

Phase I Fully Constrained GPS Network Adjustment

2001 Geodetic Control Densification

of

Jefferson County, Kentucky



*GRW Aerial Surveys, Inc.
801 Corporate Drive
Lexington, Ky. 40503*

ADJUSTMENT STATISTICS SUMMARY
 NETWORK = LOJIC_PHASE
 TIME = Thu Oct 18 10:49:25 2001

ADJUSTMENT SUMMARY

Network Reference Factor = 1.05
 Chi-Square Test ($\alpha = 95\%$) = PASS
 Degrees of Freedom = 133.00

GPS OBSERVATIONS

Reference Factor = 1.05
 r = 128.12

GPS Solution	1	Reference Factor =	0.54	r =	1.84
GPS Solution	2	Reference Factor =	1.32	r =	2.25
GPS Solution	3	Reference Factor =	0.47	r =	2.49
GPS Solution	4	Reference Factor =	1.19	r =	2.30
GPS Solution	5	Reference Factor =	1.01	r =	2.54
GPS Solution	6	Reference Factor =	0.54	r =	2.35
GPS Solution	7	Reference Factor =	1.73	r =	2.08
GPS Solution	8	Reference Factor =	1.33	r =	2.45
GPS Solution	9	Reference Factor =	0.29	r =	2.68
GPS Solution	10	Reference Factor =	1.58	r =	2.79
GPS Solution	11	Reference Factor =	0.61	r =	2.14
GPS Solution	12	Reference Factor =	0.33	r =	2.78
GPS Solution	13	Reference Factor =	0.76	r =	2.83
GPS Solution	14	Reference Factor =	0.26	r =	1.94
GPS Solution	15	Reference Factor =	1.34	r =	2.73
GPS Solution	16	Reference Factor =	0.61	r =	1.94
GPS Solution	17	Reference Factor =	1.72	r =	2.36
GPS Solution	18	Reference Factor =	0.56	r =	2.78
GPS Solution	19	Reference Factor =	0.78	r =	2.62
GPS Solution	20	Reference Factor =	0.61	r =	2.22
GPS Solution	21	Reference Factor =	1.63	r =	2.61
GPS Solution	22	Reference Factor =	0.78	r =	2.46
GPS Solution	23	Reference Factor =	1.22	r =	2.68
GPS Solution	24	Reference Factor =	1.03	r =	2.38
GPS Solution	25	Reference Factor =	1.41	r =	2.45
GPS Solution	26	Reference Factor =	1.58	r =	2.57
GPS Solution	27	Reference Factor =	1.51	r =	2.24
GPS Solution	28	Reference Factor =	0.63	r =	2.71
GPS Solution	29	Reference Factor =	1.29	r =	2.07
GPS Solution	30	Reference Factor =	0.92	r =	2.70
GPS Solution	31	Reference Factor =	0.52	r =	2.11
GPS Solution	32	Reference Factor =	0.29	r =	2.72
GPS Solution	33	Reference Factor =	0.55	r =	2.89
GPS Solution	34	Reference Factor =	1.22	r =	2.00
GPS Solution	35	Reference Factor =	1.05	r =	2.84
GPS Solution	36	Reference Factor =	0.53	r =	2.64
GPS Solution	37	Reference Factor =	0.84	r =	1.96
GPS Solution	38	Reference Factor =	0.80	r =	2.54
GPS Solution	39	Reference Factor =	0.37	r =	1.95
GPS Solution	40	Reference Factor =	2.11	r =	2.43
GPS Solution	41	Reference Factor =	1.01	r =	2.62
GPS Solution	42	Reference Factor =	0.49	r =	2.63
GPS Solution	43	Reference Factor =	0.95	r =	2.36
GPS Solution	44	Reference Factor =	1.24	r =	2.67
GPS Solution	45	Reference Factor =	1.39	r =	2.50
GPS Solution	46	Reference Factor =	1.09	r =	2.36
GPS Solution	47	Reference Factor =	0.41	r =	2.20
GPS Solution	48	Reference Factor =	1.46	r =	2.56
GPS Solution	49	Reference Factor =	0.33	r =	1.82
GPS Solution	50	Reference Factor =	1.26	r =	2.30
GPS Solution	51	Reference Factor =	0.76	r =	1.63
GPS Solution	52	Reference Factor =	1.44	r =	2.68
GPS Solution	53	Reference Factor =	0.39	r =	2.72

GEOID MODEL

Reference Factor = 1.00

r = 4.88

Geoid Heights: Reference Factor = 1.00 r = 4.88
Delta Geoid Heights: Reference Factor = 1.00 r = 0.00

WEIGHTING STRATEGIES:

GPS OBSERVATIONS:

Scalar Weighting Strategy:
User-Defined Scalar Set Applied Globally = 4.76

No summation weighting strategy was used

Station Error Strategy:

H.I. error = 0.0080
Tribrach error = 0.0030

GEOID MODEL:

Scalar Weighting Strategy:
User-Defined Scalar Set Applied Globally = 0.22

No summation weighting strategy was used

Results of adjusted Geoid model:

Noise in vertical GPS observations: 0.00261663
Variance of geoid model: 0.01006950
Use of correlated Residual Geoid Model may improve geoid heights

COORDINATE ADJUSTMENT SUMMARY
 NETWORK = LOJIC_PHASE
 TIME = Thu Oct 18 10:49:25 2001

Datum = NAD-83
 Coordinate System = 1983 State Plane Lambert
 Zone = Kentucky North

Network Adjustment Constraints:
 10 fixed coordinates in y
 10 fixed coordinates in x
 9 fixed coordinates in h

POINT	NAME	OLD COORDS	ADJUST	NEW COORDS	1.96 μ
1	31 K ECC				
	Y=	55213.4337	+0.0000	55213.4337	0.007393m
	X=	371332.9297	+0.0000	371332.9297	0.006046m
	ELL HT=	102.8510	-0.0001	102.8509	0.087152m
	ORTHO HT=	136.0450	+0.0000	136.0450	FIXED
	GEOID HT=	-33.1940	-0.0001	-33.1941	0.087152m
2	48978ECC				
	Y=	59655.0699	+0.0000	59655.0699	0.007128m
	X=	403901.4456	+0.0000	403901.4456	0.005682m
	ELL HT=	115.8909	+0.0001	115.8909	0.097438m
	ORTHO HT=	149.5780	+0.0000	149.5780	FIXED
	GEOID HT=	-33.6871	+0.0001	-33.6871	0.097438m
3	BOWMANRS				
	Y=	81239.4209	+0.0000	81239.4208	0.007760m
	X=	376047.9415	+0.0000	376047.9415	0.006269m
	ELL HT=	130.4730	+0.0001	130.4731	0.081300m
	ORTHO HT=	163.7970	+0.0000	163.7970	FIXED
	GEOID HT=	-33.3240	+0.0001	-33.3239	0.081300m
4	EDWARD 2				
	Y=	88306.8767	+0.0000	88306.8767	FIXED
	X=	355090.4548	+0.0000	355090.4548	FIXED
	ELL HT=	246.2921	+0.0000	246.2921	0.092960m
	ORTHO HT=	279.5300	+0.0000	279.5300	FIXED
	GEOID HT=	-33.2379	+0.0000	-33.2379	0.092960m
5	GOSHENRM				
	Y=	101602.2246	+0.0000	101602.2246	0.011511m
	X=	385229.9275	+0.0000	385229.9275	0.008763m
	ELL HT=	184.4265	+0.0000	184.4265	0.096012m
	ORTHO HT=	217.8720	+0.0000	217.8720	FIXED
	GEOID HT=	-33.4455	+0.0000	-33.4455	0.096012m
6	H 323ECC				
	Y=	78678.6105	+0.0000	78678.6105	0.009211m
	X=	356540.0995	+0.0000	356540.0995	0.007406m
	ELL HT=	98.2553	+0.0000	98.2553	0.089220m
	ORTHO HT=	131.4360	+0.0000	131.4360	FIXED
	GEOID HT=	-33.1807	+0.0000	-33.1807	0.089220m
7	HORRODS				
	Y=	106000.5530	+0.0000	106000.5530	FIXED
	X=	395410.3260	+0.0000	395410.3260	FIXED
	ELL HT=	210.3168	+0.0001	210.3169	0.109325m
	ORTHO HT=	243.8284	+0.0000	243.8284	0.057906m
	GEOID HT=	-33.5115	+0.0000	-33.5115	0.097935m
8	I64 L 21				
	Y=	80065.0560	+0.0000	80065.0560	FIXED
	X=	399827.7670	+0.0000	399827.7670	FIXED
	ELL HT=	194.9281	+0.0000	194.9281	0.090655m
	ORTHO HT=	228.3170	+0.0000	228.3170	FIXED
	GEOID HT=	-33.3889	+0.0000	-33.3889	0.090655m
9	J 334ECC				
	Y=	56766.7188	+0.0000	56766.7188	0.006797m

	X=	351062.8312	+0.0000	351062.8312	0.005855m
	ELL HT=	101.6787	+0.0000	101.6786	0.097507m
	ORTHO HT=	134.6370	+0.0000	134.6370	FIXED
	GEOID HT=	-32.9583	+0.0000	-32.9584	0.097507m
10 KY 05					
	Y=	78221.3000	+0.0000	78221.3000	FIXED
	X=	369684.0600	+0.0000	369684.0600	FIXED
	ELL HT=	115.8664	+0.0000	115.8664	0.080555m
	ORTHO HT=	149.1485	+0.0000	149.1484	0.036094m
	GEOID HT=	-33.2821	+0.0000	-33.2821	0.088193m
11 KY 13					
	Y=	44892.9620	+0.0000	44892.9620	FIXED
	X=	384287.9980	+0.0000	384287.9980	FIXED
	ELL HT=	173.9129	+0.0000	173.9129	0.099937m
	ORTHO HT=	207.3243	+0.0000	207.3243	0.058667m
	GEOID HT=	-33.4114	+0.0000	-33.4114	0.096258m
12 lou1					
	Y=	57164.6050	+0.0000	57164.6050	FIXED
	X=	407896.3109	+0.0000	407896.3109	FIXED
	ELL HT=	192.2173	+0.0000	192.2174	0.104998m
	ORTHO HT=	225.9534	+0.0000	225.9534	0.039262m
	GEOID HT=	-33.7361	+0.0000	-33.7360	0.098074m
13 LOUSBASE					
	Y=	73453.7270	+0.0000	73453.7270	FIXED
	X=	361270.4580	+0.0000	361270.4580	FIXED
	ELL HT=	110.1366	+0.0000	110.1366	0.084835m
	ORTHO HT=	143.3166	+0.0000	143.3166	0.039316m
	GEOID HT=	-33.1801	+0.0000	-33.1801	0.092276m
14 SDF A					
	Y=	76368.0280	+0.0000	76368.0280	FIXED
	X=	370090.2390	+0.0000	370090.2390	FIXED
	ELL HT=	112.6878	+0.0000	112.6878	0.080568m
	ORTHO HT=	145.9591	+0.0000	145.9591	0.037678m
	GEOID HT=	-33.2713	+0.0000	-33.2713	0.088495m
15 SDF E					
	Y=	77418.1010	+0.0000	77418.1010	FIXED
	X=	369817.1850	+0.0000	369817.1850	FIXED
	ELL HT=	115.8047	+0.0000	115.8048	0.080878m
	ORTHO HT=	149.0817	+0.0000	149.0817	0.037390m
	GEOID HT=	-33.2769	+0.0000	-33.2769	0.088314m
16 SNOW RMA					
	Y=	45556.3039	+0.0000	45556.3039	FIXED
	X=	345917.9055	+0.0000	345917.9055	FIXED
	ELL HT=	240.2120	-0.0001	240.2119	0.114139m
	ORTHO HT=	272.9828	+0.0000	272.9828	0.061205m
	GEOID HT=	-32.7708	-0.0001	-32.7709	0.098608m
17 X 349					
	Y=	88643.3744	+0.0000	88643.3744	0.011877m
	X=	374714.3742	+0.0000	374714.3742	0.008678m
	ELL HT=	98.8475	+0.0000	98.8475	0.085496m
	ORTHO HT=	132.2110	+0.0000	132.2110	FIXED
	GEOID HT=	-33.3635	+0.0000	-33.3635	0.085496m

OBSERVATION ADJUSTMENT SUMMARY
 NETWORK = LOJIC_PHASE
 TIME = Thu Oct 18 10:49:26 2001

OBSERVATION ADJUSTMENT (Tau = 3.55)

GPS Parameter Group 1 GPS Observations
 Azimuth rotation = -0.0385 seconds 1.96Å = 0.0187 seconds
 Deflection in latitude = +0.0949 seconds 1.96Å = 0.4316 seconds
 Deflection in longitude = +0.0606 seconds 1.96Å = 0.4060 seconds
 Network scale = 0.999999852745 1.96Å = 0.000000084643

OBS#	BLK#/ REF#	TYPE	BACKSIGHT/ INSTRUMENT/ FORESIGHT	UDVC/ UDPG/ SBNT	OBSERVED/ ADJUSTED/ RESIDUAL	1.96Å/ 1.96Å/ 1.96Å	TAU
1	1	hgoid	---	---	-33.2280m	0.1003m	0.38
	1		31 K ECC	---	-33.1941m	0.0872m	
			---	1	+0.033906m	0.0497m	
2	1	hgoid	---	---	-33.6647m	0.1003m	0.51
	2		48978ECC	---	-33.6871m	0.0974m	
			---	1	-0.022377m	0.0240m	
3	1	hgoid	---	---	-33.3118m	0.1003m	0.11
	3		BOWMANRS	---	-33.3239m	0.0813m	
			---	1	-0.012094m	0.0588m	
4	1	hgoid	---	---	-33.2217m	0.1003m	0.24
	4		EDWARD 2	---	-33.2379m	0.0930m	
			---	1	-0.016173m	0.0378m	
5	1	hgoid	---	---	-33.4569m	0.1003m	0.22
	5		GOSHENRM	---	-33.4455m	0.0960m	
			---	1	+0.011459m	0.0292m	
6	1	hgoid	---	---	-33.1739m	0.1003m	0.08
	6		H 323ECC	---	-33.1807m	0.0892m	
			---	1	-0.006853m	0.0459m	
7	1	hgoid	---	---	-33.5233m	0.1003m	0.30
	7		HORRODS	---	-33.5115m	0.0979m	
			---	1	+0.011820m	0.0219m	
8	1	hgoid	---	---	-33.4038m	0.1003m	0.19
	8		I64 L 21	---	-33.3889m	0.0907m	
			---	1	+0.014962m	0.0430m	
9	1	hgoid	---	---	-32.9687m	0.1003m	0.24
	9		J 334ECC	---	-32.9584m	0.0975m	
			---	1	+0.010338m	0.0237m	
10	1	hgoid	---	---	-33.2756m	0.1003m	0.08
	10		KY 05	---	-33.2821m	0.0882m	
			---	1	-0.006514m	0.0479m	
11	1	hgoid	---	---	-33.4235m	0.1003m	0.24
	11		KY 13	---	-33.4114m	0.0963m	
			---	1	+0.012124m	0.0284m	
12	1	hgoid	---	---	-33.7168m	0.1003m	0.50
	12		lou1	---	-33.7360m	0.0981m	
			---	1	-0.019197m	0.0212m	
13	1	hgoid	---	---	-33.1795m	0.1003m	0.01
	13		LOUSBASE	---	-33.1801m	0.0923m	
			---	1	-0.000538m	0.0394m	
14	1	hgoid	---	---	-33.2668m	0.1003m	0.05
	14		SDF A	---	-33.2713m	0.0885m	
			---	1	-0.004451m	0.0473m	

Observs.log

15	1 hgoid	-*-	-*-	-33.2712m	0.1003m	0.07
15		SDF E	-*-	-33.2769m	0.0883m	
		-*-	1	-0.005672m	0.0476m	
16	1 hgoid	-*-	-*-	-32.7839m	0.1003m	0.39
16		SNOW RMA	-*-	-32.7709m	0.0986m	
		-*-	1	+0.013051m	0.0186m	
17	1 hgoid	-*-	-*-	-33.3588m	0.1003m	0.05
17		X 349	-*-	-33.3635m	0.0855m	
		-*-	1	-0.004663m	0.0525m	
18	1 gpsaz	-*-	-*-	39ø03'28.2854"	0.2732"	0.13
1		X 349	-*-	39ø03'28.2353"	0.1607"	
		GOSHENRM	1	-0.050112"	0.2208"	
19	1 gpsht	-*-	-*-	+85.5902m	0.0536m	0.10
1		X 349	-*-	+85.5821m	0.0278m	
		GOSHENRM	1	-0.008116m	0.0458m	
20	1 gpsds	-*-	-*-	16688.5686m	0.0222m	0.23
1		X 349	-*-	16688.5763m	0.0124m	
		GOSHENRM	1	+0.007693m	0.0185m	
21	2 gpsaz	-*-	-*-	301ø56'24.4536"	0.6541"	0.15
1		lou1	-*-	301ø56'24.2989"	0.2992"	
		48978ECC	1	-0.154650"	0.5816"	
22	2 gpsht	-*-	-*-	-76.2993m	0.0350m	0.46
1		lou1	-*-	-76.3241m	0.0184m	
		48978ECC	1	-0.024853m	0.0297m	
23	2 gpsds	-*-	-*-	4707.5786m	0.0135m	0.30
1		lou1	-*-	4707.5851m	0.0062m	
		48978ECC	1	+0.006496m	0.0120m	
24	3 gpsaz	-*-	-*-	170ø35'20.7936"	2.4224"	0.02
1		KY 05	-*-	170ø35'20.9030"	0.0187"	
		SDF E	1	+0.109437"	2.4223"	
25	3 gpsht	-*-	-*-	-0.0543m	0.0251m	0.24
1		KY 05	-*-	-0.0620m	0.0179m	
		SDF E	1	-0.007732m	0.0176m	
26	3 gpsds	-*-	-*-	814.1547m	0.0099m	0.10
1		KY 05	-*-	814.1564m	0.0001m	
		SDF E	1	+0.001765m	0.0099m	
27	4 gpsaz	-*-	-*-	270ø59'25.5419"	0.0667"	0.27
1		KY 13	-*-	270ø59'25.5106"	0.0187"	
		SNOW RMA	1	-0.031347"	0.0640"	
28	4 gpsht	-*-	-*-	+66.2892m	0.0290m	0.58
1		KY 13	-*-	+66.3104m	0.0210m	
		SNOW RMA	1	+0.021154m	0.0200m	
29	4 gpsds	-*-	-*-	38375.8187m	0.0111m	0.08
1		KY 13	-*-	38375.8203m	0.0032m	
		SNOW RMA	1	+0.001618m	0.0106m	
30	5 gpsaz	-*-	-*-	266ø29'59.3740"	0.0993"	0.07
1		I64 L 21	-*-	266ø29'59.3620"	0.0187"	
		KY 05	1	-0.011942"	0.0976"	
31	5 gpsht	-*-	-*-	-79.0540m	0.0352m	0.00
1		I64 L 21	-*-	-79.0539m	0.0198m	
		KY 05	1	+0.000062m	0.0291m	
32	5 gpsds	-*-	-*-	30200.0282m	0.0117m	0.43
1		I64 L 21	-*-	30200.0371m	0.0026m	
		KY 05	1	+0.008828m	0.0114m	
33	6 gpsaz	-*-	-*-	355ø54'03.1545"	0.1346"	0.14
1		31 K ECC	-*-	355ø54'03.1245"	0.0565"	

Observs.log

			KY 05	1	-0.030036"	0.1222"	
34	6	gpsht	-*-	-*-	+13.0373m	0.0472m	0.14
	1		31 K ECC	-*-	+13.0266m	0.0220m	
			KY 05	1	-0.010651m	0.0418m	
35	6	gpsds	-*-	-*-	23066.8701m	0.0194m	0.02
	1		31 K ECC	-*-	23066.8707m	0.0076m	
			KY 05	1	+0.000652m	0.0179m	
36	7	gpsaz	-*-	-*-	246011'47.0773"	0.1326"	0.22
	1		GOSHENRM	-*-	246011'47.0334"	0.0721"	
			EDWARD 2	1	-0.043859"	0.1113"	
37	7	gpsht	-*-	-*-	+61.8959m	0.0486m	0.39
	1		GOSHENRM	-*-	+61.8680m	0.0282m	
			EDWARD 2	1	-0.027857m	0.0396m	
38	7	gpsds	-*-	-*-	32941.6879m	0.0172m	0.59
	1		GOSHENRM	-*-	32941.6723m	0.0092m	
			EDWARD 2	1	-0.015614m	0.0145m	
39	8	gpsaz	-*-	-*-	168042'45.0571"	0.1468"	0.05
	1		I64 L 21	-*-	168042'45.0460"	0.0580"	
			48978ECC	1	-0.011049"	0.1349"	
40	8	gpsht	-*-	-*-	-79.0876m	0.0455m	0.54
	1		I64 L 21	-*-	-79.0478m	0.0198m	
			48978ECC	1	+0.039766m	0.0410m	
41	8	gpsds	-*-	-*-	20812.5382m	0.0193m	0.38
	1		I64 L 21	-*-	20812.5506m	0.0071m	
			48978ECC	1	+0.012420m	0.0180m	
42	9	gpsaz	-*-	-*-	94022'55.1298"	0.3575"	0.08
	1		J 334ECC	-*-	94022'55.0767"	0.0885"	
			31 K ECC	1	-0.053115"	0.3464"	
43	9	gpsht	-*-	-*-	+1.1646m	0.0682m	0.01
	1		J 334ECC	-*-	+1.1658m	0.0202m	
			31 K ECC	1	+0.001238m	0.0652m	
44	9	gpsds	-*-	-*-	20329.5188m	0.0212m	0.09
	1		J 334ECC	-*-	20329.5221m	0.0073m	
			31 K ECC	1	+0.003271m	0.0199m	
45	10	gpsaz	-*-	-*-	266056'43.0821"	0.2327"	0.43
	1		lou1	-*-	266056'43.2596"	0.0456"	
			31 K ECC	1	+0.177455"	0.2282"	
46	10	gpsht	-*-	-*-	-89.4097m	0.0767m	0.39
	1		lou1	-*-	-89.3568m	0.0208m	
			31 K ECC	1	+0.052841m	0.0739m	
47	10	gpsds	-*-	-*-	36615.3778m	0.0242m	0.52
	1		lou1	-*-	36615.4000m	0.0067m	
			31 K ECC	1	+0.022118m	0.0233m	
48	11	gpsaz	-*-	-*-	171026'15.8812"	0.3022"	0.21
	1		EDWARD 2	-*-	171026'15.9769"	0.1601"	
			H 323ECC	1	+0.095771"	0.2564"	
49	11	gpsht	-*-	-*-	-148.0483m	0.0410m	0.11
	1		EDWARD 2	-*-	-148.0417m	0.0231m	
			H 323ECC	1	+0.006649m	0.0338m	
50	11	gpsds	-*-	-*-	9736.7794m	0.0187m	0.14
	1		EDWARD 2	-*-	9736.7835m	0.0093m	
			H 323ECC	1	+0.004073m	0.0163m	
51	12	gpsaz	-*-	-*-	259023'29.8642"	0.1048"	0.05
	1		lou1	-*-	259023'29.8728"	0.0187"	
			SNOW RMA	1	+0.008580"	0.1032"	
52	12	gpsht	-*-	-*-	+48.0169m	0.0662m	0.09

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	1		lou1	***-	+48.0070m	0.0216m	
			SNOW RMA	1	-0.009883m	0.0626m	
53	12	gpsds		***-	63056.1158m	0.0209m	0.10
	1		lou1	***-	63056.1195m	0.0053m	
			SNOW RMA	1	+0.003777m	0.0202m	
54	13	gpsaz		***-	69011'39.7748"	0.4224"	0.20
	1		SNOW RMA	***-	69011'39.6232"	0.0579"	
			31 K ECC	1	-0.151581"	0.4185"	
55	13	gpsht		***-	-137.4073m	0.1156m	0.21
	1		SNOW RMA	***-	-137.3637m	0.0206m	
			31 K ECC	1	+0.043547m	0.1137m	
56	13	gpsds		***-	27187.9104m	0.0296m	0.33
	1		SNOW RMA	***-	27187.9274m	0.0068m	
			31 K ECC	1	+0.016995m	0.0288m	
57	14	gpsaz		***-	349047'22.5960"	0.4078"	0.05
	1		BOWMANRS	***-	349047'22.5658"	0.2532"	
			X 349	1	-0.030157"	0.3196"	
58	14	gpsht		***-	-31.6303m	0.0495m	0.11
	1		BOWMANRS	***-	-31.6217m	0.0233m	
			X 349	1	+0.008525m	0.0436m	
59	14	gpsds		***-	7523.0951m	0.0245m	0.08
	1		BOWMANRS	***-	7523.0920m	0.0130m	
			X 349	1	-0.003112m	0.0208m	
60	15	gpsaz		***-	289015'26.1792"	0.1033"	0.09
	1		lou1	***-	289015'26.1621"	0.0187"	
			LOUSBASE	1	-0.017091"	0.1016"	
61	15	gpsht		***-	-82.1114m	0.0492m	0.63
	1		lou1	***-	-82.0598m	0.0204m	
			LOUSBASE	1	+0.051554m	0.0448m	
62	15	gpsds		***-	49389.3296m	0.0189m	0.29
	1		lou1	***-	49389.3200m	0.0042m	
			LOUSBASE	1	-0.009656m	0.0185m	
63	16	gpsaz		***-	204039'08.3937"	0.1939"	0.20
	1		J 334ECC	***-	204039'08.4534"	0.1055"	
			SNOW RMA	1	+0.059720"	0.1627"	
64	16	gpsht		***-	+138.5275m	0.0310m	0.05
	1		J 334ECC	***-	+138.5296m	0.0206m	
			SNOW RMA	1	+0.002113m	0.0232m	
65	16	gpsds		***-	12334.6544m	0.0122m	0.18
	1		J 334ECC	***-	12334.6511m	0.0069m	
			SNOW RMA	1	-0.003297m	0.0100m	
66	17	gpsaz		***-	301056'24.0964"	0.7218"	0.17
	1		lou1	***-	301056'24.2989"	0.2992"	
			48978ECC	1	+0.202465"	0.6568"	
67	17	gpsht		***-	-76.3125m	0.0401m	0.18
	1		lou1	***-	-76.3241m	0.0184m	
			48978ECC	1	-0.011675m	0.0356m	
68	17	gpsds		***-	4707.5673m	0.0140m	0.78
	1		lou1	***-	4707.5851m	0.0062m	
			48978ECC	1	+0.017798m	0.0126m	
69	18	gpsaz		***-	307005'10.9272"	0.1791"	0.22
	1		lou1	***-	307005'10.8564"	0.0405"	
			BOWMANRS	1	-0.070863"	0.1745"	
70	18	gpsht		***-	-61.7390m	0.0854m	0.10
	1		lou1	***-	-61.7239m	0.0195m	
			BOWMANRS	1	+0.015069m	0.0831m	

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71	18	gpsds	lou1	BOWMANRS	***- ***- ***-	***- ***- 1	39923.8637m 39923.8640m +0.000274m	0.0313m 0.0072m 0.0305m	0.00
72	19	gpsaz	I64 L 21	HORRODS	***- ***- ***-	***- ***- 1	350020'02.0762" 350020'02.0229" -0.053305"	0.1147" 0.0186" 0.1131"	0.26
73	19	gpsht	I64 L 21	HORRODS	***- ***- ***-	***- ***- 1	+15.3803m +15.4021m +0.021751m	0.0470m 0.0229m 0.0411m	0.29
74	19	gpsds	I64 L 21	HORRODS	***- ***- ***-	***- ***- 1	26309.0003m 26309.0020m +0.001674m	0.0149m 0.0022m 0.0147m	0.06
75	20	gpsaz	J 334ECC	31 K ECC	***- ***- ***-	***- ***- 1	94022'55.1336" 94022'55.0767" -0.056911"	0.1678" 0.0885" 0.1426"	0.22
76	20	gpsht	J 334ECC	31 K ECC	***- ***- ***-	***- ***- 1	+1.1641m +1.1658m +0.001715m	0.0416m 0.0202m 0.0364m	0.03
77	20	gpsds	J 334ECC	31 K ECC	***- ***- ***-	***- ***- 1	20329.5186m 20329.5221m +0.003521m	0.0149m 0.0073m 0.0130m	0.15
78	21	gpsaz	EDWARD 2	KY 05	***- ***- ***-	***- ***- 1	124038'53.2263" 124038'53.4137" +0.187361"	0.1872" 0.0187" 0.1863"	0.55
79	21	gpsht	EDWARD 2	KY 05	***- ***- ***-	***- ***- 1	-130.4143m -130.4346m -0.020255m	0.0379m 0.0226m 0.0303m	0.37
80	21	gpsds	EDWARD 2	KY 05	***- ***- ***-	***- ***- 1	17739.5682m 17739.5625m -0.005668m	0.0148m 0.0015m 0.0148m	0.21
81	22	gpsaz	I64 L 21	BOWMANRS	***- ***- ***-	***- ***- 1	272049'38.1515" 272049'38.0639" -0.087621"	0.2144" 0.0688" 0.2031"	0.24
82	22	gpsht	I64 L 21	BOWMANRS	***- ***- ***-	***- ***- 1	-64.4563m -64.4476m +0.008630m	0.0563m 0.0213m 0.0522m	0.09
83	22	gpsds	I64 L 21	BOWMANRS	***- ***- ***-	***- ***- 1	23808.7963m 23808.8022m +0.005936m	0.0159m 0.0064m 0.0146m	0.22
84	23	gpsaz	lou1	SDF E	***- ***- ***-	***- ***- 1	298000'27.2563" 298000'27.2628" +0.006569"	0.0939" 0.0187" 0.0920"	0.04
85	23	gpsht	lou1	SDF E	***- ***- ***-	***- ***- 1	-76.4326m -76.3923m +0.040318m	0.0420m 0.0194m 0.0373m	0.60
86	23	gpsds	lou1	SDF E	***- ***- ***-	***- ***- 1	43130.3130m 43130.3069m -0.006067m	0.0165m 0.0036m 0.0161m	0.21
87	24	gpsaz	KY 13	31 K ECC	***- ***- ***-	***- ***- 1	308032'31.5642" 308032'31.4619" -0.102285"	0.2417" 0.0891" 0.2246"	0.25
88	24	gpsht	KY 13	31 K ECC	***- ***- ***-	***- ***- 1	-71.0387m -71.0534m -0.014680m	0.0487m 0.0224m 0.0433m	0.19
89	24	gpsds	KY 13	31 K ECC	***- ***- ***-	***- ***- 1	16563.3894m 16563.3888m -0.000653m	0.0161m 0.0067m 0.0147m	0.02

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90	25	gpsaz	***- lou1 X 349	***- ***- 1	313029'28.1350" 313029'28.1885" +0.053553"	0.1072" 0.0466" 0.0965"	0.31
91	25	gpsht	***- lou1 X 349	***- ***- 1	-93.2957m -93.3457m -0.050027m	0.0625m 0.0248m 0.0573m	0.48
92	25	gpsds	***- lou1 X 349	***- ***- 1	45737.8821m 45737.8751m -0.006958m	0.0267m 0.0114m 0.0241m	0.16
93	26	gpsaz	***- lou1 BOWMANRS	***- ***- 1	307005'10.7751" 307005'10.8564" +0.081294"	0.1225" 0.0405" 0.1157"	0.39
94	26	gpsht	***- lou1 BOWMANRS	***- ***- 1	-61.7752m -61.7239m +0.051312m	0.0479m 0.0195m 0.0438m	0.65
95	26	gpsds	***- lou1 BOWMANRS	***- ***- 1	39923.8658m 39923.8640m -0.001865m	0.0191m 0.0072m 0.0177m	0.06
96	27	gpsaz	***- 48978ECC HORRODS	***- ***- 1	349037'04.0527" 349037'03.9815" -0.071185"	0.0682" 0.0296" 0.0614"	0.64
97	27	gpsht	***- 48978ECC HORRODS	***- ***- 1	+94.4619m +94.4499m -0.011970m	0.0424m 0.0257m 0.0337m	0.20
98	27	gpsds	***- 48978ECC HORRODS	***- ***- 1	47116.8956m 47116.8999m +0.004273m	0.0177m 0.0078m 0.0159m	0.15
99	28	gpsaz	***- I64 L 21 HORRODS	***- ***- 1	350020'02.0193" 350020'02.0229" +0.003627"	0.1438" 0.0186" 0.1426"	0.01
100	28	gpsht	***- I64 L 21 HORRODS	***- ***- 1	+15.4282m +15.4021m -0.026077m	0.0564m 0.0229m 0.0515m	0.28
101	28	gpsds	***- I64 L 21 HORRODS	***- ***- 1	26308.9955m 26309.0020m +0.006485m	0.0241m 0.0022m 0.0240m	0.15
102	29	gpsaz	***- SDF E H 323ECC	***- ***- 1	275025'23.9812" 275025'23.9594" -0.021810"	0.2635" 0.1405" 0.2230"	0.05
103	29	gpsht	***- SDF E H 323ECC	***- ***- 1	-17.5855m -17.5451m +0.040384m	0.0474m 0.0245m 0.0406m	0.55
104	29	gpsds	***- SDF E H 323ECC	***- ***- 1	13336.7825m 13336.7849m +0.002386m	0.0130m 0.0073m 0.0108m	0.12
105	30	gpsaz	***- LOUSBASE SDF A	***- ***- 1	71042'54.1838" 71042'53.9900" -0.193846"	0.2790" 0.0187" 0.2784"	0.38
106	30	gpsht	***- LOUSBASE SDF A	***- ***- 1	+2.5599m +2.5501m -0.009765m	0.0346m 0.0179m 0.0297m	0.18
107	30	gpsds	***- LOUSBASE SDF A	***- ***- 1	9288.7890m 9288.7923m +0.003231m	0.0110m 0.0008m 0.0109m	0.16
108	31	gpsaz	***- BOWMANRS	***- ***- 1	244037'37.1627" 244037'37.1092"	0.4069" 0.2198"	0.09

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			KY 05	1	-0.053452"	0.3423"	
109	31	gpsht	-*-	-*-	-14.6130m	0.0328m	0.14
	1		BOWMANRS	-*-	-14.6063m	0.0193m	
			KY 05	1	+0.006708m	0.0266m	
110	31	gpsds	-*-	-*-	7043.2930m	0.0135m	0.17
	1		BOWMANRS	-*-	7043.2966m	0.0067m	
			KY 05	1	+0.003591m	0.0117m	
111	32	gpsaz	-*-	-*-	269035'55.9395"	0.1150"	0.02
	1		lou1	-*-	269035'55.9428"	0.0275"	
			J 334ECC	1	+0.003372"	0.1116"	
112	32	gpsht	-*-	-*-	-90.5226m	0.0642m	0.00
	1		lou1	-*-	-90.5226m	0.0200m	
			J 334ECC	1	+0.000049m	0.0610m	
113	32	gpsds	-*-	-*-	56834.8593m	0.0204m	0.14
	1		lou1	-*-	56834.8640m	0.0064m	
			J 334ECC	1	+0.004767m	0.0194m	
114	33	gpsaz	-*-	-*-	340035'27.7722"	0.2285"	0.09
	1		lou1	-*-	340035'27.7335"	0.0186"	
			I64 L 21	1	-0.038680"	0.2278"	
115	33	gpsht	-*-	-*-	+2.7396m	0.0803m	0.11
	1		lou1	-*-	+2.7237m	0.0188m	
			I64 L 21	1	-0.015896m	0.0781m	
116	33	gpsds	-*-	-*-	24280.2683m	0.0329m	0.16
	1		lou1	-*-	24280.2776m	0.0021m	
			I64 L 21	1	+0.009312m	0.0329m	
117	34	gpsaz	-*-	-*-	31027'16.4263"	0.1199"	0.22
	1		J 334ECC	-*-	31027'16.4676"	0.0638"	
			LOUSBASE	1	+0.041328"	0.1015"	
118	34	gpsht	-*-	-*-	+8.4810m	0.0335m	0.40
	1		J 334ECC	-*-	+8.4628m	0.0219m	
			LOUSBASE	1	-0.018179m	0.0253m	
119	34	gpsds	-*-	-*-	19561.4923m	0.0125m	0.27
	1		J 334ECC	-*-	19561.4870m	0.0065m	
			LOUSBASE	1	-0.005272m	0.0107m	
120	35	gpsaz	-*-	-*-	340035'27.7625"	0.1776"	0.09
	1		lou1	-*-	340035'27.7335"	0.0186"	
			I64 L 21	1	-0.028988"	0.1767"	
121	35	gpsht	-*-	-*-	+2.7124m	0.0622m	0.11
	1		lou1	-*-	+2.7237m	0.0188m	
			I64 L 21	1	+0.011374m	0.0593m	
122	35	gpsds	-*-	-*-	24280.2608m	0.0258m	0.36
	1		lou1	-*-	24280.2776m	0.0021m	
			I64 L 21	1	+0.016878m	0.0258m	
123	36	gpsaz	-*-	-*-	345025'26.7644"	1.7229"	0.14
	1		SDF A	-*-	345025'26.3399"	0.0187"	
			SDF E	1	-0.424526"	1.7228"	
124	36	gpsht	-*-	-*-	+3.1137m	0.0251m	0.10
	1		SDF A	-*-	+3.1175m	0.0149m	
			SDF E	1	+0.003824m	0.0202m	
125	36	gpsds	-*-	-*-	1084.9967m	0.0094m	0.17
	1		SDF A	-*-	1084.9938m	0.0001m	
			SDF E	1	-0.002947m	0.0094m	
126	37	gpsaz	-*-	-*-	89001'03.4612"	0.2115"	0.14
	1		EDWARD 2	-*-	89001'03.4192"	0.1268"	
			X 349	1	-0.041996"	0.1693"	
127	37	gpsht	-*-	-*-	-147.4705m	0.0443m	0.31

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	1	EDWARD 2	-**-	-147.4500m	0.0249m	
		X 349	1	+0.020489m	0.0366m	
128	37	gpsds	-**-	-**-	19626.8061m	0.0151m 0.21
	1	EDWARD 2	-**-	19626.8013m	0.0089m	
		X 349	1	-0.004740m	0.0122m	
129	38	gpsaz	-**-	-**-	269035'55.9255"	0.0770" 0.13
	1	lou1	-**-	269035'55.9428"	0.0275"	
		J 334ECC	1	+0.017277"	0.0719"	
130	38	gpsht	-**-	-**-	-90.4903m	0.0535m 0.36
	1	lou1	-**-	-90.5226m	0.0200m	
		J 334ECC	1	-0.032288m	0.0496m	
131	38	gpsds	-**-	-**-	56834.8686m	0.0163m 0.17
	1	lou1	-**-	56834.8640m	0.0064m	
		J 334ECC	1	-0.004619m	0.0150m	
132	39	gpsaz	-**-	-**-	230043'42.1655"	0.3300" 0.11
	1	BOWMANRS	-**-	230043'42.2170"	0.1924"	
		SDF A	1	+0.051561"	0.2682"	
133	39	gpsht	-**-	-**-	-17.7796m	0.0306m 0.15
	1	BOWMANRS	-**-	-17.7858m	0.0198m	
		SDF A	1	-0.006224m	0.0233m	
134	39	gpsds	-**-	-**-	7695.7558m	0.0130m 0.04
	1	BOWMANRS	-**-	7695.7566m	0.0070m	
		SDF A	1	+0.000864m	0.0109m	
135	40	gpsaz	-**-	-**-	292043'46.7029"	0.0843" 0.07
	1	lou1	-**-	292043'46.7129"	0.0352"	
		H 323ECC	1	+0.009996"	0.0765"	
136	40	gpsht	-**-	-**-	-93.8643m	0.0515m 0.88
	1	lou1	-**-	-93.9373m	0.0233m	
		H 323ECC	1	-0.073079m	0.0460m	
137	40	gpsds	-**-	-**-	55680.4586m	0.0196m 0.42
	1	lou1	-**-	55680.4450m	0.0083m	
		H 323ECC	1	-0.013582m	0.0177m	
138	41	gpsaz	-**-	-**-	240027'43.0435"	0.2980" 0.36
	1	KY 05	-**-	240027'42.8468"	0.0186"	
		LOUSBASE	1	-0.196759"	0.2974"	
139	41	gpsht	-**-	-**-	-5.7248m	0.0329m 0.10
	1	KY 05	-**-	-5.7296m	0.0198m	
		LOUSBASE	1	-0.004804m	0.0263m	
140	41	gpsds	-**-	-**-	9670.4853m	0.0140m 0.28
	1	KY 05	-**-	9670.4924m	0.0008m	
		LOUSBASE	1	+0.007110m	0.0140m	
141	42	gpsaz	-**-	-**-	165025'26.6240"	1.7729" 0.09
	1	SDF E	-**-	165025'26.3399"	0.0187"	
		SDF A	1	-0.284121"	1.7728"	
142	42	gpsht	-**-	-**-	-3.1139m	0.0246m 0.10
	1	SDF E	-**-	-3.1175m	0.0149m	
		SDF A	1	-0.003555m	0.0196m	
143	42	gpsds	-**-	-**-	1084.9969m	0.0096m 0.18
	1	SDF E	-**-	1084.9938m	0.0001m	
		SDF A	1	-0.003156m	0.0096m	
144	43	gpsaz	-**-	-**-	262014'02.4171"	0.1285" 0.03
	1	48978ECC	-**-	262014'02.4106"	0.0597"	
		31 K ECC	1	-0.006571"	0.1138"	
145	43	gpsht	-**-	-**-	-13.0014m	0.0496m 0.39
	1	48978ECC	-**-	-13.0327m	0.0217m	
		31 K ECC	1	-0.031227m	0.0446m	

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146	43	gpsds	---	---	32869.9832m	0.0178m	0.13
	1		48978ECC	---	32869.9869m	0.0078m	
			31 K ECC	1	+0.003650m	0.0160m	
147	44	gpsaz	---	---	251042'54.2715"	0.3121"	0.50
	1		SDF A	---	251042'53.9898"	0.0186"	
			LOUSBASE	1	-0.281743"	0.3116"	
148	44	gpsht	---	---	-2.5554m	0.0322m	0.11
	1		SDF A	---	-2.5501m	0.0179m	
			LOUSBASE	1	+0.005319m	0.0268m	
149	44	gpsds	---	---	9288.7856m	0.0131m	0.28
	1		SDF A	---	9288.7923m	0.0008m	
			LOUSBASE	1	+0.006712m	0.0130m	
150	45	gpsaz	---	---	12006'35.0851"	0.0776"	0.21
	1		SNOW RMA	---	12006'35.1132"	0.0187"	
			EDWARD 2	1	+0.028013"	0.0753"	
151	45	gpsht	---	---	+6.0681m	0.0415m	0.48
	1		SNOW RMA	---	+6.0975m	0.0245m	
			EDWARD 2	1	+0.029412m	0.0335m	
152	45	gpsds	---	---	43723.5176m	0.0190m	0.20
	1		SNOW RMA	---	43723.5242m	0.0037m	
			EDWARD 2	1	+0.006623m	0.0186m	
153	46	gpsaz	---	---	203050'12.5993"	0.0639"	0.11
	1		I64 L 21	---	203050'12.6116"	0.0187"	
			KY 13	1	+0.012238"	0.0611"	
154	46	gpsht	---	---	-21.0337m	0.0300m	0.17
	1		I64 L 21	---	-21.0271m	0.0208m	
			KY 13	1	+0.006589m	0.0217m	
155	46	gpsds	---	---	38452.0604m	0.0129m	0.44
	1		I64 L 21	---	38452.0505m	0.0033m	
			KY 13	1	-0.009941m	0.0125m	
156	47	gpsaz	---	---	249011'39.5929"	0.1163"	0.16
	1		31 K ECC	---	249011'39.6228"	0.0579"	
			SNOW RMA	1	+0.029869"	0.1009"	
157	47	gpsht	---	---	+137.3674m	0.0383m	0.06
	1		31 K ECC	---	+137.3638m	0.0207m	
			SNOW RMA	1	-0.003658m	0.0322m	
158	47	gpsds	---	---	27187.9255m	0.0140m	0.08
	1		31 K ECC	---	27187.9274m	0.0068m	
			SNOW RMA	1	+0.001847m	0.0122m	
159	48	gpsaz	---	---	332058'30.4505"	0.1089"	0.22
	1		lou1	---	332058'30.4904"	0.0406"	
			GOSHENRM	1	+0.039896"	0.1011"	
160	48	gpsht	---	---	-7.7058m	0.0725m	0.48
	1		lou1	---	-7.7637m	0.0285m	
			GOSHENRM	1	-0.057885m	0.0666m	
161	48	gpsds	---	---	49884.5405m	0.0315m	0.22
	1		lou1	---	49884.5289m	0.0117m	
			GOSHENRM	1	-0.011541m	0.0292m	
162	49	gpsaz	---	---	194002'04.2123"	0.1171"	0.11
	1		H 323ECC	---	194002'04.1950"	0.0753"	
			J 334ECC	1	-0.017228"	0.0897"	
163	49	gpsht	---	---	+3.4199m	0.0406m	0.09
	1		H 323ECC	---	+3.4147m	0.0235m	
			J 334ECC	1	-0.005210m	0.0331m	
164	49	gpsds	---	---	22586.0889m	0.0157m	0.10
	1		H 323ECC	---	22586.0868m	0.0098m	
			J 334ECC	1	-0.002103m	0.0122m	

Observs.log

165	50	gpsaz	1	***-	***-	233001'58.5147"	0.1357"	0.55
		48978ECC		***-	***-	233001'58.6369"	0.0577"	
		KY 13	1			+0.122198"	0.1228"	
166	50	gpsht	1	***-	***-	+58.0345m	0.0440m	0.20
		48978ECC		***-	***-	+58.0208m	0.0223m	
		KY 13	1			-0.013731m	0.0380m	
167	50	gpsds	1	***-	***-	24548.0620m	0.0165m	0.27
		48978ECC		***-	***-	24548.0545m	0.0065m	
		KY 13	1			-0.007480m	0.0151m	
168	51	gpsaz	1	***-	***-	66038'01.5543"	0.3242"	0.00
		GOSHENRM		***-	***-	66038'01.5557"	0.2114"	
		HORRODS	1			+0.001349"	0.2457"	
169	51	gpsht	1	***-	***-	+25.8749m	0.0430m	0.25
		GOSHENRM		***-	***-	+25.8895m	0.0291m	
		HORRODS	1			+0.014585m	0.0317m	
170	51	gpsds	1	***-	***-	11089.9010m	0.0154m	0.27
		GOSHENRM		***-	***-	11089.8949m	0.0092m	
		HORRODS	1			-0.006086m	0.0124m	
171	52	gpsaz	1	***-	***-	296055'41.0251"	0.0906"	0.29
		lou1		***-	***-	296055'41.0712"	0.0187"	
		SDF A	1			+0.046034"	0.0887"	
172	52	gpsht	1	***-	***-	-79.5496m	0.0407m	0.61
		lou1		***-	***-	-79.5097m	0.0188m	
		SDF A	1			+0.039886m	0.0361m	
173	52	gpsds	1	***-	***-	42403.6620m	0.0158m	0.24
		lou1		***-	***-	42403.6554m	0.0036m	
		SDF A	1			-0.006620m	0.0154m	
174	53	gpsaz	1	***-	***-	262014'02.3472"	0.2559"	0.14
		48978ECC		***-	***-	262014'02.4106"	0.0597"	
		31 K ECC	1			+0.063316"	0.2489"	
175	53	gpsht	1	***-	***-	-13.0296m	0.0768m	0.02
		48978ECC		***-	***-	-13.0327m	0.0217m	
		31 K ECC	1			-0.003050m	0.0736m	
176	53	gpsds	1	***-	***-	32869.9855m	0.0243m	0.03
		48978ECC		***-	***-	32869.9869m	0.0078m	
		31 K ECC	1			+0.001425m	0.0230m	

SUMMARY OF COVARIANCES
 NETWORK = LOJIC_PHASE
 TIME = Thu Oct 18 10:49:26 2001

Definition of precision $(E \times S)\hat{y} = C\hat{y} + P\hat{y}$:

Horizontal:

Precision (P) expressed as: ratio
 Propagated linear error (E): U.S.
 (standard error of adjusted horizontal distance
 Scalar (S) on propagated linear error: 1.0000
 Constant error term (C): 0.0000

3-Dimensional:

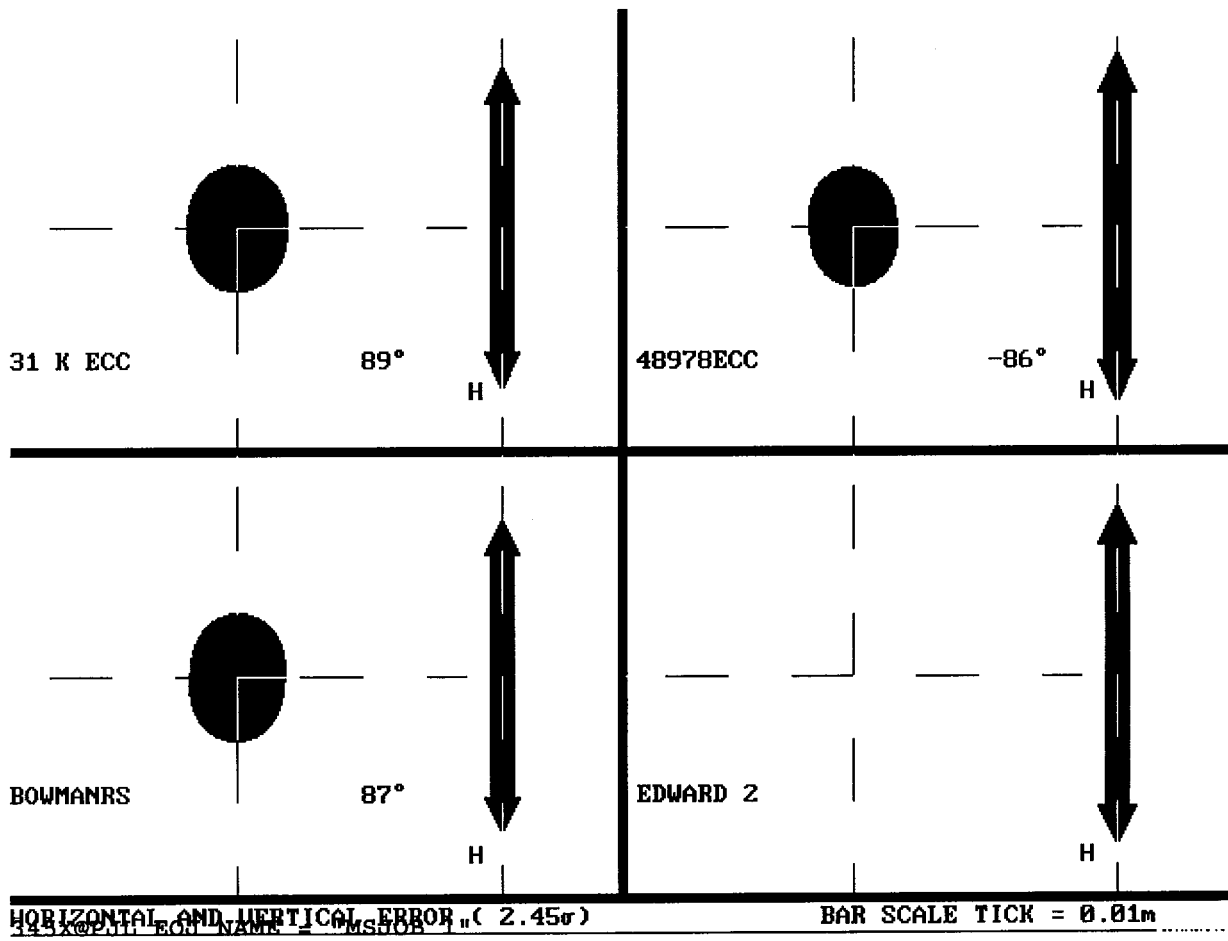
Precision (P) expressed as: ratio
 Propagated linear error (E): U.S.
 (standard error of adjusted slope distance)
 Scalar (S) on propagated linear error: 1.0000
 Constant error term (C): 0.0000
 Using orthometric height errors

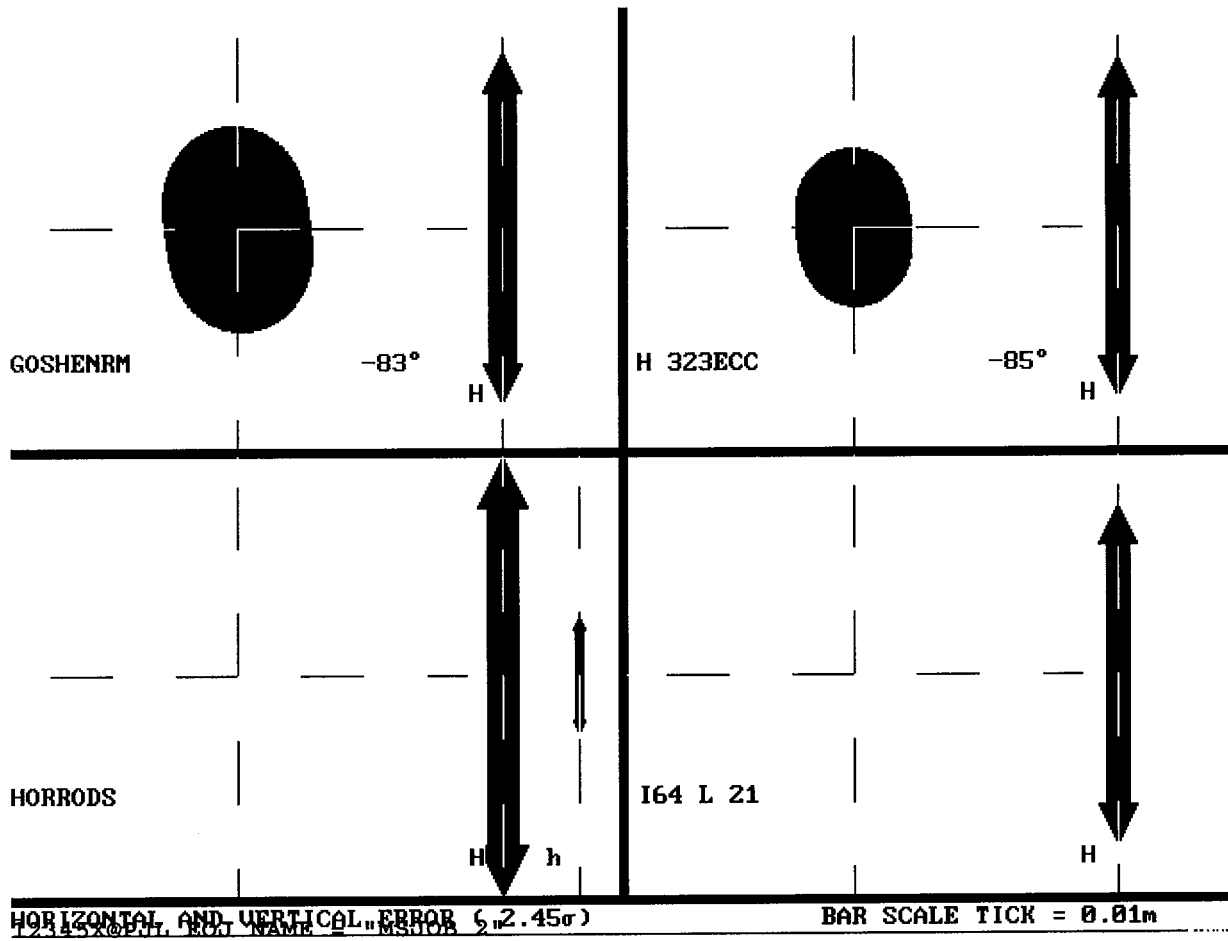
FROM/ TO	AZIMUTH/ DELTA H	1.96 $\hat{\sigma}$ 1.96 $\hat{\sigma}$	DISTANCE/ DELTA h	1.96 $\hat{\sigma}$ 1.96 $\hat{\sigma}$	HOR PREC/ 3-D PREC
31 K ECC 48978ECC	82 $\hat{\sigma}$ 14'02" +13.0400m	0.06" 0.0660m	32869.992m -***	0.0076m -***	1: 8462270 1: 8462270
31 K ECC J 334ECC	274 $\hat{\sigma}$ 22'55" -1.1723m	0.09" 0.0433m	20329.525m -***	0.0074m -***	1: 5371769 1: 5371769
31 K ECC KY 05	355 $\hat{\sigma}$ 54'03" +13.0154m	0.05" 0.0510m	23066.874m +13.1034m	0.0074m 0.0361m	1: 6126427 1: 6126427
31 K ECC KY 13	128 $\hat{\sigma}$ 32'32" +71.0619m	0.09" 0.0408m	16563.391m +71.2793m	0.0065m 0.0587m	1: 4958438 1: 4958438
31 K ECC lou1	86 $\hat{\sigma}$ 56'43" +89.3664m	0.04" 0.0744m	36615.405m +89.9084m	0.0061m 0.0393m	1:11848326 1:11848326
31 K ECC SNOW RMA	249 $\hat{\sigma}$ 11'40" +137.3610m	0.05" 0.0574m	27187.931m +136.9378m	0.0063m 0.0612m	1: 8496963 1: 8496963
48978ECC HORRODS	349 $\hat{\sigma}$ 37'04" +94.4260m	0.03" 0.0992m	47116.907m +94.2504m	0.0071m 0.0579m	1:13032548 1:13032548
48978ECC I64 L 21	348 $\hat{\sigma}$ 42'45" +79.0372m	0.06" 0.0460m	20812.554m -***	0.0071m -***	1: 5762960 1: 5762960
48978ECC KY 13	233 $\hat{\sigma}$ 01'59" +58.0220m	0.06" 0.0533m	24548.058m +57.7463m	0.0062m 0.0587m	1: 7705882 1: 7705882
48978ECC lou1	121 $\hat{\sigma}$ 56'24" +76.3265m	0.30" 0.0217m	4707.586m +76.3754m	0.0061m 0.0393m	1: 1507277 1: 1507277
BOWMANRS I64 L 21	92 $\hat{\sigma}$ 49'38" +64.4550m	0.07" 0.0503m	23808.806m -***	0.0063m -***	1: 7445646 1: 7445646
BOWMANRS KY 05	244 $\hat{\sigma}$ 37'37" -14.6067m	0.22" 0.0237m	7043.298m -14.6486m	0.0066m 0.0361m	1: 2088451 1: 2088451
BOWMANRS lou1	127 $\hat{\sigma}$ 05'11" +61.7443m	0.04" 0.0829m	39923.870m +62.1564m	0.0068m 0.0393m	1:11510187 1:11510187
BOWMANRS SDF A	230 $\hat{\sigma}$ 43'42" -17.7853m	0.19" 0.0248m	7695.758m -17.8379m	0.0070m 0.0377m	1: 2168581 1: 2168581
BOWMANRS X 349	349 $\hat{\sigma}$ 47'23" -31.6256m	0.25" 0.0271m	7523.093m -***	0.0130m -***	1: 1133819 1: 1133819
EDWARD 2 GOSHENRM	66 $\hat{\sigma}$ 11'47" -61.8655m	0.07" 0.0674m	32941.677m -***	0.0091m -***	1: 7116727 1: 7116727
EDWARD 2 H 323ECC	171 $\hat{\sigma}$ 26'16" -148.0368m	0.16" 0.0294m	9736.785m -***	0.0092m -***	1: 2073957 1: 2073957
EDWARD 2	-***	-***	-***	-***	-***

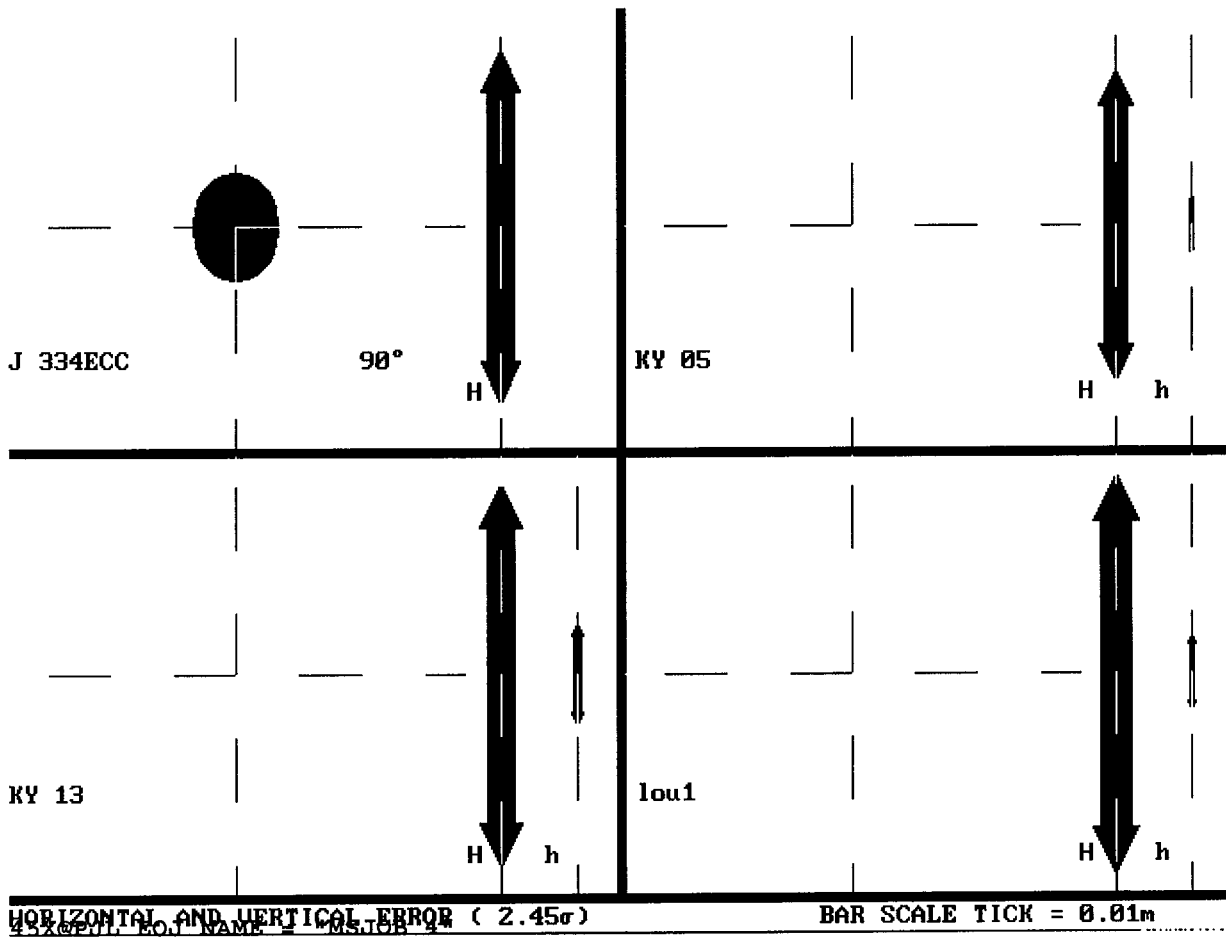
Covar.log

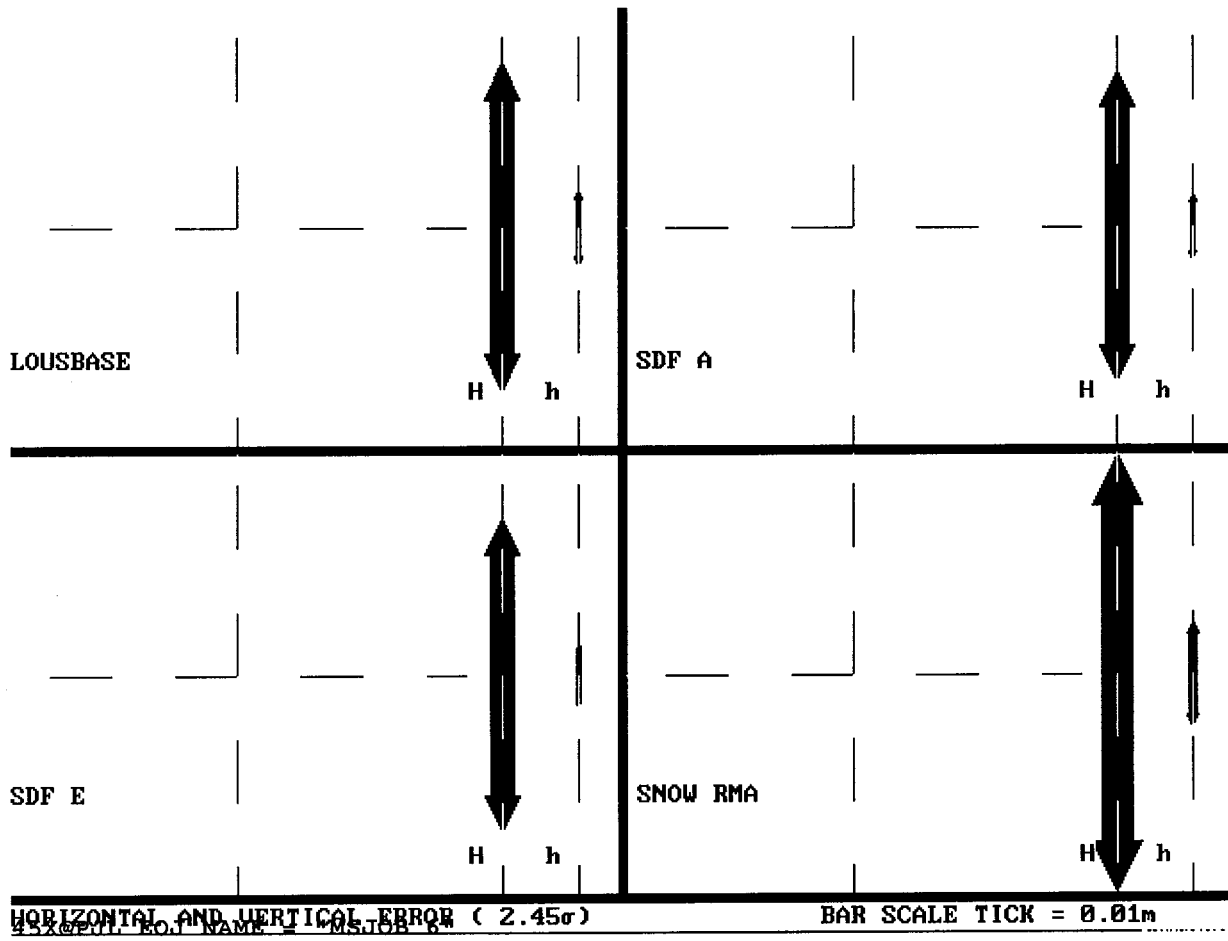
KY 05	-130.4257m	0.0401m	-130.3816m	0.0361m	***-
EDWARD 2 SNOW RMA	***- -6.0802m	***- 0.0914m	***- -6.5472m	***- 0.0612m	***- ***-
EDWARD 2 X 349	89ø01'03" -147.4446m	0.13" 0.0447m	19626.804m ***-	0.0087m ***-	1: 4446551 1: 4446551
GOSHENRM HORRODS	66ø38'02" +25.8903m	0.21" 0.0372m	11089.897m +25.9564m	0.0091m 0.0579m	1: 2399682 1: 2399682
GOSHENRM lou1	152ø58'31" +7.7908m	0.04" 0.1028m	49884.536m +8.0814m	0.0112m 0.0393m	1: 8748556 1: 8748556
GOSHENRM X 349	219ø03'28" -85.5790m	0.16" 0.0409m	16688.579m ***-	0.0124m ***-	1: 2636604 1: 2636604
H 323ECC J 334ECC	194ø02'04" +3.4233m	0.08" 0.0505m	22586.090m ***-	0.0098m ***-	1: 4498684 1: 4498684
H 323ECC lou1	112ø43'47" +93.9621m	0.03" 0.1120m	55680.453m +94.5174m	0.0078m 0.0393m	1:14027097 1:14027097
H 323ECC SDF E	95ø25'24" +17.5495m	0.14" 0.0351m	13336.787m +17.6457m	0.0074m 0.0374m	1: 3510811 1: 3510811
HORRODS I64 L 21	***- -15.3888m	***- 0.0589m	***- -15.5114m	***- 0.0579m	***- ***-
I64 L 21 KY 05	***- -79.0618m	***- 0.0611m	***- -79.1686m	***- 0.0361m	***- ***-
I64 L 21 KY 13	***- -21.0153m	***- 0.0806m	***- -20.9927m	***- 0.0587m	***- ***-
I64 L 21 lou1	***- -2.7108m	***- 0.0539m	***- -2.3636m	***- 0.0393m	***- ***-
J 334ECC lou1	89ø35'56" +90.5388m	0.02" 0.1115m	56834.872m +91.3164m	0.0059m 0.0393m	1:19026715 1:19026715
J 334ECC LOUSBASE	31ø27'17" +8.4580m	0.06" 0.0440m	19561.490m +8.6796m	0.0066m 0.0393m	1: 5847798 1: 5847798
J 334ECC SNOW RMA	204ø39'08" +138.5333m	0.10" 0.0338m	12334.653m +138.3458m	0.0066m 0.0612m	1: 3638341 1: 3638341
KY 05 LOUSBASE	***- -5.7298m	***- 0.0272m	***- -5.8318m	***- 0.0431m	***- ***-
KY 05 SDF E	***- -0.0616m	***- 0.0179m	***- -0.0668m	***- 0.0224m	***- ***-
KY 13 SNOW RMA	***- +66.2990m	***- 0.0771m	***- +65.6585m	***- 0.0738m	***- ***-
lou1 LOUSBASE	***- -82.0808m	***- 0.0999m	***- -82.6368m	***- 0.0556m	***- ***-
lou1 SDF A	***- -79.5295m	***- 0.0867m	***- -79.9943m	***- 0.0542m	***- ***-
lou1 SDF E	***- -76.4126m	***- 0.0883m	***- -76.8717m	***- 0.0541m	***- ***-
lou1 SNOW RMA	***- +47.9945m	***- 0.1247m	***- +47.0294m	***- 0.0722m	***- ***-
lou1 X 349	313ø29'28" -93.3698m	0.04" 0.0948m	45737.882m -93.7424m	0.0110m 0.0393m	1: 8167868 1: 8167868
LOUSBASE SDF A	***- +2.5513m	***- 0.0253m	***- +2.6425m	***- 0.0420m	***- ***-
SDF A	***-	***-	***-	***-	***-

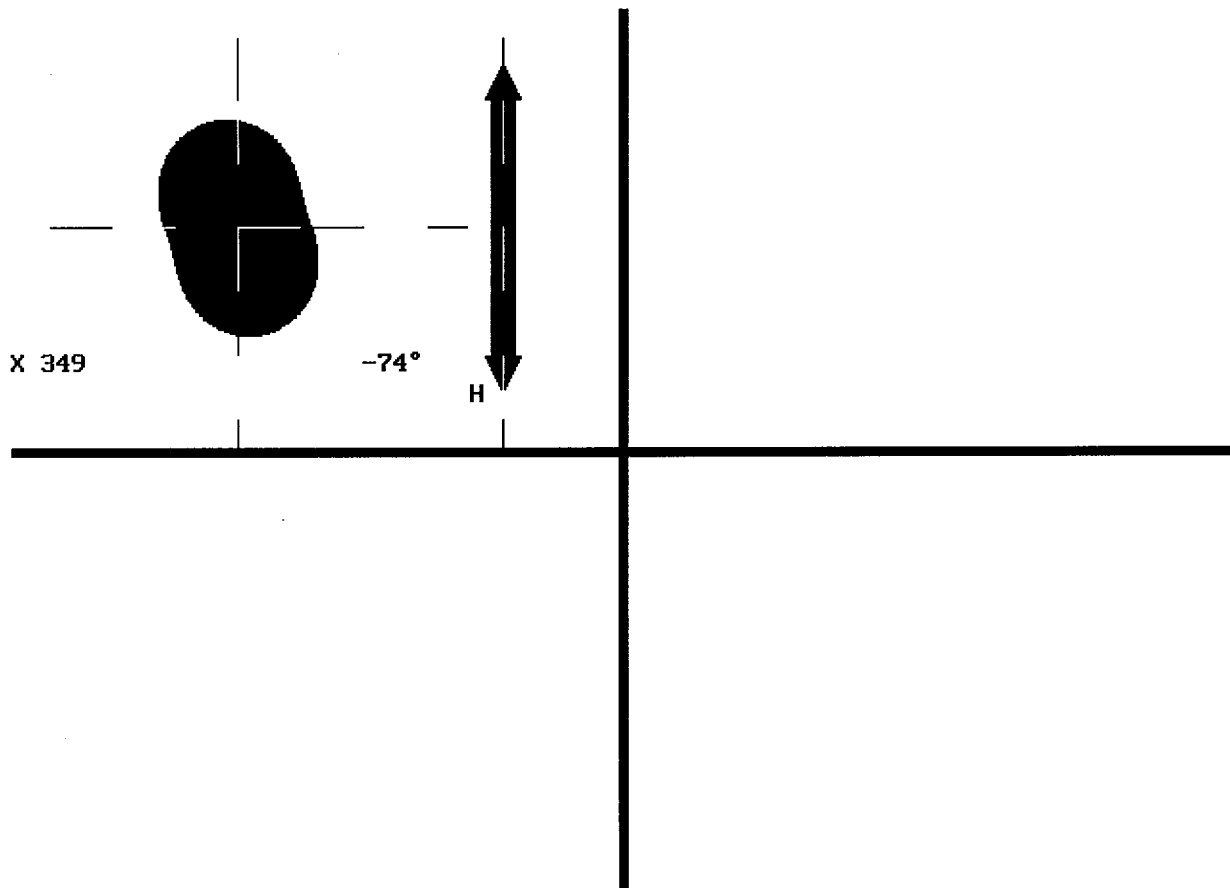
SDF E	+3.1169m	0.0151m	+3.1225m	0.0216m	-**-
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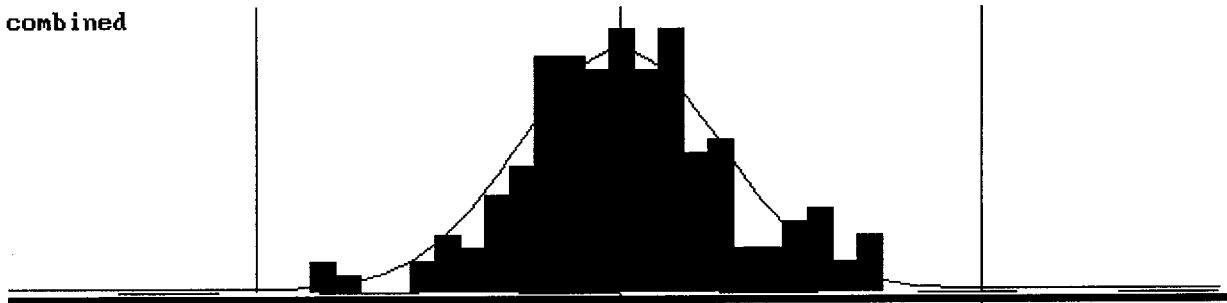




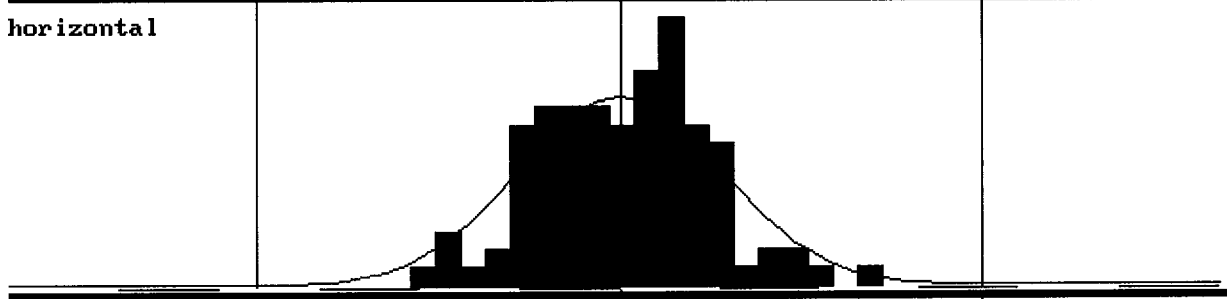


HORIZONTAL AND VERTICAL ERROR (2.45σ) BAR SCALE TICK = 0.01m

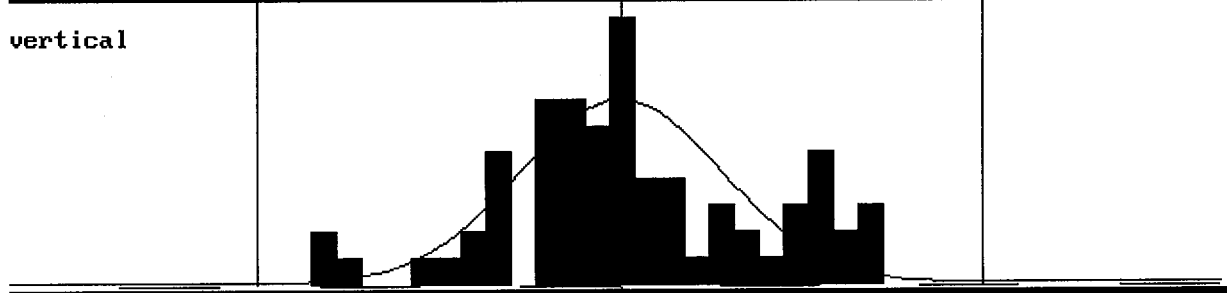
combined



horizontal



vertical



STANDARDIZED RESIDUALS MSJOB 10" Tau BAR SCALE TICK = 1 σ