

## OPUS-RS solution : 033845\_14\_268\_A0.14O OP1412000706579

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Mon 9/29/2014 8:31 AM

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## NGS OPUS-RS SOLUTION REPORT

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All computed coordinate accuracies are listed as 1-sigma RMS values.

For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>USER: john.freetly@neciusa.com  
RINEX FILE: 0338268w.14oDATE: September 29, 2014  
TIME: 14:30:16 UTCSOFTWARE: rsgps 1.37 RS92.prl 1.99.2      START: 2014/09/25 22:43:45  
EPHEMERIS: igr18114.eph [rapid]      STOP: 2014/09/25 23:26:15  
NAV FILE: brdc2680.14n      OBS USED: 1509 / 1509 : 100%  
ANT NAME: CHCX90D-OPUS      NONE      QUALITY IND. 3.01/ 14.60  
ARP HEIGHT: 2.000      NORMALIZED RMS: 0.400

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000)      IGS08 (EPOCH:2014.73414)

X: -1346689.990(m) 0.008(m)      -1346690.855(m) 0.008(m)  
Y: -4225648.725(m) 0.019(m)      -4225647.479(m) 0.019(m)  
Z: 4569767.869(m) 0.026(m)      4569767.836(m) 0.026(m)LAT: 46 2 57.82819 0.005(m)      46 2 57.84900 0.005(m)  
E LON: 252 19 23.58561 0.002(m)      252 19 23.52968 0.002(m)  
W LON: 107 40 36.41439 0.002(m)      107 40 36.47032 0.002(m)  
EL HGT: 983.398(m) 0.032(m)      982.732(m) 0.032(m)  
ORTHO HGT: 998.059(m) 0.034(m) [NAVD88 (Computed using GEOID12A)]

## UTM COORDINATES      STATE PLANE COORDINATES

UTM (Zone 13)      SPC (2500 MT )

Northing (Y) [meters]      5103019.640      201607.492  
Easting (X) [meters]      292917.781      741028.077  
Convergence [degrees]      -1.92780013      1.33369180  
Point Scale      1.00012720      0.99953260  
Combined Factor      0.99997304      0.99937853

US NATIONAL GRID DESIGNATOR: 13TBM9291703019(NAD 83)

## BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7728	P051 BILLINGSAPMT2005	CORS ARP N454823.741	W1083246.070	72640.9
DM7161	WYSH SHERIDAN	CORS ARP N444801.769	W1070035.715	148311.7
DI3425	P052 LRRNCHJRDNMT2006	CORS ARP N472229.026	W1070107.185	155705.0

## NEAREST NGS PUBLISHED CONTROL POINT

RU0415	C 554	N460432.	W1074138.	3197.8
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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.