

LIST OF BENCH MARKS

BLOCKS 5, 6, 7, 8

017830

B.M.	ELEV.	POS'N	REF.	B.M.	ELEV.	POS'N	REF.	B.M.	ELEV.	POS'N	REF.	B.M.	ELEV.	POS'N	REF.
51				52				110				90			
53				54				111				91			
55				56				112				92			
57				58				113				93			
59				60				114				94			
61				62				115				95			
63				64				116				96			
65				66				117				97			
67				68				118				98			
69				70				119				99			
71				72				120							
73				74				121				136			STL⁷ 120+30 IV 14,
75				76				122				137 887.93			- 120+30 IV 14,
77				78				123				138 860.74			- 120+100 IV 14,
79				80				124				139	834.01	STL ¹ 128+100	IV 14,
								125				140	860.74	- 124+100	IV 14,
								126				141	887.93	- 120+30	IV 14,
								127				142			
								128				143			
								129				144			
				136	699.98	STL ⁷ 136+20	IV 23	130				145			
				137	752.47	- 136+20	IV 19,	131				146			
				138	809.80	- 132+100	IV 18,	132	444.72	155+65 20+60	IV 22,	147			
								133	513.92	152+00 W 1/2 STL ¹	IV 22,	148			
								134	584.70	148+16 W 1/2 -	IV 23,	149			
								135	642.27	144+100 W 1/2 -	IV 23,				

ELEVATIONS BLOC 6

	Line 84+00 W	Line 80+00 W	Line 76+00 W	Line 72+00 W	Line 68+00 W	Line 64+00 W	Line 60+00 W
1+00	825.1	1+00 798.6	1+00 742.8	1+00 716.6			
2+00	823.7	2+00 799.5	2+00 751.5	2+00 735.4			
3+00	821.3	3+00 794.3	3+00 762.0	3+00 743.0			
4+00	829.8	4+00 794.3	4+00 779.3	4+00 756.4			
5+00	824.6	5+00 793.1	5+00 787.1	5+00 769.0			
6+00	822.1	6+00 792.4	6+00 784.5	6+00 785.3			
7+00	819.8	7+00 791.1	7+00 782.1	7+00 792.9			
8+00	816.9	8+00 790.8	8+00 780.0	8+00 794.4			
9+00	814.5	9+00 POOL	9+00 788.5	9+00 791.4			
10+00		10+00	9+98 787.4	10+00 788.9			

	BASELINE ^{48+00 W} 61+00 W	BASELINE ^{62+00 W} 75+00 W	BASELINE ⁷⁶⁺⁰⁰ 86+00				
48+00		62+00 688.8	76+00 768.9				
49+00	629.1	63+00 696.9	77+00 775.3				
50+00	634.1	64+00 699.6	78+00 780.5				
51+00	641.6	65+00 705.5	79+00 784.7				
52+00	647.5	66+00 708.8	80+00 789.4				
53+00	656.2	67+00 711.7	81+00 795.1				
54+00	661.2	68+00 709.0	82+00 801.2				
55+00	665.5	69+00 712.3	83+00 806.5				
56+00	669.7	70+00 714.3	84+00 811.3				
57+00	671.9	71+00 718.6	85+00 816.5				
58+00	674.6	72+00 724.4	86+00 819.9				
59+00	676.2	73+00 746.2					
60+00	682.7	74+00 755.3					
61+00	684.8	75+00 762.2					

ELEVATIONS BLOC 6 SOUTH OF BASELINE

Line 84+00 W		Line 80+00 W		Line 76+00 W		Line 72+00 W		Line 68+00 W		Line 64+00 W		Line 60+00 W	
0+00	826.4	0+00	797.1	0+00	747.6	0+00	714.3			0+00	699.5		
1+00	826.5	1+00	799.2	1+00	748.0	1+00	714.6			1+00	688.9		
2+00	827.8	2+00	791.4	2+00	749.4	2+00	714.9			2+00	679.1		
3+00	826.1	3+00	791.0	3+00	752.4	3+00	723.4			3+00	673.1		
4+00	822.4	4+00	791.5	4+00	757.2	4+00	731.3			4+00	671.3		
5+00	822.4	5+00	793.5	5+00	760.6	5+00	735.1			5+00	668.6		
6+00	820.0	6+00	797.0	6+00	765.9	6+00	741.9			6+00	669.0		
7+00	821.4	7+00	797.9	7+00	765.8	7+00	741.4			7+00	674.2		
8+00	825.0	8+00	795.1	8+00	765.8	8+00	740.8			8+00	680.7		
9+00	819.2	9+00	796.9	9+00	764.8	9+00	740.7			9+00	684.5		
10+00	814.8	10+00	792.7	10+00	766.0	10+00	741.0			10+00	687.0		
11+00	811.3	11+00	789.0	11+00	764.5	11+00	739.8			11+00	693.4		
12+00	809.0	12+00	787.9	12+00	761.9	12+00	739.9			12+00	701.1		
13+00	810.3	13+00	788.7	13+00	762.5	13+00	738.2			13+00	709.8		
14+00	811.9	14+00	788.5	14+00	761.7	14+00	735.7			14+00	710.8		
15+00	812.7	15+00	789.4	15+00	760.0	15+00	736.3			15+00	706.4		
16+00	814.3	16+00	789.9	16+00	761.0	16+00	736.9			16+00	701.5		
17+00	818.2	17+00	793.0	17+00	762.4	17+00	737.0			17+00	697.6		
18+00	813.0	18+00	794.2	18+00	769.6	18+00	736.3			18+00	695.7		
19+00	811.5	19+00	792.5	19+00	776.3	19+00	737.5			19+00	691.9		
20+00	811.8	20+00	790.9	20+00	769.6	20+00	734.5			20+00	688.7		
		20+38	789.7	20+23	770.0								

ELEVATIONS

BLOC 8

SOUTH OF THE BASELINE

LINES 88+00 W → 112+00 W

Line 88+00 W		Line 92+00 W		Line 96+00 W		Line 100+00 W		Line 104+00 W		Line 108+00 W		Line 112+00 W	
0+00	851.0	0+00	864.6	0+00	872	0+00	865.7	0+00	849.8	0+00	833.8	0+00	808.5 ^x
1+00	853.0	1+00	867.3	1+00	873.7	1+00	871.0	1+00	855.3	1+00	833.8	1+00	811.8
2+00	854.9	2+00	870.3	2+00	878.5	2+00	875.5	2+00	861.2	2+00	839.9	2+00	823.6
3+00	855.4	3+00	872.6	3+00	882.1	3+00	881.2	3+00	868.0	3+00	845.9	3+00	823.7
4+00	853.4	4+00	872.6	4+00	886.2	4+00	885.3	4+00	873.1	4+00	853.7	4+00	833.6
5+00	850.2	5+00	871.6	5+00	888.0	5+00	891.0	5+00	878.7	5+00	857.5	5+00	839.9
6+00	847.6	6+00	867.0	6+00	889.2	6+00	895.6	6+00	883.2	6+00	862.2	6+00	838.0
7+00	842.7	7+00	864.7	7+00	888.7	7+00	898.4	7+00	889.9	7+00	868.4	7+00	843.7
8+00	842.9	8+00	864.4	8+00	888.7	8+00	901.4	8+00	896.5	8+00	874.1	8+00	849.9
9+00	842.2	9+00	864.0	9+00	891.7	9+00	904.0	9+00	897.0	9+00	879.0	9+00	855.9
10+00	840.2	10+00	863.2	10+00	893.7	10+00	904.6	10+00	898.3	10+00	880.5	10+00	862.1
11+00	839.3	11+00	861.6	11+00	890.2	11+00	905.9	11+00	901.2	11+00	886.5	11+00	868.9
12+00	834.6	12+00	859.1	12+00	887.6	12+00	908.5	12+00	907.6	12+00	892.7	12+00	875.9
13+00	833.2	13+00	858.3	13+00	883.1	13+00	912.3	13+00	916.4	13+00	901.5	13+00	885.4
14+00	834.2	14+00	855.8	14+00	882.0	14+00	918.8	14+00	926.2	14+00	913.3	14+00	896.3
15+00	833.2	15+00	854.6	15+00	883.8	15+00	919.2	15+00	936.2	15+00	926.9	15+00	910.5
16+00	835.0	16+00	853.6	16+00	884.1	16+00	920.0	16+00	941.3	16+00	954.2	16+00	923.2
17+00	842.9	17+00	855.9	17+00	878.5	17+00	917.5	17+00	939.1	17+00	958.5	17+00	933.0
18+00	844.4	18+00	859.7	18+00	879.4	18+00	912.6	18+00	939.3	18+00	951.4	18+00	933.8
19+00	836.2	19+00	857.1	19+00	880.6	19+00	906.4	19+00	935.1	19+00	942.6	19+00	931.0
20+00	831.9	20+00	853.0	20+00	878.9	20+00	907.2	20+00	927.6	20+00	928.7	20+00	922.9
20+58 ^Δ	831.3	20+74	852.2	20+79 ^Δ	878.0	20+75	908.8	20+82		20+93	919.8	20+98	916.7

ELEVATIONS

BLOC 8

SOUTH OF THE BASELINE

LINES 116+00 W → 140+00 W

Line 116+00 W		Line 120+00 W		Line 124+00 W		Line 128+00 W		Line 132+00 W		Line 136+00 W		Line 140+00 W	
0+00 S	797.2	0+00 S	785.6	0+00 S	756.9	0+00 S		0+00 S	695.6	0+00 S	655.7	0+00 S	606.1
1+00 S	798.4	1+00 S	789.4	1+00	760.5	1+00 -	722.4	1+00	689.8	1+00	665.7	1+00	620.0
2+00	801.3	2+00 -	789.6	2+00	765.5	2+00 -	711.0	2+00	691.8	2+00	668.0	2+00	619.4
3+00	805.8	3+00 -	792.8	3+00	764.9	3+00 -	722.0	3+17	699.0	3+00	673.1	3+00	622.5
4+00	810.2	4+00 -	798.6	4+00	770.8	4+00 -	742.9	4+00	714.1	4+00	670.6	4+00	626.8
5+00	814.5	5+00 -	790.3	5+00	770.2	5+00 -	750.8	5+00	720.6	5+00	662.4	5+00	629.3
6+00	816.8	6+00 -	799.8	6+00	777.2	6+00 -	756.5	6+00	725.6	6+00	660.8	6+00	623.0
7+00	823.7	7+00 -	808.7	7+00	786.1	7+00 -	764.7	7+00	731.2	7+00	676.9	7+00	630.4
8+00	831.1	8+00 -	817.5	8+00	796.5	8+00 -	773.3	8+00	737.6	8+00	697.6	8+00	641.7
9+00	838.8	9+00 -	824.2	9+00	802.9	9+00	779.0	9+00	744.6	9+00	702.9	9+00	652.6
10+00	846.6	10+00 -	830.9	10+00	810.6	10+00 -	783.0	10+00	748.5	10+00	708.1	10+00	659.9
11+00	856.8	11+00 -	836.4	11+00	815.5	11+00 -	785.3	11+00	751.6	11+00	709.2	11+00	665.0
12+00	866.7	12+00 -	845.6	12+00	820.2	12+00 -	789.0	12+00	751.2	12+00	711.9	12+00	672.8
13+00	875.3	13+00 -	854.1	13+00	827.8	13+00 -	793.6	13+00	755.2	13+00	713.3	13+00	675.6
14+00	884.8	14+00 -	865.5	14+00	837.4	14+00 -	800.0	14+00 ⁵⁶	761.8	14+00	714.8	14+00	677.3
15+00	892.5	15+00 -	871.9	15+00	842.7	15+00 -	807.4	15+00	765.5	15+00	721.9	15+00	682.9
16+00	901.8	16+00 -	878.9	16+00	845.8	16+00 -	808.3	16+00	771.5	16+00	738.6	16+00	687.0
17+00	914.5	17+00 -	886.3	17+00	855.0	17+00 -	813.8	17+00	774.9	17+00	736.5	17+00	690.4
18+00	919.8	18+00 -	890.4	18+00	857.1	18+00 -	820.4	18+00	780.5	18+00	741.3	18+00	693.8
19+00	919.6	19+00 -	895.0	19+00	860.4	19+00 -	824.6	19+00	785.3	19+00	743.5	19+00	696.6
20+00	915.1	20+00 -	891.9	20+00	862.5	20+00 -	829.2	20+00	796.3	20+00	745.6	20+00	701.2
21+00	906.3	21+06 S	887.0	21+00	860.0	21+10	833.2	21+00	802.5	21+05	745.7	20+97	699.3
						(GRAVITY STA 4+21)	745.2	22+00	795	20+50	751		
						1+65 S	711.0	23+00	795				

ALL LINES CONTINUE WITH THE SAME ^{SLOPE} SLIGHTLY FLATTENING OUT; NO SHARP FEATURES IN TOPOGRAPHY ANYWHERE.

ELEVATIONS

BLOC 8

SOUTH OF THE BASELINE

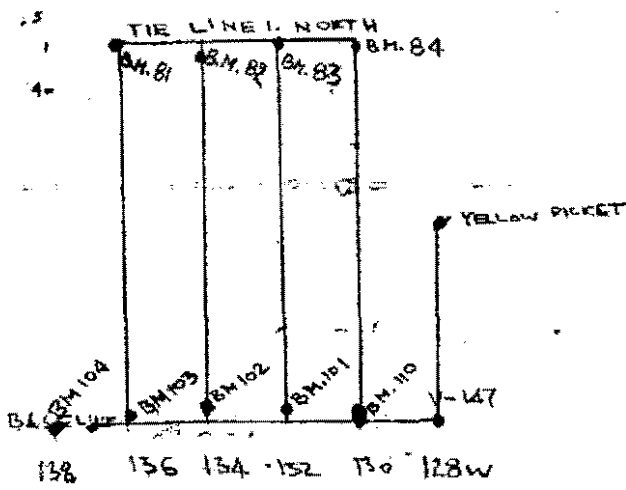
LINES 144 → 156700 W &

S. TIELINE #1

Line 144+00 W		Line 148+00 W		Line 152+00 W		Line 156+00 W		S. TIELINE #1		S. TIELINE #1		S. TIELINE #1	
0+00		0+00	513.0	0+00	491.1	0+00	497.0	86+00 W	819.9	111+00 W	917.5	136+00 W	756.5
1+00	575.3	1+00	516.9	1+00	488.3	1+00	485.1	87+00 W	826.3	112+00 W	917.0	137+00 W	739.6
2+00	578.7	2+00	520.4	2+00	482.1	2+00	469.2	88+00 W	831.3	113+00 W	916.5	138+00 W	726.0
3+00	586.1	3+00	524.5	3+00	479.1	3+00	458.3	89+00 W	836.2	114+00 W	914.0	139+00 W	712.0
4+00	575.5	4+00	533.5	4+00	475.5	4+00	457.6	90+00 W	842.8	115+00 W	911.6	140+00 W	696.8
5+00	579.7	5+00	536.4	5+00	483.0	5+00	455.7	91+00 W	846.9	116+00 W	907.8	141+00 W	683.7
6+00	583.5	6+00	540.5	6+00	488.9	6+00	454.2	92+00 W	852.0	117+00 W	902.6	142+00 W	670.8
7+00	590.5	7+00	543.0	7+00	494.1	7+00	454.9	93+00 W	856.5	118+00 W	898.8	143+00 W	655.0
8+00	594.7	8+00	545.4	8+00	500.0	8+00	460.0	94+00 W	861.6	119+00 W	893.1	144+00 W	641.2
9+00	596.7	9+00	553.1	9+00	505.4	9+00	464.1	95+00 W	869.8	120+00 W	888.1	145+00 W	628.7
10+00	597.0	10+00	555.3	10+00	508.0	10+00	464.4	96+00 W	878.0	121+00 W	883.2	146+00 W	618.4
11+00	602.6	11+00	562.8	11+00	511.4	11+00	457.7	97+00 W	885.4	122+00 W	874.4	147+00 W	603.1
12+00	606.7	12+00	567.3	12+00	515.6	12+00	459.8	98+00 W	894.8	123+00 W	869.0	148+00 W	585.5
13+00	613.9	13+00	572.0	13+00	511.9	13+00	452.5	99+00 W	899.2	124+00 W	860.0	149+00 W	568.5
14+00 ⁵	619.2	14+00	571.9	14+00	510.2	14+00	449.9	100+00 W	905.8	125+00 W	852.1	150+00 W	550.0
15+00	629.8	15+00	578.8 ⁸	15+00	513.9	15+00	449.0	101+00 W	911.0	126+00 W	846.8	151+00 W	531.1
16+00	634.6	16+00	583.3	16+00	515.5	16+00	445.1	102+00 W	916.5	127+00 W	842.6	152+00 W	511.7
17+00	634.9	17+00	586.2	17+00	516.5	17+00	444.6	103+00 W	920.6	128+00 W	836.1	153+00 W	491.9
18+00	633.4	18+00	585.4	18+00	512.5	18+00	444.6	104+00 W	922.3	129+00 W	830.9	154+00 W	474.4
19+00	634.4	19+00	585.4	19+00	514.2	19+00	443.6	105+00 W	924.3	130+00 W	823.8	155+00 W	453.2
20+00	638.3	20+00	592.5	20+00	520.8	20+00	442.4	106+00 W	924.5	131+00 W	818.1	156+00 W	434.6
20+83	640.6	20+77	597.1	20+58	524.3	20+43	441.3	107+00 W	921.8	131+94 132+00 W	809.1		
				20+75	478			108+00 W	920.1	133+00 W	797.5		
								109+00 W	919.0	134+00 W	783.8		
								110+00 W	918.8	135+00 W	773.8		

FOLLOWING IS DONE:

THE LINES SHOWN ARE RUN



- ELEVATION:
- B.M. 81 = 725.11
 - 82 = 737.13
 - 83 = 751.77
 - 84 = 764.05
 - B.M. 110 = 705.85
 - 101 = 689.68
 - 102 = 664.50
 - 103 = 654.08
 - 104 = 639.31

P.S.:

WORK EASTWARD FROM THE ANCHOR AS YOU SUGGESTED. (CONSISTENT WITH TIE LINE TO TOPOGRAPHY MAP)

3773.15

Gravity Ele.

Grav. El

$$\begin{array}{r}
 V-11 \quad 4097.13 \\
 - 3773.15 \\
 \hline
 323.98
 \end{array}$$

323.98

V33

$$\begin{array}{r}
 4306.37 - 533.22 \\
 - 3773.15 \\
 \hline
 539.22
 \end{array}$$

$$\begin{array}{r}
 V-13 \quad 4136.30 \\
 - 3773.15 \\
 \hline
 363.15
 \end{array}$$

363.15

V35

$$\begin{array}{r}
 4318.77 - 545.62 \\
 - 3773.15 \\
 \hline
 545.62
 \end{array}$$

$$\begin{array}{r}
 V-15 \quad 4153.13 \\
 - 3773.15 \\
 \hline
 379.98
 \end{array}$$

379.98

V37

$$\begin{array}{r}
 4337.34 - 564.19 \\
 - 3773.15 \\
 \hline
 564.19
 \end{array}$$

$$\begin{array}{r}
 V-17 \quad 4172.61 \\
 - 3773.15 \\
 \hline
 399.46
 \end{array}$$

399.46 ✓

V39

$$\begin{array}{r}
 4351.86 - 578.71 \\
 - 3773.15 \\
 \hline
 578.71
 \end{array}$$

$$\begin{array}{r}
 V-19 \quad 4191.30 \\
 - 3773.15 \\
 \hline
 418.15
 \end{array}$$

418.15 ✓

$$\begin{array}{r}
 V-21 \quad 4206.58 \\
 - 3773.15 \\
 \hline
 433.43
 \end{array}$$

433.43 ✓

$$\begin{array}{r}
 V-23 \quad 4218.95 \\
 - 3773.15 \\
 \hline
 445.80
 \end{array}$$

445.80

$$\begin{array}{r}
 V-25 \quad 4238.86 \\
 - 3773.15 \\
 \hline
 465.71
 \end{array}$$

465.71

$$\begin{array}{r}
 V-27 \quad 4255.29 \\
 - 3773.15 \\
 \hline
 482.14
 \end{array}$$

482.14

$$\begin{array}{r}
 V-29 \quad 4269.83 \\
 - 3773.15 \\
 \hline
 496.68
 \end{array}$$

496.68

$$\begin{array}{r}
 V-31 \quad 4286.50 \\
 - 3773.15 \\
 \hline
 513.35
 \end{array}$$

513.35

TIELINE No.1 South - LIST of Elevations.

WEST					
ST.	ELEV.				
10		51	603.9		
11		52	626.7		
12	181.5				
13					
14					
15					
16	243.1				
17					
18					
19					
20	242.5				
21					
22					
23					
24	274.6				
25	259.4				
26	277.5				
27	288.8				
28	288.0				
29	292.8				
30	299.0				
31	312.0				
32	305.2				
33	346.4				
34	363.9				
35	380.3				
36	394.9				
37	396.6				
38	402.8				
39	419.0				
40					
41					
42					
43					
44					
45					
46					
47	547.8				
48	547.1				
49	563.0				
50	581.0				

TIELINE No.1 North - LIST of Elevations.

WEST		WEST		WEST			
St.	Elev.	St.	Elev.	St.	Elev.	St.	Elev.
10		51	686.8	91		131	757.6
11		52	689.3	92	838.8	132	751.6
12	499.7	53	689.9	93	837.3	133	744.6
13		54	691.1	94	835.7	134	745.4
14	514.5	55	706.2	95	833.3	135	738.2
14+60	523.2	56	706.7	96	830.8	136	727.2
15+30	530.2	57	741.5	97	827.4	137	716.7
16	537.1	58	717.5	98	824.7	138	682.2
17		59	722.1	99	823.0	139	664.9
18	561.7	60	732.8	100	816.9	140	653.8
19	569.1	61	736.8	101	809.5	141	
20	577.1	62	743.0	102	801.7	142	632.9 ✓
21	586.2	63	750.8	103	789.9	143	632.5
22	588.3	64	752.7 ✓	104	782.7 ^{3.2}	143	626.0
23	587.8	65	756.8	105	771.1	144 +14	612.5
24	601.8	66	763.4	106	765.8	145 ✓	608.4
25	607.9	67	768.4	107	761.7	146	600.9
26	612.0	68 +15	772.7 ^{2.9}	108	754.4	147	596.6
27	614.2			109	753.9	148 +07	604.9
28	614.9		786.0	110	751.7	149	580.2
29	615.6	70	790.6	111	756.8	150	571.6
30	618.7	71	790.0	112	748.6	151	580.9
31	624.8	2	788.9	113	752.6	152	618.2
32	625.6	3	786.6	114	744.2	153	636.4
33	629.6	4	786.1	115	743.4	154	639.7
34	632.9	5	786.2	116	744.2	155	646.2
35	634.7	6	786.7	117	742.0	156	644.6
36	637.6 ⁹	7	788.1	118	739.5		
37	641.5 ³	8	782.0	119	739.2		
38	644.6	9	789.8	120	739.7		
39	649.1	80	790.7	121	741.1		
40	653.1	81	790.9	122	749.9		
41	656.0	82	793.6	123	749.8		
42	662.3 ⁰	83	803.3	124	748.5		
43	667.7	4	813.6	125	751.2		
44+10	671.3	5	820.6	126	750.6		
45	675.5	6	852.2	127	740.6		
46	677.7	7	829.9	128	738.0		
47	680.9 ⁴	8	836.5	129	762.5		
48	682.5	9		130	763.9		
49	685.2	80					
50	686.4						

V 101	88+00	851.22	I 52,	
V 111	96+00	874.61	I 52	
V 115	100+00	868.32	I 52	
BM 65	100+00 NTL #1	818.51	I 53	
BM 63	86+00	832.37	I 53	
BM 61	92+00	839.96	I 53	
V 103	92+00	872.54	I 54	
<hr/>				
V 119	104+00	853.88	III, 1;	
V 125	108+00	830.14	III 1;	
V 129	112+00	808.33	III 1;	
V 133	116+00	798.48	III 2;	
V 137	120+00	789.70	III 2;	
BM 75	120+00 NTL #1	740.60	III 2;	ROCK
BM 73	116+00	744.22	III 3;	WELL IN THE GROUND
BM 71	111+25	757.74	III 3;	ROCK
BM 69		754.30	III 3;	ROCK
BM 67		782.61	III 4;	20' SW OF CORNER ON A ^{LOC}
BM 79		752.24	III, 6;	
BM 77		749.53	III, 7;	
V 143		760.42	III, 6;	
V 147		736.03	III, 6;	
BM 79		752.24		
BM 77		749.53		
P				
BM 114		639.31		
115	132+80 W & BL	611.07	III 24	
116	143+70 W & BL	568.64	III 24	
117	148+00 W & BL	513.71	III 24	
88	150+70 NTL #1	574.07	III 25	
87	148+00 NTL #1	605.81	III 25	
86	144+00 & 3+40 N	608.22	III 26	
85	140+70 & 10+41 N	641.18	III 26	
118		490.95		

CALCULATION SHEET

MINE Vangorda Creek

DATE May 18, 1956

SHAFT _____ LEVEL _____ NOTE BOOK No. _____

PAGE NO. _____

WORKING PLACE Base Curve ^(Resurvey of SP11 & 150) RECORD BOOK No. _____

PAGE NO. _____

B.S. SP 9

STA. SP-10

F.S. SP-11

NATURAL FUNCTIONS

GURDEN'S TABLES

Vertical Angle. -6° 00'
 Measured Dist. 97.95'
 Horizontal Dist. 97.41'
 Vertical Dist. -10.24'
 Height of Inst. +2.17'
 Ht. Pt. _____
 Elev. Diff. -8.07'

Cosine	Sine	Cosine	Sine
9.997614	9.019235		
1.991004	1.991004		
11.988618	11.010239		
97.41'	10.24'		

Vertical Angle _____
 Measured Dist. _____
 Horizontal Dist. _____
 Vertical Dist. _____
 Height of Inst. _____
 Ht. Pt. _____
 Elev. Diff. _____

Cosine	Sine	Cosine	Sine

AVERAGE HOR. DIST. 97.41'
 ELE. STA. AVE. SP-10 4008.97'
 ELEV. DIFF. -8.07'
 Elevation SP-11 4000.90'
 Rail Below _____
 Elev. Rail _____
 Az. from SP 9 to SP 10
230° 30'
 Less -180° 00'
 Az. Back Sight 50° 30'
 HORIZONTAL ANGLE 181° 59'
 AZIMUTH 232° 29'

BEARING S 52° 29' W
 Horizontal Dist. 97.41'
 Latitude Diff. _____
 Departure Diff. _____

Cosine	Sine	Cosine	Sine
9.784612	9.899370		
1.988604	1.988604		
11.773216	11.887974		
59.32' S	77.26' W		

Co-ordinate Sta. SP-10
 Co-ordinate of Diffs. _____
 CO-ORDINATE OF STA. SP-11

29,375.50'	29,269.79'
- 59.32'	- 77.26'
29,316.18'	29,192.53'

D.J.C.