LiDAR Processing Report

Professional Management
and LiDAR Data Collection
and Processing Services

Block 7

PROJECT TITLE:	Professional Management and LiDAR Data Collection and Processing Services
WORK ORDER NAME:	Task Order A
WORK ORDER NUMBER:	2007058492720
CONSULTANT NAME:	3001, Inc., CH2M Hill, Inc.
PROJECT MANAGERS:	Jeremy Conner, 3001 Project Manager JoLee Gardner, CH2M Hill Project Manager

Services provided by:

3001, INC. THE GEOSPATIAL COMPANY
501 Robert Blvd. 2nd Floor
Slidell, Louisiana 70458

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Section 1

System Calibration Report

The data posting is a function of flight altitude, airspeed, scan angle, scan rate, laser pulse rates, and terrain relief. The above functions are taken into consideration at the time of flight planning. Data acquisition procedures play a role in the success of this method. Many parameters are considered in order to achieve the maximum possible Global Positioning System (GPS) positioning accuracy, such as the separation between the airborne and base station GPS receivers, satellite geometry as reflected by the Position Dilution of Precision (PDOP), signal multipath, and many other factors.

The post-flight data processing software maximizes detection probability while minimizing false alarms. It corrects for several unavoidable, but predictable, biases from the environment as well as removing effects inherent to the hardware configuration.

Monitoring the data during collection is only part of the process done to assure proper operation of equipment and ultimately, data quality. However, all subsystems may indicate correct operating parameters (precision), but that does not mean that together they are providing correct solutions (accuracy). In order to validate the collection process, calibration tests are performed. These procedures allow the operator to know if the subsystems have been set up properly and if there are any inherent biases in the instrumentation. Bore-sight configurations are flown before each mission to ensure the sensor is functioning properly and within specifications. After acquisition, each mission is calibrated separately before editing and filtering.

Prior to the calibration process, the GPS base stations, which are correlated to National Geodetic Surveys' (NGS) Continuously Operating Reference System (CORS) network stations, are processed in conjunction with the airborne GPS raw observables to determine the aircrafts positions. The processed GPS positions are combined with the inertial data (IMU) using the Applanix POSPac™ in a closed loop fashion (forward and backward solution with Kalman filter option) to compute the Smoothed Best Estimate of Trajectory (SBET) parameters, namely position, velocity, and attitude. The SBET file and the LiDAR data are used in the post-processing software (MFCCP) as input to compute the calibration parameters.

During the planning phase of this project, the airport/job site was chosen as the calibration test site. On a mission basis, the LiDAR was flown over this test area in two opposing directions and with additional parallel flights flown with a 30% overlap. The airborne results in each direction are then compared with results of the other flight directions. The attitude misalignment parameters derived from the calibration (bore sighting), and the modeled "windup" values were used in the post-processing software (MFCCP) to resolve the systematic errors in the data. Calibration charts and site maps are attached to this report. Once the calibration parameters and modeled "windup" value are acceptable, all mission data are processed.

System Configuration

Scanner Setup

Scan FOV (full angle)	degrees	14.00
Terrain Elevation AMSL (minimum in survey area)	meters	0.00
Terrain Elevation AMSL (maximum in survey area)	meters	50.00
Nominal Flying Height Above Minimum Terrain Elevation	meters	1400.00
Nominal Flying Altitude AMSL	meters	1400.00
Airspeed	knots	120.00
Range/Intensity Mode (1, 2, 3, 4)		3.00
Laser Pulse Rate	Hz	42300.00
System Controller Firmware (<V2.07, V2.07+)		V2.07+
Laser Power Class (3=3W, 4=4W)	Watts	4.00
Receiver Aperture Stop (45, 60, 65, 75, LM, ALS50)	degrees	ALS50
Scan Rate	Hz	48.00
Max Scan Rate (ALS50 Phase II only - SUBJECT TO CHANGE)	Hz	77.00
Max Scan Rate (ALS40/ALS50, 45-degree/3000 m mirror, gen 1c driver)	Hz	70.00
Max Scan Rate (ALS40, 45-degree/3000 m mirror, gen 1b driver)	Hz	46.61
Max Scan Rate (ALS40, 67-degree/6100 m mirror, all drivers)	Hz	23.31
Max Scan Rate (ALS40, 75-degree/6100 m mirror, all drivers)	Hz	20.37

Resulting Scan Pattern

Total Swath Width (nominal, at lowest terrain elev'n)	meters	343.80
Max Cross Track Spacing (occurs @ nadir)	meters	1.26
Max Along Track Spacing (occurs @ FOV edge)	meters	1.29
Illuminated Footprint Diameter (@ 1.e^2 energy)	meters	0.49
Point Density (average)	pts/meter^2	1.99
Area / Point (average)	meters^2	0.50

Section 2

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

LIDAR Daily Log

Field Crew	

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N7961Q

Lever Arm	x	y	z
GPS	-0.106	0.1	-1.120
IMU	-0.046	0.095	-0.260

Attenuator POS #

- 0.0 Open (Full Red) (High Altitude)
- 0.5 POS 1 (Half Red/Half Black) (Medium Altitude)
- 1.0 POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information		AGC
Base 1	F45_3001	
Base 2		3/3
Base3		
Aero 2		

IMU Information	
Start Time	0:41:00
Stop Time	5:00:00

Meteorological Conditions	Elevation	Temp		Pressure	
Airport					
@ Altitude		19.0°c	292.15°k	30.12 inHg	101998 Pa
@ Altitude					

GPS Base Station Information	File Name	RNX File	Ant Hgt	Ant Type
Base 1			1.8	
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
11/24/2007	David Swain	Travis Pullen	ALS05

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
F4501	S	1:02:39	1:03:31	0:00:52	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	0.00		
F4502	N	1:09:11	1:10:09	0:00:58	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	0.00		
F4503	S	1:14:40	1:15:45	0:01:05	731	25°	50°	731	2399	0.5	3+3	47400°	110 kts	127 mph	2.11		
F4504	W	1:19:49	1:20:39	0:00:50	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	0.00		
F4501	N	1:25:00	1:25:55	0:00:55	731	25°	50°	731	2399	0.5	3+3	47400°	112 kts	129 mph	0.00		
F4502	S	1:31:06	1:31:58	0:00:52	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	0.00		
F4503	N	1:36:40	1:37:30	0:00:50	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	0.00		
					731												
100	N	1:40:40	1:41:43	0:01:03	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	2.22		
101	S	1:53:07	1:54:17	0:01:10	731	25°	50°	731	2399	0.5	3+3	47400°	115 kts	132 mph	2.21		
102	N	1:58:51	2:00:06	0:01:15	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	2.34		
103	S	2:04:39	2:05:49	0:01:10	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	2.28		
104	N	2:10:16	2:11:20	0:01:04	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	2.24		
105	S	2:15:41	2:16:53	0:01:12	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	2.28		
106	N	2:20:56	2:22:00	0:01:04	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	2.30		
107	S	2:26:31	2:28:26	0:01:55	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	2.24		
108	N	2:32:19	2:33:54	0:01:35	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	2.24		
109	S	2:37:55	2:39:26	0:01:31	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	2.34		
110	N	2:43:31	2:45:03	0:01:32	731	25°	50°	731	2399	0.5	3+3	47400°	114 kts	131 mph	2.19		
111	S	2:49:19	2:50:52	0:01:33	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	2.24		
112	N	2:54:46	2:56:16	0:01:30	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	2.30		
113	S	3:00:15	3:01:47	0:01:32	731	25°	50°	731	2399	0.5	3+3	47400°	123 kts	142 mph	2.36		
114	N	3:07:06	3:09:55	0:02:49	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	4.60		
115	S	3:13:57	3:18:33	0:04:36	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	9.21		
116	N	3:21:03	3:23:48	0:02:45	731	25°	50°	731	2399	0.5	3+3	47400°	124 kts	143 mph	4.76		
117	S	3:27:52	3:30:41	0:02:49	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	4.60		
118	N	3:35:20	3:38:16	0:02:56	731	25°	50°	731	2399	0.5	3+3	47400°	108 kts	124 mph	4.14		
119	S	3:42:17	3:45:03	0:02:46	731	25°	50°	731	2399	0.5	3+3	47400°	128 kts	147 mph	4.91		
120	N	3:49:14	3:51:57	0:02:43	731	25°	50°	731	2399	0.5	3+3	47400°	124 kts	143 mph	4.76		
121	S	3:55:54	3:59:42	0:03:48	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	6.85		
122	N	4:08:20	4:17:50	0:09:30	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	20.71		
123	S	4:21:49	4:31:09	0:09:20	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	20.54		
124	N	4:36:02	4:45:30	0:09:28	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	20.02		

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	4:19:00	Hobbs Time	
Laser Collection Time:	1:18:58	Start	1161.1
Miles Flown on Flights:	139.01	Stop	1165.6
		Total	4.5

Data Collection	
Percent Complete	30.1%
Total Flight Lines	83
Lines Complete	25
Lines Completed Today	

Survey	
Percent Complete	
Total Check Sites	
Check Sites Complete	
Sites Completed Today	

Comments

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Flight Date (UTC)	Pilot	Operator	Sensor
12/3/2007	David Swain	Travis Pullen	ALS05

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N7961Q

Lever Arm

	x	y	z
GPS	-0.106	0.1	-1.120
IMU	-0.046	0.095	-0.260

Attenuator POS #

0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

		AGC
Base 1	f45_3001	
Base 2		3/3
Base3		
Aero 2		

IMU Information

Start Time	10:01:00
Stop Time	14:17:00

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	9	21.0°c	294.15°k	30.16 inHg	102133 Pa
@ Altitude		19.0°c	292.15°k	30.15 inHg	102100 Pa
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1			1.8	
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
F4501	S	10:18:21	10:19:14	0:00:53	731	25°	50°	731	2399	0.5	3+3	47400°	113 kts	130 mph	0.00		Good Boresite
F4502	W	10:23:08	10:24:09	0:01:01	731	25°	50°	731	2399	0.5	3+3	47400°	110 kts	127 mph	2.11		Good Boresite
F4501	N	10:27:59	10:28:53	0:00:54	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	0.00		Good Boresite
F4502	E	10:32:55	10:33:52	0:00:57	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	0.00		Good Boresite
125	S	10:41:56	10:51:16	0:09:20	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	20.71		TO_7
126	N	10:55:18	11:04:34	0:09:16	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	20.89		TO_7
127	S	11:09:22	11:18:46	0:09:24	731	25°	50°	731	2399	0.5	3+3	47400°	123 kts	142 mph	21.23		TO_7
128	N	11:23:05	11:32:30	0:09:25	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	20.37		TO_7
129	S	11:36:42	11:46:07	0:09:25	731	25°	50°	731	2399	0.5	3+3	47400°	125 kts	144 mph	21.58		TO_7
130	N	11:50:27	11:59:51	0:09:24	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	20.37		TO_7
131	S	12:04:05	12:13:30	0:09:25	731	25°	50°	731	2399	0.5	3+3	47400°	115 kts	132 mph	19.85		TO_7
132	N	12:17:19	12:26:40	0:09:21	731	25°	50°	731	2399	0.5	3+3	47400°	125 kts	144 mph	21.58		TO_7
133	S	12:30:58	12:40:17	0:09:19	731	25°	50°	731	2399	0.5	3+3	47400°	124 kts	143 mph	21.40		TO_7
134	N	12:44:32	12:53:56	0:09:24	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	20.54		TO_7
135	S	12:57:50	13:07:27	0:09:37	731	25°	50°	731	2399	0.5	3+3	47400°	115 kts	132 mph	19.85		TO_7
136	N	13:11:33	13:21:08	0:09:35	731	25°	50°	731	2399	0.5	3+3	47400°	110 kts	127 mph	18.99		TO_7
137	S	13:25:10	13:34:39	0:09:29	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	20.02		TO_7
138	N	13:38:38	13:48:11	0:09:33	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	20.02		TO_7
139	S	13:52:40	14:02:07	0:09:27	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	20.54		TO_7

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	4:16:00	Hobbs Time	
Laser Collection Time:	2:25:09	Start	1172.6
Miles Flown on Flights:	310.06	Stop	1177.1
		Total	4.5

Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete		Check Sites Complete	
Lines Completed Today		Sites Completed Today	

Comments

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Flight Date (UTC)	Pilot	Operator	Sensor
12/3/2007	David Swain	Travis Pullen	ALS05

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N7961Q

Lever Arm

	x	y	z
GPS	-0.106	0.1	-1.120
IMU	-0.046	0.095	-0.260

Attenuator POS #

0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

Base 1	f45_3001	AGC
Base 2		3/3
Base3		
Aero 2		

IMU Information

Start Time	21:49:00
Stop Time	2:00:00

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	9	27.0°c	300.15°k	30.03 inHg	101693 Pa
@ Altitude	731				
@ Altitude	731				

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1			1.8	
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
F4501	N	22:01:33	22:02:03	0:00:30	731	25°	50°	731	2399	0.5	3+3	47400°	123 kts	142 mph	0.00		Good Boresite
F4502	E	22:06:36	22:07:36	0:01:00	731	25°	50°	731	2399	0.5	3+3	47400°	111 kts	128 mph	2.13		Good Boresite
F4501	S	22:11:31	22:12:20	0:00:49	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	0.00		Good Boresite
F4502	W	22:16:15	22:17:16	0:01:01	731	25°	50°	731	2399	0.5	3+3	47400°	104 kts	120 mph	1.99		Good Boresite
140	N	22:26:54	22:36:16	0:09:22	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	20.54		TO_7
141	S	22:40:23	22:49:46	0:09:23	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	20.89		TO_7
142	N	22:54:07	23:03:25	0:09:18	731	25°	50°	731	2399	0.5	3+3	47400°	112 kts	129 mph	19.33		TO_7
143	S	23:07:22	23:16:42	0:09:20	731	25°	50°	731	2399	0.5	3+3	47400°	120 kts	138 mph	20.71		TO_7
144	N	23:20:44	23:30:01	0:09:17	731	25°	50°	731	2399	0.5	3+3	47400°	115 kts	132 mph	19.85		TO_7
145	S	23:34:27	23:43:52	0:09:25	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	20.37		TO_7
146	N	23:47:55	23:57:11	0:09:16	731	25°	50°	731	2399	0.5	3+3	47400°	124 kts	143 mph	21.40		TO_7
147	S	0:01:35	0:10:59	0:09:24	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	20.89		TO_7
148	N	0:15:09	0:24:30	0:09:21	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	20.37		TO_7
149	S	0:28:57	0:38:14	0:09:17	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	20.37		TO_7
150	N	0:42:02	0:51:21	0:09:19	731	25°	50°	731	2399	0.5	3+3	47400°	124 kts	143 mph	21.40		TO_7
151	S	0:55:36	1:05:06	0:09:30	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	20.89		TO_7
152	N	1:08:56	1:18:56	0:10:00	731	25°	50°	731	2399	0.5	3+3	47400	124 kts	143 mph	23.78		TO_7
153	S	1:22:07	1:31:30	0:09:23	731	25°	50°	731	2399	0.5	3+3	47400	115 kts	132 mph	19.85		TO_7
154	N	1:35:36	1:44:53	0:09:17	731	25°	50°	731	2399	0.5	3+3	47400	122 kts	140 mph	21.06		TO_7

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	4:11:00	Hobbs Time	
Laser Collection Time:	2:24:12	Start	1177.1
Miles Flown on Flights:	315.83	Stop	1181.5
		Total	4.4

Data Collection	
Percent Complete	60.2%
Total Flight Lines	83
Lines Complete	50
Lines Completed Today	

Survey	
Percent Complete	
Total Check Sites	
Check Sites Complete	
Sites Completed Today	

Comments

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N7961Q

Lever Arm

	x	y	z
GPS	-0.106	0.1	-1.120
IMU	-0.046	0.095	-0.260

Attenuator POS #

- 0.0 Open (Full Red) (High Altitude)
- 0.5 POS 1 (Half Red/Half Black) (Medium Altitude)
- 1.0 POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

		AGC
Base 1	f45_3001	
Base 2		3/3
Base3		
Aero 2		

IMU Information

Start Time	17:53:00
Stop Time	22:18:00

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	9	24.0°c	297.15°k	29.94 inHg	101388 Pa
@ Altitude		22.0°c	295.15°k	29.91 inHg	101287 Pa
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1			1.8	
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
12/4/2007	David Swain	Travis Pullen	ALS05

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
F4501	N	18:07:42	18:08:31	0:00:49	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	0.00		Good Boresite
F4502	S	18:12:54	18:13:45	0:00:51	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	0.00		Good Boresite
F4503	N	18:18:04	18:19:03	0:00:59	731	25°	50°	731	2399	0.5	3+3	47400°	123 kts	142 mph	0.00		Good Boresite
F4504	E	18:22:03	18:22:59	0:00:56	731	25°	50°	731	2399	0.5	3+3	47400°	114 kts	131 mph	0.00		Good Boresite
F4501	S	18:27:21	18:28:15	0:00:54	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	0.00		Good Boresite
F4502	N	18:31:59	18:32:47	0:00:48	731	25°	50°	731	2399	0.5	3+3	47400°	125 kts	144 mph	0.00		Good Boresite
F4503	S	18:36:22	18:37:01	0:00:39	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	0.00		Good Boresite
155	S	18:47:23	18:57:00	0:09:37	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	20.89		TO_7
156	N	19:02:08	19:11:38	0:09:30	731	25°	50°	731	2399	0.5	3+3	47400°	124 kts	143 mph	21.40		TO_7
157	S	19:15:48	19:25:13	0:09:25	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	20.02		TO_7
158	N	19:28:37	19:38:02	0:09:25	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	21.06		TO_7
159	S	19:42:07	19:51:55	0:09:48	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	21.06		TO_7
160	N	19:54:57	20:03:13	0:08:16	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	18.72		TO_7
161	S	20:07:17	20:15:17	0:08:00	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	17.95		TO_7
162	N	20:19:19	20:27:27	0:08:08	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	18.57		TO_7
163	S	20:31:29	20:39:26	0:07:57	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	15.57		TO_7
164	N	20:42:41	20:50:50	0:08:09	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	18.57		TO_7
165	S	20:54:39	21:02:42	0:08:03	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	18.57		TO_7
166	N	21:06:11	21:14:40	0:08:29	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	18.72		TO_7
167	S	21:18:42	21:25:32	0:06:50	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	14.04		TO_7
168	N	21:29:56	21:36:33	0:06:37	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	13.46		TO_7
169	S	21:30:40	21:37:49	0:07:09	731	25°	50°	731	2399	0.5	3+3	47400°	111 kts	128 mph	14.90		TO_7
170	N	21:51:53	21:59:34	0:07:41	731	25°	50°	731	2399	0.5	3+3	47400	114 kts	131 mph	15.31		TO_7

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	4:25:00	Hobbs Time	
Laser Collection Time:	2:19:00	Start	1181.5
Miles Flown on Flights:	288.81	Stop	1186.1
		Total	4.6

Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete		Check Sites Complete	
Lines Completed Today		Sites Completed Today	

Comments

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N7961Q

Lever Arm

	x	y	z
GPS	-0.106	0.1	-1.120
IMU	-0.046	0.095	-0.260

Attenuator POS #

- 0.0 Open (Full Red) (High Altitude)
- 0.5 POS 1 (Half Red/Half Black) (Medium Altitude)
- 1.0 POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

		AGC
Base 1	f45_3001	
Base 2		3/3
Base3		
Aero 2		

IMU Information

Start Time	23:12:00
Stop Time	2:20:00

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	9	19.0°c	292.15°k	29.92 inHg	101321 Pa
@ Altitude	731	17.0°c	290.15°k	29.91 inHg	101287 Pa
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1			1.8	
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
12/4/2007	David Swain	Travis Pullen	ALS05

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
F4501	S	23:25:30	23:26:26	0:00:56	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	0.00		Good Boresite
F4502	W	23:30:01	23:30:57	0:00:56	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	0.00		Good Boresite
F4501	N	23:34:14	23:34:59	0:00:45	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	0.00		Good Boresite
F4502	E	23:38:32	23:39:39	0:01:07	731	25°	50°	731	2399	0.5	3+3	47400°	115 kts	132 mph	2.21		Good Boresite
172	N	23:49:14	23:56:15	0:07:01	731	25°	50°	731	2399	0.5	3+3	47400°	116 kts	133 mph	15.57		TO_7
173	S	0:00:03	0:06:46	0:06:43	731	25°	50°	731	2399	0.5	3+3	47400°	121 kts	139 mph	13.92		TO_7
174	N	0:10:25	0:15:36	0:05:11	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	11.32		TO_7
175	S	0:19:56	0:25:06	0:05:10	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	11.32		TO_7
176	N	0:29:10	0:34:20	0:05:10	731	25°	50°	731	2399	0.5	3+3	47400°	115 kts	132 mph	11.03		TO_7
177	S	0:38:17	0:43:17	0:05:00	731	25°	50°	731	2399	0.5	3+3	47400°	118 kts	136 mph	11.32		TO_7
178	N	0:46:49	0:51:56	0:05:07	731	25°	50°	731	2399	0.5	3+3	47400°	125 kts	144 mph	11.99		TO_7
179	S	0:55:38	1:01:03	0:05:25	731	25°	50°	731	2399	0.5	3+3	47400°	117 kts	135 mph	11.22		TO_7
171	S	1:11:51	1:18:41	0:06:50	731	25°	50°	731	2399	0.5	3+3	47400°	122 kts	140 mph	14.04		TO_7
182	E	1:32:41	1:35:14	0:02:33	731	25°	50°	731	2399	0.5	3+3	47400°	119 kts	137 mph	4.56		TO_7
181	W	1:52:06	1:55:06	0:03:00	731	25°	50°	731	2399	0.5	3+3	47400°	111 kts	128 mph	6.39		TO_7
180	E	2:02:08	2:04:55	0:02:47	731	25°	50°	731	2399	0.5	3+3	47400	116 kts	133 mph	4.45		TO_7

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	3:08:00	Hobbs Time	
Laser Collection Time:	1:03:41	Start	1186.1
Miles Flown on Flights:	129.33	Stop	1189.5
		Total	3.4

Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete		Check Sites Complete	
Lines Completed Today		Sites Completed Today	

Comments

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Project #	07998.03.002
Project Description	Flidar
Location	TO_7
Aircraft	N6238Q

Lever Arm

	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #

0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

Base 1	BCT
Base 2	
Base3	
Aero 2	

IMU Information

Start Time	23:58:30
Stop Time	3:46:00

AGC

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	230ft	20.0°c	293.15°k	29.90 inHg	101253 Pa
@ Altitude					
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1	OBCT3391		1.8	gps702
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
12/4/2007	John T	Doug W	ALS20

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BS01	180	0:27:00	0:28:00	0:01:00	2507	26	48.8				12_3	120200	113 kts	130 mph	2.17		BORESITE
BS02	270	0:36:00	0:37:00	0:01:00	2483	26	48.8				12_3	120200	115 kts	132 mph	2.21		BORESITE
BS01	0	0:40:00	0:41:00	0:01:00	2490	26	48.8				12_3	120200	117 kts	135 mph	2.24		BORESITE
BS02	90	0:44:00	0:48:00	0:04:00	2521	26	48.8				12_3	120200	122 kts	140 mph	9.36		BORESITE
14n	0	0:50:00	0:53:00	0:03:00	2528	26	48.8				12_3	120200	115 kts	132 mph	6.62		
15n	180	0:57:00	1:00:00	0:03:00	2535	26	48.8				12_3	120200	120 kts	138 mph	6.90		
16n	0	1:03:00	1:06:00	0:03:00	2519	26	48.8				12_3	120200	116 kts	133 mph	6.67		
17n	180	1:10:00	1:13:00	0:03:00	2495	26	48.8				12_3	120200	119 kts	137 mph	6.85		
18n	0	1:16:00	1:19:00	0:03:00	2507	26	48.8				12_3	120200	118 kts	136 mph	6.79		
19n	180	1:23:00	1:26:00	0:03:00	2523	26	48.8				12_3	120200	116 kts	133 mph	6.67		
20n	0	1:29:00	1:32:00	0:03:00	2524	26	48.8				12_3	120200	117 kts	135 mph	6.73		
21n	180	1:36:00	1:39:00	0:03:00	2520	26	48.8				12_3	120200	109 kts	125 mph	6.27		
22n	0	1:42:00	1:45:00	0:03:00	2521	26	48.8				12_3	120200	113 kts	130 mph	6.50		
23n	180	1:49:00	1:52:00	0:03:00	2502	26	48.8				12_3	120200	113 kts	130 mph	6.50		
24n	0	1:55:00	1:58:00	0:03:00	2503	26	48.8				12_3	120200	113 kts	130 mph	6.50		
25n	180	2:01:00	2:04:00	0:03:00	2515	26	48.8				12_3	120200	110 kts	127 mph	6.33		
26n	0	2:08:00	2:11:00	0:03:00	2529	26	48.8				12_3	120200	115 kts	132 mph	6.62		
27n	180	2:14:00	2:18:00	0:04:00	2529	26	48.8				12_3	120200	107 kts	123 mph	8.21		
28n	0	2:21:00	2:25:00	0:04:00	2482	26	48.8				12_3	120200	118 kts	136 mph	9.05		
29n	180	2:28:00	2:32:00	0:04:00	2490	26	48.8				12_3	120200	110 kts	127 mph	8.44		
30n	0	2:35:00	2:38:00	0:03:00	2493	26	48.8				12_3	120200	119 kts	137 mph	6.85		
31n	180	2:40:00	2:45:00	0:05:00	2521	26	48.8				12_3	120200	109 kts	125 mph	10.45		
32n	0	2:49:00	2:52:00	0:03:00	2496	26	48.8				12_3	120200	116 kts	133 mph	6.67		
33n	180	2:56:00	2:59:00	0:03:00	2492	26	48.8				12_3	120200	113 kts	130 mph	6.50		
34n	0	3:03:00	3:08:00	0:05:00	2482	26	48.8				12_3	120200	122 kts	140 mph	11.70		
35n	180	3:11:00	3:16:00	0:05:00	2493	26	48.8				12_3	120200	114 kts	131 mph	10.93		
36n	0	3:19:00	3:24:00	0:05:00	2495	26	48.8				12_3	120200	120 kts	138 mph	11.51		
37n	180	3:28:00	3:33:00	0:05:00	2482	26	48.8				12_3	120200	113 kts	130 mph	10.84		

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	3:47:30	Hobbs Time	
Laser Collection Time:	1:32:00	Start	983.8
Miles Flown on Flights:	203.09	Stop	988.8
		Total	5

Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete	37	Check Sites Complete	
Lines Completed Today	24	Sites Completed Today	

Comments

all flight lines at 20% laser current. RECORD STOP sometimes malfunctions so additional data collected at the end of some lines. RED DL50 ALS-POS LOGGING ERROR on line 37.

Weather

x

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Flight Date (UTC)	Pilot	Operator	Sensor
12/6/2007	John T	Doug W	ALS20

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N6238Q

Lever Arm

	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #

0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

Base 1	BCT
Base 2	
Base3	
Aero 2	

IMU Information

Start Time	1:51:00
Stop Time	3:30:34

AGC

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	230ft	19.0°c	292.15°k	29.92 inHg	101321 Pa
@ Altitude					
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1	OBCT3411		1.8	gps702
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BS01	180	2:10:00	2:11:00	0:01:00	2530	26	48.8				12_3	120200	111 kts	128 mph	2.13		BORESITE
BS02	0	2:14:00	2:15:00	0:01:00	2522	26	48.8				12_3	120200	114 kts	131 mph	2.19		BORESITE
BS03	180	2:18:00	2:19:00	0:01:00	2505	26	48.8				12_3	120200	111 kts	128 mph	2.13		BORESITE
BS04	270	2:23:00	2:25:00	0:02:00	2514	26	48.8				12_3	120200	96 kts	110 mph	3.68		BORESITE
BS01	0	2:27:00	2:28:00	0:01:00	2509	26	48.8				12_3	120200	115 kts	132 mph	2.21		BORESITE
BS02	180	2:32:00	2:33:00	0:01:00	2499	26	48.8				12_3	120200	113 kts	130 mph	2.17		BORESITE
BS03	0	2:36:00	2:37:00	0:01:00	2524	26	48.8				12_3	120200	116 kts	133 mph	2.22		BORESITE
37n	180	2:44:00	2:49:00	0:05:00	2516	26	48.8				12_3	120200	112 kts	129 mph	10.74		
38n	0	2:52:00	2:57:00	0:05:00	2527	26	48.8				12_3	120200	115 kts	132 mph	11.03		
39n	180	3:01:00	3:06:00	0:05:00	2533	26	48.8				12_3	120200	113 kts	130 mph	10.84		
40n	0	3:10:00	3:15:00	0:05:00	2503	26	48.8				12_3	120200	112 kts	129 mph	10.74		

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	1:39:34	Hobbs Time	
Laser Collection Time:	0:28:00	Start	988.8
Miles Flown on Flights:	60.07	Stop	991.4
		Total	2.6

Data Collection		Survey	
Percent Complete	39.6%	Percent Complete	
Total Flight Lines	101	Total Check Sites	
Lines Complete	40	Check Sites Complete	
Lines Completed Today	4	Sites Completed Today	

Comments

all lines laser current 20%. Took an hour to get the system up and running, then ATC sent us packing, then clouds/rain showd up.

Weather

x

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Flight Date (UTC)	Pilot	Operator	Sensor
12/7/2007	John T	Doug W	ALS20

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N6238Q

Lever Arm

	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #

0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

Base 1	BCT
Base 2	
Base3	
Aero 2	

IMU Information

Start Time	2:11:00
Stop Time	5:56:48

AGC

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	230ft	20.0°c	293.15°k	30.16 inHg	102133 Pa
@ Altitude					
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1	OBCT3421		1.8	gps702
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BS01	180	2:25:00	2:26:00	0:01:00	2503	26	48.8				12_3	120200	108 kts	124 mph	2.07		BORESITE
BS02	270	2:29:00	2:30:00	0:01:00	2480	26	48.8				12_3	120200	122 kts	140 mph	2.34		BORESITE
BS01	0	2:33:00	2:34:00	0:01:00	2508	26	48.8				12_3	120200	118 kts	136 mph	2.26		BORESITE
BS02	90	2:37:00	2:39:00	0:02:00	2531	26	48.8				12_3	120200	110 kts	127 mph	4.22		BORESITE
41n	180	2:50:00	3:01:00	0:11:00	2485	26	48.8				12_3	120200	110 kts	127 mph	23.21		
42n	90	3:04:00	3:15:00	0:11:00	2505	26	48.8				12_3	120200	120 kts	138 mph	25.32		
43n	180	3:18:00	3:29:00	0:11:00	2505	26	48.8				12_3	120200	120 kts	138 mph	25.32		
44n	90	3:31:00	3:42:00	0:11:00	2516	26	48.8				12_3	120200	117 kts	135 mph	24.68		
45n	180	3:45:00	3:56:00	0:11:00	2520	26	48.8				12_3	120200	110 kts	127 mph	23.21		
46n	90	4:00:00	4:10:00	0:10:00	2513	26	48.8				12_3	120200	113 kts	130 mph	21.67		POS-AV yellow, error messages
47n	180	4:14:00	4:25:00	0:11:00	2518	26	48.8				12_3	120200	111 kts	128 mph	23.42		
48n	90	4:28:00	4:38:00	0:10:00	2505	26	48.8				12_3	120200	112 kts	129 mph	21.48		
49n	180	4:41:00	4:52:00	0:11:00	2510	26	48.8				12_3	120200	113 kts	130 mph	23.84		
50n	90	4:55:00	5:06:00	0:11:00	2490	26	48.8				12_3	120200	120 kts	138 mph	25.32		
51n	180	5:09:00	5:20:00	0:11:00	2491	26	48.8				12_3	120200	117 kts	135 mph	24.68		
52n	90	5:23:00	5:33:00	0:10:00	2473	26	48.8				12_3	120200	118 kts	136 mph	22.63		clouds, will try east
99n	180																clouds, no joy

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	3:45:48	Hobbs Time	
Laser Collection Time:	2:14:00	Start	991.4
Miles Flown on Flights:	295.67	Stop	995.5
		Total	4.1

Data Collection		Survey	
Percent Complete	51.5%	Percent Complete	
Total Flight Lines	101	Total Check Sites	
Lines Complete	52	Check Sites Complete	
Lines Completed Today	12	Sites Completed Today	

Comments

all lines flown with 20% laser current. On line 99 got "AL-POS LOGGING ERROR".

Weather

x

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Flight Date (UTC)	Pilot	Operator	Sensor
12/17/2007	John T	Doug W	ALS20

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N6238Q

Lever Arm

	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #

0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

Base 1	KBCT
Base 2	
Base3	
Aero 2	

IMU Information

Start Time	2:02:18
Stop Time	5:46:47

AGC

Meteorological Conditions

	Elevation	Temp		Pressure	
Airport	230ft	12.0°c	285.15°k	30.06 inHg	101795 Pa
@ Altitude					
@ Altitude					

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1	KBCT3521		1.8	gps702
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BS02	90	2:18:00	2:19:00	0:01:00	2520	26	48.8				12_3	120200	110 kts	127 mph	2.11		BORESITE
BS01	180	2:23:00	2:25:00	0:02:00	2477	26	48.8				12_3	120200	111 kts	128 mph	4.26		BORESITE
BS02	270	2:28:00	2:30:00	0:02:00	2522	26	48.8				12_3	120200	112 kts	129 mph	4.30		BORESITE
BS01	0	2:33:00	2:34:00	0:01:00	2532	26	48.8				12_3	120200	115 kts	132 mph	2.21		BORESITE
53	180	2:44:00	2:54:00	0:10:00	2512	26	48.8				12_3	120200	117 kts	135 mph	22.44		
54	0	2:58:00	3:09:00	0:11:00	2555	26	48.8				12_3	120200	114 kts	131 mph	24.05		
55	180	3:12:00	3:22:00	0:10:00	2521	26	48.8				12_3	120200	117 kts	135 mph	22.44		
56	0	3:26:00	3:37:00	0:11:00	2529	26	48.8				12_3	120200	116 kts	133 mph	24.47		
57	180	3:40:00	3:50:00	0:10:00	2523	26	48.8				12_3	120200	120 kts	138 mph	23.02		
58	0	3:54:00	4:05:00	0:11:00	2522	26	48.8				12_3	120200	115 kts	132 mph	24.26		
59	180	4:08:00	4:18:00	0:10:00	2540	26	48.8				12_3	120200	120 kts	138 mph	23.02		
60	0	4:22:00	4:33:00	0:11:00	2524	26	48.8				12_3	120200	116 kts	133 mph	24.47		
61	180	4:36:00	4:47:00	0:11:00	2505	26	48.8				12_3	120200	119 kts	137 mph	25.11		POS/AV indicator yellow-altitude, heading, speed
62	0	4:51:00	5:02:00	0:11:00	2508	26	48.8				12_3	120200	114 kts	131 mph	24.05		POS/AV indicator yellow-heading
63	180	5:05:00	5:15:00	0:10:00	2510	26	48.8				12_3	120200	118 kts	136 mph	22.63		
64	0	5:19:00	5:30:00	0:11:00	2499	26	48.8				12_3	120200	112 kts	129 mph	23.63		

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	3:44:29	Hobbs Time	
Laser Collection Time:	2:13:00	Start	1000.9
Miles Flown on Flights:	296.46	Stop	1004.8
		Total	3.9

Data Collection	
Percent Complete	62.7%
Total Flight Lines	102
Lines Complete	64
Lines Completed Today	12

Survey	
Percent Complete	
Total Check Sites	
Check Sites Complete	
Sites Completed Today	

Comments

Terminated mission when sled full. DL50 indicator red after line 64 when turned hypac off.

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew			
Flight Date (UTC)	Pilot	Operator	Sensor
12/18/2007	John T	Doug W	ALS20

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N6238Q

Lever Arm	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #	
0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information		AGC
Base 1	KBCT	
Base 2		
Base3		
Aero 2		
IMU Information		
Start Time	2:28:34	
Stop Time	5:37:33	

Meteorological Conditions	Elevation	Temp		Pressure	
Airport	230ft	12.0°c	285.15°k	30.23 inHg	102371 Pa
@ Altitude					
@ Altitude					

GPS Base Station Information	File Name	RNX File	Ant Hgt	Ant Type
Base 1	KBCT3531		1.8	gps702
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BS01	180	2:42:00	2:43:00	0:01:00	2511	26	48.8				12_3	120200	118 kts	136 mph	2.26		BORESITE
BS02	0	2:48:00	2:49:00	0:01:00	2515	26	48.8				12_3	120200	103 kts	119 mph	1.98		BORESITE
BS03	180	2:53:00	2:54:00	0:01:00	2496	26	48.8				12_3	120200	116 kts	133 mph	2.22		BORESITE
BS04	270	2:57:00	2:58:00	0:01:00	2518	26	48.8				12_3	120200	120 kts	138 mph	2.30		BORESITE
BS01	0	3:02:00	3:03:00	0:01:00	2509	26	48.8				12_3	120200	106 kts	122 mph	2.03		BORESITE
BS02	180	3:06:00	3:07:00	0:01:00	2511	26	48.8				12_3	120200	115 kts	132 mph	2.21		BORESITE
BS03	0	3:10:00	3:11:00	0:01:00	2493	26	48.8				12_3	120200	109 kts	125 mph	2.09		BORESITE
65	180	3:22:00	3:33:00	0:11:00	2477	26	48.8				12_3	120200	115 kts	132 mph	24.26		
66	0	3:36:00	3:47:00	0:11:00	2508	26	48.8				12_3	120200	114 kts	131 mph	24.05		
67	180	3:50:00	4:01:00	0:11:00	2491	26	48.8				12_3	120200	116 kts	133 mph	24.47		
68	0	4:04:00	4:15:00	0:11:00	2514	26	48.8				12_3	120200	117 kts	135 mph	24.68		
69	180	4:18:00	4:29:00	0:11:00	2492	26	48.8				12_3	120200	120 kts	138 mph	25.32		
70	0	4:33:00	4:43:00	0:10:00	2508	26	48.8				12_3	120200	117 kts	135 mph	22.44		
71	180	4:46:00	4:57:00	0:11:00	2474	26	48.8				12_3	120200	116 kts	133 mph	24.47		
72	0	5:00:00	5:11:00	0:11:00	2515	26	48.8				12_3	120200	117 kts	135 mph	24.68		
73	180	5:14:00	5:25:00	0:11:00	2507	26	48.8				12_3	120200	117 kts	135 mph	24.68		

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	3:08:59	Hobbs Time	
Laser Collection Time:	1:45:00	Start	1005.4
Miles Flown on Flights:	234.16	Stop	1009
		Total	3.6

Data Collection	
Percent Complete	71.6%
Total Flight Lines	102
Lines Complete	73
Lines Completed Today	9

Survey	
Percent Complete	
Total Check Sites	
Check Sites Complete	
Sites Completed Today	

Comments	Weather
	x

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew	
1st flt	

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N6238Q

Lever Arm	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #	
0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information		AGC
Base 1	BCT	
Base 2		12/3
Base3		
Aero 2		

IMU Information	
Start Time	22:19:23
Stop Time	2:16:36

Meteorological Conditions	Elevation	Temp		Pressure	
Airport	230ft	24.0°c	297.15°k	30.14 inHg	102066 Pa
@ Altitude	2400ft	21.0°c	294.15°k	30.14 inHg	102066 Pa
@ Altitude					

GPS Base Station Information	File Name	RNX File	Ant Hgt	Ant Type
Base 1	OBCT3640		1.8	gps702
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
12/30/2007	Tom F	Ken D	ALS20

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BCT2	W	22:42:28	22:43:52	0:01:24	2350	26	48.8	750	2493	20%	12_3	120200	110 kts	127 mph	2.11		BORESITE
BCT1	N	22:47:17	22:48:12	0:00:55	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	0.00		BORESITE
BCT2	E	22:52:23	22:53:28	0:01:05	2350	26	48.8	750	2493	20%	12_3	120200	115 kts	132 mph	2.21		BORESITE
BCT1	S	22:57:46	22:58:43	0:00:57	2350	26	48.8	750	2493	20%	12_3	120200	110 kts	127 mph	0.00		BORESITE
74	N	23:02:24	23:12:20	0:09:56	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	20.71		STARTED RECORDING RIGHT AT START OF LINE
75	S	23:14:41	23:25:21	0:10:40	2350	26	48.8	750	2493	20%	12_3	120200	115 kts	132 mph	22.06		GOOD
76	N	23:28:52	23:39:20	0:10:28	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
77	S	23:42:36	23:52:48	0:10:12	2350	26	48.8	750	2493	20%	12_3	120200	115 kts	132 mph	22.06		GOOD
78	N	23:55:57	0:06:10	0:10:13	2350	26	48.8	750	2493	20%	12_3	120200	113 kts	130 mph	21.67		GOOD
79	S	0:10:20	0:20:34	0:10:14	2350	26	48.8	750	2493	20%	12_3	120200	112 kts	129 mph	21.48		GOOD
80	N	0:24:06	0:34:25	0:10:19	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
81	S	0:38:30	0:48:44	0:10:14	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
82	N	0:52:19	1:02:42	0:10:23	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
83	S	1:06:54	1:17:22	0:10:28	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
84	N	1:20:31	1:30:47	0:10:16	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
85	S	1:34:20	1:44:36	0:10:16	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		GOOD
86	N	1:48:00	1:58:36	0:10:36	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	23.02		POS ERROR DURING LINE (SEE COMMENTS) RAN ENTIRE LINE

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	3:57:13	Hobbs Time	
Laser Collection Time:	2:18:36	Start	1013.8
Miles Flown on Flights:	296.42	Stop	1018.6
		Total	4.8

Data Collection	
Percent Complete	
Total Flight Lines	
Lines Complete	
Lines Completed Today	13

Survey	
Percent Complete	
Total Check Sites	
Check Sites Complete	
Sites Completed Today	

Comments

good flight until we got POS Error.
Error mssg: ALS POS LOGGING ERROR:IM ALIVE MESSAGE DID NOT RECEIVE A VALID RESPONSE[6[0.

Weather

LIDAR Daily Log

the spatial data company

5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew	
1st flt	

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7_SOUTH
Aircraft	N6238Q

Lever Arm	x	y	z
GPS	0.378	-0.336	-1.254
IMU	-0.262	0.117	0.006

Attenuator POS #	
0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information		AGC
Base 1	BCT	
Base 2		12/3
Base3		
Aero 2		

IMU Information	
Start Time	19:43:26
Stop Time	22:35:42

Meteorological Conditions	Elevation	Temp		Pressure	
Airport	230ft	24.0°c	297.15°k	30.06 inHg	101795 Pa
@ Altitude	2400ft	21.0°c	294.15°k	30.06 inHg	101795 Pa
@ Altitude					

GPS Base Station Information	File Name	RNX File	Ant Hgt	Ant Type
Base 1	OBCT3650		1.8	gps702
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
12/31/2007	Tom F	Ken D	ALS20

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BCT1	N	20:05:06	20:05:52	0:00:46	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	0.00		BORESITE
BCT2	E	20:09:28	20:10:24	0:00:56	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	0.00		BORESITE
BCT1	S	20:13:42	20:14:42	0:01:00	2350	26	48.8	750	2493	20%	12_3	120200	110 kts	127 mph	2.11		BORESITE
BCT2	W	20:17:53	20:18:50	0:00:57	2350	26	48.8	750	2493	20%	12_3	120200	110 kts	127 mph	0.00		BORESITE
183	E	20:24:32	20:29:20	0:04:48	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	9.21		TIE LINE
88	N	20:33:33	20:39:02	0:05:29	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	11.51		GOOD
89	S	20:41:55	20:49:13	0:07:18	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	16.11		GOOD
90	N	20:52:25	20:58:56	0:06:31	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	13.81		GOOD
91	S	21:02:24	21:09:05	0:06:41	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	13.81		GOOD
92	N	21:12:03	21:18:39	0:06:36	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	13.81		GOOD
93	S	21:21:44	21:28:15	0:06:31	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	13.81		GOOD
94	N	21:32:21	21:35:59	0:03:38	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	6.90		GOOD
95	S	21:38:58	21:42:38	0:03:40	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	6.90		GOOD
96	N	21:45:22	21:49:09	0:03:47	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	6.90		GOOD/LINE COMPLETELY OVER WATER
97	S	21:52:07	21:55:41	0:03:34	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	6.90		GOOD/LINE COMPLETELY OVER WATER
98	N	21:58:07	22:01:46	0:03:39	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	6.90		GOOD/LINE COMPLETELY OVER WATER
99	S	22:04:17	22:07:57	0:03:40	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	6.90		GOOD/LINE COMPLETELY OVER WATER
182	W	22:11:39	22:14:04	0:02:25	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	4.60		TIE LINE
87	S	22:18:52	22:25:22	0:06:30	2350	26	48.8	750	2493	20%	12_3	120200	120 kts	138 mph	13.81		GOOD

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	2:52:16	Hobbs Time	
Laser Collection Time:	1:18:26	Start	1018.6
Miles Flown on Flights:	154.01	Stop	1021.7
		Total	3.1

Data Collection	
Percent Complete	
Total Flight Lines	
Lines Complete	
Lines Completed Today	15

Survey	
Percent Complete	
Total Check Sites	
Check Sites Complete	
Sites Completed Today	

Comments

GOOD FLIGHT/ TO7_SOUTH_COMPLETE/

Weather

LIDAR Daily Log

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

Field Crew

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N56SA

Lever Arm

	x	y	z
GPS	-0.052	-0.334	-1.220
IMU	-0.269	-0.139	-0.017

Attenuator POS #

- 0.0 Open (Full Red) (High Altitude)
- 0.5 POS 1 (Half Red/Half Black) (Medium Altitude)
- 1.0 POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information

		AGC
Base 1	F45_3001	
Base 2		12/3
Base3		
Aero 2		

IMU Information

Start Time	2:28:05
Stop Time	6:45:00

Meteorological Conditions

	Elevation	Temp	Pressure
Airport	9		
@ Altitude			
@ Altitude			

GPS Base Station Information

	File Name	RNX File	Ant Hgt	Ant Type
Base 1			1.8	
Base 2				
Base 3				

Flight Date (UTC)	Pilot	Operator	Sensor
1/29/2008	Matt Boone	Travis Pullen	ALS20

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BT	Ground	3:28:50	3:30:22	0:01:32													Bit Test
F4501	S	3:43:14	3:43:53	0:00:39	750	32°	43°	750	2499	1	28°	145500°	120 kts	138 mph	0.00		Good Boresite
F4502	W	3:47:15	3:48:04	0:00:49	750	32°	43°	750	2499	1	28°	145500°	120 kts	138 mph	0.00		Good Boresite
F4501	N	3:51:31	3:52:11	0:00:40	902	32°	43°	1000	3280	1	28°	145500°	120 kts	138 mph	0.00		Good Boresite
F4502	E	3:55:46	3:56:42	0:00:56	904	32°	43°	1000	3280	1	28°	145500°	120 kts	138 mph	0.00		Good Boresite
146	S	4:04:58	4:15:22	0:10:24	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
147	N	4:19:09	4:29:27	0:10:18	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
148	S	4:33:05	4:43:15	0:10:10	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
149	N	4:47:18	4:57:13	0:09:55	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	20.71		TO_7
150	S	5:01:03	5:11:07	0:10:04	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
151	N	5:14:38	5:25:03	0:10:25	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
152	S	5:28:22	5:38:13	0:09:51	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	20.71		TO_7
155	N	5:42:02	5:52:19	0:10:17	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
156	S	5:55:42	6:05:11	0:09:29	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	20.71		TO_7
157	N	6:09:00	6:19:15	0:10:15	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	23.02		TO_7
180	E	6:25:52	6:28:29	0:02:37	750	26°	49°	750	2499	1	19°	118000°	120 kts	138 mph	4.60		TO_7
BT	Ground	6:40:12	6:41:39	0:01:27													Bit Test

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	4:16:55	Hobbs Time	
Laser Collection Time:	1:49:48	Start	1542.5
Miles Flown on Flights:	227.85	Stop	
		Total	

Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete		Check Sites Complete	
Lines Completed Today		Sites Completed Today	

Comments

Total billing hobbs are 3.7 hours

Weather

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

LIDAR Daily Log

Field Crew			
Flight Date (UTC)	Pilot	Operator	Sensor
1/29/2008	Matt Boone	Travis Pullen	ALS20

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N56SA

Lever Arm	x	y	z
GPS	-0.052	-0.334	-1.220
IMU	-0.269	-0.139	-0.017

Attenuator POS #	
0.0	Open (Full Red) (High Altitude)
0.5	POS 1 (Half Red/Half Black) (Medium Altitude)
1.0	POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information		AGC
Base 1	F45_3001	
Base 2		12/3
Base3		
Aero 2		

IMU Information	
Start Time	18:06:00
Stop Time	20:48:26

Meteorological Conditions	Elevation	Temp		Pressure	
Airport	9	24.0°c	297.15°k	30.06 inHg	101795 Pa
@ Altitude					
@ Altitude					

GPS Base Station Information	File Name	RNX File	Ant Hgt	Ant Type
Base 1	F0450290.dat		1.8	Novatel
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BT	Ground	18:07:42	18:09:17	0:01:35													
F4501	S	18:21:26	18:22:26	0:01:00	701	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	2.30		Good Boresite
F4502	W	18:29:41	18:30:35	0:00:54	699	26°	49°	701	2300	1	19°	118000°	118 kts	136 mph	0.00		Good Boresite
F4501	N	18:33:27	18:37:07	0:03:40	699	26°	49°	701	2300	1	19°	118000°	118 kts	136 mph	6.79		Good Boresite
F4502	E	18:37:12	18:38:08	0:00:56	689	26°	49°	701	2300	1	19°	118000°	114 kts	131 mph	0.00		Good Boresite
130	S	18:45:59	18:55:08	0:09:09	685	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	20.71		O_7 / Scanner light at bottom of screen turned red and then Back gree
131	N	18:58:54	19:08:45	0:09:51	687	26°	49°	701	2300	1	19°	118000°	122 kts	140 mph	21.06		TO_7
132	S	19:12:53	19:23:09	0:10:16	673	26°	49°	701	2300	1	19°	118000°	116 kts	133 mph	22.25		TO_7
169	N	19:27:38	19:35:05	0:07:27	694	26°	49°	701	2300	1	19°	118000°	118 kts	136 mph	15.84		TO_7
170	S	19:39:26	19:47:27	0:08:01	694	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	18.41		O_7 / Scanner light at bottom of screen turned red and then Back gree
171	N	19:51:53	19:59:14	0:07:21	705	26°	49°	701	2300	1	19°	118000°	119 kts	137 mph	15.98		TO_7
176	S	20:01:10	20:10:43	0:09:33	704	26°	49°	701	2300	1	19°	118000°	111 kts	128 mph	19.16		TO_7
177	N	20:13:53	20:19:45	0:05:52	704	26°	49°	701	2300	1	19°	118000°	124 kts	143 mph	11.89		O_7 / Scanner light at bottom of screen turned red and then Back gree
178	S	20:43:46	20:29:27	23:45:41	702	26°	49°	701	2300	1	19°	118000°	114 kts	131 mph	3115.74		TO_7
BT	Ground	20:43:46	20:45:55	0:02:09													

LIDAR FLIGHT SUMMARY

Aircraft Flight Time:	2:42:26	Hobbs Time	
Laser Collection Time:	1:03:25	Start	1542.5
Miles Flown on Flights:	3270.13	Stop	1545.4
		Total	2.9

Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete		Check Sites Complete	
Lines Completed Today		Sites Completed Today	

Comments

Weather

the spatial data company
5525 MOUNES STREET, SUITE 102
NEW ORLEANS, LOUISIANA 70123
PH. 504.733.3001 - FX. 504.734.8938

LIDAR Daily Log

Field Crew			
Flight Date (UTC)	Pilot	Operator	Sensor
1/29/2008	Matt Boone	Travis Pullen	ALS20

Project #	A7190.01.001.551
Project Description	Flidar
Location	TO_7
Aircraft	N56SA

Lever Arm	x	y	z
GPS	-0.052	-0.334	-1.220
IMU	-0.269	-0.139	-0.017

Attenuator POS #

- 0.0 Open (Full Red) (High Altitude)
- 0.5 POS 1 (Half Red/Half Black) (Medium Altitude)
- 1.0 POS 2 (1/4 Red/ 3/4 Black) (Low Altitude)

GPS Information		AGC
Base 1	BCT_3001	
Base 2		12/3
Base3		
Aero 2		

IMU Information	
Start Time	22:52:22
Stop Time	1:04:00

Meteorological Conditions	Elevation	Temp		Pressure	
Airport	9	23.0°c	296.15°k	30.06 inHg	101795 Pa
@ Altitude		22.0°c	295.15°k	30.06 inHg	101795 Pa
@ Altitude					

GPS Base Station Information	File Name	RNX File	Ant Hgt	Ant Type
Base 1	BCT_0291		1.8	Novatel
Base 2				
Base 3				

Line/Dir		Start	Stop	Total Time	Altitude	Scan Angle/Rate		AGL (m)	AMSL (ft)	Attenuator	RCC	Pulse Rate	Speed		Miles Flwn	Void "Y"	Conditions/Comments
BT	Ground	22:52:22	22:53:22	0:01:00													Ground Test
F4501	S	23:10:25	23:11:15	0:00:50	705	26°	49°	701	2300	1	19°	118000°	124 kts	143 mph	0.00		Good Boresite
F4502	W	23:19:19	23:20:19	0:01:00	703	26°	49°	701	2300	1	19°	118000°	122 kts	140 mph	2.34		Good Boresite
F4501	N	23:23:55	23:24:14	0:00:19	699	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	0.00		Good Boresite
F4502	E	23:28:00	23:28:32	0:00:32	690	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	0.00		Good Boresite
1	S	23:35:12	23:36:15	0:01:03	704	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	2.30		TO_7
2	N	23:39:21	23:40:19	0:00:58	703	26°	49°	701	2300	1	19°	118000°	122 kts	140 mph	0.00		TO_7
3	S	23:44:22	23:45:39	0:01:17	706	26°	49°	701	2300	1	19°	118000°	116 kts	133 mph	2.22		TO_7
4	N	23:48:18	23:49:22	0:01:04	704	26°	49°	701	2300	1	19°	118000°	118 kts	136 mph	2.26		TO_7
5	S	23:53:01	23:54:01	0:01:00	691	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	2.30		TO_7
6	N	23:56:59	23:57:58	0:00:59	703	26°	49°	701	2300	1	19°	118000°	119 kts	137 mph	0.00		TO_7
7	S	0:02:18	0:03:18	0:01:00	698	26°	49°	701	2300	1	19°	118000°	111 kts	128 mph	2.13		TO_7
8	N	0:06:17	0:07:17	0:01:00	702	26°	49°	701	2300	1	19°	118000°	118 kts	136 mph	2.26		TO_7
9	S	0:10:53	0:11:52	0:00:59	697	26°	49°	701	2300	1	19°	118000°	116 kts	133 mph	0.00		TO_7
10	N	0:15:02	0:16:05	0:01:03	704	26°	49°	701	2300	1	19°	118000°	116 kts	133 mph	2.22		TO_7
11	S	0:19:55	0:20:57	0:01:02	700	26°	49°	701	2300	1	19°	118000°	117 kts	135 mph	2.24		TO_7
12	N	0:24:30	0:25:28	0:00:58	696	26°	49°	701	2300	1	19°	118000°	122 kts	140 mph	0.00		TO_7
13	S	0:30:07	0:32:55	0:02:48	695	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	4.60		TO_7
30	N	0:36:22	0:39:23	0:03:01	695	26°	49°	701	2300	1	19°	118000°	120 kts	138 mph	6.90		TO_7
31	S	0:43:27	0:46:31	0:03:04	704	26°	49°	701	2300	1	19°	118000°	118 kts	136 mph	6.79		TO_7
32	N	0:49:51	0:53:04	0:03:13	687	26°	49°	701	2300	1	19°	118000°	119 kts	137 mph	6.85		TO_7
BT	Ground	1:04:09	1:05:17	0:01:08													Ground Test

LIDAR FLIGHT SUMMARY

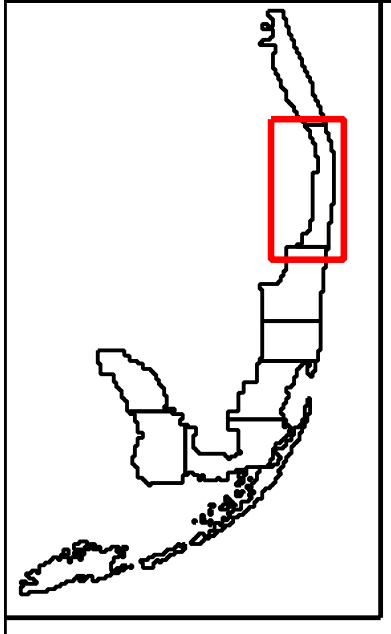
Aircraft Flight Time:	2:11:38	Hobbs Time	
Laser Collection Time:	0:29:18	Start	1545.4
Miles Flown on Flights:	45.44	Stop	1548.4
		Total	3

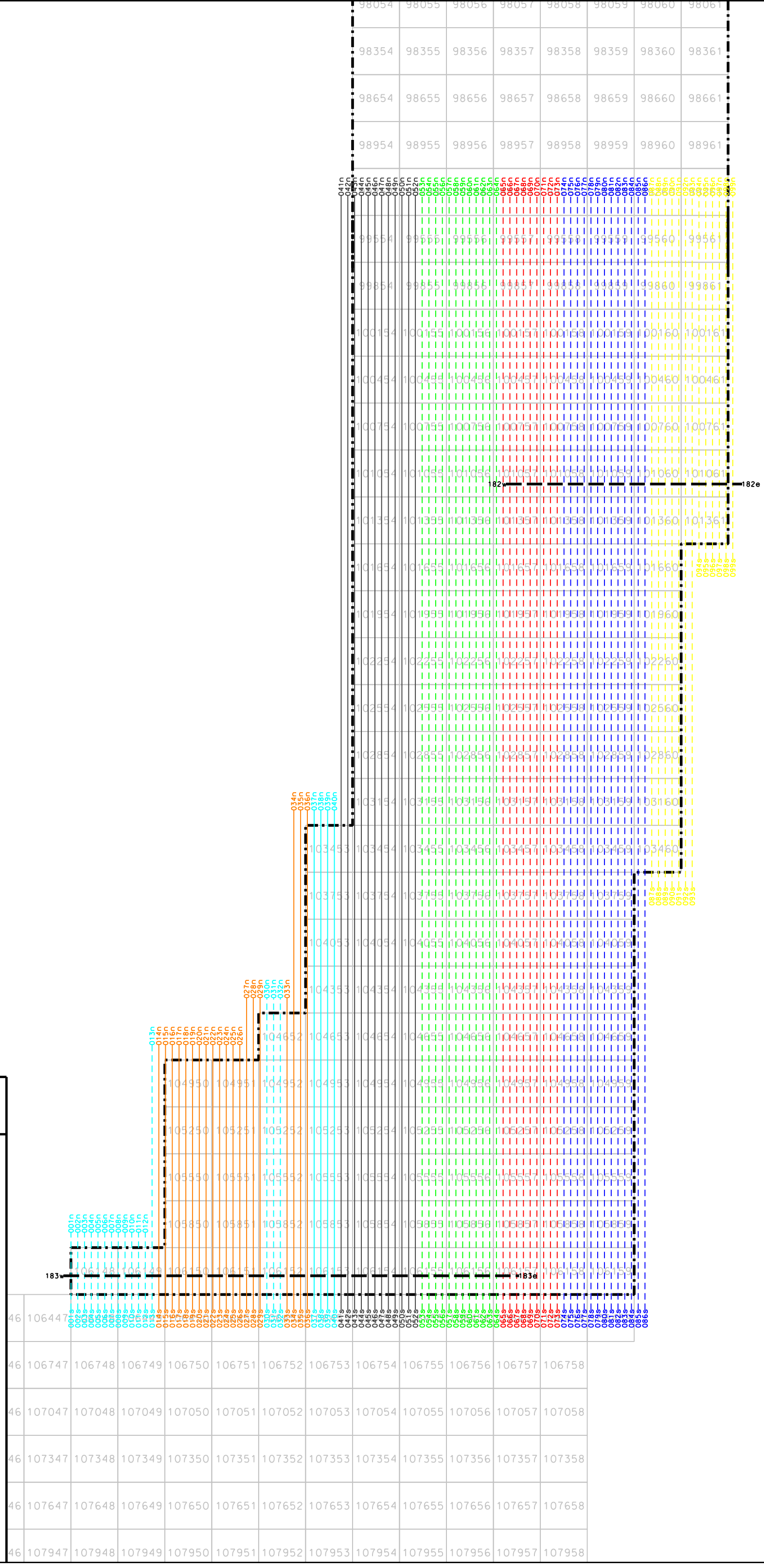
Data Collection		Survey	
Percent Complete		Percent Complete	
Total Flight Lines		Total Check Sites	
Lines Complete		Check Sites Complete	
Lines Completed Today		Sites Completed Today	

Comments

This mission was the south end of TO_7

Weather





Block 7
Dates Flown

November 24, 2007
December 3, 2007 flt1
December 3, 2007 flt2
December 4, 2007 flt 1
December 4, 2007 flt 2
December 4, 2007 flt 3
December 6, 2007
December 7, 2007
December 17, 2007 - - -
December 18, 2007 - - -
December 30, 2007 - - -
December 31, 2007 - - -
January 29, 2008 flt 1 - - -
January 29, 2008 flt 2 - - -
January 29, 2008 flt 3 - - -
Cross Flight — —

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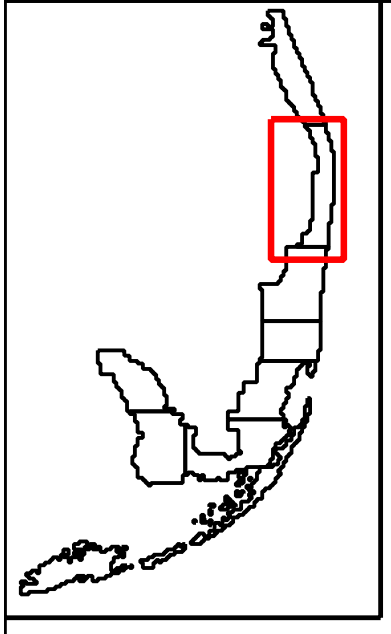

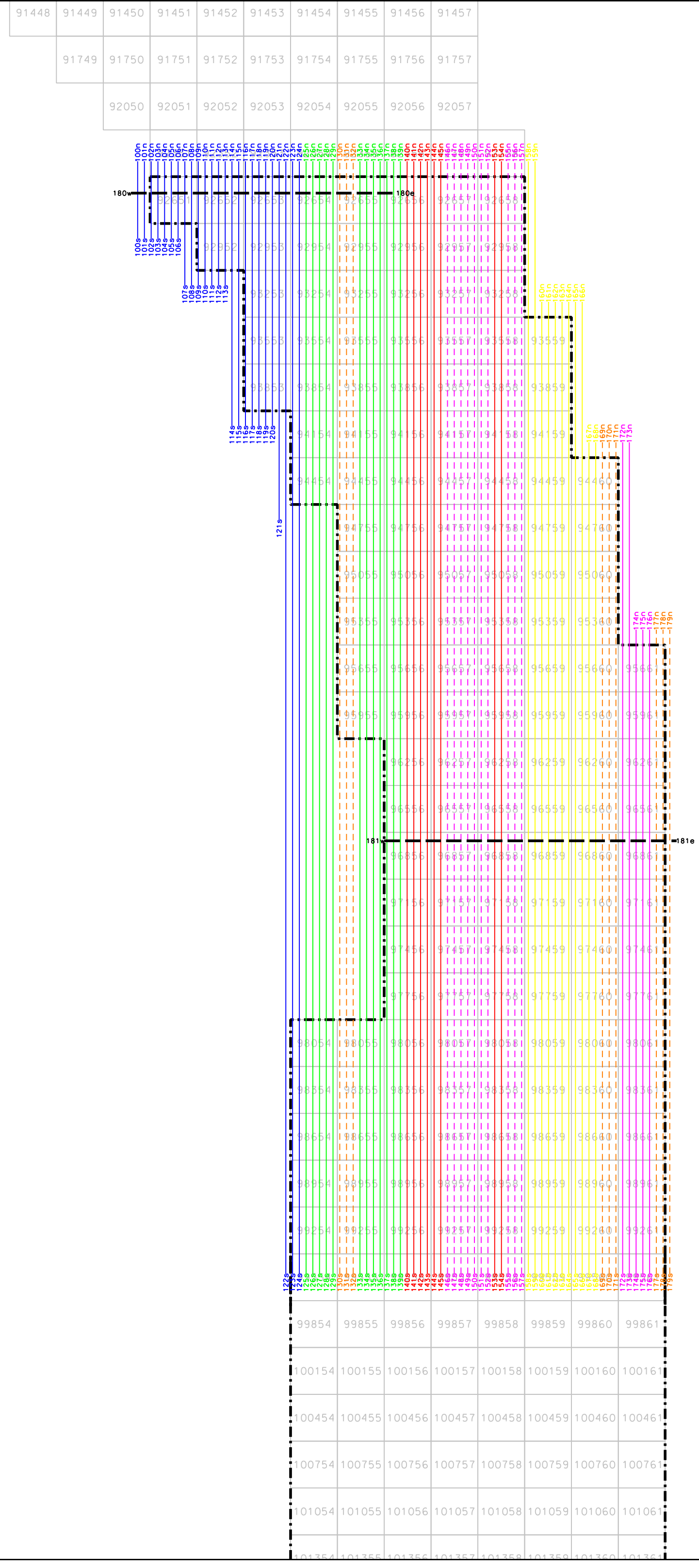

Block 7
Dates Flown

November 24, 2007
December 3, 2007 flt1
December 3, 2007 flt2
December 4, 2007 flt 1
December 4, 2007 flt 2
December 4, 2007 flt 3
December 6, 2007
December 7, 2007
December 17, 2007 - - -
December 18, 2007 - - -
December 30, 2007 - - -
December 31, 2007 - - -
January 29, 2008 flt 1 - - -
January 29, 2008 flt 2 - - -
January 29, 2008 flt 3 - - -
Cross Flight — —

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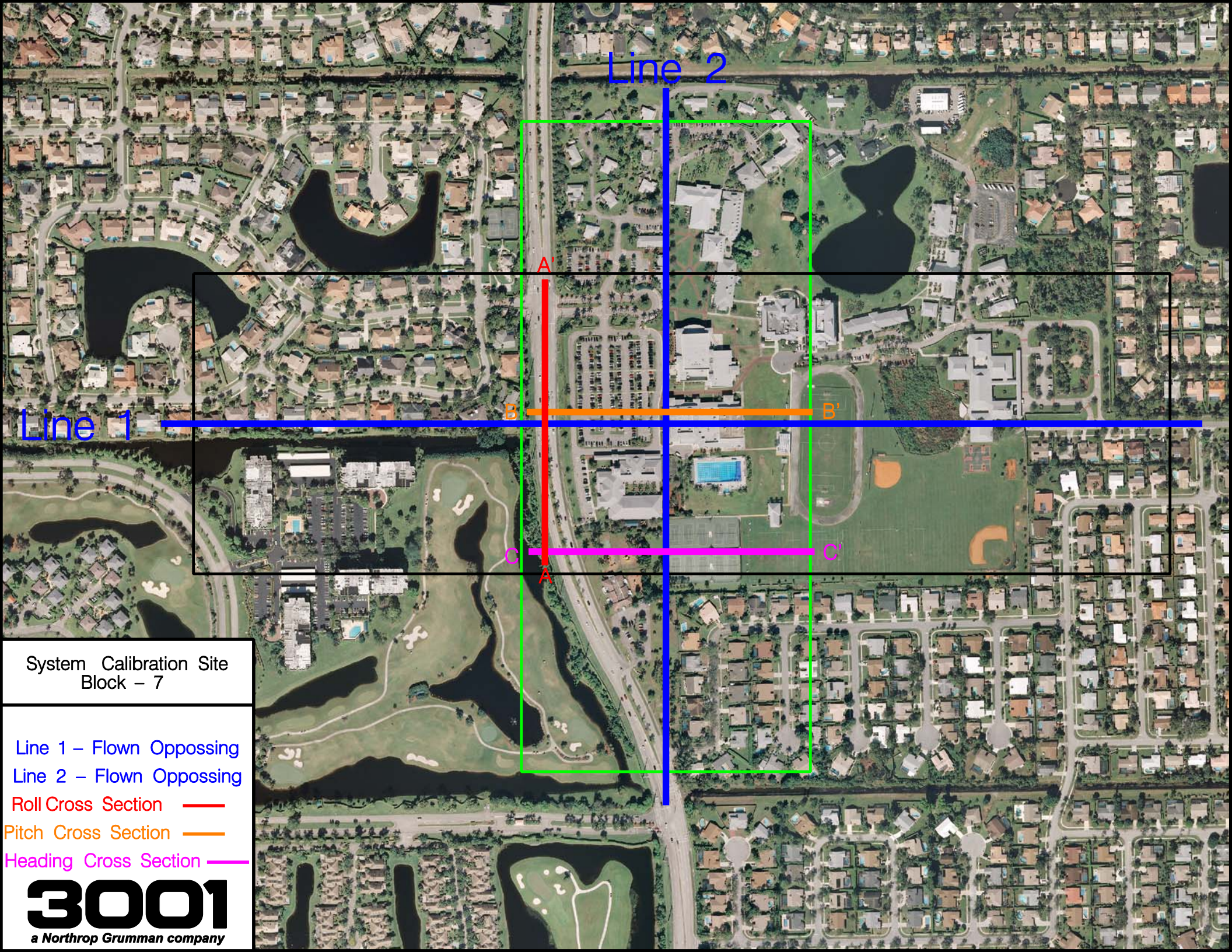
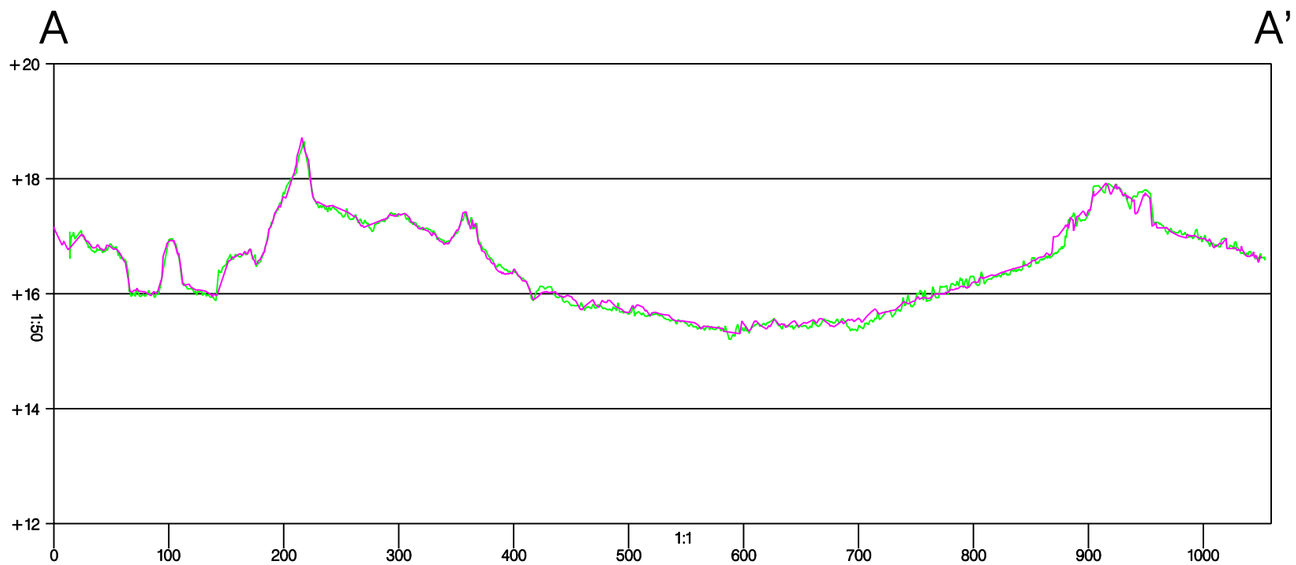
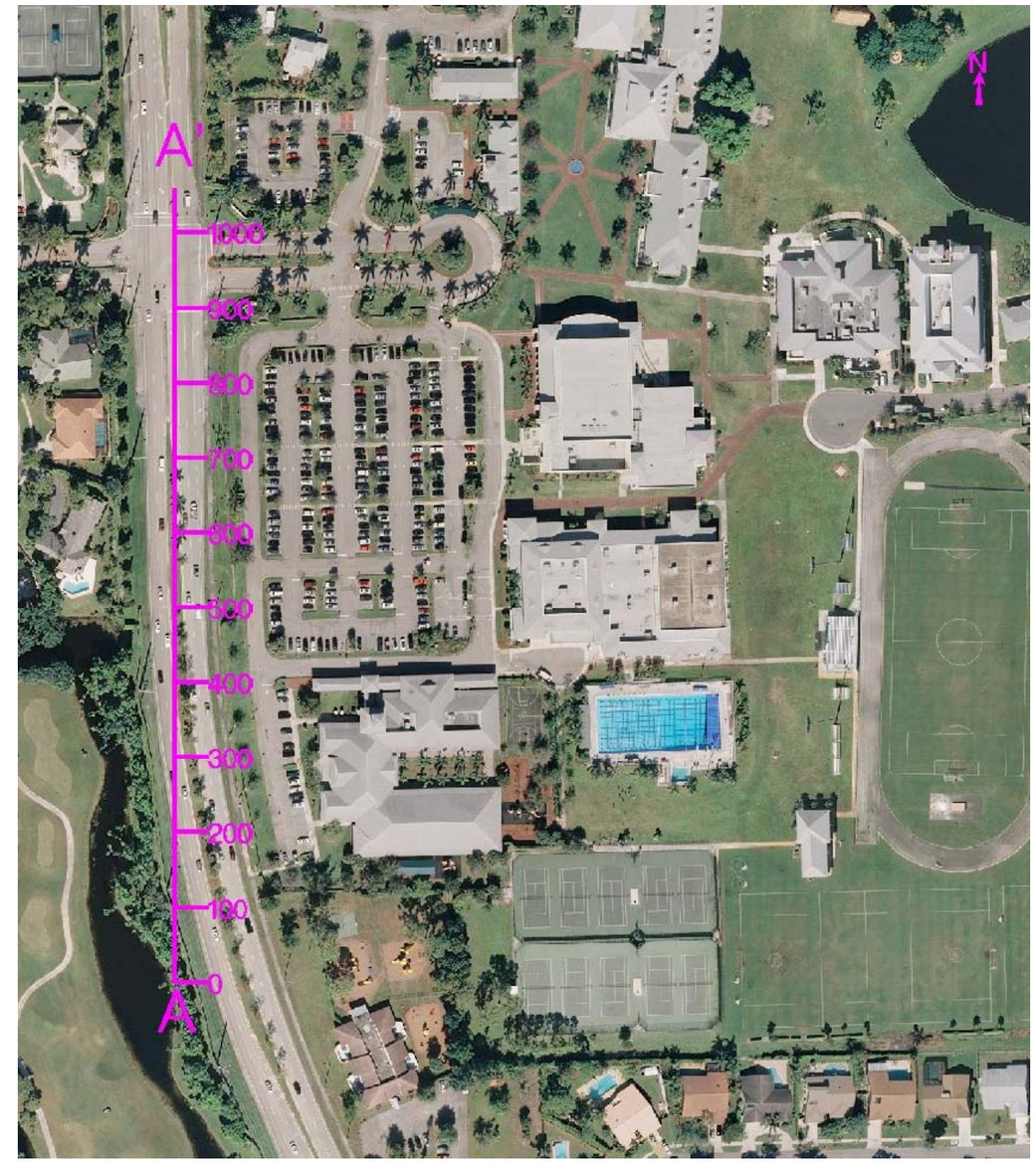
Section 3


Line 2
Line 1
A'
A
B
B'
C
C'
System Calibration Site
Block – 7
Line 1 – Flown Oppossing
Line 2 – Flown Oppossing
Roll Cross Section
Pitch Cross Section
Heading Cross Section
3001
a Northrop Grumman company

Roll





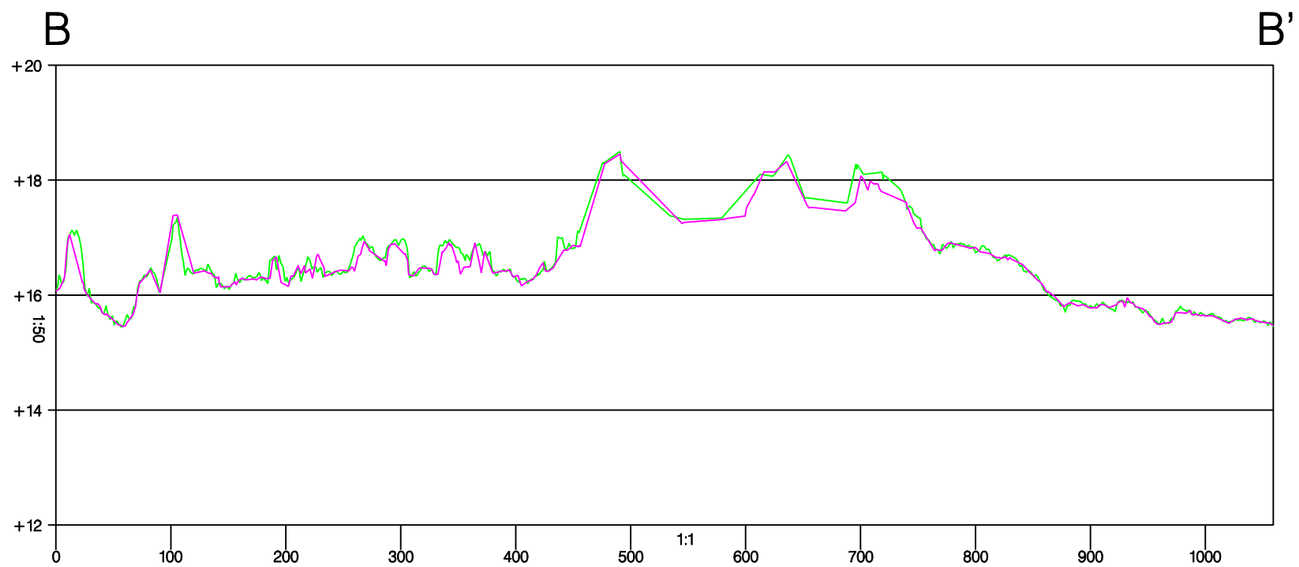
System Calibration Site
Block – 7

Pre–Project Calibration

X–section generated from two opposing flight lines

3001
a Northrop Grumman company

Pitch



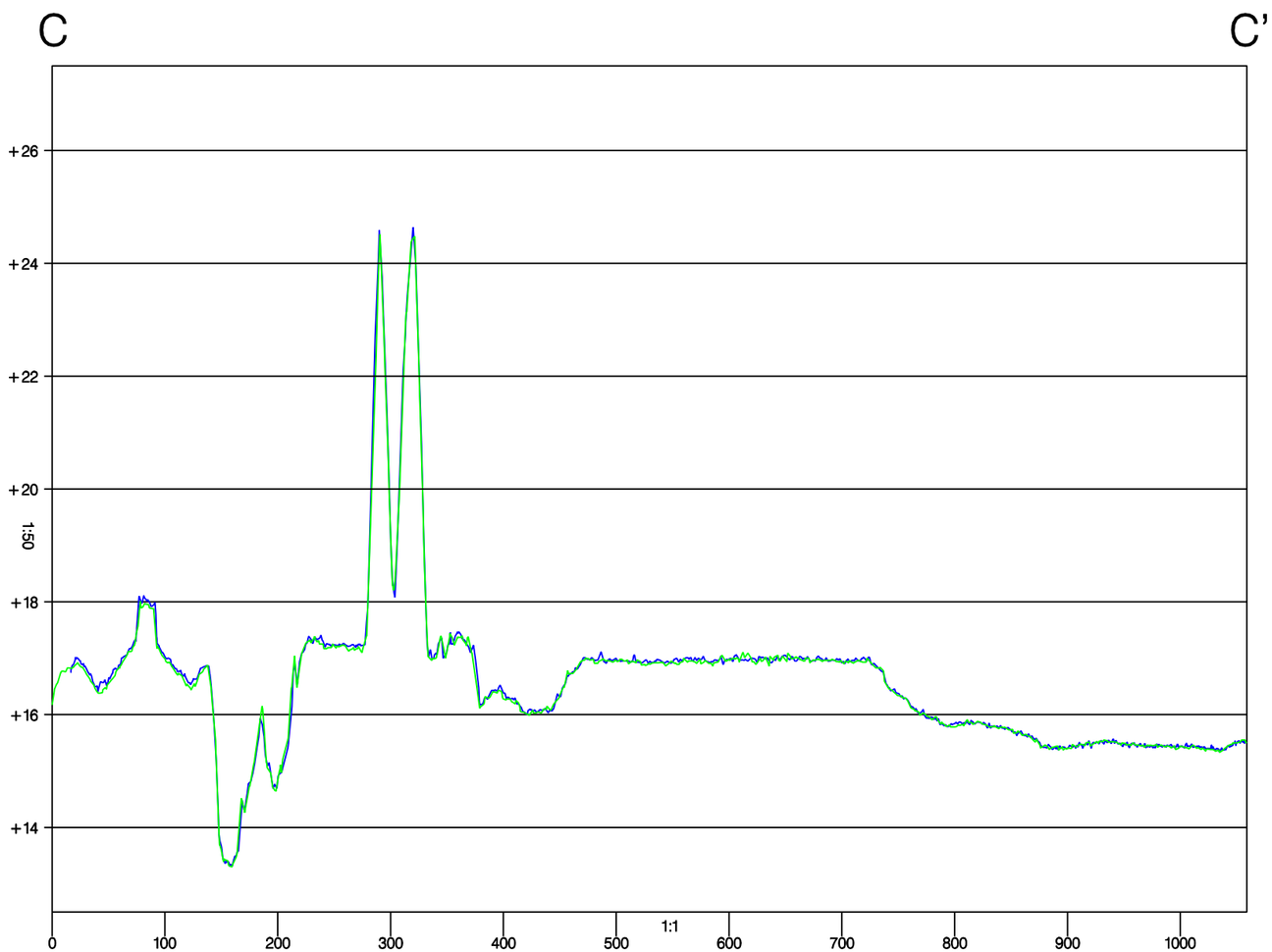
System Calibration Site
Block – 7

Pre–Project Calibration

X–section generated from two opposing flight lines

3001
a Northrop Grumman company

Heading

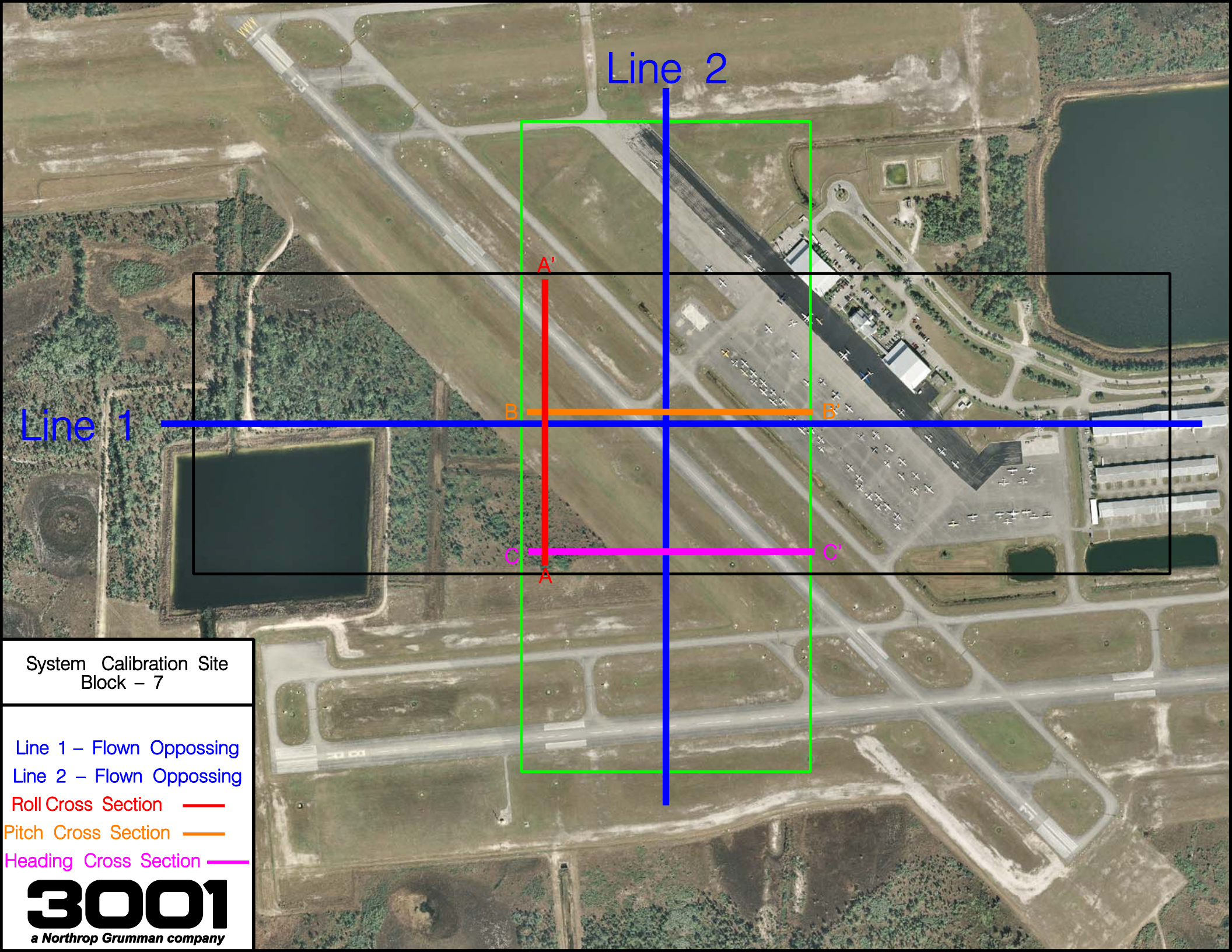


System Calibration Site
Block – 7

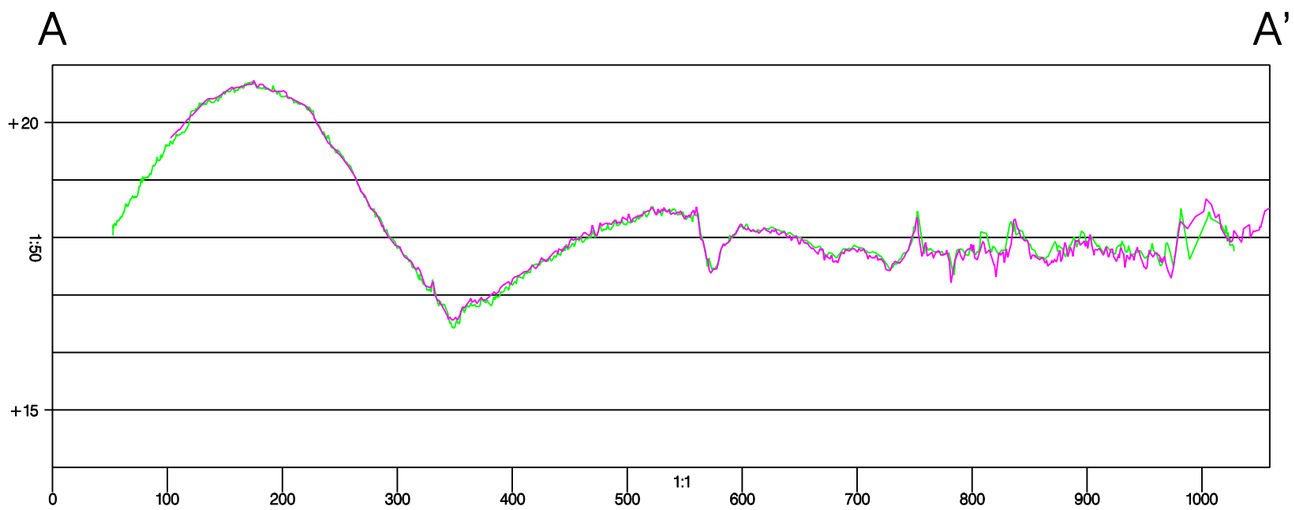
Pre–Project Calibration

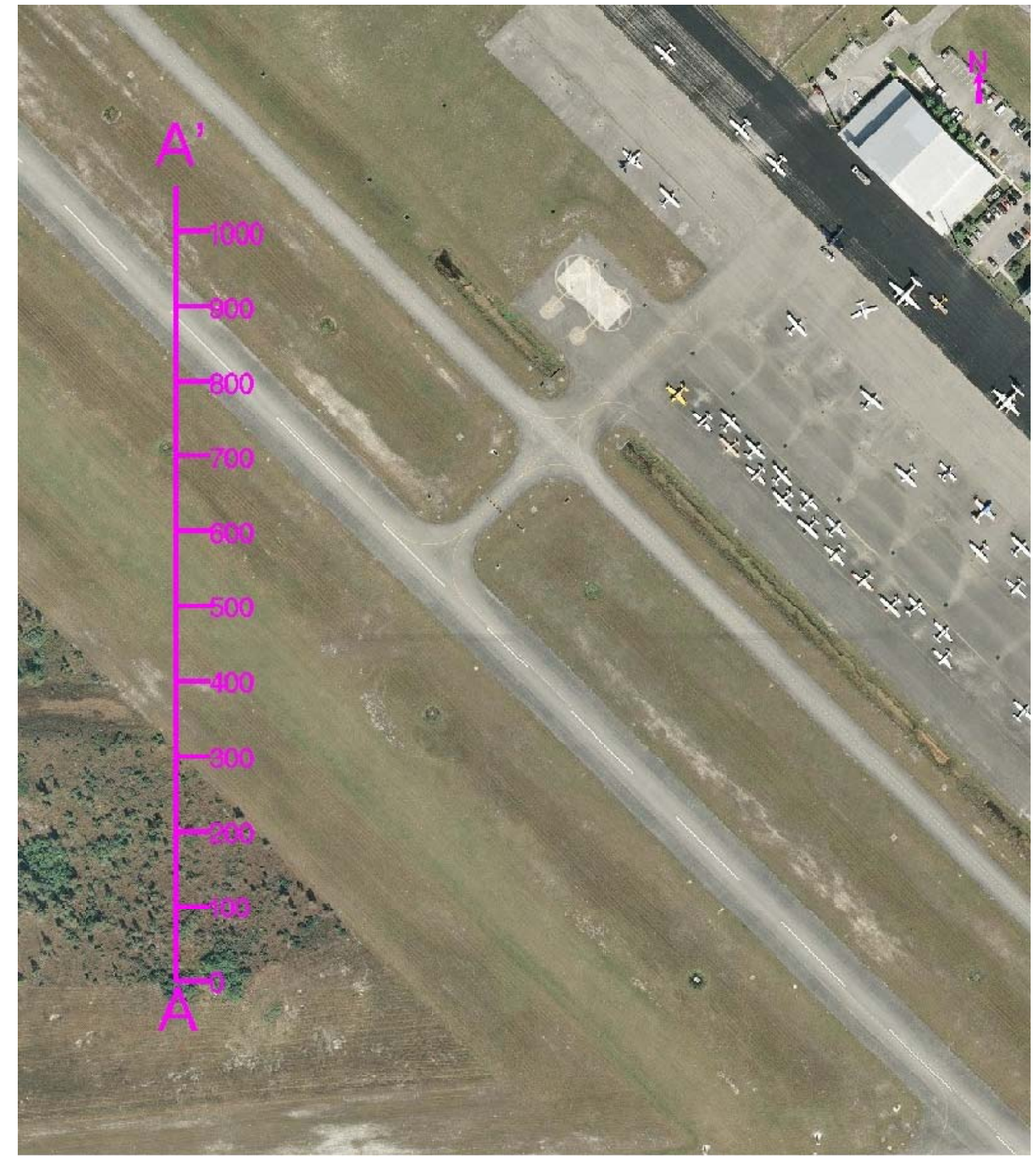
X–sections generated in overlap of perpendicular flight lines

3001
a Northrop Grumman company


Line 2
Line 1
A'
A
B
B'
C
C'
System Calibration Site
Block – 7
Line 1 – Flown Oppossing
Line 2 – Flown Oppossing
Roll Cross Section
Pitch Cross Section
Heading Cross Section
3001
a Northrop Grumman company

Roll





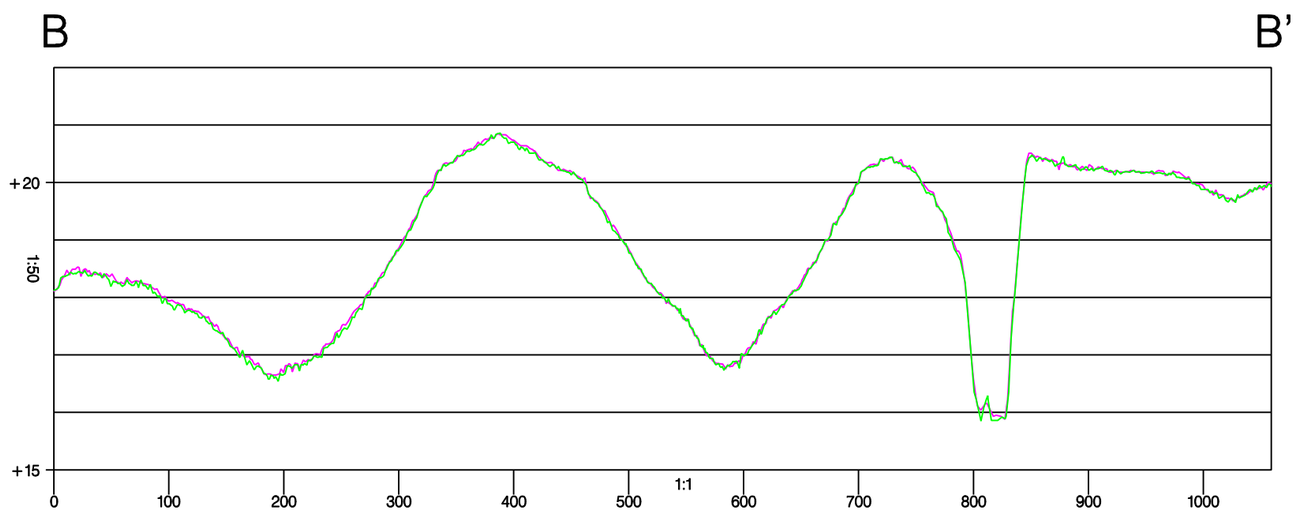
System Calibration Site
Block – 7

Post–Project Calibration

X–section generated from two opposing flight lines

3001
a Northrop Grumman company

Pitch



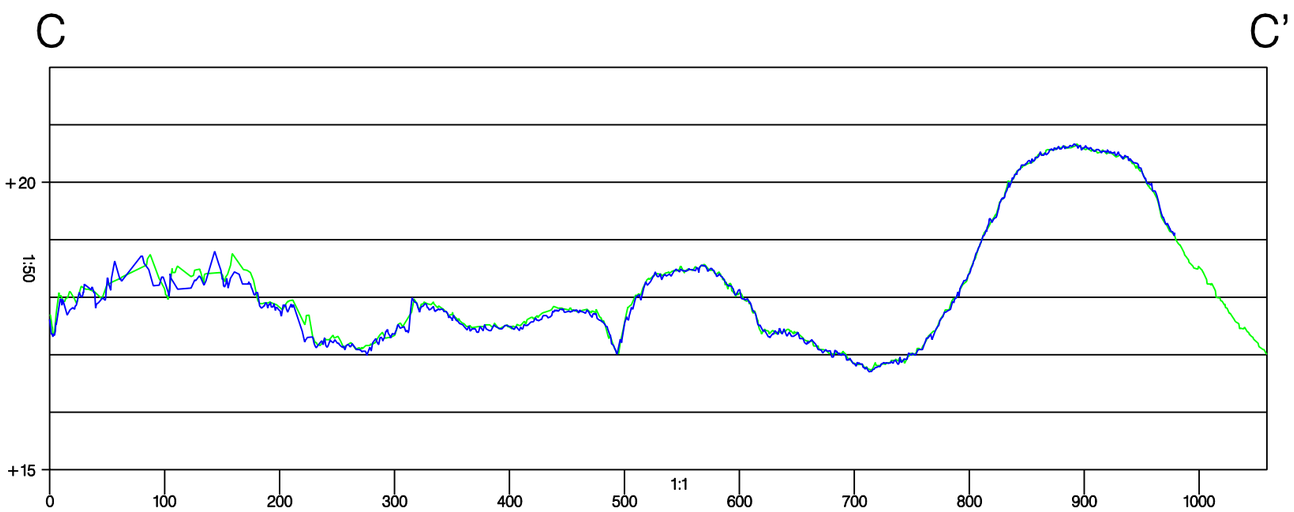
System Calibration Site
Block – 7

Post–Project Calibration

X–section generated from two opposing flight lines

3001
a Northrop Grumman company

Heading



System Calibration Site
Block – 7

Post–Project Calibration

X–sections generated in overlap of perpendicular flight lines

3001
a Northrop Grumman company

Glossary

3D	Three Dimensional
Alt	Altitude
ALTM	Airborne Laser Terrain Mapping
DGPS	Differential Global Positioning System
GPS	Global Positioning System
GRS80	Geodetic Reference System 1980
HARN	High Accuracy Reference Network
Hdg	Heading
IMU	Inertial Measurement Unit
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NGS OPUS	The National Geodetic Survey's On-line Positioning User Service
PDOP	Positional Dilution of Precision
POS	Position and Orientation System
PRF	Pulse Rate Frequency
RINEX	Receiver Independent Exchange Format
SBET	Smoothed Best Estimation of Trajectory
SVs	Space Vehicles
UTC	Coordinated Universal Time
UTM	Universal Transverse Mercator