

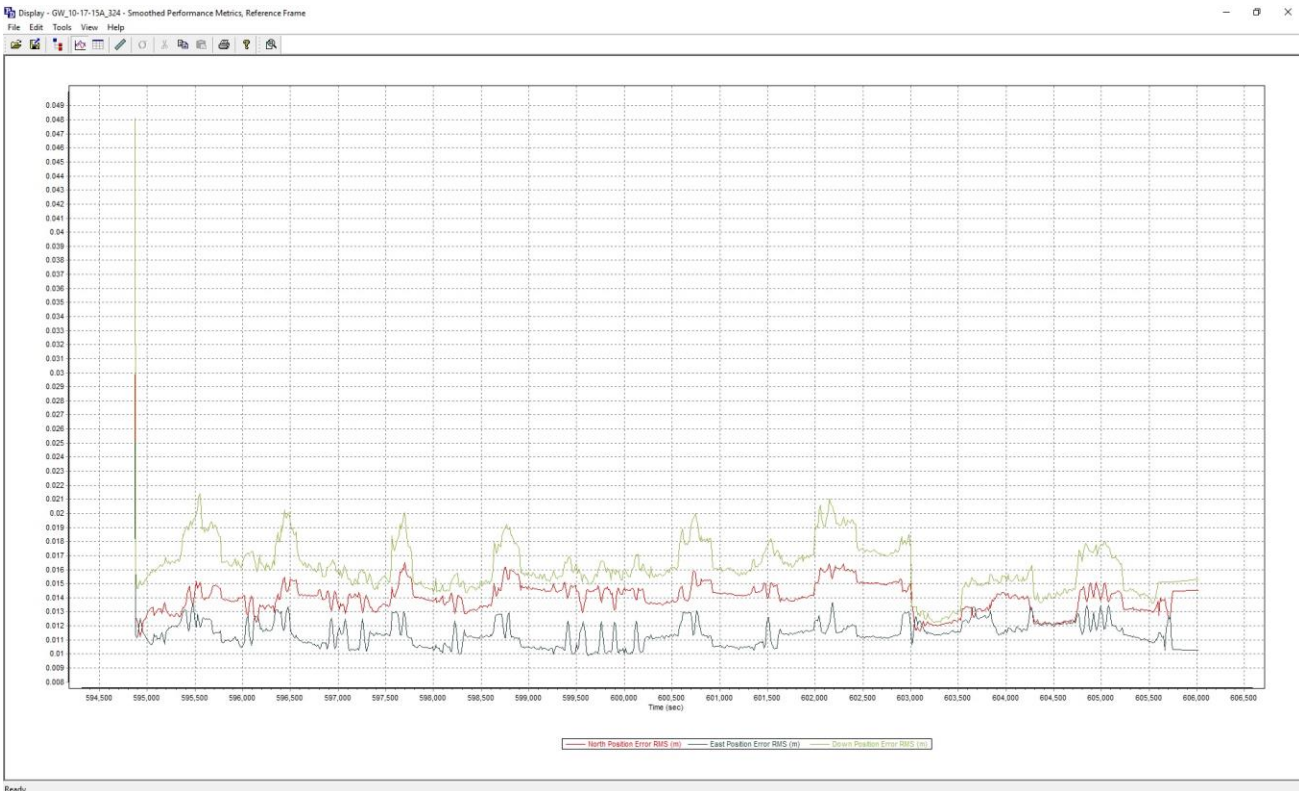
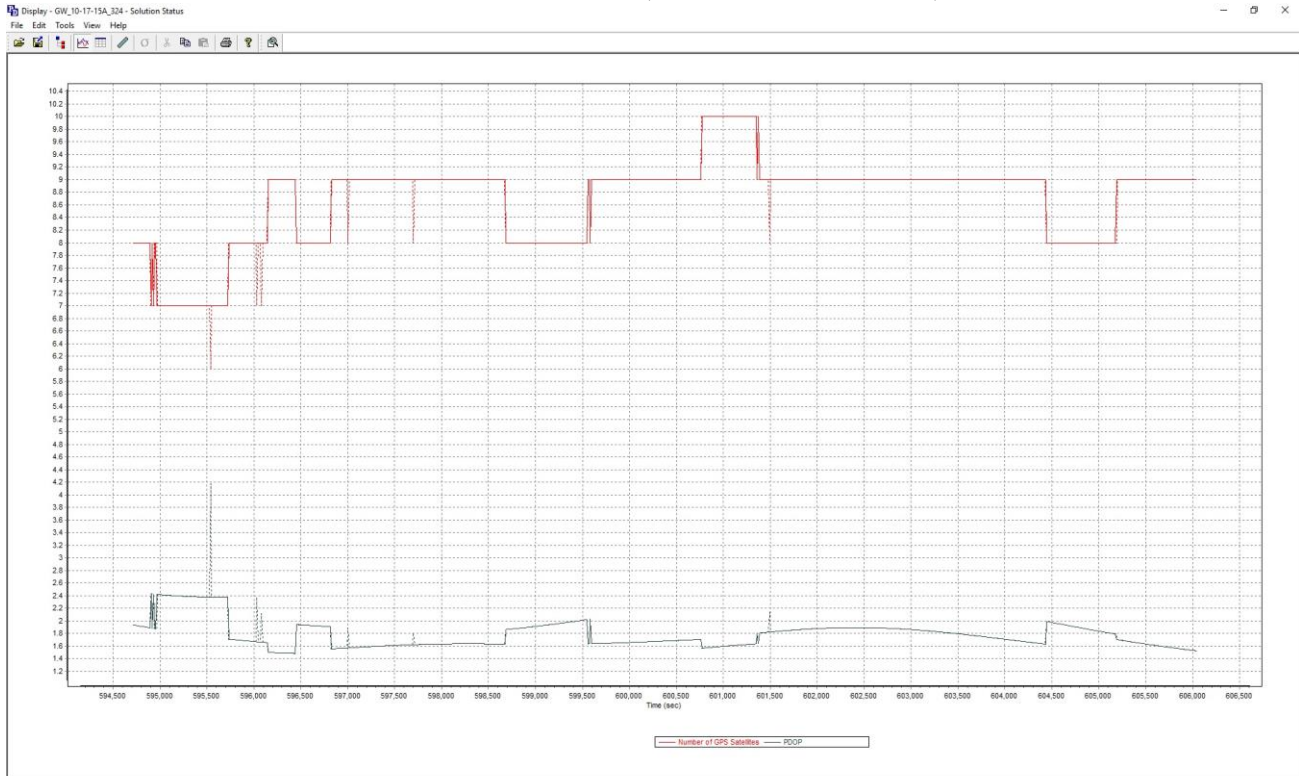
Appendix A:

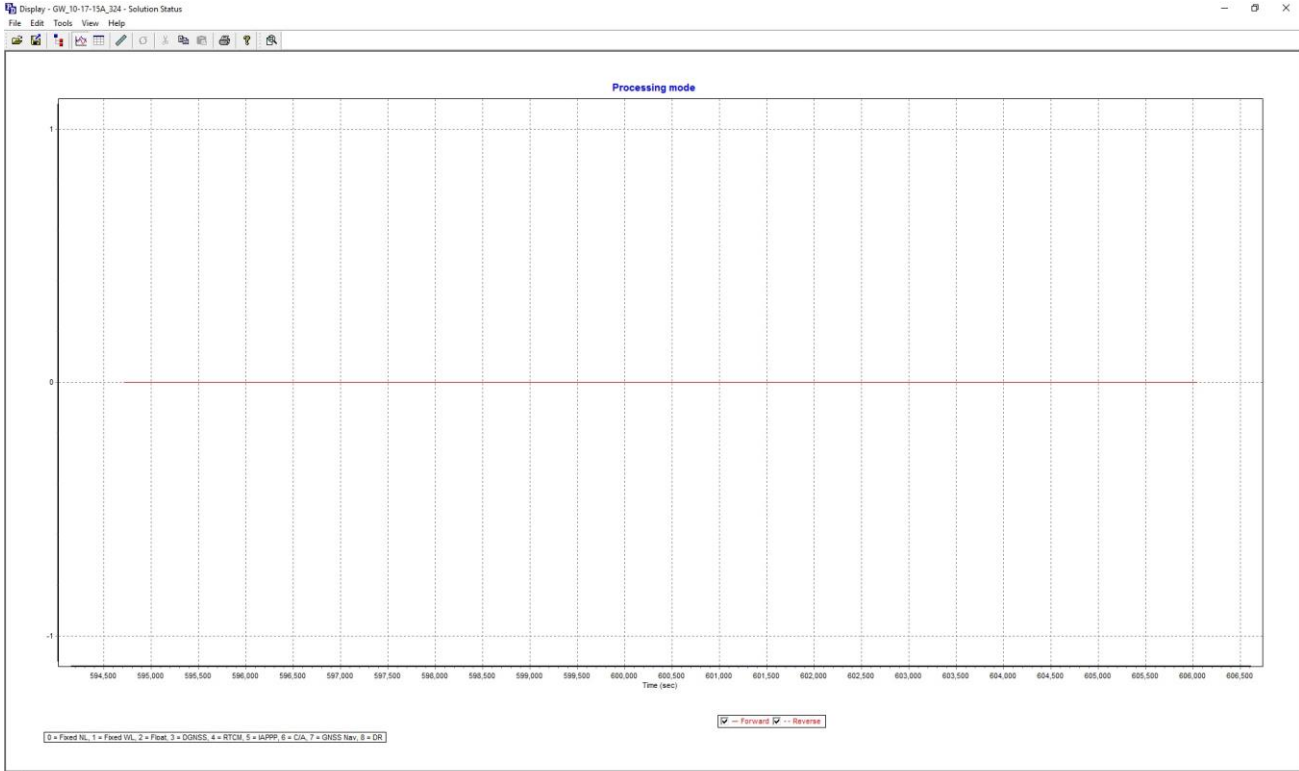
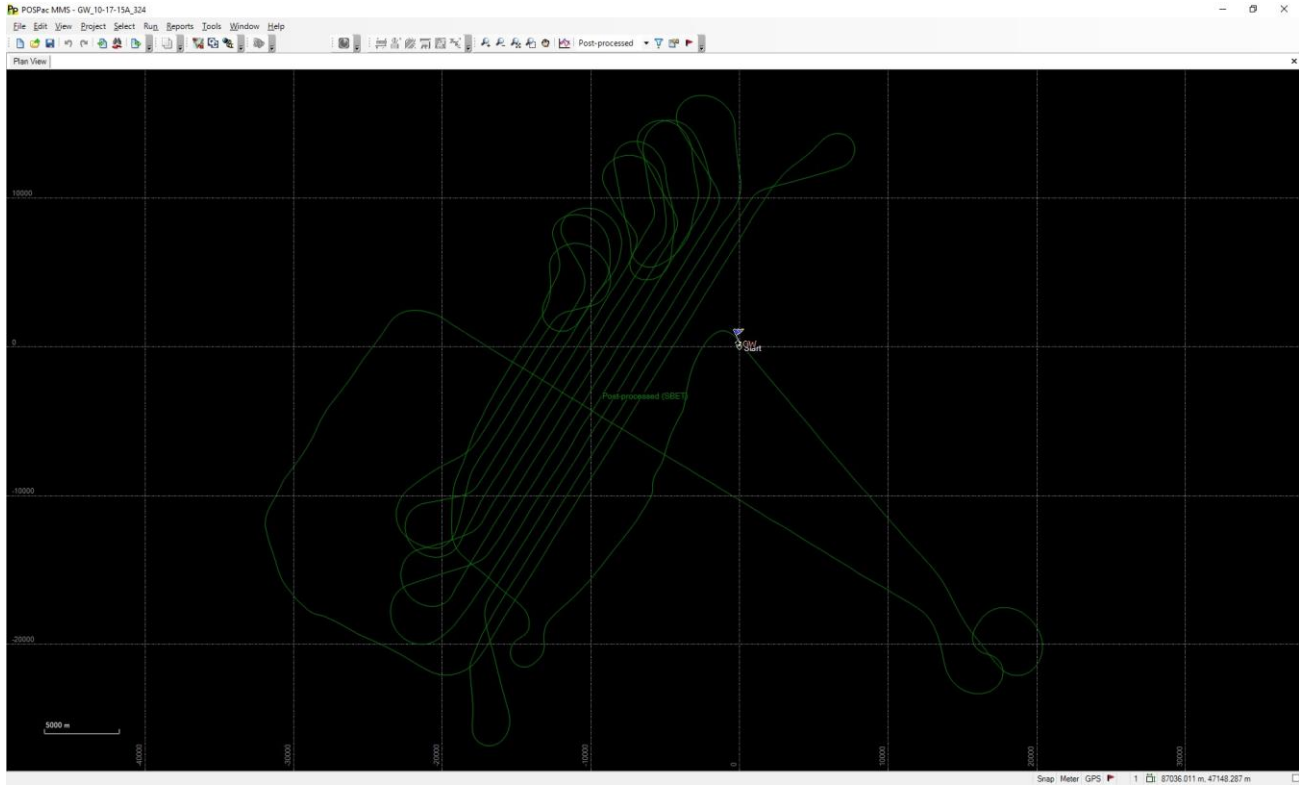
GPS/IMU Statistics, Flight Logs, and Base Station Logs

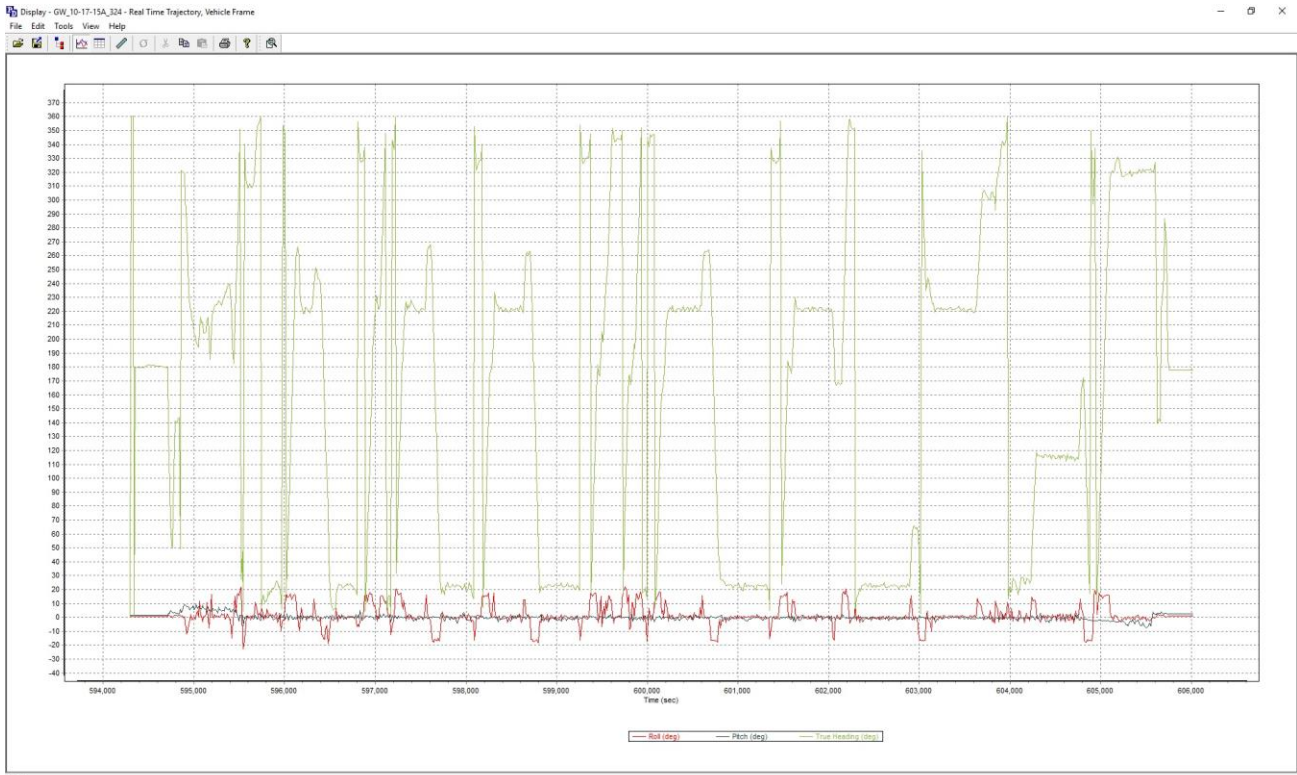
There were five total lifts. Graph reports generated from processing software, flight logs, and base station logs are found on the following pages.

Oct 17, 2016-A (N7266Z, SN324).....	2
Oct 18, 2016-A (N7266Z, SN324).....	7
Oct 18, 2016-B (N7266Z, SN324).....	12
Oct 19, 2016-A (N7266Z, SN324).....	16
Oct 19, 2016-B (N7266Z, SN324).....	19

Oct 17, 2016-A (N7266Z, SN324)







Ready

Coordinate Manager

Station Information

Station ID:

Coordinates

Latitude:

Longitude:

Altitude: m

Decimal Degrees

Antenna **Frame**

Height: m

Method:

Manufacturer:

Type:

Offset from Measured Point to APC: m

Ground Reference Point (GRP) coordinates

Station Database

Station ID: Station Fullname:

Primary Service ID: Coordinate Accuracy:

Secondary Service ID:

Station ID	Station Full...	Frame	Epoch	Ellipsoid	Latitude	Longitude	Altitude	Coord Acc

LIDAR FLIGHT LOG

MISSION: 20151017A		DATE: 10/17/15		PROJECT NUMBER: 26947		PILOT: CHRISTOPHER		OPERATOR: NELSON		AIRCRAFT: N7266Z		REMARKS	
PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	START TIME	STOP TIME	Laser Time	TZPK	REMARKS	1 of 1	
26947						1650	1400				SBN → SITE	1445.8	
								1615			KSON	1448.2	
			52	19	225	1650	2115				KSON → SITE		
	1	32	52	19	225	1650	2130	2132			TWO TESTS		
	2	212				1640	2136	2138					
	3	32				1630	2143	2146					
	4	212				1700	2155	2158					
	5	32				1630	2203	2207					
	6	212				1680	2212	2216					
	7	32				1610	2222	2227					
	8	212				X	X	X			ABORT		
	9	212				1660	2242	2249					
	10	212				1670	2254	2302					
	11	32				1640	2306	2314					
	12	212				1660	2319	2328					
	40	21				1660	2332	2340					
	40	21				1660	2352	2359			CROSSFLIGHT		
	TOTAL LINES	FLOWN	LEFT	SITE	AIRCRAFT FERRY	STATIC	START	STOP	STOP	NOTES:			
26947	13/42	13	29	2.5	0.8					0:15	SBN → KSON	1451.5	
26947				2.5	2.4								
TOTAL				2.5	3.2								

GPS OBSERVATION LOG

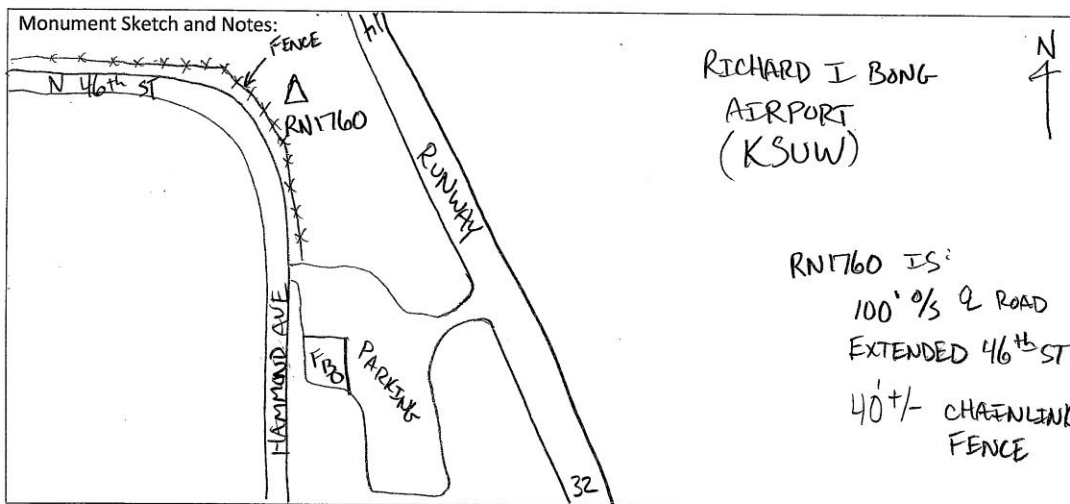
Station ID	<u>SUPERIOR GPS</u> <u>PID RN1760</u>	Date	<u>10 / 17 / 15</u>
Project Number	<u>26947</u>	Julian Date	<u>290/291</u>
Project Name	<u>DOUGLAS CO.</u>	Start Time	<u>16 : 34 : (2) :</u>
Rcvr. Type	<u>Novatel DLV3 L1 L2</u>	Stop Time	<u>24 : 42 : (2) :</u>
Rcvr. S/N	<u>NBV 12130007</u>	Rcvr. File Name	<u>00072900.PDC</u>
Antenna Type	<u>Novatel 702GG v1.03</u>	Observer	<u>BDN</u>
Antenna S/N	<u>01017577</u>		

New or Existing Mon. New Existing
 Photo Taken: Yes No
 Monument Type: DISK IN CONCRETE
 Spike PK Nail AM Washer
 Other _____

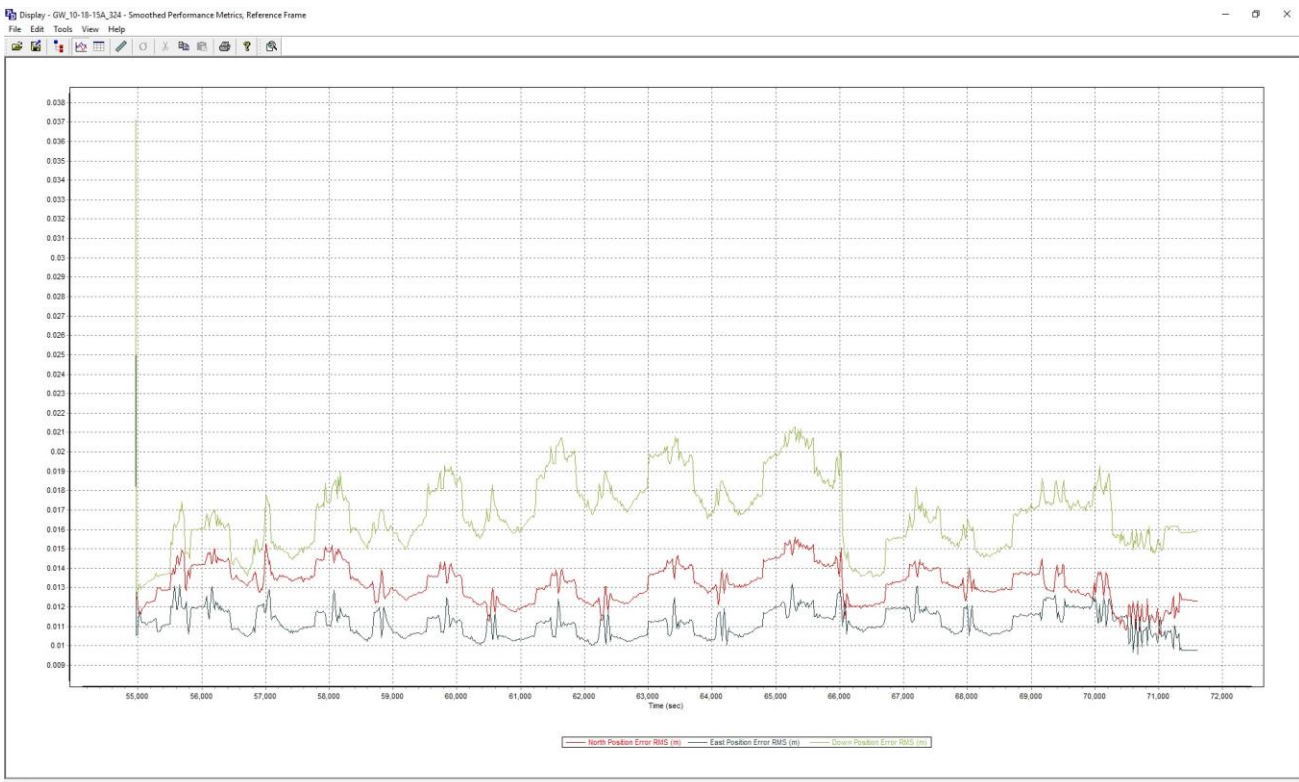
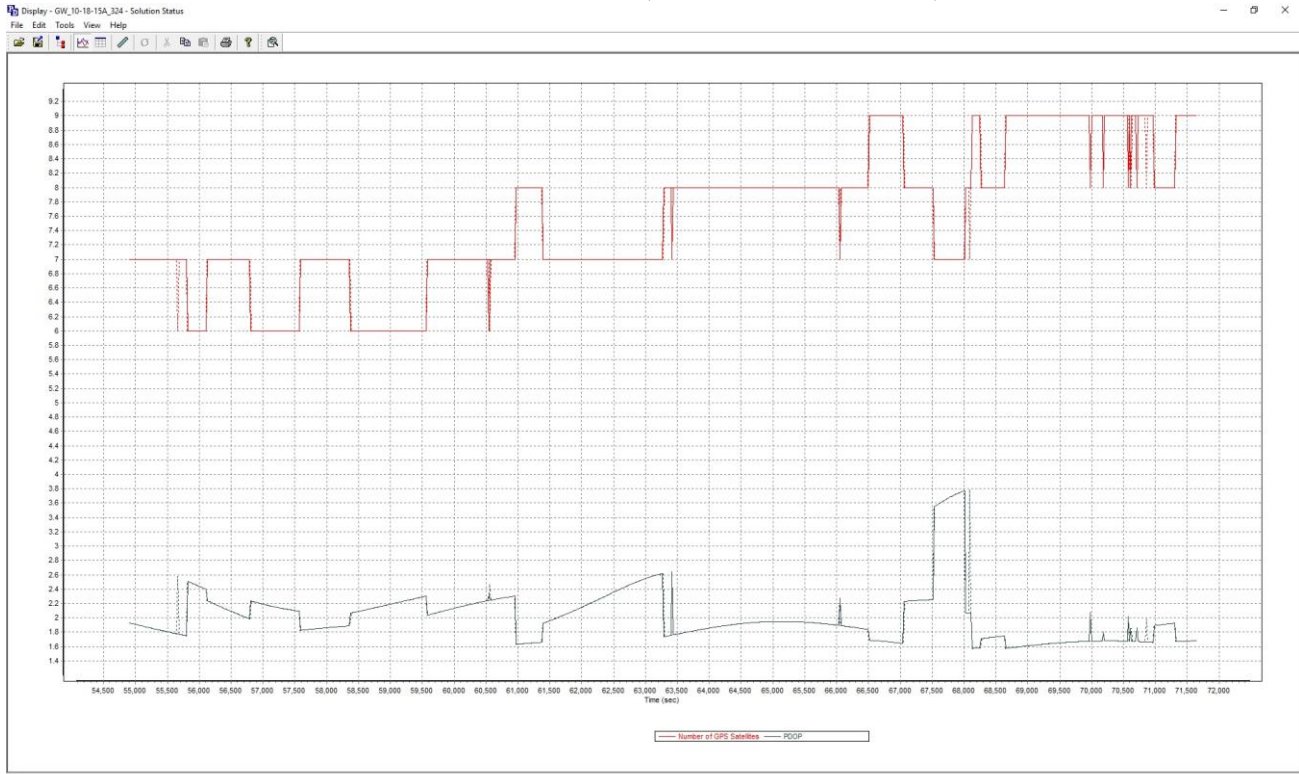
Height Readings:

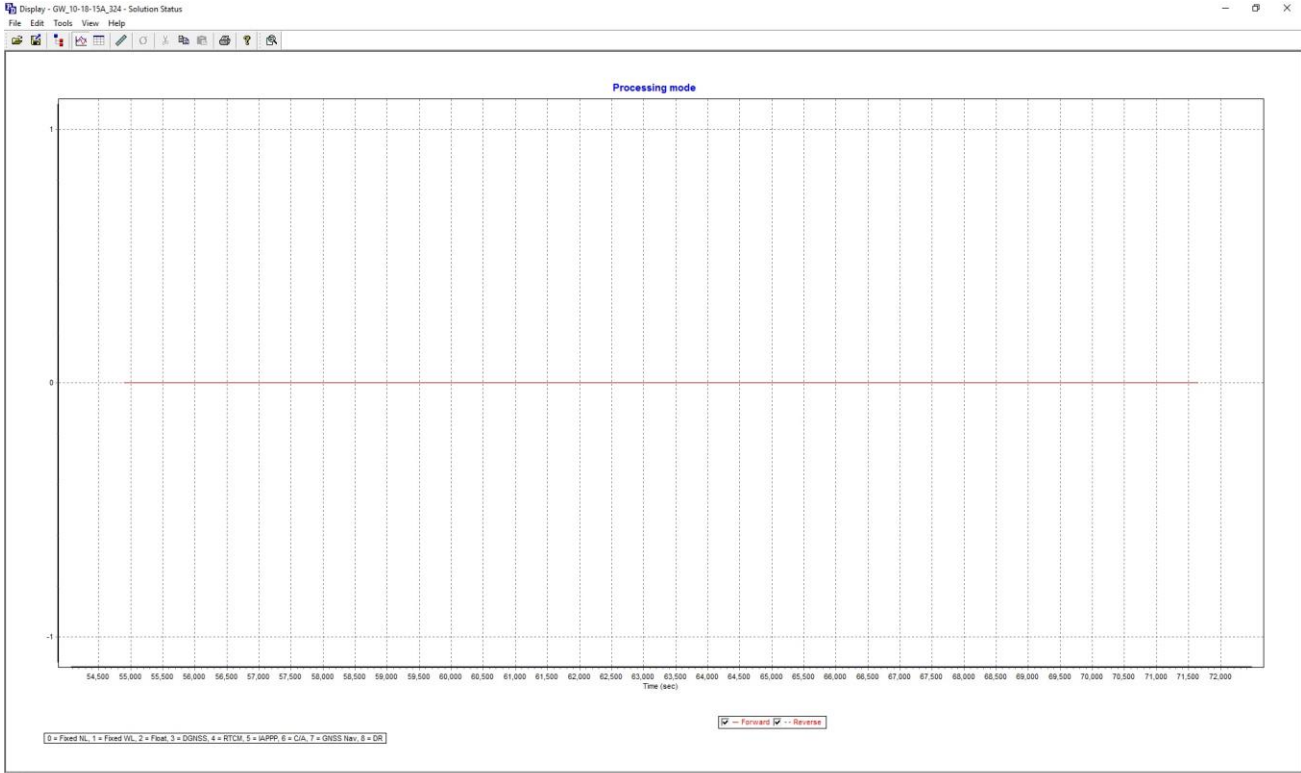
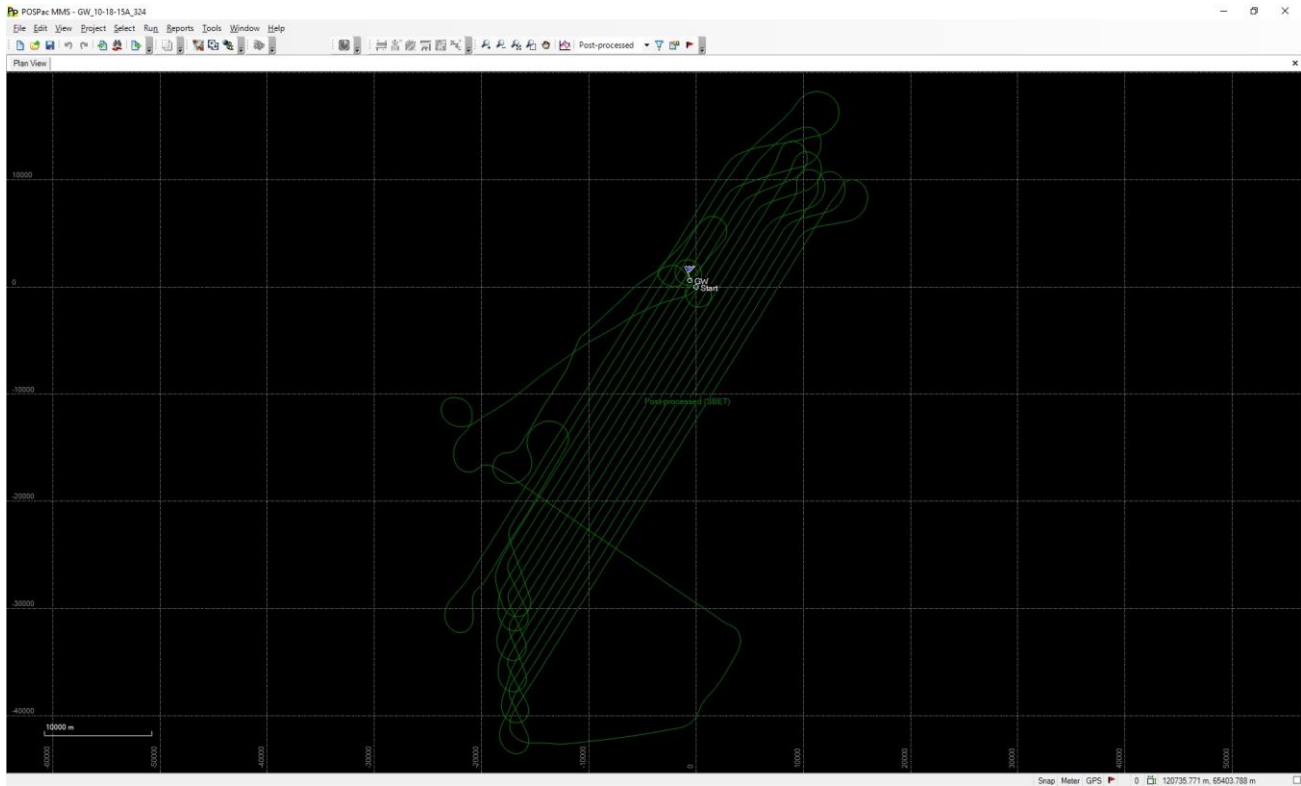
(Top of Monument to Bottom of Ground Plane)

Start 2.0 M. _____ Ft.
 Stop 2.0 M. _____ Ft. FIXED POLE
 Mean 2.0 M. _____ Ft.

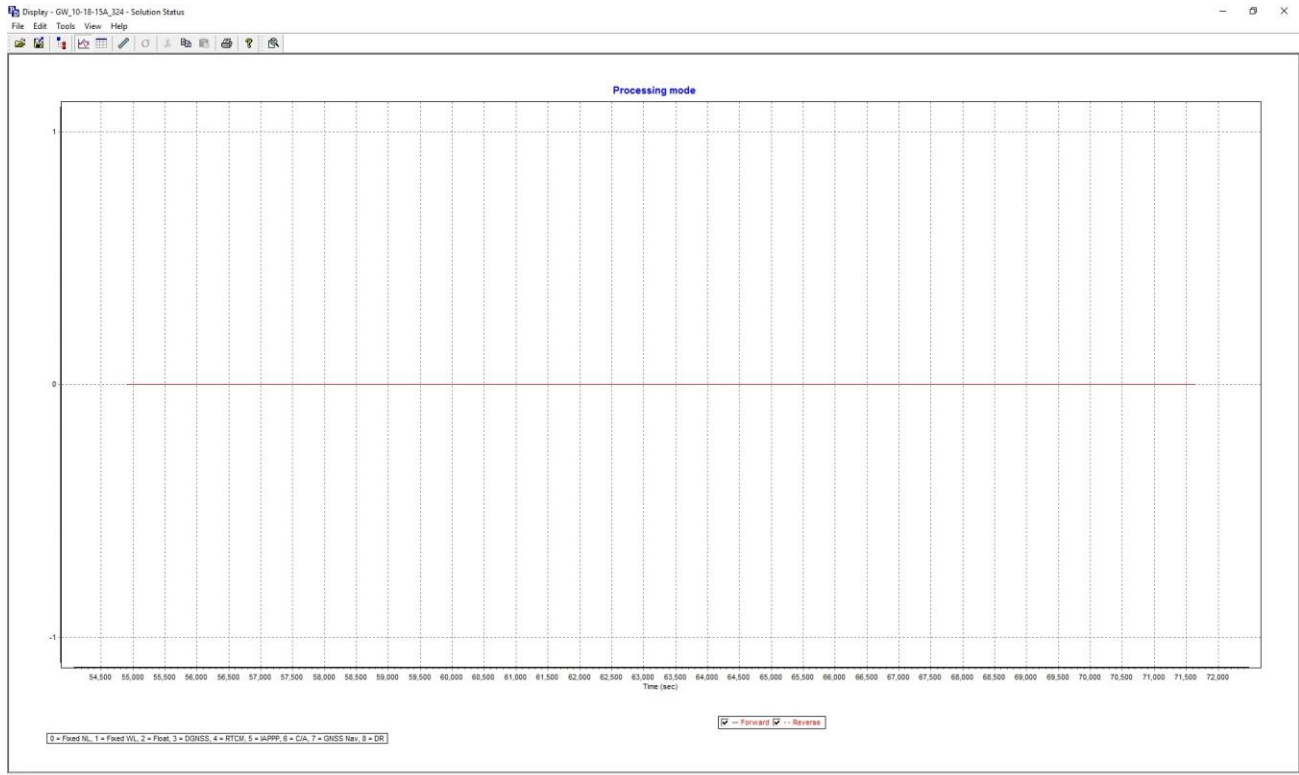


Oct 18, 2016-A (N7266Z, SN324)





Ready



Ready

Coordinate Manager

Station Information

Station ID:

Coordinates

Latitude:

Longitude:

Altitude: m

Decimal Degrees

Ground Reference Point (GRP) coordinates

Antenna **Frame**

Height: m

Method:

Manufacturer:

Type:

Offset from Measured Point to APC: m

Station Database

Station ID: Station Fullname:

Primary Service ID: Coordinate Accuracy:

Secondary Service ID:

Station ID	Station Full...	Frame	Epoch	Ellipsoid	Latitude	Longitude	Altitude	Coord Acc
(Table is currently empty)								

LIDAR FLIGHT LOG												
MISSION: 20151018A		DATE: 10/18/15		OPERATOR: NELSON		AIRCRAFT: N7266Z		13 SEN 324				
PILOT: CHRISTOPHER		SCAN ANGLE		PRF		ALT (m)		TIME		REMARKS		
PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	FREQ	ANGLE	SCAN	PRF	ALT (m)	START	STOP	Laser Time	TZPK	REMARKS
26947			52	19	225	225	1650	15:10				KSUW → SITE 1451.5
												2 TEST FIRMS
	13	32	150	19	225		1680	15:39	15:46			
	14	212	110				1620	15:54	16:05			
	15	32	145				1685	16:09	16:18			
	16	212	110				1675	16:23	16:35			
	17	32	150				1665	16:39	16:47			
	18	212	110				1670	16:52	17:04			
	19	32	155				1675	17:08	17:17			
	20	212	110				1670	17:21	17:34			
	21	32	155				1680	17:38	17:47			
	22	212	120				1675	17:52	18:05			
	23	32	150				1660	18:09	18:19			
	24	212	105				1660	18:23	18:38			
	25	32	150				1650	18:41	18:52			
	26	212	110				1655	18:56	19:12			
	41	305	115				1635	19:19	19:25			CROSS FLIGHT
									19:15			SITE → KSUW 1456.8
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	FERRY	STATIC	START	STOP	NOTES:			
26947	28/42	15	15	3.8	1.5							
									WACR			

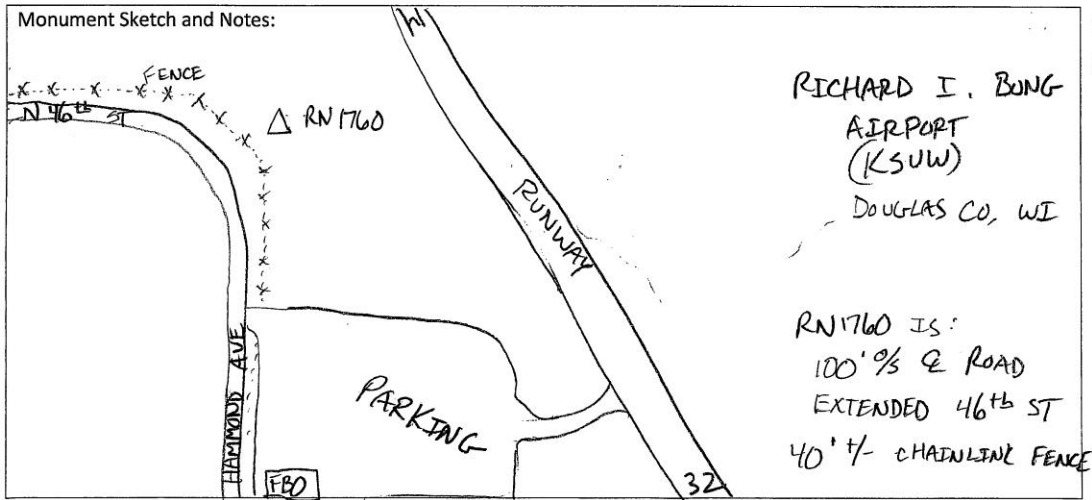
GPS OBSERVATION LOG

Station ID	<u>SUPERIOR GPS</u> <u>PIED RN1760</u>	Date	<u>10 / 18 / 15</u>
Project Number	<u>26947</u>	Julian Date	<u>291 / 292</u>
Project Name	<u>DOUGLAS CO</u>	Start Time	<u>13 : 55 (Z)</u>
Rcvr. Type	<u>Novatel DLV3 L1 L2</u>	Stop Time	<u>24 : 24 (Z)</u>
Rcvr. S/N	<u>NBV 12130007</u>	Rcvr. File Name	<u>00072910.PDC</u>
Antenna Type	<u>Novatel 702GG v1.03</u>	Observer	<u>BDN</u>
Antenna S/N	<u>01017577</u>		

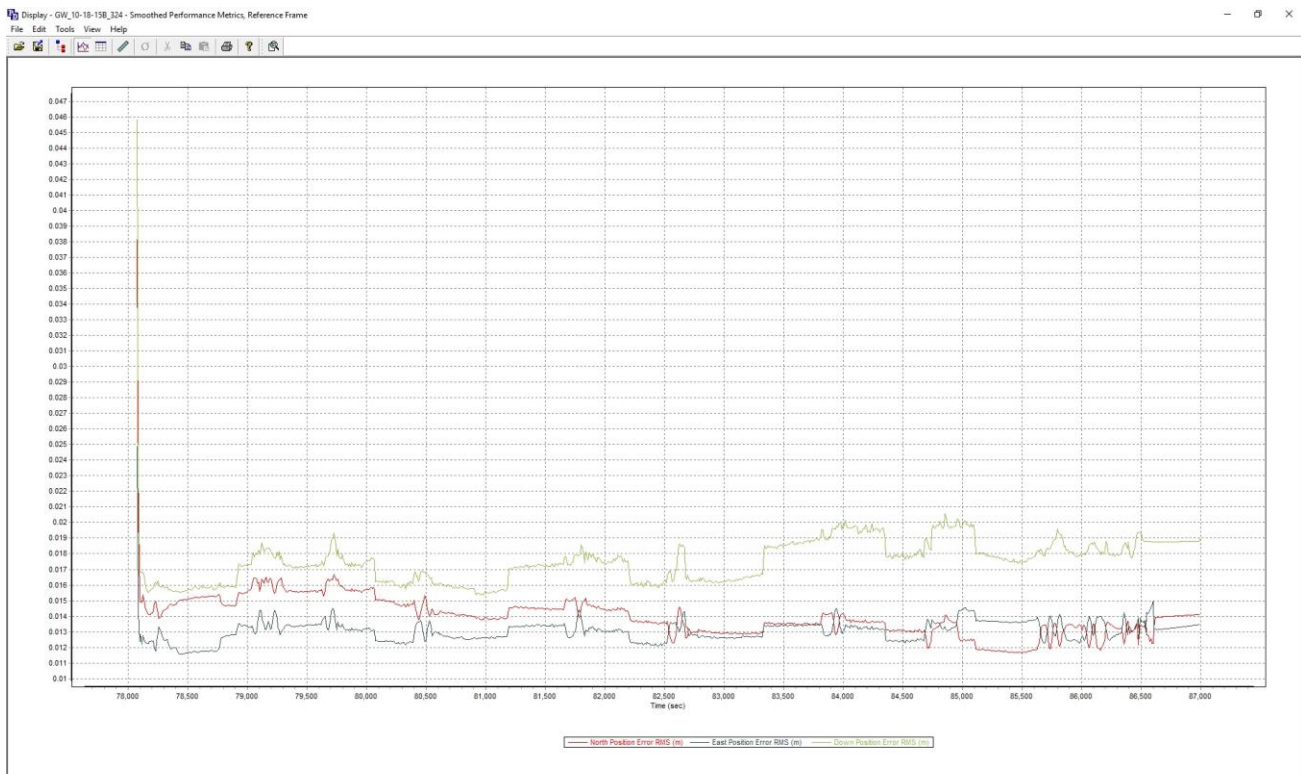
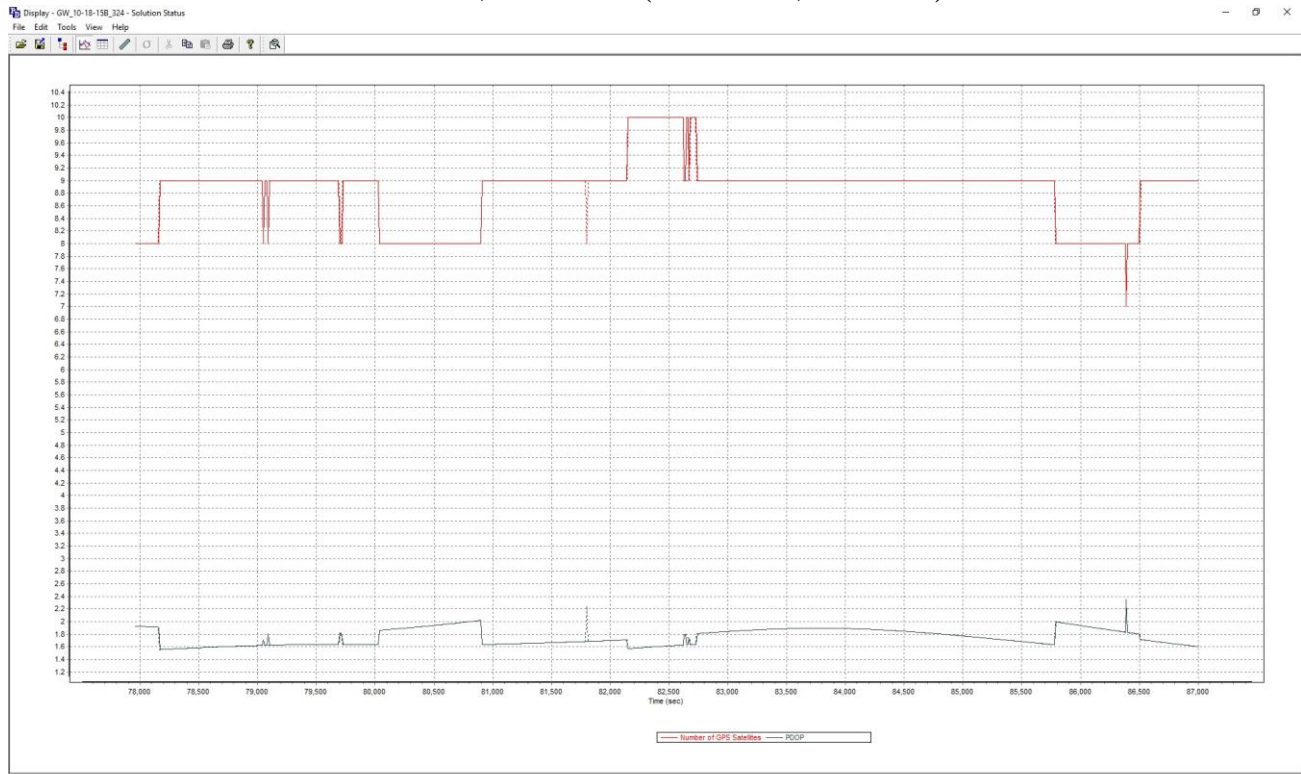
New or Existing Mon. New Existing
 Photo Taken: Yes No
 Monument Type: DISK IN CONCRETE
 Spike PK Nail AM Washer
 Other _____

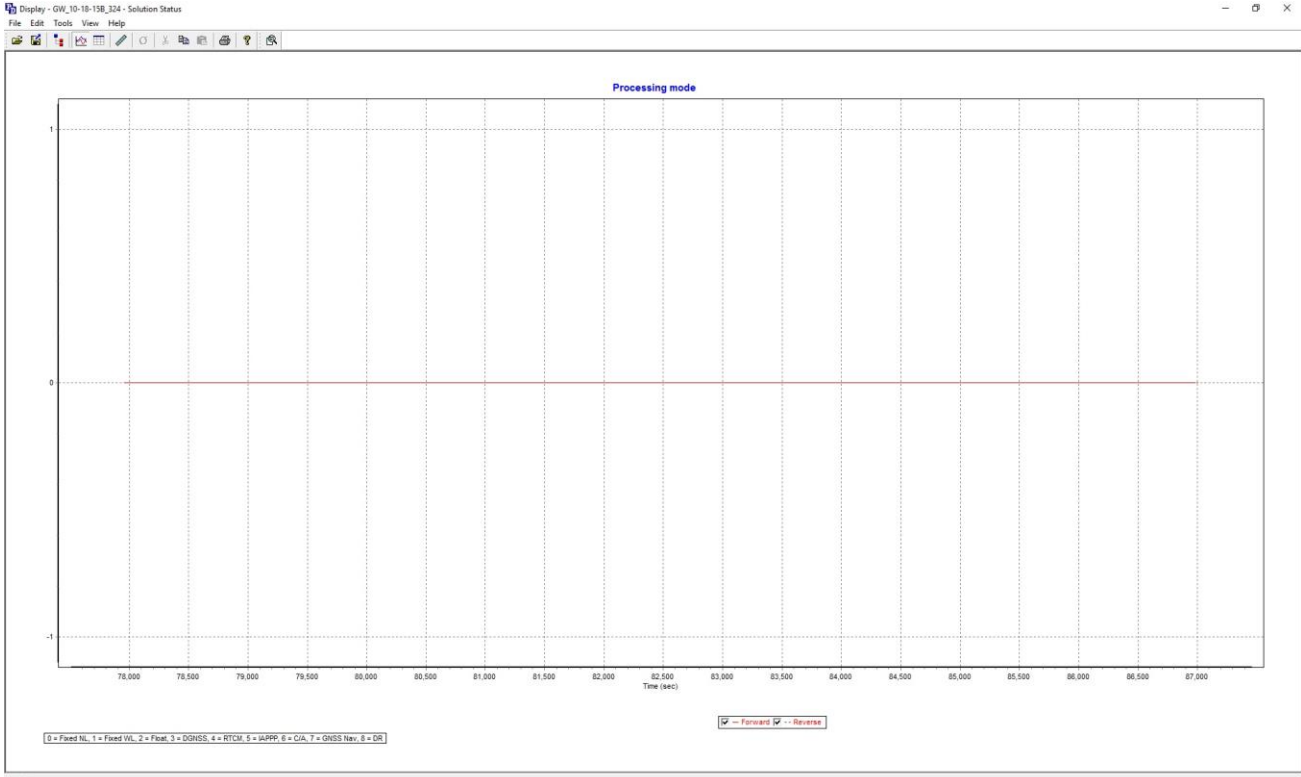
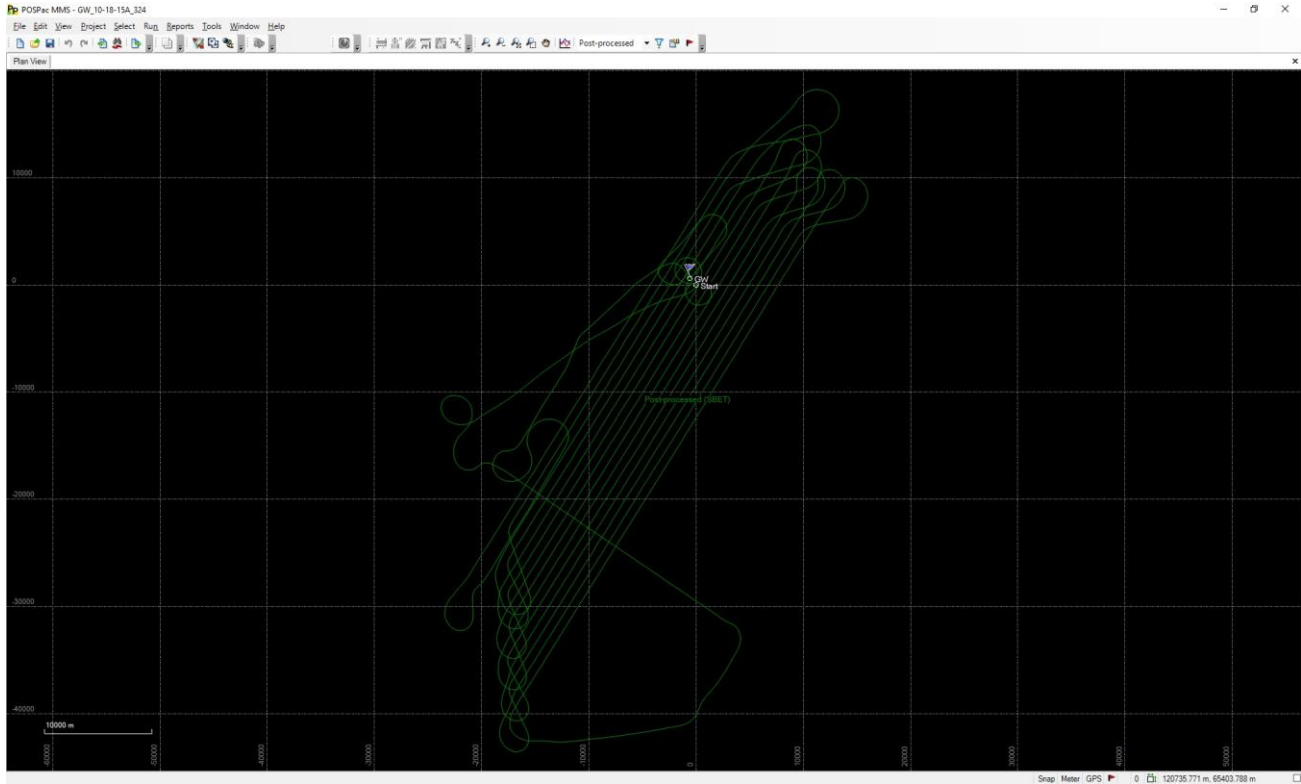
Height Readings:
(Top of Monument to Bottom of Ground Plane)

Start 2.0 M. _____ Ft.
 Stop 2.0 M. _____ Ft. **FIXED POLE**
 Mean 2.0 M. _____ Ft.



Oct 18, 2016-B (N7266Z, SN324)







Ready

Coordinate Manager

Station Information

Station ID:

Coordinates

Latitude:

Longitude:

Altitude: m

Decimal Degrees

Antenna **Frame**

Height: m

Method:

Manufacturer:

Type:

Offset from Measured Point to APC: m

Ground Reference Point (GRP) coordinates

Station Database

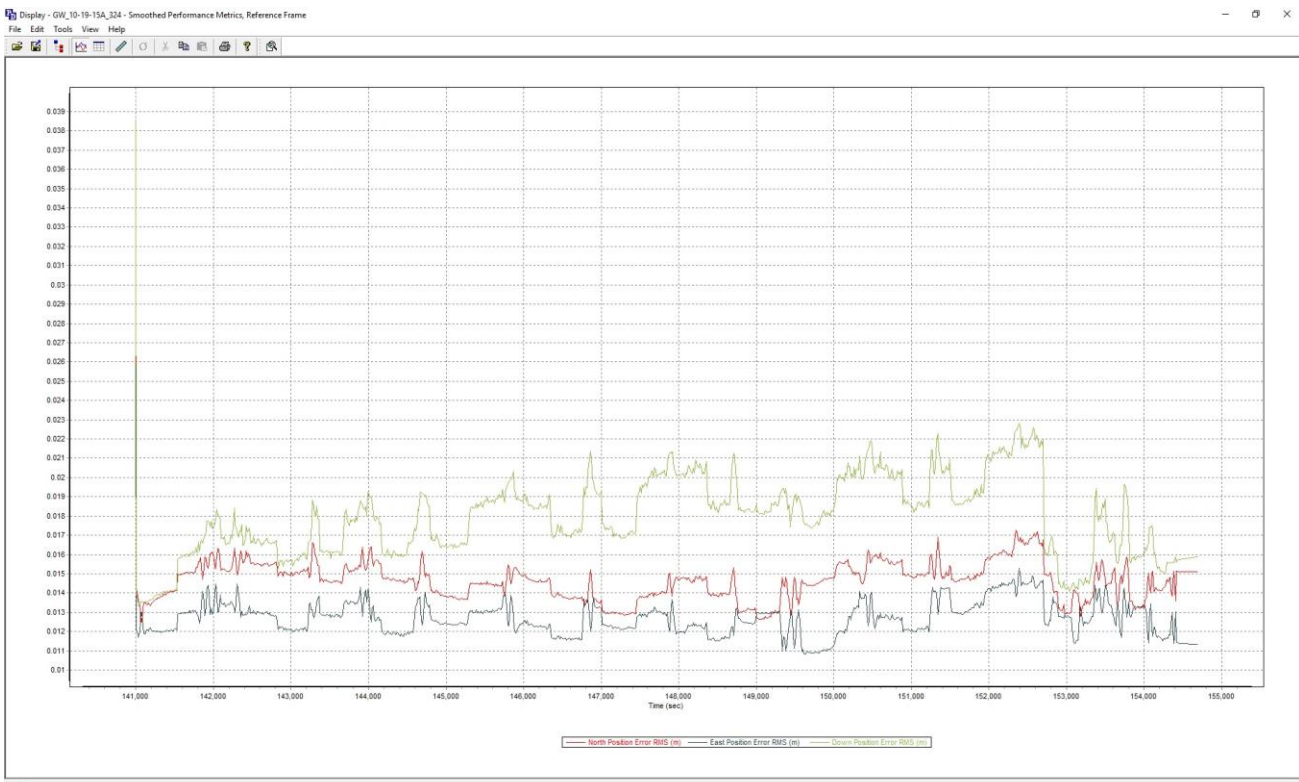
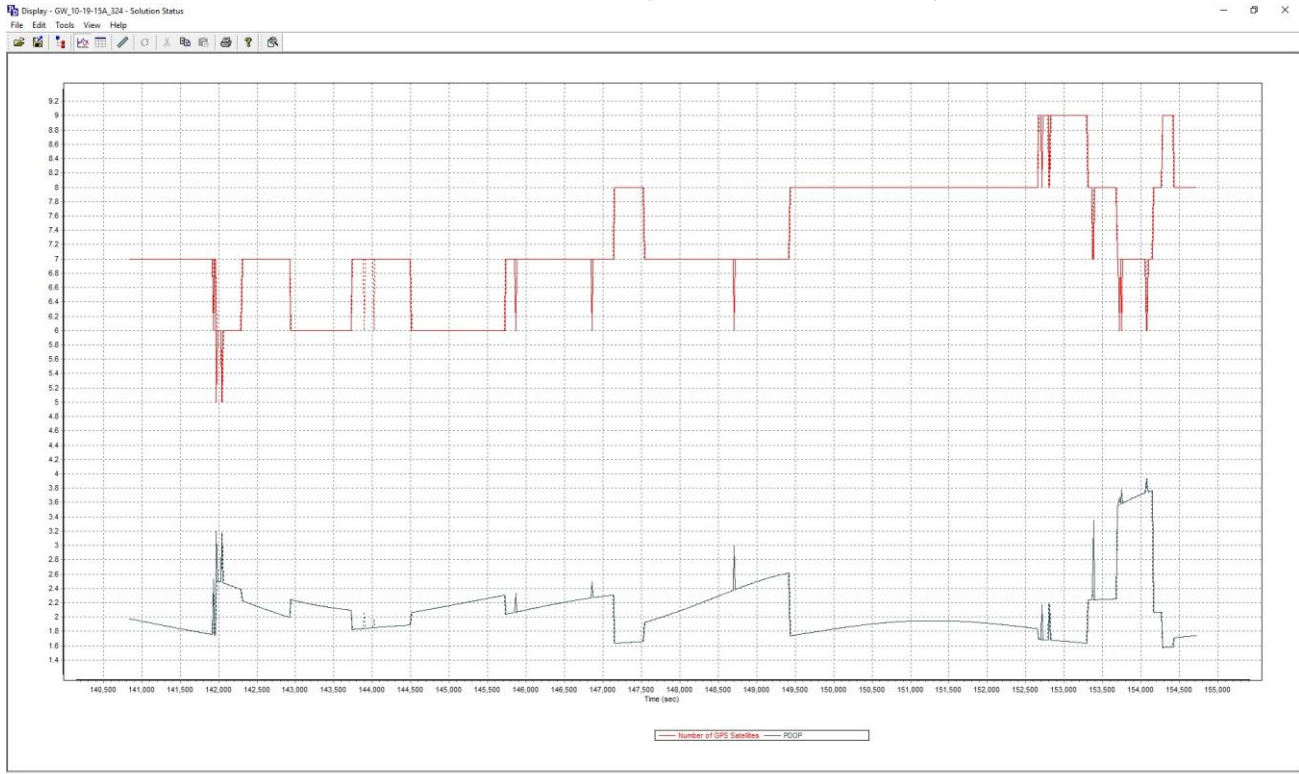
Station ID: Station Fullname:

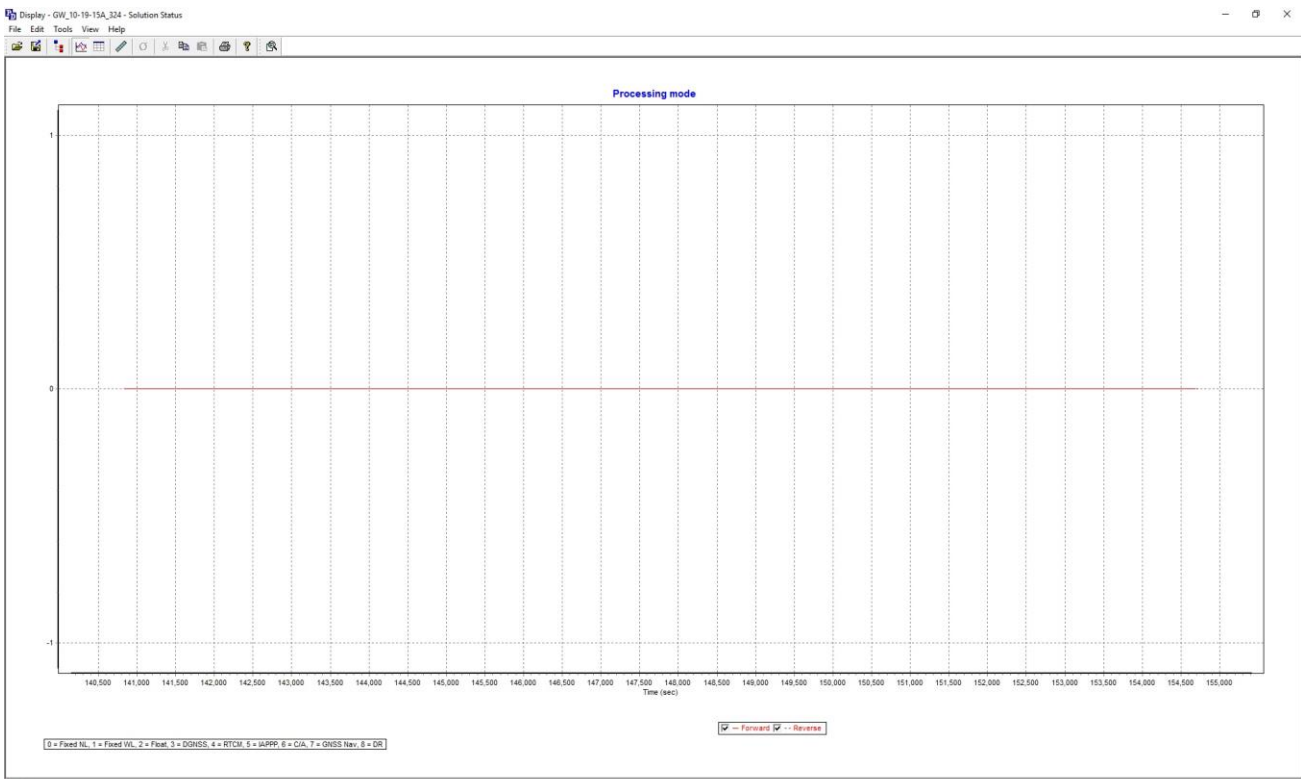
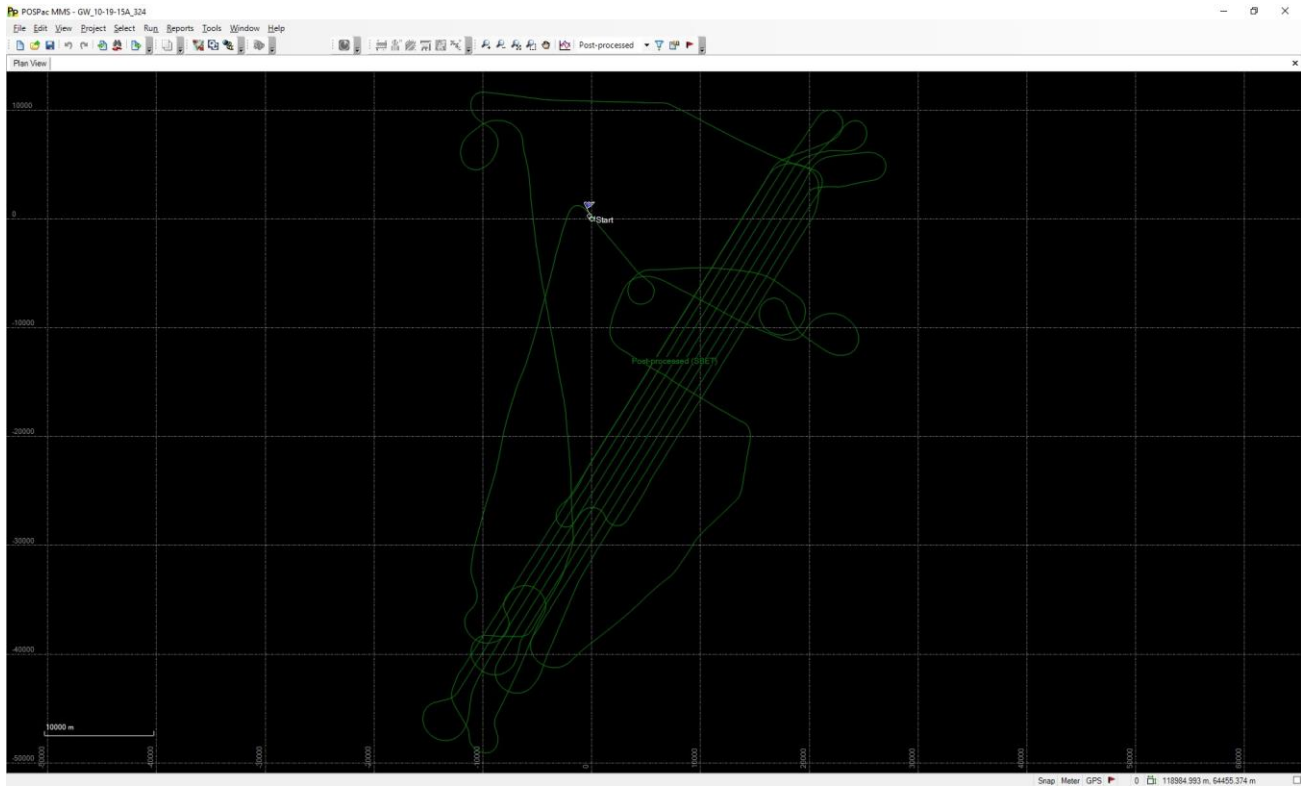
Primary Service ID: Coordinate Accuracy:

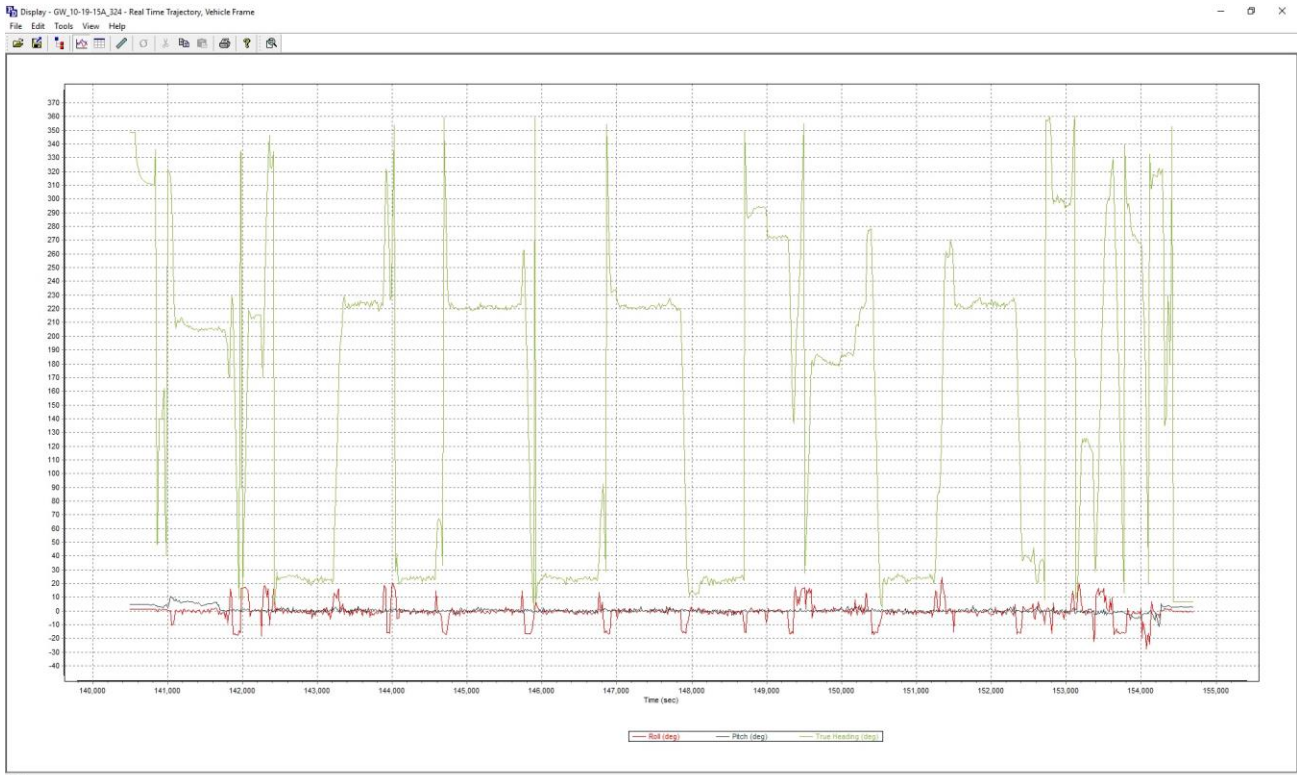
Secondary Service ID:

Station ID	Station Full...	Frame	Epoch	Ellipsoid	Latitude	Longitude	Altitude	Coord Acc

Oct 19, 2016-A (N7266Z, SN324)







Ready

Coordinate Manager

Station Information

Station ID: gw

Coordinates

Latitude: N 46 41 4.25826000

Longitude: W 92 5 54.10949000

Altitude: 177.1080 m

Decimal Degrees

Antenna | **Frame**

Height: 2.000 m

Method: Bottom of antenna mount

Manufacturer: NovAtel

Type: 702-GG 1.03

Offset from Measured Point to APC: 0.069 m

Ground Reference Point (GRP) coordinates Apply Changes

Station Database

Station ID: gw | Station Fullname: gw

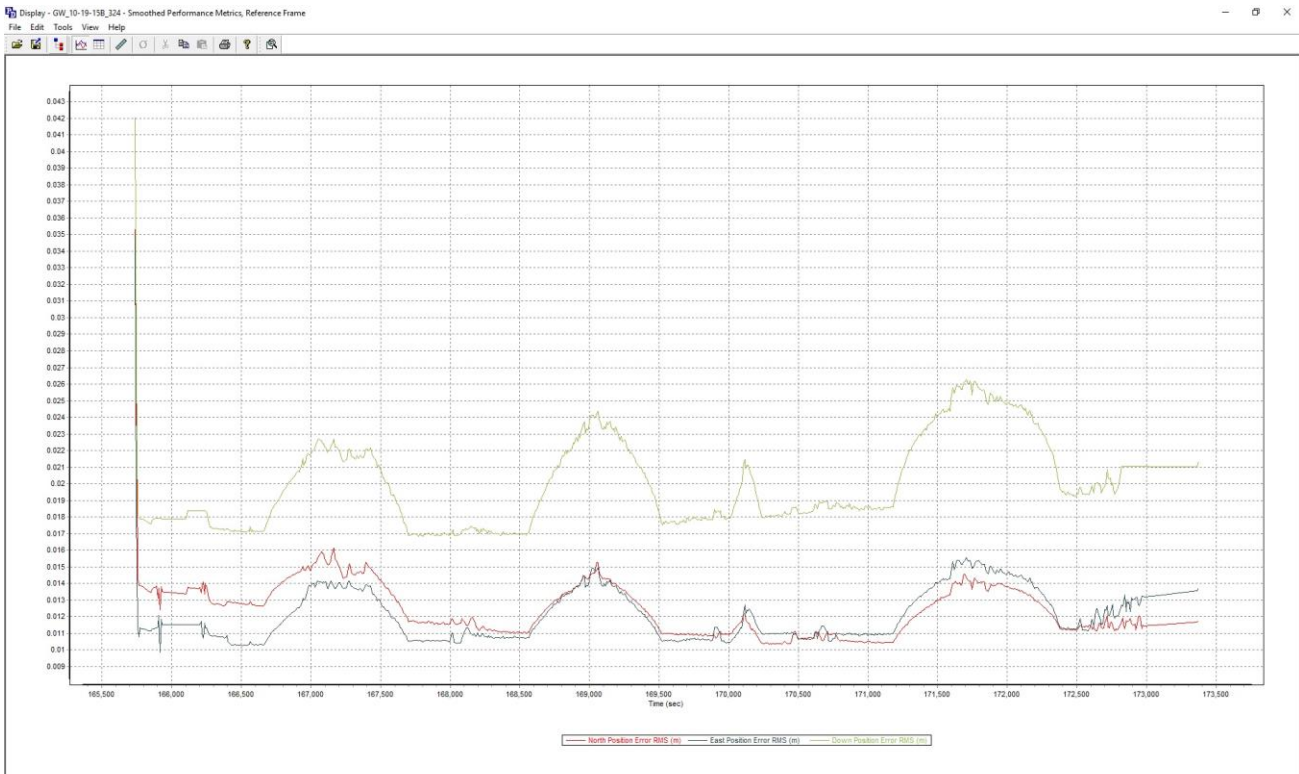
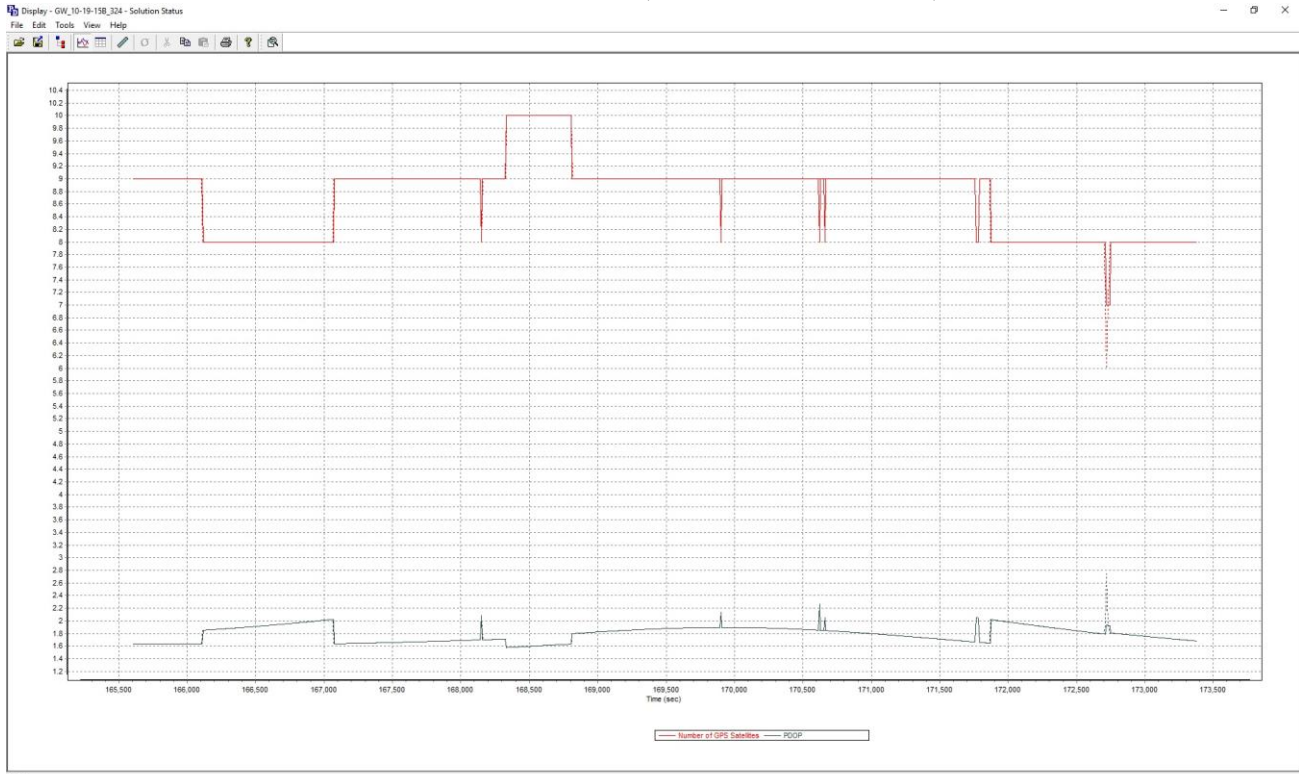
Primary Service ID: Edit | Coordinate Accuracy: UNKNOWN_ACC

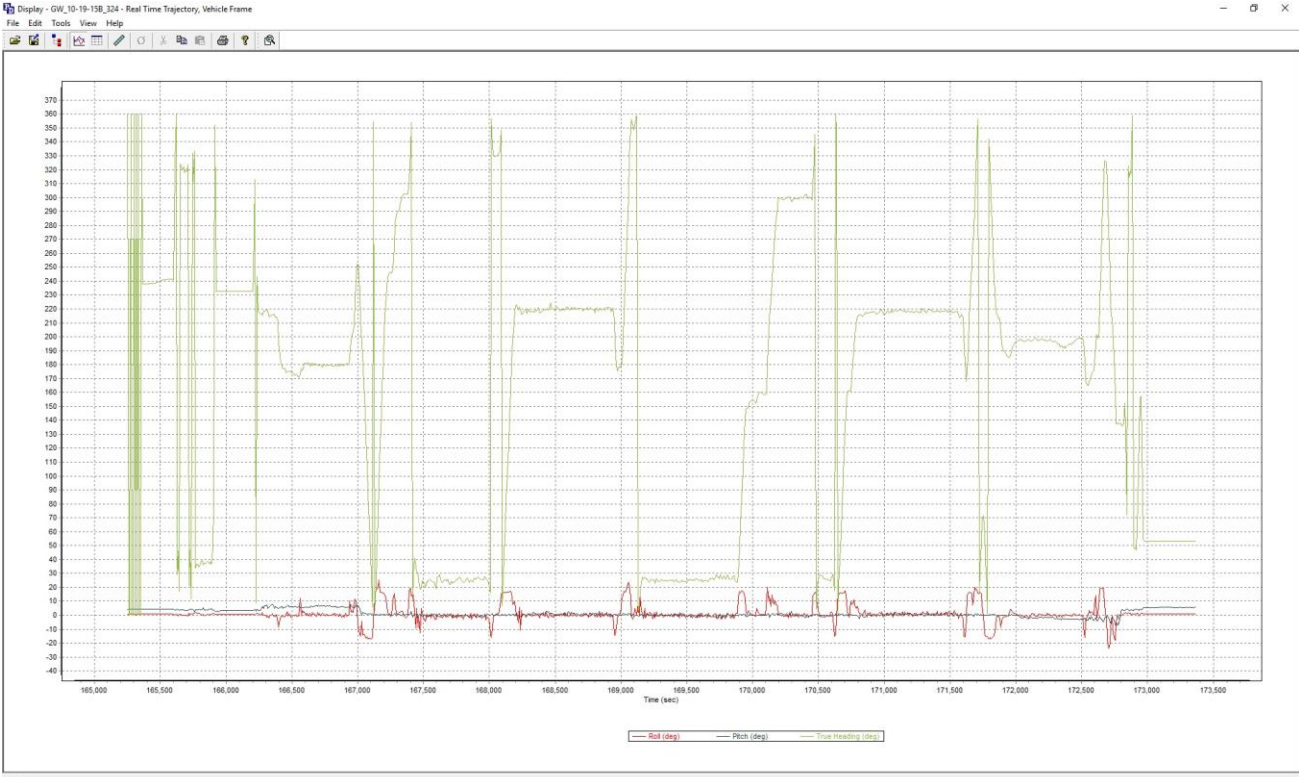
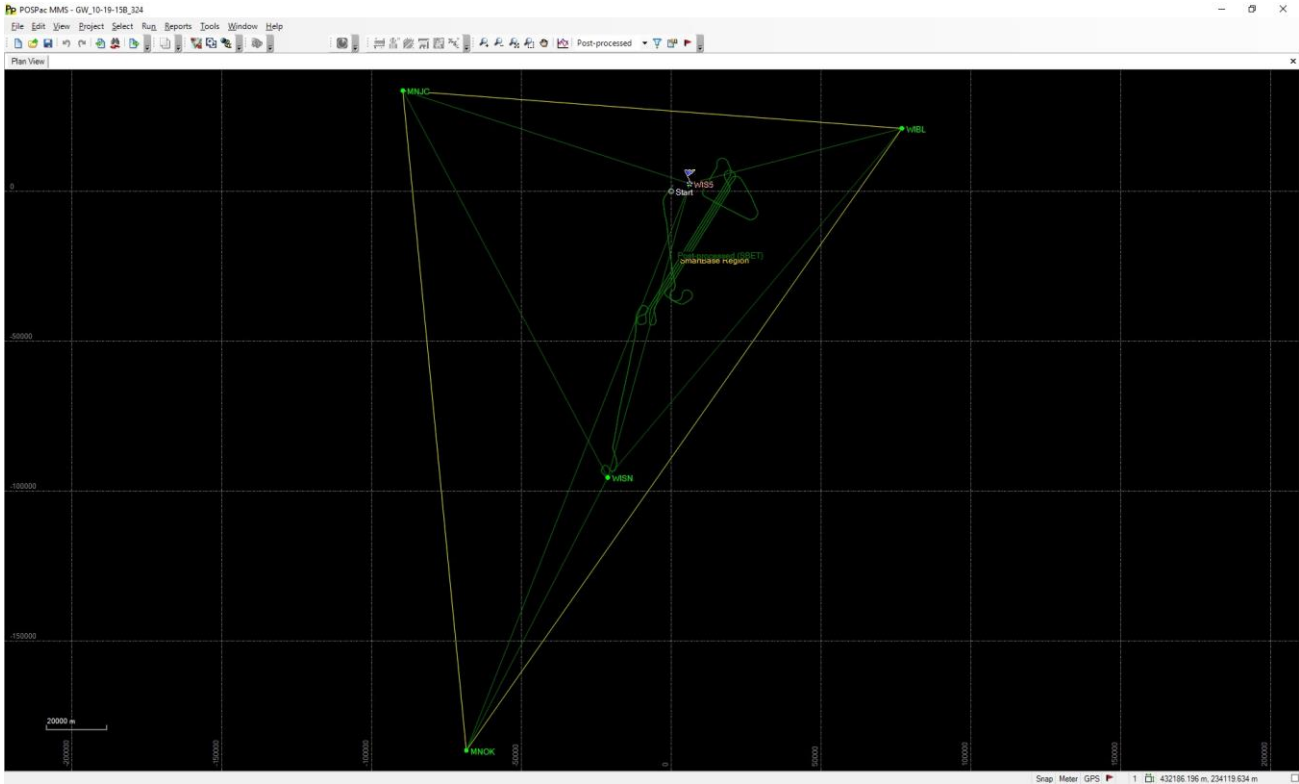
Secondary Service ID: Edit | Add Delete Update

Station ID	Station Full...	Frame	Epoch	Ellipsoid	Latitude	Longitude	Altitude	Coord Acc
[Empty Table]								

Import Coordinates Export Coordinates Close

Oct 19, 2016-B (N7266Z, SN324)





Ready



Ready

Coordinate Manager

Station Information

Station ID:

Coordinates

Latitude:

Longitude:

Altitude: m

Decimal Degrees

Antenna Reference Point (ARP) coordinates Apply Changes

Antenna Frame

Height: m

Method:

Manufacturer:

Type:

Offset from Measured Point to APC: m

Station Database

Station ID: Station Fullname:

Primary Service ID: Edit Coordinate Accuracy:

Secondary Service ID: Edit Add Delete Update

Station ID	Station Full...	Frame	Epoch	Ellipsoid	Latitude	Longitude	Altitude	Coord Acc

Import Coordinates Export Coordinates Close