

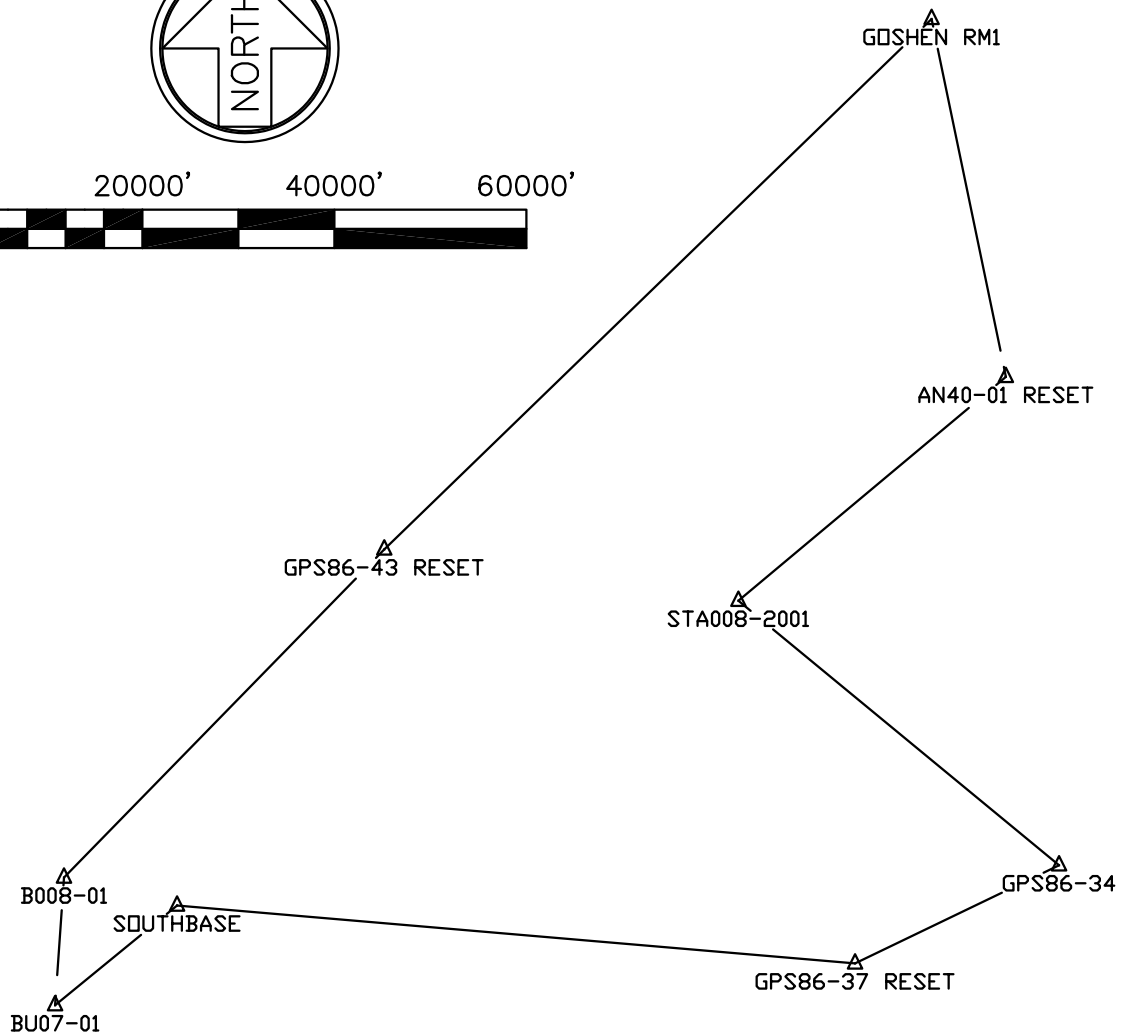
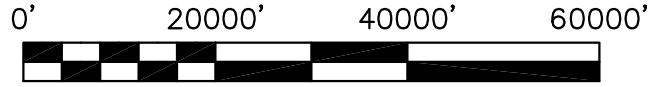
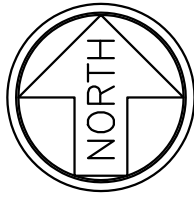
APPENDIX A  
LOOP CLOSURES  
2003  
GEODETIC CONTROL RESTORATION  
of  
JEFFERSON COUNTY, KENTUCKY  
JUNE 2003

Fuller, Mossbarger, Scott & May  
1901 Nelson Miller Parkway  
Louisville, Kentucky 40223-2177



Jacobi, Toombs and Lanz, Inc.  
401 West Main Street, Suite 600  
Louisville, Kentucky 40202





GPS Loop 1:  
 SOUTHBASE: BU07-01: B008-01: GPS86-43 RESET: GOSHEN RM1: AN40-01 RESET :  
 GPS86-34 : GPS86-37 RESET: SOUTHBASE

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B15	S2	SOUTHBASE	BU07-01	lono free fixed
B1	S3	BU07-01	B008-01	L1 fixed
B8	S20	GPS86-43 RESET	B008-01	lono free fixed
B13	S23	GOSHEN RM1	GPS86-43 RESET	lono free fixed
B5	S12	GOSHEN RM1	AN40-01	lono free fixed
B4	S5	GPS86-34 RESET	AN40-01	lono free fixed
B3	S14	GPS86-34 RESET	GPS86-37	lono free fixed
B2	S17	SOUTHBASE	GPS86-37	lono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S2-S3-S20-S23-S12-S5-S14-S17	340644.943sft	0.023sft	-0.067sft	0.208

GPS NETWORK RETSORATION FOR  
 LOUISVILLE/JEFFERSON COUNTY INFORMATION CONSORTIUM

STATIC NETWORK LOOP #1 CLOSURE

JACOBI, TOOMBS & LANZ, INC.  
 CONSULTING ENGINEERS  
 401 W. MAIN STREET  
 SUITE 600  
 LOUISVILLE, INDIANA 40202  
 (502) 583-5994



EXHIBIT

1 OF 8

SCALE: 1" = 20000'

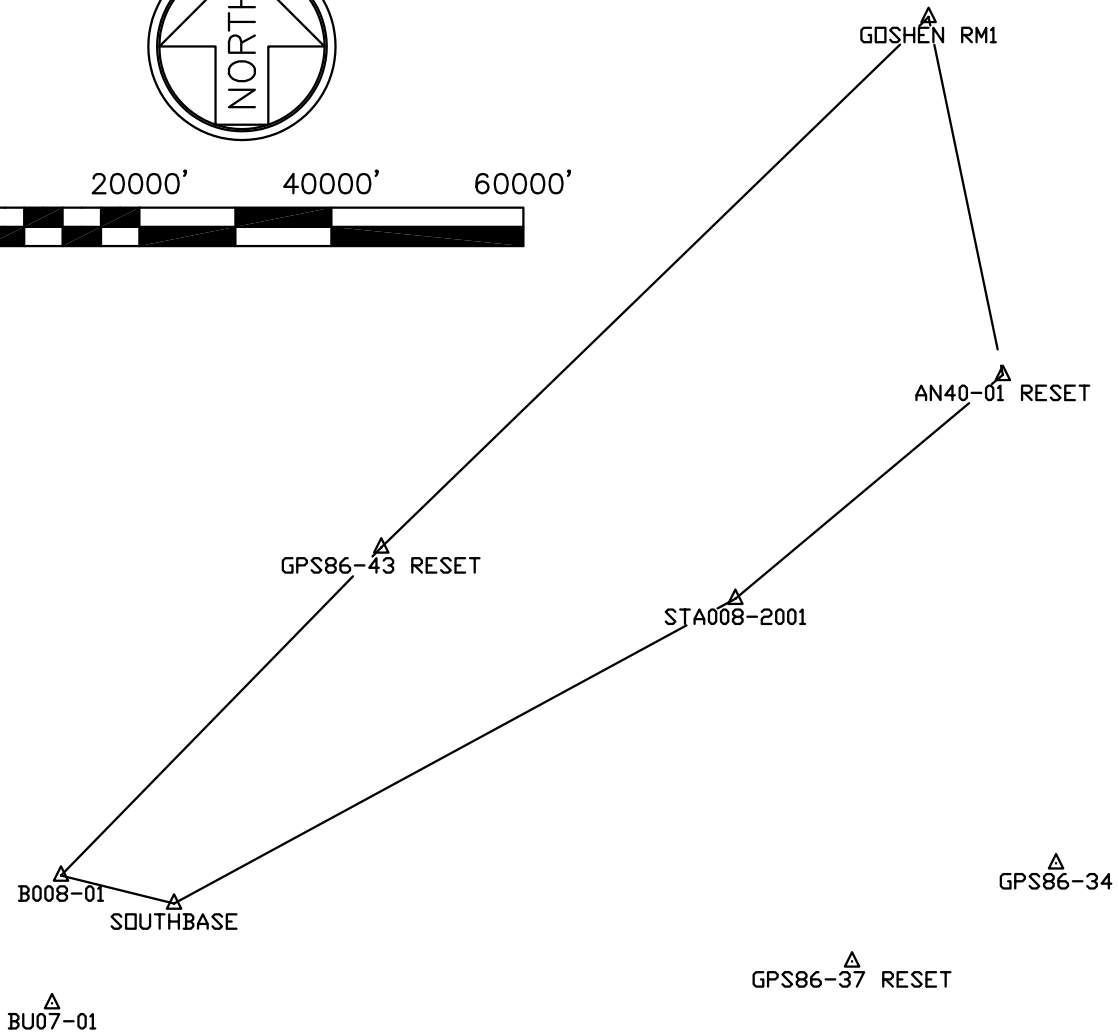
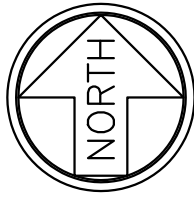
DATE: 3/11/2003

DRAWN: JAT

CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260



GPS Loop 2:  
 SOUTHBASE: B008-01: GPS86-43 RESET: GOSHEN RM1: AN40-01 RESET: STA008-2001: SOUTHBASE

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B7	S1	SOUTHBASE	B008-01	L1 fixed
B8	S20	GPS86-43 RESET	B008-01	iono free fixed
B13	S23	GOSHEN RM1	GPS86-43 RESET	iono free fixed
B5	S12	GOSHEN RM1	AN40-01 RESET	iono free fixed
B18	S4	STA008-2001	AN40-01 RESET	iono free fixed
B16	S18	SOUTHBASE	STA008-2001	iono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S1-S20-S23-S12-S4-S18	280257.523sft	0.042sft	-0.003sft	0.152

GPS NETWORK RESTORATION FOR  
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STATIC NETWORK LOOP #2 CLOSURE

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 401 W. MAIN STREET  
 SUITE 600  
 LOUISVILLE, INDIANA 40202  
 (502) 583-5994



EXHIBIT  
 2 OF 8

SCALE: 1" = 20000'

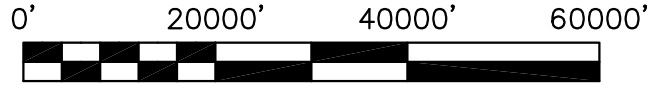
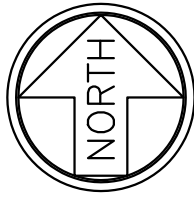
DATE: 3/11/2003

DRAWN: JAT

CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260



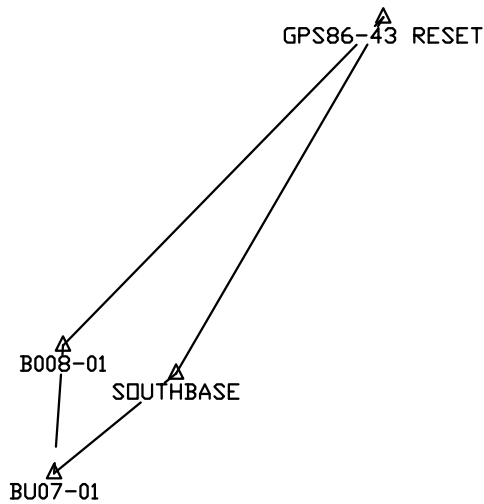
△  
GOSHEN RM1

△  
AN40-01 RESET

△  
STA008-2001

△  
GPS86-34

△  
GPS86-37 RESET



GPS Loop 3:  
SOUTHBASE: BU07-01: B008-01: GPS86-43 RESET: SOUTHBASE

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B15	S2	SOUTHBASE	BU07-01	iono free fixed
B1	S3	BU07-01	B008-01	L1 fixed
B8	S20	GPS86-43 RESET	B008-01	iono free fixed
B20	S9	SOUTHBASE	GPS86-43 RESET	iono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S2-S3-S20-S9	120417.443sft	0.062sft	-0.024sft	0.553

GPS NETWORK RESTORATION FOR  
LOUISVILLE/JEFFERSON COUNTY INFORMATION CONSORTIUM

STATIC NETWORK LOOP #3 CLOSURE

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401 W. MAIN STREET  
SUITE 600  
LOUISVILLE, INDIANA 40202  
(502) 583-5994



EXHIBIT

3 OF 8

SCALE: 1" = 20000'

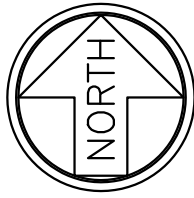
DATE: 3/11/2003

DRAWN: JAT

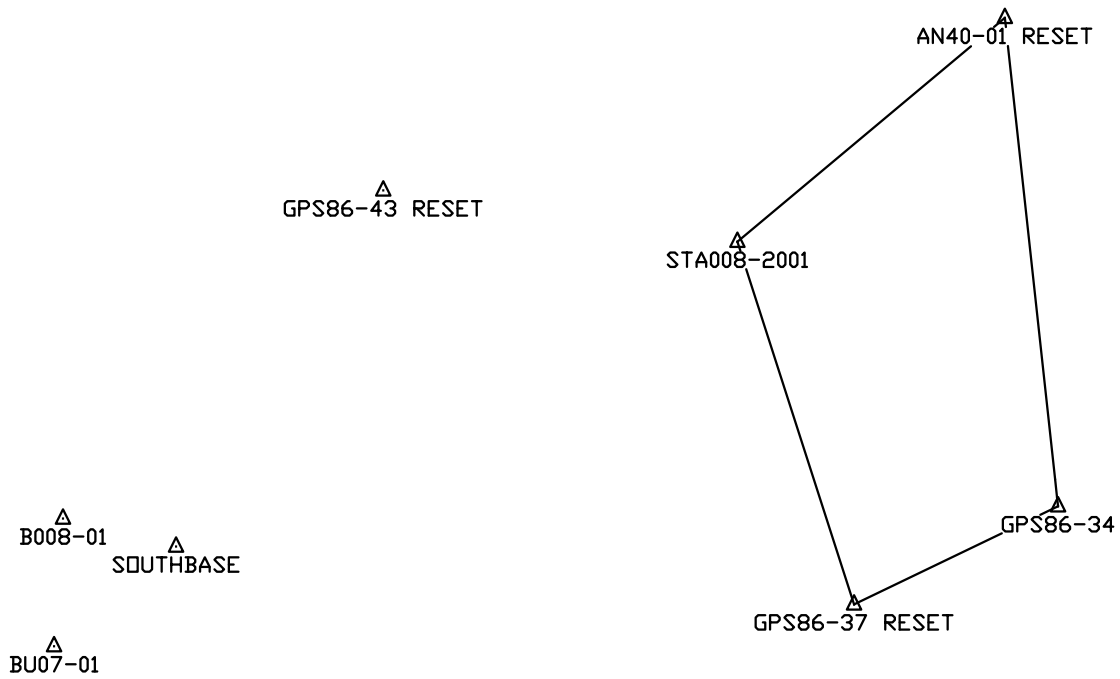
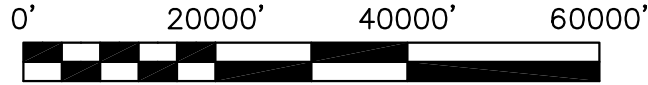
CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260



GOSHEN RM1



GPS Loop 4:  
 STA008-2001: AN40-01 RESET: GPS86-34: GPS86-37 RESET: SOUTHBASE: STA008-2001

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B18	S4	STA008-2001	AN40-01RESET	iono free fixed
B4	S5	GPS86-34	AN40-01RESET	iono free fixed
B3	S14	GPS86-34	GPS86-37 RESET	iono free fixed
B2	S17	SOUTHBASE	GPS86-37 RESET	iono free fixed
B16	S18	SOUTHBASE	STA008-2001	iono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S4 - S5 - S14 - S17 - S8	248545.559sft	0.014sft	-0.033sft	0.145

GPS NETWORK RESTORATION FOR  
 LOUISVILLE/JEFFERSON COUNTY INFORMATION CONSORTIUM

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 SUITE 600  
 LOUISVILLE, INDIANA 40202  
 (502) 583-5994



EXHIBIT  
 4 OF 8

SCALE: 1" = 20000'

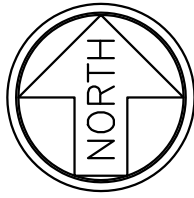
DATE: 3/11/2003

DRAWN: JAT

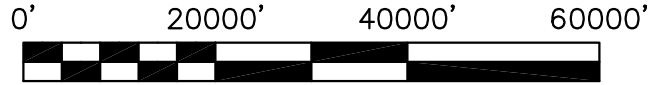
CHECKED: HLH

DRW#: 0260.DWG

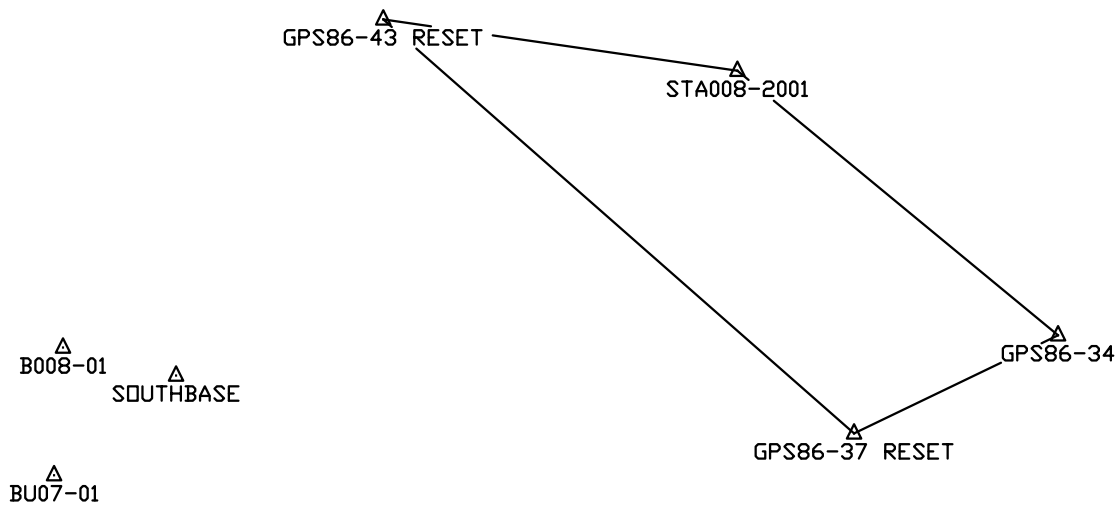
JOB No. 0260



△  
GOSHEN RM1



△  
AN40-01 RESET



GPS Loop 5:  
STA008-2001: GPS86-34: GPS86-37 RESET: GPS86-43 RESET: STA008-2001

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B12	S6	STA008-2001	GPS86-34	iono free fixed
B3	S14	GPS86-34	GPS86-37 RESET	iono free fixed
B9	S19	GPS86-43 RESET	GPS86-37 RESET	iono free fixed
B14	S7	STA008-2001	GPS86-43 RESET	iono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S6-S14-S19-S7	169490.236sft	0.011sft	-0.083sft	0.491

GPS NETWORK RESTORATION FOR  
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SUITE 600  
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(502) 583-5994



EXHIBIT

5 OF 8

SCALE: 1" = 20000'

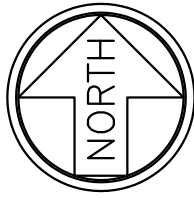
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DRAWN: JAT

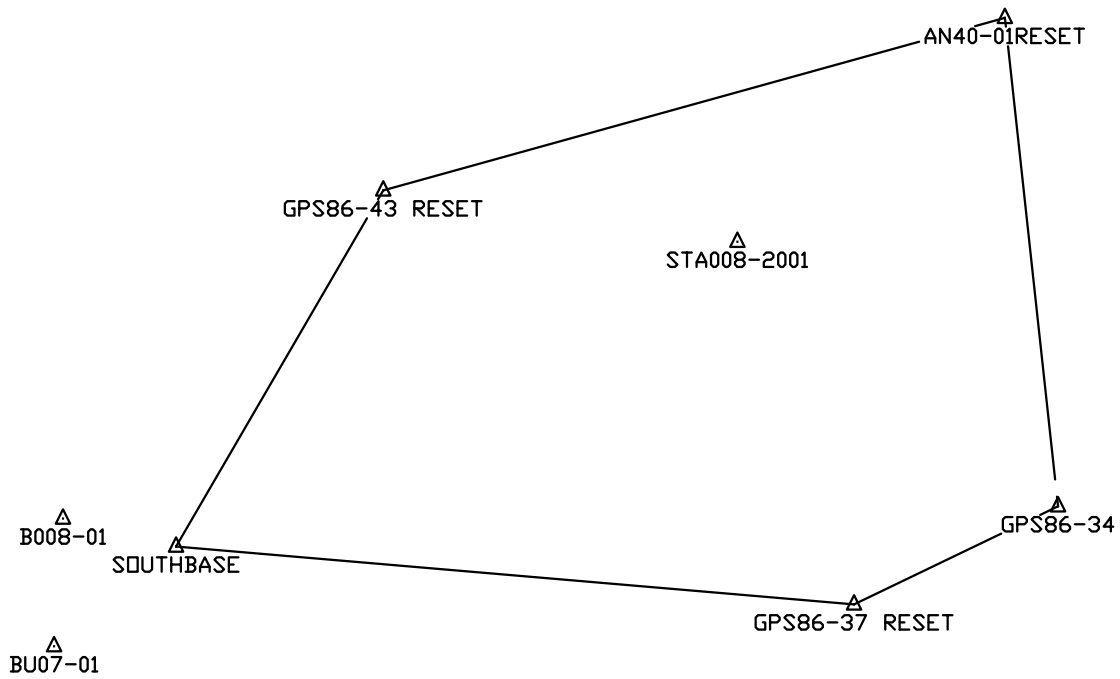
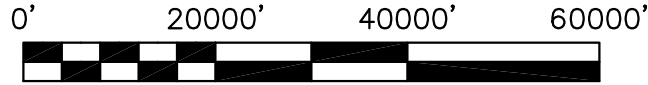
CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260



△  
GOSHEN RM1



GPS Loop 6:  
GPS86-34: AN40-01RESET: GPS86-43 RESET: SOUTHBASE: GPS86-37 RESET: GPS86-34

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B4	S5	GPS86-34	AN40-01RESET	lono free fixed
B19	S10	GPS86-43RESET	AN40-01RESET	lono free fixed
B20	S9	SOUTHBASE	GPS86-43 RESET	lono free fixed
B2	S17	SOUTHBASE	GPS86-37 RESET	lono free fixed
B3	S14	GPS86-34	GPS86-37 RESET	lono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S5-S10-S9-S17-S14	255794.025sft	0.051sft	0.057sft	0.299

GPS NETWORK RESTORATION FOR  
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EXHIBIT

6 OF 8

SCALE: 1" = 20000'

DATE: 3/11/2003

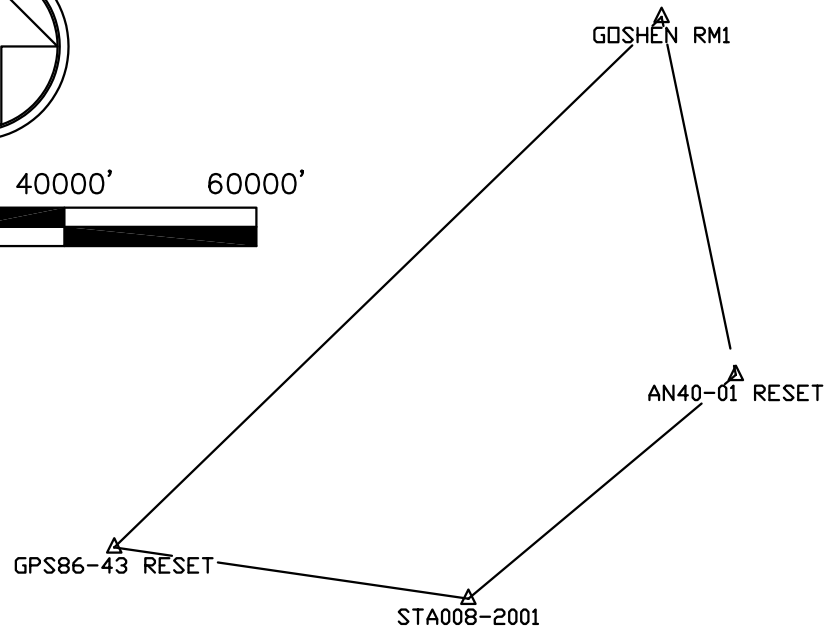
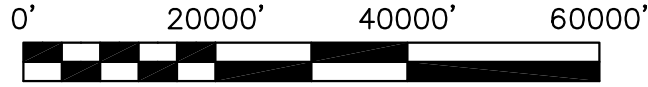
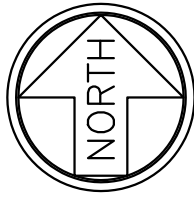
DRAWN: JAT

CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260

STATIC NETWORK LOOP #6 CLOSURE



▲  
 B008-01  
 ▲  
 SOUTHBASE  
 ▲  
 BU07-01

▲  
 GPS86-34  
 ▲  
 GPS86-37 RESET

GPS Loop 7:  
 STA008-2001: AN40-01 RESET: GOSHEN RM1: GPS86-43 RESET: STA008-2001

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B18	S4	STA008-2001	AN40-01 RESET	iono free fixed
B5	S12	GOSHEN RM1	AN40-01 RESET	iono free fixed
B13	S23	GOSHEN RM1	GPS86-43 RESET	iono free fixed
B14	S7	STA008-2001	GPS86-43 RESET	iono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S4-S12-S23-S7	191118.030sft	0.025sft	-0.039sft	0.241

GPS NETWORK RESTORATION FOR  
 LOUISVILLE/JEFFERSON COUNTY INFORMATION CONSORTIUM

STATIC NETWORK LOOP #7 CLOSURE

**JACOBI, TOOMBS & LANZ, INC.**  
**CONSULTING ENGINEERS**  
 401 W. MAIN STREET  
 SUITE 600  
 LOUISVILLE, INDIANA 40202  
 (502) 583-5994



EXHIBIT  
 7 OF 8

SCALE: 1" = 20000'

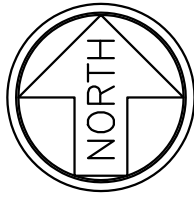
DATE: 3/11/2003

DRAWN: JAT

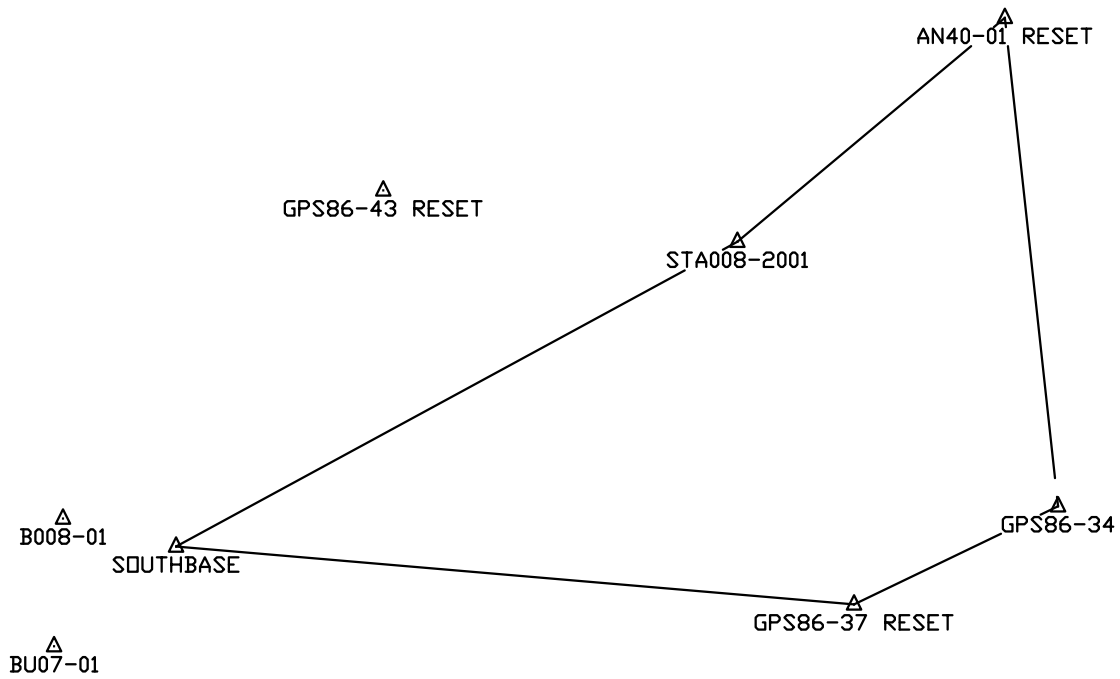
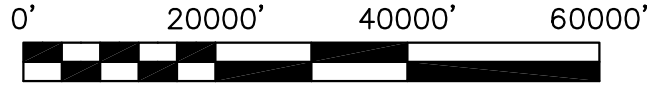
CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260



GOSHEN RM1



GPS Loop 8:  
 STA008-2001: AN40-01 RESET: GPS86-34: GPS86-37 RESET: SOUTHBASE: STA008-2001

Observations:

Baseline ID	Solution ID	From	To	Solution Type
B18	S4	STA008-2001	AN40-01RESET	lono free fixed
B4	S5	GPS86-34	AN40-01RESET	lono free fixed
B3	S14	GPS86-34	GPS86-37	lono free fixed
B2	S17	SOUTHBASE	GPS86-37	lono free fixed
B16	S18	SOUTHBASE	STA008-2001	lono free fixed

Passed combinations for loop 1:

	Length	DHoriz	DVert	PPM
S4-S5-S14-S17-S18	248545.559sft	0.014sft	-0.033sft	0.145

GPS NETWORK RESTORATION FOR  
 LOUISVILLE/JEFFERSON COUNTY INFORMATION CONSORTIUM

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 SUITE 600  
 LOUISVILLE, INDIANA 40202  
 (502) 583-5994



EXHIBIT  
 8 OF 8

STATIC NETWORK LOOP #8 CLOSURE

SCALE: 1" = 20000'

DATE: 3/11/2003

DRAWN: JAT

CHECKED: HLH

DRW#: 0260.DWG

JOB No. 0260