

Fugro USA Land, Inc.

Ground Control Survey Report

Coastal Texas Lidar Ground Control
Survey Completed on:
Feb. 02, 2018

Prepared for:

Texas Water Development Board
1700 N. Congress Avenue, ROOM 610B
Austin, TX 78701

Submitted to:

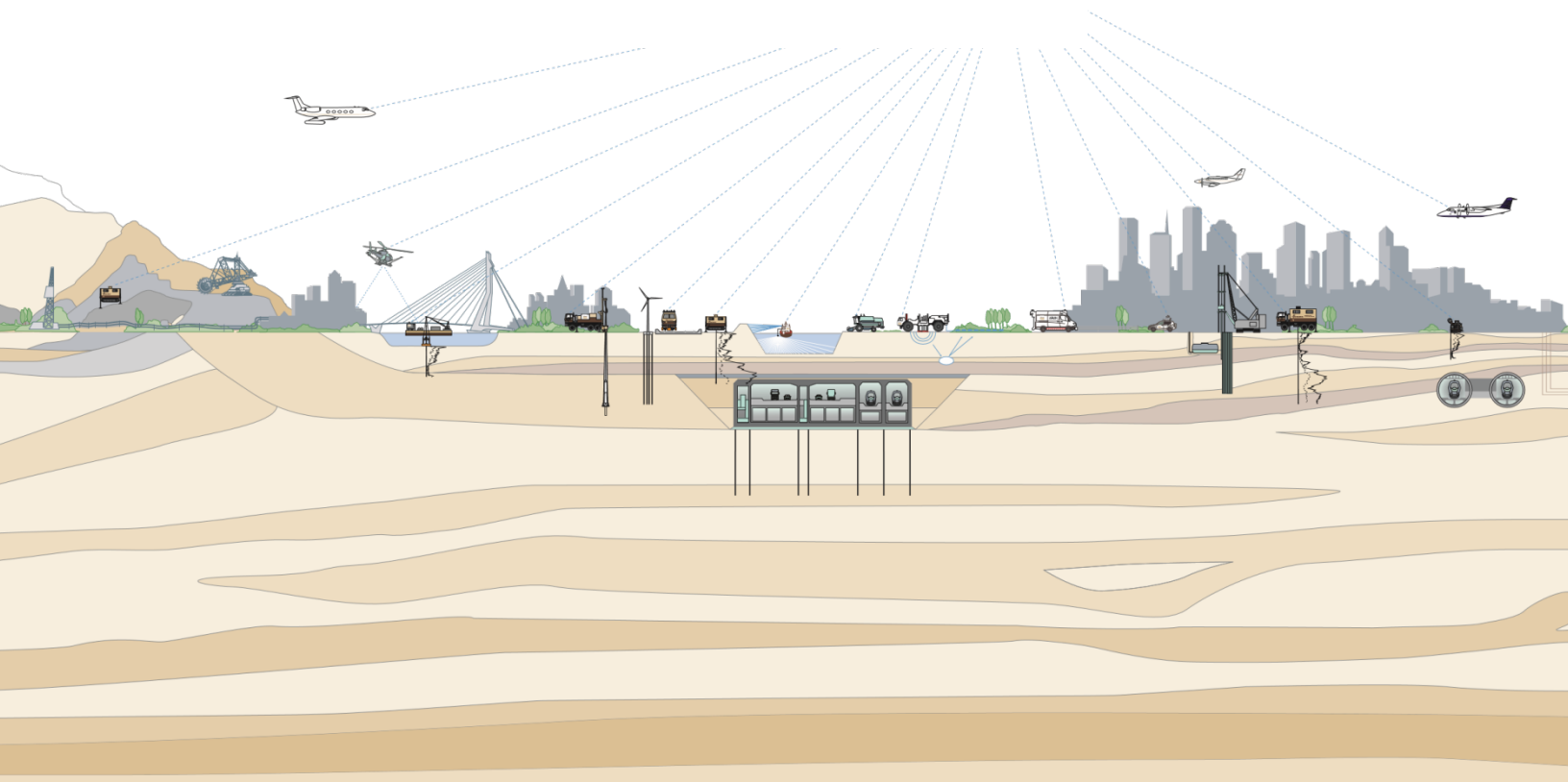
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REPORT OF SURVEY

TNRIS COASTAL TEXAS LIDAR CONTROL

INTRODUCTION

Fugro USA Land, Inc. of Lafayette, LA was tasked by Fugro USA Land, Inc. of Frederick, MD to perform a ground control survey in support of LiDAR data collection of the Coastal Texas region under the supervision of a Texas RPLS. The collected data was processed by TerraSurv, Inc. of Pittsburgh, PA.

The map in Figure 1 shows the location of the surveyed Ground Control Points (GCP, green dots) and the Continuously Operating Reference Stations (CORS, red dots) used as constraints.

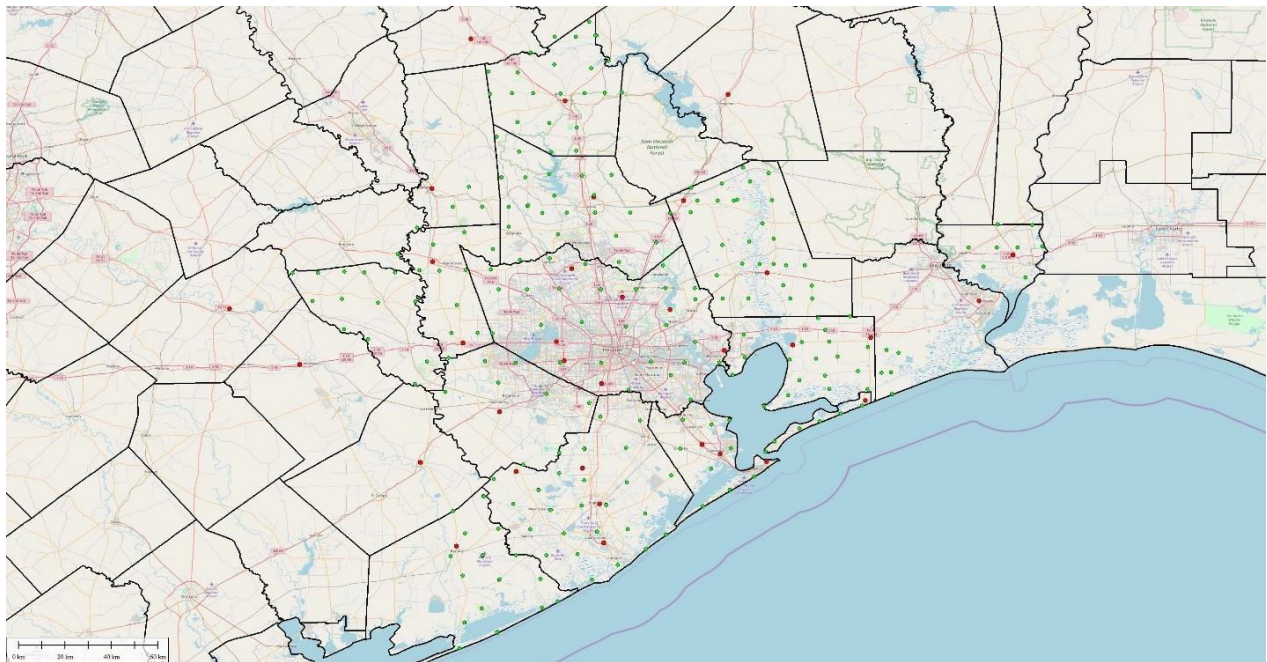


Figure 1 - Project Map

Dual frequency GNSS receivers were used for the ground control survey with a combination of 5 minute post processed kinematic (PPK) and 20+ minutes static/fast static survey methods.

CONTROL

Control for this survey consisted of 33 Continuously Operating Reference Stations (CORS) from several sources (NGS, Leica, and TXDOT). Horizontal coordinates were referenced to the North American Datum of 1983 (2011) epoch 2010.0. Elevations were referenced to NAVD88 and derived by two methods (both methods supplied for all stations):

1. Using the GEOID12B geoid model applied to the GRS80 ellipsoidal heights
2. Using the GEOID99 geoid model applied to the GRS80 ellipsoidal heights and then applying a vertical shift of +0.253 feet (0.077 meters)

Three sets of grid coordinates were computed: UTM Zone 14, UTM Zone 15, and Texas South Central Zone State Plane Coordinates (SPC). Units were US Survey Feet (SPC) and meters (UTM).

Table 1 lists the CORS used.

Table 1 - List of Continuously Operating Reference Stations (CORS) included in network

CORS ID	Name	PID	Source
ADKS	ADDICKS 1795 CORS ARP	DE5999	NGS
ANG5	ANGLETON 5 CORS ARP	DJ7827	NGS
COH2	HOUSTON 2 COOP CORS ARP	DF8773	NGS
DWI1	CLUTE COOP CORS ARP	DG6956	NGS
LKHU	LAKE HOUSTON CORS ARP	AF9521	NGS
ROD1	ROD1 CORS ARP	DJ8995	NGS
TXAC	ANAHUAC CORS ARP	DM7139	NGS
TXAG	ANGLETON CORS ARP	DH3602	NGS
TXB6	BAYTOWN		LEICA
TXBC	BAY CITY CORS ARP	DL3490	NGS
TXBH	BROOKSHIRE		LEICA
TXCM	COLUMBUS TXCOT CORS ARP	DL9812	NGS
TXCN	CONROE CORS ARP	DH3604	NGS
TXCV	CLEVELAND		LEICA
TXDM	DAMON		LEICA
TXGA	GALVESTON CORS ARP	DH3606	NGS
TXHD	HIGH ISLAND		LEICA
TXHE	HEMPSTEAD CORS ARP	DH3608	NGS
TXHS	HOUSTON W		LEICA
TXHV	HUNTSVILLE		LEICA
TXLG	LA GRANGE		TXDOT
TXLI	LIBERTY CORS ARP	DH3612	NGS
TXLM	LA MARQUE CORS ARP	DH3614	NGS
TXLQ	LA MARQUE		LEICA
TXLV	LIVINGSSTON CORS ARP	DN4508	NGS
TXMD	MERIDIAN		LEICA
TXNV	NAVASOTA		LEICA
TXOR	ORANGE CORS ARP	DN4512	NGS
TXPT	PORT ARTHUR CORS ARP	DM7838	NGS
TXRS	ROSENBERG TXRS CORS ARP	DM7155	NGS
TXWH	WHARTON CORS ARP	DL9086	NGS
TXWI	WINNIE		LEICA
ZHU1	HOUSTON WAAS 1 CORS ARP	DF4062	NGS

GPS OCCUPATIONS

Each GCP was occupied using a Trimble R8 GNSS dual frequency GPS/GLONASS receiver with a 2 m fixed height tripod. The occupations on days 024 through 038 of 2018 were done as post processed kinematic (Stop and Go) with a local base receiver. Days 039 through 048, 051, 052, and 073 through 075 were done as fast static/static surveys using CORS. Table 2 lists the GCP stations occupied with times, filenames, etc. Note: the correlations between the GPSID and the actual station names can be found in the coordinate listings at the end of this report.

Table 2 - GCP Occupations

Station	UTC Start	Duration	Type	Filename
6001	01/24/2018 13:44	11:56:23	Static	27760240.T02
132	01/24/2018 20:52	00:05:00	Stop and Go	70160241.t02
133	01/24/2018 21:25	00:05:00	Stop and Go	70160242.t02
1000	01/25/2018 14:23	09:21:41	Static	27760250.T02
1001	01/25/2018 15:13	00:05:01	Stop and Go	70160250.t02
1002	01/25/2018 15:57	00:05:00	Stop and Go	70160252.t02
1003	01/25/2018 16:23	00:04:59	Stop and Go	70160252.t02
1004	01/25/2018 17:15	00:04:59	Stop and Go	70160253.t02
1005	01/25/2018 18:06	00:04:59	Stop and Go	70160254.t02
1006	01/25/2018 18:40	00:05:00	Stop and Go	70160254.t02
1007	01/25/2018 19:01	00:04:59	Stop and Go	70160254.t02
1008	01/25/2018 20:14	00:05:00	Stop and Go	70160258.t02
1009	01/25/2018 20:45	00:05:00	Stop and Go	70160259.t02
1010	01/25/2018 22:02	00:05:00	Stop and Go	70160259.t02
1011	01/25/2018 22:29	00:04:59	Stop and Go	70160259.t02
1012	01/25/2018 23:05	00:04:59	Stop and Go	7016025B.t02
1013	01/26/2018 14:59	07:04:41	Static	27760260.T02
1014	01/26/2018 15:27	00:05:01	Stop and Go	70160260.t02
1015	01/26/2018 16:00	00:04:59	Stop and Go	70160261.t02
1016	01/26/2018 16:27	00:04:59	Stop and Go	70160261.t02
1017	01/26/2018 17:01	00:04:59	Stop and Go	70160261.t02
1018	01/26/2018 17:34	00:04:59	Stop and Go	70160261.t02
1019	01/26/2018 18:19	00:05:00	Stop and Go	70160262.t02
1020	01/26/2018 18:52	00:05:00	Stop and Go	70160263.t02
1021	01/26/2018 19:35	00:05:00	Stop and Go	70160263.t02
1022	01/26/2018 20:04	00:05:00	Stop and Go	70160264.t02
1023	01/26/2018 20:51	00:04:59	Stop and Go	70160264.t02
1024	01/26/2018 21:41	00:04:59	Stop and Go	70160265.t02
1025	01/27/2018 15:55	06:03:21	Static	27760270.T02
1026	01/27/2018 16:06	00:05:00	Stop and Go	70160270.t02
1027	01/27/2018 16:42	00:04:59	Stop and Go	70160270.t02
1028	01/27/2018 17:38	00:04:58	Stop and Go	70160270.t02
1029	01/27/2018 18:11	00:05:00	Stop and Go	70160270.t02
1030	01/27/2018 18:38	00:05:00	Stop and Go	70160270.t02
1031	01/27/2018 20:10	00:04:59	Stop and Go	70160271.t02
1032	01/27/2018 20:45	00:05:00	Stop and Go	70160272.t02
1033	01/27/2018 21:26	00:05:00	Stop and Go	70160273.t02
1034	01/28/2018 14:07	06:27:56	Static	27760280.T02
1035	01/28/2018 14:40	00:05:01	Stop and Go	70160280.t02
1036	01/28/2018 15:29	00:05:00	Stop and Go	70160280.t02
1037	01/28/2018 16:07	00:05:00	Stop and Go	70160280.t02
1038	01/28/2018 16:51	00:05:00	Stop and Go	70160280.t02
1039	01/28/2018 17:33	00:04:59	Stop and Go	70160280.t02
1040	01/28/2018 18:12	00:04:59	Stop and Go	70160281.t02
1041	01/28/2018 19:00	00:05:00	Stop and Go	70160281.t02
1042	01/28/2018 20:02	00:05:00	Stop and Go	70160281.t02
1043	01/29/2018 14:37	07:32:55	Static	27760290.T02
1044	01/29/2018 15:28	00:05:00	Stop and Go	70160291.t02
1045	01/29/2018 16:12	00:04:59	Stop and Go	70160293.t02
1046	01/29/2018 17:04	00:05:00	Stop and Go	70160294.t02
1047	01/29/2018 18:03	00:04:59	Stop and Go	70160295.t02
1048	01/29/2018 19:04	00:04:59	Stop and Go	70160296.t02
1049	01/29/2018 19:57	00:04:59	Stop and Go	70160297.t02
1050	01/29/2018 20:34	00:04:59	Stop and Go	70160297.t02
1051	01/29/2018 21:18	00:05:00	Stop and Go	70160298.t02

Station	UTC Start	Duration	Type	Filename
1052	01/29/2018 21:48	00:04:58	Stop and Go	70160299.t02
1053	01/30/2018 14:37	06:41:40	Static	27760300.T02
1054	01/30/2018 15:24	00:04:59	Stop and Go	70160300.t02
1055	01/30/2018 16:14	00:04:59	Stop and Go	70160300.t02
1056	01/30/2018 16:51	00:04:59	Stop and Go	70160300.t02
1057	01/30/2018 17:49	00:04:59	Stop and Go	70160307.t02
1058	01/30/2018 18:30	00:04:59	Stop and Go	70160307.t02
1059	01/30/2018 18:44	00:04:59	Stop and Go	70160307.t02
1060	01/30/2018 19:26	00:05:00	Stop and Go	70160307.t02
1061	01/30/2018 20:05	00:04:59	Stop and Go	70160307.t02
1062	01/30/2018 20:45	00:04:59	Stop and Go	70160307.t02
1063	01/31/2018 15:09	06:45:41	Static	27760310.T02
1064	01/31/2018 15:47	00:05:00	Stop and Go	70160310.t02
1065	01/31/2018 16:24	00:05:00	Stop and Go	70160311.t02
1066	01/31/2018 16:56	00:05:00	Stop and Go	70160311.t02
1067	01/31/2018 17:25	00:05:00	Stop and Go	70160312.t02
1068	01/31/2018 18:11	00:04:59	Stop and Go	70160312.t02
1069	01/31/2018 19:21	00:05:00	Stop and Go	70160312.t02
1070	01/31/2018 20:12	00:04:59	Stop and Go	70160313.t02
1071	01/31/2018 20:45	00:05:00	Stop and Go	70160313.t02
1072	01/31/2018 21:30	00:05:01	Stop and Go	70160314.t02
1073	02/01/2018 14:52	03:35:38	Static	27760320.T02
1074	02/01/2018 15:17	00:04:59	Stop and Go	70160320.t02
1075	02/01/2018 15:43	00:04:59	Stop and Go	70160320.t02
1076	02/01/2018 16:39	00:04:59	Stop and Go	70160321.t02
1077	02/01/2018 17:22	00:04:59	Stop and Go	70160321.t02
1078	02/01/2018 17:44	00:04:59	Stop and Go	70160321.t02
1084	02/02/2018 15:33	07:01:18	Static	27760331.T02
1085	02/02/2018 16:10	00:05:00	Stop and Go	70160330.t02
1086	02/02/2018 16:43	00:05:00	Stop and Go	70160330.t02
1087	02/02/2018 17:57	00:04:58	Stop and Go	70160330.t02
1088	02/02/2018 19:17	00:05:00	Stop and Go	70160331.t02
1089	02/02/2018 20:03	00:04:59	Stop and Go	70160331.t02
1090	02/02/2018 20:37	00:05:00	Stop and Go	70160332.t02
1091	02/02/2018 21:11	00:05:00	Stop and Go	70160332.t02
1092	02/02/2018 22:04	00:05:00	Stop and Go	70160333.t02
1093	02/03/2018 14:30	02:54:01	Static	27760340.T02
1094	02/03/2018 14:58	00:04:59	Stop and Go	70160340.t02
1095	02/03/2018 15:29	00:04:59	Stop and Go	70160342.t02
1096	02/03/2018 15:57	00:04:59	Stop and Go	70160343.t02
1097	02/03/2018 16:24	00:05:00	Stop and Go	70160343.t02
1098	02/03/2018 16:50	00:04:59	Stop and Go	70160343.t02
1099	02/03/2018 17:13	00:05:00	Stop and Go	70160343.t02
1100	02/03/2018 17:40	00:04:59	Stop and Go	70160343.t02
1103	02/04/2018 14:15	04:58:10	Static	27760351.T02
1104	02/04/2018 14:46	00:04:59	Stop and Go	70160350.t02
1105	02/04/2018 15:13	00:04:59	Stop and Go	70160350.t02
1106	02/04/2018 15:42	00:05:00	Stop and Go	70160350.t02
1107	02/04/2018 16:21	00:04:56	Stop and Go	70160350.t02
1108	02/04/2018 17:18	00:04:59	Stop and Go	70160351.t02
1109	02/04/2018 17:43	00:05:00	Stop and Go	70160351.t02
1110	02/04/2018 18:07	00:04:59	Stop and Go	70160351.t02
1111	02/04/2018 18:35	00:04:59	Stop and Go	70160351.t02
1112	02/04/2018 19:02	00:05:00	Stop and Go	70160351.t02
1115	02/05/2018 15:14	02:03:36	Static	27760360.T02
1116	02/05/2018 15:48	00:04:59	Stop and Go	70160363.t02

Station	UTC Start	Duration	Type	Filename
1117	02/05/2018 16:27	00:05:00	Stop and Go	70160365.t02
1118	02/05/2018 17:02	00:05:00	Stop and Go	70160365.t02
1119	02/05/2018 17:08	00:00:05	Stop and Go	70160365.t02
1120	02/05/2018 17:34	00:04:59	Stop and Go	70160365.t02
1121	02/05/2018 19:43	00:04:59	Stop and Go	70160365.t02
1122	02/05/2018 20:19	00:04:59	Stop and Go	70160365.t02
1123	02/05/2018 20:54	00:05:00	Stop and Go	70160365.t02
1124	02/06/2018 14:05	05:22:39	Static	27760370.T02
1125	02/06/2018 14:30	00:04:58	Stop and Go	70160370.t02
1126	02/06/2018 14:53	00:04:59	Stop and Go	70160371.t02
1127	02/06/2018 15:21	00:04:59	Stop and Go	70160371.t02
1128	02/06/2018 15:39	00:04:59	Stop and Go	70160371.t02
1129	02/06/2018 16:18	00:04:59	Stop and Go	70160371.t02
1130	02/06/2018 16:40	00:05:00	Stop and Go	70160371.t02
1131	02/06/2018 17:26	00:04:59	Stop and Go	70160371.t02
1132	02/06/2018 17:48	00:05:00	Stop and Go	70160371.t02
1133	02/06/2018 18:14	00:04:59	Stop and Go	70160371.t02
1134	02/06/2018 18:43	00:04:59	Stop and Go	70160371.t02
1135	02/07/2018 13:53	08:58:02	Static	27760380.T02
1136	02/07/2018 14:34	00:05:00	Stop and Go	70160380.t02
1136	02/07/2018 14:40	00:23:53	Static	56750380.T02
1137	02/07/2018 15:39	00:05:00	Stop and Go	70160381.t02
1137	02/07/2018 15:45	00:20:25	Static	56750381.T02
1138	02/07/2018 16:44	00:21:43	Static	56750382.T02
1139	02/07/2018 17:18	00:01:23	Static	56750383.T02
1140	02/07/2018 18:09	00:25:45	Static	56750384.T02
1141	02/07/2018 19:12	00:24:20	Static	56750385.T02
1142	02/07/2018 20:01	00:22:32	Static	56750386.T02
1143	02/07/2018 20:49	00:23:35	Static	56750387.T02
1144	02/07/2018 21:28	00:22:29	Static	56750388.T02
1145	02/07/2018 22:08	00:23:29	Static	56750389.T02
10000	02/08/2018 18:14	00:29:57	Static	89780390.T02
10001	02/08/2018 19:30	00:30:34	Static	89780391.T02
10002	02/08/2018 20:36	00:23:29	Static	89780392.T02
10003	02/09/2018 13:31	00:24:32	Static	89780400.T02
10004	02/09/2018 14:21	00:23:15	Static	89780401.T02
1146	02/09/2018 15:32	05:53:53	Static	27760400.T02
10005	02/09/2018 15:42	00:22:45	Static	89780402.T02
1147	02/09/2018 15:51	00:23:27	Static	56750400.T02
1148	02/09/2018 16:35	00:21:02	Static	56750401.T02
10006	02/09/2018 16:38	00:23:22	Static	89780403.T02
1149	02/09/2018 17:09	00:21:48	Static	56750402.T02
10007	02/09/2018 17:19	00:22:18	Static	89780404.T02
1150	02/09/2018 17:45	00:22:07	Static	56750403.T02
10008	02/09/2018 18:05	00:23:06	Static	89780405.T02
10009	02/09/2018 18:51	00:24:11	Static	89780406.T02
1151	02/09/2018 19:08	00:24:21	Static	56750404.T02
5012	02/09/2018 19:09	00:25:49	Static	89820404.T02
10010	02/09/2018 19:34	00:21:51	Static	89780407.T02
1152	02/09/2018 20:01	00:21:43	Static	56750405.T02
10011	02/09/2018 20:26	00:23:40	Static	89780408.T02
5013	02/09/2018 20:30	00:25:18	Static	89820405.T02
1153	02/09/2018 20:39	00:22:19	Static	56750406.T02
5014	02/09/2018 21:10	00:24:59	Static	89820406.T02
10012	02/09/2018 21:18	00:21:42	Static	89780409.T02
5015	02/09/2018 22:01	00:27:27	Static	89820407.T02

Station	UTC Start	Duration	Type	Filename
10013	02/09/2018 22:09	00:22:32	Static	8978040A.T02
10014	02/10/2018 15:00	00:21:54	Static	89780410.T02
5016	02/10/2018 15:06	00:26:02	Static	89820410.T02
1154	02/10/2018 15:48	00:23:18	Static	56750410.T02
10015	02/10/2018 15:52	00:24:46	Static	89780411.T02
1155	02/10/2018 16:33	00:23:38	Static	56750411.T02
10016	02/10/2018 16:57	00:23:03	Static	89780412.T02
5017	02/10/2018 17:13	00:30:43	Static	89820411.T02
1156	02/10/2018 17:20	00:23:25	Static	56750412.T02
10017	02/10/2018 17:41	00:21:48	Static	89780413.T02
5018	02/10/2018 18:31	00:25:50	Static	89820412.T02
10018	02/10/2018 18:35	00:24:13	Static	89780414.T02
10019	02/10/2018 19:18	00:21:30	Static	89780415.T02
5019	02/10/2018 19:21	00:19:15	Static	89820413.T02
10020	02/10/2018 19:57	00:21:37	Static	89780416.T02
5020	02/10/2018 20:22	00:19:44	Static	89820414.T02
10021	02/10/2018 21:13	00:22:40	Static	89780417.T02
5021	02/10/2018 21:44	00:25:56	Static	89820415.T02
10022	02/11/2018 13:50	00:22:23	Static	89780420.T02
5022	02/11/2018 13:51	00:25:47	Static	89820420.T02
10023	02/11/2018 14:33	00:21:46	Static	89780421.T02
5023	02/11/2018 14:44	00:25:22	Static	89820421.T02
1157	02/11/2018 15:03	00:29:22	Static	56750420.T02
10024	02/11/2018 15:15	00:21:31	Static	89780422.T02
1158	02/11/2018 15:23	00:22:30	Static	81750420.T02
5024	02/11/2018 15:42	00:29:58	Static	89820422.T02
1159	02/11/2018 16:02	00:26:01	Static	81750421.T02
10025	02/11/2018 16:11	00:21:40	Static	89780423.T02
1160	02/11/2018 16:18	00:22:22	Static	56750421.T02
5025	02/11/2018 16:30	00:31:54	Static	89820423.T02
1161	02/11/2018 16:53	00:28:51	Static	56750422.T02
10026	02/11/2018 17:03	00:21:34	Static	89780424.T02
116	02/11/2018 17:10	00:22:03	Static	81750422.T02
1163	02/11/2018 17:44	00:23:26	Static	81750423.T02
1164	02/12/2018 15:25	00:22:33	Static	56750430.T02
1165	02/12/2018 16:13	00:24:20	Static	56750431.T02
1166	02/12/2018 17:34	00:25:15	Static	56750432.T02
1167	02/12/2018 18:28	00:24:16	Static	56750434.T02
1168	02/13/2018 16:14	00:58:21	Static	56750440.T02
1169	02/13/2018 19:05	00:23:33	Static	56750443.T02
1170	02/14/2018 14:39	00:24:18	Static	56750450.T02
1171	02/14/2018 15:36	00:23:22	Static	56750451.T02
1172	02/14/2018 17:11	00:21:01	Static	56750452.T02
1173	02/14/2018 19:02	00:23:49	Static	56750453.T02
1174	02/14/2018 20:34	00:25:14	Static	56750454.T02
1175	02/14/2018 21:23	00:23:28	Static	56750455.T02
1176	02/14/2018 22:16	00:21:10	Static	56750456.T02
1177	02/14/2018 23:40	00:22:28	Static	56750457.T02
1178	02/15/2018 13:54	00:30:36	Static	56750460.T02
1179	02/15/2018 14:10	00:28:37	Static	81750460.T02
1180	02/15/2018 15:01	00:22:52	Static	81750461.T02
1181	02/15/2018 15:13	00:23:32	Static	56750461.T02
1182	02/15/2018 16:22	00:23:35	Static	56750462.T02
1183	02/15/2018 18:03	00:21:52	Static	56750463.T02
1184	02/15/2018 19:08	00:24:23	Static	56750464.T02
1185	02/15/2018 22:00	00:21:53	Static	56750465.T02

Station	UTC Start	Duration	Type	Filename
GCP_178_REV	02/16/2018 16:42	00:25:14	Static	27730470.T02
GCP_180_REV_2	02/16/2018 18:08	00:25:14	Static	27730472.T02
GCP_166_REV	02/16/2018 18:48	00:24:28	Static	27730473.T02
GCP_088_REV	02/16/2018 20:17	00:24:47	Static	27730474.T02
GCP_070_REV	02/16/2018 21:06	00:25:03	Static	27730475.T02
GCP_054_REV	02/16/2018 22:18	00:25:18	Static	27730476.T02
20000	02/16/2018 23:11	00:25:12	Static	27730477.T02
20008	02/17/2018 13:48	00:25:07	Static	27730480.T02
20009	02/17/2018 15:40	00:29:42	Static	27730481.T02
20010	02/17/2018 16:39	00:25:26	Static	27730482.T02
20011	02/17/2018 17:47	00:24:14	Static	27730483.T02
20012	02/17/2018 19:07	00:24:34	Static	27730484.T02
20013	02/17/2018 20:46	00:25:08	Static	27730485.T02
20014	02/17/2018 21:42	00:25:51	Static	27730486.T02
1186	02/20/2018 18:57	00:23:33	Static	56750510.T02
1187	02/20/2018 20:05	00:20:42	Static	56750511.T02
1188	02/20/2018 20:55	00:21:49	Static	56750512.T02
1189	02/20/2018 21:37	00:22:39	Static	56750513.T02
1190	02/20/2018 22:24	00:39:22	Static	81750510.T02
1191	02/20/2018 22:48	00:35:52	Static	56750514.T02
1192	02/20/2018 23:44	01:00:18	Static	56750515.T02
1193	02/21/2018 00:02	00:28:23	Static	81750520.T02
1194	02/21/2018 13:53	00:58:00	Static	81750521.T02
1195	02/21/2018 14:12	00:22:14	Static	56750520.T02
1196	02/21/2018 15:07	00:41:43	Static	81750522.T02
1197	02/21/2018 15:30	00:40:43	Static	56750521.T02
1198	02/21/2018 16:41	00:44:03	Static	56750522.T02
1199	02/21/2018 17:08	00:43:03	Static	81750523.T02
1200	02/21/2018 18:19	00:53:27	Static	56750523.T02
1201	02/21/2018 18:36	00:21:16	Static	81750524.T02
1202	02/21/2018 19:32	00:21:11	Static	56750524.T02
1203	02/21/2018 23:06	00:22:42	Static	56750525.T02
8000	03/14/2018 15:29	00:25:16	Static	37380730.T02
8001	03/14/2018 18:22	00:24:38	Static	37380731.T02
8002	03/14/2018 21:20	00:26:59	Static	37380732.T02
8003	03/14/2018 22:51	00:24:27	Static	37380733.T02
8004	03/15/2018 12:30	00:26:48	Static	37380740.T02
8005	03/15/2018 14:48	00:24:41	Static	37380741.T02
8006	03/15/2018 19:16	00:24:45	Static	37380742.T02
8007	03/16/2018 13:30	00:37:04	Static	37380750.T02
8008	03/16/2018 15:02	00:25:25	Static	37380751.T02

Data from nearby CORS was obtained for each day as needed.

GNSS DATA PROCESSING

The GNSS data files were processed using the baseline processor in Trimble Business Center (TBC) version 4.00. Precise ephemerides were used (IGS Rapid). Table 3 lists the results of the processing.

Table 3 - Baseline Processing Summary

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
ZHU1	TXCN	2.8	0.010	0.042	9	112	44	01/24/2018 13:43
TXHV	ZHU1	2.8	0.016	0.049	9	112	87	01/24/2018 13:43
ZHU1	6001	2.8	0.016	0.050	9	111	89	01/24/2018 13:44
TXCN	6001	1.7	0.008	0.033	15	123	45	01/24/2018 13:44

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
TXHV	6001	1.7	0.005	0.022	14	123	4	01/24/2018 13:44
6001	132	1.6	0.012	0.022	13	300	24	01/24/2018 20:52
6001	133	1.4	0.017	0.028	14	6	24	01/24/2018 21:25
TXCN	TXHV	4.1	0.007	0.028	16	180	43	01/25/2018 08:59
TXMD	TXHV	4.1	0.008	0.034	15	180	44	01/25/2018 08:59
ZHU1	TXMD	3.2	0.015	0.049	9	141	124	01/25/2018 14:22
TXHV	ZHU1	3.2	0.014	0.044	10	141	87	01/25/2018 14:22
ZHU1	1000	2.9	0.014	0.046	9	141	96	01/25/2018 14:23
TXCN	1000	1.9	0.010	0.031	15	141	52	01/25/2018 14:23
TXMD	1000	1.9	0.006	0.027	14	141	37	01/25/2018 14:23
TXHV	1000	1.9	0.006	0.025	15	141	9	01/25/2018 14:23
1000	1001	2.3	0.013	0.034	16	302	23	01/25/2018 15:13
1000	1002	1.5	0.015	0.028	15	301	19	01/25/2018 15:57
1000	1003	1.5	0.015	0.031	15	300	12	01/25/2018 16:23
1000	1004	1.4	0.013	0.022	16	300	27	01/25/2018 17:15
1000	1005	1.5	0.014	0.018	14	300	23	01/25/2018 18:06
1000	1006	1.5	0.013	0.022	14	301	19	01/25/2018 18:40
1000	1007	1.5	0.011	0.025	14	300	18	01/25/2018 19:01
1000	1008	1.4	0.015	0.024	13	301	16	01/25/2018 20:14
1000	1009	1.6	0.013	0.024	12	301	16	01/25/2018 20:45
1000	1010	1.4	0.011	0.020	16	301	27	01/25/2018 22:02
1000	1011	1.5	0.011	0.020	16	300	19	01/25/2018 22:29
1000	1012	1.5	0.014	0.025	16	298	27	01/25/2018 23:05
TXCN	TXCV	3.6	0.009	0.039	14	144	33	01/26/2018 11:59
ZHU1	TXCV	2.8	0.009	0.040	9	142	47	01/26/2018 14:59
ZHU1	1013	3.2	0.010	0.055	8	142	41	01/26/2018 14:59
TXCN	1013	2.1	0.007	0.035	12	142	17	01/26/2018 14:59
TXCV	1013	2.1	0.006	0.029	12	142	16	01/26/2018 14:59
1013	1014	1.7	0.013	0.031	15	302	16	01/26/2018 15:27
1013	1015	2.0	0.018	0.033	14	300	24	01/26/2018 16:00
1013	1016	1.9	0.018	0.040	13	300	17	01/26/2018 16:27
1013	1017	1.4	0.014	0.045	14	300	17	01/26/2018 17:01
1013	1018	1.4	0.013	0.022	15	300	17	01/26/2018 17:34
1013	1019	1.9	0.013	0.021	13	301	18	01/26/2018 18:19
1013	1020	1.5	0.012	0.023	14	301	12	01/26/2018 18:52
1013	1021	1.7	0.012	0.026	13	301	19	01/26/2018 19:35
1013	1022	1.7	0.013	0.026	15	301	21	01/26/2018 20:04
1013	1023	1.8	0.012	0.022	15	300	20	01/26/2018 20:51
1013	1024	1.6	0.011	0.019	14	300	6	01/26/2018 21:41
ZHU1	1025	2.8	0.017	0.055	9	122	67	01/27/2018 15:55
TXCN	1025	2.2	0.008	0.034	15	122	34	01/27/2018 15:55
1025	TXNV	2.2	0.008	0.038	15	122	27	01/27/2018 15:55
TXHV	1025	2.2	0.009	0.040	15	122	40	01/27/2018 15:55
1025	1026	1.7	0.007	0.015	14	301	1	01/27/2018 16:06
1025	1027	1.4	0.013	0.027	14	300	13	01/27/2018 16:42
1025	1028	1.5	0.013	0.019	15	299	18	01/27/2018 17:38
1025	1029	1.4	0.012	0.018	16	301	24	01/27/2018 18:11
1025	1030	1.8	0.013	0.023	15	301	13	01/27/2018 18:38
1025	1031	1.7	0.013	0.022	14	300	8	01/27/2018 20:10
1025	1032	1.6	0.013	0.022	13	301	17	01/27/2018 20:45
1025	1033	1.6	0.013	0.021	15	301	20	01/27/2018 21:26
ZHU1	1034	3.2	0.009	0.040	10	130	36	01/28/2018 14:07
TXCN	1034	1.7	0.006	0.026	15	130	21	01/28/2018 14:07
1034	1035	1.6	0.011	0.023	15	302	10	01/28/2018 14:40
1034	1036	1.5	0.013	0.025	16	301	11	01/28/2018 15:29

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
1034	1037	2.1	0.032	0.075	14	301	17	01/28/2018 16:07
1034	1038	1.5	0.012	0.024	16	298	22	01/28/2018 16:51
1034	1039	1.5	0.013	0.021	16	300	18	01/28/2018 17:33
1034	1040	1.4	0.012	0.017	16	300	11	01/28/2018 18:12
1034	1041	1.6	0.011	0.024	15	301	16	01/28/2018 19:00
1034	1042	1.4	0.014	0.023	15	301	19	01/28/2018 20:02
TXCN	TXHE	4.0	0.009	0.027	15	288	66	01/28/2018 23:59
TXNV	TXCN	4.3	0.009	0.027	15	288	60	01/28/2018 23:59
ZHU1	TXCN	3.2	0.008	0.035	10	152	44	01/29/2018 14:37
ZHU1	TXNV	3.2	0.014	0.047	10	152	85	01/29/2018 14:37
ZHU1	1043	2.8	0.012	0.042	10	151	59	01/29/2018 14:37
TXCN	1043	1.7	0.010	0.032	15	151	57	01/29/2018 14:37
TXHE	1043	1.7	0.006	0.025	15	151	13	01/29/2018 14:37
TXNV	1043	1.7	0.007	0.032	15	151	37	01/29/2018 14:37
1043	1044	1.7	0.014	0.027	16	301	16	01/29/2018 15:28
1043	1045	1.6	0.014	0.028	15	300	26	01/29/2018 16:12
1043	1046	1.4	0.012	0.020	17	301	26	01/29/2018 17:04
1043	1047	1.4	0.012	0.017	16	300	27	01/29/2018 18:03
1043	1048	2.1	0.011	0.028	13	300	28	01/29/2018 19:04
1043	1049	1.4	0.013	0.022	15	300	16	01/29/2018 19:57
1043	1050	1.6	0.013	0.024	13	300	13	01/29/2018 20:34
1043	1051	1.5	0.011	0.019	16	301	9	01/29/2018 21:18
1043	1052	1.5	0.011	0.020	15	298	15	01/29/2018 21:48
ZHU1	ROD1	3.2	0.007	0.032	10	135	22	01/30/2018 14:37
ZHU1	1053	3.2	0.005	0.020	10	134	9	01/30/2018 14:37
ROD1	1053	1.8	0.007	0.029	15	134	14	01/30/2018 14:37
1053	1054	1.5	0.013	0.027	16	300	14	01/30/2018 15:24
1053	1055	2.2	0.017	0.058	11	300	25	01/30/2018 16:14
1053	1056	1.7	0.013	0.029	14	300	13	01/30/2018 16:51
1053	1057	1.5	0.012	0.018	16	300	19	01/30/2018 17:49
1053	1058	1.5	0.011	0.020	15	299	16	01/30/2018 18:30
1053	1059	1.4	0.011	0.024	16	299	16	01/30/2018 18:44
1053	1060	1.5	0.012	0.022	14	301	27	01/30/2018 19:26
1053	1061	1.6	0.013	0.024	14	300	28	01/30/2018 20:05
1053	1062	1.8	0.012	0.021	15	300	15	01/30/2018 20:45
ZHU1	TXCM	2.8	0.015	0.051	9	136	124	01/31/2018 15:08
ZHU1	1063	3.2	0.017	0.057	9	136	104	01/31/2018 15:09
TXCM	1063	1.9	0.007	0.033	13	136	32	01/31/2018 15:09
1063	1064	1.8	0.015	0.030	14	301	22	01/31/2018 15:47
1063	1065	1.5	0.012	0.028	16	301	14	01/31/2018 16:24
1063	1066	1.4	0.014	0.027	16	301	12	01/31/2018 16:56
1063	1067	1.5	0.015	0.023	15	301	14	01/31/2018 17:25
1063	1068	1.4	0.013	0.021	17	300	23	01/31/2018 18:11
1063	1069	1.7	0.012	0.024	14	301	13	01/31/2018 19:21
1063	1070	1.6	0.018	0.031	12	300	20	01/31/2018 20:12
1063	1071	1.7	0.014	0.022	13	301	13	01/31/2018 20:45
1063	1072	1.8	0.012	0.020	14	302	11	01/31/2018 21:30
ZHU1	TXHE	2.9	0.012	0.038	10	217	72	02/01/2018 14:52
ZHU1	ROD1	2.9	0.006	0.024	10	217	22	02/01/2018 14:52
ZHU1	TXBH	2.9	0.012	0.038	10	217	62	02/01/2018 14:52
ZHU1	1073	2.9	0.011	0.036	10	216	66	02/01/2018 14:52
TXHE	1073	1.7	0.005	0.021	15	216	31	02/01/2018 14:52
ROD1	1073	1.7	0.009	0.028	15	216	53	02/01/2018 14:52
TXBH	1073	1.7	0.004	0.014	15	216	6	02/01/2018 14:52
1073	1074	1.4	0.014	0.025	16	300	10	02/01/2018 15:17

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
1073	1075	1.5	0.018	0.032	15	300	15	02/01/2018 15:43
1073	1076	1.3	0.012	0.022	16	300	12	02/01/2018 16:39
1073	1077	1.4	0.012	0.018	16	300	27	02/01/2018 17:22
1073	1078	1.3	0.012	0.018	15	300	29	02/01/2018 17:44
TXBH	TXRS	4.2	0.006	0.023	15	288	33	02/01/2018 23:59
ZHU1	TXBH	2.8	0.013	0.041	10	141	62	02/02/2018 15:33
ZHU1	TXRS	2.8	0.013	0.041	10	141	67	02/02/2018 15:33
ZHU1	1084	3.3	0.013	0.040	10	141	58	02/02/2018 15:33
ROD1	1084	1.9	0.010	0.031	14	141	51	02/02/2018 15:33
TXBH	1084	1.9	0.006	0.023	14	141	11	02/02/2018 15:33
TXRS	1084	1.9	0.006	0.027	14	141	22	02/02/2018 15:33
1084	1085	1.4	0.012	0.027	14	301	11	02/02/2018 16:10
1084	1086	1.3	0.013	0.021	16	301	28	02/02/2018 16:43
1084	1087	1.4	0.012	0.021	15	299	27	02/02/2018 17:57
1084	1088	1.5	0.012	0.022	14	301	10	02/02/2018 19:17
1084	1089	2.1	0.015	0.026	12	300	20	02/02/2018 20:03
1084	1090	1.6	0.012	0.021	14	301	28	02/02/2018 20:37
1084	1091	1.5	0.012	0.021	16	301	22	02/02/2018 21:11
1084	1092	1.5	0.012	0.020	17	301	14	02/02/2018 22:04
TXCV	TXLI	4.2	0.006	0.026	14	288	44	02/02/2018 23:59
ZHU1	TXCV	2.9	0.010	0.045	8	174	47	02/03/2018 14:29
ZHU1	TXLI	2.9	0.011	0.041	8	176	55	02/03/2018 14:29
ZHU1	1093	2.9	0.013	0.051	8	174	60	02/03/2018 14:30
TXCV	1093	1.7	0.007	0.030	14	173	20	02/03/2018 14:30
TXLI	1093	1.7	0.007	0.033	14	174	33	02/03/2018 14:30
1093	1094	1.6	0.011	0.025	15	300	7	02/03/2018 14:58
1093	1095	2.0	0.015	0.029	14	300	9	02/03/2018 15:29
1093	1096	1.5	0.018	0.035	12	300	9	02/03/2018 15:57
1093	1097	1.4	0.012	0.027	15	301	14	02/03/2018 16:24
1093	1098	1.4	0.013	0.025	16	300	16	02/03/2018 16:50
1093	1099	1.4	0.012	0.019	15	301	13	02/03/2018 17:13
ZHU1	TXLI	2.9	0.013	0.046	10	150	55	02/04/2018 14:14
ZHU1	1103	2.9	0.015	0.057	9	149	53	02/04/2018 14:15
TXLI	1103	3.0	0.004	0.019	9	149	5	02/04/2018 14:15
1103	1104	1.7	0.014	0.030	14	300	17	02/04/2018 14:46
1103	1105	1.8	0.012	0.025	13	300	6	02/04/2018 15:13
1103	1106	1.6	0.014	0.033	12	301	10	02/04/2018 15:42
1103	1107	1.4	0.013	0.025	15	297	16	02/04/2018 16:21
1103	1108	1.6	0.013	0.019	16	300	18	02/04/2018 17:18
1103	1109	1.4	0.012	0.019	16	301	12	02/04/2018 17:43
1103	1110	1.6	0.009	0.018	14	299	5	02/04/2018 18:07
1103	1111	1.4	0.010	0.022	16	299	10	02/04/2018 18:35
1103	1112	1.7	0.012	0.024	14	301	17	02/04/2018 19:02
ZHU1	TXOR	3.0	0.017	0.063	8	126	147	02/05/2018 15:13
ZHU1	1115	2.9	0.017	0.066	8	124	149	02/05/2018 15:14
TXOR	1115	3.0	0.004	0.015	9	124	4	02/05/2018 15:14
1115	1116	1.3	0.015	0.029	16	300	13	02/05/2018 15:48
1115	1117	1.3	0.012	0.023	16	301	15	02/05/2018 16:27
TXOR	1117	2.0	0.020	0.036	8	301	12	02/05/2018 16:27
1115	1118	1.4	0.013	0.020	16	301	18	02/05/2018 17:02
TXOR	1118	1.8	0.019	0.028	9	301	17	02/05/2018 17:02
1115	1119	1.4	0.019	0.028	14	6	18	02/05/2018 17:08
TXOR	1119	1.8	0.028	0.040	9	6	17	02/05/2018 17:08
TXOR	1120	1.8	0.016	0.024	10	300	7	02/05/2018 17:34
TXOR	1121	2.2	0.023	0.039	8	300	12	02/05/2018 19:43

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
TXOR	1122	1.6	0.017	0.029	9	300	15	02/05/2018 20:19
TXOR	1123	1.8	0.017	0.031	10	301	14	02/05/2018 20:54
TXLI	TXAC	4.3	0.007	0.033	9	228	32	02/06/2018 04:59
ZHU1	TXLI	2.9	0.013	0.044	10	160	55	02/06/2018 14:04
ZHU1	1124	2.9	0.013	0.047	9	160	85	02/06/2018 14:05
TXLI	1124	2.9	0.009	0.041	10	162	36	02/06/2018 14:05
TXAC	1124	1.7	0.006	0.028	14	162	25	02/06/2018 14:05
1124	1125	1.5	0.012	0.027	16	299	11	02/06/2018 14:30
1124	1126	1.5	0.013	0.028	15	300	12	02/06/2018 14:53
1124	1127	1.6	0.014	0.028	16	300	16	02/06/2018 15:21
1124	1128	1.5	0.013	0.027	15	300	20	02/06/2018 15:39
1124	1129	1.4	0.012	0.022	16	300	28	02/06/2018 16:18
1124	1130	1.3	0.012	0.020	17	301	24	02/06/2018 16:40
1124	1131	1.3	0.012	0.018	16	300	21	02/06/2018 17:26
1124	1132	1.3	0.011	0.018	16	301	13	02/06/2018 17:48
1124	1133	1.4	0.011	0.022	16	300	15	02/06/2018 18:14
1124	1134	1.5	0.011	0.025	14	300	20	02/06/2018 18:43
ZHU1	ROD1	3.3	0.008	0.034	10	132	22	02/07/2018 13:52
ZHU1	1135	3.3	0.010	0.042	10	130	37	02/07/2018 13:53
1135	TXCN	1.7	0.010	0.035	15	135	72	02/07/2018 13:53
ROD1	1135	1.7	0.010	0.034	15	135	60	02/07/2018 13:53
1135	1136	1.4	0.012	0.027	17	301	13	02/07/2018 14:34
1135	1136	1.7	0.013	0.025	14	143	13	02/07/2018 14:40
1135	1137	1.4	0.010	0.017	15	301	17	02/07/2018 15:39
1135	1137	1.4	0.018	0.031	13	123	17	02/07/2018 15:45
1138	1135	1.4	0.024	0.029	15	130	19	02/07/2018 16:44
1139	1135	1.4	0.019	0.024	14	84	14	02/07/2018 17:18
1140	1135	1.4	0.006	0.032	15	155	25	02/07/2018 18:09
1141	1135	1.4	0.023	0.031	13	146	19	02/07/2018 19:12
1142	1135	1.4	0.011	0.019	13	135	10	02/07/2018 20:01
1143	1135	1.9	0.018	0.029	14	142	15	02/07/2018 20:49
1144	1135	1.4	0.019	0.028	15	135	17	02/07/2018 21:28
1145	1135	1.5	0.011	0.020	16	141	11	02/07/2018 22:08
TXBC	10000	1.6	0.008	0.039	13	180	44	02/08/2018 18:14
TXBC	10001	1.7	0.009	0.035	10	184	33	02/08/2018 19:30
TXBC	10002	1.6	0.007	0.023	13	141	28	02/08/2018 20:36
LKHU	TXBC	4.1	0.011	0.036	9	288	129	02/08/2018 23:59
LKHU	TXAC	4.1	0.007	0.032	9	288	48	02/08/2018 23:59
LKHU	TXGA	4.1	0.010	0.031	9	288	74	02/08/2018 23:59
LKHU	DWI1	4.1	0.011	0.034	10	288	103	02/08/2018 23:59
TXAC	TXGA	4.1	0.009	0.028	14	288	51	02/08/2018 23:59
DWI1	TXGA	4.1	0.009	0.027	15	288	71	02/08/2018 23:59
DWI1	TXBC	4.1	0.009	0.027	15	288	55	02/08/2018 23:59
COH2	TXRS	4.1	0.007	0.037	9	288	40	02/08/2018 23:59
COH2	LKHU	4.1	0.007	0.037	9	288	41	02/08/2018 23:59
LKHU	TXRS	4.1	0.010	0.033	10	288	77	02/08/2018 23:59
ZHU1	COH2	4.2	0.007	0.039	9	246	38	02/09/2018 03:32
ZHU1	LKHU	4.2	0.006	0.026	10	246	19	02/09/2018 03:32
TXRS	ZHU1	4.2	0.011	0.034	10	246	67	02/09/2018 03:32
LKHU	COH2	3.7	0.009	0.052	9	156	41	02/09/2018 10:59
LKHU	TXB6	3.7	0.007	0.032	10	156	27	02/09/2018 10:59
COH2	TXGA	3.7	0.017	0.059	9	156	70	02/09/2018 10:59
COH2	TXB6	3.7	0.009	0.050	9	156	48	02/09/2018 10:59
TXB6	TXGA	3.7	0.011	0.035	14	156	50	02/09/2018 10:59
TXB6	TXAC	3.7	0.008	0.039	13	156	26	02/09/2018 10:59

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
TXBC	10003	1.7	0.006	0.009	12	147	5	02/09/2018 13:31
TXBC	10004	1.6	0.012	0.023	13	140	13	02/09/2018 14:21
TXAC	1146	2.0	0.007	0.029	13	177	27	02/09/2018 15:32
TXBC	10005	1.3	0.008	0.042	14	137	42	02/09/2018 15:42
DWI1	10005	1.3	0.007	0.040	14	137	36	02/09/2018 15:42
TXAC	1147	1.4	0.005	0.021	14	141	23	02/09/2018 15:51
TXGA	1147	1.4	0.008	0.044	13	141	39	02/09/2018 15:51
1146	1147	1.4	0.014	0.023	14	141	13	02/09/2018 15:51
TXAC	1148	1.6	0.019	0.025	14	126	15	02/09/2018 16:35
TXGA	1148	1.5	0.007	0.010	14	126	37	02/09/2018 16:35
1146	1148	1.5	0.008	0.012	14	126	22	02/09/2018 16:35
TXBC	10006	1.5	0.008	0.031	14	141	35	02/09/2018 16:38
DWI1	10006	1.5	0.007	0.024	14	141	28	02/09/2018 16:38
LKHU	1149	1.8	0.017	0.024	9	44	57	02/09/2018 17:09
TXGA	1149	1.4	0.007	0.010	12	130	29	02/09/2018 17:09
1146	1149	1.4	0.007	0.010	12	130	28	02/09/2018 17:09
TXBC	10007	1.4	0.007	0.011	13	133	34	02/09/2018 17:19
DWI1	10007	1.4	0.005	0.008	13	133	22	02/09/2018 17:19
LKHU	1150	1.9	0.016	0.030	9	44	54	02/09/2018 17:45
TXGA	1150	1.5	0.007	0.013	12	133	24	02/09/2018 17:45
1146	1150	1.5	0.008	0.015	12	133	38	02/09/2018 17:45
TXBC	10008	1.4	0.007	0.032	13	139	23	02/09/2018 18:05
DWI1	10008	1.4	0.008	0.036	12	139	33	02/09/2018 18:05
TXBC	10009	1.5	0.012	0.019	12	146	11	02/09/2018 18:51
TXAC	1151	2.0	0.007	0.012	11	146	6	02/09/2018 19:08
TXB6	1151	1.5	0.023	0.092	11	49	25	02/09/2018 19:08
LKHU	5012	3.5	0.022	0.080	8	52	36	02/09/2018 19:09
TXAC	5012	2.0	0.008	0.031	10	155	26	02/09/2018 19:09
TXGA	5012	1.5	0.011	0.043	11	155	39	02/09/2018 19:09
TXB6	5012	1.5	0.012	0.020	12	52	11	02/09/2018 19:09
TXBC	10010	1.8	0.009	0.016	11	131	22	02/09/2018 19:34
DWI1	10010	1.8	0.008	0.014	11	131	42	02/09/2018 19:34
TXAC	1152	1.4	0.011	0.018	13	130	11	02/09/2018 20:01
TXBC	10011	1.5	0.020	0.029	15	143	18	02/09/2018 20:26
DWI1	10011	1.5	0.008	0.025	14	143	40	02/09/2018 20:26
LKHU	5013	2.0	0.015	0.054	9	51	23	02/09/2018 20:30
TXAC	5013	1.4	0.007	0.023	12	152	41	02/09/2018 20:30
COH2	5013	2.0	0.010	0.055	7	152	32	02/09/2018 20:30
TXB6	5013	1.4	0.016	0.028	15	51	16	02/09/2018 20:30
TXAC	1153	1.4	0.019	0.030	15	134	17	02/09/2018 20:39
1146	1153	1.4	0.011	0.019	15	134	10	02/09/2018 20:39
LKHU	5014	2.0	0.012	0.047	8	50	23	02/09/2018 21:10
TXAC	5014	1.5	0.013	0.031	13	150	54	02/09/2018 21:10
COH2	5014	2.0	0.007	0.030	8	150	21	02/09/2018 21:10
TXB6	5014	1.4	0.010	0.037	13	50	28	02/09/2018 21:10
TXBC	10012	1.7	0.007	0.011	13	130	24	02/09/2018 21:18
DWI1	10012	1.7	0.009	0.015	13	130	49	02/09/2018 21:18
LKHU	5015	2.9	0.026	0.095	8	55	28	02/09/2018 22:01
TXAC	5015	1.6	0.011	0.046	13	165	48	02/09/2018 22:01
COH2	5015	4.7	0.015	0.063	6	165	26	02/09/2018 22:01
TXB6	5015	1.6	0.013	0.049	15	55	23	02/09/2018 22:01
TXBC	10013	1.5	0.015	0.027	16	136	15	02/09/2018 22:09
COH2	ANG5	4.5	0.006	0.037	8	276	37	02/09/2018 23:59
COH2	TXBC	4.1	0.013	0.044	9	288	88	02/09/2018 23:59
COH2	TXLM	4.1	0.007	0.039	9	288	46	02/09/2018 23:59

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
ANG5	TXAG	4.5	0.005	0.024	9	276	17	02/09/2018 23:59
ANG5	TXBC	4.5	0.010	0.033	9	276	58	02/09/2018 23:59
ANG5	TXGA	4.5	0.011	0.035	9	276	69	02/09/2018 23:59
ANG5	TXLM	4.5	0.007	0.032	9	276	46	02/09/2018 23:59
TXBC	TXGA	4.1	0.010	0.031	16	288	122	02/09/2018 23:59
TXBC	TXLM	4.1	0.009	0.030	16	288	102	02/09/2018 23:59
TXLM	TXGA	4.1	0.005	0.022	16	288	25	02/09/2018 23:59
TXAG	DWI1	4.1	0.005	0.020	16	288	17	02/09/2018 23:59
COH2	TXAG	4.1	0.011	0.038	9	288	51	02/09/2018 23:59
TXAG	TXBC	4.1	0.009	0.028	16	288	57	02/09/2018 23:59
TXAG	TXGA	4.1	0.009	0.029	16	288	65	02/09/2018 23:59
TXAG	TXLM	4.1	0.006	0.026	16	288	46	02/09/2018 23:59
COH2	TXGA	4.1	0.013	0.042	9	288	70	02/09/2018 23:59
COH2	DWI1	4.1	0.012	0.040	9	288	68	02/09/2018 23:59
DWI1	ANG5	4.5	0.006	0.028	9	276	33	02/09/2018 23:59
DWI1	TXBC	4.1	0.010	0.030	16	288	55	02/09/2018 23:59
DWI1	TXGA	4.1	0.009	0.029	16	288	71	02/09/2018 23:59
DWI1	TXLM	4.1	0.009	0.027	16	288	56	02/09/2018 23:59
ANG5	TXDM	4.1	0.008	0.038	9	157	25	02/10/2018 09:59
TXBC	TXDM	4.1	0.008	0.033	16	168	39	02/10/2018 09:59
TXLM	TXLQ	3.5	0.005	0.022	16	156	8	02/10/2018 10:59
TXBC	10014	1.7	0.008	0.015	12	132	7	02/10/2018 15:00
TXDM	10014	1.9	0.015	0.033	11	44	33	02/10/2018 15:00
5016	COH2	4.0	0.012	0.024	7	157	10	02/10/2018 15:06
TXLM	1154	1.3	0.013	0.022	14	140	11	02/10/2018 15:48
TXGA	1154	1.3	0.017	0.027	14	140	15	02/10/2018 15:48
TXLQ	1154	1.3	0.009	0.015	14	47	5	02/10/2018 15:48
TXBC	10015	1.3	0.008	0.039	13	149	29	02/10/2018 15:52
TXDM	10015	1.3	0.014	0.075	13	50	25	02/10/2018 15:52
DWI1	10015	1.3	0.009	0.049	13	149	28	02/10/2018 15:52
TXLM	1155	1.6	0.012	0.018	14	142	11	02/10/2018 16:33
TXGA	1155	1.6	0.008	0.026	13	142	21	02/10/2018 16:33
TXLQ	1155	1.6	0.010	0.015	14	48	7	02/10/2018 16:33
ANG5	10016	1.9	0.010	0.032	9	138	29	02/10/2018 16:57
TXBC	10016	1.6	0.008	0.025	12	138	41	02/10/2018 16:57
DWI1	10016	1.6	0.018	0.025	13	138	15	02/10/2018 16:57
5017	COH2	2.0	0.010	0.015	10	184	9	02/10/2018 17:13
TXGA	1156	1.7	0.009	0.016	13	141	8	02/10/2018 17:20
TXLQ	1156	1.7	0.018	0.029	13	47	16	02/10/2018 17:20
ANG5	10017	1.9	0.007	0.012	9	131	22	02/10/2018 17:41
TXDM	10017	1.5	0.012	0.025	13	44	21	02/10/2018 17:41
DWI1	10017	1.5	0.008	0.016	13	131	24	02/10/2018 17:41
5018	COH2	2.3	0.010	0.018	8	155	10	02/10/2018 18:31
ANG5	10018	1.9	0.024	0.032	8	145	19	02/10/2018 18:35
TXDM	10018	1.5	0.012	0.023	13	48	12	02/10/2018 18:35
ANG5	10019	3.3	0.010	0.017	7	129	22	02/10/2018 19:18
TXBC	10019	1.9	0.011	0.019	11	129	43	02/10/2018 19:18
TXAG	10019	1.9	0.009	0.016	11	129	33	02/10/2018 19:18
TXDM	10019	1.9	0.007	0.012	12	43	4	02/10/2018 19:18
DWI1	10019	1.9	0.011	0.018	11	129	45	02/10/2018 19:18
COH2	5019	3.3	0.016	0.025	7	1156	14	02/10/2018 19:21
ANG5	5019	3.3	0.004	0.005	7	231	23	02/10/2018 19:21
ANG5	10020	2.4	0.012	0.020	8	130	11	02/10/2018 19:57
TXDM	10020	1.4	0.020	0.030	9	43	18	02/10/2018 19:57
COH2	5020	1.9	0.004	0.005	8	1185	21	02/10/2018 20:22

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
ANG5	5020	1.9	0.004	0.006	10	237	30	02/10/2018 20:22
ANG5	10021	1.9	0.009	0.031	8	136	30	02/10/2018 21:13
TXDM	10021	1.4	0.015	0.024	15	45	14	02/10/2018 21:13
DWI1	10021	1.4	0.007	0.025	15	136	38	02/10/2018 21:13
COH2	5021	3.4	0.017	0.072	6	156	34	02/10/2018 21:44
TXLM	5021	1.5	0.022	0.037	14	156	20	02/10/2018 21:44
TXGA	5021	1.5	0.007	0.023	14	156	39	02/10/2018 21:44
TXLQ	5021	1.5	0.012	0.040	14	52	26	02/10/2018 21:44
TXLM	ANG5	4.2	0.007	0.032	9	288	46	02/10/2018 23:59
TXLM	TXAC	4.4	0.010	0.030	13	288	55	02/10/2018 23:59
TXLM	TXAG	4.0	0.006	0.027	14	288	46	02/10/2018 23:59
TXLM	TXGA	4.4	0.006	0.023	14	288	25	02/10/2018 23:59
ANG5	TXAC	4.4	0.012	0.038	9	288	95	02/10/2018 23:59
ANG5	TXAG	4.2	0.005	0.022	9	288	17	02/10/2018 23:59
ANG5	TXGA	4.4	0.011	0.037	9	288	69	02/10/2018 23:59
TXAC	TXAG	4.4	0.011	0.036	13	288	99	02/10/2018 23:59
TXAC	TXGA	4.4	0.009	0.029	13	288	51	02/10/2018 23:59
TXAG	TXGA	4.4	0.010	0.032	14	288	65	02/10/2018 23:59
TXLM	TXLQ	2.9	0.006	0.024	14	149	8	02/11/2018 10:59
TXGA	TXLQ	2.9	0.007	0.029	14	149	18	02/11/2018 10:59
ANG5	10022	2.3	0.014	0.031	6	134	16	02/11/2018 13:50
TXAG	10022	1.6	0.006	0.014	13	134	7	02/11/2018 13:50
TXLM	5022	1.7	0.011	0.025	13	155	13	02/11/2018 13:51
ANG5	5022	2.8	0.009	0.054	6	155	43	02/11/2018 13:51
TXGA	5022	1.7	0.009	0.051	12	155	36	02/11/2018 13:51
TXLQ	5022	1.7	0.011	0.071	12	52	20	02/11/2018 13:51
ANG5	10023	2.2	0.022	0.034	7	130	18	02/11/2018 14:33
TXAG	10023	1.6	0.004	0.007	13	130	3	02/11/2018 14:33
TXLM	5023	1.7	0.008	0.016	13	152	8	02/11/2018 14:44
ANG5	5023	2.8	0.012	0.045	7	152	38	02/11/2018 14:44
TXLQ	5023	1.7	0.016	0.030	13	50	15	02/11/2018 14:44
TXGA	1157	1.7	0.005	0.009	13	176	4	02/11/2018 15:03
TXLQ	1157	1.7	0.018	0.032	13	59	17	02/11/2018 15:03
ANG5	10024	4.1	0.006	0.012	7	130	5	02/11/2018 15:15
TXAG	10024	1.6	0.011	0.022	13	130	12	02/11/2018 15:15
TXGA	1158	1.3	0.008	0.018	13	135	9	02/11/2018 15:23
TXLQ	1158	1.3	0.013	0.027	12	45	21	02/11/2018 15:23
1157	1158	1.5	0.005	0.010	13	571	5	02/11/2018 15:23
TXLM	5024	1.3	0.009	0.017	15	180	9	02/11/2018 15:42
TXGA	5024	1.3	0.006	0.035	14	180	26	02/11/2018 15:42
TXLQ	5024	1.3	0.013	0.025	15	60	13	02/11/2018 15:42
TXAC	1159	1.5	0.009	0.045	14	156	36	02/11/2018 16:02
TXGA	1159	1.3	0.021	0.032	15	156	19	02/11/2018 16:02
10025	ANG5	2.2	0.010	0.015	8	130	8	02/11/2018 16:11
TXAC	1160	1.5	0.008	0.012	14	134	34	02/11/2018 16:18
TXGA	1160	1.3	0.007	0.011	14	134	26	02/11/2018 16:18
1159	1160	1.3	0.009	0.014	16	605	8	02/11/2018 16:18
TXLM	5025	1.5	0.017	0.024	15	191	15	02/11/2018 16:30
TXGA	5025	1.5	0.008	0.027	14	191	23	02/11/2018 16:30
5025	1160	1.3	0.004	0.006	14	633	34	02/11/2018 16:30
TXLQ	5025	1.5	0.017	0.025	15	64	15	02/11/2018 16:30
TXAC	1161	1.5	0.008	0.024	13	173	34	02/11/2018 16:53
TXGA	1161	1.5	0.007	0.022	13	173	35	02/11/2018 16:53
5025	1161	1.6	0.004	0.006	13	535	42	02/11/2018 16:53
TXLM	10026	1.5	0.007	0.011	13	129	28	02/11/2018 17:03

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
ANG5	10026	2.0	0.026	0.029	9	129	19	02/11/2018 17:03
TXAG	10026	1.5	0.007	0.011	13	129	26	02/11/2018 17:03
TXAC	116	1.6	0.008	0.012	13	132	37	02/11/2018 17:10
TXGA	116	1.5	0.007	0.011	13	132	43	02/11/2018 17:10
TXAC	1163	1.5	0.008	0.041	13	140	34	02/11/2018 17:44
TXGA	1163	1.5	0.007	0.039	13	140	49	02/11/2018 17:44
TXAC	TXLI	4.3	0.006	0.028	14	282	32	02/11/2018 23:59
TXAC	TXWI	3.2	0.007	0.031	13	155	29	02/12/2018 10:59
TXLI	TXWI	3.2	0.008	0.035	14	156	48	02/12/2018 10:59
TXAC	1164	1.5	0.007	0.014	12	135	25	02/12/2018 15:25
TXLI	1164	1.3	0.006	0.011	12	135	36	02/12/2018 15:25
TXWI	1164	1.3	0.012	0.023	13	45	12	02/12/2018 15:25
TXAC	1165	1.5	0.009	0.036	14	146	26	02/12/2018 16:13
TXLI	1165	1.4	0.021	0.028	16	146	17	02/12/2018 16:13
TXWI	1165	1.4	0.020	0.080	15	49	31	02/12/2018 16:13
TXAC	1166	1.5	0.018	0.031	14	152	18	02/12/2018 17:34
TXLI	1166	1.5	0.007	0.036	14	152	49	02/12/2018 17:34
TXWI	1166	1.5	0.010	0.056	14	51	24	02/12/2018 17:34
TXAC	1167	1.7	0.008	0.016	13	127	35	02/12/2018 18:28
TXLI	1167	1.5	0.012	0.045	13	146	60	02/12/2018 18:28
TXWI	1167	1.5	0.018	0.030	9	48	16	02/12/2018 18:28
TXAC	TXWI	5.5	0.008	0.038	14	121	29	02/13/2018 13:58
TXAC	1168	1.6	0.009	0.031	14	175	39	02/13/2018 16:14
TXWI	1168	1.6	0.017	0.056	14	58	17	02/13/2018 16:14
TXAC	TXHD	5.6	0.008	0.035	14	151	36	02/13/2018 16:26
TXWI	TXHD	5.3	0.007	0.030	14	151	27	02/13/2018 16:26
TXHD	1168	1.6	0.017	0.053	14	46	15	02/13/2018 16:26
TXAC	1169	1.5	0.010	0.047	12	142	43	02/13/2018 19:05
TXWI	1169	1.4	0.022	0.079	13	48	25	02/13/2018 19:05
TXHD	1169	1.4	0.013	0.021	13	48	10	02/13/2018 19:05
ANG5	TXLM	4.5	0.006	0.028	9	288	46	02/13/2018 23:59
ANG5	TXWH	4.5	0.009	0.030	9	288	61	02/13/2018 23:59
TXLM	DWI1	4.3	0.008	0.027	16	288	56	02/13/2018 23:59
TXLM	TXWH	4.2	0.009	0.029	16	288	106	02/13/2018 23:59
DWI1	TXAG	4.3	0.005	0.018	16	286	17	02/13/2018 23:59
DWI1	TXWH	4.3	0.009	0.028	16	288	77	02/13/2018 23:59
TXLM	TXLQ	2.3	0.005	0.022	15	156	8	02/14/2018 10:59
TXWH	TXDM	2.3	0.007	0.030	15	156	36	02/14/2018 10:59
DWI1	TXLQ	2.3	0.011	0.032	15	156	58	02/14/2018 10:59
TXLM	1170	1.7	0.016	0.031	14	146	17	02/14/2018 14:39
TXLQ	1170	1.7	0.011	0.053	14	49	21	02/14/2018 14:39
TXAG	1170	1.7	0.010	0.056	14	146	30	02/14/2018 14:39
ANG5	1171	2.3	0.018	0.031	8	140	18	02/14/2018 15:36
TXAG	1171	1.3	0.013	0.024	15	140	14	02/14/2018 15:36
ANG5	1172	2.0	0.010	0.016	10	126	9	02/14/2018 17:11
TXDM	1172	1.4	0.018	0.028	15	42	16	02/14/2018 17:11
TXAG	1172	1.4	0.024	0.032	15	126	20	02/14/2018 17:11
TXWH	1173	1.8	0.009	0.037	12	143	28	02/14/2018 19:02
TXDM	1173	1.6	0.011	0.018	12	48	9	02/14/2018 19:02
DWI1	1174	1.5	0.012	0.019	14	151	11	02/14/2018 20:34
TXAG	1174	1.6	0.006	0.024	15	151	23	02/14/2018 20:34
DWI1	1175	1.5	0.007	0.011	14	141	5	02/14/2018 21:23
TXAG	1175	1.5	0.012	0.022	14	141	12	02/14/2018 21:23
DWI1	1176	1.4	0.011	0.019	16	127	11	02/14/2018 22:16
TXAG	1176	1.4	0.015	0.026	16	127	15	02/14/2018 22:16

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
DWI1	1177	1.4	0.011	0.019	16	1158	11	02/14/2018 23:40
TXAG	1177	1.4	0.003	0.005	15	231	27	02/14/2018 23:40
ANG5	TXAG	4.1	0.005	0.021	9	288	17	02/14/2018 23:59
ANG5	TXLM	4.1	0.006	0.029	9	288	46	02/14/2018 23:59
ANG5	TXWH	4.1	0.010	0.033	9	288	61	02/14/2018 23:59
TXAG	TXGA	4.1	0.010	0.030	9	288	65	02/14/2018 23:59
TXAG	TXLM	4.1	0.006	0.026	10	288	46	02/14/2018 23:59
TXAG	TXWH	4.1	0.010	0.032	10	288	70	02/14/2018 23:59
TXLM	TXGA	4.1	0.006	0.023	10	288	25	02/14/2018 23:59
TXLM	TXWH	4.1	0.010	0.033	10	288	106	02/14/2018 23:59
ANG5	TXGA	4.1	0.010	0.034	9	288	69	02/14/2018 23:59
TXGA	TXWH	4.1	0.010	0.033	10	288	130	02/14/2018 23:59
ANG5	TXBC	4.2	0.011	0.035	9	228	58	02/15/2018 04:59
TXAG	DWI1	4.1	0.005	0.022	10	216	17	02/15/2018 04:59
TXAG	TXBC	4.2	0.010	0.032	10	228	57	02/15/2018 04:59
TXBC	DWI1	4.2	0.011	0.034	10	216	55	02/15/2018 04:59
TXLM	TXBC	4.2	0.011	0.034	10	228	102	02/15/2018 04:59
TXLM	DWI1	4.1	0.010	0.031	10	216	56	02/15/2018 04:59
TXWH	TXBC	4.2	0.007	0.028	10	228	38	02/15/2018 04:59
TXWH	DWI1	4.1	0.012	0.037	10	216	77	02/15/2018 04:59
ANG5	DWI1	4.1	0.007	0.032	9	216	33	02/15/2018 04:59
TXGA	TXBC	4.2	0.012	0.037	9	228	122	02/15/2018 04:59
TXGA	DWI1	4.1	0.011	0.035	9	216	71	02/15/2018 04:59
TXAG	TXLQ	3.0	0.012	0.038	10	153	50	02/15/2018 10:59
TXBC	TXLQ	4.2	0.014	0.043	10	153	107	02/15/2018 10:59
TXLM	TXLQ	3.0	0.005	0.021	10	153	8	02/15/2018 10:59
TXWH	TXLQ	3.4	0.014	0.045	10	153	113	02/15/2018 10:59
DWI1	TXLQ	3.0	0.013	0.039	10	144	58	02/15/2018 10:59
TXGA	TXLQ	3.0	0.007	0.029	10	153	18	02/15/2018 10:59
ANG5	TXLQ	3.0	0.013	0.043	9	153	52	02/15/2018 10:59
1178	TXGA	1.5	0.018	0.033	15	184	19	02/15/2018 13:54
1178	TXLQ	1.5	0.015	0.032	15	61	16	02/15/2018 13:54
1178	TXLM	1.5	0.006	0.031	15	184	22	02/15/2018 13:54
TXLQ	1179	1.6	0.013	0.064	13	58	24	02/15/2018 14:10
TXLM	1179	1.6	0.007	0.034	13	172	26	02/15/2018 14:10
TXAG	1180	1.6	0.008	0.041	13	137	28	02/15/2018 15:01
DWI1	1180	3.0	0.012	0.065	7	137	24	02/15/2018 15:01
TXAG	1181	1.3	0.008	0.044	14	142	26	02/15/2018 15:13
1181	DWI1	3.0	0.019	0.030	7	142	16	02/15/2018 15:13
ANG5	1182	2.0	0.012	0.039	9	142	30	02/15/2018 16:22
1182	TXAG	1.6	0.022	0.027	14	142	18	02/15/2018 16:22
DWI1	1183	2.0	0.014	0.029	8	39	16	02/15/2018 18:03
TXBC	1183	2.0	0.010	0.021	8	131	53	02/15/2018 18:03
DWI1	1184	2.3	0.011	0.045	8	147	31	02/15/2018 19:08
1184	TXBC	3.4	0.016	0.068	7	147	45	02/15/2018 19:08
ANG5	1185	1.9	0.010	0.017	8	132	77	02/15/2018 22:00
DWI1	1185	1.6	0.011	0.017	8	96	56	02/15/2018 22:00
TXBC	1185	1.6	0.008	0.013	8	132	40	02/15/2018 22:00
TXHE	TXLV	4.1	0.011	0.032	10	288	131	02/15/2018 23:59
TXCN	TXCV	3.3	0.009	0.036	10	151	33	02/16/2018 10:59
TXCN	TXHE	3.4	0.012	0.038	10	156	66	02/16/2018 10:59
TXCN	TXLI	4.4	0.011	0.032	10	289	72	02/16/2018 10:59
TXCN	TXLV	3.4	0.013	0.039	10	156	66	02/16/2018 10:59
TXCN	TXNV	3.4	0.012	0.039	10	151	60	02/16/2018 10:59
TXCV	TXNV	3.3	0.014	0.046	9	151	94	02/16/2018 10:59

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
TXHE	TXCV	3.3	0.014	0.046	9	151	97	02/16/2018 10:59
TXHE	TXNV	3.4	0.008	0.035	10	151	31	02/16/2018 10:59
TXLI	TXHE	3.4	0.014	0.044	10	156	125	02/16/2018 10:59
TXLI	TXCV	3.0	0.009	0.037	9	151	44	02/16/2018 10:59
TXLI	TXLV	3.4	0.014	0.042	10	156	78	02/16/2018 10:59
TXLI	TXNV	3.4	0.015	0.046	9	151	130	02/16/2018 10:59
TXLV	TXCV	3.3	0.008	0.036	9	151	48	02/16/2018 10:59
TXNV	TXLV	2.9	0.013	0.041	14	151	117	02/16/2018 10:59
TXCV	GCP_178_REV	1.5	0.012	0.039	14	51	30	02/16/2018 16:42
GCP_178_REV	TXLI	2.0	0.020	0.025	9	152	15	02/16/2018 16:42
GCP_180_REV_2	TXLV	1.8	0.008	0.038	13	152	38	02/16/2018 18:08
GCP_180_REV_2	TXLI	1.9	0.012	0.064	8	152	40	02/16/2018 18:08
GCP_180_REV_2	TXCV	1.8	0.014	0.071	13	51	26	02/16/2018 18:08
GCP_166_REV	TXLV	1.6	0.013	0.054	11	147	38	02/16/2018 18:48
GCP_166_REV	TXCV	1.6	0.019	0.035	8	43	16	02/16/2018 18:48
TXLI	GCP_166_REV	3.8	0.019	0.091	7	147	42	02/16/2018 18:48
TXCN	GCP_088_REV	2.0	0.016	0.026	8	149	15	02/16/2018 20:17
TXNV	GCP_088_REV	1.6	0.012	0.051	12	49	46	02/16/2018 20:17
TXCN	GCP_070_REV	2.2	0.017	0.047	7	150	25	02/16/2018 21:06
GCP_070_REV	TXHE	1.8	0.013	0.027	11	150	43	02/16/2018 21:06
TXCN	GCP_054_REV	2.2	0.008	0.037	8	152	35	02/16/2018 22:18
GCP_054_REV	TXNV	2.1	0.012	0.060	14	50	26	02/16/2018 22:18
TXHE	GCP_054_REV	2.1	0.007	0.035	14	152	44	02/16/2018 22:18
TXCN	20000	2.0	0.009	0.047	8	152	47	02/16/2018 23:11
TXHE	20000	1.3	0.007	0.031	15	152	35	02/16/2018 23:11
TXNV	20000	1.3	0.013	0.026	16	44	14	02/16/2018 23:11
ADKS	TXCM	4.2	0.011	0.034	10	288	96	02/16/2018 23:59
ADKS	txlg	4.2	0.011	0.034	9	288	123	02/16/2018 23:59
TXHE	txlg	4.2	0.010	0.032	10	288	78	02/16/2018 23:59
TXHE	ADKS	4.2	0.010	0.031	10	288	57	02/16/2018 23:59
TXHE	TXLV	4.2	0.010	0.032	10	288	131	02/16/2018 23:59
TXLV	txlg	4.2	0.011	0.034	9	288	207	02/16/2018 23:59
TXLV	ADKS	4.2	0.011	0.035	9	288	124	02/16/2018 23:59
TXCM	TXHE	4.2	0.010	0.031	10	288	66	02/16/2018 23:59
TXCM	txlg	4.2	0.006	0.027	10	288	35	02/16/2018 23:59
TXCM	TXLV	4.2	0.011	0.034	9	288	197	02/16/2018 23:59
ZHU1	ADKS	3.4	0.008	0.034	9	156	31	02/17/2018 10:59
ZHU1	TXHE	3.4	0.014	0.042	10	156	72	02/17/2018 10:59
ZHU1	TXHS	3.2	0.008	0.035	10	154	35	02/17/2018 10:59
ZHU1	TXHV	3.2	0.013	0.041	10	154	87	02/17/2018 10:59
ZHU1	TXLV	3.3	0.014	0.043	10	156	95	02/17/2018 10:59
ADKS	TXHS	3.4	0.006	0.025	10	154	9	02/17/2018 10:59
ADKS	TXHV	3.4	0.014	0.043	9	154	103	02/17/2018 10:59
TXHE	TXHS	3.4	0.013	0.040	10	154	65	02/17/2018 10:59
TXHE	TXHV	3.4	0.014	0.042	10	154	85	02/17/2018 10:59
TXHS	TXHV	3.2	0.014	0.043	10	154	111	02/17/2018 10:59
TXLV	TXHV	3.3	0.014	0.042	10	154	60	02/17/2018 10:59
TXLV	TXHS	3.3	0.015	0.045	9	154	129	02/17/2018 10:59
TXCM	TXHS	4.0	0.014	0.046	10	154	99	02/17/2018 10:59
TXCM	TXHV	4.0	0.015	0.046	10	154	150	02/17/2018 10:59
ZHU1	TXCM	4.0	0.014	0.045	10	156	124	02/17/2018 10:59
txlg	TXHV	4.0	0.015	0.048	9	154	153	02/17/2018 10:59
txlg	TXHS	4.0	0.014	0.043	10	154	127	02/17/2018 10:59
ZHU1	txlg	4.0	0.014	0.043	9	156	147	02/17/2018 10:59
20008	TXHV	1.6	0.021	0.038	15	51	17	02/17/2018 13:48

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
20008	TXLV	1.8	0.010	0.039	14	151	52	02/17/2018 13:48
TXCM	20009	1.4	0.010	0.040	15	178	60	02/17/2018 15:40
20009	TXHE	1.4	0.015	0.023	15	178	13	02/17/2018 15:40
TXCM	20010	1.4	0.008	0.025	14	153	40	02/17/2018 16:39
20010	txlg	1.5	0.015	0.052	13	51	36	02/17/2018 16:39
TXHE	20010	1.4	0.009	0.030	14	153	43	02/17/2018 16:39
TXCM	20011	1.5	0.013	0.050	12	145	51	02/17/2018 17:47
TXHE	20011	1.5	0.019	0.031	14	145	18	02/17/2018 17:47
20012	ADKS	3.1	0.021	0.032	8	49	18	02/17/2018 19:07
20012	TXHS	1.6	0.020	0.032	13	49	18	02/17/2018 19:07
ZHU1	20013	1.9	0.008	0.012	8	150	6	02/17/2018 20:46
ZHU1	20014	2.9	0.011	0.045	6	156	21	02/17/2018 21:42
TXBC	TXDM	4.2	0.007	0.030	16	151	39	02/20/2018 10:59
DWI1	TXBC	2.8	0.025	0.079	9	45	55	02/20/2018 14:52
DWI1	TXDM	3.7	0.018	0.073	9	44	45	02/20/2018 14:52
TXBC	1186	1.7	0.016	0.026	13	141	15	02/20/2018 18:57
TXDM	1186	1.7	0.014	0.060	13	47	29	02/20/2018 18:57
TXBC	1187	1.5	0.008	0.014	15	124	33	02/20/2018 20:05
TXDM	1187	1.5	0.015	0.026	14	41	68	02/20/2018 20:05
TXBC	1188	1.4	0.006	0.010	14	131	22	02/20/2018 20:55
TXDM	1188	1.4	0.016	0.026	14	44	47	02/20/2018 20:55
TXBC	1189	1.3	0.007	0.034	16	136	35	02/20/2018 21:37
TXDM	1189	1.3	0.012	0.021	16	45	47	02/20/2018 21:37
DWI1	1190	2.2	0.011	0.097	8	45	46	02/20/2018 22:24
TXBC	1190	2.0	0.009	0.019	15	236	11	02/20/2018 22:24
TXDM	1190	2.0	0.009	0.050	15	78	38	02/20/2018 22:24
DWI1	1191	2.6	0.010	0.052	9	117	40	02/20/2018 22:48
TXBC	1191	2.0	0.017	0.030	16	215	17	02/20/2018 22:48
TXDM	1191	1.9	0.009	0.047	16	71	26	02/20/2018 22:48
DWI1	1192	1.8	0.014	0.051	9	92	49	02/20/2018 23:44
TXBC	1192	1.5	0.003	0.005	14	177	24	02/20/2018 23:44
DWI1	TXDM	2.8	0.006	0.028	9	240	45	02/20/2018 23:59
TXDM	1192	1.5	0.011	0.039	14	46	16	02/20/2018 23:59
TXAG	DWI1	4.1	0.006	0.025	9	190	17	02/20/2018 23:59
TXAG	TXBC	4.1	0.009	0.030	10	288	57	02/20/2018 23:59
TXAG	TXPT	4.4	0.010	0.033	10	288	167	02/20/2018 23:59
TXPT	DWI1	4.4	0.013	0.044	9	190	175	02/20/2018 23:59
TXBC	DWI1	4.1	0.012	0.038	9	190	55	02/20/2018 23:59
TXBC	TXPT	4.4	0.011	0.033	10	288	222	02/20/2018 23:59
DWI1	1193	1.4	0.009	0.033	14	171	38	02/21/2018 00:02
TXBC	1193	1.4	0.006	0.021	14	171	28	02/21/2018 00:02
ANG5	TXAG	3.1	0.008	0.036	9	156	17	02/21/2018 10:59
ANG5	TXDM	3.8	0.009	0.041	9	152	25	02/21/2018 10:59
ANG5	TXPT	3.1	0.015	0.045	9	156	165	02/21/2018 10:59
ANG5	TXWI	3.1	0.015	0.045	9	152	122	02/21/2018 10:59
TXAG	TXDM	3.8	0.009	0.040	10	152	34	02/21/2018 10:59
TXAG	TXWI	3.0	0.014	0.044	10	152	124	02/21/2018 10:59
TXDM	TXWI	3.8	0.014	0.044	10	152	144	02/21/2018 10:59
TXPT	TXDM	3.8	0.014	0.043	9	152	188	02/21/2018 10:59
TXPT	TXWI	3.0	0.009	0.039	10	152	43	02/21/2018 10:59
ANG5	DWI1	3.0	0.014	0.061	8	58	33	02/21/2018 10:59
DWI1	TXDM	2.8	0.016	0.075	8	58	45	02/21/2018 10:59
DWI1	TXWI	2.9	0.027	0.080	8	58	133	02/21/2018 10:59
ANG5	TXBC	3.4	0.004	0.006	8	156	58	02/21/2018 10:59
TXBC	TXDM	3.8	0.009	0.037	10	152	39	02/21/2018 10:59

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
TXBC	TXWI	3.4	0.014	0.042	10	152	179	02/21/2018 10:59
TXAG	1194	1.9	0.005	0.024	14	174	7	02/21/2018 13:53
1194	DWI1	1.8	0.017	0.094	12	38	18	02/21/2018 13:53
TXAG	1195	1.7	0.005	0.009	13	133	3	02/21/2018 14:12
1194	1195	1.9	0.010	0.020	13	133	9	02/21/2018 14:12
DWI1	1195	1.7	0.016	0.029	12	34	16	02/21/2018 14:12
TXDM	1196	1.5	0.015	0.076	15	42	21	02/21/2018 15:07
1196	1197	1.5	0.012	0.018	15	1114	11	02/21/2018 15:30
1197	TXBC	1.5	0.009	0.034	15	122	29	02/21/2018 15:30
DWI1	1197	1.3	0.040	0.032	12	15	28	02/21/2018 15:30
ANG5	1198	2.0	0.023	0.037	10	132	19	02/21/2018 16:41
1198	1199	1.5	0.013	0.025	14	971	12	02/21/2018 17:08
TXDM	1199	1.5	0.018	0.038	15	43	4	02/21/2018 17:08
ANG5	1200	3.3	0.009	0.036	8	161	8	02/21/2018 18:19
1200	TXDM	1.6	0.016	0.070	13	54	27	02/21/2018 18:19
ANG5	1201	3.3	0.008	0.014	7	127	5	02/21/2018 18:36
1200	1201	1.5	0.015	0.025	12	127	14	02/21/2018 18:36
1201	TXAG	1.5	0.013	0.023	12	127	12	02/21/2018 18:36
TXDM	1202	1.5	0.017	0.029	14	42	42	02/21/2018 19:32
TXAG	1202	1.5	0.008	0.014	15	127	26	02/21/2018 19:32
TXBC	1202	1.5	0.009	0.016	14	127	76	02/21/2018 19:32
1203	TXPT	1.4	0.008	0.023	16	137	37	02/21/2018 23:06
1203	TXWI	1.4	0.016	0.022	16	46	12	02/21/2018 23:06
ROD1	TXCN	4.8	0.005	0.022	15	288	32	03/13/2018 23:59
TXHE	TXCV	3.4	0.014	0.045	9	144	97	03/14/2018 09:59
TXHE	TXHV	4.1	0.014	0.041	10	147	85	03/14/2018 09:59
TXHE	ROD1	3.4	0.012	0.035	9	168	52	03/14/2018 09:59
TXHE	TXCN	3.4	0.012	0.037	10	168	66	03/14/2018 09:59
TXCV	TXHV	3.4	0.014	0.040	13	142	61	03/14/2018 09:59
ROD1	TXHV	3.4	0.013	0.038	14	147	72	03/14/2018 09:59
ROD1	TXCV	3.4	0.011	0.034	14	144	51	03/14/2018 09:59
TXCN	TXHV	3.4	0.008	0.031	14	147	43	03/14/2018 09:59
TXCN	TXCV	3.4	0.008	0.031	14	144	33	03/14/2018 09:59
TXCV	8000	1.6	0.018	0.032	14	123	19	03/14/2018 15:29
TXHV	8000	1.5	0.013	0.050	13	152	76	03/14/2018 15:29
TXHV	8001	1.5	0.006	0.020	14	148	30	03/14/2018 18:22
TXHE	TXCV	2.9	0.046	0.025	7	67	97	03/14/2018 20:00
TXHE	TXHV	2.9	0.012	0.020	7	90	85	03/14/2018 20:00
TXCV	TXHV	2.9	0.037	0.020	7	333	61	03/14/2018 20:00
ROD1	TXHV	2.9	0.057	0.028	7	90	72	03/14/2018 20:00
ROD1	TXCV	2.9	0.008	0.013	7	67	51	03/14/2018 20:00
TXCN	TXHV	2.9	0.005	0.008	7	90	43	03/14/2018 20:00
TXCN	TXCV	2.9	0.013	0.022	7	67	33	03/14/2018 20:00
TXHE	TXCV	2.2	0.005	0.002	7	46	97	03/14/2018 21:00
TXHE	TXHV	2.2	0.020	0.005	7	91	85	03/14/2018 21:00
TXCV	TXHV	2.0	0.006	0.011	12	451	61	03/14/2018 21:00
ROD1	TXHV	2.0	0.006	0.011	12	91	72	03/14/2018 21:00
ROD1	TXCV	2.0	0.006	0.012	12	46	51	03/14/2018 21:00
TXCN	TXHV	2.0	0.004	0.007	9	91	43	03/14/2018 21:00
TXCN	TXCV	2.0	0.006	0.012	11	46	33	03/14/2018 21:00
ROD1	8002	1.9	0.007	0.036	16	162	32	03/14/2018 21:20
TXCN	8002	1.9	0.006	0.028	16	162	25	03/14/2018 21:20
TXHE	8003	1.8	0.016	0.022	9	147	13	03/14/2018 22:51
ZHU1	TXHE	4.8	0.010	0.032	9	289	72	03/15/2018 10:59
ZHU1	TXBC	4.8	0.011	0.033	9	289	123	03/15/2018 10:59

From	To	PDOP	Horz Prec	Vert Prec	SVs	Epochs	Length KM	UTC Start
TXBC	TXHE	4.8	0.010	0.031	9	289	122	03/15/2018 10:59
TXHE	8004	2.7	0.014	0.023	7	161	13	03/15/2018 12:30
ZHU1	8005	2.0	0.024	0.028	8	149	18	03/15/2018 14:48
ZHU1	8006	3.4	0.026	0.095	6	148	151	03/15/2018 19:16
TXHE	8006	3.4	0.024	0.095	6	148	160	03/15/2018 19:16
TXBC	8006	3.4	0.013	0.043	7	148	40	03/15/2018 19:16
ZHU1	TXHD	2.6	0.021	0.042	8	121	101	03/16/2018 09:59
TXHE	TXHD	2.6	0.051	0.088	8	121	172	03/16/2018 09:59
TXBC	TXHD	2.6	0.022	0.049	8	121	166	03/16/2018 09:59
TXHD	8007	1.3	0.004	0.005	15	223	2	03/16/2018 13:30
TXHD	8008	1.5	0.010	0.018	14	153	10	03/16/2018 15:02

LEAST SQUARES ADJUSTMENTS

The processed baselines were exported from TBC and processed to form input files for Geolab, a least squares adjustment program. The a priori baseline statistics were used with no scaling. Station errors (HI and centering) of 0.005 m were included. Two geoid models were used-GEOID12B and GEOID99.

The first adjustment held CORS LKHU fixed in all three dimensions (NAD83 (2011) latitude, longitude, and ellipsoidal height). The estimated variance factor was 0.90. Figure 2 is a plot of the horizontal and vertical residuals versus baseline length for this adjustment.

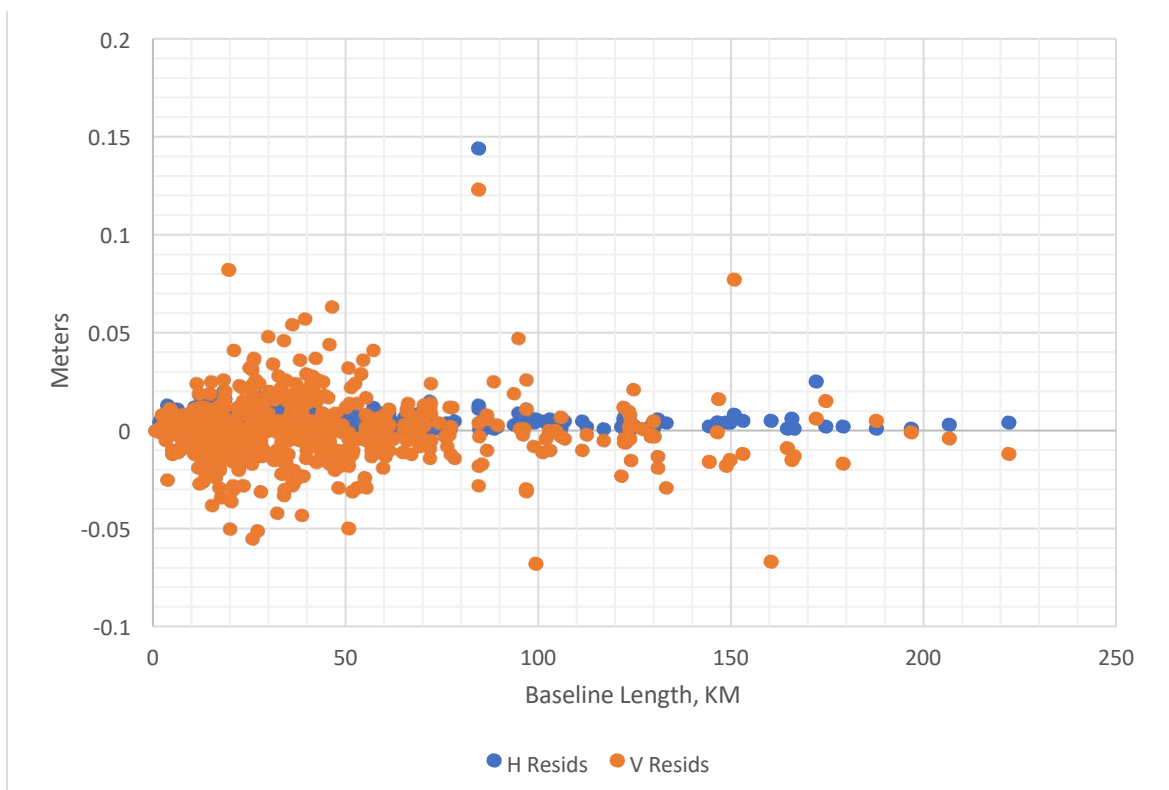


Figure 2 - Free Adjustment Residuals

Note that the highest residuals (>0.10 m) were between CORS.

The misclosures at each of the unconstrained CORS were then checked. This analysis is summarized in table 4 (all values in meters).

Table 4 - Misclosures at CORS

CORS	Azimuth	Distance	Δ Height
ADKS	89°	0.005 m	-0.022 m
ANG5	146°	0.014 m	-0.011 m
COH2	305°	0.017 m	-0.002 m
DWI1	94°	0.018 m	-0.029 m
LKHU	HELD	HELD	HELD
ROD1	33°	0.013 m	-0.095 m
TXAC	145°	0.002 m	-0.016 m
TXAG	148°	0.012 m	+0.005 m
TXBC	127°	0.025 m	-0.008 m
TXB6	159°	0.008 m	-0.015 m
TXBH	172°	0.008 m	+0.001 m
TXCM	119°	0.013 m	-0.006 m
TXCN	31°	0.003 m	-0.098 m
TXCV	119°	0.004 m	-0.030 m
TXDM	168°	0.012 m	+0.007 m
TXGA	133°	0.029 m	+0.018 m
TXHD	148°	0.017 m	-0.012 m
TXHE	13°	0.008 m	-0.026 m
TXHS	147°	0.011 m	-0.001 m
TXHV	183°	0.008 m	+0.014 m
TXLG	115°	0.011 m	-0.017 m
TXLI	119°	0.004 m	-0.004 m
TXLM	191°	0.009 m	-0.023 m
TXLQ	205°	0.017 m	-0.006 m
TXLV	63°	0.008 m	+0.023 m
TXNV	117°	0.007 m	-0.037 m
TXOR	85°	0.012 m	+0.010 m
TXPT	173°	0.022 m	-0.020 m
TXRS	179°	0.001 m	-0.026 m
TXWH	160°	0.003 m	-0.014 m
TXWI	164°	0.021 m	-0.011 m
ZHU1	33°	0.006 m	-0.087 m

The next adjustment constrained all of the CORS horizontally (NAD83 (2011) epoch 2010.0 latitude, longitude, and ellipsoidal height), with the exception of the three CORS with high ellipsoidal height misclosures from the free adjustment, denoted in red in table 4. Geoid heights were computed using the GEOID12B model. The estimated variance factor for this adjustment was 2.26. This adjustment provided the adjusted latitude and longitudes for each of the GCP stations, as well as a set of orthometric heights (derived using GEOID12B). A similar adjustment with the same constraints was then run but using the GEOID99 model instead of the GEOID12B model. This latter adjustment provided the orthometric heights derived using the GEOID99 model, which were corrected in a later step by adding a constant offset of 0.253 feet to the orthometric heights to obtain NAVD88 orthometric heights. Table 5 lists the 95% confidence regions for each of the GCP stations (values in meters).

Table 5 - Station Confidence Regions (95% - meters)

STATION	MAJOR SEMI-AXIS	AZIMUTH	MINOR SEMI-AXIS	VERTICAL
GCP_054_REV	0.017	21	0.017	0.038
GCP_070_REV	0.024	25	0.021	0.039
GCP_088_REV	0.024	92	0.023	0.038
GCP_166_REV	0.021	1	0.018	0.044
GCP_178_REV	0.025	36	0.022	0.035
GCP_180_REV	0.018	21	0.017	0.047
103	0.036	147	0.035	0.047
105	0.036	27	0.035	0.047
120	0.028	11	0.027	0.039
129	0.036	25	0.034	0.048
132	0.036	161	0.034	0.049
133	0.040	128	0.038	0.056
1000	0.015	171	0.014	0.025
1001	0.036	147	0.034	0.061
1002	0.037	152	0.034	0.053
1003	0.037	179	0.034	0.057
1004	0.036	28	0.034	0.047
1005	0.036	30	0.034	0.042
1006	0.035	55	0.035	0.046
1007	0.034	22	0.033	0.050
1008	0.037	8	0.033	0.049
1009	0.036	176	0.033	0.049
1010	0.034	81	0.034	0.044
1011	0.034	35	0.033	0.044
1012	0.037	24	0.033	0.050
1013	0.016	16	0.016	0.034
1014	0.036	148	0.035	0.062
1015	0.041	162	0.035	0.063
1016	0.041	177	0.036	0.072
1017	0.037	92	0.037	0.078
1018	0.036	47	0.035	0.052
1019	0.036	40	0.035	0.051
1020	0.036	25	0.034	0.053
1021	0.036	25	0.034	0.056
1022	0.037	9	0.034	0.056
1023	0.036	156	0.034	0.052
1024	0.035	73	0.034	0.049
1025	0.015	149	0.015	0.032
1026	0.032	159	0.031	0.044
1027	0.036	21	0.035	0.055
1028	0.036	32	0.034	0.048
1029	0.035	33	0.034	0.047
1030	0.035	41	0.034	0.052
1031	0.036	9	0.033	0.050
1032	0.036	151	0.034	0.051
1033	0.036	122	0.034	0.049
1034	0.020	12	0.020	0.037
1035	0.037	176	0.035	0.055
1036	0.038	158	0.036	0.057
1037	0.058	180	0.039	0.120
1038	0.038	40	0.037	0.056

STATION	MAJOR SEMI-AXIS	AZIMUTH	MINOR SEMI-AXIS	VERTICAL
1039	0.039	31	0.036	0.053
1040	0.037	36	0.036	0.050
1041	0.037	23	0.036	0.056
1042	0.039	8	0.036	0.055
1043	0.015	77	0.014	0.026
1044	0.036	141	0.034	0.053
1045	0.036	179	0.035	0.054
1046	0.035	38	0.034	0.045
1047	0.034	47	0.033	0.042
1048	0.034	22	0.033	0.054
1049	0.036	10	0.033	0.047
1050	0.036	164	0.034	0.049
1051	0.034	98	0.033	0.044
1052	0.034	84	0.033	0.045
1053	0.019	13	0.019	0.030
1054	0.038	149	0.036	0.055
1055	0.042	49	0.038	0.095
1056	0.038	65	0.037	0.057
1057	0.037	46	0.036	0.046
1058	0.037	29	0.036	0.048
1059	0.037	12	0.036	0.051
1060	0.037	17	0.035	0.050
1061	0.038	7	0.035	0.052
1062	0.037	134	0.036	0.048
1063	0.022	88	0.021	0.046
1064	0.040	156	0.038	0.067
1065	0.039	90	0.038	0.066
1066	0.040	68	0.038	0.065
1067	0.041	71	0.039	0.061
1068	0.039	50	0.037	0.060
1069	0.038	32	0.037	0.061
1070	0.043	159	0.039	0.068
1071	0.040	119	0.037	0.061
1072	0.039	99	0.037	0.059
1073	0.014	69	0.014	0.020
1074	0.036	153	0.033	0.047
1075	0.040	164	0.034	0.056
1076	0.035	42	0.033	0.044
1077	0.035	45	0.033	0.040
1078	0.034	44	0.033	0.039
1084	0.015	48	0.014	0.024
1085	0.035	24	0.034	0.052
1086	0.036	28	0.034	0.045
1087	0.035	36	0.033	0.045
1088	0.034	18	0.033	0.046
1089	0.037	2	0.033	0.051
1090	0.034	124	0.033	0.045
1091	0.035	90	0.033	0.045
1092	0.035	43	0.033	0.044
1093	0.017	38	0.016	0.033
1094	0.035	154	0.034	0.055
1095	0.039	167	0.035	0.059
1096	0.041	180	0.035	0.066
1097	0.036	26	0.035	0.057
1098	0.037	41	0.035	0.054
1099	0.036	49	0.034	0.049

STATION	MAJOR SEMI-AXIS	AZIMUTH	MINOR SEMI-AXIS	VERTICAL
1103	0.021	75	0.020	0.033
1104	0.039	134	0.037	0.059
1105	0.038	123	0.036	0.054
1106	0.039	26	0.038	0.063
1107	0.039	48	0.037	0.054
1108	0.039	39	0.037	0.048
1109	0.038	54	0.036	0.048
1110	0.036	60	0.035	0.048
1111	0.037	52	0.036	0.051
1112	0.038	35	0.036	0.054
1115	0.018	55	0.017	0.024
1116	0.038	172	0.036	0.053
1117	0.027	39	0.025	0.036
1118	0.027	40	0.025	0.032
1119	0.032	40	0.028	0.041
1120	0.036	37	0.032	0.042
1121	0.043	4	0.034	0.062
1122	0.037	146	0.034	0.048
1123	0.037	119	0.035	0.051
1124	0.017	79	0.017	0.034
1125	0.035	147	0.034	0.057
1126	0.036	140	0.035	0.057
1127	0.037	163	0.036	0.058
1128	0.037	180	0.036	0.056
1129	0.036	44	0.035	0.052
1130	0.036	36	0.035	0.050
1131	0.036	56	0.034	0.048
1132	0.035	60	0.034	0.048
1133	0.035	44	0.034	0.052
1134	0.035	29	0.034	0.055
1135	0.017	130	0.017	0.035
1136	0.029	142	0.027	0.047
1137	0.029	15	0.029	0.044
1138	0.047	34	0.043	0.060
1139	0.042	31	0.031	0.054
1140	0.033	174	0.032	0.063
1141	0.046	10	0.040	0.062
1142	0.036	132	0.035	0.049
1143	0.041	91	0.038	0.060
1144	0.042	60	0.041	0.058
1145	0.035	19	0.033	0.050
1146	0.015	41	0.014	0.017
1147	0.017	24	0.017	0.027
1148	0.019	33	0.018	0.018
1149	0.018	39	0.017	0.018
1150	0.018	39	0.018	0.020
1151	0.023	6	0.021	0.027
1152	0.031	126	0.030	0.034
1153	0.026	100	0.024	0.031
1154	0.019	35	0.018	0.021
1155	0.017	40	0.017	0.020
1156	0.023	44	0.022	0.027
1157	0.018	168	0.018	0.019
1158	0.018	174	0.018	0.021
1159	0.020	33	0.019	0.027
1160	0.018	36	0.017	0.018

STATION	MAJOR SEMI-AXIS	AZIMUTH	MINOR SEMI-AXIS	VERTICAL
1161	0.020	52	0.019	0.029
1162	0.020	44	0.020	0.019
1163	0.020	35	0.020	0.045
1164	0.017	31	0.016	0.018
1165	0.020	36	0.018	0.034
1166	0.018	45	0.018	0.035
1167	0.018	180	0.017	0.025
1168	0.019	51	0.018	0.039
1169	0.019	179	0.017	0.032
1170	0.018	178	0.018	0.038
1171	0.025	28	0.024	0.032
1172	0.021	46	0.019	0.024
1173	0.021	179	0.020	0.029
1174	0.021	83	0.020	0.027
1175	0.021	37	0.020	0.022
1176	0.023	20	0.022	0.028
1177	0.020	61	0.020	0.019
1178	0.019	140	0.017	0.030
1179	0.021	147	0.020	0.048
1180	0.021	30	0.020	0.054
1181	0.023	15	0.022	0.040
1182	0.025	44	0.023	0.037
1183	0.023	20	0.021	0.030
1184	0.023	162	0.021	0.059
1185	0.017	26	0.017	0.018
1186	0.024	151	0.023	0.039
1187	0.022	92	0.021	0.025
1188	0.022	41	0.021	0.023
1189	0.021	18	0.020	0.031
1190	0.017	74	0.017	0.032
1191	0.018	59	0.017	0.037
1192	0.017	19	0.017	0.020
1193	0.020	31	0.020	0.031
1194	0.018	158	0.018	0.029
1195	0.018	156	0.017	0.020
1196	0.026	43	0.025	0.047
1197	0.023	48	0.022	0.036
1198	0.032	32	0.030	0.046
1199	0.031	28	0.029	0.047
1200	0.020	178	0.018	0.035
1201	0.019	2	0.018	0.022
1202	0.018	109	0.017	0.020
1203	0.022	45	0.019	0.028
5003	0.028	162	0.027	0.037
5010	0.027	167	0.026	0.038
5011	0.026	176	0.025	0.034
5012	0.016	6	0.014	0.027
5013	0.016	107	0.015	0.027
5014	0.015	68	0.014	0.028
5015	0.017	30	0.015	0.044
5016	0.032	163	0.030	0.041
5017	0.030	35	0.029	0.031
5018	0.030	14	0.028	0.034
5019	0.021	8	0.020	0.020
5020	0.019	117	0.019	0.016
5021	0.016	32	0.015	0.029

STATION	MAJOR SEMI-AXIS	AZIMUTH	MINOR SEMI-AXIS	VERTICAL
5022	0.022	167	0.021	0.039
5023	0.022	156	0.021	0.027
5024	0.022	42	0.021	0.026
5025	0.026	44	0.024	0.030
6001	0.017	172	0.016	0.029
8000	0.024	132	0.023	0.043
8001	0.028	97	0.027	0.036
8002	0.020	74	0.019	0.037
8003	0.035	179	0.032	0.039
8004	0.033	145	0.030	0.040
8005	0.045	27	0.038	0.048
8006	0.020	35	0.018	0.052
8007	0.027	19	0.027	0.022
8008	0.030	43	0.029	0.034
10000	0.028	26	0.028	0.062
10001	0.029	168	0.028	0.056
10002	0.028	101	0.027	0.041
10003	0.028	176	0.027	0.025
10004	0.031	138	0.030	0.041
10005	0.020	7	0.020	0.046
10006	0.020	50	0.019	0.033
10007	0.020	44	0.019	0.018
10008	0.020	31	0.020	0.039
10009	0.031	8	0.029	0.035
10010	0.021	170	0.020	0.022
10011	0.023	99	0.022	0.032
10012	0.020	53	0.020	0.020
10013	0.035	18	0.032	0.046
10014	0.022	164	0.021	0.027
10015	0.017	39	0.017	0.044
10016	0.018	46	0.017	0.026
10017	0.017	40	0.016	0.019
10018	0.026	11	0.023	0.032
10019	0.013	3	0.013	0.014
10020	0.025	133	0.024	0.029
10021	0.017	57	0.017	0.026
10022	0.021	179	0.021	0.025
10023	0.022	127	0.021	0.021
10024	0.020	171	0.020	0.023
10025	0.030	30	0.028	0.031
10026	0.018	37	0.017	0.017
20000	0.017	57	0.016	0.030
20008	0.024	133	0.022	0.043
20009	0.022	38	0.021	0.033
20010	0.018	41	0.017	0.030
20011	0.025	38	0.022	0.043
20012	0.028	172	0.026	0.037
20013	0.028	68	0.028	0.029
20014	0.031	31	0.027	0.072

ADJUSTED COORDINATES

Some of the originally identified GCP locations were not suitable as Lidar GCP location and therefore these points were moved to appropriate locations. These GCP are identified with the name XXX-REV.

Table 6 - Latitude/Longitude/Ellipsoid Height (meters)

NAD83 (2011) epoch 2010.0

Station Name	GPSID	Latitude	Longitude	Ellip H m
001	1064	30°03'16.85315" N	96°36'19.38988" W	88.666
002	1072	29°56'50.96887" N	96°31'42.71712" W	74.733
003-REV	20010	30°03'23.37915" N	96°30'28.46087" W	92.491
004	1063	29°57'18.25794" N	96°24'49.75383" W	42.340
005	1071	29°50'20.83576" N	96°24'24.08847" W	77.178
006	1066	30°03'40.01836" N	96°24'18.36944" W	51.199
007	1067	30°03'26.08878" N	96°19'39.08376" W	84.822
008	1070	29°48'01.78898" N	96°18'45.16615" W	49.522
009	1069	29°56'27.65280" N	96°16'30.70469" W	46.794
012	1068	30°03'31.30710" N	96°12'32.00820" W	38.308
013-REV2	8003	30°07'40.85207" N	96°11'51.66668" W	42.914
015	1090	29°37'36.58997" N	96°07'56.73211" W	14.747
016	20011	29°56'45.57966" N	96°07'48.97177" W	15.183
017	1046	30°13'52.85604" N	96°07'29.54727" W	37.733
019	1078	30°03'57.88134" N	96°06'49.86322" W	29.119
020	1091	29°42'45.87045" N	96°05'09.12011" W	12.503
021	1044	30°09'55.50264" N	96°03'39.71620" W	47.052
022	1077	30°03'52.61620" N	96°02'14.83274" W	35.485
023	1089	29°35'46.08781" N	96°00'51.94437" W	10.882
024	10003	28°57'42.76947" N	95°59'38.09823" W	-12.474
025-REV	1186	29°08'10.80435" N	95°59'02.63483" W	-4.575
026	1092	29°43'40.27831" N	96°00'07.32013" W	6.315
027	10000	28°36'19.87346" N	95°57'37.70184" W	-24.822
028	1073	29°49'26.74635" N	95°59'28.65599" W	24.311
029	10004	28°53'08.29478" N	95°56'53.94009" W	-17.180
030-REV	1187	28°42'19.43523" N	95°56'26.55367" W	-24.358
031	1047	30°18'40.04697" N	95°59'12.98094" W	76.824
032	10014	29°03'01.16772" N	95°56'15.89424" W	-10.980
033 HCFCd	1076	29°55'53.74084" N	95°58'14.30981" W	35.808
034	1049	30°12'50.84368" N	95°56'30.39801" W	60.653
035-REV	8004	30°04'05.08006" N	95°56'05.51443" W	48.400
036-REV	20000	30°23'18.70186" N	95°55'25.10798" W	91.766
037	10002	28°45'37.94409" N	95°52'25.10766" W	-21.888
038-REV	1190	28°57'52.09851" N	95°52'18.14472" W	-13.746
039	1074	29°49'24.38835" N	95°53'23.44878" W	22.923
040-REV	1192	29°11'35.42722" N	95°52'00.83944" W	-9.257
041	1084	29°42'52.99270" N	95°51'40.69993" W	13.807
042	1048	30°18'39.37743" N	95°52'19.64095" W	78.988
043-REV	8006	28°40'03.77842" N	95°48'53.83539" W	-25.722
044	1075	29°49'21.34748" N	95°49'59.65859" W	18.863
045	1051	30°04'09.50972" N	95°50'18.81375" W	50.221

Station Name	GPSID	Latitude	Longitude	Ellip H m
046-REV	1191	29°04'01.32511" N	95°48'35.31117" W	-14.531
047-REV	1188	28°52'16.27060" N	95°48'20.98958" W	-18.475
049	1012	30°50'00.80442" N	95°50'54.23818" W	58.508
050	1088	29°37'52.82925" N	95°48'36.67221" W	0.565
051	1010	30°44'50.15165" N	95°50'33.82981" W	61.638
052	1052	29°59'32.31187" N	95°48'32.85489" W	31.452
053	1028	30°34'57.43211" N	95°48'59.37377" W	75.288
054-REV	GCP_054_REV	30°25'31.39490" N	95°47'51.24337" W	57.697
055	1173	29°15'37.93868" N	95°49'41.81484" W	-8.410
056-REV	1193	29°09'49.19051" N	95°45'07.95209" W	-12.775
057	10008	28°57'51.03009" N	95°44'27.41705" W	-20.442
058	1042	30°14'04.98588" N	95°46'12.85906" W	44.632
059	1038	30°18'42.30398" N	95°46'13.67729" W	54.744
060-REV	20012	29°42'29.83310" N	95°44'36.64208" W	2.066
061	1011	30°44'58.57395" N	95°45'26.52985" W	73.193
062-REV	1199	29°19'00.16668" N	95°42'48.22845" W	-8.110
063	1039	30°06'24.25687" N	95°43'34.31170" W	34.891
064	1029	30°38'17.56234" N	95°44'08.21176" W	71.249
065	1030	30°31'27.88356" N	95°43'46.42368" W	75.277
066-REV	1197	29°03'56.75151" N	95°41'11.76425" W	-20.588
067	1009	30°49'50.11343" N	95°44'04.41831" W	48.337
068	1061	29°59'31.81713" N	95°42'00.26385" W	18.722
069	1031	30°25'30.84076" N	95°42'18.92373" W	70.201
070-REV2	8002	30°19'01.44307" N	95°41'42.79048" W	66.546
071-REV	1189	28°52'23.09777" N	95°38'49.10844" W	-23.046
072-REV	1198	29°13'01.55859" N	95°39'15.93643" W	-14.556
073	10005	28°45'44.46570" N	95°38'33.14970" W	-24.928
074	1008	30°54'28.54281" N	95°41'05.25712" W	18.085
075	105	30°44'58.90614" N	95°40'31.04471" W	69.262
076	10007	28°57'51.36495" N	95°37'28.06826" W	-19.860
077	1060	29°51'18.08764" N	95°38'41.08120" W	7.521
078	1087	29°35'20.07863" N	95°37'26.97797" W	-6.557
079	1036	30°17'11.73670" N	95°38'26.36829" W	52.102
080-REV	1196	29°08'19.87515" N	95°36'31.29440" W	-18.873
081	1040	30°06'42.87456" N	95°36'40.57493" W	23.810
082	1032	30°26'14.12238" N	95°36'53.45387" W	42.975
083	5010	30°38'03.89625" N	95°36'47.43832" W	50.752
084-REV	1184	28°47'13.91494" N	95°34'53.67836" W	-24.355
085	133	30°31'23.50560" N	95°36'23.43537" W	37.302
086	1172	29°16'56.03179" N	95°34'27.82334" W	-13.956
087	10020	29°21'41.12913" N	95°34'28.12210" W	-11.440
088-REV	GCP_088_REV	30°21'18.63714" N	95°35'34.84192" W	42.185

Station Name	GPSID	Latitude	Longitude	Ellip H m
089	10016	29°03'01.33768" N	95°33'25.04840" W	-19.214
090	1086	29°42'28.01669" N	95°34'15.78225" W	-5.586
091	1062	29°59'42.10241" N	95°34'27.12310" W	11.304
092	1034	30°12'17.73360" N	95°34'45.36893" W	27.134
093	103	30°51'39.80083" N	95°35'35.15180" W	53.821
094	1007	30°58'04.06075" N	95°35'32.24442" W	35.947
095	5011	30°44'53.33138" N	95°34'12.87895" W	81.312
096	1035	30°17'17.14121" N	95°32'42.37687" W	28.460
097	1174	28°58'09.75066" N	95°30'13.69459" W	-21.824
098	5018	29°33'11.54768" N	95°27'32.81024" W	-5.488
099-REV	1194	29°09'25.83138" N	95°29'15.88324" W	-17.730
100-REV	1201	29°15'16.31399" N	95°28'41.51196" W	-15.537
101	132	30°31'40.54912" N	95°30'30.71626" W	75.702
102-REV	1200	29°22'38.03376" N	95°28'39.02219" W	-10.180
103	120	30°37'00.09611" N	95°30'26.59217" W	82.134
104	1006	30°58'07.51235" N	95°30'35.28354" W	31.978
105 HCPCD	1059	29°51'57.74359" N	95°29'16.44387" W	-2.572
105-REV	8005	29°51'58.05201" N	95°29'15.28577" W	-2.566
106	1015	30°25'52.48114" N	95°29'08.78359" W	84.912
107	1183	28°52'11.25217" N	95°26'50.53880" W	-25.417
108	1041	30°05'25.67224" N	95°28'24.31772" W	13.620
109	5003	30°45'02.68107" N	95°28'37.92153" W	50.995
110	5019	29°30'01.77469" N	95°24'56.44540" W	-9.033
111	1175	29°03'24.24791" N	95°25'45.82337" W	-22.120
112	1004	31°01'35.07272" N	95°27'34.53398" W	60.676
113	1016	30°21'20.84305" N	95°26'21.74427" W	43.921
114-REV	20008	30°50'45.18269" N	95°27'04.22638" W	33.946
115	1017	30°17'20.04496" N	95°26'13.35551" W	20.409
116	1053	29°59'33.20281" N	95°24'49.27712" W	3.453
117	5017	29°42'29.59847" N	95°24'43.05716" W	-13.238
118-REV	1195	29°09'34.62655" N	95°23'34.71273" W	-21.313
119-REV	8001	30°58'20.60935" N	95°26'03.68498" W	48.123
120	1177	28°55'39.06728" N	95°20'55.60875" W	-20.199
121	129	30°45'05.28285" N	95°23'51.69937" W	89.048
122	1002	30°52'30.42391" N	95°23'00.51421" W	17.708
123	1014	30°26'06.93027" N	95°22'19.18498" W	70.021
124	1018	30°11'56.53774" N	95°21'18.12284" W	16.005
125	1054	30°05'55.29571" N	95°20'34.97630" W	0.035
126	1176	29°03'55.55633" N	95°18'36.00361" W	-25.266
127-REV	1202	29°22'48.37187" N	95°18'59.42830" W	-16.934
128	1171	29°14'52.01328" N	95°18'45.24946" W	-20.849
129	1057	29°50'54.45797" N	95°18'59.36599" W	-9.034
130	5016	29°36'13.62635" N	95°18'25.60868" W	-12.670
131	1001	30°45'14.53376" N	95°19'54.22648" W	87.527
132	1024	30°17'20.48208" N	95°18'00.30025" W	20.476
133-REV	20013	29°59'33.92709" N	95°16'41.94446" W	-2.697
134	5020	29°29'09.53897" N	95°15'45.14235" W	-14.750

Station Name	GPSID	Latitude	Longitude	Ellip H m
135	1181	28°59'20.73391" N	95°14'24.31165" W	-24.258
136	5014	29°42'46.06313" N	95°13'12.67671" W	-21.302
137	1182	29°07'38.09522" N	95°14'33.56180" W	-25.201
138	1019	30°10'22.25047" N	95°12'00.56385" W	2.623
139	1180	29°02'43.11948" N	95°09'43.49695" W	-24.755
140-REV	20014	30°05'08.29566" N	95°10'24.27971" W	-9.483
141	1140	29°59'52.13337" N	95°09'50.56702" W	-7.251
142	1141	29°51'13.69047" N	95°09'36.79547" W	-15.030
143	1170	29°16'26.24380" N	95°08'28.90987" W	-22.969
144	5015	29°39'36.29501" N	95°08'38.79769" W	-18.438
145	1020	30°17'13.13101" N	95°08'45.78851" W	15.669
146	5023	29°22'35.43015" N	95°06'24.72458" W	-18.103
147	5022	29°29'21.15827" N	95°05'48.95781" W	-20.770
148	5013	29°42'34.84860" N	95°05'25.08832" W	-19.121
149	5021	29°33'58.36972" N	95°03'58.16988" W	-22.776
150	1021	30°17'24.12829" N	95°03'57.33323" W	11.975
151	1023	30°23'07.68996" N	95°03'51.58078" W	21.606
152	1142	29°47'20.55585" N	95°03'01.15624" W	-18.079
153	1138	29°59'47.43160" N	95°03'01.81563" W	-8.512
154	1139	29°57'14.43671" N	95°02'53.99073" W	-10.240
156	1179	29°09'13.39587" N	95°01'12.32680" W	-24.155
157	1022	30°20'08.13964" N	95°02'24.01311" W	19.802
158	1155	29°18'02.19740" N	94°59'18.87655" W	-24.560
159	5024	29°28'09.60563" N	94°59'13.04882" W	-23.890
161	1104	30°02'46.98534" N	94°57'54.50009" W	-4.207
162	1143	29°42'34.09817" N	94°57'19.50348" W	-22.096
163	1094	30°20'06.04182" N	94°57'43.16475" W	13.846
164	1136	29°57'25.45082" N	94°56'32.13324" W	-10.537
165	1107	30°09'52.01802" N	94°56'38.33823" W	1.637
166-REV	GCP_166_REV	30°24'01.95116" N	94°56'45.94568" W	21.351
168	1178	29°13'04.26304" N	94°54'57.33021" W	-24.579
169	5025	29°29'14.77684" N	94°55'02.26340" W	-24.455
170	1154	29°22'43.84668" N	94°54'40.85533" W	-24.319
171	5012	29°39'44.41741" N	94°54'15.56054" W	-19.173
172-REV	8000	30°20'04.25010" N	94°53'57.50580" W	8.366
173	1105	30°05'27.60031" N	94°52'03.56589" W	-3.857
174	1145	29°49'02.12623" N	94°51'38.81765" W	-18.277
175	1144	29°43'46.66149" N	94°51'26.29512" W	-19.477
176	1097	30°27'48.60300" N	94°51'51.63810" W	-6.125
177	1137	29°57'25.34732" N	94°50'35.37131" W	-11.461
178-REV	GCP_178_REV	30°10'36.03541" N	94°50'23.98660" W	-17.089
179	1156	29°16'09.64149" N	94°49'16.98421" W	-22.327
180-REV	GCP_180_REV	30°24'31.59007" N	94°50'12.81828" W	-9.025
181	1103	30°05'22.65776" N	94°48'03.43068" W	-17.315
182	1150	29°32'28.12458" N	94°46'59.82424" W	-26.222
183	1157	29°21'54.17256" N	94°46'32.61158" W	-25.176
184	1108	30°14'51.01438" N	94°47'18.90518" W	-12.116
186	1098	30°26'26.69143" N	94°45'54.72898" W	-3.630
187	1158	29°24'13.26647" N	94°44'32.05535" W	-25.623
188	1099	30°20'15.43646" N	94°45'06.61007" W	-6.134
189	1110	30°05'23.52034" N	94°44'43.12530" W	-6.446

Station Name	GPSID	Latitude	Longitude	Ellip H m
190	1109	30°11'16.95413" N	94°44'46.42086" W	-2.657
191	1129	30°00'27.14278" N	94°42'31.83779" W	-9.521
192	1111	30°05'05.91136" N	94°41'52.81234" W	-7.185
193	1149	29°34'59.79137" N	94°41'20.83967" W	-24.164
194	1151	29°43'17.37953" N	94°41'04.37572" W	-22.954
195	1130	29°57'24.94755" N	94°40'56.22794" W	-14.678
196	1159	29°27'19.62593" N	94°38'46.41533" W	-25.181
197	1148	29°38'26.55529" N	94°38'47.66116" W	-23.920
198	1131	29°47'17.94078" N	94°38'10.70905" W	-21.219
199	1112	30°05'09.10826" N	94°37'33.02930" W	-8.262
200	1166	29°39'32.05222" N	94°32'48.69509" W	-24.763
201-REV	1165	30°00'26.71222" N	94°35'54.26185" W	-10.781
202	1127	29°57'24.73389" N	94°35'46.97346" W	-13.204
203	1152	29°43'27.56297" N	94°34'53.66376" W	-21.697
204	1126	29°52'54.50948" N	94°34'30.18926" W	-15.564
205	1160	29°28'59.30778" N	94°34'05.63849" W	-24.784
206	1125	29°50'08.16189" N	94°32'52.10152" W	-18.387
207	1147	29°36'26.99031" N	94°31'53.94972" W	-25.297
208	1132	29°47'26.00044" N	94°31'49.73360" W	-20.005
209	1153	29°43'58.06102" N	94°29'57.41513" W	-22.432
210	1161	29°30'49.80755" N	94°29'09.54019" W	-25.428
211-REV	1164	29°53'16.52603" N	94°27'00.55437" W	-17.908
212	1146	29°40'33.54029" N	94°25'11.90073" W	-25.338
213-REV	8007	29°32'38.99385" N	94°24'14.98218" W	-25.438
214	1163	29°36'21.65676" N	94°23'03.32991" W	-25.945
215	1133	29°46'08.74802" N	94°22'53.06643" W	-22.470
216	1167	29°40'14.52661" N	94°19'46.74075" W	-24.641
217	1134	29°45'29.73225" N	94°18'36.31950" W	-24.445
218-REV	8008	29°35'19.16125" N	94°17'23.38148" W	-25.057
219-REV	1203	29°44'50.31919" N	94°15'46.15072" W	-25.426
220	1119	30°09'14.44785" N	93°59'32.40679" W	-21.394
221	1117	30°04'47.23793" N	93°56'07.01702" W	-22.367
222	1120	30°09'17.45002" N	93°52'59.36597" W	-21.856
223	1123	30°14'40.21784" N	93°52'52.19595" W	-18.549
224	1115	30°09'14.27172" N	93°48'11.20717" W	-22.206
225	1116	30°02'21.03155" N	93°46'21.97058" W	-25.517
226	1122	30°14'27.05086" N	93°44'48.00030" W	-23.056
227	1121	30°09'34.03552" N	93°42'27.40283" W	-25.490

Table 7 – UTM Zone 14 & UTM 15 (meters)

NAD83 (2011) epoch 2010.0

Station Name	GPSID	UTM 14 N	UTM 14 E	UTM 15 N	UTM 15 E
001	1064	3327261.553	730861.988	3330327.260	152344.511
002	1072	3315536.179	738530.080	3318206.876	159393.431
003-REV	20010	3327663.424	740258.486	3330235.529	161756.361
004	1063	3316620.740	749586.107	3318712.072	170498.263
005	1071	3303781.548	750564.582	3305832.010	170805.222
006	1066	3328396.432	750161.263	3330448.083	171690.197
007	1067	3328139.836	757653.018	3329798.439	179161.936
008	1070	3299708.203	759764.133	3301282.740	179784.574
009	1069	3315372.177	763006.449	3316762.519	183841.294
012	1068	3328573.999	769090.838	3329631.858	190611.007
013-REV2	8003	3336286.156	769983.003	3337288.656	191907.349
015	1090	3280872.999	777659.491	3281537.733	196683.086
016	20011	3316265.591	776987.079	3316923.800	197853.432
017	1046	3347918.608	776711.438	3348553.168	199240.598
019	1078	3329620.148	778236.825	3330196.790	199801.329
020	1091	3290511.100	781929.621	3290942.890	201447.925
021	1044	3340765.028	783047.234	3341074.763	205191.461
022	1077	3329646.554	785609.303	3329836.246	207165.802
023	1089	3277758.440	789177.712	3277830.822	208025.825
024	10003	3207486.037	792971.608	3207455.928	208214.824
025-REV	1186	3226852.922	793437.318	3226773.761	209664.942
026	1092	3292394.563	790000.356	3292404.791	209606.075
027	10000	3168059.045	797242.816	3167864.966	210491.922
028	1073	3303093.044	790761.205	3303049.161	210922.399
029	10004	3199146.568	797635.912	3198891.216	212450.475
030-REV	1187	3179182.038	798892.710	3178890.268	212698.312
031	1047	3357108.687	789757.972	3357042.213	212755.211
032	10014	3217432.922	798194.069	3217124.245	213935.502
033 HCFCD	1076	3315065.347	792443.680	3314917.053	213227.226
034	1049	3346468.478	794392.720	3346172.715	216821.633
035-REV	8004	3330291.465	795493.867	3329961.552	217070.400
036-REV	20000	3365855.734	795614.939	3365466.509	219066.517
037	10002	3185466.058	805288.242	3184843.478	219401.292
038-REV	1190	3208082.572	804880.675	3207447.613	220137.692
039	1074	3303281.145	800571.766	3302725.966	220728.632
040-REV	1192	3233453.686	804674.785	3232791.661	221223.497
041	1084	3291300.085	803659.700	3290602.615	223188.864
042	1048	3357387.133	800805.470	3356736.291	223800.916
043-REV	8006	3175325.903	811297.318	3174416.052	224891.227
044	1075	3303336.738	806047.906	3302496.262	226199.186
045	1051	3330681.056	804779.084	3329863.322	226361.819

Station Name	GPSID	UTM 14 N	UTM 14 E	UTM 15 N	UTM 15 E
046-REV	1191	3219616.423	810609.058	3218673.002	226443.287
047-REV	1188	3197910.661	811583.588	3196951.624	226315.366
049	1012	3415408.363	801464.864	3414628.980	227549.713
050	1088	3282189.746	808862.987	3281236.851	227911.658
051	1010	3405853.668	802277.620	3405046.458	227848.940
052	1052	3322221.141	807856.282	3321255.817	228990.667
053	1028	3387665.447	805308.840	3386726.523	229903.734
054-REV	GCP_054_REV	3370279.717	807619.973	3369247.107	231286.877
055	1173	3241024.289	808230.049	3240168.946	225160.470
056-REV	1193	3230484.748	815924.500	3229253.035	232303.957
057	10008	3208394.206	817632.312	3207112.086	232885.247
058	1042	3349209.136	810849.066	3348041.496	233396.322
059	1038	3357751.445	810584.168	3356583.187	233582.806
060-REV	20012	3290902.432	815082.208	3289612.757	234572.205
061	1011	3406346.851	810446.731	3405101.449	236030.520
062-REV	1199	3247561.644	819226.000	3246132.322	236473.352
063	1039	3335137.309	815498.098	3333749.386	237296.778
064	1029	3394053.294	812890.302	3392699.100	237812.690
065	1030	3381449.153	813837.630	3380066.986	238086.904
066-REV	1197	3219806.861	822615.943	3218252.311	238440.063
067	1009	3415392.030	812369.234	3414027.464	238434.407
068	1061	3322504.301	818383.952	3320987.441	239515.162
069	1031	3370517.663	816492.430	3369014.166	240156.452
070-REV2	8002	3358549.663	817807.339	3356998.251	240835.423
071-REV	1189	3198549.179	827082.930	3196805.425	241821.186
072-REV	1198	3236677.600	825272.810	3234957.840	241952.431
073	10005	3186282.344	827862.865	3184521.013	241980.650
074	1008	3424110.423	816877.476	3422487.653	243402.722
075	105	3406587.726	818308.807	3404921.003	243891.187
076	10007	3208723.384	828991.809	3206864.713	244241.748
077	1060	3307449.528	824170.049	3305657.828	244504.444
078	1087	3277995.273	827023.096	3276110.123	245823.303
079	1036	3355324.165	823157.363	3353496.104	246005.150
080-REV	1196	3228128.251	829972.686	3226184.159	246207.372
081	1040	3336034.441	826562.977	3334063.715	248388.458
082	1032	3372107.912	825141.973	3370142.757	248874.134
083	5010	3393979.973	824645.047	3391998.767	249541.570
084-REV	1184	3189207.429	833740.709	3187144.548	247995.219
085	133	3381663.646	825656.641	3379652.595	249895.243
086	1172	3244125.494	832847.416	3242004.477	249894.032
087	10020	3252907.883	832581.896	3250783.704	250079.276
088-REV	GCP_088_REV	3363067.504	827514.803	3360994.251	250763.469
089	10016	3218462.051	835296.740	3216265.127	251029.328
090	1086	3291329.776	831780.325	3289172.909	251262.062

Station Name	GPSID	UTM 14 N	UTM 14 E	UTM 15 N	UTM 15 E
091	1062	3323178.104	830526.065	3321024.493	251669.820
092	1034	3346442.926	829338.912	3344305.999	251706.444
093	103	3419176.008	825805.770	3417082.977	252048.572
094	1007	3431017.508	825520.856	3428916.132	252401.107
095	5011	3406719.590	828376.896	3404513.703	253946.741
096	1035	3355766.830	832349.621	3353452.566	255202.826
097	1174	3209631.916	840742.610	3207175.735	256016.287
098	5018	3274512.851	843142.611	3271801.800	261731.101
099-REV	1194	3230506.010	841687.755	3227959.970	258021.017
100-REV	1201	3241331.166	842292.949	3238732.240	259177.909
101	132	3382476.200	835048.384	3379964.137	259311.235
102-REV	1200	3254941.403	841950.059	3252332.226	259533.285
103	120	3392325.019	834852.747	3389802.797	259640.375
104	1006	3431368.365	833401.839	3428841.754	260284.764
105 HCFCD	1059	3309124.185	839295.689	3306540.814	259687.737
105-REV	8005	3309134.638	839326.497	3306549.639	259719.026
106	1015	3371819.969	837567.785	3369196.489	261259.554
107	1183	3198751.925	846577.864	3196022.347	261288.994
108	1041	3334058.793	839928.890	3331390.303	261623.791
109	5003	3407284.511	837281.485	3404600.868	262863.042
110	5019	3268795.478	847535.126	3265869.926	265819.391
111	1175	3219537.774	847706.285	3216707.843	263468.673
112	1004	3437915.528	837997.074	3435127.122	265223.056
113	1016	3363590.147	842291.118	3360734.130	265536.952
114-REV	20008	3417916.475	839439.730	3415094.153	265586.425
115	1017	3356177.985	842748.500	3353313.861	265601.652
116	1053	3323378.564	846031.118	3320413.171	267153.294
117	5017	3291846.543	847182.246	3288889.616	266659.185
118-REV	1195	3231056.599	850905.397	3228039.312	267247.507
119-REV	8001	3432000.693	840600.064	3429084.986	267501.460
120	1177	3205446.928	856005.470	3202226.224	271035.184
121	129	3407607.151	844895.784	3404515.294	270477.878
122	1002	3421367.314	845813.854	3418195.072	272131.593
123	1014	3372610.882	848489.705	3369406.608	272199.517
124	1018	3346460.835	850962.630	3343185.243	273285.278
125	1054	3335367.304	852474.720	3332037.496	274210.784
126	1176	3220860.903	859311.130	3217438.091	275115.501
127-REV	1202	3255743.039	857580.091	3252329.556	275170.698
128	1171	3241078.397	858425.808	3237654.898	275263.070
129	1057	3307693.104	855929.066	3304246.130	276210.191
130	5016	3280582.470	857704.367	3277105.773	276574.500
131	1001	3408097.511	851206.209	3404666.815	276800.057
132	1024	3356613.478	855932.178	3353052.433	278778.522
133-REV	20013	3323818.140	859100.888	3320167.954	280216.371
134	5020	3267654.176	862445.988	3263962.880	280637.906
135	1181	3212608.882	866394.161	3208845.442	281763.123
136	5014	3292946.401	865735.155	3289024.600	285226.565

Station Name	GPSID	UTM 14 N	UTM 14 E	UTM 15 N	UTM 15 E
137	1182	3227925.038	865654.780	3224163.055	281803.990
138	1019	3344043.791	865982.991	3339983.571	288142.734
139	1180	3219089.658	873798.544	3214934.725	289478.616
140-REV	20014	3334455.655	868885.715	3330266.929	290534.579
141	1140	3324743.482	870116.183	3320514.758	291253.159
142	1141	3308780.237	871020.489	3304544.545	291321.853
143	1170	3244518.583	874984.546	3240239.857	291958.185
144	5015	3287342.498	873297.255	3283042.682	292479.497
145	1020	3356880.687	870768.500	3352535.950	293592.464
146	5023	3256005.887	877960.404	3251545.495	295515.196
147	5022	3268540.496	878506.558	3264019.739	296704.454
148	5013	3293019.789	878324.440	3288444.884	297787.961
149	5021	3277183.590	881203.867	3272501.186	299840.433
150	1021	3357484.428	878471.231	3352731.614	301306.882
151	1023	3368077.455	878257.146	3363307.588	301653.195
152	1142	3301956.035	881894.715	3297172.197	301812.784
153	1138	3324971.591	881085.023	3320168.458	302205.408
154	1139	3320264.020	881457.648	3315454.019	302330.943
156	1179	3231575.301	887232.686	3226704.633	303513.570
157	1022	3362625.756	880790.394	3357736.625	303891.304
158	1155	3247975.378	889743.541	3242932.158	306855.467
159	5024	3266699.032	889256.595	3261629.664	307331.064
161	1104	3330792.806	889133.382	3325552.426	310536.446
162	1143	3293446.792	891388.372	3288193.319	310838.754
163	1094	3362826.198	888300.479	3357539.668	311391.214
164	1136	3320961.687	891693.317	3315615.035	312574.888
165	1107	3343964.250	890709.526	3338604.063	312799.346
166-REV	GCP_166_REV	3370151.497	889569.633	3364777.102	313044.212
168	1178	3239038.396	897128.916	3233642.321	313763.359
169	5025	3268942.944	895949.064	3263522.771	314120.410
170	1154	3256915.476	896949.500	3251477.986	314499.677
171	5012	3288391.938	896522.521	3282886.750	315696.481
172-REV	8000	3362987.744	894335.201	3357381.894	317417.203
173	1105	3336079.404	898363.682	3330340.044	320017.392
174	1145	3305730.773	900124.486	3299988.441	320187.815
175	1144	3296020.253	900810.735	3290270.731	320367.617
176	1097	3377422.072	897176.579	3371623.496	321014.350
177	1137	3321301.826	901267.966	3315454.014	322139.601
178-REV	GCP_178_REV	3345682.740	900685.451	3339793.059	322836.636
179	1156	3245076.120	906126.459	3239202.762	323043.462
180-REV	GCP_180_REV	3371446.803	900038.963	3365514.323	323551.567
181	1103	3336162.096	904805.387	3330084.638	326444.234
182	1150	3275366.695	908741.243	3269268.444	327206.168
183	1157	3255854.349	910184.299	3249740.900	327641.227
184	1108	3353724.126	905350.532	3347564.643	327910.944
186	1098	3375250.837	906800.970	3368948.576	330494.509
187	1158	3260259.799	913282.532	3253973.892	330956.122
188	1099	3363855.766	908516.122	3357498.063	331601.372
189	1110	3336387.623	910173.260	3330027.962	331807.483
190	1109	3347278.231	909678.078	3340910.766	331885.818
191	1129	3327384.023	914035.558	3320850.210	335186.125

Station Name	GPSID	UTM 14 N	UTM 14 E	UTM 15 N	UTM 15 E
192	1111	3336016.071	914758.836	3329417.116	336359.199
193	1149	3280377.373	917703.684	3273801.111	336399.500
194	1151	3295731.193	917574.640	3289113.045	337065.398
195	1130	3321864.590	916812.386	3315203.105	337665.655
196	1159	3266348.921	922396.271	3259575.479	340354.171
197	1148	3286905.012	921590.863	3280107.040	340611.660
198	1131	3303322.169	921966.309	3296451.727	341837.041
199	1112	3336379.437	921718.959	3329414.376	343315.982
200	1166	3289292.157	931179.261	3281990.226	350292.047
201-REV	1165	3327776.187	924702.155	3320683.149	345838.835
202	1127	3322174.094	925113.579	3315078.046	345956.097
203	1152	3296422.743	927536.793	3289285.736	347031.130
204	1126	3313923.583	927496.202	3306730.588	347900.417
205	1160	3269707.793	929853.697	3262539.666	347960.076
206	1125	3308897.564	930329.972	3301573.827	350463.000
207	1147	3283644.249	932873.660	3276273.712	351688.675
208	1132	3303963.700	932200.473	3296559.350	352070.642
209	1153	3297671.166	935471.084	3290118.454	355003.438
210	1161	3273421.673	937707.451	3265836.547	355978.558
211-REV	1164	3315074.631	939548.477	3307249.663	359971.528
212	1146	3291668.542	943403.329	3283725.651	362597.011
213-REV	8007	3277099.518	945516.764	3269099.025	363950.163
214	1163	3284040.863	947174.792	3275930.043	365960.556
215	1133	3302151.843	946727.101	3293999.275	366452.493
216	1167	3291432.974	952181.185	3283036.498	371331.107
217	1134	3301228.080	953682.087	3292717.824	373334.211
218-REV	8008	3282483.086	956412.141	3273900.850	375083.774
219-REV	1203	3300200.227	958309.967	3291453.639	377891.532
220	1119	3346461.010	982536.443	3336267.199	404437.313
221	1117	3338463.757	988407.599	3327995.343	409864.408
222	1120	3347022.363	993066.413	3336273.162	414952.400
223	1123	3356985.833	992810.015	3346207.368	415221.073
224	1115	3347274.494	1000794.518	3336118.341	422660.184
225	1116	3334662.444	1004307.352	3323377.842	425496.316
226	1122	3357172.489	1005795.294	3345709.456	428159.241
227	1121	3348309.087	1009981.981	3336665.798	431860.976

Table 8 – Texas South Central Zone (US Feet)

NAD83 (2011)
epoch 2010.0

Station Name	GPSID	SPC N ft	SPC E ft
001	1064	13938797.922	2726015.142
002	1072	13900331.313	2751147.232
003-REV	20010	13940101.275	2756833.552
004	1063	13903872.743	2787406.699
005	1071	13861767.604	2790598.707
006	1066	13942489.006	2789311.144
007	1067	13941634.834	2813878.786
008	1070	13848399.773	2820760.982
009	1069	13899758.896	2831413.202
012	1068	13943038.397	2851385.869
013-REV2	8003	13968325.210	2854325.883
015	1090	13786624.862	2879419.035
016	20011	13902666.997	2877256.078
017	1046	14006454.017	2876413.402
019	1078	13946451.795	2881376.841
020	1091	13818220.371	2893427.648
021	1044	13982984.022	2897171.876
022	1077	13946524.302	2905549.374
023	1089	13776405.089	2917178.972
024	10003	13546032.367	2929622.632
025-REV	1186	13609522.360	2931135.984
026	1092	13824386.779	2919889.211
027	10000	13416783.722	2943680.050
028	1073	13859459.565	2922396.519
029	10004	13518698.274	2944921.944
030-REV	1187	13453251.446	2949069.508
031	1047	14036555.322	2919213.996
032	10014	13578644.613	2946734.940
033 HCFC	1076	13898707.102	2927930.121
034	1049	14001657.949	2934383.193
035-REV	8004	13948619.169	2937957.649
036-REV	20000	14065218.597	2938441.458
037	10002	13473861.590	2970025.424
038-REV	1190	13547998.982	2968661.767
039	1074	13860062.846	2954558.520
040-REV	1192	13631164.670	2967970.849
041	1084	13820783.914	2964666.147
042	1048	14037438.846	2955435.538
043-REV	8006	13440631.612	2989740.076
044	1075	13860237.424	2972509.895
045	1051	13949877.348	2968398.355

Station Name	GPSID	SPC N ft	SPC E ft
046-REV	1191	13585810.604	2987429.586
047-REV	1188	13514663.333	2990644.499
049	1012	14227676.695	2957796.659
050	1088	13790915.398	2981713.198
051	1010	14196342.935	2960423.144
052	1052	13922138.433	2978469.023
053	1028	14136695.305	2970294.419
054-REV	GCP_054_REV	14079687.188	2977814.218
055	1173	13655981.177	2979622.935
056-REV	1193	13621437.139	3004846.384
057	10008	13549032.717	3010459.343
058	1042	14010601.846	2988340.254
059	1038	14038606.207	2987494.929
060-REV	20012	13819467.672	3002107.474
061	1011	14197927.484	2987210.766
062-REV	1199	13677409.372	3015664.165
063	1039	13964462.008	3003545.913
064	1029	14157611.222	2995174.521
065	1030	14116285.159	2998234.941
066-REV	1197	13586443.028	3026784.129
067	1009	14227577.063	2993552.047
068	1061	13923046.328	3012978.684
069	1031	14080439.367	3006901.970
070-REV2	8002	14041202.321	3011176.059
071-REV	1189	13516775.479	3041445.522
072-REV	1198	13641737.646	3035483.839
073	10005	13476572.159	3044019.310
074	1008	14256143.477	3008372.696
075	105	14198685.043	3012989.105
076	10007	13550122.880	3047690.163
077	1060	13873691.090	3031916.924
078	1087	13777151.739	3041231.941
079	1036	14030613.746	3028704.206
080-REV	1196	13613720.069	3050890.276
081	1040	13967376.988	3039816.729
082	1032	14085624.272	3035261.478
083	5010	14157325.875	3033711.339
084-REV	1184	13486168.136	3063278.902
085	133	14116946.827	3036981.531
086	1172	13666148.030	3060307.010
087	10020	13694929.851	3059437.277
088-REV	GCP_088_REV	14055982.659	3043010.493
089	10016	13582044.870	3068344.596
090	1086	13820848.831	3056836.602

Station Name	GPSID	SPC N ft	SPC E ft
091	1062	13925230.462	3052777.671
092	1034	14001485.714	3048941.578
093	103	14239923.999	3037623.415
094	1007	14278749.488	3036745.380
095	5011	14199074.921	3045997.518
096	1035	14032038.061	3058835.889
097	1174	13553112.257	3086199.274
098	5018	13765726.300	3094055.725
099-REV	1194	13621517.866	3089281.201
100-REV	1201	13656991.800	3091261.163
101	132	14119576.203	3067770.504
102-REV	1200	13701592.048	3090138.042
103	120	14151860.604	3067166.973
104	1006	14279860.757	3062585.993
105 HCFCD	1059	13879154.522	3081492.189
105-REV	8005	13879188.724	3081593.168
106	1015	14084638.505	3075990.530
107	1183	13517465.369	3105334.274
108	1041	13960869.883	3083618.730
109	5003	14200888.166	3075191.102
110	5019	13746988.042	3108445.549
111	1175	13585579.524	3109010.066
112	1004	14301302.101	3077685.221
113	1016	14057648.824	3091444.141
114-REV	20008	14235731.292	3082314.711
115	1017	14033354.498	3092919.858
116	1053	13925854.872	3103592.532
117	5017	13822523.344	3107310.917
118-REV	1195	13623326.199	3119485.879
119-REV	8001	14281897.227	3086188.124
120	1177	13539415.494	3136218.151
121	129	14201911.802	3100152.133
122	1002	14247012.760	3103226.424
123	1014	14087192.557	3111790.288
124	1018	14001484.887	3119810.955
125	1054	13965127.077	3124736.335
126	1176	13589923.824	3147034.398
127-REV	1202	13704215.049	3141353.912
128	1171	13656166.118	3144124.285
129	1057	13874436.103	3135996.341
130	5016	13785602.291	3141776.366
131	1001	14203490.314	3120838.665
132	1024	14034740.731	3136126.923
133-REV	20013	13927266.652	3146421.603
134	5020	13743239.313	3157301.943
135	1181	13562893.027	3170248.673
136	5014	13826102.817	3168103.306

Station Name	GPSID	SPC N ft	SPC E ft
137	1182	13613073.015	3167814.132
138	1019	13993521.624	3169023.641
139	1180	13584132.282	3194500.924
140-REV	20014	13962097.640	3178508.211
141	1140	13930273.410	3182515.730
142	1141	13877970.864	3185445.119
143	1170	13667439.123	3198374.575
144	5015	13807733.368	3192871.307
145	1020	14035568.292	3184743.564
146	5023	13705070.842	3208124.482
147	5022	13746132.915	3209919.437
148	5013	13826325.847	3209348.028
149	5021	13774444.523	3218762.319
150	1021	14037520.651	3209983.373
151	1023	14072228.482	3209319.567
152	1142	13855594.916	3221057.871
153	1138	13930994.786	3218452.479
154	1139	13915571.813	3219662.234
156	1179	13625042.584	3238501.042
157	1022	14054357.343	3217599.631
158	1155	13678763.257	3246721.759
159	5024	13740093.937	3245132.672
161	1104	13950044.434	3244833.019
162	1143	13827705.894	3252143.156
163	1094	14054986.953	3242205.000
164	1136	13917833.740	3253194.294
165	1107	13993187.538	3250033.737
166-REV	GCP_166_REV	14078980.660	3246390.463
168	1178	13649491.607	3270913.194
169	5025	13747439.452	3267055.137
170	1154	13708044.832	3270325.908
171	5012	13811141.677	3268952.944
172-REV	8000	14055494.018	3261975.348
173	1105	13967336.343	3275083.191
174	1145	13867926.890	3280778.463
175	1144	13836120.763	3283009.311
176	1097	14102768.602	3271340.479
177	1137	13918925.188	3284557.170
178-REV	GCP_178_REV	13998785.613	3282717.366
179	1156	13669267.781	3300380.704
180-REV	GCP_180_REV	14083182.602	3280692.718
181	1103	13967588.599	3296182.972
182	1150	13768468.007	3308956.822
183	1157	13704565.661	3313671.034
184	1108	14025109.670	3298024.775
186	1098	14095615.610	3302858.755
187	1158	13718991.733	3323818.805
188	1099	14058283.786	3308430.765
189	1110	13968311.519	3313764.842
190	1109	14003982.250	3312177.144
191	1129	13938813.103	3326388.836

Station Name	GPSID	SPC N ft	SPC E ft
192	1111	13967081.062	3328781.959
193	1149	13784867.986	3338312.265
194	1151	13835147.248	3337910.659
195	1130	13920730.163	3335468.438
196	1159	13738926.591	3353666.269
197	1148	13806238.740	3351049.256
198	1131	13859997.373	3352305.263
199	1112	13968250.156	3351576.783
200	1166	13814041.846	3382448.789
201-REV	1165	13940068.398	3361320.984
202	1127	13921722.659	3362653.338
203	1152	13837395.279	3370533.396
204	1126	13894700.419	3370435.258
205	1160	13749919.545	3378086.952
206	1125	13878236.981	3379703.036
207	1147	13795547.201	3387988.952
208	1132	13862078.243	3385817.503
209	1153	13841469.282	3396514.364
210	1161	13762072.626	3403804.043
211-REV	1164	13898441.033	3409900.097
212	1146	13821803.755	3422474.226
213-REV	8007	13774105.646	3429374.015
214	1163	13796827.387	3434810.018
215	1133	13856117.758	3433373.949
216	1167	13821018.745	3451209.468
217	1134	13853080.143	3456139.950
218-REV	8008	13791716.158	3465046.296
219-REV	1203	13849706.611	3471286.764
220	1119	14001046.302	3550711.203
221	1117	13974853.801	3569894.900
222	1120	14002842.444	3585171.812
223	1123	14035446.469	3584373.928
224	1115	14003636.816	3610459.575
225	1116	13962359.771	3621905.509
226	1122	14036000.312	3626863.001
227	1121	14006984.503	3640522.504

1.1 Table 9 - GPS Derived Orthometric Heights & Geoid Separations

G99=GEOID99

G12B=GEOID12B

HCFCDD=Harris County Flood Control District (Ellip H-G99+0.253 ft)

Station Name	GPSID	Ortho H Meters (G12B)	Ortho H US Ft (G99)	HCFCDD US Ft	Ellip H Meters	G12B Hgt Meters	G99 Hgt Meters
001	1064	115.794	379.425	379.678	88.666	-27.128	-26.983
002	1072	101.969	334.074	334.327	74.733	-27.236	-27.093
003-REV	20010	119.714	392.302	392.555	92.491	-27.223	-27.083
004	1063	69.669	228.120	228.373	42.340	-27.329	-27.191
005	1071	104.514	342.411	342.664	77.178	-27.336	-27.189
006	1066	78.512	257.145	257.398	51.199	-27.313	-27.178
007	1067	112.186	367.640	367.893	84.822	-27.364	-27.234
008	1070	76.933	251.883	252.136	49.522	-27.410	-27.251
009	1069	74.239	243.087	243.340	46.794	-27.444	-27.298
012	1068	65.778	215.354	215.607	38.308	-27.470	-27.332
013-REV2	8003	70.370	230.436	230.689	42.914	-27.457	-27.323
015	1090	42.131	137.769	138.022	14.747	-27.384	-27.245
016	20011	42.721	139.675	139.928	15.183	-27.538	-27.390
017	1046	65.169	213.408	213.661	37.733	-27.435	-27.314
019	1078	56.645	185.387	185.640	29.119	-27.526	-27.387
020	1091	39.956	130.623	130.876	12.503	-27.453	-27.310
021	1044	74.539	244.163	244.416	47.052	-27.488	-27.369
022	1077	63.028	206.335	206.588	35.485	-27.543	-27.405
023	1089	38.253	125.075	125.328	10.882	-27.371	-27.240
024	10003	14.321	46.565	46.818	-12.474	-26.795	-26.667
025-REV	1186	22.419	73.094	73.347	-4.575	-26.994	-26.854
026	1092	33.790	110.400	110.653	6.315	-27.474	-27.335
027	10000	1.756	5.115	5.368	-24.822	-26.578	-26.381
028	1073	51.850	169.622	169.875	24.311	-27.538	-27.390
029	10004	9.521	30.830	31.083	-17.180	-26.701	-26.577
030-REV	1187	2.298	6.975	7.228	-24.358	-26.656	-26.484
031	1047	104.238	341.610	341.863	76.824	-27.414	-27.299
032	10014	15.863	51.630	51.883	-10.980	-26.844	-26.717
033 HCFCDD	1076	63.375	207.424	207.677	35.808	-27.567	-27.415
034	1049	88.151	288.786	289.039	60.653	-27.498	-27.369
035-REV	8004	75.956	248.750	249.003	48.400	-27.556	-27.418
036-REV	20000	119.127	390.501	390.754	91.766	-27.360	-27.258
037	10002	4.724	15.023	15.276	-21.888	-26.612	-26.467
038-REV	1190	12.944	42.113	42.366	-13.746	-26.690	-26.582
039	1074	50.442	165.029	165.282	22.923	-27.519	-27.379
040-REV	1192	17.718	57.733	57.986	-9.257	-26.975	-26.854
041	1084	41.249	134.905	135.158	13.807	-27.442	-27.312
042	1048	106.434	348.815	349.068	78.988	-27.446	-27.331
043-REV	8006	0.741	1.886	2.139	-25.722	-26.463	-26.297

Station Name	GPSID	Ortho H Meters (G12B)	Ortho H US Ft (G99)	HCPCD US Ft	Ellip H Meters	G12B Hgt Meters	G99 Hgt Meters
044	1075	46.369	151.689	151.942	18.863	-27.506	-27.372
045	1051	77.790	254.790	255.043	50.221	-27.569	-27.439
046-REV	1191	12.227	39.751	40.004	-14.531	-26.758	-26.648
047-REV	1188	8.134	26.299	26.552	-18.475	-26.608	-26.490
049	1012	85.445	280.193	280.446	58.508	-26.937	-26.894
050	1088	27.947	91.250	91.503	0.565	-27.381	-27.248
051	1010	88.668	290.747	291.000	61.638	-27.030	-26.982
052	1052	59.027	193.212	193.465	31.452	-27.575	-27.440
053	1028	102.510	336.062	336.315	75.288	-27.222	-27.144
054-REV	GCP_054_REV	85.075	278.841	279.094	57.697	-27.377	-27.293
055	1173	18.635	60.738	60.991	-8.410	-27.045	-26.923
056-REV	1193	14.085	45.820	46.073	-12.775	-26.860	-26.741
057	10008	6.161	19.885	20.138	-20.442	-26.603	-26.504
058	1042	72.168	236.377	236.630	44.632	-27.536	-27.416
059	1038	82.221	269.419	269.672	54.744	-27.478	-27.375
060-REV	20012	29.492	96.319	96.572	2.066	-27.426	-27.292
061	1011	100.283	328.851	329.104	73.193	-27.089	-27.041
062-REV	1199	18.927	61.716	61.969	-8.110	-27.037	-26.920
063	1039	62.472	204.557	204.810	34.891	-27.581	-27.457
064	1029	98.461	322.818	323.071	71.249	-27.212	-27.147
065	1030	102.575	336.305	336.558	75.277	-27.299	-27.229
066-REV	1197	6.074	19.603	19.856	-20.588	-26.662	-26.563
067	1009	75.367	247.142	247.395	48.337	-27.030	-26.993
068	1061	46.283	151.437	151.690	18.722	-27.562	-27.436
069	1031	97.598	319.953	320.206	70.201	-27.397	-27.321
070-REV2	8002	94.034	308.211	308.464	66.546	-27.488	-27.397
071-REV	1189	3.455	11.001	11.254	-23.046	-26.501	-26.399
072-REV	1198	12.300	40.000	40.253	-14.556	-26.857	-26.748
073	10005	1.465	4.446	4.699	-24.928	-26.393	-26.283
074	1008	45.080	147.805	148.058	18.085	-26.995	-26.966
075	105	96.400	316.115	316.368	69.262	-27.139	-27.090
076	10007	6.666	21.578	21.831	-19.860	-26.527	-26.438
077	1060	35.001	114.426	114.679	7.521	-27.480	-27.356
078	1087	20.701	67.536	67.789	-6.557	-27.258	-27.142
079	1036	79.626	260.925	261.178	52.102	-27.523	-27.428
080-REV	1196	7.831	25.374	25.627	-18.873	-26.704	-26.607
081	1040	51.382	168.221	168.474	23.810	-27.573	-27.464
082	1032	70.382	230.708	230.961	42.975	-27.407	-27.345
083	5010	77.994	255.718	255.971	50.752	-27.242	-27.191
084-REV	1184	1.995	6.237	6.490	-24.355	-26.350	-26.256
085	133	64.636	211.860	212.113	37.302	-27.334	-27.273

Station Name	GPSID	Ortho H Meters (G12B)	Ortho H US Ft (G99)	HCFC D US Ft	Ellip H Meters	G12B Hgt Meters	G99 Hgt Meters
086	1172	12.923	42.080	42.333	-13.956	-26.879	-26.782
087	10020	15.553	50.689	50.942	-11.440	-26.992	-26.890
088-REV	GCP_088_REV	69.668	228.323	228.576	42.185	-27.483	-27.409
089	10016	7.336	23.796	24.049	-19.214	-26.550	-26.468
090	1086	21.771	71.037	71.290	-5.586	-27.357	-27.239
091	1062	38.824	127.011	127.264	11.304	-27.520	-27.409
092	1034	54.695	179.094	179.347	27.134	-27.561	-27.453
093	103	80.908	265.347	265.600	53.821	-27.088	-27.057
094	1007	62.949	206.456	206.709	35.947	-27.002	-26.981
095	5011	108.476	355.777	356.030	81.312	-27.165	-27.130
096	1035	55.997	183.415	183.668	28.460	-27.536	-27.445
097	1174	4.636	14.911	15.164	-21.824	-26.460	-26.369
098	5018	21.673	70.738	70.991	-5.488	-27.161	-27.049
099-REV	1194	8.897	28.944	29.197	-17.730	-26.627	-26.553
100-REV	1201	11.229	36.558	36.811	-15.537	-26.766	-26.680
101	132	103.031	337.860	338.113	75.702	-27.329	-27.278
102-REV	1200	16.777	54.711	54.964	-10.180	-26.957	-26.856
103	120	109.382	358.739	358.992	82.134	-27.248	-27.211
104	1006	59.034	193.632	193.885	31.978	-27.057	-27.041
105 HCFC D	1059	24.862	81.188	81.441	-2.572	-27.434	-27.318
105-REV	8005	24.868	81.204	81.457	-2.566	-27.434	-27.318
106	1015	112.330	368.329	368.582	84.912	-27.418	-27.355
107	1183	0.886	2.661	2.914	-25.417	-26.303	-26.229
108	1041	41.131	134.626	134.879	13.620	-27.512	-27.415
109	5003	78.169	256.384	256.637	50.995	-27.175	-27.152
110	5019	18.067	58.901	59.154	-9.033	-27.100	-26.986
111	1175	4.374	14.108	14.361	-22.120	-26.494	-26.421
112	1004	87.716	287.755	288.008	60.676	-27.040	-27.032
113	1016	71.412	234.032	234.285	43.921	-27.491	-27.412
114-REV	20008	61.105	200.410	200.663	33.946	-27.159	-27.139
115	1017	47.935	156.981	157.234	20.409	-27.526	-27.439
116	1053	30.905	101.056	101.309	3.453	-27.452	-27.349
117	5017	14.053	45.732	45.985	-13.238	-27.292	-27.177
118-REV	1195	5.267	17.044	17.297	-21.313	-26.581	-26.508
119-REV	8001	75.221	246.758	247.011	48.123	-27.098	-27.090
120	1177	6.116	19.787	20.040	-20.199	-26.315	-26.230
121	129	116.215	381.249	381.502	89.048	-27.167	-27.158
122	1002	44.879	147.195	147.448	17.708	-27.171	-27.158
123	1014	97.444	319.471	319.724	70.021	-27.424	-27.355
124	1018	43.503	142.464	142.717	16.005	-27.498	-27.417
125	1054	27.493	89.937	90.190	0.035	-27.458	-27.378
126	1176	1.199	3.681	3.934	-25.266	-26.465	-26.387
127-REV	1202	9.958	32.342	32.595	-16.934	-26.892	-26.792
128	1171	5.823	18.852	19.105	-20.849	-26.672	-26.595
129	1057	18.327	59.747	60.000	-9.034	-27.360	-27.245

Station Name	GPSID	Ortho H Meters (G12B)	Ortho H US Ft (G99)	HCFC D US Ft	Ellip H Meters	G12B Hgt Meters	G99 Hgt Meters
130	5016	14.515	47.241	47.494	-12.670	-27.185	-27.069
131	1001	114.693	376.312	376.565	87.527	-27.167	-27.173
132	1024	47.958	157.103	157.356	20.476	-27.482	-27.409
133-REV	20013	24.730	80.810	81.063	-2.697	-27.426	-27.327
134	5020	12.286	39.954	40.207	-14.750	-27.037	-26.928
135	1181	2.073	6.549	6.802	-24.258	-26.331	-26.254
136	5014	5.942	19.108	19.361	-21.302	-27.244	-27.126
137	1182	1.309	4.049	4.302	-25.201	-26.510	-26.435
138	1019	30.037	98.386	98.639	2.623	-27.414	-27.364
139	1180	1.613	5.036	5.289	-24.755	-26.369	-26.291
140-REV	20014	17.906	58.546	58.799	-9.483	-27.390	-27.328
141	1140	20.132	65.751	66.004	-7.251	-27.383	-27.292
142	1141	12.288	39.957	40.210	-15.030	-27.318	-27.209
143	1170	3.723	11.873	12.126	-22.969	-26.692	-26.588
144	5015	8.756	28.356	28.609	-18.438	-27.194	-27.081
145	1020	43.095	141.243	141.496	15.669	-27.426	-27.383
146	5023	8.725	28.258	28.511	-18.103	-26.827	-26.715
147	5022	6.212	20.010	20.263	-20.770	-26.982	-26.869
148	5013	8.109	26.250	26.503	-19.121	-27.230	-27.122
149	5021	4.299	13.743	13.996	-22.776	-27.076	-26.965
150	1021	39.387	129.120	129.373	11.975	-27.411	-27.381
151	1023	49.026	160.764	161.017	21.606	-27.420	-27.395
152	1142	9.200	29.849	30.102	-18.079	-27.280	-27.178
153	1138	18.837	61.568	61.821	-8.512	-27.349	-27.278
154	1139	17.103	55.840	56.093	-10.240	-27.343	-27.260
156	1179	2.334	7.303	7.556	-24.155	-26.489	-26.381
157	1022	47.219	154.832	155.085	19.802	-27.417	-27.391
158	1155	2.169	6.663	6.916	-24.560	-26.729	-26.591
159	5024	3.035	9.567	9.820	-23.890	-26.925	-26.806
161	1104	23.149	75.787	76.040	-4.207	-27.357	-27.307
162	1143	5.114	16.476	16.729	-22.096	-27.210	-27.118
163	1094	41.254	135.315	135.568	13.846	-27.408	-27.398
164	1136	16.809	54.928	55.181	-10.537	-27.346	-27.279
165	1107	28.997	95.075	95.328	1.637	-27.361	-27.342
166-REV	GCP_166_REV	48.774	159.993	160.246	21.351	-27.423	-27.415
168	1178	1.988	6.083	6.336	-24.579	-26.568	-26.433
169	5025	2.462	7.700	7.953	-24.455	-26.917	-26.802
170	1154	2.474	7.674	7.927	-24.319	-26.792	-26.658
171	5012	7.976	25.879	26.132	-19.173	-27.149	-27.061
172-REV	8000	35.778	117.375	117.628	8.366	-27.412	-27.410
173	1105	23.509	77.050	77.303	-3.857	-27.367	-27.342
174	1145	8.998	29.308	29.561	-18.277	-27.275	-27.210
175	1144	7.729	25.095	25.348	-19.477	-27.206	-27.127
176	1097	21.322	69.947	70.200	-6.125	-27.447	-27.445
177	1137	15.891	51.975	52.228	-11.461	-27.352	-27.303
178-REV	GCP_178_REV	10.288	33.737	33.990	-17.089	-27.377	-27.372
179	1156	4.268	13.556	13.809	-22.327	-26.594	-26.459
180-REV	GCP_180_REV	18.417	60.433	60.686	-9.025	-27.442	-27.445

Station Name	GPSID	Ortho H Meters (G12B)	Ortho H US Ft (G99)	HCFCD US Ft	Ellip H Meters	G12B Hgt Meters	G99 Hgt Meters
181	1103	10.069	32.966	33.219	-17.315	-27.384	-27.363
182	1150	0.731	2.070	2.323	-26.222	-26.953	-26.852
183	1157	1.533	4.593	4.846	-25.176	-26.709	-26.576
184	1108	15.292	50.187	50.440	-12.116	-27.408	-27.413
186	1098	23.816	78.149	78.402	-3.630	-27.447	-27.450
187	1158	1.127	3.287	3.540	-25.623	-26.750	-26.625
188	1099	21.294	69.872	70.125	-6.134	-27.428	-27.432
189	1110	20.941	68.655	68.908	-6.446	-27.386	-27.372
190	1109	24.744	81.188	81.441	-2.657	-27.401	-27.403
191	1129	17.835	58.455	58.708	-9.521	-27.356	-27.338
192	1111	20.200	66.247	66.500	-7.185	-27.384	-27.377
193	1149	2.824	9.006	9.259	-24.164	-26.988	-26.909
194	1151	4.198	13.602	13.855	-22.954	-27.152	-27.100
195	1130	12.657	41.463	41.716	-14.678	-27.335	-27.315
196	1159	1.617	4.964	5.217	-25.181	-26.798	-26.694
197	1148	3.127	10.062	10.315	-23.920	-27.047	-26.987
198	1131	5.983	19.518	19.771	-21.219	-27.202	-27.168
199	1112	19.118	62.752	63.005	-8.262	-27.380	-27.389
200	1166	2.266	7.333	7.586	-24.763	-27.029	-26.998
201-REV	1165	16.558	54.354	54.607	-10.781	-27.340	-27.349
202	1127	14.113	46.302	46.555	-13.204	-27.317	-27.317
203	1152	5.421	17.687	17.940	-21.697	-27.118	-27.088
204	1126	11.701	38.376	38.629	-15.564	-27.266	-27.262
205	1160	2.014	6.358	6.611	-24.784	-26.798	-26.722
206	1125	8.833	28.957	29.210	-18.387	-27.220	-27.214
207	1147	1.658	5.315	5.568	-25.297	-26.955	-26.917
208	1132	7.169	23.491	23.744	-20.005	-27.174	-27.165
209	1153	4.677	15.299	15.552	-22.432	-27.109	-27.095
210	1161	1.366	4.321	4.574	-25.428	-26.794	-26.745
211-REV	1164	9.325	30.705	30.958	-17.908	-27.234	-27.267
212	1146	1.691	5.505	5.758	-25.338	-27.029	-27.016
213-REV	8007	1.374	4.419	4.672	-25.438	-26.812	-26.784
214	1163	0.967	3.120	3.373	-25.945	-26.911	-26.896
215	1133	4.656	15.321	15.574	-22.470	-27.126	-27.140
216	1167	2.357	7.730	7.983	-24.641	-26.998	-26.996
217	1134	2.657	8.776	9.029	-24.445	-27.103	-27.121
218-REV	8008	1.779	5.833	6.086	-25.057	-26.835	-26.834
219-REV	1203	1.651	5.489	5.742	-25.426	-27.077	-27.099
220	1119	5.931	31.437	31.690	-21.394	-27.325	-30.976
221	1117	4.898	28.461	28.714	-22.367	-27.265	-31.042
222	1120	5.468	28.973	29.226	-21.856	-27.323	-30.687
223	1123	8.849	39.170	39.423	-18.549	-27.398	-30.488
224	1115	5.109	27.155	27.408	-22.206	-27.315	-30.483
225	1116	1.696	16.903	17.156	-25.517	-27.214	-30.670
226	1122	4.321	23.645	23.898	-23.056	-27.377	-30.264
227	1121	1.821	15.948	16.201	-25.490	-27.311	-30.351