

ELEVATION CERTIFICATE

Important: Read the instructions on pages 1-9.

SECTION A - PROPERTY INFORMATION

A1. Building Owner's Name John & Pam Hardbarger		For Insurance Company Use: Policy Number
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1175 Sunbridge Ln		Company NAIC Number
City Rogers State AR ZIP Code 72758		

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Parcel #15-11424-000 (Lot 7 Spring Creek Meadows II)

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) commercial (shop building)

A5. Latitude/Longitude: Lat. 36°18'29.57" Long. 94°12'36.92" Horizontal Datum: NAD 1927 NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number 1A

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s)	<u>0</u>	sq ft
b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade	<u>0</u>	
c) Total net area of flood openings in A8.b	<u>0</u>	sq in
d) Engineered flood openings?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

A9. For a building with an attached garage:

a) Square footage of attached garage	<u>0</u>	sq ft
b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade	<u>0</u>	
c) Total net area of flood openings in A9.b	<u>0</u>	sq in
d) Engineered flood openings?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number Benton County 050419		B2. County Name Benton	B3. State Arkansas		
B4. Map/Panel Number 05007C0265	B5. Suffix J	B6. FIRM Index Date 9/28/2007	B7. FIRM Panel Effective/Revised Date 9/28/2007	B8. Flood Zone(s) AE	B9. Base Flood Elevation(s) (Zone AO, use base flood depth) 1182.3

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.
 FIS Profile FIRM Community Determined Other (Describe) _____

B11. Indicate elevation datum used for BFE in Item B9: NGVD 1929 NAVD 1988 Other (Describe) _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No
Designation Date _____ CBRS OPA

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: Construction Drawings* Building Under Construction* Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-h below according to the building diagram specified in Item A7. Use the same datum as the BFE.
Benchmark Utilized GPS rapid static OPUS-RS Vertical Datum NAVD 1988
Conversion/Comments benchmark estimated accuracy 0.06'±, report attached

Check the measurement used.

- | | | |
|--|----------------|---|
| a) Top of bottom floor (including basement, crawlspace, or enclosure floor) | <u>1179.6</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| b) Top of the next higher floor | <u>0._____</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| c) Bottom of the lowest horizontal structural member (V Zones only) | <u>0._____</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| d) Attached garage (top of slab) | <u>0._____</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) | <u>1178.0</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| f) Lowest adjacent (finished) grade next to building (LAG) | <u>1178.5</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| g) Highest adjacent (finished) grade next to building (HAG) | <u>1178.9</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |
| h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support | <u>0._____</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only) |

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*
Check here if comments are provided on back of form. Were latitude and longitude in Section A provided by a licensed land surveyor? Yes No

Certifier's Name Jim F. Ramsey	License Number AR #1227
Title Professional Surveyor/Pres.	Company Name Ramsey Surveying, Inc.
Address 1729 West Poplar Street	City Rogers State AR ZIP Code 72758
Signature	Date 10/05/2009 Telephone 479-631-6663

PLACE
SEAL
HERE

IMPORTANT: In these spaces, copy the corresponding information from Section A.	For Insurance Company Use:
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1175 Sunbridge Ln	Policy Number
City Rogers State AR ZIP Code 72758	Company NAIC Number

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments Benchmarks on site were established by GPS rapid static method (OPUS-RS), report attached. Other elevations were established on this survey using a Leica TCR703 total station from the GPS benchmarks with an approximate accuracy of 0.1'±. All photographs were taken on 10/02/2009. Item C2e is for the power box on the West side of the building.

Signature	Date 10/05/2009	<input checked="" type="checkbox"/> Check here if attachments
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SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zones AO and A (without BFE), complete Items E1-E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B, and C. For Items E1-E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

- E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).
a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____. feet meters above or below the HAG.
b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____. feet meters above or below the LAG.
- E2. For Building Diagrams 6-9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8-9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____. feet meters above or below the HAG.
- E3. Attached garage (top of slab) is _____. feet meters above or below the HAG.
- E4. Top of platform of machinery and/or equipment servicing the building is _____. feet meters above or below the HAG.
- E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? Yes No Unknown. The local official must certify this information in Section G.

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. *The statements in Sections A, B, and E are correct to the best of my knowledge.*

Property Owner's or Owner's Authorized Representative's Name			
Address	City	State	ZIP Code
Signature	Date	Telephone	
Comments			

Check here if attachments

SECTION G - COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8 and G9.

- G1. The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)
- G2. A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.
- G3. The following information (Items G4-G9) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued
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- G7. This permit has been issued for: New Construction Substantial Improvement
- G8. Elevation of as-built lowest floor (including basement) of the building: _____. feet meters (PR) Datum _____
- G9. BFE or (in Zone AO) depth of flooding at the building site: _____. feet meters (PR) Datum _____
- G10. Community's design flood elevation: _____. feet meters (PR) Datum _____

Local Official's Name	Title
Community Name	Telephone
Signature	Date
Comments	

Check here if attachments

Building Photographs

See Instructions for Item A6.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1175 Sunbridge Ln	For Insurance Company Use: Policy Number
City Rogers State AR ZIP Code 72758	Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least two building photographs below according to the instructions for Item A6. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." If submitting more photographs than will fit on this page, use the Continuation Page, following.



Building Photographs

Continuation Page

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1175 Sunbridge Ln	For Insurance Company Use: Policy Number
City Rogers State AR ZIP Code 72758	Company NAIC Number

If submitting more photographs than will fit on the preceding page, affix the additional photographs below. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View."



Control

Station: GPSR-415	Date: 10/2/2009	Antenna height: 2.05 M	Survey Method: GPS rapid static
Monument Type: Spindle	Job #: 09162	Combined Scale Factor: 0.99996372	Convergence: -1.28638322°
City: Rogers	State: AR	Zone: AR North	S-T-R: 19-19-30
GPS Observer: Andy Schroeder		Horizontal Datum: NAD 83	Vertical Datum: NAVD 88
		Horizontal Accuracy: 0.011'±	Vertical Accuracy: 0.062'±
HDOP	10 SV 0.86 @ 8:38	Northing: 726190.290	Easting: 660991.717
	10 SV 1.06 @ 9:08		
VDOP	10 SV 2.16 @ 8:38	Latitude: 36°18'29.87455"	Longitude: 94°12'38.38898"
	10 SV 1.92 @ 9:08		
PDOP	10 SV 2.32 @ 8:38	Elevation: 1178.49	File: 76812750.T01
	10 SV 2.19 @ 9:08		

Start: 8:38 AM

End: 9:08 AM

Location of point:

Set spindle in grass West of metal building

110° 75' to NWC of shop

12° 45' to SWC of garage

280° 100' to telephone pedestal



Jim Ramsey

From: opus [opus@NGS.NOAA.GOV]
Sent: Sunday, October 04, 2009 8:36 AM
To: jim@ramseysurveying.com
Subject: OPUS-RS solution : 76812750.09o 001012280

FILE: 76812750.09o 001012280

NGS OPUS-RS SOLUTION REPORT

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USER: jim@ramseysurveying.com DATE: October 04, 2009
RINEX FILE: 7681275n.09o TIME: 13:36:04 UTC

SOFTWARE: rsgps 1.32 RS30.prl 1.54 START: 2009/10/02 13:38:05
EPHEMERIS: igr15515.eph [rapid] STOP: 2009/10/02 14:07:35
NAV FILE: brdc2750.09n OBS USED: 2763 / 3447 : 80%
ANT NAME: TRM_R8_GNSS QUALITY IND. 33.32/ 45.72
ARP HEIGHT: 2.05 NORMALIZED RMS: 0.265

REF FRAME: NAD_83(CORS96)(EPOCH:2002.0000) ITRF00 (EPOCH:2009.75227)

X:	-377845.058(m)	0.009(m)	-377845.781(m)	0.009(m)
Y:	-5132193.280(m)	0.019(m)	-5132191.882(m)	0.019(m)
Z:	3756009.444(m)	0.014(m)	3756009.294(m)	0.014(m)

LAT:	36 18 29.87455	0.009(m)	36 18 29.89639	0.009(m)
E LON:	265 47 21.61102	0.009(m)	265 47 21.57801	0.009(m)
W LON:	94 12 38.38898	0.009(m)	94 12 38.42199	0.009(m)
EL HGT:	331.068(m)	0.021(m)	329.899(m)	0.021(m)
ORTHO HGT:	359.205(m)	0.039(m)	[NAVD88 (Computed using GEOID03)]	

	UTM COORDINATES	STATE PLANE COORDINATES
	UTM (Zone 15)	SPC (0301 AR N)
Northing (Y) [meters]	4018824.155	221343.243
Easting (X) [meters]	391309.608	201470.678
Convergence [degrees]	-0.71694032	-1.28638322
Point Scale	0.99974555	1.00001568
Combined Factor	0.99969361	0.99996372

US NATIONAL GRID DESIGNATOR: 15SUA9131018824(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DG9661	CTA1 CRAFTON TULL COOP CORS ARP	N362037.345	W0941048.002	4798.3
DH7119	ARFY FAYETTEVILLE CORS ARP	N360656.851	W0941048.135	21539.0
DH8821	EFAY APAC02 COOP CORS ARP	N360600.869	W0940606.197	25080.9
DH7158	WWED APAC 01 COOP CORS ARP	N360528.416	W0942522.240	30731.4
DH7105	ARHR HARRISON CORS ARP	N361103.236	W0930148.726	106995.9
DI8420	SAL5 SALLISAW 5 CORS ARP	N352201.460	W0944859.709	117915.1
DE7172	OKMU MUSKOGEE CORS ARP	N354300.062	W0952405.822	125843.5
DE8101	OKTU TULSA CORS ARP	N361238.113	W0955115.783	148115.1
DE7170	OKMA MCALESTER CORS ARP	N345540.833	W0954414.056	206344.9

NEAREST NGS PUBLISHED CONTROL POINT

GG0602	OSAGE	N361652.405	W0941136.452	3386.2
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FINAL COORDINATES (ITRF at epoch of observations)

ctal	-374932.679	-5130115.391	3759207.061
arfy	-376023.526	-5144995.608	3738785.097
efay	-369066.562	-5146564.212	3737423.947
wwed	-397945.830	-5144938.178	3736568.620
arhr	-272465.198	-5147017.546	3744907.451
sal5	-437219.008	-5188678.603	3671226.972
okmu	-488055.106	-5161519.976	3702808.158
oktu	-525545.007	-5125491.466	3747170.473
okma	-523341.970	-5208943.897	3631437.278
7681	-377845.781	-5132191.882	3756009.294

Covariance matrix of the stations:

1	1.6270E-07	1.9640E-07	-6.2060E-08	9.7970E-09	1.1090E-08	-9.3870E-09	1.1670E-08
1.2420E-08	-1.1190E-08	3.4910E-09	1.7590E-09	-2.4970E-09	3.7790E-08	5.4720E-08	
-4.3870E-08	-1.2240E-08	-6.5510E-08	2.1440E-08	-2.5620E-08	-5.5610E-08	2.9160E-08	
-3.3220E-08	-2.6510E-08	2.6580E-08	-4.3310E-08	-1.2860E-07	5.1680E-08	3.1770E-08	
2.1550E-07	-1.6900E-07						
2	1.9640E-07	4.6370E-06	-3.6330E-06	2.4470E-08	-4.6470E-07	4.0820E-07	3.0240E-08
-4.6290E-07	4.0450E-07	5.2080E-09	-4.8790E-07	4.2470E-07	1.1080E-07	-3.5650E-07	
3.2390E-07	-4.2300E-08	-6.9830E-07	5.0250E-07	-8.2920E-08	-6.4520E-07	5.0670E-07	
-1.0570E-07	-5.3720E-07	4.8180E-07	-1.3630E-07	-8.7290E-07	5.8030E-07	5.3930E-08	
7.0400E-07	-5.4120E-07						
3	-6.2060E-08	-3.6330E-06	3.1830E-06	-1.2960E-08	4.1130E-07	-3.6420E-07	-1.5410E-08
4.1010E-07	-3.6230E-07	-4.7960E-09	4.2190E-07	-3.7200E-07	-4.9410E-08	3.6210E-07	
-3.2480E-07	1.4960E-08	5.0710E-07	-4.0180E-07	3.2480E-08	4.8980E-07	-4.0840E-07	
4.2630E-08	4.4970E-07	-4.0340E-07	5.4550E-08	5.8070E-07	-4.3500E-07	-2.1440E-08	
-2.9900E-07	2.4800E-07						
4	9.7970E-09	2.4470E-08	-1.2960E-08	1.6060E-07	1.8080E-07	-5.8900E-08	1.0280E-08
9.9270E-09	-9.9680E-09	2.7830E-09	-1.3280E-10	-1.7480E-09	3.4170E-08	4.9570E-08	
-4.0710E-08	-1.1630E-08	-6.2250E-08	2.0620E-08	-2.3920E-08	-5.3720E-08	2.8160E-08	
-3.0910E-08	-2.7370E-08	2.6100E-08	-4.0160E-08	-1.2120E-07	4.9280E-08	2.6350E-08	
1.9050E-07	-1.5320E-07						
5	1.1090E-08	-4.6470E-07	4.1130E-07	1.8080E-07	4.6650E-06	-3.6680E-06	1.2340E-08
-5.0390E-07	4.2480E-07	-3.7260E-09	-5.2090E-07	4.3870E-07	6.3930E-08	-4.3240E-07	
3.6980E-07	-3.4170E-08	-6.6350E-07	4.9530E-07	-6.0420E-08	-6.2820E-07	4.9710E-07	
-7.5160E-08	-5.5640E-07	4.7900E-07	-9.4930E-08	-7.8330E-07	5.5190E-07	2.9190E-08	
3.3220E-07	-2.5370E-07						
6	-9.3870E-09	4.0820E-07	-3.6420E-07	-5.8900E-08	-3.6680E-06	3.2010E-06	-1.0130E-08
4.2620E-07	-3.6940E-07	-2.0470E-09	4.3570E-07	-3.7740E-07	-3.5930E-08	3.8790E-07	
-3.3900E-07	1.2870E-08	5.0140E-07	-4.0080E-07	2.6340E-08	4.8930E-07	-4.0700E-07	
3.4250E-08	4.5980E-07	-4.0420E-07	4.3050E-08	5.5930E-07	-4.2790E-07	-1.4580E-08	
-1.2820E-07	1.1180E-07						
7	1.1670E-08	3.0240E-08	-1.5410E-08	1.0280E-08	1.2340E-08	-1.0130E-08	1.6420E-07
1.7870E-07	-5.6310E-08	3.7340E-09	2.7450E-09	-3.0510E-09	3.9350E-08	5.7250E-08	
-4.5600E-08	-1.2580E-08	-6.6850E-08	2.1600E-08	-2.6460E-08	-5.6390E-08	2.9460E-08	
-3.4350E-08	-2.6080E-08	2.6690E-08	-4.4800E-08	-1.3190E-07	5.2590E-08	2.8250E-08	
2.1630E-07	-1.7380E-07						
8	1.2420E-08	-4.6290E-07	4.1010E-07	9.9270E-09	-5.0390E-07	4.2620E-07	1.7870E-07
4.6640E-06	-3.6650E-06	-2.6610E-09	-5.1990E-07	4.3780E-07	6.6230E-08	-4.2980E-07	
3.6770E-07	-3.3650E-08	-6.6460E-07	4.9510E-07	-6.0380E-08	-6.2890E-07	4.9720E-07	
-7.5410E-08	-5.5610E-07	4.7900E-07	-9.5490E-08	-7.8630E-07	5.5250E-07	3.0530E-08	
3.3970E-07	-2.5990E-07						
9	-1.1190E-08	4.0450E-07	-3.6230E-07	-9.9680E-09	4.2480E-07	-3.6940E-07	-5.6310E-08
-3.6650E-06	3.1960E-06	-3.3010E-09	4.3380E-07	-3.7610E-07	-3.9690E-08	3.8300E-07	
-3.3550E-07	1.2730E-08	5.0390E-07	-4.0090E-07	2.7160E-08	4.9080E-07	-4.0750E-07	
3.5630E-08	4.5910E-07	-4.0430E-07	4.5110E-08	5.6550E-07	-4.2950E-07	-1.6390E-08	
-1.4340E-07	1.2440E-07						
10	3.4910E-09	5.2080E-09	-4.7960E-09	2.7830E-09	-3.7260E-09	-2.0470E-09	3.7340E-09
-2.6610E-09	-3.3010E-09	1.5220E-07	1.8610E-07	-6.8820E-08	1.6820E-08	2.3940E-08	

-2.4440E-08 -8.4940E-09 -4.6830E-08 1.7290E-08 -1.5420E-08 -4.4750E-08 2.3780E-08
 -1.9390E-08 -3.1690E-08 2.4090E-08 -2.4660E-08 -8.5530E-08 3.8180E-08 1.9970E-08
 1.0450E-07 -8.4170E-08
 11 1.7590E-09 -4.8790E-07 4.2190E-07 -1.3280E-10 -5.2090E-07 4.3570E-07 2.7450E-09
 -5.1990E-07 4.3380E-07 1.8610E-07 4.6820E-06 -3.6870E-06 4.2720E-08 -4.6290E-07
 3.8950E-07 -3.3370E-08 -6.4910E-07 4.9330E-07 -5.3810E-08 -6.2050E-07 4.9370E-07
 -6.5260E-08 -5.6270E-07 4.7790E-07 -8.0810E-08 -7.4670E-07 5.4120E-07 1.9810E-08
 2.3800E-07 -1.7830E-07
 12 -2.4970E-09 4.2470E-07 -3.7200E-07 -1.7480E-09 4.3870E-07 -3.7740E-07 -3.0510E-09
 4.3780E-07 -3.7610E-07 -6.8820E-08 -3.6870E-06 3.2200E-06 -2.0910E-08 4.0960E-07
 -3.5330E-07 1.2840E-08 4.9220E-07 -4.0000E-07 2.2320E-08 4.8460E-07 -4.0520E-07
 2.7970E-08 4.6470E-07 -4.0380E-07 3.3910E-08 5.3480E-07 -4.2100E-07 -7.6450E-09
 -6.3030E-08 5.9680E-08
 13 3.7790E-08 1.1080E-07 -4.9410E-08 3.4170E-08 6.3930E-08 -3.5930E-08 3.9350E-08
 6.6230E-08 -3.9690E-08 1.6820E-08 4.2720E-08 -2.0910E-08 2.6500E-07 2.3320E-07
 -7.3190E-08 -2.6160E-08 -1.3200E-07 3.5860E-08 -6.2560E-08 -9.4340E-08 4.8040E-08
 -8.3110E-08 -8.1480E-09 3.5260E-08 -1.1030E-07 -2.8210E-07 9.9470E-08 5.4700E-08
 5.7760E-07 -4.6370E-07
 14 5.4720E-08 -3.5650E-07 3.6210E-07 4.9570E-08 -4.3240E-07 3.8790E-07 5.7250E-08
 -4.2980E-07 3.8300E-07 2.3940E-08 -4.6290E-07 4.0960E-07 2.3320E-07 4.6850E-06
 -3.6520E-06 -3.9120E-08 -7.3470E-07 5.0580E-07 -9.3170E-08 -6.6770E-07 5.1460E-07
 -1.2370E-07 -5.2850E-07 4.8540E-07 -1.6370E-07 -9.6080E-07 6.0410E-07 7.3100E-08
 7.8100E-07 -6.1340E-07
 15 -4.3870E-08 3.2390E-07 -3.2480E-07 -4.0710E-08 3.6980E-07 -3.3900E-07 -4.5600E-08
 3.6770E-07 -3.3550E-07 -2.4440E-08 3.8950E-07 -3.5330E-07 -7.3190E-08 -3.6520E-06
 3.1620E-06 1.5190E-08 5.5340E-07 -4.0690E-07 4.9790E-08 5.1760E-07 -4.1860E-07
 6.9700E-08 4.3720E-07 -4.0780E-07 9.3770E-08 6.9240E-07 -4.6590E-07 -4.9290E-08
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 16 -1.2240E-08 -4.2300E-08 1.4960E-08 -1.1630E-08 -3.4170E-08 1.2870E-08 -1.2580E-08
 -3.3650E-08 1.2730E-08 -8.4940E-09 -3.3370E-08 1.2840E-08 -2.6160E-08 -3.9120E-08
 1.5190E-08 1.5450E-07 2.4520E-07 -1.1060E-07 5.4080E-09 -2.2680E-08 1.2710E-08
 8.8460E-09 -4.2520E-08 1.8980E-08 1.3460E-08 2.5530E-09 1.0450E-08 4.0620E-09
 -1.0720E-07 8.5350E-08
 17 -6.5510E-08 -6.9830E-07 5.0710E-07 -6.2250E-08 -6.6350E-07 5.0140E-07 -6.6850E-08
 -6.6460E-07 5.0390E-07 -4.6830E-08 -6.4910E-07 4.9220E-07 -1.3200E-07 -7.3470E-07
 5.5340E-07 2.4520E-07 5.1200E-06 -3.9110E-06 2.2990E-08 -5.5420E-07 4.5520E-07
 4.0790E-08 -6.2710E-07 4.6350E-07 6.4220E-08 -4.1750E-07 4.3490E-07 -4.8190E-08
 -6.2190E-07 4.9940E-07
 18 2.1440E-08 5.0250E-07 -4.0180E-07 2.0620E-08 4.9530E-07 -4.0080E-07 2.1600E-08
 4.9510E-07 -4.0090E-07 1.7290E-08 4.9330E-07 -4.0000E-07 3.5860E-08 5.0580E-07
 -4.0690E-07 -1.1060E-07 -3.9110E-06 3.3100E-06 2.2180E-09 4.7670E-07 -3.9610E-07
 -1.0430E-09 4.9750E-07 -4.0280E-07 -7.1180E-09 4.4500E-07 -3.9000E-07 1.6520E-08
 2.1420E-07 -1.5210E-07
 19 -2.5620E-08 -8.2920E-08 3.2480E-08 -2.3920E-08 -6.0420E-08 2.6340E-08 -2.6460E-08
 -6.0380E-08 2.7160E-08 -1.5420E-08 -5.3810E-08 2.2320E-08 -6.2560E-08 -9.3170E-08
 4.9790E-08 5.4080E-09 2.2990E-08 2.2180E-09 1.8160E-07 3.0270E-07 -1.6280E-07
 3.2640E-08 -5.1760E-08 1.5080E-08 4.5530E-08 7.6620E-08 -1.2310E-08 -9.4910E-09
 -2.8720E-07 2.2990E-07
 20 -5.5610E-08 -6.4520E-07 4.8980E-07 -5.3720E-08 -6.2820E-07 4.8930E-07 -5.6390E-08
 -6.2890E-07 4.9080E-07 -4.4750E-08 -6.2050E-07 4.8460E-07 -9.4340E-08 -6.6770E-07
 5.1760E-07 -2.2680E-08 -5.5420E-07 4.7670E-07 3.0270E-07 4.9680E-06 -3.8850E-06
 6.1170E-09 -6.0920E-07 4.6940E-07 1.9160E-08 -5.0320E-07 4.6650E-07 -3.8020E-08
 -3.9840E-07 3.2660E-07
 21 2.9160E-08 5.0670E-07 -4.0840E-07 2.8160E-08 4.9710E-07 -4.0700E-07 2.9460E-08
 4.9720E-07 -4.0750E-07 2.3780E-08 4.9370E-07 -4.0520E-07 4.8040E-08 5.1460E-07
 -4.1860E-07 1.2710E-08 4.5520E-07 -3.9610E-07 -1.6280E-07 -3.8850E-06 3.3460E-06
 -7.1370E-10 4.9340E-07 -4.0300E-07 -8.0410E-09 4.2720E-07 -3.8890E-07 2.4220E-08
 2.4300E-07 -1.8110E-07
 22 -3.3220E-08 -1.0570E-07 4.2630E-08 -3.0910E-08 -7.5160E-08 3.4250E-08 -3.4350E-08
 -7.5410E-08 3.5630E-08 -1.9390E-08 -6.5260E-08 2.7970E-08 -8.3110E-08 -1.2370E-07
 6.9700E-08 8.8460E-09 4.0790E-08 -1.0430E-09 3.2640E-08 6.1170E-09 -7.1370E-10
 2.0730E-07 2.7980E-07 -1.8330E-07 6.3450E-08 1.1830E-07 -2.4810E-08 -1.7200E-08
 -3.8860E-07 3.1170E-07
 23 -2.6510E-08 -5.3720E-07 4.4970E-07 -2.7370E-08 -5.5640E-07 4.5980E-07 -2.6080E-08
 -5.5610E-07 4.5910E-07 -3.1690E-08 -5.6270E-07 4.6470E-07 -8.1480E-09 -5.2850E-07
 4.3720E-07 -4.2520E-08 -6.2710E-07 4.9750E-07 -5.1760E-08 -6.0920E-07 4.9340E-07

2.7980E-07 4.7690E-06 -3.7890E-06 -6.4630E-08 -6.8090E-07 5.2740E-07 -8.4530E-09
5.6790E-08 -3.0130E-08
24 2.6580E-08 4.8180E-07 -4.0340E-07 2.6100E-08 4.7900E-07 -4.0420E-07 2.6690E-08
4.7900E-07 -4.0430E-07 2.4090E-08 4.7790E-07 -4.0380E-07 3.5260E-08 4.8540E-07
-4.0780E-07 1.8980E-08 4.6350E-07 -4.0280E-07 1.5080E-08 4.6940E-07 -4.0300E-07
-1.8330E-07 -3.7890E-06 3.3430E-06 9.6940E-09 4.5400E-07 -4.0250E-07 2.1530E-08
1.5430E-07 -1.1780E-07
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-9.5490E-08 4.5110E-08 -2.4660E-08 -8.0810E-08 3.3910E-08 -1.1030E-07 -1.6370E-07
9.3770E-08 1.3460E-08 6.4220E-08 -7.1180E-09 4.5530E-08 1.9160E-08 -8.0410E-09
6.3450E-08 -6.4630E-08 9.6940E-09 2.5210E-07 5.5220E-07 -2.6460E-07 -2.7370E-08
-5.2170E-07 4.1710E-07
26 -1.2860E-07 -8.7290E-07 5.8070E-07 -1.2120E-07 -7.8330E-07 5.5930E-07 -1.3190E-07
-7.8630E-07 5.6550E-07 -8.5530E-08 -7.4670E-07 5.3480E-07 -2.8210E-07 -9.6080E-07
6.9240E-07 2.5530E-09 -4.1750E-07 4.4500E-07 7.6620E-08 -5.0320E-07 4.2720E-07
1.1830E-07 -6.8090E-07 4.5400E-07 5.5220E-07 5.8630E-06 -4.2590E-06 -1.1180E-07
-1.3200E-06 1.0510E-06
27 5.1680E-08 5.8030E-07 -4.3500E-07 4.9280E-08 5.5190E-07 -4.2790E-07 5.2590E-08
5.5250E-07 -4.2950E-07 3.8180E-08 5.4120E-07 -4.2100E-07 9.9470E-08 6.0410E-07
-4.6590E-07 1.0450E-08 4.3490E-07 -3.9000E-07 -1.2310E-08 4.6650E-07 -3.8890E-07
-2.4810E-08 5.2740E-07 -4.0250E-07 -2.6460E-07 -4.2590E-06 3.4720E-06 4.6930E-08
4.9270E-07 -3.6850E-07
28 3.1770E-08 5.3930E-08 -2.1440E-08 2.6350E-08 2.9190E-08 -1.4580E-08 2.8250E-08
3.0530E-08 -1.6390E-08 1.9970E-08 1.9810E-08 -7.6450E-09 5.4700E-08 7.3100E-08
-4.9290E-08 4.0620E-09 -4.8190E-08 1.6520E-08 -9.4910E-09 -3.8020E-08 2.4220E-08
-1.7200E-08 -8.4530E-09 2.1530E-08 -2.7370E-08 -1.1180E-07 4.6930E-08 1.3740E-06
1.7100E-06 -6.4740E-07
29 2.1550E-07 7.0400E-07 -2.9900E-07 1.9050E-07 3.3220E-07 -1.2820E-07 2.1630E-07
3.3970E-07 -1.4340E-07 1.0450E-07 2.3800E-07 -6.3030E-08 5.7760E-07 7.8100E-07
-4.7100E-07 -1.0720E-07 -6.2190E-07 2.1420E-07 -2.8720E-07 -3.9840E-07 2.4300E-07
-3.8860E-07 5.6790E-08 1.5430E-07 -5.2170E-07 -1.3200E-06 4.9270E-07 1.7100E-06
5.4890E-05 -4.4650E-05
30 -1.6900E-07 -5.4120E-07 2.4800E-07 -1.5320E-07 -2.5370E-07 1.1180E-07 -1.7380E-07
-2.5990E-07 1.2440E-07 -8.4170E-08 -1.7830E-07 5.9680E-08 -4.6370E-07 -6.1340E-07
3.8700E-07 8.5350E-08 4.9940E-07 -1.5210E-07 2.2990E-07 3.2660E-07 -1.8110E-07
3.1170E-07 -3.0130E-08 -1.1780E-07 4.1710E-07 1.0510E-06 -3.6850E-07 -6.4740E-07
-4.4650E-05 3.9390E-05

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

```

0.0000013740    0.0000017100    -0.0000006474
0.0000017100    0.0000548900    -0.0000446500
-0.0000006474   -0.0000446500    0.0000393900

```

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

```

0.0000014121    0.0000008135    0.0000033511
0.0000008135    0.0000023091    0.0000062272
0.0000033511    0.0000062272    0.0000919328

```

Horizontal network accuracy = 0.00346 meters.

Vertical network accuracy = 0.01880 meters.

Vectors

To	From	X	Y	Z
ctal	7681	2913.102	2076.491	3197.767
arfy	7681	1822.255	-12803.726	-17224.198
efay	7681	8779.219	-14372.330	-18585.347
wwed	7681	-20100.049	-12746.297	-19440.675
arhr	7681	105380.583	-14825.664	-11101.843
sal5	7681	-59373.227	-56486.721	-84782.322
okmu	7681	-110209.325	-29328.094	-53201.136
oktu	7681	-147699.226	6700.415	-8838.821
okma	7681	-145496.189	-76752.015	-124572.016

Covariance matrix of the 9 vectors

```

1 1.4732E-06 1.6370E-06 -5.1902E-07 1.3257E-06 1.4764E-06 -4.7321E-07 1.3257E-06

```

1.4764E-06 -4.7320E-07 1.3258E-06 1.4764E-06 -4.7325E-07 1.3253E-06 1.4761E-06
-4.7298E-07 1.3259E-06 1.4772E-06 -4.7348E-07 1.3261E-06 1.4769E-06 -4.7346E-07
1.3262E-06 1.4764E-06 -4.7335E-07 1.3263E-06 1.4777E-06 -4.7365E-07
2 1.6370E-06 5.8119E-05 -4.7443E-05 1.4900E-06 5.3389E-05 -4.3572E-05 1.4700E-06
5.3383E-05 -4.3561E-05 1.5568E-06 5.3460E-05 -4.3621E-05 1.1893E-06 5.3048E-05
-4.3314E-05 1.7210E-06 5.4110E-05 -4.3820E-05 1.8603E-06 5.3939E-05 -4.3845E-05
1.9390E-06 5.3592E-05 -4.3781E-05 2.0415E-06 5.4633E-05 -4.4021E-05
3 -5.1902E-07 -4.7443E-05 4.2077E-05 -4.8572E-07 -4.3686E-05 3.8666E-05 -4.6757E-07
-4.3681E-05 3.8655E-05 -5.4659E-07 -4.3751E-05 3.8710E-05 -2.1167E-07 -4.3375E-05
3.8430E-05 -6.9635E-07 -4.4343E-05 3.8892E-05 -8.2338E-07 -4.4188E-05 3.8915E-05
-8.9503E-07 -4.3871E-05 3.8856E-05 -9.8851E-07 -4.4821E-05 3.9076E-05
4 1.3257E-06 1.4900E-06 -4.8572E-07 1.4819E-06 1.6711E-06 -5.3852E-07 1.3297E-06
1.4989E-06 -4.8778E-07 1.3305E-06 1.4996E-06 -4.8830E-07 1.3271E-06 1.4960E-06
-4.8562E-07 1.3320E-06 1.5054E-06 -4.9010E-07 1.3332E-06 1.5038E-06 -4.9026E-07
1.3339E-06 1.5006E-06 -4.8963E-07 1.3349E-06 1.5101E-06 -4.9185E-07
5 1.4764E-06 5.3389E-05 -4.3686E-05 1.6711E-06 5.8891E-05 -4.7936E-05 1.4768E-06
5.3714E-05 -4.3828E-05 1.5726E-06 5.3799E-05 -4.3895E-05 1.1671E-06 5.3344E-05
-4.3555E-05 1.7538E-06 5.4516E-05 -4.4115E-05 1.9076E-06 5.4328E-05 -4.4142E-05
1.9943E-06 5.3945E-05 -4.4072E-05 2.1076E-06 5.5094E-05 -4.4337E-05
6 -4.7321E-07 -4.3572E-05 3.8666E-05 -5.3852E-07 -4.7936E-05 4.2367E-05 -4.6915E-07
-4.3836E-05 3.8784E-05 -5.5070E-07 -4.3908E-05 3.8841E-05 -2.0505E-07 -4.3520E-05
3.8552E-05 -7.0530E-07 -4.4520E-05 3.9030E-05 -8.3638E-07 -4.4359E-05 3.9052E-05
-9.1027E-07 -4.4032E-05 3.8992E-05 -1.0069E-06 -4.5013E-05 3.9219E-05
7 1.3257E-06 1.4700E-06 -4.6757E-07 1.3297E-06 1.4768E-06 -4.6915E-07 1.4817E-06
1.6419E-06 -5.1352E-07 1.3295E-06 1.4766E-06 -4.6901E-07 1.3304E-06 1.4778E-06
-4.6991E-07 1.3291E-06 1.4750E-06 -4.6852E-07 1.3288E-06 1.4753E-06 -4.6836E-07
1.3286E-06 1.4761E-06 -4.6844E-07 1.3283E-06 1.4736E-06 -4.6794E-07
8 1.4764E-06 5.3383E-05 -4.3681E-05 1.4989E-06 5.3714E-05 -4.3836E-05 1.6419E-06
5.8875E-05 -4.7912E-05 1.5723E-06 5.3792E-05 -4.3889E-05 1.1681E-06 5.3339E-05
-4.3551E-05 1.7530E-06 5.4508E-05 -4.4109E-05 1.9063E-06 5.4320E-05 -4.4136E-05
1.9927E-06 5.3937E-05 -4.4065E-05 2.1057E-06 5.5084E-05 -4.4330E-05
9 -4.7320E-07 -4.3561E-05 3.8655E-05 -4.8778E-07 -4.3828E-05 3.8784E-05 -5.1352E-07
-4.7912E-05 4.2337E-05 -5.5014E-07 -4.3894E-05 3.8830E-05 -2.0700E-07 -4.3510E-05
3.8543E-05 -7.0363E-07 -4.4502E-05 3.9017E-05 -8.3375E-07 -4.4342E-05 3.9039E-05
-9.0708E-07 -4.4017E-05 3.8979E-05 -1.0030E-06 -4.4992E-05 3.9205E-05
10 1.3258E-06 1.5568E-06 -5.4659E-07 1.3305E-06 1.5726E-06 -5.5070E-07 1.3295E-06
1.5723E-06 -5.5014E-07 1.4863E-06 1.7718E-06 -6.2441E-07 1.3162E-06 1.5563E-06
-5.3838E-07 1.3415E-06 1.6069E-06 -5.6246E-07 1.3481E-06 1.5988E-06 -5.6367E-07
1.3518E-06 1.5823E-06 -5.6067E-07 1.3567E-06 1.6318E-06 -5.7198E-07
11 1.4764E-06 5.3460E-05 -4.3751E-05 1.4996E-06 5.3799E-05 -4.3908E-05 1.4766E-06
5.3792E-05 -4.3894E-05 1.7718E-06 5.9096E-05 -4.8096E-05 1.1553E-06 5.3408E-05
-4.3611E-05 1.7640E-06 5.4625E-05 -4.4193E-05 1.9236E-06 5.4430E-05 -4.4221E-05
2.0135E-06 5.4033E-05 -4.4148E-05 2.1311E-06 5.5225E-05 -4.4423E-05
12 -4.7325E-07 -4.3621E-05 3.8710E-05 -4.8830E-07 -4.3895E-05 3.8841E-05 -4.6901E-07
-4.3889E-05 3.8830E-05 -6.2441E-07 -4.8096E-05 4.2491E-05 -1.9697E-07 -4.3564E-05
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-9.2349E-07 -4.4092E-05 3.9044E-05 -1.0229E-06 -4.5103E-05 3.9278E-05
13 1.3253E-06 1.1893E-06 -2.1167E-07 1.3271E-06 1.1671E-06 -2.0505E-07 1.3304E-06
1.1681E-06 -2.0700E-07 1.3162E-06 1.1553E-06 -1.9697E-07 1.5296E-06 1.2925E-06
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-8.4011E-07 -4.3712E-05 3.8713E-05 -9.2144E-07 -4.4538E-05 3.8906E-05
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1.7530E-06 -7.0363E-07 1.3415E-06 1.7640E-06 -7.1227E-07 1.2891E-06 1.7050E-06
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5.4508E-05 -4.4502E-05 1.6069E-06 5.4625E-05 -4.4594E-05 1.0486E-06 5.3996E-05
-4.4125E-05 2.1106E-06 6.1254E-05 -4.9275E-05 2.0684E-06 5.5356E-05 -4.4937E-05

2.1876E-06 5.4828E-05 -4.4840E-05 2.3441E-06 5.6414E-05 -4.5207E-05
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 -4.4109E-05 3.9017E-05 -5.6246E-07 -4.4193E-05 3.9082E-05 -1.6436E-07 -4.3745E-05
 3.8748E-05 -8.5987E-07 -4.9275E-05 4.3004E-05 -8.9160E-07 -4.4714E-05 3.9327E-05
 -9.7666E-07 -4.4337E-05 3.9257E-05 -1.0881E-06 -4.5470E-05 3.9521E-05
 19 1.3261E-06 1.8603E-06 -8.2338E-07 1.3332E-06 1.9076E-06 -8.3638E-07 1.3288E-06
 1.9063E-06 -8.3375E-07 1.3481E-06 1.9236E-06 -8.4734E-07 1.2662E-06 1.8309E-06
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 1.4333E-06 1.9539E-06 -8.8375E-07 1.4564E-06 2.1856E-06 -9.3654E-07
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 2.1427E-06 5.4622E-05 -4.4661E-05 2.2889E-06 5.6105E-05 -4.5003E-05
 21 -4.7346E-07 -4.3845E-05 3.8915E-05 -4.9026E-07 -4.4142E-05 3.9052E-05 -4.6836E-07
 -4.4136E-05 3.9039E-05 -5.6367E-07 -4.4221E-05 3.9106E-05 -1.5988E-07 -4.3765E-05
 3.8766E-05 -7.4426E-07 -4.4937E-05 3.9327E-05 -1.0643E-06 -4.9105E-05 4.3098E-05
 -9.8403E-07 -4.4369E-05 3.9286E-05 -1.0968E-06 -4.5517E-05 3.9551E-05
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 1.9927E-06 -9.0708E-07 1.3518E-06 2.0135E-06 -9.2349E-07 1.2534E-06 1.9018E-06
 -8.4011E-07 1.3960E-06 2.1876E-06 -9.7666E-07 1.4333E-06 2.1427E-06 -9.8403E-07
 1.6157E-06 2.3869E-06 -1.1639E-06 1.4820E-06 2.3287E-06 -1.0308E-06
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 -4.3712E-05 1.7831E-06 5.4828E-05 -4.4337E-05 1.9539E-06 5.4622E-05 -4.4369E-05
 2.3869E-06 5.9545E-05 -4.8563E-05 2.1755E-06 5.5472E-05 -4.4585E-05
 24 -4.7335E-07 -4.3781E-05 3.8856E-05 -4.8963E-07 -4.4072E-05 3.8992E-05 -4.6844E-07
 -4.4065E-05 3.8979E-05 -5.6067E-07 -4.4148E-05 3.9044E-05 -1.6997E-07 -4.3706E-05
 3.8713E-05 -7.3530E-07 -4.4840E-05 3.9257E-05 -8.8375E-07 -4.4661E-05 3.9286E-05
 -1.1639E-06 -4.8563E-05 4.2969E-05 -1.0763E-06 -4.5401E-05 3.9474E-05
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 26 1.4777E-06 5.4633E-05 -4.4821E-05 1.5101E-06 5.5094E-05 -4.5013E-05 1.4736E-06
 5.5084E-05 -4.4992E-05 1.6318E-06 5.5225E-05 -4.5103E-05 9.6210E-07 5.4468E-05
 -4.4538E-05 1.9316E-06 5.6414E-05 -4.5470E-05 2.1856E-06 5.6105E-05 -4.5517E-05
 2.3287E-06 5.5472E-05 -4.5401E-05 2.8957E-06 6.3393E-05 -5.0453E-05
 27 -4.7365E-07 -4.4021E-05 3.9076E-05 -4.9185E-07 -4.4337E-05 3.9219E-05 -4.6794E-07
 -4.4330E-05 3.9205E-05 -5.7198E-07 -4.4423E-05 3.9278E-05 -1.3116E-07 -4.3925E-05
 3.8906E-05 -7.6923E-07 -4.5207E-05 3.9521E-05 -9.3654E-07 -4.5003E-05 3.9551E-05
 -1.0308E-06 -4.4585E-05 3.9474E-05 -1.3760E-06 -5.0453E-05 4.3599E-05

Correlation matrix of the 9 vectors

1 1.0000E+00 1.7691E-01 -6.5923E-02 8.9723E-01 1.5851E-01 -5.9898E-02 8.9727E-01
 1.5853E-01 -5.9918E-02 8.9596E-01 1.5824E-01 -5.9816E-02 8.8289E-01 1.5967E-01
 -6.0290E-02 8.8597E-01 1.5550E-01 -5.9487E-02 8.7070E-01 1.5624E-01 -5.9419E-02
 8.5962E-01 1.5764E-01 -5.9495E-02 8.4285E-01 1.5291E-01 -5.9101E-02
 2 1.7691E-01 1.0000E+00 -9.5938E-01 1.6056E-01 9.1258E-01 -8.7808E-01 1.5841E-01
 9.1261E-01 -8.7817E-01 1.6750E-01 9.1220E-01 -8.7779E-01 1.2613E-01 9.1359E-01
 -8.7901E-01 1.8308E-01 9.0688E-01 -8.7652E-01 1.9447E-01 9.0847E-01 -8.7606E-01
 2.0009E-01 9.1100E-01 -8.7610E-01 2.0655E-01 9.0007E-01 -8.7451E-01
 3 -6.5923E-02 -9.5938E-01 1.0000E+00 -6.1511E-02 -8.7760E-01 9.1578E-01 -5.9217E-02
 -8.7762E-01 9.1585E-01 -6.9118E-02 -8.7737E-01 9.1550E-01 -2.6384E-02 -8.7793E-01
 9.1659E-01 -8.7062E-02 -8.7345E-01 9.1429E-01 -1.0116E-01 -8.7468E-01 9.1382E-01
 -1.0855E-01 -8.7646E-01 9.1383E-01 -1.1754E-01 -8.6784E-01 9.1231E-01
 4 8.9723E-01 1.6056E-01 -6.1511E-02 1.0000E+00 1.7888E-01 -6.7964E-02 8.9734E-01
 1.6047E-01 -6.1582E-02 8.9649E-01 1.6024E-01 -6.1537E-02 8.8148E-01 1.6134E-01
 -6.1718E-02 8.8737E-01 1.5801E-01 -6.1393E-02 8.7279E-01 1.5862E-01 -6.1346E-02
 8.6208E-01 1.5974E-01 -6.1360E-02 8.4579E-01 1.5580E-01 -6.1191E-02
 5 1.5851E-01 9.1258E-01 -8.7760E-01 1.7888E-01 1.0000E+00 -9.5967E-01 1.5810E-01
 9.1223E-01 -8.7775E-01 1.6809E-01 9.1195E-01 -8.7749E-01 1.2297E-01 9.1265E-01
 -8.7810E-01 1.8535E-01 9.0769E-01 -8.7662E-01 1.9810E-01 9.0901E-01 -8.7620E-01
 2.0444E-01 9.1096E-01 -8.7611E-01 2.1184E-01 9.0171E-01 -8.7500E-01
 6 -5.9898E-02 -8.7808E-01 9.1578E-01 -6.7964E-02 -9.5967E-01 1.0000E+00 -5.9213E-02
 -8.7770E-01 9.1576E-01 -6.9398E-02 -8.7750E-01 9.1544E-01 -2.5472E-02 -8.7784E-01
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1.7579E-01 -6.4836E-02 8.9591E-01 1.5780E-01 -5.9109E-02 8.8372E-01 1.5940E-01
-5.9726E-02 8.8553E-01 1.5483E-01 -5.8694E-02 8.6994E-01 1.5562E-01 -5.8610E-02
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8 1.5853E-01 9.1261E-01 -8.7762E-01 1.6047E-01 9.1223E-01 -8.7770E-01 1.7579E-01
1.0000E+00 -9.5966E-01 1.6808E-01 9.1196E-01 -8.7750E-01 1.2309E-01 9.1269E-01
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2.0431E-01 9.1097E-01 -8.7611E-01 2.1167E-01 9.0166E-01 -8.7498E-01
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9.1646E-01 -8.7702E-02 -8.7388E-01 9.1440E-01 -1.0212E-01 -8.7504E-01 9.1392E-01
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-6.8323E-02 8.9240E-01 1.6841E-01 -7.0354E-02 8.8124E-01 1.6839E-01 -7.0428E-02
8.7236E-01 1.6819E-01 -7.0159E-02 8.5839E-01 1.6811E-01 -7.1055E-02
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9.1196E-01 -8.7755E-01 1.8905E-01 1.0000E+00 -9.5980E-01 1.2152E-01 9.1215E-01
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12 -5.9816E-02 -8.7779E-01 9.1550E-01 -6.1537E-02 -8.7749E-01 9.1544E-01 -5.9109E-02
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-1.1146E-01 -8.7658E-01 9.1377E-01 -1.2104E-01 -8.6904E-01 9.1256E-01
13 8.8289E-01 1.2613E-01 -2.6384E-02 8.8148E-01 1.2297E-01 -2.5472E-02 8.8372E-01
1.2309E-01 -2.5723E-02 8.7291E-01 1.2152E-01 -2.4432E-02 1.0000E+00 1.3721E-01
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15 -6.0290E-02 -8.7901E-01 9.1659E-01 -6.1718E-02 -8.7810E-01 9.1635E-01 -5.9726E-02
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 9.1371E-01 -9.0973E-02 -8.7403E-01 9.1324E-01 -1.0744E-01 -8.7483E-01 9.1292E-01
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 -1.0996E-01 8.8250E-01 2.3102E-01 -1.2799E-01 8.9522E-01 2.2669E-01 -1.2886E-01
 8.9931E-01 2.1746E-01 -1.2665E-01 1.0000E+00 2.8052E-01 -1.6074E-01
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 9.0166E-01 -8.6847E-01 1.6811E-01 9.0227E-01 -8.6904E-01 9.7704E-02 8.9817E-01
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 2.3010E-01 9.0288E-01 -8.6991E-01 2.8052E-01 1.0000E+00 -9.5968E-01
 27 -5.9101E-02 -8.7451E-01 9.1231E-01 -6.1191E-02 -8.7500E-01 9.1252E-01 -5.8220E-02
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 9.1159E-01 -9.4481E-02 -8.7479E-01 9.1270E-01 -1.1303E-01 -8.7512E-01 9.1240E-01
 -1.2282E-01 -8.7504E-01 9.1200E-01 -1.6074E-01 -9.5968E-01 1.0000E+00

G-FILE for the vectors

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 12 23 -8765775 12 24 9137673 12 25 -1210437 12 26 -8690400 D 12 27 9125621 13 14
 1372078 13 15 -259695 13 16 8453075 13 17 1083303 D 13 18 -202652 13 19 8159083 13 20
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 D 13 23 1186871 13 24 -209656 13 25 7710744 13 26 977036 13 27 -160610
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 21 27 9124022 22 23 2433442 22 24 -1396917 22 25 8993122 22 26 2300978 D 22 27
 -1228210 23 24 -9600796 23 25 2174584 23 26 9028828 23 27 -8750401 D 24 25 -1266511 24
 26 -8699054 24 27 9120004 25 26 2805238 25 27 -1607409 D 26 27 -9596779

ITRF position of 7681 as determined by individual baselines

	X	Y	Z
ctal	-377845.780	-5132191.854	3756009.284
arfy	-377845.783	-5132191.873	3756009.290
efay	-377845.789	-5132191.867	3756009.289
wwed	-377845.782	-5132191.864	3756009.285
arhr	-377845.774	-5132191.873	3756009.304
sal5	-377845.776	-5132191.887	3756009.282
okmu	-377845.767	-5132191.852	3756009.263
oktu	-377845.798	-5132191.886	3756009.299
okma	-377845.780	-5132191.904	3756009.294

Residuals of position determined by individual baselines from the final position

	X	Y	Z	East	North
Up					
ctal	0.001	0.027	-0.010	-0.001	0.008
-0.028					
arfy	-0.001	0.009	-0.004	-0.002	0.002
-0.010					
efay	-0.007	0.014	-0.005	-0.008	0.004
-0.014					
wwed	-0.001	0.018	-0.009	-0.003	0.003
-0.020					
arhr	0.007	0.008	0.010	0.007	0.013
-0.001					
sal5	0.005	-0.005	-0.012	0.006	-0.013
-0.003					
okmu	0.014	0.030	-0.031	0.012	-0.007
-0.043					
oktu	-0.017	-0.004	0.005	-0.017	0.001
0.007					
okma	0.001	-0.022	-0.001	0.002	-0.013
0.017					

STATE PLANE COORDINATES - U.S. Survey Foot

SPC (0301 AR N)
Northing (Y) [feet] 726190.290
Easting (X) [feet] 660991.717
Convergence [degrees] -1.28638322
Point Scale 1.00001568
Combined Factor 0.99996372

dop from interpolation is 0.455
scatter (mean square distance from rover) is 11972.201
average edop for rover is 0.880
average ndop for rover is 1.200
average hdop for rover is 1.488
average vdop for rover is 4.160
average gdop for rover is 5.160

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.