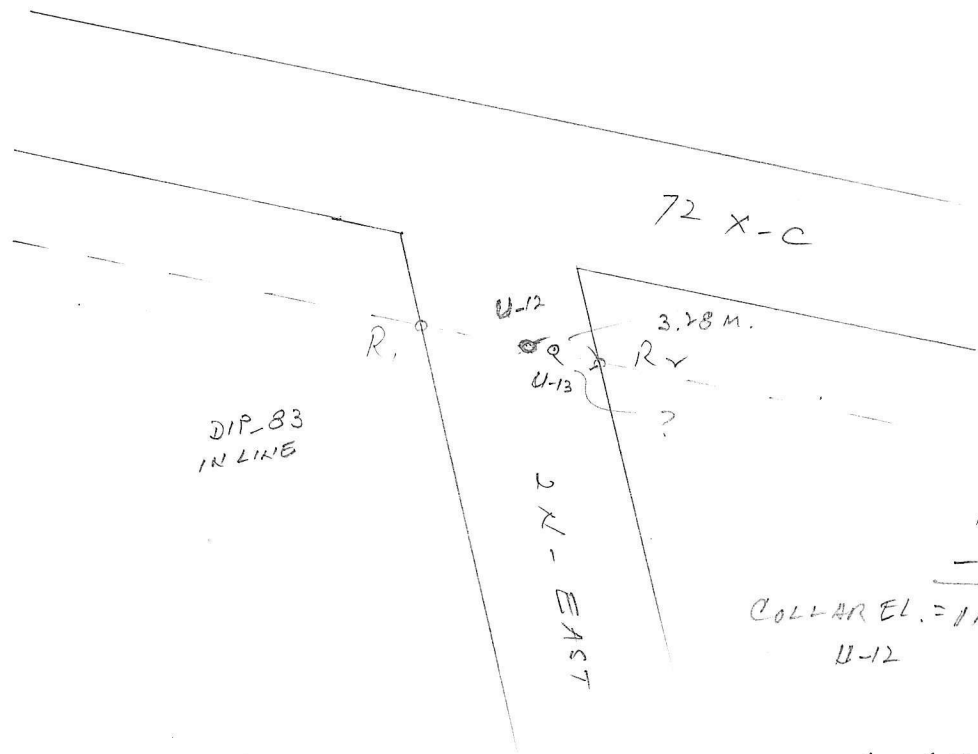


B.S.	75-038	75-041	75-041	75-043	75-044	75-044	75-044	
S.T.A.	75-041	TP1 ON FLR	TP1 ON FLR	75-044	TP2 ON FLR	TP2 ON FLR	TP2 ON FLR	
F.S.	TP1 ON FLR	REF. DDH # 1	REF. DDH # 2	TP2	REF. DDH # 3	REF. DDH # 4	REF. DDH # 5	
MEAS. DISTANCE	16.8	6.309	2.957	10.031	11.604	4.109	1.920	
VERT. ANGLE	0	0	0	0	0	0	0	
SINE - V.A.								
COSINE - V.A.								
STA. ELEVATION	1158.725	1152.916	1152.916	1155.943	1152.408			
H.I.	-2.813	+1.554	+1.554	-2.569	+1.308	+1.308	+1.308	
INST. HEIGHT	1155.912	1154.470	1154.470	1153.374	1153.716			
DISTANCE	0	0	0	0	0			
DIFF.	1155.912	1154.470	1154.470	1153.374	1153.716			
H.P.	-2.996	0	0	-0.966	0	0	0	
F.S. ELEVATION	1152.916	1154.470	1154.470	1152.408	1153.716	1153.716	1153.716	
AZ. B.S. TO STA.	86-50-59	266-50-59	266-50-59	223-59-09	198-29-09			
±180-00'-00"	180-00-00	180	180	180	180			
AZ. STA. TO B.S.	266-50-59	86-50-59	86-50-59	43-59-09	18-29-09	18-29-09	18-29-09	
HORZ. ANGLE	00-00-00	136-57-01	316-57-01	154-30-00	25-18-51	205-18-51	115-18-51	
-360-00'-00"	266-50-59	223-48-00	403-48-00	198-29-09	43-48-00	223-48-00	133-48-00	
AZ. STA. TO F.S.			43-48-00					
BEARING	S 86-50-59 W	S 43-48-00 W	N 43-48-00 E	S 18-29-09 W	N 43-48-00 E	S 43-48-00 W	S 46-12-00 E	
HORZ. DISTANCE	16.8	6.309	2.957	10.031	11.604	4.109	1.920	
COSINE BEARING	.05495	.72176	.72176	.94840	.72176	.72176	.69214	
STA. LAT.	10 687.064	10 686.141	10 686.141	10 729.259	10 719.746	10 719.746	10 719.746	
DIFF.	-0.923	+4.554	+2.134	-9.513	+8.375	-2.966	-1.329	
F.S. LAT.	10 686.141 N	10 681.587 N	10 688.275 N	10 719.746 N	10 728.121 N	10 716.780 N	10 718.417 N	
SINE BEARING	.99849	.69214	.69214	.31707	.69214	.69214	.72176	
STA. DEP.	7617.497	7600.722	7600.722	7635.943	7632.763	7632.763	7632.763	
DIFF.	-16.775	+4.367	+2.047	-3.180	+8.032	-2.844	+1.386	
F.S. DEP.	7600.722 E	7596.355 E	7602.769 E	7632.763 E	7640.795 E	7629.919 E	7634.149 E	
GRADE CALC.								
F.S. GRADE ELV.								
GRADE CHAIN								
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.	
CALCULATED BY:	ROA		ROA		ROA		ROA	
CHECKED BY:								
DATE	29 11 75		29 11 75		29 11 75		29 11 75	
FIELD PAGE NO.	389		389		390		390	



1154.470  
 - 1.560  
 COLLAR EL. = 1152.910  
 U-12

3.280  
 2.957  
 -----  
 0.323

10 681.587 - 7596.355  
 10 688.275 - 7602.769  
 -----  
 + 6.688 + 6.414

= 0.95903

43-48-03  
 43-47-59 ✓ LINE  
 - 04"

*check only* *check only* *check only* *check only*

B.S.	75-044	75-048	75-048	75-048	75-048		
S.T.A.	TP2 OVERL.	LP 37	LP 37	LP 37	LP 37		
F.S.	DDH 6	DDH 41 <sup>collar</sup> ①	DDH 41 ②	DDH 42 <sup>collar</sup> ①	DDH 42 ②		
MEAS. DISTANCE	5.852	10.201	8.78	10.50	8.52		
VERT. ANGLE	0	+03 29 00	+03 22 40	+03 50 40	+03 55 00		
SINE - V.A.		.06076	.05892	.06705	.06831		
COSINE - V.A.		.99815	.99826	.99775	.99766		
STA. ELEVATION	1152.408	1156.232	1156.232	1156.232	1156.232		
H.I.	+1.308	-2.28	-2.28	-2.28	-2.28		
INST. HEIGHT	1153.716	1153.952	1153.952	1153.952	1153.952		
DISTANCE	0	+ .620	+ .517	+ .704	+ .582		
DIFF.		1154.572	1154.469	1154.656	1154.534		
H.P.	0	0	0	0	0		
F.S. ELEVATION	1153.716	1154.572	1154.469	1154.656	1154.534		
AZ. B.S. TO STA.		70 32 29	70 32 29	70 32 29	70 32 29		
±180 -00' -00"		+180	+180	+180	+180		
AZ. STA. TO B.S.	18-29-09	250 32 29	250 32 29	250 32 29	250 32 29		
HORZ. ANGLE	295-18-51	180 01 20	171 52 00	173 22 00	175 08 20		
-360 -00' -00"	313-48-00	430 33 49	422 24 29	423 54 29	425 40 49		
AZ. STA. TO F.S.		70 33 49	62 24 29	63 54 29	65 40 49		
BEARING	N46-12-00W	N70 33 49 E	N62 24 29 E	N63 54 29 E	N65 40 49 E		
HORZ. DISTANCE	5.852	10.181	8.765	10.476	8.500		
COSINE BEARING	.69214	.29964 <sup>330</sup>	.46368	.43981	.41182		
STA. LAT.	10 719.746	10 775.126	10 775.121	10 775.121	10 775.121		
DIFF.	+ 4.050	+ 3.889	+ 4.064	+ 4.607	+ 3.500		
F.S. LAT.	10 723.796 N	10 778.122 N	10 779.185 N	10 779.728 N	10 778.621 N		
SINE BEARING	.7476	.95405 <sup>94301</sup>	.88600	.89809	.91126		
STA. DEP.	7632.763	7682.127	7682.127	7682.127	7682.127		
DIFF.	- 4.224	+ 9.713 <sup>601</sup>	+ 7.766	+ 9.408	+ 7.746		
F.S. DEP.	7628.539 E	7691.840 E	7689.893 E	7691.535 E	7689.873 E		
GRADE CALC.		728					
F.S. GRADE ELV.		7691.840		7691.535			
GRADE CHAIN		Brig S69°46'49"E		Brig N56°20'02"E			
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	ROA						
CHECKED BY:	ROA		ROA	ROA	ROA		
DATE	29 11 75						
FIELD PAGE NO.	390						





B.S.	75-043	75-043		75-043	75-043	75-043	75-043
S.T.A.	75-044	75-044		75-044	75-044	75-044	75-044
F.S.	Collar U-16	U16 (2)	U17 collar	U21 Bottom	U21 TOP +1.0m	U22	U23
MEAS. DISTANCE	4.60	4.30		11.52	12.78	9.90	9.0
VERT. ANGLE	-17° 16' 40"	+1° 21' 40"		+1 -25 -20	+7 -32 -20	0	0
SINE - V.A.	.29700	.02375		.02482	.13120		
COSINE - V.A.	.95488	.99972		.99969	.99136		
STA. ELEVATION	1155.943	1155.943		1155.943	1155.943	1155.943	1155.943
H.I.	-2.78	-2.78		-2.8	-2.8	-2.8	-2.8
INST. HEIGHT	1153.163	1153.163		1153.143	1153.143	1153.143	1153.143
DISTANCE	-1.366	+ .102		+ .286	+ 1.677	0	0
DIFF.	1151.797	1153.061		1153.429			
H.P.	0	0		0	0	-1.435	-1.4
F.S. ELEVATION	1151.797 COLLAR	1153.061	1151.797 COLLAR	1153.429 ✓	1154.820 ✓	1151.708 -	1151.743 -
AZ. B.S. TO STA. ±180 - 00' - 00"	223 59 09 -180	223 59 09 -180		223 59 09 -180	223 59 09 -180	223 59 09 -180	223 59 09 -180
AZ. STA. TO B.S.	43 59 09	43 59 09		43 59 09	43 59 09	43 59 09	43 59 09
HORIZ. ANGLE -360 - 00' - 00"	75 40 20 119 39 29	103 18 20 147 17 29		162 07 00 206 06 09	164 06 00 208 05 09	159 31 40 203 30 49	156 04 40 200 03 49
AZ. STA. TO F.S.	119 39 29	147 17 29	43 47 59	206 06 09	208 05 09	203 30 49	200 03 49
BEARING	S 60 20 31 E	S 32 42 31 E	N 43 47 59 E	S 26 06 09 W	S 28 05 09 W	S 23 30 49 W	S 20 03 49 W
HORIZ. DISTANCE	4.392	4.299		11.516	12.670	9.90	9.00
COSINE BEARING							
STA. LAT.	10 729.258	10 729.258		10 729.258	10 729.258	10 729.258	10 729.258
DIFF.	-2.173	-3.617		-10.341	-11.178	-9.078	-8.454
F.S. LAT.	10 727.085 N	10 725.641 N	10 727.200 N	10 718.917 N	10 718.080 N	10 720.180 N	10 720.804 N
SINE BEARING							
STA. DEP.	76 35.943	76 35.943		76 35.943	76 35.943	76 35.943	76 35.943
DIFF.	+ 3.817	+ 2.323		- 5.067	- 5.965	- 3.950	- 3.088
F.S. DEP.	76 39.760 E	76 38.266 E	76 39.600 E	76 30.876 E	76 29.978 E	76 31.993 E	76 32.855 E
GRADE CALC.			@ -60° DIP	Brg 547.00 49w Pz 227.00 49 +55° Collar El. 1155.639			
F.S. GRADE ELV.				N - 10 716.857			
GRADE CHAIN				E - 76 28.660			
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	WS	WS		WS	WS	WS	WS
CHECKED BY:							
DATE	20 01 76	20 01 76		Feb 4/76	Feb 4/76	Feb 4/76	Feb 4/76
FIELD PAGE NO.	425	425		431	431	431	431

B.S.	75-043	75-043	LP 45	LP 45	LP 45	LP 45
S.T.A.	75-044	75-044	75-050	75-050	75-050	75-050
F.S.	U 24 Collar	U 24	U 26 ①	U 26 C+1.7	U 27 ①	U 27 Collar
MEAS. DISTANCE	5.55	5.00	2.250	2.430	2.880	4.720
VERT. ANGLE	+ 21-17-00	+ 6-11-40	- 18-06-20	+ 10-02-00	+ 00-17-00	+ 32-39-00
SINE - V.A.	.36298	.10790	.31077	.17422	.00495	.53951
COSINE - V.A.	.93180	.99416	.95049	.98471	.99999	.84198
STA. ELEVATION	1155.943	1155.943	1157.251	1157.251	1157.251	1157.251
H.I.	- 2.8	- 2.8	- 2.410	- 2.410	- 2.410	- 2.410
INST. HEIGHT	1153.143	1153.143	1154.841	1154.841	1154.841	1154.841
DISTANCE	+ 2.015	+ .540	- .699	+ .423	+ .014	+ 2.546
DIFF.	1155.158	1153.683		1155.264	1154.855	1157.387
H.P.	0	0	0	0	0	0
F.S. ELEVATION	1155.158 -	1153.683 -	1154.142	1155.264	1154.855	C 1157.387
AZ. B.S. TO STA.	223 59 09	223 59 09				
± 180 - 00' - 00"	-180	-180				
AZ. STA. TO B.S.	43 59 09	43 59 09	97-02-39	97-02-39	97-02-39	97-02-39
HORZ. ANGLE	76 02 00	100 20 00	79-53-30	88-42-40	354-37-00	341-08-00
- 360 - 00' - 00"	120 01 09	144 19 09	176-56-09	185-45-19	451-39-39	438-10-39
AZ. STA. TO F.S.					91-39-39	78-10-39
BEARING	S 59 58 51 E	S 35 40 51 E	S 3-03-51 E	S 5-45-19 W	S 88-20-21 E	N 78-10-39 E
HORZ. DISTANCE	5.171	4.971	2.139	2.393	2.880	3.974
COSINE BEARING						
STA. LAT.	10729.258	10729.258	10780.219	10780.219	10780.219	10780.219
DIFF.	- 2.587	- 4.038	- 2.136	- 2.381	- .083	+ .814
F.S. LAT.	10726.671 N	10725.220 N	10778.083 N	10777.838 N	10780.136 N	10781.033 N
SINE BEARING						
STA. DEP.	7635.943	7635.943	7689.829	7689.829	7689.829	7689.829
DIFF.	+ 4.477	+ 2.899	+ .114	- .240	+ 2.879	+ 3.890
F.S. DEP.	7640.420 E	7638.842 E	7689.943 E	7689.589 E	7692.708 E	7693.719 E
GRADE CALC.	Brg N 47 24 03 E		Brg S 55-18-48 W		Brg N 48-25-09 E	
	A <sub>2</sub> 47 24 03		AZ 235 18 48		AZ 48-25-09	
	Dip +34° 30'		DIP +68° 59' 11"		DIP +61° 53' 57"	
F.S. GRADE ELV.			LAT. 10777.491	DEP. 7689.087	LAT. 10781.033	DEP. 7693.719
GRADE CHAIN			El. 1156.851		El. 1157.387	
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.
CALCULATED BY:	WS	WS	WS	WS	WS	WS
CHECKED BY:			P.J.G.	P.J.G.	P.J.G.	P.J.G.
DATE	Feb 4/76	Feb 4/76	FEB 17/76	FEB 17/76	FEB 17/76	FEB 17/76
FIELD PAGE NO.	431	431	440	440	440	440

B.S.	75027	75028					
S.T.A.	75028	TP					
F.S.	TP	U 28 E	U 28 C	U 29 E	U 29 C	U 30 E	U 30 C
MEAS. DISTANCE	24.137	17.39	18.99	17.19	18.95	17.31	18.84
VERT. ANGLE	+ 04 52 - 00	+ 00 - 57 - 00	- 03 - 05 - 40	+ 00 32 .00	- 00 - 51 - 40	+ 02 - 18 - 00	+ 06 - 16 - 00
SINE - V.A.	08484	01658	05398	00931	01503	04013	10916
COSINE - V.A.	99639	99986	99854	99996	99989	99919	99402
STA. ELEVATION	1166.915	1166.143					
H.I.	- 2.820	+ 1.405					
INST. HEIGHT	1164.095	1167.548	1167.548	1167.548	1167.548	1167.548	1167.548
DISTANCE	+ 2.048	+ 0.288	- 1.025	+ 0.160	- 0.285	+ 0.695	+ 2.057
DIFF.							
H.P.							
F.S. ELEVATION	1166.143	1167.836	1166.523	1167.708	1167.263	1168.243	1169.605
AZ. B.S. TO STA.	122 - 25 - 50	306 - 28 - 10					
±180 - 00' - 00"	180	180					
AZ. STA. TO B.S.	302 - 25 - 50	126 - 28 - 10	126 - 28 - 10	126 - 28 - 10	126 - 28 - 10	126 - 28 - 10	126 - 28 - 10
HORZ. ANGLE	04 - 02 - 20	294 - 45 - 20	293 - 42 - 00	293 - 38 - 00	292 - 19 - 30	292 - 49 - 00	292 - 14 - 40
- 360 - 00' - 00"	306 - 28 - 10	421 - 13 - 30	420 - 10 - 10	420 - 06 - 10	418 - 47 - 40	419 - 17 - 10	418 - 42 - 50
AZ. STA. TO F.S.		61 - 13 - 30	60 - 10 - 10	60 - 06 - 10	58 - 47 - 40	59 - 17 - 10	58 - 42 - 50
BEARING	N 53 - 31 - 50 W	N 61 - 13 - 30 E	N 60 - 10 - 10 E	N 60 - 06 - 10 E	N 58 - 47 - 40 E	N 59 - 17 - 10 E	N 58 - 42 - 50 E
HORZ. DISTANCE	24.051	17.387	18.962	17.189	18.948	17.296	18.727
COSINE BEARING	59439	48137	49744	49845	51811	51075	51931
STA. LAT.	10685.020	10699.315	10699.315	10699.315	10699.315	10699.315	10699.315
DIFF.	+ 14.296	+ 8.370	+ 9.433	+ 8.568	+ 9.817	+ 8.834	+ 9.725
F.S. LAT.	10699.316 N	10707.685 N	10708.748 N	10707.883 N	10709.132 N	10708.149 N	10709.040 N
SINE BEARING	80417	87652	86750	86692	85531	85973	85458
STA. DEP.	7541.638	7522.298	7522.298	7522.298	7522.298	7522.298	7522.298
DIFF.	- 19.341	+ 15.240	+ 16.450	+ 14.901	+ 16.206	+ 14.870	+ 16.004
F.S. DEP.	7522.297 E	7537.538 E	7538.748 E	7537.199 E	7539.514 E	7537.168 E	7538.302 E
GRADE CALC.		1.210 = 1.13829	N 48 - 42 - 0 E	2.305 1.84548	N 46 - 15 - 00 E	1.134 - 1.27773	N 51 - 50 - 40 E
		1.063		1.249		0.891	
F.S. GRADE ELV.		1.611	- 39°	1.806	- 13 - 50	1.442	+ 43.21 - 56
GRADE CHAIN		1.313		0.945		1.362	
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:							
CHECKED BY:	WS	WS	WS	WS	WS	WS	WS
DATE							
FIELD PAGE NO.							

B.S.					75049.		
S.T.A.					LP40		
F.S.	U 31 E	U 31 C.	U 32 E	U 32 C	U 34 E	U 34 C	U 35 E
MEAS. DISTANCE	11.58	13.34	11.44	11.10	15.18	15.32	15.34
VERT. ANGLE	-00- 49- 00	-02- 57- 20	+01- 22- 40	-06- 05- 20	-05- 58- 00	-11- 46- 00	-05- 55- 20
SINE - V.A.	01425	05156	02404	10607	0.10395	0.20393	0.10318
COSINE - V.A.	99990.	99867.	99971.	99436	0.99458	0.97899	0.99466
STA. ELEVATION					1150.165		
H.I.					- 2.43		
INST. HEIGHT	1167.548	1167.548	1167.548	1167.548	1147.735	1147.735	1147.735
DISTANCE	- 0.165	- 0.688	+ 0.275	- 1.177	- 1.578	- 3.124	- 1.583
DIFF.					1146.157		
H.P.							
F.S. ELEVATION	1167.383	1166.860	1167.823	1166.371	1146.157	1144.611	1146.152
AZ. B.S. TO STA.					313.50.35		
±180 -00' -00"					180		
AZ. STA. TO B.S.	126.28.10	126.28.10	126.28.10	126.28.10	133.50.35		133.50.35
HORZ. ANGLE	304.44.00.	307.38.30	302.25.00	303.26.40	199.21.10	199.21.10	198.32.00
-360 -00' -00"	431.12.10	434.06.40	428.53.10	429.54.50			
AZ. STA. TO F.S.	71.12.10	74.06.40	68.53.10	69.54.50	333.11.45	333.11.45	332.22.35
BEARING	N 71. 12. 10 E	N 74. 06. 40 E	N 68. 53. 10 E	N 69. 54. 50 E	N 26. 48. 15 W	N 26. 48. 15 W	N 27. 37. 25 W
HORZ. DISTANCE	11.579	13.322	11.437	11.037.	15.098	14.998.	15.258
COSINE BEARING	32222	27377	36022	34343			
STA. LAT.	10699.315	10699.315	10699.315	10699.315	10754.119	10754.119	10754.119
DIFF.	3.731	3.647	4.120	3.790	+ 13.476	+ 13.387	+ 13.519
F.S. LAT.	10703.046 N	10702.962 N	10703.435 N	10703.105 N	10767.595 N	10767.506 N	10767.638 N
SINE BEARING	94666	96179	93287	93918			
STA. DEP.	7522.298	7522.298	7522.298	7522.298	7595.842	7595.842	7595.842
DIFF.	10.961.	12.813	10.669.	10.366	- 6.808.	- 6.763.	- 7.075
F.S. DEP.	7533.259 E	7535.111 E	7532.967 E	7532.664 E	7589.034 E	7589.079 E	7588.767 E
GRADE CALC.	$\frac{1.852}{0.084} = 22.04762$	S 87 24 10 E	$\frac{0.303}{0.330}$	S 42-33 27 W	$\frac{E 0.045 = 505617}{N 0.089}$		$\frac{E 0.640 = 1.57298}{N 0.407}$
	1.854 -15-45-12	92-35-50	0.448 -72° 50'	222 33-27	=S 26° 49' 20" E		N 57° 32' 45' E
F.S. GRADE ELV.	0.523		1.452				
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:					P.F.G.	P.F.G.	P.F.G.
CHECKED BY:	WR	WR	WR	WR			
DATE					06-03-76	06-03-76	06-03-76.
FIELD PAGE NO.							

B.S.	75049	LP43					
S.T.A.	LP40	76008					
F.S.	U-35 C.	U-36 E	U-36 C.	U-37 E	U-37 C.	U-38 E	U-38 C
MEAS. DISTANCE	15.65	21.280	22.880	21.318	22.580	21.384	22.786
VERT. ANGLE	-11-24-40	+10-27-30	+10-16-00	+09-42-20	+09-48-40	+09-52-00	+09-56-40
SINE - V.A.	0.19785	0.18152	0.17823	0.16858	0.17040	0.17136	0.17269
COSINE - V.A.	0.98023	0.98339	0.98399	0.98569	0.98537	0.98521	0.98498
STA. ELEVATION		1167.224					
H.I.		- 3.330					
INST. HEIGHT	1147.735	1163.894	1163.894	1163.894	1163.894	1163.894	1163.894
DISTANCE	- 3.096	+ 3.863	+ 4.078	+ 3.594	+ 3.848	+ 3.664	+ 3.935
DIFF.							
H.P.							
F.S. ELEVATION	1144.639	1167.757	1167.972	1167.488	1167.742	1167.558	1167.829
AZ. B.S. TO STA.		134-09-26					
±180 - 00' - 00"		180					
AZ. STA. TO B.S.	133-50-35	314-09-26	314-09-26	314-09-26	314-09-26	314-09-26	314-09-26
HORZ. ANGLE	201-21-20	180-00-20	180-10-40	178-51-20	176-16-00	180-25-00	178-20-00
- 360 - 00' - 00"		494-09-46	494-20-06	493-00-46			
AZ. STA. TO F.S.	335-11-55	134-09-46	134-20-06	133-00-46	130-25-26	134-34-26	132-29-26
BEARING	N 26.48.05W						
HORZ. DISTANCE	15.341	20.927	22.514	21.013	22.250	21.068	22.444
COSINE BEARING							
STA. LAT.	10754.119	10647.709	10647.709	10647.709	10647.709	10647.709	10647.709
DIFF.	+ 13.926	- 14.580	- 15.734	- 14.334	- 14.427	- 14.786	- 15.160
F.S. LAT.	10768.045 N	10633.129 N	10631.975 N	10633.375 N	10633.282 N	10632.923 N	10632.549 N
SINE BEARING							
STA. DEP.	7595.842	7664.715	7664.715	7664.715	7664.715	7664.715	7664.715
DIFF.	- 6.435	+ 15.012	+ 16.104	+ 15.365	+ 16.938	+ 15.007	+ 16.550
F.S. DEP.	7589.407 E	7679.727 E	7680.819 E	7680.080 E	7681.653 E	7679.722 E	7681.265 E
GRADE CALC.		DIP + $\frac{215}{1570}$ = 0.13522	$\frac{1.092}{1.154}$	$\frac{254}{1.59}$ = 15975	$\frac{1.573}{0.093}$	$\frac{.211}{1.59}$	$\frac{1.543}{0.374}$
F.S. GRADE ELV.		7° 46'	S 43° 25' E	+ 9° 11'	S 86° 37' E	+ 9° 49'	S 76° 38' E
GRADE CHAIN			136-35'		93° 23'		103-22'
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	P.J.G.	P.J.G.	P.J.G.	P.J.G.	P.J.G.	P.J.G.	P.J.G.
CHECKED BY:	ROA	ROA	ROA	ROA	ROA	ROA	ROA
DATE	06-03-76	10 MAR 76	10 MAR 76	10 MAR 76	10 MAR 76	10 MAR 76	10 MAR 76
FIELD PAGE NO.							

B.S.	750.49	LP40					
S.T.A.	LP40	TP					
F.S.	TP	U39-E	U39-C	U40-E	U40-C	U41-E	U41-C
MEAS. DISTANCE	18.842	3.600	3.722	3.616	3.820	3.990	4.760
VERT. ANGLE	-10-23-20	+10-45-00	-20-25-40	+04-21-50	-20-18-10	+02-35-00	-15-43-00
SINE - V.A.	0.18033	0.18652	0.34903	0.07609	0.34698	0.04507	0.27088
COSINE - V.A.	0.98361	0.98245	0.93711	0.99710	0.93787	0.99898	0.96261
STA. ELEVATION	1150.165	1144.392					
H.I.	- 2.375	+ 1.530					
INST. HEIGHT	1147.790	1145.922	1145.922	1145.922	1145.922	1145.922	1145.922
DISTANCE	- 3.398	+ 0.671	- 1.299	+ 0.275	- 1.325	+ 0.180	- 1.289
DIFF.							
H.P.							
F.S. ELEVATION	1144.392	1146.593	1144.623	1146.197	1144.597	1146.102	1144.633
AZ. B.S. TO STA.		328-35-25					
±180 -00' -00"		180					
AZ. STA. TO B.S.	133-50-35	148-35-25	148-35-25	148-35-25	148-35-25	148-35-25	148-35-25
HORZ. ANGLE	194-44-50	342-14-30	351-53-50	336-17-00	355-02-00	329-30-00	312-25-00
-360 -00' -00"		490-49-55	500-29-15	484-52-25	503-37-25	478-05-25	461-00-25
AZ. STA. TO F.S.	328-35-25	130-49-55	140-29-15	124-52-25	143-37-25	118-05-25	101-00-25
BEARING	N31-24-35W	S49-10-05E	S39-30-45E	S55-07-35E	S36-22-35E	S61-54-35E	S78-59-35E
HORZ. DISTANCE	18.533	3.537	3.488	3.606	3.583	3.986	4.582
COSINE BEARING							
STA. LAT.	10754.119	10769.936	10769.936	10769.936	10769.936	10769.936	10769.936
DIFF.	+ 15.817	- 2.313	- 2.691	- 2.062	- 2.885	- 1.877	- 0.875
F.S. LAT.	10769.936 N	10767.623 N	10767.245 N	10767.874 N	10767.051 N	10768.059 N	10769.061 N
SINE BEARING							
STA. DEP.	7595.842	7586.183	7586.183	7586.183	7586.183	7586.183	7586.183
DIFF.	- 9.659	+ 2.676	+ 2.219	+ 2.958	+ 2.125	+ 3.516	+ 4.998
F.S. DEP.	7586.183 E	7588.859 E	7588.402 E	7589.141 E	7588.308 E	7589.699 E	7590.681 E
GRADE CALC.		E = .457 N = .378 = 0.593	FLV 1.970 Horz Dis 0.593 DIP	E = .833 N = .823 = 1.171	FLV 1.611 DIST 1.171 DIP =	E = .982 N = 1.002 =	FLV 1.469 DIST 1.403 DIP
F.S. GRADE ELV.		230° 24' 17"	- 73° 14' 51"	225 20 45	- 53-58-14	44° 25' 21"	- 46 18 59
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:							
CHECKED BY:							
DATE							
FIELD PAGE NO.							

RoA  
18/03/16

B.S.							
S.T.A.							
F.S.	U-42 E	U-42 C.	U-43 E	U-43 C.	U-44 E	U-44 C	
MEAS. DISTANCE	4.460	5.270	4.375	5.138	2.748	3.750	
VERT. ANGLE	+10 - 58 - 30	+30 - 56 - 40	+11 - 52 - 20	+33 - 28 - 40	+24 - 15 - 00	+49 - 50 - 20	
SINE - V.A.	0.19038	0.51421	0.20573	0.55161	0.41072	0.76423	
COSINE - V.A.	0.98171	0.85767	0.97861	0.83410	0.91176	0.64494	
STA. ELEVATION							
H.I.							
INST. HEIGHT	1145.922	1145.922	1145.922	1145.922	1145.922	1145.922	
DISTANCE	+ 0.849	+ 2.710	+ 0.900	+ 2.834	+ 1.129	+ 2.866	
DIFF.							
H.P.							
F.S. ELEVATION	1146.771	1148.632	1146.822	1148.756	1147.051	1148.788	
AZ. B.S. TO STA. ±180 - 00' - 00"							
AZ. STA. TO B.S.	148 - 35 - 25	148 - 35 - 25	148 - 35 - 25	148 - 35 - 25	148 - 35 - 25	148 - 35 - 25	
HORZ. ANGLE - 360 - 00' - 00"	340 - 35 - 10	331 - 13 - 30	340 - 09 - 00	340 - 28 - 30	340 - 57 - 30	03 - 38 - 40	
AZ. STA. TO F.S.	489 - 10 - 35	479 - 48 - 55	488 - 44 - 25	489 - 03 - 55	489 - 32 - 55	152 - 14 - 05	
BEARING	S 50 - 49 - 25 E	S 60 - 11 - 05 E	S 51 - 15 - 35 E	S 50 - 56 - 05 E	S 50 - 27 - 05 E	S 27 - 45 - 55 E	
HORZ. DISTANCE	4.378	4.520	4.281	4.286	2.506	2.419	
COSINE BEARING							
STA. LAT.	10769.936	10769.936	10769.936	10769.936	10769.936	10769.936	
DIFF.	- 2.766	- 2.247	- 2.679	- 2.701	- 1.596	- 2.140	
F.S. LAT.	10767.170 N	10767.689 N	10767.257 N	10767.235 N	10768.340 N	10767.796 N	N
SINE BEARING							
STA. DEP.	7586.183	7586.183	7586.183	7586.183	7586.183	7586.183	
DIFF.	+ 3.394	+ 3.922	+ 3.339	+ 3.328	+ 1.932	+ 1.127	
F.S. DEP.	7589.577 E	7590.105 E	7589.522 E	7589.511 E	7588.115 E	7587.310 E	E
GRADE CALC.	$\frac{E}{N} = \frac{0.528}{0.519}$	$\frac{ELV.}{HOR DIST} = \frac{1.861}{0.790}$	$\frac{E}{N} = \frac{0.011}{0.022}$	$\frac{ELV.}{HOR DIST} = \frac{1.934}{0.025}$	$\frac{E}{N} = \frac{0.0805}{0.544}$	$\frac{ELV.}{HOR DIST} = \frac{1.737}{0.972}$	
F.S. GRADE ELV.	45° 29' 33"	+ 68° 18' 56"	206° 33' 54"	+ 89° 15' 34"	235° 57' - 00"	+ 60° 46' 09"	
GRADE CHAIN							
OFFSETS	LEFT	RIGHT	PLUS	MINUS	L.	R.	P.
CALCULATED BY:							
CHECKED BY:							
DATE							
FIELD PAGE NO.							

PfG  
RDA  
18/03/76



B.S.	76 006	76 006	76 006	76 006	76 006	76 006	76 006
S.T.A.	TP	TP	TP	TP	TP	TP	TP
F.S.	457 ①	457 Collar	456 ①	456 Collar	455 ①	455 Collar	452 ①
MEAS. DISTANCE	5.65	6.720	5.51	6.42	5.41	6.47	5.90
VERT. ANGLE	- 8 - 39 - 00	- 13 - 30 - 00	- 10 - 16 - 00	- 2 - 24 - 00	- 10 - 55 - 00	- 2 - 58 - 00	+ 5 - 19 - 00
SINE - V.A.	.15040	.23345	.17823	.04188	.18938	.05175	.09266
COSINE - V.A.	.98863	.97237	.98399	.99912	.98190	.99866	.99570
STA. ELEVATION							
H.I.							
INST. HEIGHT	1145.395	1145.395	1145.395	1145.395	1145.395	1145.395	1145.395
DISTANCE	- .850	- 1.569	- .982	- .269	- 1.025	- .335	+ .547
DIFF.							
H.P.							
F.S. ELEVATION	1144.545	1143.826	1144.413	1145.126	1144.370	1145.060	1145.942
AZ. B.S. TO STA.							
±180 - 00' - 00"							
AZ. STA. TO B.S.	323 25 26	323 25 26	323 25 26	323 25 26	323 25 26	323 25 26	323 25 26
HORIZ. ANGLE	306 33 20	297 33 00	307 01 20	298 16 40	305 33 00	298 36 40	305 27 40
- 360 - 00' - 00"	629 58 46	620 58 26	630 26 46	621 42 06	628 58 26	622 02 06	628 53 06
AZ. STA. TO F.S.	269 58 46	260 58 26	270 26 46	261 42 06	268 58 26	262 02 06	268 53 06
BEARING	S 89 58 46 W	S 80 58 26 W	N 89 33 14 W	S 81 42 06 W	S 88 58 26 W	S 82 02 06 W	S 88 53 06 W
HORIZ. DISTANCE	5.586	6.534	5.422	6.414	5.312	6.461	5.875
COSINE BEARING							
STA. LAT.	10826.922	10826.922	10826.922	10826.922	10826.922	10826.922	10826.922
DIFF.	- .002	- 1.025 +	.042	- .926	- .095	- .895	- .114
F.S. LAT.	10826.920 N	10825.897 N	10826.964 N	10825.996 N	10826.827 N	10826.027 N	10826.808 N
SINE BEARING							
STA. DEP.	7649.536	7649.536	7649.536	7649.536	7649.536	7649.536	7649.536
DIFF.	- 5.586	- 6.453	- 5.422	- 6.347	- 5.311	- 6.399	- 5.874
F.S. DEP.	7643.950 E	7643.083 E	7644.114 E	7643.189 E	7644.225 E	7643.137 E	7643.662 E
GRADE CALC.							
F.S. GRADE ELV.							
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	WS	WS	WS	WS	WS	WS	WS
CHECKED BY:	ROA	ROA	ROA	ROA	ROA	ROA	ROA
DATE	7 04 76	7 04 76	7 04 76	7 04 76	7 04 76	7 04 76	7 04 76
FIELD PAGE NO.	487	487	487	487	488	488	488

B.S.	L 76 006	76 006	76 006	76 006	76 006				
S.T.A.	TP	TP	TP	TP	TP				
F.S.	452 Collar	453 ①	453 Collar	454 ①	454 Collar				
MEAS. DISTANCE	6.65	5.76	6.23	5.10	5.54				
VERT. ANGLE	+ 16 - 39 - 00	+ 8 - 01 - 30	+ 19 - 50 - 30	+ 15 - 34 - 00	+ 29 - 24 - 30				
SINE - V.A.	.28652	.13961	.33942	.26836	.49103				
COSINE - V.A.	.95807	.99021	.94063	.96332	.87114				
STA. ELEVATION									
H.I.									
INST. HEIGHT	1145.395	1145.395	1145.395	1145.395	1145.395				
DISTANCE	+ 1.905	+ .804	+ 2.115	+ 1.369	+ 2.720				
DIFF.									
H.P.									
F.S. ELEVATION	1147.300	1146.199	1147.510	1146.764	1148.115				
AZ. B.S. TO STA.									
± 180 - 00' - 00"									
AZ. STA. TO B.S.	323 25 26	323 25 26	323 25 26	323 25 26	323 25 26				
HORZ. ANGLE	301 52 20	308 10 20	307 43 20	328 48 40	338 00 00				
- 360 - 00' - 00"	625 17 46	631 35 46	631 08 46	652 14 06	661 25 26				
AZ. STA. TO F.S.	265 17 46	271 35 46	271 08 46	292 14 06	301 25 26				
BEARING	S 85 17 46 W	N 88 24 14 W	N 88 51 24 W	N 67 45 54 W	N 88 34 34 W				
HORZ. DISTANCE	6.371	5.704	5.860	4.913	4.826				
COSINE BEARING									
STA. LAT.	10826.922	10826.922	10826.922	10826.922	10826.922				
DIFF.	- .522	.159	.117	1.859	2.516				
F.S. LAT.	10826.400 N	10827.081 N	10827.039 N	10828.781 N	10829.438 N		N		N
SINE BEARING									
STA. DEP.	7649.536	7649.536	7649.536	7649.536	7649.536				
DIFF.	- 6.350	- 5.702	- 5.859	- 4.548	- 4.118				
F.S. DEP.	7643.186 E	7643.834 E	7643.677 E	7644.988 E	7645.418 E		E		E
GRADE CALC.									
F.S. GRADE ELV.									
GRADE CHAIN									
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.		
CALCULATED BY:	WS	WS	WS	WS	WS				
CHECKED BY:	ROA	ROA	ROA	ROA	ROA				
DATE	7 04 76	7 04 76	7 04 76	7 04 76	7 04 76				
FIELD PAGE NO.	488	488	488	488	488				

$$\begin{array}{r} \underline{U56} \quad 10826.964 \quad 7644.114 \\ 10825.996 \quad 7643.189 \\ - .968 \quad - .925 \end{array}$$

$$\begin{array}{r} \text{Elev } \textcircled{1} \quad 1144.413 \\ \textcircled{2} \quad 1145.126 \\ \hline .5713 \end{array}$$

$$\begin{array}{r} \underline{.925} \quad \text{HD} \quad 1.339 \\ \underline{.968} \quad \text{Brq} \quad 543 \quad 41 \quad 55 \quad \text{W} \\ \text{Az} \quad 223 \quad 41 \quad 55 \end{array}$$

$$+ \text{DIP} \quad 28^{\circ} 02' 05'' -$$

$$\begin{array}{r} \underline{U55} \quad 10826.827 \quad 7644.225 \\ 10826.027 \quad 7643.137 \\ - .800 \quad - 1.088 \end{array}$$

$$\begin{array}{r} \text{Elev } \textcircled{1} \quad 1144.370 \\ \textcircled{2} \quad 1145.060 \\ \hline .690 \end{array}$$

$$\begin{array}{r} \underline{1.088} \quad \text{HD} \quad 1.350 \\ \underline{.800} \quad \text{Brq} \quad 553 \quad 40 \quad 23 \quad \text{W} \\ \text{Az} \quad 233 \quad 40 \quad 23 \end{array}$$

$$+ \text{DIP} \quad 27^{\circ} 04' 19''$$

$$\begin{array}{r} \underline{U52} \quad 10826.808 \quad 7643.662 \\ 10826.400 \quad 7643.186 \\ - .408 \quad - .476 \end{array}$$

$$\begin{array}{r} \text{Elev } \textcircled{1} \quad 1145.942 \\ 1147.300 \\ \hline 1.358 \end{array}$$

$$\begin{array}{r} \underline{.476} \quad \text{HD} \quad .627 \\ \underline{.408} \quad \text{Brq} \quad 5 \quad 49 \quad 23 \quad 55 \quad \text{W} \\ \text{Az} \quad 229 \quad 23 \quad 55 \end{array}$$

$$+ \text{DIP} \quad 65^{\circ} 13' 00''$$

$$\begin{array}{r} \underline{U53} \quad 10827.081 \quad 7643.834 \\ 10827.039 \quad 7643.677 \\ - .042 \quad - .157 \end{array}$$

$$\begin{array}{r} \text{Elev } \textcircled{1} \quad 1146.199 \\ \textcircled{2} \quad 1147.510 \\ \hline 1.311 \end{array}$$

$$\begin{array}{r} \underline{.157} \quad \text{HD} \quad .163 \\ \underline{.042} \quad \text{Brq} \quad 5, 75 \quad 01 \quad 23 \quad \text{W} \\ \text{Az} \quad 255 \quad 01 \quad 23 \end{array}$$

$$+ \text{DIP} \quad 82^{\circ} 54' 45''$$

$$\begin{array}{r} \underline{U54} \quad 10828.781 \quad 7644.988 \\ 10829.438 \quad 7645.418 \\ + .657 \quad + .430 \end{array}$$

$$\begin{array}{r} \text{Elev } \textcircled{1} \quad 1146.764 \\ \textcircled{2} \quad 1148.115 \\ \hline 1.351 \end{array}$$

$$\begin{array}{r} \underline{.430} \quad \text{HD} \quad .785 \\ \underline{.657} \quad \text{Brq} \quad N33 \quad 12 \quad 15 \quad \text{E} \\ \text{Az} \quad 33 \quad 12 \quad 15 \end{array}$$

$$+ \text{DIP} \quad 59^{\circ} 50' 28''$$

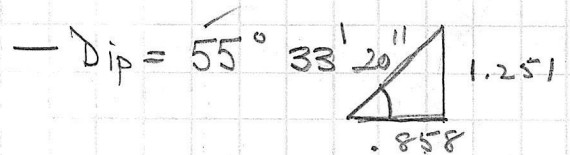
U 48

10827.356	7645.807
<u>10826.650</u>	<u>7645.320</u>
- .706	- .487

Elev ①	1144.587
Elev C	<u>1143.336</u>
	1.251

$\frac{.487}{.706}$

HD = .858  
 BRG S 34 35 53 W  
 Az 214 35 53 ✓



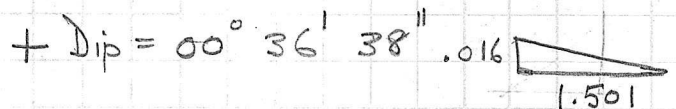
U 50

10827.083	7644.131
<u>10825.601</u>	<u>7643.895</u>
- 1.482	- .236

Elev ①	1144.503
Elev C	<u>1144.519</u>
	.016

$\frac{.236}{1.482}$

HD 1.501  
 BRG S 9 02 53 W ✓  
 Az 189 02 53



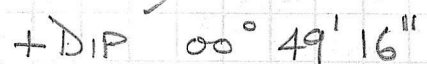
U 49

10827.056	7644.128
<u>10825.927</u>	<u>7643.088</u>
- 1.129	- 1.040

Elev ①	1144.520
Elev C	<u>1144.542</u>
	.022

$\frac{1.040}{1.129}$

HD 1.535  
 BRG S 42 39 01 W  
 Az 222 39 01



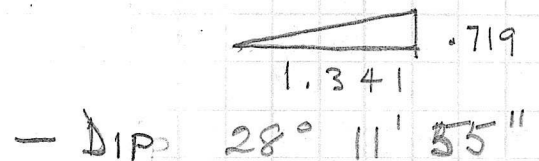
U 57

10826.920	7643.950
<u>10825.897</u>	<u>7643.083</u>
- 1.023	- .867

Elev ①	1144.545
②	<u>1143.826</u>
	.719

$\frac{.867}{1.023}$

= HD 1.341  
 BRG S 40 16 53 W  
 Az 220 16 53



B.S.	76-003	76-007					
S.T.A.	76-007	TP.					
F.S.	TP.	① U 58 E	U 58 C	② U 58 E	U 58 C.	U 59 E	U 59 C
MEAS. DISTANCE	15.664	10.958	11.200	10.890	11.114	10.116	10.840
VERT. ANGLE	-15-04-40	-00-59-00	-00-55-00	-01-57-00	-01-53-20	-00-57-00	-05-26-20
SINE - V.A.	.26013						
COSINE - V.A.	.96557						
STA. ELEVATION	1142.276	1135.106					
H.I.	- 3.095	+ 1.365					
INST. HEIGHT	1139.181	1136.471	1136.471	1136.471	1136.471	1136.471	1136.471
DISTANCE	- 4.075	- 0.188	0.179	- 0.371	- 0.366	- 0.168	- 1.027
DIFF.							
H.P.							
F.S. ELEVATION	1135.106	1136.283	1136.292	1136.100	1136.105	1136.303	1135.444
AZ. B.S. TO STA.		282-45-35					
± 180 - 00' - 00"		180					
AZ. STA. TO B.S.	154-21-35	102-45-35	102-45-35	102-45-35	102-45-35	102-45-35	102-45-35
HORIZ. ANGLE	128-24-00	159-50-40	158-51-00	160-23-20	159-32-50	162-52-30	160-04-10
- 360 - 00' - 00"							
AZ. STA. TO F.S.	282-45-35	262-36-15	261-36-35	263-08-55	262-18-25	265-38-05	262-49-45
BEARING							
HORIZ. DISTANCE	15.125	10.956	11.199	10.884	11.108	10.115	10.791
COSINE BEARING							
STA. LAT.	10796.166	10799.507	10799.507	10799.507	10799.507	10799.507	10799.507
DIFF.	+ 3.341	- 1.410	- 1.634	- 1.298	- 1.487	- 0.770	- 1.347
F.S. LAT.	10799.507 N	10798.097 N	10797.873 N	10798.209 N	10798.020 N	10798.737 N	10798.160 N
SINE BEARING							
STA. DEP.	7560.351	7545.600	7545.600	7545.600	7545.600	7545.600	7545.600
DIFF.	- 14.751	- 10.865	- 11.079	- 10.806	- 11.008	- 10.086	- 10.707
F.S. DEP.	7545.600 E	7534.735 E	7534.521 E	7534.794 E	7534.592 E	7535.514 E	7534.893 E
GRADE CALC.		.214 = .310	.009	0.202 - 0.277	.005	0.621 = .848	0.859
		.224	.310	.189	0.277	0.577	.848
F.S. GRADE ELV.		S 43°-41'-31" W	+ 1' 39" 46	S 46-54-15 W	+ 1'-02'-03"	S 47°-06'-12 W	- 45-22-09
GRADE CHAIN		223°-41'-31"		226°-54'-15"		227°-06'-12"	
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	P. J. G.						
CHECKED BY:	W. S.		"	"	"	"	"
DATE	21-04-76						
FIELD PAGE NO.							

B.S.	76007.						
S.T.A.	T.P.						
F.S.	U60 C	U61 C.	U62 E	U62 C.	U63 E	U63 C.	
MEAS. DISTANCE	9.830	10.040.	10.040.	10.930	10.140.	10.980	
VERT. ANGLE	-08 - 47 - 20	-08 - 25 - 00.	-02 - 26 - 20	-04 - 35 - 30	+01 - 39 - 40	+05 - 06 - 20	
SINE - V.A.							
COSINE - V.A.							
STA. ELEVATION							
H.I.							
INST. HEIGHT	1136.471.	1136.471.	1136.471.	1136.471	1136.471.	1136.471.	
DISTANCE	- 1.502	- 1.470	- 0.427	- 0.875	+ 0.294	+ 0.977	
DIFF.							
H.P.							
F.S. ELEVATION	1134.969	1135.001	1136.044	1135.596	1136.765	1137.448	
AZ. B.S. TO STA. ±180 - 00' - 00"							
AZ. STA. TO B.S.	102 - 45 - 35.	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35.	
HORZ. ANGLE - 360 - 00' - 00"	166 - 25 - 20.	164 - 47 - 20	164 - 06 - 20	159 - 47 - 00.	163 - 16 - 20	159 - 23 - 00	
AZ. STA. TO F.S.	269 - 10 - 55	267 - 32 - 55	266 - 51 - 55	262 - 32 - 35	266 - 01 - 55	262 - 08 - 35	
BEARING							
HORZ. DISTANCE	9.715	9.932	10.031.	10.895	10.136	10.936	
COSINE BEARING							
STA. LAT.	10799.507	10799.507	10799.507	10799.507	10799.507	10799.507	
DIFF.	- 0.139	- 0.425	- 0.549	- 1.414	- 0.701	- 1.495	
F.S. LAT.	10799.368 N	10799.082 N	10798.958 N	10798.093 N	10798.806 N	10798.012 N	N
SINE BEARING							
STA. DEP.	7545.600.	7545.600	7545.600	7545.600.	7545.600	7545.600.	
DIFF.	- 9.714.	- 9.923	- 10.016	- 10.803	- 10.112.	- 10.833.	
F.S. DEP.	7535.886 E	7535.677 E	7535.584 E	7534.797 E	7535.488 E	7534.767 E	E
GRADE CALC.			0.787 = 1.169	0.448	0.721 1.073	0.683	
			0.865	1.169	0.794	1.073	
F.S. GRADE ELV.			542 - 17 - 98 W	- 20° - 58' - 06"	542 - 14 - 29 W	+ 32° - 28' - 41"	
GRADE CHAIN			222° - 17' - 48"	?	222° - 14' - 29"		
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	P.J.G.						
CHECKED BY:	WS						
DATE	21-04-76						
FIELD PAGE NO.	494.	495					

B.S.									
S.T.A.									
F.S.	U64 E	U64 C	U65 E	U65 C	U66 E	U66 C			
MEAS. DISTANCE	8.305	8.840	9.700	9.958	9.330	9.420			
VERT. ANGLE	+09 - 02 - 00	+15 - 17 - 20	+07 - 48 - 00	+14 - 53 - 00	-00 - 12 - 00	+02 - 36 - 40			
SINE - V.A.									
COSINE - V.A.									
STA. ELEVATION									
H.I.									
INST. HEIGHT	1136.471	1136.471	1136.471	1136.471	1136.471	1136.471			
DISTANCE	+ 1.304	+ 2.331	+ 1.316	+ 2.558	- 0.033	+ 0.429			
DIFF.									
H.P.									
F.S. ELEVATION	1137.775	1138.802	1137.787	1139.029	1136.438	1136.900			
AZ. B.S. TO STA.									
±180 - 00' - 00"									
AZ. STA. TO B.S.	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35	102 - 45 - 35			
HORZ. ANGLE	169 - 53 - 20	167 - 14 - 20	167 - 23 - 00	167 - 36 - 20	162 - 51 - 20	156 - 11 - 10			
- 360 - 00' - 00"									
AZ. STA. TO F.S.	272.38.55	269.59.55	270.08.35	270.21.55	265.36.55	258.56.45			
BEARING									
HORZ. DISTANCE	8.202	8.527	9.610	9.624	9.330	9.410			
COSINE BEARING									
STA. LAT.	10799.507	10799.507	10799.507	10799.507	10799.507	10799.507			
DIFF.	+ 0.379	- 0.000	+ 0.024	+ 0.061	- 0.713	- 1.804			
F.S. LAT.	10799.886 N	10799.507 N	10799.531 N	10799.568 N	10798.794 N	10797.703 N			N
SINE BEARING									
STA. DEP.	7545.600	7545.600	7545.600	7545.600	7545.600	7545.600			
DIFF.	- 8.193	- 8.527	- 9.610	- 9.624	- 9.303	- 9.235			
F.S. DEP.	7537.407 E	7537.073 E	7535.990 E	7535.976 E	7536.297 E	7536.365 E			E
GRADE CALC.	0.334 0.505	1.027	0.014 0.040	1.242	0.068 1.093	0.962			
	0.379	.505	0.037	0.040	1.091	1.093			
F.S. GRADE ELV.	S 41° 23' 19" W	+ 63.48.56	N 20 43 32 W	+ 88.09.19	S 3 - 34 - 00 E	+ 22° 54' 48"			
GRADE CHAIN	221° 23' 19"		339° 16' 28"		176° - 26' - 00"				
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.		
CALCULATED BY:	R.J.G.								
CHECKED BY:	WS	"	"	"	"	"			
DATE	21-04-76								
FIELD PAGE NO.	494 E	495							

B.S.	76024						76015	
S.T.A.	76029						76017	
F.S.	U 78 E		U 78 C		U 74 E		U 74 C	
MEAS. DISTANCE	11.820		12.666		11.966		12.662	
VERT. ANGLE	-00- 35- 30		+00- 02- 40		-00- 52- 40		-00- 21- 30	
SINE - V.A.	0.01033		0.0078		0.01532		0.00625	
COSINE - V.A.	0.99995		1.00000		0.99988		0.99998	
STA. ELEVATION	1177.772							
H.I.	- 2.710							
INST. HEIGHT	1175.062		1175.062		1175.062		1175.062	
DISTANCE	- 0.122		+ 0.010		- 0.183		- 0.079	
DIFF.								
H.P.								
F.S. ELEVATION	1174.940 ✓		1175.072 ✓		1174.879 ✓		1174.983 ✓	
AZ. B.S. TO STA.								
±180 - 00' - 00"								
AZ. STA. TO B.S.	308.57-09		308.57-09		308.57-09		308.57-09	
HORZ. ANGLE	188.48-10		188.31-20		191-43-20		192-06-20	
-360 - 00' - 00"	497.45-19		497-28-29		500-40-29		501.03-29	
AZ. STA. TO F.S.	137-45-19 ✓		137-28-29 ✓		140-40-29 ✓		141-03-29 ✓	
BEARING								
HORZ. DISTANCE	11.819		12.666		11.965		12.662	
COSINE BEARING								
STA. LAT.	10612.633		10612.633		10612.633		10612.633	
DIFF.	- 8.749		- 9.335		- 9.256		- 9.848	
F.S. LAT.	10603.884 <sup>N</sup>		10603.298 <sup>N</sup>		10603.377 <sup>N</sup>		10602.785 <sup>N</sup>	
SINE BEARING								
STA. DEP.	7724.422		7724.422		7724.422		7724.422	
DIFF.	+ 7.946		+ 8.561		+ 7.582		+ 7.958	
F.S. DEP.	7732.368 <sup>E</sup>		7732.983 <sup>E</sup>		7732.004 <sup>E</sup>		7732.380 <sup>E</sup>	
GRADE CALC.	0.615		0.132		0.376		0.104	
	0.586		0.849		0.592		0.701	
F.S. GRADE ELV.	S 46° 22' 59" E		+ 8° 50' 15"		S 32° 25' 16" E		+ 8° 26' 20"	
GRADE CHAIN	133° 37' 00		147.34 44		169° 08' 44"		+ 5° 38' 59"	
OFFSETS	LEFT	RIGHT	PLUS	MINUS	L.	R.	P.	M.
CALCULATED BY:	P. G. L.							
CHECKED BY:	11/05/76.							
DATE	5 11							
FIELD PAGE NO.								

12-2-76

B.S.	76017						
S.T.A.	TP.						
F.S.	U-67 E	U-67 C	U-68 E	U-68 C	U-69 E	U-69 C	UNK E
MEAS. DISTANCE	8.692	9.044	8.424	8.854	8.000	8.865	8.416
VERT. ANGLE	-05-31-00	-05-12-00	-02-00-00	+02-28-00	+01-27-00	+18-28-00	
SINE - V.A.							
COSINE - V.A.							
STA. ELEVATION	1125.885						
H.I.	+ 1.520						
INST. HEIGHT	1127.405		1127.405	1127.405	1127.405	1127.405	
DISTANCE	- 0.836	- 0.820	- 0.294	+ 0.381	+ 0.202	+ 2.808	
DIFF.							
H.P.							
F.S. ELEVATION	1126.569	1126.585	1127.111	1127.786	1127.607	1130.213	
AZ. B.S. TO STA.	145-59-15						
±180 -00'-00"	180						
AZ. STA. TO B.S.	325-59-15	325-59-15	325-59-15	325-59-15	325-59-15	325-59-15	
HORZ. ANGLE	332-31-00	326-14-00	326-31-20	320-12-10	340-01-00	329-57-00	
-360 -00'-00"	658-30-15	652-13-15	652-30-35	646-11-25	666-00-15	655-56-15	
AZ. STA. TO F.S.	298-30-15	292-13-15	292-30-35	286-11-25	306-00-15	295-56-15	
BEARING							
HORZ. DISTANCE	8.652	9.007	8.419	8.846	7.997	8.409	
COSINE BEARING							
STA. LAT.	10839.346	10839.346	10839.346	10839.346	10839.346	10839.346	
DIFF.	+ 4.129	+ 3.406	+ 3.223	+ 2.466	+ 4.701	+ 3.678	
F.S. LAT.	10843.475 N	10842.752 N	10842.569 N	10841.812 N	10844.047 N	10843.024 N	N
SINE BEARING							
STA. DEP.	7502.015	7502.015	7502.015	7502.015	7502.015	7502.015	
DIFF.	- 7.603	- 8.338	- 7.718	- 8.495	- 6.469	- 7.562	
F.S. DEP.	7494.412 E	7493.677 E	7494.237 E	7493.520 E	7495.546 E	7494.453 E	E
GRADE CALC.	0.135 = 0.723	0.016 = 0.016 1.031	0.717 0.751	0.675 0.641 1.043	1.093 1.023	2.606 - 1.741 1.497	
F.S. GRADE ELV.	S 45-28-17 W 225-28-17	+00° 53' 21" /	S 43-26-44 W 223-26-44	+ 32-54-35	S 46-53-41 W 226-53-41	+ 60 07-30	
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:			P. Jg.				
CHECKED BY:	ROK	ROK		ROK	ROK	ROK	
DATE			19/05/76				
FIELD PAGE NO.							



B.S.							
S.T.A.							
F.S.	U-73 E	U-73 C	U-75 E	U-75 C	U-77 E	U-77 C	U-79 E
MEAS. DISTANCE	7.616	7.592	7.974	8.234	7.872	8.056	7.932
VERT. ANGLE	-10 - 47 - 10	-10 - 38 - 30	-12 - 46 - 00	-20 - 00 - 00	-13 - 01 - 30	-18 - 10 - 20	-12 - 42 - 00
SINE - V.A.							
COSINE - V.A.							
STA. ELEVATION							
H.I.							
INST. HEIGHT	1127.405	1127.405	1127.405	1127.405	1127.405	1127.405	1127.405
DISTANCE	- 1.425	- 1.402	- 1.762	- 2.816	- 1.774	- 2.512	- 1.744
DIFF.							
H.P.							
F.S. ELEVATION	1125.980	1126.003	1125.643	1124.589	1125.631	1124.893	1125.661
AZ. B.S. TO STA. ±180 - 00' - 00"							
AZ. STA. TO B.S.	325 - 59 - 15	325 - 59 - 15	325 - 59 - 15	325 - 59 - 15	325 - 59 - 15	325 - 59 - 15	325 - 59 - 15
HORIZ. ANGLE - 360 - 00' - 00"	325 - 21 - 10 651 20 - 25	317 - 23 - 20 643 22 35	334 - 14 - 20 660 13 35	336 14 30 662 13 45	342 - 14 - 20 668 03 35	345 - 51 - 00 671 50 15	329 - 02 - 20 655 01 35
AZ. STA. TO F.S.	291 - 20 - 25	283 - 22 - 35	300 - 13 - 35	302 13 45	308 03 35	311 50 15	295 01 35
BEARING							
HORIZ. DISTANCE	7.481	7.461	7.777	7.737	7.669	7.654	7.738
COSINE BEARING							
STA. LAT.	10839.346	10839.346	10839.346	10839.346	10839.346	10839.346	10839.346
DIFF.	+ 2.722	+ 1.726	+ 3.915	+ 4.126	+ 4.728	+ 5.105	+ 3.273
F.S. LAT.	10842.068 N	10841.072 N	10843.261 N	10843.472 N	10844.074 N	10844.451 N	10842.619 N
SINE BEARING							
STA. DEP.	7502.015	7502.015	7502.015	7502.015	7502.015	7502.015	7502.015
DIFF.	- 6.968	- 7.259	- 6.720	- 6.545	- 6.038	- 5.702	- 7.011
F.S. DEP.	7495.047 E	7494.756 E	7495.295 E	7495.470 E	7495.977 E	7496.313 E	7495.004 E
GRADE CALC.	0.291 0.996	0.023 1.038	0.175 0.211	1.054 0.274	0.336 0.377	0.738 0.505	0.596 0.752
F.S. GRADE ELV.	5 16 - 17 - 12 W 196 - 17 - 12	+ 1° 16 09	N 39 - 40 - 18. E 39 - 40 - 18.	- 75 25 40	N 41.42 32 E	- 55 37 01'	S 38 23 55 W 218 23 55
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:				R.P.G.			
CHECKED BY:	RSA	ROK	ROK				ROK
DATE				19/05/76			
FIELD PAGE NO.							

B.S.	75048							
S.T.A.	75050							
F.S.	U-80 E		U-80 C	U-82 E	U-82 C	U-84 E	U-84 C	U-86 E
MEAS. DISTANCE	3.380		4.124	3.680	5.030	3.056	2.880	2.736
VERT. ANGLE	-07-42-40		-02-07-40	-08-53-30	-03-13-20	-06-08-00	-36-47-00	-02-23-20
SINE - V.A.								
COSINE - V.A.								
STA. ELEVATION	1157.251							
H.I.	- 2.300							
INST. HEIGHT	1154.951		1154.951	1154.951	1154.951	1154.951	1154.951	1154.951
DISTANCE	- 0.454		- 0.153	- 0.569	- 0.283	- 0.326	- 1.724	- 0.114
DIFF.								
H.P.								
F.S. ELEVATION	1154.497		1154.798	1154.382	1154.668	1154.625	1153.227	1154.837
AZ. B.S. TO STA.								
±180 - 00' - 00"								
AZ. STA. TO B.S.	240-40-19		240-40-19	240-40-19	240-40-19	240-40-19	240-40-19	240-40-19
HORZ. ANGLE	349-20-20		325-56-00	346-57-20	334-06-40	23-45-30	37-48-40	185-38-20
-360 - 00' - 00"	590-00-39		566-36-19	587-37-39	574-46-59	264-25-49		426-18-39
AZ. STA. TO F.S.	230-00-39		206-36-19	227-37-39	214-46-59	264-25-49	278-28-59	66-18-39
BEARING								
HORZ. DISTANCE	3.349		4.121	3.636	5.022	3.038	2.307	2.734
COSINE BEARING								
STA. LAT.	10780.219		10780.219	10780.219	10780.219	10780.219	10780.219	10780.219
DIFF.	- 2.152		- 3.685	- 2.450	- 4.125	- 0.295	+ 0.340	+ 1.098
F.S. LAT.	10778.067 N		10776.534 N	10777.769 N	10776.094 N	10779.924 N	10780.559 N	10781.317 N
SINE BEARING								
STA. DEP.	7689.829		7689.829	7689.829	7689.829	7689.829	7689.829	7689.829
DIFF.	- 2.566		- 1.846	- 2.686	- 2.865	- 3.024	- 2.282	+ 2.504
F.S. DEP.	7687.263 E		7687.983 E	7687.143 E	7686.964 E	7686.805 E	7687.547 E	7692.333 E
GRADE CALC.	0.720		0.301	0.179	0.286	0.742	1.398	0.917
	1.533		1.694	1.675	1.685	0.635	0.977	1.047
F.S. GRADE ELV.	S 25° 09' 28" E		+ 10° 04' 32"	S 6° 06' W	+ 9° 38'	N 49° 26' 35" E	- 55° 03' 07"	41° 12' 47"
GRADE CHAIN	154 50.32			186.54				
OFFSETS	LEFT	RIGHT	PLUS	MINUS	L.	R.	P.	M.
CALCULATED BY:								
CHECKED BY:								
DATE								
FIELD PAGE NO.								

*P. H.*  
20/05/16

B.S.		76031		76018			
S.T.A.		76035		76012			
F.S.	U-86c	U-94E	U-94C	U-81C	U-83c	U-85E	U-85c
MEAS. DISTANCE	4.150	6.850	7.948	16.050	16.50	15.766	15.646
VERT. ANGLE	-13 - 20 - 00	-08 - 06 - 00	-06 - 58 - 00	-04 - 55 - 40	+07 - 59 - 20	+07 - 35 - 20	+09 - 04 - 30
SINE - V.A.							
COSINE - V.A.							
STA. ELEVATION		1103.239		1140.963			
H.I.		- 2.490		- 1.795			
INST. HEIGHT	1154.951	1100.749	1100.749	1139.168	1139.168	1139.168	1139.168
DISTANCE	- 0.951	- 0.965	- 0.964	- 1.379	+ 2.293	+ 2.082	+ 2.468
DIFF.					1141.461		
H.P.					+ .60		
F.S. ELEVATION	1153.994	1099.784	1099.785	1137.789	1142.061	1141.250	1141.636
AZ. B.S. TO STA.							
±180 - 00' - 00"							
AZ. STA. TO B.S.	240.40.19	133.32.45	133.32.45	44-26-00	44.26.00	44.26.00	44.26.00
HORZ. ANGLE	177-14-20	215-19-20	215-07-40	356-49-20	357-37-40	358.35-00	358-32-20
-360 - 00' - 00"	417.54.39			401-15-20	402-03-40	403.01.60	402-58.20
AZ. STA. TO F.S.	57.54.39	348-52.05	348 40 25	41.15-20	42-03-40	43-01-00	42.58.20
BEARING							
HORZ. DISTANCE	4.038	6.782	7.889	15.991	16.340	15.628	15.450
COSINE BEARING							
STA. LAT.	10780.219	10960.391	10960.391	10823.022	10823.022	10823.022	10823.022
DIFF.	+ 2.145	+ 6.654	+ 7.735	+ 12.022	+ 12.131	+ 11.426	+ 11.304
F.S. LAT.	10782364 N	10967.045 N	10968.126 N	10835.044 N	10835.153 N	10834.448 N	10834.326 N
SINE BEARING							
STA. DEP.	7689.829	7379.866	7379.866	7559.785	7559.785	7559.785	7559.785
DIFF.	+ 3.421	- 1.309	- 1.549	+ 10.545	+ 10.946	+ 10.662	+ 10.531
F.S. DEP.	7693.250 E	7378.557 E	7378.317 E	7570.330 E	7570.731 E	7570.447 E	7570.316 E
GRADE CALC.	0.843 1.392	0.240 1.081	.001 1.107			0.131 0.122	0.386 0.179
F.S. GRADE ELV.	- 31.11.57	N 12 31 03 W 347 28 - 51	FLAT			S 47-02-14 W 227.02.14	+ 65° 07 17
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:			P.F.G.	P.F.G.	P.F.G.	P.F.G.	P.F.G.
CHECKED BY:			WS	WS	WS	WS	WS
DATE			25/05/16	28/05/16	28/05/16	28/05/16	28/05/16
FIELD PAGE NO.			516				



B.S.	TP <sub>1</sub>						
S.T.A.	TP <sub>2</sub>						
F.S.	98 E (A)	98 C (A)	98 E	98 C	92 E	92 C	96 E
MEAS. DISTANCE	3.782	4.310	4.535	4.912	3.796	4.454	3.970
VERT. ANGLE	-09.48.20	-20.31.20	-09.16.20	-17.12.00	-07.21.30	-06.15.20	+03.46.30
SINE - V.A.							
COSINE - V.A.							
STA. ELEVATION							
H.I.							
INST. HEIGHT	1157.544	1157.544	1157.544	1157.544	1157.544	1157.544	1157.544
VERT. DISTANCE	- 0.644	- 1.511	- 0.731	- 1.452	- 0.486	- 0.485	+ 0.261
DIFF.							
H.P.							
F.S. ELEVATION	1156.900	1156.033	1156.813	1156.092	1157.058	1157.059	1157.805
AZ. B.S. TO STA.							
±180 - 00' - 00"							
AZ. STA. TO B.S.	313.37.12	313.37.12	313.37.12	313.37.12	313.37.12	313.37.12	313.37.12
HORZ. ANGLE	218.03.20	223.00.40	215.05.20	217.53.00	226.46.00	233.52.40	223.31.30
- 360 - 00' - 00"	531.40.32	536.37.52	528.42.32	531.30.12	540.23.12	547.29.52	537.08.42
AZ. STA. TO F.S.	171.40.32	176.37.52	168.42.32	171.30.12	180.23.12	187.29.52	177.08.42
BEARING							
HORZ. DISTANCE	3.727	4.036	4.476	4.692	3.765	4.427	3.961
COSINE BEARING							
STA. LAT.	10753.871	10753.871	10753.871	10753.871	10753.871	10753.871	10753.871
DIFF.	- 3.688	- 4.029	- 4.389	- 4.640	- 3.765	- 4.389	- 3.956
F.S. LAT.	10750.183 N	10749.842 N	10749.482 N	10749.231 N	10750.106 N	10749.482 N	10749.915 N
SINE BEARING							
STA. DEP.	7730.944	7730.944	7730.944	7730.944	7730.944	7730.944	7730.944
DIFF.	+ 0.540	+ 0.237	+ 0.876	+ 0.693	- 0.025	- 0.578	+ 0.197
F.S. DEP.	7731.484 E	7731.181 E	7731.820 E	7731.637 E	7730.919 E	7730.366 E	7731.141 E
GRADE CALC.	$\frac{0.303}{0.341}$	$\frac{0.867}{0.456}$	$\frac{0.183}{0.251}$	$\frac{0.721}{0.311}$	$\frac{0.552}{0.624}$	$\frac{0.001}{0.834}$	$\frac{0.469}{0.638}$
F.S. GRADE ELV.	S 41.37.23 W 221.37.23	- 62 15 28 216.05.431	S 36 05.43 W 216.05.431	- 66.40.02 221.32.521	S 41.32.52 W 221.32.521	- 0.04.67 221.04.49	S 41.04.49 221.04.49
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:							
CHECKED BY:							
DATE							
FIELD PAGE NO.							

9/9/16  
WS  
27/06/16

B.S.							
S.T.A.							
F.S.	96 C	100 E	100 C	102 E	102 C	104 E	104 C
MEAS. DISTANCE	4.532	4.730	5.264	4.622	5.230	4.108	4.544
VERT. ANGLE	+06 - 28 - 40	+12 - 05 - 00	+16 - 18 - 40	+29 - 43 - 30	+36 - 15 - 40	+33 - 41 - 30	+42 - 12 - 00
SINE - V.A.							
COSINE - V.A.							
STA. ELEVATION							
H.I.							
INST. HEIGHT	1157.544	1157.544	1157.544	1157.544	1157.544	1157.544	1157.544
VERT. DISTANCE	+ 0.511	+ 0.990	+ 1.478	+ 2.292	+ 3.093	+ 2.279	+ 3.052
DIFF.							
H.P.							
F.S. ELEVATION	1158.055	1158.534	1159.022	1159.836	1160.637	1159.823	1160.596
AZ. B.S. TO STA.							
±180 - 00' - 00"							
AZ. STA. TO B.S.	313 - 37 - 12	313 - 37 - 12	313 - 37 - 12	313 - 37 - 12	313 - 37 - 12	313 - 37 - 12	313 - 37 - 12
HORZ. ANGLE	229 - 50 - 20	213 - 36 - 30	220 - 06 - 00	210 - 29 - 40	214 - 44 - 20	190 - 41 - 20	184 - 15 - 20
- 360 - 00' - 00"	543 - 27 - 32	527 - 13 - 42	533 - 43 - 12	524 - 06 - 52	528 - 21 - 32	504 - 18 - 32	497 - 52 - 32
AZ. STA. TO F.S.	183 - 27 - 32	167 - 13 - 42	173 - 43 - 12	164 - 06 - 52	168 - 21 - 32	144 - 18 - 32	137 - 52 - 32
BEARING							
HORZ. DISTANCE	4.503	4.625	5.052	4.014	4.217	3.418	3.366
COSINE BEARING							
STA. LAT.	10753.872	10753.872	10753.872	10753.872	10753.872	10753.872	10753.872
DIFF.	- 4.495	- 4.511	- 5.022	- 3.861	- 4.130	- 2.776	- 2.496
F.S. LAT.	10749.377 N	10749.361 N	10748.850 N	10750.011 N	10749.742 N	10751.096 N	10751.376 N
SINE BEARING							
STA. DEP.	7730.944	7730.944	7730.944	7730.944	7730.944	7730.944	7730.944
DIFF.	- 0.272	+ 1.022	+ 0.553	+ 1.099	+ 0.851	+ 1.994	+ 2.258
F.S. DEP.	7730.672 E	7731.966 E	7731.497 E	7732.043 E	7731.795 E	7732.938 E	7733.202 E
GRADE CALC.	0.250	0.469	0.488	0.248	0.801	0.264	0.773
	0.714	0.511	0.694	0.269	0.366	0.280	0.385
		S 42 - 32 - 45 W		S 42 - 40 - 26 W		N 43 - 18 - 55 E	
F.S. GRADE ELV.	+ 19 - 17 - 50	222 - 32 - 45	+ 35 - 06 - 49	222 - 40 - 26	+ 65 - 26 - 35		+ 63 - 31 - 26
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:							
CHECKED BY:							
DATE							
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W.S.  
27/08/76

B.S.	TP 1	TP1	TP1	TP1		
S.T.A.	TP 2	TP2.	TP2	TP2		
F.S.	108 E	108 C	90 E	90 C	106 E	106 C.
MEAS. DISTANCE	4.548	4.778	2.674	3.120	3.750	3.925
VERT. ANGLE	-10.53055	-15.683	-13.225	29.7972	-04-30-20	-04-15-20
SINE - V.A.	.18276	.27032	.22878	.49693		
COSINE - V.A.	.98316	.96277	.97348	.86779		
STA. ELEVATION	1156.184	1156.184	1156.184	1156.184		
H.I.	+ 1.360	+ 1.360	+ 1.360	1.360		
INST. HEIGHT	1157.544	1157.544	1157.544	1157.544	1157.544	1157.544
VERT. DISTANCE	- .831	- 1.292	- .612	- 1.550	- 0.295	- 0.291
DIFF.						
H.P.						
F.S. ELEVATION	1156.713	1156.252	1156.932	1155.994	1157.249	1157.253
AZ. B.S. TO STA.	133 37 12 .62	133.6200	133.6200	133.6200		
±180 - 00' - 00"						
AZ. STA. TO B.S.	313.62	313.62	313.620	313.620	313-37-12	313-37-12
HORZ. ANGLE	176 05 40	166.30.40 = 166.511	168.500	157.906	172-38-00	161-45-30
- 360 - 00' - 00"					486.15.12	475.22.42
AZ. STA. TO F.S.	129.71444	120.1311	122.12	111.526	126.15.12	115.22.42
BEARING	S 50.28556 E.	59.86889	57.88	68.474		
HORZ. DISTANCE	4.471	4.600	2.603	2.708	3.738	3.914
COSINE BEARING	.63896	.50198	.53169	.36692		
STA. LAT.	10753.871	10753.871	10753.871	10753.871	10753.871	10753.871
DIFF.	2.857	2.309	1.384	.993	- 2.210	- 1.677
F.S. LAT.	10751.014 N	10751.562 N	10752.487 N	10752.878 N	10751.661 N	10752.194 N
SINE BEARING	.76924	.86488	.84694	.93025		
STA. DEP.	7730.944	7730.944	7730.944	7730.944	7730.944	7730.944
DIFF.	3.439	3.978	2.205	2.519	+ 3.014	+ 3.536
F.S. DEP.	7734.383 E	7734.922 E	7733.149 E	7733.463 E	7733.958 E	7734.480 E
GRADE CALC.	Δ elev = -.461	azimuth	Δ elev = +.938	azimuth	0.522	0.004
	Δ lat = -.548	= N44° 31' 32" E	Δ lat = -.391	= N38° 46' 01" E	0.533	0.746
	Δ dep = -.539	dip = -30° 57' 12"	Δ dep = -.314	dip	N44-24-09 E	+ 00° 18 - 26
F.S. GRADE ELV.		= 120° 57' 12"		= -61° 52' 12"		
GRADE CHAIN				= 151° 52' 12"		
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.
CALCULATED BY:	RG	RG	RG	RG		
CHECKED BY:	WS	WS	WS	WS		
DATE	27/6/76	27/6/76	27/6/76	27/6/76	27/06/76	
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B.S.	76 014						
S.T.A.	76 016						
F.S.	120 End	120 Collar	110 Collar	112 End	112 Collar	114 End	114 Collar.
MEAS. DISTANCE	4.438	4.826	4.340	3.670	3.968	3.454	3.716
VERT. ANGLE	- 10.75833	-9.90556	-28.43333	<del>-9.8</del> -8.29444	31.7611	- 13.93333	-12.83333
SINE - V.A.	.18667	.17202	.47614	.31707 <del>14426</del>	.52638	.24079	.22212
COSINE - V.A.	.98242	.98509	.87931	.98953	.85025	.97058	.97502
STA. ELEVATION	1138.504	1138.504					
H.I.	3.455						
INST. HEIGHT	1135.049	1135.049	1135.049	1135.049	1135.049	1135.049	1135.049
VERT. DISTANCE	- .828	.830	2.066	<del>1.164</del> .529	2.089	.832	.825
DIFF.		0					
H.P.					2.960		
F.S. ELEVATION	1134.221 ✓	1134.219 ✓	1132.983 ✓	1134.820	1133.320 ✓	1134.217 x	1134.224 ✓
AZ. B.S. TO STA. ±180 - 00' - 00"	333.78917	333.78917	333.78917	333.78917	333.78917	333.78917	333.78917
AZ. STA. TO B.S.	153.78917	153.78917	153.78917	153.78917	153.78917	153.78917	153.78917
HORZ. ANGLE - 360 - 00' - 00"	198.81667	203.77222	187.72500	179.91111	165.39167	143.99444	132.00000
AZ. STA. TO F.S.	352.60584	357.56139	341.51417	333.70028	319.18084	297.78361	285.78917
BEARING	N 7.39416 W.	N 2.43861 W	N 18.48583 W.	N 26.29972	N 40.81916 W	N 62.21639	N 74.21083
HORZ. DISTANCE	4.360	4.754	3.816	3.632	3.374	3.352	3.623
COSINE BEARING	.99168	.99909	.94840	.89649	.75678	.46613	.27210
STA. LAT.	10 890.965	10 890.965	10 890.965	10 890.965	10 890.965	10 890.965	10 890.965
DIFF.	4.324	4.750	3.619	3.256	2.553	1.562	.986
F.S. LAT.	10895.289 ✓ N	10893.715 ✓ N	10894.584 ✓ N	10894.221 ✓ N	10893.418 ✓ N	10892.527 ✓ N	10891.951 ✓ N
SINE BEARING	.12869	.00425 <del>0.04255</del>	.31707	.44307	.65367	.88471	.96227
STA. DEP.	7628.549	7628.549	7628.549	7628.549	7628.549	7628.549	7628.549
DIFF.	- .561	- .202	- 1.210	1.609	2.205	2.966	3.486
F.S. DEP.	7627.988 ✓ E	7628.347 ✓ E	7627.339 ✓ E	7626.940 ✓ E	7626.344 ✓ E	7625.583 ✓ E	7625.063 ✓ E
GRADE CALC.	Δ V - .828 + .830 + .002			<del>-.529</del> + 2.089	+1.553 + 1.56	- .832 + .825	+ 0.007
	Δ L + 4.324 - 4.750 + .426			3.256 - 2.553	- .703	1.562 - .986	- .576
	Δ D - .561 + .202 + .359			- 1.609 + 2.205	- .596	- 2.966 + 3.486	- .520
F.S. GRADE ELV.							
GRADE CHAIN							
OFFSETS	LEFT RIGHT	PLUS MINUS	L. R.	P. M.	L. R.	P. M.	L. R.
CALCULATED BY:	Azimuth 40.12161	N 40° 07' 18" E		40.29116	S 40° 17' 28" W	42.075022	S 42° 04' 30" W
CHECKED BY:	Dip HD .557			.921		.776	
DATE	Dip .20569	89° 47' 40"		59.42555	120° 34' 28"	.51683	89° 28' 59"
FIELD PAGE NO.							

