

Jasper County Iowa

Countywide G.P.S. Survey Control Network

2005



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INTRODUCTION

In 2005 Jasper County, Iowa, contracted with GB Consulting to complete a high accuracy GPS control survey for the purpose of establishing a county-wide survey control system and for future use in a county wide GIS system. Gary Brown chose to team with Dan Corbin of DC Inc. to aid in the completion of this survey. These two individuals have teamed to complete more than 50 county wide GPS surveys over the past 16 years.

Eighty eight (88) new control stations were added within the County along with, eight (8) existing Marshall County GPS control points, and three (3) Story County existing GPS control points. An additional three (3) HARN control points with horizontal control only, four (4) HARN control points with horizontal and vertical control, three (3) 1st and 2nd Order vertical control stations, and one (1) 3rd Order vertical control station were included in the network. A total of one hundred ten (110) points were measured.

PROJECT REQUIREMENTS

The purpose of this survey was to establish new state plane control throughout the project area, using a new horizontal and vertical control network with GPS survey equipment and techniques. This network was horizontally referenced to the Iowa High Accuracy Reference Network (HARN) of 1996. Vertically the network was referenced to the North American Vertical Datum of 1988 (NAVD88). Because this control would be utilized for many different purposes, it was important that the network geometry be ideal for a strong GPS survey. The new point locations for control were evenly spread throughout the county with the needs of future multiple uses and GPS survey requirements in mind.

MONUMENTATION

To perpetuate the GPS control measurements, 88 new permanent monuments were set by the County. The County set 36" deep concrete monuments at each new station. A steel fence post with a sign was placed as a witness point at each new permanent monument position.

The county engineer's office completed all site selection and monumentation for this project.

RECONNAISSANCE

The most important criterion for GPS observations at any given location is a clear view to the sky. In terms of network design, it is desirable that the horizontal control be located near the perimeter and also throughout the project site if possible. With this in mind, existing HARN horizontal stations were recovered in and/or near Jasper County along with other control that has been adjusted to the HARN. All positions in and near the county were chosen to be included in the network.

Vertical control was selected to provide as much coverage as possible, both at the periphery and in the interior of the project area. In addition, four (4) HARN stations with vertical control and four (4) existing NGS and USGS benchmarks were recovered and included in this survey.

FIELD SURVEY

Four Trimble 24 channel dual frequency Geodetic GPS receivers with Everest multi-path mitigation and high performance low elevation satellite tracking were used in this survey. Two model 5800 receivers, one R8 receiver and one R7 receiver were used for the survey. GPS observations were made during daylight and evening hours from Tuesday, May 31, 2005, through Friday, June 3, 2005.

Rapid static GPS techniques were utilized to minimize the time and cost of the survey. The satellite “window”, where at least six satellites were observable, was open for much of the day with only a few short periods of unacceptable coverage because of the number of satellites or bad geometry. Each measurement period during which all receivers observe satellites simultaneously lasted from 10 minutes to 150 minutes, depending on the distance being measured and the geometry of the satellite constellation. Four separate points had over 2 hours of data recorded and accordingly these points were also processed using OPUS.

DATA ADJUSTMENT

A total number of 372 vectors were observed and processed. Based on statistical indicators from the Trimble Geomatics Office processing software, no vectors were flagged as an outlier at the 95% confidence level. Fourteen (14) baselines were measured 2 or more times with 22 points occupied once, 59 points occupied twice, 27 points occupied 3 times and 2 points occupied 4 times during different sessions on the survey. After removal of trivial vectors the final network is comprised of 110 stations and 212 baselines. All data adjustment was performed using the Trimble Geomatics Office least squares adjustment software. An initial free adjustment was performed in NAD83 to check the overall quality of the GPS data and the nature of the control. The initial unconstrained (free) adjustment yielded baseline precisions which ranged from 1:242,746 to 1:4,881,647 with the 3 mile baselines falling in the 1:700,000 to 1:1,200,000 range. Once the horizontal and vertical control was verified, subsequent adjustments were performed to arrive at the optimal solutions for each datum.

NAD83 (1996)

The initial free adjustment was performed holding HARN adjusted point MC 98-124 fixed horizontally with the vertical adjustment disabled. Coordinate values on the other HARN control stations were then checked against the published values. The network fit the published HARN values within a few hundredths of a foot. Because all data fit so well the other HARN-referenced stations from other counties were added to the network and a new adjustment performed. After each adjustment a comparison of adjusted coordinates vs. published values was made. By holding all of the existing HARN stations fixed, and the control that was adjusted to the HARN, the precision of the “free” adjustment degraded very little.

Once we were satisfied with the horizontal adjustment, we locked the horizontal positions and concentrated on the vertical adjustment. The Geoid 03 Central zone was utilized to provide a model of the height of the Geoid. Adjustments were then performed locking on to the vertical control stations one at a time beginning with NGS G 10. Vertical control was added station by station with the elevations on the benchmarks being then checked against the published values. All existing

vertical control was integrated into the network without creating any outliers. The completed network consists of 110 points with 22 points being constrained in either horizontal or vertical. Three points were constrained in horizontal only, four points were constrained in vertical only, and 15 points were constrained in both horizontal and vertical. All of this control fit with the network adjustment extremely well.

A final adjustment of both horizontal and vertical was then performed. All of the horizontal control points were held fixed in x and y and all vertical control were held fixed in z. This fully constrained adjustment solved for scale and rotation. In the final adjusted network, 100% of the adjusted vectors have an estimated error of x, y and z baseline precision after adjustment was between 1:125,814 to 1:2,423,447 with the 3 mile baselines falling in the 1:450,000 to 1:850,000 range, and the 5 mile and longer baselines in the 1:1,000,000 or higher. All of the processed data and error factors were computed using a 95% confidence level factor. The results are well in excess of the first-order precision. OPUS calculations were computed on four stations within the network. The OPUS solutions compared to the final adjusted positions agreed within $0.10' \pm$ in horizontal and within $0.20' \pm$ in vertical.

CONCLUSION

All measured point accuracies exceed first-order standards. It is estimated that the control point positional accuracies are within ± 0.04 ft in horizontal and within ± 0.08 ft. vertical for benchmark use.

Network Adjustment Report

Project : Jasper County

User name	Gary Brown	Date & Time	9:41:02 PM 6/6/2005
Coordinate System	US State Plane 1983/1996	Zone	Iowa South 1402
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	Geoid Model	Geoid 03 (Conus)
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

Adjustment Style Settings - 95% Confidence Limits

Residual Tolerances

To End Iterations : 0.000033sft
Final Convergence Cutoff : 0.016404sft

Covariance Display

Horizontal

Propagated Linear Error [E] : U.S.

Constant Term [C] : 0.00000000sft

Scale on Linear Error [S] : 1.96

Three-Dimensional

Propagated Linear Error [E] : U.S.

Constant Term [C] : 0.00000000sft

Scale on Linear Error [S] : 1.96

Elevation Errors were used in the calculations.

Adjustment Controls

Compute Correlations for Geoid : True

Horizontal and Vertical adjustment performed

Set-up Errors

GPS

Error in Height of Antenna : 0.015sft

Centering Error : 0.015sft

Statistical Summary

Successful Adjustment in 1 iteration(s)

Network Reference Factor : 1.01

Chi Square Test ($\alpha=95\%$) : PASS

Degrees of Freedom : 357.00

GPS Observation Statistics

Reference Factor : 1.01

Redundancy Number (r) : 341.63

Geoid Model Statistics

Reference Factor : 1.00

Redundancy Number (r) : 15.37

Weighting Strategies

GPS Observations

User-defined Scalar Applied to All Observations

Scalar : 1.21

Geoid Observations

User-defined Scalar Applied to All Observations

Scalar : 0.52

Adjusted Coordinates

Adjustment performed in **NAD 1983/1996 HARN (Conus)**

Number of Points : 110
 Number of Constrained Points : 22
 Horizontal Only : 3
 Elevation Only : 4
 Horizontal and Elevation Only : 15

Adjusted Grid Coordinates

Errors are reported using 1.96σ .

Point Name	Northing	N error	Easting	E error	Elevation	e error	Fix
SC TP411	678861.410sft	0.000sft	1692320.270sft	0.000sft	957.440sft	0.000sft	N E e
E02	663348.747sft	0.028sft	1697648.572sft	0.027sft	949.738sft	0.140sft	
NGS G 10	644529.370sft	0.000sft	1699454.250sft	0.000sft	827.430sft	0.000sft	N E e
F01	647310.479sft	0.027sft	1681886.635sft	0.026sft	971.952sft	0.170sft	
F05	630955.577sft	0.026sft	1697735.158sft	0.026sft	897.788sft	0.152sft	
E03	663240.389sft	0.026sft	1713458.162sft	0.026sft	849.393sft	0.146sft	
D03	663528.248sft	0.026sft	1729357.996sft	0.026sft	955.699sft	0.155sft	
D04	663297.135sft	0.022sft	1745121.077sft	0.022sft	1010.097sft	0.161sft	
MC 98-116	678908.350sft	0.000sft	1744970.950sft	0.000sft	951.380sft	0.000sft	N E e
C02	663630.893sft	0.024sft	1774118.766sft	0.023sft	940.733sft	0.164sft	
MC 98-132	679021.410sft	0.000sft	1776664.810sft	0.000sft	976.790sft	0.000sft	N E e
H02	647262.645sft	0.026sft	1776952.214sft	0.025sft	867.918sft	0.215sft	
H04	632742.152sft	0.031sft	1777024.338sft	0.030sft	956.574sft	0.239sft	
SC 31-82-21	678879.050sft	0.000sft	1682178.080sft	0.000sft	955.000sft	0.000sft	N E e
SC 36-82-21	678811.460sft	0.000sft	1713421.830sft	0.000sft	991.410sft	0.000sft	N E e
F03	647363.104sft	0.026sft	1713474.097sft	0.025sft	883.604sft	0.156sft	
F06	631103.878sft	0.028sft	1713477.861sft	0.028sft	826.768sft	0.180sft	
G04	631207.614sft	0.035sft	1742559.222sft	0.034sft	830.192sft	0.226sft	
G03	631096.770sft	0.031sft	1729748.772sft	0.031sft	916.738sft	0.212sft	
H03	631188.608sft	0.029sft	1761227.837sft	0.028sft	929.590sft	0.237sft	

MC 98-108	678610.810sft	0.000sft	1729174.960sft	0.000sft	982.880sft	0.000sft	N E e
C01	663306.292sft	0.021sft	1760727.069sft	0.021sft	883.688sft	0.163sft	
E01	663176.054sft	0.024sft	1681780.803sft	0.024sft	845.946sft	0.154sft	
F02	647306.201sft	0.023sft	1700362.052sft	0.023sft	815.841sft	0.083sft	
G02	647464.132sft	0.039sft	1745522.548sft	0.038sft	963.229sft	0.209sft	
MC 98-124	678975.150sft	0.000sft	1760908.050sft	0.000sft	912.260sft	0.000sft	N E e
G01	646304.629sft	0.038sft	1729208.825sft	0.038sft	956.193sft	0.196sft	
K04	601789.894sft	0.032sft	1825041.679sft	0.031sft	820.559sft	0.240sft	
K02	615793.111sft	0.031sft	1824940.185sft	0.030sft	936.751sft	0.224sft	
NGS X 87	629140.900sft	0.030sft	1852978.425sft	0.029sft	1008.020sft	0.000sft	e
J04	626837.147sft	0.025sft	1840726.073sft	0.025sft	928.265sft	0.158sft	
MC 98-162	679413.820sft	0.000sft	1840265.750sft	0.000sft	992.800sft	0.000sft	N E e
A03	663830.122sft	0.025sft	1839491.120sft	0.025sft	1017.596sft	0.142sft	
L01	615595.391sft	0.032sft	1792861.807sft	0.031sft	954.232sft	0.252sft	
K01	614985.785sft	0.036sft	1809897.353sft	0.035sft	942.312sft	0.245sft	
H05	616992.162sft	0.035sft	1777514.424sft	0.034sft	897.474sft	0.251sft	
M01	613620.778sft	0.034sft	1761084.439sft	0.032sft	947.478sft	0.244sft	
L04	600001.449sft	0.034sft	1808878.472sft	0.034sft	919.035sft	0.254sft	
K03	615865.691sft	0.027sft	1840669.765sft	0.027sft	883.405sft	0.186sft	
J03	632938.240sft	0.034sft	1824689.621sft	0.033sft	985.317sft	0.208sft	
A02	663702.387sft	0.030sft	1824468.029sft	0.029sft	952.757sft	0.153sft	
MC 98-154	679252.420sft	0.000sft	1824507.570sft	0.000sft	1023.640sft	0.000sft	N E e
J01	647832.462sft	0.035sft	1827349.367sft	0.034sft	991.343sft	0.190sft	
I04	631549.138sft	0.037sft	1808713.434sft	0.036sft	895.529sft	0.232sft	
MC 98-146	679265.390sft	0.000sft	1808396.060sft	0.000sft	1011.770sft	0.000sft	N E e
B02	663581.716sft	0.031sft	1808438.067sft	0.030sft	996.842sft	0.163sft	
N01	615173.367sft	0.035sft	1727271.287sft	0.033sft	790.459sft	0.216sft	
O01	616988.058sft	0.038sft	1681826.408sft	0.037sft	913.223sft	0.161sft	
F04	630951.011sft	0.040sft	1682067.643sft	0.039sft	806.970sft	0.178sft	
I02	647718.071sft	0.035sft	1808660.531sft	0.034sft	1002.440sft	0.208sft	
I03	630083.508sft	0.030sft	1792845.843sft	0.029sft	900.496sft	0.241sft	
B01	663417.632sft	0.028sft	1792534.015sft	0.027sft	960.530sft	0.165sft	

O03	615177.104sft	0.043sft	1709062.771sft	0.041sft	786.439sft	0.195sft	
K05	600318.067sft	0.035sft	1840838.949sft	0.034sft	930.695sft	0.224sft	
NGS GGI A	623895.980sft	0.000sft	1849504.030sft	0.000sft	1001.794sft	0.120sft	N E
J02	647876.948sft	0.032sft	1840295.093sft	0.031sft	918.484sft	0.171sft	
NGS D 88	674321.660sft	0.000sft	1835768.660sft	0.000sft	1030.410sft	0.000sft	N E e
MC 98-139	679057.070sft	0.000sft	1792714.180sft	0.000sft	939.950sft	0.000sft	N E e
H01	647615.640sft	0.032sft	1760837.832sft	0.032sft	986.887sft	0.213sft	
I01	647695.798sft	0.033sft	1792661.279sft	0.032sft	941.919sft	0.215sft	
O02	615110.953sft	0.033sft	1695159.471sft	0.032sft	802.289sft	0.168sft	
L03	599913.364sft	0.033sft	1793075.468sft	0.032sft	906.029sft	0.256sft	
N02	615298.669sft	0.045sft	1745315.617sft	0.041sft	910.526sft	0.236sft	
T01	584861.154sft	0.033sft	1825174.742sft	0.032sft	865.873sft	0.252sft	
T03	567557.657sft	0.029sft	1827957.546sft	0.028sft	910.696sft	0.253sft	
T05	550440.597sft	0.028sft	1828622.803sft	0.027sft	759.509sft	0.250sft	
R04	565742.604sft	0.029sft	1781060.578sft	0.028sft	757.086sft	0.224sft	
R07	549935.895sft	0.028sft	1765210.842sft	0.027sft	894.299sft	0.144sft	
R05	565606.722sft	0.022sft	1750828.285sft	0.021sft	907.529sft	0.161sft	
Q04	565467.948sft	0.025sft	1733700.527sft	0.024sft	915.458sft	0.108sft	
NGS D 5	542654.120sft	0.027sft	1758656.201sft	0.025sft	902.470sft	0.000sft	e
DYER	514101.190sft	0.000sft	1703103.690sft	0.000sft	930.332sft	0.287sft	N E
S06	551176.357sft	0.036sft	1812617.745sft	0.035sft	748.274sft	0.255sft	
Q05	549607.926sft	0.030sft	1732384.606sft	0.028sft	849.969sft	0.152sft	
P04	565439.592sft	0.025sft	1718611.429sft	0.024sft	877.674sft	0.147sft	
Q01	583409.579sft	0.033sft	1719035.127sft	0.032sft	913.867sft	0.175sft	
P07	549528.908sft	0.025sft	1718610.643sft	0.025sft	886.949sft	0.109sft	
P05	555211.101sft	0.024sft	1687330.915sft	0.024sft	789.912sft	0.219sft	
P02	569257.115sft	0.032sft	1688292.391sft	0.031sft	886.099sft	0.204sft	
L02	599735.995sft	0.036sft	1778569.166sft	0.036sft	938.333sft	0.252sft	
M02	599320.243sft	0.031sft	1761227.076sft	0.029sft	861.566sft	0.235sft	
T04	563732.662sft	0.028sft	1842497.623sft	0.027sft	877.272sft	0.241sft	
T06	553177.979sft	0.029sft	1843803.038sft	0.029sft	883.259sft	0.233sft	
R06	549819.141sft	0.030sft	1752028.586sft	0.029sft	905.041sft	0.132sft	

NGS A 5	571084.550sft	0.000sft	1733556.000sft	0.000sft	922.670sft	0.000sft	N E e
P06	549552.433sft	0.024sft	1702751.151sft	0.023sft	889.936sft	0.152sft	
O07	583443.318sft	0.030sft	1681880.584sft	0.029sft	904.806sft	0.182sft	
O04	599308.005sft	0.036sft	1697742.978sft	0.034sft	918.571sft	0.167sft	
S05	550089.347sft	0.034sft	1795570.218sft	0.033sft	744.766sft	0.240sft	
P01	583715.436sft	0.036sft	1702874.106sft	0.034sft	886.832sft	0.185sft	
O06	593626.997sft	0.042sft	1681843.046sft	0.041sft	880.727sft	0.132sft	
N03	599361.388sft	0.033sft	1729426.790sft	0.032sft	832.959sft	0.205sft	
T02	584035.178sft	0.035sft	1840931.312sft	0.034sft	888.444sft	0.243sft	
NGS L 87	534179.960sft	0.000sft	1874202.760sft	0.000sft	863.776sft	0.000sft	N E e
R08	549980.548sft	0.034sft	1781143.714sft	0.033sft	744.253sft	0.208sft	
R03	565620.669sft	0.031sft	1763724.543sft	0.030sft	759.488sft	0.190sft	
Q02	583408.785sft	0.022sft	1733569.945sft	0.021sft	885.757sft	0.156sft	
P03	565386.363sft	0.031sft	1702694.680sft	0.031sft	904.134sft	0.177sft	
NGS GPS 15	571453.190sft	0.000sft	1639473.840sft	0.000sft	891.666sft	0.348sft	N E
NGS V 4	601289.269sft	0.040sft	1681783.625sft	0.038sft	951.480sft	0.000sft	e
O05	599236.628sft	0.043sft	1713660.970sft	0.041sft	917.029sft	0.198sft	
N04	602680.046sft	0.040sft	1743983.823sft	0.040sft	767.448sft	0.222sft	
USGS ET 20 JHB	546809.373sft	0.037sft	1713299.342sft	0.036sft	880.700sft	0.000sft	e
S01	584049.553sft	0.033sft	1793154.536sft	0.032sft	N/A	N/A	
S03	564675.664sft	0.031sft	1796532.850sft	0.030sft	N/A	N/A	
R02	581624.312sft	0.033sft	1780862.972sft	0.032sft	N/A	N/A	
Q03	581490.977sft	0.029sft	1749621.140sft	0.028sft	N/A	N/A	
R01	583777.807sft	0.032sft	1764003.878sft	0.031sft	N/A	N/A	
S02	584164.802sft	0.034sft	1810247.033sft	0.033sft	N/A	N/A	
S04	566070.376sft	0.034sft	1811028.724sft	0.033sft	N/A	N/A	

Adjusted Geodetic Coordinates

Errors are reported using 1.96σ .

Point Name	Latitude	N error	Longitude	E error	Height	h error	Fix
SC TP411	41°51'47.07284"N	0.000sft	93°18'34.06286"W	0.000sft	854.673sft	0.537sft	Lat Long e
E02	41°49'13.70141"N	0.028sft	93°17'24.14128"W	0.027sft	846.486sft	0.512sft	
NGS G 10	41°46'07.73716"N	0.000sft	93°17'00.91226"W	0.000sft	723.760sft	0.494sft	Lat Long e
F01	41°46'35.58013"N	0.027sft	93°20'52.67806"W	0.026sft	868.680sft	0.523sft	
F05	41°43'53.67838"N	0.026sft	93°17'24.03056"W	0.026sft	793.955sft	0.489sft	
E03	41°49'12.20185"N	0.026sft	93°13'55.35046"W	0.026sft	745.869sft	0.491sft	
D03	41°49'14.50909"N	0.026sft	93°10'25.35094"W	0.026sft	851.965sft	0.476sft	
D04	41°49'11.58999"N	0.022sft	93°06'57.18375"W	0.022sft	906.150sft	0.464sft	
MC 98-116	41°51'45.81931"N	0.000sft	93°06'58.25668"W	0.000sft	847.653sft	0.486sft	Lat Long e
C02	41°49'13.44695"N	0.024sft	93°00'34.19779"W	0.023sft	836.483sft	0.458sft	
MC 98-132	41°51'45.34524"N	0.000sft	92°59'59.40416"W	0.000sft	872.701sft	0.481sft	Lat Long e
H02	41°46'31.58449"N	0.026sft	92°59'58.02126"W	0.025sft	763.476sft	0.438sft	
H04	41°44'08.12941"N	0.031sft	92°59'58.17210"W	0.030sft	852.003sft	0.427sft	
SC 31-82-21	41°51'47.44514"N	0.000sft	93°20'48.09724"W	0.000sft	852.414sft	0.551sft	Lat Long e
SC 36-82-21	41°51'46.02993"N	0.000sft	93°13'55.19668"W	0.000sft	888.192sft	0.511sft	Lat Long e
F03	41°46'35.34686"N	0.026sft	93°13'55.78568"W	0.025sft	779.777sft	0.476sft	
F06	41°43'54.71647"N	0.028sft	93°13'56.39635"W	0.028sft	722.687sft	0.467sft	
G04	41°43'54.68125"N	0.035sft	93°07'32.84061"W	0.034sft	725.820sft	0.438sft	
G03	41°43'54.09651"N	0.031sft	93°10'21.80159"W	0.031sft	812.478sft	0.448sft	
H03	41°43'53.62751"N	0.029sft	93°03'26.62523"W	0.028sft	825.100sft	0.428sft	
MC 98-108	41°51'43.51650"N	0.000sft	93°10'27.02212"W	0.000sft	879.439sft	0.496sft	Lat Long e
C01	41°49'10.94888"N	0.021sft	93°03'31.08033"W	0.021sft	779.547sft	0.458sft	
E01	41°49'12.32129"N	0.024sft	93°20'53.70953"W	0.024sft	743.001sft	0.536sft	
F02	41°46'35.14777"N	0.023sft	93°16'48.83994"W	0.023sft	712.205sft	0.494sft	
G02	41°46'35.15617"N	0.039sft	93°06'52.80796"W	0.038sft	859.047sft	0.448sft	
MC 98-124	41°51'45.73155"N	0.000sft	93°03'27.63789"W	0.000sft	808.291sft	0.481sft	Lat Long e
G01	41°46'24.35973"N	0.038sft	93°10'28.17228"W	0.038sft	852.162sft	0.459sft	
K04	41°38'59.13398"N	0.032sft	92°49'28.02577"W	0.031sft	715.385sft	0.444sft	
K02	41°41'17.48453"N	0.031sft	92°49'27.93004"W	0.030sft	831.675sft	0.446sft	
NGS X 87	41°43'27.03438"N	0.030sft	92°43'16.82203"W	0.029sft	902.849sft	0.491sft	e
J04	41°43'05.32764"N	0.025sft	92°45'58.64943"W	0.025sft	823.158sft	0.471sft	
MC 98-162	41°51'44.76563"N	0.000sft	92°45'58.87175"W	0.000sft	888.231sft	0.528sft	Lat Long e

A03	41°49'10.88302"N	0.025sft	92°46'10.83761"W	0.025sft	912.827sft	0.505sft	
L01	41°41'17.77866"N	0.032sft	92°56'30.73564"W	0.031sft	849.418sft	0.422sft	
K01	41°41'10.61590"N	0.036sft	92°52'46.26752"W	0.035sft	837.364sft	0.433sft	
H05	41°41'32.50189"N	0.035sft	92°59'52.90694"W	0.034sft	792.765sft	0.420sft	
M01	41°41'00.07503"N	0.034sft	93°03'29.69318"W	0.032sft	842.827sft	0.422sft	
L04	41°38'42.65099"N	0.034sft	92°53'01.09519"W	0.034sft	813.981sft	0.430sft	
K03	41°41'16.94318"N	0.027sft	92°46'00.61129"W	0.027sft	778.229sft	0.466sft	
J03	41°44'06.88427"N	0.034sft	92°49'29.47845"W	0.033sft	880.381sft	0.455sft	
A02	41°49'10.82024"N	0.030sft	92°49'29.25132"W	0.029sft	848.086sft	0.487sft	
MC 98-154	41°51'44.43245"N	0.000sft	92°49'27.13360"W	0.000sft	919.102sft	0.510sft	Lat Long e
J01	41°46'33.81984"N	0.035sft	92°48'52.85063"W	0.034sft	886.515sft	0.472sft	
I04	41°43'54.33303"N	0.037sft	92°53'00.32347"W	0.036sft	790.718sft	0.440sft	
MC 98-146	41°51'45.74306"N	0.000sft	92°53'00.04771"W	0.000sft	907.433sft	0.496sft	Lat Long e
B02	41°49'10.80389"N	0.031sft	92°53'00.96136"W	0.030sft	892.330sft	0.472sft	
N01	41°41'16.87273"N	0.035sft	93°10'55.24452"W	0.033sft	686.044sft	0.447sft	
O01	41°41'36.01305"N	0.038sft	93°20'54.17051"W	0.037sft	809.500sft	0.514sft	
F04	41°43'53.95589"N	0.040sft	93°20'50.66788"W	0.039sft	703.403sft	0.516sft	
I02	41°46'34.07172"N	0.035sft	92°52'59.50902"W	0.034sft	897.783sft	0.453sft	
I03	41°43'40.91252"N	0.030sft	92°56'29.72016"W	0.029sft	795.792sft	0.429sft	
B01	41°49'10.24362"N	0.028sft	92°56'31.01212"W	0.027sft	856.143sft	0.462sft	
O03	41°41'17.49837"N	0.043sft	93°14'55.23353"W	0.041sft	682.237sft	0.471sft	
K05	41°38'43.32928"N	0.035sft	92°46'00.10903"W	0.034sft	825.428sft	0.464sft	
NGS GGI A	41°42'35.52395"N	0.000sft	92°44'03.24746"W	0.000sft	896.619sft	0.482sft	Lat Long
J02	41°46'33.21678"N	0.032sft	92°46'01.99501"W	0.031sft	813.569sft	0.488sft	
NGS D 88	41°50'54.83229"N	0.000sft	92°46'58.85553"W	0.000sft	925.728sft	0.516sft	Lat Long e
MC 98-139	41°51'44.73213"N	0.000sft	92°56'27.30522"W	0.000sft	835.712sft	0.486sft	Lat Long e
H01	41°46'35.93385"N	0.032sft	93°03'30.66927"W	0.032sft	882.573sft	0.441sft	
I01	41°46'34.91920"N	0.033sft	92°56'30.66374"W	0.032sft	837.376sft	0.444sft	
O02	41°41'17.20151"N	0.033sft	93°17'58.48249"W	0.032sft	698.305sft	0.491sft	
L03	41°38'42.83519"N	0.033sft	92°56'29.24683"W	0.032sft	801.079sft	0.422sft	
N02	41°41'17.39125"N	0.045sft	93°06'57.41337"W	0.041sft	805.973sft	0.433sft	
T01	41°36'11.87649"N	0.033sft	92°49'28.00491"W	0.032sft	760.604sft	0.449sft	
T03	41°33'20.70944"N	0.029sft	92°48'53.17027"W	0.028sft	805.353sft	0.462sft	
T05	41°30'31.54535"N	0.028sft	92°48'46.19878"W	0.027sft	654.105sft	0.480sft	
R04	41°33'05.97075"N	0.029sft	92°59'10.15652"W	0.028sft	651.978sft	0.441sft	
R07	41°30'30.67459"N	0.028sft	93°02'39.70789"W	0.027sft	789.266sft	0.463sft	

R05	41°33'06.20311"N	0.022sft	93°05'47.79381"W	0.021sft	802.679sft	0.451sft	
Q04	41°33'05.55594"N	0.025sft	93°09'33.07398"W	0.024sft	810.781sft	0.466sft	
NGS D 5	41°29'19.06081"N	0.027sft	93°04'06.33538"W	0.025sft	797.483sft	0.477sft	e
DYER	41°24'39.03470"N	0.000sft	93°16'17.27492"W	0.000sft	826.191sft	0.584sft	Lat Long
S06	41°30'40.01068"N	0.036sft	92°52'16.49338"W	0.035sft	642.918sft	0.467sft	
Q05	41°30'28.90970"N	0.030sft	93°09'51.18685"W	0.028sft	745.287sft	0.488sft	
P04	41°33'05.81267"N	0.025sft	93°12'51.53462"W	0.024sft	773.163sft	0.484sft	
Q01	41°36'03.34016"N	0.033sft	93°12'45.18087"W	0.032sft	809.388sft	0.468sft	
P07	41°30'28.61499"N	0.025sft	93°12'52.23181"W	0.025sft	782.426sft	0.503sft	
P05	41°31'25.56698"N	0.024sft	93°19'43.21865"W	0.024sft	685.785sft	0.544sft	
P02	41°33'44.32278"N	0.032sft	93°19'30.20677"W	0.031sft	781.989sft	0.527sft	
L02	41°38'41.95942"N	0.036sft	92°59'40.32637"W	0.036sft	833.476sft	0.420sft	
M02	41°38'38.78510"N	0.031sft	93°03'28.77108"W	0.029sft	756.795sft	0.423sft	
T04	41°32'41.74429"N	0.028sft	92°45'42.35238"W	0.027sft	771.876sft	0.482sft	
T06	41°30'57.35737"N	0.029sft	92°45'26.37032"W	0.029sft	777.853sft	0.494sft	
R06	41°30'30.16727"N	0.030sft	93°05'32.97969"W	0.029sft	800.143sft	0.471sft	
NGS A 5	41°34'01.05303"N	0.000sft	93°09'34.68580"W	0.000sft	818.003sft	0.462sft	Lat Long e
P06	41°30'29.30956"N	0.024sft	93°16'20.68436"W	0.023sft	785.606sft	0.525sft	
O07	41°36'04.59994"N	0.030sft	93°20'54.22705"W	0.029sft	800.850sft	0.526sft	
O04	41°38'41.01397"N	0.036sft	93°17'24.93389"W	0.034sft	814.440sft	0.490sft	
S05	41°30'30.42835"N	0.034sft	92°56'00.66190"W	0.033sft	639.498sft	0.461sft	
P01	41°36'06.83540"N	0.036sft	93°16'17.88938"W	0.034sft	782.559sft	0.491sft	
O06	41°37'45.21334"N	0.042sft	93°20'54.48764"W	0.041sft	776.833sft	0.520sft	
N03	41°38'40.57799"N	0.033sft	93°10'27.61522"W	0.032sft	728.425sft	0.447sft	
T02	41°36'02.45568"N	0.035sft	92°46'00.70016"W	0.034sft	783.103sft	0.467sft	
NGS L 87	41°27'46.90670"N	0.000sft	92°38'49.22161"W	0.000sft	758.384sft	0.558sft	Lat Long e
R08	41°30'30.23853"N	0.034sft	92°59'10.28767"W	0.033sft	639.078sft	0.460sft	
R03	41°33'05.71550"N	0.031sft	93°02'58.17567"W	0.030sft	654.509sft	0.445sft	
Q02	41°36'02.81390"N	0.022sft	93°09'33.86750"W	0.021sft	781.125sft	0.450sft	
P03	41°33'05.75069"N	0.031sft	93°16'20.88220"W	0.031sft	799.819sft	0.507sft	
NGS GPS 15	41°34'06.49539"N	0.000sft	93°30'12.40381"W	0.000sft	788.270sft	0.624sft	Lat Long
NGS V 4	41°39'00.91554"N	0.040sft	93°20'55.09453"W	0.038sft	847.646sft	0.516sft	e
O05	41°38'39.87692"N	0.043sft	93°13'55.27619"W	0.041sft	812.672sft	0.467sft	
N04	41°39'12.78259"N	0.040sft	93°07'15.69104"W	0.040sft	662.796sft	0.433sft	
USGS ET 20 JHB	41°30'01.91215"N	0.037sft	93°14'02.15152"W	0.036sft	776.236sft	0.514sft	e
S01	41°36'06.10221"N	0.033sft	92°56'29.54693"W	0.032sft	772.191sft	0.428sft	

S03	41°32'54.47688"N	0.031sft	92°55'46.75233"W	0.030sft	772.452sft	0.444sft	
R02	41°35'42.88987"N	0.033sft	92°59'11.52244"W	0.032sft	796.417sft	0.427sft	
Q03	41°35'43.19196"N	0.029sft	93°06'02.71183"W	0.028sft	733.441sft	0.438sft	
R01	41°36'05.09006"N	0.032sft	93°02'53.26113"W	0.031sft	658.988sft	0.429sft	
S02	41°36'06.09596"N	0.034sft	92°52'44.55879"W	0.033sft	806.376sft	0.436sft	
S04	41°33'07.27362"N	0.034sft	92°52'35.97668"W	0.033sft	736.731sft	0.450sft	

Adjusted Observations

Adjustment performed in **NAD 1983/1996 HARN (Conus)**

GPS Observations

GPS Transformation Group: <GPS Default>

Deflection in Longitude : 0°00'00.0717" (1.96σ) : 0°00'00.6526"

Deflection in Latitude : 0°00'00.0632" (1.96σ) : 0°00'00.6891"

Azimuth Rotation : -0°00'00.0178" (1.96σ) : 0°00'00.0355"

Network Scale : 0.99999955 (1.96σ) : 0.00000017

Number of Observations : 212

Number of Outliers : 0

Observation Adjustment (Critical Tau = 3.94). Any outliers are in **red**.

Obs. ID	From Pt.	To Pt.		Observation	A-posteriori Error (1.96σ)	Residual	Stand. Residual
B186	R05	Q04	Az.	269°48'05.8843"	0°00'00.2745"	-0°00'00.2980"	-1.31
			ΔHt.	8.108sft	0.026sft	0.065sft	3.37
			Dist.	17128.877sft	0.022sft	0.008sft	0.43
B298	Q02	Q01	Az.	270°13'39.4005"	0°00'00.4517"	0°00'00.0166"	0.07
			ΔHt.	28.268sft	0.041sft	-0.081sft	-3.27
			Dist.	14535.208sft	0.031sft	-0.008sft	-0.47
B257	O07	O06	Az.	359°53'19.1632"	0°00'00.7267"	-0°00'00.3470"	-1.48
			ΔHt.	-24.014sft	0.042sft	0.034sft	3.22
			Dist.	10184.003sft	0.037sft	0.016sft	1.41
B372	Q02	NGS A 5	Az.	180°17'21.0220"	0°00'00.3473"	-0°00'01.0262"	-3.14
			ΔHt.	36.874sft	0.033sft	-0.004sft	-0.14
			Dist.	12324.599sft	0.022sft	-0.041sft	-1.89
B304	O06	NGS V 4	Az.	359°39'19.7694"	0°00'00.9670"	-0°00'00.4783"	-1.52
			ΔHt.	70.816sft	0.044sft	0.038sft	3.11
			Dist.	7662.670sft	0.038sft	0.014sft	1.13
B121	I03	H04	Az.	279°54'24.7671"	0°00'00.3919"	-0°00'00.0912"	-0.44
			ΔHt.	56.217sft	0.037sft	-0.061sft	-3.09
			Dist.	16043.462sft	0.030sft	0.016sft	1.02

B181	T01	T03	Az.	171°18'31.3173"	0°00'00.3491"	0°00'00.0650"	0.35
			ΔHt.	44.743sft	0.036sft	-0.047sft	-2.88
			Dist.	17526.352sft	0.030sft	0.003sft	0.19
B275	O04	NGS V 4	Az.	277°12'54.2248"	0°00'00.4798"	0°00'00.0839"	0.36
			ΔHt.	33.212sft	0.047sft	-0.070sft	-2.85
			Dist.	16082.199sft	0.034sft	-0.004sft	-0.30
B269	Q02	N03	Az.	345°39'55.3789"	0°00'00.3958"	0°00'00.1095"	0.52
			ΔHt.	-52.693sft	0.046sft	-0.075sft	-2.82
			Dist.	16482.244sft	0.034sft	0.013sft	0.72
B349	Q02	Q03	Az.	97°02'15.4695"	0°00'00.3623"	0°00'00.3410"	1.60
			ΔHt.	-47.690sft	0.032sft	0.045sft	2.64
			Dist.	16165.800sft	0.028sft	-0.006sft	-0.38
B120	B01	I03	Az.	179°49'53.8268"	0°00'00.1775"	0°00'00.1076"	1.04
			ΔHt.	-60.361sft	0.040sft	-0.070sft	-2.54
			Dist.	33335.620sft	0.030sft	0.010sft	0.56
B49	F02	E02	Az.	350°32'40.1683"	0°00'00.3720"	0°00'00.0744"	0.38
			ΔHt.	134.287sft	0.034sft	-0.012sft	-0.92
			Dist.	16270.358sft	0.030sft	-0.040sft	-2.54
B340	Q02	R05	Az.	136°06'45.6021"	0°00'00.1921"	0°00'00.3959"	2.52
			ΔHt.	21.543sft	0.028sft	0.053sft	2.43
			Dist.	24795.167sft	0.023sft	0.009sft	0.46
B213	R05	P04	Az.	269°58'07.5053"	0°00'00.1587"	-0°00'00.1302"	-0.99
			ΔHt.	-29.504sft	0.029sft	0.061sft	2.50
			Dist.	32218.335sft	0.024sft	0.027sft	1.40
B162	F01	E01	Az.	359°43'04.6359"	0°00'00.3782"	0°00'00.3381"	1.65
			ΔHt.	-125.673sft	0.036sft	0.021sft	1.53
			Dist.	15865.878sft	0.029sft	-0.039sft	-2.47
B1	SC TP411	E02	Az.	161°10'07.7111"	0°00'00.3464"	-0°00'00.0200"	-0.10
			ΔHt.	-8.193sft	0.033sft	0.024sft	1.67
			Dist.	16402.055sft	0.028sft	-0.041sft	-2.47
B320	NGS GPS 15	O07	Az.	74°12'34.4335"	0°00'00.1425"	-0°00'00.0159"	-0.20
			ΔHt.	12.569sft	0.042sft	0.050sft	2.37
			Dist.	44070.476sft	0.030sft	-0.017sft	-1.03
B270	P04	P03	Az.	269°59'48.1183"	0°00'00.3978"	-0°00'00.0571"	-0.29

			ΔHt.	26.662sft	0.033sft	0.001sft	0.05
			Dist.	15917.355sft	0.030sft	0.035sft	2.28
B305	N03	O05	Az.	269°45'40.6247"	0°00'00.4784"	-0°00'00.1511"	-1.02
			ΔHt.	84.253sft	0.041sft	-0.023sft	-2.27
			Dist.	15766.649sft	0.036sft	-0.008sft	-0.71
B316	P02	P03	Az.	105°09'30.2992"	0°00'00.4553"	-0°00'00.0178"	-0.09
			ΔHt.	17.824sft	0.037sft	0.014sft	0.88
			Dist.	14913.848sft	0.033sft	0.032sft	2.25
B276	O04	O05	Az.	90°23'41.6372"	0°00'00.5049"	-0°00'00.1480"	-0.81
			ΔHt.	-1.773sft	0.051sft	0.046sft	2.24
			Dist.	15918.490sft	0.037sft	-0.013sft	-0.97
B174	H01	C01	Az.	359°53'10.8389"	0°00'00.3881"	-0°00'00.0858"	-0.41
			ΔHt.	-103.022sft	0.035sft	-0.038sft	-2.19
			Dist.	15690.993sft	0.030sft	-0.001sft	-0.05
B15	NGS G 10	F03	Az.	78°42'55.8259"	0°00'00.3746"	0°00'00.5815"	2.18
			ΔHt.	56.014sft	0.032sft	0.005sft	0.25
			Dist.	14303.382sft	0.026sft	0.027sft	1.49
B45	MC 98-124	MC 98-116	Az.	270°03'05.2341"	0°00'00.0355"	0°00'00.6122"	2.16
			ΔHt.	39.368sft	0.033sft	-0.018sft	-1.19
			Dist.	15936.993sft	0.003sft	-0.021sft	-0.96
B337	T03	S04	Az.	265°25'50.4236"	0°00'00.3625"	-0°00'00.0910"	-0.41
			ΔHt.	-68.616sft	0.040sft	-0.063sft	-2.16
			Dist.	16994.576sft	0.029sft	-0.003sft	-0.15
B37	SC TP411	E01	Az.	214°01'26.4688"	0°00'00.2601"	0°00'00.4130"	2.07
			ΔHt.	-111.672sft	0.032sft	-0.026sft	-1.32
			Dist.	18897.160sft	0.024sft	-0.014sft	-0.75
B329	T03	S03	Az.	265°12'41.8377"	0°00'00.1908"	0°00'00.0175"	0.15
			ΔHt.	-32.891sft	0.039sft	-0.052sft	-2.04
			Dist.	31557.598sft	0.028sft	-0.014sft	-0.83
B143	O02	F05	Az.	9°21'54.5907"	0°00'00.4164"	-0°00'00.3744"	-2.01
			ΔHt.	95.654sft	0.040sft	-0.011sft	-0.74
			Dist.	16052.798sft	0.033sft	0.007sft	0.51
B11	C02	H02	Az.	170°30'07.5894"	0°00'00.3428"	-0°00'00.1293"	-0.62
			ΔHt.	-73.012sft	0.034sft	-0.020sft	-0.99

			Dist.	16611.630sft	0.028sft	-0.035sft	-2.00
B13	SC TP411	SC 31-82-21	Az.	270°13'31.1392"	0°00'00.0355"	0°00'00.8820"	1.98
			ΔHt.	-2.255sft	0.035sft	-0.009sft	-0.65
			Dist.	10142.047sft	0.002sft	0.004sft	0.18
B184	R04	R07	Az.	225°24'59.2832"	0°00'00.2400"	-0°00'00.0588"	-0.34
			ΔHt.	137.289sft	0.030sft	0.037sft	1.98
			Dist.	22385.284sft	0.026sft	-0.015sft	-0.82
B346	S02	S04	Az.	177°56'07.2073"	0°00'00.3644"	-0°00'00.1943"	-0.97
			ΔHt.	-69.651sft	0.042sft	0.054sft	1.95
			Dist.	18111.840sft	0.035sft	-0.029sft	-1.32
B347	L02	R02	Az.	173°06'53.8658"	0°00'00.3771"	-0°00'00.2379"	-1.19
			ΔHt.	-37.065sft	0.048sft	0.046sft	1.27
			Dist.	18256.804sft	0.035sft	-0.037sft	-1.95
B211	Q04	R05	Az.	89°45'36.4572"	0°00'00.2745"	0°00'00.1985"	0.86
			ΔHt.	-8.107sft	0.026sft	0.043sft	1.95
			Dist.	17128.877sft	0.022sft	-0.007sft	-0.35
B354	R04	R08	Az.	180°02'10.5471"	0°00'00.3104"	-0°00'00.3694"	-1.57
			ΔHt.	-12.905sft	0.026sft	-0.044sft	-1.94
			Dist.	15762.823sft	0.024sft	0.034sft	1.84
B173	MC 98-139	MC 98-132	Az.	270°14'28.3652"	0°00'00.0355"	-0°00'00.1945"	-0.66
			ΔHt.	36.995sft	0.040sft	0.028sft	1.93
			Dist.	16049.161sft	0.003sft	0.029sft	1.34
B39	NGS G 10	F02	Az.	18°14'46.1522"	0°00'01.6240"	0°00'02.4586"	1.92
			ΔHt.	-11.554sft	0.029sft	0.003sft	0.19
			Dist.	2921.458sft	0.023sft	-0.017sft	-0.91
B199	Q01	P04	Az.	181°32'24.0615"	0°00'00.3527"	-0°00'00.1073"	-0.59
			ΔHt.	-36.230sft	0.039sft	-0.035sft	-1.91
			Dist.	17975.515sft	0.032sft	-0.005sft	-0.34
B2	NGS G 10	F01	Az.	279°08'18.8226"	0°00'00.3088"	-0°00'00.3042"	-1.41
			ΔHt.	144.927sft	0.034sft	-0.004sft	-0.22
			Dist.	17786.415sft	0.026sft	-0.034sft	-1.89
B228	P02	O07	Az.	335°47'36.6578"	0°00'00.4296"	-0°00'00.1529"	-0.83
			ΔHt.	18.868sft	0.036sft	0.007sft	0.57
			Dist.	15568.356sft	0.033sft	0.026sft	1.89

B34	C01	D04	Az.	270°15'26.4165"	0°00'00.3499"	0°00'00.4265"	1.87
			ΔHt.	126.609sft	0.032sft	0.012sft	0.79
			Dist.	15605.883sft	0.026sft	-0.007sft	-0.41
B182	T03	T05	Az.	178°13'32.3843"	0°00'00.3469"	0°00'00.1627"	0.84
			ΔHt.	-151.254sft	0.043sft	0.070sft	1.84
			Dist.	17130.574sft	0.030sft	-0.006sft	-0.32
B350	L04	K04	Az.	84°05'30.3935"	0°00'00.3415"	-0°00'00.1934"	-0.81
			ΔHt.	-98.601sft	0.030sft	-0.039sft	-1.83
			Dist.	16262.190sft	0.026sft	-0.011sft	-0.63
B20	G04	G03	Az.	269°45'03.2510"	0°00'00.5441"	0°00'00.0330"	0.15
			ΔHt.	86.663sft	0.037sft	0.023sft	1.82
			Dist.	12811.036sft	0.033sft	0.003sft	0.20
B84	H05	M01	Az.	258°44'05.5640"	0°00'00.4326"	-0°00'00.0714"	-0.34
			ΔHt.	50.068sft	0.044sft	-0.041sft	-1.80
			Dist.	16772.570sft	0.033sft	-0.010sft	-0.67
B112	MC 98-154	MC 98-162	Az.	89°51'29.0618"	0°00'00.0355"	-0°00'00.0028"	-0.01
			ΔHt.	-30.876sft	0.036sft	-0.035sft	-1.79
			Dist.	15758.763sft	0.003sft	0.001sft	0.04
B43	G02	G04	Az.	190°35'04.6040"	0°00'00.4519"	0°00'00.0423"	0.25
			ΔHt.	-133.230sft	0.044sft	0.032sft	1.78
			Dist.	16524.472sft	0.038sft	0.007sft	0.46
B57	D04	G02	Az.	178°48'01.7714"	0°00'00.4628"	0°00'00.0504"	0.31
			ΔHt.	-47.108sft	0.040sft	0.021sft	1.77
			Dist.	15838.043sft	0.036sft	0.004sft	0.35
B274	P01	O04	Az.	341°56'07.3502"	0°00'00.4528"	-0°00'00.3705"	-1.75
			ΔHt.	31.888sft	0.057sft	-0.046sft	-1.24
			Dist.	16415.531sft	0.039sft	0.008sft	0.39
B42	MC 98-116	D04	Az.	179°42'06.6261"	0°00'00.2927"	0°00'00.1643"	0.67
			ΔHt.	58.492sft	0.026sft	-0.033sft	-1.71
			Dist.	15611.760sft	0.022sft	0.022sft	1.17
B46	MC 98-132	MC 98-124	Az.	270°09'41.3692"	0°00'00.0355"	0°00'00.0667"	0.23
			ΔHt.	-64.404sft	0.029sft	0.031sft	1.70
			Dist.	15756.584sft	0.003sft	0.018sft	0.85
B66	SC 36-82-21	MC 98-108	Az.	90°54'21.6833"	0°00'00.0355"	-0°00'00.5351"	-1.70

			ΔHt.	-8.758sft	0.041sft	-0.025sft	-1.24
			Dist.	15754.164sft	0.003sft	0.020sft	0.90
B200	P04	P07	Az.	180°11'27.6245"	0°00'00.3507"	0°00'00.3690"	1.68
			ΔHt.	9.259sft	0.031sft	0.022sft	1.27
			Dist.	15911.237sft	0.028sft	0.019sft	1.14
B3	F05	NGS G 10	Az.	7°21'22.5161"	0°00'00.3898"	-0°00'00.4379"	-1.67
			ΔHt.	-70.191sft	0.034sft	0.004sft	0.24
			Dist.	13682.292sft	0.026sft	0.021sft	1.21
B255	P06	P05	Az.	290°18'04.7899"	0°00'00.3528"	-0°00'00.2845"	-1.32
			ΔHt.	-99.814sft	0.035sft	0.039sft	1.67
			Dist.	16426.310sft	0.028sft	0.004sft	0.25
B227	P06	DYER	Az.	179°34'48.5622"	0°00'00.1361"	0°00'00.1221"	1.14
			ΔHt.	40.574sft	0.031sft	0.021sft	1.02
			Dist.	35454.446sft	0.024sft	0.031sft	1.64
B331	R04	R02	Az.	359°37'32.1999"	0°00'00.3825"	-0°00'00.0416"	-0.20
			ΔHt.	144.444sft	0.035sft	-0.026sft	-1.62
			Dist.	15883.415sft	0.030sft	-0.004sft	-0.29
B342	T01	S02	Az.	267°46'27.5275"	0°00'00.4301"	0°00'00.1109"	0.51
			ΔHt.	45.777sft	0.034sft	0.025sft	1.60
			Dist.	14944.340sft	0.030sft	-0.022sft	-1.40
B243	NGS D 5	P06	Az.	277°19'08.4994"	0°00'00.1048"	-0°00'00.1025"	-1.58
			ΔHt.	-11.855sft	0.035sft	0.018sft	1.00
			Dist.	56331.170sft	0.027sft	0.013sft	0.75
B155	MC 98-139	B01	Az.	181°01'41.8071"	0°00'00.3636"	0°00'00.0658"	0.30
			ΔHt.	20.427sft	0.037sft	-0.024sft	-1.58
			Dist.	15640.300sft	0.029sft	0.013sft	0.75
B333	R01	Q03	Az.	261°15'48.5182"	0°00'00.4247"	0°00'00.1395"	0.59
			ΔHt.	74.458sft	0.035sft	-0.030sft	-1.57
			Dist.	14563.799sft	0.029sft	-0.009sft	-0.57
B327	S01	S03	Az.	170°28'34.8548"	0°00'00.3111"	-0°00'00.0396"	-0.24
			ΔHt.	0.254sft	0.036sft	0.030sft	1.56
			Dist.	19666.817sft	0.031sft	-0.012sft	-0.72
B12	H02	H04	Az.	180°02'42.4287"	0°00'00.3928"	-0°00'00.1884"	-0.81
			ΔHt.	88.522sft	0.031sft	0.025sft	1.56

			Dist.	14520.735sft	0.028sft	-0.004sft	-0.26
B321	O07	P01	Az.	89°21'25.3113"	0°00'00.3435"	0°00'00.0296"	0.20
			ΔHt.	-18.298sft	0.045sft	0.007sft	0.35
			Dist.	20995.848sft	0.033sft	-0.023sft	-1.55
B6	D03	D04	Az.	91°03'16.8527"	0°00'00.3744"	0°00'00.3236"	1.54
			ΔHt.	54.180sft	0.034sft	0.013sft	0.90
			Dist.	15764.661sft	0.028sft	0.014sft	0.90
B138	H02	H01	Az.	271°35'05.3775"	0°00'00.3706"	0°00'00.0730"	0.34
			ΔHt.	119.103sft	0.034sft	-0.028sft	-1.53
			Dist.	16118.261sft	0.028sft	0.003sft	0.18
B139	I01	H02	Az.	268°47'18.3311"	0°00'00.4193"	-0°00'00.1630"	-0.80
			ΔHt.	-73.894sft	0.041sft	0.030sft	1.53
			Dist.	15715.049sft	0.031sft	-0.002sft	-0.14
B97	K01	I04	Az.	356°19'12.9819"	0°00'00.4259"	0°00'00.0981"	0.54
			ΔHt.	-46.640sft	0.041sft	-0.026sft	-1.52
			Dist.	16605.809sft	0.035sft	0.014sft	0.91
B145	L01	L03	Az.	179°35'13.3874"	0°00'00.4329"	0°00'00.0417"	0.22
			ΔHt.	-48.344sft	0.038sft	0.022sft	1.51
			Dist.	15683.766sft	0.034sft	-0.014sft	-0.96
B222	Q04	NGS A 5	Az.	358°45'01.7205"	0°00'00.8896"	0°00'00.7479"	1.08
			ΔHt.	7.224sft	0.037sft	0.009sft	0.42
			Dist.	5618.639sft	0.025sft	0.030sft	1.49
B341	M02	R01	Az.	170°09'41.6262"	0°00'00.3795"	0°00'00.0181"	0.09
			ΔHt.	-97.812sft	0.036sft	-0.024sft	-1.49
			Dist.	15788.919sft	0.030sft	0.013sft	0.81
B332	R05	Q03	Az.	355°55'11.2983"	0°00'00.3482"	-0°00'00.0229"	-0.11
			ΔHt.	-69.232sft	0.031sft	-0.024sft	-1.48
			Dist.	15930.537sft	0.028sft	0.021sft	1.26
B58	C02	MC 98-124	Az.	319°35'46.7351"	0°00'00.2401"	-0°00'00.1985"	-1.04
			ΔHt.	-28.182sft	0.030sft	-0.019sft	-0.86
			Dist.	20247.467sft	0.024sft	-0.028sft	-1.47
B196	Q04	Q05	Az.	184°58'03.0645"	0°00'00.3667"	-0°00'00.0038"	-0.02
			ΔHt.	-65.498sft	0.033sft	0.010sft	0.59
			Dist.	15915.072sft	0.029sft	0.024sft	1.47

B260	N03	N01	Az.	352°27'06.3714"	0°00'00.4344"	0°00'00.0782"	0.41
			ΔHt.	-42.375sft	0.044sft	0.009sft	0.54
			Dist.	15958.513sft	0.035sft	0.022sft	1.46
B140	L01	H05	Az.	275°34'04.7976"	0°00'00.4477"	-0°00'00.2286"	-1.14
			ΔHt.	-56.647sft	0.041sft	-0.028sft	-1.45
			Dist.	15411.040sft	0.033sft	0.003sft	0.21
B208	L02	M02	Az.	268°57'35.3073"	0°00'00.4097"	-0°00'00.2782"	-1.42
			ΔHt.	-76.675sft	0.048sft	0.010sft	0.37
			Dist.	17347.442sft	0.034sft	0.002sft	0.12
B252	Q01	P01	Az.	271°16'25.3935"	0°00'00.4481"	-0°00'00.0612"	-0.35
			ΔHt.	-26.823sft	0.042sft	-0.020sft	-1.41
			Dist.	16164.347sft	0.034sft	0.001sft	0.07
B9	MC 98-116	D04	Az.	179°42'06.6261"	0°00'00.2927"	0°00'00.1538"	0.63
			ΔHt.	58.492sft	0.026sft	0.025sft	1.41
			Dist.	15611.760sft	0.022sft	-0.012sft	-0.64
B165	NGS GGI A	K03	Az.	228°14'01.9784"	0°00'00.4674"	-0°00'00.0002"	0.00
			ΔHt.	-118.388sft	0.033sft	-0.003sft	-0.20
			Dist.	11938.744sft	0.027sft	-0.024sft	-1.41
B356	R05	NGS A 5	Az.	287°51'43.3702"	0°00'00.2478"	0°00'00.3138"	0.90
			ΔHt.	15.331sft	0.036sft	-0.031sft	-0.60
			Dist.	18120.684sft	0.021sft	-0.032sft	-1.39
B231	O04	O02	Az.	350°51'12.4241"	0°00'00.4234"	-0°00'00.2827"	-1.39
			ΔHt.	-116.129sft	0.047sft	0.006sft	0.24
			Dist.	16013.026sft	0.035sft	-0.007sft	-0.40
B265	R07	R03	Az.	354°53'12.8911"	0°00'00.3527"	-0°00'00.0739"	-0.33
			ΔHt.	-134.751sft	0.032sft	0.028sft	1.38
			Dist.	15755.585sft	0.028sft	0.007sft	0.41
B202	P07	DYER	Az.	203°49'38.9041"	0°00'00.1352"	-0°00'00.0514"	-0.53
			ΔHt.	43.759sft	0.033sft	0.002sft	0.12
			Dist.	38674.425sft	0.026sft	0.025sft	1.37
B204	P05	P02	Az.	4°01'43.4429"	0°00'00.4548"	0°00'00.1256"	0.59
			ΔHt.	96.209sft	0.034sft	0.019sft	1.37
			Dist.	14079.353sft	0.031sft	0.013sft	0.92
B95	A02	J01	Az.	170°09'15.1503"	0°00'00.4358"	0°00'00.0611"	0.34

			ΔHt.	38.423sft	0.045sft	0.007sft	0.40
			Dist.	16129.322sft	0.035sft	0.020sft	1.35
B261	L02	L03	Az.	89°37'56.1673"	0°00'00.4719"	0°00'00.1042"	0.53
			ΔHt.	-32.402sft	0.039sft	-0.018sft	-1.35
			Dist.	14507.693sft	0.033sft	-0.008sft	-0.57
B117	B02	B01	Az.	269°48'54.5344"	0°00'00.4185"	-0°00'00.0641"	-0.32
			ΔHt.	-36.181sft	0.037sft	0.005sft	0.34
			Dist.	15904.786sft	0.031sft	0.020sft	1.34
B363	R02	R01	Az.	277°37'03.4564"	0°00'00.3861"	0°00'00.0946"	0.48
			ΔHt.	-137.422sft	0.041sft	-0.030sft	-1.34
			Dist.	16996.538sft	0.031sft	-0.008sft	-0.52
B302	P05	NGS GPS 15	Az.	288°51'35.2850"	0°00'00.1054"	-0°00'00.0654"	-0.92
			ΔHt.	102.508sft	0.036sft	0.020sft	1.31
			Dist.	50539.825sft	0.026sft	0.004sft	0.22
B310	S05	R08	Az.	269°56'28.1313"	0°00'00.4338"	0°00'00.3112"	1.31
			ΔHt.	-0.415sft	0.032sft	0.007sft	0.45
			Dist.	14427.445sft	0.029sft	0.006sft	0.38
B116	I03	I04	Az.	85°05'25.4321"	0°00'00.4428"	-0°00'00.0494"	-0.23
			ΔHt.	-5.079sft	0.041sft	0.027sft	1.29
			Dist.	15935.271sft	0.033sft	-0.013sft	-0.79
B185	R07	R05	Az.	317°45'17.1912"	0°00'00.2347"	0°00'00.2268"	1.29
			ΔHt.	13.424sft	0.029sft	0.001sft	0.06
			Dist.	21271.205sft	0.024sft	-0.006sft	-0.32
B237	R04	S05	Az.	137°30'34.7772"	0°00'00.2647"	0°00'00.0722"	0.41
			ΔHt.	-12.490sft	0.030sft	0.024sft	1.28
			Dist.	21344.454sft	0.027sft	-0.012sft	-0.68
B40	E03	SC 36-82-21	Az.	0°02'34.1240"	0°00'00.3407"	0°00'00.2060"	0.90
			ΔHt.	142.329sft	0.035sft	-0.019sft	-1.27
			Dist.	15570.938sft	0.026sft	0.003sft	0.15
B335	S02	S01	Az.	270°01'22.3078"	0°00'00.3972"	-0°00'00.1107"	-0.52
			ΔHt.	-34.179sft	0.038sft	0.026sft	1.26
			Dist.	17093.343sft	0.031sft	-0.018sft	-1.14
B113	MC 98-154	MC 98-146	Az.	270°29'29.4801"	0°00'00.0355"	-0°00'00.3629"	-1.26
			ΔHt.	-11.663sft	0.041sft	-0.001sft	-0.07

			Dist.	16111.266sft	0.003sft	-0.002sft	-0.11
B5	E03	D03	Az.	89°08'20.6200"	0°00'00.3842"	0°00'00.2101"	1.02
			ΔHt.	106.091sft	0.034sft	0.018sft	1.22
			Dist.	15902.325sft	0.029sft	0.020sft	1.26
B306	N04	N03	Az.	257°24'25.9048"	0°00'00.4907"	-0°00'00.0202"	-0.12
			ΔHt.	65.633sft	0.039sft	0.014sft	1.25
			Dist.	14930.837sft	0.035sft	-0.005sft	-0.44
B296	Q05	P07	Az.	269°53'33.3094"	0°00'00.4545"	-0°00'00.3143"	-1.24
			ΔHt.	37.145sft	0.035sft	-0.008sft	-0.43
			Dist.	13774.698sft	0.029sft	-0.014sft	-0.88
B41	F03	E03	Az.	0°07'08.0912"	0°00'00.3619"	0°00'00.2631"	1.24
			ΔHt.	-33.903sft	0.033sft	-0.010sft	-0.61
			Dist.	15877.242sft	0.028sft	-0.008sft	-0.49
B98	MC 98-146	B02	Az.	180°15'09.8097"	0°00'00.3939"	0°00'00.2574"	1.23
			ΔHt.	-15.107sft	0.038sft	-0.001sft	-0.04
			Dist.	15683.554sft	0.031sft	0.012sft	0.72
B128	J04	NGS GGI A	Az.	109°00'26.1523"	0°00'00.5640"	0°00'00.4788"	1.22
			ΔHt.	73.457sft	0.031sft	0.006sft	0.34
			Dist.	9257.694sft	0.025sft	-0.003sft	-0.16
B277	M02	N04	Az.	281°19'01.6093"	0°00'00.4234"	0°00'00.0156"	0.10
			ΔHt.	-93.991sft	0.044sft	0.019sft	1.21
			Dist.	17567.891sft	0.036sft	-0.005sft	-0.35
B357	R03	R01	Az.	1°10'41.2583"	0°00'00.3440"	-0°00'00.0590"	-0.33
			ΔHt.	4.485sft	0.038sft	0.025sft	1.19
			Dist.	18159.826sft	0.031sft	0.016sft	0.92
B171	I04	I02	Az.	0°13'07.2122"	0°00'00.4369"	-0°00'00.0709"	-0.42
			ΔHt.	107.070sft	0.039sft	-0.003sft	-0.20
			Dist.	16169.094sft	0.035sft	0.016sft	1.19
B144	F04	F01	Az.	359°27'59.7197"	0°00'00.4528"	-0°00'00.1715"	-1.18
			ΔHt.	165.282sft	0.039sft	0.009sft	0.87
			Dist.	16360.544sft	0.036sft	-0.005sft	-0.46
B344	S05	S03	Az.	4°08'56.1115"	0°00'00.4002"	0°00'00.0502"	0.22
			ΔHt.	132.958sft	0.033sft	0.019sft	0.94
			Dist.	14618.556sft	0.029sft	-0.019sft	-1.17

B94	MC 98-154	A02	Az.	180°35'27.0170"	0°00'00.3868"	0°00'00.1146"	0.54
			ΔHt.	-71.020sft	0.037sft	0.010sft	0.62
			Dist.	15549.908sft	0.030sft	0.019sft	1.17
B31	MC 98-108	D03	Az.	179°31'09.5863"	0°00'00.3528"	0°00'00.0741"	0.32
			ΔHt.	-27.479sft	0.033sft	-0.017sft	-1.17
			Dist.	15083.502sft	0.026sft	0.010sft	0.60
B106	O01	F04	Az.	1°05'22.7527"	0°00'00.5301"	-0°00'00.1975"	-1.16
			ΔHt.	-106.093sft	0.039sft	0.009sft	0.87
			Dist.	13965.195sft	0.036sft	-0.006sft	-0.49
B366	L04	S02	Az.	175°28'00.8395"	0°00'00.3976"	-0°00'00.1301"	-0.66
			ΔHt.	-7.609sft	0.034sft	0.017sft	1.15
			Dist.	15896.053sft	0.031sft	-0.005sft	-0.32
B67	G03	G01	Az.	358°10'55.8395"	0°00'00.4708"	-0°00'00.0070"	-0.04
			ΔHt.	39.689sft	0.038sft	0.015sft	1.13
			Dist.	15217.515sft	0.035sft	0.001sft	0.04
B55	G01	D03	Az.	0°42'38.2456"	0°00'00.4180"	-0°00'00.0076"	-0.05
			ΔHt.	-0.191sft	0.040sft	0.017sft	1.13
			Dist.	17224.215sft	0.035sft	0.000sft	0.01
B330	R04	S03	Az.	94°16'59.1841"	0°00'00.3689"	0°00'00.0518"	0.24
			ΔHt.	120.468sft	0.032sft	-0.019sft	-1.12
			Dist.	15509.522sft	0.027sft	-0.016sft	-0.99
B69	MC 98-124	C01	Az.	180°57'11.2149"	0°00'00.2735"	-0°00'00.1798"	-0.73
			ΔHt.	-28.749sft	0.025sft	0.021sft	1.11
			Dist.	15669.727sft	0.021sft	-0.012sft	-0.65
B322	NGS V 4	O01	Az.	0°15'21.0301"	0°00'00.4509"	-0°00'00.1871"	-1.11
			ΔHt.	-38.140sft	0.042sft	0.001sft	0.09
			Dist.	15699.121sft	0.036sft	0.008sft	0.57
B35	C02	C01	Az.	268°56'05.1569"	0°00'00.3972"	0°00'00.0930"	0.36
			ΔHt.	-56.931sft	0.029sft	0.019sft	1.10
			Dist.	13395.534sft	0.025sft	0.002sft	0.10
B50	F02	F01	Az.	270°09'29.8007"	0°00'00.3239"	-0°00'00.0712"	-0.38
			ΔHt.	156.482sft	0.032sft	0.020sft	1.10
			Dist.	18475.432sft	0.029sft	-0.013sft	-0.79
B336	S01	R02	Az.	259°12'22.8450"	0°00'00.5213"	-0°00'00.2856"	-1.09

			ΔHt.	24.230sft	0.037sft	-0.006sft	-0.34
			Dist.	12528.880sft	0.031sft	0.000sft	0.01
B297	Q02	P04	Az.	220°00'01.0285"	0°00'00.2210"	0°00'00.1665"	1.01
			ΔHt.	-7.962sft	0.031sft	-0.006sft	-0.29
			Dist.	23381.223sft	0.025sft	0.020sft	1.08
B168	MC 98-154	NGS D 88	Az.	114°05'29.6341"	0°00'00.0355"	-0°00'00.0046"	-0.01
			ΔHt.	6.621sft	0.033sft	0.017sft	1.08
			Dist.	12293.099sft	0.002sft	-0.002sft	-0.10
B63	F03	F06	Az.	180°09'47.3678"	0°00'00.3601"	-0°00'00.1512"	-0.74
			ΔHt.	-57.094sft	0.032sft	0.001sft	0.06
			Dist.	16259.301sft	0.029sft	0.018sft	1.08
B70	MC 98-124	C01	Az.	180°57'11.2149"	0°00'00.2735"	-0°00'00.1503"	-0.61
			ΔHt.	-28.749sft	0.025sft	0.013sft	0.70
			Dist.	15669.727sft	0.021sft	-0.020sft	-1.07
B175	B01	I01	Az.	179°54'13.6849"	0°00'00.3971"	0°00'00.1102"	0.55
			ΔHt.	-18.771sft	0.040sft	0.018sft	1.07
			Dist.	15722.301sft	0.031sft	0.014sft	0.91
B239	R05	R06	Az.	175°55'04.6865"	0°00'00.3379"	0°00'00.0468"	0.21
			ΔHt.	-2.541sft	0.031sft	0.018sft	1.06
			Dist.	15833.693sft	0.027sft	0.012sft	0.71
B60	SC 31-82-21	E01	Az.	181°33'00.8123"	0°00'00.3143"	0°00'00.0273"	0.11
			ΔHt.	-109.417sft	0.036sft	-0.017sft	-1.05
			Dist.	15707.842sft	0.024sft	-0.009sft	-0.47
B311	R04	R03	Az.	269°56'08.2349"	0°00'00.3456"	0°00'00.2260"	1.05
			ΔHt.	2.537sft	0.036sft	0.019sft	0.75
			Dist.	17337.027sft	0.028sft	-0.004sft	-0.24
B88	K04	L04	Az.	264°07'51.9878"	0°00'00.3415"	0°00'00.2372"	1.04
			ΔHt.	98.601sft	0.030sft	-0.020sft	-1.04
			Dist.	16262.190sft	0.026sft	-0.001sft	-0.03
B137	MC 98-146	MC 98-139	Az.	269°38'43.2774"	0°00'00.0355"	-0°00'00.0177"	-0.06
			ΔHt.	-71.715sft	0.038sft	0.004sft	0.25
			Dist.	15683.021sft	0.003sft	0.023sft	1.04
B278	M02	M01	Az.	359°43'10.8667"	0°00'00.4663"	-0°00'00.2121"	-1.01
			ΔHt.	86.038sft	0.040sft	0.008sft	0.55

			Dist.	14301.512sft	0.033sft	0.001sft	0.06
B81	H02	H03	Az.	224°41'59.6821"	0°00'00.2407"	0°00'00.0445"	0.28
			ΔHt.	61.624sft	0.031sft	0.020sft	1.00
			Dist.	22486.339sft	0.026sft	-0.014sft	-0.81
B36	H04	H03	Az.	264°42'46.9963"	0°00'00.3745"	-0°00'00.0370"	-0.18
			ΔHt.	-26.898sft	0.032sft	-0.010sft	-0.67
			Dist.	15872.838sft	0.028sft	0.016sft	1.00
B197	Q04	P04	Az.	270°07'01.0041"	0°00'00.3674"	-0°00'00.1544"	-0.61
			ΔHt.	-37.612sft	0.031sft	0.015sft	0.71
			Dist.	15089.614sft	0.026sft	0.018sft	0.99
B203	DYER	P05	Az.	339°09'36.5403"	0°00'00.1163"	0°00'00.0772"	0.92
			ΔHt.	-140.387sft	0.035sft	0.021sft	0.99
			Dist.	44033.637sft	0.025sft	0.013sft	0.71
B312	NGS D 5	R06	Az.	317°30'56.2383"	0°00'00.5873"	0°00'00.2935"	0.72
			ΔHt.	2.665sft	0.037sft	-0.029sft	-0.99
			Dist.	9760.635sft	0.027sft	0.006sft	0.31
B264	R08	R07	Az.	270°10'40.7429"	0°00'00.3845"	0°00'00.0130"	0.06
			ΔHt.	150.194sft	0.032sft	-0.016sft	-0.99
			Dist.	15933.521sft	0.029sft	-0.011sft	-0.64
B314	NGS A 5	Q02	Az.	0°17'20.4789"	0°00'00.3471"	0°00'00.1604"	0.48
			ΔHt.	-36.873sft	0.033sft	0.013sft	0.56
			Dist.	12324.599sft	0.022sft	-0.021sft	-0.98
B96	K02	K01	Az.	267°22'23.3177"	0°00'00.4728"	0°00'00.1938"	0.97
			ΔHt.	5.694sft	0.041sft	-0.009sft	-0.55
			Dist.	15064.709sft	0.034sft	-0.001sft	-0.08
B78	L01	K01	Az.	92°25'00.6709"	0°00'00.4027"	-0°00'00.0024"	-0.01
			ΔHt.	-12.060sft	0.038sft	-0.015sft	-0.97
			Dist.	17046.708sft	0.033sft	0.006sft	0.44
B75	MC 98-162	A03	Az.	183°19'44.2632"	0°00'00.3263"	0°00'00.2012"	0.82
			ΔHt.	24.591sft	0.036sft	-0.019sft	-0.97
			Dist.	15602.763sft	0.026sft	-0.008sft	-0.42
B102	H04	H05	Az.	178°32'50.6502"	0°00'00.4101"	-0°00'00.1839"	-0.97
			ΔHt.	-59.243sft	0.036sft	-0.005sft	-0.38
			Dist.	15757.789sft	0.032sft	-0.004sft	-0.31

B30	G03	F06	Az.	270°14'26.9139"	0°00'00.4026"	0°00'00.1684"	0.93
			ΔHt.	-89.785sft	0.035sft	0.012sft	0.95
			Dist.	16271.047sft	0.031sft	-0.001sft	-0.07
B308	K05	T02	Az.	180°09'28.8790"	0°00'00.4161"	-0°00'00.0047"	-0.03
			ΔHt.	-42.329sft	0.038sft	-0.014sft	-0.94
			Dist.	16283.543sft	0.033sft	0.000sft	-0.02
B65	MC 98-108	MC 98-116	Az.	89°08'06.8896"	0°00'00.0355"	0°00'00.0666"	0.23
			ΔHt.	-31.791sft	0.036sft	0.015sft	0.94
			Dist.	15798.548sft	0.003sft	0.018sft	0.84
B283	R03	R05	Az.	270°14'05.5981"	0°00'00.4411"	0°00'00.1222"	0.45
			ΔHt.	148.175sft	0.033sft	0.017sft	0.94
			Dist.	12896.684sft	0.027sft	0.000sft	0.02
B179	O02	O01	Az.	278°08'45.3453"	0°00'00.5138"	-0°00'00.1912"	-0.93
			ΔHt.	111.201sft	0.039sft	0.009sft	0.57
			Dist.	13464.747sft	0.033sft	-0.002sft	-0.13
B17	E03	F06	Az.	180°08'28.9663"	0°00'00.1829"	0°00'00.0967"	0.93
			ΔHt.	-23.191sft	0.032sft	-0.010sft	-0.56
			Dist.	32136.541sft	0.029sft	-0.005sft	-0.30
B130	A03	J02	Az.	177°35'45.6827"	0°00'00.4133"	0°00'00.1719"	0.92
			ΔHt.	-99.263sft	0.041sft	-0.005sft	-0.46
			Dist.	15973.370sft	0.033sft	0.004sft	0.24
B91	J03	J04	Az.	111°16'26.0679"	0°00'00.3925"	0°00'00.1635"	0.89
			ΔHt.	-57.230sft	0.042sft	0.011sft	0.54
			Dist.	17157.986sft	0.032sft	0.004sft	0.26
B295	NGS D 5	Q05	Az.	285°06'36.1447"	0°00'00.2227"	0°00'00.0931"	0.58
			ΔHt.	-52.185sft	0.038sft	-0.033sft	-0.89
			Dist.	27177.340sft	0.028sft	0.000sft	-0.01
B104	N01	G03	Az.	9°03'10.9189"	0°00'00.4353"	0°00'00.0092"	0.05
			ΔHt.	126.438sft	0.049sft	0.005sft	0.20
			Dist.	16115.173sft	0.036sft	0.015sft	0.89
B370	S06	S04	Az.	354°19'27.8456"	0°00'00.4320"	-0°00'00.1774"	-0.88
			ΔHt.	93.818sft	0.037sft	0.010sft	0.62
			Dist.	14979.062sft	0.032sft	-0.004sft	-0.29
B108	K03	K02	Az.	270°13'07.4520"	0°00'00.4004"	0°00'00.1272"	0.61

			ΔHt.	53.451sft	0.034sft	0.000sft	0.02
			Dist.	15729.984sft	0.030sft	-0.014sft	-0.87
B51	F05	F02	Az.	9°15'55.5716"	0°00'00.3566"	-0°00'00.0457"	-0.21
			ΔHt.	-81.746sft	0.035sft	-0.024sft	-0.86
			Dist.	16560.375sft	0.029sft	-0.014sft	-0.77
B159	N02	M01	Az.	96°19'35.4791"	0°00'00.5011"	-0°00'00.0144"	-0.10
			ΔHt.	36.849sft	0.046sft	0.006sft	0.60
			Dist.	15858.083sft	0.036sft	0.010sft	0.85
B272	DYER	NGS GPS 15	Az.	312°10'49.6837"	0°00'00.0356"	-0°00'00.0004"	-0.01
			ΔHt.	-37.880sft	0.041sft	0.022sft	0.85
			Dist.	85665.455sft	0.015sft	-0.013sft	-0.63
B48	E01	E02	Az.	89°28'34.2420"	0°00'00.3905"	0°00'00.0043"	0.02
			ΔHt.	103.479sft	0.034sft	-0.016sft	-0.85
			Dist.	15868.594sft	0.030sft	0.000sft	-0.01
B290	T04	NGS L 87	Az.	133°28'25.1091"	0°00'00.1341"	0°00'00.0056"	0.07
			ΔHt.	-13.512sft	0.044sft	-0.025sft	-0.84
			Dist.	43344.174sft	0.028sft	-0.009sft	-0.52
B147	NGS X 87	NGS GGI A	Az.	214°02'04.7316"	0°00'00.9702"	0°00'00.4341"	0.83
			ΔHt.	-6.230sft	0.034sft	-0.010sft	-0.63
			Dist.	6291.379sft	0.030sft	0.002sft	0.13
B192	T05	S06	Az.	273°05'05.3291"	0°00'00.4246"	-0°00'00.1223"	-0.67
			ΔHt.	-11.180sft	0.039sft	0.010sft	0.82
			Dist.	16022.549sft	0.032sft	0.002sft	0.17
B114	J01	I02	Az.	270°06'03.5290"	0°00'00.4016"	-0°00'00.1340"	-0.82
			ΔHt.	11.275sft	0.047sft	0.014sft	0.71
			Dist.	18689.201sft	0.035sft	-0.006sft	-0.43
B220	R07	R06	Az.	269°47'33.9854"	0°00'00.4506"	-0°00'00.0034"	-0.01
			ΔHt.	10.882sft	0.036sft	-0.020sft	-0.82
			Dist.	13183.258sft	0.028sft	-0.009sft	-0.50
B189	NGS D 5	DYER	Az.	243°04'56.3615"	0°00'00.0879"	-0°00'00.0425"	-0.50
			ΔHt.	28.719sft	0.040sft	0.030sft	0.82
			Dist.	62463.402sft	0.026sft	0.002sft	0.07
B170	J03	K02	Az.	179°36'26.7672"	0°00'00.3962"	0°00'00.0569"	0.32
			ΔHt.	-48.711sft	0.041sft	-0.016sft	-0.81

			Dist.	17147.157sft	0.034sft	-0.006sft	-0.38
B326	K04	T01	Az.	179°59'40.6785"	0°00'00.3642"	-0°00'00.1271"	-0.64
			ΔHt.	45.215sft	0.034sft	-0.015sft	-0.81
			Dist.	16929.663sft	0.031sft	-0.002sft	-0.13
B317	P03	P06	Az.	179°56'43.9087"	0°00'00.3892"	0°00'00.0474"	0.24
			ΔHt.	-14.218sft	0.032sft	0.012sft	0.80
			Dist.	15834.580sft	0.030sft	0.011sft	0.70
B158	I03	L01	Az.	180°18'16.8806"	0°00'00.4287"	0°00'00.0107"	0.05
			ΔHt.	53.622sft	0.037sft	-0.014sft	-0.79
			Dist.	14488.301sft	0.031sft	0.002sft	0.14
B164	K03	K05	Az.	179°51'34.1251"	0°00'00.4273"	-0°00'00.1483"	-0.78
			ΔHt.	47.194sft	0.036sft	-0.007sft	-0.55
			Dist.	15548.827sft	0.033sft	-0.003sft	-0.24
B14	SC TP411	SC 36-82-21	Az.	90°15'38.8570"	0°00'00.0355"	-0°00'00.1827"	-0.78
			ΔHt.	33.513sft	0.040sft	0.010sft	0.63
			Dist.	21101.291sft	0.004sft	-0.002sft	-0.07
B122	H03	M01	Az.	180°45'33.1584"	0°00'00.3672"	0°00'00.0757"	0.40
			ΔHt.	17.723sft	0.045sft	0.023sft	0.78
			Dist.	17568.627sft	0.034sft	-0.006sft	-0.30
B148	J02	NGS X 87	Az.	146°23'11.5831"	0°00'00.2842"	0°00'00.1074"	0.77
			ΔHt.	89.270sft	0.037sft	-0.011sft	-0.65
			Dist.	22625.467sft	0.031sft	-0.011sft	-0.70
B250	R06	Q05	Az.	269°39'09.1185"	0°00'00.3119"	-0°00'00.0319"	-0.19
			ΔHt.	-54.849sft	0.034sft	-0.007sft	-0.42
			Dist.	19645.839sft	0.029sft	-0.012sft	-0.76
B149	MC 98-162	NGS D 88	Az.	221°55'56.3882"	0°00'00.0355"	0°00'00.4984"	0.72
			ΔHt.	37.497sft	0.034sft	0.000sft	0.00
			Dist.	6793.571sft	0.001sft	0.017sft	0.75
B352	L03	S01	Az.	180°04'56.4244"	0°00'00.3971"	0°00'00.1524"	0.75
			ΔHt.	-28.892sft	0.037sft	0.001sft	0.06
			Dist.	15864.389sft	0.032sft	-0.004sft	-0.23
B178	N02	N01	Az.	269°51'19.1490"	0°00'00.4997"	0°00'00.0245"	0.11
			ΔHt.	-119.922sft	0.061sft	-0.018sft	-0.50
			Dist.	18045.037sft	0.038sft	0.011sft	0.74

B217	T06	T05	Az.	260°16'02.1947"	0°00'00.4071"	-0°00'00.0498"	-0.25
			ΔHt.	-123.743sft	0.034sft	-0.010sft	-0.74
			Dist.	15425.632sft	0.030sft	-0.002sft	-0.12
B62	F02	F03	Az.	89°53'45.3302"	0°00'00.4502"	-0°00'00.0913"	-0.35
			ΔHt.	67.568sft	0.031sft	-0.012sft	-0.74
			Dist.	13112.178sft	0.028sft	-0.001sft	-0.03
B131	NGS D 88	A03	Az.	160°56'14.0250"	0°00'00.4570"	-0°00'00.0695"	-0.21
			ΔHt.	-12.905sft	0.034sft	0.005sft	0.28
			Dist.	11132.234sft	0.025sft	0.014sft	0.73
B123	N01	O03	Az.	270°13'17.1393"	0°00'00.4605"	0°00'00.1382"	0.73
			ΔHt.	-3.801sft	0.055sft	-0.014sft	-0.53
			Dist.	18208.791sft	0.037sft	0.009sft	0.69
B161	O03	O02	Az.	269°53'35.1438"	0°00'00.5442"	0°00'00.1043"	0.63
			ΔHt.	16.074sft	0.045sft	-0.004sft	-0.35
			Dist.	13903.667sft	0.036sft	0.009sft	0.73
B169	J01	J03	Az.	190°34'34.8994"	0°00'00.4719"	0°00'00.0683"	0.36
			ΔHt.	-6.137sft	0.044sft	-0.005sft	-0.28
			Dist.	15129.907sft	0.035sft	0.010sft	0.71
B47	MC 98-132	MC 98-124	Az.	270°09'41.3692"	0°00'00.0355"	-0°00'00.0289"	-0.09
			ΔHt.	-64.404sft	0.029sft	0.009sft	0.33
			Dist.	15756.584sft	0.003sft	0.016sft	0.71
B127	K04	K05	Az.	95°46'03.6293"	0°00'00.4164"	0°00'00.0524"	0.26
			ΔHt.	110.037sft	0.034sft	-0.005sft	-0.32
			Dist.	15866.018sft	0.031sft	-0.011sft	-0.70
B157	I01	I03	Az.	179°46'02.1006"	0°00'00.3509"	0°00'00.1308"	0.70
			ΔHt.	-41.589sft	0.042sft	-0.012sft	-0.46
			Dist.	17613.342sft	0.031sft	0.002sft	0.12
B318	P06	USGS ET 20 JHB	Az.	104°43'36.2717"	0°00'00.6292"	-0°00'00.1883"	-0.69
			ΔHt.	-9.374sft	0.035sft	-0.004sft	-0.25
			Dist.	10899.429sft	0.033sft	0.000sft	0.02
B247	S06	S05	Az.	266°45'57.0240"	0°00'00.4259"	-0°00'00.0632"	-0.29
			ΔHt.	-3.415sft	0.039sft	0.002sft	0.11
			Dist.	17082.774sft	0.033sft	-0.011sft	-0.68
B289	T02	T04	Az.	176°04'16.8684"	0°00'00.3318"	0°00'00.0622"	0.41

			ΔHt.	-11.234sft	0.043sft	-0.013sft	-0.63
			Dist.	20363.459sft	0.034sft	0.002sft	0.15
B282	R04	R08	Az.	180°02'10.5471"	0°00'00.3104"	0°00'00.1494"	0.62
			ΔHt.	-12.905sft	0.026sft	0.008sft	0.40
			Dist.	15762.823sft	0.024sft	-0.012sft	-0.63
B100	H02	C01	Az.	315°00'27.6266"	0°00'00.2275"	-0°00'00.0917"	-0.58
			ΔHt.	16.081sft	0.030sft	-0.012sft	-0.62
			Dist.	22817.773sft	0.025sft	0.003sft	0.19
B156	H01	H03	Az.	178°55'50.7151"	0°00'00.3770"	-0°00'00.0446"	-0.22
			ΔHt.	-57.478sft	0.038sft	0.015sft	0.62
			Dist.	16431.737sft	0.031sft	-0.007sft	-0.38
B266	R07	NGS D 5	Az.	222°17'30.9202"	0°00'00.5714"	-0°00'00.2416"	-0.61
			ΔHt.	8.217sft	0.038sft	0.017sft	0.57
			Dist.	9797.693sft	0.028sft	0.009sft	0.44
B72	K04	K02	Az.	0°01'46.9637"	0°00'00.4656"	-0°00'00.1303"	-0.59
			ΔHt.	116.295sft	0.035sft	0.004sft	0.25
			Dist.	14003.834sft	0.033sft	-0.001sft	-0.09
B348	M02	Q03	Az.	213°21'11.9651"	0°00'00.2867"	-0°00'00.0968"	-0.57
			ΔHt.	-23.354sft	0.038sft	0.012sft	0.47
			Dist.	21274.460sft	0.030sft	0.004sft	0.21
B209	T03	T04	Az.	105°11'23.4888"	0°00'00.4054"	-0°00'00.0685"	-0.32
			ΔHt.	-33.483sft	0.036sft	-0.008sft	-0.57
			Dist.	15035.264sft	0.029sft	-0.003sft	-0.21
B254	P07	P06	Az.	270°16'23.3576"	0°00'00.3308"	-0°00'00.0577"	-0.26
			ΔHt.	3.185sft	0.027sft	0.006sft	0.36
			Dist.	15860.094sft	0.025sft	0.009sft	0.52
B263	NGS L 87	T05	Az.	290°11'45.6315"	0°00'00.1208"	0°00'00.0070"	0.10
			ΔHt.	-104.258sft	0.037sft	0.001sft	0.04
			Dist.	48395.481sft	0.028sft	-0.008sft	-0.51
B301	P07	USGS ET 20 JHB	Az.	243°04'27.7478"	0°00'01.1446"	-0°00'00.2439"	-0.50
			ΔHt.	-6.189sft	0.034sft	0.005sft	0.36
			Dist.	5967.280sft	0.033sft	0.007sft	0.48
B10	C02	MC 98-132	Az.	9°42'58.9838"	0°00'00.3110"	-0°00'00.0520"	-0.22
			ΔHt.	36.222sft	0.033sft	0.009sft	0.49

			Dist.	15599.514sft	0.024sft	-0.007sft	-0.40
B92	A03	A02	Az.	269°59'38.8784"	0°00'00.4315"	0°00'00.0017"	0.01
			ΔHt.	-64.735sft	0.036sft	-0.005sft	-0.32
			Dist.	15023.528sft	0.031sft	-0.007sft	-0.48
B21	H03	G04	Az.	270°21'00.3888"	0°00'00.3821"	0°00'00.0781"	0.47
			ΔHt.	-99.273sft	0.041sft	0.004sft	0.22
			Dist.	18668.780sft	0.034sft	-0.001sft	-0.10
B73	NGS X 87	J04	Az.	259°51'51.5514"	0°00'00.4832"	-0°00'00.0438"	-0.17
			ΔHt.	-79.686sft	0.032sft	-0.008sft	-0.46
			Dist.	12467.178sft	0.029sft	0.004sft	0.26
B172	B02	I02	Az.	179°36'09.2921"	0°00'00.4348"	-0°00'00.0098"	-0.06
			ΔHt.	5.448sft	0.038sft	-0.005sft	-0.40
			Dist.	15865.156sft	0.034sft	0.006sft	0.46
B90	J04	K03	Az.	180°46'38.4373"	0°00'00.5455"	-0°00'00.1295"	-0.43
			ΔHt.	-44.932sft	0.032sft	-0.003sft	-0.21
			Dist.	10971.740sft	0.029sft	0.003sft	0.20
B245	T04	T06	Az.	173°26'08.3803"	0°00'00.5859"	0°00'00.0042"	0.01
			ΔHt.	5.973sft	0.041sft	-0.009sft	-0.43
			Dist.	10635.473sft	0.031sft	0.004sft	0.25
B129	J02	J04	Az.	179°18'33.0902"	0°00'00.2938"	-0°00'00.0260"	-0.17
			ΔHt.	9.583sft	0.037sft	0.005sft	0.26
			Dist.	21044.336sft	0.030sft	0.007sft	0.41
B345	S03	S04	Az.	84°52'47.2703"	0°00'00.4152"	0°00'00.0924"	0.41
			ΔHt.	-35.725sft	0.035sft	-0.006sft	-0.35
			Dist.	14563.291sft	0.028sft	-0.002sft	-0.10
B309	NGS L 87	T06	Az.	302°33'53.9942"	0°00'00.1675"	0°00'00.0062"	0.07
			ΔHt.	19.485sft	0.036sft	-0.007sft	-0.41
			Dist.	35849.223sft	0.029sft	-0.002sft	-0.13
B262	T01	T02	Az.	93°26'44.1207"	0°00'00.4197"	0°00'00.0360"	0.19
			ΔHt.	22.494sft	0.036sft	0.005sft	0.33
			Dist.	15778.626sft	0.031sft	-0.006sft	-0.39
B284	R05	NGS D 5	Az.	161°26'01.8911"	0°00'00.2062"	0°00'00.0670"	0.38
			ΔHt.	-5.206sft	0.035sft	-0.006sft	-0.19
			Dist.	24251.600sft	0.025sft	0.005sft	0.22

B29	F06	F05	Az.	269°38'12.4106"	0°00'00.3945"	0°00'00.0102"	0.05
			ΔHt.	71.273sft	0.034sft	0.005sft	0.34
			Dist.	15743.532sft	0.030sft	0.002sft	0.13
B163	L04	L03	Az.	270°05'12.4885"	0°00'00.4305"	-0°00'00.0502"	-0.25
			ΔHt.	-12.896sft	0.037sft	-0.004sft	-0.21
			Dist.	15803.583sft	0.032sft	0.001sft	0.04

Geoid Observations

Number of Observations : 103

Number of Outliers : 0

Observation Adjustment (Critical Tau = 3.94). Any outliers are in **red**.

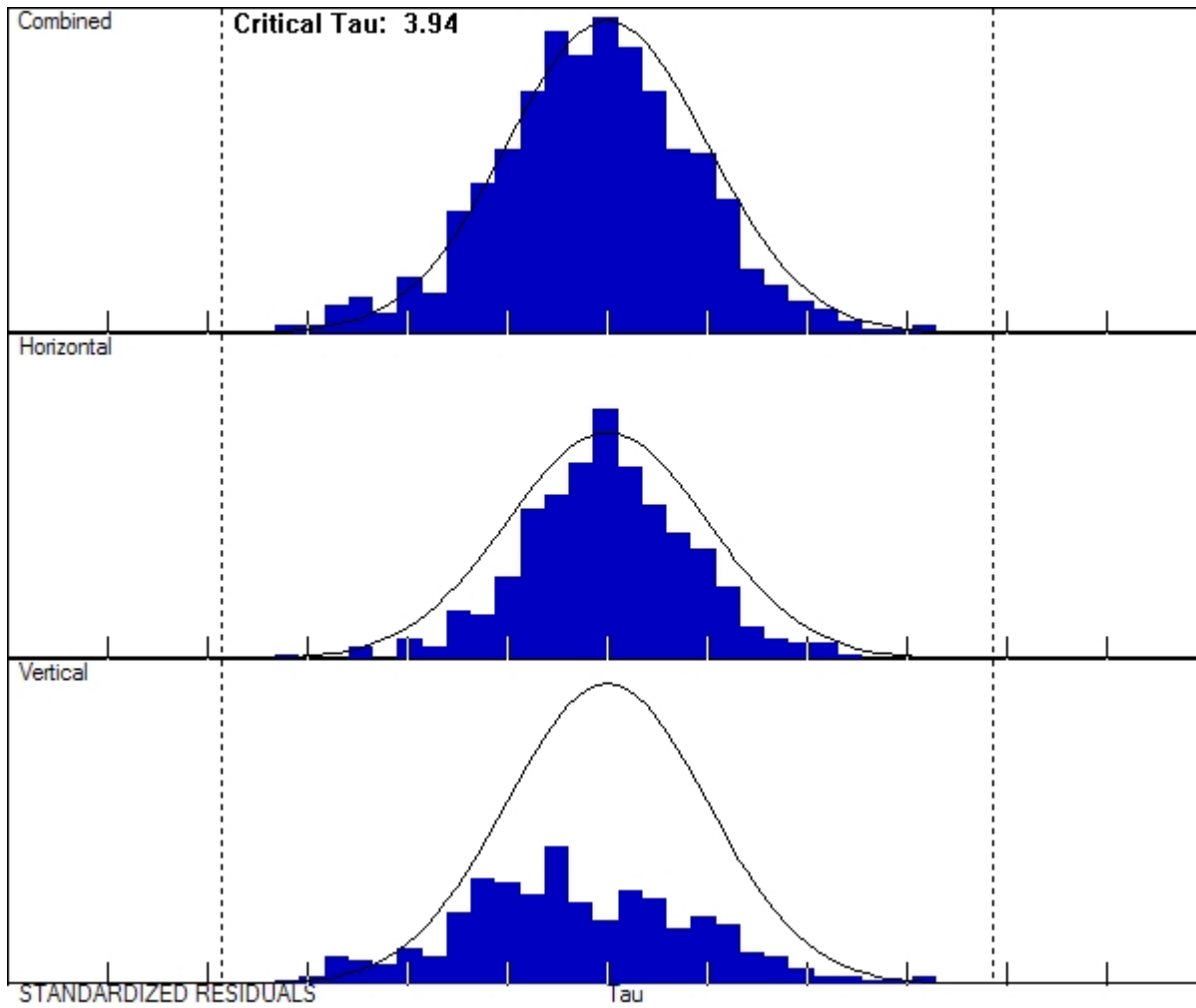
Observation ID	Point Name	Separation	A-posteriori Error (1.96σ)	Residual	Standardized Residual
G31	NGS X 87	-105.171sft	0.491sft	-0.425sft	-2.82
G56	NGS GGI A	-105.176sft	0.501sft	-0.393sft	-2.78
G57	J02	-104.915sft	0.523sft	-0.332sft	-2.78
G32	J04	-105.107sft	0.509sft	-0.367sft	-2.74
G46	K03	-105.176sft	0.515sft	-0.338sft	-2.65
G55	K05	-105.267sft	0.529sft	-0.277sft	-2.49
G33	A03	-104.770sft	0.526sft	-0.282sft	-2.45
G47	J03	-104.936sft	0.520sft	-0.297sft	-2.43
G49	J01	-104.827sft	0.523sft	-0.287sft	-2.41
G30	K02	-105.076sft	0.521sft	-0.289sft	-2.38
G28	K04	-105.174sft	0.527sft	-0.258sft	-2.26
G93	T02	-105.340sft	0.542sft	-0.207sft	-2.21
G58	NGS D 88	-104.682sft	0.516sft	-0.262sft	-2.06
G64	T01	-105.268sft	0.536sft	-0.208sft	-2.03
G38	K01	-104.948sft	0.521sft	-0.240sft	-1.99
G36	A02	-104.671sft	0.522sft	-0.237sft	-1.96
G45	L04	-105.054sft	0.524sft	-0.223sft	-1.90
G50	I04	-104.811sft	0.520sft	-0.231sft	-1.89

G65	T03	-105.342sft	0.546sft	-0.151sft	-1.71
G74	T04	-105.396sft	0.554sft	-0.121sft	-1.64
G37	I02	-104.657sft	0.519sft	-0.201sft	-1.63
G54	L03	-104.950sft	0.518sft	-0.195sft	-1.57
G29	L01	-104.814sft	0.517sft	-0.192sft	-1.53
G73	DYER	-104.141sft	0.537sft	-0.149sft	-1.46
G79	P07	-104.523sft	0.515sft	-0.185sft	-1.45
G103	USGS ET 20 JHB	-104.464sft	0.514sft	-0.186sft	-1.44
G89	P06	-104.331sft	0.526sft	-0.167sft	-1.44
G48	MC 98-154	-104.538sft	0.510sft	-0.186sft	-1.40
G34	MC 98-162	-104.569sft	0.528sft	-0.157sft	-1.40
G39	I03	-104.704sft	0.517sft	-0.175sft	-1.39
G80	P05	-104.127sft	0.538sft	-0.137sft	-1.37
G76	Q05	-104.682sft	0.508sft	-0.184sft	-1.36
G83	L02	-104.857sft	0.511sft	-0.174sft	-1.32
G98	P03	-104.315sft	0.527sft	-0.150sft	-1.32
G77	P04	-104.511sft	0.508sft	-0.174sft	-1.28
G75	S06	-105.355sft	0.541sft	-0.122sft	-1.27
G67	R04	-105.108sft	0.510sft	-0.167sft	-1.26
G66	T05	-105.404sft	0.552sft	-0.097sft	-1.25
G85	S05	-105.268sft	0.525sft	-0.139sft	-1.19
G41	H05	-104.709sft	0.513sft	-0.154sft	-1.19
G84	T06	-105.407sft	0.558sft	-0.078sft	-1.19
G96	R03	-104.980sft	0.495sft	-0.174sft	-1.19
G81	P02	-104.109sft	0.536sft	-0.122sft	-1.18
G69	R05	-104.849sft	0.488sft	-0.180sft	-1.18
G94	NGS L 87	-105.392sft	0.558sft	0.077sft	1.17
G70	Q04	-104.677sft	0.480sft	-0.187sft	-1.17
G86	R06	-104.898sft	0.491sft	-0.174sft	-1.16
G51	B02	-104.512sft	0.514sft	-0.147sft	-1.14
G95	R08	-105.176sft	0.509sft	-0.151sft	-1.13

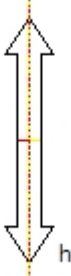
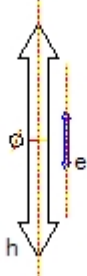
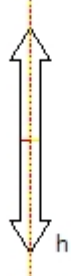
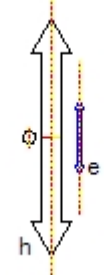
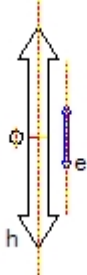
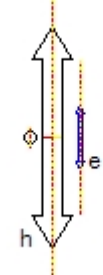
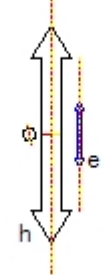
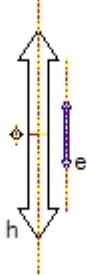
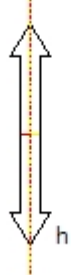
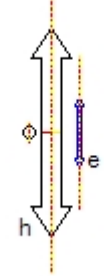
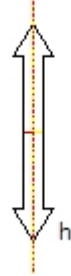
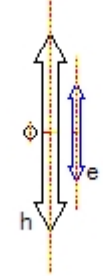
G82	M02	-104.772sft	0.504sft	-0.155sft	-1.12
G68	R07	-105.033sft	0.490sft	-0.164sft	-1.09
G87	NGS A 5	-104.667sft	0.462sft	-0.187sft	-1.08
G99	NGS GPS 15	-103.395sft	0.552sft	-0.083sft	-1.08
G78	Q01	-104.479sft	0.505sft	-0.147sft	-1.07
G97	Q02	-104.632sft	0.486sft	-0.164sft	-1.06
G61	I01	-104.543sft	0.514sft	-0.133sft	-1.03
G88	P01	-104.272sft	0.524sft	-0.121sft	-1.03
G20	MC 98-108	-103.441sft	0.496sft	0.148sft	1.02
G72	NGS D 5	-104.987sft	0.477sft	-0.164sft	-1.01
G42	M01	-104.650sft	0.509sft	-0.132sft	-0.99
G102	N04	-104.652sft	0.503sft	-0.135sft	-0.97
G15	H04	-104.571sft	0.513sft	-0.123sft	-0.95
G71	N03	-104.533sft	0.505sft	-0.130sft	-0.94
G101	O05	-104.356sft	0.517sft	-0.112sft	-0.89
G90	O07	-103.956sft	0.533sft	-0.089sft	-0.83
G62	N02	-104.553sft	0.509sft	-0.110sft	-0.82
G52	N01	-104.415sft	0.512sft	-0.097sft	-0.75
G91	O04	-104.131sft	0.524sft	-0.087sft	-0.73
G21	H03	-104.491sft	0.511sft	-0.092sft	-0.70
G43	O03	-104.202sft	0.519sft	-0.086sft	-0.69
G11	MC 98-116	-103.727sft	0.486sft	0.098sft	0.64
G14	H02	-104.442sft	0.510sft	-0.083sft	-0.62
G63	O02	-103.983sft	0.524sft	-0.072sft	-0.61
G44	F04	-103.566sft	0.532sft	-0.064sft	-0.60
G40	B01	-104.387sft	0.505sft	-0.081sft	-0.59
G92	O06	-103.895sft	0.525sft	-0.068sft	-0.58
G5	F05	-103.833sft	0.515sft	-0.073sft	-0.57
G4	F01	-103.273sft	0.537sft	-0.056sft	-0.55
G53	O01	-103.723sft	0.530sft	-0.060sft	-0.54
G17	SC 36-82-21	-103.218sft	0.511sft	0.068sft	0.52

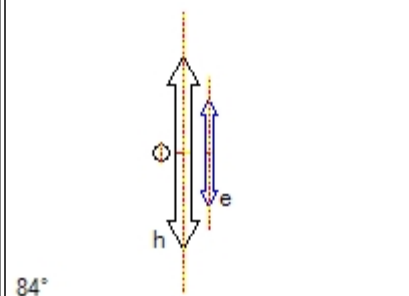
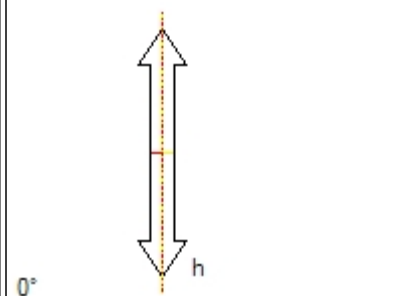
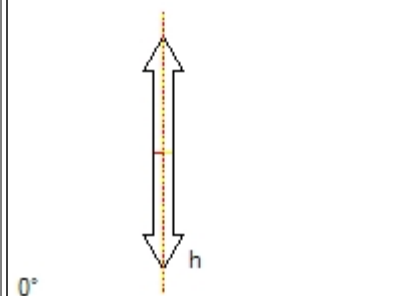
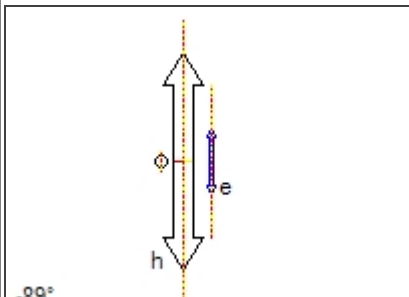
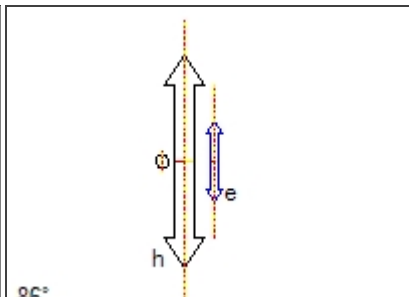
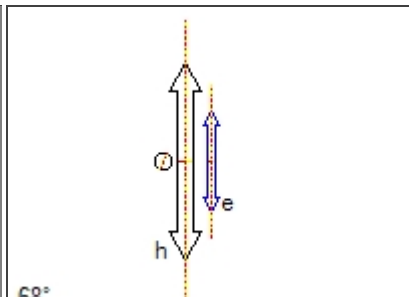
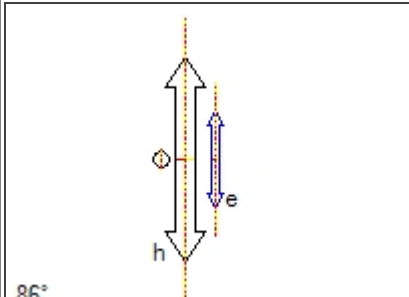
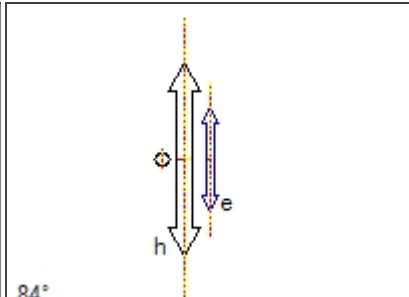
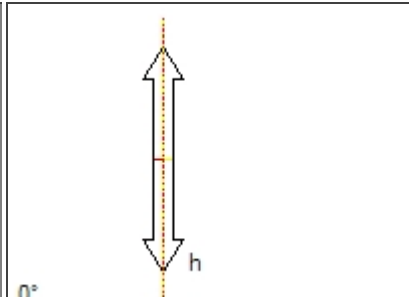
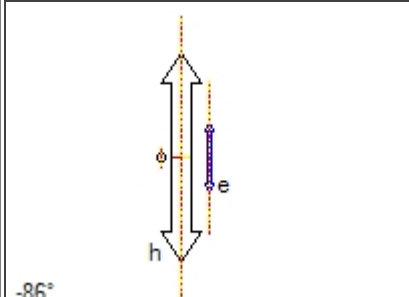
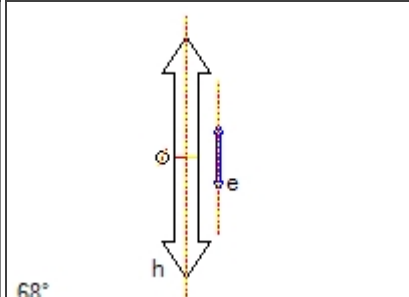
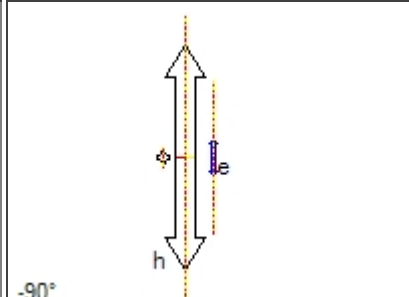
G19	F06	-104.080sft	0.512sft	-0.067sft	-0.51
G10	G04	-104.372sft	0.512sft	-0.067sft	-0.51
G3	NGS G 10	-103.670sft	0.494sft	-0.071sft	-0.48
G8	D03	-103.734sft	0.511sft	0.063sft	0.48
G7	G03	-104.260sft	0.513sft	-0.062sft	-0.47
G1	SC TP411	-102.767sft	0.537sft	0.047sft	0.46
G35	MC 98-146	-104.337sft	0.496sft	-0.062sft	-0.43
G24	F02	-103.636sft	0.502sft	-0.059sft	-0.42
G23	E01	-102.944sft	0.549sft	-0.034sft	-0.41
G100	NGS V 4	-103.834sft	0.516sft	-0.051sft	-0.40
G16	SC 31-82-21	-102.586sft	0.551sft	-0.028sft	-0.36
G9	D04	-103.948sft	0.504sft	0.046sft	0.34
G60	H01	-104.313sft	0.509sft	-0.041sft	-0.31
G6	E03	-103.525sft	0.521sft	0.030sft	0.25
G27	MC 98-124	-103.969sft	0.481sft	0.039sft	0.24
G59	MC 98-139	-104.238sft	0.486sft	-0.037sft	-0.24
G18	F03	-103.828sft	0.511sft	-0.029sft	-0.22
G13	MC 98-132	-104.089sft	0.481sft	0.029sft	0.18
G12	C02	-104.251sft	0.500sft	-0.021sft	-0.15
G25	G02	-104.182sft	0.511sft	-0.016sft	-0.12
G26	G01	-104.032sft	0.513sft	-0.013sft	-0.10
G22	C01	-104.141sft	0.500sft	0.009sft	0.06
G2	E02	-103.253sft	0.535sft	-0.003sft	-0.03

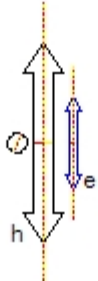
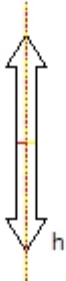
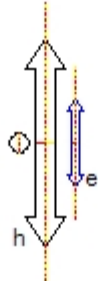
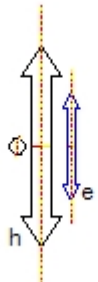
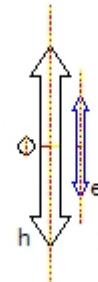
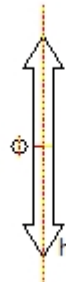
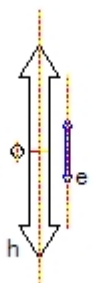
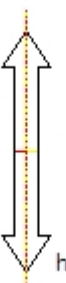
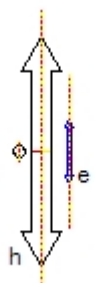
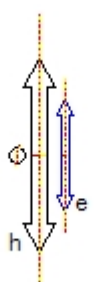
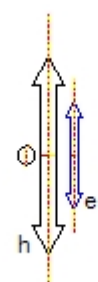
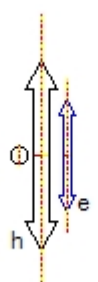
Histograms of Standardized Residuals



Point Error Ellipses

SC TP411	E02	NGS G 10
 <p>0°</p>	 <p>70°</p>	 <p>0°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
F01	F05	E03
 <p>-86°</p>	 <p>-86°</p>	 <p>-83°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
D03	D04	MC 98-116
 <p>-80°</p>	 <p>-90°</p>	 <p>0°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
C02	MC 98-132	H02
 <p>-83°</p>	 <p>0°</p>	 <p>88°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

H04	SC 31-82-21	SC 36-82-21
		
84°	0°	0°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
F03	F06	G04
		
-89°	86°	68°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
G03	H03	MC 98-108
		
86°	84°	0°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
C01	E01	F02
		
-86°	68°	-90°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

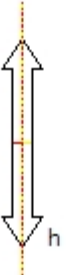
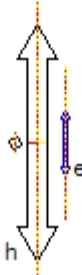
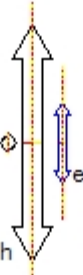
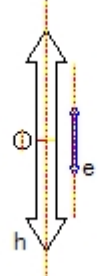
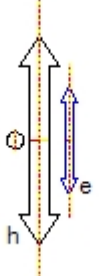
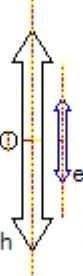
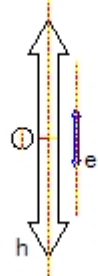
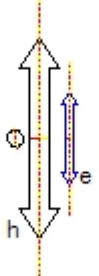
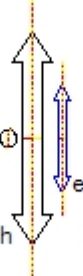

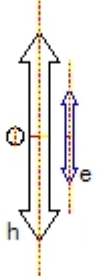
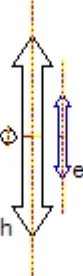
G02	MC 98-124	G01
 64°	 0°	 83°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
K04	K02	NGS X 87
 79°	 83°	 90°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
J04	MC 98-162	A03
 -87°	 0°	 -88°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
L01	K01	H05
 80°	 73°	 86°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		


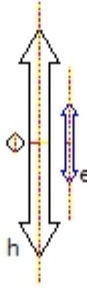
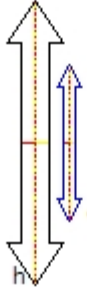
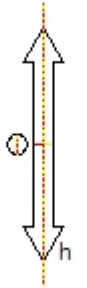
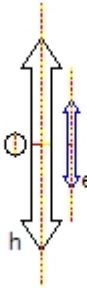
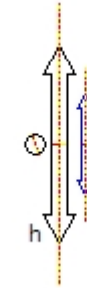
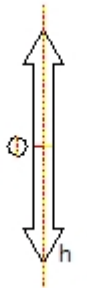
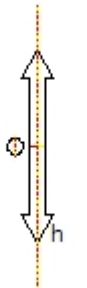
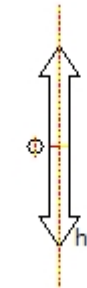
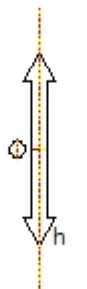
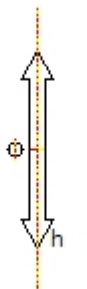
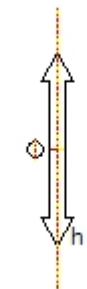
M01	L04	K03
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J03	A02	MC 98-154
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
J01	I04	MC 98-146
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
B02	N01	O01
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

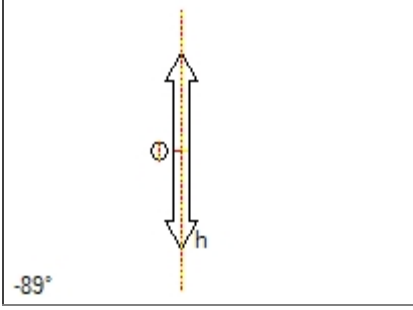
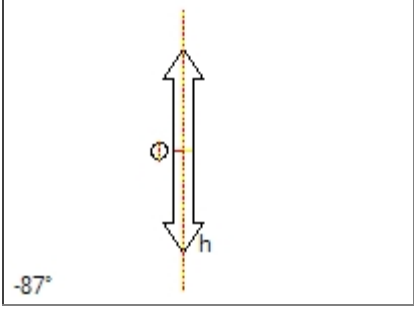
F04	I02	I03
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B01	O03	K05
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
NGS GGI A	J02	NGS D 88
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
MC 98-139	H01	I01
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

O02	L03	N02
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
T01	T03	T05
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
R04	R07	R05
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
Q04	NGS D 5	DYER
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

S06	Q05	P04
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
Q01	P07	P05
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
P02	L02	M02
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
T04	T06	R06
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

NGS A 5	P06	O07
 0°	 87°	 84°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45 σ Vertical Univariate Scalar: 1.96 σ		
O04	S05	P01
 90°	 87°	 -86°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45 σ Vertical Univariate Scalar: 1.96 σ		
O06	N03	T02
 87°	 -73°	 80°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45 σ Vertical Univariate Scalar: 1.96 σ		
NGS L 87	R08	R03
 0°	 87°	 88°
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45 σ Vertical Univariate Scalar: 1.96 σ		

Q02	P03	NGS GPS 15
 <p data-bbox="175 527 212 548">-84°</p>	 <p data-bbox="586 527 623 548">87°</p>	 <p data-bbox="997 527 1034 548">0°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
NGS V 4	O05	N04
 <p data-bbox="175 953 212 974">87°</p>	 <p data-bbox="586 953 623 974">-81°</p>	 <p data-bbox="997 953 1034 974">-70°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
USGS ET 20 JHB	S01	S03
 <p data-bbox="175 1369 212 1390">-87°</p>	 <p data-bbox="586 1369 623 1390">-86°</p>	 <p data-bbox="997 1369 1034 1390">-90°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
R02	Q03	R01
 <p data-bbox="175 1785 212 1806">84°</p>	 <p data-bbox="586 1785 623 1806">89°</p>	 <p data-bbox="997 1785 1034 1806">87°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

S02	S04	
 <p data-bbox="164 527 217 562">-89°</p>	 <p data-bbox="579 527 633 562">-87°</p>	
<p data-bbox="289 569 1281 604">Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		

Covariant Terms

Adjustment performed in **NAD 1983/1996 HARN (Conus)**

From Point	To Point		Components	A-posteriori Error (1.96σ)	Horiz. Precision (Ratio)
SC TP411	E02	Az.	161°10'07.7289"	0°00'00.3453"	1:595576
		ΔHt.	-8.187sft	0.062sft	
		ΔElev.	-7.702sft	0.140sft	
		Dist.	16402.062sft	0.028sft	
SC TP411	SC 31-82-21	Az.	270°13'31.1570"	0°00'00.0000"	1:0
		ΔHt.	-2.259sft	0.047sft	
		ΔElev.	-2.440sft	0.000sft	
		Dist.	10142.052sft	0.000sft	
SC TP411	SC 36-82-21	Az.	90°15'38.8747"	0°00'00.0000"	1:0
		ΔHt.	33.520sft	0.077sft	
		ΔElev.	33.970sft	0.000sft	
		Dist.	21101.300sft	0.000sft	
SC TP411	E01	Az.	214°01'26.4866"	0°00'00.2603"	1:777546
		ΔHt.	-111.671sft	0.072sft	
		ΔElev.	-111.494sft	0.154sft	
		Dist.	18897.168sft	0.024sft	
E02	E01	Az.	269°30'53.9991"	0°00'00.3915"	1:533874
		ΔHt.	-103.484sft	0.060sft	
		ΔElev.	-103.793sft	0.172sft	
		Dist.	15868.601sft	0.030sft	
E02	F02	Az.	170°32'16.6573"	0°00'00.3707"	1:552759
		ΔHt.	-134.281sft	0.063sft	
		ΔElev.	-133.897sft	0.143sft	
		Dist.	16270.366sft	0.029sft	
NGS G 10	F01	Az.	279°08'18.8404"	0°00'00.3105"	1:676098
		ΔHt.	144.920sft	0.065sft	

		ΔElev.	144.522sft	0.170sft	
		Dist.	17786.423sft	0.026sft	
NGS G 10	F05	Az.	187°21'37.9279"	0°00'00.3914"	1:520084
		ΔHt.	70.195sft	0.057sft	
		ΔElev.	70.358sft	0.152sft	
		Dist.	13682.298sft	0.026sft	
NGS G 10	F03	Az.	78°42'55.8436"	0°00'00.3737"	1:560729
		ΔHt.	56.017sft	0.056sft	
		ΔElev.	56.174sft	0.156sft	
		Dist.	14303.389sft	0.026sft	
NGS G 10	F02	Az.	18°14'46.1699"	0°00'01.6225"	1:125814
		ΔHt.	-11.555sft	0.031sft	
		ΔElev.	-11.589sft	0.083sft	
		Dist.	2921.460sft	0.023sft	
F01	E01	Az.	359°43'04.6537"	0°00'00.3760"	1:542437
		ΔHt.	-125.678sft	0.063sft	
		ΔElev.	-126.007sft	0.165sft	
		Dist.	15865.885sft	0.029sft	
F01	F02	Az.	90°06'47.3671"	0°00'00.3252"	1:645148
		ΔHt.	-156.475sft	0.066sft	
		ΔElev.	-156.112sft	0.182sft	
		Dist.	18475.440sft	0.029sft	
F01	F04	Az.	179°27'58.3988"	0°00'00.4520"	1:454573
		ΔHt.	-165.276sft	0.067sft	
		ΔElev.	-164.983sft	0.175sft	
		Dist.	16360.551sft	0.036sft	
F05	F06	Az.	89°35'54.2180"	0°00'00.3942"	1:528976
		ΔHt.	-71.267sft	0.060sft	
		ΔElev.	-71.020sft	0.180sft	
		Dist.	15743.539sft	0.030sft	
F05	F02	Az.	9°15'55.5893"	0°00'00.3566"	1:568699

		ΔHt.	-81.750sft	0.066sft	
		ΔElev.	-81.947sft	0.172sft	
		Dist.	16560.382sft	0.029sft	
F05	O02	Az.	189°22'17.5314"	0°00'00.4147"	1:495009
		ΔHt.	-95.649sft	0.067sft	
		ΔElev.	-95.499sft	0.162sft	
		Dist.	16052.805sft	0.032sft	
E03	D03	Az.	89°08'20.6377"	0°00'00.3830"	1:544392
		ΔHt.	106.096sft	0.061sft	
		ΔElev.	106.306sft	0.164sft	
		Dist.	15902.332sft	0.029sft	
E03	SC 36-82-21	Az.	0°02'34.1417"	0°00'00.3386"	1:600655
		ΔHt.	142.324sft	0.062sft	
		ΔElev.	142.017sft	0.146sft	
		Dist.	15570.945sft	0.026sft	
E03	F03	Az.	180°07'08.3990"	0°00'00.3617"	1:563211
		ΔHt.	33.908sft	0.062sft	
		ΔElev.	34.211sft	0.163sft	
		Dist.	15877.249sft	0.028sft	
E03	F06	Az.	180°08'28.9842"	0°00'00.1838"	1:1106520
		ΔHt.	-23.181sft	0.112sft	
		ΔElev.	-22.626sft	0.212sft	
		Dist.	32136.556sft	0.029sft	
D03	D04	Az.	91°03'16.8704"	0°00'00.3730"	1:557344
		ΔHt.	54.185sft	0.060sft	
		ΔElev.	54.398sft	0.164sft	
		Dist.	15764.668sft	0.028sft	
D03	MC 98-108	Az.	359°31'10.7189"	0°00'00.3517"	1:580825
		ΔHt.	27.475sft	0.060sft	
		ΔElev.	27.181sft	0.155sft	
		Dist.	15083.509sft	0.026sft	

D03	G01	Az.	180°42'40.1437"	0°00'00.4179"	1:485921
		ΔHt.	0.197sft	0.070sft	
		ΔElev.	0.494sft	0.178sft	
		Dist.	17224.223sft	0.035sft	
D04	MC 98-116	Az.	359°42'07.3596"	0°00'00.2926"	1:696960
		ΔHt.	-58.496sft	0.058sft	
		ΔElev.	-58.717sft	0.161sft	
		Dist.	15611.768sft	0.022sft	
D04	C01	Az.	90°13'09.0065"	0°00'00.3481"	1:599140
		ΔHt.	-126.603sft	0.059sft	
		ΔElev.	-126.410sft	0.164sft	
		Dist.	15605.890sft	0.026sft	
D04	G02	Az.	178°48'01.7892"	0°00'00.4626"	1:439101
		ΔHt.	-47.103sft	0.066sft	
		ΔElev.	-46.869sft	0.177sft	
		Dist.	15838.050sft	0.036sft	
MC 98-116	MC 98-108	Az.	269°10'26.2257"	0°00'00.0000"	1:0
		ΔHt.	31.786sft	0.061sft	
		ΔElev.	31.500sft	0.000sft	
		Dist.	15798.555sft	0.000sft	
MC 98-116	MC 98-124	Az.	90°00'44.6958"	0°00'00.0000"	1:0
		ΔHt.	-39.362sft	0.060sft	
		ΔElev.	-39.120sft	0.000sft	
		Dist.	15937.000sft	0.000sft	
C02	MC 98-132	Az.	9°42'59.0016"	0°00'00.3107"	1:653524
		ΔHt.	36.218sft	0.062sft	
		ΔElev.	36.057sft	0.164sft	
		Dist.	15599.521sft	0.024sft	
C02	H02	Az.	170°30'07.6071"	0°00'00.3418"	1:590909
		ΔHt.	-73.006sft	0.064sft	
		ΔElev.	-72.815sft	0.181sft	

		Dist.	16611.638sft	0.028sft	
C02	C01	Az.	268°56'05.1747"	0°00'00.3974"	1:525214
		ΔHt.	-56.936sft	0.051sft	
		ΔElev.	-57.046sft	0.156sft	
		Dist.	13395.540sft	0.026sft	
C02	MC 98-124	Az.	319°35'46.7529"	0°00'00.2403"	1:851425
		ΔHt.	-28.192sft	0.069sft	
		ΔElev.	-28.473sft	0.164sft	
		Dist.	20247.476sft	0.024sft	
MC 98-132	MC 98-124	Az.	270°09'41.3869"	0°00'00.0000"	1:0
		ΔHt.	-64.410sft	0.057sft	
		ΔElev.	-64.530sft	0.000sft	
		Dist.	15756.591sft	0.000sft	
MC 98-132	MC 98-139	Az.	90°12'06.8397"	0°00'00.0000"	1:0
		ΔHt.	-36.989sft	0.064sft	
		ΔElev.	-36.840sft	0.000sft	
		Dist.	16049.169sft	0.000sft	
H02	H04	Az.	180°02'42.4465"	0°00'00.3918"	1:518748
		ΔHt.	88.527sft	0.058sft	
		ΔElev.	88.655sft	0.173sft	
		Dist.	14520.742sft	0.028sft	
H02	H03	Az.	224°41'59.6999"	0°00'00.2408"	1:854818
		ΔHt.	61.623sft	0.083sft	
		ΔElev.	61.672sft	0.205sft	
		Dist.	22486.349sft	0.026sft	
H02	C01	Az.	315°00'27.6443"	0°00'00.2271"	1:907759
		ΔHt.	16.070sft	0.076sft	
		ΔElev.	15.769sft	0.201sft	
		Dist.	22817.783sft	0.025sft	
H02	H01	Az.	271°35'05.3953"	0°00'00.3715"	1:567479
		ΔHt.	119.097sft	0.061sft	

		ΔElev.	118.968sft	0.179sft	
		Dist.	16118.268sft	0.028sft	
H02	I01	Az.	88°45'00.2034"	0°00'00.4183"	1:507675
		ΔHt.	73.900sft	0.064sft	
		ΔElev.	74.001sft	0.179sft	
		Dist.	15715.056sft	0.031sft	
H04	H03	Az.	264°42'47.0141"	0°00'00.3742"	1:561388
		ΔHt.	-26.903sft	0.060sft	
		ΔElev.	-26.983sft	0.181sft	
		Dist.	15872.845sft	0.028sft	
H04	H05	Az.	178°32'50.6680"	0°00'00.4090"	1:494635
		ΔHt.	-59.238sft	0.063sft	
		ΔElev.	-59.100sft	0.181sft	
		Dist.	15757.796sft	0.032sft	
H04	I03	Az.	99°52'06.0300"	0°00'00.3910"	1:538864
		ΔHt.	-56.211sft	0.062sft	
		ΔElev.	-56.078sft	0.183sft	
		Dist.	16043.470sft	0.030sft	
SC 31-82-21	E01	Az.	181°33'00.8301"	0°00'00.3137"	1:647294
		ΔHt.	-109.413sft	0.063sft	
		ΔElev.	-109.054sft	0.154sft	
		Dist.	15707.849sft	0.024sft	
SC 36-82-21	MC 98-108	Az.	90°54'21.7011"	0°00'00.0000"	1:0
		ΔHt.	-8.753sft	0.064sft	
		ΔElev.	-8.530sft	0.000sft	
		Dist.	15754.171sft	0.000sft	
F03	F06	Az.	180°09'47.3856"	0°00'00.3615"	1:563169
		ΔHt.	-57.090sft	0.063sft	
		ΔElev.	-56.837sft	0.178sft	
		Dist.	16259.309sft	0.029sft	
F03	F02	Az.	269°55'40.6412"	0°00'00.4500"	1:464935

		ΔHt.	-67.572sft	0.052sft	
		ΔElev.	-67.764sft	0.157sft	
		Dist.	13112.184sft	0.028sft	
F06	G03	Az.	90°12'04.0879"	0°00'00.4012"	1:521153
		ΔHt.	89.791sft	0.062sft	
		ΔElev.	89.971sft	0.179sft	
		Dist.	16271.055sft	0.031sft	
G04	G03	Az.	269°45'03.2688"	0°00'00.5426"	1:385720
		ΔHt.	86.658sft	0.055sft	
		ΔElev.	86.546sft	0.165sft	
		Dist.	12811.042sft	0.033sft	
G04	H03	Az.	90°18'16.5149"	0°00'00.3809"	1:556085
		ΔHt.	99.280sft	0.071sft	
		ΔElev.	99.399sft	0.194sft	
		Dist.	18668.788sft	0.034sft	
G04	G02	Az.	10°34'37.9627"	0°00'00.4513"	1:437537
		ΔHt.	133.227sft	0.071sft	
		ΔElev.	133.037sft	0.183sft	
		Dist.	16524.479sft	0.038sft	
G03	G01	Az.	358°10'55.8573"	0°00'00.4703"	1:433587
		ΔHt.	39.683sft	0.063sft	
		ΔElev.	39.455sft	0.176sft	
		Dist.	15217.522sft	0.035sft	
G03	N01	Az.	189°03'33.1881"	0°00'00.4330"	1:444644
		ΔHt.	-126.434sft	0.072sft	
		ΔElev.	-126.279sft	0.181sft	
		Dist.	16115.180sft	0.036sft	
H03	M01	Az.	180°45'33.1762"	0°00'00.3644"	1:516878
		ΔHt.	17.728sft	0.073sft	
		ΔElev.	17.887sft	0.189sft	
		Dist.	17568.635sft	0.034sft	

H03	H01	Az.	358°55'53.4259"	0°00'00.3762"	1:531231
		ΔHt.	57.474sft	0.067sft	
		ΔElev.	57.296sft	0.182sft	
		Dist.	16431.744sft	0.031sft	
C01	MC 98-124	Az.	0°57'08.9363"	0°00'00.2730"	1:746620
		ΔHt.	28.745sft	0.058sft	
		ΔElev.	28.572sft	0.163sft	
		Dist.	15669.734sft	0.021sft	
C01	H01	Az.	179°53'10.5826"	0°00'00.3877"	1:520701
		ΔHt.	103.027sft	0.063sft	
		ΔElev.	103.199sft	0.177sft	
		Dist.	15691.000sft	0.030sft	
K04	K02	Az.	0°01'46.9815"	0°00'00.4627"	1:433298
		ΔHt.	116.290sft	0.058sft	
		ΔElev.	116.193sft	0.173sft	
		Dist.	14003.840sft	0.032sft	
K04	L04	Az.	264°07'52.0056"	0°00'00.3414"	1:617756
		ΔHt.	98.596sft	0.060sft	
		ΔElev.	98.476sft	0.183sft	
		Dist.	16262.198sft	0.026sft	
K04	K05	Az.	95°46'03.6470"	0°00'00.4160"	1:507481
		ΔHt.	110.043sft	0.060sft	
		ΔElev.	110.136sft	0.184sft	
		Dist.	15866.025sft	0.031sft	
K04	T01	Az.	179°59'40.6963"	0°00'00.3627"	1:553705
		ΔHt.	45.220sft	0.066sft	
		ΔElev.	45.314sft	0.187sft	
		Dist.	16929.671sft	0.031sft	
K02	K01	Az.	267°22'23.3355"	0°00'00.4712"	1:448121
		ΔHt.	5.689sft	0.063sft	
		ΔElev.	5.561sft	0.178sft	

		Dist.	15064.716sft	0.034sft	
K02	K03	Az.	90°10'49.5871"	0°00'00.3992"	1:527673
		ΔHt.	-53.446sft	0.060sft	
		ΔElev.	-53.346sft	0.179sft	
		Dist.	15729.991sft	0.030sft	
K02	J03	Az.	359°36'27.8153"	0°00'00.3950"	1:508193
		ΔHt.	48.706sft	0.070sft	
		ΔElev.	48.565sft	0.189sft	
		Dist.	17147.164sft	0.034sft	
NGS X 87	J04	Az.	259°51'51.5692"	0°00'00.4836"	1:430835
		ΔHt.	-79.690sft	0.051sft	
		ΔElev.	-79.755sft	0.158sft	
		Dist.	12467.183sft	0.029sft	
NGS X 87	NGS GGI A	Az.	214°02'04.7493"	0°00'00.9704"	1:211362
		ΔHt.	-6.230sft	0.040sft	
		ΔElev.	-6.226sft	0.120sft	
		Dist.	6291.382sft	0.030sft	
NGS X 87	J02	Az.	326°25'01.5867"	0°00'00.2841"	1:723253
		ΔHt.	-89.280sft	0.080sft	
		ΔElev.	-89.536sft	0.171sft	
		Dist.	22625.478sft	0.031sft	
J04	K03	Az.	180°46'38.4551"	0°00'00.5442"	1:373907
		ΔHt.	-44.929sft	0.048sft	
		ΔElev.	-44.860sft	0.155sft	
		Dist.	10971.745sft	0.029sft	
J04	J03	Az.	291°18'46.4089"	0°00'00.3916"	1:532850
		ΔHt.	57.223sft	0.067sft	
		ΔElev.	57.052sft	0.180sft	
		Dist.	17157.994sft	0.032sft	
J04	NGS GGI A	Az.	109°00'26.1701"	0°00'00.5620"	1:370751
		ΔHt.	73.461sft	0.042sft	

		ΔElev.	73.530sft	0.142sft	
		Dist.	9257.698sft	0.025sft	
J04	J02	Az.	359°18'35.3356"	0°00'00.2931"	1:694022
		ΔHt.	-9.589sft	0.079sft	
		ΔElev.	-9.781sft	0.192sft	
		Dist.	21044.346sft	0.030sft	
MC 98-162	A03	Az.	183°19'44.2810"	0°00'00.3246"	1:614648
		ΔHt.	24.595sft	0.063sft	
		ΔElev.	24.796sft	0.142sft	
		Dist.	15602.770sft	0.025sft	
MC 98-162	MC 98-154	Az.	269°53'48.0618"	0°00'00.0000"	1:0
		ΔHt.	30.871sft	0.061sft	
		ΔElev.	30.840sft	0.000sft	
		Dist.	15758.770sft	0.000sft	
MC 98-162	NGS D 88	Az.	221°55'56.4060"	0°00'00.0000"	1:0
		ΔHt.	37.497sft	0.040sft	
		ΔElev.	37.610sft	0.000sft	
		Dist.	6793.575sft	0.000sft	
A03	A02	Az.	269°59'38.8962"	0°00'00.4313"	1:489193
		ΔHt.	-64.740sft	0.059sft	
		ΔElev.	-64.839sft	0.166sft	
		Dist.	15023.534sft	0.031sft	
A03	J02	Az.	177°35'45.7005"	0°00'00.4105"	1:492526
		ΔHt.	-99.258sft	0.067sft	
		ΔElev.	-99.112sft	0.163sft	
		Dist.	15973.378sft	0.032sft	
A03	NGS D 88	Az.	340°56'46.0695"	0°00'00.4561"	1:439711
		ΔHt.	12.901sft	0.050sft	
		ΔElev.	12.814sft	0.142sft	
		Dist.	11132.239sft	0.025sft	
L01	K01	Az.	92°25'00.6886"	0°00'00.4017"	1:524609

		ΔHt.	-12.054sft	0.066sft	
		ΔElev.	-11.920sft	0.188sft	
		Dist.	17046.716sft	0.032sft	
L01	H05	Az.	275°34'04.8154"	0°00'00.4464"	1:473612
		ΔHt.	-56.653sft	0.063sft	
		ΔElev.	-56.758sft	0.181sft	
		Dist.	15411.047sft	0.033sft	
L01	I03	Az.	0°18'16.2227"	0°00'00.4260"	1:474292
		ΔHt.	-53.626sft	0.061sft	
		ΔElev.	-53.736sft	0.175sft	
		Dist.	14488.307sft	0.031sft	
L01	L03	Az.	179°35'13.4052"	0°00'00.4292"	1:470203
		ΔHt.	-48.339sft	0.064sft	
		ΔElev.	-48.203sft	0.182sft	
		Dist.	15683.773sft	0.033sft	
K01	I04	Az.	356°19'12.9996"	0°00'00.4249"	1:475411
		ΔHt.	-46.646sft	0.068sft	
		ΔElev.	-46.783sft	0.187sft	
		Dist.	16605.816sft	0.035sft	
H05	M01	Az.	258°44'05.5818"	0°00'00.4314"	1:512143
		ΔHt.	50.063sft	0.070sft	
		ΔElev.	50.004sft	0.188sft	
		Dist.	16772.578sft	0.033sft	
M01	N02	Az.	276°21'53.6401"	0°00'00.5008"	1:440858
		ΔHt.	-36.855sft	0.067sft	
		ΔElev.	-36.952sft	0.185sft	
		Dist.	15858.091sft	0.036sft	
M01	M02	Az.	179°43'10.2714"	0°00'00.4623"	1:434500
		ΔHt.	-86.033sft	0.062sft	
		ΔElev.	-85.912sft	0.174sft	
		Dist.	14301.519sft	0.033sft	

L04	L03	Az.	270°05'12.5063"	0°00'00.4287"	1:494992
		ΔHt.	-12.902sft	0.062sft	
		ΔElev.	-13.006sft	0.182sft	
		Dist.	15803.590sft	0.032sft	
L04	S02	Az.	175°28'00.8573"	0°00'00.3970"	1:506332
		ΔHt.	-7.604sft	0.062sft	
		ΔElev.	?	?	
		Dist.	15896.060sft	0.031sft	
K03	K05	Az.	179°51'34.1429"	0°00'00.4251"	1:476113
		ΔHt.	47.198sft	0.063sft	
		ΔElev.	47.289sft	0.178sft	
		Dist.	15548.834sft	0.033sft	
K03	NGS GGI A	Az.	48°12'43.9238"	0°00'00.4651"	1:443575
		ΔHt.	118.389sft	0.052sft	
		ΔElev.	118.389sft	0.158sft	
		Dist.	11938.749sft	0.027sft	
J03	J01	Az.	10°34'10.5247"	0°00'00.4702"	1:431181
		ΔHt.	6.134sft	0.067sft	
		ΔElev.	6.026sft	0.177sft	
		Dist.	15129.913sft	0.035sft	
A02	MC 98-154	Az.	0°35'25.6221"	0°00'00.3852"	1:522436
		ΔHt.	71.016sft	0.063sft	
		ΔElev.	70.883sft	0.153sft	
		Dist.	15549.915sft	0.030sft	
A02	J01	Az.	170°09'15.1681"	0°00'00.4349"	1:457154
		ΔHt.	38.429sft	0.069sft	
		ΔElev.	38.585sft	0.173sft	
		Dist.	16129.329sft	0.035sft	
MC 98-154	MC 98-146	Az.	270°29'29.4979"	0°00'00.0000"	1:0
		ΔHt.	-11.669sft	0.065sft	
		ΔElev.	-11.870sft	0.000sft	

		Dist.	16111.273sft	0.000sft	
MC 98-154	NGS D 88	Az.	114°05'29.6518"	0°00'00.0000"	1:0
		ΔHt.	6.626sft	0.050sft	
		ΔElev.	6.770sft	0.000sft	
		Dist.	12293.105sft	0.000sft	
J01	I02	Az.	270°06'03.5468"	0°00'00.4009"	1:531638
		ΔHt.	11.268sft	0.075sft	
		ΔElev.	11.097sft	0.190sft	
		Dist.	18689.210sft	0.035sft	
I04	I02	Az.	0°13'07.2299"	0°00'00.4367"	1:463467
		ΔHt.	107.065sft	0.066sft	
		ΔElev.	106.911sft	0.182sft	
		Dist.	16169.101sft	0.035sft	
I04	I03	Az.	265°07'44.8284"	0°00'00.4421"	1:477204
		ΔHt.	5.074sft	0.065sft	
		ΔElev.	4.967sft	0.182sft	
		Dist.	15935.279sft	0.033sft	
MC 98-146	B02	Az.	180°15'09.8275"	0°00'00.3925"	1:508875
		ΔHt.	-15.103sft	0.064sft	
		ΔElev.	-14.928sft	0.163sft	
		Dist.	15683.561sft	0.031sft	
MC 98-146	MC 98-139	Az.	269°38'43.2952"	0°00'00.0000"	1:0
		ΔHt.	-71.721sft	0.062sft	
		ΔElev.	-71.820sft	0.000sft	
		Dist.	15683.028sft	0.000sft	
B02	I02	Az.	179°36'09.3098"	0°00'00.4340"	1:463149
		ΔHt.	5.453sft	0.065sft	
		ΔElev.	5.597sft	0.177sft	
		Dist.	15865.163sft	0.034sft	
B02	B01	Az.	269°48'54.5522"	0°00'00.4178"	1:509585
		ΔHt.	-36.187sft	0.062sft	

		ΔElev.	-36.312sft	0.167sft	
		Dist.	15904.793sft	0.031sft	
N01	O03	Az.	270°13'17.1571"	0°00'00.4598"	1:488063
		ΔHt.	-3.807sft	0.079sft	
		ΔElev.	-4.020sft	0.194sft	
		Dist.	18208.799sft	0.037sft	
N01	N02	Az.	89°48'40.9912"	0°00'00.4986"	1:471739
		ΔHt.	119.929sft	0.083sft	
		ΔElev.	120.067sft	0.198sft	
		Dist.	18045.045sft	0.038sft	
N01	N03	Az.	172°26'48.0215"	0°00'00.4319"	1:462352
		ΔHt.	42.381sft	0.068sft	
		ΔElev.	42.500sft	0.178sft	
		Dist.	15958.520sft	0.035sft	
O01	F04	Az.	1°05'22.7705"	0°00'00.5288"	1:388506
		ΔHt.	-106.097sft	0.060sft	
		ΔElev.	-106.253sft	0.159sft	
		Dist.	13965.202sft	0.036sft	
O01	O02	Az.	98°06'48.5113"	0°00'00.5140"	1:402859
		ΔHt.	-111.195sft	0.057sft	
		ΔElev.	-110.935sft	0.172sft	
		Dist.	13464.753sft	0.033sft	
O01	NGS V 4	Az.	180°15'21.6621"	0°00'00.4498"	1:436785
		ΔHt.	38.145sft	0.067sft	
		ΔElev.	38.257sft	0.161sft	
		Dist.	15699.128sft	0.036sft	
I03	B01	Az.	359°49'54.7053"	0°00'00.1777"	1:1113693
		ΔHt.	60.351sft	0.118sft	
		ΔElev.	60.034sft	0.233sft	
		Dist.	33335.635sft	0.030sft	
I03	I01	Az.	359°46'02.7467"	0°00'00.3506"	1:565783

		ΔHt.	41.584sft	0.072sft	
		ΔElev.	41.423sft	0.189sft	
		Dist.	17613.350sft	0.031sft	
B01	MC 98-139	Az.	1°01'39.3521"	0°00'00.3613"	1:551604
		ΔHt.	-20.432sft	0.064sft	
		ΔElev.	-20.580sft	0.165sft	
		Dist.	15640.307sft	0.028sft	
B01	I01	Az.	179°54'13.7027"	0°00'00.3976"	1:503502
		ΔHt.	-18.767sft	0.066sft	
		ΔElev.	-18.611sft	0.178sft	
		Dist.	15722.308sft	0.031sft	
O03	O02	Az.	269°53'35.1616"	0°00'00.5438"	1:384209
		ΔHt.	16.068sft	0.063sft	
		ΔElev.	15.850sft	0.171sft	
		Dist.	13903.673sft	0.036sft	
K05	T02	Az.	180°09'28.8968"	0°00'00.4141"	1:488592
		ΔHt.	-42.324sft	0.066sft	
		ΔElev.	-42.251sft	0.182sft	
		Dist.	16283.550sft	0.033sft	
O02	O04	Az.	170°50'50.1390"	0°00'00.4216"	1:462239
		ΔHt.	116.135sft	0.070sft	
		ΔElev.	116.283sft	0.178sft	
		Dist.	16013.033sft	0.035sft	
L03	L02	Az.	269°40'03.1602"	0°00'00.4703"	1:445021
		ΔHt.	32.398sft	0.060sft	
		ΔElev.	32.304sft	0.177sft	
		Dist.	14507.700sft	0.033sft	
L03	S01	Az.	180°04'56.4422"	0°00'00.3956"	1:500619
		ΔHt.	-28.888sft	0.064sft	
		ΔElev.	?	?	
		Dist.	15864.396sft	0.032sft	

T01	T03	Az.	171°18'31.3351"	0°00'00.3478"	1:579062
		ΔHt.	44.749sft	0.067sft	
		ΔElev.	44.823sft	0.191sft	
		Dist.	17526.360sft	0.030sft	
T01	T02	Az.	93°26'44.1384"	0°00'00.4193"	1:502764
		ΔHt.	22.499sft	0.061sft	
		ΔElev.	22.571sft	0.184sft	
		Dist.	15778.633sft	0.031sft	
T01	S02	Az.	267°46'27.5453"	0°00'00.4293"	1:496625
		ΔHt.	45.772sft	0.058sft	
		ΔElev.	?	?	
		Dist.	14944.347sft	0.030sft	
T03	T05	Az.	178°13'32.4021"	0°00'00.3456"	1:580981
		ΔHt.	-151.249sft	0.071sft	
		ΔElev.	-151.187sft	0.192sft	
		Dist.	17130.581sft	0.029sft	
T03	T04	Az.	105°11'23.5065"	0°00'00.4021"	1:522033
		ΔHt.	-33.477sft	0.058sft	
		ΔElev.	-33.423sft	0.178sft	
		Dist.	15035.271sft	0.029sft	
T03	S03	Az.	265°12'41.8555"	0°00'00.1886"	1:1128681
		ΔHt.	-32.902sft	0.107sft	
		ΔElev.	?	?	
		Dist.	31557.612sft	0.028sft	
T03	S04	Az.	265°25'50.4414"	0°00'00.3617"	1:594398
		ΔHt.	-68.622sft	0.067sft	
		ΔElev.	?	?	
		Dist.	16994.584sft	0.029sft	
T05	S06	Az.	273°05'05.3469"	0°00'00.4210"	1:501299
		ΔHt.	-11.186sft	0.063sft	
		ΔElev.	-11.235sft	0.182sft	

		Dist.	16022.556sft	0.032sft	
T05	T06	Az.	80°13'49.7699"	0°00'00.4065"	1:511269
		ΔHt.	123.748sft	0.060sft	
		ΔElev.	123.751sft	0.180sft	
		Dist.	15425.639sft	0.030sft	
T05	NGS L 87	Az.	110°05'10.1901"	0°00'00.1182"	1:1773915
		ΔHt.	104.280sft	0.152sft	
		ΔElev.	104.268sft	0.250sft	
		Dist.	48395.502sft	0.027sft	
R04	R07	Az.	225°24'59.3010"	0°00'00.2377"	1:865849
		ΔHt.	137.288sft	0.081sft	
		ΔElev.	137.213sft	0.203sft	
		Dist.	22385.294sft	0.026sft	
R04	S05	Az.	137°30'34.7950"	0°00'00.2645"	1:778325
		ΔHt.	-12.480sft	0.072sft	
		ΔElev.	-12.321sft	0.209sft	
		Dist.	21344.464sft	0.027sft	
R04	R08	Az.	180°02'10.5649"	0°00'00.3119"	1:642390
		ΔHt.	-12.901sft	0.059sft	
		ΔElev.	-12.833sft	0.181sft	
		Dist.	15762.830sft	0.025sft	
R04	R03	Az.	269°56'08.2527"	0°00'00.3434"	1:618157
		ΔHt.	2.531sft	0.065sft	
		ΔElev.	2.402sft	0.189sft	
		Dist.	17337.034sft	0.028sft	
R04	S03	Az.	94°16'59.2019"	0°00'00.3652"	1:577592
		ΔHt.	120.473sft	0.057sft	
		ΔElev.	?	?	
		Dist.	15509.529sft	0.027sft	
R04	R02	Az.	359°37'32.2177"	0°00'00.3819"	1:528005
		ΔHt.	144.439sft	0.063sft	

		ΔElev.	?	?	
		Dist.	15883.422sft	0.030sft	
R07	R05	Az.	317°45'17.2089"	0°00'00.2350"	1:881415
		ΔHt.	13.413sft	0.072sft	
		ΔElev.	13.230sft	0.178sft	
		Dist.	21271.215sft	0.024sft	
R07	NGS D 5	Az.	222°17'30.9379"	0°00'00.5668"	1:354325
		ΔHt.	8.217sft	0.050sft	
		ΔElev.	8.171sft	0.144sft	
		Dist.	9797.698sft	0.028sft	
R07	R06	Az.	269°47'34.0032"	0°00'00.4490"	1:473801
		ΔHt.	10.877sft	0.054sft	
		ΔElev.	10.742sft	0.167sft	
		Dist.	13183.264sft	0.028sft	
R07	R08	Az.	90°08'21.9715"	0°00'00.3818"	1:558696
		ΔHt.	-150.188sft	0.059sft	
		ΔElev.	-150.046sft	0.181sft	
		Dist.	15933.528sft	0.029sft	
R07	R03	Az.	354°53'12.9088"	0°00'00.3531"	1:571308
		ΔHt.	-134.757sft	0.061sft	
		ΔElev.	-134.811sft	0.171sft	
		Dist.	15755.592sft	0.028sft	
R05	Q04	Az.	269°48'05.9021"	0°00'00.2754"	1:770691
		ΔHt.	8.102sft	0.060sft	
		ΔElev.	7.929sft	0.173sft	
		Dist.	17128.884sft	0.022sft	
R05	NGS D 5	Az.	161°26'01.9089"	0°00'00.2063"	1:969664
		ΔHt.	-5.196sft	0.085sft	
		ΔElev.	-5.059sft	0.161sft	
		Dist.	24251.611sft	0.025sft	
R05	P04	Az.	269°58'07.5231"	0°00'00.1592"	1:1347423

		ΔHt.	-29.516sft	0.106sft	
		ΔElev.	-29.855sft	0.218sft	
		Dist.	32218.350sft	0.024sft	
R05	R06	Az.	175°55'04.7043"	0°00'00.3382"	1:593830
		ΔHt.	-2.536sft	0.061sft	
		ΔElev.	-2.488sft	0.164sft	
		Dist.	15833.700sft	0.027sft	
R05	NGS A 5	Az.	287°51'43.3879"	0°00'00.2491"	1:875626
		ΔHt.	15.323sft	0.067sft	
		ΔElev.	15.141sft	0.161sft	
		Dist.	18120.692sft	0.021sft	
R05	R03	Az.	90°12'13.1090"	0°00'00.4389"	1:480605
		ΔHt.	-148.170sft	0.052sft	
		ΔElev.	-148.040sft	0.162sft	
		Dist.	12896.690sft	0.027sft	
R05	Q02	Az.	316°09'15.6461"	0°00'00.1929"	1:1060151
		ΔHt.	-21.554sft	0.081sft	
		ΔElev.	-21.771sft	0.203sft	
		Dist.	24795.178sft	0.023sft	
R05	Q03	Az.	355°55'11.3160"	0°00'00.3472"	1:577748
		ΔHt.	-69.238sft	0.061sft	
		ΔElev.	?	?	
		Dist.	15930.544sft	0.028sft	
Q04	Q05	Az.	184°58'03.0823"	0°00'00.3663"	1:546804
		ΔHt.	-65.494sft	0.063sft	
		ΔElev.	-65.489sft	0.154sft	
		Dist.	15915.079sft	0.029sft	
Q04	P04	Az.	270°07'01.0218"	0°00'00.3672"	1:580645
		ΔHt.	-37.618sft	0.057sft	
		ΔElev.	-37.784sft	0.162sft	
		Dist.	15089.621sft	0.026sft	

Q04	NGS A 5	Az.	358°45'01.7382"	0°00'00.8886"	1:221687
		ΔHt.	7.222sft	0.041sft	
		ΔElev.	7.212sft	0.108sft	
		Dist.	5618.642sft	0.025sft	
NGS D 5	DYER	Az.	243°04'56.3794"	0°00'00.0863"	1:2423447
		ΔHt.	28.708sft	0.212sft	
		ΔElev.	27.862sft	0.287sft	
		Dist.	62463.431sft	0.026sft	
NGS D 5	Q05	Az.	285°06'36.1625"	0°00'00.2254"	1:968308
		ΔHt.	-52.196sft	0.092sft	
		ΔElev.	-52.501sft	0.152sft	
		Dist.	27177.353sft	0.028sft	
NGS D 5	R06	Az.	317°30'56.2561"	0°00'00.5882"	1:356906
		ΔHt.	2.660sft	0.048sft	
		ΔElev.	2.571sft	0.132sft	
		Dist.	9760.639sft	0.027sft	
NGS D 5	P06	Az.	277°19'08.5172"	0°00'00.1070"	1:2018086
		ΔHt.	-11.877sft	0.179sft	
		ΔElev.	-12.534sft	0.152sft	
		Dist.	56331.195sft	0.028sft	
DYER	P07	Az.	23°47'23.1651"	0°00'00.1320"	1:1530574
		ΔHt.	-43.764sft	0.137sft	
		ΔElev.	-43.382sft	0.304sft	
		Dist.	38674.442sft	0.025sft	
DYER	P05	Az.	339°09'36.5581"	0°00'00.1125"	1:1810897
		ΔHt.	-140.406sft	0.145sft	
		ΔElev.	-140.420sft	0.294sft	
		Dist.	44033.657sft	0.024sft	
DYER	P06	Az.	359°34'50.8374"	0°00'00.1332"	1:1506084
		ΔHt.	-40.585sft	0.123sft	
		ΔElev.	-40.395sft	0.284sft	

		Dist.	35454.462sft	0.024sft	
DYER	NGS GPS 15	Az.	312°10'49.7014"	0°00'00.0000"	1:0
		ΔHt.	-37.920sft	0.266sft	
		ΔElev.	-38.666sft	0.363sft	
		Dist.	85665.494sft	0.000sft	
S06	S05	Az.	266°45'57.0417"	0°00'00.4226"	1:518648
		ΔHt.	-3.421sft	0.066sft	
		ΔElev.	-3.508sft	0.186sft	
		Dist.	17082.782sft	0.033sft	
S06	S04	Az.	354°19'27.8634"	0°00'00.4320"	1:465616
		ΔHt.	93.812sft	0.062sft	
		ΔElev.	?	?	
		Dist.	14979.068sft	0.032sft	
Q05	P07	Az.	269°53'33.3272"	0°00'00.4533"	1:470919
		ΔHt.	37.140sft	0.055sft	
		ΔElev.	36.980sft	0.150sft	
		Dist.	13774.704sft	0.029sft	
Q05	R06	Az.	89°36'18.0154"	0°00'00.3123"	1:680141
		ΔHt.	54.857sft	0.071sft	
		ΔElev.	55.072sft	0.169sft	
		Dist.	19645.848sft	0.029sft	
P04	Q01	Az.	1°32'19.8628"	0°00'00.3521"	1:567133
		ΔHt.	36.225sft	0.071sft	
		ΔElev.	36.193sft	0.184sft	
		Dist.	17975.523sft	0.032sft	
P04	P07	Az.	180°11'27.6423"	0°00'00.3482"	1:579756
		ΔHt.	9.263sft	0.061sft	
		ΔElev.	9.275sft	0.158sft	
		Dist.	15911.244sft	0.027sft	
P04	Q02	Az.	39°57'49.8713"	0°00'00.2200"	1:946218
		ΔHt.	7.962sft	0.085sft	

		ΔElev.	8.083sft	0.199sft	
		Dist.	23381.233sft	0.025sft	
P04	P03	Az.	269°59'48.1361"	0°00'00.3964"	1:526070
		ΔHt.	26.656sft	0.060sft	
		ΔElev.	26.460sft	0.174sft	
		Dist.	15917.362sft	0.030sft	
Q01	P01	Az.	271°16'25.4112"	0°00'00.4468"	1:475789
		ΔHt.	-26.829sft	0.066sft	
		ΔElev.	-27.035sft	0.174sft	
		Dist.	16164.355sft	0.034sft	
Q01	Q02	Az.	90°11'32.3982"	0°00'00.4506"	1:476698
		ΔHt.	-28.263sft	0.061sft	
		ΔElev.	-28.109sft	0.171sft	
		Dist.	14535.215sft	0.030sft	
P07	P06	Az.	270°16'23.3754"	0°00'00.3311"	1:633883
		ΔHt.	3.179sft	0.057sft	
		ΔElev.	2.987sft	0.183sft	
		Dist.	15860.101sft	0.025sft	
P07	USGS ET 20 JHB	Az.	243°04'27.7656"	0°00'01.1446"	1:182595
		ΔHt.	-6.191sft	0.039sft	
		ΔElev.	-6.249sft	0.109sft	
		Dist.	5967.283sft	0.033sft	
P05	P02	Az.	4°01'43.4607"	0°00'00.4538"	1:450282
		ΔHt.	96.205sft	0.058sft	
		ΔElev.	96.187sft	0.172sft	
		Dist.	14079.360sft	0.031sft	
P05	P06	Az.	110°15'50.5622"	0°00'00.3495"	1:598916
		ΔHt.	99.821sft	0.061sft	
		ΔElev.	100.025sft	0.182sft	
		Dist.	16426.318sft	0.027sft	
P05	NGS GPS 15	Az.	288°51'35.3028"	0°00'00.0991"	1:2103149

		ΔHt.	102.486sft	0.160sft	
		ΔElev.	101.754sft	0.321sft	
		Dist.	50539.848sft	0.024sft	
P02	O07	Az.	335°47'36.6756"	0°00'00.4275"	1:479782
		ΔHt.	18.861sft	0.061sft	
		ΔElev.	18.707sft	0.170sft	
		Dist.	15568.363sft	0.032sft	
P02	P03	Az.	105°09'30.3169"	0°00'00.4535"	1:460316
		ΔHt.	17.830sft	0.059sft	
		ΔElev.	18.035sft	0.174sft	
		Dist.	14913.855sft	0.032sft	
L02	M02	Az.	268°57'35.3251"	0°00'00.4080"	1:514454
		ΔHt.	-76.682sft	0.072sft	
		ΔElev.	-76.767sft	0.192sft	
		Dist.	17347.450sft	0.034sft	
L02	R02	Az.	173°06'53.8836"	0°00'00.3767"	1:529195
		ΔHt.	-37.059sft	0.077sft	
		ΔElev.	?	?	
		Dist.	18256.812sft	0.034sft	
M02	N04	Az.	281°19'01.6271"	0°00'00.4229"	1:488034
		ΔHt.	-93.998sft	0.069sft	
		ΔElev.	-94.118sft	0.193sft	
		Dist.	17567.899sft	0.036sft	
M02	Q03	Az.	213°21'11.9829"	0°00'00.2848"	1:710239
		ΔHt.	-23.353sft	0.082sft	
		ΔElev.	?	?	
		Dist.	21274.469sft	0.030sft	
M02	R01	Az.	170°09'41.6440"	0°00'00.3784"	1:529343
		ΔHt.	-97.806sft	0.062sft	
		ΔElev.	?	?	
		Dist.	15788.926sft	0.030sft	

T04	T06	Az.	173°26'08.3981"	0°00'00.5850"	1:347045
		ΔHt.	5.977sft	0.053sft	
		ΔElev.	5.987sft	0.155sft	
		Dist.	10635.477sft	0.031sft	
T04	T02	Az.	356°04'29.0613"	0°00'00.3289"	1:607185
		ΔHt.	11.227sft	0.079sft	
		ΔElev.	11.171sft	0.201sft	
		Dist.	20363.469sft	0.034sft	
T04	NGS L 87	Az.	133°28'25.1269"	0°00'00.1308"	1:1587140
		ΔHt.	-13.492sft	0.139sft	
		ΔElev.	-13.496sft	0.241sft	
		Dist.	43344.194sft	0.027sft	
T06	NGS L 87	Az.	122°29'30.9079"	0°00'00.1663"	1:1252072
		ΔHt.	-19.469sft	0.115sft	
		ΔElev.	-19.483sft	0.233sft	
		Dist.	35849.239sft	0.029sft	
NGS A 5	Q02	Az.	0°17'20.4967"	0°00'00.3479"	1:560755
		ΔHt.	-36.877sft	0.053sft	
		ΔElev.	-36.913sft	0.156sft	
		Dist.	12324.604sft	0.022sft	
P06	P03	Az.	359°56'44.0577"	0°00'00.3881"	1:526434
		ΔHt.	14.214sft	0.062sft	
		ΔElev.	14.198sft	0.172sft	
		Dist.	15834.588sft	0.030sft	
P06	USGS ET 20 JHB	Az.	104°43'36.2895"	0°00'00.6296"	1:332929
		ΔHt.	-9.370sft	0.049sft	
		ΔElev.	-9.236sft	0.152sft	
		Dist.	10899.434sft	0.033sft	
O07	P01	Az.	89°21'25.3290"	0°00'00.3415"	1:636456
		ΔHt.	-18.291sft	0.080sft	
		ΔElev.	-17.974sft	0.204sft	

		Dist.	20995.857sft	0.033sft	
O07	O06	Az.	359°53'19.1809"	0°00'00.7250"	1:277459
		ΔHt.	-24.017sft	0.054sft	
		ΔElev.	-24.079sft	0.148sft	
		Dist.	10184.008sft	0.037sft	
O07	NGS GPS 15	Az.	254°18'44.9293"	0°00'00.1385"	1:1524909
		ΔHt.	-12.580sft	0.150sft	
		ΔElev.	-13.140sft	0.331sft	
		Dist.	44070.495sft	0.029sft	
O04	P01	Az.	161°55'22.8349"	0°00'00.4515"	1:424131
		ΔHt.	-31.881sft	0.077sft	
		ΔElev.	-31.740sft	0.180sft	
		Dist.	16415.538sft	0.039sft	
O04	NGS V 4	Az.	277°12'54.2426"	0°00'00.4796"	1:476720
		ΔHt.	33.205sft	0.068sft	
		ΔElev.	32.909sft	0.167sft	
		Dist.	16082.207sft	0.034sft	
O04	O05	Az.	90°23'41.6550"	0°00'00.5041"	1:430923
		ΔHt.	-1.768sft	0.071sft	
		ΔElev.	-1.543sft	0.176sft	
		Dist.	15918.497sft	0.037sft	
S05	R08	Az.	269°56'28.1491"	0°00'00.4317"	1:494658
		ΔHt.	-0.420sft	0.056sft	
		ΔElev.	-0.513sft	0.173sft	
		Dist.	14427.452sft	0.029sft	
S05	S03	Az.	4°08'56.1293"	0°00'00.4010"	1:499176
		ΔHt.	132.954sft	0.059sft	
		ΔElev.	?	?	
		Dist.	14618.563sft	0.029sft	
O06	NGS V 4	Az.	359°39'19.7872"	0°00'00.9651"	1:203485
		ΔHt.	70.813sft	0.051sft	

		ΔElev.	70.753sft	0.132sft	
		Dist.	7662.674sft	0.038sft	
N03	Q02	Az.	165°39'19.6962"	0°00'00.3930"	1:495382
		ΔHt.	52.700sft	0.070sft	
		ΔElev.	52.799sft	0.177sft	
		Dist.	16482.252sft	0.033sft	
N03	O05	Az.	269°45'40.6425"	0°00'00.4780"	1:440347
		ΔHt.	84.247sft	0.065sft	
		ΔElev.	84.070sft	0.179sft	
		Dist.	15766.656sft	0.036sft	
N03	N04	Az.	77°22'18.3762"	0°00'00.4902"	1:426341
		ΔHt.	-65.629sft	0.062sft	
		ΔElev.	-65.511sft	0.179sft	
		Dist.	14930.844sft	0.035sft	
R03	R01	Az.	1°10'41.2760"	0°00'00.3435"	1:578662
		ΔHt.	4.479sft	0.071sft	
		ΔElev.	?	?	
		Dist.	18159.834sft	0.031sft	
Q02	Q03	Az.	97°02'15.4873"	0°00'00.3614"	1:587346
		ΔHt.	-47.684sft	0.060sft	
		ΔElev.	?	?	
		Dist.	16165.807sft	0.028sft	
S01	S03	Az.	170°28'34.8726"	0°00'00.3105"	1:635170
		ΔHt.	0.261sft	0.074sft	
		ΔElev.	?	?	
		Dist.	19666.826sft	0.031sft	
S01	R02	Az.	259°12'22.8628"	0°00'00.5190"	1:411621
		ΔHt.	24.227sft	0.054sft	
		ΔElev.	?	?	
		Dist.	12528.886sft	0.030sft	
S01	S02	Az.	89°58'52.9451"	0°00'00.3957"	1:554334

		ΔHt.	34.185sft	0.066sft	
		ΔElev.	?	?	
		Dist.	17093.351sft	0.031sft	
S03	S04	Az.	84°52'47.2881"	0°00'00.4138"	1:515308
		ΔHt.	-35.721sft	0.058sft	
		ΔElev.	?	?	
		Dist.	14563.297sft	0.028sft	
R02	R01	Az.	277°37'03.4742"	0°00'00.3845"	1:552499
		ΔHt.	-137.429sft	0.066sft	
		ΔElev.	?	?	
		Dist.	16996.546sft	0.031sft	
Q03	R01	Az.	81°13'42.7587"	0°00'00.4236"	1:503518
		ΔHt.	-74.453sft	0.058sft	
		ΔElev.	?	?	
		Dist.	14563.806sft	0.029sft	
S02	S04	Az.	177°56'07.2251"	0°00'00.3638"	1:521410
		ΔHt.	-69.645sft	0.073sft	
		ΔElev.	?	?	
		Dist.	18111.848sft	0.035sft	