ENGINEERS
SURVEYORS
INSPECTORS

CHAUDHARY & ASSOCIATES, INC.

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LETTER OF TRANSMITTAL

To: ARUP PB
901 MARKET STREET, SUITE 260
SAN FRANCISCO CA. 94103

Attn: JOHN KARN, P.E.
PROJECT MANAGER

Job No.: 07-07-036
Date: 11/19/07
Re: DOYLE DRIVE

Mailed Via: CA. OVERNIGHT
Faxed On:

Enclosed are the following items:
☐ Letter ☐ Blackline prints ☐ Proposal ☐ Floppy Disk ☒ Other

No. of Copies	Date of Item	DESCRIPTION
1		BINDER – SURVEY CONTROL REPORT

If enclosures are not as noted, please call us at (707) 255-2729 immediately.

RECEIVED ARUP SF NOV 20 2007
JOB NO. 131558 REG NO. FILE NO.
TO INIT. ACTION
DP File

The enclosed items are transmitted:
☐ For Your Use ☐ For Your Review and Comments ☐ For Your Approval
☐ As Requested ☒ Other _____

REMARKS: 'B' SUBMITTAL, PART 1 FOR SUBMITTAL TO CALTRANS

COPY TO: _____ ☐ with enclosures
_____ ☐ with enclosures
_____ ☐ with enclosures

SIGNED S. Karn
TITLE P.E.

11-19-07
07-07-036

ARUP/Doyle Drive (Hwy 101)
San Francisco, CA
Project Report

OVERVIEW

The original PB/Doyle Drive Project (EA #04-163700, ASC #0020-14) was completed by Chaudhary & Associates in March of 2000. All new control was constrained to reliable values from 2000 project.

The purpose of this phase of the project is to establish California State Plane Coordinates, Zone 3, NAD-83 (Feet) for 2nd order horizontal project control, aerial mapping control and NAVD 88 elevations (Feet) for vertical control. A combination of (terrestrial) methods using a 2" total station for additional horizontal control and a 2nd order digital level for NAVD88 elevations was used.

CONTROL

A. The 3 first-order stations used in 2000 were:

1. Southwest quadrant- HPGN D CA 04 GE (first order). EPOCH 1991.35
2. Southeast quadrant- HPGN D CA 04 GF (first order). EPOCH 1991.35
3. Northwest quadrant- HPGN CA 04 09 (B order). EPOCH 1991.35

Refer to GPS report for static reduction done in 2000

PROCEDURE

A. The Original flight control from the 2000 project is to be recovered for reuse where ever possible. The flight control panels will be repainted and the units converted from Metric to English. The project will be reflown using the original flight lines (See Submittal 'A').

B. Where the original control could not be recovered new flight panels will be painted in close proximity to the 2000 flight panel. The new flight panels will be conventionally tied to reliable HV values from the 2000 survey.

CONVENTIONAL (horizontal)

A. Beginning on 9-19-2007, a Trimble S6 (2") total station was used to traverse between the Original GPS (2000) control to tie 4 new horizontal panels. Traverses were constrained to the (2000) adjusted control panel values. All observations are shown on the attached field notes.

B. The data was entered into StarNet software, holding the GPS (2000) coordinates fixed, all conventional data was adjusted by least squares. See the attached StarNet adjustment sheets for adjustment results.

CONVENTIONAL (digital levels)

A. The 2 first-order stations used in 2000 for vertical control were:

1. On Site – H 1444 (PID HT3539)- First-order class II
2. On Site – CLARK (PID HT0698)- First-order class I

B. Beginning on 9-10-2007 the Topcon DL-102 and TDS Survey Pro Collector was used to observe 10 new vertical points. All level runs are shown on the attached field notes.

C. The 2007 level data was processed using Starplus/Starlev Digital Level Software. See attached digital level sheets for adjustment results. (2007 data)

D. It was determined during level operations that the elevation on Panel HV-13 (2000) had changed/dropped. It was also determined thru field evaluation (rebar in vertical position and otherwise undisturbed) and RTK checks that the horizontal position had not changed significantly (less than 0.02') therefore only a new vertical value only was given for this point.

Please find enclosed the following:
Book 1

1. Control listing.
2. Project network sketch / diagram.
3. All field notes.
4. Station recovery / obstruction diagrams.
5. Report- Conventional Field observations. Starnet file v6.0.35. TGO dc file. Output listing.
6. Report - Starlev leveling. Starnet file v6.0.35 Output listing.
7. TDS rw5 files/reports.
8. Terrestrial data raw files/.dc files.
9. GPS Baseline processing reports (on CD).

Note: See PB/Doyle project folder from 2000 for complete GPS primary control details.

Please call if you have any questions or comments.

Edward Alan Krumrei R.P.E. No. 23922
License expires: 12/31/07

REGISTERED PROFESSIONAL ENGINEER
EDWARD A. KRUMREI
No. 23922
EXPIRES 12-31-07
CIVIL
STATE OF CALIFORNIA

JOB#07-07-036 ARUP/DOYLE
UNITS US SURVEY FT
NAD 83 CA ZONE 3-1991.35 EPOCH
NAVD 88

INDEX

BOOK1

SECTION 1- CONTROL LISTING

SECTION 2- NETWORK PLOT.

SECTION 3- FIELD NOTES

SECTION 4- OBSTRUCTION DIAGRAMS / RECOVERY FORMS

SECTION 5- STARNET ADJUSTMENT REPORT- CONVENTIONAL FIELD TIES.

SECTION 6- STARLEV ADJUSTMENT REPORT- FROM DIGITAL LEVELS

SECTION 7- DIGITAL LEVEL REPORTS AND RW5 FILES.

SECTION 8- TERRESTRIAL DATA RAW FILES/ .DC FILE

Chaudhary & Associates
ARUP\Doyle Drive Job# 07-07-036
Aerial Control JRF 10-24-2007

Horizontal & Vertical Panels-Old set in 2000 (EA #04-163700, ASC #0020-14).
Units-Converted to US ft

Pt#	Northing	Easting	Elev	Description
HV-1	2117618.8796	6001136.4820	222.769	N&S painted X
HV-2	2118994.4011	6000948.1490	47.352	N&S painted X
HV-3	2120780.2601	6000694.9212	13.757	N&S painted X
HV-4	2121957.3056	6000524.0816	10.669	N&S painted X
HV-5	2121717.8222	5998888.1925	11.181	N&S painted X
HV-6	2120220.1805	5998958.1825	17.198	N&S tip traffic arrow
HV-7	2118893.6001	5999059.6390	65.722	100d painted X
HV-12	2123051.2260	5991603.8337	18.136	N&S painted X
HV-13	2118682.6655	5996954.2036	41.847	1/2" Rebar-new elev
HV-14	2120996.5310	5992842.5747	96.414	N&S painted X
HV-15	2120936.2972	5993775.7191	10.600	N&S painted X
HV-16	2120322.3089	5993725.8176	60.623	N&S painted X
HV-17	2119845.2672	5992733.4640	139.901	N&S painted X
HV-18	2121491.7777	5992605.3737	86.138	N&S painted X
HV-19	2120456.7204	5991708.7580	217.424	N&S painted X
HV-20	2119492.2617	5991424.5821	252.050	N&S painted X
HV-21	2121114.3887	5990923.0575	241.371	N&S painted X
HV-22	2120376.1848	5990398.4851	278.582	N&S painted X
HV-23	2122057.2077	5990863.2446	186.050	N&S painted X
HV-24	2122495.4925	5990570.9191	188.471	1/2" Rebar Wood X

Horizontal & Vertical Panels-New set in 2007. Units-US ft

Pt#	Northing	Easting	Elev	Description
HV-25	2117670.3514	5999223.9402	150.508	cns-ch-hv25
HV-26	2120065.7712	5996446.1929	53.345	magnw CH-HV26
HV-27	2121587.7458	5996285.0762	12.377	rebar+cap-CH-HV27
HV-28	2122557.9546	5992668.2887	10.759	rebar+cap-CH-HV28

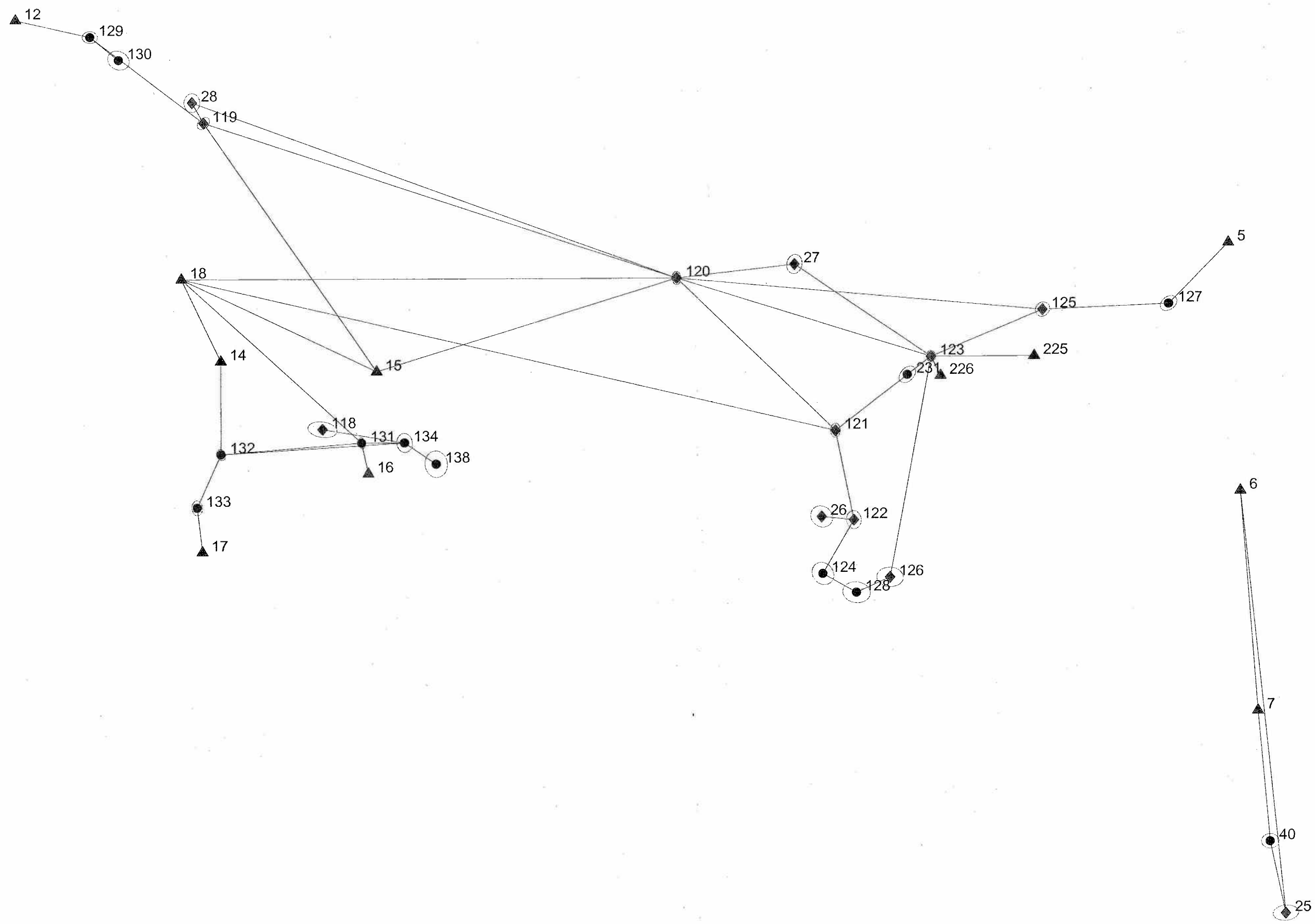
Vertical Panels-Old set in 2000(EA #04-163700, ASC #0020-14). Units-Converted to US ft

Pt#	Elev	Description
V-102	10.850	N&S painted X
V-105	117.569	N&S painted X
V-106	31.322	N&S painted X
V-107	17.280	N&S painted X
V-110	56.201	Scribed X painted X
V-112	9.423	N&S painted X
V-113	9.895	N&S painted X
V-114	10.666	N&S painted X
V-115	9.747	N&S painted X
V-117	95.485	N&S painted X
V-118	40.925	N&S painted X
V-119	159.032	N&S painted X
V-120	187.099	N&S painted X
V-121	156.338	N&S painted X

Vertical Panels-New set in 2007. Units-US ft

Pt#	Elev	Description
V-130	9.590	MAGNW-V130
V-131	44.080	PID131-EC-NE
V-132	10.394	MAGNS-V132
V-133	13.971	MAGNS-V133
V-134	12.583	MAGNS-V134
V-135	30.167	MAGN-PID-V135
V-136	60.242	VLTE-SW-PID136
V-137	206.102	MAGN-PID-V137
V-138	43.540	PID138-CTR-DIC
V-139	43.594	PID139-EC-SE

Project: 0736-CONTROL TIES October 23, 2007 01:09:36 PM



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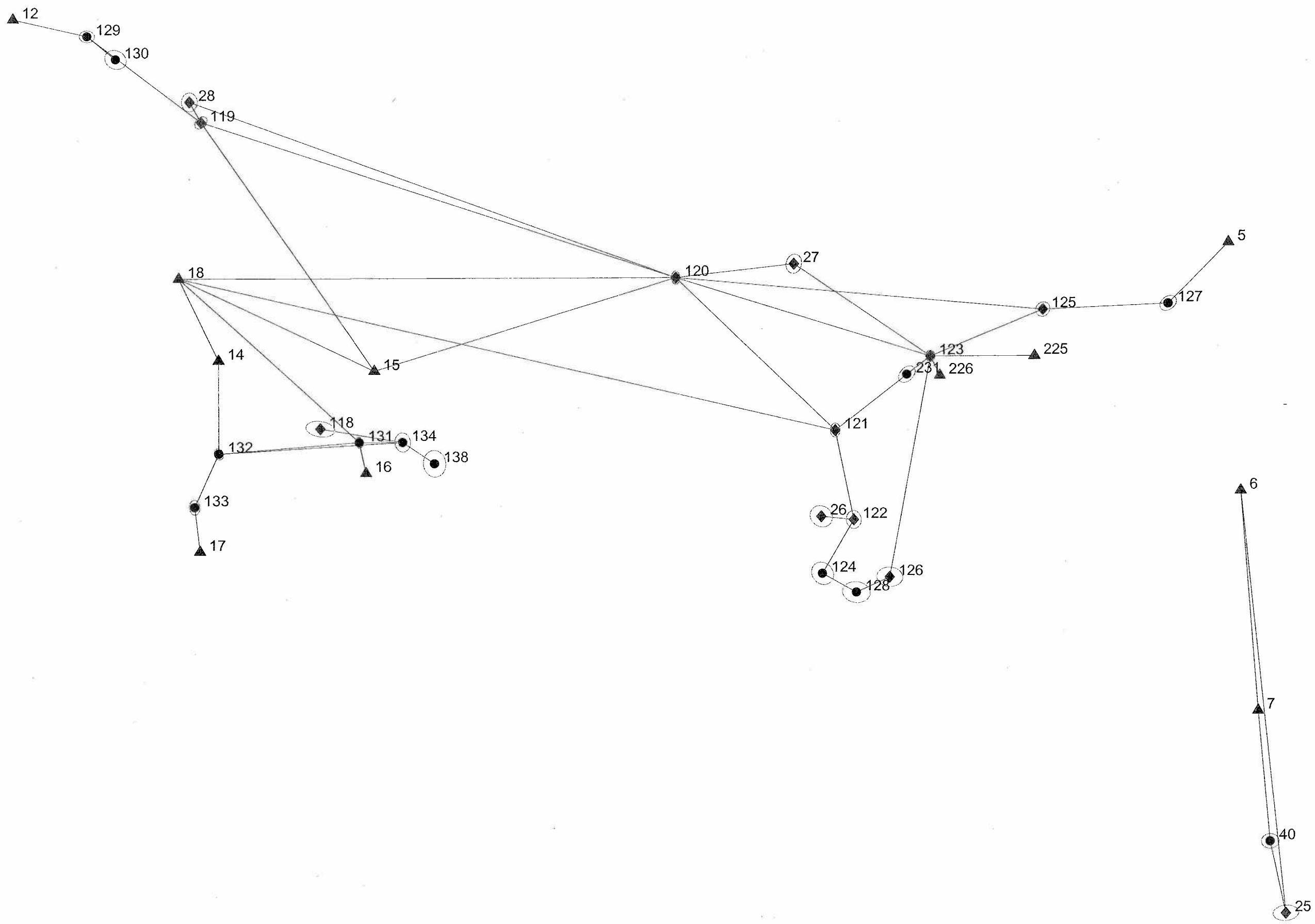

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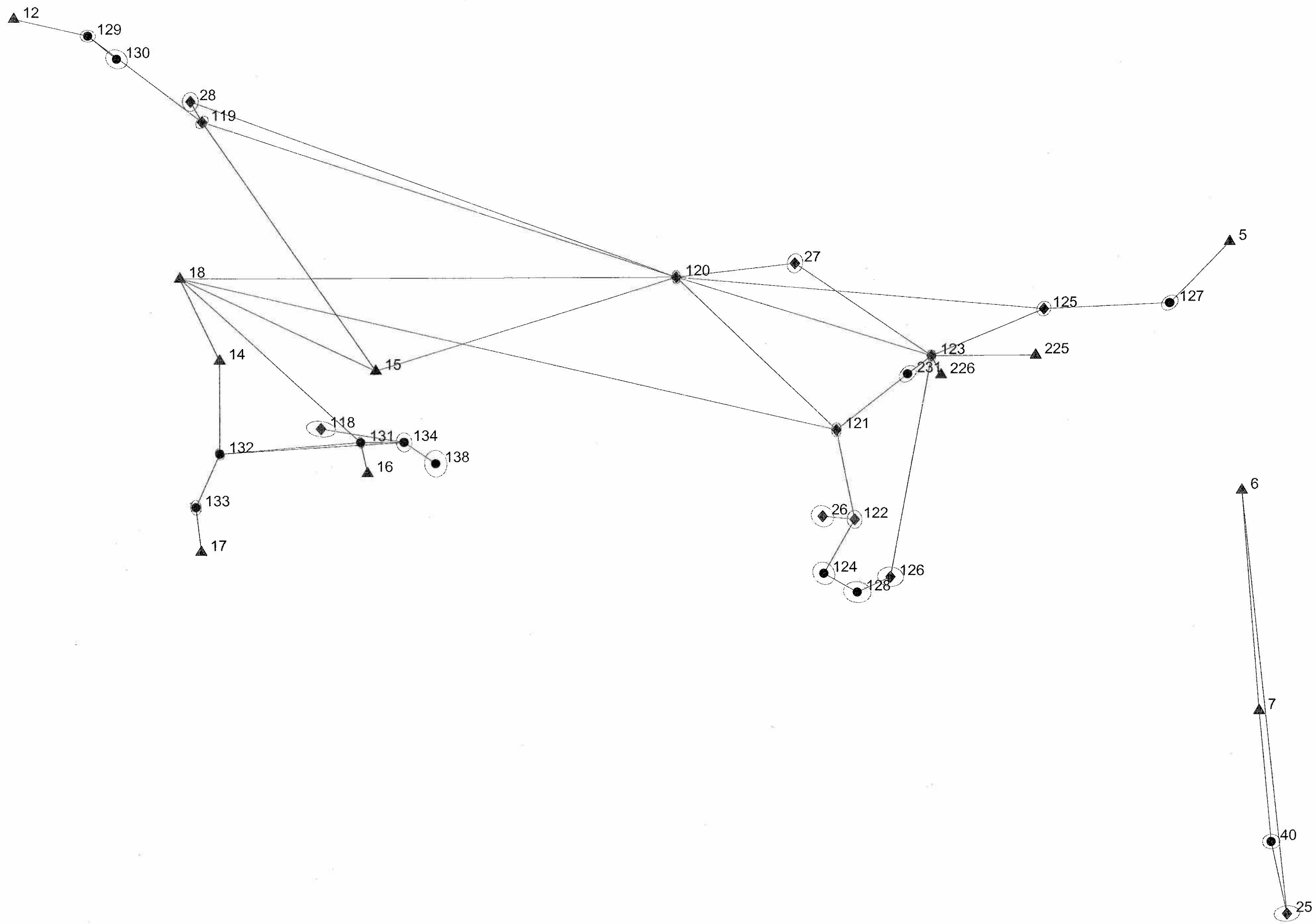

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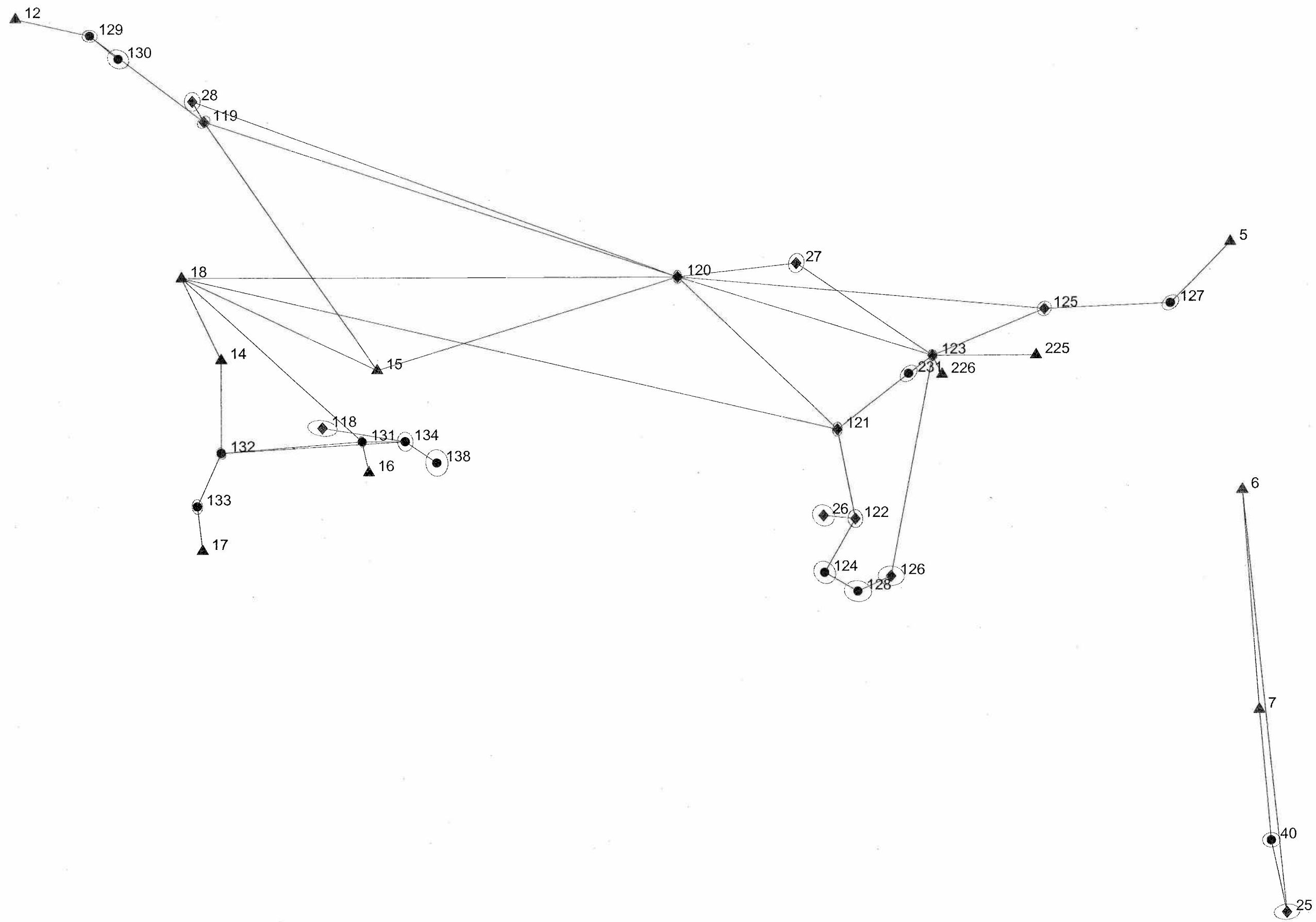


07-07-036
ARUP / DOYLE

JRF / TN

9/4/2007

(Rehab Panels from.
99-05-028 PB / Doyle
* Units - meters
Datum NAD 83 zone 3
NAVD 88
(from PB/Doyle GPS))

* Units new Project = US Feet
(Some Levels recorded in m)
(see p 4-6 need to convert)

① 9/4/2007
JF / TN

Rehab Panels * Reset MAGNETWASH
HV-22, HV-21*, HV-19*, HV-20,
HV-17, V-119, V-121, HV-23
HV-24, HV-14*, HV-15, HV-18
HV-16, * V-118, V-112, V-120,

Reset new Panels @/near
old V-122 — new V-160
old HV-1 → new HV-25 (BE/KK)

07-07-036 ①
ARUP / Doyle

9/5/2007
JF / BE / TN / KK / J Bigo

Available #
Vertical - 130-208 JF 160-
Horizontal - 25-117 30-

+ NOTE: V-112 WAS LABELED HV-5 IN MET DESCRIPTION OF V-112,
HV-11 IS BEAT-LOCATED IN PED. WALKWAY.

(2) 9/7/07

BE / KK

Panels Found / Refreshed

V-102, V-106, V-107, V-110, V-113

V-114, V-115, V-118, V-117, (119-121 done)

Panels searched for and not Found

V-101, V-103, V-104, V-108, V-109, V-111

(2)

07-07-036

ARUP / Doyle

☆ Scope for day will be to find old panels and refresh paint on them. We will not be resetting panels that are not found.

"V" is that still need to be record: 105 + 122

(3)

9/10/07

BE/TN

Panels Found/Refreshed

HV-12, HV-2, HV-3, HV-4, HV-5, HV-6, HV-7, HV-13

Panels not Found

HV-10, HV-8, HV-9, HV-10

07-07-036

(3)

ARVP / Doyle

☆ Did not search for HV-11, Tim said he and Fisher found it, even though previous notes don't say.

9/11/07 BE / KK

★METRIC★ Level Loop From nail @ V-115 to V-130.

Pt #	(+)	DIST	(−)	el	Adj el
V-115				2.971 meters	
	6.438'	(149.3) 45.52m		9.747'	
	1.9624				
		(149.9) 45.69	5.678'	10.507	
TP-300			1.7308	3.2026	
	1.4640	(106.8) 32.54			
		(110.0) 33.53		9.609'	
V-130			1.7379	2.9287	
	1.7109	(109.1) 32.96			
		(108.5) 33.06			
TP-300			1.4365	3.2031	
	1.7446	(150.2) 45.77			
		(148.9) 45.40			
V-115			1.9767	2.971 (9.747')	

Loop for # V-160 on next page

Years of
Cone nail in panel

CM

$\Sigma(+) = 6.8819$
$\Sigma(-)$ 6.8819 (closes Flat)

115 − 13 =
ΔEl = −0.138
D = 516

13 = − 115
ΔEl = 0.138
D = 515.7

9/11/07 BE/KK

Run to V-137

Pt#	(+)	DIST	(-)	el:	Adj el
BV-23				56.708	
	7.435'	65.3'		186.0445	
	2.2662	19.90m			
		67.3'	1.9662'		
TP-201		20.50m	0.5993		
	9.061'	65.5'			
	2.7617	19.95			
		62.0'	1.4718'		
TP-302		18.91	0.44[illegible]		
	8.7195'	57.9'			
	2.6577	17.66			
		55.8'	1.7234'		
V-137		17.02	0.5253	206.1036	
	1.4596'	56.4'			
	0.4449	17.19			
		57.4	8.4544'		
TP-302		17.51	2.5769		
	1.3182	63.9			
	0.4018	19.47			
		63.5	8.9081'		
TP-301		19.37	2.7152		
	1.9498'	67.1			
	0.5943	20.44			
		65.7	7.4163'		
BV-23		20.03	2.2605	186.0524	

07-07-036

ARUP / Doyle Dr.

CCN + Sh in Panel

Steel tip @ Dwy

FD Disk @ CB - "TOWILL INC Concord, CA - 101"

PID in Bike Lane arrow

$\Sigma(+) = 9.1266$

$\Sigma(-) = 9.1258$

Error = 0.0008m over 6 turns

23 - 137 $\Delta el = 20.054$

$D = 374'$

137 - 23 $\Delta el = 20.051$

$D = 374'$

(6) 9/11/07 BE/KK

Level loop from HV-2 to ~~HV-3~~

Pt#	(+)	Dist	(-)	el:	Avg el
HV-2				14.433 m.	
	1.6272	12.90 m			
TP-302		13.10	1.5699	14.4903	
	2.6610	10.06			
TP-303		9.08	0.1570	16.9943	
	2.8860	7.68			
TP-304		7.27	0.3636	19.5167	
	2.8658	8.21			
TP-305		8.47	0.3505	22.0320	
	2.9988	13.81			
TP-306		13.38	0.0161		

07-07-036

ARUP / Doyle Dr.

(6)

9/12/07 BE/KK

will be setting new panels in general area of panels not Found.
start "HV" numbering at 25,
"V" numbering at 131

Panels set

HV-25, HV-26, V-131, V-132 (near old 101), V-133 (near old 103)

9/13/07

set HV-27 (near old HV-10)
set HV-28 (near old HV-11)
V-134 (near old 104)

New Panels set

#	Tied H		Tied V
25	✓		✓
26			
27			
28			✓
130	N/A		✓
131	"	138, 139	✓
132	"		✓
133	"		✓
134	"		✓
135	"		✓
136	"		✓
137	N/A		✓

(8) 9/14/07 VF / KK

* DL Run to CHHV 28

PT	BS	DIST	FS	elev	desc
(1) HT 0698				13.94'	BDF on Sea Wall
	1.910	241.5			
28		237.2	5.098	10.762	Rebar + Cap
	4.962	238.9			
(150) HT 0698		239.8	1.777	13.947	BDF on Sea Wall

Note: "New Run to HV. 27"

PT	BS	DIST	FS	elev	desc
(2) HT3539				18.81	vert BDF BM
	0.855	135.0			
TP 151		137.1	6.754	12.911	CN
	2.981	81.9			
V 130		88.1	6.305	9.587	MALNS
	6.964	168.2			
TP 152		170.6	6.400	10.151	CN
	7.092	216.2		11.1	
TP 153		216.1	5.350	11.893	MAGNS
	5.883	269.0	532.1		
V 132		263.1	7.383	10.393	MAGNS

07-07-036

ARUP / Doyle Dr (8)

TDS File = 0736-DL1.RWS

* Note: units = US Feet

(TP Point Range 150-)

name / note

1 = NGS BM "Clark 1948"

CH. HV. 28 / Aerial Panel

NGS BM "Clark 1948"

V.114 3.251 m = 10.666'
V.115 2.971 m = 9.747'

Name / note

H 1444 Fnd on Col 60 (N) E Face of Doyle behind old Commisary Bldg

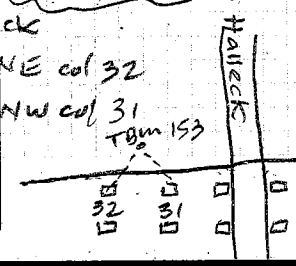
Bad shot 152

CH V 130

check V. 130

PT	BS	DIST	FS	elev
151	3.67	66.9		
		103.3	6.997	
				9.584

Set MAGNS under Doyle Dr @ Halleck
24.8' NE col 32
24.6' NW col 31



9/14/2007
JF / KK

ARUP / Doyle Dr
07-07-036

0736-DL1.RWS (cont)

cont Run to HV.27

PT	BS	DIST	FS	elev	desc	name/note
132			~~165.5~~ 3.95	10.393	MAGNS	CH. V. 132
	6.321	192.6				
TP 154		192.0	2.173	14.541	T Bar	
	2.980	252.7	-1380'			
TP 155		253.3	5.105	12.416	CN	
	4.762	223.8				
TP 156		222.2	3.735	13.443	CN	ON POST
	3.387	214.5				
HV 27		214.4	4.901	12.379	Rebar +Cap	CH. HV. 27
	4.388	233.9	469			
TP 157		234.7	3.308	12.959	CN	ON POST
	4.254	262.7	~~-1613.5~~ 1145'			
TP 158		265.1	0.079	17.134	TOC-SE	SE cor conc bench (w side pond)
	1.824	234.5				
TP 159		232.0	5.150	13.808	CN	ON POST
	1.726	79.9				
V 115		70.7	5.799	9.735	CNS	
	6.047	219.4				
TP 160		220.5	5.236	10.546	CN	
	5.971	82.2	-644.7			
TP 161		82.5	2.687	13.830	CN	
	5.627	19.6				
162 HT 3539		20.5	0.646	18.911	BDF	Bm H 1444 <18.81>

9/17/2007 JF/KK

* Run from TBm 153 to HV 26

PT	BS	DIST	FS	elev	desc
153				<11.893>	MAGNS
	8.396	122.8			
SS 163		21.2	5.71	14.579	MAGN
SS 164		150.3	1.291	18.993	MAGNS
TP 165	1024	126.5	1.508	18.781	CN
	8.644	127.0			
SS 166	229	14.0	6.399	21.027	MAGNS
TP 167		126.9	0.316	27.109	CN
	9.711	119.1			
TP 168		119.3	1.582	35.238	CN
	8.687	140.7			
TP 169	280	142.2	0.925	43.000	CN
	9.628	139.8			
TP 170		140.3	5.109	47.520	CN
	8.551	125.4			
SS 171	244	170.3	7.332 *	48.239	PKF
HV 26		118.7	2.728	53.343	MAGNW
	2.610	123.7			
TP 172		123.4	8.434	47.519	CN

ARUP / Doyle
07-07-036

(10)

* 0736-DL1, RW5 (CONT)

Name / note

TBm 153 @ Hallecke / Doyle (see p 8)

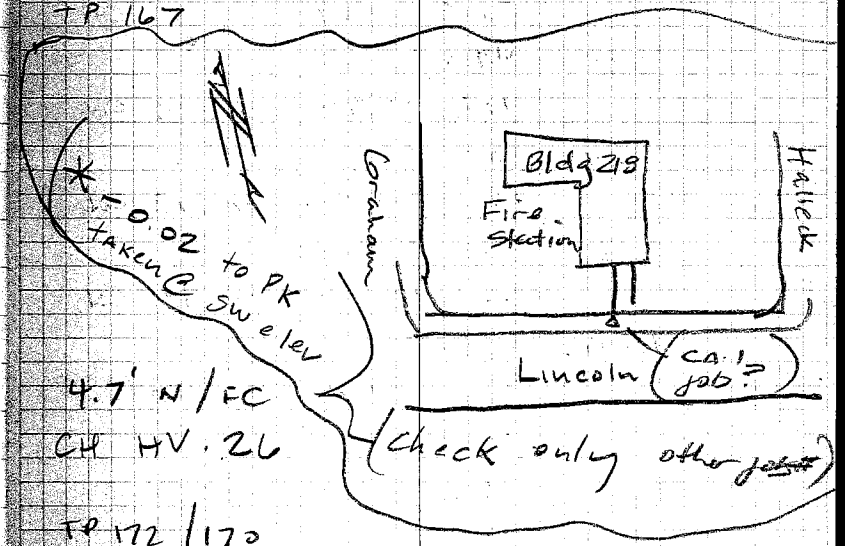
(CA. 18 (Tredwell)? not this job!)

(CA 22 (" ?) Do not use " !!

TP 165

(CA. 25 (Tredwell?) (For check Not to use this job)

TP 167



4.7' N / FC

CH HV. 26

TP 172 / 170
(not used)

9/17/2007
JF / KK

Thru HV 26, PID 136, ~~close~~ Thru 13

ARUP / Doyle
07-07-036

0736-DL1.RWS (cont) 110 = 17.13mc, 13 = 42.07'

PT	BS	DIST	FS	elev	desc	name / note
HV 26				53.343	MAGNW	CH HV 26 "TP 172 not used"
	7.461	210.4	1239'			
TP 172		209.3	2.224	58.580	CN	TP 172 (overwrite not used pt)
	8.915	156.1				
TP 173		155.5	4.912	62.583	CN	
	5.319	129.6				
PID 136		130.9	7.662	60.240	SW VLTE COR	CH V 136 (PID)
	1.888	151.2				
TP 174		151.3	+.417	57.711	CN	
	3.226	41.3				
TP 175		40.3	9.714	51.223	CN	
	0.324	30.7				
TP 176		32.2	9.069	42.478	CN	
	5.333	152.0	856.6'			
TP 177		154.6	2.633	45.178	CN	
	4.611	53.7				<Loose soil>
HV 13		49.3	7.944	41.845	Rebar	CH HV 13 <42.07'>
	9.462	150.2				
TP 178		151.3	5.283	46.024	CN	
	9.027	221.6				
TP 179		222.8	3.381	51.670	CN	

(12)

9/17/2007
JF / KK

13 to V.110 (close)

PT	BS	DIST	FS	elev	desc	name/note
TP 179				51.670	CN	TP 179
	9.792	109.7	12383			
TP 180		110.1	0.650	60.812	CN	
	4.205	140.2				
CHV 110		132.4	8.829	56.138	scribed X	CR. V 110 <56.20> held

check old CA 32

PT	BS	DIST	FS	elev	desc	name/note
TP 179				(51.670)	CN	TP 179
(191)	3.306	78.9				
32		62.7	6.185	48.791	MAGNK	old CA 32 (check elev) SW MPOC

N.F
IN
file
job #?

07-07-036
ARUP / Doyle

(12)

0736 - DL1. RWS (cont)

Found MAGNK @ SW Cor Presidio / MAC Arthur

(13) 9/17/2007 J.F / KK

07-07-036
ARUP / Doyle
0736-DL1.RWS (cont)
el 102 = 3.307 m = 10.85'

(13)

Run V.102 to new V 133 V 134

PT	BS	DIST	FS	elev	desc	name / note
V.102				10.85	CNS	CH V 102
	4.050	123.7	649'			
TP 182		130.2	4.519	10.331	60d	
	7.842	192.3				
V 133		196.1	4.247	13.976	MAGNS	CH. V. 133
	4.520	280.7	934'			
TP 183		280.6	5.516	12.980	CN	
	5.034	189.1				
V 134		183.5	5.423	12.591	MAGNS	CH. V. 134
	5.589	185.3				
TP 184		137.2	5.193	12.937	CN	TP 134 / 183
	5.470	279.9	934'			
(TP 185) V 133		281.6	4.475	13.982	MAGNS	CH V. 133 / TP 185
	4.224	195.5				
186		194.0	7.817	10.389	60d	TP 186 / 182
	4.467	131.4	653'			
(187) V.102		132.2	3.991	10.865	CNS	CLOSE CH. V. 102
				<10.850>		

(14)

9/18/2007

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Begin Levels CH HV 7 to new HV 25

PT	BS	DIST	FS	elev	desc	name/note
7				(65.722)	100d	CH HV 7
	9.445	117.3				
TP 188		119.3	1.583	73.534	CN	
	9.713	41.6				
TP 189		41.1	1.447	81.850	CN	
	9.814	44.6				
TP 190		46.5	1.811	89.853	CN	
	9.806	56.1				
TP 191		57.7	0.390	99.269	CN	
	8.554	79.5				
TP 192		77.8	0.240	107.583	CN	
	9.708	51.92				
TP 193		49.4	0.101	117.190	CN	
	9.757	52.5				
TP 194		52.4	0.357	126.590	CN	
	9.788	93.8				
TP 195		94.4	0.130	136.198	CN	
	9.719	74.9				
TP 196		74.7	1.363	144.554	CN	

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(14)

0736-PL1, RWS (cont)

Pt	el	desc
6	17.198	NS tip arrow
7	65.722	100d
8	149.081	NJ destroyed

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((cont) HV 7 to HV 25)

0736-DL1, RWS (cont)

PT	BS	DIST	FS	elev	desc	name/note
196				144.554	CN	TP 196
	9.229	53.3	1331.2			
HV 25		51.9	3.281	150.502	NS	CA-HV 25
	3.258	51.8				
TP 197		53.0	9.207	144.553	CN	TP 197/196
	1.249	74.7				
TP 198		75.0	9.606	136.196	CN	TP 198/195
	0.155	94.4				
TP 199		93.7	9.763	126.588	CN	TP 199/194
	0.267	52.2				
TP 200		52.8	9.666	117.189	CN	TP 200/193
	0.091	49.7				
TP 201		51.5	9.701	107.579	CN	TP 201/192
	0.143	77.5				
TP 202		79.5	3.458	99.264	CN	TP 202/191
	0.209	57.7				
TP 203		56.4	9.628	89.845	CN	TP 203/190
	1.659	46.2				
TP 204		44.1	9.662	81.842	CN	TP 204/189
	1.159	40.7				
TP 205		42.3	9.428	73.573	CN	TP 205/188

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cont/close HV.7 – HV.25

PT	BS	DIST	FS	elev	desc	name/note
TP 205				73.573	CN	TP 205/188
	1.826	120.1	1330			
(206) HV 7		116.6	9.688	65.711 <65.722>	100d	CH HV.7 (close)

*Begin Loop HV.7 to V.13 *

@ Chestnut / Richardson SE COR

PT	BS	DIST	FS	elev	desc	name/note
7				65.722	100d	
	0.460	106.6	512.5'			
TP 207		108.9	7.313	58.869	CN	
	1.111	75.9				
TP 208		75.1	9.713	50.267	CN	
	0.259	72.5				
TP 209		73.5	9.502	41.024	CN	TBM WEST EP LYON ST @ Chester X walk
	6.117	148.4				
TP 210		147.3	9.651	37.490	CN	
	0.122	63.1	605'			
TP 211		63.3	7.471	30.141	CN	
	6.018	92.5				
✓135		90.2	5.995	30.164	MAGN	PID CH V 135

24.698' (7-209)
512.5'

0736 - DL1 . RWS (cont)

(17) 9/18/2007
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(17)

MARK@RADMAN
(916) 391 1651

PT	BS	DIST	FS	elev	desc	name / note
135				30.164	MAG14	CM V 135 (PID)
	6.059	90.9	604.9			
TP 212		91.2	6.083	30.140	CN	TP 212/211
	7.441	63.7				
TP 213		63.4	0.093	37.488	CN	TP 213/210
	9.463	147.3				
TP 214 209		148.4	5.928	41.023	CN	TP 214/209
	9.585	70.1				
TP 215		72.5	0.345	50.263	CN	TP 215/208
	9.755	75.2				
TP 216		75.6	1.151	58.867	CN	TP 216/207
	7.256	107.4	509'			
(217) HV.7		108.2	0.407	65.716	101d	CM HV.7 (close)

(18)

9/19/2007
JF / KK

Az: 175°37'36"

T @ 6 — BS - 7
BNH = 4.792/1.461m — 5.372/1.638m ~~5.75/1.752m~~

ΔH = 0.002 — ΔV = 0.047

(ZA - 87°54'35" — SD - 1331.444')

Az: 174°02'59"

T @ 6 — BS - 25
BNH = 4.792/1.461m — HS - 5.838/1.779m

ΔH = 0.008 — ΔV = 0.11

(ZA - 87°00'53"
SD - 2567.329')

Az: 355°37'36"

T @ 7 — BS - 6
BNH = 5.13/1.563m — HS - 5.22/1.592m

ΔH = 0.002 — 0.03

(ZA - 92°06'32" — SD - 1331.458')

Az: 174°50'26"

T @ 7 — BS - 46
BNH = 5.13/1.563m — HS - 4.684/1.428m

ΔH = 0.005 — ΔV = 0.026

(ZA - 85°42'20"
SD - 793.231

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(19)

Tie out 25

0736

Site @ 25 — HS = 5.838/1.779 m
(2 sets averaged)

HA - 358°25'23"
ZA - 87°00'52"
SD - 2567.327'

(10000) HOR 6-25-7
Site @ 7 — HS = 5.372/1.638m

HA - 1°34'37"
ZA - 87°54'34"
SD - 1331.443'

Set MAGNW

FS 40 — (HS = 4.684/1.428)

HA - 179°12'51"
ZA 85°42'18"
SD 793.224'

(10001 - HOR 7-40-6)
FS 6 — HS = 5.22/1.592m

HA - 180°47'08"
ZA - 92°06'33"
SD - 1331.461'

Az: 354°02'59"

T @ 25 BS @ 6

BMH = 5.14/1.566m HS = 5.22/1.592m

ΔH = 0 ΔV = 0.11

(ZA - 92°59'22"
SD - 2567.316')

Az: 347°55'23"

T @ 25 BS @ 40

BMH = 5.14/1.566m HS = 4.684

ΔH = .025 ΔV 0.02

(ZA - 93°15'42"
SD - 446.100')

Az: 354°50'26"

T @ 40 BS - 7

BMH = 4.465/1.361m HS - 4.62/1.408

ΔH = 0.017 ΔV = 0.015

(ZA - 94°23'34" SD - 793.335')

Az: 167°55'23"

T @ 40 BS - 25

BMH = 4.465/1.361m HS - 5.49/1.673m

ΔH = 0.019 ΔV = 0.013

(ZA - 86°48'01"
SD - 446.079)

10002 (AN6 25-6-40)

FS 40 (HS = 4.684/1.428m)

HA - 353°52'26"
ZA - 93°15'42"
SD - 446.098'

10003 (HOR 25-40-6)

FS 6 (HS = 5.22)

HA - 6°07'35"
ZA - 92°59'22"
SD - 2567.315'

10004 (AN6 40-7-25)

FS 25 (HS = 5.49/1.673m)

HA - 173°04'56"
ZA - 86°47'59"
SD - 446.075'

10005 (HOR 40-25-7)

FS 7 (HS = 4.62/1.408)

HA - 186°55'02"
ZA - 94°23'33"
SD - 793.335'

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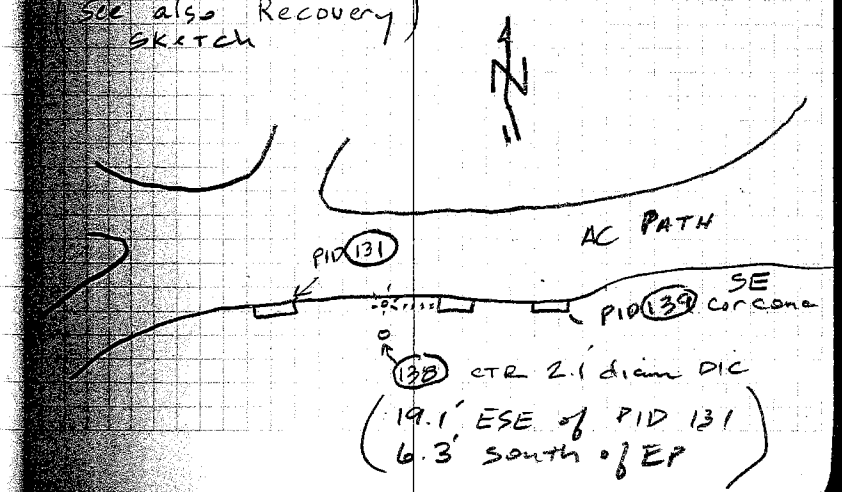
check in Lucas / Letterman Gate
Run to PID 131

PT	BS	DIST	FS	elev	desc	name/note
TBM 209				*41.024	CN	TP / TBM 209 (*unadjusted)
	9.046	197.6				
PID-SS 139		102.6	6.479	43.591	SE COR	conc bench pad
PID-SS 138		188.3	6.533	43.537	DK	CTR 2.1 diam SD DIC
PID 131		206.5	5.991	44.079	NE COR	conc bench pad
	6.218	202.0				
(218) TBM 209		201.5	9.270	41.027	CN	close TBM 209

NTS

(see also Recovery Sketch)



(21)

9/20/2007
JF / KK

Az: 295°23'25"

→ @ 15 ✱ BS - 18

BNH = 5.187/1.581 HS - 5595/1.705m

ΔH = 0.03 ΔV = 0.04

FS 119 set rebar + Cap
(HS = 5.32/1.622m)

HA - 29°54'25"
ZA - 89°47'29"
SD - 1823.367'

✱ BS (ZA - 86°40'10"
SD - 1297.741')

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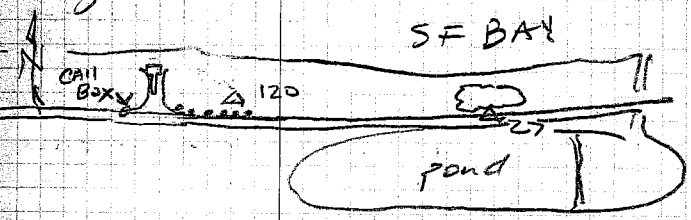
(Ties to HV 26, HV 27, HV 28)
Begin Traverse

(21)



FS 120 set Rebar + Cap north of Chrissy Field Bike path (DG) approx 150' EAST of Call Box # and 650' west of CA 27 set aprox 30' north of DG path and 80' east of conc bench (70' E/path)
(HS = 5.31/1.619 m)

HA - 137°06'03"
ZA - 89°57'07"
SD - 1888.588'

(22) 9/20/2007 VF / KK

Az 72°29'23"

T C 15 BS - 120

BNH = 5.137/1.591 HS - 5.31/1.619m

ΔH = 0.005 ΔV = - 0.10

10006 HOR 15 - 120 - 18

FS 18 (HS = 5.595/1.705m)

HA - 222°53'58"

ZA - 86°40'10"

SD - 1297.743'

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(22)

CONT Ties for HV.26, HV.27

BS (ZA - 89°57'04"

SD - 1888.589')

10007 (ANG 15 - 120 - 119)

FS 119 (HS = 5.32/1.622m)

HA - 252°48'24"

ZA - 89°47'28"

SD - 1823.368'

(23) 9/20/2007 JF/KK

Az: 115°23'25"

T @ 18 BS @ 15

BKH = 5.06/1.542m HS = 5.718/1.741m

ΔH = 0.03 ΔV = (-) 0.026

10008 (ANG 18-15-14)

FS 14 HS = 4.77/1.454m

HA - 39°01'04"

ZA - 89°00'40"

SD - 549.238'

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(23)

BS (ZA - 93°19'59"
SD - 1297.74')

10009 (ANG 18-15-120)

FS 120 HS = 5.31/1.619m

HA - 334°21'58"

ZA - 91°25'29"

SD - 2972.442'

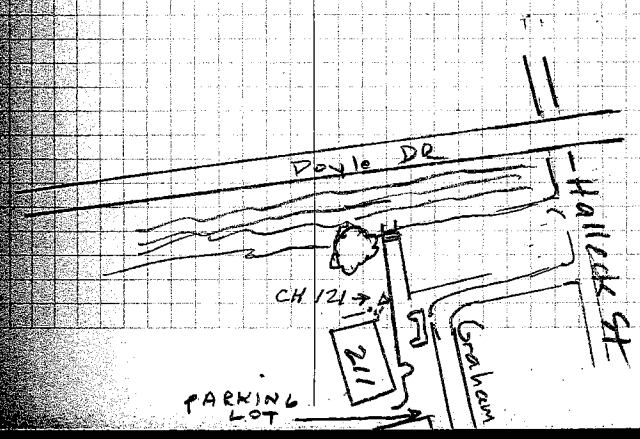
121 (HS = 5.475/1.668)

SET 100d - SPIKE 25' NE/Bldg 211
0.4' W/BSW

HA - 347°37'48"

ZA - 90°37'56"

SD - 4029.279'



(24) 9/20/2007 JF / KK

Az: 89°45'21"

T @ 18 BS @ 120

BNH = 5.06 / 1.542m HS = 5.31 / 1.619m

ΔH = 0.02

ΔV = 0.12

ZA - 91°25'30"

SD - 2972.444'

FS 121 (HS = 5.475 / 1.668m)

1. 10010 (HOR 18-120-121)

HA - 13°15'49"

ZA - 90°37'57"

SD - 4029.279'

3. FS 14 (HS = 4.77 / 1.454m)

10012 (ANG 18-120-14)

HA - 64°39'06"

ZA - 89°00'40"

SD - 549.239'

FS 15 (HS = 5.718 / 1.741)

2. 10011 (HOR 18-120-15)

HA - 25°38'02"

ZA - 93°19'58"

SD - 1297.741'

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ARUP / Doyle

(24)

Az: 103°01'13"

T @ 19 BS - 121

BNH = 5.06 / 1.542 HS = 5.475 / 1.668

ΔH = 0.00" ΔV = 0.02

ZA = 90°37'57"

SD = 4029.281'

FS 15 (HS = 5.718 / 1.741m)

10013 HOR 18-121-15

HA - 12°22'15"

ZA - 93°19'58"

SD - 1297.741'

FS 120 (HS = 5.31 / 1.619m)

10014 (HOR 18-121-120)

HA - 346°44'12"

ZA - 91°25'29"

SD - 2972.445

9/20/2007
JF / KK

Az: 269°45'21"

★ @ 120 BS - 18
BM H = ~~4.163~~ 5.175 / ~~1.515m~~ 1.577 HS - 4.77 / 1.454m

ΔH = 0.02
ΔV = 0.005

BS ZA - 88°36'23"
SD - 2972.418

FS 119 (HS = 2.53 / .772m)
10015 (A 120-18-119

HA - 18°23'43"
ZA - 89°58'09"
SD - 2987.869

FS 27 (HS = 5.375 / 1.638m)
Rebar + CAP HV 27 (Panel)

HA - 173°32'29"
ZA - 90°03'18"
SD - 713.311

FS 28 (HS = 2.533)
(Rebar + CAP Panel HV 28)

HA - 20°09'20"
ZA - 90°05'54"
SD - 3093.546'

FS 121 (HS = 5.475 / 1.668m)
10016 (A 120-18-121

HA - 224°12'57"
ZA - 88°44'24"
SD - 1325.859

FS 15 (HS = 5.718 / 1.741m)
10017 (A 120-18-15)

HA - 342°44'14"
ZA - 90°04'50"
SD - 1888.589

(26) 9/20/2007 JF/KK

Az: 133°58'.31"

T @ 120 BS @ 121

BNH = 5.175/1.577 HS = 5.475/1.668m

ΔH = 0.101

ΔV = 0.15

1.

FS 15 HS = 5.718/1.741

10018 (H 120-121-15)

HA - 118°31'15"

ZA - 90°04'38"

SD - 1888.593

3.

FS 119 (HS = 2.53/.772m)

10020 (H 120-121-119)

HA - 154°10'44"

ZA - 89°58'10"

SD - 2987.871

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(26)

BS 120-121 (ZA - 88°44'24"
SD - 1325.859

FS 18 HS = 4.77

10019 (H 120-121-18)

HA - 135°47'01"

ZA - 88°36'26"

SD - 2972.420

2. FS 27 (HS = 5.375/1.638)

10021 (H 120-121-27)

HA - 309°19'31"

ZA - 90°03'13"

SD - 713.315'

(27) 9/20/2007 JE/KK

Az:

* C 120 BS -15

BHH= 5.175/1577 HS - 5.718/1741

Heat WAVES

FS 18 HS = 4.77

~~10022~~ (H 120-15-18)

HA -

ZA -

SD -

FS 121 HS = 5.475

~~10023~~ (H 120-15-121)

HA -

ZA -

SD -

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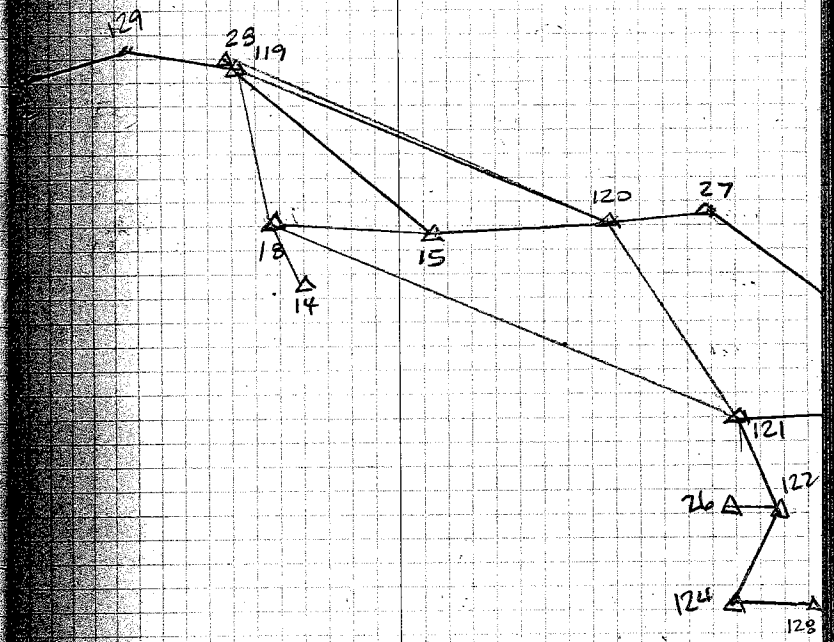
(27)



(28) 9/21/2007 JF/TH

AZ: 293°.01'.13"

T @121 BS – 18

BNH = 5.26/1.603 HS – 5.53/1.685m

ΔH = 0.04 ΔV = 0.12

FS 120 (HS = 6.27/1.912m)

10022 (4 121-18-120)

HA – 30°.57'.06"
ZA – 91°.15'.10"
SD – 1325.852'

(Raw file check)

HA	SD	ZA
0.00.00		
30.57.07	1325.852	91.15.03
210.57.05	1325.851	268.44.44
179.59.52		(359.59.47)
(30.57.09)		(91.15.09)
0.00.00	1325.851	91.15.03
(30.57.05)	1325.853	268.44.41
210.57.04		(359.59.44)
180.00.00		(91.15.01)
<30.57.07>	<1325.852>	<91.15.10>

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(28)

BS (121-18)
1. (ZA – 89°.23'.02" SD – 4029.274')
2. (ZA – 89.22.57 SD – 4029.277)

FS 122 (HS = 5.81/1.771m)
SET MAGNS @ west EP Keyes Av
Dr aprox 90' south/Lincoln

HA – 245°.29'.46"
ZA – 88°.55'.09"
SD – 548.329'

FS 123 SET MAGNS Under Doyle Drive @ the East side of Halleck on AC path 3.4' SE of SW COR of Nly B-10 column.

HA – 129°.02'.55"
ZA – 92°.26'.49"
SD – 225.976'

(29) 9/21/2007 JK/KR

Az: 313°58'31"

T @121 BS - 120

BNH = 5.26/1.603 HS - 6.27/1.912m

ΔH = 0.009 BS (ZA 91°15'12"

ΔV = 0.20 SD 1325.849

FS 123 (HS = 4.91)

10023 (A 121 - 120 - 123)

HA - 95°05'54"

ZA - 92°26'45"

SD - 725.971

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(29)

FS 122 HS = 5.81/1.771m

10024 (A 121 - 120 - 122)

HA - 214°32'41"

ZA - 88°55'12"

SD - 548.826'

FS 18 (HS = 5.53/1.685m)

10025 (H 121 - 120 - 18)

HA - 329°02'55"

ZA - 89°23'02"

SD - 4029.269'

9/21/2007 JF/KK

Az: 168°30'59"

T @ 121 BS - 122

BNH = 5.26/1.603 HS - 5.81/1.771m

ΔH = -0

ΔV = 0.01 BS (ZA - 88°55'12"
SD - 548.828)

FS 123 HS = 4.91

10027 (A 121-122-123)

HA - 243°33'15"
ZA - 92°26'47"
SD - 725.971'

Az: 52°04'08"

T @ 121 BS -123

BNH = 5.26/1.603 HS - 4.91

ΔH = -0

ΔV = 0.03 BS (ZA - 92°26'49"
SD - 725.974)

FS 120 (HS = 6.27/1.912m)

10029 (H 121-123-120)

HA - 261°54'08"
ZA - 91°15'14"
SD - 1325.843

FS 120 HS = 6.27/1.912m

10026 (A 121-122-120)

HA - 145°27'23"
ZA - 91°15'09"
SD - 1325.848

10028 (H 121-123-122)

FS 122 HS = 5.81/1.771m

HA - 116°26'48"
ZA - 88°55'12"
SD - 548.829

(31) 9/21/2007
JE / KK

Az: 348°30'59"

* @ 122 BS - 121
BNH = 5.228/1.594 HS - 5.74/1.749m
ΔH = BS (ZA 91°04'51"
ΔV = SD 548.827'

FS 26 HS = 4.91
MAGNWASH CH HV 26

HA - 287°09'34"
ZA - 89°59'06"
SD - 194.635'

Az: 209°54'10"

π @ 122 BS - 124
BNH = 5.228/1.594m HS = 0.32
ΔH = 0.004 BS (ZA - 89°41'50"
ΔV = 0.02 SD - 374.744'

FS 121 HS = 5.74/1.749m)
10031 (H 122-124-121)

HA - 138°36'52"
ZA - 91°04'53"
SD - 548.830

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FS 124 HS = 0.32
SET MAGNS ON EP (south)
on CANBY ST @ extension
of ℄ of Keyes ST

HA - 221°23'11"
ZA - 89°41'51"
SD - 374.748'

FS 26 HS = 4.91
10030 (H 122-121-26)

HA 65°46'26"
ZA 89°59'08"
SD 194.638

(32) 9/21/2007 JF/KZ

Az: 232°04'05"

T @ 123 BS - 121

BNH = 5.053/1.540m HS - 5.74/1.749m

ΔH = 0.011 BS (ZA - 87°36'37"

ΔV = 0.015 SD - 725.949)

FS 120 HS = 6.27/1.912m

10033 (A 123 - 121 - 120)

HA - 55°12'06"

ZA - 89°57'15"

SD - 1598.134

Az: 287°16'24"

T @ 123 BS - 120

BNH = 5.053/1.540 HS - 6.27/1.912

ΔH = 0.04 BS (ZA - 89°57'16"

ΔV = 0.20 SD - 1598.126)

FS 121 HS = 5.74

10034 (H 123 - 120 - 121)

HA - 304°47'56"

ZA - 87°36'37"

SD - 725.950

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(32)

FS 226 HS = 4.91 (A 10037 / 123-121-226)

HA -

ZA - see p 33

SD -

FS 231 HS = 4.91

10032 (CL 123 - 121 - 231)

HA - 0°09'39"

ZA - 90°17'39"

SD - 179.193

FS 231 HS = 4.91

10035 (H 123 - 120 - 231)

HA - 304°57'34"

ZA - 90°17'37"

SD - 179.191

(33) 9/21/2007 JF/KK

Az: 232°15'01"

T @ 123 BS - 231

BMH = 5.053 HS - 4.91

ΔH = 0.105 ΔV = -0.150

FS 121 HS = 5.74

10036 H 123-231-121

HA - 359°50'22"

ZA - 87°36'37"

SD - 725.951'

Az. 232°04'08"

T @ 123 BS - 121 *

BMH = 5.09/1.551m HS = 5.045/1.781m

ΔH = 0.004

ΔV = 0.02

BS ZA - 87°36'37"

SD 725.950'

FS 125 *

2.

HA 195°00'52"

ZA 90°03'07"

SD 727.872'

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(33)

231 BS ZA - 90°17'36"

SD - 179.193'

FS 226 (HS = 4.91)

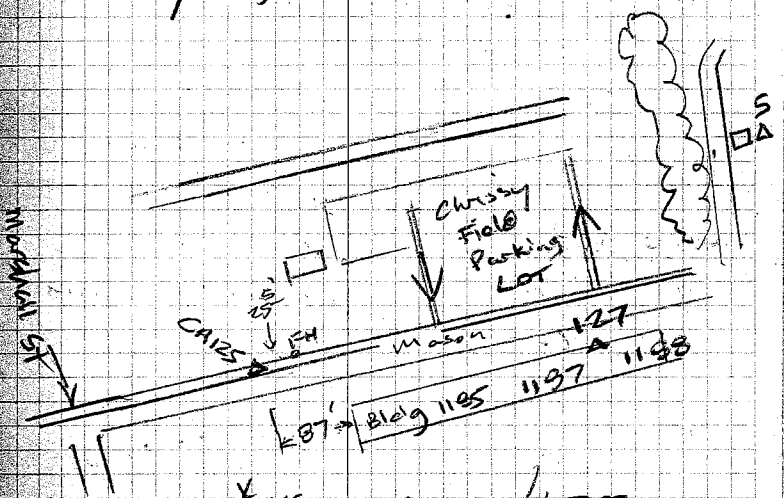
10037 (A 123-121-226)

* HA - 281°44'33"

ZA - 89°23'05"

SD - 129.027'

9/24/2007 JF/KK



FS 125 * HS = 5.585/1.703m

SET MAGNS on North EP of Bike path along Mason St aprox east of E Marshall St

(34) 9/24/2007 JF/KC

cont>

T @ 123

BNH = 5.09/1.551m

Az: 232°04'08"

BS - 121

HS - 5.845/1.781m

1. FS 27 HS = ~~4.77~~/~~1.454m~~ 5.84 / 1.779

10038 (A 123-121-27)

HA - 72°13'49"

ZA - 89°57'56"

SD - 989.737'

T @ 123

BNH = 5.09/1.551m

ΔH = 0.005

ΔV = 0.02

Az 67°05'00"

BS - 125

HS = 5.585/1.703

BS ZA - 90°03'08"

SD - 727.874'

FS 27 HS = ~~4.77~~/~~1.454m~~ 5.84 / 1.779

10041 (A 123-125-27)

HA - 237°12'58"

ZA - 89°57'55"

SD - 989.733'

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07-07-036

(34)

121 BS (ZA - 87°36'13"

SD - 725.960'

FS 225 HS =

FS 121 HS = 5.845/1.781m

10039 (H 123-125-121)

HA - 164°59'10"

ZA - 87°36'13"

SD - 725.958'

FS 120 (HS = 5.96/1.817)

10040 (H 123-125-120)

HA - 220°11'15"

ZA - 89°57'53"

SD - 1598.136'

FS 126 HS = 6.00

10044 (A 123-125-126)

HA - 123°26'21"

ZA - 88°25'39"

SD - 1352.547'

(35) 9/24/2007 JF / KC

(same as p34)

Az: 232°04'09"

T @ 123 BS - 121

BMH = 5.09 / 1.551m HS - 5.845 / 1.781m

ΔH = 0.003 BS (ZA - 725.952'

ΔV = 0.02 SD - 87°36'15")

FS 225 HS = 4.91

10042 (C 123 - 121 - 225)

HA - 217°39'39"

ZA - 90°04'07"

SD - 620.397'

Az: 89°43'02"

T @ 123 BS - 225

BMH = 5.09 / 1.551m HS - 4.91

ΔH = 0.05 BS (ZA = 90°04'07"

ΔV = 0.08 SD = 620.399')

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07-07-036

(35)

(HS = 6.00)

FS 126 SET MAGNS IN SE Quad
intersection Halleck / Lincoln

HA - 318°27'15"

ZA - 88°25'43"

SD - 1352.541'

FS 121 (HS = 5.845 / 1.781m)

10043 (H 123-225-121)

HA - 142°20'23"

ZA - 87°36'14"

SD - 725.958'

9/24/2007 JF / AK

Az: 247°05'00"

T @ 125 BS - 123

BNH = 5.06 / 1.542m HS = 5.47 / 1.668m

ΔH = 0.005 BS (ZA - 89°57'39"

ΔV = 0.012 SD - 727.877'

~~FS 120~~

Az: 87°21'19"

T @ 125 BS - 127

BNH = 5.06 / 1.542m HS - 5.728 / 1.745m

ΔH = 0.007 BS (ZA - 90°06'55"

ΔV = 0.012 SD - 758.760'

ARVP / Doyle
07-07-036

FS 127 HS = 5.728 / 1.745

Set MAG N + WASH in AC between Bldgs 1137 and 1138 south side Mason St 6.9' west of NW cor Bldg 1133 and 3.1' North of a bollard

(HA - 200°16'14"

ZA - 90°06'52"

SD - 758.763'

Horizon

FS 123 HS = 5.47 / 1.668m

10045 (H 125-127-123)

(HA - 159°43'47"

ZA - 89°57'39"

SD - 727.876'

FS 120 HS = 5.96 / 1.817m

10046 (A 125-127-120)

(HA - 187°36'56"

ZA - 89°57'43"

SD - 2204.797'

(37) 9/24/2007 JF/KK

Az: 267°21'14"

π @ 127 BS - 125

BMH = 5.152/1.5705m HS - 5.63/1.717m

ΔH = 0.009 BS ZA - 89°52'57"

ΔV = 0.037 SD - 758.752'

(+/) Az: 44°02'44"

π @ 127 BS - 5

BMH = 5.152/1.5705 HS = 5.73/1.746m

ΔH = 0.134 BS ZA - 89°50'17"

ΔV = -0.080 SD - 513.861'

ARUP/Doyle

07-07-036

(37)

FS CH HV.5 (HS = 5.73/1.746m)

10047 (CL 127-125-5)

HA - 136°41'53"

ZA - 89°50'16"

SD - 513.862'

FS 125 (HS = 5.63/1.717m)

10048 (H 127-5-125

HA - 223°18'08"

ZA - 89°53'00"

SD - 758.753'

9/24/2007 JF/KK

Az: 10°31'22"

T @ 126
5.31/1.618m

BS - 123
HS - 5.66/1.712m

ΔH = 0
ΔV = 0.17

BS (ZA - 91°34'28"
SD - 1352.543

Az: 65°17'07"

T @ 128
BNH = 4.964/1.513

BS - 126
HS - 5.87/1.739

ΔH = 0.004 ΔV = 0.005

BS (ZA - 93°26'17"
SD - 221.695'

FS 129 (HS = 5.52/1.682m)
set 100d in grass Between
Bldg 4 and Bldg 5 +/- 100' west/FC FUNSTON
(HA - 234°45'45"
ZA - 86°32'31"
SD - 221.695'

FS 124 HS = 5.42/1.652m
100dg (T 129-126-124)
(HA - 234°03'11"
ZA - 90°40'05"
SD - 231.399

(39)

09/24/2007
JF / KK

(+/-) Az: 119°19'50"

π @ 124 BS - 128
BNM = 5.077/1.547 HS = 5.307/1.617m
ΔH = 0.009
ΔV = -0.076 BS (ZA - 89°25'11"
SD - 231.399')

(+/-) Az: 29°54'10"

π @ 124 BS - 122
BNM = 5.077/1.547 HS - 5.665/1.726
ΔH = 0.002
ΔV = 0.006 BS (ZA - 91°07'19"
SD - 374.815')

FS 122 (HS = 5.665/1.726m)
10090 (C 124-128-122)

HA - 270°34'03"
ZA - 91°07'20"
SD - 374.813'

FS 128 HS = 5.307/1.617m
10051 (H 124-122-128)

HA - 89°25'58"
ZA - 89°25'12" Avg/Meaned
SD - 231.399'

* Raw DC ✓

HA	SD	ZA
89°25'58.59	231.398	89°25'03
269°25'54.59	231.400	270°34'39
179°59'55		(359°59'42)
		+18/2 = 9"
Mean Avg 89°25'58.5"	231.399	89°25'11"

* checks Terrestrial Data Report Listing

9/25/2007 JF/KK

Az: 145°17'51"

T @ 119 135 - 15

BNH = 4.35/1.478 HS - ~~5.55~~ 5.55/1.676m

ΔH = 0.004 BS (ZA - 90°13'20"

ΔV = 0.04 SD - 1823.379

2.

FS 23 HS = (5.5/1.676m)

10052 (A 119-15-23)

HA - 185°13'19"

ZA - 92°45'00"

SD - 141.185

3. FS 120 HS = 6.155/1.877m

10053 (A 119-15-120)

HA - 322°51'17"

ZA - 90°05'04"

SD - 2987.868'

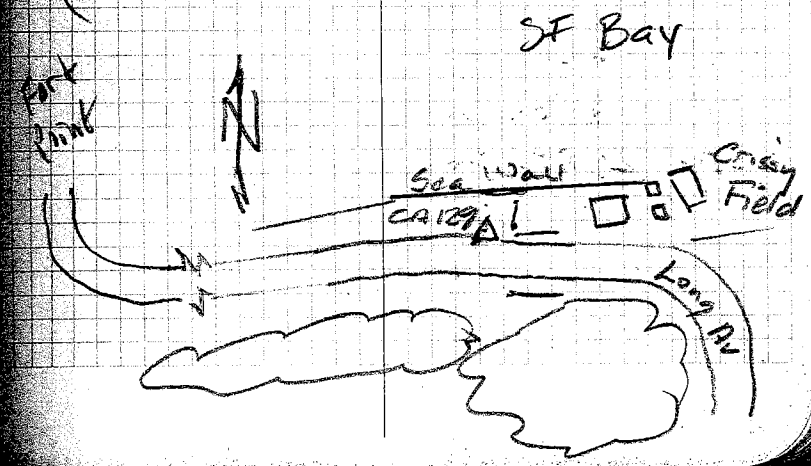
1. FS 129 (HS = 5.592/1.704m)

set MAGNETW @ West side metal Gates on Long Av aprox 150' past EC @ bottom of Hill.
3.2' NW of the N/y main gate post
13.8' south of seawall
2.95' west of S/y hinge post of secondary gate.
Note: Rd continues west to Fort Point

HA - 161°38'17"

ZA - 90°10'39"

SD - 858.937'



(41) 9/25/2007 J=/KK

Az: 306°56'08"

T @ 119 BS = 129

BMH = 4.85/1.478m HS - 3.592/1.704m

ΔH = 0.01 BS ZA - 90°10'40"

ΔV = 0.04 SD - 858.932'

1.

FS 28 (HS = 5.5/1.676m)

10054 H 119 - 129 - 28

HA - 23°35'06"

ZA - 92°44'59"

SD - 141.135

Az: 108°09'07"

T @ 119 BS - 120

BMH = 4.85/1.478m HS - 6.155/1.877m

ΔH = 0.02 BS ZA - 90°05'02"

ΔV = 0.18 SD - 2987.865'

1. FS 15 HS = ~~5.55~~ 5.50/1.676m

10057 A 119-120-15

HA - 37°08'44"

ZA - 90°13'21"

SD - 1823.366

2. FS 120 (HS = 6.155/1.877m)

10055 (H 119 -129 -120)

HA - 161°13'03"

ZA - 90°05'04"

SD - 2987.861'

3. FS 15 (HS = ~~5.55~~ 5.50/1.676m)

10056 (H 119 - 129 - 15)

HA - 198°21'48"

ZA - 90°13'20"

SD - 1823.365'

2 FS 129 HS = 5.592/1.704m

10058 (A 119 - 120 - 129)

HA - 198°46'58"

ZA - 90°10'42"

SD - 858.933'

9/25/2007 JF/KK

Az: 126°56'03"

T @ 129 BS - 119

BNH = 5.05/1.539m HS - 5.39/1.643m

ΔH = 0

ΔV = 0.02

BS (ZA - 89°49'27"
SD - 858.936')

* FS 130 Fnd USC+GS BM BD
aprox 52' SSE of the SE
cor of Bldg T989 near
stop bar at a T in
Long Av aprox 50' WEST
of Long Av Bottom of Hill Stop
"1925 BM 174"

Az: 282°35'19"

T @ 129 BS - 12

BNH = 5.05/1.539 HS - 5.49/1.672m ~~1.678m~~

ΔH = 0.048

ΔV = 0

BS (ZA - 89°35'47"
SD - 458.397')

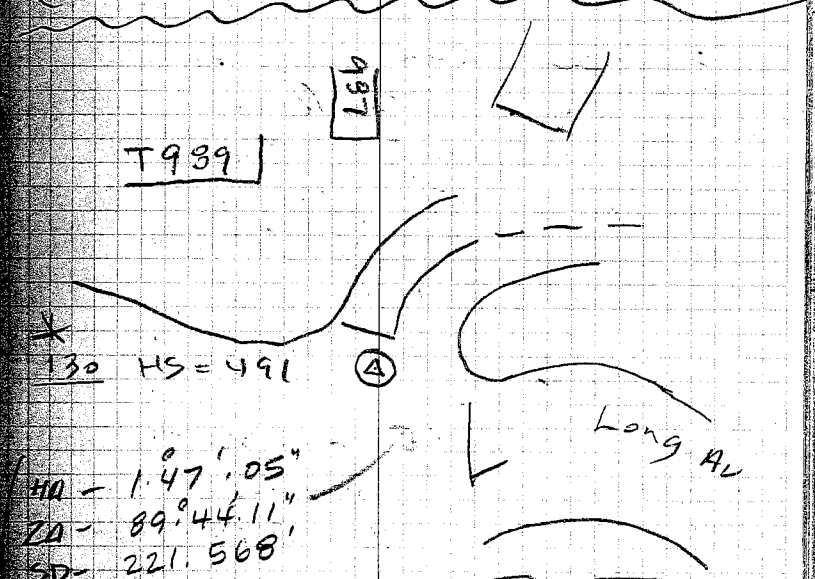
FS 119 (HS = 5.390/1.643)
10060 (H 129-12-119)

(HA - 204°20'30"
ZA - 89°49'28"
SD - 858.936'

Find closure
on WEST end to CH HV 12

FS 12 (HS = 5.49/1.672m ~~1.678m~~)
10059 (H 129-119-12)

(HA - 155°39'30"
ZA - 89°35'44"
SD - 458.399'



* 130 HS = 4.91 (A)

(HA - 1°47'05"
ZA - 89°44'11"
SD - 221.568'

FS 130 (HS = 4.91)
10061 H 129-12-130

(HA - 206°07'36"
ZA - 89°44'17"
SD - 221.575'

9/25/2007
VE/KK

Levels to new control

PT	BS	DIST	FS	elev	desc
28				* (10.762)	Rebar Cap +
	9.815	118.4			
119		104.2	2.903	17.674	"
	2.437	104.7			
(219) 28		108.0	9.401	(10.760)	"

Run to CA.129

PT	BS	DIST	FS	elev	desc
(1) CLARK 1947				13.94'	BD Bm
	5.548	152.6			
129		136.9	4.664	14.324	MB&NW
	4.607	143.6			
(220) (1) CLARK 1947		146.0	5.435	13.946	BD Bm

Run to CA.120

PT	BS	DIST	FS	elev	desc
TP 157				* (12.959)	CN
	3.454	132.1			
120		129.3	3.732	12.681	Rebar + Cap
	3.555	130.5			
(221) 157		130.7	3.274	12.962	CN

(TDS file 0736-DL1, RW5)
(see page 3)

name/note
CH HV 28 * unadjusted

CA 119 see sketch (CH HV 28) CA 28

close CH HV 28

(see page 8)

name/note
NGS Bm Clark 1947

CA.129

close – Bm Clark 1947

(see p 9)

name/note
on post TP 157

CA.120

TP 157 (close)

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Level Run to CA 123

(see p 8)

PT	BS	Dist	FS	elev	desc	name/note
153				*(11.393)	MAGNS	TBM 153 (* Unadjusted)
	7.402	81.3				
222 (CH 231)		100.7	7.567	11.728	CNS	CA 231
223 (CH 226)		101.3	5.264	14.031	CNS	CA 226
123		102.2	7.299	11.996	MAGNS	CA 123
	6.942	96.3				
224 153		81.5	7.046	11.892	MAGNS	TBM 153

PT	BS	Dist	FS	elev	desc	name/note
154				14.541	TBAR	TP 154 (see p 9)
	2.116	174.8				
125		176.6	5.294	11.373	MAGNS	CA 125 (see p 33)
	5.196	175.7				
225 154		174.5	2.025	14.544	TBAR	close TP 154

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Run to CA.121

PT	BS	DIST	FS	elev	desc	name/note
170				*47.52	CN	TP 170
	6.063	216.3				
TP 226		212.2	8.276	45.307	TC	TP 226
	3.763	36.5				
CA 121		33.7	6.930	42.140	100d	CA 121
	9.720	284.2				
(227) TP 170		245.0	4.331	47.529	CN	Close TP 170

Run to CA.122

PT	BS	DIST	FS	elev	desc	name/note
170				47.52	CN	TP 170
	7.064	68.2				
122		64.4	2.119	52.465	MAGNS	CA 122
	1.903	67.1				
(228) TP 170		67.1	6.347	47.521	CN	Close TP 170

Run to CA.126

PT	BS	DIST	FS	elev	desc	name/note
TP 169				*43.00	CN	TP 169 * unadjusted
	5.789	152.6				
229		185.0	3.009	45.78	CN ~~MAGNS~~	~~CA 126~~ TP 229
	7.592	43.9				
126		51.8	4.559	48.813	MAGNS	CA 126

see p 10 (* unadjusted)

9/25/2007

Run to CA 126 (cont)

PT	BS	PIST	FS	elev	desc	name/note
126				48.813	MAGN	CA 126
	4.719	50.6	7.752			
TP 230		42.3		45.78	CN	TP
	4.255	150.6				
(231) 169		190.2	7.038	42.997	CN	TP 169 (close)
				(43.00)		

(END FIELD TIES FOR PRESENT CONTROL SET — HOLD TO PROCESS —)

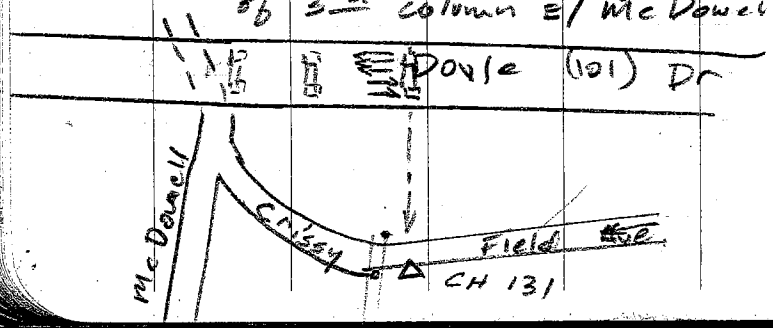
9/28/2007 JF/KK

HI 5.483

Resection

CH 131 set MAGN + WASH on TC

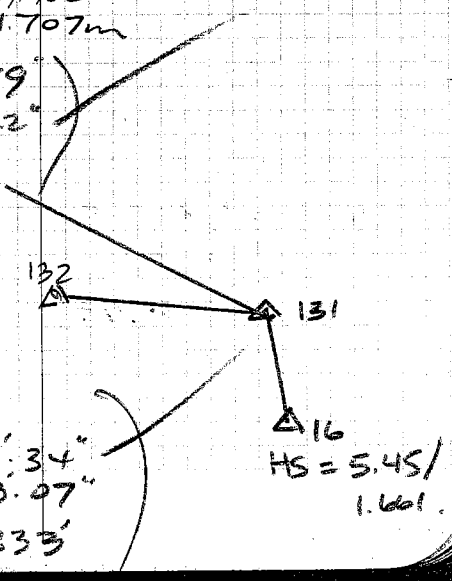
BNH = 4.976/1.516 5' NE of a JP on Crissy Field Ave south of extension of 3rd column E/ McDowell



Begin SB-CPT/Layout Control

10 HS = 5.597/1.706
5.60/1.707m

HA-359°59'59"
ZA-88°41'22"
SD-1461.460'



16
HA-215°00'34"
ZA-97°38'07"
SD-189.333'

9/25/2007

Run to CA 126 (cont)

PT	BS	DIST	FS	elev	desc	name/note
126				48.813	MAGNS	CA 126
	4.719	50.6	7.752			
TP 230		42.3		45.78	CN	TP
	4.255	150.6				
(231) 169		190.2	7.038	42.997	CN	TP 169 (close)
				(43.00)		

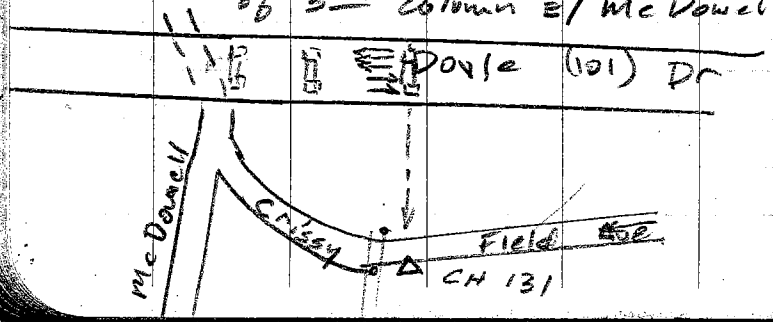
9/28/2007 JF/KK

HI 5.483

Resection

CH 131 set MAGN + WASH on TC

BHH = 4.976/1.516 5' NE of a JP on Crissy Field Ave south of extension of 3rd column E/ McDowell



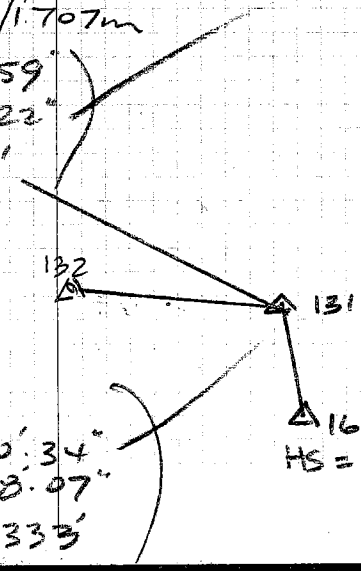
(END FIELD TIES FOR PRESENT CONTROL SET — HOLD TO PROCESS —)

Begin SB-CPT/Layout Control

5.597/1.706

10 HS = 5.60/1.707m

(HA-359°.59'.59"
ZA-88°.41'.22"
SD-1461.460')



(16
HA-215°.00'.34"
ZA-97°.38'.07"
SD-189.333')

9/28/2007 JF/KK

Az 312° 23' 03"

T @ 131 BS - 13

BHH = 4.976/1.516m HS - 5.60/1.706m

ΔH = 0.03 BS ZA - 88° 41' 22"

ΔV = 0.08 SD - 1461.460'

(1 16 ΔH 0.01
ΔV = 0.007)

FS 16 (HS = 5.45/1.66m)

10062 (4 131-18-16)

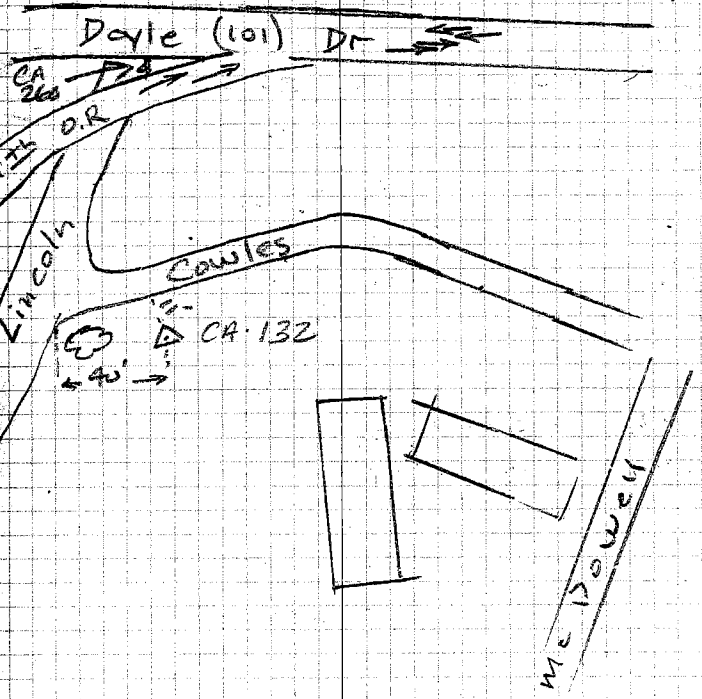
HA - 215° 00' 36"
ZA - 87° 38' 07"
SD - 189.335'

FS 132 (HS = 5.592/1.704m)

HA - 312° 45' 53"
ZA - 86° 31' 40"
SD - 845.719'

(HS = 5.592/1.704m)

FS 132 set 1" IP + CAP and tack SE cor Cowles/Lincoln 11' south of Cowles EP 40' east/Lincoln EP



INST Collimation 9 AM
S-6 HA + ZA Reset

(48)

9/29/07
JF / KK

Az: 265° 08' 55"

π @ 131 BS - 132
4.976/1.516 HS - 5.592/1.704m

ΔHz 0.006
ΔV= 0.003 BS (ZA - 86° 31' 41"
SD - 845.719')

FS 18 (HS = 5.60/1.706m)
10063 (H 131-132-18)

HA - 47° 14' 09"
ZA - 88° 41' 22"
SD - 1461.454'

HI = 5.736 Az: 85° 08' 55"
π @ 132 BS - 131
BHH = 5.225/1.593 HS - 5.35/1.631
ΔH = ∅
ΔV = 0.015
FS 14 HS = 5.46/1.663)
10065 (a 132-131-14)
HA - 274° 45' 53"
ZA - 90° 47' 37"
SD - 561.077'

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(49)

(From 0736 - Doyle, DC)

FS 16 HS = 5.45/1.661m
10064 (H 131-132-16)
HA - 262° 14' 44"
ZA - 87° 38' 09"
SD - 189.336'

FS 133 (HS = 5.34/1.627)
SET MAG NAIL @ BSW North Side
Storey Ave 50' West of Lincoln
5.2' SE of CTR 001 #34-19 BT 7

HA - 113° 38' 20"
ZA - 87° 19' 02"
SD - 351.732'

(49) 9/28/2007
JF / KK

HI 5.736 Az = 203°47'16"
☆ @ 132 BS – 133
BNH = 5.225/1.593 HS – 5.34/1.627
ΔH = 0.002
ΔV = 0.004 BS ZA – 87°19'03"
SD – 351.780'

FS – 14 HS = 5.46/1.663
10066 (A 132-133-14)
HA – 156°07'32"
ZA – 90°47'36"
SD – 561.071'

Az 359°54'39"
☆ @ 132 BS – 14
BNH = 5.225/1.593m HS – 5.46/1.663
ΔH = 0.015 BS ZA – 90°47'37"
ΔV = 0.002 SD – 561.072'

FS 131 (HS = 5.35/1.631m)
10068 (H 132-14-131)
HA – 85°14'05"
ZA – 93°29'39"
SD – 845.737'

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07-07-036
(49)

FS 131 (HS – 5.35/1.631m)
10067 (A 132-133-131)
HA – 241°21'43"
ZA – 93°29'38"
SD – 845.732'

~~10068 (FS 260 HS = 4.91)~~
~~(A 132-133-260 (MAGNS END)~~
~~HA –~~
~~ZA –~~
~~SD –~~
CANT SEE

FS 133 HS = 5.34/1.627m
10069 (H 132-14-133)
HA – 203°52'27"
ZA – 87°19'05"
SD – 351.778'

(50) 9/28/07 JF/KH
(Light Rain 11:30 am)

iH = 5.49 Az: 23°47'16"
* @ 133 BS - 132
BNH = 4.98/1.518 HS - 5.74/1.751m

ΔH = 0.004
ΔV = 0.02

BS ZA - 92°42'39"
SD - 351.788

(iH = 5.49) Az 173°15'50"
* @ 133 BS - 17
BNH = 4.98/1.518 (HS - 7.4)

ΔH = 0
ΔV = 0

BS ZA - 85°33'10"
SD - 271.443

ARUP / Doyle
07-07-036 (50)

NS panel CH HV 17

FS 17 (HS - 7.4)
10070 (CL 133 - 132 - 17)
HA - 149°29'29"
ZA - 85°33'12"
SD - 271.439

FS 132 HS = 5.74/1.751
10071 (H 133 - 17 - 132)
HA - 210°31'26"
ZA - 92°42'38"
SD - 351.787

Old Control			New Control
HV-1			HV-25
HV-2			HV-26
HV-3			HV-27
HV-4			HV-28
HV-5			V-130
HV-6			V-131
HV-7			V-132
HV-12			V-133
HV-13*			V-134
HV-14			V-135
HV-15			V-136
HV-16	HV-20		V-137
HV-17	HV.21		
HV-18	HV.22		
HV-19	HV.23	HV.24	

Old V Control

V-102
V-105
V-106
V-107
V-110
V-112
V-113
V-114
V-115
V-117
V-118
V-119
V-120
V-121
~~V-122~~

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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Dr Job No. 99-08-052

Station Name: HV-1 ★ Station No. HV-1

Monument Description: Nail & Shiner in Painted Panel

To Reach Description & Notes: North side of intersection of Scott ST & Vallejo ST

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

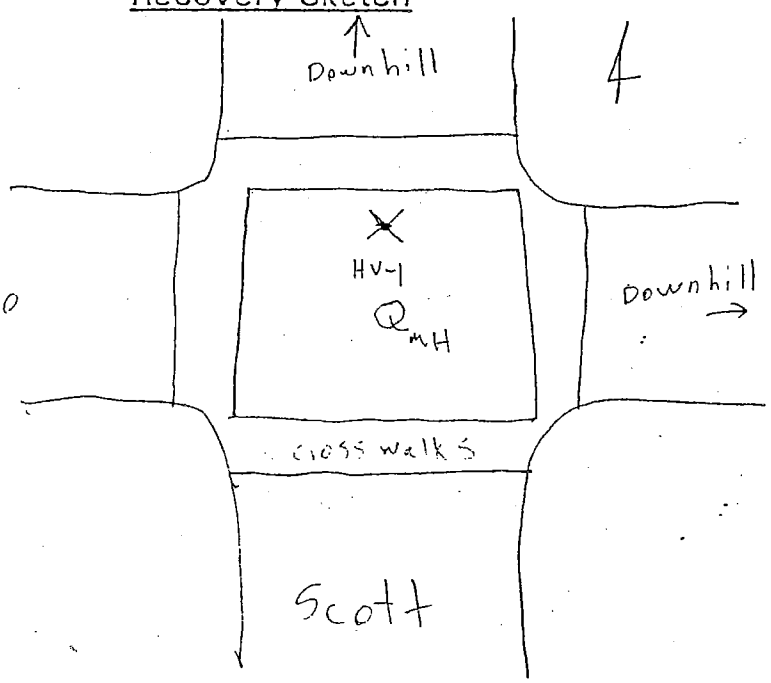
Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: STS + RVT Are there obstructions? ___ yes ___ no

~~★ Not Found on 9/5/07 CM-HV-25~~

Nail Found, reset 9/12/07 BE/KK

Recovery Sketch



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[redacted] CONTROL POINT RECOVERY FORM

Project: PB- Doyle Dr Job No. _____

Station Name: HV-2 Station No. HV-2

Monument Description: Nail & Shiner in Painted Photo Panel

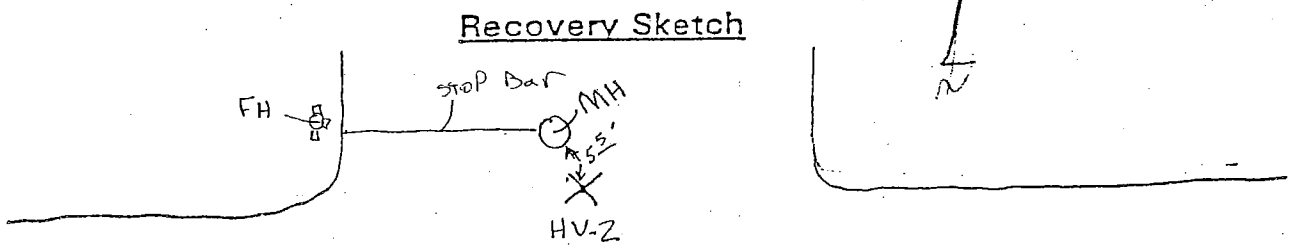
To Reach Description & Notes: North side of intersection of Scott ST & Greenwich ST

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

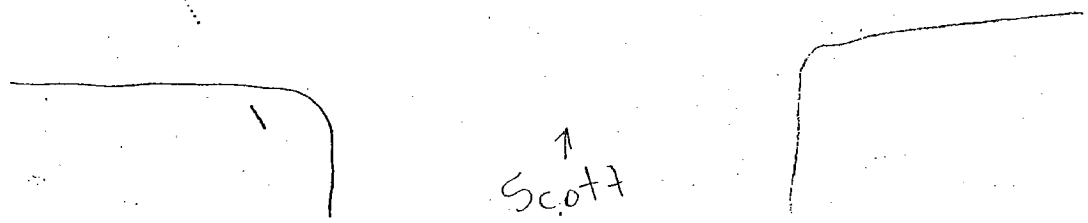
Station Recon. by: STS & RVT Are there obstructions? X yes ___ no

Recovery Sketch



Found, Refreshed
BE/JN
9/10/07

← Greenwich ST →



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[redacted] CONTROL POINT RECOVERY FORM

Project: PB / Doyle Dr. Job No. _____

Station Name: HV-3 Station No. CA-HV-3

Monument Description: Nail + shiner in Painted Photo Panel

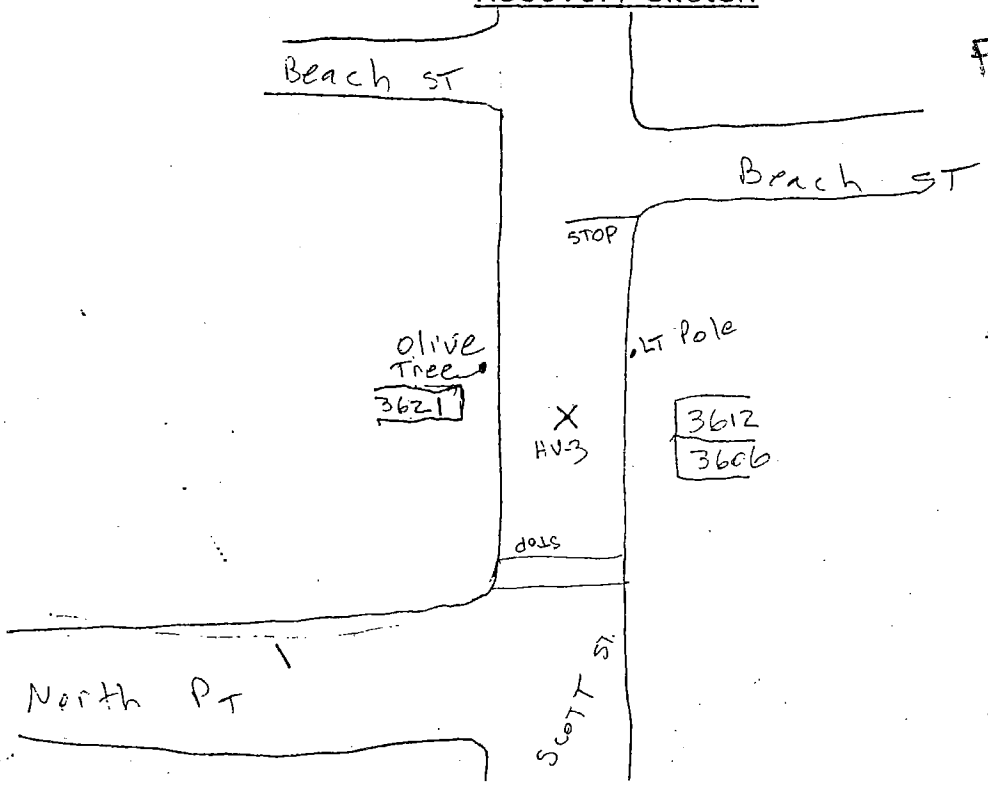
To Reach Description & Notes: Cir of Scott ST ± 92' N. of North PT Street

s the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

tation Recon. by: STS+ RVT Are there obstructions? X yes ___ no

Recovery Sketch



Found, refreshed
BE/TN
9/10/07

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GPS CONTROL POINT RECOVERY FORM

Project: PB / Doyle Dr Job No. _____

Station Name: HV-4 Station No. CA-HV-4

Monument Description: Nail & Shiner in Painted Photo Panel

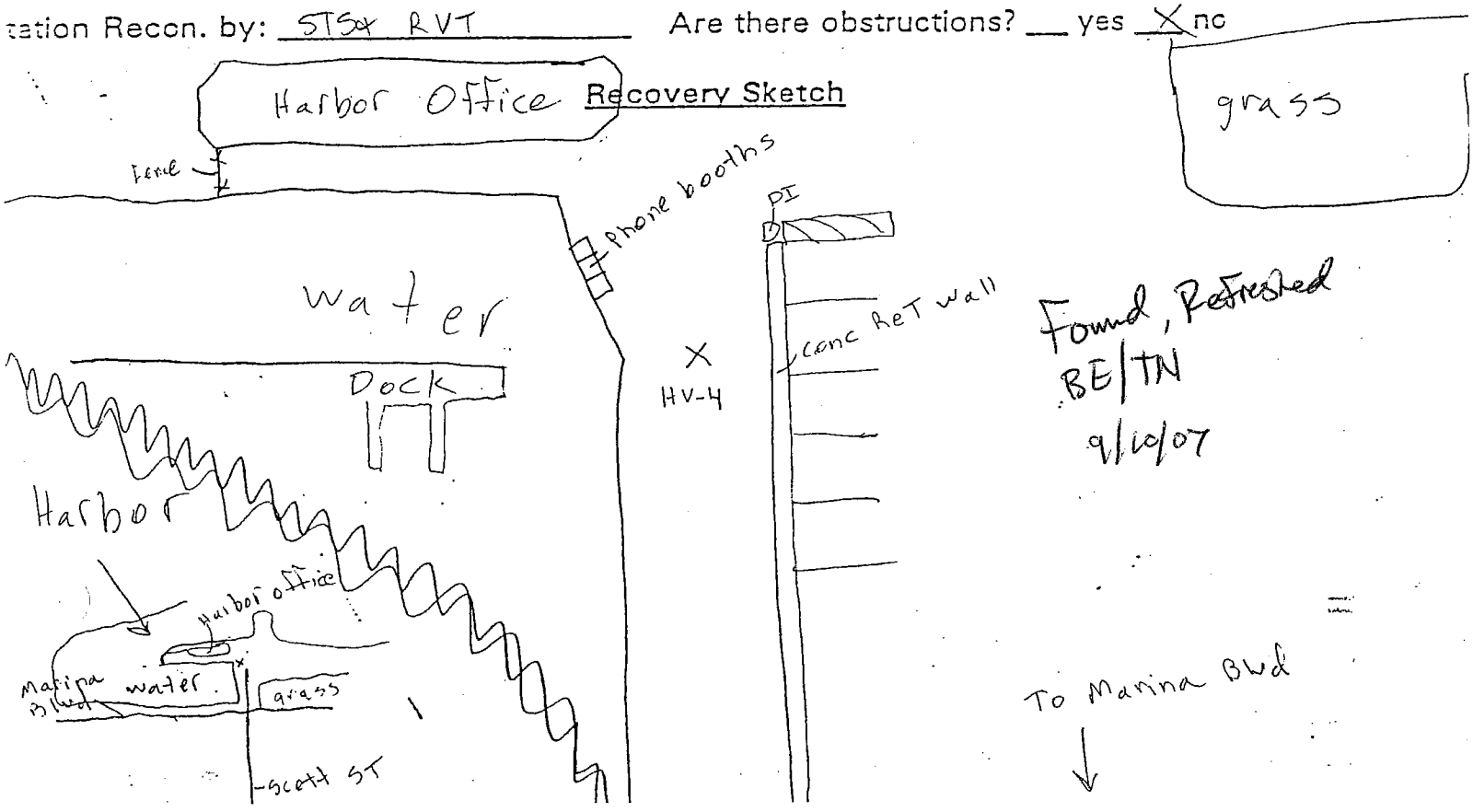
To Reach Description & Notes: in AC sidewalk South East of Harbor office, East of Marina on extension of Scott ST ± 200' N of Marina Blvd

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

Station Recon. by: STSX RVT Are there obstructions? ___ yes X no

Harbor Office Recovery Sketch



Found, Refreshed
BE/TN
9/10/07

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GPS CONTROL POINT RECOVERY FORM

Project: PB / Doyle Dr Job No. _____

Station Name: HV-5 Station No. CA-HV-5

Monument Description: N+ Shiner in painted Photo Panel

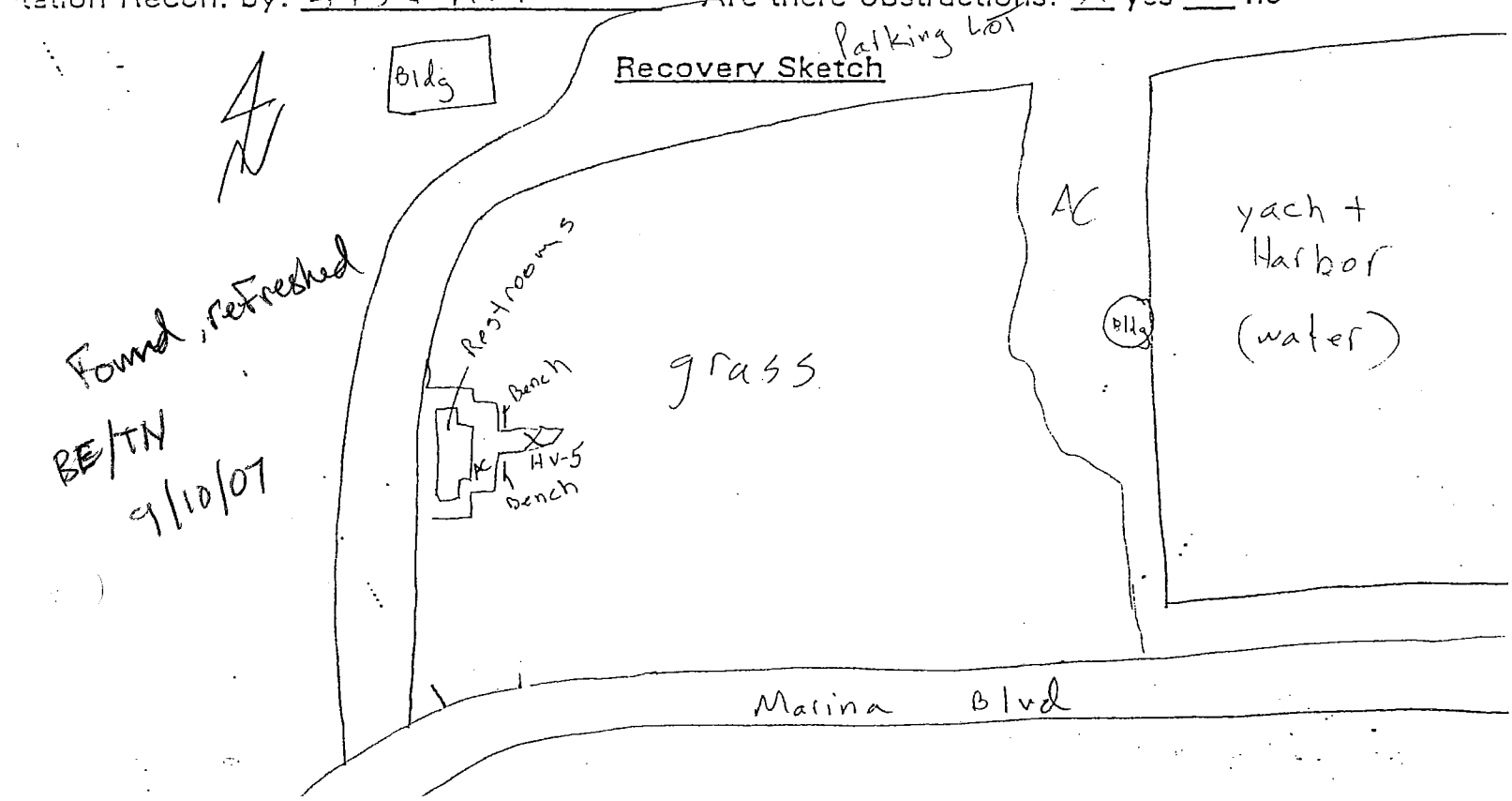
To Reach Description & Notes: N+S in AC strip East of bathrooms in Park Directly west of yacht Harbor, N of Marina Blvd ± 250' East of yacht Rd

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

Station Recon. by: STS & RVT Are there obstructions? X yes ___ no

Recovery Sketch



Found, refreshed
BE/TN
9/10/07

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GPS CONTROL POINT RECOVERY FORM

Project: PB / Doyle Dr Job No. _____

Station Name: HV-6 Station No. CA-HV-6

Monument Description: SET Nail & shiner in tip of Traffic Arrow

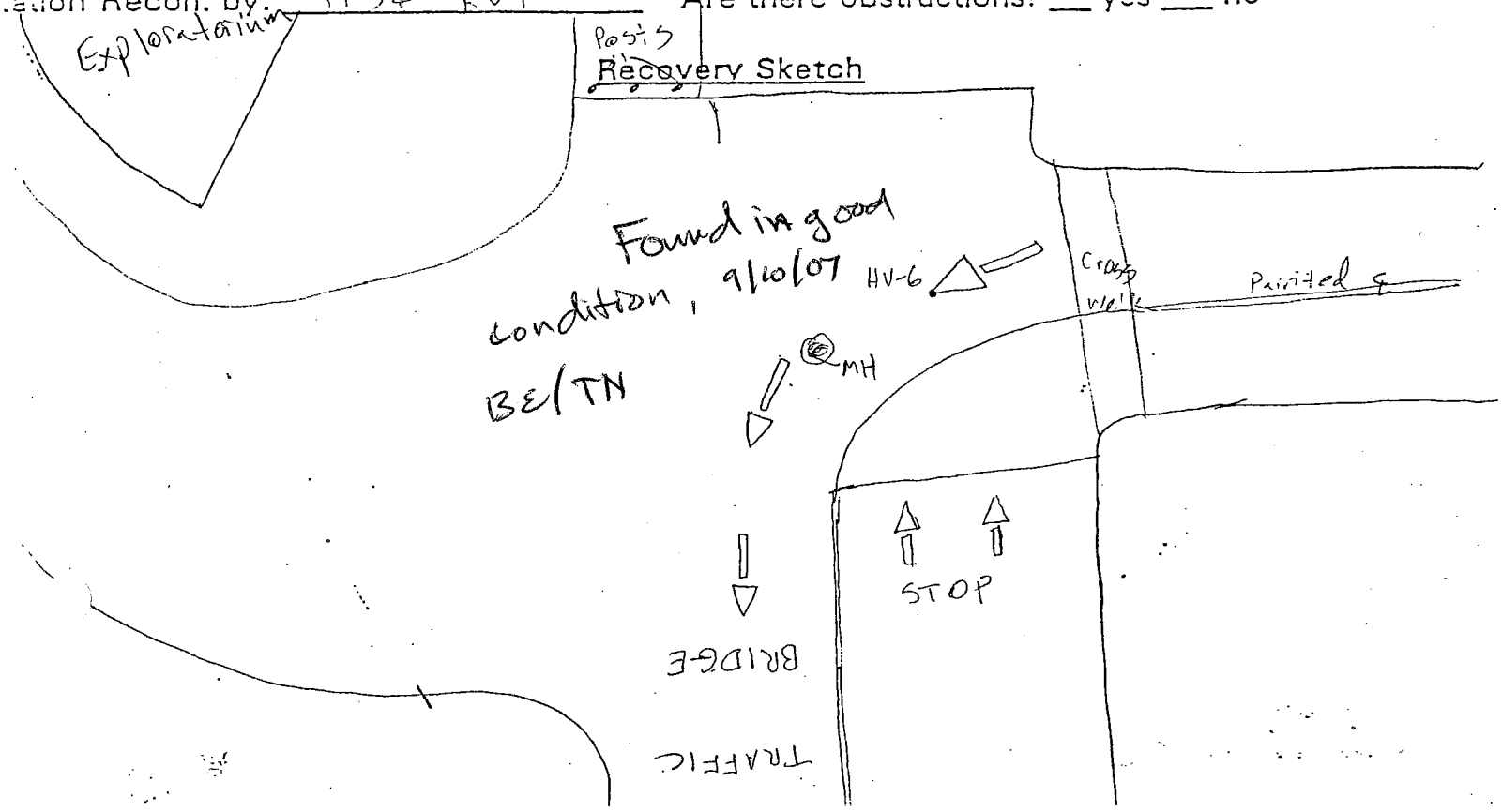
To Reach Description & Notes: NE quadrant of intersection of Bay & Lyon Streets, SE of the South end of the San Francisco Palace of Fine Arts / Exploratorium

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

Station Recon. by: STS & KVT Are there obstructions? ___ yes ___ no

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: PB / Doyle Dr Job No. _____

Station Name: HV-7 Station No. CA-HV-7

Monument Description: 100D SPK + Shiner in Painted Photo Panel

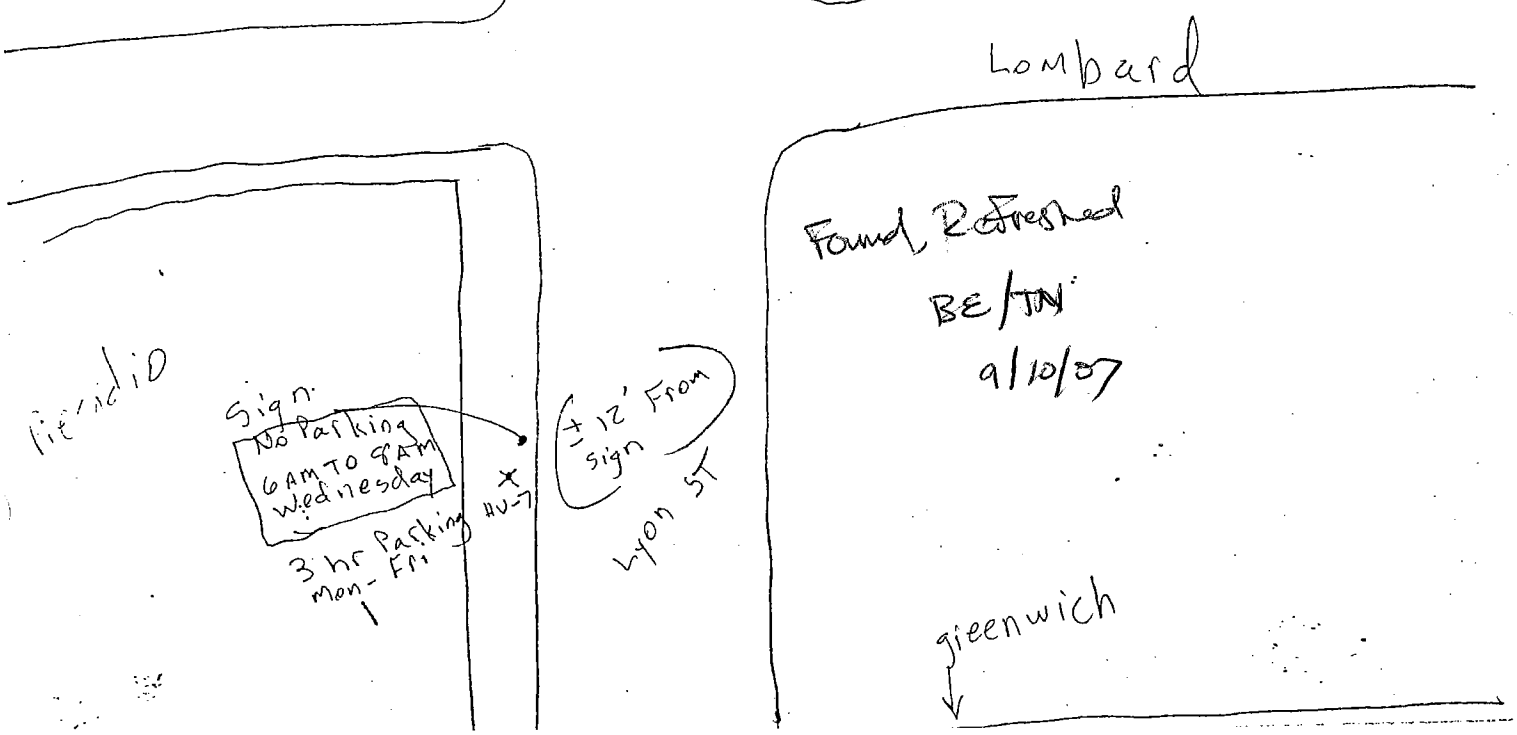
To Reach Description & Notes: 100D SPK + Shiner in Conc. Sidewalk (in broken Corner of square), west side of Lyon St. between Lombard + Greenwich, 6.5' west of curb

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

Station Recon. by: STS & RVT Are there obstructions? X yes ___ no

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-12 Station No. 12

Monument Description: set C-Nail & shiner in 4" x 4' painted panel

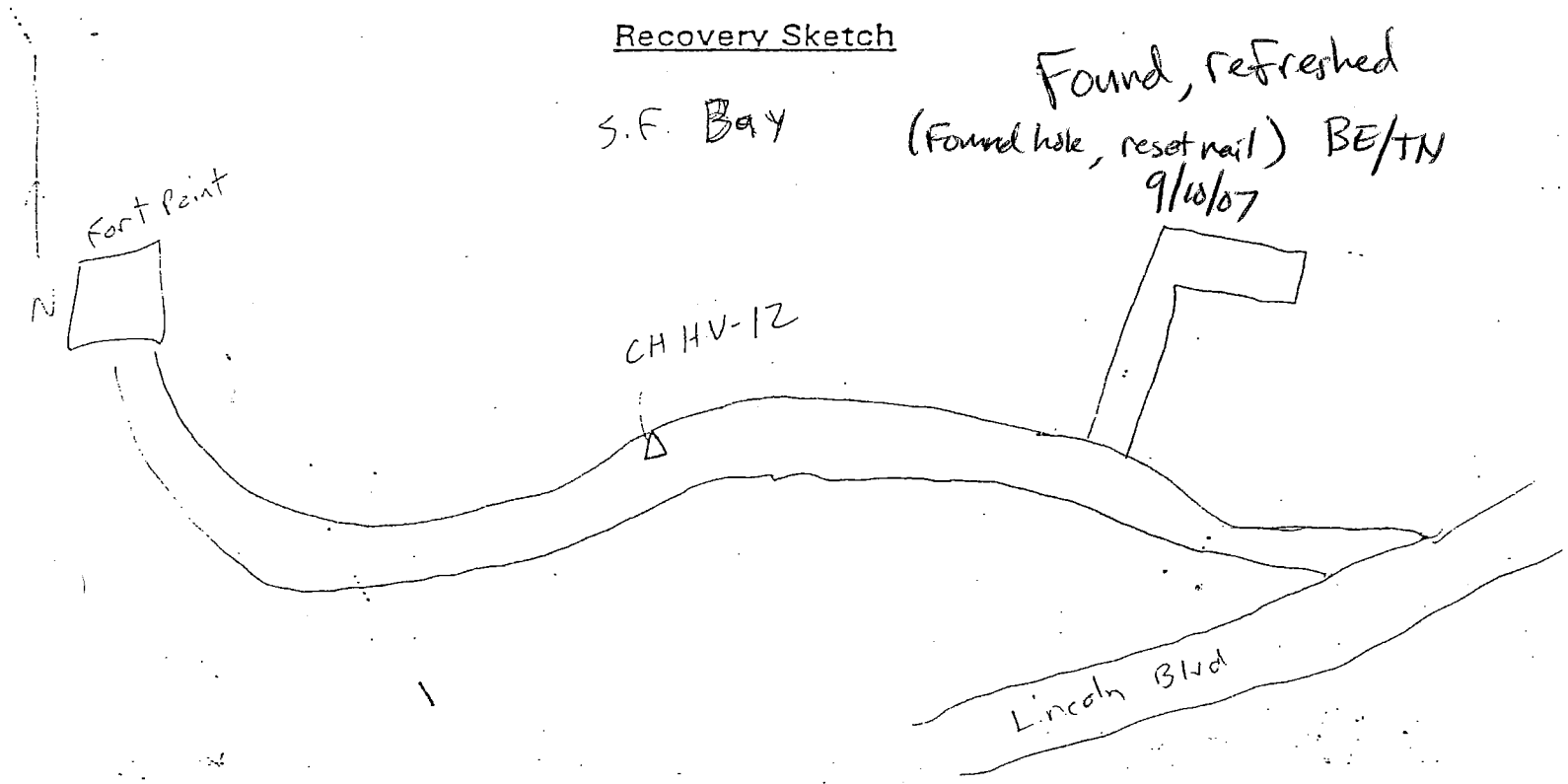
To Reach Description & Notes: From Golden Gate Bridge go E'ly on Lincoln Blvd go left on go down towards + along the bay towards Fort point, station is located on the N'ly side of Rd. between Fort Point and Pier 6.5' South of face of Seawall

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? X yes ___ no

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Adjusted elevation * 07-07-036

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-13 Station No. 13

Monument Description: set 1/2" Rebar in 4" x 4' wood post

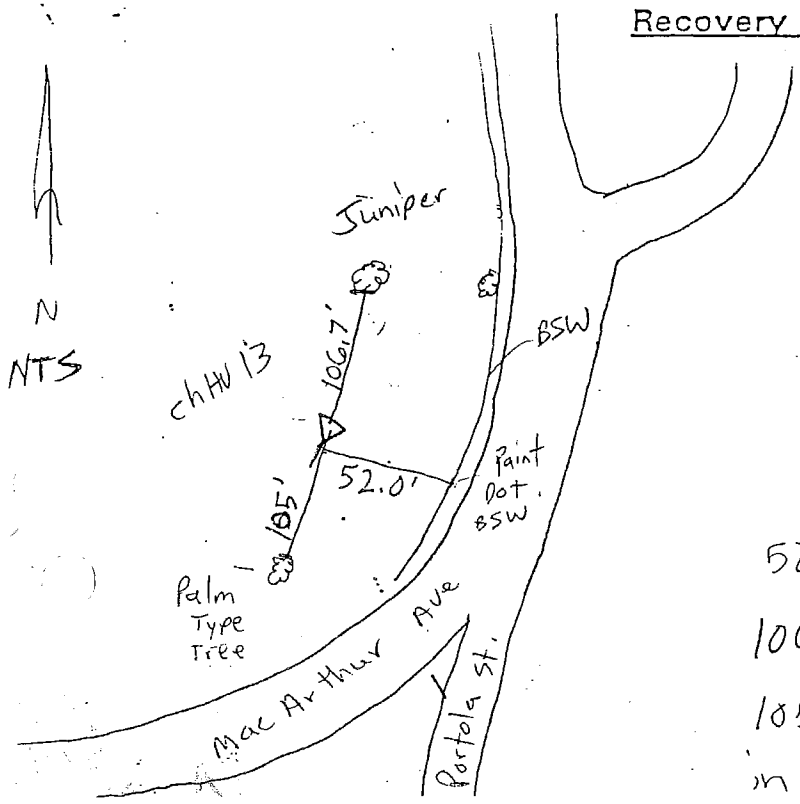
To Reach Description & Notes: station is located near intersection of Mac Arthur Ave & Portola st. ± West of ℄ of ~~Portola~~ Mac Arthur Ave, ± North of Int. of Mac Arthur & Portola

Is the station a drive point? X yes ___ no (within 100') Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? X yes ___ no

Recovery Sketch



Found, Refreshed
BE/TN
9/10/07

52.0' W'ly of BSW
106.7' S'ly of face of 60" Juniper
105' N'ly of face of palm type tree in line between palm tree & Juniper

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Conventional

GPS CONTROL POINT RECOVERY FORM

Project: PB/ Doyle Drive Job No. 99-08-052

tation Name: CH HV-14 Station No. 14

Monument Description: set C-Nail & shiner in 4" X 4' painted panel

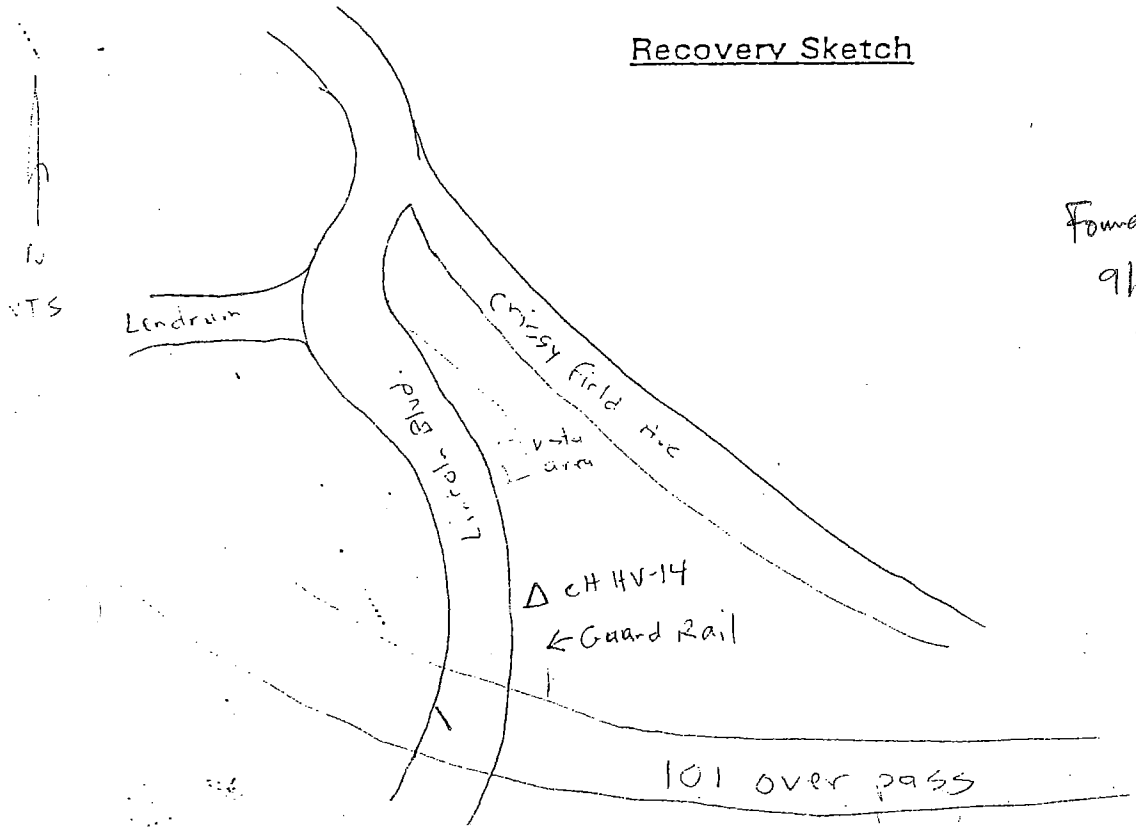
o Reach Description & Notes: From Golden Gate Bridge go E'ly on Lincoln Blvd
tay on Lincoln Blvd. past crissy Field Ave & Lendrum ct. Station is located
E'ly side of Lincoln Blvd, at south end of Bus parking / vista area ±750'
uth of Lendrum ct, ±150' North of 101 overpass. 3.5' West of Guard
ail, 24' East of ℄ of Lincoln Blvd.

the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

re there any Restrictions on Access? ___ yes X no (If yes, explain) ___

ation Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



Found, Refreshed
9/4/07 SPF
Reset MAGNW @ ~~0~~

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GPS CONTROL POINT RECOVERY FORM

Project: PB/ Doyle Drive Job No. 99-08-052

Station Name: CH HV-15 Station No. 15

Monument Description: set C-Nail & shiner in 4" x 4' painted panel

To Reach Description & Notes: from Golden Gate Bridge go E'ly on Lincoln Blvd, in Presidio left on McDowell Ave. cross over Crissy Field Drive, go right on Mason St. near w'ly end of old Crissy Field, station is located on south side of Mason St. near turn in to Building 649, grounds maintainance, 13.4' West of SSMH ±37' South of face of curb North side of Mason St., ±50' North of NE corner of Bldg. 649

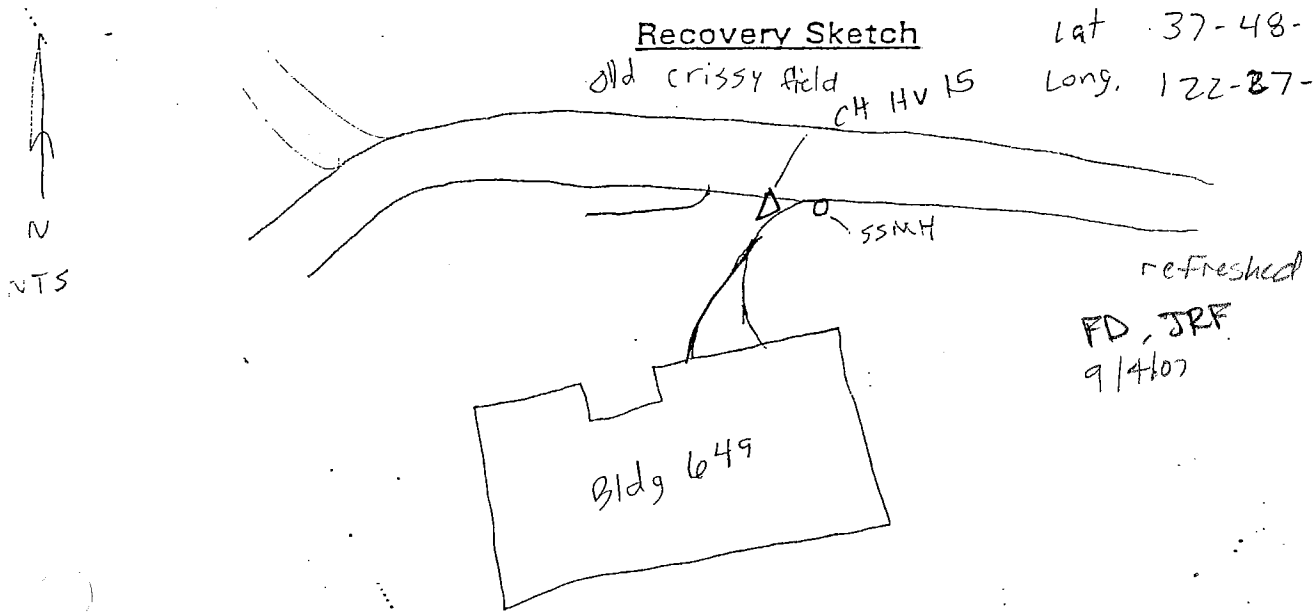
Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no

Recovery Sketch

Lat 37-48-13
Long. 122-27-57



refreshed
FD, JRF
9/4/07

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conventional CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-16 Station No. 16

Monument Description: Set C-Nail & shiner in 4"X4' Painted Panel

To Reach Description & Notes: From Golden Gate bridge, Go E'ly on Lincoln Blvd. into the Presidio, turn Left on , then turn right just Past the last brick Bldg on the right, go to the NE corner of Bldg., station is located ±40' NE of NE corner of Brick Bldg, ± 33' South of SW corner of small brick bldg. in AC Parking area

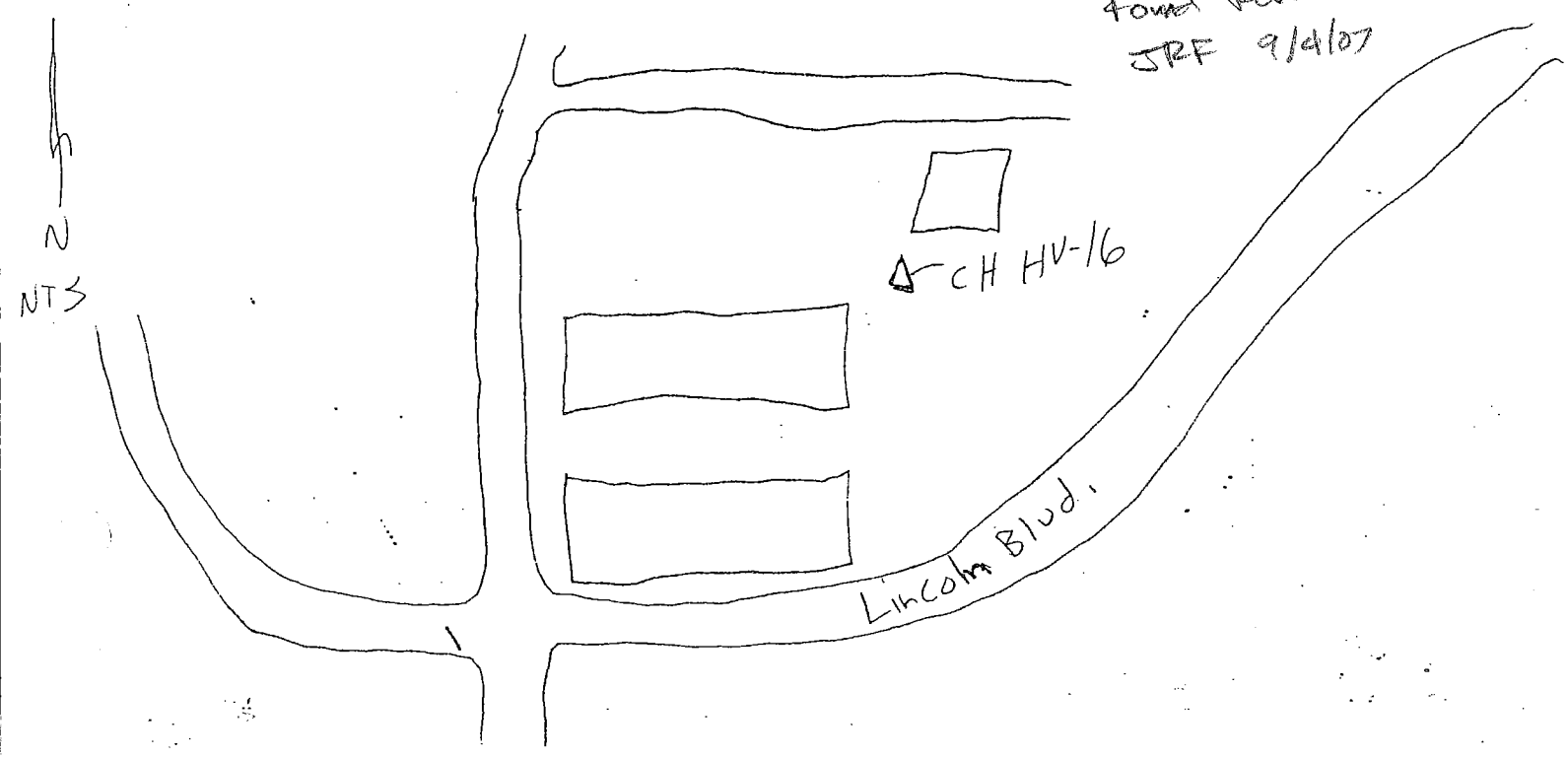
Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch

Found Refreshed
JRF 9/4/07



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Conventional [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-17 Station No. 17

Monument Description: set C-Nail & shiner in 4" x 4' Painted Panel

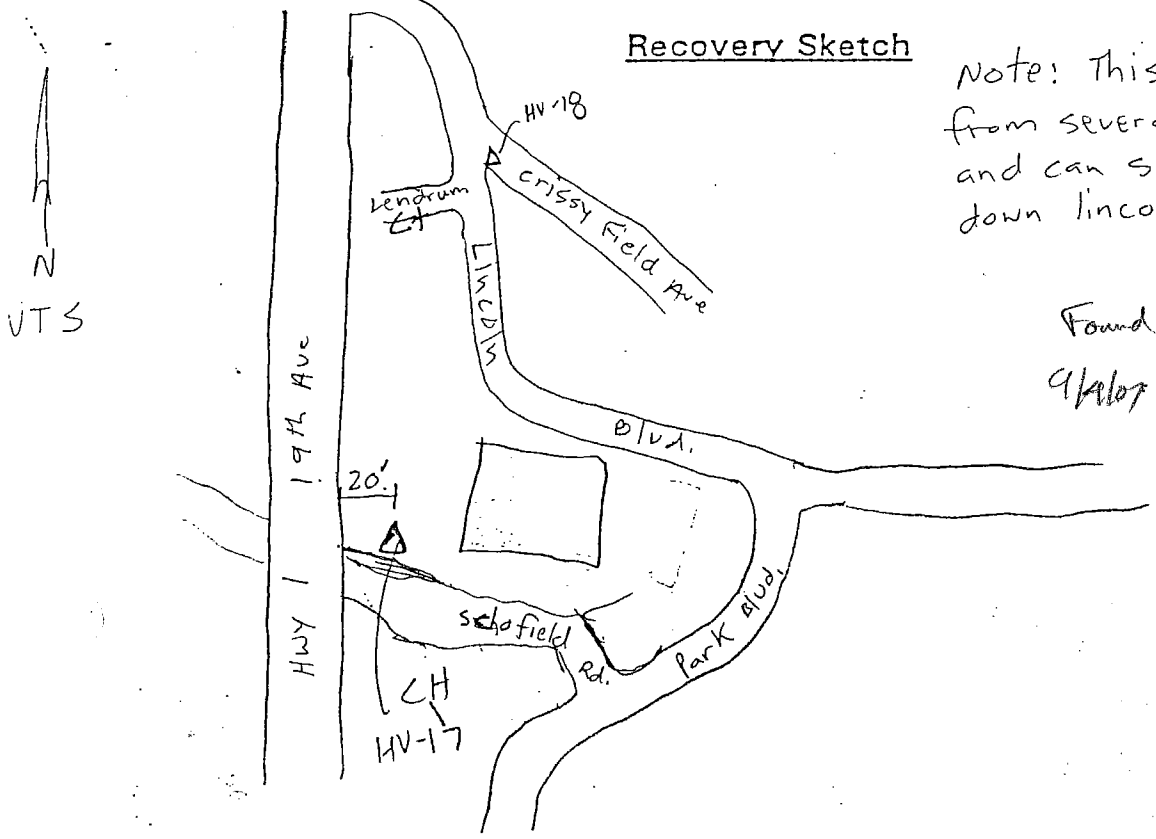
To Reach Description & Notes: go E'ly on Lincoln Blvd from Golden Gate Bridge turn right on then take 1st right onto schofield ~~Rd~~ Rd. & Huge house area, continue on schofield Rd. to SW corner of a Bldg. the station is located ±35' West of SW corner of ~~Bldg~~ most W'ly Bldg on property, ±20' East of E'ly edge of Hwy 1 overpass

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



Note: This station is visible from several spots on the Beach and can see a point N'ly ~~to~~ down lincoln Blvd. to tie HV-18

Found Refreshed
9/15/07 JRF

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conventional [redacted] CONTROL POINT RECOVERY FORM

roject: PB/Doyle Drive Job No. 99-08-052

tation Name: CH HV-18 Station No. 18

onument Description: set C-Nail & shiner in 4" x 4' painted Panel

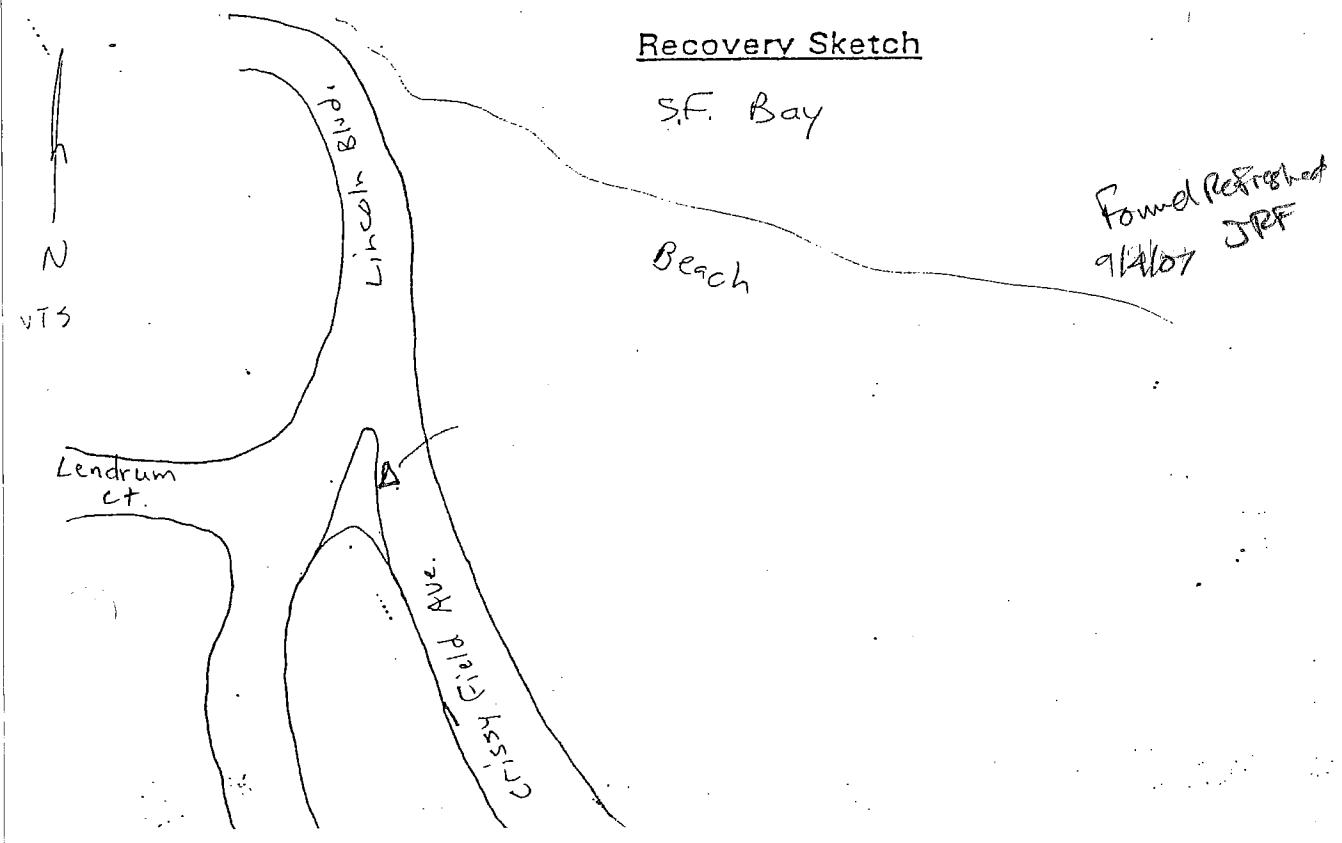
o Reach Description & Notes: station is located near intersection of Lincoln Blvd & Crissy Field, near Lendrum Ct.

the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

e there any Restrictions on Access? ___ yes X no (If yes, explain) ___

ation Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-19 Station No. 19

Monument Description: set c-Nail & shiner in 4" x 4' painted Panel

To Reach Description & Notes: Station is located at the intersection of Upton Ave & Ruckman Ave in the Presidio. from intersection of Merchant Rd, Lincoln Blvd. and Ralston Ave. go s'ly ~~[illegible]~~ on Ralston Ave continue on Ralston ~~[illegible]~~ curving E'ly then N'ly and go right on Ruckman Ave, near Fire department & Park police ±9' w'ly of EP, ±21' s'ly of SW Bldg. cor

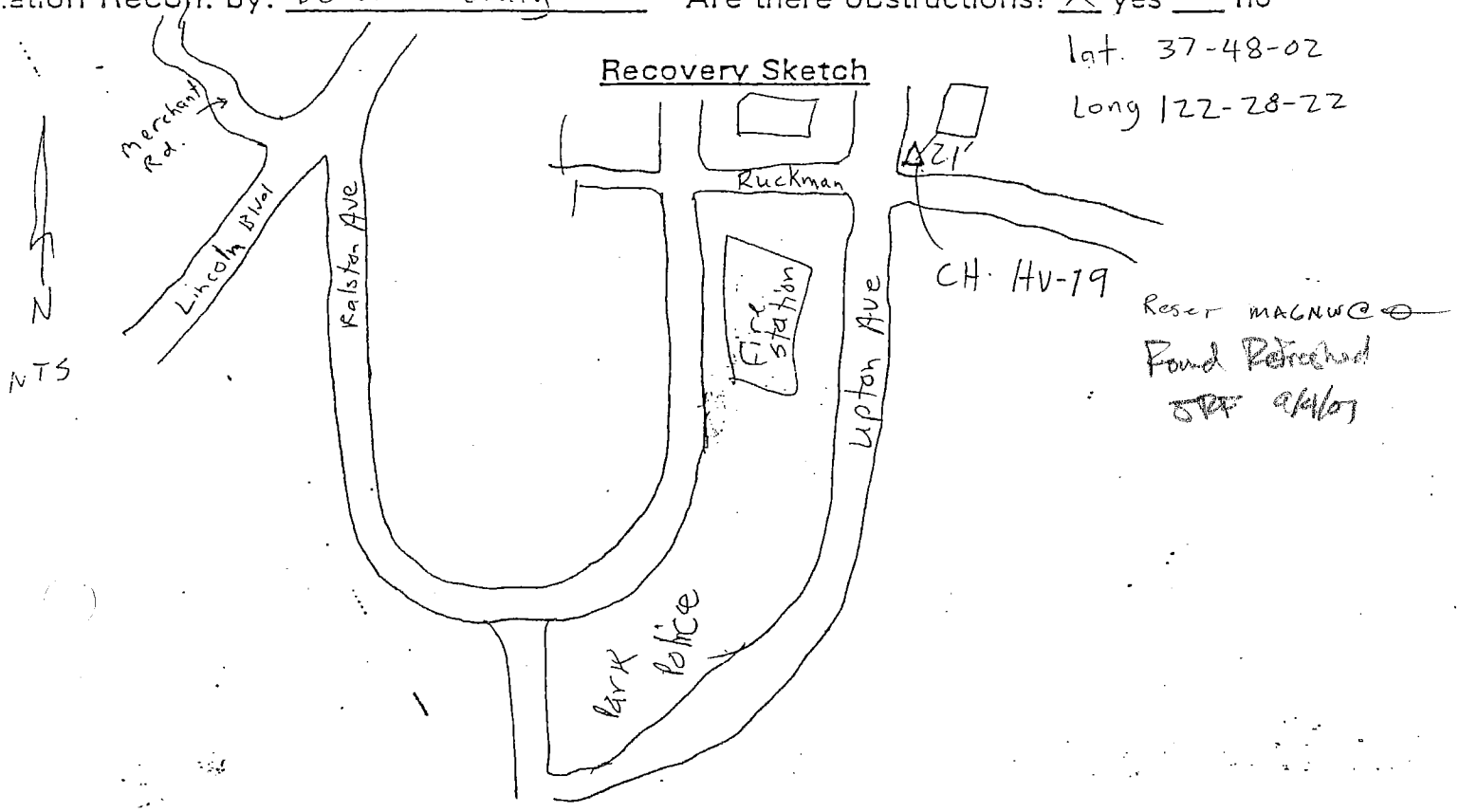
Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron a Craig Are there obstructions? X yes ___ no

lat. 37-48-02
Long 122-28-22

Recovery Sketch



Reset MAGNWC
Found Retrieved
JRF 9/4/07

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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-20 Station No. 20

Monument Description: set C-Nail & shiner in 4" x 4' Painted Panel

To Reach Description & Notes: From intersection of merchant ~~Drive~~ Rd., Lincoln Blvd. and Ralston Ave in the Presidio, go S'ly on Ralston Ave ~~to~~ and then right on ~~Upton Ave~~, Pope st., station is located on street in front of 1337 Pope St. (Upton Ave)

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

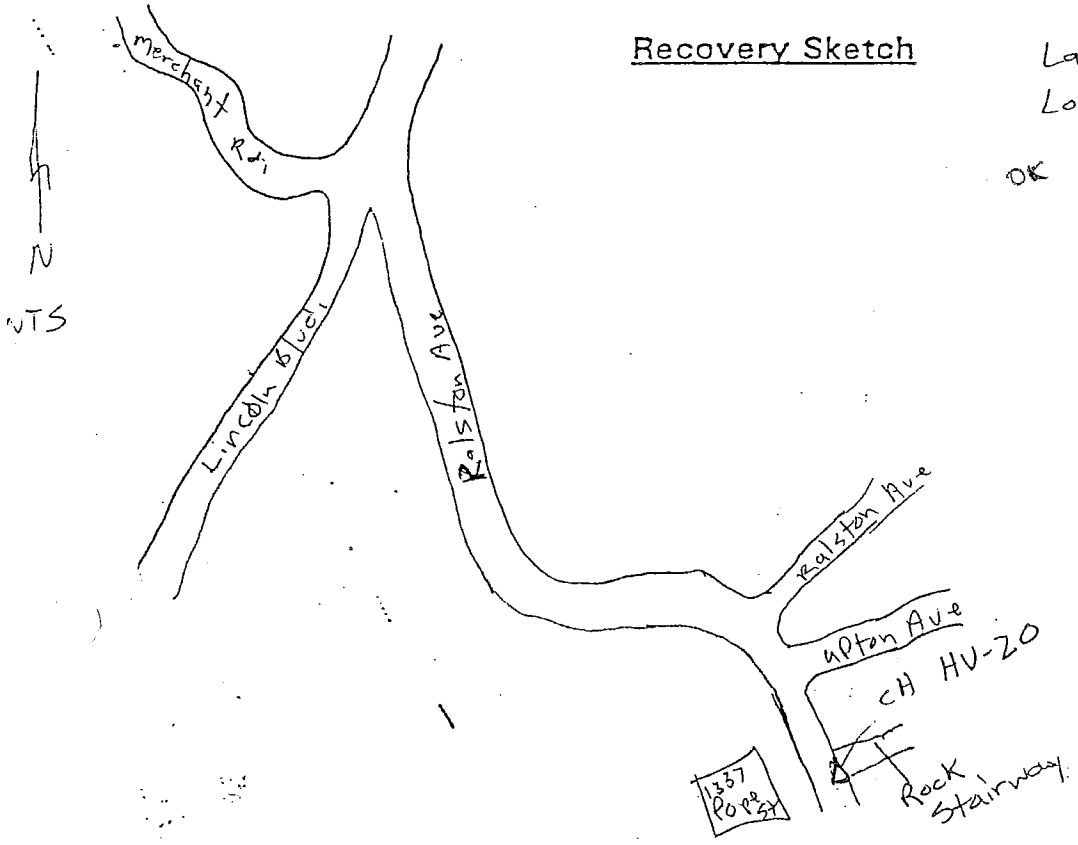
Station Recon. by: Deron & Craig Are there obstructions? X yes ___ no

Recovery Sketch

Lat 37-47-56
Long 122-28-25

OK

Found Refreshed
JRF 9/4/07



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Conventional [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-21 Station No. 21

Monument Description: set C-Nail & shiner in 4" x 4' painted panel

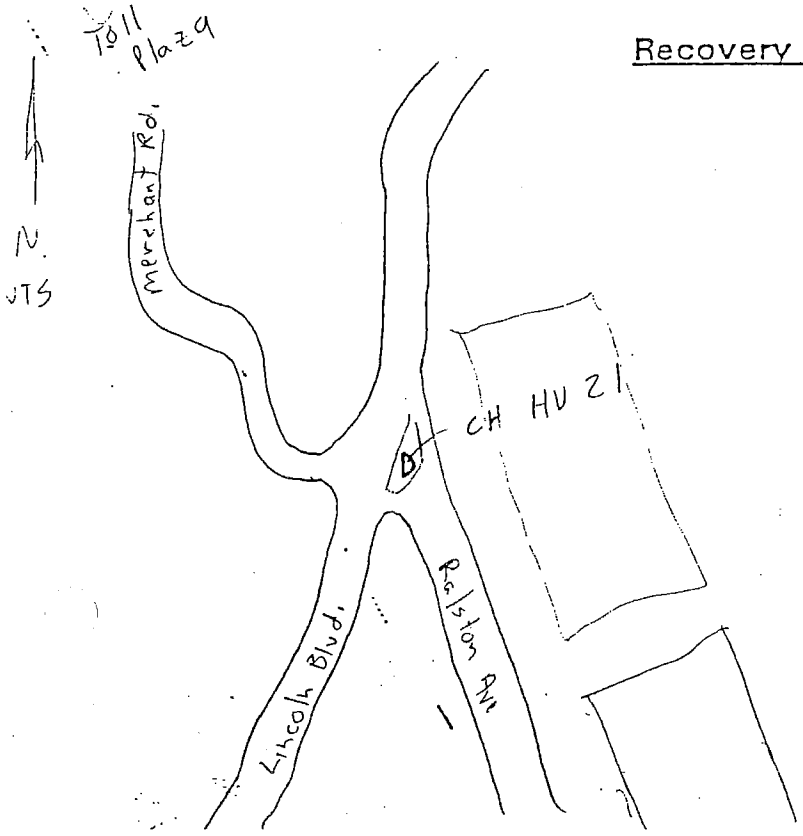
To Reach Description & Notes: from Toll Plaza South bound 101 take 1st right (merchant Rd.), follow merchant Rd to Lincoln Blvd. (49 mile Drive) station is located ~~at~~ near intersections of Merchant Rd., Lincoln Blvd. and Ralston Ave in the Presidio, in AC Island North of merchant & east of Lincoln.

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



OK

Reset MAGNW
Found Refreshed
9/4/07
JRF

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Conventional H&V

[redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-22 Station No. 22

Monument Description: set c-nail & shiner in 4" x 4' painted panel

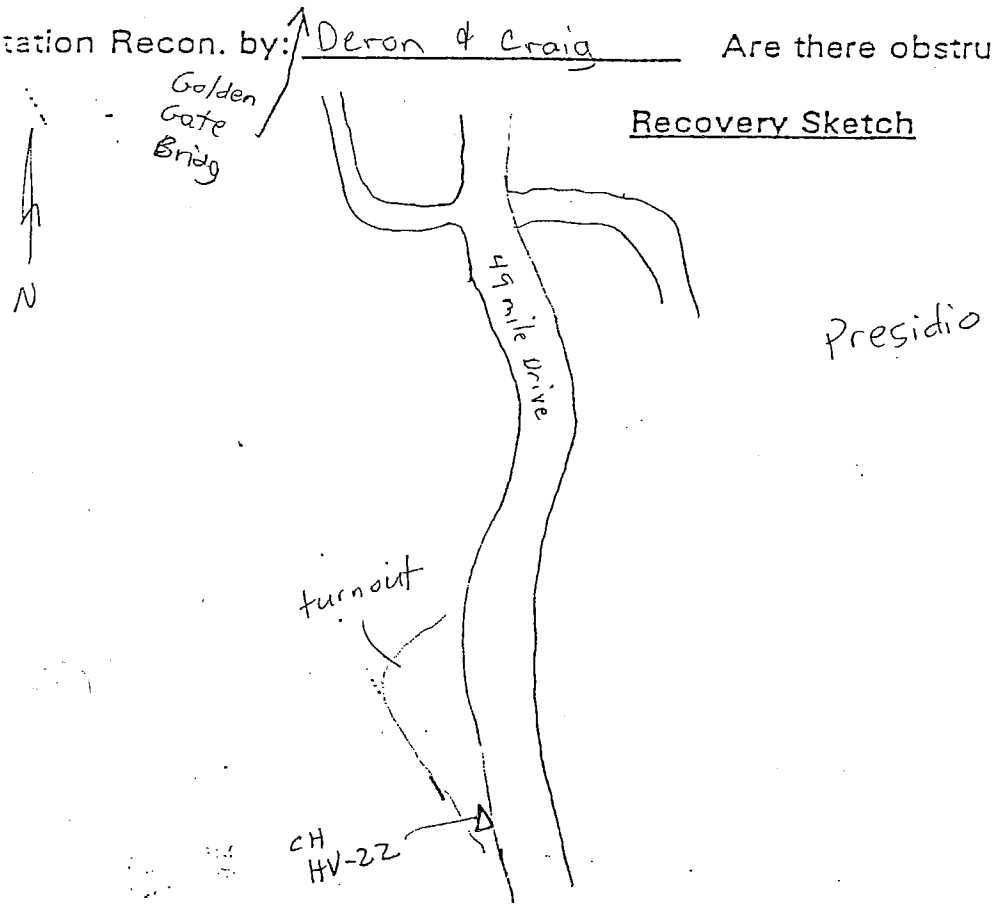
To Reach Description & Notes: From Golden Gate Toll plaza ~~to~~ (South) take 1st (merchant Rd.) right and follow Road to stop sign (49 mile Drive) go right about 0.2 mile to a turnout on the right, ~~and~~ the station is located at the S'ly end of turnout. 7' ~~X~~ East of Guard Rail & 16' West of ℄ Road

s the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

tation Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



Found, Re-Checked
9/4/01
JRP

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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HV-23 Station No. 23

Monument Description: set c-Nail & shiner in 4" x 4' painted Panel

To Reach Description & Notes: 101 South bound from Marin county, take 1st right (Merchant Rd.) after Golden Gate Toll Plaza, then right into 2nd parking area, station is located in middle Row of second parking area 8 car stalls down (North)

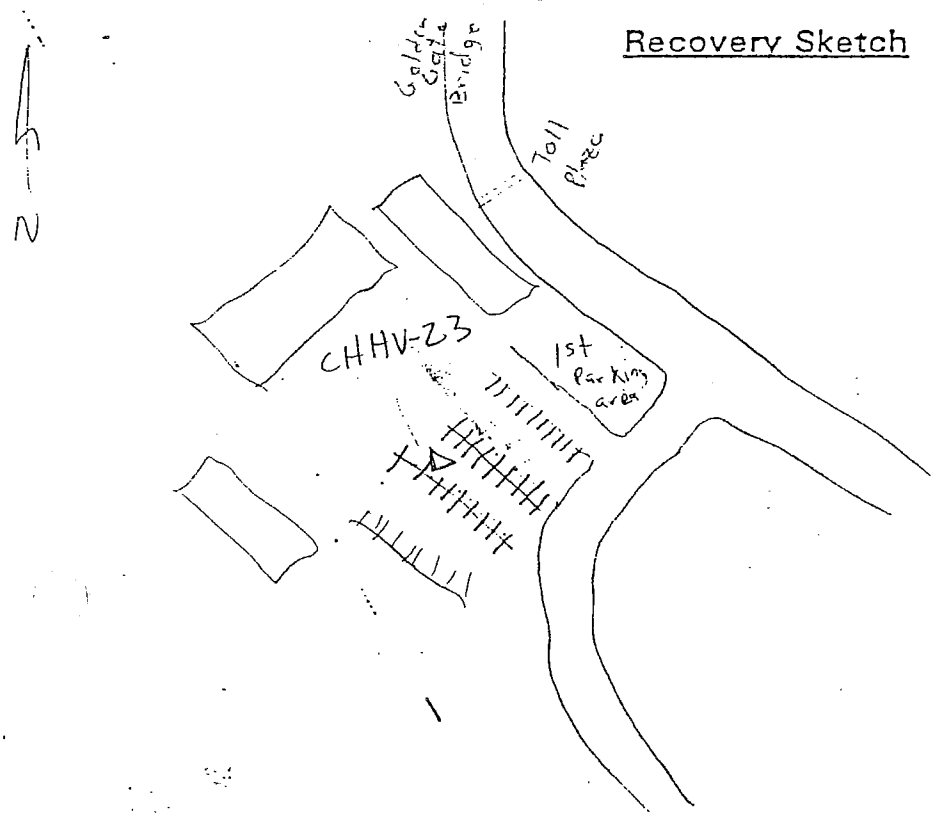
Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? X yes ___ no

Recovery Sketch

lat. 37-48-22
long 122-28-33



Found, Refreshed
JRF
9/4/07

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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH HU-24 Station No. 24

Monument Description: set 1/2" Rebar in 4" x 4' wood panel

To Reach Description & Notes: ~~Too~~ 101 south bound, take 1st right after (merchant Rd.) Golden Gate Bridge Toll plaza (Presidio exit) follow Rd. past Bridge Toll Plaza Bldgs to a dirt parking area, park and follow dirt trail west then south towards bridge, walk down stairs & along top of bank over ocean station is located on a mull overlooking the ocean ±40' west of chain link fence ±20' east of main trail

Is the station a drive point? ___ yes X no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

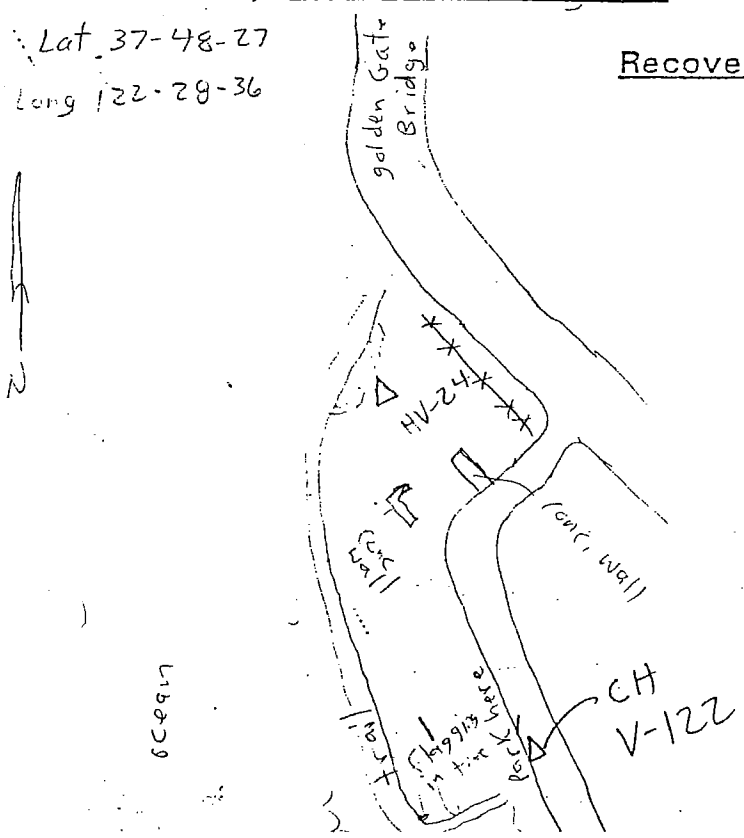
Station Recon. by: Deron + Craig Are there obstructions? ___ yes X no

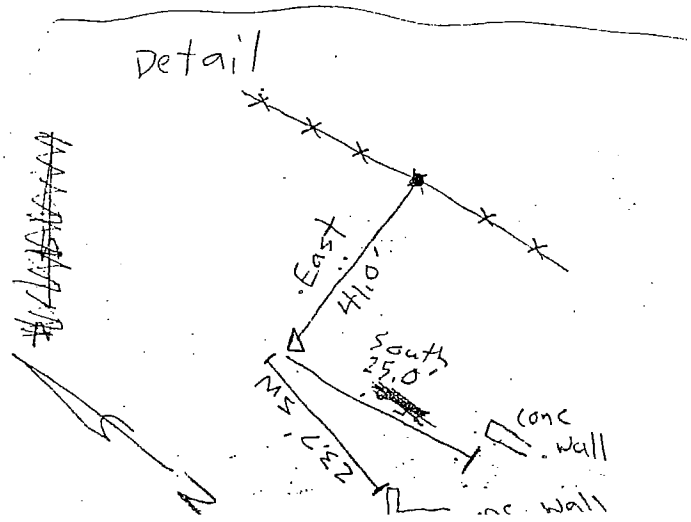
Lat 37-48-27
Long 122-28-36

Recovery Sketch

Found, Refreshed
JPF
9/4/07

see photo for better detail on location





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GPS CONTROL POINT RECOVERY FORM

Project: ARUP/Doyle Date: 9/12/07 Job No. 07-07-36

Station Name: CA-HV-25 Station No. 25

Monument Description: Conc nail + Shiner in Panel

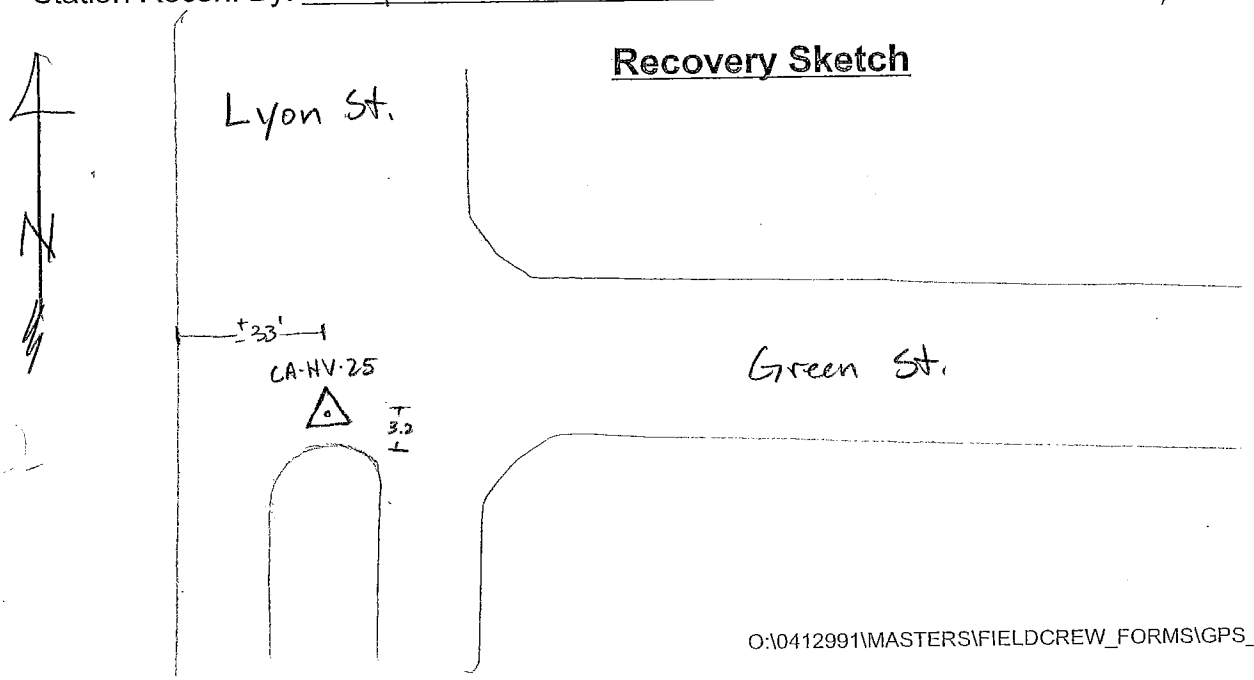
To Reach Description & Notes: at the intersection of Lyon and Green. Nail is 3.2' n'ly of the north most face of conc island, ±33' e'ly of west curb

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: BE / KK Are there obstructions? X YES ___ NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP/Doyle Date: 9/12/07 Job No. 07-07-036

Station Name: CA-HV-26 Station No. 26

Monument Description: see mount wash panel

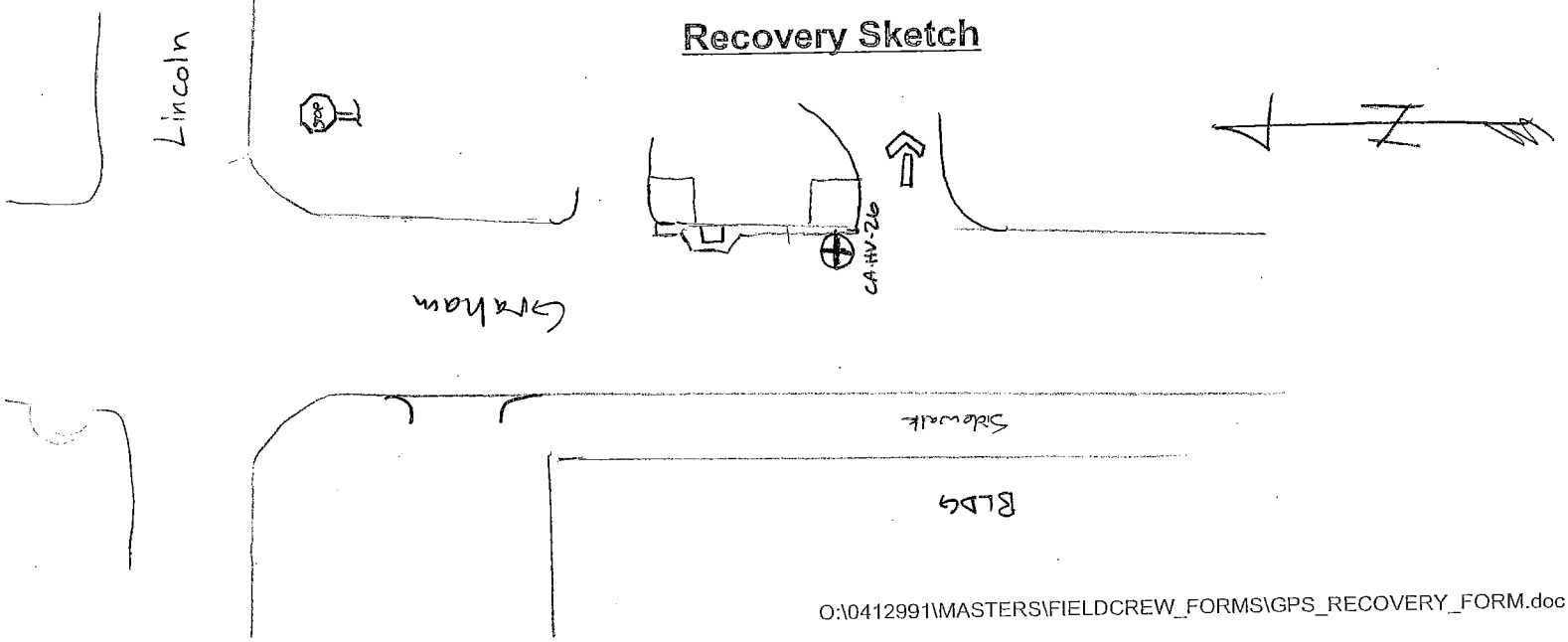
To Reach Description & Notes: From w/bound Lincoln From int. w/ Lyon and Lombard, turn left onto Graham, Panel is on east side of street, ± 145' s'ly of Stop Sign in s/e cor. 183' s'ly of TFC @ a CB and 3.5' w'ly of FC

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: BE/KK/JRF Are there obstructions? ___ YES X NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP/Doyle Date: 9/13/2007 Job No. 07-07-036

Station Name: CH HV. 27 Station No. 27

Monument Description: Set ½" rebar + cap (4'x4' wood panel)

To Reach Description & Notes: From Mason Dr @ Marshall st
Go east +/- 1000' to east entrance parking lot for east side of
Chrissy Field - Park on west end lot west of Bathrooms
and walk out (or drive?) Bike / Pedestrial Bay Trail
aprox 1200' to the station on the right @ Cyress Grove
(46.1' west of SW cor wooden trail to Bench
76.5' NE of NE cor Concrete Bench (@ south edge trail))

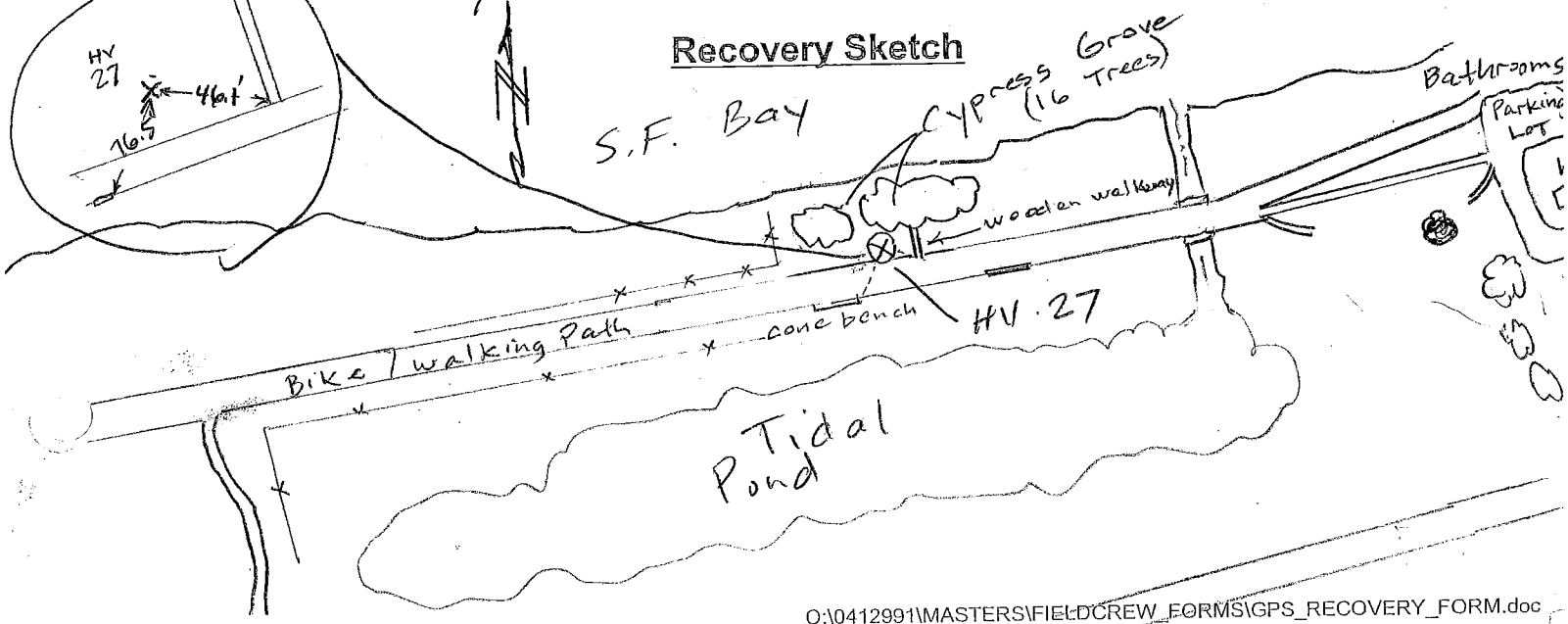
Is the station a drive point? ___ YES X NO Is a 4WD Required? ___ YES X NO

(Note: STATION is aprox north of Path)

Are there any Restrictions on Access? X YES ___ NO (If yes, explain) _____

Station Recon. By: JRF/KK Are there obstructions? X YES ___ NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/13/2007 Job No. 07-07-036

Station Name: CH · HV · 28 Station No. 28

Monument Description: Set Rebar + Cap (4'x4' wood panel)

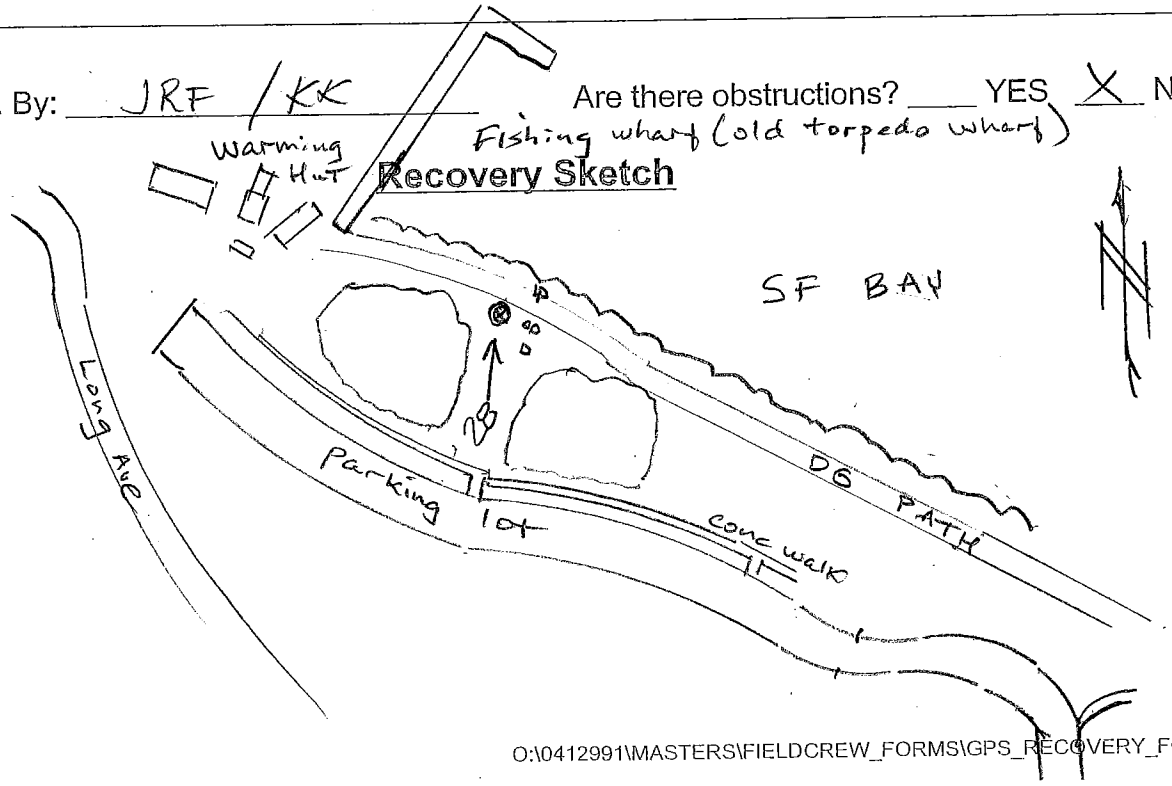
To Reach Description & Notes: Take MASON Dr west thru Chrissy Field to the Parking Lot @ the west end of Mason. Park @ the 2nd sidewalk beach access. Walk in north aprox 200' to the station 36.5' South of a sign @ n edge trail, 15.5' west of CTR (garbage can conc pad) and 38' NW of a 2x3' metal vault

Is the station a drive point? ___ YES X NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) _____

Station Recon. By: JRF / KK Are there obstructions? ___ YES X NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: PB/Doyle Dr Job No. _____

Station Name: V-102 Station No. CA-V-102

Monument Description: N/S in Painted Photo Panel

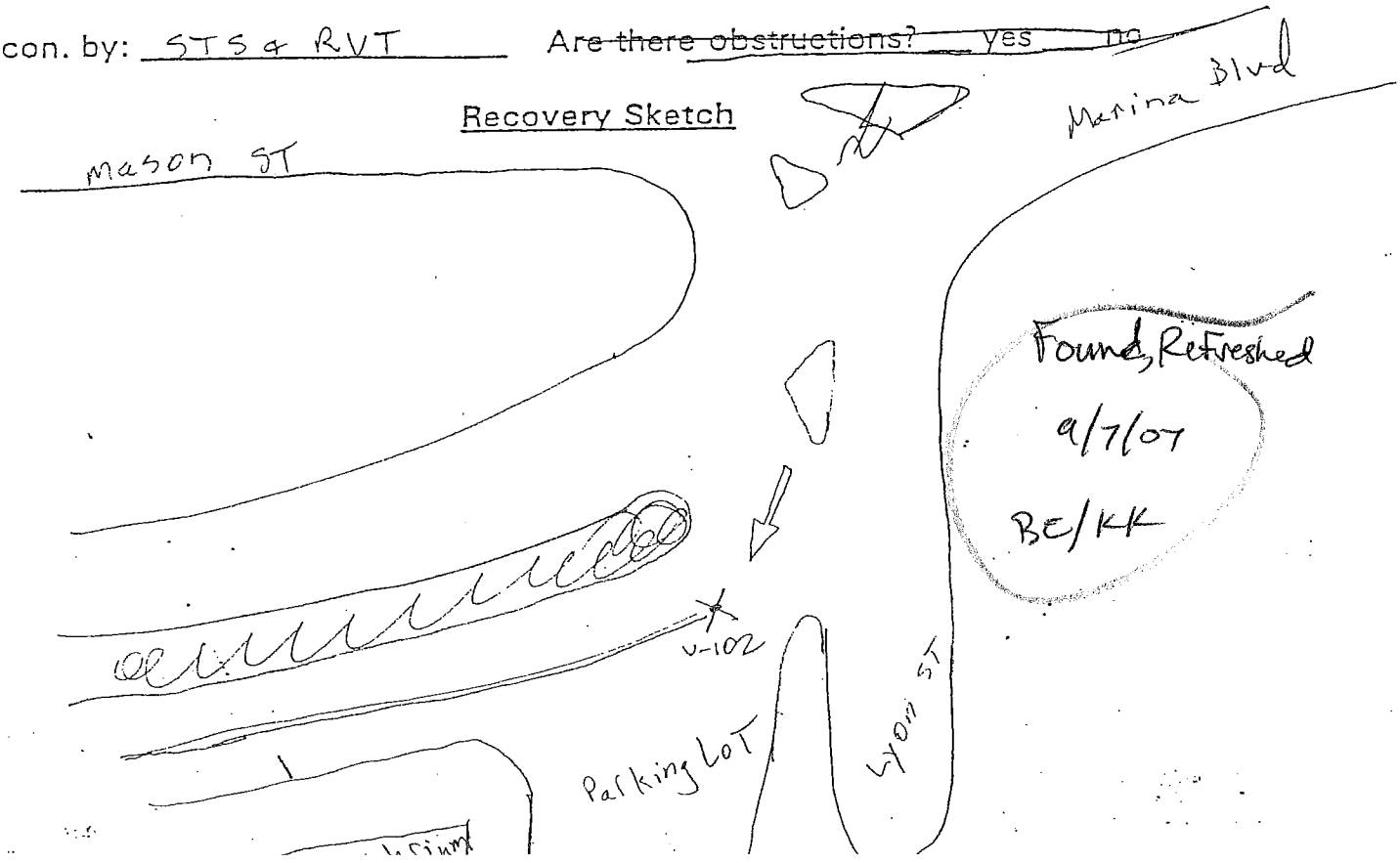
To Reach Description & Notes: N/S in AC @ entrance to Exploratorium ± 50' South of Marina Blvd & ± 20 west of Lyon ST West of Yacht harbor

Is this station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) _____

Station Recon. by: STS & RVT ~~Are there obstructions? ___ yes ___ no~~

Recovery Sketch



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vertical CONTROL POINT RECOVERY FORM

Project: PB/ Doyle Drive Job No. 99-08-052

Station Name: CH V105 Station No. 105

Monument Description: Set c-Nail & shiner in 4" x 4' painted panel

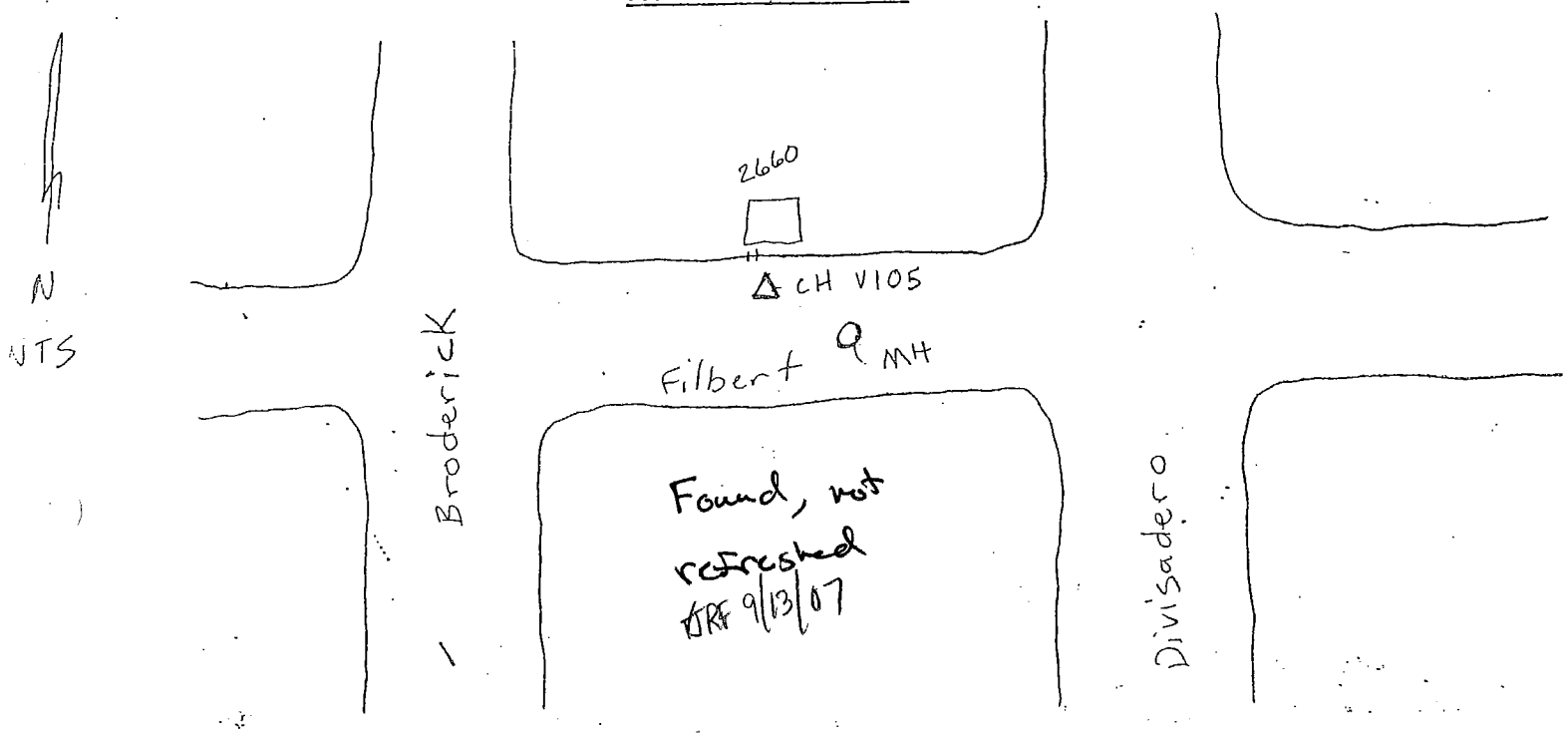
To Reach Description & Notes: Station is located on Filbert st., between Divisadero and Broderick, located on N'ly side of Filbert st. near dwy of 2660 Filbert st, 14' NW of a MH, 8.8' South of face of curb

s station a drive point? ___ yes ___ no Is a 4WD Required? ___ yes ___ no

are there any Restrictions on Access? ___ yes ___ no (If yes, explain) _____

tation Recon. by: _____ Are there obstructions? ___ yes ___ no

Recovery Sketch



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vertical CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V106 Station No. 106

Monument Description: set c-Nail & shiner in 4" x 4' painted panel

To Reach Description & Notes: station is located in the SW corner of Lombard and Divisadero, 6' south of ℄ of DI, 2.5' East of face of curb, 15' west of ℄ of Divisadero.

Is this station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch

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Refreshed
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vertical CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 9908-052

Station Name: CH V107 Station No. 107

Monument Description: set C-Nail + shiner in 4" x 4' painted panel

To Reach Description & Notes: station is located in NE corner of Francisco and Divisadero streets, 7.3' sw of fire hydrant, 11' East of a 2.2' Dia. DI, 0.8' off lip of gutter

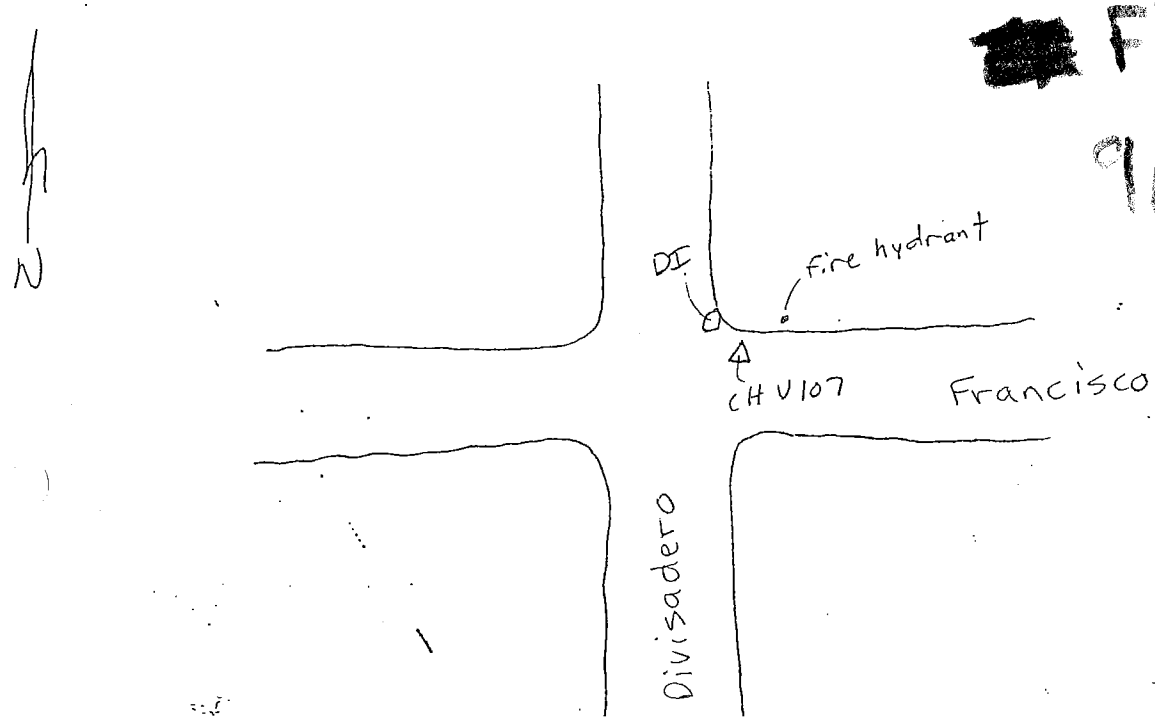
Is station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron + Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch

FD, refreshed 9/7/07



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vertical CONTROL POINT RECOVERY FORM

Project: PB\Doyle Drive Job No. 99-08-052

Station Name: CH V-110 Station No. 110

Monument Description: set scribed X in 4" x 4' painted panel

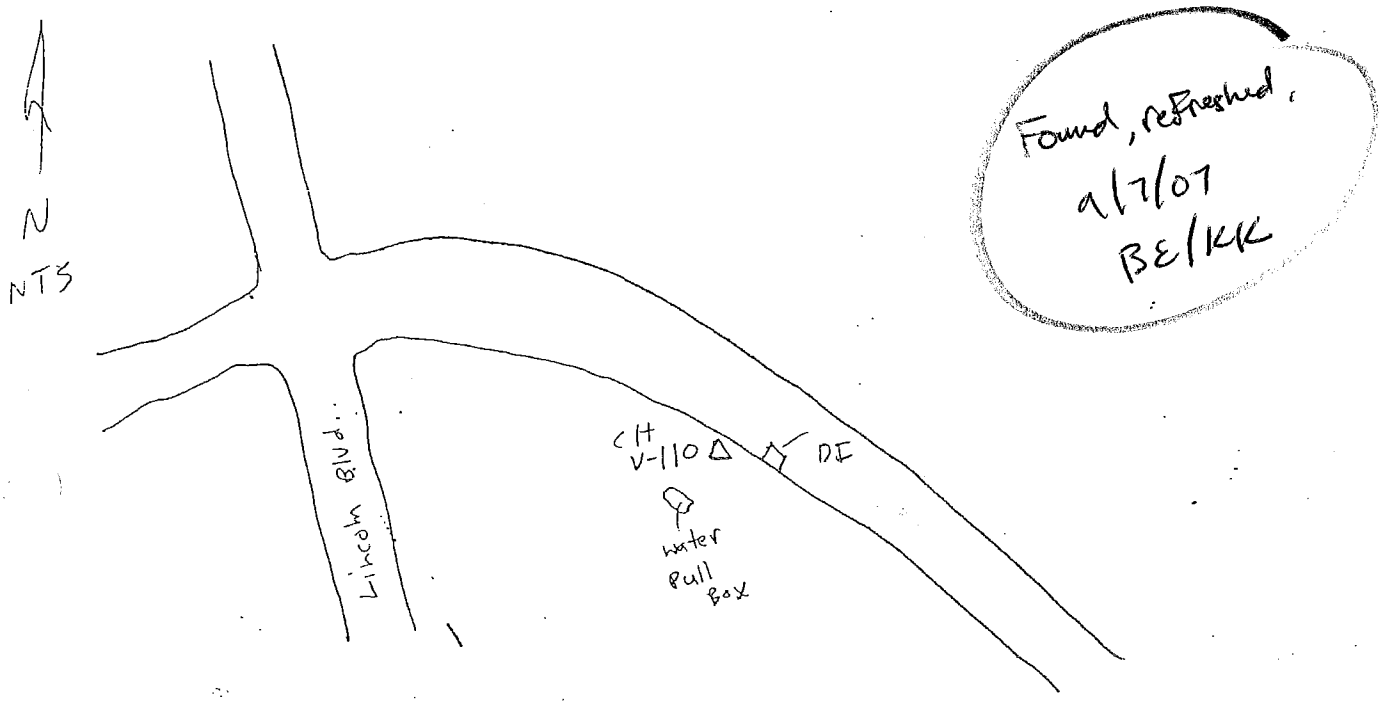
To Reach Description & Notes: from the cemetery in the Presidio, follow Lincoln Blvd. E'ly, go ~~right~~ left on Letterman Drive, station is located on the sidewalk of Letterman Drive, ± 300' NE of ℄ of Lincoln Blvd., 5' NW of the NW corner of DI, 16' NE of ℄ of 4' x 2.5' water pull Box

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



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Vertical CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V112 Station No. 112

Monument Description: set c-Nail & shiner in 4" x 4' painted panel

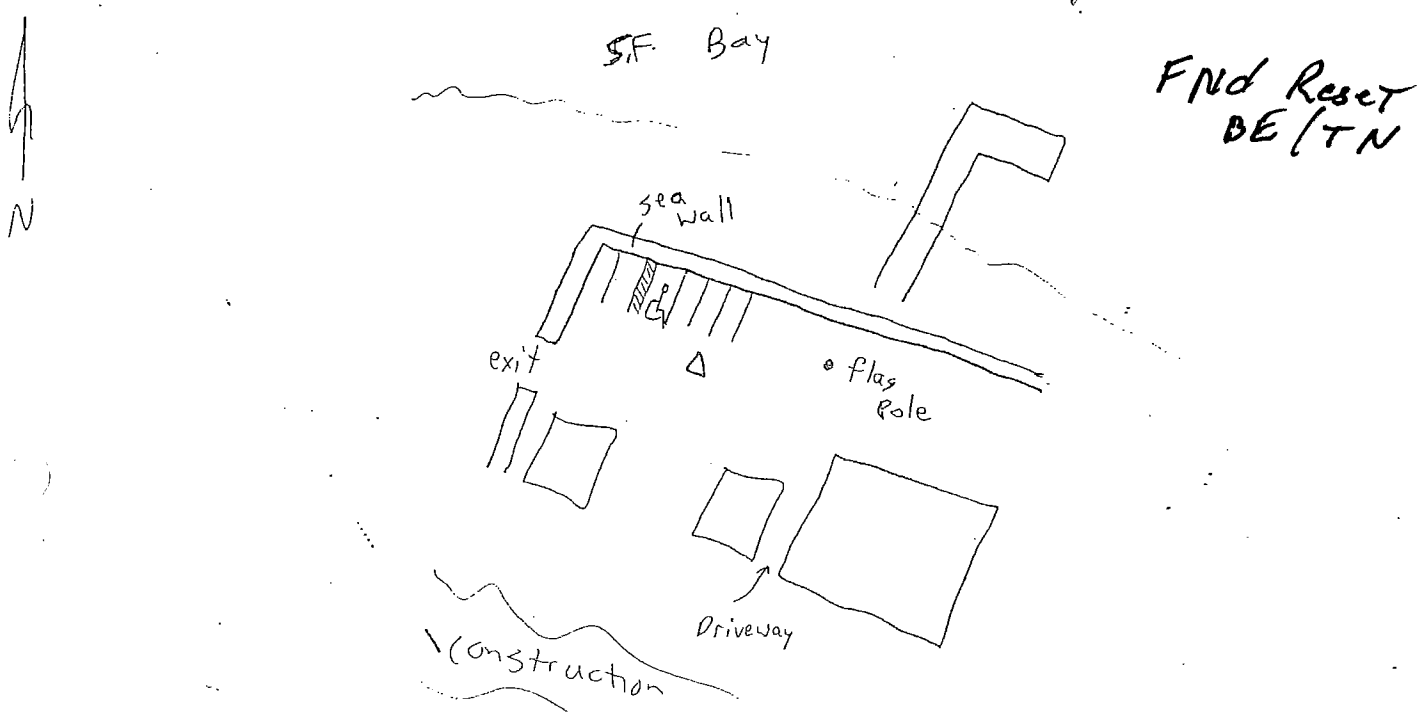
To Reach Description & Notes: from Mason St, old crissy field, drive W'ly on mason st. towards fort pt, working your way towards the old coast guard station, you'll have to drive through construction area. station is located near NW corner of parking lot for old coast guard station. 22' SW of sea wall, ±95' NW of flag pole, between 2nd & 3rd parking stalls East of wheel chair parking spot.

Is station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



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vertical [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V 113 Station No. 113

Monument Description: set c-Nail & shiner in 4" x 4' painted panel

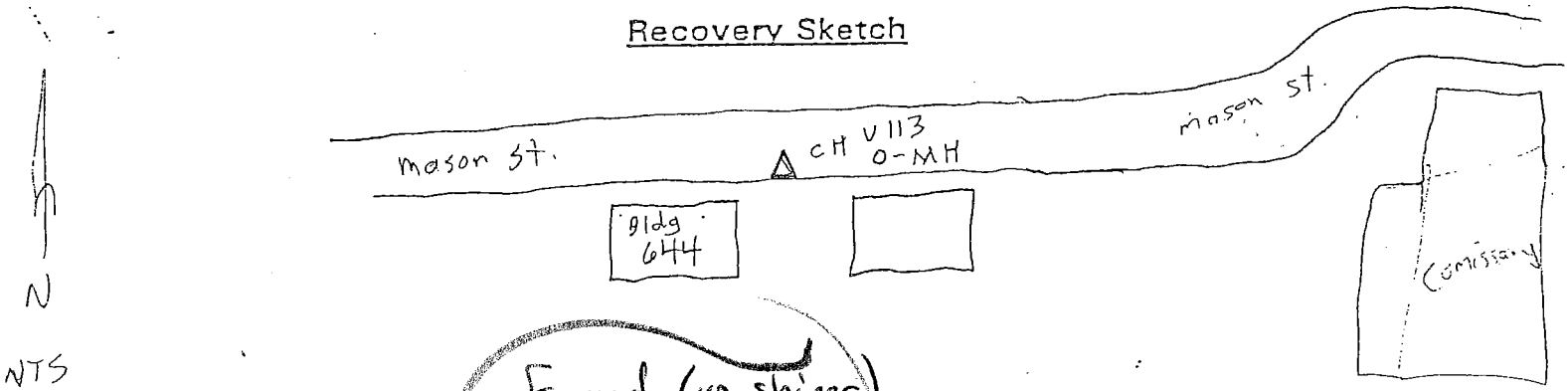
To Reach Description & Notes: station is located on South side of mason st. ±40' East of Bldg 644 (Presidio Trust Wharehouse) 12.5' west of MH ±37' South of face of curb on North side of mason st. ±1600 west of commissary

Is station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



Found (no shiner) refreshed 9/7/07 BE/KK

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Vertical [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive

Job No. 99-08-052

Station Name: CH V-114

Station No. 114

Monument Description: Set C-Nail & shiner in 4"x4' painted panel

To Reach Description & Notes: Station is located on West side of the commissary ±300' West of commissary Bldg., 15' East 8' chain link fence on small paved side Rd. ± 200' South of mason st.

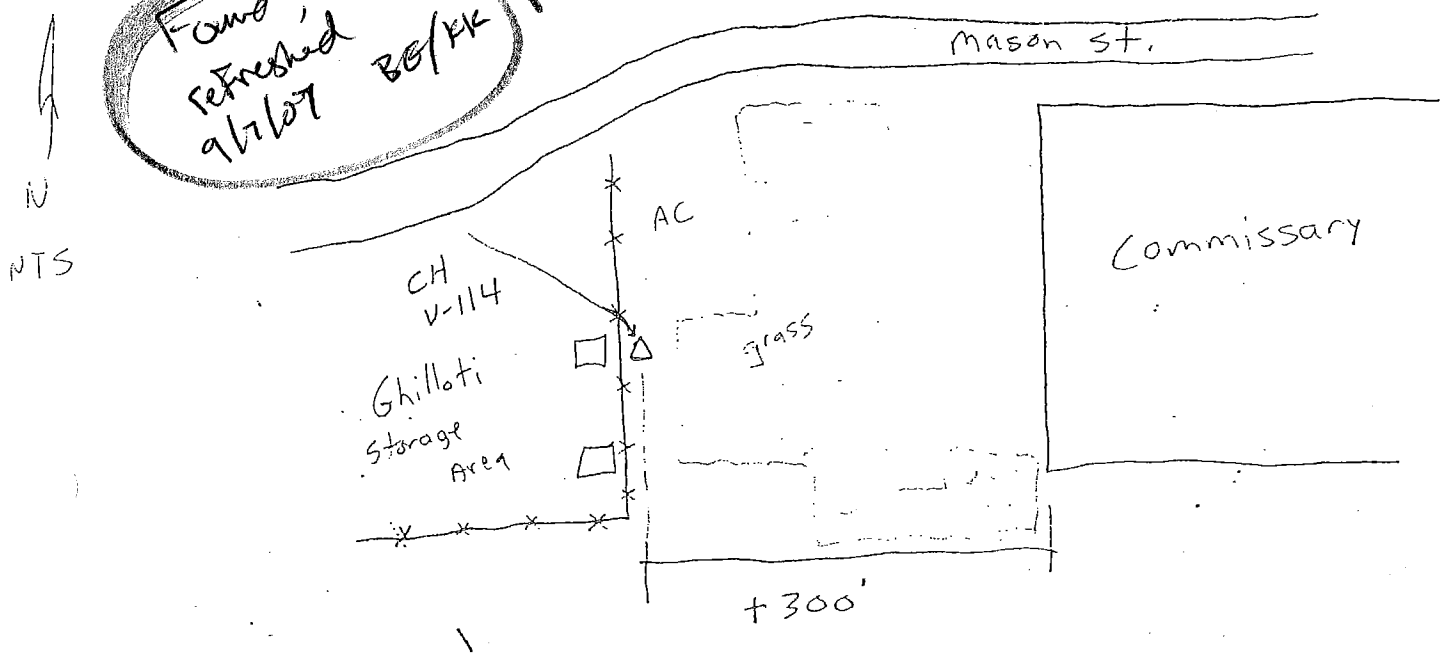
Is a station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Found refreshed 9/7/07 BG/KK

Recovery Sketch



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vertical [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V-115 Station No. 115

Monument Description: set C-Nail & shiner in 4" x 4' painted panel

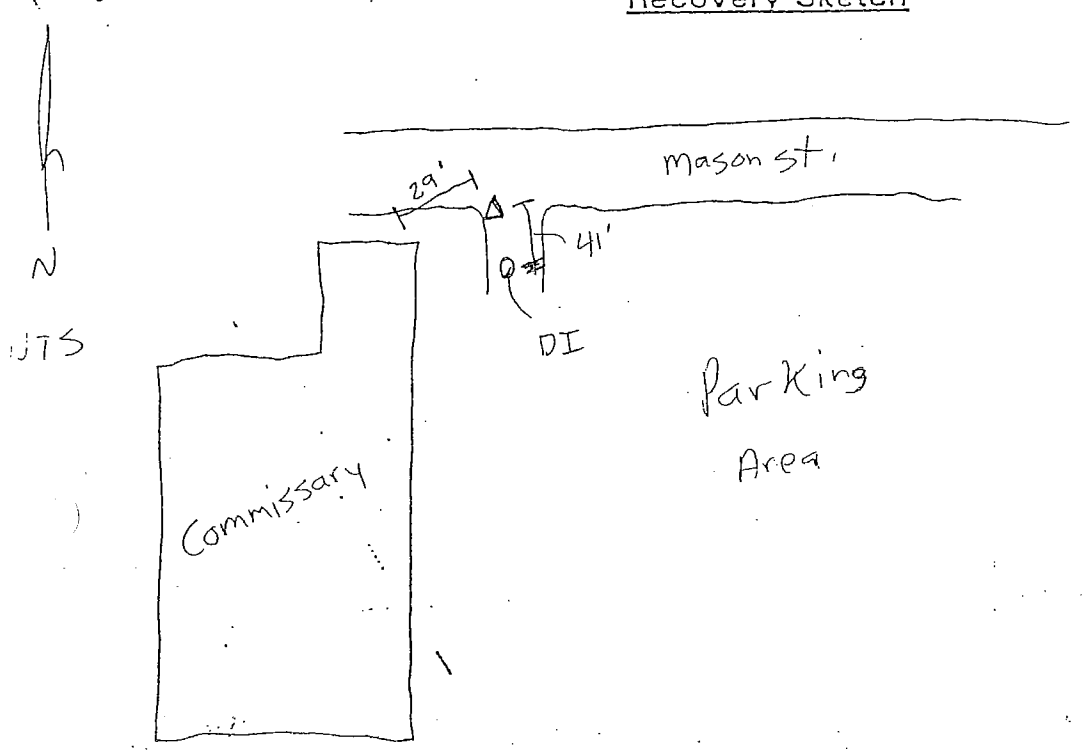
To Reach Description & Notes: station is located near NE corner of commissary on the south side of Mason St., near the entrance to the commissary parking area. ±29' East of NE corner of commissary, ±41' NW of 2.2' Diameter DI

Is this station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



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vertical [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V-117 Station No. 117

Monument Description: set c-Nail & shiner in 4" X 4' painted panel

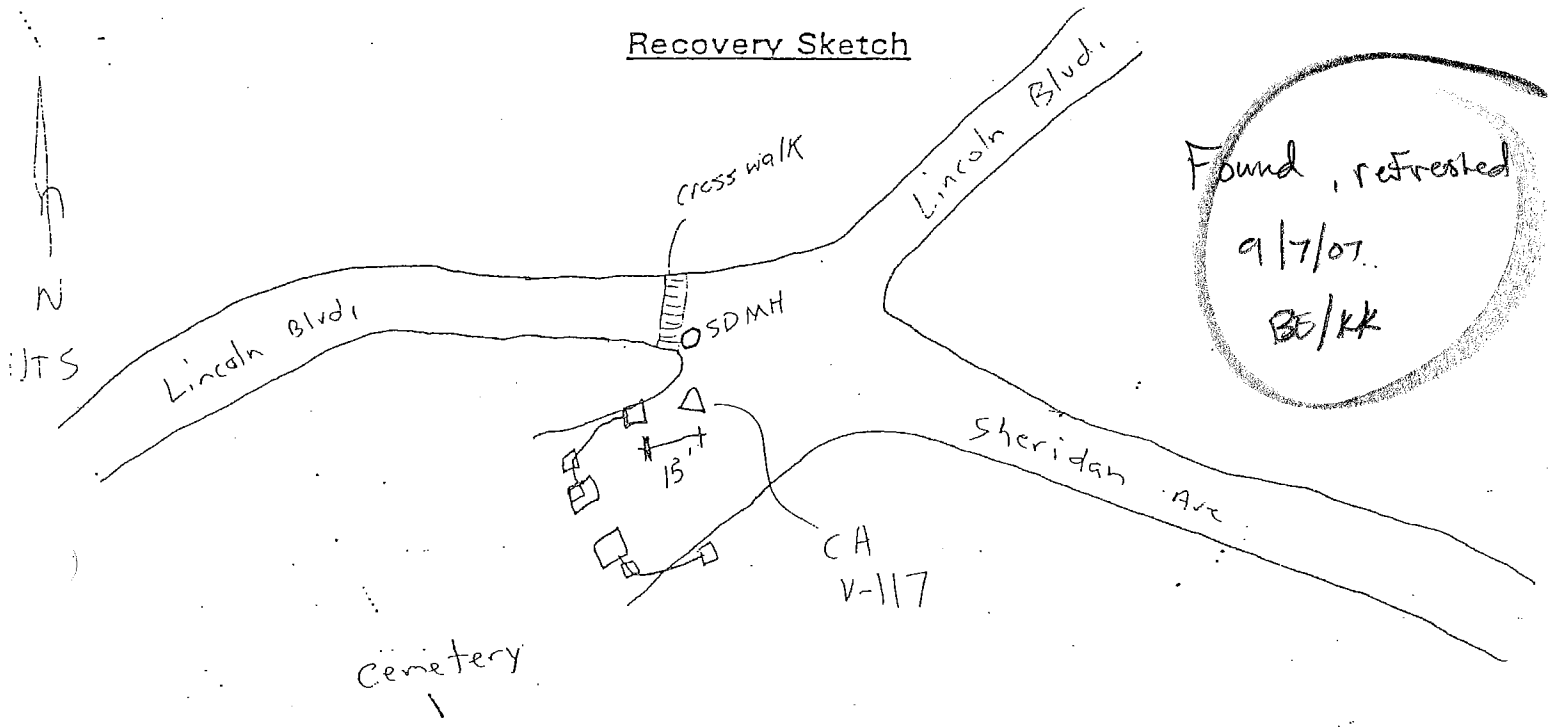
To Reach Description & Notes: From Golden Gate Bridge Go E'ly on Lincoln Blvd through the Presidio towards S.F., station is located near intersection of Lincoln Blvd & Sheridan Ave, at NE corner of cemetery, and entrance to cemetery, ±23' SW of SDMH, 15' E'ly of most N'ly Block pillar carved (1931) at entrance to cemetery

Is this station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



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Vertical CONTROL POINT RECOVERY FORM

Project: PB/ Doyle Drive Job No. 99-08-052

Station Name: CH V-118 Station No. 118

Monument Description: Set c-Nail & shiner in 4"x4' painted Panel

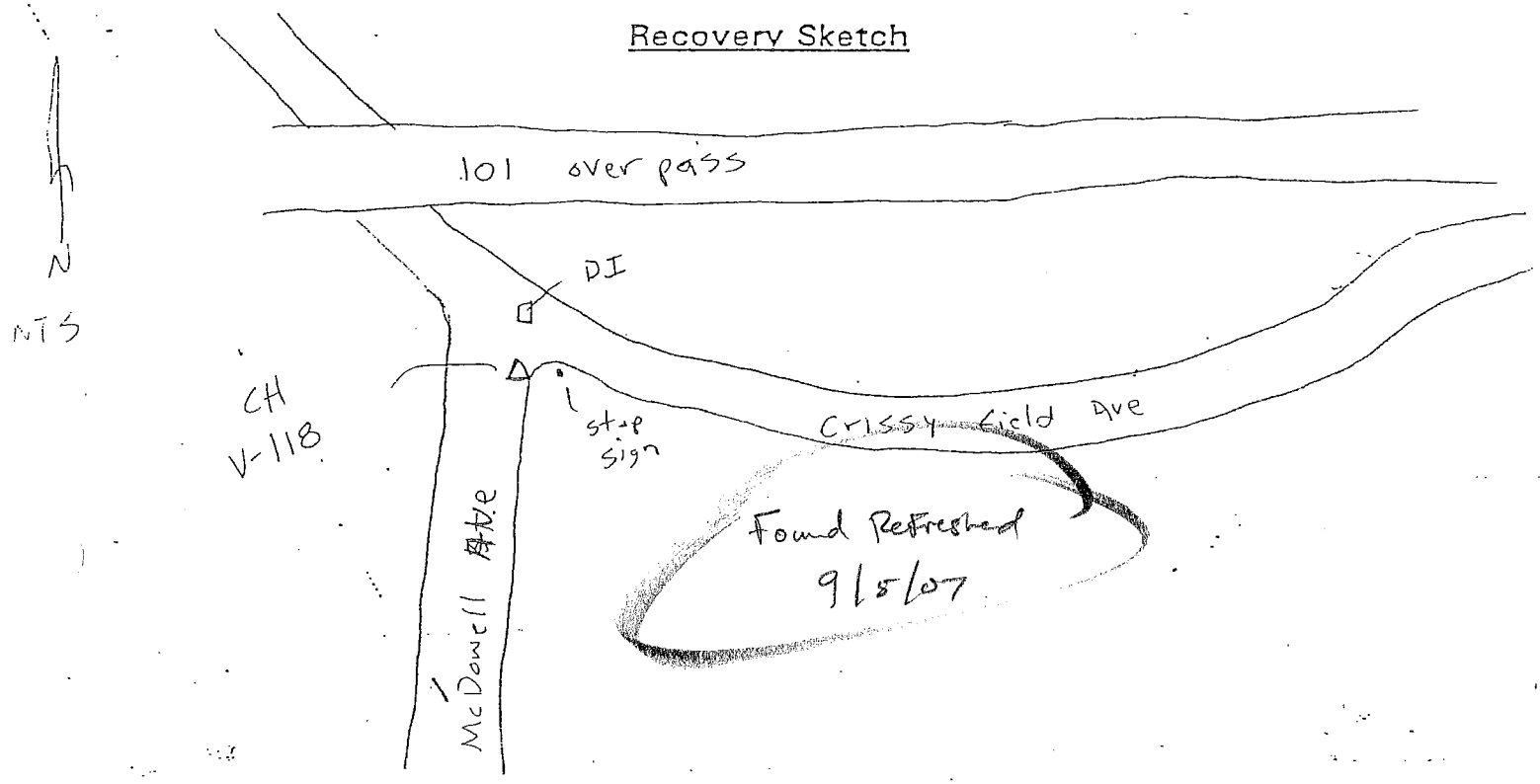
To Reach Description & Notes: From Golden Gate Bridge, go E'ly on Lincoln Blvd. left of McDowell st., station is located at intersection of Crissy Field Ave and McDowell st. on E'ly side of McDowell st., ±28' south of ℄ DI at intersection, 8.6' West of a stop sign & street sign.

Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch



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vertical [redacted] CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V-119 Station No. 119

Monument Description: set c-Nail & shiner in 4"x4' painted panel

To Reach Description & Notes: from Lincoln Blvd, take storey Ave South station is located near intersection of storey Ave and Rod Rd. across street from Bldg. 1268A & B, ±23' NW of SSMH, ±32' NE of Power Pole # EKS8

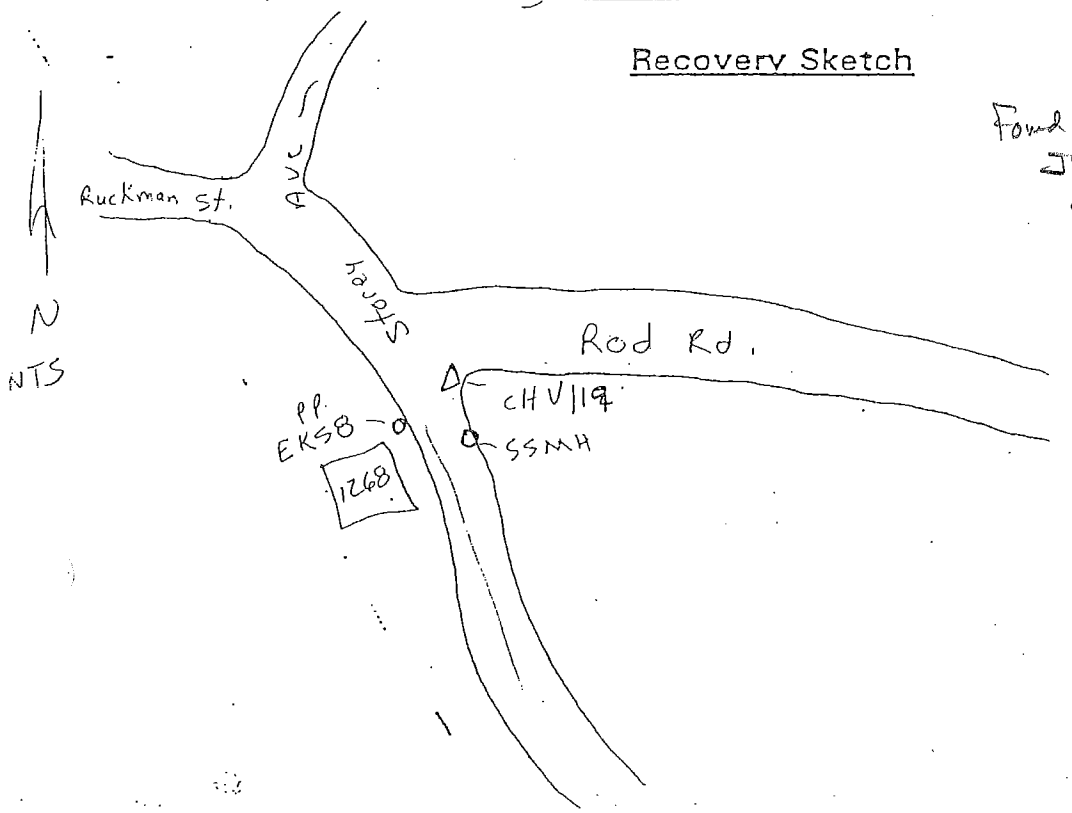
s) station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch

Found, Refreshed
JPF
9/4/07



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vertical CONTROL POINT RECOVERY FORM

Project: PB/Doyle Drive Job No. 99-08-052

Station Name: CH V 120 Station No. 120

Monument Description: set C-Nail & shiner in 4" X 4' painted panel

To Reach Description & Notes: From Golden Gate Bridge go E'ly on Lincoln Blvd. go right on Armstead Rd.; station is located on right hand side of Rd. across the street from 1254 A Armstead Rd., 2.7' NE of EP, ±40' NW of Power Pole # EMES.

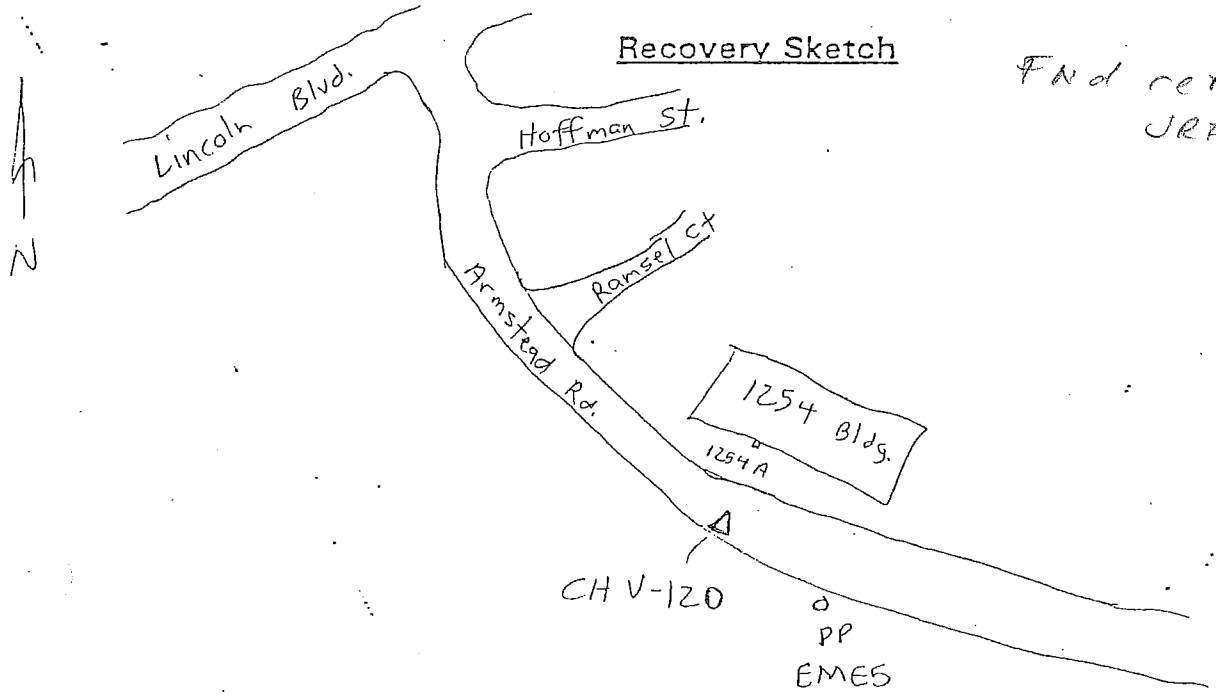
Is the station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Oeron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch

Fnd refreshed JRF/KK



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Registered Civil Engineer
Planner

3272 VILLA LANE
NAPA, CALIFORNIA 94558-3085
Telephone (707) 255-2729
FAX 255-5021

Vertical CONTROL POINT RECOVERY FORM

Project: PB / Doyle Drive Job No. 99-08-052

Station Name: CH V-121 Station No. 121

Monument Description: set c-Nail & shiner in 4" x 4' painted panel

To Reach Description & Notes: station is located in parking/site seeing areas at SE corner of Golden Gate Bridge, located in the NE corner of parking lot 3.9' SE of face of curb. 3.8' E of SE corner of DI near parking stall #78

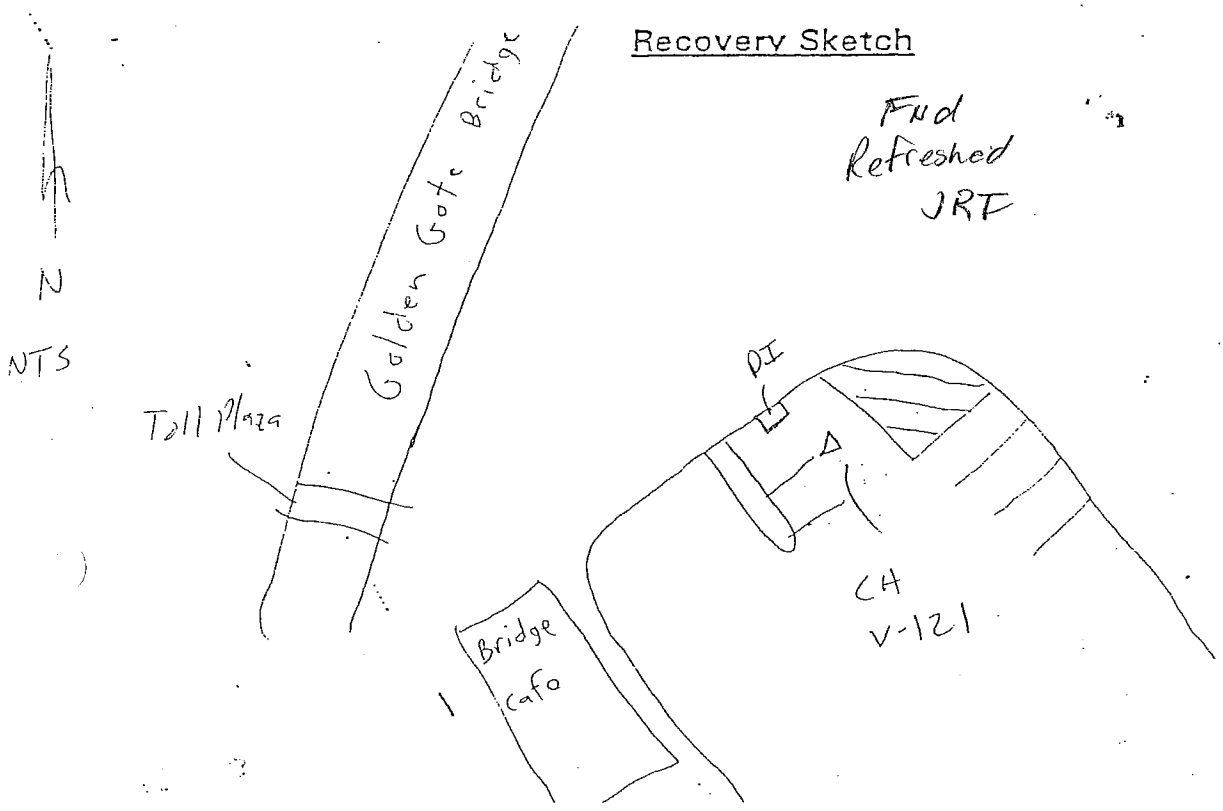
Is this station a drive point? X yes ___ no Is a 4WD Required? ___ yes X no

Are there any Restrictions on Access? ___ yes X no (If yes, explain) ___

Station Recon. by: Deron & Craig Are there obstructions? ___ yes ___ no N/A

Recovery Sketch

Found
Refreshed
JRT



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/5/07 Job No. 07-07-036

Station Name: CA-V-130 Station No. 130

Monument Description: MAGN + WASHER / Panel

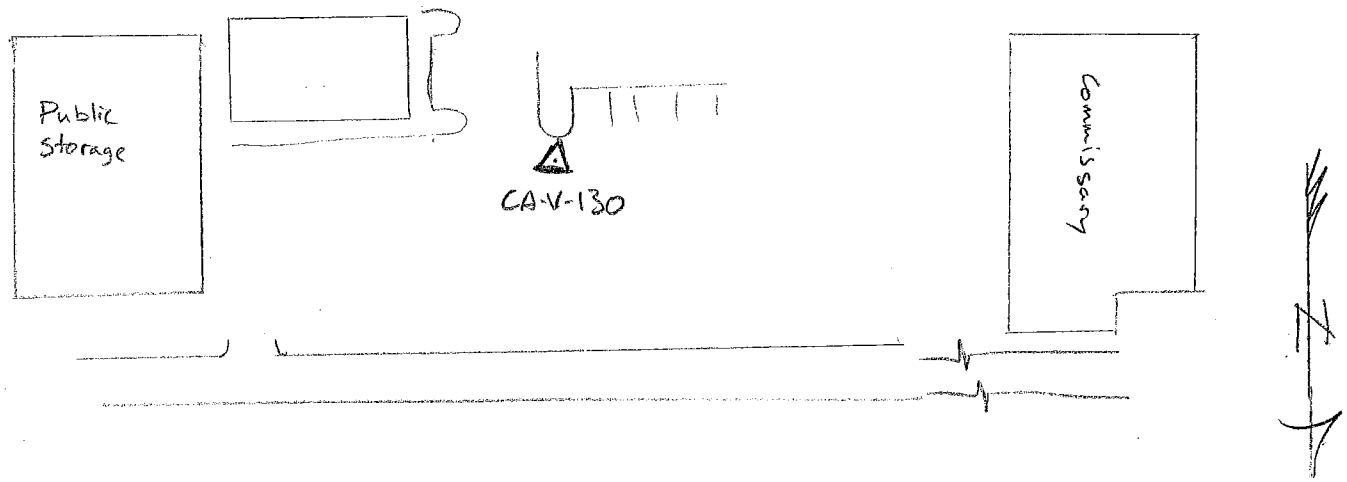
To Reach Description & Notes: See CA-V-116 (set in same general area) Station located in parking lot of the Commisary on Mason St. by Crissy Field, Magn is n'ly of TFC of parking island, see sketch

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: BE / KK Are there obstructions? ___ YES X NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP/Doyle Date: 9/12/07 Job No. 07-07-036

Station Name: CA-V-131 Station No. 131

Monument Description: PID, n/e cor of conc pad w/ benches on it

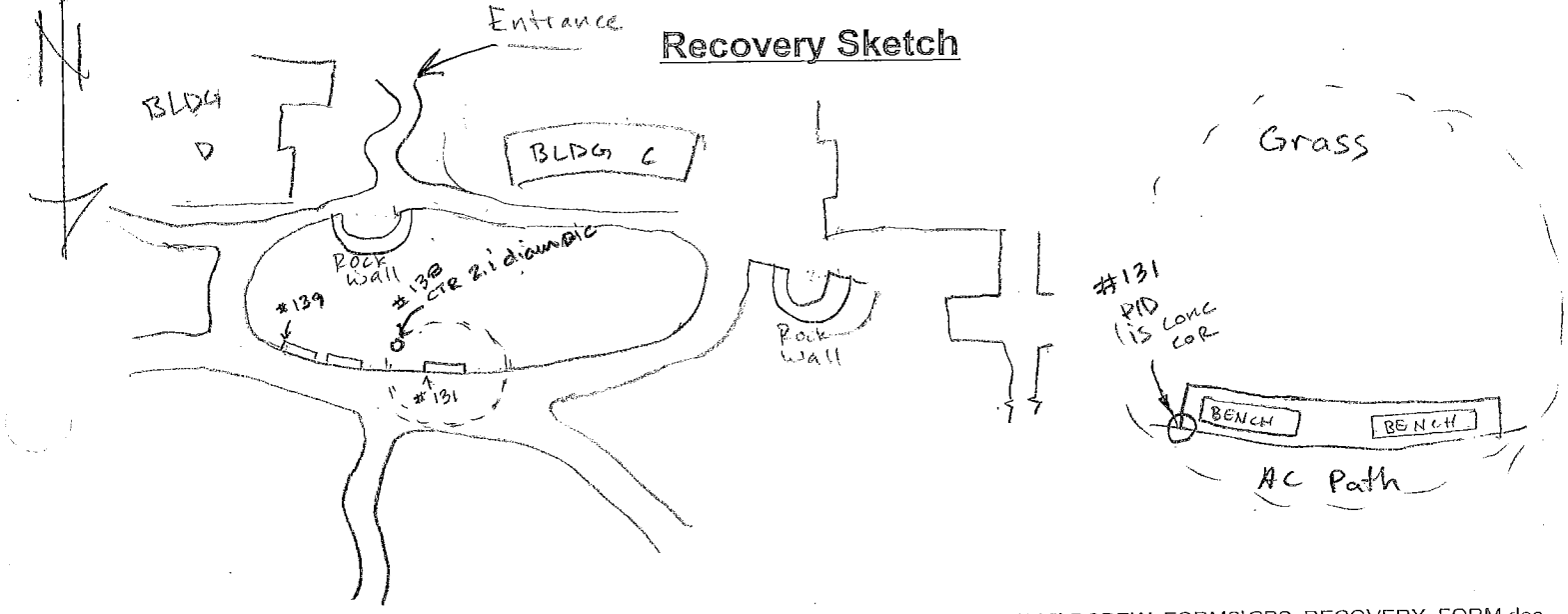
To Reach Description & Notes: From int. of Lyon + Lombard (E)/Lincoln (W), head west on Lincoln and take first right onto Letterman. Check-in w/ guards, take path on east side of BLDG "C" and head north, then see sketch

Is the station a drive point? ___ YES X NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? X YES ___ NO (If yes, explain) Must Check in w/ Personel at Lucas

Station Recon. By: _____ Are there obstructions? ___ YES ___ NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/12/2007 Job No. 07-07-036

Station Name: CH V. 132 Station No. 132

Monument Description: SET MAGNETS and painted 4'x4'x4" panel

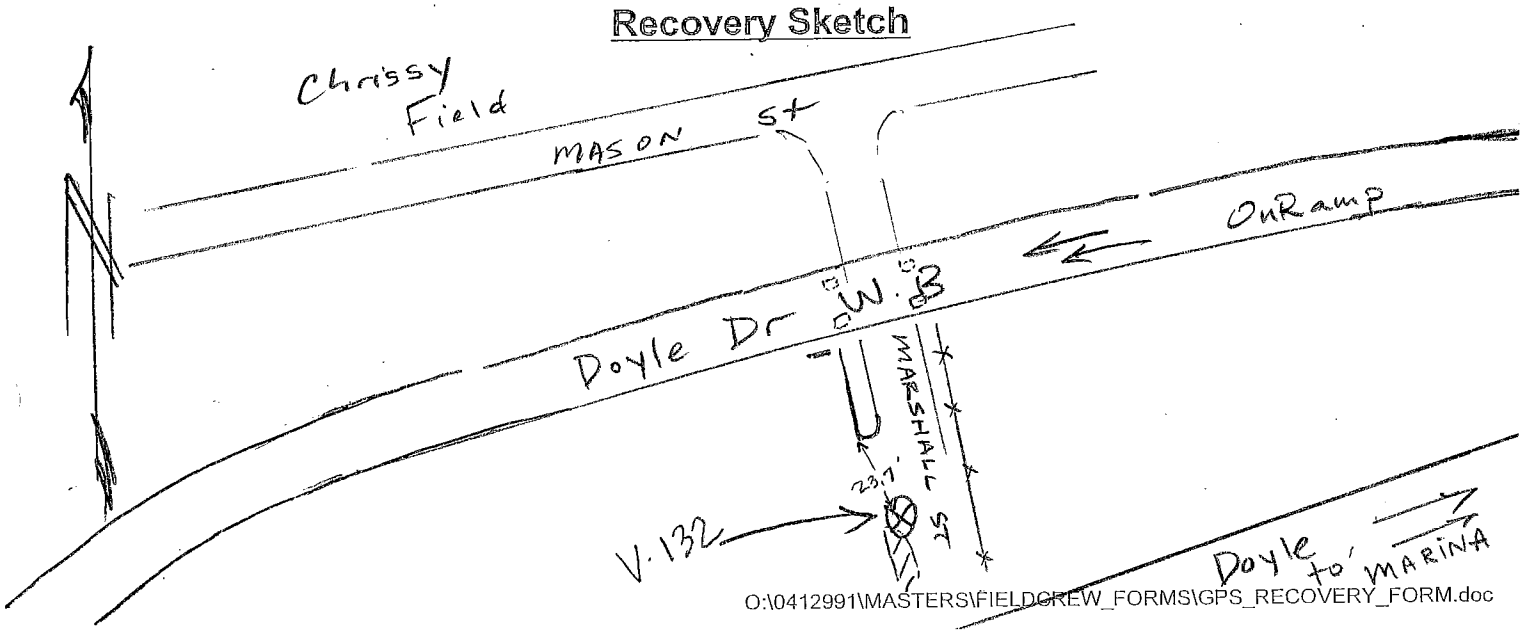
To Reach Description & Notes: From MASON St take Marshall St SE past Doyle Dr / 101 WB/NB onramp O.C. 49.7' past SE column to the station on the right Before painted island between Marshall and parking lot

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: JRF / KK Are there obstructions? X YES N/A NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/12/2007 Job No. 07-07-036

Station Name: CH. V. 133 Station No. 133

Monument Description: set MAGNETS + 4'x4'x4" panel (near old 103)

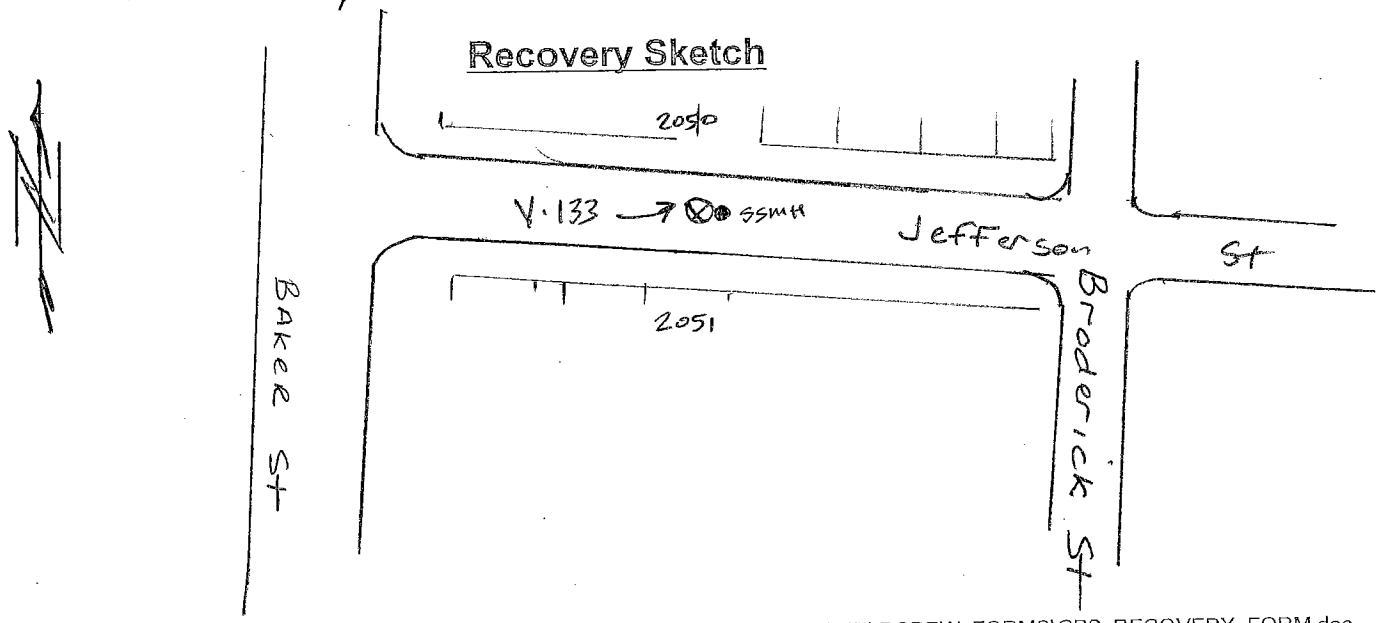
To Reach Description & Notes: From Marina Go south (1 block) on Broderick then Rt (west) on Jefferson St 1/2 block to station @ ℄ in front of # 2050 3/4 2051 Jefferson and 4.6' west of an SS MH (CTR)

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: JRF / KK Are there obstructions? ___ YES N/A NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/13/2007 Job No. 07-07-036

Station Name: CH. V. 134 Station No. 134

Monument Description: set MAGNETS 4x4 panel

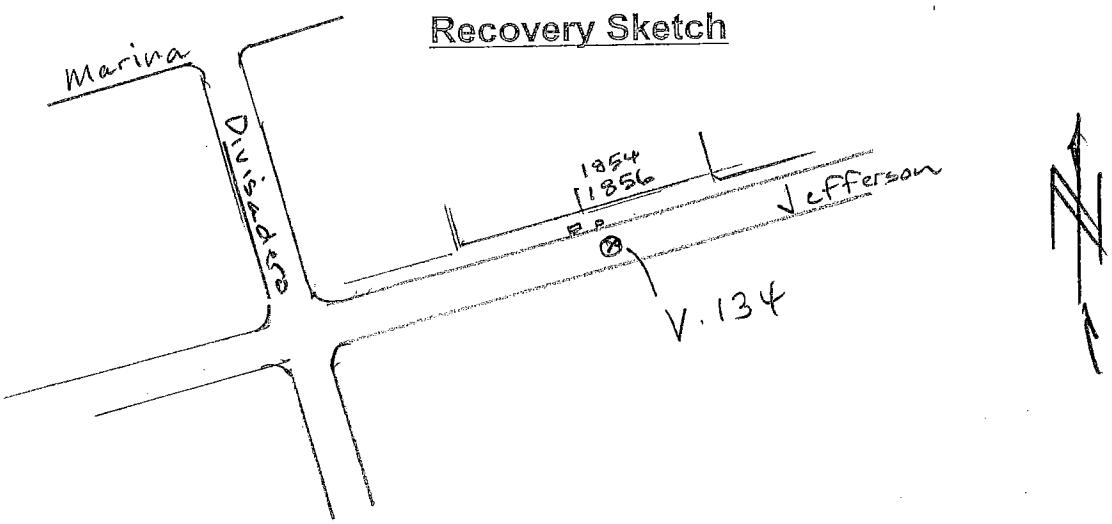
To Reach Description & Notes: MARINA — south on Divisadero then left on Jefferson st go aprox 200' to the station North of CTR near wside dwy 1854/1856 Jefferson
(12' south of WM 1854/1856 Jefferson)
(16' SE of 3'x5' PACBELL VAULT)
(10.25' south of FC)

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: JRT / KK Are there obstructions? ___ YES NA NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: A RUP / Doyle (PID) Date: 9/13/2007 Job No. 07-07-036

Station Name: CH. V. 135 Station No. 135

Monument Description: SET MAGN PID @ SE inside X walk X Pt (near old 108)

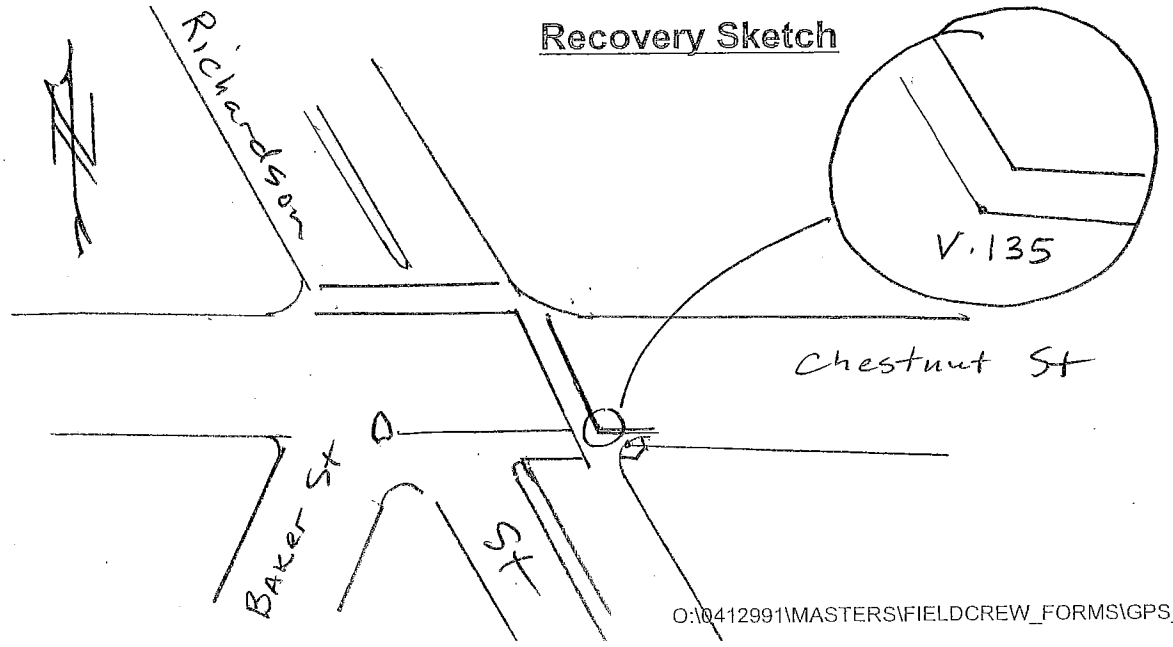
To Reach Description & Notes: SE cor Richardson / Chestnut / Baker St.
(19.65' NW of FC @ ℄ WCR
24.8' NW-PTSL (Pole TS) @ SE Cor
21' W of PGE MH (@ CTR))

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: JRP / KK Are there obstructions? ___ YES NA NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/13/2007 Job No. 07-07-036

Station Name: (PID) CH. V · 136 Station No. 136

Monument Description: (PID) SW Cor of 5.9' x 3.4' PG&E Vault

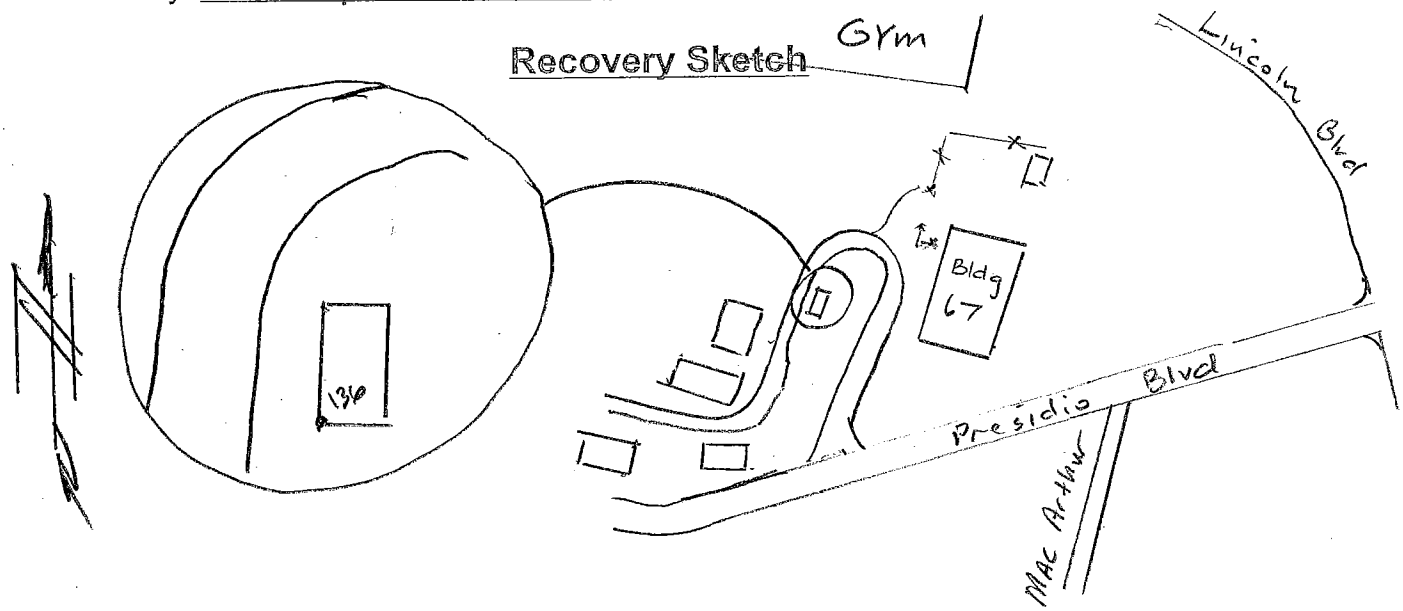
To Reach Description & Notes: From Lincoln Blvd EB Go Rt on Presidio Blvd past Mac Arthur then take 1st Rt, Martinez St to Bldg 67 driveway, follow driveway around past Bldg 67 to the EC where it is going south and the station on the left.

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: JRF / KK Are there obstructions? ___ YES NA NO

Recovery Sketch



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GPS CONTROL POINT RECOVERY FORM

Project: ARUP / Doyle Date: 9/5/2007 Job No. 07-07-036

Station Name: CH V 137 Station No. 137

Monument Description: set MAGN @ Ex Arrow tip PID *

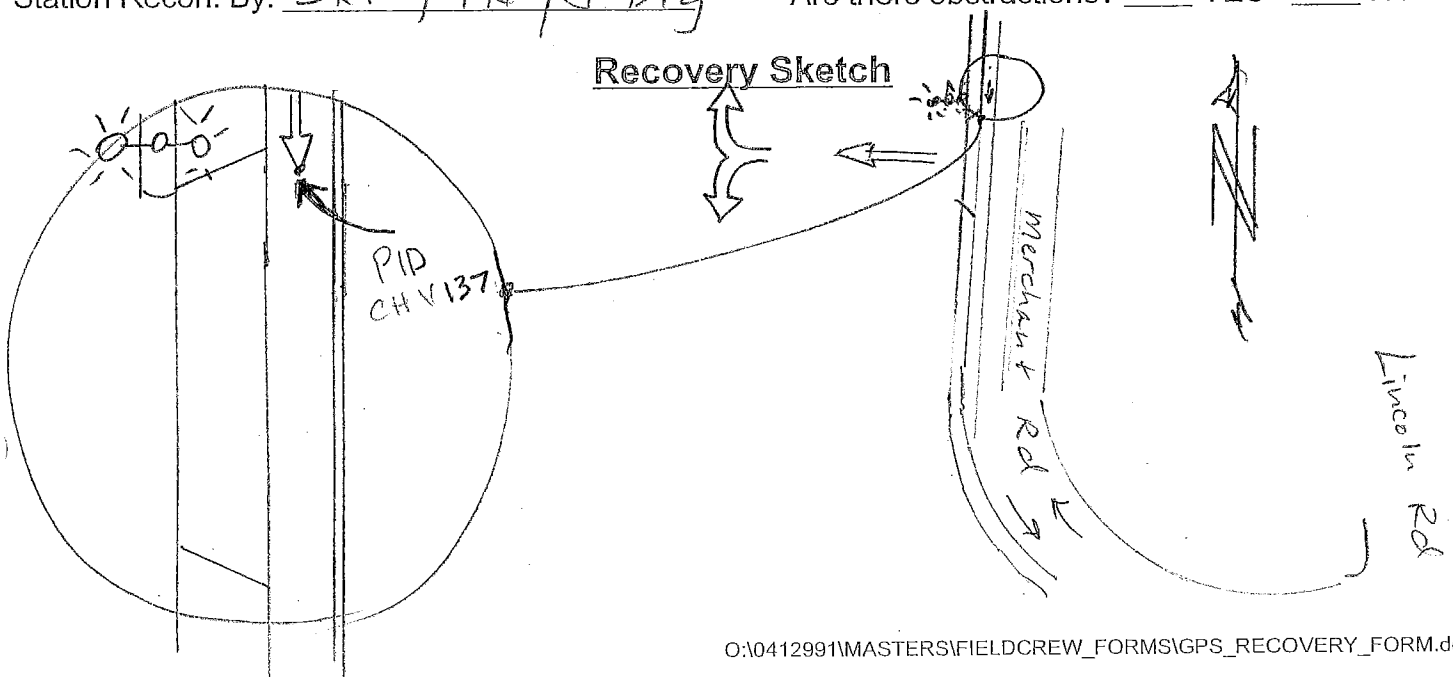
To Reach Description & Notes: From 101 SB after 66 toll Plaza take 1ST Rt, Lincoln Rd exit and go ~405' to a CDOT Driveway (entrance to parking lot - paved) and the station in the right. 2.57' off TC @ the nly edge of Driveway

Is the station a drive point? X YES ___ NO Is a 4WD Required? ___ YES X NO

Are there any Restrictions on Access? ___ YES X NO (If yes, explain) ___

Station Recon. By: JRP / TN / J Big Are there obstructions? ___ YES ___ NO

Recovery Sketch



STAR*NET-PRO Version 6.0.35
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Run Date: Fri Oct 19 2007 10:26:19

Summary of Files Used and Option Settings

Project Folder and Data Files

Project Name	0736-CONTROL TIES
Project Folder	Q:\2007\07-07-036 ARUP DOYLE\STAR
Data File List	1. 0736-CONTROL TIES.dat

Project Option Settings

STAR*NET Run Mode	: Adjust with Error Propagation
Type of Adjustment	: 3D
Project Units	: FeetUS; DMS
Coordinate System	: Lambert NAD83; CA Zone 3 0403
Geoid Height	: -30.0000 (Default, Meters)
Longitude Sign Convention	: Positive West
Input/Output Coordinate Order	: North-East
Angle Data Station Order	: At-From-To
Distance/Vertical Data Type	: Slope/Zenith
Convergence Limit; Max Iterations	: 0.010000; 10
Default Coefficient of Refraction	: 0.070000
Create Coordinate File	: Yes
Create Geodetic Position File	: No
Create Ground Scale Coordinate File	: No
Create Dump File	: No

Instrument Standard Error Settings

Project Default Instrument

Distances (Constant)	:	0.010000 FeetUS
Distances (PPM)	:	1.000000
Angles	:	3.000000 Seconds
Directions	:	3.000000 Seconds
Azimuths & Bearings	:	3.000000 Seconds
Zeniths	:	7.000000 Seconds
Elevation Differences (Constant)	:	0.040000 FeetUS
Elevation Differences (PPM)	:	0.000000
Differential Levels	:	0.010000 FeetUS / Mile
Centering Error Instrument	:	0.005000 FeetUS
Centering Error Target	:	0.005000 FeetUS
Centering Error Vertical	:	0.005000 FeetUS

Summary of Unadjusted Input Observations

Number of Entered Stations (FeetUS) = 23

Fixed Stations	N	E	Elev	Description
5	2121717.8220	5998888.1920	11.1810	N&S painted X
6	2120220.1800	5998958.1830	17.1980	N&S tip traffic
7	2118893.6000	5999059.6390	65.7220	100d painted X
12	2123051.2260	5991603.8340	18.1360	N&S painted X
14	2120996.5310	5992842.5750	96.4140	N&S painted X
15	2120936.2970	5993775.7190	10.6000	N&S painted X
16	2120322.3090	5993725.8180	60.6230	N&S painted X
17	2119845.2670	5992733.4640	139.9010	N&S painted X
18	2121491.7780	5992605.3740	86.1380	N&S painted X
225	2121033.0170	5997722.9970	12.0410	Magn&s
226	2120914.3150	5997159.6230	14.0420	N&S

Partially Fixed	N	E	Elev	Description
	StdErr	StdErr	StdErr	
25	2117670.3750	5999223.9390	150.5080	cns-ch-hv25
	FREE	FREE	FIXED	
26	2120065.7460	5996446.1450	53.3450	magnw CH-HV26
	FREE	FREE	FIXED	
27	2121587.7140	5996285.0520	12.3770	rebar+cap-CH-HV27
	FREE	FREE	FIXED	
28	2122557.9550	5992668.2950	10.7590	rebar+cap-CH-HV28
	FREE	FREE	FIXED	
118	2120587.9450	5993449.2260	40.9120	N&S painted X-v118
	FREE	FREE	FIXED	
119	2122435.1920	5992737.6990	17.6720	set rebar+cap
	FREE	FREE	FIXED	
120	2121504.4540	5995576.6620	12.6760	set rebar+cap
	FREE	FREE	FIXED	
121	2120584.2090	5996530.5710	42.1370	set 100d
	FREE	FREE	FIXED	
122	2120046.5000	5996639.8220	52.4660	Set magns
	FREE	FREE	FIXED	
123	2121030.0470	5997102.6260	11.9980	set magns
	FREE	FREE	FIXED	
125	2121313.4720	5997773.0090	11.3720	Set magns
	FREE	FREE	FIXED	
126	2119700.8370	5996855.7400	48.8160	Set magns
	FREE	FREE	FIXED	

Number of Measured Angle Observations (DMS) = 98

At	From	To	Angle	StdErr	t-T
6	7	25	358-25-23.00	3.15	0.00
6	25	7	1-34-37.00	3.15	-0.00
7	6	40	179-12-51.00	3.95	0.00
7	40	6	180-47-08.00	3.95	-0.00
25	6	40	353-52-26.00	4.27	0.00
25	40	6	6-07-35.00	4.27	-0.00
40	7	25	173-04-56.00	5.40	0.00
40	25	7	186-55-02.00	5.40	-0.00
15	18	119	29-54-25.00	3.18	0.00
15	18	120	137-06-03.00	3.39	0.01
15	120	18	222-53-58.00	3.39	-0.01
15	120	119	252-48-24.00	3.23	-0.01
18	15	14	39-01-04.00	3.87	-0.00
18	15	120	334-21-58.00	3.16	0.01
18	15	121	347-37-48.00	3.16	0.01
18	120	121	13-15-49.00	3.03	0.00

18	120	15	25-38-02.00	3.16	-0.01
18	120	14	64-39-06.00	3.97	-0.01
18	121	15	12-22-15.00	3.16	-0.01
18	121	120	346-44-12.00	3.03	-0.00
120	18	119	18-23-43.00	3.04	0.00
20	18	27	173-32-29.00	3.80	0.02
120	18	121	224-12-57.00	3.29	0.02
120	18	15	342-44-14.00	3.08	0.01
120	18	28	20-09-20.00	3.04	-0.00
120	121	15	118-31-15.00	3.35	-0.01
120	121	18	135-47-01.00	3.29	-0.02
120	121	119	154-10-44.00	3.31	-0.02
120	121	27	309-19-31.00	3.60	-0.00
121	18	120	30-57-06.00	3.16	0.01
121	18	122	245-29-46.00	4.07	0.02
121	18	123	129-02-55.00	3.69	0.02
121	120	123	98-05-54.00	3.82	0.01
121	120	18	329-02-55.00	3.16	-0.01
121	120	122	214-32-41.00	4.44	0.00
121	122	120	145-27-23.00	4.44	-0.00
121	122	123	243-33-15.00	4.74	0.00
121	123	122	116-26-48.00	4.74	-0.00
121	123	120	261-54-08.00	3.82	-0.01
122	121	124	221-23-11.00	6.24	-0.00
122	121	26	287-09-34.00	8.15	-0.00
122	124	26	65-46-26.00	8.27	-0.00
122	124	121	138-36-52.00	6.24	0.00
123	121	231	0-09-39.00	7.93	0.00
123	121	120	55-12-06.00	3.58	-0.00
123	120	121	304-47-56.00	3.58	0.00
123	120	231	304-57-34.00	8.48	0.01
123	231	121	359-50-22.00	7.93	-0.00
123	121	226	281-44-33.00	11.67	0.00
123	121	27	72-13-49.00	3.78	-0.00
123	121	125	195-00-52.00	4.58	0.01
123	125	121	164-59-10.00	4.58	-0.01
123	125	120	220-11-15.00	3.90	-0.01
123	125	27	237-12-58.00	4.10	-0.01
123	121	225	217-39-39.00	4.72	0.01
123	225	121	142-20-23.00	4.72	-0.01
123	121	126	318-27-15.00	3.55	0.00
123	125	126	123-26-21.00	3.92	-0.00
125	123	127	200-16-14.00	4.51	0.01
125	127	123	159-43-47.00	4.51	-0.01
125	127	120	187-36-56.00	3.79	-0.01
127	125	5	136-41-53.00	4.97	0.01
127	5	125	223-18-08.00	4.97	-0.01
126	123	128	234-45-45.00	7.60	-0.00
128	126	124	234-03-11.00	10.80	-0.00
124	128	122	270-34-03.00	7.98	-0.00
124	122	128	89-25-58.00	7.98	0.00
119	15	129	161-38-17.00	3.72	-0.01
119	15	28	185-13-19.00	11.17	-0.01
119	15	120	322-51-17.00	3.09	0.01
119	129	28	23-35-06.00	10.14	0.00
119	129	120	161-13-03.00	3.59	0.02
119	129	15	198-21-48.00	3.72	0.01
119	120	15	37-08-44.00	3.09	-0.01
119	120	129	198-46-58.00	3.59	-0.02
129	119	130	1-47-05.00	6.64	-0.00
129	119	12	155-39-30.00	5.19	-0.01
129	12	119	204-20-30.00	5.19	0.01
129	12	130	206-07-36.00	9.01	0.00
131	18	16	215-00-34.00	8.70	0.01
131	18	16	215-00-36.00	8.70	0.01

131	18	132	312-45-53.00	3.44	0.00
131	132	18	47-14-09.00	3.44	-0.00
131	132	16	262-14-44.00	8.56	0.00
132	131	133	118-38-20.00	5.71	-0.00
132	131	14	274-45-53.00	4.29	-0.00
132	133	14	156-07-32.00	6.55	0.00
132	133	131	241-21-43.00	5.71	0.00
132	14	131	85-14-08.00	4.29	0.00
132	14	133	203-52-27.00	6.55	-0.00
133	132	17	149-28-29.00	8.63	-0.00
133	17	132	210-31-26.00	8.63	0.00
134	118	138	204-52-55.00	8.66	0.00
134	118	131	350-30-35.00	5.74	0.00
134	118	132	347-06-05.00	3.93	-0.00
134	132	118	12-53-58.00	3.93	0.00
134	132	138	217-46-53.00	7.62	0.01
134	132	131	3-24-34.00	5.91	0.00

Number of Measured Distance Observations (FeetUS) = 153

From	To	Distance	StdErr	HI	HT	Comb Grid	Type
6	7	1331.4440	87.5435	5.302	5.374	0.9999323	S
6	25	2567.3270	0.0144	5.302	5.837	0.9999302	S
6	25	2567.3290	87.0053	5.302	5.837	0.9999302	S
6	7	1331.4430	0.0134	5.302	5.374	0.9999323	S
7	6	1331.4580	92.0632	5.638	5.223	0.9999323	S
7	40	793.2240	0.0129	5.638	4.685	0.9999296	S
7	40	793.2310	85.4220	5.638	4.685	0.9999296	S
7	6	1331.4610	0.0134	5.638	5.223	0.9999323	S
25	6	2567.3160	92.5922	5.647	5.223	0.9999302	S
25	40	446.0980	0.0126	5.647	4.685	0.9999276	S
25	40	446.1000	93.1542	5.647	4.685	0.9999276	S
25	6	2567.3150	0.0144	5.647	5.223	0.9999302	S
40	7	793.3350	94.2334	4.974	4.619	0.9999296	S
40	25	446.0750	0.0126	4.974	5.489	0.9999276	S
40	25	446.0790	86.4801	4.974	5.489	0.9999276	S
40	7	793.3350	0.0129	4.974	4.619	0.9999296	S
15	18	1297.7410	86.4010	5.697	5.594	0.9999320	S
15	119	1823.3670	0.0138	5.697	5.322	0.9999337	S
15	120	1888.5880	0.0138	5.697	5.322	0.9999338	S
15	120	1888.5890	89.5704	5.697	5.312	0.9999338	S
15	18	1297.7430	0.0133	5.697	5.594	0.9999320	S
15	119	1823.3680	0.0138	5.697	5.322	0.9999337	S
18	15	1297.7400	93.1959	5.569	5.712	0.9999320	S
18	14	549.2380	0.0127	5.569	4.770	0.9999299	S
18	120	2972.4420	0.0148	5.569	5.312	0.9999320	S
18	121	4029.2790	0.0157	5.569	5.312	0.9999312	S
18	120	2972.4440	91.2530	5.569	5.312	0.9999320	S
18	121	4029.2790	0.0157	5.569	5.472	0.9999312	S
18	15	1297.7410	0.0133	5.569	5.712	0.9999320	S
18	14	549.2390	0.0127	5.569	4.770	0.9999299	S
18	121	4029.2810	90.3757	5.569	5.472	0.9999312	S
18	15	1297.7410	0.0133	5.569	5.712	0.9999320	S
18	120	2972.4450	0.0148	5.569	5.312	0.9999320	S
120	18	2972.4180	88.3623	5.473	4.770	0.9999320	S
120	18	2972.4030	88.3612	5.684	4.770	0.9999320	S
120	119	2987.8690	0.0148	5.684	2.533	0.9999336	S
120	27	713.3110	0.0128	5.684	5.374	0.9999337	S
120	121	1325.8590	0.0134	5.684	5.472	0.9999330	S
120	15	1888.5890	0.0138	5.684	5.712	0.9999338	S
120	18	2972.4180	88.3623	5.684	4.770	0.9999320	S
120	28	3093.5460	0.0149	5.684	2.533	0.9999338	S
120	121	1325.8590	88.4424	5.684	5.472	0.9999330	S
120	15	1888.5930	0.0138	5.684	5.712	0.9999338	S
120	18	2972.4200	0.0148	5.684	4.770	0.9999320	S

120	119	2987.8710	0.0148	5.684	2.533	0.9999336	S
120	27	713.3150	0.0128	5.684	5.374	0.9999337	S
121	18	4029.2740	89.2302	5.769	5.528	0.9999312	S
121	120	1325.8520	0.0134	5.769	6.273	0.9999330	S
121	122	548.8290	0.0127	5.769	5.810	0.9999320	S
121	18	4029.2740	89.2257	5.769	5.528	0.9999312	S
121	123	725.9760	0.0128	5.769	4.910	0.9999330	S
121	120	1325.8440	91.1512	5.769	6.273	0.9999330	S
121	123	725.9710	0.0128	5.769	4.910	0.9999330	S
121	18	4029.2690	0.0157	5.769	5.528	0.9999312	S
121	120	1325.8500	91.1507	5.769	6.273	0.9999330	S
121	122	548.8260	0.0127	5.769	5.810	0.9999320	S
121	122	548.8280	88.5512	5.769	5.810	0.9999320	S
121	120	1325.8480	0.0134	5.769	6.273	0.9999330	S
121	123	725.9710	0.0128	5.769	4.910	0.9999330	S
121	123	725.9740	92.2649	5.769	4.910	0.9999330	S
121	122	548.8290	0.0127	5.769	5.810	0.9999320	S
121	120	1325.8430	0.0134	5.769	6.273	0.9999330	S
122	121	548.8270	91.0451	5.739	5.738	0.9999320	S
122	124	374.7480	0.0126	5.739	0.320	0.9999316	S
122	26	194.6350	0.0124	5.739	4.910	0.9999317	S
122	124	374.7440	89.4150	5.739	0.320	0.9999316	S
122	26	194.6380	0.0124	5.739	4.910	0.9999317	S
122	121	548.8300	0.0127	5.739	5.738	0.9999320	S
123	121	725.9480	87.3637	5.562	5.738	0.9999330	S
123	231	179.1930	0.0124	5.562	4.910	0.9999337	S
123	120	1598.1340	0.0136	5.562	6.273	0.9999337	S
123	120	1598.1260	89.5716	5.562	6.270	0.9999337	S
123	121	725.9500	0.0128	5.562	5.740	0.9999330	S
123	231	179.1910	0.0124	5.562	4.910	0.9999337	S
123	231	179.1930	90.1736	5.563	4.910	0.9999337	S
123	121	725.9510	0.0128	5.563	5.740	0.9999330	S
123	121	725.9500	87.3637	5.562	5.740	0.9999330	S
123	226	129.0270	0.0124	5.562	4.910	0.9999337	S
123	121	725.9600	87.3613	5.598	5.843	0.9999330	S
123	27	989.7370	0.0131	5.598	5.837	0.9999337	S
123	125	727.8720	0.0128	5.598	5.587	0.9999337	S
123	125	727.8740	90.0308	5.598	5.587	0.9999337	S
123	121	725.9580	0.0128	5.598	5.843	0.9999330	S
123	120	1598.1360	0.0136	5.598	5.961	0.9999337	S
123	27	989.7330	0.0131	5.598	5.837	0.9999337	S
123	121	725.9520	87.3615	5.598	5.843	0.9999330	S
123	225	620.3970	0.0128	5.598	4.910	0.9999337	S
123	225	620.3990	90.0407	5.598	4.910	0.9999337	S
123	121	725.9580	0.0128	5.598	5.843	0.9999330	S
123	126	1352.5410	0.0134	5.598	6.000	0.9999328	S
123	126	1352.5470	0.0134	5.600	6.000	0.9999328	S
125	123	727.8770	89.5739	5.569	5.472	0.9999337	S
125	127	758.7630	0.0129	5.569	5.725	0.9999338	S
125	127	758.7600	90.0655	5.569	5.725	0.9999338	S
125	123	727.8760	0.0128	5.569	5.472	0.9999337	S
125	120	2204.7970	0.0141	5.569	5.961	0.9999337	S
127	125	758.7520	89.5257	5.662	5.633	0.9999338	S
127	5	513.8620	0.0127	5.662	5.728	0.9999338	S
127	5	513.8610	89.5017	5.662	5.728	0.9999338	S
127	125	758.7530	0.0129	5.662	5.633	0.9999338	S
126	123	1352.5430	91.3428	5.818	5.656	0.9999328	S
126	128	221.6950	0.0124	5.818	5.518	0.9999316	S
128	126	221.6950	93.2617	5.473	5.869	0.9999316	S
128	124	231.3990	0.0124	5.473	5.420	0.9999313	S
124	128	231.3990	89.2511	5.585	5.305	0.9999313	S
124	122	374.8130	0.0126	5.585	5.663	0.9999316	S
124	122	374.8150	91.0719	5.585	5.663	0.9999316	S
124	128	231.3990	0.0124	5.585	5.305	0.9999313	S
119	15	1823.3700	90.1320	5.358	5.499	0.9999337	S

119	129	858.9370	0.0130	5.358	5.591	0.9999336	S
119	28	141.1850	0.0124	5.358	5.500	0.9999337	S
119	120	2987.8680	0.0148	5.358	6.158	0.9999336	S
119	129	858.9320	90.1040	5.358	5.591	0.9999336	S
119	28	141.1850	0.0124	5.358	5.500	0.9999337	S
119	120	2987.8610	0.0148	5.358	6.158	0.9999336	S
119	15	1823.3650	0.0138	5.358	5.499	0.9999337	S
119	120	2987.8650	90.0502	5.358	6.158	0.9999336	S
119	15	1823.3660	0.0138	5.358	5.499	0.9999337	S
119	129	858.9330	0.0130	5.358	5.591	0.9999336	S
129	119	858.9360	89.4927	5.559	5.390	0.9999336	S
129	130	221.5680	0.0124	5.559	4.910	0.9999336	S
129	12	458.3990	0.0126	5.559	5.486	0.9999336	S
129	12	458.3970	89.3547	5.559	5.486	0.9999336	S
129	119	858.9360	0.0130	5.559	5.390	0.9999336	S
129	130	221.5750	0.0124	5.559	4.910	0.9999336	S
131	16	189.3330	0.0124	5.483	5.449	0.9999316	S
131	18	1461.4600	88.4122	5.483	5.597	0.9999310	S
131	16	189.3350	0.0124	5.483	5.449	0.9999316	S
131	132	845.7190	0.0129	5.483	5.591	0.9999305	S
131	132	845.7190	86.3141	5.483	5.591	0.9999305	S
131	18	1461.4540	0.0135	5.483	5.597	0.9999310	S
131	16	189.3360	0.0124	5.483	5.449	0.9999316	S
132	131	845.7410	93.2939	5.736	5.351	0.9999305	S
132	133	351.7820	0.0125	5.736	5.338	0.9999289	S
132	14	561.0770	0.0127	5.736	5.456	0.9999295	S
132	133	351.7800	87.1903	5.736	5.338	0.9999289	S
132	14	561.0710	0.0127	5.736	5.456	0.9999295	S
132	131	845.7320	0.0129	5.736	5.351	0.9999305	S
132	14	561.0720	90.4737	5.736	5.456	0.9999295	S
132	131	845.7370	0.0129	5.736	5.351	0.9999305	S
132	133	351.7780	0.0125	5.736	5.338	0.9999289	S
133	132	351.7880	92.4239	5.490	5.745	0.9999289	S
133	17	271.4390	0.0125	5.490	7.400	0.9999280	S
133	17	271.4430	85.3310	5.490	7.400	0.9999280	S
133	132	351.7870	0.0125	5.490	5.745	0.9999289	S
134	118	502.9960	94.4803	5.592	5.016	0.9999313	S
134	138	230.1900	0.0124	5.592	5.049	0.9999297	S
134	131	261.3240	0.0125	5.592	5.200	0.9999310	S
134	132	1103.3620	0.0132	5.592	5.500	0.9999298	S
134	132	1103.3660	88.5326	5.592	5.500	0.9999298	S
134	118	502.9970	0.0127	5.592	5.016	0.9999313	S
134	138	230.1900	0.0124	5.592	5.049	0.9999297	S
134	131	261.3260	0.0125	5.592	5.200	0.9999310	S

Number of Zenith Observations (DMS) = 98

From	To	Zenith	StdErr	HI	HT
6	25	87-00-52.00	7.02	5.302	5.837
6	7	87-54-34.00	7.09	5.302	5.374
7	40	85-42-18.00	7.24	5.638	4.685
7	6	92-06-33.00	7.09	5.638	5.223
25	40	93-15-42.00	7.73	5.647	4.685
25	6	92-59-22.00	7.02	5.647	5.223
40	25	86-47-59.00	7.73	4.974	5.489
40	7	94-23-33.00	7.24	4.974	4.619
15	119	89-47-29.00	7.05	5.697	5.322
15	120	89-57-07.00	7.04	5.697	5.322
15	18	86-40-10.00	7.09	5.697	5.594
15	119	89-47-28.00	7.05	5.697	5.322
18	14	89-00-40.00	7.49	5.569	4.770
18	120	91-25-29.00	7.02	5.569	5.312
18	121	90-37-56.00	7.01	5.569	5.312
18	121	90-37-57.00	7.01	5.569	5.472
18	15	93-19-58.00	7.09	5.569	5.712

18	14	89-00-40.00	7.49	5.569	4.770
18	15	93-19-58.00	7.09	5.569	5.712
18	120	91-25-29.00	7.02	5.569	5.312
120	119	89-58-09.00	7.02	5.684	2.533
120	27	90-03-18.00	7.29	5.684	5.374
120	121	88-44-24.00	7.09	5.684	5.472
120	15	90-04-50.00	7.04	5.684	5.712
120	28	90-05-54.00	7.02	5.684	2.533
120	15	90-04-38.00	7.04	5.684	5.712
120	18	88-36-26.00	7.02	5.684	4.770
120	119	89-58-10.00	7.02	5.684	2.533
120	27	90-03-13.00	7.29	5.684	5.374
121	120	91-15-10.00	7.09	5.769	6.273
121	122	88-55-09.00	7.49	5.769	5.810
121	123	92-26-49.00	7.28	5.769	4.910
121	123	92-26-45.00	7.28	5.769	4.910
121	18	89-23-02.00	7.01	5.769	5.528
121	122	88-55-12.00	7.49	5.769	5.810
121	120	91-15-09.00	7.09	5.769	6.273
121	123	92-26-47.00	7.28	5.769	4.910
121	122	88-55-12.00	7.49	5.769	5.810
121	120	91-15-14.00	7.09	5.769	6.273
122	124	89-41-51.00	8.01	5.739	0.320
122	26	89-59-06.00	10.25	5.739	4.910
122	26	89-59-08.00	10.25	5.739	4.910
122	121	91-04-53.00	7.49	5.739	5.738
123	231	90-17-38.00	10.74	5.562	4.910
123	120	89-57-15.00	7.06	5.562	6.273
123	121	87-36-37.00	7.28	5.562	5.740
123	231	90-17-37.00	10.74	5.562	4.910
123	121	87-36-37.00	7.28	5.563	5.740
123	226	89-23-05.00	13.30	5.562	4.910
123	27	89-57-56.00	7.15	5.598	5.837
123	125	90-03-07.00	7.28	5.598	5.587
123	121	87-36-13.00	7.28	5.598	5.843
123	120	89-57-53.00	7.06	5.598	5.961
123	27	89-57-55.00	7.15	5.598	5.837
123	225	90-04-07.00	7.38	5.598	4.910
123	121	87-36-14.00	7.28	5.598	5.843
123	126	88-25-43.00	7.08	5.598	6.000
123	126	88-25-39.00	7.08	5.600	6.000
125	127	90-06-52.00	7.26	5.569	5.725
125	123	89-57-39.00	7.28	5.569	5.472
125	120	89-57-43.00	7.03	5.569	5.961
127	5	89-50-16.00	7.55	5.662	5.728
127	125	89-53-00.00	7.26	5.662	5.633
126	128	86-32-31.00	9.61	5.818	5.518
128	124	90-40-05.00	9.42	5.473	5.420
124	122	91-07-20.00	8.01	5.585	5.663
124	128	89-25-12.00	9.42	5.585	5.305
119	129	90-10-39.00	7.20	5.358	5.591
119	28	92-45-00.00	12.48	5.358	5.500
119	120	90-05-04.00	7.02	5.358	6.158
119	28	92-44-59.00	12.48	5.358	5.500
119	120	90-05-04.00	7.02	5.358	6.158
119	15	90-13-20.00	7.05	5.358	5.499
119	15	90-13-21.00	7.05	5.358	5.499
119	129	90-10-42.00	7.20	5.358	5.591
129	130	89-44-11.00	9.61	5.559	4.910
129	12	89-35-44.00	7.69	5.559	5.486
129	119	89-49-28.00	7.20	5.559	5.390
129	130	89-44-17.00	9.61	5.559	4.910
131	16	87-38-07.00	10.41	5.483	5.449
131	16	87-38-07.00	10.41	5.483	5.449
131	132	86-31-40.00	7.21	5.483	5.591

131	18	88-41-22.00	7.07	5.483	5.597
131	16	87-38-09.00	10.41	5.483	5.449
132	133	87-19-02.00	8.14	5.736	5.338
132	14	90-47-37.00	7.47	5.736	5.456
132	14	90-47-36.00	7.47	5.736	5.456
132	131	93-29-38.00	7.21	5.736	5.351
132	131	93-29-39.00	7.21	5.736	5.351
132	133	87-19-05.00	8.14	5.736	5.338
133	17	85-33-12.00	8.82	5.490	7.400
133	132	92-42-38.00	8.14	5.490	5.745
134	138	83-39-56.00	9.44	5.592	5.049
134	131	96-36-26.00	8.95	5.592	5.200
134	132	88-53-25.00	7.12	5.592	5.500
134	118	94-48-04.00	7.58	5.592	5.016
134	138	83-39-51.00	9.44	5.592	5.049
134	131	96-36-26.00	8.95	5.592	5.200

Adjustment Statistical Summary

Iterations	=	2
Number of Stations	=	35
Number of Observations	=	349
Number of Unknowns	=	60
Number of Redundant Obs	=	289

Observation	Count	Sum Squares of StdRes	Error Factor
Angles	98	53.323	0.811
Distances	153	50.470	0.631
Zeniths	98	191.624	1.537
Total	349	295.418	1.011

The Chi-Square Test at 5.00% Level Passed
Lower/Upper Bounds (0.918/1.081)

Adjusted Station Information

Adjusted Coordinates (FeetUS)

Station	N	E	Elev	Description
5	2121717.8220	5998888.1920	11.1810	N&S painted X
6	2120220.1800	5998958.1830	17.1980	N&S tip traffic
7	2118893.6000	5999059.6390	65.7220	100d painted X
12	2123051.2260	5991603.8340	18.1360	N&S painted X
14	2120996.5310	5992842.5750	96.4140	N&S painted X
15	2120936.2970	5993775.7190	10.6000	N&S painted X
16	2120322.3090	5993725.8180	60.6230	N&S painted X
17	2119845.2670	5992733.4640	139.9010	N&S painted X
18	2121491.7780	5992605.3740	86.1380	N&S painted X
225	2121033.0170	5997722.9970	12.0410	Magn&s
226	2120914.3150	5997159.6230	14.0420	N&S
25	2117670.3514	5999223.9402	150.5080	cns-ch-hv25
26	2120065.7712	5996446.1929	53.3450	magnw CH-HV26
27	2121587.7458	5996285.0762	12.3770	rebar+cap-CH-HV27
28	2122557.9546	5992668.2887	10.7590	rebar+cap-CH-HV28
118	2120587.9400	5993449.1938	40.9120	N&S painted X-v118
119	2122435.1972	5992737.6910	17.6720	set rebar+cap
120	2121504.4735	5995576.6850	12.6760	set rebar+cap
121	2120584.2338	5996530.6068	42.1370	set 100d
122	2120046.5284	5996639.8624	52.4660	Set magns
123	2121030.0772	5997102.6621	11.9980	set magns
125	2121313.4971	5997773.0381	11.3720	Set magns
126	2119700.8683	5996855.7789	48.8160	Set magns
40	2118105.8497	5999130.7640	126.1040	Set magnw
124	2119721.6914	5996453.0681	59.8668	Set magns
231	2120920.3292	5996961.0286	11.7320	N&S-ch231
127	2121348.5306	5998530.9323	9.7680	set magnw
128	2119608.3441	5996654.7719	62.4966	set 100d
129	2122951.2926	5992051.1672	14.8166	set magnw
130	2122812.7097	5992224.0288	16.4828	bdf-usc&gs-bm
131	2120506.9234	5993684.5264	52.7738	set magnw
132	2120435.5352	5992843.4360	103.9002	set ip+cap
133	2120114.0107	5992701.7154	120.7695	set magnw
134	2120508.7105	5993944.0892	82.4450	
138	2120380.8591	5994133.7964	108.3891	set magnw

Adjusted Positions and Ellipsoid Heights (FeetUS)

(Average Geoid Height = -30.000 Meters, -98.425 FeetUS)

Station	Latitude	Longitude	Ellip Ht
5	37-48-20.762455	122-26-53.280888	-87.2440
6	37-48-05.973230	122-26-52.020534	-81.2270
7	37-47-52.881348	122-26-50.412710	-32.7030
12	37-48-32.433786	122-28-24.381335	-80.2890
14	37-48-12.381962	122-28-08.409470	-2.0110
15	37-48-11.980508	122-27-56.768741	-87.8250
16	37-48-05.901128	122-27-57.229698	-37.8020
17	37-48-00.979503	122-28-09.466910	41.4760
18	37-48-17.227920	122-28-11.494365	-12.2870
225	37-48-13.753383	122-27-07.619221	-86.3840
226	37-48-12.463826	122-27-14.606820	-84.3830
25	37-47-40.823769	122-26-48.048998	52.0830
26	37-48-03.928943	122-27-23.273616	-45.0800
27	37-48-18.939758	122-27-25.677289	-86.0480
28	37-48-27.779710	122-28-10.990172	-87.6660
118	37-48-08.469319	122-28-00.745313	-57.5130
119	37-48-26.580745	122-28-10.093331	-80.7530
120	37-48-17.970096	122-27-34.480820	-85.7490

121	37-48-09.071189	122-27-22.357058	-56.2880
122	37-48-03.778755	122-27-20.855972	-45.9590
123	37-48-13.596331	122-27-15.346552	-86.4270
125	37-48-16.536140	122-27-07.068703	-87.0530
126	37-48-00.406639	122-27-18.076229	-49.6090
0	37-47-45.109351	122-26-49.322519	27.6790
124	37-48-00.529269	122-27-23.098348	-38.5582
231	37-48-12.482273	122-27-17.082451	-86.6930
127	37-48-17.038605	122-26-57.635885	-88.6570
128	37-47-59.450553	122-27-20.556147	-35.9284
129	37-48-31.539206	122-28-18.781879	-83.6084
130	37-48-30.205377	122-28-16.591871	-81.9422
131	37-48-07.717389	122-27-57.792413	-45.6512
132	37-48-06.836934	122-28-08.251683	5.4752
133	37-48-03.629318	122-28-09.932875	22.3445
134	37-48-07.788950	122-27-54.559343	-15.9800
138	37-48-06.564566	122-27-52.162600	9.9641

Convergence Angles (DMS) and Grid Factors at Stations
(Grid Azimuth = Geodetic Azimuth - Convergence)
(Elevation Factor Includes a -30.00 Meter Geoid Height Correction)

	Convergence	------- Factors -------			
Station	Angle	Scale	x	Elevation	= Combined
5	-1-11-33.76	0.99992963		1.00000417	0.99993381
6	-1-11-32.98	0.99992957		1.00000388	0.99993345
7	-1-11-32.00	0.99992951		1.00000156	0.99993108
12	-1-12-29.53	0.99992969		1.00000384	0.99993353
14	-1-12-19.75	0.99992959		1.00000010	0.99992969
15	-1-12-12.62	0.99992959		1.00000420	0.99993379
16	-1-12-12.91	0.99992957		1.00000181	0.99993137
17	-1-12-20.40	0.99992955		0.99999802	0.99992756
18	-1-12-21.64	0.99992962		1.00000059	0.99993020
225	-1-11-42.53	0.99992960		1.00000413	0.99993373
226	-1-11-46.81	0.99992960		1.00000404	0.99993363
25	-1-11-30.55	0.99992947		0.99999751	0.99992698
26	-1-11-52.12	0.99992956		1.00000216	0.99993171
27	-1-11-53.59	0.99992962		1.00000412	0.99993374
28	-1-12-21.33	0.99992967		1.00000419	0.99993386
118	-1-12-15.06	0.99992958		1.00000275	0.99993233
119	-1-12-20.78	0.99992966		1.00000386	0.99993352
120	-1-11-58.98	0.99992962		1.00000410	0.99993372
121	-1-11-51.56	0.99992958		1.00000269	0.99993227
122	-1-11-50.64	0.99992956		1.00000220	0.99993176
123	-1-11-47.26	0.99992960		1.00000413	0.99993373
125	-1-11-42.20	0.99992961		1.00000416	0.99993378
126	-1-11-48.94	0.99992954		1.00000237	0.99993192
40	-1-11-31.33	0.99992948		0.99999868	0.99992816
124	-1-11-52.01	0.99992954		1.00000184	0.99993139
231	-1-11-48.33	0.99992960		1.00000415	0.99993374
127	-1-11-36.42	0.99992962		1.00000424	0.99993386
128	-1-11-50.45	0.99992954		1.00000172	0.99993126
129	-1-12-26.10	0.99992968		1.00000400	0.99993368
130	-1-12-24.76	0.99992968		1.00000392	0.99993360
131	-1-12-13.25	0.99992957		1.00000218	0.99993176
132	-1-12-19.65	0.99992957		0.99999974	0.99992931
133	-1-12-20.68	0.99992956		0.99999893	0.99992849
134	-1-12-11.27	0.99992957		1.00000076	0.99993034
138	-1-12-09.80	0.99992957		0.99999952	0.99992909
Project Averages:	-1-12-00.06	0.99992959		1.00000229	0.99993188

Adjusted Observations and Residuals

Adjusted Measured Angle Observations (DMS)

At	From	To	Angle	Residual	StdErr	StdRes
6	7	25	358-25-23.64	0-00-00.64	3.15	0.2
6	25	7	1-34-36.36	-0-00-00.64	3.15	0.2
7	6	40	179-12-51.32	0-00-00.32	3.95	0.1
7	40	6	180-47-08.68	0-00-00.68	3.95	0.2
25	6	40	353-52-25.18	-0-00-00.82	4.27	0.2
25	40	6	6-07-34.82	-0-00-00.18	4.27	0.0
40	7	25	173-04-57.50	0-00-01.50	5.40	0.3
40	25	7	186-55-02.50	0-00-00.50	5.40	0.1
15	18	119	29-54-21.42	-0-00-03.58	3.18	1.1
15	18	120	137-05-59.65	-0-00-03.35	3.39	1.0
15	120	18	222-54-00.35	0-00-02.35	3.39	0.7
15	120	119	252-48-21.76	-0-00-02.24	3.23	0.7
18	15	14	39-01-02.12	-0-00-01.88	3.87	0.5
18	15	120	334-21-53.16	-0-00-04.84	3.16	1.5
18	15	121	347-37-40.94	-0-00-07.06	3.16	2.2
18	120	121	13-15-47.78	-0-00-01.22	3.03	0.4
18	120	15	25-38-06.84	0-00-04.84	3.16	1.5
18	120	14	64-39-08.96	0-00-02.96	3.97	0.7
18	121	15	12-22-19.06	0-00-04.06	3.16	1.3
18	121	120	346-44-12.22	0-00-00.22	3.03	0.1
120	18	119	18-23-44.87	0-00-01.87	3.04	0.6
120	18	27	173-32-25.35	-0-00-03.65	3.80	1.0
120	18	121	224-12-54.72	-0-00-02.28	3.29	0.7
120	18	15	342-44-06.49	-0-00-07.51	3.08	2.4
120	18	28	20-09-22.45	0-00-02.45	3.04	0.8
120	121	15	118-31-11.77	-0-00-03.23	3.35	1.0
120	121	18	135-47-05.28	0-00-04.28	3.29	1.3
120	121	119	154-10-50.16	0-00-06.16	3.31	1.9
120	121	27	309-19-30.63	-0-00-00.37	3.60	0.1
121	18	120	30-57-06.94	0-00-00.94	3.16	0.3
121	18	122	245-29-45.75	-0-00-00.25	4.07	0.1
121	18	123	129-02-58.95	0-00-03.95	3.69	1.1
121	120	123	98-05-52.02	-0-00-01.98	3.82	0.5
121	120	18	329-02-53.06	-0-00-01.94	3.16	0.6
121	120	122	214-32-38.81	-0-00-02.19	4.44	0.5
121	122	120	145-27-21.19	-0-00-01.81	4.44	0.4
121	122	123	243-33-13.20	-0-00-01.80	4.74	0.4
121	123	122	116-26-46.80	-0-00-01.20	4.74	0.3
121	123	120	261-54-07.98	-0-00-00.02	3.82	0.0
122	121	124	221-23-10.02	-0-00-00.98	6.24	0.2
122	121	26	287-09-34.99	0-00-00.99	8.15	0.1
122	124	26	65-46-24.98	-0-00-01.02	8.27	0.1
122	124	121	138-36-49.98	-0-00-02.02	6.24	0.3
123	121	231	0-09-38.51	-0-00-00.49	7.93	0.1
123	121	120	55-12-04.55	-0-00-01.45	3.58	0.4
123	120	121	304-47-55.45	-0-00-00.55	3.58	0.2
123	120	231	304-57-33.97	-0-00-00.03	8.48	0.0
123	231	121	359-50-21.49	-0-00-00.51	7.93	0.1
123	121	226	281-43-56.17	-0-00-36.83	11.67	3.2*
123	121	27	72-13-45.83	-0-00-03.17	3.78	0.8
123	121	125	195-00-51.35	-0-00-00.65	4.58	0.1
123	125	121	164-59-08.65	-0-00-01.35	4.58	0.3
123	125	120	220-11-13.20	-0-00-01.80	3.90	0.5
123	125	27	237-12-54.48	-0-00-03.52	4.10	0.9
123	121	225	217-39-37.03	-0-00-01.97	4.72	0.4
123	225	121	142-20-22.97	-0-00-00.03	4.72	0.0
123	121	126	318-27-13.88	-0-00-01.12	3.55	0.3
123	125	126	123-26-22.53	0-00-01.53	3.92	0.4

125	123	127	200-16-15.43	0-00-01.43	4.51	0.3
125	127	123	159-43-44.57	-0-00-02.43	4.51	0.5
125	127	120	187-36-57.82	0-00-01.82	3.79	0.5
127	125	5	136-41-52.31	-0-00-00.69	4.97	0.1
127	5	125	223-18-07.69	-0-00-00.31	4.97	0.1
126	123	128	234-45-40.28	-0-00-04.72	7.60	0.6
128	126	124	234-03-01.96	-0-00-09.04	10.80	0.8
124	128	122	270-34-00.69	-0-00-02.31	7.98	0.3
124	122	128	89-25-59.31	0-00-01.31	7.98	0.2
119	15	129	161-38-15.73	-0-00-01.27	3.72	0.3
119	15	28	185-13-17.43	-0-00-01.57	11.17	0.1
119	15	120	322-51-16.62	-0-00-00.38	3.09	0.1
119	129	28	23-35-01.71	-0-00-04.29	10.14	0.4
119	129	120	161-13-00.89	-0-00-02.11	3.59	0.6
119	129	15	198-21-44.27	-0-00-03.73	3.72	1.0
119	120	15	37-08-43.38	-0-00-00.62	3.09	0.2
119	120	129	198-46-59.11	0-00-01.11	3.59	0.3
129	119	130	1-47-06.10	0-00-01.10	6.64	0.2
129	119	12	155-39-32.14	0-00-02.14	5.19	0.4
129	12	119	204-20-27.86	-0-00-02.14	5.19	0.4
129	12	130	206-07-33.96	-0-00-02.04	9.01	0.2
131	18	16	215-00-29.96	-0-00-04.04	8.70	0.5
131	18	16	215-00-29.96	-0-00-06.04	8.70	0.7
131	18	132	312-45-52.00	-0-00-01.00	3.44	0.3
131	132	18	47-14-08.00	-0-00-01.00	3.44	0.3
131	132	16	262-14-37.96	-0-00-06.04	8.56	0.7
132	131	133	118-38-17.41	-0-00-02.59	5.71	0.5
132	131	14	274-45-48.46	-0-00-04.54	4.29	1.1
132	133	14	156-07-31.05	-0-00-00.95	6.55	0.1
132	133	131	241-21-42.59	-0-00-00.41	5.71	0.1
132	14	131	85-14-11.54	0-00-03.54	4.29	0.8
132	14	133	203-52-28.95	0-00-01.95	6.55	0.3
133	132	17	149-28-32.52	0-00-03.52	8.63	0.4
133	17	132	210-31-27.48	0-00-01.48	8.63	0.2
134	118	138	204-52-55.66	0-00-00.66	8.66	0.1
134	118	131	350-30-36.11	0-00-01.11	5.74	0.2
134	118	132	347-06-03.17	-0-00-01.83	3.93	0.5
134	132	118	12-53-56.83	-0-00-01.17	3.93	0.3
134	132	138	217-46-52.49	-0-00-00.51	7.62	0.1
134	132	131	3-24-32.94	-0-00-01.06	5.91	0.2

Adjusted Measured Distance Observations (FeetUS)

From	To	Distance	Residual	StdErr	StdRes
6	7	1331.4316	-0.0124	87.5435	0.0
6	25	2567.3115	-0.0155	0.0144	1.1
6	25	2567.3115	-0.0175	87.0053	0.0
6	7	1331.4316	-0.0114	0.0134	0.9
7	6	1331.4442	-0.0138	92.0632	0.0
7	40	793.2399	0.0159	0.0129	1.2
7	40	793.2399	0.0089	85.4220	0.0
7	6	1331.4442	-0.0168	0.0134	1.3
25	6	2567.3057	-0.0103	92.5922	0.0
25	40	446.1086	0.0106	0.0126	0.8
25	40	446.1086	0.0086	93.1542	0.0
25	6	2567.3057	-0.0093	0.0144	0.6
40	7	793.3389	0.0039	94.2334	0.0
40	25	446.0834	0.0084	0.0126	0.7
40	25	446.0834	0.0044	86.4801	0.0
40	7	793.3389	0.0039	0.0129	0.3
15	18	1297.7620	0.0210	86.4010	0.0
15	119	1823.3737	0.0067	0.0138	0.5
15	120	1888.5922	0.0042	0.0138	0.3
15	120	1888.5922	0.0032	89.5704	0.0
15	18	1297.7620	0.0190	0.0133	1.4

15	119	1823.3737	0.0057	0.0138	0.4
18	15	1297.7597	0.0197	93.1959	0.0
18	14	549.2414	0.0034	0.0127	0.3
18	120	2972.4553	0.0133	0.0148	0.9
18	121	4029.3038	0.0248	0.0157	1.6
18	120	2972.4553	0.0113	91.2530	0.0
18	121	4029.3020	0.0230	0.0157	1.5
18	15	1297.7597	0.0187	0.0133	1.4
18	14	549.2414	0.0024	0.0127	0.2
18	121	4029.3020	0.0210	90.3757	0.0
18	15	1297.7597	0.0187	0.0133	1.4
18	120	2972.4553	0.0103	0.0148	0.7
120	18	2972.4316	0.0136	88.3623	0.0
120	18	2972.4265	0.0235	88.3612	0.0
120	119	2987.8631	-0.0059	0.0148	0.4
120	27	713.3165	0.0055	0.0128	0.4
120	121	1325.8581	-0.0009	0.0134	0.1
120	15	1888.5925	0.0035	0.0138	0.3
120	18	2972.4265	0.0085	88.3623	0.0
120	28	3093.5235	-0.0225	0.0149	1.5
120	121	1325.8581	-0.0009	88.4424	0.0
120	15	1888.5925	-0.0005	0.0138	0.0
120	18	2972.4265	0.0065	0.0148	0.4
120	119	2987.8631	-0.0079	0.0148	0.5
120	27	713.3165	0.0015	0.0128	0.1
121	18	4029.2984	0.0244	89.2302	0.0
121	120	1325.8518	-0.0002	0.0134	0.0
121	122	548.8284	-0.0006	0.0127	0.0
121	18	4029.2984	0.0244	89.2257	0.0
121	123	725.9856	0.0096	0.0128	0.7
121	120	1325.8518	0.0078	91.1512	0.0
121	123	725.9856	0.0146	0.0128	1.1
121	18	4029.2984	0.0294	0.0157	1.9
121	120	1325.8518	0.0018	91.1507	0.0
121	122	548.8284	0.0024	0.0127	0.2
121	122	548.8284	0.0004	88.5512	0.0
121	120	1325.8518	0.0038	0.0134	0.3
121	123	725.9856	0.0146	0.0128	1.1
121	123	725.9856	0.0116	92.2649	0.0
121	122	548.8284	-0.0006	0.0127	0.0
121	120	1325.8518	0.0088	0.0134	0.7
122	121	548.8276	0.0006	91.0451	0.0
122	124	374.7458	-0.0022	0.0126	0.2
122	26	194.6365	0.0015	0.0124	0.1
122	124	374.7458	0.0018	89.4150	0.0
122	26	194.6365	-0.0015	0.0124	0.1
122	121	548.8276	-0.0024	0.0127	0.2
123	121	725.9568	0.0088	87.3637	0.0
123	231	179.1920	-0.0010	0.0124	0.1
123	120	1598.1239	-0.0101	0.0136	0.7
123	120	1598.1239	-0.0021	89.5716	0.0
123	121	725.9569	0.0069	0.0128	0.5
123	231	179.1920	0.0010	0.0124	0.1
123	231	179.1920	-0.0010	90.1736	0.0
123	121	725.9568	0.0058	0.0128	0.5
123	121	725.9569	0.0069	87.3637	0.0
123	226	129.0332	0.0062	0.0124	0.5
123	121	725.9597	-0.0003	87.3613	0.0
123	27	989.7332	-0.0038	0.0131	0.3
123	125	727.8748	0.0028	0.0128	0.2
123	125	727.8748	0.0008	90.0308	0.0
123	121	725.9597	0.0017	0.0128	0.1
123	120	1598.1236	-0.0124	0.0136	0.9
123	27	989.7332	0.0002	0.0131	0.0
123	121	725.9597	0.0077	87.3615	0.0

123	225	620.3835	-0.0135	0.0128	1.1
123	225	620.3835	-0.0155	90.0407	0.0
123	121	725.9597	0.0017	0.0128	0.1
123	126	1352.5455	0.0045	0.0134	0.3
123	126	1352.5455	-0.0015	0.0134	0.1
125	123	727.8748	-0.0022	89.5739	0.0
125	127	758.7552	-0.0078	0.0129	0.6
125	127	758.7552	-0.0048	90.0655	0.0
125	123	727.8748	-0.0012	0.0128	0.1
125	120	2204.7877	-0.0093	0.0141	0.7
127	125	758.7555	0.0035	89.5257	0.0
127	5	513.8560	-0.0060	0.0127	0.5
127	5	513.8560	-0.0050	89.5017	0.0
127	125	758.7555	0.0025	0.0129	0.2
126	123	1352.5389	-0.0041	91.3428	0.0
126	128	221.6987	0.0037	0.0124	0.3
128	126	221.6930	-0.0020	93.2617	0.0
128	124	231.4014	0.0024	0.0124	0.2
124	128	231.3978	-0.0012	89.2511	0.0
124	122	374.8121	-0.0009	0.0126	0.1
124	122	374.8121	-0.0029	91.0719	0.0
124	128	231.3978	-0.0012	0.0124	0.1
119	15	1823.3746	0.0046	90.1320	0.0
119	129	858.9381	0.0011	0.0130	0.1
119	28	141.1898	0.0048	0.0124	0.4
119	120	2987.8657	-0.0023	0.0148	0.2
119	129	858.9381	0.0061	90.1040	0.0
119	28	141.1898	0.0048	0.0124	0.4
119	120	2987.8657	0.0047	0.0148	0.3
119	15	1823.3746	0.0096	0.0138	0.7
119	120	2987.8657	0.0007	90.0502	0.0
119	15	1823.3746	0.0086	0.0138	0.6
119	129	858.9381	0.0051	0.0130	0.4
129	119	858.9383	0.0023	89.4927	0.0
129	130	221.5715	0.0035	0.0124	0.3
129	12	458.4018	0.0028	0.0126	0.2
129	12	458.4018	0.0048	89.3547	0.0
129	119	858.9383	0.0023	0.0130	0.2
129	130	221.5715	-0.0035	0.0124	0.3
131	16	189.3501	0.0171	0.0124	1.4
131	18	1461.4804	0.0204	88.4122	0.0
131	16	189.3501	0.0151	0.0124	1.2
131	132	845.7267	0.0077	0.0129	0.6
131	132	845.7267	0.0077	86.3141	0.0
131	18	1461.4804	0.0264	0.0135	2.0
131	16	189.3501	0.0141	0.0124	1.1
132	131	845.7435	0.0025	93.2939	0.0
132	133	351.7836	0.0016	0.0125	0.1
132	14	561.0899	0.0129	0.0127	1.0
132	133	351.7836	0.0036	87.1903	0.0
132	14	561.0899	0.0189	0.0127	1.5
132	131	845.7435	0.0115	0.0129	0.9
132	14	561.0899	0.0179	90.4737	0.0
132	131	845.7435	0.0065	0.0129	0.5
132	133	351.7836	0.0056	0.0125	0.4
133	132	351.7903	0.0023	92.4239	0.0
133	17	271.4489	0.0099	0.0125	0.8
133	17	271.4489	0.0059	85.3310	0.0
133	132	351.7903	0.0033	0.0125	0.3
134	118	502.9976	0.0016	94.4803	0.0
134	138	230.1900	-0.0000	0.0124	0.0
134	131	261.3219	-0.0021	0.0125	0.2
134	132	1103.3675	0.0055	0.0132	0.4
134	132	1103.3675	0.0015	88.5326	0.0
134	118	502.9976	0.0006	0.0127	0.0

134	138	230.1900	-0.0000	0.0124	0.0
134	131	261.3219	-0.0041	0.0125	0.3

Adjusted Zenith Observations (DMS)

From	To	Zenith	Residual	StdErr	StdRes
6	25	87-00-52.55	0-00-00.55	7.02	0.1
6	7	87-54-35.51	0-00-01.51	7.09	0.2
7	40	85-42-15.65	-0-00-02.35	7.24	0.3
7	6	92-06-28.90	-0-00-04.10	7.09	0.6
25	40	93-15-36.57	-0-00-05.43	7.73	0.7
25	6	92-59-20.34	-0-00-01.66	7.02	0.2
40	25	86-47-53.58	-0-00-05.42	7.73	0.7
40	7	94-23-30.19	-0-00-02.81	7.24	0.4
15	119	89-47-30.16	0-00-01.16	7.05	0.2
15	120	89-57-02.22	-0-00-04.78	7.04	0.7
15	18	86-40-09.17	-0-00-00.83	7.09	0.1
15	119	89-47-30.16	0-00-02.16	7.05	0.3
18	14	89-00-43.12	0-00-03.12	7.49	0.4
18	120	91-25-28.62	-0-00-00.38	7.02	0.1
18	121	90-38-02.72	0-00-06.72	7.01	1.0
18	121	90-37-54.53	-0-00-02.47	7.01	0.4
18	15	93-19-55.46	-0-00-02.54	7.09	0.4
18	14	89-00-43.12	0-00-03.12	7.49	0.4
18	15	93-19-55.46	-0-00-02.54	7.09	0.4
18	120	91-25-28.62	-0-00-00.38	7.02	0.1
120	119	89-58-05.28	-0-00-03.72	7.02	0.5
120	27	90-02-59.12	-0-00-18.88	7.29	2.6
120	121	88-44-14.96	-0-00-09.04	7.09	1.3
120	15	90-03-51.67	-0-00-58.33	7.04	8.3*
120	28	90-05-51.02	-0-00-02.98	7.02	0.4
120	15	90-03-51.67	-0-00-46.33	7.04	6.6*
120	18	88-36-17.78	-0-00-08.22	7.02	1.2
120	119	89-58-05.28	-0-00-04.72	7.02	0.7
120	27	90-02-59.12	-0-00-13.88	7.29	1.9
121	120	91-15-10.87	0-00-00.87	7.09	0.1
121	122	88-55-04.77	-0-00-04.23	7.49	0.6
121	123	92-26-52.81	0-00-03.81	7.28	0.5
121	123	92-26-52.81	0-00-07.81	7.28	1.1
121	18	89-22-56.89	-0-00-05.11	7.01	0.7
121	122	88-55-04.77	-0-00-07.23	7.49	1.0
121	120	91-15-10.87	0-00-01.87	7.09	0.3
121	123	92-26-52.81	0-00-05.81	7.28	0.8
121	122	88-55-04.77	-0-00-07.23	7.49	1.0
121	120	91-15-10.87	-0-00-03.13	7.09	0.4
122	124	89-41-50.77	-0-00-00.23	8.01	0.0
122	26	89-59-07.84	0-00-01.84	10.25	0.2
122	26	89-59-07.84	-0-00-00.16	10.25	0.0
122	121	91-04-44.86	-0-00-08.14	7.49	1.1
123	231	90-17-37.50	-0-00-00.50	10.74	0.0
123	120	89-57-07.49	-0-00-07.51	7.06	1.1
123	121	87-36-26.66	-0-00-10.34	7.28	1.4
123	231	90-17-37.50	0-00-00.50	10.74	0.0
123	121	87-36-26.94	-0-00-10.06	7.28	1.4
123	226	89-22-55.34	-0-00-09.66	13.30	0.7
123	27	89-57-55.40	-0-00-00.60	7.15	0.1
123	125	90-03-03.60	-0-00-03.40	7.28	0.5
123	121	87-36-07.64	-0-00-05.36	7.28	0.7
123	120	89-57-52.41	-0-00-00.59	7.06	0.1
123	27	89-57-55.40	0-00-00.40	7.15	0.1
123	225	90-03-37.08	-0-00-29.92	7.38	4.1*
123	121	87-36-07.64	-0-00-06.36	7.28	0.9
123	126	88-25-28.94	-0-00-14.06	7.08	2.0
123	126	88-25-29.24	-0-00-09.76	7.08	1.4
125	127	90-06-36.85	-0-00-15.15	7.26	2.1

125	123	89-57-33.18	-0-00-05.82	7.28	0.8
125	120	89-57-30.67	-0-00-12.33	7.03	1.8
127	5	89-50-08.50	-0-00-07.50	7.55	1.0
127	125	89-52-55.05	-0-00-04.95	7.26	0.7
126	128	86-32-24.25	-0-00-06.75	9.61	0.7
128	124	90-39-52.43	-0-00-12.57	9.42	1.3
124	122	91-07-11.70	-0-00-08.30	8.01	1.0
124	128	89-25-06.35	-0-00-05.65	9.42	0.6
119	129	90-10-33.39	-0-00-05.61	7.20	0.8
119	28	92-44-56.18	-0-00-03.82	12.48	0.3
119	120	90-05-02.32	-0-00-01.68	7.02	0.2
119	28	92-44-56.18	-0-00-02.82	12.48	0.2
119	120	90-05-02.32	-0-00-01.68	7.02	0.2
119	15	90-13-11.79	-0-00-08.21	7.05	1.2
119	15	90-13-11.79	-0-00-09.21	7.05	1.3
119	129	90-10-33.39	-0-00-08.61	7.20	1.2
129	130	89-44-14.00	0-00-03.00	9.61	0.3
129	12	89-35-41.15	-0-00-02.85	7.69	0.4
129	119	89-49-18.52	-0-00-09.48	7.20	1.3
129	130	89-44-14.00	-0-00-03.00	9.61	0.3
131	16	87-38-05.11	-0-00-01.89	10.41	0.2
131	16	87-38-05.11	-0-00-01.89	10.41	0.2
131	132	86-31-40.35	0-00-00.35	7.21	0.0
131	18	88-41-20.87	-0-00-01.13	7.07	0.2
131	16	87-38-05.11	-0-00-03.89	10.41	0.4
132	133	87-19-00.13	-0-00-01.87	8.14	0.2
132	14	90-47-37.43	0-00-00.43	7.47	0.1
132	14	90-47-37.43	0-00-01.43	7.47	0.2
132	131	93-29-34.23	-0-00-03.77	7.21	0.5
132	131	93-29-34.23	-0-00-04.77	7.21	0.7
132	133	87-19-00.13	-0-00-04.87	8.14	0.6
133	17	85-33-16.41	0-00-04.41	8.82	0.5
133	132	92-42-26.61	-0-00-11.39	8.14	1.4
134	138	83-39-53.50	-0-00-02.50	9.44	0.3
134	131	96-36-22.97	-0-00-03.03	8.95	0.3
134	132	88-53-30.76	0-00-05.76	7.12	0.8
134	118	94-48-10.03	0-00-06.03	7.58	0.8
134	138	83-39-53.50	0-00-02.50	9.44	0.3
134	131	96-36-22.97	-0-00-03.03	8.95	0.3

Adjusted Azimuths (DMS) and Horizontal Distances (FeetUS)

(Relative Confidence of Azimuth is in Seconds)

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence Azi	 Dist	 PPM
6	7	175-37-35.65	1330.4540 1330.5441	0.00	0.0000	0.0003
12	129	102-35-34.80	458.3598 458.3902	6.85	0.0194	42.2461
14	18	334-24-27.64	549.1210 549.1595	0.00	0.0000	0.0006
15	18	295-23-25.53	1295.4793 1295.5674	0.00	0.0000	0.0003
25	6	354-02-59.28	2563.6406 2563.8195	2.62	0.0195	7.6114
25	40	347-55-24.47	445.3545 445.3868	7.14	0.0184	41.2203
40	7	354-50-26.97	790.9547 791.0103	5.82	0.0186	23.4984
118	134	99-05-43.78	501.1973 501.2318	8.74	0.0311	61.9821
119	15	145-17-46.95	1823.2400 1823.3609	2.00	0.0129	7.0824
119	28	330-31-04.38	141.0179 141.0273	18.01	0.0196	139.2825
119	120	108-09-03.57	2987.6636 2987.8619	1.63	0.0131	4.3782
119	129	306-56-02.67	858.8768 858.9338	2.92	0.0159	18.5656
120	15	252-29-25.20	1888.4658 1888.5909	1.81	0.0109	5.7547
120	18	269-45-18.70	2971.3381 2971.5403	1.18	0.0103	3.4636
120	27	83-17-44.06	713.2688 713.3161	5.29	0.0178	25.0227
120	28	289-54-41.15	3093.3139 3093.5188	1.91	0.0194	6.2663
120	121	133-58-13.44	1325.4463 1325.5351	2.02	0.0115	8.6649
120	123	107-16-10.00	1598.0169 1598.1228	1.83	0.0109	6.8316
120	125	94-58-10.06	2204.6404 2204.7864	1.99	0.0176	7.9697
121	18	283-01-06.49	4028.7826 4029.0596	0.91	0.0124	3.0783
121	122	168-30-52.25	548.6930 548.7303	4.76	0.0147	26.7042
121	123	52-04-05.45	725.2748 725.3234	2.74	0.0104	14.3079
122	26	275-40-27.24	194.6232 194.6364	15.50	0.0215	110.3441
122	124	209-54-02.27	374.7148 374.7405	9.99	0.0195	52.0227
123	27	304-17-51.29	989.6672 989.7327	4.42	0.0170	17.1771
123	125	67-04-56.81	727.8261 727.8744	3.70	0.0176	24.1344
123	126	190-31-19.34	1351.9421 1352.0329	4.85	0.0201	14.8549
123	225	89-43-42.49	620.3419 620.3830	4.85	0.0109	17.6402
123	226	153-48-01.63	129.0171 129.0257	18.49	0.0141	109.1806

123	231	232-13-43.97	179.1777	11.66	0.0215	119.7325
			179.1896			
124	128	119-20-01.58	231.3699	14.23	0.0200	86.3040
			231.3858			
125	127	87-21-12.25	758.7034	3.82	0.0190	24.9977
			758.7536			
126	128	245-16-59.62	221.2794	14.50	0.0261	117.9141
			221.2945			
127	5	44-03-04.56	513.8197	6.58	0.0228	44.4382
			513.8537			
129	130	128-43-08.77	221.5544	13.37	0.0215	97.1036
			221.5691			
131	16	167-23-32.94	189.1758	10.06	0.0140	73.8287
			189.1887			
131	18	312-23-02.98	1460.9957	1.59	0.0124	8.4953
			1461.0965			
131	132	265-08-54.98	844.1145	3.72	0.0121	14.3139
			844.1732			
131	134	89-36-19.89	259.5690	14.32	0.0183	70.5559
			259.5869			
132	14	359-54-43.44	560.9964	4.24	0.0141	25.1771
			561.0360			
132	133	203-47-12.39	351.3726	5.34	0.0154	43.9657
			351.3976			
132	134	86-11-46.95	1103.0830	4.94	0.0198	17.9055
			1103.1604			
133	17	173-15-44.91	270.6126	9.96	0.0190	70.3563
			270.6320			
134	138	123-58-39.44	228.7681	15.28	0.0215	93.9343
			228.7842			

Error Propagation

Station Coordinate Standard Deviations (FeetUS)

Station	N	E	Elev
5	0.000000	0.000000	0.000000
6	0.000000	0.000000	0.000000
7	0.000000	0.000000	0.000000
12	0.000000	0.000000	0.000000
14	0.000000	0.000000	0.000000
15	0.000000	0.000000	0.000000
16	0.000000	0.000000	0.000000
17	0.000000	0.000000	0.000000
18	0.000000	0.000000	0.000000
225	0.000000	0.000000	0.000000
226	0.000000	0.000000	0.000000
25	0.008042	0.013239	0.000000
26	0.011039	0.011529	0.000000
27	0.009981	0.007876	0.000000
28	0.009761	0.008180	0.000000
118	0.008210	0.015004	0.000000
119	0.006361	0.006286	0.000000
120	0.006932	0.004206	0.000000
121	0.007327	0.004952	0.000000
122	0.009294	0.007625	0.000000
123	0.005954	0.004471	0.000000
125	0.007518	0.007331	0.000000
126	0.010061	0.013564	0.000000
40	0.007596	0.009110	0.010117
124	0.011607	0.011450	0.008008
31	0.008622	0.008599	0.006595
127	0.007816	0.008414	0.013329
128	0.010911	0.014202	0.008019
129	0.006150	0.007962	0.012163
130	0.009893	0.011155	0.014185
131	0.005661	0.003835	0.005099
132	0.005769	0.004711	0.008578
133	0.007771	0.005351	0.008791
134	0.009884	0.008078	0.008359
138	0.013792	0.011489	0.011209

Station Coordinate Error Ellipses (FeetUS)
Confidence Region = 95%

Station	Semi-Major Axis	Semi-Minor Axis	Azimuth of Major Axis	Elev
5	0.000000	0.000000	0-00	0.000000
6	0.000000	0.000000	0-00	0.000000
7	0.000000	0.000000	0-00	0.000000
12	0.000000	0.000000	0-00	0.000000
14	0.000000	0.000000	0-00	0.000000
15	0.000000	0.000000	0-00	0.000000
16	0.000000	0.000000	0-00	0.000000
17	0.000000	0.000000	0-00	0.000000
18	0.000000	0.000000	0-00	0.000000
225	0.000000	0.000000	0-00	0.000000
226	0.000000	0.000000	0-00	0.000000
25	0.032510	0.019513	84-16	0.000000
26	0.029366	0.025771	125-15	0.000000
27	0.024677	0.018963	12-44	0.000000
28	0.023898	0.020019	2-00	0.000000
118	0.037001	0.019583	98-15	0.000000
119	0.017848	0.012675	43-58	0.000000

120	0.016978	0.010279	177-37	0.000000
121	0.017937	0.012116	1-29	0.000000
122	0.022776	0.018631	175-06	0.000000
123	0.014584	0.010932	176-50	0.000000
125	0.019252	0.017029	39-02	0.000000
126	0.033225	0.024593	93-15	0.000000
40	0.022308	0.018581	86-56	0.019828
124	0.030284	0.025991	137-35	0.015695
231	0.024810	0.016518	44-48	0.012926
127	0.022927	0.016266	51-26	0.026124
128	0.034893	0.026537	97-38	0.015718
129	0.019495	0.015046	92-07	0.023840
130	0.028280	0.023069	116-45	0.027803
131	0.013975	0.009209	170-03	0.009993
132	0.014394	0.011190	162-05	0.016812
133	0.019049	0.013057	175-46	0.017231
134	0.024250	0.019703	173-15	0.016383
138	0.033820	0.028050	173-51	0.021970

Relative Error Ellipses (FeetUS)
Confidence Region = 95%

Stations From	To	Semi-Major Axis	Semi-Minor Axis	Azimuth of Major Axis	Vertical
6	7	0.000000	0.000000	0-00	0.000000
12	129	0.019495	0.015046	92-07	0.023840
14	18	0.000000	0.000000	0-00	0.000000
15	18	0.000000	0.000000	0-00	0.000000
25	6	0.032510	0.019513	84-16	0.000000
25	40	0.018375	0.015402	163-22	0.019828
40	7	0.022308	0.018581	86-56	0.019828
118	134	0.031065	0.021241	99-05	0.016383
119	15	0.017848	0.012675	43-58	0.000000
119	28	0.019673	0.012262	154-41	0.000000
119	120	0.023632	0.013050	20-46	0.000000
119	129	0.016117	0.011934	114-26	0.023840
120	15	0.016978	0.010279	177-37	0.000000
120	18	0.016978	0.010279	177-37	0.000000
120	27	0.019259	0.016812	32-55	0.000000
120	28	0.028980	0.018886	8-28	0.000000
120	121	0.012994	0.011434	33-57	0.000000
120	123	0.014257	0.010814	8-00	0.000000
120	125	0.021545	0.017289	19-03	0.000000
121	18	0.017937	0.012116	1-29	0.000000
121	122	0.014655	0.012646	166-21	0.000000
121	123	0.010477	0.009535	32-42	0.000000
122	26	0.021476	0.014623	95-40	0.000000
122	124	0.020073	0.017510	0-42	0.015695
123	27	0.021255	0.016948	28-22	0.000000
123	125	0.017606	0.013001	61-21	0.000000
123	126	0.031990	0.019766	92-24	0.000000
123	225	0.014584	0.010932	176-50	0.000000
123	226	0.014584	0.010932	176-50	0.000000
123	231	0.021453	0.010128	52-14	0.012926
124	128	0.019972	0.015959	117-33	0.013034
125	127	0.019494	0.013301	68-55	0.026124
126	128	0.026115	0.015521	68-18	0.015718
127	5	0.022927	0.016266	51-26	0.026124
129	130	0.021514	0.014366	128-43	0.014306
131	16	0.013975	0.009209	170-03	0.009993
131	18	0.013975	0.009209	170-03	0.009993
131	132	0.015538	0.011663	157-14	0.018032
131	134	0.018442	0.017893	118-42	0.014295
132	14	0.014394	0.011190	162-05	0.016812
132	133	0.015572	0.008891	14-59	0.014013

132	134	0.026483	0.019641	169-28	0.022005
133	17	0.019049	0.013057	175-46	0.017231
134	138	0.021489	0.016943	123-59	0.014638

Elapsed Time = 00:00:01

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Run Date: Fri Oct 12 2007 11:57:41

Summary of Files Used and Option Settings

Project Folder and Data Files

Project Name	0736-LEVELS
Project Folder	Q:\2007\07-07-036 ARUP DOYLE\STAR
Data File List 1.	0736-LEVELS.dat

Project Option Settings

STAR*NET Run Mode	: Adjust with Error Propagation
Type of Adjustment	: Lev
Project Units	: FeetUS
Input/Output Coordinate Order	: North-East
Create Coordinate File	: Yes

Instrument Standard Error Settings

Project Default Instrument Differential Levels	: 0.010000 FeetUS / Mile

Summary of Unadjusted Input Observations

Number of Entered Stations (FeetUS) = 18

Fixed Stations	Elev	Description
100	13.9400	BM-NGS-CLARK1948
101	18.8100	BM-NGS-H1444
7	65.7220	100d painted X
23	186.0490	N&S painted X
102	10.8500	NS-CH-V102
110	56.1900	CUT+CH-V110

Unused Stations	Elev	Description
1	222.7690	N&S painted X
2	47.3520	N&S painted X
3	13.7570	N&S painted X
4	10.6690	N&S painted X
5	11.1810	N&S painted X
6	17.1980	N&S tip traffic
12	18.1360	N&S painted X
14	96.4140	N&S painted X
15	10.6000	N&S painted X
16	60.6230	N&S painted X
17	139.9010	N&S painted X
18	86.1380	N&S painted X

Number of Differential Level Observations (FeetUS) = 51

From	To	Elev Diff	StdErr	Length
115	130	-0.1380	0.0031	516
130	115	0.1380	0.0031	516
23	137	20.0540	0.0027	374
137	23	-20.0510	0.0027	374
100	28	-3.1780	0.0030	479
28	100	3.1850	0.0030	479
101	130	-9.2230	0.0029	442
130	153	2.3060	0.0038	771
153	132	-1.5000	0.0032	532
132	154	4.1480	0.0027	385
154	27	-2.1620	0.0051	1380
27	157	0.5800	0.0030	469
157	115	-3.2240	0.0047	1145
115	101	9.0760	0.0035	645
153	169	31.1070	0.0044	1025
169	170	4.5200	0.0023	280
26	136	6.8970	0.0048	1239
136	13	-18.3950	0.0040	857
13	110	14.3430	0.0048	1238
102	133	3.1257	0.0035	648
133	134	-1.3850	0.0042	934
134	133	1.3910	0.0042	934
133	102	-3.1170	0.0035	653
7	25	84.7800	0.0050	1331
25	7	-84.7910	0.0050	1330
7	209	-24.6980	0.0031	513
209	135	-10.8600	0.0034	605
135	209	10.8590	0.0034	605
209	7	24.6930	0.0031	509
209	139	2.5670	0.0024	300
209	138	2.5130	0.0027	386
209	131	3.0550	0.0028	404
131	209	-3.0520	0.0028	404
28	119	6.9120	0.0021	223

119	28	-6.9140	0.0020	213
100	129	0.8840	0.0023	290
129	100	-0.8780	0.0023	290
157	120	-0.2780	0.0022	261
120	157	0.2810	0.0022	261
153	231	-0.1650	0.0019	182
153	226	2.1380	0.0019	183
153	123	0.1030	0.0019	184
123	153	-0.1040	0.0018	178
154	125	-3.1680	0.0026	351
125	154	3.1710	0.0026	350
170	121	-5.3800	0.0031	499
121	170	5.3890	0.0032	529
170	122	4.9450	0.0016	133
122	170	-4.9440	0.0016	134
169	126	5.8130	0.0029	433
126	169	-5.8160	0.0029	434

Adjustment Statistical Summary

Number of Stations = 38

Number of Observations = 51
Number of Unknowns = 32
Number of Redundant Obs = 19

Observation	Count	Sum Squares of StdRes	Error Factor
Level Data	51	26.070	1.171
Total	51	26.070	1.171

The Chi-Square Test at 5.00% Level Passed
Lower/Upper Bounds (0.685/1.315)

Adjusted Elevations and Error Propagation (FeetUS)

Station	Elev	StdDev	95%	Description
100	13.9400	0.000000	0.000000	BM-NGS-CLARK1948
101	18.8100	0.000000	0.000000	BM-NGS-H1444
1	222.7690	0.000000	0.000000	N&S painted X
2	47.3520	0.000000	0.000000	N&S painted X
3	13.7570	0.000000	0.000000	N&S painted X
4	10.6690	0.000000	0.000000	N&S painted X
5	11.1810	0.000000	0.000000	N&S painted X
6	17.1980	0.000000	0.000000	N&S tip traffic
7	65.7220	0.000000	0.000000	100d painted X
12	18.1360	0.000000	0.000000	N&S painted X
14	96.4140	0.000000	0.000000	N&S painted X
15	10.6000	0.000000	0.000000	N&S painted X
16	60.6230	0.000000	0.000000	N&S painted X
17	139.9010	0.000000	0.000000	N&S painted X
18	86.1380	0.000000	0.000000	N&S painted X
23	186.0490	0.000000	0.000000	N&S painted X
102	10.8500	0.000000	0.000000	NS-CH-V102
110	56.1900	0.000000	0.000000	CUT+CH-V110
115	9.7299	0.002510	0.004919	CNS-V115
130	9.5898	0.002365	0.004635	MAGNW-V130
137	206.1015	0.001882	0.003689	MAGN-PID-V137
28	10.7585	0.002130	0.004174	REBAR+CAP-HV28
153	11.8945	0.004170	0.008172	MAGNS-TBM153
132	10.3936	0.004779	0.009367	MAGNS-V132
154	14.5410	0.005042	0.009882	TBAR-TP154
27	12.3766	0.005023	0.009845	REBAR+CAP-HV27
157	12.9558	0.004670	0.009153	TOP POST TP157
169	43.0015	0.006066	0.011890	CN-TP169
170	47.5215	0.006489	0.012717	CN-TP170
26	53.3450	0.007946	0.015575	
136	60.2420	0.006299	0.012346	VLTE-SW-PID136
13	41.8470	0.004842	0.009491	1/2" Rebar
133	13.9714	0.002482	0.004864	MAGNS-V133
134	12.5834	0.003874	0.007592	MAGNS-V134
25	150.5075	0.003550	0.006957	NS-HV25
209	41.0265	0.002200	0.004311	CN-TBM209
135	30.1670	0.003251	0.006372	MAGN-PID-V135
139	43.5935	0.003244	0.006357	PID139-EC-SE (SS)
138	43.5395	0.003486	0.006832	PID138-CTR-DIC (SS)
131	44.0800	0.002944	0.005769	PID131-EC-NE
119	17.6715	0.002569	0.005035	REBAR+CAP-CH119
129	14.8210	0.001657	0.003248	MAGNW-CH129
120	12.6763	0.004928	0.009658	REBAR+CAP-CH120
231	11.7295	0.004564	0.008946	CNS-CH231 (SS)
226	14.0325	0.004566	0.008950	CNS-CH226 (SS)
123	11.9980	0.004370	0.008566	MAGNS-CH123
125	11.3715	0.005361	0.010507	MAGNS-CH125
121	42.1371	0.006853	0.013432	100D-CH121
122	52.4660	0.006585	0.012907	MAGNS-CH122
126	48.8160	0.006396	0.012535	MAGNS-CH126

Adjusted Observations and Residuals

Adjusted Differential Level Observations (FeetUS)

From	To	Elev Diff	Residual	StdErr	StdRes
115	130	-0.1401	-0.0021	0.0031	0.7
130	115	0.1401	0.0021	0.0031	0.7
23	137	20.0525	-0.0015	0.0027	0.6
137	23	-20.0525	-0.0015	0.0027	0.6
100	28	-3.1815	-0.0035	0.0030	1.2
28	100	3.1815	-0.0035	0.0030	1.2
101	130	-9.2202	0.0028	0.0029	1.0
130	153	2.3047	-0.0013	0.0038	0.3
153	132	-1.5009	-0.0009	0.0032	0.3
132	154	4.1473	-0.0007	0.0027	0.2
154	27	-2.1643	-0.0023	0.0051	0.5
27	157	0.5792	-0.0008	0.0030	0.3
157	115	-3.2259	-0.0019	0.0047	0.4
115	101	9.0801	0.0041	0.0035	1.2
153	169	31.1070	0.0000	0.0044	0.0
169	170	4.5200	-0.0000	0.0023	0.0
26	136	6.8970	-0.0000	0.0048	0.0
136	13	-18.3950	0.0000	0.0040	0.0
13	110	14.3430	-0.0000	0.0048	0.0
102	133	3.1214	-0.0043	0.0035	1.2
133	134	-1.3880	-0.0030	0.0042	0.7
134	133	1.3880	-0.0030	0.0042	0.7
133	102	-3.1214	-0.0044	0.0035	1.2
7	25	84.7855	0.0055	0.0050	1.1
25	7	-84.7855	0.0055	0.0050	1.1
	209	-24.6955	0.0025	0.0031	0.8
209	135	-10.8595	0.0005	0.0034	0.1
135	209	10.8595	0.0005	0.0034	0.1
209	7	24.6955	0.0025	0.0031	0.8
209	139	2.5670	0.0000	0.0024	0.0
209	138	2.5130	-0.0000	0.0027	0.0
209	131	3.0535	-0.0015	0.0028	0.5
131	209	-3.0535	-0.0015	0.0028	0.5
28	119	6.9130	0.0010	0.0021	0.5
119	28	-6.9130	0.0010	0.0020	0.5
100	129	0.8810	-0.0030	0.0023	1.3
129	100	-0.8810	-0.0030	0.0023	1.3
157	120	-0.2795	-0.0015	0.0022	0.7
120	157	0.2795	-0.0015	0.0022	0.7
153	231	-0.1650	-0.0000	0.0019	0.0
153	226	2.1380	0.0000	0.0019	0.0
153	123	0.1035	0.0005	0.0019	0.3
123	153	-0.1035	0.0005	0.0018	0.3
154	125	-3.1695	-0.0015	0.0026	0.6
125	154	3.1695	-0.0015	0.0026	0.6
170	121	-5.3844	-0.0044	0.0031	1.4
121	170	5.3844	-0.0046	0.0032	1.5
170	122	4.9445	-0.0005	0.0016	0.3
122	170	-4.9445	-0.0005	0.0016	0.3
169	126	5.8145	0.0015	0.0029	0.5
126	169	-5.8145	0.0015	0.0029	0.5

Elapsed Time = 00:00:00

JOB:Name: 0736-DL1	Date: 1-1-1994	Time: 20:18:52.09					
M Setup:North Azimuth	Units: Intern'l ft.	Scale: 1.000000	Curvature: On	Angle: Degrees			
Store:Point: 1	North: 5,000.0000	East: 5,000.0000	Elev: 13.94	BM-CLARK1948			
Store:Point: 28	North: 0.0000	East: 0.0000	Elev: 10.76	REBAR+CAP-HV28			
Lvl Lp:BS pt: 1	FS pt: 28	BS Elv: 13.94	BS Rod: 1.91	FS Rod: 5.09	BS Dst: 241.560	FS Dst: 237.240	REBAR+CAP-HV28
Store:Point: 150	North: 0.0000	East: 0.0000	Elev: 13.95	NGS-BM-CLARK1948			
Lvl Lp:BS pt: 0	FS pt: 150	BS Elv: 10.76	BS Rod: 4.96	FS Rod: 1.78	BS Dst: 238.980	FS Dst: 239.860	NGS-BM-CLARK1948
Note: NEW RUN TO HV27							
Store:Point: 2	North: 5,000.0000	East: 5,000.0000	Elev: 18.81	BM-H1444			
Store:Point: 151	North: 0.0000	East: 0.0000	Elev: 12.91	CN-TP151			
Lvl Lp:BS pt: 2	FS pt: 151	BS Elv: 18.81	BS Rod: 0.85	FS Rod: 6.75	BS Dst: 135.020	FS Dst: 137.120	CN-TP151
Store:Point: 152	North: 0.0000	East: 0.0000	Elev: 8.89	BAD-SHOT			
Lvl Lp:BS pt: 0	FS pt: 152	BS Elv: 12.91	BS Rod: 2.98	FS Rod: 7.00	BS Dst: 81.860	FS Dst: 103.320	BAD-SHOT
Store:Point: 130	North: 0.0000	East: 0.0000	Elev: 9.59	MAGNS-V130			
Lvl Lp:BS pt: 0	FS pt: 130	BS Elv: 12.91	BS Rod: 2.98	FS Rod: 6.30	BS Dst: 81.860	FS Dst: 88.100	MAGNS-V130
Store:Point: 152	North: 0.0000	East: 0.0000	Elev: 10.15	CN-TP152			
Lvl Lp:BS pt: 0	FS pt: 152	BS Elv: 9.59	BS Rod: 6.96	FS Rod: 6.40	BS Dst: 168.220	FS Dst: 170.620	CN-TP152
Store:Point: 153	North: 0.0000	East: 0.0000	Elev: 11.89	MAGNS-TBM153			
Lvl Lp:BS pt: 0	FS pt: 153	BS Elv: 10.15	BS Rod: 7.09	FS Rod: 5.35	BS Dst: 216.240	FS Dst: 216.120	MAGNS-TBM153
Store:Point: 132	North: 0.0000	East: 0.0000	Elev: 10.39	MAGNS-V132			
Lvl Lp:BS pt: 0	FS pt: 132	BS Elv: 11.89	BS Rod: 5.88	FS Rod: 7.38	BS Dst: 269.020	FS Dst: 263.160	MAGNS-V132
Store:Point: 154	North: 0.0000	East: 0.0000	Elev: 14.54	TBAR-TP154			
Lvl Lp:BS pt: 0	FS pt: 154	BS Elv: 10.39	BS Rod: 6.32	FS Rod: 2.17	BS Dst: 192.680	FS Dst: 192.060	TBAR-TP154
Store:Point: 155	North: 0.0000	East: 0.0000	Elev: 12.42	CN-TP155			
Lvl Lp:BS pt: 0	FS pt: 155	BS Elv: 14.54	BS Rod: 2.98	FS Rod: 5.11	BS Dst: 252.740	FS Dst: 253.300	CN-TP155
Store:Point: 156	North: 0.0000	East: 0.0000	Elev: 13.44	CN-TP156			
Lvl Lp:BS pt: 0	FS pt: 156	BS Elv: 12.42	BS Rod: 4.76	FS Rod: 3.73	BS Dst: 223.860	FS Dst: 222.200	CN-TP156
Store:Point: 27	North: 0.0000	East: 0.0000	Elev: 12.38	REBAR+CAP-HV27			
Lvl Lp:BS pt: 0	FS pt: 27	BS Elv: 13.44	BS Rod: 3.84	FS Rod: 4.90	BS Dst: 214.340	FS Dst: 214.480	REBAR+CAP-HV27
Store:Point: 157	North: 0.0000	East: 0.0000	Elev: 12.96	CN-TP157			
Lvl Lp:BS pt: 0	FS pt: 157	BS Elv: 12.38	BS Rod: 4.39	FS Rod: 3.81	BS Dst: 233.940	FS Dst: 234.700	CN-TP157
Store:Point: 158	North: 0.0000	East: 0.0000	Elev: 17.13	TOC-SE-TP158			
Lvl Lp:BS pt: 0	FS pt: 158	BS Elv: 12.96	BS Rod: 4.25	FS Rod: 0.08	BS Dst: 262.780	FS Dst: 265.120	TOC-SE-TP158
Store:Point: 159	North: 0.0000	East: 0.0000	Elev: 13.81	CN-TP159			
Lvl Lp:BS pt: 0	FS pt: 159	BS Elv: 17.13	BS Rod: 1.82	FS Rod: 5.15	BS Dst: 234.520	FS Dst: 232.020	CN-TP159
Store:Point: 115	North: 0.0000	East: 0.0000	Elev: 9.73	CNS-V115			
Lvl Lp:BS pt: 0	FS pt: 115	BS Elv: 13.81	BS Rod: 1.73	FS Rod: 5.80	BS Dst: 79.900	FS Dst: 70.720	CNS-V115
Store:Point: 160	North: 0.0000	East: 0.0000	Elev: 10.55	CN-TP160			
Lvl Lp:BS pt: 0	FS pt: 160	BS Elv: 9.73	BS Rod: 6.05	FS Rod: 5.24	BS Dst: 219.400	FS Dst: 220.540	CN-TP160
Store:Point: 161	North: 0.0000	East: 0.0000	Elev: 13.83	CN-TP161			

Lvl Lp:BS pt: 0	FS pt: 161	BS Elv: 10.55	BS Rod: 5.97	FS Rod: 2.69	BS Dst: 82.200	FS Dst: 82.500	CN-TP161
Store:Point: 162	North: 0.0000	East: 0.0000	Elev: 18.81	BDF-BM-H1444			
Lvl Lp:BS pt: 0	FS pt: 162	BS Elv: 13.83	BS Rod: 5.63	FS Rod: 0.65	BS Dst: 19.620	FS Dst: 20.480	BDF-BM-H1444
Note: RUN FROM TBM153 TO HV26-----							
Store:Point: 163	North: 0.0000	East: 0.0000	Elev: 14.58	MAGN-CA18-DNU			
L Lp SS:BS pt: 153	FS pt: 163	BS Elv: 11.89	BS Rod: 8.40	FS Rod: 5.71	BS Dst: 122.360	FS Dst: 21.200	MAGN-CA18-DNU
Store:Point: 164	North: 0.0000	East: 0.0000	Elev: 19.00	MAGN-CA22-DNU			
L Lp SS:BS pt: 153	FS pt: 164	BS Elv: 11.89	BS Rod: 8.40	FS Rod: 1.29	BS Dst: 122.360	FS Dst: 150.300	MAGN-CA22-DNU
Store:Point: 165	North: 0.0000	East: 0.0000	Elev: 18.78	CN-TP165			
Lvl Lp:BS pt: 153	FS pt: 165	BS Elv: 11.89	BS Rod: 8.40	FS Rod: 1.51	BS Dst: 122.360	FS Dst: 126.580	CN-TP165
Store:Point: 166	North: 0.0000	East: 0.0000	Elev: 21.03	MAGNS-CA25-DNU			
L Lp SS:BS pt: 0	FS pt: 166	BS Elv: 18.78	BS Rod: 8.64	FS Rod: 6.40	BS Dst: 127.040	FS Dst: 14.000	MAGNS-CA25-DNU
Store:Point: 167	North: 0.0000	East: 0.0000	Elev: 27.11	CN-TP167			
Lvl Lp:BS pt: 0	FS pt: 167	BS Elv: 18.78	BS Rod: 8.64	FS Rod: 0.32	BS Dst: 127.040	FS Dst: 126.920	CN-TP167
Store:Point: 168	North: 0.0000	East: 0.0000	Elev: 35.24	CN-TP168			
Lvl Lp:BS pt: 0	FS pt: 168	BS Elv: 27.11	BS Rod: 9.71	FS Rod: 1.58	BS Dst: 119.160	FS Dst: 119.360	CN-TP168
Store:Point: 169	North: 0.0000	East: 0.0000	Elev: 43.00	CN-TP169			
Lvl Lp:BS pt: 0	FS pt: 169	BS Elv: 35.24	BS Rod: 8.69	FS Rod: 0.93	BS Dst: 140.760	FS Dst: 142.260	CN-TP169
Store:Point: 170	North: 0.0000	East: 0.0000	Elev: 47.52	CN-TP170			
Lvl Lp:BS pt: 0	FS pt: 170	BS Elv: 43.00	BS Rod: 9.63	FS Rod: 5.11	BS Dst: 139.840	FS Dst: 140.340	CN-TP170
Store:Point: 171	North: 0.0000	East: 0.0000	Elev: 48.24	PKF-CA1-DNU			
L Lp SS:BS pt: 0	FS pt: 171	BS Elv: 47.52	BS Rod: 8.55	FS Rod: 7.83	BS Dst: 125.420	FS Dst: 170.380	PKF-CA1-DNU
Store:Point: 26	North: 0.0000	East: 0.0000	Elev: 53.34	MAGNW-HV26			
Lvl Lp:BS pt: 0	FS pt: 26	BS Elv: 47.52	BS Rod: 8.55	FS Rod: 2.73	BS Dst: 125.420	FS Dst: 118.720	MAGNW-HV26
Store:Point: 172	North: 0.0000	East: 0.0000	Elev: 47.52	CN-TP172/170			
Lvl Lp:BS pt: 0	FS pt: 172	BS Elv: 53.34	BS Rod: 2.61	FS Rod: 8.43	BS Dst: 123.760	FS Dst: 123.440	CN-TP172/170
Note: TP172 NOT USED							
Store:Point: 172	North: 0.0000	East: 0.0000	Elev: 58.58	CN-TP172			
Lvl Lp:BS pt: 26	FS pt: 172	BS Elv: 53.34	BS Rod: 7.46	FS Rod: 2.22	BS Dst: 210.460	FS Dst: 209.380	CN-TP172
Store:Point: 173	North: 0.0000	East: 0.0000	Elev: 62.58	CN-TP173			
Lvl Lp:BS pt: 0	FS pt: 173	BS Elv: 58.58	BS Rod: 8.91	FS Rod: 4.91	BS Dst: 156.180	FS Dst: 155.540	CN-TP173
Store:Point: 136	North: 0.0000	East: 0.0000	Elev: 60.24	VLTE-SW-PID136			
Lvl Lp:BS pt: 0	FS pt: 136	BS Elv: 62.58	BS Rod: 5.32	FS Rod: 7.66	BS Dst: 129.680	FS Dst: 130.960	VLTE-SW-PID136
Store:Point: 174	North: 0.0000	East: 0.0000	Elev: 57.71	CN-TP174			
Lvl Lp:BS pt: 0	FS pt: 174	BS Elv: 60.24	BS Rod: 1.89	FS Rod: 4.42	BS Dst: 151.200	FS Dst: 151.300	CN-TP174
Store:Point: 175	North: 0.0000	East: 0.0000	Elev: 51.22	CN-TP175			
Lvl Lp:BS pt: 0	FS pt: 175	BS Elv: 57.71	BS Rod: 3.23	FS Rod: 9.71	BS Dst: 41.300	FS Dst: 40.340	CN-TP175
Store:Point: 176	North: 0.0000	East: 0.0000	Elev: 42.48	CN-TP176			
Lvl Lp:BS pt: 0	FS pt: 176	BS Elv: 51.22	BS Rod: 0.32	FS Rod: 9.07	BS Dst: 30.660	FS Dst: 32.180	CN-TP176
Store:Point: 177	North: 0.0000	East: 0.0000	Elev: 45.18	CN-TP177			

Lvl Lp:BS pt: 0	FS pt: 177	BS Elv: 42.48	BS Rod: 5.33	FS Rod: 2.63	BS Dst: 152.020	FS Dst: 154.680	CN-TP177
Store:Point: 13	North: 0.0000	East: 0.0000	Elev: 41.84	REBAR-HV13			
Lvl Lp:BS pt: 0	FS pt: 13	BS Elv: 45.18	BS Rod: 4.61	FS Rod: 7.94	BS Dst: 53.700	FS Dst: 49.260	REBAR-HV13
Store:Point: 178	North: 0.0000	East: 0.0000	Elev: 46.02	CN-TP178			
Lvl Lp:BS pt: 0	FS pt: 178	BS Elv: 41.84	BS Rod: 9.46	FS Rod: 5.28	BS Dst: 150.220	FS Dst: 151.380	CN-TP178
Store:Point: 179	North: 0.0000	East: 0.0000	Elev: 51.67	CN-TP179			
Lvl Lp:BS pt: 0	FS pt: 179	BS Elv: 46.02	BS Rod: 9.03	FS Rod: 3.38	BS Dst: 221.680	FS Dst: 222.860	CN-TP179
Store:Point: 180	North: 0.0000	East: 0.0000	Elev: 60.81	CN-TP180			
Lvl Lp:BS pt: 0	FS pt: 180	BS Elv: 51.67	BS Rod: 9.79	FS Rod: 0.65	BS Dst: 109.780	FS Dst: 110.120	CN-TP180
Store:Point: 110	North: 0.0000	East: 0.0000	Elev: 56.19	CUT+ V110			
Lvl Lp:BS pt: 0	FS pt: 110	BS Elv: 60.81	BS Rod: 4.21	FS Rod: 8.83	BS Dst: 140.200	FS Dst: 132.400	CUT+ V110
Note: CLOSED AT 110-----CHECK OLD CA32 FROM TP179							
Store:Point: 181	North: 0.0000	East: 0.0000	Elev: 48.79	MAGNF-CA32-DNU			
Lvl Lp:BS pt: 179	FS pt: 181	BS Elv: 51.67	BS Rod: 3.31	FS Rod: 6.18	BS Dst: 78.880	FS Dst: 62.680	MAGNF-CA32-DNU
Note: BEGIN LOOP V102 THRU V133-134--------							
Store:Point: 102	North: 5,000.0000	East: 5,000.0000	Elev: 10.85	NS-CH-V102			
Store:Point: 182	North: 0.0000	East: 0.0000	Elev: 10.38	60D-TP182			
Lvl Lp:BS pt: 102	FS pt: 182	BS Elv: 10.85	BS Rod: 4.05	FS Rod: 4.52	BS Dst: 128.720	FS Dst: 130.240	60D-TP182
Store:Point: 133	North: 0.0000	East: 0.0000	Elev: 13.98	MAGNS-V133			
Lvl Lp:BS pt: 0	FS pt: 133	BS Elv: 10.38	BS Rod: 7.84	FS Rod: 4.25	BS Dst: 192.840	FS Dst: 196.180	MAGNS-V133
Store:Point: 183	North: 0.0000	East: 0.0000	Elev: 12.98	CN-TP183			
Lvl Lp:BS pt: 0	FS pt: 183	BS Elv: 13.98	BS Rod: 4.52	FS Rod: 5.52	BS Dst: 280.740	FS Dst: 280.640	CN-TP183
Store:Point: 134	North: 0.0000	East: 0.0000	Elev: 12.59	MAGNS-V134			
Lvl Lp:BS pt: 0	FS pt: 134	BS Elv: 12.98	BS Rod: 5.03	FS Rod: 5.42	BS Dst: 189.100	FS Dst: 183.500	MAGNS-V134
Store:Point: 184	North: 0.0000	East: 0.0000	Elev: 12.99	CN-TP184/183			
Lvl Lp:BS pt: 0	FS pt: 184	BS Elv: 12.59	BS Rod: 5.59	FS Rod: 5.19	BS Dst: 185.340	FS Dst: 187.260	CN-TP184/183
Store:Point: 185	North: 0.0000	East: 0.0000	Elev: 13.98	MAGNS-V133			
Lvl Lp:BS pt: 0	FS pt: 185	BS Elv: 12.99	BS Rod: 5.47	FS Rod: 4.47	BS Dst: 279.920	FS Dst: 281.600	MAGNS-V133
Store:Point: 186	North: 0.0000	East: 0.0000	Elev: 10.39	60D-TP186/182			
Lvl Lp:BS pt: 0	FS pt: 186	BS Elv: 13.98	BS Rod: 4.22	FS Rod: 7.82	BS Dst: 195.580	FS Dst: 194.020	60D-TP186/182
Store:Point: 187	North: 0.0000	East: 0.0000	Elev: 10.86	CNS-V102-CLOSE			
Lvl Lp:BS pt: 0	FS pt: 187	BS Elv: 10.39	BS Rod: 4.47	FS Rod: 3.99	BS Dst: 131.400	FS Dst: 132.060	CNS-V102-CLOSE
Note: BEGIN LOOP CH-HV7 TO NEW HV25--------							
Store:Point: 7	North: 5,000.0000	East: 5,000.0000	Elev: 65.72	100D-CH-HV7			
Store:Point: 188	North: 0.0000	East: 0.0000	Elev: 73.58	CN-TP188			
Lvl Lp:BS pt: 7	FS pt: 188	BS Elv: 65.72	BS Rod: 9.45	FS Rod: 1.58	BS Dst: 117.380	FS Dst: 119.880	CN-TP188
Store:Point: 189	North: 0.0000	East: 0.0000	Elev: 81.85	CN-TP189			
Lvl Lp:BS pt: 0	FS pt: 189	BS Elv: 73.58	BS Rod: 9.71	FS Rod: 1.45	BS Dst: 41.640	FS Dst: 41.140	CN-TP189
Store:Point: 190	North: 0.0000	East: 0.0000	Elev: 89.85	CN-TP190			
Lvl Lp:BS pt: 0	FS pt: 190	BS Elv: 81.85	BS Rod: 9.81	FS Rod: 1.81	BS Dst: 44.500	FS Dst: 46.460	CN-TP190

Store:Point: 191	North: 0.0000	East: 0.0000	Elev: 99.27	CN-TP191			
Lvl Lp:BS pt: 0	FS pt: 191	BS Elv: 89.85	BS Rod: 9.81	FS Rod: 0.39	BS Dst: 56.060	FS Dst: 57.720	CN-TP191
Store:Point: 192	North: 0.0000	East: 0.0000	Elev: 107.58	CN-TP192			
Lvl Lp:BS pt: 0	FS pt: 192	BS Elv: 99.27	BS Rod: 8.55	FS Rod: 0.24	BS Dst: 79.520	FS Dst: 77.840	CN-TP192
Store:Point: 193	North: 0.0000	East: 0.0000	Elev: 117.19	CN-TP193			
Lvl Lp:BS pt: 0	FS pt: 193	BS Elv: 107.58	BS Rod: 9.71	FS Rod: 0.10	BS Dst: 51.920	FS Dst: 49.360	CN-TP193
Store:Point: 194	North: 0.0000	East: 0.0000	Elev: 126.59	CN-TP194			
Lvl Lp:BS pt: 0	FS pt: 194	BS Elv: 117.19	BS Rod: 9.76	FS Rod: 0.36	BS Dst: 52.540	FS Dst: 52.420	CN-TP194
Store:Point: 195	North: 0.0000	East: 0.0000	Elev: 136.20	CN-TP195			
Lvl Lp:BS pt: 0	FS pt: 195	BS Elv: 126.59	BS Rod: 9.79	FS Rod: 0.18	BS Dst: 93.820	FS Dst: 94.420	CN-TP195
Store:Point: 196	North: 0.0000	East: 0.0000	Elev: 144.55	CN-TP196			
Lvl Lp:BS pt: 0	FS pt: 196	BS Elv: 136.20	BS Rod: 9.72	FS Rod: 1.36	BS Dst: 74.920	FS Dst: 74.720	CN-TP196
Store:Point: 25	North: 0.0000	East: 0.0000	Elev: 150.50	NS-CH-HV25			
Lvl Lp:BS pt: 0	FS pt: 25	BS Elv: 144.55	BS Rod: 9.23	FS Rod: 3.28	BS Dst: 53.280	FS Dst: 51.880	NS-CH-HV25
Store:Point: 197	North: 0.0000	East: 0.0000	Elev: 144.55	CN-TP197/196			
Lvl Lp:BS pt: 0	FS pt: 197	BS Elv: 150.50	BS Rod: 3.26	FS Rod: 9.21	BS Dst: 51.780	FS Dst: 53.020	CN-TP197/196
Store:Point: 198	North: 0.0000	East: 0.0000	Elev: 136.20	CN-TP198/195			
Lvl Lp:BS pt: 0	FS pt: 198	BS Elv: 144.55	BS Rod: 1.25	FS Rod: 9.61	BS Dst: 74.740	FS Dst: 75.020	CN-TP198/195
Store:Point: 199	North: 0.0000	East: 0.0000	Elev: 126.59	CN-TP199/194			
Lvl Lp:BS pt: 0	FS pt: 199	BS Elv: 136.20	BS Rod: 0.16	FS Rod: 9.76	BS Dst: 94.360	FS Dst: 93.700	CN-TP199/194
Store:Point: 200	North: 0.0000	East: 0.0000	Elev: 117.19	CN-TP200/193			
Lvl Lp:BS pt: 0	FS pt: 200	BS Elv: 126.59	BS Rod: 0.27	FS Rod: 9.67	BS Dst: 52.160	FS Dst: 52.800	CN-TP200/193
Store:Point: 201	North: 0.0000	East: 0.0000	Elev: 107.58	CN-TP201/192			
Lvl Lp:BS pt: 0	FS pt: 201	BS Elv: 117.19	BS Rod: 0.09	FS Rod: 9.70	BS Dst: 49.740	FS Dst: 51.540	CN-TP201/192
Store:Point: 202	North: 0.0000	East: 0.0000	Elev: 99.26	CN-TP202/191			
Lvl Lp:BS pt: 0	FS pt: 202	BS Elv: 107.58	BS Rod: 0.14	FS Rod: 8.46	BS Dst: 77.540	FS Dst: 79.460	CN-TP202/191
Store:Point: 203	North: 0.0000	East: 0.0000	Elev: 89.84	CN-TP203/190			
Lvl Lp:BS pt: 0	FS pt: 203	BS Elv: 99.26	BS Rod: 0.21	FS Rod: 9.63	BS Dst: 57.700	FS Dst: 56.380	CN-TP203/190
Store:Point: 204	North: 0.0000	East: 0.0000	Elev: 81.84	CN-TP204/189			
Lvl Lp:BS pt: 0	FS pt: 204	BS Elv: 89.84	BS Rod: 1.66	FS Rod: 9.66	BS Dst: 46.240	FS Dst: 44.140	CN-TP204/189
Store:Point: 205	North: 0.0000	East: 0.0000	Elev: 73.57	CN-TP205/188			
Lvl Lp:BS pt: 0	FS pt: 205	BS Elv: 81.84	BS Rod: 1.16	FS Rod: 9.43	BS Dst: 40.740	FS Dst: 42.260	CN-TP205/188
Store:Point: 206	North: 0.0000	East: 0.0000	Elev: 65.71	100D-CLOSE-HV7			
Lvl Lp:BS pt: 0	FS pt: 206	BS Elv: 73.57	BS Rod: 1.83	FS Rod: 9.69	BS Dst: 120.180	FS Dst: 116.640	100D-CLOSE-HV7
Note: BEGIN LOOP HV7 TO V13*							
Store:Point: 207	North: 0.0000	East: 0.0000	Elev: 58.87	CN-TP207			
Lvl Lp:BS pt: 7	FS pt: 207	BS Elv: 65.72	BS Rod: 0.46	FS Rod: 7.31	BS Dst: 106.620	FS Dst: 108.980	CN-TP207
Store:Point: 208	North: 0.0000	East: 0.0000	Elev: 50.27	CN-TP208			
Lvl Lp:BS pt: 0	FS pt: 208	BS Elv: 58.87	BS Rod: 1.11	FS Rod: 9.71	BS Dst: 75.900	FS Dst: 75.120	CN-TP208
Store:Point: 209	North: 0.0000	East: 0.0000	Elev: 41.02	CN-TP209			

Lvl Lp:BS pt: 0	FS pt: 209	BS Elv: 50.27	BS Rod: 0.26	FS Rod: 9.50	BS Dst: 72.480	FS Dst: 73.540	CN-TP209
Store:Point: 210	North: 0.0000	East: 0.0000	Elev: 37.49	CN-TP210			
Lvl Lp:BS pt: 0	FS pt: 210	BS Elv: 41.02	BS Rod: 6.12	FS Rod: 9.65	BS Dst: 148.460	FS Dst: 147.300	CN-TP210
Store:Point: 211	North: 0.0000	East: 0.0000	Elev: 30.14	CN-TP211			
Lvl Lp:BS pt: 0	FS pt: 211	BS Elv: 37.49	BS Rod: 0.12	FS Rod: 7.47	BS Dst: 63.120	FS Dst: 63.340	CN-TP211
Store:Point: 135	North: 0.0000	East: 0.0000	Elev: 30.16	MAGN-PID-V135			
Lvl Lp:BS pt: 0	FS pt: 135	BS Elv: 30.14	BS Rod: 6.02	FS Rod: 6.00	BS Dst: 92.500	FS Dst: 90.200	MAGN-PID-V135
Store:Point: 212	North: 0.0000	East: 0.0000	Elev: 30.14	CN-TP212/211			
Lvl Lp:BS pt: 0	FS pt: 212	BS Elv: 30.16	BS Rod: 6.06	FS Rod: 6.08	BS Dst: 90.920	FS Dst: 91.160	CN-TP212/211
Store:Point: 213	North: 0.0000	East: 0.0000	Elev: 37.49	CN-TP213/210			
Lvl Lp:BS pt: 0	FS pt: 213	BS Elv: 30.14	BS Rod: 7.44	FS Rod: 0.09	BS Dst: 63.720	FS Dst: 63.440	CN-TP213/210
Store:Point: 214	North: 0.0000	East: 0.0000	Elev: 41.02	CN-TP214/209			
Lvl Lp:BS pt: 0	FS pt: 214	BS Elv: 37.49	BS Rod: 9.46	FS Rod: 5.93	BS Dst: 147.300	FS Dst: 148.420	CN-TP214/209
Store:Point: 215	North: 0.0000	East: 0.0000	Elev: 50.26	CN-TP215/208			
Lvl Lp:BS pt: 0	FS pt: 215	BS Elv: 41.02	BS Rod: 9.59	FS Rod: 0.34	BS Dst: 70.100	FS Dst: 72.500	CN-TP215/208
Store:Point: 216	North: 0.0000	East: 0.0000	Elev: 58.87	CN-TP216/207			
Lvl Lp:BS pt: 0	FS pt: 216	BS Elv: 50.26	BS Rod: 9.76	FS Rod: 1.15	BS Dst: 75.180	FS Dst: 75.560	CN-TP216/207
Store:Point: 217	North: 0.0000	East: 0.0000	Elev: 65.72	10D-CLOSE-HV7			
Lvl Lp:BS pt: 0	FS pt: 217	BS Elv: 58.87	BS Rod: 7.26	FS Rod: 0.41	BS Dst: 107.400	FS Dst: 108.280	10D-CLOSE-HV7
Note: BEGIN LOOP TO PID-CH-HV131----------							
Store:Point: 139	North: 0.0000	East: 0.0000	Elev: 43.59	PID139-CTR-DIC			
L Lp SS:BS pt: 209	FS pt: 139	BS Elv: 41.02	BS Rod: 9.05	FS Rod: 6.48	BS Dst: 197.640	FS Dst: 102.600	PID139-CTR-DIC
Store:Point: 138	North: 0.0000	East: 0.0000	Elev: 43.54	PID138-CTR-DIC			
L Lp SS:BS pt: 209	FS pt: 138	BS Elv: 41.02	BS Rod: 9.05	FS Rod: 6.53	BS Dst: 197.640	FS Dst: 188.320	PID138-CTR-DIC
Store:Point: 131	North: 0.0000	East: 0.0000	Elev: 44.08	PID131-NE-COR-EC			
Lvl Lp:BS pt: 209	FS pt: 131	BS Elv: 41.02	BS Rod: 9.05	FS Rod: 5.99	BS Dst: 197.640	FS Dst: 206.540	PID131-NE-COR-EC
Store:Point: 139	North: 0.0000	East: 0.0000	Elev: 43.59	PID139-SE-COR-EC			
Store:Point: 218	North: 0.0000	East: 0.0000	Elev: 41.03	TBM-209-CLOSE			
Lvl Lp:BS pt: 0	FS pt: 218	BS Elv: 44.08	BS Rod: 6.22	FS Rod: 9.27	BS Dst: 202.060	FS Dst: 201.540	TBM-209-CLOSE
Note: RUN TO CA-119----							
Store:Point: 119	North: 0.0000	East: 0.0000	Elev: 17.67	REBAR+CAP-CA119			
Lvl Lp:BS pt: 28	FS pt: 119	BS Elv: 10.76	BS Rod: 9.81	FS Rod: 2.90	BS Dst: 118.480	FS Dst: 104.280	REBAR+CAP-CA119
Store:Point: 219	North: 0.0000	East: 0.0000	Elev: 10.76	CLOSE-CH-HV28			
Lvl Lp:BS pt: 0	FS pt: 219	BS Elv: 17.67	BS Rod: 2.49	FS Rod: 9.40	BS Dst: 104.720	FS Dst: 108.040	CLOSE-CH-HV28
Note: RUN TO CA129-------							
Store:Point: 129	North: 0.0000	East: 0.0000	Elev: 14.82	MAGNW-CA129			
Lvl Lp:BS pt: 1	FS pt: 129	BS Elv: 13.94	BS Rod: 5.55	FS Rod: 4.66	BS Dst: 152.640	FS Dst: 136.920	MAGNW-CA129
Store:Point: 220	North: 0.0000	East: 0.0000	Elev: 13.95	CLOSE-CLARK1947			
Lvl Lp:BS pt: 0	FS pt: 220	BS Elv: 14.82	BS Rod: 4.61	FS Rod: 5.49	BS Dst: 143.600	FS Dst: 145.980	CLOSE-CLARK1947
Note: RUN TO CA120--------							

Store:Point: 120	North: 0.0000	East: 0.0000	Elev: 12.68	REBAR+CAP-CA120			
Lvl Lp:BS pt: 157	FS pt: 120	BS Elv: 12.96	BS Rod: 3.45	FS Rod: 3.73	BS Dst: 132.140	FS Dst: 129.300	REBAR+CAP-CA120
Store:Point: 221	North: 0.0000	East: 0.0000	Elev: 12.96	CN-TP157-CLOSE			
Lvl Lp:BS pt: 0	FS pt: 221	BS Elv: 12.68	BS Rod: 3.56	FS Rod: 3.27	BS Dst: 130.500	FS Dst: 130.680	CN-TP157-CLOSE
Note: RUN TO CA123-----							
Store:Point: 222	North: 0.0000	East: 0.0000	Elev: 11.73	CNS-CH231			
L Lp SS:BS pt: 153	FS pt: 222	BS Elv: 11.89	BS Rod: 7.40	FS Rod: 7.57	BS Dst: 81.300	FS Dst: 100.700	CNS-CH231
Store:Point: 223	North: 0.0000	East: 0.0000	Elev: 14.03	CNS-CH226			
L Lp SS:BS pt: 153	FS pt: 223	BS Elv: 11.89	BS Rod: 7.40	FS Rod: 5.26	BS Dst: 81.300	FS Dst: 101.800	CNS-CH226
Store:Point: 123	North: 0.0000	East: 0.0000	Elev: 12.00	MAGNS-CA123			
Lvl Lp:BS pt: 153	FS pt: 123	BS Elv: 11.89	BS Rod: 7.40	FS Rod: 7.30	BS Dst: 81.300	FS Dst: 102.280	MAGNS-CA123
Store:Point: 224	North: 0.0000	East: 0.0000	Elev: 11.89	MAGNS-TBM153			
Lvl Lp:BS pt: 0	FS pt: 224	BS Elv: 12.00	BS Rod: 6.94	FS Rod: 7.05	BS Dst: 96.340	FS Dst: 81.520	MAGNS-TBM153
Note: RUN TO CA125------							
Store:Point: 125	North: 0.0000	East: 0.0000	Elev: 11.37	MAGNS-			
Lvl Lp:BS pt: 154	FS pt: 125	BS Elv: 14.54	BS Rod: 2.12	FS Rod: 5.28	BS Dst: 174.800	FS Dst: 176.660	MAGNS-
Store:Point: 125	North: 0.0000	East: 0.0000	Elev: 11.37	MAGNS-CA125			
Store:Point: 225	North: 0.0000	East: 0.0000	Elev: 14.54	CLOSE-TP154			
Lvl Lp:BS pt: 0	FS pt: 225	BS Elv: 11.37	BS Rod: 5.20	FS Rod: 2.02	BS Dst: 175.740	FS Dst: 174.560	CLOSE-TP154
Note: RUN TO CA121 AND CA126--------							
Store:Point: 226	North: 0.0000	East: 0.0000	Elev: 45.31	TC-TP226			
Lvl Lp:BS pt: 170	FS pt: 226	BS Elv: 47.52	BS Rod: 6.06	FS Rod: 8.28	BS Dst: 216.380	FS Dst: 212.260	TC-TP226
Store:Point: 121	North: 0.0000	East: 0.0000	Elev: 42.14	100D-CA121			
Lvl Lp:BS pt: 0	FS pt: 121	BS Elv: 45.31	BS Rod: 3.76	FS Rod: 6.93	BS Dst: 36.840	FS Dst: 33.660	100D-CA121
Store:Point: 227	North: 0.0000	East: 0.0000	Elev: 47.53	CN-CLOSE TP170			
Lvl Lp:BS pt: 0	FS pt: 227	BS Elv: 42.14	BS Rod: 9.72	FS Rod: 4.33	BS Dst: 284.200	FS Dst: 245.080	CN-CLOSE TP170
Note: RUN TO CA122----							
Store:Point: 122	North: 0.0000	East: 0.0000	Elev: 52.47	MAGNS-CA122			
Lvl Lp:BS pt: 170	FS pt: 122	BS Elv: 47.52	BS Rod: 7.06	FS Rod: 2.12	BS Dst: 68.220	FS Dst: 64.440	MAGNS-CA122
Store:Point: 228	North: 0.0000	East: 0.0000	Elev: 47.52	CLOSE-TP170			
Lvl Lp:BS pt: 0	FS pt: 228	BS Elv: 52.47	BS Rod: 1.90	FS Rod: 6.85	BS Dst: 67.140	FS Dst: 67.080	CLOSE-TP170
Note: RUN TO CA126-------							
Store:Point: 229	North: 0.0000	East: 0.0000	Elev: 45.78	CN-TP229			
Lvl Lp:BS pt: 169	FS pt: 229	BS Elv: 43.00	BS Rod: 5.79	FS Rod: 3.01	BS Dst: 152.640	FS Dst: 185.060	CN-TP229
Store:Point: 126	North: 0.0000	East: 0.0000	Elev: 48.81	MAGNS-CA126			
Lvl Lp:BS pt: 0	FS pt: 126	BS Elv: 45.78	BS Rod: 7.59	FS Rod: 4.56	BS Dst: 43.900	FS Dst: 51.820	MAGNS-CA126
Store:Point: 230	North: 0.0000	East: 0.0000	Elev: 45.78	CN-TP230-229			
Lvl Lp:BS pt: 0	FS pt: 230	BS Elv: 48.81	BS Rod: 4.72	FS Rod: 7.75	BS Dst: 50.600	FS Dst: 42.260	CN-TP230-229
Store:Point: 231	North: 0.0000	East: 0.0000	Elev: 43.00	CN-CLOSE-TP169			
Lvl Lp:BS pt: 0	FS pt: 231	BS Elv: 45.78	BS Rod: 4.25	FS Rod: 7.04	BS Dst: 150.600	FS Dst: 190.220	CN-CLOSE-TP169

Level loop report for Q:\2007\07-07-036 ARUP Doyle\TRAVERSE-CONTROL2007\Terrestrial data_files\0736-DL1.RW5

All distances are in feet.

BS Pt	BS Elev	BS Rod	FS Pt	FS Elev	FS Rod	Elev Diff	Descriptor
1	13.9400	1.9100	28	10.7620	5.0880	-3.1780	REBAR+CAP-HV28
Turn pt	10.7620	4.9620	150	13.9470	1.7770	3.1850	NGS-BM-CLARK1948
2	18.8100	0.8550	151	12.9110	6.7540	-5.8990	CN-TP151
Turn pt	12.9110	2.9810	152	8.8950	6.9970	-4.0160	BAD-SHOT
Turn pt	12.9110	2.9810	130	9.5870	6.3050	-3.3240	MAGNS-V130
Turn pt	9.5870	6.9640	152	10.1510	6.4000	0.5640	CN-TP152
Turn pt	10.1510	7.0920	153	11.8930	5.3500	1.7420	MAGNS-TBM153
Turn pt	11.8930	5.8830	132	10.3930	7.3830	-1.5000	MAGNS-V132
Turn pt	10.3930	6.3210	154	14.5410	2.1730	4.1480	TBAR-TP154
Turn pt	14.5410	2.9800	155	12.4160	5.1050	-2.1250	CN-TP155
Turn pt	12.4160	4.7620	156	13.4430	3.7350	1.0270	CN-TP156
Turn pt	13.4430	3.8370	27	12.3790	4.9010	-1.0640	REBAR+CAP-HV27
Turn pt	12.3790	4.3880	157	12.9590	3.8080	0.5800	CN-TP157
Turn pt	12.9590	4.2540	158	17.1340	0.0790	4.1750	TOC-SE-TP158
Turn pt	17.1340	1.8240	159	13.8080	5.1500	-3.3260	CN-TP159
Turn pt	13.8080	1.7260	115	9.7350	5.7990	-4.0730	CNS-V115
Turn pt	9.7350	6.0470	160	10.5460	5.2360	0.8110	CN-TP160
Turn pt	10.5460	5.9710	161	13.8300	2.6870	3.2840	CN-TP161
Turn pt	13.8300	5.6270	162	18.8110	0.6460	4.9810	BDF-BM-H1444
153	11.8930	8.3960	163	14.5790	5.7100	2.6860	MAGN-CA18-DNU
153	11.8930	8.3960	164	18.9980	1.2910	7.1050	MAGN-CA22-DNU
153	11.8930	8.3960	165	18.7810	1.5080	6.8880	CN-TP165
Turn pt	18.7810	8.6440	166	21.0270	6.3980	2.2460	MAGNS-CA25-DNU
Turn pt	18.7810	8.6440	167	27.1090	0.3160	8.3280	CN-TP167
Turn pt	27.1090	9.7110	168	35.2380	1.5820	8.1290	CN-TP168
Turn pt	35.2380	8.6870	169	43.0000	0.9250	7.7620	CN-TP169
Turn pt	43.0000	9.6280	170	47.5200	5.1080	4.5200	CN-TP170
Turn pt	47.5200	8.5510	171	48.2390	7.8320	0.7190	PKF-CA1-DNU
Turn pt	47.5200	8.5510	26	53.3430	2.7280	5.8230	MAGNW-HV26
Turn pt	53.3430	2.6100	172	47.5190	8.4340	-5.8240	CN-TP172/170
26	53.3430	7.4610	172	58.5800	2.2240	5.2370	CN-TP172
Turn pt	58.5800	8.9150	173	62.5830	4.9120	4.0030	CN-TP173
Turn pt	62.5830	5.3190	136	60.2400	7.6620	-2.3430	VLTE-SW-PID136
Turn pt	60.2400	1.8880	174	57.7110	4.4170	-2.5290	CN-TP174
Turn pt	57.7110	3.2260	175	51.2230	9.7140	-6.4880	CN-TP175
Turn pt	51.2230	0.3240	176	42.4780	9.0690	-8.7450	CN-TP176
Turn pt	42.4780	5.3330	177	45.1780	2.6330	2.7000	CN-TP177
Turn pt	45.1780	4.6110	13	41.8450	7.9440	-3.3330	REBAR-HV13
Turn pt	41.8450	9.4620	178	46.0240	5.2830	4.1790	CN-TP178
Turn pt	46.0240	9.0270	179	51.6700	3.3810	5.6460	CN-TP179
Turn pt	51.6700	9.7920	180	60.8120	0.6500	9.1420	CN-TP180
Turn pt	60.8120	4.2050	110	56.1880	8.8290	-4.6240	CUT+ V110
179	51.6700	3.3060	181	48.7910	6.1850	-2.8790	MAGNF-CA32-DNU
102	1[illegible]497	4.0500	182	10.3807	4.5190	-0.4690	60D-TP182
Turn pt	[illegible]807	7.8420	133	13.9757	4.2470	3.5950	MAGNS-V
Turn pt	13.9757	4.5200	183	12.9797	5.5160	-0.9960	CN-TP183

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Turn pt	12.9797	5.0340	134	12.5907	5.4230	-0.3890	MAGNS-V134
Turn pt	12.5907	5.5890	184	12.9867	5.1930	0.3960	CN-TP184/183
Turn pt	12.9867	5.4700	185	13.9817	4.4750	0.9950	MAGNS-V133
Turn pt	13.9817	4.2240	186	10.3887	7.8170	-3.5930	60D-TP186/182
Turn pt	10.3887	4.4670	187	10.8647	3.9910	0.4760	CNS-V102-CLOSE
7	65.7220	9.4450	188	73.5840	1.5830	7.8620	CN-TP188
Turn pt	73.5840	9.7130	189	81.8500	1.4470	8.2660	CN-TP189
Turn pt	81.8500	9.8140	190	89.8530	1.8110	8.0030	CN-TP190
Turn pt	89.8530	9.8060	191	99.2690	0.3900	9.4160	CN-TP191
Turn pt	99.2690	8.5540	192	107.5830	0.2400	8.3140	CN-TP192
Turn pt	107.5830	9.7080	193	117.1900	0.1010	9.6070	CN-TP193
Turn pt	117.1900	9.7570	194	126.5900	0.3570	9.4000	CN-TP194
Turn pt	126.5900	9.7880	195	136.1980	0.1800	9.6080	CN-TP195
Turn pt	136.1980	9.7190	196	144.5540	1.3630	8.3560	CN-TP196
Turn pt	144.5540	9.2290	25	150.5020	3.2810	5.9480	NS-CH-HV25
Turn pt	150.5020	3.2580	197	144.5530	9.2070	-5.9490	CN-TP197/196
Turn pt	144.5530	1.2490	198	136.1960	9.6060	-8.3570	CN-TP198/195
Turn pt	136.1960	0.1550	199	126.5880	9.7630	-9.6080	CN-TP199/194
Turn pt	126.5880	0.2670	200	117.1890	9.6660	-9.3990	CN-TP200/193
Turn pt	117.1890	0.0910	201	107.5790	9.7010	-9.6100	CN-TP201/192
Turn pt	107.5790	0.1430	202	99.2640	8.4580	-8.3150	CN-TP202/191
Turn pt	99.2640	0.2090	203	89.8450	9.6280	-9.4190	CN-TP203/190
Turn pt	89.8450	1.6590	204	81.8420	9.6620	-8.0030	CN-TP204/189
Turn pt	81.8420	1.1590	205	73.5730	9.4280	-8.2690	CN-TP205/188
Turn pt	73.5730	1.8260	206	65.7110	9.6880	-7.8620	100D-CLOSE-HV7
7	65.7220	0.4600	207	58.8690	7.3130	-6.8530	CN-TP207
Turn pt	58.8690	1.1110	208	50.2670	9.7130	-8.6020	CN-TP208
Turn pt	50.2670	0.2590	209	41.0240	9.5020	-9.2430	CN-TP209
Turn pt	41.0240	6.1170	210	37.4900	9.6510	-3.5340	CN-TP210
Turn pt	37.4900	0.1220	211	30.1410	7.4710	-7.3490	CN-TP211
Turn pt	30.1410	6.0180	135	30.1640	5.9950	0.0230	MAGN-PID-V135
Turn pt	30.1640	6.0590	212	30.1400	6.0830	-0.0240	CN-TP212/211
Turn pt	30.1400	7.4410	213	37.4880	0.0930	7.3480	CN-TP213/210
Turn pt	37.4880	9.4630	214	41.0230	5.9280	3.5350	CN-TP214/209
Turn pt	41.0230	9.5850	215	50.2630	0.3450	9.2400	CN-TP215/208
Turn pt	50.2630	9.7550	216	58.8670	1.1510	8.6040	CN-TP216/207
Turn pt	58.8670	7.2560	217	65.7160	0.4070	6.8490	10D-CLOSE-HV7
209	41.0240	9.0460	139	43.5910	6.4790	2.5670	PID139-CTR-DIC
209	41.0240	9.0460	138	43.5370	6.5330	2.5130	PID138-CTR-DIC
209	41.0240	9.0460	131	44.0790	5.9910	3.0550	PID131-NE-COR-EC
Turn pt	44.0790	6.2180	218	41.0270	9.2700	-3.0520	TBM-209-CLOSE
28	10.7620	9.8150	119	17.6740	2.9030	6.9120	REBAR+CAP-CA119
Turn pt	17.6740	2.4870	219	10.7600	9.4010	-6.9140	CLOSE-CH-HV28
1	13.9400	5.5480	129	14.8240	4.6640	0.8840	MAGNW-CA129
Turn pt	14.8240	4.6070	220	13.9460	5.4850	-0.8780	CLOSE-CLARK1947
157	12.9590	3.4540	120	12.6810	3.7320	-0.2780	REBAR+CAP-CA120
Turn pt	12.6810	3.5550	221	12.9620	3.2740	0.2810	CN-TP157-CLOSE
153	11.8930	7.4020	222	11.7280	7.5670	-0.1650	CNS-CH231
153	11.8930	7.4020	223	14.0310	5.2640	2.1380	CNS-CH226
153	1[illegible]930	7.4020	123	11.9960	7.2990	0.1030	MAGNS-CA[illegible]
Turn pt	[illegible]960	6.9420	224	11.8920	7.0460	-0.1040	MAGNS-T[illegible] 53
154	14.5410	2.1160	125	11.3730	5.2840	-3.1680	MAGNS-

Turn pt	11.3730	5.1960	225	14.5440	2.0250	3.1710	CLOSE-TP154
170	47.5200	6.0630	226	45.3070	8.2760	-2.2130	TC-TP226
Turn pt	45.3070	3.7630	121	42.1400	6.9300	-3.1670	100D-CA121
Turn pt	42.1400	9.7200	227	47.5290	4.3310	5.3890	CN-CLOSE TP170
170	47.5200	7.0640	122	52.4650	2.1190	4.9450	MAGNS-CA122
Turn pt	52.4650	1.9030	228	47.5210	6.8470	-4.9440	CLOSE-TP170
169	43.0000	5.7890	229	45.7800	3.0090	2.7800	CN-TP229
Turn pt	45.7800	7.5920	126	48.8130	4.5590	3.0330	MAGNS-CA126
Turn pt	48.8130	4.7190	230	45.7800	7.7520	-3.0330	CN-TP230-229
Turn pt	45.7800	4.2550	231	42.9970	7.0380	-2.7830	CN-CLOSE-TP169

04-05-032 PARSONS CALTRAIN
DIGITAL LEVELS- JRF
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Point	Northing	Easting	Elevation	Description
1	5,000.0000	5,000.0000	13.94	BM-CLARK1948 CLARK
2	5,000.0000	5,000.0000	18.81	BM-H1444 H1444
7	5,000.0000	5,000.0000	65.72	100D-CH-HV7
13	0.0000	0.0000	41.84	REBAR-HV13 NOT held
25	0.0000	0.0000	150.50	NS-CH-HV25
26	0.0000	0.0000	53.34	MAGNW-HV26
27	0.0000	0.0000	12.38	REBAR+CAP-HV27
28	0.0000	0.0000	10.76	REBAR+CAP-HV28
102	5,000.0000	5,000.0000	10.85	NS-CH-V102
110	0.0000	0.0000	56.19	CUT+ V110
115	0.0000	0.0000	9.73	CNS-V115
119	0.0000	0.0000	17.67	REBAR+CAP-CA119
120	0.0000	0.0000	12.68	REBAR+CAP-CA120
121	0.0000	0.0000	42.14	100D-CA121
122	0.0000	0.0000	52.47	MAGNS-CA122
123	0.0000	0.0000	12.00	MAGNS-CA123
125	0.0000	0.0000	11.37	MAGNS-CA125
126	0.0000	0.0000	48.81	MAGNS-CA126
129	0.0000	0.0000	14.82	MAGNW-CA129
130	0.0000	0.0000	9.59	MAGNS-V130
131	0.0000	0.0000	44.08	PID131-NE-COR-EC
132	0.0000	0.0000	10.39	MAGNS-V132
133	0.0000	0.0000	13.98	MAGNS-V133
134	0.0000	0.0000	12.59	MAGNS-V134
135	0.0000	0.0000	30.16	MAGN-PID-V135
136	0.0000	0.0000	60.24	VLTE-SW-PID136
138	0.0000	0.0000	43.54	PID138-CTR-DIC
139	0.0000	0.0000	43.59	PID139-SE-COR-EC
150	0.0000	0.0000	13.95	NGS-BM-CLARK1948
151	0.0000	0.0000	12.91	CN-TP151
152	0.0000	0.0000	10.15	CN-TP152
153	0.0000	0.0000	11.89	MAGNS-TBM153
154	0.0000	0.0000	14.54	TBAR-TP154
155	0.0000	0.0000	12.42	CN-TP155
156	0.0000	0.0000	13.44	CN-TP156
157	0.0000	0.0000	12.96	CN-TP157
158	0.0000	0.0000	17.13	TOC-SE-TP158
159	0.0000	0.0000	13.81	CN-TP159
160	0.0000	0.0000	10.55	CN-TP160
161	0.0000	0.0000	13.83	CN-TP161
162	0.0000	0.0000	18.81	BDF-BM-H1444
163	0.0000	0.0000	14.58	MAGN-CA18-DNU
164	0.0000	0.0000	19.00	MAGN-CA22-DNU
165	0.0000	0.0000	18.78	CN-TP165
166	0.0000	0.0000	21.03	MAGNS-CA25-DNU
167	0.0000	0.0000	27.11	CN-TP167
168	0.0000	0.0000	35.24	CN-TP168
169	0.0000	0.0000	43.00	CN-TP169
170	0.0000	0.0000	47.52	CN-TP170
171	0.0000	0.0000	48.24	PKF-CA1-DNU
172	0.0000	0.0000	58.58	CN-TP172
173	0.0000	0.0000	62.58	CN-TP173
174	0.0000	0.0000	57.71	CN-TP174
175	0.0000	0.0000	51.22	CN-TP175
176	0.0000	0.0000	42.48	CN-TP176
177	0.0000	0.0000	45.18	CN-TP177
178	0.0000	0.0000	46.02	CN-TP178

04-05-032 PARSONS CALTRAIN
DIGITAL LEVELS- JRF
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Point	Northing	Easting	Elevation	Description
179	0.0000	0.0000	51.67	CN-TP179
180	0.0000	0.0000	60.81	CN-TP180
181	0.0000	0.0000	48.79	MAGNF-CA32-DNU
182	0.0000	0.0000	10.38	60D-TP182
183	0.0000	0.0000	12.98	CN-TP183
184	0.0000	0.0000	12.99	CN-TP184/183
185	0.0000	0.0000	13.98	MAGNS-V133
186	0.0000	0.0000	10.39	60D-TP186/182
187	0.0000	0.0000	10.86	CNS-V102-CLOSE
188	0.0000	0.0000	73.58	CN-TP188
189	0.0000	0.0000	81.85	CN-TP189
190	0.0000	0.0000	89.85	CN-TP190
191	0.0000	0.0000	99.27	CN-TP191
192	0.0000	0.0000	107.58	CN-TP192
193	0.0000	0.0000	117.19	CN-TP193
194	0.0000	0.0000	126.59	CN-TP194
195	0.0000	0.0000	136.20	CN-TP195
196	0.0000	0.0000	144.55	CN-TP196
197	0.0000	0.0000	144.55	CN-TP197/196
198	0.0000	0.0000	136.20	CN-TP198/195
199	0.0000	0.0000	126.59	CN-TP199/194
200	0.0000	0.0000	117.19	CN-TP200/193
201	0.0000	0.0000	107.58	CN-TP201/192
202	0.0000	0.0000	99.26	CN-TP202/191
203	0.0000	0.0000	89.84	CN-TP203/190
204	0.0000	0.0000	81.84	CN-TP204/189
205	0.0000	0.0000	73.57	CN-TP205/188
206	0.0000	0.0000	65.71	100D-CLOSE-HV7
207	0.0000	0.0000	58.87	CN-TP207
208	0.0000	0.0000	50.27	CN-TP208
209	0.0000	0.0000	41.02	CN-TP209
210	0.0000	0.0000	37.49	CN-TP210
211	0.0000	0.0000	30.14	CN-TP211
212	0.0000	0.0000	30.14	CN-TP212/211
213	0.0000	0.0000	37.49	CN-TP213/210
214	0.0000	0.0000	41.02	CN-TP214/209
215	0.0000	0.0000	50.26	CN-TP215/208
216	0.0000	0.0000	58.87	CN-TP216/207
217	0.0000	0.0000	65.72	10D-CLOSE-HV7
218	0.0000	0.0000	41.03	TBM-209-CLOSE
219	0.0000	0.0000	10.76	CLOSE-CH-HV28
220	0.0000	0.0000	13.95	CLOSE-CLARK1947
221	0.0000	0.0000	12.96	CN-TP157-CLOSE
222	0.0000	0.0000	11.73	CNS-CH231
223	0.0000	0.0000	14.03	CNS-CH226
224	0.0000	0.0000	11.89	MAGNS-TBM153
225	0.0000	0.0000	14.54	CLOSE-TP154
226	0.0000	0.0000	45.31	TC-TP226
227	0.0000	0.0000	47.53	CN-CLOSE TP170
228	0.0000	0.0000	47.52	CLOSE-TP170
229	0.0000	0.0000	45.78	CN-TP229
230	0.0000	0.0000	45.78	CN-TP230-229
231	0.0000	0.0000	43.00	CN-CLOSE-TP169

Terrestrial data

Project : 0736-CONTROL

User name	station247	**Date & Time**	5:49:56 AM 9/26/2007
Coordinate System	US State Plane 1983	**Zone**	California Zone 3 0403
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD29	**Geoid Model**	GEOID03
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

Instrument Setup	Back Sight	Fore Sight	Horiz Angle	Vertical Angle	Slope Dist	Inst Ht	Tgt Ht
6	7	7	0°00'00"	87°54'~~29~~ 35"	1331.~~432~~ 444sft	5.302sft	5.374sft
6	7	25	358°25'23"	87°00'41" 52	2567.~~304~~ 327sft	5.302sft	5.837sft
6	25	25	0°00'00"	87°00'42"	2567.305sft	5.302sft	5.837sft
6	25	10000	1°34'37"	87°54'29"	1331.431sft	5.302sft	5.374sft
7	6	6	0°00'00"	92°06'27"	1331.447sft	5.638sft	5.223sft
7	6	40	179°12'51"	85°42'14"	793.218sft	5.638sft	4.685sft
7	40	40	0°00'00"	85°42'16"	793.224sft	5.638sft	4.685sft
7	40	10001	180°47'08"	92°06'27"	1331.449sft	5.638sft	5.223sft
25	6	6	0°00'00"	92°59'11"	2567.296sft	5.647sft	5.223sft
25	6	10002	353°52'26"	93°15'41"	446.095sft	5.647sft	4.685sft
25	40	40	0°00'00"	93°15'40"	446.096sft	5.647sft	4.685sft
25	40	10003	6°07'35"	92°59'11"	2567.295sft	5.647sft	5.223sft
40	7	7	0°00'00"	94°23'30"	793.335sft	4.974sft	4.619sft
40	7	10004	173°04'56"	86°47'57"	446.075sft	4.974sft	5.489sft
40	25	25	0°00'00"	86°47'59"	446.079sft	4.974sft	5.489sft
40	25	10005	186°55'02"	94°23'30"	793.336sft	4.974sft	4.619sft
15	18	18	0°00'00"	86°39'58"	1297.734sft	5.697sft	5.594sft
15	18	18	0°00'00"	86°40'05"	1297.736sft	5.697sft	5.594sft
15	18	119	29°54'25"	89°47'21"	1823.360sft	5.697sft	5.322sft
15	18	120	137°06'03"	89°56'59"	1888.581sft	5.697sft	5.322sft
15	120	120	0°00'00"	89°56'56"	1888.576sft	5.697sft	5.312sft
15	120	10006	222°53'58"	86°40'05"	1297.734sft	5.697sft	5.594sft
15	120	10007	252°48'24"	89°47'20"	1823.355sft	5.697sft	5.322sft
18	15	15	0°00'00"	93°19'53"	1297.732sft	5.569sft	5.712sft
18	15	10008	39°01'04"	89°00'38"	549.235sft	5.569sft	4.770sft
18	15	10009	334°21'58"	91°25'17"	2972.425sft	5.569sft	5.312sft

18	15	121	3[illegible]°37'48"	90°37'39"	4029.255sft	5.569sft	5.3[illegible]sft
18	120	120	0°00'00"	91°25'17"	2972.426sft	5.569sft	5.312sft
18	120	10010	13°15'49"	90°37'40"	4029.255sft	5.569sft	5.472sft
18	120	10011	25°38'02"	93°19'53"	1297.734sft	5.569sft	5.712sft
18	120	10012	64°39'06"	89°00'38"	549.236sft	5.569sft	4.770sft
18	121	121	0°00'00"	90°37'40"	4029.257sft	5.569sft	5.472sft
18	121	10013	12°22'15"	93°19'53"	1297.733sft	5.569sft	5.712sft
18	121	10014	346°44'12"	91°25'17"	2972.427sft	5.569sft	5.312sft
120	18	18	0°00'00"	88°35'47"	2972.407sft	5.473sft	4.770sft
120	18	18	0°00'00"	88°36'12"	2972.403sft	5.684sft	4.770sft
120	18	10015	18°23'43"	89°57'56"	2987.857sft	5.684sft	2.533sft
120	18	27	173°32'29"	90°03'15"	713.309sft	5.684sft	5.374sft
120	18	10016	224°12'57"	88°44'19"	1325.853sft	5.684sft	5.472sft
120	18	10017	342°44'14"	90°04'42"	1888.582sft	5.684sft	5.712sft
120	18	18	0°00'00"	88°36'09"	2972.409sft	5.684sft	4.770sft
120	18	18	0°00'00"	88°36'09"	2972.412sft	5.684sft	4.770sft
120	18	18	0°00'00"	88°36'10"	2972.414sft	5.684sft	4.770sft
120	18	28	20°09'20"	90°05'41"	3093.542sft	5.684sft	2.533sft
120	121	121	0°00'00"	88°44'18"	1325.857sft	5.684sft	5.472sft
120	121	10018	118°31'15"	90°04'30"	1888.591sft	5.684sft	5.712sft
120	121	10019	135°47'01"	88°36'13"	2972.416sft	5.684sft	4.770sft
120	121	10020	154°10'44"	89°57'57"	2987.867sft	5.684sft	2.533sft
120	121	10021	309°19'31"	90°03'10"	713.314sft	5.684sft	5.374sft
121	18	18	0°00'00"	89°22'40"	4029.294sft	5.769sft	5.528sft
121	18	10022	30°57'06"	91°15'05"	1325.857sft	5.769sft	6.273sft
121	18	122	245°29'46"	88°55'07"	548.831sft	5.769sft	5.810sft
121	18	18	0°00'00"	89°22'45"	4029.291sft	5.769sft	5.528sft
121	18	123	129°02'55"	92°26'45"	725.986sft	5.769sft	4.910sft
121	120	120	0°00'00"	91°15'06"	1325.852sft	5.769sft	6.273sft
121	120	10023	98°05'54"	92°26'41"	725.981sft	5.769sft	4.910sft
121	120	10025	329°02'55"	89°22'45"	4029.287sft	5.769sft	5.528sft
121	120	120	0°00'00"	91°15'07"	1325.850sft	5.769sft	6.273sft
121	120	10024	214°32'41"	88°55'10"	548.829sft	5.769sft	5.810sft
121	122	122	0°00'00"	88°55'09"	548.830sft	5.769sft	5.810sft
121	122	10026	145°27'23"	91°15'03"	1325.854sft	5.769sft	6.273sft
121	122	10027	243°33'15"	92°26'43"	725.980sft	5.769sft	4.910sft
121	123	123	0°00'00"	92°26'45"	725.983sft	5.769sft	4.910sft
121	123	10028	116°26'48"	88°55'09"	548.831sft	5.769sft	5.810sft
121	123	10029	261°54'08"	91°15'08"	1325.848sft	5.769sft	6.273sft
122	121	121	0°00'00"	91°04'48"	548.830sft	5.739sft	5.738sft
122	121	124	221°23'11"	89°41'49"	374.750sft	5.739sft	0.320sft
122	121	26	287°09'34"	89°59'05"	194.642sft	5.739sft	4.910sft
122	124	124	0°00'00"	89°41'48"	374.746sft	5.739sft	0.320sft
122	124	10030	65°46'26"	89°59'07"	194.646sft	5.739sft	4.910sft
122	124	10031	138°36'52"	91°04'51"	548.833sft	5.739sft	5.738sft
123	121	121	0°00'00"	87°36'34"	725.947sft	5.562sft	5.738sft
123	121	10032	0°09'39"	90°17'37"	179.200sft	5.562sft	4.910sft

123	121	10033	55°12'06"	89°57'08"	1598.132sft	5.562sft	6.275sft
123	120	120	0°00'00"	89°57'10"	1598.125sft	5.562sft	6.270sft
123	120	10034	304°47'56"	87°36'34"	725.949sft	5.562sft	5.740sft
123	120	10035	304°57'34"	90°17'36"	179.197sft	5.562sft	4.910sft
123	231	231	0°00'00"	90°17'35"	179.199sft	5.563sft	4.910sft
123	231	10036	359°50'22"	87°36'34"	725.950sft	5.563sft	5.740sft
123	121	121	0°00'00"	87°36'34"	725.949sft	5.562sft	5.740sft
123	121	10037	281°44'33"	89°23'06"	129.033sft	5.562sft	4.910sft
123	121	121	0°00'00"	87°36'10"	725.957sft	5.598sft	5.843sft
123	121	10038	72°13'49"	89°57'52"	989.734sft	5.598sft	5.837sft
123	121	125	195°00'52"	90°03'04"	727.869sft	5.598sft	5.587sft
123	125	125	0°00'00"	90°03'05"	727.873sft	5.598sft	5.587sft
123	125	10039	164°59'10"	87°36'10"	725.956sft	5.598sft	5.843sft
123	125	10040	220°11'15"	89°57'46"	1598.132sft	5.598sft	5.961sft
123	125	10041	237°12'58"	89°57'51"	989.730sft	5.598sft	5.837sft
123	121	121	0°00'00"	87°36'10"	725.956sft	5.598sft	5.843sft
123	121	10042	217°39'39"	90°04'04"	620.402sft	5.598sft	4.910sft
123	225	225	0°00'00"	90°04'05"	620.403sft	5.598sft	4.910sft
123	225	10043	142°20'23"	87°36'11"	725.956sft	5.598sft	5.843sft
123	121	121	0°00'00"	87°36'12"	725.952sft	5.598sft	5.843sft
123	121	126	318°27'15"	88°25'38"	1352.547sft	5.598sft	6.000sft
123	125	125	0°00'00"	90°03'05"	727.873sft	5.600sft	5.587sft
123	125	10044	123°26'21"	88°25'34"	1352.552sft	5.600sft	6.000sft
125	123	123	0°00'00"	89°57'36"	727.877sft	5.569sft	5.472sft
125	123	127	200°16'14"	90°06'49"	758.762sft	5.569sft	5.725sft
125	127	127	0°00'00"	90°06'52"	758.762sft	5.569sft	5.725sft
125	127	10045	159°43'47"	89°57'36"	727.877sft	5.569sft	5.472sft
125	127	10046	187°36'56"	89°57'34"	2204.802sft	5.569sft	5.961sft
127	125	125	0°00'00"	89°52'53"	758.754sft	5.662sft	5.633sft
127	125	10047	136°41'53"	89°50'14"	513.863sft	5.662sft	5.728sft
127	5	5	0°00'00"	89°50'15"	513.862sft	5.662sft	5.728sft
127	5	10048	223°18'08"	89°52'56"	758.755sft	5.662sft	5.633sft
126	123	123	0°00'00"	91°34'22"	1352.547sft	5.818sft	5.656sft
126	123	128	234°45'45"	86°32'30"	221.696sft	5.818sft	5.518sft
128	126	126	0°00'00"	93°26'16"	221.696sft	5.473sft	5.869sft
128	126	10049	234°03'11"	90°40'04"	231.400sft	5.473sft	5.420sft
124	128	128	0°00'00"	89°25'11"	231.399sft	5.585sft	5.305sft
124	128	10050	270°34'03"	91°07'18"	374.813sft	5.585sft	5.663sft
124	122	122	0°00'00"	91°07'18"	374.815sft	5.585sft	5.663sft
124	122	10051	89°25'58"	89°25'11"	231.399sft	5.585sft	5.305sft
119	15	15	0°00'00"	90°13'13"	1823.370sft	5.358sft	5.499sft
119	15	129	161°38'17"	90°10'36"	858.937sft	5.358sft	5.591sft
119	15	10052	185°13'19"	92°44'55"	141.191sft	5.358sft	5.500sft
119	15	10053	322°51'17"	90°04'52"	2987.866sft	5.358sft	6.158sft
119	129	129	0°00'00"	90°10'36"	858.932sft	5.358sft	5.591sft
119	129	10054	23°35'06"	92°44'54"	141.191sft	5.358sft	5.500sft
119	129	10055	161°13'03"	90°04'51"	2987.860sft	5.358sft	6.158sft

119	129	10056	1[illegible]°21'48"	90°13'13"	1823.364sft	5.358sft	5.4[illegible]sft
119	120	120	0°00'00"	90°04'49"	2987.864sft	5.358sft	6.158sft
119	120	10057	37°08'44"	90°13'13"	1823.366sft	5.358sft	5.499sft
119	120	10058	198°46'58"	90°10'38"	858.933sft	5.358sft	5.591sft
129	119	119	0°00'00"	89°49'24"	858.935sft	5.559sft	5.390sft
129	119	130	1°47'05"	89°44'11"	221.574sft	5.559sft	4.910sft
129	119	10059	155°39'30"	89°35'42"	458.398sft	5.559sft	5.486sft
129	12	12	0°00'00"	89°35'45"	458.397sft	5.559sft	5.486sft
129	12	10060	204°20'30"	89°49'25"	858.936sft	5.559sft	5.390sft
129	12	10061	206°07'36"	89°44'17"	221.581sft	5.559sft	4.910sft

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File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

```
SC V10-70          Copyright © Trimble Navigation Ltd, 1996-2003
            Serial no 1026        23-Oct-07 12:29
            Angle Degrees         Dist US Feet          Press inch Hg
            Temp Fahrenheit       Coord N-E-Elv         H.obs Right

JOB         Job ID 0736-DOYLE
            Atmos crn Yes         C and R crn Yes       Refrac cnst 0.14
            Elev Yes              Sea level crn No

NOTE    TS  Time Date 09/04/2007 Time 08:01:43

SITE    TM  Prj Lat   <null>                  Nrth Offset 0.000
            Prj Lng   <null>                  East Offset 0.000
            Prj Hgt   <null>                  Scale       1.0000000000

SHFTGRD TM  File name <no text>

PROJ    TM  Lambert Conformal Conic 2 Parallel
            Orig Lat  36°30'00.00000"N        Orig Nrth 1640416.667
            Orig Lng  120°30'00.00000"W       Orig East 6561666.667
            Orig Hgt  0.000                   Orig Elev 0.000
            Orient 1  38°26'00"               Orient 2  37°04'00"
            Scale     <null>

COORD   NM  System Name           US State Plane 1983
            Zone Name             California Zone 3 0403
            Datum Name            NAD 1983 (Conus)
            Coord System Option   Chosen from library

LOCELL  TM  Local Rad 20925604.474            Flat.     298.2572215381

DATUM   TM  Molodensky
            Srce Rad  20925604.474            Srce Flat 298.2572235630
            Rotn X    0°00'00"                Rotn Y    0°00'00"
            Rotn Z    0°00'00"                Trans X   0.000
            Trans Y   0.000                   Trans Z   0.000
            Scale     0.00000000

COGO    NM  Azmth     From North              Dir       North-East

HGTADJ  TM  Geoid Model
            Orig Nrth 0.000                   Slope N   0.000
            Orig East 0.000                   Slope E   0.000
            Hgt Const 0.000
            Geoid     GEOID03

NOTE    NM  Q:\2007\07-07-036 ARUP Doyle\TSC\0736-CONTROL

GRDPOS  KI  Point ID 1            Nrth 2117618.880      East 6001136.482
            Class Normal          Elv  222.769          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 2            Nrth 2118994.401      East 6000948.149
            Class Normal          Elv  47.352           Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 3            Nrth 2120780.260      East 6000694.921
            Class Normal          Elv  13.757           Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 4            Nrth 2121957.306      East 6000524.082
            Class Normal          Elv  10.669           Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 5            Nrth 2121717.822      East 5998888.192
            Class Normal          Elv  11.181           Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 6            Nrth 2120220.180      East 5998958.183
            Class Normal          Elv  17.198           Code N&S tip traffic
            Obs  User Input
```

```
GRDPOS  KI  Point ID 7          Nrth 2118893.600     East 5999059.639
            Class Normal        Elv  65.722          Code 100d painted X
            Obs  User Input

GRDPOS  KI  Point ID 8          Nrth 2117702.539     East 5999237.818
            Class Normal        Elv  149.081         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 9          Nrth 2120164.445     East 5996478.936
            Class Normal        Elv  50.587          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 10         Nrth 2121572.409     East 5996198.854
            Class Normal        Elv  12.113          Code 1/2"" Rebar Wood
            Obs  User Input

GRDPOS  KI  Point ID 11         Nrth 2122517.659     East 5992748.270
            Class Normal        Elv  10.072          Code 1/2"" Rebar Wood
            Obs  User Input

GRDPOS  KI  Point ID 12         Nrth 2123051.226     East 5991603.834
            Class Normal        Elv  18.136          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 13         Nrth 2118682.666     East 5996954.204
            Class Normal        Elv  42.070          Code 1/2"" Rebar Wood
            Obs  User Input

GRDPOS  KI  Point ID 14         Nrth 2120996.531     East 5992842.575
            Class Normal        Elv  96.414          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 15         Nrth 2120936.297     East 5993775.719
            Class Normal        Elv  10.600          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 16         Nrth 2120322.309     East 5993725.818
            Class Normal        Elv  60.623          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 17         Nrth 2119845.267     East 5992733.464
            Class Normal        Elv  139.901         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 18         Nrth 2121491.778     East 5992605.374
            Class Normal        Elv  86.138          Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 19         Nrth 2120456.720     East 5991708.758
            Class Normal        Elv  217.424         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 20         Nrth 2119492.262     East 5991424.582
            Class Normal        Elv  252.050         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 21         Nrth 2121114.389     East 5990923.058
            Class Normal        Elv  241.371         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 22         Nrth 2120376.185     East 5990398.485
            Class Normal        Elv  278.582         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 23         Nrth 2122057.208     East 5990863.245
            Class Normal        Elv  186.050         Code N&S painted X
            Obs  User Input

GRDPOS  KI  Point ID 24         Nrth 2122495.493     East 5990570.919
            Class Normal        Elv  188.471         Code 1/2"" Rebar Wood
            Obs  User Input
```

```
GRDPOS  KI  Point ID 118          Nrth 2120587.945      East 5993449.226
            Class Normal          Elv  40.912           Code CH V 118
            Obs  User Input

GRDPOS  KI  Point ID 209          Nrth 2120540.151      East 5993804.114
            Class Normal          Elv  66.896           Code 100d CH 209
            Obs  User Input

GRDPOS  KI  Point ID 219          Nrth 2120401.489      East 5994209.938
            Class Normal          Elv  106.680          Code X in Sidewalk
            Obs  User Input

GRDPOS  KI  Point ID 220          Nrth 2120558.219      East 5994547.963
            Class Normal          Elv  83.353           Code Set 60d
            Obs  User Input

GRDPOS  KI  Point ID 221          Nrth 2120431.175      East 5994787.247
            Class Normal          Elv  91.270           Code Set Scribed X
            Obs  User Input

F FILE  FC  File                                Used      No
            ID        00000                     Name

COGO    NM  Azmth     From North                Dir       North-East

SITE    KI  Prj Lat   <null>                    Nrth Offset 0.000
            Prj Lng   <null>                    East Offset 0.000
            Prj Hgt   0.000                     Scale       1.0000000000

SHFTGRD KI  File name <no text>

PROJ    KI  Lambert Conformal Conic 2 Parallel
            Orig Lat  36°30'00.00000"N          Orig Nrth 1640416.667
            Orig Lng  120°30'00.00000"W         Orig East 6561666.667
            Orig Hgt  0.000                     Orig Elev 0.000
            Orient 1  38°26'00"                 Orient 2  37°04'00"
            Scale     <null>

DATUM   KI  Molodensky
            Srce Rad  20925604.474              Srce Flat 298.2572235630
            Rotn X    0°00'00"                  Rotn Y    0°00'00"
            Rotn Z    0°00'00"                  Trans X   0.000
            Trans Y   0.000                     Trans Z   0.000
            Scale     0.00000000

PLANE   KI  Orig Nrth <null>                    Orig East <null>
            Trans N   <null>                    Trans E   <null>
            Rotation  <null>                    Scale     <null>

HGTADJ  KI  Geoid Model
            Orig Nrth 0.000                     Slope N   0.000
            Orig East 0.000                     Slope E   0.000
            Hgt Const 0.000
            Geoid     GEOID03 (Conus)

COORD   NM  System Name           <no text>
            Zone Name             <no text>
            Datum Name            <no text>
            Coord System Option   Keyed in

NOTE    TS  Time Date 09/04/2007 Time 12:17:06

SURVEY  KI  Elev mask 10                        PDOP mask 6.0

SURVEY  KI  Elev mask 10                        PDOP mask 6.0

SURVEY  KI  Elev mask 10                        PDOP mask 6.0

SURVEY  KI  Elev mask 10                        PDOP mask 6.0

SURVEY EVENTKISurvey event Rover survey started

GPSANT  KI  Antenna ht 0.000                    Measuremt True
```

```
GPSPOS  SI  Point ID Berk        Lat  37°52'10.10497"N Lng  122°16'14.94501"W
            Class Normal         Hgt  173.527          Code <no text>
            Obs  User Input      H.pr <null>           V.pr <null>

GPSANT  KI  Antenna ht 0.000                  Measuremt True

GPSPOS  FD  Point ID Berk        Lat  37°52'10.10497"N Lng  122°16'14.94501"W
            Class Normal         Hgt  173.527          Code <no text>
            Obs  User Input      H.pr <null>           V.pr <null>

EQUIP   SI  Receiver  <no text>              Serial no <no text>
            Antenna   Unknown External
            Meas To   Antenna Phase Center
            Tape adj  0.000                  Serial no <no text>
            H.Offset  0.000                  V.Offset  0.000

NOTE    NM  Receiver firmware version=0.000

GPSANT  KI  Antenna ht 0.000                  Measuremt True

GPSREF  KI  Reference Berk

INIT    KI  Init event    Gained             Week          1443
            Init type     On the fly         seconds       243178.0
            Init counter  1                  Point ID      <no text>
            Survey type   Real Time          Plate H.Dist  <null>
            Plate V.Dist  <null>             Plate azimuth <null>

INIT    KI  Init event    Lost               Week          1443
            Init type     On the fly         seconds       243336.0
            Init counter  1                  Point ID      <no text>
            Survey type   Real Time          Plate H.Dist  <null>
            Plate V.Dist  <null>             Plate azimuth <null>

INIT    KI  Init event    Gained             Week          1443
            Init type     On the fly         seconds       243878.0
            Init counter  2                  Point ID      <no text>
            Survey type   Real Time          Plate H.Dist  <null>
            Plate V.Dist  <null>             Plate azimuth <null>

NOTE    TS  Time Date 09/04/2007 Time 13:02:23

INIT    KI  Init event    Lost               Week          1443
            Init type     On the fly         seconds       244940.0
            Init counter  2                  Point ID      <no text>
            Survey type   Real Time          Plate H.Dist  <null>
            Plate V.Dist  <null>             Plate azimuth <null>

INIT    KI  Init event    Gained             Week          1443
            Init type     On the fly         seconds       245226.0
            Init counter  3                  Point ID      <no text>
            Survey type   Real Time          Plate H.Dist  <null>
            Plate V.Dist  <null>             Plate azimuth <null>

EQUIP   NM  Receiver  R8-2                   Serial no 4631120599
            Antenna   R8 Model 2/SPS880 Internal
            Meas To   Bottom of antenna mount
            Tape adj  0.000                  Serial no <no text>
            H.Offset  0.000                  V.Offset  0.213

NOTE    NM  Receiver firmware version=3.200

GPSANT  KI  Antenna ht 6.562                  Measuremt Uncorrected

GPSVEC  SO  Point ID 19c         DX   -57348.371       DY   18534.949
            Class Stake out      DZ   -19469.930       Code chk 19
            Obs  Wide Area Fixed H.pr 0.056            V.pr 0.082

GPSQC1  NM  Min SVs        6                 PDOP max  2.1
            Relative DOPs  Yes               HDOP max  1.2
            Total GPS pos  48                VDOP max  1.7
            Monitor status Not monitored     RMS       30.9
            Horz SD                          Vert SD
            Star'    1443 sec 245611.0       End wk 1443   sec 245658.0
```

```
PT DGN  SO  Name           19                 To the Point

GRID D  SO  Delta N        -1.353             Delta E        0.800
            Delta Elv      0.215

INIT    KI  Init event     Lost               Week           1443
            Init type      On the fly         seconds        246220.0
            Init counter   3                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

INIT    KI  Init event     Gained             Week           1443
            Init type      On the fly         seconds        246577.0
            Init counter   4                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

GPSVEC  SO  Point ID 21c           DX   -57822.016       DY   19279.850
            Class Stake out        DZ   -18948.833       Code chk21
            Obs  Wide Area Fixed   H.pr 0.053            V.pr 0.118

GPSQC1  NM  Min SVs        6                  PDOP max  4.3
            Relative DOPs  Yes                HDOP max  1.8
            Total GPS pos  19                 VDOP max  3.9
            Monitor status Not monitored      RMS       13.2
            Horz SD                           Vert SD
            Start wk 1443 sec 246630.0        End wk 1443   sec 246650.0

PT DGN  SO  Name           21                 To the Point

GRID D  SO  Delta N        -1.401             Delta E        0.875
            Delta Elv      0.346

INIT    KI  Init event     Lost               Week           1443
            Init type      On the fly         seconds        246687.0
            Init counter   4                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

INIT    KI  Init event     Gained             Week           1443
            Init type      On the fly         seconds        246697.0
            Init counter   5                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

INIT    KI  Init event     Lost               Week           1443
            Init type      On the fly         seconds        246709.0
            Init counter   5                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

NOTE    TS  Time Date 09/04/2007 Time 13:35:39

INIT    KI  Init event     Gained             Week           1443
            Init type      On the fly         seconds        246935.0
            Init counter   6                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

INIT    KI  Init event     Lost               Week           1443
            Init type      On the fly         seconds        247064.0
            Init counter   6                  Point ID       <no text>
            Survey type    Real Time          Plate H.Dist   <null>
            Plate V.Dist   <null>             Plate azimuth  <null>

GPSVEC  SO  Point ID 20c           DX   -57904.940       DY   18151.807
            Class Stake out        DZ   -20215.345       Code chk20
            Obs  Wide Area Fixed   H.pr 0.053            V.pr 0.101
```

```
GPSQC1  NM  Min SVs        5                  PDOP max  4.4
            Relative DOPs  Yes                HDOP max  2.0
            Total GPS pos  12                 VDOP max  3.9
            Monitor status Not monitored      RMS
            Horz SD                           Vert SD
            Start wk 1443 sec 247005.0        End wk 1443   sec 247019.0

PT DGN  SO  Name           20                 To the Point

GRID D  SO  Delta N        -1.406             Delta E        0.834
            Delta Elv      0.179

INIT    KI  Init event     Gained             Week          1443
            Init type      On the fly         seconds       247759.0
            Init counter   7                  Point ID      <no text>
            Survey type    Real Time          Plate H.Dist  <null>
            Plate V.Dist   <null>             Plate azimuth <null>

INIT    KI  Init event     Lost               Week          1443
            Init type      On the fly         seconds       247866.0
            Init counter   7                  Point ID      <no text>
            Survey type    Real Time          Plate H.Dist  <null>
            Plate V.Dist   <null>             Plate azimuth <null>

NOTE    TS  Time Date 09/04/2007 Time 14:19:20

INIT    KI  Init event     Gained             Week          1443
            Init type      On the fly         seconds       249558.0
            Init counter   8                  Point ID      <no text>
            Survey type    Real Time          Plate H.Dist  <null>
            Plate V.Dist   <null>             Plate azimuth <null>

GPSVEC  CN  Point ID 119c          DX   -56705.350       DY   18160.854
            Class Normal           DZ   -19527.123       Code chk119
            Obs  Wide Area Fixed   H.pr 0.044            V.pr 0.060

GPSQC1  NM  Min SVs        7                  PDOP max  2.4
            Relative DOPs  Yes                HDOP max  1.4
            Total GPS pos  32                 VDOP max  2.0
            Monitor status Not monitored      RMS       27.8
            Horz SD                           Vert SD
            Start wk 1443 sec 249687.0        End wk 1443   sec 249721.0

GPSQC2  NM  Ttl satellites 7                  Err Scale 0.0099999998
            VCV xx    0.0001804394            VCV xy    0.0001263228
            VCV xz    -0.0000419883           VCV yy    0.0001857449
            VCV yz    -0.0000880331           VCV zz    0.0001521777

INIT    KI  Init event     Lost               Week          1443
            Init type      On the fly         seconds       249752.0
            Init counter   8                  Point ID      <no text>
            Survey type    Real Time          Plate H.Dist  <null>
            Plate V.Dist   <null>             Plate azimuth <null>

SURVEY EVENTKISurvey event Survey ended

NOTE    TS  Time Date 09/05/2007 Time 07:11:18

SURVEY  KI  Elev mask 10                      PDOP mask 6.0

SURVEY  KI  Elev mask 10                      PDOP mask 6.0

SURVEY  KI  Elev mask 10                      PDOP mask 6.0

SURVEY EVENTKISurvey event Rover survey started

GPSANT  KI  Antenna ht 0.000                  Measuremt True

GPSPOS  FD  Point ID Berk          Lat  37°52'10.10497"N Lng  122°16'14.94501"W
            Class Normal           Hgt  173.527          Code <no text>
            Obs  User Input        H.pr <null>           V.pr <null>
```

```
EQUIP   SI  Receiver  <no text>                Serial no <no text>
            Antenna   Unknown External
            Meas To   Antenna Phase Center
            Tape adj  0.000                    Serial no <no text>
            H.Offset  0.000                    V.Offset  0.000

NOTE    NM  Receiver firmware version=0.000

GPSANT  KI  Antenna ht 0.000                   Measuremt True

GPSREF  KI  Reference Berk

INIT    KI  Init event    Gained               Week          1443
            Init type     On the fly           seconds       310874.0
            Init counter  1                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

INIT    KI  Init event    Lost                 Week          1443
            Init type     On the fly           seconds       310888.0
            Init counter  1                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

NOTE    TS  Time Date 09/05/2007 Time 07:42:27

INIT    KI  Init event    Gained               Week          1443
            Init type     On the fly           seconds       312143.0
            Init counter  2                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

INIT    KI  Init event    Lost                 Week          1443
            Init type     On the fly           seconds       313049.0
            Init counter  2                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

INIT    KI  Init event    Gained               Week          1443
            Init type     On the fly           seconds       313148.0
            Init counter  3                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

INIT    KI  Init event    Lost                 Week          1443
            Init type     On the fly           seconds       313259.0
            Init counter  3                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

INIT    KI  Init event    Gained               Week          1443
            Init type     On the fly           seconds       313323.0
            Init counter  4                    Point ID      <no text>
            Survey type   Real Time            Plate H.Dist  <null>
            Plate V.Dist  <null>               Plate azimuth <null>

NOTE    TS  Time Date 09/05/2007 Time 08:18:32

EQUIP   NM  Receiver  R8-2                     Serial no 4631120599
            Antenna   R8 Model 2/SPS880 Internal
            Meas To   Bottom of antenna mount
            Tape adj  0.000                    Serial no <no text>
            H.Offset  0.000                    V.Offset  0.213

NOTE    NM  Receiver firmware version=3.200

GPSANT  KI  Antenna ht 6.562                   Measuremt Uncorrected

GPSVEC  CN  Point ID 24c          DX   -57669.137       DY   20230.201
            Class Normal          DZ   -17896.238       Code chk24
            Obs  Wide Area Fixed  H.pr 0.032            V.pr 0.045
```

```
GPSQC1  NM  Min SVs        7                  PDOP max  2.3
            Relative DOPs  Yes                HDOP max  1.3
            Total GPS pos  98                 VDOP max  2.0
            Monitor status Not monitored      RMS       15.9
            Horz SD                           Vert SD
            Start wk 1443 sec 314391.0        End wk 1443   sec 314498.0

GPSQC2  NM  Ttl satellites 7                  Err Scale 0.0077459668
            VCV xx    0.0000846               VCV xy    0.0001004122
            VCV xz    -0.000031096            VCV yy    0.0002510721
            VCV yz    -0.0000744203           VCV zz    0.0001308224

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       315822.0
            Init counter  4                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       315838.0
            Init counter  5                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       315920.0
            Init counter  5                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       315927.0
            Init counter  6                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       315954.0
            Init counter  6                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       316021.0
            Init counter  7                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

NOTE    TS  Time Date 09/05/2007 Time 08:48:53

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       316129.0
            Init counter  7                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

NOTE    TS  Time Date 09/05/2007 Time 09:26:25

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       318381.0
            Init counter  8                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       319435.0
            Init counter  8                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>
```

```
INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       319487.0
            Init counter  9                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

NOTE    TS  Time Date 09/05/2007 Time 09:59:19

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       320353.0
            Init counter  9                   Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       320410.0
            Init counter  10                  Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       320517.0
            Init counter  10                  Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       321445.0
            Init counter  11                  Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Lost                Week          1443
            Init type     On the fly          seconds       321661.0
            Init counter  11                  Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

INIT    KI  Init event    Gained              Week          1443
            Init type     On the fly          seconds       321944.0
            Init counter  12                  Point ID      <no text>
            Survey type   Real Time           Plate H.Dist  <null>
            Plate V.Dist  <null>              Plate azimuth <null>

NOTE    TS  Time Date 09/05/2007 Time 10:33:48

SURVEY EVENTKISurvey event Survey ended

NOTE    TS  Time Date 09/17/2007 Time 06:22:02

NOTE    TS  Time Date 09/19/2007 Time 07:50:38

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.85                   Temp      50.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 6            Nrth 2120220.180      East 5998958.183
            Class Normal          Elv  17.198           Code N&S tip traffic
            Obs  User Input

STN     NM  ID        6                       Theo ht   5.302
            Scale     1.0000000000            Type      Fixed

BKB     NM  6                                 -         7
            Azmth     <null>
            Face      0°00'00"                Face 2    180°00'01.62"
```

```
NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  6                               -         7
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   87°54'28.296"         V.Std Err 0°00'03"
            EDM Dist  1331.443              S.Std Err 0.013
            Code      100d painted X        Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.002
                                            V.Dist         -0.047

TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  6                               -         25
            H.Angle   358°25'24.168"        H.Std Err 0°00'03"
            V.Angle   87°00'45.144"         V.Std Err 0°00'03"
            EDM Dist  2567.326              S.Std Err 0.015
            Code      set ns-panel          Class     Normal

OBS     F2  6                               -         25
            H.Angle   178°25'25.14"         H.Std Err 0°00'03"
            V.Angle   272°59'01.248"        V.Std Err 0°00'03"
            EDM Dist  2567.328              S.Std Err 0.015
            Code      set ns-panel          Class     Normal

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  6                               -         7
            H.Angle   180°00'01.62"         H.Std Err 0°00'03"
            V.Angle   272°05'17.448"        V.Std Err 0°00'03"
            EDM Dist  1331.446              S.Std Err 0.013
            Code      100d painted X        Class     Backsight

BKB     NM  6                               -         7
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'00.972"

OBS     F1  6                               -         7
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   87°54'27.972"         V.Std Err 0°00'03"
            EDM Dist  1331.445              S.Std Err 0.013
            Code      100d painted X        Class     Backsight

TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  6                               -         25
            H.Angle   358°25'21.576"        H.Std Err 0°00'03"
            V.Angle   87°00'45.144"         V.Std Err 0°00'03"
            EDM Dist  2567.328              S.Std Err 0.015
            Code      set ns-panel          Class     Normal

OBS     F2  6                               -         25
            H.Angle   178°25'23.844"        H.Std Err 0°00'03"
            V.Angle   272°58'59.952"        V.Std Err 0°00'03"
            EDM Dist  2567.326              S.Std Err 0.015
            Code      set ns-panel          Class     Normal

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  6                               -         7
            H.Angle   180°00'00.972"        H.Std Err 0°00'03"
            V.Angle   272°05'19.068"        V.Std Err 0°00'03"
            EDM Dist  1331.444              S.Std Err 0.013
            Code      100d painted X        Class     Backsight
```

```
MTA      MA  ID         7                      Code       100d painted X
             H.Angle    0°00'00"               H.Std Err  0°00'00"
             V.Angle    87°54'34.938"          V.Std Err  0°00'00.687"
             S.Dist     1331.444               S.Std Err  0.001
             Angles     2                      BS Pt ID   7
             Distances  4

TRGET    NM  Target ht  5.837                  P.C. mm    0.0
             Prism Off  0.000

MTA      MA  ID         25                     Code       set ns-panel
             H.Angle    358°25'23.034"         H.Std Err  0°00'01.146"
             V.Angle    87°00'52.272"          V.Std Err  0°00'00.458"
             S.Dist     2567.327               S.Std Err  0.001
             Angles     2                      BS Pt ID   7
             Distances  4

RESIDUALSRR  Round      1                      ID         7
             H Ang Res  0°00'00"               V Ang Res  -0°00'06.642"
             EDM Res    -0.002

RESIDUALSRR  Round      1                      ID         25
             H Ang Res  0°00'01.134"           V Ang Res  -0°00'07.128"
             EDM Res    -0.001

RESIDUALSRR  Round      1                      ID         25
             H Ang Res  0°00'00.486"           V Ang Res  0°00'06.48"
             EDM Res    0.001

RESIDUALSRR  Round      1                      ID         7
             H Ang Res  0°00'00"               V Ang Res  0°00'07.614"
             EDM Res    0.002

RESIDUALSRR  Round      2                      ID         7
             H Ang Res  0°00'00"               V Ang Res  -0°00'06.966"
             EDM Res    0.001

RESIDUALSRR  Round      2                      ID         25
             H Ang Res  -0°00'01.458"          V Ang Res  -0°00'07.128"
             EDM Res    0.001

RESIDUALSRR  Round      2                      ID         25
             H Ang Res  -0°00'00.162"          V Ang Res  0°00'07.776"
             EDM Res    -0.001

RESIDUALSRR  Round      2                      ID         7
             H Ang Res  0°00'00"               V Ang Res  0°00'05.994"
             EDM Res    0.000

INSTR    NM  EDM        VX & S Series
             Serial no  11832                  Firmware   R7.0.35
             Mount      Not Applic             Edm o/s    <null>
             J Constant 273.9420092103         N Constant 105.675
             H.col      0°00'00.648"           V.col      -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"               EDM Prec   0.010
             VA Prec    0°00'03"               EDM (ppm)  2

ATMOS    NM  Press      29.86                  Temp       50.0
             Refrac cnst 0.142                 PPM        <null>

GRDPOS   FD  Point ID 6            Nrth 2120220.180      East 5998958.183
             Class Normal          Elv  17.198           Code N&S tip traffic
             Obs  User Input

STN      NM  ID         6                      Theo ht    5.302
             Scale      1.0000000000           Type       Fixed

BKB      NM  6                                 -          25
             Azmth      <null>
             Face 1     0°00'00"               Face 2     180°00'01.62"

NOTE     SN  Start of Rounds
```

```
TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  6                               -         25
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   87°00'42.876"         V.Std Err 0°00'03"
            EDM Dist  2567.325              S.Std Err 0.015
            Code      set ns-panel          Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.008
                                            V.Dist         -0.117

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  6                               -         10000
            H.Angle   1°34'36.804"          H.Std Err 0°00'03"
            V.Angle   87°54'25.056"         V.Std Err 0°00'03"
            EDM Dist  1331.442              S.Std Err 0.013
            Code      hor 6-25-7            Class     Normal

OBS     F2  6                               -         10000
            H.Angle   181°34'38.748"        H.Std Err 0°00'03"
            V.Angle   272°05'17.124"        V.Std Err 0°00'03"
            EDM Dist  1331.447              S.Std Err 0.013
            Code      hor 6-25-7            Class     Normal

TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  6                               -         25
            H.Angle   180°00'01.62"         H.Std Err 0°00'03"
            V.Angle   272°58'57.36"         V.Std Err 0°00'03"
            EDM Dist  2567.332              S.Std Err 0.015
            Code      set ns-panel          Class     Backsight

BKB     NM  6                               -         25
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'01.62"

OBS     F1  6                               -         25
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   87°00'42.876"         V.Std Err 0°00'03"
            EDM Dist  2567.329              S.Std Err 0.015
            Code      set ns-panel          Class     Backsight

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  6                               -         10000
            H.Angle   1°34'35.832"          H.Std Err 0°00'03"
            V.Angle   87°54'25.704"         V.Std Err 0°00'03"
            EDM Dist  1331.442              S.Std Err 0.013
            Code      hor 6-25-7            Class     Normal

OBS     F2  6                               -         10000
            H.Angle   181°34'38.1"          H.Std Err 0°00'03"
            V.Angle   272°05'17.124"        V.Std Err 0°00'03"
            EDM Dist  1331.441              S.Std Err 0.013
            Code      hor 6-25-7            Class     Normal

TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  6                               -         25
            H.Angle   180°00'01.62"         H.Std Err 0°00'03"
            V.Angle   272°58'58.332"        V.Std Err 0°00'03"
            EDM Dist  2567.327              S.Std Err 0.015
            Code      set ns-panel          Class     Backsight
```

```
MTA      MA  ID         25                      Code       set ns-panel
             H.Angle    0°00'00"                H.Std Err  0°00'00"
             V.Angle    87°00'52.515"           V.Std Err  0°00'00.344"
             S.Dist     2567.329                S.Std Err  0.003
             Angles     2                       BS Pt ID   25
             Distances  4

TRGET    NM  Target ht  5.374                   P.C. mm    0.0
             Prism Off  0.000

MTA      MA  ID         10000                   Code       hor 6-25-7
             H.Angle    1°34'36.561"            H.Std Err  0°00'00.573"
             V.Angle    87°54'34.128"           V.Std Err  0°00'00.229"
             S.Dist     1331.443                S.Std Err  0.003
             Angles     2                       BS Pt ID   25
             Distances  4

RESIDUALSRR  Round      1                       ID         25
             H Ang Res  0°00'00"                V Ang Res  -0°00'09.639"
             EDM Res    -0.003

RESIDUALSRR  Round      1                       ID         10000
             H Ang Res  0°00'00.243"            V Ang Res  -0°00'09.072"
             EDM Res    -0.001

RESIDUALSRR  Round      1                       ID         10000
             H Ang Res  0°00'00.567"            V Ang Res  0°00'08.748"
             EDM Res    0.004

RESIDUALSRR  Round      1                       ID         25
             H Ang Res  0°00'00"                V Ang Res  0°00'10.125"
             EDM Res    0.004

RESIDUALSRR  Round      2                       ID         25
             H Ang Res  0°00'00"                V Ang Res  -0°00'09.639"
             EDM Res    0.001

RESIDUALSRR  Round      2                       ID         10000
             H Ang Res  -0°00'00.729"           V Ang Res  -0°00'08.424"
             EDM Res    -0.001

RESIDUALSRR  Round      2                       ID         10000
             H Ang Res  -0°00'00.081"           V Ang Res  0°00'08.748"
             EDM Res    -0.002

RESIDUALSRR  Round      2                       ID         25
             H Ang Res  0°00'00"                V Ang Res  0°00'09.153"
             EDM Res    -0.001

NOTE     TS  Time Date  09/19/2007 Time 08:38:54

INSTR    NM  EDM        VX & S Series
             Serial no  11832                   Firmware   R7.0.35
             Mount      Not Applic              Edm o/s    <null>
             J Constant 273.9420092103          N Constant 105.675
             H.col      0°00'00.648"            V.col      -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"                EDM Prec   0.010
             VA Prec    0°00'03"                EDM (ppm)  2

ATMOS    NM  Press      29.80                   Temp       50.0
             Refrac cnst 0.142                  PPM        <null>

GRDPOS   FD  Point ID 7            Nrth 2118893.600       East 5999059.639
             Class Normal          Elv  65.722            Code 100d painted X
             Obs  User Input

STN      NM  ID         7                       Theo ht    5.638
             Scale      1.0000000000            Type       Fixed

BKB      NM  7                                  -          6
             Azmth      <null>
             Face 1     0°00'00"                Face 2     180°00'00.972"
```

```
NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  7                               -         6
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   92°06'23.544"         V.Std Err 0°00'03"
            EDM Dist  1331.456              S.Std Err 0.013
            Code      N&S tip traffic       Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         -0.002
                                            V.Dist         -0.033

TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  7                               -         40
            H.Angle   179°12'46.62"         H.Std Err 0°00'03"
            V.Angle   85°42'07.056"         V.Std Err 0°00'03"
            EDM Dist  793.224               S.Std Err 0.011
            Code      set magnw             Class     Normal

OBS     F2  7                               -         40
            H.Angle   359°12'54.72"         H.Std Err 0°00'03"
            V.Angle   274°17'32.532"        V.Std Err 0°00'03"
            EDM Dist  793.223               S.Std Err 0.011
            Code      set magnw             Class     Normal

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  7                               -         6
            H.Angle   180°00'00.972"        H.Std Err 0°00'03"
            V.Angle   267°53'18.312"        V.Std Err 0°00'03"
            EDM Dist  1331.463              S.Std Err 0.013
            Code      N&S tip traffic       Class     Backsight

BKB     NM  7                               -         6
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'05.184"

OBS     F1  7                               -         6
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   92°06'23.544"         V.Std Err 0°00'03"
            EDM Dist  1331.455              S.Std Err 0.013
            Code      N&S tip traffic       Class     Backsight

TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  7                               -         40
            H.Angle   179°12'51.156"        H.Std Err 0°00'03"
            V.Angle   85°42'06.732"         V.Std Err 0°00'03"
            EDM Dist  793.225               S.Std Err 0.011
            Code      set magnw             Class     Normal

OBS     F2  7                               -         40
            H.Angle   359°12'56.016"        H.Std Err 0°00'03"
            V.Angle   274°17'31.236"        V.Std Err 0°00'03"
            EDM Dist  793.226               S.Std Err 0.011
            Code      set magnw             Class     Normal

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  7                               -         6
            H.Angle   180°00'05.184"        H.Std Err 0°00'03"
            V.Angle   267°53'19.608"        V.Std Err 0°00'03"
            EDM Dist  1331.460              S.Std Err 0.013
            Code      N&S tip traffic       Class     Backsight
```

```
MTA     MA  ID        6                       Code      N&S tip traffic
            H.Angle   0°00'00"                H.Std Err 0°00'00"
            V.Angle   92°06'32.292"           V.Std Err 0°00'00.458"
            S.Dist    1331.458                S.Std Err 0.004
            Angles    2                       BS Pt ID  6
            Distances 4

TRGET   NM  Target ht 4.685                   P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        40                      Code      set magnw
            H.Angle   179°12'50.589"          H.Std Err 0°00'00.573"
            V.Angle   85°42'17.505"           V.Std Err 0°00'00.344"
            S.Dist    793.225                 S.Std Err 0.001
            Angles    2                       BS Pt ID  6
            Distances 4

RESIDUALSRR Round     1                       ID        6
            H Ang Res 0°00'00"                V Ang Res -0°00'08.748"
            EDM Res   -0.003

RESIDUALSRR Round     1                       ID        40
            H Ang Res -0°00'03.969"           V Ang Res -0°00'10.449"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        40
            H Ang Res 0°00'03.159"            V Ang Res 0°00'09.963"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        6
            H Ang Res 0°00'00"                V Ang Res 0°00'09.396"
            EDM Res   0.004

RESIDUALSRR Round     2                       ID        6
            H Ang Res 0°00'00"                V Ang Res -0°00'08.748"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        40
            H Ang Res 0°00'00.567"            V Ang Res -0°00'10.773"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        40
            H Ang Res 0°00'00.243"            V Ang Res 0°00'11.259"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        6
            H Ang Res 0°00'00"                V Ang Res 0°00'08.1"
            EDM Res   0.002

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.81                   Temp      50.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 7            Nrth 2118893.600      East 5999059.639
            Class Normal          Elv  65.722           Code 100d painted X
            Obs  User Input

STN     NM  ID        7                       Theo ht   5.638
            Scale     1.0000000000            Type      Fixed

BKB     NM  7                                 -         40
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'04.536"

NOTE    SN  Start of Rounds
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```
TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  7                               -         40
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   85°42'10.944"         V.Std Err 0°00'03"
            EDM Dist  793.232               S.Std Err 0.011
            Code      set magnw             Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         -0.005
                                            V.Dist         -0.026

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  7                               -         10001
            H.Angle   180°47'08.52"         H.Std Err 0°00'03"
            V.Angle   92°06'24.192"         V.Std Err 0°00'03"
            EDM Dist  1331.461              S.Std Err 0.013
            Code      hor 7-40-6            Class     Normal

OBS     F2  7                               -         10001
            H.Angle   0°47'11.112"          H.Std Err 0°00'03"
            V.Angle   267°53'18.636"        V.Std Err 0°00'03"
            EDM Dist  1331.460              S.Std Err 0.013
            Code      hor 7-40-6            Class     Normal

TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  7                               -         40
            H.Angle   180°00'04.536"        H.Std Err 0°00'03"
            V.Angle   274°17'31.884"        V.Std Err 0°00'03"
            EDM Dist  793.231               S.Std Err 0.011
            Code      set magnw             Class     Backsight

MTA     MA  ID        40                    Code      set magnw
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   85°42'19.53"          V.Std Err <null>
            S.Dist    793.231               S.Std Err 0.001
            Angles    1                     BS Pt ID  40
            Distances 2

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10001                 Code      hor 7-40-6
            H.Angle   180°47'07.548"        H.Std Err <null>
            V.Angle   92°06'32.778"         V.Std Err <null>
            S.Dist    1331.461              S.Std Err 0.001
            Angles    1                     BS Pt ID  40
            Distances 2

RESIDUALSRR Round     1                     ID        40
            H Ang Res 0°00'00"              V Ang Res -0°00'08.586"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        10001
            H Ang Res 0°00'00.972"          V Ang Res -0°00'08.586"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID        10001
            H Ang Res -0°00'00.972"         V Ang Res 0°00'08.586"
            EDM Res   -0.001

RESIDUALSRR Round     1                     ID        40
            H Ang Res 0°00'00"              V Ang Res 0°00'08.586"
            EDM Res   0.000

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"
```

```
PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.72                   Temp      50.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 25           Nrth 2117670.359      East 5999223.947
            Class Normal          Elv  150.511          Code set ns-panel
            Obs  User Input

STN     NM  ID        25                      Theo ht   5.647
            Scale     1.0000000000            Type      Fixed

BKB     NM  25                                -         6
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'00"

NOTE    TS  Time Date 09/19/2007 Time 09:10:43

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.223                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  25                                -         6
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   92°59'11.616"           V.Std Err 0°00'03"
            EDM Dist  2567.312                S.Std Err 0.015
            Code      N&S tip traffic         Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.001
                                              V.Dist         -0.112

TRGET   NM  Target ht 4.685                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  25                                -         10002
            H.Angle   353°52'24.348"          H.Std Err 0°00'03"
            V.Angle   93°15'33.336"           V.Std Err 0°00'03"
            EDM Dist  446.098                 S.Std Err 0.011
            Code      ang 25-6-40             Class     Normal

OBS     F2  25                                -         10002
            H.Angle   173°52'27.912"          H.Std Err 0°00'03"
            V.Angle   266°44'08.52"           V.Std Err 0°00'03"
            EDM Dist  446.097                 S.Std Err 0.011
            Code      ang 25-6-40             Class     Normal

TRGET   NM  Target ht 5.223                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  25                                -         6
            H.Angle   180°00'00"              H.Std Err 0°00'03"
            V.Angle   267°00'28.944"          V.Std Err 0°00'03"
            EDM Dist  2567.318                S.Std Err 0.015
            Code      N&S tip traffic         Class     Backsight

BKB     NM  25                                -         6
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'00"

OBS     F1  25                                -         6
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   92°59'13.56"            V.Std Err 0°00'03"
            EDM Dist  2567.315                S.Std Err 0.015
            Code      N&S tip traffic         Class     Backsight

TRGET   NM  Target ht 4.685                   P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F1  25                              -         10002
            H.Angle   353°52'23.7"          H.Std Err 0°00'03"
            V.Angle   93°15'33.012"         V.Std Err 0°00'03"
            EDM Dist  446.104               S.Std Err 0.011
            Code      ang 25-6-40           Class     Normal

OBS     F2  25                              -         10002
            H.Angle   173°52'27.912"        H.Std Err 0°00'03"
            V.Angle   266°44'07.872"        V.Std Err 0°00'03"
            EDM Dist  446.094               S.Std Err 0.011
            Code      ang 25-6-40           Class     Normal

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  25                              -         6
            H.Angle   180°00'00"            H.Std Err 0°00'03"
            V.Angle   267°00'28.62"         V.Std Err 0°00'03"
            EDM Dist  2567.318              S.Std Err 0.015
            Code      N&S tip traffic       Class     Backsight

MTA     MA  ID        6                     Code      N&S tip traffic
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   92°59'21.903"         V.Std Err 0°00'00.802"
            S.Dist    2567.316              S.Std Err 0.003
            Angles    2                     BS Pt ID  6
            Distances 4

TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10002                 Code      ang 25-6-40
            H.Angle   353°52'25.968"        H.Std Err 0°00'00.229"
            V.Angle   93°15'42.489"         V.Std Err 0°00'00.115"
            S.Dist    446.098               S.Std Err 0.004
            Angles    2                     BS Pt ID  6
            Distances 4

RESIDUALSRR Round     1                     ID        6
            H Ang Res 0°00'00"              V Ang Res -0°00'10.287"
            EDM Res   -0.004

RESIDUALSRR Round     1                     ID        10002
            H Ang Res -0°00'01.62"          V Ang Res -0°00'09.153"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        10002
            H Ang Res 0°00'01.944"          V Ang Res 0°00'08.991"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        6
            H Ang Res 0°00'00"              V Ang Res 0°00'09.153"
            EDM Res   0.003

RESIDUALSRR Round     2                     ID        6
            H Ang Res 0°00'00"              V Ang Res -0°00'08.343"
            EDM Res   -0.001

RESIDUALSRR Round     2                     ID        10002
            H Ang Res -0°00'02.268"         V Ang Res -0°00'09.477"
            EDM Res   0.006

RESIDUALSRR Round     2                     ID        10002
            H Ang Res 0°00'01.944"          V Ang Res 0°00'09.639"
            EDM Res   -0.004

RESIDUALSRR Round     2                     ID        6
            H Ang Res 0°00'00"              V Ang Res 0°00'09.477"
            EDM Res   0.002
```

```
INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

ATMOS   NM  Press     29.71                 Temp      50.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 25          Nrth 2117670.359     East 5999223.947
            Class Normal         Elv  150.511         Code set ns-panel
            Obs  User Input

STN     NM  ID        25                    Theo ht   5.647
            Scale     1.0000000000          Type      Fixed

BKB     NM  25                              -         40
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'01.62"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  25                              -         40
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   93°15'33.336"         V.Std Err 0°00'03"
            EDM Dist  446.101               S.Std Err 0.011
            Code      set magnw             Class     Backsight

POLAR D F1  Azmth         <null>            H.Dist         0.025
                                            V.Dist         -0.021

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  25                              -         10003
            H.Angle   6°07'33.06"           H.Std Err 0°00'03"
            V.Angle   92°59'12.264"         V.Std Err 0°00'03"
            EDM Dist  2567.314              S.Std Err 0.015
            Code      hor 25-40-6           Class     Normal

OBS     F2  25                              -         10003
            H.Angle   186°07'37.92"         H.Std Err 0°00'03"
            V.Angle   267°00'27.324"        V.Std Err 0°00'03"
            EDM Dist  2567.317              S.Std Err 0.015
            Code      hor 25-40-6           Class     Normal

TRGET   NM  Target ht 4.685                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  25                              -         40
            H.Angle   180°00'01.62"         H.Std Err 0°00'03"
            V.Angle   266°44'10.14"         V.Std Err 0°00'03"
            EDM Dist  446.099               S.Std Err 0.011
            Code      set magnw             Class     Backsight

BKB     NM  25                              -         40
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'02.916"

OBS     F1  25                              -         40
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   93°15'33.984"         V.Std Err 0°00'03"
            EDM Dist  446.099               S.Std Err 0.011
            Code      set magnw             Class     Backsight

TRGET   NM  Target ht 5.223                 P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F1  25                              -          10003
            H.Angle   6°07'34.68"           H.Std Err  0°00'03"
            V.Angle   92°59'12.264"         V.Std Err  0°00'03"
            EDM Dist  2567.316              S.Std Err  0.015
            Code      hor 25-40-6           Class      Normal

OBS     F2  25                              -          10003
            H.Angle   186°07'36.948"        H.Std Err  0°00'03"
            V.Angle   267°00'29.916"        V.Std Err  0°00'03"
            EDM Dist  2567.315              S.Std Err  0.015
            Code      hor 25-40-6           Class      Normal

TRGET   NM  Target ht 4.685                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  25                              -          40
            H.Angle   180°00'02.916"        H.Std Err  0°00'03"
            V.Angle   266°44'08.844"        V.Std Err  0°00'03"
            EDM Dist  446.100               S.Std Err  0.011
            Code      set magnw             Class      Backsight

MTA     MA  ID        40                    Code       set magnw
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   93°15'42.084"         V.Std Err  0°00'00.687"
            S.Dist    446.100               S.Std Err  0.001
            Angles    2                     BS Pt ID   40
            Distances 4

TRGET   NM  Target ht 5.223                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10003                 Code       hor 25-40-6
            H.Angle   6°07'34.518"          H.Std Err  0°00'00.229"
            V.Angle   92°59'21.822"         V.Std Err  0°00'00.916"
            S.Dist    2567.315              S.Std Err  0.001
            Angles    2                     BS Pt ID   40
            Distances 4

RESIDUALSRR Round     1                     ID         40
            H Ang Res 0°00'00"              V Ang Res  -0°00'08.748"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID         10003
            H Ang Res -0°00'01.458"         V Ang Res  -0°00'09.558"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID         10003
            H Ang Res 0°00'01.782"          V Ang Res  0°00'10.854"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID         40
            H Ang Res 0°00'00"              V Ang Res  0°00'07.776"
            EDM Res   0.000

RESIDUALSRR Round     2                     ID         40
            H Ang Res 0°00'00"              V Ang Res  -0°00'08.1"
            EDM Res   -0.001

RESIDUALSRR Round     2                     ID         10003
            H Ang Res 0°00'00.162"          V Ang Res  -0°00'09.558"
            EDM Res   0.001

RESIDUALSRR Round     2                     ID         10003
            H Ang Res -0°00'00.486"         V Ang Res  0°00'08.262"
            EDM Res   0.000

RESIDUALSRR Round     2                     ID         40
            H Ang Res 0°00'00"              V Ang Res  0°00'09.072"
            EDM Res   0.000

NOTE    TS  Time Date 09/19/2007 Time 09:44:36
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```
INSTR   NM  EDM       VX & S Series
            Serial no 11832                  Firmware  R7.0.35
            Mount     Not Applic             Edm o/s   <null>
            J Constant 273.9420092103        N Constant 105.675
            H.col     0°00'00.648"           V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"               EDM Prec  0.010
            VA Prec   0°00'03"               EDM (ppm) 2

ATMOS   NM  Press     29.73                  Temp      65.0
            Refrac cnst 0.142                PPM       <null>

GRDPOS  FD  Point ID 40          Nrth 2118105.871      East 5999130.765
            Class Normal         Elv  126.094          Code set magnw
            Obs  User Input

STN     NM  ID        40                     Theo ht   4.974
            Scale     1.0000000000           Type      Fixed

BKB     NM  40                               -         7
            Azmth     <null>
            Face 1    0°00'00"               Face 2    180°00'01.62"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 4.619                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  40                               -         7
            H.Angle   0°00'00"               H.Std Err 0°00'03"
            V.Angle   94°23'23.748"          V.Std Err 0°00'03"
            EDM Dist  793.332                S.Std Err 0.011
            Code      100d painted X         Class     Backsight

POLAR D F1  Azmth          <null>            H.Dist         -0.017
                                             V.Dist         -0.015

TRGET   NM  Target ht 5.489                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  40                               -         10004
            H.Angle   173°04'57.36"          H.Std Err 0°00'03"
            V.Angle   86°47'49.812"          V.Std Err 0°00'03"
            EDM Dist  446.075                S.Std Err 0.011
            Code      ang 40-7-25            Class     Normal

OBS     F2  40                               -         10004
            H.Angle   353°04'55.74"          H.Std Err 0°00'03"
            V.Angle   273°11'51.072"         V.Std Err 0°00'03"
            EDM Dist  446.075                S.Std Err 0.011
            Code      ang 40-7-25            Class     Normal

TRGET   NM  Target ht 4.619                  P.C. mm   0.0
            Prism Off 0.000

OBS     F2  40                               -         7
            H.Angle   180°00'01.62"          H.Std Err 0°00'03"
            V.Angle   265°36'16.488"         V.Std Err 0°00'03"
            EDM Dist  793.338                S.Std Err 0.011
            Code      100d painted X         Class     Backsight

MTA     MA  ID        7                      Code      100d painted X
            H.Angle   0°00'00"               H.Std Err <null>
            V.Angle   94°23'33.63"           V.Std Err <null>
            S.Dist    793.335                S.Std Err 0.004
            Angles    1                      BS Pt ID  7
            Distances 2

TRGET   NM  Target ht 5.489                  P.C. mm   0.0
            Prism Off 0.000
```

```
MTA      MA  ID        10004                  Code      ang 40-7-25
             H.Angle   173°04'55.74"          H.Std Err <null>
             V.Angle   86°47'59.37"           V.Std Err <null>
             S.Dist    446.075                S.Std Err 0.000
             Angles    1                      BS Pt ID  7
             Distances 2

RESIDUALSRR  Round     1                      ID        7
             H Ang Res 0°00'00"               V Ang Res -0°00'09.882"
             EDM Res   -0.003

RESIDUALSRR  Round     1                      ID        10004
             H Ang Res 0°00'01.62"            V Ang Res -0°00'09.558"
             EDM Res   0.000

RESIDUALSRR  Round     1                      ID        10004
             H Ang Res -0°00'01.62"           V Ang Res 0°00'09.558"
             EDM Res   0.000

RESIDUALSRR  Round     1                      ID        7
             H Ang Res 0°00'00"               V Ang Res 0°00'09.882"
             EDM Res   0.003

INSTR    NM  EDM       VX & S Series
             Serial no 11832                  Firmware  R7.0.35
             Mount     Not Applic             Edm o/s   <null>
             J Constant 273.9420092103        N Constant 105.675
             H.col     0°00'00.648"           V.col     -0°00'07.128"

PRECIS   NM  HA Prec   0°00'03"               EDM Prec  0.010
             VA Prec   0°00'03"               EDM (ppm) 2

ATMOS    NM  Press     29.74                  Temp      65.0
             Refrac cnst 0.142                PPM       <null>

GRDPOS   FD  Point ID 40          Nrth 2118105.871      East 5999130.765
             Class Normal         Elv  126.094          Code set magnw
             Obs  User Input

STN      NM  ID        40                     Theo ht   4.974
             Scale     1.0000000000           Type      Fixed

BKB      NM  40                               -         25
             Azmth     <null>
             Face 1    0°00'00"               Face 2    180°00'00.324"

NOTE     SN  Start of Rounds

TRGET    NM  Target ht 5.489                  P.C. mm   0.0
             Prism Off 0.000

OBS      F1  40                               -         25
             H.Angle   0°00'00"               H.Std Err 0°00'03"
             V.Angle   86°47'53.376"          V.Std Err 0°00'03"
             EDM Dist  446.079                S.Std Err 0.011
             Code      set ns-panel           Class     Backsight

POLAR D F1   Azmth          <null>            H.Dist         0.019
                                              V.Dist         0.013

TRGET    NM  Target ht 4.619                  P.C. mm   0.0
             Prism Off 0.000

OBS      F1  40                               -         10005
             H.Angle   186°55'02.64"          H.Std Err 0°00'03"
             V.Angle   94°23'26.34"           V.Std Err 0°00'03"
             EDM Dist  793.335                S.Std Err 0.011
             Code      hor 40-25-7            Class     Normal

OBS      F2  40                               -         10005
             H.Angle   6°55'01.668"           H.Std Err 0°00'03"
             V.Angle   265°36'20.376"         V.Std Err 0°00'03"
             EDM Dist  793.335                S.Std Err 0.011
             Code      hor 40-25-7            Class     Normal
```

```
TRGET   NM  Target ht 5.489                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  40                              -         25
            H.Angle   180°00'00.324"        H.Std Err 0°00'03"
            V.Angle   273°11'51.072"        V.Std Err 0°00'03"
            EDM Dist  446.079               S.Std Err 0.011
            Code      set ns-panel          Class     Backsight

MTA     MA  ID        25                    Code      set ns-panel
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   86°48'01.152"         V.Std Err <null>
            S.Dist    446.079               S.Std Err 0.000
            Angles    1                     BS Pt ID  25
            Distances 2

TRGET   NM  Target ht 4.619                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10005                 Code      hor 40-25-7
            H.Angle   186°55'01.992"        H.Std Err <null>
            V.Angle   94°23'32.982"         V.Std Err <null>
            S.Dist    793.335               S.Std Err 0.000
            Angles    1                     BS Pt ID  25
            Distances 2

RESIDUALSRR Round     1                     ID        25
            H Ang Res 0°00'00"              V Ang Res -0°00'07.776"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        10005
            H Ang Res 0°00'00.648"          V Ang Res -0°00'06.642"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        10005
            H Ang Res -0°00'00.648"         V Ang Res 0°00'06.642"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        25
            H Ang Res 0°00'00"              V Ang Res 0°00'07.776"
            EDM Res   0.000

NOTE    TS  Time Date 09/19/2007 Time 12:01:05

NOTE    TS  Time Date 09/20/2007 Time 08:06:38

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

NOTE    TS  Time Date 09/20/2007 Time 09:09:41

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

ATMOS   NM  Press     29.88                 Temp      60.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 15          Nrth 2120936.297     East 5993775.719
            Class Normal         Elv  10.600          Code N&S painted X
            Obs  User Input
```

```
STN      NM  ID         15                    Theo ht    5.697
             Scale      1.0000000000          Type       Fixed

BKB      NM  15                               -          18
             Azmth      <null>
             Face 1     0°00'00"              Face 2     <null>

TRGET    NM  Target ht 5.594                  P.C. mm    0.0
             Prism Off 0.000

OBS      F1  15                               -          18
             H.Angle    0°00'00"              H.Std Err  0°00'03"
             V.Angle    86°40'02.28"          V.Std Err  0°00'03"
             EDM Dist   1297.739              S.Std Err  0.012
             Code       N&S painted X         Class      Backsight

POLAR D F1   Azmth            <null>           H.Dist          0.030
                                               V.Dist         -0.042

BKB      NM  15                               -          18
             Azmth      <null>
             Face 1     0°00'00"              Face 2     <null>

OBS      F1  15                               -          18
             H.Angle    0°00'00"              H.Std Err  0°00'03"
             V.Angle    86°40'03.9"           V.Std Err  0°00'03"
             EDM Dist   1297.740              S.Std Err  0.012
             Code       N&S painted X         Class      Backsight

MTA      MA  ID         18                    Code       N&S painted X
             H.Angle    0°00'00"              H.Std Err  <null>
             V.Angle    86°40'03.09"          V.Std Err  <null>
             S.Dist     1297.739              S.Std Err  <null>
             Angles     2                     BS Pt ID   18
             Distances  2

BKB      NM  15                               -          18
             Azmth      <null>
             Face 1     0°00'00"              Face 2     180°00'01.62"

NOTE     SN  Start of Rounds

OBS      F1  15                               -          18
             H.Angle    0°00'00"              H.Std Err  0°00'03"
             V.Angle    86°40'03.9"           V.Std Err  0°00'03"
             EDM Dist   1297.738              S.Std Err  0.012
             Code       N&S painted X         Class      Backsight

TRGET    NM  Target ht 5.322                  P.C. mm    0.0
             Prism Off 0.000

OBS      F1  15                               -          119
             H.Angle    29°54'25.2"           H.Std Err  0°00'03"
             V.Angle    89°47'20.22"          V.Std Err  0°00'03"
             EDM Dist   1823.364              S.Std Err  0.013
             Code       set rebar+cap         Class      Normal

OBS      F1  15                               -          120
             H.Angle    137°06'03.456"        H.Std Err  0°00'03"
             V.Angle    89°56'59.532"         V.Std Err  0°00'03"
             EDM Dist   1888.586              S.Std Err  0.014
             Code       set rebar+cap         Class      Normal

OBS      F2  15                               -          120
             H.Angle    317°06'04.104"        H.Std Err  0°00'03"
             V.Angle    270°02'45.564"        V.Std Err  0°00'03"
             EDM Dist   1888.587              S.Std Err  0.014
             Code       set rebar+cap         Class      Normal

OBS      F2  15                               -          119
             H.Angle    209°54'27.468"        H.Std Err  0°00'03"
             V.Angle    270°12'22.608"        V.Std Err  0°00'03"
             EDM Dist   1823.369              S.Std Err  0.013
             Code       set rebar+cap         Class      Normal
```

```
TRGET   NM  Target ht 5.594                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  15                              -         18
            H.Angle   180°00'01.62"         H.Std Err 0°00'03"
            V.Angle   273°19'42.816"        V.Std Err 0°00'03"
            EDM Dist  1297.741              S.Std Err 0.012
            Code      N&S painted X         Class     Backsight

BKB     NM  15                              -         18
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'01.62"

OBS     F1  15                              -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   86°40'02.604"         V.Std Err 0°00'03"
            EDM Dist  1297.743              S.Std Err 0.012
            Code      N&S painted X         Class     Backsight

TRGET   NM  Target ht 5.322                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  15                              -         119
            H.Angle   29°54'26.172"         H.Std Err 0°00'03"
            V.Angle   89°47'20.868"         V.Std Err 0°00'03"
            EDM Dist  1823.366              S.Std Err 0.013
            Code      set rebar+cap         Class     Normal

OBS     F1  15                              -         120
            H.Angle   137°06'03.132"        H.Std Err 0°00'03"
            V.Angle   89°56'59.208"         V.Std Err 0°00'03"
            EDM Dist  1888.590              S.Std Err 0.014
            Code      set rebar+cap         Class     Normal

OBS     F2  15                              -         120
            H.Angle   317°06'02.808"        H.Std Err 0°00'03"
            V.Angle   270°02'45.888"        V.Std Err 0°00'03"
            EDM Dist  1888.590              S.Std Err 0.014
            Code      set rebar+cap         Class     Normal

OBS     F2  15                              -         119
            H.Angle   209°54'26.172"        H.Std Err 0°00'03"
            V.Angle   270°12'23.904"        V.Std Err 0°00'03"
            EDM Dist  1823.369              S.Std Err 0.013
            Code      set rebar+cap         Class     Normal

TRGET   NM  Target ht 5.594                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  15                              -         18
            H.Angle   180°00'01.62"         H.Std Err 0°00'03"
            V.Angle   273°19'42.168"        V.Std Err 0°00'03"
            EDM Dist  1297.741              S.Std Err 0.012
            Code      N&S painted X         Class     Backsight

MTA     MA  ID        18                    Code      N&S painted X
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   86°40'10.38"          V.Std Err 0°00'00.229"
            S.Dist    1297.741              S.Std Err 0.002
            Angles    2                     BS Pt ID  18
            Distances 4

TRGET   NM  Target ht 5.322                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        119                   Code      set rebar+cap
            H.Angle   29°54'25.443"         H.Std Err 0°00'00.115"
            V.Angle   89°47'28.644"         V.Std Err 0°00'00.229"
            S.Dist    1823.367              S.Std Err 0.002
            Angles    2                     BS Pt ID  18
            Distances 4

TRGET   NM  Target ht 5.322                 P.C. mm   0.0
            Prism     0.000
```

```
MTA      MA  ID         120                     Code       set rebar+cap
             H.Angle    137°06'02.565"          H.Std Err  0°00'00.573"
             V.Angle    89°57'06.822"           V.Std Err  0°00'00.229"
             S.Dist     1888.588                S.Std Err  0.002
             Angles     2                       BS Pt ID   18
             Distances  4

RESIDUALSRR  Round      1                       ID         18
             H Ang Res  0°00'00"                V Ang Res  -0°00'06.48"
             EDM Res    -0.003

RESIDUALSRR  Round      1                       ID         119
             H Ang Res  -0°00'00.243"           V Ang Res  -0°00'08.424"
             EDM Res    -0.003

RESIDUALSRR  Round      1                       ID         120
             H Ang Res  0°00'00.891"            V Ang Res  -0°00'07.29"
             EDM Res    -0.002

RESIDUALSRR  Round      1                       ID         120
             H Ang Res  -0°00'00.081"           V Ang Res  0°00'07.614"
             EDM Res    -0.001

RESIDUALSRR  Round      1                       ID         119
             H Ang Res  0°00'00.405"            V Ang Res  0°00'08.748"
             EDM Res    0.002

RESIDUALSRR  Round      1                       ID         18
             H Ang Res  0°00'00"                V Ang Res  0°00'06.804"
             EDM Res    0.000

RESIDUALSRR  Round      2                       ID         18
             H Ang Res  0°00'00"                V Ang Res  -0°00'07.776"
             EDM Res    0.002

RESIDUALSRR  Round      2                       ID         119
             H Ang Res  0°00'00.729"            V Ang Res  -0°00'07.776"
             EDM Res    -0.001

RESIDUALSRR  Round      2                       ID         120
             H Ang Res  0°00'00.567"            V Ang Res  -0°00'07.614"
             EDM Res    0.002

RESIDUALSRR  Round      2                       ID         120
             H Ang Res  -0°00'01.377"           V Ang Res  0°00'07.29"
             EDM Res    0.002

RESIDUALSRR  Round      2                       ID         119
             H Ang Res  -0°00'00.891"           V Ang Res  0°00'07.452"
             EDM Res    0.002

RESIDUALSRR  Round      2                       ID         18
             H Ang Res  0°00'00"                V Ang Res  0°00'07.452"
             EDM Res    0.001

INSTR    NM  EDM        VX & S Series
             Serial no  11832                   Firmware   R7.0.35
             Mount      Not Applic              Edm o/s    <null>
             J Constant 273.9420092103          N Constant 105.675
             H.col      0°00'00.648"            V.col      -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"                EDM Prec   0.010
             VA Prec    0°00'03"                EDM (ppm)  2

ATMOS    NM  Press      29.89                   Temp       55.0
             Refrac cnst 0.142                  PPM        <null>

GRDPOS   FD  Point ID 15          Nrth 2120936.297      East 5993775.719
             Class Normal         Elv  10.600           Code N&S painted X
             Obs  User Input

STN      NM  ID         15                      Theo ht    5.697
             Scale      1.0000000000            Type       Fixed
```

```
BKB     NM  15                              -         120
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'02.268"

NOTE    TS  Time Date 09/20/2007 Time 09:42:18

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.312                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  15                              -         120
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   89°56'56.616"         V.Std Err 0°00'03"
            EDM Dist  1888.589              S.Std Err 0.014
            Code      set rebar+cap         Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.005
                                            V.Dist         -0.103

TRGET   NM  Target ht 5.594                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  15                              -         10006
            H.Angle   222°53'57.516"        H.Std Err 0°00'03"
            V.Angle   86°40'02.28"          V.Std Err 0°00'03"
            EDM Dist  1297.741              S.Std Err 0.012
            Code      hor 15-120-18         Class     Normal

TRGET   NM  Target ht 5.322                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  15                              -         10007
            H.Angle   252°48'24.66"         H.Std Err 0°00'03"
            V.Angle   89°47'19.248"         V.Std Err 0°00'03"
            EDM Dist  1823.365              S.Std Err 0.013
            Code      ang 15-120-119        Class     Normal

OBS     F2  15                              -         10007
            H.Angle   72°48'25.632"         H.Std Err 0°00'03"
            V.Angle   270°12'24.228"        V.Std Err 0°00'03"
            EDM Dist  1823.368              S.Std Err 0.013
            Code      ang 15-120-119        Class     Normal

TRGET   NM  Target ht 5.594                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  15                              -         10006
            H.Angle   42°54'00.756"         H.Std Err 0°00'03"
            V.Angle   273°19'41.844"        V.Std Err 0°00'03"
            EDM Dist  1297.746              S.Std Err 0.012
            Code      hor 15-120-18         Class     Normal

TRGET   NM  Target ht 5.312                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  15                              -         120
            H.Angle   180°00'02.268"        H.Std Err 0°00'03"
            V.Angle   270°02'47.184"        V.Std Err 0°00'03"
            EDM Dist  1888.589              S.Std Err 0.014
            Code      set rebar+cap         Class     Backsight

BKB     NM  15                              -         120
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'01.296"

OBS     F1  15                              -         120
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   89°56'55.32"          V.Std Err 0°00'03"
            EDM Dist  1888.587              S.Std Err 0.014
            Code      set rebar+cap         Class     Backsight

TRGET   NM  Target ht 5.594                 P.C. mm   0.0
            Prism Off 0.000
```

```
OBS      F1  15                              -          10006
             H.Angle   222°53'57.192"        H.Std Err  0°00'03"
             V.Angle   86°40'02.28"          V.Std Err  0°00'03"
             EDM Dist  1297.742              S.Std Err  0.012
             Code      hor 15-120-18         Class      Normal

TRGET    NM  Target ht 5.322                 P.C. mm    0.0
             Prism Off 0.000

OBS      F1  15                              -          10007
             H.Angle   252°48'23.364"        H.Std Err  0°00'03"
             V.Angle   89°47'20.22"          V.Std Err  0°00'03"
             EDM Dist  1823.367              S.Std Err  0.013
             Code      ang 15-120-119        Class      Normal

OBS      F2  15                              -          10007
             H.Angle   72°48'24.336"         H.Std Err  0°00'03"
             V.Angle   270°12'23.904"        V.Std Err  0°00'03"
             EDM Dist  1823.370              S.Std Err  0.013
             Code      ang 15-120-119        Class      Normal

TRGET    NM  Target ht 5.594                 P.C. mm    0.0
             Prism Off 0.000

OBS      F2  15                              -          10006
             H.Angle   42°53'59.784"         H.Std Err  0°00'03"
             V.Angle   273°19'42.492"        V.Std Err  0°00'03"
             EDM Dist  1297.744              S.Std Err  0.012
             Code      hor 15-120-18         Class      Normal

TRGET    NM  Target ht 5.312                 P.C. mm    0.0
             Prism Off 0.000

OBS      F2  15                              -          120
             H.Angle   180°00'01.296"        H.Std Err  0°00'03"
             V.Angle   270°02'47.832"        V.Std Err  0°00'03"
             EDM Dist  1888.590              S.Std Err  0.014
             Code      set rebar+cap         Class      Backsight

MTA      MA  ID        120                   Code       set rebar+cap
             H.Angle   0°00'00"              H.Std Err  0°00'00"
             V.Angle   89°57'04.23"          V.Std Err  0°00'00.687"
             S.Dist    1888.589              S.Std Err  0.001
             Angles    2                     BS Pt ID   120
             Distances 4

TRGET    NM  Target ht 5.594                 P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10006                 Code       hor 15-120-18
             H.Angle   222°53'57.921"        H.Std Err  0°00'00.115"
             V.Angle   86°40'10.056"         V.Std Err  0°00'00.229"
             S.Dist    1297.743              S.Std Err  0.002
             Angles    2                     BS Pt ID   120
             Distances 4

TRGET    NM  Target ht 5.322                 P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10007                 Code       ang 15-120-119
             H.Angle   252°48'23.607"        H.Std Err  0°00'00.573"
             V.Angle   89°47'27.834"         V.Std Err  0°00'00.458"
             S.Dist    1823.368              S.Std Err  0.002
             Angles    2                     BS Pt ID   120
             Distances 4

RESIDUALSRR  Round     1                     ID         120
             H Ang Res 0°00'00"              V Ang Res  -0°00'07.614"
             EDM Res   0.001

RESIDUALSRR  Round     1                     ID         10006
             H Ang Res -0°00'00.405"         V Ang Res  -0°00'07.776"
             EDM Re-   -0.002
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```
RESIDUALSRR Round     1                       ID        10007
            H Ang Res 0°00'01.053"            V Ang Res -0°00'08.586"
            EDM Res   -0.003

RESIDUALSRR Round     1                       ID        10007
            H Ang Res -0°00'00.243"           V Ang Res 0°00'07.938"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10006
            H Ang Res 0°00'00.567"            V Ang Res 0°00'08.1"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        120
            H Ang Res 0°00'00"                V Ang Res 0°00'08.586"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        120
            H Ang Res 0°00'00"                V Ang Res -0°00'08.91"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        10006
            H Ang Res -0°00'00.729"           V Ang Res -0°00'07.776"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        10007
            H Ang Res -0°00'00.243"           V Ang Res -0°00'07.614"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        10007
            H Ang Res -0°00'00.567"           V Ang Res 0°00'08.262"
            EDM Res   0.003

RESIDUALSRR Round     2                       ID        10006
            H Ang Res 0°00'00.567"            V Ang Res 0°00'07.452"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        120
            H Ang Res 0°00'00"                V Ang Res 0°00'07.938"
            EDM Res   0.001

NOTE    TS  Time Date 09/20/2007 Time 10:20:09

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

NOTE    TS  Time Date 09/20/2007 Time 10:53:21

ATMOS   NM  Press     29.82                   Temp      55.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 18           Nrth 2121491.778      East 5992605.374
            Class Normal          Elv  86.138           Code N&S painted X
            Obs  User Input

STN     NM  ID        18                      Theo ht   5.569
            Scale     1.0000000000            Type      Fixed

BKB     NM  18                                -         15
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'55.788"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.712                   P.C. mm   0.0
            Prism Off 0.000
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```
OBS      F1  18                              -          15
             H.Angle   0°00'00"              H.Std Err 0°00'03"
             V.Angle   93°19'51.564"         V.Std Err 0°00'03"
             EDM Dist  1297.735              S.Std Err 0.012
             Code      N&S painted X         Class     Backsight

POLAR D F1   Azmth          <null>           H.Dist          0.030
                                             V.Dist         -0.026

TRGET    NM  Target ht 4.770                 P.C. mm   0.0
             Prism Off 0.000

OBS      F1  18                              -          10008
             H.Angle   39°01'03.396"        H.Std Err 0°00'03"
             V.Angle   89°00'31.464"        V.Std Err 0°00'03"
             EDM Dist  549.237               S.Std Err 0.011
             Code      ang 18-15-14          Class     Normal

TRGET    NM  Target ht 5.312                 P.C. mm   0.0
             Prism Off 0.000

OBS      F1  18                              -          10009
             H.Angle   334°21'56.7"          H.Std Err 0°00'03"
             V.Angle   91°25'21.468"         V.Std Err 0°00'03"
             EDM Dist  2972.436              S.Std Err 0.016
             Code      ang 18-15-120         Class     Normal

OBS      F1  18                              -          121
             H.Angle   347°37'44.58"         H.Std Err 0°00'03"
             V.Angle   90°37'47.352"         V.Std Err 0°00'03"
             EDM Dist  4029.276              S.Std Err 0.018
             Code      set 100d spk          Class     Normal

OBS      F2  18                              -          121
             H.Angle   167°37'44.58"         H.Std Err 0°00'03"
             V.Angle   269°21'56.772"        V.Std Err 0°00'03"
             EDM Dist  4029.278              S.Std Err 0.018
             Code      set 100d spk          Class     Normal

OBS      F2  18                              -          10009
             H.Angle   154°21'55.728"        H.Std Err 0°00'03"
             V.Angle   268°34'21.684"        V.Std Err 0°00'03"
             EDM Dist  2972.441              S.Std Err 0.016
             Code      ang 18-15-120         Class     Normal

TRGET    NM  Target ht 4.770                 P.C. mm   0.0
             Prism Off 0.000

OBS      F2  18                              -          10008
             H.Angle   219°00'59.508"        H.Std Err 0°00'03"
             V.Angle   270°59'09.42"         V.Std Err 0°00'03"
             EDM Dist  549.238               S.Std Err 0.011
             Code      ang 18-15-14          Class     Normal

TRGET    NM  Target ht 5.712                 P.C. mm   0.0
             Prism Off 0.000

OBS      F2  18                              -          15
             H.Angle   179°59'55.788"        H.Std Err 0°00'03"
             V.Angle   266°39'53.208"        V.Std Err 0°00'03"
             EDM Dist  1297.742              S.Std Err 0.012
             Code      N&S painted X         Class     Backsight

BKB      NM  18                              -          15
             Azmth     <null>
             Face 1    0°00'00"              Face 2    180°00'00"

OBS      F1  18                              -          15
             H.Angle   0°00'00"              H.Std Err 0°00'03"
             V.Angle   93°19'50.592"         V.Std Err 0°00'03"
             EDM Dist  1297.741              S.Std Err 0.012
             Code      N&S painted X         Class     Backsight
```

```
TRGET   NM  Target ht 4.770                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10008
            H.Angle   39°01'05.016"         H.Std Err  0°00'03"
            V.Angle   89°00'31.464"         V.Std Err  0°00'03"
            EDM Dist  549.238               S.Std Err  0.011
            Code      ang 18-15-14          Class      Normal

TRGET   NM  Target ht 5.312                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10009
            H.Angle   334°21'57.996"        H.Std Err  0°00'03"
            V.Angle   91°25'21.144"         V.Std Err  0°00'03"
            EDM Dist  2972.446              S.Std Err  0.016
            Code      ang 18-15-120         Class      Normal

OBS     F1  18                              -          121
            H.Angle   347°37'49.116"        H.Std Err  0°00'03"
            V.Angle   90°37'48"             V.Std Err  0°00'03"
            EDM Dist  4029.282              S.Std Err  0.018
            Code      set 100d spk          Class      Normal

OBS     F2  18                              -          121
            H.Angle   167°37'48.144"        H.Std Err  0°00'03"
            V.Angle   269°21'55.476"        V.Std Err  0°00'03"
            EDM Dist  4029.279              S.Std Err  0.018
            Code      set 100d spk          Class      Normal

OBS     F2  18                              -          10009
            H.Angle   154°21'57.348"        H.Std Err  0°00'03"
            V.Angle   268°34'22.98"         V.Std Err  0°00'03"
            EDM Dist  2972.446              S.Std Err  0.016
            Code      ang 18-15-120         Class      Normal

TRGET   NM  Target ht 4.770                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          10008
            H.Angle   219°01'02.424"        H.Std Err  0°00'03"
            V.Angle   270°59'11.688"        V.Std Err  0°00'03"
            EDM Dist  549.238               S.Std Err  0.011
            Code      ang 18-15-14          Class      Normal

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          15
            H.Angle   180°00'00"            H.Std Err  0°00'03"
            V.Angle   266°39'54.18"         V.Std Err  0°00'03"
            EDM Dist  1297.743              S.Std Err  0.012
            Code      N&S painted X         Class      Backsight

MTA     MA  ID        15                    Code       N&S painted X
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   93°19'58.692"         V.Std Err  0°00'00.687"
            S.Dist    1297.740              S.Std Err  0.003
            Angles    2                     BS Pt ID   15
            Distances 4

TRGET   NM  Target ht 4.770                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10008                 Code       ang 18-15-14
            H.Angle   39°01'03.639"        H.Std Err  0°00'00.115"
            V.Angle   89°00'40.455"         V.Std Err  0°00'00.802"
            S.Dist    549.238               S.Std Err  0.001
            Angles    2                     BS Pt ID   15
            Distances 4

TRGET   NM  Target ht 5.312                 P.C. mm    0.0
            Prism Off 0.000
```

```
MTA     MA  ID        10009                   Code      ang 18-15-120
            H.Angle   334°21'57.996"          H.Std Err 0°00'00.458"
            V.Angle   91°25'29.487"           V.Std Err 0°00'00.573"
            S.Dist    2972.442                S.Std Err 0.005
            Angles    2                       BS Pt ID  15
            Distances 4

MTA     MA  ID        121                     Code      set 100d spk
            H.Angle   347°37'47.658"          H.Std Err 0°00'01.375"
            V.Angle   90°37'55.776"           V.Std Err 0°00'00.687"
            S.Dist    4029.279                S.Std Err 0.002
            Angles    2                       BS Pt ID  15
            Distances 4

RESIDUALSRR Round     1                       ID        15
            H Ang Res 0°00'00"                V Ang Res -0°00'07.128"
            EDM Res   -0.005

RESIDUALSRR Round     1                       ID        10008
            H Ang Res -0°00'00.243"           V Ang Res -0°00'08.991"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10009
            H Ang Res -0°00'01.296"           V Ang Res -0°00'08.019"
            EDM Res   -0.006

RESIDUALSRR Round     1                       ID        121
            H Ang Res -0°00'03.078"           V Ang Res -0°00'08.424"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        121
            H Ang Res 0°00'01.134"            V Ang Res 0°00'07.452"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10009
            H Ang Res 0°00'01.944"            V Ang Res 0°00'08.829"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10008
            H Ang Res 0°00'00.081"            V Ang Res 0°00'10.125"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        15
            H Ang Res 0°00'00"                V Ang Res 0°00'08.1"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        15
            H Ang Res 0°00'00"                V Ang Res -0°00'08.1"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        10008
            H Ang Res 0°00'01.377"            V Ang Res -0°00'08.991"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10009
            H Ang Res 0°00'00"                V Ang Res -0°00'08.343"
            EDM Res   0.004

RESIDUALSRR Round     2                       ID        121
            H Ang Res 0°00'01.458"            V Ang Res -0°00'07.776"
            EDM Res   0.003

RESIDUALSRR Round     2                       ID        121
            H Ang Res 0°00'00.486"            V Ang Res 0°00'08.748"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10009
            H Ang Res -0°00'00.648"           V Ang Res 0°00'07.533"
            EDM Res   0.004

RESIDUALSRR Round     2                       ID        10008
            H Ang Res -0°00'01.215"           V Ang Res 0°00'07.857"
            EDM Re~   0.000
```

```
RESIDUALSRR Round     2                       ID        15
            H Ang Res 0°00'00"                V Ang Res 0°00'07.128"
            EDM Res   0.003

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.82                   Temp      55.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 18           Nrth 2121491.778      East 5992605.374
            Class Normal          Elv  86.138          Code N&S painted X
            Obs  User Input

STN     NM  ID        18                      Theo ht   5.569
            Scale     1.0000000000            Type      Fixed

BKB     NM  18                                -         120
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'57.084"

NOTE    TS  Time Date 09/20/2007 Time 11:26:24

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.312                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         120
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   91°25'23.412"           V.Std Err 0°00'03"
            EDM Dist  2972.445                S.Std Err 0.016
            Code      set rebar+cap           Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.023
                                              V.Dist         -0.117

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         10010
            H.Angle   13°15'48.204"           H.Std Err 0°00'03"
            V.Angle   90°37'48.648"           V.Std Err 0°00'03"
            EDM Dist  4029.281                S.Std Err 0.018
            Code      hor 18-120-121          Class     Normal

TRGET   NM  Target ht 5.712                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         10011
            H.Angle   25°38'01.68"            H.Std Err 0°00'03"
            V.Angle   93°19'50.592"           V.Std Err 0°00'03"
            EDM Dist  1297.738                S.Std Err 0.012
            Code      hor 18-120-15           Class     Normal

TRGET   NM  Target ht 4.770                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         10012
            H.Angle   64°39'07.02"            H.Std Err 0°00'03"
            V.Angle   89°00'29.52"            V.Std Err 0°00'03"
            EDM Dist  549.238                 S.Std Err 0.011
            Code      ang 18-120-14           Class     Normal
```

```
OBS     F2  18                              -          10012
            H.Angle   244°39'00.216"        H.Std Err  0°00'03"
            V.Angle   270°59'10.392"        V.Std Err  0°00'03"
            EDM Dist  549.239               S.Std Err  0.011
            Code      ang 18-120-14         Class      Normal

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          10011
            H.Angle   205°37'59.412"        H.Std Err  0°00'03"
            V.Angle   266°39'53.532"        V.Std Err  0°00'03"
            EDM Dist  1297.741              S.Std Err  0.012
            Code      hor 18-120-15         Class      Normal

TRGET   NM  Target ht 5.472                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          10010
            H.Angle   193°15'46.584"        H.Std Err  0°00'03"
            V.Angle   269°21'54.828"        V.Std Err  0°00'03"
            EDM Dist  4029.277              S.Std Err  0.018
            Code      hor 18-120-121        Class      Normal

TRGET   NM  Target ht 5.312                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          120
            H.Angle   179°59'57.084"        H.Std Err  0°00'03"
            V.Angle   268°34'20.712"        V.Std Err  0°00'03"
            EDM Dist  2972.441              S.Std Err  0.016
            Code      set rebar+cap         Class      Backsight

BKB     NM  18                              -          120
            Azmth     <null>
            Face 1    0°00'00"              Face 2     179°59'57.408"

OBS     F1  18                              -          120
            H.Angle   0°00'00"              H.Std Err  0°00'03"
            V.Angle   91°25'20.172"         V.Std Err  0°00'03"
            EDM Dist  2972.444              S.Std Err  0.016
            Code      set rebar+cap         Class      Backsight

TRGET   NM  Target ht 5.472                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10010
            H.Angle   13°15'48.852"         H.Std Err  0°00'03"
            V.Angle   90°37'48.648"         V.Std Err  0°00'03"
            EDM Dist  4029.281              S.Std Err  0.018
            Code      hor 18-120-121        Class      Normal

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10011
            H.Angle   25°38'01.68"          H.Std Err  0°00'03"
            V.Angle   93°19'49.944"         V.Std Err  0°00'03"
            EDM Dist  1297.743              S.Std Err  0.012
            Code      hor 18-120-15         Class      Normal

TRGET   NM  Target ht 4.770                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10012
            H.Angle   64°39'07.344"         H.Std Err  0°00'03"
            V.Angle   89°00'31.14"          V.Std Err  0°00'03"
            EDM Dist  549.239               S.Std Err  0.011
            Code      ang 18-120-14         Class      Normal
```

```
OBS      F2  18                              -          10012
             H.Angle   244°39'04.104"        H.Std Err  0°00'03"
             V.Angle   270°59'10.716"        V.Std Err  0°00'03"
             EDM Dist  549.239               S.Std Err  0.011
             Code      ang 18-120-14         Class      Normal

TRGET    NM  Target ht 5.712                 P.C. mm    0.0
             Prism Off 0.000

OBS      F2  18                              -          10011
             H.Angle   205°38'01.356"        H.Std Err  0°00'03"
             V.Angle   266°39'53.208"        V.Std Err  0°00'03"
             EDM Dist  1297.744              S.Std Err  0.012
             Code      hor 18-120-15         Class      Normal

TRGET    NM  Target ht 5.472                 P.C. mm    0.0
             Prism Off 0.000

OBS      F2  18                              -          10010
             H.Angle   193°15'46.584"        H.Std Err  0°00'03"
             V.Angle   269°21'55.476"        V.Std Err  0°00'03"
             EDM Dist  4029.277              S.Std Err  0.018
             Code      hor 18-120-121        Class      Normal

TRGET    NM  Target ht 5.312                 P.C. mm    0.0
             Prism Off 0.000

OBS      F2  18                              -          120
             H.Angle   179°59'57.408"        H.Std Err  0°00'03"
             V.Angle   268°34'24.276"        V.Std Err  0°00'03"
             EDM Dist  2972.446              S.Std Err  0.016
             Code      set rebar+cap         Class      Backsight

MTA      MA  ID        120                   Code       set rebar+cap
             H.Angle   0°00'00"              H.Std Err  0°00'00"
             V.Angle   91°25'29.649"         V.Std Err  0°00'02.406"
             S.Dist    2972.444              S.Std Err  0.002
             Angles    2                     BS Pt ID   120
             Distances 4

TRGET    NM  Target ht 5.472                 P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10010                 Code       hor 18-120-121
             H.Angle   13°15'48.933"         H.Std Err  0°00'00.115"
             V.Angle   90°37'56.748"         V.Std Err  0°00'00.229"
             S.Dist    4029.279              S.Std Err  0.002
             Angles    2                     BS Pt ID   120
             Distances 4

TRGET    NM  Target ht 5.712                 P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10011                 Code       hor 18-120-15
             H.Angle   25°38'02.409"         H.Std Err  0°00'00.573"
             V.Angle   93°19'58.449"         V.Std Err  0°00'00.115"
             S.Dist    1297.741              S.Std Err  0.003
             Angles    2                     BS Pt ID   120
             Distances 4

TRGET    NM  Target ht 4.770                 P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10012                 Code       ang 18-120-14
             H.Angle   64°39'06.048"         H.Std Err  0°00'01.375"
             V.Angle   89°00'39.888"         V.Std Err  0°00'00.458"
             S.Dist    549.239               S.Std Err  0.001
             Angles    2                     BS Pt ID   120
             Distances 4

RESIDUALSRR  Round     1                     ID         120
             H Ang Res 0°00'00"              V Ang Res  -0°00'06.237"
             EDM Re    0.001
```

```
RESIDUALSRR Round     1                       ID        10010
            H Ang Res -0°00'00.729"           V Ang Res -0°00'08.1"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        10011
            H Ang Res -0°00'00.729"           V Ang Res -0°00'07.857"
            EDM Res   -0.004

RESIDUALSRR Round     1                       ID        10012
            H Ang Res 0°00'00.972"            V Ang Res -0°00'10.368"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10012
            H Ang Res -0°00'02.916"           V Ang Res 0°00'09.72"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10011
            H Ang Res -0°00'00.081"           V Ang Res 0°00'08.019"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10010
            H Ang Res 0°00'00.567"            V Ang Res 0°00'08.424"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        120
            H Ang Res 0°00'00"                V Ang Res 0°00'09.639"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        120
            H Ang Res 0°00'00"                V Ang Res -0°00'09.477"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10010
            H Ang Res -0°00'00.081"           V Ang Res -0°00'08.1"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10011
            H Ang Res -0°00'00.729"           V Ang Res -0°00'08.505"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10012
            H Ang Res 0°00'01.296"            V Ang Res -0°00'08.748"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10012
            H Ang Res 0°00'00.648"            V Ang Res 0°00'09.396"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10011
            H Ang Res 0°00'01.539"            V Ang Res 0°00'08.343"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10010
            H Ang Res 0°00'00.243"            V Ang Res 0°00'07.776"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        120
            H Ang Res 0°00'00"                V Ang Res 0°00'06.075"
            EDM Res   0.002

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.82                   Temp      55.0
            Refrac cnst 0.142                 PPM       <null>
```

```
GRDPOS  FD  Point ID 18          Nrth 2121491.778      East 5992605.374
            Class Normal         Elv  86.138           Code N&S painted X
            Obs  User Input

STN     NM  ID        18                      Theo ht   5.569
            Scale     1.0000000000            Type      Fixed

BKB     NM  18                                -         121
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'59.352"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         121
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   90°37'48.648"           V.Std Err 0°00'03"
            EDM Dist  4029.281                S.Std Err 0.018
            Code      set 100d spk            Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         -0.004
                                              V.Dist         0.022

TRGET   NM  Target ht 5.712                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         10013
            H.Angle   12°22'14.124"           H.Std Err 0°00'03"
            V.Angle   93°19'50.592"           V.Std Err 0°00'03"
            EDM Dist  1297.742                S.Std Err 0.012
            Code      hor 18-121-15           Class     Normal

TRGET   NM  Target ht 5.312                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  18                                -         10014
            H.Angle   346°44'11.148"          H.Std Err 0°00'03"
            V.Angle   91°25'21.144"           V.Std Err 0°00'03"
            EDM Dist  2972.442                S.Std Err 0.016
            Code      hor 18-121-120          Class     Normal

OBS     F2  18                                -         10014
            H.Angle   166°44'11.148"          H.Std Err 0°00'03"
            V.Angle   268°34'22.332"          V.Std Err 0°00'03"
            EDM Dist  2972.446                S.Std Err 0.016
            Code      hor 18-121-120          Class     Normal

TRGET   NM  Target ht 5.712                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  18                                -         10013
            H.Angle   192°22'14.124"          H.Std Err 0°00'03"
            V.Angle   266°39'52.884"          V.Std Err 0°00'03"
            EDM Dist  1297.743                S.Std Err 0.012
            Code      hor 18-121-15           Class     Normal

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  18                                -         121
            H.Angle   179°59'59.352"          H.Std Err 0°00'03"
            V.Angle   269°21'53.208"          V.Std Err 0°00'03"
            EDM Dist  4029.278                S.Std Err 0.018
            Code      set 100d spk            Class     Backsight

BKB     NM  18                                -         121
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'56.436"
```

```
OBS     F1  18                              -          121
            H.Angle   0°00'00"              H.Std Err  0°00'03"
            V.Angle   90°37'50.268"         V.Std Err  0°00'03"
            EDM Dist  4029.283              S.Std Err  0.018
            Code      set 100d spk          Class      Backsight

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10013
            H.Angle   12°22'14.124"         H.Std Err  0°00'03"
            V.Angle   93°19'49.62"          V.Std Err  0°00'03"
            EDM Dist  1297.739              S.Std Err  0.012
            Code      hor 18-121-15         Class      Normal

TRGET   NM  Target ht 5.312                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  18                              -          10014
            H.Angle   346°44'10.5"          H.Std Err  0°00'03"
            V.Angle   91°25'21.144"         V.Std Err  0°00'03"
            EDM Dist  2972.445              S.Std Err  0.016
            Code      hor 18-121-120        Class      Normal

OBS     F2  18                              -          10014
            H.Angle   166°44'09.204"        H.Std Err  0°00'03"
            V.Angle   268°34'22.332"        V.Std Err  0°00'03"
            EDM Dist  2972.446              S.Std Err  0.016
            Code      hor 18-121-120        Class      Normal

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          10013
            H.Angle   192°22'11.856"        H.Std Err  0°00'03"
            V.Angle   266°39'53.856"        V.Std Err  0°00'03"
            EDM Dist  1297.740              S.Std Err  0.012
            Code      hor 18-121-15         Class      Normal

TRGET   NM  Target ht 5.472                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  18                              -          121
            H.Angle   179°59'56.436"        H.Std Err  0°00'03"
            V.Angle   269°21'57.42"         V.Std Err  0°00'03"
            EDM Dist  4029.282              S.Std Err  0.018
            Code      set 100d spk          Class      Backsight

MTA     MA  ID        121                   Code       set 100d spk
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   90°37'57.072"         V.Std Err  0°00'00.916"
            S.Dist    4029.281              S.Std Err  0.002
            Angles    2                     BS Pt ID   121
            Distances 4

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10013                 Code       hor 18-121-15
            H.Angle   12°22'14.61"          H.Std Err  0°00'00.229"
            V.Angle   93°19'58.368"         V.Std Err  0°00'00.687"
            S.Dist    1297.741              S.Std Err  0.002
            Angles    2                     BS Pt ID   121
            Distances 4

TRGET   NM  Target ht 5.312                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10014                 Code       hor 18-121-120
            H.Angle   346°44'11.553"        H.Std Err  0°00'00.115"
            V.Angle   91°25'29.406"         V.Std Err  0°00'00"
            S.Dist    2972.445              S.Std Err  0.002
            Angles    2                     BS Pt ID   121
            Dista     4
```

```
RESIDUALSRR Round     1                       ID        121
            H Ang Res 0°00'00"                V Ang Res -0°00'08.424"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10013
            H Ang Res -0°00'00.486"           V Ang Res -0°00'07.776"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10014
            H Ang Res -0°00'00.405"           V Ang Res -0°00'08.262"
            EDM Res   -0.003

RESIDUALSRR Round     1                       ID        10014
            H Ang Res 0°00'00.243"            V Ang Res 0°00'08.262"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10013
            H Ang Res 0°00'00.162"            V Ang Res 0°00'08.748"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        121
            H Ang Res 0°00'00"                V Ang Res 0°00'09.72"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        121
            H Ang Res 0°00'00"                V Ang Res -0°00'06.804"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10013
            H Ang Res -0°00'00.486"           V Ang Res -0°00'08.748"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        10014
            H Ang Res -0°00'01.053"           V Ang Res -0°00'08.262"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        10014
            H Ang Res 0°00'01.215"            V Ang Res 0°00'08.262"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        10013
            H Ang Res 0°00'00.81"             V Ang Res 0°00'07.776"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        121
            H Ang Res 0°00'00"                V Ang Res 0°00'05.508"
            EDM Res   0.001

NOTE    TS  Time Date 09/20/2007 Time 12:38:34

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.91                   Temp      55.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 120          Nrth 2121504.446      East 5995576.684
            Class Normal          Elv  12.634            Code set rebar+cap
            Obs  User Input

STN     NM  ID        120                     Theo ht   5.473
            Scale     1.0000000000            Type      Fixed

BKB     NM  120                               -         18
            Azmth     <null>
            Face 1    0°00'00"                Face 2    <null>
```

```
TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   88°35'59.856"         V.Std Err 0°00'03"
            EDM Dist  2972.427              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.023
                                            V.Dist         -0.005

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

ATMOS   NM  Press     29.90                 Temp      60.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 120          Nrth 2121504.446      East 5995576.684
            Class Normal          Elv  12.634            Code set rebar+cap
            Obs  User Input

STN     NM  ID        120                   Theo ht   5.684
            Scale     1.0000000000          Type      Fixed

BKB     NM  120                             -         18
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'59.676"

NOTE    TS  Time Date 09/20/2007 Time 13:17:13

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   88°36'13.788"         V.Std Err 0°00'03"
            EDM Dist  2972.416              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.021
                                            V.Dist         -0.014

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         10015
            H.Angle   18°23'41.064"         H.Std Err 0°00'03"
            V.Angle   89°58'01.092"         V.Std Err 0°00'03"
            EDM Dist  2987.872              S.Std Err 0.016
            Code      A 120-18-119          Class     Normal

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         27
            H.Angle   173°32'25.872"        H.Std Err 0°00'03"
            V.Angle   90°03'08.568"         V.Std Err 0°00'03"
            EDM Dist  713.314               S.Std Err 0.011
            Code      REBAR+CAP-HV27        Class     Normal

TRGET   NM  Target ht 5.472                 P.C. mm   0.0
            Prism Off 0.000
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```
OBS     F1  120                             -         10016
            H.Angle   224°12'57.312"        H.Std Err 0°00'03"
            V.Angle   88°44'15.252"         V.Std Err 0°00'03"
            EDM Dist  1325.858              S.Std Err 0.013
            Code      A 120-18-121          Class     Normal

TRGET   NM  Target ht 5.712                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         10017
            H.Angle   342°44'13.884"        H.Std Err 0°00'03"
            V.Angle   90°04'37.02"          V.Std Err 0°00'03"
            EDM Dist  1888.593              S.Std Err 0.014
            Code      A 120-18-15           Class     Normal

OBS     F2  120                             -         10017
            H.Angle   162°44'17.772"        H.Std Err 0°00'03"
            V.Angle   269°54'57.384"        V.Std Err 0°00'03"
            EDM Dist  1888.585              S.Std Err 0.014
            Code      A 120-18-15           Class     Normal

TRGET   NM  Target ht 5.472                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         10016
            H.Angle   44°12'57.312"         H.Std Err 0°00'03"
            V.Angle   271°15'28.224"        V.Std Err 0°00'03"
            EDM Dist  1325.863              S.Std Err 0.013
            Code      A 120-18-121          Class     Normal

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         27
            H.Angle   353°32'31.056"        H.Std Err 0°00'03"
            V.Angle   269°56'32.964"        V.Std Err 0°00'03"
            EDM Dist  713.315               S.Std Err 0.011
            Code      REBAR+CAP-HV27        Class     Normal

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         10015
            H.Angle   198°23'43.656"        H.Std Err 0°00'03"
            V.Angle   270°01'41.736"        V.Std Err 0°00'03"
            EDM Dist  2987.870              S.Std Err 0.016
            Code      A 120-18-119          Class     Normal

TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         18
            H.Angle   179°59'59.676"        H.Std Err 0°00'03"
            V.Angle   271°23'26.448"        V.Std Err 0°00'03"
            EDM Dist  2972.420              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

BKB     NM  120                             -         18
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'02.268"

OBS     F1  120                             -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   88°36'17.028"         V.Std Err 0°00'03"
            EDM Dist  2972.413              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000
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OBS     F1  120                             -          10015
            H.Angle   18°23'43.656"         H.Std Err  0°00'03"
            V.Angle   89°58'00.768"         V.Std Err  0°00'03"
            EDM Dist  2987.872              S.Std Err  0.016
            Code      A 120-18-119          Class      Normal

TRGET   NM  Target ht 5.374                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  120                             -          27
            H.Angle   173°32'34.62"         H.Std Err  0°00'03"
            V.Angle   90°03'11.16"          V.Std Err  0°00'03"
            EDM Dist  713.310               S.Std Err  0.011
            Code      REBAR+CAP-HV27        Class      Normal

TRGET   NM  Target ht 5.472                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  120                             -          10016
            H.Angle   224°12'59.58"         H.Std Err  0°00'03"
            V.Angle   88°44'14.928"         V.Std Err  0°00'03"
            EDM Dist  1325.855              S.Std Err  0.013
            Code      A 120-18-121          Class      Normal

TRGET   NM  Target ht 5.712                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  120                             -          10017
            H.Angle   342°44'14.856"        H.Std Err  0°00'03"
            V.Angle   90°04'44.472"         V.Std Err  0°00'03"
            EDM Dist  1888.588              S.Std Err  0.014
            Code      A 120-18-15           Class      Normal

OBS     F2  120                             -          10017
            H.Angle   162°44'10.644"        H.Std Err  0°00'03"
            V.Angle   269°55'02.568"        V.Std Err  0°00'03"
            EDM Dist  1888.592              S.Std Err  0.014
            Code      A 120-18-15           Class      Normal

TRGET   NM  Target ht 5.472                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  120                             -          10016
            H.Angle   44°12'56.988"         H.Std Err  0°00'03"
            V.Angle   271°15'24.66"         V.Std Err  0°00'03"
            EDM Dist  1325.859              S.Std Err  0.013
            Code      A 120-18-121          Class      Normal

TRGET   NM  Target ht 5.374                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  120                             -          27
            H.Angle   353°32'25.548"        H.Std Err  0°00'03"
            V.Angle   269°56'34.908"        V.Std Err  0°00'03"
            EDM Dist  713.307               S.Std Err  0.011
            Code      REBAR+CAP-HV27        Class      Normal

TRGET   NM  Target ht 2.533                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  120                             -          10015
            H.Angle   198°23'44.304"        H.Std Err  0°00'03"
            V.Angle   270°01'43.68"         V.Std Err  0°00'03"
            EDM Dist  2987.861              S.Std Err  0.016
            Code      A 120-18-119          Class      Normal

TRGET   NM  Target ht 4.770                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  120                             -          18
            H.Angle   180°00'02.268"        H.Std Err  0°00'03"
            V.Angle   271°23'25.152"        V.Std Err  0°00'03"
            EDM Dist  2972.412              S.Std Err  0.016
            Code      N&S painted X         Class      Backsight
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MTA     MA  ID         18                    Code      N&S painted X
            H.Angle    0°00'00"              H.Std Err 0°00'00"
            V.Angle    88°36'24.804"         V.Std Err 0°00'01.604"
            S.Dist     2972.415              S.Std Err 0.003
            Angles     2                     BS Pt ID  18
            Distances  4

TRGET   NM  Target ht  2.533                 P.C. mm   0.0
            Prism Off  0.000

MTA     MA  ID         10015                 Code      A 120-18-119
            H.Angle    18°23'42.684"         H.Std Err 0°00'00.229"
            V.Angle    89°58'09.111"         V.Std Err 0°00'00.802"
            S.Dist     2987.869              S.Std Err 0.005
            Angles     2                     BS Pt ID  18
            Distances  4

TRGET   NM  Target ht  5.374                 P.C. mm   0.0
            Prism Off  0.000

MTA     MA  ID         27                    Code      REBAR+CAP-HV27
            H.Angle    173°32'28.788"        H.Std Err 0°00'00.229"
            V.Angle    90°03'17.964"         V.Std Err 0°00'00.229"
            S.Dist     713.311               S.Std Err 0.004
            Angles     2                     BS Pt ID  18
            Distances  4

TRGET   NM  Target ht  5.472                 P.C. mm   0.0
            Prism Off  0.000

MTA     MA  ID         10016                 Code      A 120-18-121
            H.Angle    224°12'57.312"        H.Std Err 0°00'00.229"
            V.Angle    88°44'24.324"         V.Std Err 0°00'01.146"
            S.Dist     1325.859              S.Std Err 0.003
            Angles     2                     BS Pt ID  18
            Distances  4

TRGET   NM  Target ht  5.712                 P.C. mm   0.0
            Prism Off  0.000

MTA     MA  ID         10017                 Code      A 120-18-15
            H.Angle    342°44'13.803"        H.Std Err 0°00'03.093"
            V.Angle    90°04'50.385"         V.Std Err 0°00'00.802"
            S.Dist     1888.589              S.Std Err 0.004
            Angles     2                     BS Pt ID  18
            Distances  4

RESIDUALSRR Round      1                     ID        18
            H Ang Res  0°00'00"              V Ang Res -0°00'11.016"
            EDM Res    0.001

RESIDUALSRR Round      1                     ID        10015
            H Ang Res  -0°00'01.62"          V Ang Res -0°00'08.019"
            EDM Res    0.003

RESIDUALSRR Round      1                     ID        27
            H Ang Res  -0°00'02.916"         V Ang Res -0°00'09.396"
            EDM Res    0.002

RESIDUALSRR Round      1                     ID        10016
            H Ang Res  0°00'00"              V Ang Res -0°00'09.072"
            EDM Res    -0.001

RESIDUALSRR Round      1                     ID        10017
            H Ang Res  0°00'00.081"          V Ang Res -0°00'13.365"
            EDM Res    0.003

RESIDUALSRR Round      1                     ID        10017
            H Ang Res  0°00'04.293"          V Ang Res 0°00'12.231"
            EDM Res    -0.004

RESIDUALSRR Round      1                     ID        10016
            H Ang Res  0°00'00.324"          V Ang Res 0°00'07.452"
            EDM        0.004
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RESIDUALSRR Round     1                       ID        27
            H Ang Res 0°00'02.592"            V Ang Res 0°00'09.072"
            EDM Res   0.003

RESIDUALSRR Round     1                       ID        10015
            H Ang Res 0°00'01.296"            V Ang Res 0°00'09.153"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        18
            H Ang Res 0°00'00"                V Ang Res 0°00'08.748"
            EDM Res   0.005

RESIDUALSRR Round     2                       ID        18
            H Ang Res 0°00'00"                V Ang Res -0°00'07.776"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        10015
            H Ang Res 0°00'00.972"            V Ang Res -0°00'08.343"
            EDM Res   0.004

RESIDUALSRR Round     2                       ID        27
            H Ang Res 0°00'05.832"            V Ang Res -0°00'06.804"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        10016
            H Ang Res 0°00'02.268"            V Ang Res -0°00'09.396"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        10017
            H Ang Res 0°00'01.053"            V Ang Res -0°00'05.913"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        10017
            H Ang Res -0°00'05.427"           V Ang Res 0°00'07.047"
            EDM Res   0.003

RESIDUALSRR Round     2                       ID        10016
            H Ang Res -0°00'02.592"           V Ang Res 0°00'11.016"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        27
            H Ang Res -0°00'05.508"           V Ang Res 0°00'07.128"
            EDM Res   -0.005

RESIDUALSRR Round     2                       ID        10015
            H Ang Res -0°00'00.648"           V Ang Res 0°00'07.209"
            EDM Res   -0.008

RESIDUALSRR Round     2                       ID        18
            H Ang Res 0°00'00"                V Ang Res 0°00'10.044"
            EDM Res   -0.003

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

NOTE    NM  Used last station setup

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.90                   Temp      65.0
            Refr      st 0.142                PPM       <null>
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```
GRDPOS  FD  Point ID 120          Nrth 2121504.446      East 5995576.684
            Class Normal          Elv  12.634           Code set rebar+cap
            Obs  User Input

STN     NM  ID        120                     Theo ht   5.684
            Scale     1.0000000000            Type      Fixed

BKB     NM  120                               -         18
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'56.76"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 4.770                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                               -         18
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   88°36'12.816"           V.Std Err 0°00'03"
            EDM Dist  2972.411                S.Std Err 0.016
            Code      N&S painted X           Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.018
                                              V.Dist         -0.028

TRGET   NM  Target ht 2.533                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                               -         28
            H.Angle   20°09'07.812"           H.Std Err 0°00'03"
            V.Angle   90°05'44.088"           V.Std Err 0°00'03"
            EDM Dist  3093.403                S.Std Err 0.016
            Code      REBAR+CAP-HV28          Class     Del normal

OBS     F2  120                               -         28
            H.Angle   200°09'18.828"          H.Std Err 0°00'03"
            V.Angle   269°53'53.556"          V.Std Err 0°00'03"
            EDM Dist  3093.533                S.Std Err 0.016
            Code      REBAR+CAP-HV28          Class     Del normal

TRGET   NM  Target ht 4.770                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                               -         18
            H.Angle   179°59'56.76"           H.Std Err 0°00'03"
            V.Angle   271°23'29.688"          V.Std Err 0°00'03"
            EDM Dist  2972.415                S.Std Err 0.016
            Code      N&S painted X           Class     Backsight

BKB     NM  120                               -         18
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'56.436"

OBS     F1  120                               -         18
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   88°36'12.816"           V.Std Err 0°00'03"
            EDM Dist  2972.417                S.Std Err 0.016
            Code      N&S painted X           Class     Backsight

TRGET   NM  Target ht 2.533                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                               -         28
            H.Angle   20°09'16.56"            H.Std Err 0°00'03"
            V.Angle   90°05'47.328"           V.Std Err 0°00'03"
            EDM Dist  3093.540                S.Std Err 0.016
            Code      REBAR+CAP-HV28          Class     Del normal

OBS     F2  120                               -         28
            H.Angle   200°09'10.08"           H.Std Err 0°00'03"
            V.Angle   269°53'53.556"          V.Std Err 0°00'03"
            EDM Dist  3093.538                S.Std Err 0.016
            Code      REBAR+CAP-HV28          Class     Del normal
```

```
TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         18
            H.Angle   179°59'56.436"        H.Std Err 0°00'03"
            V.Angle   271°23'28.716"        V.Std Err 0°00'03"
            EDM Dist  2972.416              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

BKB     NM  120                             -         18
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'02.268"

NOTE    SN  Start of Rounds

OBS     F1  120                             -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   88°36'15.408"         V.Std Err 0°00'03"
            EDM Dist  2972.416              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         28
            H.Angle   20°09'21.096"         H.Std Err 0°00'03"
            V.Angle   90°05'46.68"          V.Std Err 0°00'03"
            EDM Dist  3093.551              S.Std Err 0.016
            Code      REBAR+CAP-HV28        Class     Normal

OBS     F2  120                             -         28
            H.Angle   200°09'18.504"        H.Std Err 0°00'03"
            V.Angle   269°54'00.684"        V.Std Err 0°00'03"
            EDM Dist  3093.539              S.Std Err 0.016
            Code      REBAR+CAP-HV28        Class     Normal

TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         18
            H.Angle   180°00'02.268"        H.Std Err 0°00'03"
            V.Angle   271°23'31.956"        V.Std Err 0°00'03"
            EDM Dist  2972.417              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

BKB     NM  120                             -         18
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'58.704"

OBS     F1  120                             -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   88°36'18.972"         V.Std Err 0°00'03"
            EDM Dist  2972.418              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         28
            H.Angle   20°09'21.42"          H.Std Err 0°00'03"
            V.Angle   90°05'45.708"         V.Std Err 0°00'03"
            EDM Dist  3093.546              S.Std Err 0.016
            Code      REBAR+CAP-HV28        Class     Normal

OBS     F2  120                             -         28
            H.Angle   200°09'18.828"        H.Std Err 0°00'03"
            V.Angle   269°53'55.5"          V.Std Err 0°00'03"
            EDM Dist  3093.547              S.Std Err 0.016
            Code      REBAR+CAP-HV28        Class     Normal

TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F2  120                             -          18
            H.Angle   179°59'58.704"        H.Std Err 0°00'03"
            V.Angle   271°23'30.336"        V.Std Err 0°00'03"
            EDM Dist  2972.420              S.Std Err 0.016
            Code      N&S painted X         Class     Backsight

MTA     MA  ID        18                    Code      N&S painted X
            H.Angle   0°00'00"             H.Std Err 0°00'00"
            V.Angle   88°36'23.022"         V.Std Err 0°00'01.833"
            S.Dist    2972.418              S.Std Err 0.002
            Angles    2                     BS Pt ID  18
            Distances 4

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        28                    Code      REBAR+CAP-HV28
            H.Angle   20°09'19.719"         H.Std Err 0°00'01.489"
            V.Angle   90°05'54.051"         V.Std Err 0°00'01.489"
            S.Dist    3093.546              S.Std Err 0.005
            Angles    2                     BS Pt ID  18
            Distances 4

RESIDUALSRR Round     1                     ID        18
            H Ang Res 0°00'00"              V Ang Res -0°00'07.614"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        28
            H Ang Res 0°00'01.377"          V Ang Res -0°00'07.371"
            EDM Res   0.005

RESIDUALSRR Round     1                     ID        28
            H Ang Res -0°00'03.483"         V Ang Res 0°00'05.265"
            EDM Res   -0.007

RESIDUALSRR Round     1                     ID        18
            H Ang Res 0°00'00"              V Ang Res 0°00'05.022"
            EDM Res   -0.001

RESIDUALSRR Round     2                     ID        18
            H Ang Res 0°00'00"              V Ang Res -0°00'04.05"
            EDM Res   0.000

RESIDUALSRR Round     2                     ID        28
            H Ang Res 0°00'01.701"          V Ang Res -0°00'08.343"
            EDM Res   0.000

RESIDUALSRR Round     2                     ID        28
            H Ang Res 0°00'00.405"          V Ang Res 0°00'10.449"
            EDM Res   0.001

RESIDUALSRR Round     2                     ID        18
            H Ang Res 0°00'00"              V Ang Res 0°00'06.642"
            EDM Res   0.002

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

NOTE    TS  Time Date 09/20/2007 Time 13:48:49

ATMOS   NM  Press     29.89                 Temp      65.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 120          Nrth 2121504.446      East 5995576.684
            Class Normal          Elv  12.634            Code set rebar+cap
            Obs  User Input
```

```
STN     NM  ID        120                   Theo ht   5.684
            Scale     1.0000000000          Type      Fixed

BKB     NM  120                             -         121
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'59.352"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.472                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         121
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   88°44'12.66"          V.Std Err 0°00'03"
            EDM Dist  1325.858              S.Std Err 0.013
            Code      set 100d spk          Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.011
                                            V.Dist         0.164

TRGET   NM  Target ht 5.712                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         10018
            H.Angle   118°31'14.304"        H.Std Err 0°00'03"
            V.Angle   90°04'13.044"         V.Std Err 0°00'03"
            EDM Dist  1888.594              S.Std Err 0.014
            Code      H 120-121-15          Class     Normal

TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         10019
            H.Angle   135°47'02.04"         H.Std Err 0°00'03"
            V.Angle   88°36'16.38"          V.Std Err 0°00'03"
            EDM Dist  2972.422              S.Std Err 0.016
            Code      H 120-121-18          Class     Normal

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         10020
            H.Angle   154°10'45.372"        H.Std Err 0°00'03"
            V.Angle   89°58'00.768"         V.Std Err 0°00'03"
            EDM Dist  2987.865              S.Std Err 0.016
            Code      H 120-121-119         Class     Normal

TRGET   NM  Target ht 5.374                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  120                             -         10021
            H.Angle   309°19'30.504"        H.Std Err 0°00'03"
            V.Angle   90°03'04.356"         V.Std Err 0°00'03"
            EDM Dist  713.316               S.Std Err 0.011
            Code      H 120-121-27          Class     Normal

OBS     F2  120                             -         10021
            H.Angle   129°19'31.476"        H.Std Err 0°00'03"
            V.Angle   269°56'37.5"          V.Std Err 0°00'03"
            EDM Dist  713.314               S.Std Err 0.011
            Code      H 120-121-27          Class     Normal

TRGET   NM  Target ht 2.533                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  120                             -         10020
            H.Angle   334°10'42.78"         H.Std Err 0°00'03"
            V.Angle   270°01'41.736"        V.Std Err 0°00'03"
            EDM Dist  2987.877              S.Std Err 0.016
            Code      H 120-121-119         Class     Normal

TRGET   NM  Target ht 4.770                 P.C. mm   0.0
            Pris      0.000
```

```
OBS      F2  120                              -          10019
             H.Angle   315°46'59.124"         H.Std Err  0°00'03"
             V.Angle   271°23'24.828"         V.Std Err  0°00'03"
             EDM Dist  2972.419               S.Std Err  0.016
             Code      H 120-121-18           Class      Normal

TRGET    NM  Target ht 5.712                  P.C. mm    0.0
             Prism Off 0.000

OBS      F2  120                              -          10018
             H.Angle   298°31'14.628"         H.Std Err  0°00'03"
             V.Angle   269°54'57.384"         V.Std Err  0°00'03"
             EDM Dist  1888.592               S.Std Err  0.014
             Code      H 120-121-15           Class      Normal

TRGET    NM  Target ht 5.472                  P.C. mm    0.0
             Prism Off 0.000

OBS      F2  120                              -          121
             H.Angle   179°59'59.352"         H.Std Err  0°00'03"
             V.Angle   271°15'25.632"         V.Std Err  0°00'03"
             EDM Dist  1325.860               S.Std Err  0.013
             Code      set 100d spk           Class      Backsight

MTA      MA  ID        121                    Code       set 100d spk
             H.Angle   0°00'00"               H.Std Err  <null>
             V.Angle   88°44'23.514"          V.Std Err  <null>
             S.Dist    1325.859               S.Std Err  0.002
             Angles    1                      BS Pt ID   121
             Distances 2

TRGET    NM  Target ht 5.712                  P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10018                  Code       H 120-121-15
             H.Angle   118°31'14.79"          H.Std Err  <null>
             V.Angle   90°04'37.83"           V.Std Err  <null>
             S.Dist    1888.593               S.Std Err  0.001
             Angles    1                      BS Pt ID   121
             Distances 2

TRGET    NM  Target ht 4.770                  P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10019                  Code       H 120-121-18
             H.Angle   135°47'00.906"         H.Std Err  <null>
             V.Angle   88°36'25.776"          V.Std Err  <null>
             S.Dist    2972.420               S.Std Err  0.002
             Angles    1                      BS Pt ID   121
             Distances 2

TRGET    NM  Target ht 2.533                  P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10020                  Code       H 120-121-119
             H.Angle   154°10'44.4"           H.Std Err  <null>
             V.Angle   89°58'09.516"          V.Std Err  <null>
             S.Dist    2987.871               S.Std Err  0.008
             Angles    1                      BS Pt ID   121
             Distances 2

TRGET    NM  Target ht 5.374                  P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10021                  Code       H 120-121-27
             H.Angle   309°19'31.314"         H.Std Err  <null>
             V.Angle   90°03'13.428"          V.Std Err  <null>
             S.Dist    713.315                S.Std Err  0.002
             Angles    1                      BS Pt ID   121
             Distances 2

RESIDUALSRR  Round     1                      ID         121
             H Ang     0°00'00"               V Ang Res  -0°00'10.854"
             EDM F     -0.001
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```
RESIDUALSRR Round     1                       ID        10018
            H Ang Res -0°00'00.486"           V Ang Res -0°00'24.786"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10019
            H Ang Res 0°00'01.134"            V Ang Res -0°00'09.396"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10020
            H Ang Res 0°00'00.972"            V Ang Res -0°00'08.748"
            EDM Res   -0.006

RESIDUALSRR Round     1                       ID        10021
            H Ang Res -0°00'00.81"            V Ang Res -0°00'09.072"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10021
            H Ang Res 0°00'00.81"             V Ang Res 0°00'09.072"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10020
            H Ang Res -0°00'00.972"           V Ang Res 0°00'08.748"
            EDM Res   0.006

RESIDUALSRR Round     1                       ID        10019
            H Ang Res -0°00'01.134"           V Ang Res 0°00'09.396"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10018
            H Ang Res 0°00'00.486"            V Ang Res 0°00'24.786"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        121
            H Ang Res 0°00'00"                V Ang Res 0°00'10.854"
            EDM Res   0.001

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

NOTE    TS  Time Date 09/21/2007 Time 05:57:15

NOTE    NM  Following data copied from another job: 0736-CONT-STAR

GRDPOS  KI  Point ID 222          Nrth 2120799.836      East 5995944.192
            Class Normal          Elv  11.056           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 223          Nrth 2120365.728      East 5996280.846
            Class Normal          Elv  43.274           Code Set N&S
            Obs  User Input

GRDPOS  KI  Point ID 224          Nrth 2120314.532      East 5998471.994
            Class Normal          Elv  10.663           Code Set N&S
            Obs  User Input

GRDPOS  KI  Point ID 225          Nrth 2121033.017      East 5997722.997
            Class Normal          Elv  12.041           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 226          Nrth 2120914.315      East 5997159.623
            Class Normal          Elv  14.042           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 227          Nrth 2121057.274      East 5997697.716
            Class Normal          Elv  11.614           Code Foresight Statio
            Obs  User Input
```

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GRDPOS  KI  Point ID 228          Nrth 2121072.077      East 5997940.081
            Class Normal          Elv  11.647           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 229          Nrth 2121116.286      East 5998065.776
            Class Normal          Elv  10.630           Code Foresight Statio
            Obs  User Input

GRDPOS  KI  Point ID 230          Nrth 2120161.848      East 5998838.890
            Class Normal          Elv  14.272           Code Set N&S
            Obs  User Input

GRDPOS  KI  Point ID 231          Nrth 2120920.322      East 5996960.998
            Class Normal          Elv  11.745           Code Foresight Statio
            Obs  User Input

GRDPOS  KI  Point ID 232          Nrth 2120837.983      East 5996786.320
            Class Normal          Elv  12.041           Code Foresight Statio
            Obs  User Input

GRDPOS  KI  Point ID 233          Nrth 2120690.368      East 5996322.079
            Class Del normal      Elv  13.156           Code Backsight Statio
            Obs  User Input

NOTE    NM  Deleted 7:17:18 AM 9/21/2007

GRDPOS  KI  Point ID 234          Nrth 2120563.384      East 5995787.149
            Class Normal          Elv  12.139           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 235          Nrth 2120419.086      East 5995358.328
            Class Normal          Elv  12.106           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 236          Nrth 2120370.198      East 5995164.922
            Class Normal          Elv  19.521           Code Backsight Statio
            Obs  User Input

GRDPOS  KI  Point ID 237          Nrth 2120327.328      East 5995084.772
            Class Normal          Elv  61.975           Code Foresight Statio
            Obs  User Input

NOTE    TS  Time Date 09/21/2007 Time 07:17:18

GRDPOS  KI  Point ID 233          Nrth 2120690.368      East 5996322.079
            Class Normal          Elv  13.156           Code CN
            Obs  User Input

NOTE    KI  Computed inverse, Start pt: 121, End pt: 223,

NOTE    KI  Azimuth: 228.825°, H Dist: 331.719sft, V Dist: 1.001sft,

NOTE    KI  S Dist: 331.721sft

NOTE    TS  Time Date 09/21/2007 Time 08:53:37

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2
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```
ATMOS   NM  Press      29.84                  Temp      75.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 121          Nrth 2120584.118      East 5996530.533
            Class Normal          Elv  42.273            Code set 100d spk
            Obs  User Input

STN     NM  ID         121                    Theo ht   5.769
            Scale      1.0000000000           Type      Fixed

BKB     NM  121                               -         18
            Azmth      <null>
            Face 1     0°00'00"               Face 2    179°59'52.224"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.528                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                               -         18
            H.Angle    0°00'00"               H.Std Err 0°00'03"
            V.Angle    89°22'50.88"           V.Std Err 0°00'03"
            EDM Dist   4029.275               S.Std Err 0.018
            Code       N&S painted X          Class     Backsight

POLAR D F1  Azmth            <null>            H.Dist         -0.041
                                               V.Dist         -0.253

TRGET   NM  Target ht 6.273                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                               -         10022
            H.Angle    30°57'06.84"           H.Std Err 0°00'03"
            V.Angle    91°15'03.276"          V.Std Err 0°00'03"
            EDM Dist   1325.852               S.Std Err 0.013
            Code       A 121-18-120           Class     Normal

TRGET   NM  Target ht 5.810                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                               -         122
            H.Angle    245°29'44.196"         H.Std Err 0°00'03"
            V.Angle    88°55'01.956"          V.Std Err 0°00'03"
            EDM Dist   548.827                S.Std Err 0.011
            Code       SET MAGNS              Class     Normal

OBS     F2  121                               -         122
            H.Angle    65°29'42.9"            H.Std Err 0°00'03"
            V.Angle    271°04'42.816"         V.Std Err 0°00'03"
            EDM Dist   548.829                S.Std Err 0.011
            Code       SET MAGNS              Class     Normal

TRGET   NM  Target ht 6.273                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                               -         10022
            H.Angle    210°57'01.656"         H.Std Err 0°00'03"
            V.Angle    268°44'44.088"         V.Std Err 0°00'03"
            EDM Dist   1325.851               S.Std Err 0.013
            Code       A 121-18-120           Class     Normal

TRGET   NM  Target ht 5.528                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                               -         18
            H.Angle    179°59'52.224"         H.Std Err 0°00'03"
            V.Angle    270°36'55.512"         V.Std Err 0°00'03"
            EDM Dist   4029.274               S.Std Err 0.018
            Code       N&S painted X          Class     Backsight

BKB     NM  121                               -         18
            Azmth      <null>
            Face 1     0°00'00"               Face 2    180°00'00"
```

```
OBS     F1  121                             -          18
            H.Angle   0°00'00"              H.Std Err  0°00'03"
            V.Angle   89°22'50.556"         V.Std Err  0°00'03"
            EDM Dist  4029.277              S.Std Err  0.018
            Code      N&S painted X         Class      Backsight

TRGET   NM  Target ht 6.273                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  121                             -          10022
            H.Angle   30°57'05.22"          H.Std Err  0°00'03"
            V.Angle   91°15'03.276"         V.Std Err  0°00'03"
            EDM Dist  1325.851              S.Std Err  0.013
            Code      A 121-18-120          Class      Normal

TRGET   NM  Target ht 5.810                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  121                             -          122
            H.Angle   245°29'45.168"        H.Std Err  0°00'03"
            V.Angle   88°55'02.928"         V.Std Err  0°00'03"
            EDM Dist  548.829               S.Std Err  0.011
            Code      SET MAGNS             Class      Normal

OBS     F2  121                             -          122
            H.Angle   65°29'44.196"         H.Std Err  0°00'03"
            V.Angle   271°04'45.408"        V.Std Err  0°00'03"
            EDM Dist  548.829               S.Std Err  0.011
            Code      SET MAGNS             Class      Normal

TRGET   NM  Target ht 6.273                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  121                             -          10022
            H.Angle   210°57'03.924"        H.Std Err  0°00'03"
            V.Angle   268°44'41.496"        V.Std Err  0°00'03"
            EDM Dist  1325.853              S.Std Err  0.013
            Code      A 121-18-120          Class      Normal

TRGET   NM  Target ht 5.528                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  121                             -          18
            H.Angle   180°00'00"            H.Std Err  0°00'03"
            V.Angle   270°36'58.752"        V.Std Err  0°00'03"
            EDM Dist  4029.280              S.Std Err  0.018
            Code      N&S painted X         Class      Backsight

MTA     MA  ID        18                    Code       N&S painted X
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   89°22'56.793"         V.Std Err  0°00'01.26"
            S.Dist    4029.277              S.Std Err  0.003
            Angles    2                     BS Pt ID   18
            Distances 4

TRGET   NM  Target ht 6.273                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10022                 Code       A 121-18-120
            H.Angle   30°57'06.354"         H.Std Err  0°00'02.52"
            V.Angle   91°15'10.242"         V.Std Err  0°00'00.916"
            S.Dist    1325.852              S.Std Err  0.001
            Angles    2                     BS Pt ID   18
            Distances 4

TRGET   NM  Target ht 5.810                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        122                   Code       SET MAGNS
            H.Angle   245°29'46.059"        H.Std Err  0°00'01.947"
            V.Angle   88°55'09.165"         V.Std Err  0°00'00.573"
            S.Dist    548.829               S.Std Err  0.001
            Angles    2                     BS Pt ID   18
            Distances 4
```

```
RESIDUALSRR Round     1                       ID        18
            H Ang Res 0°00'00"                V Ang Res -0°00'05.913"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10022
            H Ang Res 0°00'00.486"            V Ang Res -0°00'06.966"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        122
            H Ang Res -0°00'01.863"           V Ang Res -0°00'07.209"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        122
            H Ang Res 0°00'04.617"            V Ang Res 0°00'08.019"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10022
            H Ang Res 0°00'03.078"            V Ang Res 0°00'05.67"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        18
            H Ang Res 0°00'00"                V Ang Res 0°00'07.695"
            EDM Res   -0.002

RESIDUALSRR Round     2                       ID        18
            H Ang Res 0°00'00"                V Ang Res -0°00'06.237"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10022
            H Ang Res -0°00'01.134"           V Ang Res -0°00'06.966"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        122
            H Ang Res -0°00'00.891"           V Ang Res -0°00'06.237"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        122
            H Ang Res -0°00'01.863"           V Ang Res 0°00'05.427"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10022
            H Ang Res -0°00'02.43"            V Ang Res 0°00'08.262"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        18
            H Ang Res 0°00'00"                V Ang Res 0°00'04.455"
            EDM Res   0.004

NOTE    TS  Time Date 09/21/2007 Time 09:32:51

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

NOTE    TS  Time Date 09/21/2007 Time 10:06:27

ATMOS   NM  Press     29.84                   Temp      75.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 121          Nrth 2120584.118      East 5996530.533
            Class Normal          Elv  42.273           Code set 100d spk
            Obs  User Input

STN     NM  ID        121                     Theo ht   5.769
            Scale     1.0000000000            Type      Fixed

BKB     NM  121                               -         18
            Azmth     <null>
            Face      0°00'00"                Face 2    179°59'54.492"
```

```
NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.528                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                             -         18
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   89°22'58.332"         V.Std Err 0°00'03"
            EDM Dist  4029.274              S.Std Err 0.018
            Code      N&S painted X         Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         -0.041
                                            V.Dist         -0.107

TRGET   NM  Target ht 4.910                 P.C. mm   2.0
            Prism Off 0.000

OBS     F1  121                             -         123
            H.Angle   129°02'54.528"        H.Std Err 0°00'03"
            V.Angle   92°26'41.303"         V.Std Err 0°00'03"
            EDM Dist  725.974               S.Std Err 0.011
            Code      SET MAGNS             Class     Normal

OBS     F2  121                             -         123
            H.Angle   309°02'49.02"         H.Std Err 0°00'03"
            V.Angle   267°33'05.738"        V.Std Err 0°00'03"
            EDM Dist  725.979               S.Std Err 0.011
            Code      SET MAGNS             Class     Normal

TRGET   NM  Target ht 5.528                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                             -         18
            H.Angle   179°59'54.492"        H.Std Err 0°00'03"
            V.Angle   270°36'54.216"        V.Std Err 0°00'03"
            EDM Dist  4029.274              S.Std Err 0.018
            Code      N&S painted X         Class     Backsight

MTA     MA  ID        18                    Code      N&S painted X
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   89°23'02.058"         V.Std Err <null>
            S.Dist    4029.274              S.Std Err 0.000
            Angles    1                     BS Pt ID  18
            Distances 2

TRGET   NM  Target ht 4.910                 P.C. mm   2.0
            Prism Off 0.000

MTA     MA  ID        123                   Code      SET MAGNS
            H.Angle   129°02'54.528"        H.Std Err <null>
            V.Angle   92°26'47.783"         V.Std Err <null>
            S.Dist    725.976               S.Std Err 0.003
            Angles    1                     BS Pt ID  18
            Distances 2

RESIDUALSRR Round     1                     ID        18
            H Ang Res 0°00'00"              V Ang Res -0°00'03.726"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        123
            H Ang Res 0°00'00"              V Ang Res -0°00'06.48"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        123
            H Ang Res 0°00'00"              V Ang Res 0°00'06.48"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID        18
            H Ang Res 0°00'00"              V Ang Res 0°00'03.726"
            EDM Res   0.000
```

```
INSTR   NM  EDM       VX & S Series
            Serial no 11832                  Firmware  R7.0.35
            Mount     Not Applic             Edm o/s   <null>
            J Constant 273.9420092103        N Constant 105.675
            H.col     0°00'00.648"           V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"               EDM Prec  0.010
            VA Prec   0°00'03"               EDM (ppm) 2

ATMOS   NM  Press     29.84                  Temp      75.0
            Refrac cnst 0.142                PPM       <null>

GRDPOS  FD  Point ID 121          Nrth 2120584.118      East 5996530.533
            Class Normal          Elv  42.273           Code set 100d spk
            Obs  User Input

STN     NM  ID        121                    Theo ht   5.769
            Scale     1.0000000000           Type      Fixed

BKB     NM  121                              -         120
            Azmth     <null>
            Face 1    0°00'00"               Face 2    179°59'57.732"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 6.273                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                              -         120
            H.Angle   0°00'00"               H.Std Err 0°00'03"
            V.Angle   91°15'09.108"          V.Std Err 0°00'03"
            EDM Dist  1325.847               S.Std Err 0.013
            Code      set rebar+cap          Class     Backsight

POLAR D F1  Azmth          <null>            H.Dist         0.008
                                             V.Dist         -0.189

TRGET   NM  Target ht 4.910                  P.C. mm   2.0
            Prism Off 0.000

OBS     F1  121                              -         10023
            H.Angle   98°05'52.872"          H.Std Err 0°00'03"
            V.Angle   92°26'33.852"          V.Std Err 0°00'03"
            EDM Dist  725.974                S.Std Err 0.011
            Code      A 121-120-223          Class     Normal

TRGET   NM  Target ht 5.528                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                              -         10025
            H.Angle   329°02'54.456"         H.Std Err 0°00'03"
            V.Angle   89°22'58.008"          V.Std Err 0°00'03"
            EDM Dist  4029.272               S.Std Err 0.018
            Code      A 121-120-18           Class     Normal

OBS     F2  121                              -         10025
            H.Angle   149°02'52.512"         H.Std Err 0°00'03"
            V.Angle   270°36'52.92"          V.Std Err 0°00'03"
            EDM Dist  4029.267               S.Std Err 0.018
            Code      A 121-120-18           Class     Normal

TRGET   NM  Target ht 4.910                  P.C. mm   2.0
            Prism Off 0.000

OBS     F2  121                              -         10023
            H.Angle   278°05'51.252"         H.Std Err 0°00'03"
            V.Angle   267°33'04.766"         V.Std Err 0°00'03"
            EDM Dist  725.970                S.Std Err 0.011
            Code      A 121-120-223          Class     Normal

TRGET   NM  Target ht 6.273                  P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F2  121                             -          120
            H.Angle   179°59'57.732"        H.Std Err  0°00'03"
            V.Angle   268°44'42.468"        V.Std Err  0°00'03"
            EDM Dist  1325.845              S.Std Err  0.013
            Code      set rebar+cap         Class      Backsight

BKB     NM  121                             -          120
            Azmth     <null>
            Face 1    0°00'00"              Face 2     179°59'57.732"

OBS     F1  121                             -          120
            H.Angle   0°00'00"              H.Std Err  0°00'03"
            V.Angle   91°15'03.924"         V.Std Err  0°00'03"
            EDM Dist  1325.846              S.Std Err  0.013
            Code      set rebar+cap         Class      Backsight

TRGET   NM  Target ht 4.910                 P.C. mm    2.0
            Prism Off 0.000

OBS     F1  121                             -          10023
            H.Angle   98°05'56.76"          H.Std Err  0°00'03"
            V.Angle   92°26'36.768"         V.Std Err  0°00'03"
            EDM Dist  725.971               S.Std Err  0.011
            Code      A 121-120-223         Class      Normal

TRGET   NM  Target ht 5.528                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  121                             -          10025
            H.Angle   329°02'56.076"        H.Std Err  0°00'03"
            V.Angle   89°22'55.416"         V.Std Err  0°00'03"
            EDM Dist  4029.271              S.Std Err  0.018
            Code      A 121-120-18          Class      Normal

OBS     F2  121                             -          10025
            H.Angle   149°02'51.54"         H.Std Err  0°00'03"
            V.Angle   270°36'50.652"        V.Std Err  0°00'03"
            EDM Dist  4029.266              S.Std Err  0.018
            Code      A 121-120-18          Class      Normal

TRGET   NM  Target ht 4.910                 P.C. mm    2.0
            Prism Off 0.000

OBS     F2  121                             -          10023
            H.Angle   278°05'51.9"          H.Std Err  0°00'03"
            V.Angle   267°33'07.682"        V.Std Err  0°00'03"
            EDM Dist  725.970               S.Std Err  0.011
            Code      A 121-120-223         Class      Normal

TRGET   NM  Target ht 6.273                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  121                             -          120
            H.Angle   179°59'57.732"        H.Std Err  0°00'03"
            V.Angle   268°44'43.44"         V.Std Err  0°00'03"
            EDM Dist  1325.845              S.Std Err  0.013
            Code      set rebar+cap         Class      Backsight

MTA     MA  ID        120                   Code       set rebar+cap
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   91°15'11.781"         V.Std Err  0°00'02.176"
            S.Dist    1325.846              S.Std Err  0.001
            Angles    2                     BS Pt ID   120
            Distances 4

TRGET   NM  Target ht 4.910                 P.C. mm    2.0
            Prism Off 0.000

MTA     MA  ID        10023                 Code       A 121-120-223
            H.Angle   98°05'54.33"         H.Std Err  0°00'01.604"
            V.Angle   92°26'44.543"         V.Std Err  0°00'00"
            S.Dist    725.971               S.Std Err  0.002
            Angles    2                     BS Pt ID   120
            Dist      4
```

```
TRGET   NM  Target ht 5.528                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10025                 Code       A 121-120-18
            H.Angle   329°02'54.78"         H.Std Err  0°00'00.229"
            V.Angle   89°23'02.463"         V.Std Err  0°00'00.115"
            S.Dist    4029.269              S.Std Err  0.003
            Angles    2                     BS Pt ID   120
            Distances 4

RESIDUALSRR Round     1                     ID         120
            H Ang Res 0°00'00"              V Ang Res  -0°00'02.673"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID         10023
            H Ang Res -0°00'01.458"         V Ang Res  -0°00'10.692"
            EDM Res   0.003

RESIDUALSRR Round     1                     ID         10025
            H Ang Res -0°00'00.324"         V Ang Res  -0°00'04.455"
            EDM Res   0.003

RESIDUALSRR Round     1                     ID         10025
            H Ang Res 0°00'00"              V Ang Res  0°00'04.617"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID         10023
            H Ang Res -0°00'00.81"          V Ang Res  0°00'10.692"
            EDM Res   -0.001

RESIDUALSRR Round     1                     ID         120
            H Ang Res 0°00'00"              V Ang Res  0°00'05.751"
            EDM Res   -0.001

RESIDUALSRR Round     2                     ID         120
            H Ang Res 0°00'00"              V Ang Res  -0°00'07.857"
            EDM Res   0.001

RESIDUALSRR Round     2                     ID         10023
            H Ang Res 0°00'02.43"           V Ang Res  -0°00'07.776"
            EDM Res   0.000

RESIDUALSRR Round     2                     ID         10025
            H Ang Res 0°00'01.296"          V Ang Res  -0°00'07.047"
            EDM Res   0.002

RESIDUALSRR Round     2                     ID         10025
            H Ang Res -0°00'00.972"         V Ang Res  0°00'06.885"
            EDM Res   -0.003

RESIDUALSRR Round     2                     ID         10023
            H Ang Res -0°00'00.162"         V Ang Res  0°00'07.776"
            EDM Res   -0.001

RESIDUALSRR Round     2                     ID         120
            H Ang Res 0°00'00"              V Ang Res  0°00'04.779"
            EDM Res   -0.001

BKB     NM  121                             -          120
            Azmth     <null>
            Face 1    0°00'00"              Face 2     179°59'55.788"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 6.273                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  121                             -          120
            H.Angle   0°00'00"              H.Std Err  0°00'03"
            V.Angle   91°15'04.248"         V.Std Err  0°00'03"
            EDM Dist  1325.845              S.Std Err  0.013
            Code      set rebar+cap         Class      Backsight
```

```
TRGET   NM  Target ht 5.810                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                             -         10024
            H.Angle   214°32'38.652"        H.Std Err 0°00'03"
            V.Angle   88°55'03.9"           V.Std Err 0°00'03"
            EDM Dist  548.828               S.Std Err 0.011
            Code      A 121-120-122         Class     Normal

OBS     F2  121                             -         10024
            H.Angle   34°32'39.3"           H.Std Err 0°00'03"
            V.Angle   271°04'38.928"        V.Std Err 0°00'03"
            EDM Dist  548.825               S.Std Err 0.011
            Code      A 121-120-122         Class     Normal

TRGET   NM  Target ht 6.273                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                             -         120
            H.Angle   179°59'55.788"        H.Std Err 0°00'03"
            V.Angle   268°44'39.552"        V.Std Err 0°00'03"
            EDM Dist  1325.843              S.Std Err 0.013
            Code      set rebar+cap         Class     Backsight

MTA     MA  ID        120                   Code      set rebar+cap
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   91°15'12.348"         V.Std Err <null>
            S.Dist    1325.844              S.Std Err 0.001
            Angles    1                     BS Pt ID  120
            Distances 2

TRGET   NM  Target ht 5.810                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10024                 Code      A 121-120-122
            H.Angle   214°32'41.082"        H.Std Err <null>
            V.Angle   88°55'12.486"         V.Std Err <null>
            S.Dist    548.827               S.Std Err 0.002
            Angles    1                     BS Pt ID  120
            Distances 2

RESIDUALSRR Round     1                     ID        120
            H Ang Res 0°00'00"              V Ang Res -0°00'08.1"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID        10024
            H Ang Res -0°00'02.43"          V Ang Res -0°00'08.586"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID        10024
            H Ang Res 0°00'02.43"           V Ang Res 0°00'08.586"
            EDM Res   -0.001

RESIDUALSRR Round     1                     ID        120
            H Ang Res 0°00'00"              V Ang Res 0°00'08.1"
            EDM Res   -0.001

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

ATMOS   NM  Press     29.85                 Temp      75.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 121          Nrth 2120584.118      East 5996530.533
            Class Normal          Elv  42.273            Code set 100d spk
            Obs  User Input
```

```
STN     NM  ID        121                    Theo ht   5.769
            Scale     1.0000000000           Type      Fixed

BKB     NM  121                              -         122
            Azmth     <null>
            Face 1    0°00'00"               Face 2    179°59'55.464"

NOTE    TS  Time Date 09/21/2007 Time 10:38:00

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.810                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                              -         122
            H.Angle   0°00'00"               H.Std Err 0°00'03"
            V.Angle   88°55'05.52"           V.Std Err 0°00'03"
            EDM Dist  548.828                S.Std Err 0.011
            Code      SET MAGNS              Class     Backsight

POLAR D F1  Azmth          <null>            H.Dist         0.001
                                             V.Dist         -0.010

TRGET   NM  Target ht 6.273                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                              -         10026
            H.Angle   145°27'24.264"         H.Std Err 0°00'03"
            V.Angle   91°15'03.276"          V.Std Err 0°00'03"
            EDM Dist  1325.847               S.Std Err 0.013
            Code      A 121-122-120          Class     Normal

TRGET   NM  Target ht 4.910                  P.C. mm   2.0
            Prism Off 0.000

OBS     F1  121                              -         10027
            H.Angle   243°33'15.84"          H.Std Err 0°00'03"
            V.Angle   92°26'38.712"          V.Std Err 0°00'03"
            EDM Dist  725.973                S.Std Err 0.011
            Code      A 121-122-123          Class     Normal

OBS     F2  121                              -         10027
            H.Angle   63°33'10.332"          H.Std Err 0°00'03"
            V.Angle   267°33'05.738"         V.Std Err 0°00'03"
            EDM Dist  725.968                S.Std Err 0.011
            Code      A 121-122-123          Class     Normal

TRGET   NM  Target ht 6.273                  P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                              -         10026
            H.Angle   325°27'16.488"         H.Std Err 0°00'03"
            V.Angle   268°44'45.708"         V.Std Err 0°00'03"
            EDM Dist  1325.849               S.Std Err 0.013
            Code      A 121-122-120          Class     Normal

TRGET   NM  Target ht 5.810                  P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                              -         122
            H.Angle   179°59'55.464"         H.Std Err 0°00'03"
            V.Angle   271°04'42.492"         V.Std Err 0°00'03"
            EDM Dist  548.828                S.Std Err 0.011
            Code      SET MAGNS              Class     Backsight

MTA     MA  ID        122                    Code      SET MAGNS
            H.Angle   0°00'00"               H.Std Err <null>
            V.Angle   88°55'11.514"          V.Std Err <null>
            S.Dist    548.828                S.Std Err 0.000
            Angles    1                      BS Pt ID  122
            Distances 2

TRGET   NM  Targe- ht 6.273                  P.C. mm   0.0
            Pris     0.000
```

File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

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MTA     MA  ID        10026                   Code      A 121-122-120
            H.Angle   145°27'22.644"          H.Std Err <null>
            V.Angle   91°15'08.784"           V.Std Err <null>
            S.Dist    1325.848                S.Std Err 0.001
            Angles    1                       BS Pt ID  122
            Distances 2

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Prism Off 0.000

MTA     MA  ID        10027                   Code      A 121-122-123
            H.Angle   243°33'15.354"          H.Std Err <null>
            V.Angle   92°26'46.487"           V.Std Err <null>
            S.Dist    725.971                 S.Std Err 0.003
            Angles    1                       BS Pt ID  122
            Distances 2

RESIDUALSRR Round     1                       ID        122
            H Ang Res 0°00'00"                V Ang Res -0°00'05.994"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10026
            H Ang Res 0°00'01.62"             V Ang Res -0°00'05.508"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10027
            H Ang Res 0°00'00.486"            V Ang Res -0°00'07.776"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        10027
            H Ang Res -0°00'00.486"           V Ang Res 0°00'07.776"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        10026
            H Ang Res -0°00'01.62"            V Ang Res 0°00'05.508"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        122
            H Ang Res 0°00'00"                V Ang Res 0°00'05.994"
            EDM Res   0.000

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.85                   Temp      75.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 121          Nrth 2120584.118      East 5996530.533
            Class Normal          Elv  42.273            Code set 100d spk
            Obs  User Input

STN     NM  ID        121                     Theo ht   5.769
            Scale     1.0000000000            Type      Fixed

BKB     NM  121                               -         123
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'59.352"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Prism Off 0.000

OBS     F1  121                               -         123
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   92°26'38.388"           V.Std Err 0°00'03"
            EDM Dist  725.976                 S.Std Err 0.011
            Code      SET MAGNS               Class     Backsight
```

```
POLAR D F1  Azmth          <null>            H.Dist         -0.001
                                             V.Dist         -0.033

TRGET   NM  Target ht 5.810                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                              -         10028
            H.Angle   116°26'49.344"         H.Std Err 0°00'03"
            V.Angle   88°55'05.52"           V.Std Err 0°00'03"
            EDM Dist  548.829                S.Std Err 0.011
            Code      H 121-123-122          Class     Normal

TRGET   NM  Target ht 6.273                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  121                              -         10029
            H.Angle   261°54'10.044"         H.Std Err 0°00'03"
            V.Angle   91°15'06.84"           V.Std Err 0°00'03"
            EDM Dist  1325.842               S.Std Err 0.013
            Code      H 121-123-120          Class     Normal

OBS     F2  121                              -         10029
            H.Angle   81°54'05.832"          H.Std Err 0°00'03"
            V.Angle   268°44'39.228"         V.Std Err 0°00'03"
            EDM Dist  1325.844               S.Std Err 0.013
            Code      H 121-123-120          Class     Normal

TRGET   NM  Target ht 5.810                  P.C. mm   0.0
            Prism Off 0.000

OBS     F2  121                              -         10028
            H.Angle   296°26'45.78"          H.Std Err 0°00'03"
            V.Angle   271°04'42.168"         V.Std Err 0°00'03"
            EDM Dist  548.830                S.Std Err 0.011
            Code      H 121-123-122          Class     Normal

TRGET   NM  Target ht 4.910                  P.C. mm   2.0
            Prism Off 0.000

OBS     F2  121                              -         123
            H.Angle   179°59'59.352"         H.Std Err 0°00'03"
            V.Angle   267°33'02.822"         V.Std Err 0°00'03"
            EDM Dist  725.972                S.Std Err 0.011
            Code      SET MAGNS              Class     Backsight

MTA     MA  ID        123                    Code      SET MAGNS
            H.Angle   0°00'00"               H.Std Err <null>
            V.Angle   92°26'47.783"          V.Std Err <null>
            S.Dist    725.974                S.Std Err 0.003
            Angles    1                      BS Pt ID  123
            Distances 2

TRGET   NM  Target ht 5.810                  P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10028                  Code      H 121-123-122
            H.Angle   116°26'47.886"         H.Std Err <null>
            V.Angle   88°55'11.676"          V.Std Err <null>
            S.Dist    548.829                S.Std Err 0.001
            Angles    1                      BS Pt ID  123
            Distances 2

TRGET   NM  Target ht 6.273                  P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10029                  Code      H 121-123-120
            H.Angle   261°54'08.262"         H.Std Err <null>
            V.Angle   91°15'13.806"          V.Std Err <null>
            S.Dist    1325.843               S.Std Err 0.002
            Angles    1                      BS Pt ID  123
            Distances 2
```

```
RESIDUALSRR Round     1                       ID        123
            H Ang Res 0°00'00"                V Ang Res -0°00'09.396"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        10028
            H Ang Res 0°00'01.458"            V Ang Res -0°00'06.156"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10029
            H Ang Res 0°00'01.782"            V Ang Res -0°00'06.966"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10029
            H Ang Res -0°00'01.782"           V Ang Res 0°00'06.966"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10028
            H Ang Res -0°00'01.458"           V Ang Res 0°00'06.156"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        123
            H Ang Res 0°00'00"                V Ang Res 0°00'09.396"
            EDM Res   -0.002

NOTE    TS  Time Date 09/21/2007 Time 11:12:00

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.84                   Temp      75.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 122          Nrth 2120046.406      East 5996639.772
            Class Normal          Elv  52.590            Code SET MAGNS
            Obs  User Input

STN     NM  ID        122                     Theo ht   5.740
            Scale     1.0000000000            Type      Fixed

BKB     NM  122                               -         121
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'59.028"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.738                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  122                               -         121
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   91°04'39.576"           V.Std Err 0°00'03"
            EDM Dist  548.827                 S.Std Err 0.011
            Code      set 100d spk            Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.000
                                              V.Dist         -0.002

TRGET   NM  Target ht 0.320                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  122                               -         124
            H.Angle   221°23'11.724"          H.Std Err 0°00'03"
            V.Angle   89°41'41.64"            V.Std Err 0°00'03"
            EDM Dist  374.752                 S.Std Err 0.011
            Code      SET MAGNS               Class     Normal

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Pris      0.000
```

```
OBS      F1  122                              -          26
             H.Angle   287°09'34.488"         H.Std Err  0°00'03"
             V.Angle   89°58'56.518"          V.Std Err  0°00'03"
             EDM Dist  194.637                S.Std Err  0.010
             Code      MAGNW-CH-HV26          Class      Normal

OBS      F2  122                              -          26
             H.Angle   107°09'31.572"         H.Std Err  0°00'03"
             V.Angle   270°00'45.345"         V.Std Err  0°00'03"
             EDM Dist  194.632                S.Std Err  0.010
             Code      MAGNW-CH-HV26          Class      Normal

TRGET    NM  Target ht 0.320                  P.C. mm    0.0
             Prism Off 0.000

OBS      F2  122                              -          124
             H.Angle   41°23'09.132"          H.Std Err  0°00'03"
             V.Angle   270°18'00.216"         V.Std Err  0°00'03"
             EDM Dist  374.745                S.Std Err  0.011
             Code      SET MAGNS              Class      Normal

TRGET    NM  Target ht 5.738                  P.C. mm    0.0
             Prism Off 0.000

OBS      F2  122                              -          121
             H.Angle   179°59'59.028"         H.Std Err  0°00'03"
             V.Angle   268°54'58.392"         V.Std Err  0°00'03"
             EDM Dist  548.827                S.Std Err  0.011
             Code      set 100d spk           Class      Backsight

MTA      MA  ID        121                    Code       set 100d spk
             H.Angle   0°00'00"               H.Std Err  <null>
             V.Angle   91°04'50.592"          V.Std Err  <null>
             S.Dist    548.827                S.Std Err  0.000
             Angles    1                      BS Pt ID   121
             Distances 2

TRGET    NM  Target ht 0.320                  P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        124                    Code       SET MAGNS
             H.Angle   221°23'10.914"         H.Std Err  <null>
             V.Angle   89°41'50.712"          V.Std Err  <null>
             S.Dist    374.748                S.Std Err  0.005
             Angles    1                      BS Pt ID   121
             Distances 2

TRGET    NM  Target ht 4.910                  P.C. mm    2.0
             Prism Off 0.000

MTA      MA  ID        26                     Code       MAGNW-CH-HV26
             H.Angle   287°09'33.516"         H.Std Err  <null>
             V.Angle   89°59'05.587"          V.Std Err  <null>
             S.Dist    194.635                S.Std Err  0.004
             Angles    1                      BS Pt ID   121
             Distances 2

RESIDUALSRR  Round     1                      ID         121
             H Ang Res 0°00'00"               V Ang Res  -0°00'11.016"
             EDM Res   0.000

RESIDUALSRR  Round     1                      ID         124
             H Ang Res 0°00'00.81"            V Ang Res  -0°00'09.072"
             EDM Res   0.003

RESIDUALSRR  Round     1                      ID         26
             H Ang Res 0°00'00.972"           V Ang Res  -0°00'09.072"
             EDM Res   0.003

RESIDUALSRR  Round     1                      ID         26
             H Ang Res -0°00'00.972"          V Ang Res  0°00'09.072"
             EDM Res   -0.003
```

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RESIDUALSRR Round     1                        ID        124
            H Ang Res -0°00'00.81"             V Ang Res 0°00'09.072"
            EDM Res   -0.003

RESIDUALSRR Round     1                        ID        121
            H Ang Res 0°00'00"                 V Ang Res 0°00'11.016"
            EDM Res   0.000

INSTR   NM  EDM       VX & S Series
            Serial no 11832                    Firmware  R7.0.35
            Mount     Not Applic               Edm o/s   <null>
            J Constant 273.9420092103          N Constant 105.675
            H.col     0°00'00.648"             V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                 EDM Prec  0.010
            VA Prec   0°00'03"                 EDM (ppm) 2

ATMOS   NM  Press     29.84                    Temp      75.0
            Refrac cnst 0.142                  PPM       <null>

GRDPOS  FD  Point ID 122          Nrth 2120046.406      East 5996639.772
            Class Normal          Elv  52.590            Code SET MAGNS
            Obs  User Input

STN     NM  ID        122                      Theo ht   5.740
            Scale     1.0000000000             Type      Fixed

BKB     NM  122                                -         124
            Azmth     <null>
            Face 1    0°00'00"                 Face 2    180°00'01.296"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 0.320                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  122                                -         124
            H.Angle   0°00'00"                 H.Std Err 0°00'03"
            V.Angle   89°41'39.048"            V.Std Err 0°00'03"
            EDM Dist  374.744                  S.Std Err 0.011
            Code      SET MAGNS                Class     Backsight

POLAR D F1  Azmth           <null>             H.Dist          0.004
                                               V.Dist          -0.021

TRGET   NM  Target ht 4.910                    P.C. mm   2.0
            Prism Off 0.000

OBS     F1  122                                -         10030
            H.Angle   65°46'28.92"             H.Std Err 0°00'03"
            V.Angle   89°58'59.433"            V.Std Err 0°00'03"
            EDM Dist  194.640                  S.Std Err 0.010
            Code      H 122-124-26             Class     Normal

TRGET   NM  Target ht 5.738                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  122                                -         10031
            H.Angle   138°36'55.08"            H.Std Err 0°00'03"
            V.Angle   91°04'44.112"            V.Std Err 0°00'03"
            EDM Dist  548.826                  S.Std Err 0.011
            Code      H122-124-121             Class     Normal

OBS     F2  122                                -         10031
            H.Angle   318°36'51.192"           H.Std Err 0°00'03"
            V.Angle   268°54'57.42"            V.Std Err 0°00'03"
            EDM Dist  548.835                  S.Std Err 0.011
            Code      H122-124-121             Class     Normal

TRGET   NM  Target ht 4.910                    P.C. mm   2.0
            Prism Off 0.000
```

```
OBS     F2  122                             -          10030
            H.Angle   245°46'24.06"         H.Std Err  0°00'03"
            V.Angle   270°00'43.077"        V.Std Err  0°00'03"
            EDM Dist  194.636               S.Std Err  0.010
            Code      H 122-124-26          Class      Normal

TRGET   NM  Target ht 0.320                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  122                             -          124
            H.Angle   180°00'01.296"        H.Std Err  0°00'03"
            V.Angle   270°17'58.92"         V.Std Err  0°00'03"
            EDM Dist  374.744               S.Std Err  0.011
            Code      SET MAGNS             Class      Backsight

MTA     MA  ID        124                   Code       SET MAGNS
            H.Angle   0°00'00"              H.Std Err  <null>
            V.Angle   89°41'50.064"         V.Std Err  <null>
            S.Dist    374.744               S.Std Err  0.000
            Angles    1                     BS Pt ID   124
            Distances 2

TRGET   NM  Target ht 4.910                 P.C. mm    2.0
            Prism Off 0.000

MTA     MA  ID        10030                 Code       H 122-124-26
            H.Angle   65°46'25.842"        H.Std Err  <null>
            V.Angle   89°59'08.178"         V.Std Err  <null>
            S.Dist    194.638               S.Std Err  0.003
            Angles    1                     BS Pt ID   124
            Distances 2

TRGET   NM  Target ht 5.738                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10031                 Code       H122-124-121
            H.Angle   138°36'52.488"        H.Std Err  <null>
            V.Angle   91°04'53.346"         V.Std Err  <null>
            S.Dist    548.830               S.Std Err  0.007
            Angles    1                     BS Pt ID   124
            Distances 2

RESIDUALSRR Round     1                     ID         124
            H Ang Res 0°00'00"              V Ang Res  -0°00'11.016"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID         10030
            H Ang Res 0°00'03.078"          V Ang Res  -0°00'08.748"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID         10031
            H Ang Res 0°00'02.592"          V Ang Res  -0°00'09.234"
            EDM Res   -0.005

RESIDUALSRR Round     1                     ID         10031
            H Ang Res -0°00'02.592"         V Ang Res  0°00'09.234"
            EDM Res   0.005

RESIDUALSRR Round     1                     ID         10030
            H Ang Res -0°00'03.078"         V Ang Res  0°00'08.748"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID         124
            H Ang Res 0°00'00"              V Ang Res  0°00'11.016"
            EDM Res   0.000

NOTE    TS  Time Date 09/21/2007 Time 11:56:38

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware   R7.0.35
            Mount     Not Applic            Edm o/s    <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col      -0°00'07.128"
```

```
PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.88                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                     Theo ht   5.562
            Scale     1.0000000000            Type      Fixed

BKB     NM  123                               -         121
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'03.888"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.738                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         121
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   87°36'27.756"           V.Std Err 0°00'03"
            EDM Dist  725.948                 S.Std Err 0.011
            Code      set 100d spk            Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.011
                                              V.Dist         -0.015

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Prism Off 0.000

OBS     F1  123                               -         10032
            H.Angle   0°09'38.664"            H.Std Err 0°00'03"
            V.Angle   90°17'30.019"           V.Std Err 0°00'03"
            EDM Dist  179.193                 S.Std Err 0.010
            Code      A 123-121-231           Class     Normal

TRGET   NM  Target ht 6.273                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         10033
            H.Angle   55°12'07.344"           H.Std Err 0°00'03"
            V.Angle   89°57'06.012"           V.Std Err 0°00'03"
            EDM Dist  1598.148                S.Std Err 0.013
            Code      A 123-121-120           Class     Normal

OBS     F2  123                               -         10033
            H.Angle   235°12'08.64"           H.Std Err 0°00'03"
            V.Angle   270°02'35.844"          V.Std Err 0°00'03"
            EDM Dist  1598.126                S.Std Err 0.013
            Code      A 123-121-120           Class     Normal

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Prism Off 0.000

OBS     F2  123                               -         10032
            H.Angle   180°09'42.228"          H.Std Err 0°00'03"
            V.Angle   269°42'13.463"          V.Std Err 0°00'03"
            EDM Dist  179.195                 S.Std Err 0.010
            Code      A 123-121-231           Class     Normal

TRGET   NM  Target ht 5.738                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                               -         121
            H.Angle   180°00'03.888"          H.Std Err 0°00'03"
            V.Angle   272°23'14.748"          V.Std Err 0°00'03"
            EDM Dist  725.948                 S.Std Err 0.011
            Code      set 100d spk            Class     Backsight
```

```
BKB     NM  123                             -         121
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'04.212"

OBS     F1  123                             -         121
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   87°36'29.376"         V.Std Err 0°00'03"
            EDM Dist  725.950               S.Std Err 0.011
            Code      set 100d spk          Class     Backsight

TRGET   NM  Target ht 4.910                 P.C. mm   2.0
            Prism Off 0.000

OBS     F1  123                             -         10032
            H.Angle   0°09'38.988"          H.Std Err 0°00'03"
            V.Angle   90°17'27.752"         V.Std Err 0°00'03"
            EDM Dist  179.194               S.Std Err 0.010
            Code      A 123-121-231         Class     Normal

TRGET   NM  Target ht 6.273                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                             -         10033
            H.Angle   55°12'09.288"         H.Std Err 0°00'03"
            V.Angle   89°57'07.308"         V.Std Err 0°00'03"
            EDM Dist  1598.143              S.Std Err 0.013
            Code      A 123-121-120         Class     Normal

OBS     F2  123                             -         10033
            H.Angle   235°12'07.02"         H.Std Err 0°00'03"
            V.Angle   270°02'37.464"        V.Std Err 0°00'03"
            EDM Dist  1598.119              S.Std Err 0.013
            Code      A 123-121-120         Class     Normal

TRGET   NM  Target ht 4.910                 P.C. mm   2.0
            Prism Off 0.000

OBS     F2  123                             -         10032
            H.Angle   180°09'42.876"        H.Std Err 0°00'03"
            V.Angle   269°42'14.759"        V.Std Err 0°00'03"
            EDM Dist  179.192               S.Std Err 0.010
            Code      A 123-121-231         Class     Normal

TRGET   NM  Target ht 5.738                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                             -         121
            H.Angle   180°00'04.212"        H.Std Err 0°00'03"
            V.Angle   272°23'14.1"          V.Std Err 0°00'03"
            EDM Dist  725.946               S.Std Err 0.011
            Code      set 100d spk          Class     Backsight

MTA     MA  ID        121                   Code      set 100d spk
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   87°36'37.071"         V.Std Err 0°00'00.802"
            S.Dist    725.948               S.Std Err 0.002
            Angles    2                     BS Pt ID  121
            Distances 4

TRGET   NM  Target ht 4.910                 P.C. mm   2.0
            Prism Off 0.000

MTA     MA  ID        10032                 Code      A 123-121-231
            H.Angle   0°09'38.664"          H.Std Err 0°00'00.229"
            V.Angle   90°17'37.387"         V.Std Err 0°00'01.26"
            S.Dist    179.193               S.Std Err 0.001
            Angles    2                     BS Pt ID  121
            Distances 4

TRGET   NM  Target ht 6.273                 P.C. mm   0.0
            Prism Off 0.000
```

File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

```
MTA     MA  ID        10033                   Code      A 123-121-120
            H.Angle   55°12'06.048"           H.Std Err 0°00'00"
            V.Angle   89°57'15.003"           V.Std Err 0°00'00.115"
            S.Dist    1598.134                S.Std Err 0.014
            Angles    2                       BS Pt ID  121
            Distances 4

RESIDUALSRR Round     1                       ID        121
            H Ang Res 0°00'00"                V Ang Res -0°00'09.315"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10032
            H Ang Res 0°00'00"                V Ang Res -0°00'07.371"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10033
            H Ang Res 0°00'01.296"            V Ang Res -0°00'08.991"
            EDM Res   0.014

RESIDUALSRR Round     1                       ID        10033
            H Ang Res -0°00'01.296"           V Ang Res 0°00'09.153"
            EDM Res   -0.008

RESIDUALSRR Round     1                       ID        10032
            H Ang Res -0°00'00.324"           V Ang Res 0°00'09.153"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        121
            H Ang Res 0°00'00"                V Ang Res 0°00'08.181"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        121
            H Ang Res 0°00'00"                V Ang Res -0°00'07.695"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10032
            H Ang Res 0°00'00.324"            V Ang Res -0°00'09.639"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        10033
            H Ang Res 0°00'03.24"             V Ang Res -0°00'07.695"
            EDM Res   0.009

RESIDUALSRR Round     2                       ID        10033
            H Ang Res -0°00'03.24"            V Ang Res 0°00'07.533"
            EDM Res   -0.015

RESIDUALSRR Round     2                       ID        10032
            H Ang Res 0°00'00"                V Ang Res 0°00'07.857"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        121
            H Ang Res 0°00'00"                V Ang Res 0°00'08.829"
            EDM Res   -0.002

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648             V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.87                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                     Theo ht   5.562
            Scale     1.0000000000            Type      Fixed
```

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```
BKB     NM  123                             -         120
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'52.548"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 6.270                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                             -         120
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   89°57'07.632"         V.Std Err 0°00'03"
            EDM Dist  1598.137              S.Std Err 0.013
            Code      set rebar+cap         Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         -0.047
                                            V.Dist         -0.197

TRGET   NM  Target ht 5.740                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                             -         10034
            H.Angle   304°47'50.388"        H.Std Err 0°00'03"
            V.Angle   87°36'28.08"          V.Std Err 0°00'03"
            EDM Dist  725.951               S.Std Err 0.011
            Code      H 123-120-121         Class     Normal

TRGET   NM  Target ht 4.910                 P.C. mm   2.0
            Prism Off 0.000

OBS     F1  123                             -         10035
            H.Angle   304°57'28.728"        H.Std Err 0°00'03"
            V.Angle   90°17'27.104"         V.Std Err 0°00'03"
            EDM Dist  179.193               S.Std Err 0.010
            Code      H 123-120-231         Class     Normal

OBS     F2  123                             -         10035
            H.Angle   124°57'31.968"        H.Std Err 0°00'03"
            V.Angle   269°42'13.463"        V.Std Err 0°00'03"
            EDM Dist  179.188               S.Std Err 0.010
            Code      H 123-120-231         Class     Normal

TRGET   NM  Target ht 5.740                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                             -         10034
            H.Angle   124°47'53.628"        H.Std Err 0°00'03"
            V.Angle   272°23'14.424"        V.Std Err 0°00'03"
            EDM Dist  725.950               S.Std Err 0.011
            Code      H 123-120-121         Class     Normal

TRGET   NM  Target ht 6.270                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                             -         120
            H.Angle   179°59'52.548"        H.Std Err 0°00'03"
            V.Angle   270°02'34.872"        V.Std Err 0°00'03"
            EDM Dist  1598.116              S.Std Err 0.013
            Code      set rebar+cap         Class     Backsight

MTA     MA  ID        120                   Code      set rebar+cap
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   89°57'16.38"          V.Std Err <null>
            S.Dist    1598.126              S.Std Err 0.015
            Angles    1                     BS Pt ID  120
            Distances 2

TRGET   NM  Target ht 5.740                 P.C. mm   0.0
            Prism Off 0.000
```

```
MTA      MA  ID         10034                    Code       H 123-120-121
             H.Angle    304°47'55.734"           H.Std Err  <null>
             V.Angle    87°36'36.828"            V.Std Err  <null>
             S.Dist     725.950                  S.Std Err  0.001
             Angles     1                        BS Pt ID   120
             Distances  2

TRGET    NM  Target ht  4.910                    P.C. mm    2.0
             Prism Off  0.000

MTA      MA  ID         10035                    Code       H 123-120-231
             H.Angle    304°57'34.074"           H.Std Err  <null>
             V.Angle    90°17'36.82"             V.Std Err  <null>
             S.Dist     179.191                  S.Std Err  0.004
             Angles     1                        BS Pt ID   120
             Distances  2

RESIDUALSRR  Round      1                        ID         120
             H Ang Res  0°00'00"                 V Ang Res  -0°00'08.748"
             EDM Res    0.010

RESIDUALSRR  Round      1                        ID         10034
             H Ang Res  -0°00'05.346"            V Ang Res  -0°00'08.748"
             EDM Res    0.000

RESIDUALSRR  Round      1                        ID         10035
             H Ang Res  -0°00'05.346"            V Ang Res  -0°00'09.72"
             EDM Res    0.003

RESIDUALSRR  Round      1                        ID         10035
             H Ang Res  0°00'05.346"             V Ang Res  0°00'09.72"
             EDM Res    -0.003

RESIDUALSRR  Round      1                        ID         10034
             H Ang Res  0°00'05.346"             V Ang Res  0°00'08.748"
             EDM Res    0.000

RESIDUALSRR  Round      1                        ID         120
             H Ang Res  0°00'00"                 V Ang Res  0°00'08.748"
             EDM Res    -0.010

INSTR    NM  EDM        VX & S Series
             Serial no  11832                    Firmware   R7.0.35
             Mount      Not Applic               Edm o/s    <null>
             J Constant 273.9420092103           N Constant 105.675
             H.col      0°00'00.648"             V.col      -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"                 EDM Prec   0.010
             VA Prec    0°00'03"                 EDM (ppm)  2

NOTE     TS  Time Date 09/21/2007 Time 12:27:14

ATMOS    NM  Press      29.87                    Temp       65.0
             Refrac cnst 0.142                   PPM        <null>

GRDPOS   FD  Point ID 123          Nrth 2121029.957      East 5997102.595
             Class Normal          Elv  12.152           Code SET MAGNS
             Obs  User Input

STN      NM  ID         123                      Theo ht    5.563
             Scale      1.0000000000             Type       Fixed

BKB      NM  123                                 -          231
             Azmth      <null>
             Face 1     0°00'00"                 Face 2     180°00'03.24"

NOTE     SN  Start of Rounds

TRGET    NM  Target ht  4.910                    P.C. mm    2.0
             Prism Off  0.000
```

```
OBS      F1  123                              -          231
             H.Angle   0°00'00"              H.Std Err 0°00'03"
             V.Angle   90°17'27.428"         V.Std Err 0°00'03"
             EDM Dist  179.192               S.Std Err 0.010
             Code      Foresight Statio      Class     Backsight

POLAR D F1   Azmth          <null>           H.Dist         -0.105
                                             V.Dist         -0.150

TRGET    NM  Target ht 5.740                  P.C. mm   0.0
             Prism Off 0.000

OBS      F1  123                              -          10036
             H.Angle   359°50'21.66"         H.Std Err 0°00'03"
             V.Angle   87°36'29.052"         V.Std Err 0°00'03"
             EDM Dist  725.951               S.Std Err 0.011
             Code      H 123-231-121         Class     Normal

OBS      F2  123                              -          10036
             H.Angle   179°50'25.224"        H.Std Err 0°00'03"
             V.Angle   272°23'14.424"        V.Std Err 0°00'03"
             EDM Dist  725.951               S.Std Err 0.011
             Code      H 123-231-121         Class     Normal

TRGET    NM  Target ht 4.910                  P.C. mm   2.0
             Prism Off 0.000

OBS      F2  123                              -          231
             H.Angle   180°00'03.24"         H.Std Err 0°00'03"
             V.Angle   269°42'16.054"        V.Std Err 0°00'03"
             EDM Dist  179.193               S.Std Err 0.010
             Code      Foresight Statio      Class     Backsight

MTA      MA  ID        231                    Code      Foresight Statio
             H.Angle   0°00'00"              H.Std Err <null>
             V.Angle   90°17'35.687"         V.Std Err <null>
             S.Dist    179.193               S.Std Err 0.001
             Angles    1                     BS Pt ID  231
             Distances 2

TRGET    NM  Target ht 5.740                  P.C. mm   0.0
             Prism Off 0.000

MTA      MA  ID        10036                  Code      H 123-231-121
             H.Angle   359°50'21.822"        H.Std Err <null>
             V.Angle   87°36'37.314"         V.Std Err <null>
             S.Dist    725.951               S.Std Err 0.000
             Angles    1                     BS Pt ID  231
             Distances 2

RESIDUALSRR  Round     1                     ID        231
             H Ang Res 0°00'00"              V Ang Res -0°00'08.262"
             EDM Res   -0.001

RESIDUALSRR  Round     1                     ID        10036
             H Ang Res -0°00'00.162"         V Ang Res -0°00'08.262"
             EDM Res   0.000

RESIDUALSRR  Round     1                     ID        10036
             H Ang Res 0°00'00.162"          V Ang Res 0°00'08.262"
             EDM Res   0.000

RESIDUALSRR  Round     1                     ID        231
             H Ang Res 0°00'00"              V Ang Res 0°00'08.262"
             EDM Res   0.001

INSTR    NM  EDM       VX & S Series
             Serial no 11832                 Firmware  R7.0.35
             Mount     Not Applic            Edm o/s   <null>
             J Constant 273.9420092103       N Constant 105.675
             H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS   NM  HA Prec   0°00'03"              EDM Prec  0.010
             VA P      0°00'03"              EDM (ppm) 2
```

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```
ATMOS   NM  Press      29.87                    Temp       65.0
            Refrac cnst 0.142                   PPM        <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152            Code SET MAGNS
            Obs  User Input

STN     NM  ID         123                      Theo ht    5.562
            Scale      1.0000000000             Type       Fixed

BKB     NM  123                                 -          121
            Azmth      <null>
            Face 1     0°00'00"                 Face 2     180°00'03.888"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.740                     P.C. mm    0.0
            Prism Off 0.000

OBS     F1  123                                 -          121
            H.Angle    0°00'00"                 H.Std Err  0°00'03"
            V.Angle    87°36'28.08"             V.Std Err  0°00'03"
            EDM Dist   725.950                  S.Std Err  0.011
            Code       set 100d spk             Class      Backsight

POLAR D F1  Azmth           <null>              H.Dist          0.009
                                                V.Dist          -0.012

TRGET   NM  Target ht 4.910                     P.C. mm    2.0
            Prism Off 0.000

OBS     F1  123                                 -          10037
            H.Angle    281°44'34.548"           H.Std Err  0°00'03"
            V.Angle    89°22'57.208"            V.Std Err  0°00'03"
            EDM Dist   129.026                  S.Std Err  0.010
            Code       A 123-121-226            Class      Normal

OBS     F2  123                                 -          10037
            H.Angle    101°44'36.168"           H.Std Err  0°00'03"
            V.Angle    270°36'44.981"           V.Std Err  0°00'03"
            EDM Dist   129.027                  S.Std Err  0.010
            Code       A 123-121-226            Class      Normal

TRGET   NM  Target ht 5.740                     P.C. mm    0.0
            Prism Off 0.000

OBS     F2  123                                 -          121
            H.Angle    180°00'03.888"           H.Std Err  0°00'03"
            V.Angle    272°23'14.424"           V.Std Err  0°00'03"
            EDM Dist   725.949                  S.Std Err  0.011
            Code       set 100d spk             Class      Backsight

MTA     MA  ID         121                      Code       set 100d spk
            H.Angle    0°00'00"                 H.Std Err  <null>
            V.Angle    87°36'36.828"            V.Std Err  <null>
            S.Dist     725.950                  S.Std Err  0.001
            Angles     1                        BS Pt ID   121
            Distances  2

TRGET   NM  Target ht 4.910                     P.C. mm    2.0
            Prism Off 0.000

MTA     MA  ID         10037                    Code       A 123-121-226
            H.Angle    281°44'33.414"           H.Std Err  <null>
            V.Angle    89°23'06.114"            V.Std Err  <null>
            S.Dist     129.027                  S.Std Err  0.001
            Angles     1                        BS Pt ID   121
            Distances  2

RESIDUALSRR Round      1                        ID         121
            H Ang Res  0°00'00"                 V Ang Res  -0°00'08.748"
            EDM Res    0.000
```

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```
RESIDUALSRR Round     1                        ID        10037
            H Ang Res 0°00'01.134"             V Ang Res -0°00'08.91"
            EDM Res   -0.001

RESIDUALSRR Round     1                        ID        10037
            H Ang Res -0°00'01.134"            V Ang Res 0°00'08.91"
            EDM Res   0.001

RESIDUALSRR Round     1                        ID        121
            H Ang Res 0°00'00"                 V Ang Res 0°00'08.748"
            EDM Res   0.000

NOTE    TS  Time Date 09/24/2007 Time 08:12:41

INSTR   NM  EDM       VX & S Series
            Serial no 11832                    Firmware  R7.0.35
            Mount     Not Applic               Edm o/s   <null>
            J Constant 273.9420092103          N Constant 105.675
            H.col     0°00'00.648"             V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                 EDM Prec  0.010
            VA Prec   0°00'03"                 EDM (ppm) 2

ATMOS   NM  Press     30.07                    Temp      65.0
            Refrac cnst 0.142                  PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                      Theo ht   5.598
            Scale     1.0000000000             Type      Fixed

BKB     NM  123                                -         121
            Azmth     <null>
            Face 1    0°00'00"                 Face 2    179°59'53.844"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.843                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                                -         121
            H.Angle   0°00'00"                 H.Std Err 0°00'03"
            V.Angle   87°36'05.4"              V.Std Err 0°00'03"
            EDM Dist  725.958                  S.Std Err 0.011
            Code      set 100d spk             Class     Backsight

POLAR D F1  Azmth          <null>              H.Dist         0.005
                                               V.Dist         -0.025

TRGET   NM  Target ht 5.837                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                                -         10038
            H.Angle   72°13'51.06"             H.Std Err 0°00'03"
            V.Angle   89°57'48.456"            V.Std Err 0°00'03"
            EDM Dist  989.735                  S.Std Err 0.012
            Code      A 123-121-27             Class     Normal

TRGET   NM  Target ht 5.587                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                                -         125
            H.Angle   195°00'50.004"           H.Std Err 0°00'03"
            V.Angle   90°02'59.82"             V.Std Err 0°00'03"
            EDM Dist  727.873                  S.Std Err 0.011
            Code      SET MAGNS                Class     Normal

OBS     F2  123                                -         125
            H.Angle   15°00'47.736"            H.Std Err 0°00'03"
            V.Angle   269°56'45.276"           V.Std Err 0°00'03"
            EDM Dist  727.870                  S.Std Err 0.011
            Code      SET MAGNS                Class     Normal
```

```
TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                             -         10038
            H.Angle   252°13'41.016"        H.Std Err 0°00'03"
            V.Angle   270°01'56.964"        V.Std Err 0°00'03"
            EDM Dist  989.739               S.Std Err 0.012
            Code      A 123-121-27          Class     Normal

TRGET   NM  Target ht 5.843                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                             -         121
            H.Angle   179°59'53.844"        H.Std Err 0°00'03"
            V.Angle   272°23'39.048"        V.Std Err 0°00'03"
            EDM Dist  725.961               S.Std Err 0.011
            Code      set 100d spk          Class     Backsight

MTA     MA  ID        121                   Code      set 100d spk
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   87°36'13.176"         V.Std Err <null>
            S.Dist    725.960               S.Std Err 0.002
            Angles    1                     BS Pt ID  121
            Distances 2

TRGET   NM  Target ht 5.837                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10038                 Code      A 123-121-27
            H.Angle   72°13'49.116"         H.Std Err <null>
            V.Angle   89°57'55.746"         V.Std Err <null>
            S.Dist    989.737               S.Std Err 0.003
            Angles    1                     BS Pt ID  121
            Distances 2

TRGET   NM  Target ht 5.587                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        125                   Code      SET MAGNS
            H.Angle   195°00'51.948"        H.Std Err <null>
            V.Angle   90°03'07.272"         V.Std Err <null>
            S.Dist    727.872               S.Std Err 0.002
            Angles    1                     BS Pt ID  121
            Distances 2

RESIDUALSRR Round     1                     ID        121
            H Ang Res 0°00'00"              V Ang Res -0°00'07.776"
            EDM Res   -0.001

RESIDUALSRR Round     1                     ID        10038
            H Ang Res 0°00'01.944"          V Ang Res -0°00'07.29"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        125
            H Ang Res -0°00'01.944"         V Ang Res -0°00'07.452"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID        125
            H Ang Res 0°00'01.944"          V Ang Res 0°00'07.452"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        10038
            H Ang Res -0°00'01.944"         V Ang Res 0°00'07.29"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID        121
            H Ang Res 0°00'00"              V Ang Res 0°00'07.776"
            EDM Res   0.001

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.co      0°00'00.648"          V.col     -0°00'07.128"
```

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```
PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     30.07                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                     Theo ht   5.598
            Scale     1.0000000000            Type      Fixed

BKB     NM  123                               -         125
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'08.424"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.587                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         125
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   90°02'59.82"            V.Std Err 0°00'03"
            EDM Dist  727.876                 S.Std Err 0.011
            Code      SET MAGNS               Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         -0.004
                                              V.Dist         -0.026

TRGET   NM  Target ht 5.843                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         10039
            H.Angle   164°59'12.264"          H.Std Err 0°00'03"
            V.Angle   87°36'05.724"           V.Std Err 0°00'03"
            EDM Dist  725.956                 S.Std Err 0.011
            Code      H 123-125-121           Class     Normal

TRGET   NM  Target ht 5.961                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         10040
            H.Angle   220°11'20.904"          H.Std Err 0°00'03"
            V.Angle   89°57'44.244"           V.Std Err 0°00'03"
            EDM Dist  1598.148                S.Std Err 0.013
            Code      H 123-125-120           Class     Normal

TRGET   NM  Target ht 5.837                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         10041
            H.Angle   237°13'05.592"          H.Std Err 0°00'03"
            V.Angle   89°57'45.54"            V.Std Err 0°00'03"
            EDM Dist  989.733                 S.Std Err 0.012
            Code      H 123-125-27            Class     Normal

OBS     F2  123                               -         10041
            H.Angle   57°13'00.084"           H.Std Err 0°00'03"
            V.Angle   270°01'57.288"          V.Std Err 0°00'03"
            EDM Dist  989.736                 S.Std Err 0.012
            Code      H 123-125-27            Class     Normal

TRGET   NM  Target ht 5.961                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                               -         10040
            H.Angle   40°11'17.988"           H.Std Err 0°00'03"
            V.Angle   270°01'59.88"           V.Std Err 0°00'03"
            EDM Dist  1598.126                S.Std Err 0.013
            Code      H 123-125-120           Class     Normal
```

```
TRGET   NM  Target ht 5.843                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  123                             -          10039
            H.Angle   344°59'17.124"        H.Std Err  0°00'03"
            V.Angle   272°23'39.048"        V.Std Err  0°00'03"
            EDM Dist  725.960               S.Std Err  0.011
            Code      H 123-125-121         Class      Normal

TRGET   NM  Target ht 5.587                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  123                             -          125
            H.Angle   180°00'08.424"        H.Std Err  0°00'03"
            V.Angle   269°56'43.98"         V.Std Err  0°00'03"
            EDM Dist  727.872               S.Std Err  0.011
            Code      SET MAGNS             Class      Backsight

NOTE    TS  Time Date 09/24/2007 Time 08:45:35

BKB     NM  123                             -          125
            Azmth     <null>
            Face 1    0°00'00"              Face 2     179°59'53.844"

OBS     F1  123                             -          125
            H.Angle   0°00'00"              H.Std Err  0°00'03"
            V.Angle   90°03'01.116"         V.Std Err  0°00'03"
            EDM Dist  727.877               S.Std Err  0.011
            Code      SET MAGNS             Class      Backsight

TRGET   NM  Target ht 5.843                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  123                             -          10039
            H.Angle   164°59'07.728"        H.Std Err  0°00'03"
            V.Angle   87°36'06.696"         V.Std Err  0°00'03"
            EDM Dist  725.956               S.Std Err  0.011
            Code      H 123-125-121         Class      Normal

TRGET   NM  Target ht 5.961                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  123                             -          10040
            H.Angle   220°11'16.692"        H.Std Err  0°00'03"
            V.Angle   89°57'46.188"         V.Std Err  0°00'03"
            EDM Dist  1598.146              S.Std Err  0.013
            Code      H 123-125-120         Class      Normal

TRGET   NM  Target ht 5.837                 P.C. mm    0.0
            Prism Off 0.000

OBS     F1  123                             -          10041
            H.Angle   237°12'56.844"        H.Std Err  0°00'03"
            V.Angle   89°57'49.104"         V.Std Err  0°00'03"
            EDM Dist  989.732               S.Std Err  0.012
            Code      H 123-125-27          Class      Normal

OBS     F2  123                             -          10041
            H.Angle   57°12'52.308"         H.Std Err  0°00'03"
            V.Angle   270°01'56.316"        V.Std Err  0°00'03"
            EDM Dist  989.730               S.Std Err  0.012
            Code      H 123-125-27          Class      Normal

TRGET   NM  Target ht 5.961                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  123                             -          10040
            H.Angle   40°11'06.972"         H.Std Err  0°00'03"
            V.Angle   270°01'58.908"        V.Std Err  0°00'03"
            EDM Dist  1598.126              S.Std Err  0.013
            Code      H 123-125-120         Class      Normal

TRGET   NM  Target ht 5.843                 P.C. mm    0.0
            Prism     0.000
```

```
OBS     F2  123                             -          10039
            H.Angle   344°59'04.164"        H.Std Err  0°00'03"
            V.Angle   272°23'40.02"         V.Std Err  0°00'03"
            EDM Dist  725.959               S.Std Err  0.011
            Code      H 123-125-121         Class      Normal

TRGET   NM  Target ht 5.587                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  123                             -          125
            H.Angle   179°59'53.844"        H.Std Err  0°00'03"
            V.Angle   269°56'44.952"        V.Std Err  0°00'03"
            EDM Dist  727.875               S.Std Err  0.011
            Code      SET MAGNS             Class      Backsight

MTA     MA  ID        125                   Code       SET MAGNS
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   90°03'08.001"         V.Std Err  0°00'00.115"
            S.Dist    727.875               S.Std Err  0.002
            Angles    2                     BS Pt ID   125
            Distances 4

TRGET   NM  Target ht 5.843                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10039                 Code       H 123-125-121
            H.Angle   164°59'09.753"        H.Std Err  0°00'01.031"
            V.Angle   87°36'13.338"         V.Std Err  0°00'00.006"
            S.Dist    725.958               S.Std Err  0.002
            Angles    2                     BS Pt ID   125
            Distances 4

TRGET   NM  Target ht 5.961                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10040                 Code       H 123-125-120
            H.Angle   220°11'15.072"        H.Std Err  0°00'00.229"
            V.Angle   89°57'52.911"         V.Std Err  0°00'01.031"
            S.Dist    1598.136              S.Std Err  0.012
            Angles    2                     BS Pt ID   125
            Distances 4

TRGET   NM  Target ht 5.837                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10041                 Code       H 123-125-27
            H.Angle   237°12'58.14"         H.Std Err  0°00'00.687"
            V.Angle   89°57'55.26"          V.Std Err  0°00'01.604"
            S.Dist    989.733               S.Std Err  0.002
            Angles    2                     BS Pt ID   125
            Distances 4

RESIDUALSRR Round     1                     ID         125
            H Ang Res 0°00'00"              V Ang Res  -0°00'08.181"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID         10039
            H Ang Res 0°00'02.511"          V Ang Res  -0°00'07.614"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID         10040
            H Ang Res 0°00'05.832"          V Ang Res  -0°00'08.667"
            EDM Res   0.012

RESIDUALSRR Round     1                     ID         10041
            H Ang Res 0°00'07.452"          V Ang Res  -0°00'09.72"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID         10041
            H Ang Res -0°00'06.48"          V Ang Res  0°00'07.452"
            EDM Res   0.003
```

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RESIDUALSRR Round     1                       ID        10040
            H Ang Res -0°00'05.508"           V Ang Res 0°00'07.209"
            EDM Res   -0.010

RESIDUALSRR Round     1                       ID        10039
            H Ang Res -0°00'01.053"           V Ang Res 0°00'07.614"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        125
            H Ang Res 0°00'00"                V Ang Res 0°00'08.019"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        125
            H Ang Res 0°00'00"                V Ang Res -0°00'06.885"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10039
            H Ang Res -0°00'02.025"           V Ang Res -0°00'06.642"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        10040
            H Ang Res 0°00'01.62"             V Ang Res -0°00'06.723"
            EDM Res   0.010

RESIDUALSRR Round     2                       ID        10041
            H Ang Res -0°00'01.296"           V Ang Res -0°00'06.156"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        10041
            H Ang Res 0°00'00.324"            V Ang Res 0°00'08.424"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        10040
            H Ang Res -0°00'01.944"           V Ang Res 0°00'08.181"
            EDM Res   -0.011

RESIDUALSRR Round     2                       ID        10039
            H Ang Res 0°00'00.567"            V Ang Res 0°00'06.642"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        125
            H Ang Res 0°00'00"                V Ang Res 0°00'07.047"
            EDM Res   0.000

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     30.08                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                     Theo ht   5.598
            Scale     1.0000000000            Type      Fixed

BKB     NM  123                               -         121
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'04.86"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.843                   P.C. mm   0.0
            Prism Off 0.000
```

```
OBS      F1  123                                  -          121
             H.Angle    0°00'00"                  H.Std Err  0°00'03"
             V.Angle    87°36'06.372"             V.Std Err  0°00'03"
             EDM Dist   725.960                   S.Std Err  0.011
             Code       set 100d spk              Class      Backsight

POLAR D F1   Azmth            <null>              H.Dist          0.003
                                                 V.Dist         -0.022

TRGET    NM  Target ht  4.910                     P.C. mm    2.0
             Prism Off  0.000

OBS      F1  123                                  -          10042
             H.Angle    217°39'43.956"            H.Std Err  0°00'03"
             V.Angle    90°04'00.058"             V.Std Err  0°00'03"
             EDM Dist   620.397                   S.Std Err  0.011
             Code       C 123-121-225             Class      Normal

OBS      F2  123                                  -          10042
             H.Angle    37°39'38.124"             H.Std Err  0°00'03"
             V.Angle    269°55'46.983"            V.Std Err  0°00'03"
             EDM Dist   620.398                   S.Std Err  0.011
             Code       C 123-121-225             Class      Normal

TRGET    NM  Target ht  5.843                     P.C. mm    0.0
             Prism Off  0.000

OBS      F2  123                                  -          121
             H.Angle    180°00'04.86"             H.Std Err  0°00'03"
             V.Angle    272°23'40.992"            V.Std Err  0°00'03"
             EDM Dist   725.957                   S.Std Err  0.011
             Code       set 100d spk              Class      Backsight

MTA      MA  ID         121                       Code       set 100d spk
             H.Angle    0°00'00"                  H.Std Err  <null>
             V.Angle    87°36'12.69"              V.Std Err  <null>
             S.Dist     725.959                   S.Std Err  0.002
             Angles     1                         BS Pt ID   121
             Distances  2

TRGET    NM  Target ht  4.910                     P.C. mm    2.0
             Prism Off  0.000

MTA      MA  ID         10042                     Code       C 123-121-225
             H.Angle    217°39'38.61"             H.Std Err  <null>
             V.Angle    90°04'06.538"             V.Std Err  <null>
             S.Dist     620.397                   S.Std Err  0.001
             Angles     1                         BS Pt ID   121
             Distances  2

RESIDUALSRR  Round      1                         ID         121
             H Ang Res  0°00'00"                  V Ang Res  -0°00'06.318"
             EDM Res    0.002

RESIDUALSRR  Round      1                         ID         10042
             H Ang Res  0°00'05.346"              V Ang Res  -0°00'06.48"
             EDM Res    -0.001

RESIDUALSRR  Round      1                         ID         10042
             H Ang Res  -0°00'05.346"             V Ang Res  0°00'06.48"
             EDM Res    0.001

RESIDUALSRR  Round      1                         ID         121
             H Ang Res  0°00'00"                  V Ang Res  0°00'06.318"
             EDM Res    -0.002

INSTR    NM  EDM        VX & S Series
             Serial no  11832                     Firmware   R7.0.35
             Mount      Not Applic                Edm o/s    <null>
             J Constant 273.9420092103            N Constant 105.675
             H.col      0°00'00.648"              V.col      -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"                  EDM Prec   0.010
             VA P       0°00'03"                  EDM (ppm)  2
```

```
ATMOS   NM  Press      30.08                    Temp       65.0
            Refrac cnst 0.142                   PPM        <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID         123                      Theo ht    5.598
            Scale      1.0000000000             Type       Fixed

BKB     NM  123                                 -          225
            Azmth      <null>
            Face 1     0°00'00"                 Face 2     180°00'05.184"

NOTE    TS  Time Date 09/24/2007 Time 09:17:43

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 4.910                     P.C. mm    2.0
            Prism Off 0.000

OBS     F1  123                                 -          225
            H.Angle    0°00'00"                 H.Std Err  0°00'03"
            V.Angle    90°04'00.382"            V.Std Err  0°00'03"
            EDM Dist   620.396                  S.Std Err  0.011
            Code       Backsight Statio         Class      Backsight

POLAR D F1  Azmth            <null>             H.Dist          0.051
                                                V.Dist          -0.084

TRGET   NM  Target ht 5.843                     P.C. mm    0.0
            Prism Off 0.000

OBS     F1  123                                 -          10043
            H.Angle    142°20'24.144"           H.Std Err  0°00'03"
            V.Angle    87°36'03.132"            V.Std Err  0°00'03"
            EDM Dist   725.959                  S.Std Err  0.011
            Code       H 123-225-121            Class      Normal

OBS     F2  123                                 -          10043
            H.Angle    322°20'27.708"           H.Std Err  0°00'03"
            V.Angle    272°23'35.484"           V.Std Err  0°00'03"
            EDM Dist   725.957                  S.Std Err  0.011
            Code       H 123-225-121            Class      Normal

TRGET   NM  Target ht 4.910                     P.C. mm    2.0
            Prism Off 0.000

OBS     F2  123                                 -          225
            H.Angle    180°00'05.184"           H.Std Err  0°00'03"
            V.Angle    269°55'45.687"           V.Std Err  0°00'03"
            EDM Dist   620.401                  S.Std Err  0.011
            Code       Backsight Statio         Class      Backsight

MTA     MA  ID         225                      Code       Backsight Statio
            H.Angle    0°00'00"                 H.Std Err  <null>
            V.Angle    90°04'07.348"            V.Std Err  <null>
            S.Dist     620.399                  S.Std Err  0.004
            Angles     1                        BS Pt ID   225
            Distances  2

TRGET   NM  Target ht 5.843                     P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID         10043                    Code       H 123-225-121
            H.Angle    142°20'23.334"           H.Std Err  <null>
            V.Angle    87°36'13.824"            V.Std Err  <null>
            S.Dist     725.958                  S.Std Err  0.002
            Angles     1                        BS Pt ID   225
            Distances  2

RESIDUALSRR Round      1                        ID         225
            H Ang Res  0°00'00"                 V Ang Res  -0°00'06.966"
            EDM        -0.002
```

```
RESIDUALSRR Round     1                       ID        10043
            H Ang Res 0°00'00.81"             V Ang Res -0°00'10.692"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10043
            H Ang Res -0°00'00.81"            V Ang Res 0°00'10.692"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        225
            H Ang Res 0°00'00"                V Ang Res 0°00'06.966"
            EDM Res   0.002

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     30.09                   Temp      70.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152           Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                     Theo ht   5.598
            Scale     1.0000000000            Type      Fixed

BKB     NM  123                               -         121
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'03.24"

NOTE    TS  Time Date 09/24/2007 Time 09:53:10

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.843                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  123                               -         121
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   87°36'07.992"           V.Std Err 0°00'03"
            EDM Dist  725.947                 S.Std Err 0.011
            Code      set 100d spk            Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.014
                                              V.Dist         -0.016

TRGET   NM  Target ht 6.000                   P.C. mm   2.0
            Prism Off 0.000

OBS     F1  123                               -         126
            H.Angle   318°27'15.444"          H.Std Err 0°00'03"
            V.Angle   88°25'38.702"           V.Std Err 0°00'03"
            EDM Dist  1352.541                S.Std Err 0.013
            Code      SET MAGNS               Class     Normal

OBS     F2  123                               -         126
            H.Angle   138°27'17.064"          H.Std Err 0°00'03"
            V.Angle   271°34'12.227"          V.Std Err 0°00'03"
            EDM Dist  1352.541                S.Std Err 0.013
            Code      SET MAGNS               Class     Normal
```

File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

```
TRGET   NM  Target ht 5.843                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  123                             -         121
            H.Angle   180°00'03.24"         H.Std Err 0°00'03"
            V.Angle   272°23'37.752"        V.Std Err 0°00'03"
            EDM Dist  725.957               S.Std Err 0.011
            Code      set 100d spk          Class     Backsight

MTA     MA  ID        121                   Code      set 100d spk
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   87°36'15.12"          V.Std Err <null>
            S.Dist    725.952               S.Std Err 0.007
            Angles    1                     BS Pt ID  121
            Distances 2

TRGET   NM  Target ht 6.000                 P.C. mm   2.0
            Prism Off 0.000

MTA     MA  ID        126                   Code      SET MAGNS
            H.Angle   318°27'14.634"        H.Std Err <null>
            V.Angle   88°25'43.238"         V.Std Err <null>
            S.Dist    1352.541              S.Std Err 0.000
            Angles    1                     BS Pt ID  121
            Distances 2

RESIDUALSRR Round     1                     ID        121
            H Ang Res 0°00'00"              V Ang Res -0°00'07.128"
            EDM Res   -0.005

RESIDUALSRR Round     1                     ID        126
            H Ang Res 0°00'00.81"           V Ang Res -0°00'04.536"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        126
            H Ang Res -0°00'00.81"          V Ang Res 0°00'04.536"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        121
            H Ang Res 0°00'00"              V Ang Res 0°00'07.128"
            EDM Res   0.005

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

ATMOS   NM  Press     30.10                 Temp      70.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 123          Nrth 2121029.957      East 5997102.595
            Class Normal          Elv  12.152            Code SET MAGNS
            Obs  User Input

STN     NM  ID        123                   Theo ht   5.600
            Scale     1.0000000000          Type      Fixed

BKB     NM  123                             -         125
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'52.872"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.587                 P.C. mm   0.0
            Prism Off 0.000
```

```
OBS      F1  123                                -          125
             H.Angle   0°00'00"                 H.Std Err  0°00'03"
             V.Angle   90°03'01.44"             V.Std Err  0°00'03"
             EDM Dist  727.876                  S.Std Err  0.011
             Code      SET MAGNS                Class      Backsight

POLAR D F1   Azmth          <null>              H.Dist          -0.006
                                                 V.Dist          -0.022

TRGET    NM  Target ht 6.000                    P.C. mm    2.0
             Prism Off 0.000

OBS      F1  123                                -          10044
             H.Angle   123°26'18.312"           H.Std Err  0°00'03"
             V.Angle   88°25'31.25"             V.Std Err  0°00'03"
             EDM Dist  1352.551                 S.Std Err  0.013
             Code      A 123-125-126            Class      Normal

OBS      F2  123                                -          10044
             H.Angle   303°26'16.368"           H.Std Err  0°00'03"
             V.Angle   271°34'12.551"           V.Std Err  0°00'03"
             EDM Dist  1352.542                 S.Std Err  0.013
             Code      A 123-125-126            Class      Normal

TRGET    NM  Target ht 5.587                    P.C. mm    0.0
             Prism Off 0.000

OBS      F2  123                                -          125
             H.Angle   179°59'52.872"           H.Std Err  0°00'03"
             V.Angle   269°56'46.248"           V.Std Err  0°00'03"
             EDM Dist  727.871                  S.Std Err  0.011
             Code      SET MAGNS                Class      Backsight

MTA      MA  ID        125                      Code       SET MAGNS
             H.Angle   0°00'00"                 H.Std Err  <null>
             V.Angle   90°03'07.596"            V.Std Err  <null>
             S.Dist    727.874                  S.Std Err  0.003
             Angles    1                        BS Pt ID   125
             Distances 2

TRGET    NM  Target ht 6.000                    P.C. mm    2.0
             Prism Off 0.000

MTA      MA  ID        10044                    Code       A 123-125-126
             H.Angle   123°26'20.904"           H.Std Err  <null>
             V.Angle   88°25'39.35"             V.Std Err  <null>
             S.Dist    1352.547                 S.Std Err  0.006
             Angles    1                        BS Pt ID   125
             Distances 2

RESIDUALSRR  Round     1                        ID         125
             H Ang Res 0°00'00"                 V Ang Res  -0°00'06.156"
             EDM Res   0.002

RESIDUALSRR  Round     1                        ID         10044
             H Ang Res -0°00'02.592"            V Ang Res  -0°00'08.1"
             EDM Res   0.004

RESIDUALSRR  Round     1                        ID         10044
             H Ang Res 0°00'02.592"             V Ang Res  0°00'08.1"
             EDM Res   -0.004

RESIDUALSRR  Round     1                        ID         125
             H Ang Res 0°00'00"                 V Ang Res  0°00'06.156"
             EDM Res   -0.002

NOTE     TS  Time Date 09/24/2007 Time 10:27:11

INSTR    NM  EDM       VX & S Series
             Serial no 11832                    Firmware   R7.0.35
             Mount     Not Applic               Edm o/s    <null>
             J Constant 273.9420092103          N Constant 105.675
             H.col     0°00'00.648"             V.col      -0°00'07.128"
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```
PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     30.10                   Temp      70.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 125          Nrth 2121313.366      East 5997772.970
            Class Normal          Elv  11.513            Code SET MAGNS
            Obs  User Input

STN     NM  ID        125                     Theo ht   5.569
            Scale     1.0000000000            Type      Fixed

BKB     NM  125                               -         123
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'49.956"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                               -         123
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   89°57'32.58"            V.Std Err 0°00'03"
            EDM Dist  727.875                 S.Std Err 0.011
            Code      SET MAGNS               Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         -0.005
                                              V.Dist         0.012

TRGET   NM  Target ht 5.725                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                               -         127
            H.Angle   200°16'09.984"          H.Std Err 0°00'03"
            V.Angle   90°06'44.352"           V.Std Err 0°00'03"
            EDM Dist  758.763                 S.Std Err 0.011
            Code      SET MAGNS               Class     Normal

OBS     F2  125                               -         127
            H.Angle   20°16'07.068"           H.Std Err 0°00'03"
            V.Angle   269°53'00.744"          V.Std Err 0°00'03"
            EDM Dist  758.763                 S.Std Err 0.011
            Code      SET MAGNS               Class     Normal

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  125                               -         123
            H.Angle   179°59'49.956"          H.Std Err 0°00'03"
            V.Angle   270°02'15.432"          V.Std Err 0°00'03"
            EDM Dist  727.880                 S.Std Err 0.011
            Code      SET MAGNS               Class     Backsight

BKB     NM  125                               -         123
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'52.548"

OBS     F1  125                               -         123
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   89°57'31.608"           V.Std Err 0°00'03"
            EDM Dist  727.877                 S.Std Err 0.011
            Code      SET MAGNS               Class     Backsight

TRGET   NM  Target ht 5.725                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                               -         127
            H.Angle   200°16'13.872"          H.Std Err 0°00'03"
            V.Angle   90°06'46.296"           V.Std Err 0°00'03"
            EDM Dist  758.765                 S.Std Err 0.011
            Code      SET MAGNS               Class     Normal
```

```
OBS      F2  125                          -          127
             H.Angle   20°16'08.04"       H.Std Err  0°00'03"
             V.Angle   269°53'01.068"     V.Std Err  0°00'03"
             EDM Dist  758.760            S.Std Err  0.011
             Code      SET MAGNS          Class      Normal

TRGET    NM  Target ht 5.472              P.C. mm    0.0
             Prism Off 0.000

OBS      F2  125                          -          123
             H.Angle   179°59'52.548"     H.Std Err  0°00'03"
             V.Angle   270°02'14.136"     V.Std Err  0°00'03"
             EDM Dist  727.878            S.Std Err  0.011
             Code      SET MAGNS          Class      Backsight

MTA      MA  ID        123                Code       SET MAGNS
             H.Angle   0°00'00"           H.Std Err  0°00'00"
             V.Angle   89°57'38.655"      V.Std Err  0°00'00.115"
             S.Dist    727.877            S.Std Err  0.002
             Angles    2                  BS Pt ID   123
             Distances 4

TRGET    NM  Target ht 5.725              P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        127                Code       SET MAGNS
             H.Angle   200°16'14.115"     H.Std Err  0°00'00.802"
             V.Angle   90°06'52.209"      V.Std Err  0°00'00.573"
             S.Dist    758.763            S.Std Err  0.002
             Angles    2                  BS Pt ID   123
             Distances 4

RESIDUALSRR  Round     1                  ID         123
             H Ang Res 0°00'00"           V Ang Res  -0°00'06.075"
             EDM Res   -0.003

RESIDUALSRR  Round     1                  ID         127
             H Ang Res -0°00'04.131"      V Ang Res  -0°00'07.857"
             EDM Res   0.000

RESIDUALSRR  Round     1                  ID         127
             H Ang Res 0°00'02.997"       V Ang Res  0°00'07.047"
             EDM Res   0.000

RESIDUALSRR  Round     1                  ID         123
             H Ang Res 0°00'00"           V Ang Res  0°00'05.913"
             EDM Res   0.003

RESIDUALSRR  Round     2                  ID         123
             H Ang Res 0°00'00"           V Ang Res  -0°00'07.047"
             EDM Res   -0.001

RESIDUALSRR  Round     2                  ID         127
             H Ang Res -0°00'00.243"      V Ang Res  -0°00'05.913"
             EDM Res   0.002

RESIDUALSRR  Round     2                  ID         127
             H Ang Res 0°00'01.377"       V Ang Res  0°00'06.723"
             EDM Res   -0.002

RESIDUALSRR  Round     2                  ID         123
             H Ang Res 0°00'00"           V Ang Res  0°00'07.209"
             EDM Res   0.000

INSTR    NM  EDM       VX & S Series
             Serial no 11832              Firmware   R7.0.35
             Mount     Not Applic         Edm o/s    <null>
             J Constant 273.9420092103    N Constant 105.675
             H.col     0°00'00.648"       V.col      -0°00'07.128"

PRECIS   NM  HA Prec   0°00'03"           EDM Prec   0.010
             VA Prec   0°00'03"           EDM (ppm)  2
```

File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

```
ATMOS   NM  Press      30.09                  Temp      75.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 125          Nrth 2121313.366      East 5997772.970
            Class Normal          Elv  11.513           Code SET MAGNS
            Obs  User Input

STN     NM  ID         125                    Theo ht   5.569
            Scale      1.0000000000           Type      Fixed

BKB     NM  125                               -         127
            Azmth      <null>
            Face 1     0°00'00"               Face 2    179°59'55.788"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.725                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                               -         127
            H.Angle    0°00'00"               H.Std Err 0°00'03"
            V.Angle    90°06'49.536"          V.Std Err 0°00'03"
            EDM Dist   758.762                S.Std Err 0.011
            Code       SET MAGNS              Class     Backsight

POLAR D F1  Azmth           <null>            H.Dist          -0.002
                                              V.Dist          -0.010

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                               -         10045
            H.Angle    159°43'46.776"         H.Std Err 0°00'03"
            V.Angle    89°57'34.2"            V.Std Err 0°00'03"
            EDM Dist   727.878                S.Std Err 0.011
            Code       H 125-127-123          Class     Normal

TRGET   NM  Target ht 5.961                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                               -         10046
            H.Angle    187°36'53.964"         H.Std Err 0°00'03"
            V.Angle    89°57'39.06"           V.Std Err 0°00'03"
            EDM Dist   2204.796               S.Std Err 0.014
            Code       A 125-127-120          Class     Normal

OBS     F2  125                               -         10046
            H.Angle    7°36'50.724"           H.Std Err 0°00'03"
            V.Angle    270°02'09.276"         V.Std Err 0°00'03"
            EDM Dist   2204.799               S.Std Err 0.014
            Code       A 125-127-120          Class     Normal

TRGET   NM  Target ht 5.472                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  125                               -         10045
            H.Angle    339°43'36.408"         H.Std Err 0°00'03"
            V.Angle    270°02'16.728"         V.Std Err 0°00'03"
            EDM Dist   727.872                S.Std Err 0.011
            Code       H 125-127-123          Class     Normal

TRGET   NM  Target ht 5.725                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  125                               -         127
            H.Angle    179°59'55.788"         H.Std Err 0°00'03"
            V.Angle    269°52'59.448"         V.Std Err 0°00'03"
            EDM Dist   758.758                S.Std Err 0.011
            Code       SET MAGNS              Class     Backsight

NOTE    TS  Time Date 09/24/2007 Time 10:59:21
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```
BKB     NM  125                             -         127
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'57.732"

OBS     F1  125                             -         127
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   90°06'48.24"          V.Std Err 0°00'03"
            EDM Dist  758.763               S.Std Err 0.011
            Code      SET MAGNS             Class     Backsight

TRGET   NM  Target ht 5.472                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                             -         10045
            H.Angle   159°43'55.2"          H.Std Err 0°00'03"
            V.Angle   89°57'33.876"         V.Std Err 0°00'03"
            EDM Dist  727.877               S.Std Err 0.011
            Code      H 125-127-123         Class     Normal

TRGET   NM  Target ht 5.961                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  125                             -         10046
            H.Angle   187°36'57.204"        H.Std Err 0°00'03"
            V.Angle   89°57'37.116"         V.Std Err 0°00'03"
            EDM Dist  2204.802              S.Std Err 0.014
            Code      A 125-127-120         Class     Normal

OBS     F2  125                             -         10046
            H.Angle   7°36'53.964"          H.Std Err 0°00'03"
            V.Angle   270°02'14.136"        V.Std Err 0°00'03"
            EDM Dist  2204.793              S.Std Err 0.014
            Code      A 125-127-120         Class     Normal

TRGET   NM  Target ht 5.472                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  125                             -         10045
            H.Angle   339°43'42.888"        H.Std Err 0°00'03"
            V.Angle   270°02'14.784"        V.Std Err 0°00'03"
            EDM Dist  727.875               S.Std Err 0.011
            Code      H 125-127-123         Class     Normal

TRGET   NM  Target ht 5.725                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  125                             -         127
            H.Angle   179°59'57.732"        H.Std Err 0°00'03"
            V.Angle   269°52'58.8"          V.Std Err 0°00'03"
            EDM Dist  758.758               S.Std Err 0.011
            Code      SET MAGNS             Class     Backsight

MTA     MA  ID        127                   Code      SET MAGNS
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   90°06'54.882"         V.Std Err 0°00'00.229"
            S.Dist    758.760               S.Std Err 0.003
            Angles    2                     BS Pt ID  127
            Distances 4

TRGET   NM  Target ht 5.472                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10045                 Code      H 125-127-123
            H.Angle   159°43'46.938"        H.Std Err 0°00'04.582"
            V.Angle   89°57'39.141"         V.Std Err 0°00'00.573"
            S.Dist    727.876               S.Std Err 0.003
            Angles    2                     BS Pt ID  127
            Distances 4

TRGET   NM  Target ht 5.961                 P.C. mm   0.0
            Prism Off 0.000
```

```
MTA     MA  ID        10046                   Code      A 125-127-120
            H.Angle   187°36'55.584"          H.Std Err 0°00'01.604"
            V.Angle   89°57'43.191"           V.Std Err 0°00'02.406"
            S.Dist    2204.797                S.Std Err 0.004
            Angles    2                       BS Pt ID  127
            Distances 4

RESIDUALSRR Round     1                       ID        127
            H Ang Res 0°00'00"                V Ang Res -0°00'05.346"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        10045
            H Ang Res -0°00'00.162"           V Ang Res -0°00'04.941"
            EDM Res   0.003

RESIDUALSRR Round     1                       ID        10046
            H Ang Res -0°00'01.62"            V Ang Res -0°00'04.131"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        10046
            H Ang Res -0°00'00.648"           V Ang Res 0°00'07.533"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        10045
            H Ang Res -0°00'06.318"           V Ang Res 0°00'04.131"
            EDM Res   -0.003

RESIDUALSRR Round     1                       ID        127
            H Ang Res 0°00'00"                V Ang Res 0°00'05.67"
            EDM Res   -0.003

RESIDUALSRR Round     2                       ID        127
            H Ang Res 0°00'00"                V Ang Res -0°00'06.642"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10045
            H Ang Res 0°00'08.262"            V Ang Res -0°00'05.265"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        10046
            H Ang Res 0°00'01.62"             V Ang Res -0°00'06.075"
            EDM Res   0.005

RESIDUALSRR Round     2                       ID        10046
            H Ang Res 0°00'00.648"            V Ang Res 0°00'02.673"
            EDM Res   -0.005

RESIDUALSRR Round     2                       ID        10045
            H Ang Res -0°00'01.782"           V Ang Res 0°00'06.075"
            EDM Res   0.000

RESIDUALSRR Round     2                       ID        127
            H Ang Res 0°00'00"                V Ang Res 0°00'06.318"
            EDM Res   -0.002

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

NOTE    TS  Time Date 09/24/2007 Time 11:32:34

ATMOS   NM  Press     30.09                   Temp      75.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 127          Nrth 2121348.394      East 5998530.872
            Class Normal          Elv  9.852            Code SET MAGNS
            Obs  User Input
```

```
STN      NM  ID         127                    Theo ht    5.662
             Scale      1.0000000000           Type       Fixed

BKB      NM  127                               -          125
             Azmth      <null>
             Face 1     0°00'00"               Face 2     179°59'54.492"

NOTE     SN  Start of Rounds

TRGET    NM  Target ht 5.633                   P.C. mm    0.0
             Prism Off 0.000

OBS      F1  127                               -          125
             H.Angle    0°00'00"               H.Std Err  0°00'03"
             V.Angle    89°52'49.728"          V.Std Err  0°00'03"
             EDM Dist   758.752                S.Std Err  0.011
             Code       SET MAGNS              Class      Backsight

POLAR D F1   Azmth            <null>            H.Dist          0.009
                                                V.Dist          0.037

TRGET    NM  Target ht 5.728                   P.C. mm    0.0
             Prism Off 0.000

OBS      F1  127                               -          10047
             H.Angle    136°41'51.936"         H.Std Err  0°00'03"
             V.Angle    89°50'09.024"          V.Std Err  0°00'03"
             EDM Dist   513.861                S.Std Err  0.011
             Code       CL 127-125-5           Class      Normal

OBS      F2  127                               -          10047
             H.Angle    316°41'49.02"          H.Std Err  0°00'03"
             V.Angle    270°09'37.368"         V.Std Err  0°00'03"
             EDM Dist   513.863                S.Std Err  0.011
             Code       CL 127-125-5           Class      Normal

TRGET    NM  Target ht 5.633                   P.C. mm    0.0
             Prism Off 0.000

OBS      F2  127                               -          125
             H.Angle    179°59'54.492"         H.Std Err  0°00'03"
             V.Angle    270°06'56.34"          V.Std Err  0°00'03"
             EDM Dist   758.752                S.Std Err  0.011
             Code       SET MAGNS              Class      Backsight

MTA      MA  ID         125                    Code       SET MAGNS
             H.Angle    0°00'00"               H.Std Err  <null>
             V.Angle    89°52'56.694"          V.Std Err  <null>
             S.Dist     758.752                S.Std Err  0.000
             Angles     1                      BS Pt ID   125
             Distances  2

TRGET    NM  Target ht 5.728                   P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID         10047                  Code       CL 127-125-5
             H.Angle    136°41'53.232"         H.Std Err  <null>
             V.Angle    89°50'15.828"          V.Std Err  <null>
             S.Dist     513.862                S.Std Err  0.002
             Angles     1                      BS Pt ID   125
             Distances  2

RESIDUALSRR  Round      1                      ID         125
             H Ang Res  0°00'00"               V Ang Res  -0°00'06.966"
             EDM Res    0.000

RESIDUALSRR  Round      1                      ID         10047
             H Ang Res  -0°00'01.296"          V Ang Res  -0°00'06.804"
             EDM Res    -0.001

RESIDUALSRR  Round      1                      ID         10047
             H Ang Res  0°00'01.296"           V Ang Res  0°00'06.804"
             EDM Res    0.001
```

```
RESIDUALSRR Round      1                        ID        125
            H Ang Res 0°00'00"                  V Ang Res 0°00'06.966"
            EDM Res   0.000

INSTR   NM  EDM        VX & S Series
            Serial no 11832                     Firmware  R7.0.35
            Mount     Not Applic                Edm o/s   <null>
            J Constant 273.9420092103           N Constant 105.675
            H.col     0°00'00.648"              V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                  EDM Prec  0.010
            VA Prec   0°00'03"                  EDM (ppm) 2

ATMOS   NM  Press     30.09                     Temp      75.0
            Refrac cnst 0.142                   PPM       <null>

GRDPOS  FD  Point ID 127          Nrth 2121348.394      East 5998530.872
            Class Normal          Elv  9.852            Code SET MAGNS
            Obs  User Input

STN     NM  ID        127                       Theo ht   5.662
            Scale     1.0000000000              Type      Fixed

BKB     NM  127                                 -         5
            Azmth     <null>
            Face 1    0°00'00"                  Face 2    179°59'59.352"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.728                     P.C. mm   0.0
            Prism Off 0.000

OBS     F1  127                                 -         5
            H.Angle   0°00'00"                  H.Std Err 0°00'03"
            V.Angle   89°50'09.996"             V.Std Err 0°00'03"
            EDM Dist  513.861                   S.Std Err 0.011
            Code      N&S painted X             Class     Backsight

POLAR D F1  Azmth          <null>               H.Dist         0.134
                                                V.Dist         -0.080

TRGET   NM  Target ht 5.633                     P.C. mm   0.0
            Prism Off 0.000

OBS     F1  127                                 -         10048
            H.Angle   223°18'10.98"             H.Std Err 0°00'03"
            V.Angle   89°52'48.756"             V.Std Err 0°00'03"
            EDM Dist  758.751                   S.Std Err 0.011
            Code      H 127-5-125               Class     Normal

OBS     F2  127                                 -         10048
            H.Angle   43°18'08.388"             H.Std Err 0°00'03"
            V.Angle   270°06'50.184"            V.Std Err 0°00'03"
            EDM Dist  758.755                   S.Std Err 0.011
            Code      H 127-5-125               Class     Normal

TRGET   NM  Target ht 5.728                     P.C. mm   0.0
            Prism Off 0.000

OBS     F2  127                                 -         5
            H.Angle   179°59'59.352"            H.Std Err 0°00'03"
            V.Angle   270°09'33.48"             V.Std Err 0°00'03"
            EDM Dist  513.862                   S.Std Err 0.011
            Code      N&S painted X             Class     Backsight

BKB     NM  127                                 -         5
            Azmth     <null>
            Face 1    0°00'00"                  Face 2    179°59'53.196"

OBS     F1  127                                 -         5
            H.Angle   0°00'00"                  H.Std Err 0°00'03"
            V.Angle   89°50'10.32"              V.Std Err 0°00'03"
            EDM Dist  513.859                   S.Std Err 0.011
            Code      N&S painted X             Class     Backsight
```

```
TRGET   NM  Target ht 5.633                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  127                             -         10048
            H.Angle   223°18'07.092"        H.Std Err 0°00'03"
            V.Angle   89°52'51.672"         V.Std Err 0°00'03"
            EDM Dist  758.751               S.Std Err 0.011
            Code      H 127-5-125           Class     Normal

OBS     F2  127                             -         10048
            H.Angle   43°17'58.344"         H.Std Err 0°00'03"
            V.Angle   270°06'52.128"        V.Std Err 0°00'03"
            EDM Dist  758.755               S.Std Err 0.011
            Code      H 127-5-125           Class     Normal

TRGET   NM  Target ht 5.728                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  127                             -         5
            H.Angle   179°59'53.196"        H.Std Err 0°00'03"
            V.Angle   270°09'39.312"        V.Std Err 0°00'03"
            EDM Dist  513.861               S.Std Err 0.011
            Code      N&S painted X         Class     Backsight

MTA     MA  ID        5                     Code      N&S painted X
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   89°50'16.881"         V.Std Err 0°00'01.947"
            S.Dist    513.861               S.Std Err 0.001
            Angles    2                     BS Pt ID  5
            Distances 4

TRGET   NM  Target ht 5.633                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10048                 Code      H 127-5-125
            H.Angle   223°18'08.064"        H.Std Err 0°00'02.749"
            V.Angle   89°52'59.529"         V.Std Err 0°00'00.344"
            S.Dist    758.753               S.Std Err 0.002
            Angles    2                     BS Pt ID  5
            Distances 4

RESIDUALSRR Round     1                     ID        5
            H Ang Res 0°00'00"              V Ang Res -0°00'06.885"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        10048
            H Ang Res 0°00'02.916"          V Ang Res -0°00'10.773"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        10048
            H Ang Res 0°00'00.972"          V Ang Res 0°00'10.287"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID        5
            H Ang Res 0°00'00"              V Ang Res 0°00'09.639"
            EDM Res   0.001

RESIDUALSRR Round     2                     ID        5
            H Ang Res 0°00'00"              V Ang Res -0°00'06.561"
            EDM Res   -0.002

RESIDUALSRR Round     2                     ID        10048
            H Ang Res -0°00'00.972"         V Ang Res -0°00'07.857"
            EDM Res   -0.002

RESIDUALSRR Round     2                     ID        10048
            H Ang Res -0°00'02.916"         V Ang Res 0°00'08.343"
            EDM Res   0.002

RESIDUALSRR Round     2                     ID        5
            H Ang Res 0°00'00"              V Ang Res 0°00'03.807"
            EDM Res   0.000

NOTE    TS  Time Date 09/24/2007 Time 13:00:14
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```
INSTR   NM  EDM       VX & S Series
            Serial no 11832                  Firmware  R7.0.35
            Mount     Not Applic             Edm o/s   <null>
            J Constant 273.9420092103        N Constant 105.675
            H.col     0°00'00.648"           V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"               EDM Prec  0.010
            VA Prec   0°00'03"               EDM (ppm) 2

ATMOS   NM  Press     30.04                  Temp      75.0
            Refrac cnst 0.142                PPM       <null>

GRDPOS  FD  Point ID 126          Nrth 2119700.747      East 5996855.692
            Class Normal          Elv  48.876           Code SET MAGNS
            Obs  User Input

STN     NM  ID        126                    Theo ht   5.818
            Scale     1.0000000000           Type      Fixed

BKB     NM  126                              -         123
            Azmth     <null>
            Face 1    0°00'00"               Face 2    179°59'59.028"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.656                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  126                              -         123
            H.Angle   0°00'00"               H.Std Err 0°00'03"
            V.Angle   91°34'18.984"          V.Std Err 0°00'03"
            EDM Dist  1352.543               S.Std Err 0.013
            Code      SET MAGNS              Class     Backsight

POLAR D F1  Azmth          <null>            H.Dist         -0.001
                                             V.Dist         0.179

TRGET   NM  Target ht 5.518                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  126                              -         128
            H.Angle   234°45'46.224"         H.Std Err 0°00'03"
            V.Angle   86°32'22.848"          V.Std Err 0°00'03"
            EDM Dist  221.697                S.Std Err 0.010
            Code      SET 100D               Class     Normal

OBS     F2  126                              -         128
            H.Angle   54°45'42.66"           H.Std Err 0°00'03"
            V.Angle   273°27'21.276"         V.Std Err 0°00'03"
            EDM Dist  221.694                S.Std Err 0.010
            Code      SET 100D               Class     Normal

TRGET   NM  Target ht 5.656                  P.C. mm   0.0
            Prism Off 0.000

OBS     F2  126                              -         123
            H.Angle   179°59'59.028"         H.Std Err 0°00'03"
            V.Angle   268°25'23.844"         V.Std Err 0°00'03"
            EDM Dist  1352.544               S.Std Err 0.013
            Code      SET MAGNS              Class     Backsight

MTA     MA  ID        123                    Code      SET MAGNS
            H.Angle   0°00'00"               H.Std Err <null>
            V.Angle   91°34'27.57"           V.Std Err <null>
            S.Dist    1352.543               S.Std Err 0.000
            Angles    1                      BS Pt ID  123
            Distances 2

TRGET   NM  Target ht 5.518                  P.C. mm   0.0
            Prism Off 0.000
```

```
MTA      MA  ID        128                     Code      SET 100D
             H.Angle   234°45'44.928"          H.Std Err <null>
             V.Angle   86°32'30.786"           V.Std Err <null>
             S.Dist    221.695                 S.Std Err 0.002
             Angles    1                       BS Pt ID  123
             Distances 2

RESIDUALSRR  Round     1                       ID        123
             H Ang Res 0°00'00"                V Ang Res -0°00'08.586"
             EDM Res   0.000

RESIDUALSRR  Round     1                       ID        128
             H Ang Res 0°00'01.296"            V Ang Res -0°00'07.938"
             EDM Res   0.001

RESIDUALSRR  Round     1                       ID        128
             H Ang Res -0°00'01.296"           V Ang Res 0°00'07.938"
             EDM Res   -0.001

RESIDUALSRR  Round     1                       ID        123
             H Ang Res 0°00'00"                V Ang Res 0°00'08.586"
             EDM Res   0.000

INSTR    NM  EDM       VX & S Series
             Serial no 11832                   Firmware  R7.0.35
             Mount     Not Applic              Edm o/s   <null>
             J Constant 273.9420092103         N Constant 105.675
             H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS   NM  HA Prec   0°00'03"                EDM Prec  0.010
             VA Prec   0°00'03"                EDM (ppm) 2

ATMOS    NM  Press     30.02                   Temp      80.0
             Refrac cnst 0.142                 PPM       <null>

GRDPOS   FD  Point ID 128          Nrth 2119608.231      East 5996654.683
             Class Normal          Elv  62.550           Code SET 100D
             Obs  User Input

STN      NM  ID        128                     Theo ht   5.473
             Scale     1.0000000000            Type      Fixed

BKB      NM  128                               -         126
             Azmth     <null>
             Face 1    0°00'00"                Face 2    179°59'54.492"

NOTE     SN  Start of Rounds

TRGET    NM  Target ht 5.869                   P.C. mm   0.0
             Prism Off 0.000

OBS      F1  128                               -         126
             H.Angle   0°00'00"                H.Std Err 0°00'03"
             V.Angle   93°26'06.432"           V.Std Err 0°00'03"
             EDM Dist  221.693                 S.Std Err 0.010
             Code      SET MAGNS               Class     Backsight

POLAR D F1   Azmth          <null>             H.Dist         -0.004
                                               V.Dist         0.005

TRGET    NM  Target ht 5.420                   P.C. mm   0.0
             Prism Off 0.000

OBS      F1  128                               -         10049
             H.Angle   234°03'15.372"          H.Std Err 0°00'03"
             V.Angle   90°39'56.952"           V.Std Err 0°00'03"
             EDM Dist  231.399                 S.Std Err 0.010
             Code      T 128-126-124           Class     Normal

OBS      F2  128                               -         10049
             H.Angle   54°03'01.764"           H.Std Err 0°00'03"
             V.Angle   269°19'46.848"          V.Std Err 0°00'03"
             EDM Dist  231.399                 S.Std Err 0.010
             Code      T 128-126-124           Class     Normal
```

```
TRGET   NM  Target ht 5.869                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  128                             -         126
            H.Angle   179°59'54.492"        H.Std Err 0°00'03"
            V.Angle   266°33'32.832"        V.Std Err 0°00'03"
            EDM Dist  221.696               S.Std Err 0.010
            Code      SET MAGNS             Class     Backsight

MTA     MA  ID        126                   Code      SET MAGNS
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   93°26'16.8"           V.Std Err <null>
            S.Dist    221.695               S.Std Err 0.002
            Angles    1                     BS Pt ID  126
            Distances 2

TRGET   NM  Target ht 5.420                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10049                 Code      T 128-126-124
            H.Angle   234°03'11.322"        H.Std Err <null>
            V.Angle   90°40'05.052"         V.Std Err <null>
            S.Dist    231.399               S.Std Err 0.000
            Angles    1                     BS Pt ID  126
            Distances 2

RESIDUALSRR Round     1                     ID        126
            H Ang Res 0°00'00"              V Ang Res -0°00'10.368"
            EDM Res   -0.002

RESIDUALSRR Round     1                     ID        10049
            H Ang Res 0°00'04.05"           V Ang Res -0°00'08.1"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        10049
            H Ang Res -0°00'04.05"          V Ang Res 0°00'08.1"
            EDM Res   0.000

RESIDUALSRR Round     1                     ID        126
            H Ang Res 0°00'00"              V Ang Res 0°00'10.368"
            EDM Res   0.002

NOTE    TS  Time Date 09/24/2007 Time 13:33:28

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"              EDM Prec  0.010
            VA Prec   0°00'03"              EDM (ppm) 2

ATMOS   NM  Press     30.01                 Temp      70.0
            Refrac cnst 0.142               PPM       <null>

GRDPOS  FD  Point ID 124          Nrth 2119721.573      East 5996452.963
            Class Normal          Elv  59.992            Code SET MAGNS
            Obs  User Input

STN     NM  ID        124                   Theo ht   5.585
            Scale     1.0000000000          Type      Fixed

BKB     NM  124                             -         128
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'55.788"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.305                 P.C. mm   0.0
            Prism Off 0.000
```

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```
OBS      F1  124                              -          128
             H.Angle   0°00'00"               H.Std Err 0°00'03"
             V.Angle   89°25'02.748"          V.Std Err 0°00'03"
             EDM Dist  231.400                S.Std Err 0.010
             Code      SET 100D               Class     Backsight

POLAR D F1   Azmth          <null>            H.Dist         0.009
                                              V.Dist         -0.076

TRGET    NM  Target ht 5.663                  P.C. mm   0.0
             Prism Off 0.000

OBS      F1  124                              -          10050
             H.Angle   270°34'02.82"          H.Std Err 0°00'03"
             V.Angle   91°07'13.476"          V.Std Err 0°00'03"
             EDM Dist  374.814                S.Std Err 0.011
             Code      C 124-128-122          Class     Normal

OBS      F2  124                              -          10050
             H.Angle   90°33'58.932"          H.Std Err 0°00'03"
             V.Angle   268°52'33.888"         V.Std Err 0°00'03"
             EDM Dist  374.812                S.Std Err 0.011
             Code      C 124-128-122          Class     Normal

TRGET    NM  Target ht 5.305                  P.C. mm   0.0
             Prism Off 0.000

OBS      F2  124                              -          128
             H.Angle   179°59'55.788"         H.Std Err 0°00'03"
             V.Angle   270°34'39.756"         V.Std Err 0°00'03"
             EDM Dist  231.398                S.Std Err 0.010
             Code      SET 100D               Class     Backsight

MTA      MA  ID        128                    Code      SET 100D
             H.Angle   0°00'00"               H.Std Err <null>
             V.Angle   89°25'11.496"          V.Std Err <null>
             S.Dist    231.399                S.Std Err 0.002
             Angles    1                      BS Pt ID  128
             Distances 2

TRGET    NM  Target ht 5.663                  P.C. mm   0.0
             Prism Off 0.000

MTA      MA  ID        10050                  Code      C 124-128-122
             H.Angle   270°34'02.982"         H.Std Err <null>
             V.Angle   91°07'19.794"          V.Std Err <null>
             S.Dist    374.813                S.Std Err 0.001
             Angles    1                      BS Pt ID  128
             Distances 2

RESIDUALSRR  Round     1                      ID        128
             H Ang Res 0°00'00"               V Ang Res -0°00'08.748"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID        10050
             H Ang Res -0°00'00.162"          V Ang Res -0°00'06.318"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID        10050
             H Ang Res 0°00'00.162"           V Ang Res 0°00'06.318"
             EDM Res   -0.001

RESIDUALSRR  Round     1                      ID        128
             H Ang Res 0°00'00"               V Ang Res 0°00'08.748"
             EDM Res   -0.001

INSTR    NM  EDM       VX & S Series
             Serial no 11832                  Firmware  R7.0.35
             Mount     Not Applic             Edm o/s   <null>
             J Constant 273.9420092103        N Constant 105.675
             H.col     0°00'00.648"           V.col     -0°00'07.128"

PRECIS   NM  HA Prec   0°00'03"               EDM Prec  0.010
             VA P      0°00'03"               EDM (ppm) 2
```

```
ATMOS   NM  Press      30.01                  Temp      70.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 124          Nrth 2119721.573      East 5996452.963
            Class Normal          Elv  59.992            Code SET MAGNS
            Obs  User Input

STN     NM  ID         124                    Theo ht   5.585
            Scale      1.0000000000           Type      Fixed

BKB     NM  124                               -         122
            Azmth      <null>
            Face 1     0°00'00"               Face 2    179°59'55.464"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.663                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  124                               -         122
            H.Angle    0°00'00"               H.Std Err 0°00'03"
            V.Angle    91°07'08.94"           V.Std Err 0°00'03"
            EDM Dist   374.814                S.Std Err 0.011
            Code       SET MAGNS              Class     Backsight

POLAR D F1  Azmth           <null>            H.Dist          0.002
                                              V.Dist          -0.006

TRGET   NM  Target ht 5.305                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  124                               -         10051
            H.Angle    89°25'58.152"          H.Std Err 0°00'03"
            V.Angle    89°25'02.748"          V.Std Err 0°00'03"
            EDM Dist   231.398                S.Std Err 0.010
            Code       H 124-12-128           Class     Normal

OBS     F2  124                               -         10051
            H.Angle    269°25'54.264"         H.Std Err 0°00'03"
            V.Angle    270°34'38.784"         V.Std Err 0°00'03"
            EDM Dist   231.400                S.Std Err 0.010
            Code       H 124-12-128           Class     Normal

TRGET   NM  Target ht 5.663                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  124                               -         122
            H.Angle    179°59'55.464"         H.Std Err 0°00'03"
            V.Angle    268°52'30.324"         V.Std Err 0°00'03"
            EDM Dist   374.815                S.Std Err 0.011
            Code       SET MAGNS              Class     Backsight

MTA     MA  ID         122                    Code      SET MAGNS
            H.Angle    0°00'00"               H.Std Err <null>
            V.Angle    91°07'19.308"          V.Std Err <null>
            S.Dist     374.815                S.Std Err 0.001
            Angles     1                      BS Pt ID  122
            Distances 2

TRGET   NM  Target ht 5.305                   P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID         10051                  Code      H 124-12-128
            H.Angle    89°25'58.476"          H.Std Err <null>
            V.Angle    89°25'11.982"          V.Std Err <null>
            S.Dist     231.399                S.Std Err 0.001
            Angles     1                      BS Pt ID  122
            Distances 2

RESIDUALSRR Round      1                      ID        122
            H Ang Res 0°00'00"                V Ang Res -0°00'10.368"
            EDM Res    -0.001
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RESIDUALSRR Round      1                        ID         10051
            H Ang Res -0°00'00.324"             V Ang Res -0°00'09.234"
            EDM Res   -0.001

RESIDUALSRR Round      1                        ID         10051
            H Ang Res 0°00'00.324"              V Ang Res 0°00'09.234"
            EDM Res   0.001

RESIDUALSRR Round      1                        ID         122
            H Ang Res 0°00'00"                  V Ang Res 0°00'10.368"
            EDM Res   0.001

NOTE    TS  Time Date 09/25/2007 Time 09:12:39

INSTR   NM  EDM        VX & S Series
            Serial no 11832                     Firmware   R7.0.35
            Mount     Not Applic                Edm o/s    <null>
            J Constant 273.9420092103           N Constant 105.675
            H.col     0°00'00.648"              V.col      -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                  EDM Prec   0.010
            VA Prec   0°00'03"                  EDM (ppm)  2

ATMOS   NM  Press     30.08                     Temp       70.0
            Refrac cnst 0.142                   PPM        <null>

GRDPOS  FD  Point ID 119          Nrth 2122435.207      East 5992737.727
            Class Normal          Elv  17.686          Code set rebar+cap
            Obs  User Input

STN     NM  ID        119                       Theo ht    5.358
            Scale     1.0000000000              Type       Fixed

BKB     NM  119                                 -          15
            Azmth     <null>
            Face 1    0°00'00"                  Face 2     180°00'03.24"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.499                     P.C. mm    0.0
            Prism Off 0.000

OBS     F1  119                                 -          15
            H.Angle   0°00'00"                  H.Std Err  0°00'03"
            V.Angle   90°13'08.292"             V.Std Err  0°00'03"
            EDM Dist  1823.376                  S.Std Err  0.013
            Code      N&S painted X             Class      Backsight

POLAR D F1  Azmth          <null>               H.Dist          -0.014
                                                V.Dist          -0.045

TRGET   NM  Target ht 5.591                     P.C. mm    0.0
            Prism Off 0.000

OBS     F1  119                                 -          129
            H.Angle   161°38'20.436"            H.Std Err  0°00'03"
            V.Angle   90°10'26.292"             V.Std Err  0°00'03"
            EDM Dist  858.940                   S.Std Err  0.012
            Code      SET MAGNW                 Class      Normal

TRGET   NM  Target ht 5.500                     P.C. mm    2.0
            Prism Off 0.000

OBS     F1  119                                 -          10052
            H.Angle   185°13'19.776"            H.Std Err  0°00'03"
            V.Angle   92°44'42.86"              V.Std Err  0°00'03"
            EDM Dist  141.187                   S.Std Err  0.010
            Code      A 119-15-28               Class      Normal

TRGET   NM  Target ht 6.158                     P.C. mm    0.0
            Prism Off 0.000
```

```
OBS     F1  119                             -         10053
            H.Angle   322°51'20.988"        H.Std Err 0°00'03"
            V.Angle   90°04'52.572"         V.Std Err 0°00'03"
            EDM Dist  2987.868              S.Std Err 0.016
            Code      A 119-15-120          Class     Normal

OBS     F2  119                             -         10053
            H.Angle   142°51'20.988"        H.Std Err 0°00'03"
            V.Angle   269°54'44.424"        V.Std Err 0°00'03"
            EDM Dist  2987.867              S.Std Err 0.016
            Code      A 119-15-120          Class     Normal

TRGET   NM  Target ht 5.500                 P.C. mm   2.0
            Prism Off 0.000

OBS     F2  119                             -         10052
            H.Angle   5°13'21.72"           H.Std Err 0°00'03"
            V.Angle   267°14'51.232"        V.Std Err 0°00'03"
            EDM Dist  141.184               S.Std Err 0.010
            Code      A 119-15-28           Class     Normal

TRGET   NM  Target ht 5.591                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  119                             -         129
            H.Angle   341°38'19.464"        H.Std Err 0°00'03"
            V.Angle   269°49'07.464"        V.Std Err 0°00'03"
            EDM Dist  858.934               S.Std Err 0.012
            Code      SET MAGNW             Class     Normal

TRGET   NM  Target ht 5.499                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  119                             -         15
            H.Angle   180°00'03.24"         H.Std Err 0°00'03"
            V.Angle   269°46'28.704"        V.Std Err 0°00'03"
            EDM Dist  1823.370              S.Std Err 0.013
            Code      N&S painted X         Class     Backsight

BKB     NM  119                             -         15
            Azmth     <null>
            Face 1    0°00'00"              Face 2    180°00'00.648"

OBS     F1  119                             -         15
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   90°13'09.588"         V.Std Err 0°00'03"
            EDM Dist  1823.370              S.Std Err 0.013
            Code      N&S painted X         Class     Backsight

TRGET   NM  Target ht 5.591                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  119                             -         129
            H.Angle   161°38'15.576"        H.Std Err 0°00'03"
            V.Angle   90°10'27.588"         V.Std Err 0°00'03"
            EDM Dist  858.937               S.Std Err 0.012
            Code      SET MAGNW             Class     Normal

TRGET   NM  Target ht 5.500                 P.C. mm   2.0
            Prism Off 0.000

OBS     F1  119                             -         10052
            H.Angle   185°13'19.128"        H.Std Err 0°00'03"
            V.Angle   92°44'42.537"         V.Std Err 0°00'03"
            EDM Dist  141.186               S.Std Err 0.010
            Code      A 119-15-28           Class     Normal

TRGET   NM  Target ht 6.158                 P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F1  119                             -          10053
            H.Angle   322°51'16.776"        H.Std Err  0°00'03"
            V.Angle   90°04'53.868"         V.Std Err  0°00'03"
            EDM Dist  2987.866              S.Std Err  0.016
            Code      A 119-15-120          Class      Normal

OBS     F2  119                             -          10053
            H.Angle   142°51'14.508"        H.Std Err  0°00'03"
            V.Angle   269°54'45.072"        V.Std Err  0°00'03"
            EDM Dist  2987.869              S.Std Err  0.016
            Code      A 119-15-120          Class      Normal

TRGET   NM  Target ht 5.500                 P.C. mm    2.0
            Prism Off 0.000

OBS     F2  119                             -          10052
            H.Angle   5°13'18.804"          H.Std Err  0°00'03"
            V.Angle   267°14'52.527"        V.Std Err  0°00'03"
            EDM Dist  141.182               S.Std Err  0.010
            Code      A 119-15-28           Class      Normal

TRGET   NM  Target ht 5.591                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  119                             -          129
            H.Angle   341°38'15.252"        H.Std Err  0°00'03"
            V.Angle   269°49'09.732"        V.Std Err  0°00'03"
            EDM Dist  858.938               S.Std Err  0.012
            Code      SET MAGNW             Class      Normal

TRGET   NM  Target ht 5.499                 P.C. mm    0.0
            Prism Off 0.000

OBS     F2  119                             -          15
            H.Angle   180°00'00.648"        H.Std Err  0°00'03"
            V.Angle   269°46'27.408"        V.Std Err  0°00'03"
            EDM Dist  1823.365              S.Std Err  0.013
            Code      N&S painted X         Class      Backsight

MTA     MA  ID        15                    Code       N&S painted X
            H.Angle   0°00'00"              H.Std Err  0°00'00"
            V.Angle   90°13'20.442"         V.Std Err  0°00'00.916"
            S.Dist    1823.370              S.Std Err  0.005
            Angles    2                     BS Pt ID   15
            Distances 4

TRGET   NM  Target ht 5.591                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        129                   Code       SET MAGNW
            H.Angle   161°38'16.71"         H.Std Err  0°00'02.291"
            V.Angle   90°10'39.171"         V.Std Err  0°00'00.344"
            S.Dist    858.937               S.Std Err  0.002
            Angles    2                     BS Pt ID   15
            Distances 4

TRGET   NM  Target ht 5.500                 P.C. mm    2.0
            Prism Off 0.000

MTA     MA  ID        10052                 Code       A 119-15-28
            H.Angle   185°13'18.885"        H.Std Err  0°00'00.344"
            V.Angle   92°44'55.409"         V.Std Err  0°00'00.573"
            S.Dist    141.185               S.Std Err  0.002
            Angles    2                     BS Pt ID   15
            Distances 4

TRGET   NM  Target ht 6.158                 P.C. mm    0.0
            Prism Off 0.000
```

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MTA     MA  ID        10053                  Code      A 119-15-120
            H.Angle   322°51'17.343"         H.Std Err 0°00'02.864"
            V.Angle   90°05'04.236"          V.Std Err 0°00'00.229"
            S.Dist    2987.868               S.Std Err 0.001
            Angles    2                      BS Pt ID  15
            Distances 4

RESIDUALSRR Round     1                      ID        15
            H Ang Res 0°00'00"               V Ang Res -0°00'12.15"
            EDM Res   0.006

RESIDUALSRR Round     1                      ID        129
            H Ang Res 0°00'03.726"           V Ang Res -0°00'12.879"
            EDM Res   0.003

RESIDUALSRR Round     1                      ID        10052
            H Ang Res 0°00'00.891"           V Ang Res -0°00'12.555"
            EDM Res   0.002

RESIDUALSRR Round     1                      ID        10053
            H Ang Res 0°00'03.645"           V Ang Res -0°00'11.664"
            EDM Res   0.001

RESIDUALSRR Round     1                      ID        10053
            H Ang Res 0°00'00.405"           V Ang Res 0°00'11.34"
            EDM Res   0.000

RESIDUALSRR Round     1                      ID        10052
            H Ang Res -0°00'00.405"          V Ang Res 0°00'13.365"
            EDM Res   -0.001

RESIDUALSRR Round     1                      ID        129
            H Ang Res -0°00'00.486"          V Ang Res 0°00'13.365"
            EDM Res   -0.003

RESIDUALSRR Round     1                      ID        15
            H Ang Res 0°00'00"               V Ang Res 0°00'10.854"
            EDM Res   0.000

RESIDUALSRR Round     2                      ID        15
            H Ang Res 0°00'00"               V Ang Res -0°00'10.854"
            EDM Res   0.000

RESIDUALSRR Round     2                      ID        129
            H Ang Res -0°00'01.134"          V Ang Res -0°00'11.583"
            EDM Res   -0.001

RESIDUALSRR Round     2                      ID        10052
            H Ang Res 0°00'00.243"           V Ang Res -0°00'12.879"
            EDM Res   0.001

RESIDUALSRR Round     2                      ID        10053
            H Ang Res -0°00'00.567"          V Ang Res -0°00'10.368"
            EDM Res   -0.002

RESIDUALSRR Round     2                      ID        10053
            H Ang Res -0°00'03.483"          V Ang Res 0°00'10.692"
            EDM Res   0.002

RESIDUALSRR Round     2                      ID        10052
            H Ang Res -0°00'00.729"          V Ang Res 0°00'12.069"
            EDM Res   -0.003

RESIDUALSRR Round     2                      ID        129
            H Ang Res -0°00'02.106"          V Ang Res 0°00'11.097"
            EDM Res   0.001

RESIDUALSRR Round     2                      ID        15
            H Ang Res 0°00'00"               V Ang Res 0°00'12.15"
            EDM Res   -0.006
```

```
INSTR   NM  EDM       VX & S Series
            Serial no 11832                  Firmware  R7.0.35
            Mount     Not Applic             Edm o/s   <null>
            J Constant 273.9420092103        N Constant 105.675
            H.col     0°00'00.648"           V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"               EDM Prec  0.010
            VA Prec   0°00'03"               EDM (ppm) 2

ATMOS   NM  Press     30.07                  Temp      70.0
            Refrac cnst 0.142                PPM       <null>

GRDPOS  FD  Point ID 119          Nrth 2122435.207      East 5992737.727
            Class Normal          Elv  17.686            Code set rebar+cap
            Obs  User Input

STN     NM  ID        119                    Theo ht   5.358
            Scale     1.0000000000           Type      Fixed

BKB     NM  119                              -         129
            Azmth     <null>
            Face 1    0°00'00"               Face 2    179°59'57.084"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.591                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  119                              -         129
            H.Angle   0°00'00"               H.Std Err 0°00'03"
            V.Angle   90°10'29.532"          V.Std Err 0°00'03"
            EDM Dist  858.933                S.Std Err 0.012
            Code      SET MAGNW              Class     Backsight

POLAR D F1  Azmth          <null>            H.Dist        0.004
                                             V.Dist       -0.040

TRGET   NM  Target ht 5.500                  P.C. mm   2.0
            Prism Off 0.000

OBS     F1  119                              -         10054
            H.Angle   23°35'04.524"          H.Std Err 0°00'03"
            V.Angle   92°44'45.451"          V.Std Err 0°00'03"
            EDM Dist  141.185                S.Std Err 0.010
            Code      H 119-129-28           Class     Normal

TRGET   NM  Target ht 6.158                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  119                              -         10055
            H.Angle   161°13'02.172"         H.Std Err 0°00'03"
            V.Angle   90°04'53.868"          V.Std Err 0°00'03"
            EDM Dist  2987.859               S.Std Err 0.016
            Code      H 119-129-120          Class     Normal

TRGET   NM  Target ht 5.499                  P.C. mm   0.0
            Prism Off 0.000

OBS     F1  119                              -         10056
            H.Angle   198°21'46.368"         H.Std Err 0°00'03"
            V.Angle   90°13'09.264"          V.Std Err 0°00'03"
            EDM Dist  1823.365               S.Std Err 0.013
            Code      H 119-129-15           Class     Normal

OBS     F2  119                              -         10056
            H.Angle   18°21'46.044"          H.Std Err 0°00'03"
            V.Angle   269°46'28.704"         V.Std Err 0°00'03"
            EDM Dist  1823.365               S.Std Err 0.013
            Code      H 119-129-15           Class     Normal

TRGET   NM  Target ht 6.158                  P.C. mm   0.0
            Prism Off 0.000
```

```
OBS      F2  119                              -          10055
             H.Angle   341°13'00.228"         H.Std Err 0°00'03"
             V.Angle   269°54'46.368"         V.Std Err 0°00'03"
             EDM Dist  2987.864               S.Std Err 0.016
             Code      H 119-129-120          Class     Normal

TRGET    NM  Target ht 5.500                  P.C. mm   2.0
             Prism Off 0.000

OBS      F2  119                              -          10054
             H.Angle   203°35'04.2"           H.Std Err 0°00'03"
             V.Angle   267°14'56.09"          V.Std Err 0°00'03"
             EDM Dist  141.184                S.Std Err 0.010
             Code      H 119-129-28           Class     Normal

TRGET    NM  Target ht 5.591                  P.C. mm   0.0
             Prism Off 0.000

OBS      F2  119                              -          129
             H.Angle   179°59'57.084"         H.Std Err 0°00'03"
             V.Angle   269°49'09.408"         V.Std Err 0°00'03"
             EDM Dist  858.931                S.Std Err 0.012
             Code      SET MAGNW              Class     Backsight

MTA      MA  ID        129                    Code      SET MAGNW
             H.Angle   0°00'00"               H.Std Err <null>
             V.Angle   90°10'40.062"          V.Std Err <null>
             S.Dist    858.932                S.Std Err 0.001
             Angles    1                      BS Pt ID  129
             Distances 2

TRGET    NM  Target ht 5.500                  P.C. mm   2.0
             Prism Off 0.000

MTA      MA  ID        10054                  Code      H 119-129-28
             H.Angle   23°35'05.82"           H.Std Err <null>
             V.Angle   92°44'54.681"          V.Std Err <null>
             S.Dist    141.185                S.Std Err 0.001
             Angles    1                      BS Pt ID  129
             Distances 2

TRGET    NM  Target ht 6.158                  P.C. mm   0.0
             Prism Off 0.000

MTA      MA  ID        10055                  Code      H 119-129-120
             H.Angle   161°13'02.658"         H.Std Err <null>
             V.Angle   90°05'03.75"           V.Std Err <null>
             S.Dist    2987.861               S.Std Err 0.003
             Angles    1                      BS Pt ID  129
             Distances 2

TRGET    NM  Target ht 5.499                  P.C. mm   0.0
             Prism Off 0.000

MTA      MA  ID        10056                  Code      H 119-129-15
             H.Angle   198°21'47.664"         H.Std Err <null>
             V.Angle   90°13'20.28"           V.Std Err <null>
             S.Dist    1823.365               S.Std Err 0.000
             Angles    1                      BS Pt ID  129
             Distances 2

RESIDUALSRR  Round     1                      ID        129
             H Ang Res 0°00'00"               V Ang Res -0°00'10.53"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID        10054
             H Ang Res -0°00'01.296"          V Ang Res -0°00'09.234"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID        10055
             H Ang Res -0°00'00.486"          V Ang Res -0°00'09.882"
             EDM Res   -0.002
```

```
RESIDUALSRR Round     1                       ID        10056
            H Ang Res -0°00'01.296"           V Ang Res -0°00'11.016"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10056
            H Ang Res 0°00'01.296"            V Ang Res 0°00'11.016"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10055
            H Ang Res 0°00'00.486"            V Ang Res 0°00'09.882"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        10054
            H Ang Res 0°00'01.296"            V Ang Res 0°00'09.234"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        129
            H Ang Res 0°00'00"                V Ang Res 0°00'10.53"
            EDM Res   -0.001

NOTE    TS  Time Date 09/25/2007 Time 09:43:33

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     30.08                   Temp      70.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 119          Nrth 2122435.207      East 5992737.727
            Class Normal          Elv  17.686           Code set rebar+cap
            Obs  User Input

STN     NM  ID        119                     Theo ht   5.358
            Scale     1.0000000000            Type      Fixed

BKB     NM  119                               -         120
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'56.76"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 6.158                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  119                               -         120
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   90°04'53.22"            V.Std Err 0°00'03"
            EDM Dist  2987.862                S.Std Err 0.016
            Code      set rebar+cap           Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         -0.021
                                              V.Dist         -0.187

TRGET   NM  Target ht 5.499                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  119                               -         10057
            H.Angle   37°08'43.872"           H.Std Err 0°00'03"
            V.Angle   90°13'12.828"           V.Std Err 0°00'03"
            EDM Dist  1823.369                S.Std Err 0.013
            Code      A 119-120-15            Class     Normal

TRGET   NM  Target ht 5.591                   P.C. mm   0.0
            Prism Off 0.000
```

```
OBS      F1  119                              -          10058
             H.Angle   198°46'58.8"           H.Std Err 0°00'03"
             V.Angle   90°10'32.124"          V.Std Err 0°00'03"
             EDM Dist  858.934                S.Std Err 0.012
             Code      A 119-120-129          Class     Normal

OBS      F2  119                              -          10058
             H.Angle   18°46'54.912"          H.Std Err 0°00'03"
             V.Angle   269°49'09.084"         V.Std Err 0°00'03"
             EDM Dist  858.933                S.Std Err 0.012
             Code      A 119-120-129          Class     Normal

TRGET    NM  Target ht 5.499                  P.C. mm   0.0
             Prism Off 0.000

OBS      F2  119                              -          10057
             H.Angle   217°08'40.308"         H.Std Err 0°00'03"
             V.Angle   269°46'31.62"          V.Std Err 0°00'03"
             EDM Dist  1823.364               S.Std Err 0.013
             Code      A 119-120-15           Class     Normal

TRGET    NM  Target ht 6.158                  P.C. mm   0.0
             Prism Off 0.000

OBS      F2  119                              -          120
             H.Angle   179°59'56.76"          H.Std Err 0°00'03"
             V.Angle   269°54'49.608"         V.Std Err 0°00'03"
             EDM Dist  2987.869               S.Std Err 0.016
             Code      set rebar+cap          Class     Backsight

MTA      MA  ID        120                    Code      set rebar+cap
             H.Angle   0°00'00"               H.Std Err <null>
             V.Angle   90°05'01.806"          V.Std Err <null>
             S.Dist    2987.865               S.Std Err 0.005
             Angles    1                      BS Pt ID  120
             Distances 2

TRGET    NM  Target ht 5.499                  P.C. mm   0.0
             Prism Off 0.000

MTA      MA  ID        10057                  Code      A 119-120-15
             H.Angle   37°08'43.71"           H.Std Err <null>
             V.Angle   90°13'20.604"          V.Std Err <null>
             S.Dist    1823.367               S.Std Err 0.003
             Angles    1                      BS Pt ID  120
             Distances 2

TRGET    NM  Target ht 5.591                  P.C. mm   0.0
             Prism Off 0.000

MTA      MA  ID        10058                  Code      A 119-120-129
             H.Angle   198°46'58.476"         H.Std Err <null>
             V.Angle   90°10'41.52"           V.Std Err <null>
             S.Dist    858.933                S.Std Err 0.001
             Angles    1                      BS Pt ID  120
             Distances 2

RESIDUALSRR  Round     1                      ID        120
             H Ang Res 0°00'00"               V Ang Res -0°00'08.586"
             EDM Res   -0.004

RESIDUALSRR  Round     1                      ID        10057
             H Ang Res 0°00'00.162"           V Ang Res -0°00'07.776"
             EDM Res   0.002

RESIDUALSRR  Round     1                      ID        10058
             H Ang Res 0°00'00.324"           V Ang Res -0°00'09.396"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID        10058
             H Ang Res -0°00'00.324"          V Ang Res 0°00'09.396"
             EDM Res   -0.001
```

```
RESIDUALSRR Round     1                       ID        10057
            H Ang Res -0°00'00.162"           V Ang Res 0°00'07.776"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        120
            H Ang Res 0°00'00"                V Ang Res 0°00'08.586"
            EDM Res   0.004

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'00.648"            V.col     -0°00'07.128"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

NOTE    TS  Time Date 09/25/2007 Time 10:25:45

ATMOS   NM  Press     30.08                   Temp      70.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 129          Nrth 2122951.318      East 5992051.216
            Class Normal          Elv  14.807           Code SET MAGNW
            Obs  User Input

STN     NM  ID        129                     Theo ht   5.559
            Scale     1.0000000000            Type      Fixed

BKB     NM  129                               -         119
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'05.184"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.390                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  129                               -         119
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   89°49'19.128"           V.Std Err 0°00'03"
            EDM Dist  858.936                 S.Std Err 0.012
            Code      set rebar+cap           Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.001
                                              V.Dist         0.027

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Prism Off 0.000

OBS     F1  129                               -         130
            H.Angle   1°47'07.512"            H.Std Err 0°00'03"
            V.Angle   89°44'03.515"           V.Std Err 0°00'03"
            EDM Dist  221.569                 S.Std Err 0.010
            Code      BDF-USC&GS-BM174        Class     Normal

TRGET   NM  Target ht 5.486                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  129                               -         10059
            H.Angle   155°39'31.284"          H.Std Err 0°00'03"
            V.Angle   89°35'37.788"           V.Std Err 0°00'03"
            EDM Dist  458.400                 S.Std Err 0.011
            Code      A 129-119-12            Class     Normal

OBS     F2  129                               -         10059
            H.Angle   335°39'33.876"          H.Std Err 0°00'03"
            V.Angle   270°24'08.928"          V.Std Err 0°00'03"
            EDM Dist  458.398                 S.Std Err 0.011
            Code      A 129-119-12            Class     Normal

TRGET   NM  Target ht 4.910                   P.C. mm   2.0
            Prism Off 0.000
```

```
OBS      F2  129                              -          130
             H.Angle   181°47'07.188"         H.Std Err  0°00'03"
             V.Angle   270°15'39.966"         V.Std Err  0°00'03"
             EDM Dist  221.566                S.Std Err  0.010
             Code      BDF-USC&GS-BM174       Class      Normal

TRGET    NM  Target ht 5.390                  P.C. mm    0.0
             Prism Off 0.000

OBS      F2  129                              -          119
             H.Angle   180°00'05.184"         H.Std Err  0°00'03"
             V.Angle   270°10'24.348"         V.Std Err  0°00'03"
             EDM Dist  858.935                S.Std Err  0.012
             Code      set rebar+cap          Class      Backsight

MTA      MA  ID        119                    Code       set rebar+cap
             H.Angle   0°00'00"               H.Std Err  <null>
             V.Angle   89°49'27.39"           V.Std Err  <null>
             S.Dist    858.936                S.Std Err  0.001
             Angles    1                      BS Pt ID   119
             Distances 2

TRGET    NM  Target ht 4.910                  P.C. mm    2.0
             Prism Off 0.000

MTA      MA  ID        130                    Code       BDF-USC&GS-BM174
             H.Angle   1°47'04.758"           H.Std Err  <null>
             V.Angle   89°44'11.774"          V.Std Err  <null>
             S.Dist    221.568                S.Std Err  0.002
             Angles    1                      BS Pt ID   119
             Distances 2

TRGET    NM  Target ht 5.486                  P.C. mm    0.0
             Prism Off 0.000

MTA      MA  ID        10059                  Code       A 129-119-12
             H.Angle   155°39'29.988"         H.Std Err  <null>
             V.Angle   89°35'44.43"           V.Std Err  <null>
             S.Dist    458.399                S.Std Err  0.002
             Angles    1                      BS Pt ID   119
             Distances 2

RESIDUALSRR  Round     1                      ID         119
             H Ang Res 0°00'00"               V Ang Res  -0°00'08.262"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID         130
             H Ang Res 0°00'02.754"           V Ang Res  -0°00'08.262"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID         10059
             H Ang Res 0°00'01.296"           V Ang Res  -0°00'06.642"
             EDM Res   0.001

RESIDUALSRR  Round     1                      ID         10059
             H Ang Res -0°00'01.296"          V Ang Res  0°00'06.642"
             EDM Res   -0.001

RESIDUALSRR  Round     1                      ID         130
             H Ang Res -0°00'02.754"          V Ang Res  0°00'08.262"
             EDM Res   -0.001

RESIDUALSRR  Round     1                      ID         119
             H Ang Res 0°00'00"               V Ang Res  0°00'08.262"
             EDM Res   -0.001

INSTR    NM  EDM       VX & S Series
             Serial no 11832                  Firmware   R7.0.35
             Mount     Not Applic             Edm o/s    <null>
             J Constant 273.9420092103        N Constant 105.675
             H.col     0°00'00.648"           V.col      -0°00'07.128"

PRECIS   NM  HA Prec   0°00'03"               EDM Prec   0.010
             VA Prec   0°00'03"               EDM (ppm)  2
```

File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

```
ATMOS   NM  Press      30.08                    Temp      70.0
            Refrac cnst 0.142                   PPM       <null>

GRDPOS  FD  Point ID 129          Nrth 2122951.318      East 5992051.216
            Class Normal          Elv  14.807            Code SET MAGNW
            Obs  User Input

STN     NM  ID         129                      Theo ht   5.559
            Scale      1.0000000000             Type      Fixed

BKB     NM  129                                 -         12
            Azmth      <null>
            Face 1     0°00'00"                 Face 2    179°59'53.196"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.486                     P.C. mm   0.0
            Prism Off 0.000

OBS     F1  129                                 -         12
            H.Angle    0°00'00"                 H.Std Err 0°00'03"
            V.Angle    89°35'37.788"            V.Std Err 0°00'03"
            EDM Dist   458.396                  S.Std Err 0.011
            Code       N&S painted X            Class     Backsight

POLAR D F1  Azmth            <null>             H.Dist          0.048
                                                V.Dist          0.003

TRGET   NM  Target ht 5.390                     P.C. mm   0.0
            Prism Off 0.000

OBS     F1  129                                 -         10060
            H.Angle    204°20'26.772"           H.Std Err 0°00'03"
            V.Angle    89°49'18.156"            V.Std Err 0°00'03"
            EDM Dist   858.935                  S.Std Err 0.012
            Code       H 129-12-119             Class     Normal

TRGET   NM  Target ht 4.910                     P.C. mm   2.0
            Prism Off 0.000

OBS     F1  129                                 -         10061
            H.Angle    206°07'33.312"           H.Std Err 0°00'03"
            V.Angle    89°44'09.993"            V.Std Err 0°00'03"
            EDM Dist   221.574                  S.Std Err 0.010
            Code       A 129-12-130             Class     Normal

OBS     F2  129                                 -         10061
            H.Angle    26°07'31.368"            H.Std Err 0°00'03"
            V.Angle    270°15'35.108"           V.Std Err 0°00'03"
            EDM Dist   221.575                  S.Std Err 0.010
            Code       A 129-12-130             Class     Normal

TRGET   NM  Target ht 5.390                     P.C. mm   0.0
            Prism Off 0.000

OBS     F2  129                                 -         10060
            H.Angle    24°20'26.448"            H.Std Err 0°00'03"
            V.Angle    270°10'21.432"           V.Std Err 0°00'03"
            EDM Dist   858.937                  S.Std Err 0.012
            Code       H 129-12-119             Class     Normal

TRGET   NM  Target ht 5.486                     P.C. mm   0.0
            Prism Off 0.000

OBS     F2  129                                 -         12
            H.Angle    179°59'53.196"           H.Std Err 0°00'03"
            V.Angle    270°24'03.744"           V.Std Err 0°00'03"
            EDM Dist   458.398                  S.Std Err 0.011
            Code       N&S painted X            Class     Backsight
```

```
MTA      MA  ID         12                    Code      N&S painted X
             H.Angle    0°00'00"              H.Std Err <null>
             V.Angle    89°35'47.022"         V.Std Err <null>
             S.Dist     458.397               S.Std Err 0.002
             Angles     1                     BS Pt ID  12
             Distances  2

TRGET    NM  Target ht  5.390                 P.C. mm   0.0
             Prism Off  0.000

MTA      MA  ID         10060                 Code      H 129-12-119
             H.Angle    204°20'30.012"        H.Std Err <null>
             V.Angle    89°49'28.362"         V.Std Err <null>
             S.Dist     858.936               S.Std Err 0.002
             Angles     1                     BS Pt ID  12
             Distances  2

TRGET    NM  Target ht  4.910                 P.C. mm   2.0
             Prism Off  0.000

MTA      MA  ID         10061                 Code      A 129-12-130
             H.Angle    206°07'35.742"        H.Std Err <null>
             V.Angle    89°44'17.443"         V.Std Err <null>
             S.Dist     221.575               S.Std Err 0.000
             Angles     1                     BS Pt ID  12
             Distances  2

RESIDUALSRR  Round      1                     ID        12
             H Ang Res  0°00'00"              V Ang Res -0°00'09.234"
             EDM Res    -0.001

RESIDUALSRR  Round      1                     ID        10060
             H Ang Res  -0°00'03.24"          V Ang Res -0°00'10.206"
             EDM Res    -0.001

RESIDUALSRR  Round      1                     ID        10061
             H Ang Res  -0°00'02.43"          V Ang Res -0°00'07.452"
             EDM Res    0.000

RESIDUALSRR  Round      1                     ID        10061
             H Ang Res  0°00'02.43"           V Ang Res 0°00'07.452"
             EDM Res    0.000

RESIDUALSRR  Round      1                     ID        10060
             H Ang Res  0°00'03.24"           V Ang Res 0°00'10.206"
             EDM Res    0.001

RESIDUALSRR  Round      1                     ID        12
             H Ang Res  0°00'00"              V Ang Res 0°00'09.234"
             EDM Res    0.001

NOTE     TS  Time Date 09/28/2007 Time 09:31:02

INSTR    NM  EDM        VX & S Series
             Serial no  11832                 Firmware  R7.0.35
             Mount      Not Applic            Edm o/s   <null>
             J Constant 273.9420092103        N Constant 105.675
             H.col      0°00'00.648"          V.col     -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"              EDM Prec  0.010
             VA Prec    0°00'03"              EDM (ppm) 2

INSTR    NM  EDM        VX & S Series
             Serial no  11832                 Firmware  R7.0.35
             Mount      Not Applic            Edm o/s   <null>
             J Constant 273.9420092103        N Constant 105.675
             H.col      0°00'00.648"          V.col     -0°00'07.128"

PRECIS   NM  HA Prec    0°00'03"              EDM Prec  0.010
             VA Prec    0°00'03"              EDM (ppm) 2

ATMOS    NM  Press      29.83                 Temp      65.0
             Refrac cnst 0.142                PPM       <null>
```

```
GRDPOS  FD  Point ID 131          Nrth 2120506.920      East 5993684.530
            Class Normal          Elv  52.777           Code set magnw-tc
            Obs  User Input

NOTE    NM  Resection type: Standard

STN     NM  ID        131                     Theo ht   5.483
            Scale     1.0000000000            Type      Fixed

BKB     NM  131                               -         18
            Azmth     <null>
            Face 1    0°00'00.32"             Face 2    180°00'02.102"

TRGET   NM  Target ht 5.597                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                               -         18
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   88°41'11.22"            V.Std Err 0°00'03"
            EDM Dist  1461.454                S.Std Err 0.013
            Code      N&S painted X           Class     Backsight

TRGET   NM  Target ht 5.449                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                               -         16
            H.Angle   215°00'34.056"          H.Std Err 0°00'03"
            V.Angle   87°37'56.532"           V.Std Err 0°00'03"
            EDM Dist  189.334                 S.Std Err 0.010
            Code      N&S painted X           Class     Backsight

OBS     F2  131                               -         16
            H.Angle   35°00'36"               H.Std Err 0°00'03"
            V.Angle   272°21'42.084"          V.Std Err 0°00'03"
            EDM Dist  189.333                 S.Std Err 0.010
            Code      N&S painted X           Class     Backsight

TRGET   NM  Target ht 5.597                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                               -         18
            H.Angle   180°00'00"              H.Std Err 0°00'03"
            V.Angle   271°18'27.396"          V.Std Err 0°00'03"
            EDM Dist  1461.463                S.Std Err 0.013
            Code      N&S painted X           Class     Backsight

OBS     F1  131                               -         18
            H.Angle   0°00'00.324"            H.Std Err 0°00'03"
            V.Angle   88°41'11.22"            V.Std Err 0°00'03"
            EDM Dist  1461.458                S.Std Err 0.013
            Code      N&S painted X           Class     Backsight

TRGET   NM  Target ht 5.449                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                               -         16
            H.Angle   215°00'33.084"          H.Std Err 0°00'03"
            V.Angle   87°37'57.18"            V.Std Err 0°00'03"
            EDM Dist  189.335                 S.Std Err 0.010
            Code      N&S painted X           Class     Backsight

OBS     F2  131                               -         16
            H.Angle   35°00'36.648"           H.Std Err 0°00'03"
            V.Angle   272°21'41.76"           V.Std Err 0°00'03"
            EDM Dist  189.331                 S.Std Err 0.010
            Code      N&S painted X           Class     Backsight

TRGET   NM  Target ht 5.597                   P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F2  131                             -           18
            H.Angle   180°00'01.944"        H.Std Err 0°00'03"
            V.Angle   271°18'28.044"        V.Std Err 0°00'03"
            EDM Dist  1461.466              S.Std Err 0.013
            Code      N&S painted X         Class     Backsight

MTA     MA  ID        18                    Code      N&S painted X
            H.Angle   359°59'59.356"        H.Std Err 0°00'00.802"
            V.Angle   88°41'21.75"          V.Std Err 0°00'00.229"
            S.Dist    1461.460              S.Std Err 0.005
            Angles    2                     BS Pt ID  18
            Distances 4

TRGET   NM  Target ht 5.449                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        16                    Code      N&S painted X
            H.Angle   215°00'33.736"        H.Std Err 0°00'00.115"
            V.Angle   87°38'07.467"        V.Std Err 0°00'00.344"
            S.Dist    189.333               S.Std Err 0.002
            Angles    2                     BS Pt ID  18
            Distances 4

GRDPOS  RS  Point ID 131          Nrth 2120506.920      East 5993684.530
            Class Normal          Elv  52.777           Code set magnw-tc
            Obs  User Input

RESIDUALSRS ID        18                    Dimensions 3D
            N Res     0.024                 E Res     -0.023
            El Res    -0.071                H Ang Res 0°00'00.32"
            V Ang Res 0°00'10.107"          EDM Res   0.031

RESIDUALSRS ID        16                    Dimensions 3D
            N Res     -0.012                E Res     0.003
            El Res    -0.010                H Ang Res -0°00'00.644"
            V Ang Res 0°00'11.605"          EDM Res   0.012

RESIDUALSRS ID        16                    Dimensions 3D
            N Res     -0.013                E Res     0.004
            El Res    0.010                 H Ang Res -0°00'00.806"
            V Ang Res -0°00'09.779"         EDM Res   0.014

RESIDUALSRS ID        18                    Dimensions 3D
            N Res     0.025                 E Res     -0.005
            El Res    0.080                 H Ang Res 0°00'02.102"
            V Ang Res -0°00'11.277"         EDM Res   0.022

RESIDUALSRS ID        18                    Dimensions 3D
            N Res     0.019                 E Res     -0.021
            El Res    -0.071                H Ang Res -0°00'00.004"
            V Ang Res 0°00'10.107"          EDM Res   0.026

RESIDUALSRS ID        16                    Dimensions 3D
            N Res     -0.012                E Res     0.002
            El Res    -0.010                H Ang Res 0°00'00.328"
            V Ang Res 0°00'10.957"          EDM Res   0.012

RESIDUALSRS ID        16                    Dimensions 3D
            N Res     -0.015                E Res     0.005
            El Res    0.010                 H Ang Res -0°00'01.454"
            V Ang Res -0°00'10.103"         EDM Res   0.016

RESIDUALSRS ID        18                    Dimensions 3D
            N Res     0.012                 E Res     -0.012
            El Res    0.076                 H Ang Res 0°00'00.158"
            V Ang Res -0°00'10.629"         EDM Res   0.019

INSTR   NM  EDM       VX & S Series
            Serial no 11832                 Firmware  R7.0.35
            Mount     Not Applic            Edm o/s   <null>
            J Constant 273.9420092103       N Constant 105.675
            H.col     0°00'00.648"          V.col     -0°00'07.128"
```

```
PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.83                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 131          Nrth 2120506.920      East 5993684.530
            Class Normal          Elv  52.777           Code set magnw-tc
            Obs  User Input

STN     NM  ID        131                     Theo ht   5.483
            Scale     1.0000000000            Type      Fixed

BKB     NM  131                               -         18
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'59.676"

NOTE    TS  Time Date 09/28/2007 Time 10:07:00

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.597                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                               -         18
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   88°41'10.248"           V.Std Err 0°00'03"
            EDM Dist  1461.456                S.Std Err 0.013
            Code      N&S painted X           Class     Backsight

POLAR D F1  Azmth           <null>            H.Dist          0.031
                                              V.Dist          -0.078

TRGET   NM  Target ht 5.449                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                               -         10062
            H.Angle   215°00'34.38"           H.Std Err 0°00'03"
            V.Angle   87°37'57.18"            V.Std Err 0°00'03"
            EDM Dist  189.337                 S.Std Err 0.010
            Code      a 131-18-16             Class     Normal

TRGET   NM  Target ht 5.591                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                               -         132
            H.Angle   312°45'49.896"          H.Std Err 0°00'03"
            V.Angle   86°31'27.444"           V.Std Err 0°00'03"
            EDM Dist  845.716                 S.Std Err 0.012
            Code      set ip+cap              Class     Normal

OBS     F2  131                               -         132
            H.Angle   132°45'53.784"          H.Std Err 0°00'03"
            V.Angle   273°28'08.256"          V.Std Err 0°00'03"
            EDM Dist  845.721                 S.Std Err 0.012
            Code      set ip+cap              Class     Normal

TRGET   NM  Target ht 5.449                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                               -         10062
            H.Angle   35°00'35.028"           H.Std Err 0°00'03"
            V.Angle   272°21'42.732"          V.Std Err 0°00'03"
            EDM Dist  189.334                 S.Std Err 0.010
            Code      a 131-18-16             Class     Normal

TRGET   NM  Target ht 5.597                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                               -         18
            H.Angle   179°59'59.676"          H.Std Err 0°00'03"
            V.Angle   271°18'28.692"          V.Std Err 0°00'03"
            EDM Dist  1461.463                S.Std Err 0.013
            Code      N&S painted X           Class     Backsight
```

```
BKB     NM  131                             -          18
            Azmth      <null>
            Face 1     0°00'00"            Face 2     180°00'00.648"

OBS     F1  131                             -          18
            H.Angle    0°00'00"            H.Std Err  0°00'03"
            V.Angle    88°41'10.248"       V.Std Err  0°00'03"
            EDM Dist   1461.460            S.Std Err  0.013
            Code       N&S painted X       Class      Backsight

TRGET   NM  Target ht  5.449               P.C. mm    0.0
            Prism Off  0.000

OBS     F1  131                             -          10062
            H.Angle    215°00'36.648"      H.Std Err  0°00'03"
            V.Angle    87°37'57.18"        V.Std Err  0°00'03"
            EDM Dist   189.335             S.Std Err  0.010
            Code       a 131-18-16         Class      Normal

TRGET   NM  Target ht  5.591               P.C. mm    0.0
            Prism Off  0.000

OBS     F1  131                             -          132
            H.Angle    312°45'51.84"       H.Std Err  0°00'03"
            V.Angle    86°31'28.092"       V.Std Err  0°00'03"
            EDM Dist   845.716             S.Std Err  0.012
            Code       set ip+cap          Class      Normal

OBS     F2  131                             -          132
            H.Angle    132°45'55.08"       H.Std Err  0°00'03"
            V.Angle    273°28'06.312"      V.Std Err  0°00'03"
            EDM Dist   845.721             S.Std Err  0.012
            Code       set ip+cap          Class      Normal

TRGET   NM  Target ht  5.449               P.C. mm    0.0
            Prism Off  0.000

OBS     F2  131                             -          10062
            H.Angle    35°00'36.324"       H.Std Err  0°00'03"
            V.Angle    272°21'42.408"      V.Std Err  0°00'03"
            EDM Dist   189.335             S.Std Err  0.010
            Code       a 131-18-16         Class      Normal

TRGET   NM  Target ht  5.597               P.C. mm    0.0
            Prism Off  0.000

OBS     F2  131                             -          18
            H.Angle    180°00'00.648"      H.Std Err  0°00'03"
            V.Angle    271°18'25.776"      V.Std Err  0°00'03"
            EDM Dist   1461.463            S.Std Err  0.013
            Code       N&S painted X       Class      Backsight

MTA     MA  ID         18                  Code       N&S painted X
            H.Angle    0°00'00"            H.Std Err  0°00'00"
            V.Angle    88°41'21.507"       V.Std Err  0°00'01.031"
            S.Dist     1461.460            S.Std Err  0.003
            Angles     2                   BS Pt ID   18
            Distances  4

TRGET   NM  Target ht  5.449               P.C. mm    0.0
            Prism Off  0.000

MTA     MA  ID         10062               Code       a 131-18-16
            H.Angle    215°00'35.514"      H.Std Err  0°00'00.916"
            V.Angle    87°38'07.305"       V.Std Err  0°00'00.115"
            S.Dist     189.335             S.Std Err  0.001
            Angles     2                   BS Pt ID   18
            Distances  4

TRGET   NM  Target ht  5.591               P.C. mm    0.0
            Prism Off  0.000
```

File Q:\2007\07-07-036 ARUP Doyle\TSC\0736-MAP CONTROL\Data Files\Trimble Files\0736DOYLE-2.dc

```
MTA     MA  ID         132                    Code       set ip+cap
            H.Angle    312°45'52.569"         H.Std Err  0°00'00.802"
            V.Angle    86°31'40.242"          V.Std Err  0°00'00.916"
            S.Dist     845.719                S.Std Err  0.003
            Angles     2                      BS Pt ID   18
            Distances  4

RESIDUALSRR Round      1                      ID         18
            H Ang Res  0°00'00"               V Ang Res  -0°00'11.259"
            EDM Res    -0.005

RESIDUALSRR Round      1                      ID         10062
            H Ang Res  -0°00'01.134"          V Ang Res  -0°00'10.125"
            EDM Res    0.002

RESIDUALSRR Round      1                      ID         132
            H Ang Res  -0°00'02.673"          V Ang Res  -0°00'12.798"
            EDM Res    -0.003

RESIDUALSRR Round      1                      ID         132
            H Ang Res  0°00'01.539"           V Ang Res  0°00'11.502"
            EDM Res    0.003

RESIDUALSRR Round      1                      ID         10062
            H Ang Res  -0°00'00.162"          V Ang Res  0°00'09.963"
            EDM Res    -0.001

RESIDUALSRR Round      1                      ID         18
            H Ang Res  0°00'00"               V Ang Res  0°00'09.801"
            EDM Res    0.002

RESIDUALSRR Round      2                      ID         18
            H Ang Res  0°00'00"               V Ang Res  -0°00'11.259"
            EDM Res    0.000

RESIDUALSRR Round      2                      ID         10062
            H Ang Res  0°00'01.134"           V Ang Res  -0°00'10.125"
            EDM Res    0.000

RESIDUALSRR Round      2                      ID         132
            H Ang Res  -0°00'00.729"          V Ang Res  -0°00'12.15"
            EDM Res    -0.002

RESIDUALSRR Round      2                      ID         132
            H Ang Res  0°00'01.863"           V Ang Res  0°00'13.446"
            EDM Res    0.002

RESIDUALSRR Round      2                      ID         10062
            H Ang Res  0°00'00.162"           V Ang Res  0°00'10.287"
            EDM Res    0.000

RESIDUALSRR Round      2                      ID         18
            H Ang Res  0°00'00"               V Ang Res  0°00'12.717"
            EDM Res    0.003

INSTR   NM  EDM        VX & S Series
            Serial no  11832                  Firmware   R7.0.35
            Mount      Not Applic             Edm o/s    <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col      0°00'00.648"           V.col      -0°00'07.128"

PRECIS  NM  HA Prec    0°00'03"               EDM Prec   0.010
            VA Prec    0°00'03"               EDM (ppm)  2

INSTR   NM  EDM        VX & S Series
            Serial no  11832                  Firmware   R7.0.35
            Mount      Not Applic             Edm o/s    <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col      0°00'02.916"           V.col      0°00'05.508"

PRECIS  NM  HA Prec    0°00'03"               EDM Prec   0.010
            VA Prec    0°00'03"               EDM (ppm)  2
```

```
ATMOS   NM  Press     29.85                    Temp      65.0
            Refrac cnst 0.142                  PPM       <null>

GRDPOS  FD  Point ID 131          Nrth 2120506.920      East 5993684.530
            Class Normal          Elv  52.777           Code set magnw-tc
            Obs  User Input

STN     NM  ID        131                      Theo ht   5.483
            Scale     1.0000000000             Type      Fixed

BKB     NM  131                                -         132
            Azmth     <null>
            Face 1    0°00'00"                 Face 2    179°59'59.352"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.591                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                                -         132
            H.Angle   0°00'00"                 H.Std Err 0°00'03"
            V.Angle   86°31'41.052"            V.Std Err 0°00'03"
            EDM Dist  845.717                  S.Std Err 0.012
            Code      set ip+cap               Class     Backsight

POLAR D F1  Azmth          <null>              H.Dist         0.001
                                               V.Dist         0.003

TRGET   NM  Target ht 5.597                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                                -         10063
            H.Angle   47°14'09.78"             H.Std Err 0°00'03"
            V.Angle   88°41'21.912"            V.Std Err 0°00'03"
            EDM Dist  1461.451                 S.Std Err 0.013
            Code      h 131-132-18             Class     Normal

TRGET   NM  Target ht 5.449                    P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                                -         10064
            H.Angle   262°14'44.484"           H.Std Err 0°00'03"
            V.Angle   87°38'10.14"             V.Std Err 0°00'03"
            EDM Dist  189.337                  S.Std Err 0.010
            Code      h 131-132-16             Class     Normal

OBS     F2  131                                -         10064
            H.Angle   82°14'42.216"            H.Std Err 0°00'03"
            V.Angle   272°21'51.804"           V.Std Err 0°00'03"
            EDM Dist  189.337                  S.Std Err 0.010
            Code      h 131-132-16             Class     Normal

TRGET   NM  Target ht 5.597                    P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                                -         10063
            H.Angle   227°14'08.16"            H.Std Err 0°00'03"
            V.Angle   271°18'39.06"            V.Std Err 0°00'03"
            EDM Dist  1461.454                 S.Std Err 0.013
            Code      h 131-132-18             Class     Normal

TRGET   NM  Target ht 5.591                    P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                                -         132
            H.Angle   179°59'59.352"           H.Std Err 0°00'03"
            V.Angle   273°28'18.624"           V.Std Err 0°00'03"
            EDM Dist  845.724                  S.Std Err 0.012
            Code      set ip+cap               Class     Backsight

BKB     NM  131                                -         132
            Azmth     <null>
            Face 1    0°00'00"                 Face 2    179°59'58.704"
```

```
OBS     F1  131                             -          132
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   86°31'40.728"         V.Std Err 0°00'03"
            EDM Dist  845.713               S.Std Err 0.012
            Code      set ip+cap            Class     Backsight

TRGET   NM  Target ht 5.597                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                             -          10063
            H.Angle   47°14'09.78"          H.Std Err 0°00'03"
            V.Angle   88°41'21.588"         V.Std Err 0°00'03"
            EDM Dist  1461.457              S.Std Err 0.013
            Code      h 131-132-18          Class     Normal

TRGET   NM  Target ht 5.449                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  131                             -          10064
            H.Angle   262°14'42.864"        H.Std Err 0°00'03"
            V.Angle   87°38'09.816"         V.Std Err 0°00'03"
            EDM Dist  189.335               S.Std Err 0.010
            Code      h 131-132-16          Class     Normal

OBS     F2  131                             -          10064
            H.Angle   82°14'43.512"         H.Std Err 0°00'03"
            V.Angle   272°21'53.1"          V.Std Err 0°00'03"
            EDM Dist  189.337               S.Std Err 0.010
            Code      h 131-132-16          Class     Normal

TRGET   NM  Target ht 5.597                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                             -          10063
            H.Angle   227°14'05.892"        H.Std Err 0°00'03"
            V.Angle   271°18'37.764"        V.Std Err 0°00'03"
            EDM Dist  1461.455              S.Std Err 0.013
            Code      h 131-132-18          Class     Normal

TRGET   NM  Target ht 5.591                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  131                             -          132
            H.Angle   179°59'58.704"        H.Std Err 0°00'03"
            V.Angle   273°28'19.92"         V.Std Err 0°00'03"
            EDM Dist  845.723               S.Std Err 0.012
            Code      set ip+cap            Class     Backsight

MTA     MA  ID        132                   Code      set ip+cap
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   86°31'40.809"         V.Std Err 0°00'00.573"
            S.Dist    845.719               S.Std Err 0.005
            Angles    2                     BS Pt ID  132
            Distances 4

TRGET   NM  Target ht 5.597                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10063                 Code      h 131-132-18
            H.Angle   47°14'08.889"        H.Std Err 0°00'00.573"
            V.Angle   88°41'21.669"         V.Std Err 0°00'00.344"
            S.Dist    1461.454              S.Std Err 0.003
            Angles    2                     BS Pt ID  132
            Distances 4

TRGET   NM  Target ht 5.449                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10064                 Code      h 131-132-16
            H.Angle   262°14'43.755"        H.Std Err 0°00'00.115"
            V.Angle   87°38'08.763"         V.Std Err 0°00'00.573"
            S.Dist    189.337               S.Std Err 0.001
            Angles    2                     BS Pt ID  132
            Distances 4
```

```
RESIDUALSRR Round     1                       ID        132
            H Ang Res 0°00'00"                V Ang Res 0°00'00.243"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        10063
            H Ang Res 0°00'00.891"            V Ang Res 0°00'00.243"
            EDM Res   -0.003

RESIDUALSRR Round     1                       ID        10064
            H Ang Res 0°00'00.729"            V Ang Res 0°00'01.377"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10064
            H Ang Res -0°00'00.891"           V Ang Res -0°00'00.567"
            EDM Res   0.000

RESIDUALSRR Round     1                       ID        10063
            H Ang Res -0°00'00.081"           V Ang Res -0°00'00.729"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        132
            H Ang Res 0°00'00"                V Ang Res 0°00'00.567"
            EDM Res   0.004

RESIDUALSRR Round     2                       ID        132
            H Ang Res 0°00'00"                V Ang Res -0°00'00.081"
            EDM Res   -0.006

RESIDUALSRR Round     2                       ID        10063
            H Ang Res 0°00'00.891"            V Ang Res -0°00'00.081"
            EDM Res   0.003

RESIDUALSRR Round     2                       ID        10064
            H Ang Res -0°00'00.891"           V Ang Res 0°00'01.053"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        10064
            H Ang Res 0°00'01.053"            V Ang Res -0°00'01.863"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        10063
            H Ang Res -0°00'01.701"           V Ang Res 0°00'00.567"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        132
            H Ang Res 0°00'00"                V Ang Res -0°00'00.729"
            EDM Res   0.004

NOTE    TS  Time Date 09/28/2007 Time 11:11:03

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'02.916"            V.col     0°00'05.508"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.79                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 132          Nrth 2120435.535      East 5992843.447
            Class Normal          Elv  103.904          Code set ip+cap
            Obs  User Input

STN     NM  ID        132                     Theo ht   5.736
            Scale     1.0000000000            Type      Fixed

BKB     NM  132                               -         131
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'58.38"

NOTE    SN  Star     Rounds
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```
TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         131
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   93°29'38.328"         V.Std Err 0°00'03"
            EDM Dist  845.736               S.Std Err 0.012
            Code      set magnw-tc          Class     Backsight

POLAR D F1  Azmth          <null>           H.Dist         0.000
                                            V.Dist         0.016

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         133
            H.Angle   118°38'18.744"        H.Std Err 0°00'03"
            V.Angle   87°19'01.236"         V.Std Err 0°00'03"
            EDM Dist  351.783               S.Std Err 0.011
            Code      set magnw-bsw         Class     Normal

TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         10065
            H.Angle   274°45'51.912"        H.Std Err 0°00'03"
            V.Angle   90°47'37.032"         V.Std Err 0°00'03"
            EDM Dist  561.075               S.Std Err 0.011
            Code      a 132-131-14          Class     Normal

OBS     F2  132                             -         10065
            H.Angle   94°45'50.292"         H.Std Err 0°00'03"
            V.Angle   269°12'23.292"        V.Std Err 0°00'03"
            EDM Dist  561.079               S.Std Err 0.011
            Code      a 132-131-14          Class     Normal

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         133
            H.Angle   298°38'18.42"         H.Std Err 0°00'03"
            V.Angle   272°40'58.44"         V.Std Err 0°00'03"
            EDM Dist  351.781               S.Std Err 0.011
            Code      set magnw-bsw         Class     Normal

TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         131
            H.Angle   179°59'58.38"         H.Std Err 0°00'03"
            V.Angle   266°30'20.052"        V.Std Err 0°00'03"
            EDM Dist  845.743               S.Std Err 0.012
            Code      set magnw-tc          Class     Backsight

BKB     NM  132                             -         131
            Azmth     <null>
            Face 1    0°00'00"              Face 2    179°59'59.676"

OBS     F1  132                             -         131
            H.Angle   0°00'00"              H.Std Err 0°00'03"
            V.Angle   93°29'38.652"         V.Std Err 0°00'03"
            EDM Dist  845.743               S.Std Err 0.012
            Code      set magnw-tc          Class     Backsight

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         133
            H.Angle   118°38'20.04"         H.Std Err 0°00'03"
            V.Angle   87°19'03.504"         V.Std Err 0°00'03"
            EDM Dist  351.784               S.Std Err 0.011
            Code      set magnw-bsw         Class     Normal
```

```
TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         10065
            H.Angle   274°45'54.504"        H.Std Err 0°00'03"
            V.Angle   90°47'37.68"          V.Std Err 0°00'03"
            EDM Dist  561.078               S.Std Err 0.011
            Code      a 132-131-14          Class     Normal

OBS     F2  132                             -         10065
            H.Angle   94°45'53.532"         H.Std Err 0°00'03"
            V.Angle   269°12'23.616"        V.Std Err 0°00'03"
            EDM Dist  561.075               S.Std Err 0.011
            Code      a 132-131-14          Class     Normal

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         133
            H.Angle   298°38'21.984"        H.Std Err 0°00'03"
            V.Angle   272°40'58.44"         V.Std Err 0°00'03"
            EDM Dist  351.781               S.Std Err 0.011
            Code      set magnw-bsw         Class     Normal

TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         131
            H.Angle   179°59'59.676"        H.Std Err 0°00'03"
            V.Angle   266°30'20.376"        V.Std Err 0°00'03"
            EDM Dist  845.740               S.Std Err 0.012
            Code      set magnw-tc          Class     Backsight

MTA     MA  ID        131                   Code      set magnw-tc
            H.Angle   0°00'00"              H.Std Err 0°00'00"
            V.Angle   93°29'39.138"         V.Std Err 0°00'00"
            S.Dist    845.741               S.Std Err 0.003
            Angles    2                     BS Pt ID  131
            Distances 4

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        133                   Code      set magnw-bsw
            H.Angle   118°38'20.283"        H.Std Err 0°00'01.26"
            V.Angle   87°19'01.965"         V.Std Err 0°00'00.802"
            S.Dist    351.782               S.Std Err 0.001
            Angles    2                     BS Pt ID  131
            Distances 4

TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10065                 Code      a 132-131-14
            H.Angle   274°45'53.046"        H.Std Err 0°00'01.604"
            V.Angle   90°47'36.951"         V.Std Err 0°00'00.115"
            S.Dist    561.077               S.Std Err 0.002
            Angles    2                     BS Pt ID  131
            Distances 4

RESIDUALSRR Round     1                     ID        131
            H Ang Res 0°00'00"              V Ang Res -0°00'00.81"
            EDM Res   -0.004

RESIDUALSRR Round     1                     ID        133
            H Ang Res -0°00'01.539"         V Ang Res -0°00'00.729"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID        10065
            H Ang Res -0°00'01.134"         V Ang Res 0°00'00.081"
            EDM Res   -0.002
```

```
RESIDUALSRR Round     1                       ID        10065
            H Ang Res -0°00'01.134"           V Ang Res -0°00'00.243"
            EDM Res   0.002

RESIDUALSRR Round     1                       ID        133
            H Ang Res -0°00'00.243"           V Ang Res -0°00'00.405"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        131
            H Ang Res 0°00'00"                V Ang Res 0°00'00.81"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        131
            H Ang Res 0°00'00"                V Ang Res -0°00'00.486"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        133
            H Ang Res -0°00'00.243"           V Ang Res 0°00'01.539"
            EDM Res   0.002

RESIDUALSRR Round     2                       ID        10065
            H Ang Res 0°00'01.458"            V Ang Res 0°00'00.729"
            EDM Res   0.001

RESIDUALSRR Round     2                       ID        10065
            H Ang Res 0°00'00.81"             V Ang Res -0°00'00.567"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        133
            H Ang Res 0°00'02.025"            V Ang Res -0°00'00.405"
            EDM Res   -0.001

RESIDUALSRR Round     2                       ID        131
            H Ang Res 0°00'00"                V Ang Res 0°00'00.486"
            EDM Res   0.000

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'02.916"            V.col     0°00'05.508"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.79                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 132          Nrth 2120435.535      East 5992843.447
            Class Normal          Elv  103.904          Code set ip+cap
            Obs  User Input

STN     NM  ID        132                     Theo ht   5.736
            Scale     1.0000000000            Type      Fixed

BKB     NM  132                               -         133
            Azmth     <null>
            Face 1    0°00'00"                Face 2    180°00'00.324"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.338                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                               -         133
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   87°19'04.152"           V.Std Err 0°00'03"
            EDM Dist  351.780                 S.Std Err 0.011
            Code      set magnw-bsw           Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.002
                                              V.Dist         0.004
```

```
TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         10066
            H.Angle   156°07'32.844"        H.Std Err 0°00'03"
            V.Angle   90°47'36.708"         V.Std Err 0°00'03"
            EDM Dist  561.073               S.Std Err 0.011
            Code      a 132-133-14          Class     Normal

TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                             -         10067
            H.Angle   241°21'45.144"        H.Std Err 0°00'03"
            V.Angle   93°29'38.328"         V.Std Err 0°00'03"
            EDM Dist  845.733               S.Std Err 0.012
            Code      a 132-133-131         Class     Normal

OBS     F2  132                             -         10067
            H.Angle   61°21'40.608"         H.Std Err 0°00'03"
            V.Angle   266°30'22.968"        V.Std Err 0°00'03"
            EDM Dist  845.731               S.Std Err 0.012
            Code      a 132-133-131         Class     Normal

TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         10066
            H.Angle   336°07'32.196"        H.Std Err 0°00'03"
            V.Angle   269°12'24.912"        V.Std Err 0°00'03"
            EDM Dist  561.070               S.Std Err 0.011
            Code      a 132-133-14          Class     Normal

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         133
            H.Angle   180°00'00.324"        H.Std Err 0°00'03"
            V.Angle   272°40'57.468"        V.Std Err 0°00'03"
            EDM Dist  351.779               S.Std Err 0.011
            Code      set magnw-bsw         Class     Backsight

MTA     MA  ID        133                   Code      set magnw-bsw
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   87°19'03.342"         V.Std Err <null>
            S.Dist    351.780               S.Std Err 0.001
            Angles    1                     BS Pt ID  133
            Distances 2

TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10066                 Code      a 132-133-14
            H.Angle   156°07'32.358"        H.Std Err <null>
            V.Angle   90°47'35.898"         V.Std Err <null>
            S.Dist    561.071               S.Std Err 0.002
            Angles    1                     BS Pt ID  133
            Distances 2

TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10067                 Code      a 132-133-131
            H.Angle   241°21'42.714"        H.Std Err <null>
            V.Angle   93°29'37.68"          V.Std Err <null>
            S.Dist    845.732               S.Std Err 0.001
            Angles    1                     BS Pt ID  133
            Distances 2

RESIDUALSRR Round     1                     ID        133
            H Ang Res 0°00'00"              V Ang Res 0°00'00.81"
            EDM Res   0.001
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```
RESIDUALSRR Round     1                       ID        10066
            H Ang Res 0°00'00.486"            V Ang Res 0°00'00.81"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10067
            H Ang Res 0°00'02.43"             V Ang Res 0°00'00.648"
            EDM Res   0.001

RESIDUALSRR Round     1                       ID        10067
            H Ang Res -0°00'02.43"            V Ang Res -0°00'00.648"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        10066
            H Ang Res -0°00'00.486"           V Ang Res -0°00'00.81"
            EDM Res   -0.001

RESIDUALSRR Round     1                       ID        133
            H Ang Res 0°00'00"                V Ang Res -0°00'00.81"
            EDM Res   -0.001

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'02.916"            V.col     0°00'05.508"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.79                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 132          Nrth 2120435.535      East 5992843.447
            Class Normal          Elv  103.904          Code set ip+cap
            Obs  User Input

STN     NM  ID        132                     Theo ht   5.736
            Scale     1.0000000000            Type      Fixed

BKB     NM  132                               -         14
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'59.352"

NOTE    TS  Time Date 09/28/2007 Time 11:44:03

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.456                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                               -         14
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   90°47'38.328"           V.Std Err 0°00'03"
            EDM Dist  561.075                 S.Std Err 0.011
            Code      N&S painted X           Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.015
                                              V.Dist         -0.002

TRGET   NM  Target ht 5.351                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  132                               -         10068
            H.Angle   85°14'07.764"           H.Std Err 0°00'03"
            V.Angle   93°29'38.976"           V.Std Err 0°00'03"
            EDM Dist  845.739                 S.Std Err 0.012
            Code      h 132-14-131            Class     Normal

TRGET   NM  Target ht 5.338                   P.C. mm   0.0
            Prism Off 0.000
```

```
OBS     F1  132                             -         10069
            H.Angle   203°52'28.452"        H.Std Err 0°00'03"
            V.Angle   87°19'05.448"         V.Std Err 0°00'03"
            EDM Dist  351.779               S.Std Err 0.011
            Code      h 132-14-133          Class     Normal

OBS     F2  132                             -         10069
            H.Angle   23°52'25.86"          H.Std Err 0°00'03"
            V.Angle   272°40'56.172"        V.Std Err 0°00'03"
            EDM Dist  351.777               S.Std Err 0.011
            Code      h 132-14-133          Class     Normal

TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         10068
            H.Angle   265°14'07.44"         H.Std Err 0°00'03"
            V.Angle   266°30'21.024"        V.Std Err 0°00'03"
            EDM Dist  845.735               S.Std Err 0.012
            Code      h 132-14-131          Class     Normal

TRGET   NM  Target ht 5.456                 P.C. mm   0.0
            Prism Off 0.000

OBS     F2  132                             -         14
            H.Angle   179°59'59.352"        H.Std Err 0°00'03"
            V.Angle   269°12'23.94"         V.Std Err 0°00'03"
            EDM Dist  561.069               S.Std Err 0.011
            Code      N&S painted X         Class     Backsight

MTA     MA  ID        14                    Code      N&S painted X
            H.Angle   0°00'00"              H.Std Err <null>
            V.Angle   90°47'37.194"         V.Std Err <null>
            S.Dist    561.072               S.Std Err 0.004
            Angles    1                     BS Pt ID  14
            Distances 2

TRGET   NM  Target ht 5.351                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10068                 Code      h 132-14-131
            H.Angle   85°14'07.926"         H.Std Err <null>
            V.Angle   93°29'38.976"         V.Std Err <null>
            S.Dist    845.737               S.Std Err 0.003
            Angles    1                     BS Pt ID  14
            Distances 2

TRGET   NM  Target ht 5.338                 P.C. mm   0.0
            Prism Off 0.000

MTA     MA  ID        10069                 Code      h 132-14-133
            H.Angle   203°52'27.48"         H.Std Err <null>
            V.Angle   87°19'04.638"         V.Std Err <null>
            S.Dist    351.778               S.Std Err 0.001
            Angles    1                     BS Pt ID  14
            Distances 2

RESIDUALSRR Round     1                     ID        14
            H Ang Res 0°00'00"              V Ang Res 0°00'01.134"
            EDM Res   0.003

RESIDUALSRR Round     1                     ID        10068
            H Ang Res -0°00'00.162"         V Ang Res 0°00'00"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID        10069
            H Ang Res 0°00'00.972"          V Ang Res 0°00'00.81"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID        10069
            H Ang Res -0°00'00.972"         V Ang Res -0°00'00.81"
            EDM Res   -0.001
```

```
RESIDUALSRR Round     1                       ID        10068
            H Ang Res 0°00'00.162"            V Ang Res 0°00'00"
            EDM Res   -0.002

RESIDUALSRR Round     1                       ID        14
            H Ang Res 0°00'00"                V Ang Res -0°00'01.134"
            EDM Res   -0.003

INSTR   NM  EDM       VX & S Series
            Serial no 11832                   Firmware  R7.0.35
            Mount     Not Applic              Edm o/s   <null>
            J Constant 273.9420092103         N Constant 105.675
            H.col     0°00'02.916"            V.col     0°00'05.508"

PRECIS  NM  HA Prec   0°00'03"                EDM Prec  0.010
            VA Prec   0°00'03"                EDM (ppm) 2

ATMOS   NM  Press     29.77                   Temp      65.0
            Refrac cnst 0.142                 PPM       <null>

GRDPOS  FD  Point ID 133          Nrth 2120114.014      East 5992701.722
            Class Normal          Elv  120.771          Code set magnw-bsw
            Obs  User Input

STN     NM  ID        133                     Theo ht   5.490
            Scale     1.0000000000            Type      Fixed

BKB     NM  133                               -         132
            Azmth     <null>
            Face 1    0°00'00"                Face 2    179°59'53.196"

NOTE    SN  Start of Rounds

TRGET   NM  Target ht 5.745                   P.C. mm   0.0
            Prism Off 0.000

OBS     F1  133                               -         132
            H.Angle   0°00'00"                H.Std Err 0°00'03"
            V.Angle   92°42'39.852"           V.Std Err 0°00'03"
            EDM Dist  351.788                 S.Std Err 0.011
            Code      set ip+cap              Class     Backsight

POLAR D F1  Azmth          <null>             H.Dist         0.002
                                              V.Dist         0.025

TRGET   NM  Target ht 7.400                   P.C. mm   2.0
            Prism Off 0.000

OBS     F1  133                               -         10070
            H.Angle   149°28'23.736"          H.Std Err 0°00'03"
            V.Angle   85°33'18.634"           V.Std Err 0°00'03"
            EDM Dist  271.438                 S.Std Err 0.010
            Code      a 133-132-17            Class     Normal

OBS     F2  133                               -         10070
            H.Angle   329°28'27.624"          H.Std Err 0°00'03"
            V.Angle   274°26'47.196"          V.Std Err 0°00'03"
            EDM Dist  271.440                 S.Std Err 0.010
            Code      a 133-132-17            Class     Normal

TRGET   NM  Target ht 5.745                   P.C. mm   0.0
            Prism Off 0.000

OBS     F2  133                               -         132
            H.Angle   179°59'53.196"          H.Std Err 0°00'03"
            V.Angle   267°17'22.74"           V.Std Err 0°00'03"
            EDM Dist  351.788                 S.Std Err 0.011
            Code      set ip+cap              Class     Backsight
```

```
MTA      MA  ID         132                    Code       set ip+cap
             H.Angle    0°00'00"               H.Std Err  <null>
             V.Angle    92°42'38.556"          V.Std Err  <null>
             S.Dist     351.788                S.Std Err  0.000
             Angles     1                      BS Pt ID   132
             Distances  2

TRGET    NM  Target ht  7.400                  P.C. mm    2.0
             Prism Off  0.000

MTA      MA  ID         10070                  Code       a 133-132-17
             H.Angle    149°28'29.082"         H.Std Err  <null>
             V.Angle    85°33'15.719"          V.Std Err  <null>
             S.Dist     271.439                S.Std Err  0.001
             Angles     1                      BS Pt ID   132
             Distances  2

RESIDUALSRR  Round      1                      ID         132
             H Ang Res  0°00'00"               V Ang Res  0°00'01.296"
             EDM Res    0.000

RESIDUALSRR  Round      1                      ID         10070
             H Ang Res  -0°00'05.346"          V Ang Res  0°00'02.916"
             EDM Res    -0.001

RESIDUALSRR  Round      1                      ID         10070
             H Ang Res  0°00'05.346"           V Ang Res  -0°00'02.916"
             EDM Res    0.001

RESIDUALSRR  Round      1                      ID         132
             H Ang Res  0°00'00"               V Ang Res  -0°00'01.296"
             EDM Res    0.000

INSTR    NM  EDM        VX & S Series
             Serial no  11832                  Firmware   R7.0.35
             Mount      Not Applic             Edm o/s    <null>
             J Constant 273.9420092103         N Constant 105.675
             H.col      0°00'02.916"           V.col      0°00'05.508"

PRECIS   NM  HA Prec    0°00'03"               EDM Prec   0.010
             VA Prec    0°00'03"               EDM (ppm)  2

ATMOS    NM  Press      29.78                  Temp       65.0
             Refrac cnst 0.142                 PPM        <null>

GRDPOS   FD  Point ID 133          Nrth 2120114.014      East 5992701.722
             Class Normal          Elv  120.771          Code set magnw-bsw
             Obs  User Input

STN      NM  ID         133                    Theo ht    5.490
             Scale      1.0000000000           Type       Fixed

BKB      NM  133                               -          17
             Azmth      <null>
             Face 1     0°00'00"               Face 2     180°00'00.972"

NOTE     SN  Start of Rounds

TRGET    NM  Target ht  7.400                  P.C. mm    2.0
             Prism Off  0.000

OBS      F1  133                               -          17
             H.Angle    0°00'00"               H.Std Err  0°00'03"
             V.Angle    85°33'16.367"          V.Std Err  0°00'03"
             EDM Dist   271.444                S.Std Err  0.010
             Code       N&S painted X          Class      Backsight

POLAR D F1   Azmth            <null>            H.Dist          0.000
                                                V.Dist          -0.001

TRGET    NM  Target ht  5.745                  P.C. mm    0.0
             Prism Off  0.000
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OBS     F1  133                             -          10071
            H.Angle   210°31'27.84"         H.Std Err  0°00'03"
            V.Angle   92°42'39.204"         V.Std Err  0°00'03"
            EDM Dist  351.785               S.Std Err  0.011
            Code      h 133-17-132          Class      Normal

OBS     F2  133                             -          10071
            H.Angle   30°31'24.6"           H.Std Err  0°00'03"
            V.Angle   267°17'23.712"        V.Std Err  0°00'03"
            EDM Dist  351.788               S.Std Err  0.011
            Code      h 133-17-132          Class      Normal

TRGET   NM  Target ht 7.400                 P.C. mm    2.0
            Prism Off 0.000

OBS     F2  133                             -          17
            H.Angle   180°00'00.972"        H.Std Err  0°00'03"
            V.Angle   274°26'47.844"        V.Std Err  0°00'03"
            EDM Dist  271.440               S.Std Err  0.010
            Code      N&S painted X         Class      Backsight

MTA     MA  ID        17                    Code       N&S painted X
            H.Angle   0°00'00"              H.Std Err  <null>
            V.Angle   85°33'14.261"         V.Std Err  <null>
            S.Dist    271.442               S.Std Err  0.003
            Angles    1                     BS Pt ID   17
            Distances 2

TRGET   NM  Target ht 5.745                 P.C. mm    0.0
            Prism Off 0.000

MTA     MA  ID        10071                 Code       h 133-17-132
            H.Angle   210°31'25.734"        H.Std Err  <null>
            V.Angle   92°42'37.746"         V.Std Err  <null>
            S.Dist    351.787               S.Std Err  0.002
            Angles    1                     BS Pt ID   17
            Distances 2

RESIDUALSRR Round     1                     ID         17
            H Ang Res 0°00'00"              V Ang Res  0°00'02.106"
            EDM Res   0.002

RESIDUALSRR Round     1                     ID         10071
            H Ang Res 0°00'02.106"          V Ang Res  0°00'01.458"
            EDM Res   -0.001

RESIDUALSRR Round     1                     ID         10071
            H Ang Res -0°00'02.106"         V Ang Res  -0°00'01.458"
            EDM Res   0.001

RESIDUALSRR Round     1                     ID         17
            H Ang Res 0°00'00"              V Ang Res  -0°00'02.106"
            EDM Res   -0.002

NOTE    TS  Time Date 10/19/2007 Time 09:06:59
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