

OPUS-RS solution : 033845_14_233_A0.14O OP1408731390497

opus <opus@ngs.noaa.gov>

Fri 8/22/2014 12:19 PM

To:Chad Mozol <Chad.Mozol@neciusa.com>;

FILE: 033845_14_233_A0.14O OP1408731390497

NGS OPUS-RS SOLUTION REPORT =====

All computed coordinate accuracies are listed as 1-sigma RMS values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: cmozol@neciusa.com DATE: August 22, 2014
RINEX FILE: 0338233s.14o TIME: 18:19:31 UTC

SOFTWARE: rsgps 1.37 RS93.prl 1.99.2 START: 2014/08/21 18:06:15
EPHEMERIS: igr18064.eph [rapid] STOP: 2014/08/21 19:18:15
NAV FILE: brdc2330.14n OBS USED: 3054 / 3828 : 80%
ANT NAME: CHCX90D-OPUS NONE QUALITY IND. 7.68/ 36.97
ARP HEIGHT: 1.8 NORMALIZED RMS: 0.295

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.63775)

X: -1344297.197(m) 0.006(m) -1344298.071(m) 0.006(m)
Y: -4055540.795(m) 0.011(m) -4055539.569(m) 0.011(m)
Z: 4720863.954(m) 0.013(m) 4720863.943(m) 0.013(m)

LAT: 48 2 42.97405 0.007(m) 48 2 42.99521 0.007(m)
E LON: 251 39 39.95858 0.004(m) 251 39 39.89990 0.004(m)
W LON: 108 20 20.04142 0.004(m) 108 20 20.10010 0.004(m)
EL HGT: 834.937(m) 0.017(m) 834.334(m) 0.017(m)
ORTHO HGT: 851.048(m) 0.019(m) [NAVD88 (Computed using GEOID12A)]

	UTM COORDINATES	STATE PLANE COORDINATES
	UTM (Zone 12)	SPC (2500 MT)
Northing (Y) [meters]	5324758.109	422368.675
Easting (X) [meters]	698324.840	686529.988
Convergence [degrees]	1.97963054	0.84934924
Point Scale	1.00008332	0.99955553
Combined Factor	0.99995247	0.99942475

US NATIONAL GRID DESIGNATOR: 12UXU9832424758(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7731	P053 WHITEWATERMT2007	CORS ARP	N484333.865 W1074331.456	88304.2
DG9749	MTMS MONTANA STATE UNI	CORS ARP	N483227.426 W1094111.858	114197.5
DI3425	P052 LRRNCHJRDNMT2006	CORS ARP	N472229.026 W1070107.185	124003.2
DM7133	MTLW LEWISTOWN	CORS ARP	N470314.929 W1092633.764	138025.1
DI2257	P049 ARMINGTON_MT2006	CORS ARP	N472059.850 W1105422.382	207643.3
DI3422	P050 WICKUMRNCHMT2006	CORS ARP	N484834.096 W1111454.296	231492.7

NEAREST NGS PUBLISHED CONTROL POINT

Information on nearest mark is not available due to database connectivity issues or has restrictions on when or how it can be published.

OPUS-RS Extended Output, Level 2

FINAL COORDINATES (ITRF at epoch of observations)

p053	-1283559.247	-4015770.314	4771131.595
mtms	-1425435.585	-3984013.207	4757493.881
p052	-1266648.334	-4138194.561	4670709.490
mtlw	-1449333.486	-4105829.833	4646773.506
p049	-1545099.845	-4044895.888	4669084.588
p050	-1525480.185	-3923083.435	4777585.192
0338	-1344298.071	-4055539.569	4720863.943

Covariance matrix of the stations:

1	4.0520E-07	7.9550E-07	-5.7580E-07	-4.9690E-08	-1.6870E-07	1.7050E-07	5.4080E-08	-7.8630E-08	-1.0580E-08	-4.6140E-08	-1.7340E-07	6.9080E-08	-9.5950E-08	-1.9180E-07	1.2150E-07	-1.0130E-07	-1.8240E-07	2.2450E-07	1.1100E-07	1.4880E-07	-1.4050E-07
2	7.9550E-07	2.3040E-06	-1.9320E-06	-1.5880E-07	-4.2820E-07	4.2140E-07	-8.9050E-08	-3.8140E-07	3.0490E-07	-1.6040E-07	-4.4390E-07	3.5830E-07	-1.9440E-07	-4.5080E-07	3.9170E-07	-1.9380E-07	-4.3230E-07	4.5580E-07	7.1550E-08	1.5350E-07	-1.0510E-07
3	-5.7580E-07	-1.9320E-06	2.3720E-06	1.1860E-07	3.9600E-07	-4.5730E-07	9.1740E-08	3.5280E-07	-3.8840E-07	1.0930E-07	3.7520E-07	-4.1920E-07	1.2300E-07	3.9280E-07	-4.4870E-07	1.3430E-07	4.1500E-07	-4.9200E-07	-2.5720E-08	-4.3550E-08	7.0870E-08
4	-4.9690E-08	-1.5880E-07	1.1860E-07	4.1650E-07	8.7290E-07	-6.8730E-07	-5.3110E-08	-1.6070E-07	1.3200E-07	-4.9690E-08	-1.7630E-07	1.4470E-07	-4.9730E-08	-1.8940E-07	1.5210E-07	-4.7740E-08	-1.8780E-07	1.4000E-07	8.5370E-09	-3.4740E-08	3.8970E-08
5	-1.6870E-07	-4.2820E-07	3.9600E-07	8.7290E-07	2.3600E-06	-2.0150E-06	-1.7210E-07	-4.4230E-07	4.0420E-07	-1.7800E-07	-4.4710E-07	4.0730E-07	-1.7940E-07	-4.4450E-07	4.0700E-07	-1.7440E-07	-4.3080E-07	4.0010E-07	-2.6030E-08	-1.5940E-08	5.5640E-08
6	1.7050E-07	4.2140E-07	-4.5730E-07	-6.8730E-07	-2.0150E-06	2.5160E-06	1.7930E-07	4.1860E-07	-5.0680E-07	1.2490E-07	3.7750E-07	-4.7970E-07	1.0290E-07	3.8500E-07	-4.7040E-07	1.0920E-07	4.1300E-07	-4.3470E-07	7.1310E-08	1.2750E-07	-1.1350E-07
7	5.4080E-08	-8.9050E-08	9.1740E-08	-5.3110E-08	-1.7210E-07	1.7930E-07	4.4940E-07	8.2110E-07	-6.6310E-07	-4.7500E-08	-1.7730E-07	3.7820E-08	-1.1430E-07	-1.9700E-07	1.0540E-07	-1.2220E-07	-1.8490E-07	2.4800E-07	1.3010E-07	1.7390E-07	-1.8060E-07
8	-7.8630E-08	-3.8140E-07	3.5280E-07	-1.6070E-07	-4.4230E-07	4.1860E-07	8.2110E-07	2.3640E-06	-1.9250E-06	-1.6040E-07	-4.5840E-07	3.1880E-07	-2.1050E-07	-4.6800E-07	3.6740E-07	-2.1230E-07	-4.4720E-07	4.6810E-07			

7.3630E-08 1.1720E-07 -1.0930E-07

9 -1.0580E-08 3.0490E-07 -3.8840E-07 1.3200E-07 4.0420E-07 -5.0680E-07 -6.6310E-07 -1.9250E-06 2.3460E-06
1.1350E-07 3.8550E-07 -2.8820E-07 2.0390E-07 4.0960E-07 -3.8710E-07 2.2650E-07 4.1930E-07 -6.0950E-07 -1.3760E-07
-2.1150E-07 2.6290E-07

10 -4.6140E-08 -1.6040E-07 1.0930E-07 -4.9690E-08 -1.7800E-07 1.2490E-07 -4.7500E-08 -1.6040E-07 1.1350E-07
4.1900E-07 8.8590E-07 -6.2640E-07 -5.5120E-08 -1.9460E-07 1.4130E-07 -5.3720E-08 -1.9260E-07 1.3760E-07 1.2980E-08
-2.9120E-08 1.9620E-08

11 -1.7340E-07 -4.4390E-07 3.7520E-07 -1.7630E-07 -4.4710E-07 3.7750E-07 -1.7730E-07 -4.5840E-07 3.8550E-07
8.8590E-07 2.4210E-06 -1.9010E-06 -1.8200E-07 -4.5900E-07 3.8580E-07 -1.7700E-07 -4.4570E-07 3.7710E-07 -3.1520E-08
-3.4920E-08 3.8720E-08

12 6.9080E-08 3.5830E-07 -4.1920E-07 1.4470E-07 4.0730E-07 -4.7970E-07 3.7820E-08 3.1880E-07 -2.8820E-07
-6.2640E-07 -1.9010E-06 2.2980E-06 1.7910E-07 3.9950E-07 -4.0700E-07 1.9600E-07 4.1610E-07 -5.3660E-07 -4.9180E-08
-8.3950E-08 1.3030E-07

13 -9.5950E-08 -1.9440E-07 1.2300E-07 -4.9730E-08 -1.7940E-07 1.0290E-07 -1.1430E-07 -2.1050E-07 2.0390E-07
-5.5120E-08 -1.8200E-07 1.7910E-07 5.0450E-07 9.5950E-07 -6.9580E-07 -2.2350E-08 -1.9380E-07 8.7560E-08
-4.4850E-08 -1.2550E-07 1.1980E-07

14 -1.9180E-07 -4.5080E-07 3.9280E-07 -1.8940E-07 -4.4450E-07 3.8500E-07 -1.9700E-07 -4.6800E-07 4.0960E-07
-1.9460E-07 -4.5900E-07 3.9950E-07 9.5950E-07 2.4260E-06 -1.9630E-06 -1.8580E-07 -4.3700E-07 3.7610E-07
-4.9210E-08 -4.1280E-08 5.6090E-08

15 1.2150E-07 3.9170E-07 -4.4870E-07 1.5210E-07 4.0700E-07 -4.7040E-07 1.0540E-07 3.6740E-07 -3.8710E-07
1.4130E-07 3.8580E-07 -4.0700E-07 -6.9580E-07 -1.9630E-06 2.3770E-06 1.7430E-07 4.1140E-07 -4.9650E-07 9.4850E-09
3.1510E-10 3.1290E-08

16 -1.0130E-07 -1.9380E-07 1.3430E-07 -4.7740E-08 -1.7440E-07 1.0920E-07 -1.2220E-07 -2.1230E-07 2.2650E-07
-5.3720E-08 -1.7700E-07 1.9600E-07 -2.2350E-08 -1.8580E-07 1.7430E-07 5.1410E-07 9.4280E-07 -8.3980E-07
-5.1290E-08 -1.3390E-07 1.4360E-07

17 -1.8240E-07 -4.3230E-07 4.1500E-07 -1.8780E-07 -4.3080E-07 4.1300E-07 -1.8490E-07 -4.4720E-07 4.1930E-07
-1.9260E-07 -4.4570E-07 4.1610E-07 -1.9380E-07 -4.3700E-07 4.1140E-07 9.4280E-07 2.3590E-06 -2.0750E-06
-3.7930E-08 -1.1220E-08 6.2890E-08

18 2.2450E-07 4.5580E-07 -4.9200E-07 1.4000E-07 4.0010E-07 -4.3470E-07 2.4800E-07 4.6810E-07 -6.0950E-07
1.3760E-07 3.7710E-07 -5.3660E-07 8.7560E-08 3.7610E-07 -4.9650E-07 -8.3980E-07 -2.0750E-06 2.7360E-06 1.3130E-07
2.1120E-07 -2.1540E-07

19 1.1100E-07 7.1550E-08 -2.5720E-08 8.5370E-09 -2.6030E-08 7.1310E-08 1.3010E-07 7.3630E-08 -1.3760E-07
1.2980E-08 -3.1520E-08 -4.9180E-08 -4.4850E-08 -4.9210E-08 9.4850E-09 -5.1290E-08 -3.7930E-08 1.3130E-07 3.9240E-06
9.0690E-06 -6.7120E-06

20 1.4880E-07 1.5350E-07 -4.3550E-08 -3.4740E-08 -1.5940E-08 1.2750E-07 1.7390E-07 1.1720E-07 -2.1150E-07
-2.9120E-08 -3.4920E-08 -8.3950E-08 -1.2550E-07 -4.1280E-08 3.1510E-10 -1.3390E-07 -1.1220E-08 2.1120E-07 9.0690E-06
2.6080E-05 -2.1790E-05

21 -1.4050E-07 -1.0510E-07 7.0870E-08 3.8970E-08 5.5640E-08 -1.1350E-07 -1.8060E-07 -1.0930E-07 2.6290E-07
1.9620E-08 3.8720E-08 1.3030E-07 1.1980E-07 5.6090E-08 3.1290E-08 1.4360E-07 6.2890E-08 -2.1540E-07 -6.7120E-06
-2.1790E-05 2.6110E-05

Covariance Matrix for the xyz OPUS Rover Position (meters^2).

0.0000039240 0.0000090690 -0.0000067120
0.0000090690 0.0000260800 -0.0000217900
-0.0000067120 -0.0000217900 0.0000261100

Covariance Matrix for the enu OPUS Position (meters^2).

0.0000007003 0.0000008120 -0.0000000809
0.0000008120 0.0000051835 -0.0000038560
-0.0000000809 -0.0000038560 0.0000502302

Horizontal network accuracy = 0.00458 meters.

Vertical network accuracy = 0.01390 meters.

		Vectors		
To	From	X	Y	Z
p053	0338	60738.824	39769.255	50267.652
mtms	0338	-81137.514	71526.362	36629.938
p052	0338	77649.738	-82654.992	-50154.452
mtlw	0338	-105035.414	-50290.264	-74090.436
p049	0338	-200801.774	10643.681	-51779.355
p050	0338	-181182.114	132456.134	56721.249

Covariance matrix of the 6 vectors

1	4.1072E-06	9.6442E-06	-7.1216E-06	3.7548E-06	8.7775E-06	-6.4723E-06	3.7370E-06	8.7679E-06	-6.4445E-06
2	9.6442E-06	2.8077E-05	-2.3573E-05	8.8734E-06	2.5514E-05	-2.1391E-05	8.7345E-06	2.5428E-05	-2.1168E-05
3	-7.1216E-06	-2.3573E-05	2.8340E-05	-6.6067E-06	-2.1406E-05	2.5695E-05	-6.4139E-06	-2.1284E-05	2.5388E-05
4	3.7548E-06	8.8734E-06	-6.6067E-06	4.3234E-06	1.0003E-05	-7.5096E-06	3.7323E-06	8.8694E-06	-6.4814E-06
5	8.7775E-06	2.5514E-05	-2.1406E-05	1.0003E-05	2.8472E-05	-2.3988E-05	8.7490E-06	2.5536E-05	-2.1230E-05
6	-6.4723E-06	-2.1391E-05	2.5695E-05	-7.5096E-06	-2.3988E-05	2.8853E-05	-6.4234E-06	-2.1390E-05	2.5454E-05
7	3.7370E-06	8.7345E-06	-6.4139E-06	3.7323E-06	8.7490E-06	-6.4234E-06	4.1132E-06	9.6426E-06	-7.0569E-06
8	8.7679E-06	2.5428E-05	-2.1284E-05	8.8694E-06	2.5536E-05	-2.1390E-05	9.6426E-06	2.8210E-05	-2.3394E-05
9	-6.4445E-06	-2.1168E-05	2.5388E-05	-6.4814E-06	-2.1230E-05	2.5454E-05	-7.0569E-06	-2.3394E-05	2.7930E-05
10	3.7539E-06	8.8662E-06	-6.5966E-06	3.8528E-06	8.9462E-06	-6.6780E-06	3.7334E-06	8.8641E-06	-6.4805E-06
11	8.7783E-06	2.5518E-05	-2.1410E-05	8.9590E-06	2.5684E-05	-2.1579E-05	8.7493E-06	2.5539E-05	-2.1232E-05
12	-6.4532E-06	-2.1243E-05	2.5490E-05	-6.5571E-06	-2.1354E-05	2.5613E-05	-6.4444E-06	-2.1278E-05	2.5429E-05
13	3.7619E-06	8.9286E-06	-6.6831E-06	3.9106E-06	9.0411E-06	-6.8002E-06	3.7244E-06	8.9104E-06	-6.4903E-06
14	8.7776E-06	2.5517E-05	-2.1410E-05	8.9635E-06	2.5693E-05	-2.1589E-05	8.7473E-06	2.5536E-05	-2.1225E-05
15	-6.4595E-06	-2.1294E-05	2.5559E-05	-6.6084E-06	-2.1439E-05	2.5722E-05	-6.4355E-06	-2.1314E-05	2.5429E-05
16	3.7630E-06	8.9376E-06	-6.6956E-06	3.9190E-06	9.0545E-06	-6.8177E-06	3.7230E-06	8.9170E-06	-6.4915E-06
17	8.7757E-06	2.5505E-05	-2.1394E-05	8.9539E-06	2.5676E-05	-2.1567E-05	8.7481E-06	2.5527E-05	-2.1222E-05
18	-6.4783E-06	-2.1440E-05	2.5763E-05	-6.7423E-06	-2.1657E-05	2.6004E-05	-6.4147E-06	-2.1424E-05	2.5453E-05

Correlation matrix of the 6 vectors

1	1.0000E+00	8.9808E-01	-6.6009E-01	8.9104E-01	8.1169E-01	-5.9455E-01	9.0920E-01	8.1457E-01	-6.0170E-01
2	8.9808E-01	1.0000E+00	-8.3569E-01	8.0538E-01	9.0240E-01	-7.5155E-01	8.1278E-01	9.0352E-01	-7.5592E-01

8.0532E-01 9.0095E-01 -7.5564E-01 7.9273E-01 9.0065E-01 -7.5375E-01 7.9156E-01 9.0225E-01 -7.4781E-01
 3 -6.6009E-01 -8.3569E-01 1.0000E+00 -5.9685E-01 -7.5358E-01 8.9858E-01 -5.9406E-01 -7.5277E-01 9.0237E-01
 -5.9638E-01 -7.5241E-01 9.0249E-01 -5.9060E-01 -7.5217E-01 9.0053E-01 -5.9024E-01 -7.5330E-01 8.9439E-01
 4 8.9104E-01 8.0538E-01 -5.9685E-01 1.0000E+00 9.0156E-01 -6.7237E-01 8.8505E-01 8.0312E-01 -5.8981E-01
 8.9180E-01 8.0609E-01 -5.9440E-01 8.8480E-01 8.0625E-01 -5.9612E-01 8.8451E-01 8.0718E-01 -5.9928E-01
 5 8.1169E-01 9.0240E-01 -7.5358E-01 9.0156E-01 1.0000E+00 -8.3694E-01 8.0847E-01 9.0106E-01 -7.5284E-01
 8.0693E-01 9.0051E-01 -7.5433E-01 7.9714E-01 9.0055E-01 -7.5362E-01 7.9634E-01 9.0198E-01 -7.5011E-01
 6 -5.9455E-01 -7.5155E-01 8.9858E-01 -6.7237E-01 -8.3694E-01 1.0000E+00 -5.8963E-01 -7.4974E-01 8.9664E-01
 -5.9836E-01 -7.5157E-01 8.9878E-01 -5.9559E-01 -7.5168E-01 8.9817E-01 -5.9564E-01 -7.5262E-01 8.9472E-01
 7 9.0920E-01 8.1278E-01 -5.9406E-01 8.8505E-01 8.0847E-01 -5.8963E-01 1.0000E+00 8.9517E-01 -6.5840E-01
 8.8598E-01 8.0709E-01 -5.9893E-01 8.6395E-01 8.0666E-01 -5.9518E-01 8.6147E-01 8.0853E-01 -5.8455E-01
 8 8.1457E-01 9.0352E-01 -7.5277E-01 8.0312E-01 9.0106E-01 -7.4974E-01 8.9517E-01 1.0000E+00 -8.3344E-01
 8.0324E-01 8.9960E-01 -7.5511E-01 7.8925E-01 8.9921E-01 -7.5268E-01 7.8788E-01 9.0089E-01 -7.4548E-01
 9 -6.0170E-01 -7.5592E-01 9.0237E-01 -5.8981E-01 -7.5284E-01 8.9664E-01 -6.5840E-01 -8.3344E-01 1.0000E+00
 -5.9017E-01 -7.5160E-01 9.0691E-01 -5.7776E-01 -7.5113E-01 9.0249E-01 -5.7643E-01 -7.5270E-01 8.9010E-01
 10 8.9149E-01 8.0532E-01 -5.9638E-01 8.9180E-01 8.0693E-01 -5.9836E-01 8.8598E-01 8.0324E-01 -5.9017E-01
 1.0000E+00 9.0182E-01 -6.6303E-01 8.8323E-01 8.0587E-01 -5.9579E-01 8.8281E-01 8.0683E-01 -5.9822E-01
 11 8.1036E-01 9.0095E-01 -7.5241E-01 8.0609E-01 9.0051E-01 -7.5157E-01 8.0709E-01 8.9960E-01 -7.5160E-01
 9.0182E-01 1.0000E+00 -8.3382E-01 7.9601E-01 8.9914E-01 -7.5246E-01 7.9521E-01 9.0056E-01 -7.4902E-01
 12 -6.0019E-01 -7.5564E-01 9.0249E-01 -5.9440E-01 -7.5433E-01 8.9878E-01 -5.9893E-01 -7.5511E-01 9.0691E-01
 -6.6303E-01 -8.3382E-01 1.0000E+00 -5.8556E-01 -7.5308E-01 9.0298E-01 -5.8472E-01 -7.5441E-01 8.9382E-01
 13 8.7328E-01 7.9273E-01 -5.9060E-01 8.8480E-01 7.9714E-01 -5.9559E-01 8.6395E-01 7.8925E-01 -5.7776E-01
 8.8323E-01 7.9601E-01 -5.8556E-01 1.0000E+00 8.9776E-01 -6.6508E-01 8.8263E-01 7.9706E-01 -5.9781E-01
 14 8.1004E-01 9.0065E-01 -7.5217E-01 8.0625E-01 9.0055E-01 -7.5168E-01 8.0666E-01 8.9921E-01 -7.5113E-01
 8.0587E-01 8.9914E-01 -7.5308E-01 8.9776E-01 1.0000E+00 -8.3523E-01 7.9575E-01 9.0081E-01 -7.4942E-01
 15 -5.9783E-01 -7.5375E-01 9.0053E-01 -5.9612E-01 -7.5362E-01 8.9817E-01 -5.9518E-01 -7.5268E-01 9.0249E-01
 -5.9579E-01 -7.5246E-01 9.0298E-01 -6.6508E-01 -8.3523E-01 1.0000E+00 -5.8894E-01 -7.5385E-01 8.9428E-01
 16 8.7136E-01 7.9156E-01 -5.9024E-01 8.8451E-01 7.9634E-01 -5.9564E-01 8.6147E-01 7.8788E-01 -5.7643E-01
 8.8281E-01 7.9521E-01 -5.8472E-01 8.8263E-01 7.9575E-01 -5.8894E-01 1.0000E+00 8.9581E-01 -6.7882E-01
 17 8.1167E-01 9.0225E-01 -7.5330E-01 8.0718E-01 9.0198E-01 -7.5262E-01 8.0853E-01 9.0089E-01 -7.5270E-01
 8.0683E-01 9.0056E-01 -7.5441E-01 7.9706E-01 9.0081E-01 -7.5385E-01 8.9581E-01 1.0000E+00 -8.3624E-01
 18 -5.9078E-01 -7.4781E-01 8.9439E-01 -5.9928E-01 -7.5011E-01 8.9472E-01 -5.8455E-01 -7.4548E-01 8.9010E-01
 -5.9822E-01 -7.4902E-01 8.9382E-01 -5.9781E-01 -7.4942E-01 8.9428E-01 -6.7882E-01 -8.3624E-01 1.0000E+00

G-FILE for the vectors

Axx2014 8212014 821
 B201408211800201408211900 6 rsgps 1.37IGS
 lant_info.003 NGS
 C00070001 607388243 20 397692549 52 502676520 53
 C00070002 -811375138 20 715263620 53 366299384 53
 C00070003 776497375 20 -826549922 53 -501544523 52
 C00070004-1050354143 20 -502902642 53 -740904363 53
 C00070005-2008017738 21 106436809 53 -517793550 53
 C00070006-1811821139 21 1324561335 53 567212492 54
 D 1 2 8980813 1 3 -6600875 1 4 8910390 1 5 8116921 1 6 -5945534
 D 1 7 9091968 1 8 8145658 1 9 -6016971 1 10 8914857 1 11 8103581
 D 1 12 -6001858 1 13 8732761 1 14 8100413 1 15 -5978320 1 16 8713641
 D 1 17 8116744 1 18 -5907807 2 3 -8356877 2 4 8053788 2 5 9024002
 D 2 6 -7515541 2 7 8127795 2 8 9035177 2 9 -7559232 2 10 8053184
 D 2 11 9009519 2 12 -7556387 2 13 7927255 2 14 9006535 2 15 -7537480
 D 2 16 7915578 2 17 9022537 2 18 -7478141 3 4 -5968502 3 5 -7535765

D 3 6 8985801 3 7 -5940637 3 8 -7527660 3 9 9023741 3 10 -5963829
D 3 11 -7524066 3 12 9024901 3 13 -5905980 3 14 -7521653 3 15 9005306
D 3 16 -5902361 3 17 -7533009 3 18 8943855 4 5 9015583 4 6 -6723666
D 4 7 8850486 4 8 8031233 4 9 -5898149 4 10 8918023 4 11 8060872
D 4 12 -5943988 4 13 8847992 4 14 8062503 4 15 -5961197 4 16 8845089
D 4 17 8071761 4 18 -5992807 5 6 -8369374 5 7 8084662 5 8 9010602
D 5 9 -7528417 5 10 8069285 5 11 9005110 5 12 -7543275 5 13 7971350
D 5 14 9005459 5 15 -7536153 5 16 7963379 5 17 9019800 5 18 -7501069
D 6 7 -5896309 6 8 -7497365 6 9 8966441 6 10 -5983562 6 11 -7515687
D 6 12 8987818 6 13 -5955854 6 14 -7516794 6 15 8981734 6 16 -5956382
D 6 17 -7526163 6 18 8947180 7 8 8951677 7 9 -6583957 7 10 8859799
D 7 11 8070917 7 12 -5989263 7 13 8639517 7 14 8066561 7 15 -5951762
D 7 16 8614726 7 17 8085313 7 18 -5845539 8 9 -8334368 8 10 8032350
D 8 11 8995998 8 12 -7551134 8 13 7892499 8 14 8992068 8 15 -7526842
D 8 16 7878769 8 17 9008859 8 18 -7454804 9 10 -5901736 9 11 -7515997
D 9 12 9069143 9 13 -5777567 9 14 -7511286 9 15 9024881 9 16 -5764313
D 9 17 -7527013 9 18 8901027 10 11 9018199 10 12 -6630347 10 13 8832270
D 10 14 8058724 10 15 -5957886 10 16 8828087 10 17 8068329 10 18 -5982161
D 11 12 -8338209 11 13 7960077 11 14 8991417 11 15 -7524592 11 16 7952113
D 11 17 9005597 11 18 -7490170 12 13 -5855630 12 14 -7530774 12 15 9029837
D 12 16 -5847220 12 17 -7544110 12 18 8938205 13 14 8977552 13 15 -6650815
D 13 16 8826261 13 17 7970607 13 18 -5978087 14 15 -8352309 14 16 7957451
D 14 17 9008085 14 18 -7494198 15 16 -5889396 15 17 -7538537 15 18 8942765
D 16 17 8958055 16 18 -6788228 17 18 -8362394

ITRF position of 0338 as determined by individual baselines

	X	Y	Z
p053	-1344298.078	-4055539.573	4720863.959
mtms	-1344298.071	-4055539.583	4720863.946
p052	-1344298.080	-4055539.582	4720863.956
mtlw	-1344298.067	-4055539.566	4720863.952
p049	-1344298.062	-4055539.554	4720863.927
p050	-1344298.070	-4055539.568	4720863.953

Residuals of position determined by individual baselines from the final position

	X	Y	Z	East	North	Up
p053	-0.006	-0.005	0.016	-0.005	0.006	0.016
mtms	-0.000	-0.015	0.003	0.005	-0.008	0.012
p052	-0.008	-0.014	0.013	-0.003	-0.003	0.021
mtlw	0.004	0.003	0.009	0.003	0.009	0.004
p049	0.009	0.015	-0.015	0.004	0.002	-0.023
p050	0.001	0.000	0.010	0.001	0.007	0.007

STATE PLANE COORDINATES - International Foot

SPC (2500 MT)

Northing (Y) [feet]	1385723.999
Easting (X) [feet]	2252394.974
Convergence [degrees]	0.84934924
Point Scale	0.99955553
Combined Factor	0.99942475

** Orthometric Heights Above Future Geopotential Datum.

Prototype orthometric heights are now being made available as a precursor to the completion of GRAV-D and the replacement of NAVD 88 with a new geopotential reference system. The following height reflects the current best estimate of the true orthometric height, based on the existing gravimetric geoid model. This height is subject to change as data and modeling for the gravimetric geoid change throughout the lifetime of the GRAV-D project, or as new realizations of the ITRF are adopted. However, at the completion of GRAV-D, these heights will supersede the NAVD 88 heights

APPROX ORTHO HGT: 850.043 (m) [PROTOTYPE (Computed using USGG2012,GRS80,IGS08)]

dop from interpolation is 0.491
scatter (mean square distance from rover) is 25323.828
average edop for rover is 0.850
average ndop for rover is 1.900
average hdop for rover is 2.081
average vdop for rover is 2.830
average gdop for rover is 4.180

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.