 A	4254380.105	613985.053	21.87	Photo ID Point
2046	4258831.367	623616.017	30.86	Photo ID Point
2047	4187017.987	636484.331	23.27	Photo ID Point
2048	4193405.963	641406.865	3.94	Photo ID Point
2049	4190469.951	631961.214	-2.39	Photo ID Point
2050	4211711.699	631797.727	11.23	Photo ID Point
2051	4205144.399	624734.357	9.23	Photo ID Point
2051 A	4205091.266	624721.857	10.53	Photo ID Point
2052	4202840.770	618293.058	19.55	Photo ID Point
2052 A	4202872.763	618294.377	19.39	Photo ID Point
2053	4203185.872	629102.993	12.87	Photo ID Point
2053 A	4203238.406	629141.242	13.10	Photo ID Point
2054	4224424.569	635850.420	1.03	Photo ID Point

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
2055	4227446.068	630623.592	-9.36	Photo ID Point
2056	4211857.796	638922.686	13.85	Photo ID Point
2057	4221600.222	629457.901	-13.97	Photo ID Point
2057 A	4221611.779	629419.242	-13.24	Photo ID Point
2058	4211812.208	619307.338	12.42	Photo ID Point
2059	4215947.780	634362.598	11.68	Photo ID Point
2060	4251498.769	623762.712	2.93	Photo ID Point
2061	4240602.497	614224.214	24.50	Photo ID Point
2061 A	4240568.492	614224.546	24.07	Photo ID Point
2062	4237605.794	623417.667	24.26	Photo ID Point
2063	4244122.505	635791.116	19.99	Photo ID Point
2064	4190418.453	647604.486	27.59	Photo ID Point
3001	4229651.826	576285.557	8.86	CHK
3003	4231230.787	596702.880	12.09	CHK
3004	4227232.633	589578.129	8.22	CHK
3005	4219689.364	591570.262	6.02	CHK
3005 A	4219715.124	591592.826	6.58	CHK
3006	4216406.797	600145.922	33.54	CHK
3007	4208078.422	593069.857	180.95	CHK
3008	4206959.554	596566.454	145.97	CHK
3009	4205233.746	602277.704	132.18	CHK
3010	4205050.520	608664.470	225.76	CHK
3011	4196243.084	612270.734	139.54	CHK
3012	4206450.231	612788.683	13.88	CHK
3013	4208328.848	619157.841	-2.49	CHK
3013 A	4208322.106	619233.838	-1.87	CHK
3014	4194209.340	621088.233	12.30	CHK
3015	4184198.813	627384.013	44.49	CHK
3015 A	4184168.603	627419.523	44.92	CHK
3016	4180094.035	627932.455	110.46	CHK
3016 A	4180147.291	627931.331	108.69	CHK
3017	4177404.118	635242.509	52.94	CHK
3018	4171869.395	656262.492	32.72	CHK
3019	4183155.976	652789.278	20.76	CHK
3020	4194368.720	649250.513	12.38	CHK
3020 A	4194411.967	649249.059	12.50	CHK
3021	4213321.965	643404.438	7.77	CHK

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
3022	4232154.530	637506.436	11.23	CHK
3022 A	4232130.706	637504.845	13.69	CHK
3023	4252280.802	632334.469	27.08	CHK
3024	4266135.426	624362.862	11.79	CHK
3025	4249508.279	606990.550	28.21	CHK
3026	4228516.237	612589.247	22.39	CHK
3026 A	4228561.654	612589.272	23.04	CHK
3027	4172007.731	645939.741	73.29	CHK
3028	4204779.478	643166.898	6.94	CHK
3029	4224253.858	621663.177	-4.01	CHK
3030	4243810.899	625201.611	11.85	CHK
3030 A	4243841.844	625229.160	10.97	CHK
3031	4215516.630	578399.749	13.87	CHK
3031 A	4215516.263	578442.380	5.95	CHK
3032	4234286.640	630491.628	21.13	CHK
3032 A	4234332.870	630486.852	23.00	CHK
3033	4202316.632	649377.500	11.20	CHK
3034	4174732.485	657359.239	34.11	CHK
3035	4167754.251	649722.928	104.26	CHK
3036	4249105.519	602861.127	42.91	CHK
3036 A	4249139.057	602864.714	43.03	CHK
3037	4261818.129	616995.638	19.25	CHK
3038	4229366.643	622999.424	-10.04	CHK
3038 A	4229161.266	623025.701	-7.61	CHK
3039	4218201.137	613755.384	1.94	CHK
3039 A	4217704.652	613532.460	3.46	CHK
3040	4199605.622	637621.315	5.66	CHK
3041	4179557.147	645091.558	26.14	CHK
3042	4246643.040	614955.294	9.40	CHK
3043	4259227.631	623740.329	28.90	CHK
3043 A	4259195.799	623715.456	18.24	CHK
3044	4187011.525	636454.834	24.33	CHK
3045	4193388.285	642146.002	21.95	CHK
3047	4211765.264	619306.463	-3.52	CHK
3048	4232919.845	622326.716	12.48	CHK
3049	4190412.810	647678.561	11.70	CHK
3050	4219835.345	577916.889	95.31	CHK

Point No.	UTM Zone 10 North		Ortho Height (NAVD88) (sFT)	Description
	UTM Northing (m)	UTM Easting (m)		
3051	4173429.916	658089.457	35.43	CHK
3051 A	4173381.225	658055.152	46.23	CHK
3052	4241335.140	629663.631	26.95	CHK
3052 A	4241320.183	629684.718	26.29	CHK
QC1	4233331.944	584922.983	10.34	QC1
QC2	4209668.438	596888.567	7.90	QC2
QC3	4206326.017	612924.829	24.19	QC3
QC4	4194593.298	620757.045	14.16	QC4
QC5	4183349.390	627179.474	61.77	QC5
QC6	4178180.767	636059.320	38.53	QC6
QC7	4171836.265	655702.239	30.49	QC7
QC8	4183061.286	652943.399	21.21	QC8
QC9	4195772.567	648861.228	10.74	QC9
QC10	4213302.802	642477.347	4.44	QC10
QC11	4232131.129	637585.615	11.22	QC11
QC12	4252035.653	632839.623	14.92	QC12
QC13	4267259.916	624656.912	11.47	QC13
QC13 A	4267243.070	624615.553	12.88	QC13 A
QC14	4249461.624	606946.038	29.97	QC14
QC14 A	4249489.618	606945.586	30.23	QC14 A
QC15	4228033.289	612328.129	22.85	QC15
QC16	4172533.708	644483.115	81.45	QC16
QC17	4204481.332	644543.321	0.21	QC17
QC18	4224625.530	621927.005	1.69	QC18
QC19	4243480.680	625317.299	7.38	QC19
QC20	4215973.917	577670.092	160.68	QC20
QC21	4208519.940	619349.431	0.11	QC21
QC22	4233994.728	629905.656	4.77	QC22

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 latitude and longitude coordinates shown on the log sheets were populated in the field, are unadjusted, and are not representative of the final coordinates listed in section 2.

The data is assembled on the following pages.

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	1	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°34'46.93579"	Receiver :		
Longitude	W121°30'41.83000"	R10	9670	
Ellipsoidal Height	-65.023	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	RAIN 52*	

To Reach Description :
Corner of marble sidewalk

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Feb-17**
Station Name	**10**	File Name	**LGC_020917_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°13'15.14962"**
Longitude	**W122°07'42.07406"**
Ellipsoidal Height	**-84.054**

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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Feb-17**
Station Name	**1001**	File Name	**LGC_020917_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°11'37.74503"**	Receiver :	
Longitude	**W122°08'49.89115"**	R10	**9670**
Ellipsoidal Height	**-43.91**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Feb-17**
Station Name	**1002**	File Name	**LGC_020917_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°06'23.07917"**	Receiver :		
Longitude	**W122°06'07.28720"**	R10	**9670**	
Ellipsoidal Height	**-98.242**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**14-Feb-17**
Station Name	**1003**	File Name	**LGC_021417_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°11'34.98627"**
Longitude	**W122°04'49.97030"**
Ellipsoidal Height	**-105.025**

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°**

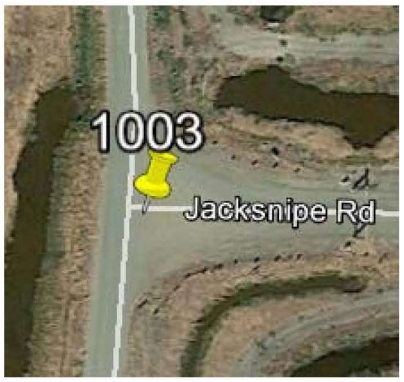
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Feb-17**
Station Name	**1004**	File Name	**LGC_020917_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°11'49.78066"**	Receiver :	
Longitude	**W122°00'17.92659"**	R10	**9670**
Ellipsoidal Height	**-94.927**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**14-Feb-17**
Station Name	**1005**	File Name	**LGC_021417_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°06'48.35145"**	Receiver :		
Longitude	**W121°58'52.59558"**	R10	**9670**	
Ellipsoidal Height	**-95.62**	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 55°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**14-Feb-17**
Station Name	**1006**	File Name	**LGC_021417_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°13'42.30433"**
Longitude	**W121°56'37.88776"**
Ellipsoidal Height	**-89.365**

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 64°**

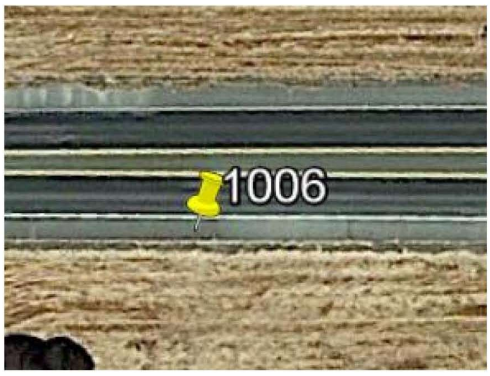
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Feb-17**
Station Name	**1007**	File Name	**LGC_021317_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°09'30.38999"**	Receiver :		
Longitude	**W121°54'20.43436"**	R10	**9670**	
Ellipsoidal Height	**-84.687**	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: **PARTLY CLOUDY 55°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Feb-17**
Station Name	**1008**	File Name	**LGC_021317_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°05'28.06731"**	Receiver :		
Longitude	**W121°52'42.36794"**	R10	**9670**	
Ellipsoidal Height	**-95.965**	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 :

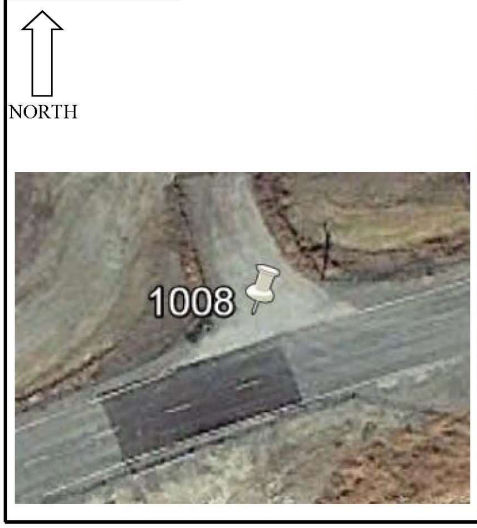
Weather Conditions: **PARTLY CLOUDY 57°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	1009	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°20'12.94135"	Receiver :	
Longitude	W121°51'22.87367"	R10	9670
Ellipsoidal Height	-57.811	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	CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	1010	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°19'46.30874"
Longitude	W121°48'44.65269"
Ellipsoidal Height	-77.577

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	1011	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°19'45.60407"
Longitude	W121°45'45.85658"
Ellipsoidal Height	-90.534

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Feb-17**
Station Name	**1012**	File Name	**LGC_021317_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°11'00.40262"**	Receiver :		
Longitude	**W121°45'15.97581"**	R10	**9670**	
Ellipsoidal Height	**-4.543**	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 47°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Feb-17**
Station Name	**1013**	File Name	**LGC_021317_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°10'56.33346"**
Longitude	**W121°42'30.14162"**
Ellipsoidal Height	**-70.272**

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 49°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	1014	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°08'56.54054"
Longitude	W121°39'24.23613"
Ellipsoidal Height	-120.598

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: PARTLY CLOUDY 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	1015	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°09'45.39174"	Receiver :	
Longitude	W121°36'12.20317"	R10	9670
Ellipsoidal Height	-100.925	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: PARTLY CLOUDY 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	05-Feb-17
Station Name	1016	File Name	LGC_020517_EN

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

WGS 84 COORDINATES:

Latitude	N38°06'52.96381"	Receiver :		
Longitude	W121°33'14.02651"	R10	9670	
Ellipsoidal Height	-109.076	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	CLOUDY 60*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	05-Feb-17
Station Name	1017	File Name	LGC_020517_EN

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

WGS 84 COORDINATES:

Latitude	N38°06'50.01196"	Receiver :	
Longitude	W121°30'18.38217"	R10	9670
Ellipsoidal Height	-104.4	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	CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	05-Feb-17
Station Name	1018	File Name	LGC_020517_EN

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

WGS 84 COORDINATES:

Latitude	N38°06'55.11809"	Receiver :		
Longitude	W121°27'22.24844"	R10	9670	
Ellipsoidal Height	-107.415	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	CLOUDY 60*	

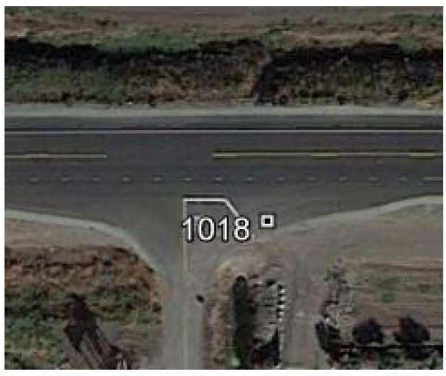
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	05-Feb-17
Station Name	1019	File Name	LGC_020517_EN

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

WGS 84 COORDINATES:

Latitude	N38°06'57.64760"
Longitude	W121°24'29.98320"
Ellipsoidal Height	-89.023

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	05-Feb-17
Station Name	1020	File Name	LGC_020517_EN

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

WGS 84 COORDINATES:

Latitude	N38°06'57.08180"
Longitude	W121°21'42.12412"
Ellipsoidal Height	-79.97

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Feb-17**
Station Name	**1021**	File Name	**LGC_021117_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°55'01.84560"**	Receiver :		
Longitude	**W121°35'18.53990"**	R10	**9670**	
Ellipsoidal Height	**-90.9**	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 55°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Feb-17**
Station Name	**1022**	File Name	**LGC_021117_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°53'35.58005"**	Receiver :	
Longitude	**W121°29'09.72569"**	R10	**9670**
Ellipsoidal Height	**-100.901**	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: **CLOUDY 53°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	07-Feb-17
Station Name	1023	File Name	LGC_020717_EN

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

WGS 84 COORDINATES:

Latitude	N37°43'16.30093"	Receiver :		
Longitude	W121°11'12.25652"	R10	9670	
Ellipsoidal Height	-57.525	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: CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	07-Feb-17
Station Name	1024	File Name	LGC_020717_EN

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

WGS 84 COORDINATES:

Latitude	N37°43'29.46864"	Receiver :		
Longitude	W121°14'10.44268"	R10	9670	
Ellipsoidal Height	-76.996	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	CLOUDY/RAIN 62*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	1025	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°40'41.47452"	Receiver :		
Longitude	W121°16'22.81475"	R10	9670	
Ellipsoidal Height	-67.891	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	CLOUDY/RAIN 62*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	07-Feb-17
Station Name	1026	File Name	LGC_020717_EN

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

WGS 84 COORDINATES:

Latitude	N37°48'47.25433"
Longitude	W121°18'54.71829"
Ellipsoidal Height	-94.723

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: CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**1027**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°01'50.46297"**
Longitude	**W121°52'36.17768"**
Ellipsoidal Height	**-93.449**

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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Feb-17**
Station Name	**1028**	File Name	**LGC_021217_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°00'55.29693"**	Receiver :		
Longitude	**W121°49'30.45880"**	R10	**9670**	
Ellipsoidal Height	**-89.297**	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 59°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Feb-17**
Station Name	**1029**	File Name	**LGC_021217_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°00'44.38030"**	Receiver :		
Longitude	**W121°46'34.40394"**	R10	**9670**	
Ellipsoidal Height	**-74.762**	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 59°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Feb-17**
Station Name	**1030**	File Name	**LGC_021217_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°00'27.15246"**
Longitude	**W121°43'30.41368"**
Ellipsoidal Height	**-95.237**

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 63°**

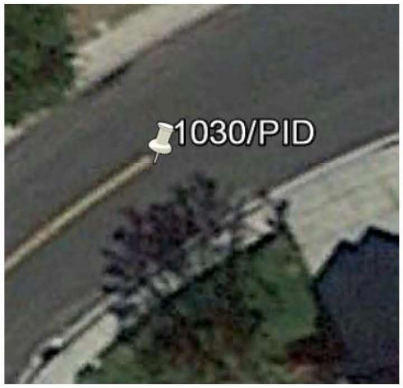
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Feb-17**
Station Name	**1031 A**	File Name	**LGC_021117_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°53'21.83259"**	Receiver :		
Longitude	**W121°38'32.17865"**	R10	**9670**	
Ellipsoidal Height	**-76.72**	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 55°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Feb-17**
Station Name	**1031**	File Name	**LGC_021117_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°53'21.83483"**	Receiver :		
Longitude	**W121°38'29.50264"**	R10	**9670**	
Ellipsoidal Height	**-77.084**	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 55°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	1032	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°46'49.76108"	Receiver :	
Longitude	W121°32'28.65170"	R10	9670
Ellipsoidal Height	-38.563	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	CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	1033	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°34'37.13558"	Receiver :		
Longitude	W121°34'14.07016"	R10	9670	
Ellipsoidal Height	-88.93	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	CLOUDY/RAIN 56*	

To Reach Description :
CONCRETE ROAD ENTRANCE

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	1034	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°34'35.55767"	Receiver :		
Longitude	W121°31'04.48459"	R10	9670	
Ellipsoidal Height	-80.504	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	RAIN 52*	

To Reach Description :
GRAVEL PARKING LOT

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Feb-17**
Station Name	**11**	File Name	**LGC_021317_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°13'24.83780"**
Longitude	**W121°53'30.86191"**
Ellipsoidal Height	**-80.256**

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 47°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	12	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°22'59.80543"
Longitude	W121°49'23.89277"
Ellipsoidal Height	-60.513

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: RAIN 57*

To Reach Description :
CORNER OF CONCRETE PAD

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	13	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°30'22.95530"
Longitude	W121°40'07.13719"
Ellipsoidal Height	-71.912

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: PARTLY CLOUDY 62*

To Reach Description :
CORNER OF SCALE RAMP

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	14	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°20'33.65091"	Receiver :		
Longitude	W121°35'04.56656"	R10	9670	
Ellipsoidal Height	-97.732	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	CLOUDY 63*	

To Reach Description :
CONCRETE DRIVEWAY

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	15 A	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°12'48.26040"
Longitude	W121°36'25.63362"
Ellipsoidal Height	-95.208

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: PARTLY CLOUDY 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	15	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°12'48.38769"	Receiver :	
Longitude	W121°36'23.96078"	R10	9670
Ellipsoidal Height	-93.832	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: PARTLY CLOUDY 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	16	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°05'59.43507"	Receiver :		
Longitude	W121°42'19.74944"	R10	9670	
Ellipsoidal Height	-98.681	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	PARTLY CLOUDY 62*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	06-Feb-17
Station Name	17	File Name	LGC_020617_EN

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

WGS 84 COORDINATES:

Latitude	N37°56'04.93881"
Longitude	W121°25'50.44512"
Ellipsoidal Height	-94.546

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	18	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°45'10.77051"	Receiver :		
Longitude	W121°21'04.85542"	R10	9670	
Ellipsoidal Height	-81.743	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	CLOUDY/RAIN 62*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Feb-17**
Station Name	**19**	File Name	**LGC_020917_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°11'18.74560"**	Receiver :		
Longitude	**W121°58'33.59745"**	R10	**9670**	
Ellipsoidal Height	**-94.795**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	2	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°13'21.17908"
Longitude	W121°21'24.59660"
Ellipsoidal Height	-74.515

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: PARTLY CLOUDY 62*

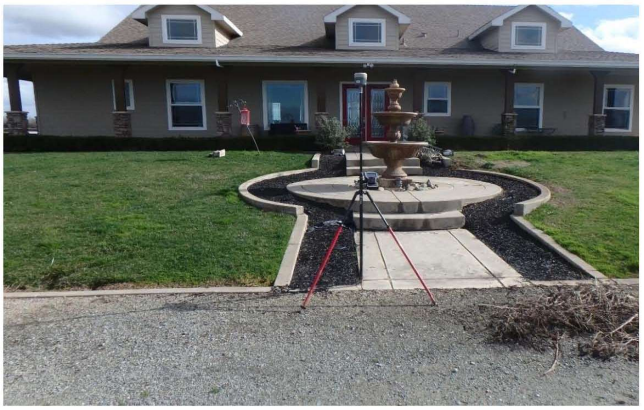
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**2007**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°00'56.45547"**	Receiver :	
Longitude	**W121°55'56.20554"**	R10	**9670**
Ellipsoidal Height	**39.204**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**2008**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°00'19.40249"**
Longitude	**W121°53'58.74131"**
Ellipsoidal Height	**40.595**

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: **CLOUDY/RAIN 62°**

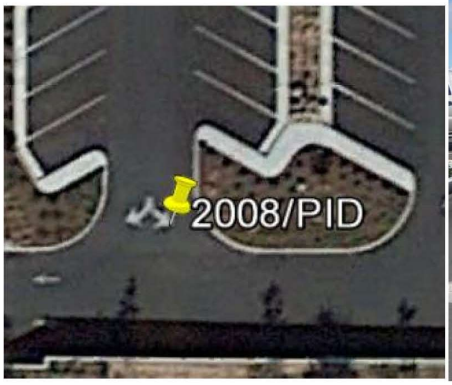
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**2009**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°59'23.10763"**
Longitude	**W121°49'55.59459"**
Ellipsoidal Height	**4.119**

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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Feb-17**
Station Name	**2010**	File Name	**LGC_021217_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°59'10.68465"**	Receiver :		
Longitude	**W121°45'54.99102"**	R10	**9670**	
Ellipsoidal Height	**28.348**	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 59°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	2023	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°24'23.63239"
Longitude	W121°28'55.36117"
Ellipsoidal Height	-84.485

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: MOSTLY CLOUDY 64*

To Reach Description :
END OF PARKING STRIPE

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	06-Feb-17
Station Name	2028	File Name	LGC_020617_EN

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

WGS 84 COORDINATES:

Latitude	N37°58'35.34165"
Longitude	W121°21'14.47472"
Ellipsoidal Height	-104.33

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	07-Feb-17
Station Name	3	File Name	LGC_020717_EN

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

WGS 84 COORDINATES:

Latitude	N37°57'29.36488"	Receiver :		
Longitude	W121°17'29.27262"	R10	9670	
Ellipsoidal Height	-91.912	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	CLOUDY/RAIN 62*	

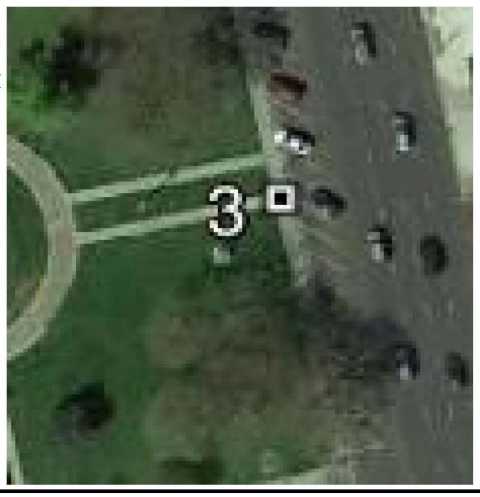
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	07-Feb-17
Station Name	4	File Name	LGC_020717_EN

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

WGS 84 COORDINATES:

Latitude	N37°42'34.74166"	Receiver :	
Longitude	W121°12'54.48291"	R10	9670
Ellipsoidal Height	-71.112	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	CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	5	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°38'38.39986"	Receiver :		
Longitude	W121°21'40.08954"	R10	9670	
Ellipsoidal Height	71.759	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	CLOUDY/RAIN 62*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	6	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°45'30.83426"
Longitude	W121°32'51.21740"
Ellipsoidal Height	7.235

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: CLOUDY/RAIN 62*

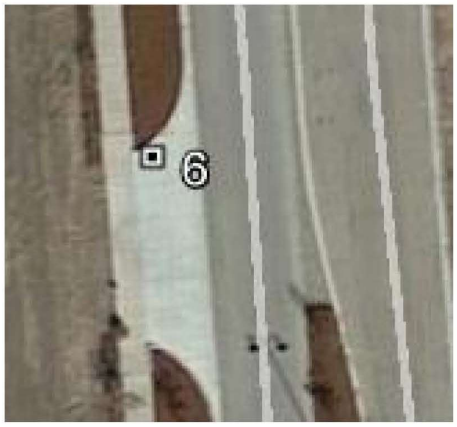
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Feb-17**
Station Name	**7**	File Name	**LGC_021117_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°54'20.54092"**	Receiver :		
Longitude	**W121°43'30.34699"**	R10	**9670**	
Ellipsoidal Height	**36.218**	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 64°**

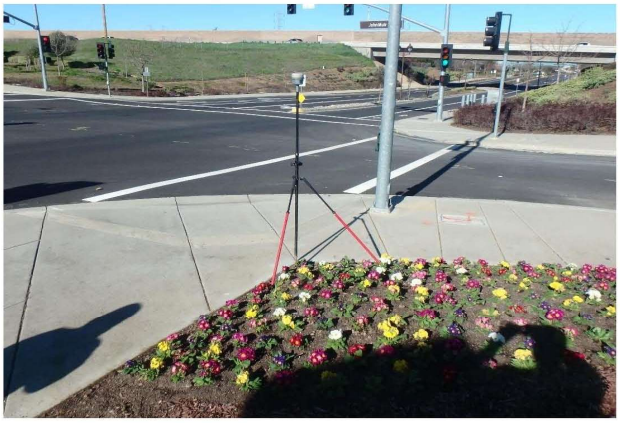
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**8**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°59'53.48178"**	Receiver :		
Longitude	**W121°53'33.48526"**	R10	**9670**	
Ellipsoidal Height	**65.101**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**9 A**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°01'31.93353"**	Receiver :		
Longitude	**W122°08'15.44171"**	R10	**9670**	
Ellipsoidal Height	**-97.801**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**9**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°01'29.60698"**	Receiver :		
Longitude	**W122°08'15.95350"**	R10	**9670**	
Ellipsoidal Height	**-98.423**	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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**09-Feb-17**
Station Name	**QC1**	File Name	**LGC_020917_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°14'38.35989"**
Longitude	**W122°01'46.28839"**
Ellipsoidal Height	**-94.321**

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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	05-Feb-17
Station Name	QC10	File Name	LGC_020517_EN

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

WGS 84 COORDINATES:

Latitude	N38°03'22.55665"
Longitude	W121°22'33.64378"
Ellipsoidal Height	-99.649

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: CLOUDY 60*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	QC11	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°13'35.94956"
Longitude	W121°25'41.20859"
Ellipsoidal Height	-91.646

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: PARTLY CLOUDY 62*

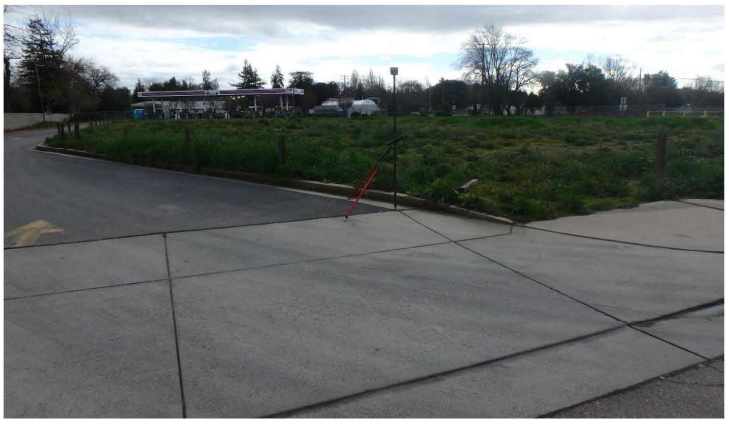
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	QC12	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°24'24.08651"
Longitude	W121°28'42.86602"
Ellipsoidal Height	-86.957

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: MOSTLY CLOUDY 64*

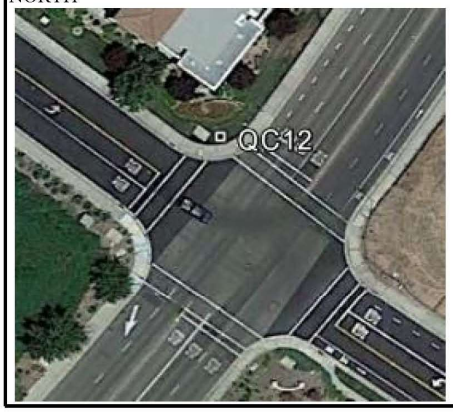
To Reach Description :
CORNER OF ELECTRICAL VAULT

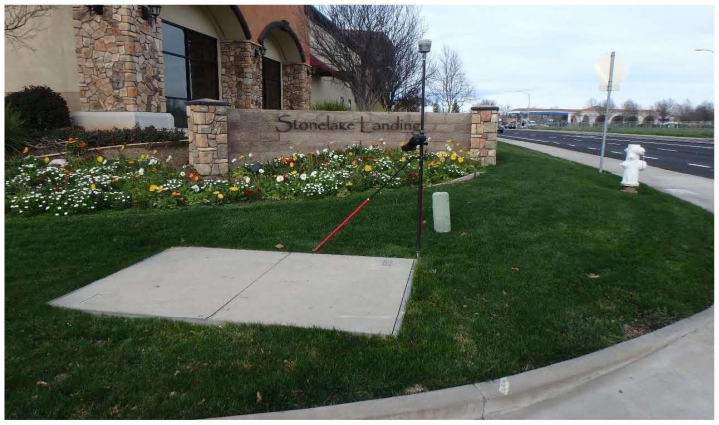
Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH





GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	QC13 A	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°32'41.58411"
Longitude	W121°34'12.11725"
Ellipsoidal Height	-88.651

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: CLOUDY/RAIN 57*

To Reach Description :
CORNER OF CONCRETE UTILITY PAD

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	QC13	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°32'42.10963"
Longitude	W121°34'10.39835"
Ellipsoidal Height	-90.064

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: CLOUDY/RAIN 57*

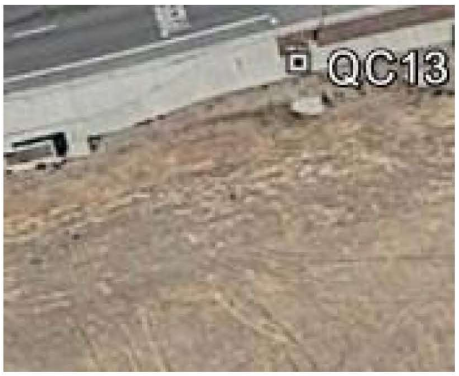
To Reach Description :
CONCRETE SIDEWALK CORNER

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	QC14 A	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°23'14.00896"
Longitude	W121°46'31.64741"
Ellipsoidal Height	-74.05

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: CLOUDY 57*

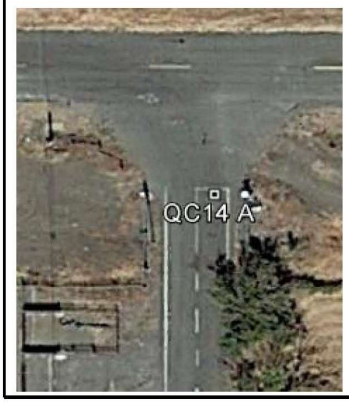
To Reach Description :
ENTRANCE TO DIXON HOUSING AUTHORITY

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	03-Feb-17
Station Name	QC14	File Name	LGC_020317_EN

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

WGS 84 COORDINATES:

Latitude	N38°23'13.10072"	Receiver :		
Longitude	W121°46'31.64408"	R10	9670	
Ellipsoidal Height	-74.31	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	CLOUDY 57*	

To Reach Description :
ENTRANCE TO DIXON HOUSING AUTHORITY

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**13-Feb-17**
Station Name	**QC15**	File Name	**LGC_021317_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°11'35.66136"**
Longitude	**W121°43'02.09615"**
Ellipsoidal Height	**-82.781**

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 47°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	QC16	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°41'19.11545"	Receiver :		
Longitude	W121°21'40.74018"	R10	9670	
Ellipsoidal Height	-24.246	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: CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	06-Feb-17
Station Name	QC17	File Name	LGC_020617_EN

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

WGS 84 COORDINATES:

Latitude	N37°58'35.27110"	Receiver :		
Longitude	W121°21'15.30439"	R10	9670	
Ellipsoidal Height	-104.407	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	CLOUDY 60*	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	QC18	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°13'35.94956"
Longitude	W121°25'41.20859"
Ellipsoidal Height	-91.646

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: PARTLY CLOUDY 62*

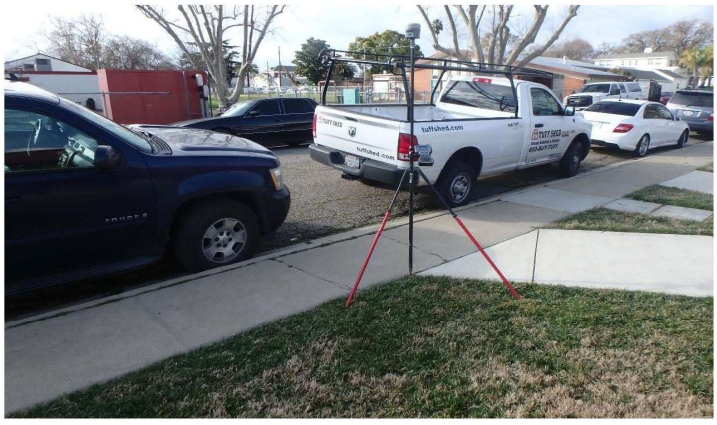
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	02-Feb-17
Station Name	QC19	File Name	LGC_020217_EN

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

WGS 84 COORDINATES:

Latitude	N38°19'50.52451"
Longitude	W121°33'58.40603"
Ellipsoidal Height	-95.919

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: CLOUDY 63*

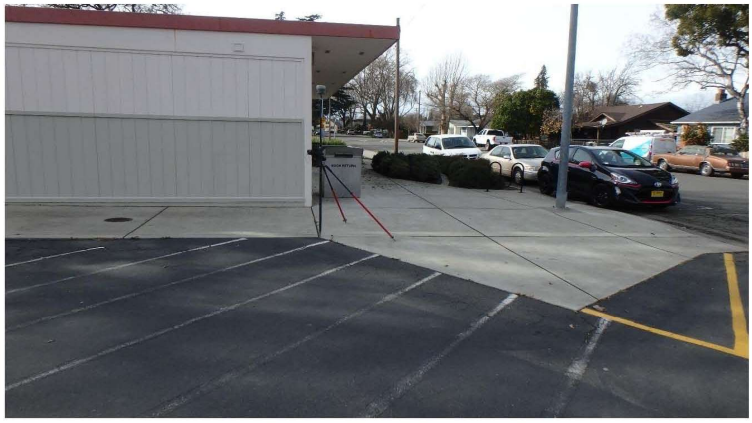
To Reach Description :
SCHOOL/LIBRARY PARKING LOT

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**QC2**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°01'46.36617"**	Receiver :	
Longitude	**W121°53'45.68935"**	R10	**9670**
Ellipsoidal Height	**-97.652**	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: **CLOUDY/RAIN 62°**

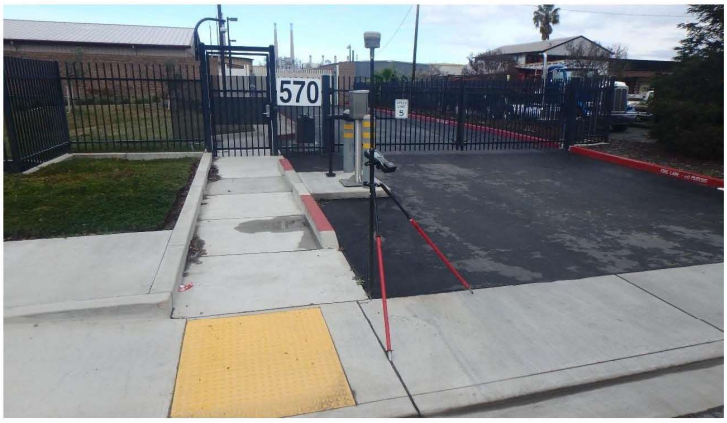
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**10-Feb-17**
Station Name	**QC20**	File Name	**LGC_021017_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°05'17.59774"**
Longitude	**W122°06'51.45682"**
Ellipsoidal Height	**55.527**

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: **CLOUDY/RAIN 62°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Feb-17**
Station Name	**QC21**	File Name	**LGC_021217_EN**

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

WGS 84 COORDINATES:

Latitude	**N38°00'59.46123"**
Longitude	**W121°38'25.26380"**
Ellipsoidal Height	**-105.984**

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 64°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	04-Feb-17
Station Name	QC22	File Name	LGC_020417_EN

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

WGS 84 COORDINATES:

Latitude	N38°14'40.50550"	Receiver :	
Longitude	W121°30'55.74948"	R10	9670
Ellipsoidal Height	-98.8	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	PARTLY CLOUDY 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**12-Feb-17**
Station Name	**QC3**	File Name	**LGC_021217_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°59'51.25875"**
Longitude	**W121°42'49.92888"**
Ellipsoidal Height	**-81.95**

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 63°**

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	**Sacramento LiDAR**	Operator Name	**Erik Noyer**
Project Number	**76982**	Date of Survey	**11-Feb-17**
Station Name	**QC4**	File Name	**LGC_021117_EN**

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

WGS 84 COORDINATES:

Latitude	**N37°53'27.04671"**	Receiver :		
Longitude	**W121°37'35.96948"**	R10	**9670**	
Ellipsoidal Height	**-91.774**	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 55°**	

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	QC5	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°47'19.17941"
Longitude	W121°33'20.21632"
Ellipsoidal Height	-43.84

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: CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	QC6	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°44'26.92420"
Longitude	W121°27'20.76508"
Ellipsoidal Height	-67.128

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: CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	08-Feb-17
Station Name	QC7	File Name	LGC_020817_EN

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

WGS 84 COORDINATES:

Latitude	N37°40'49.88410"	Receiver :	
Longitude	W121°14'03.39132"	R10	9670
Ellipsoidal Height	-75.33	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	CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	07-Feb-17
Station Name	QC8	File Name	LGC_020717_EN

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

WGS 84 COORDINATES:

Latitude	N37°46'55.61699"
Longitude	W121°15'47.47447"
Ellipsoidal Height	-84.243

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: CLOUDY/RAIN 62*

To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

Sketch

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Sacramento LiDAR	Operator Name	Erik Noyer
Project Number	76982	Date of Survey	06-Feb-17
Station Name	QC9	File Name	LGC_020617_EN

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

WGS 84 COORDINATES:

Latitude	N37°53'50.31058"	Receiver :		
Longitude	W121°18'24.87200"	R10	9670	
Ellipsoidal Height	-94.22	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	RAIN 62*	

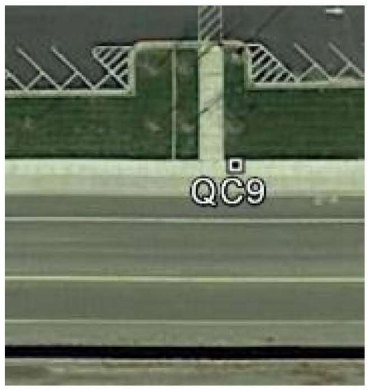
To Reach Description :

Witness Ties :

Reference Object	Distance	N-E-S-W

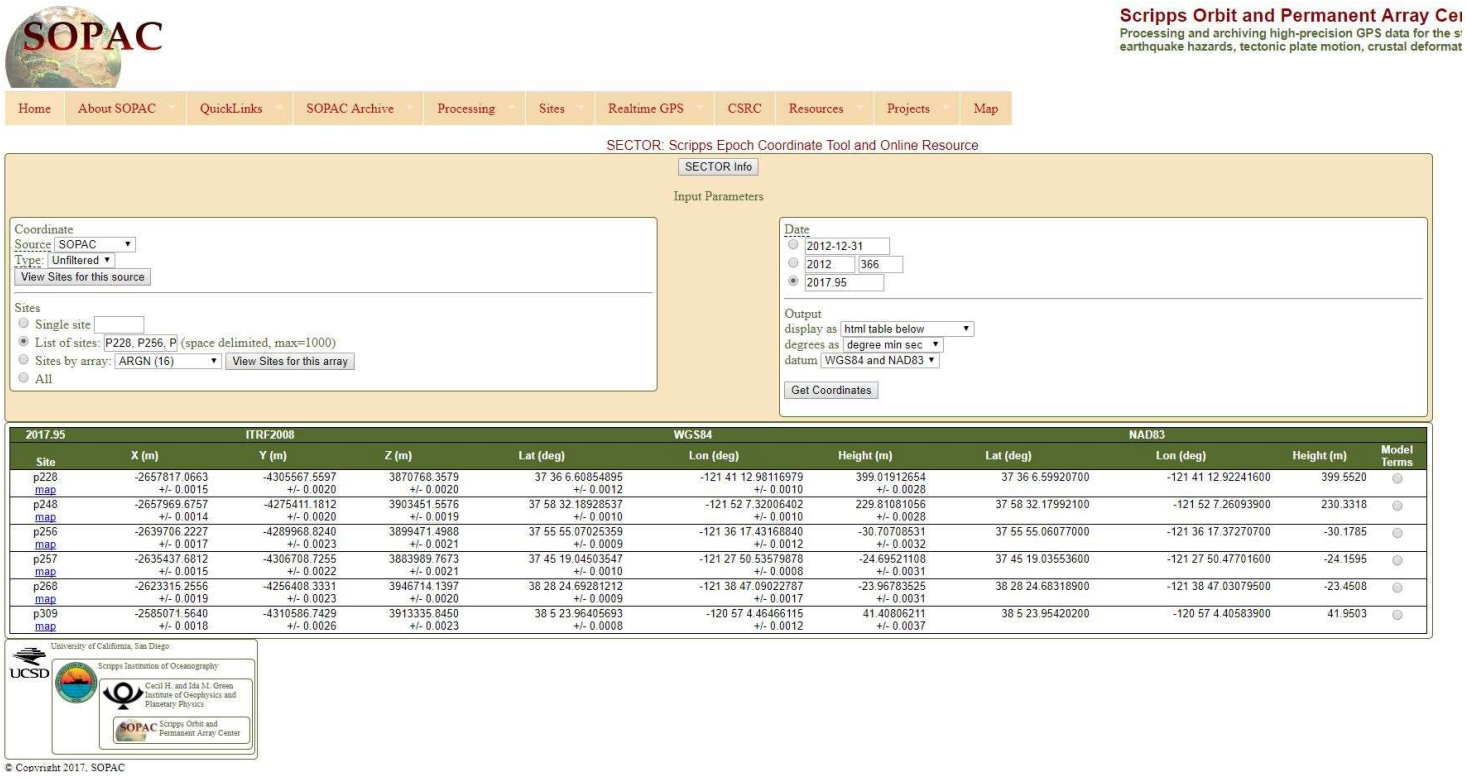
Sketch

NORTH



Section 4: Incorporated CSRC CORS Sites

site	Description
p228	CSRC DelValle_CN2005
p256	CSRC FallmanPrp_CN2005
p257	CSRC TomPainSlg_CN2005
p268	CSRC FinchFarms_CN2005
p309	CSRC Calaveras_CN2005
p248	CSRC BlkDiamond_CN2007



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