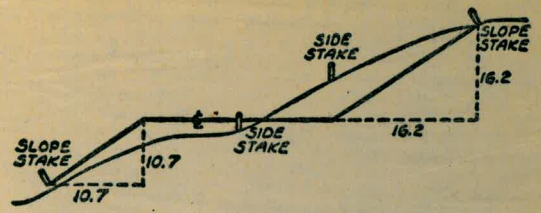


Distances from Side Stakes for Cross-Sectioning

Slope 1 to 1. Roadway of Any Width

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

MICROFILMED JAN 18 1962

Book 845-B.

IMPROVED TABLES AND INFORMATION

JAN. 2, 54

LEONARD - T
VARONFAKIS - ROD
KEMP - TAPE

NOTE: ALL MUCK HAS BEEN REMOVED AND ELEV'S. ARE ON HARD ROCK, ALONG CENTER-LINE. DEPRESSIONS AND RIDGES RUN FULL WIDTH OF FLOOR, IN GENERAL.

SEE X-SECTIONS OF TUNNEL FOR FLOOR WIDTHS.

PROFILE BOTTOM OF BLACK CANYON TUNNEL.

SMD #9 -3.09	1898.07		1901.16
148+00		-4.35	1893.7
+02		-4.8	93.3
+03		-4.7	93.4
+04		-4.7	93.4
+06		-4.6	93.5
+09		-4.35	93.7
+12		-4.35	93.7
+16		-4.5	93.6
+19		-4.4	93.7
+23		-4.65	93.4
+24		-4.75	93.3
+26		-4.9	93.2
+28		-4.85	93.2
+29		-4.75	93.3
+31		-4.7	93.4
+33		-4.45	93.6
+36		-4.35	93.7
+39		-4.15	1893.9

1898.07

148+40		-4.6	1893.5
+46		-4.65	93.4
+47		-4.80	93.3
+50		-4.6	93.5
+52		-4.55	93.5
+54		-4.3	93.8
+66		-4.7	93.4
+58		-4.8	93.3
+62		-4.85	93.2
+64		-4.75	93.3
+67		-4.95	93.1
+69		-5.05	93.0
+71		-5.05	93.0
+73		-4.75	93.3
+77		-4.8	93.3
+79		-4.6	93.5
+82		-4.7	93.4
+85		-5.0	93.1
+87		-5.3	1892.8

	1898.07		
148+89		-4.7	1893.4
+91		-4.9	93.2
+94		-5.0	93.1
+96		-4.6	93.5
+99		-4.6	93.5
149+00		-4.7	93.4
+04		-4.7	93.4
+06		-4.3	93.8
+10		-4.5	93.6
+11		-4.4	93.7
+15		-4.7	93.4
+17		-4.95	93.1
+20		-4.3	93.8
+22		-4.4	93.7
+24		-4.1	94.0 .2 HI.
+27		-4.5	93.6
+28		-4.55	93.5
+30		-4.35	93.7
+32		-4.95	1893.1

1898.07

149+34		-5.2	1892.9
+35		-4.85	93.2
+37		-4.65	93.4
+40		-4.4	93.7
+43		-4.5	93.6
+46		-4.25	93.8
+48		-4.85	93.7
+50		-4.55	93.5
+51		-4.85	93.2
+55		-5.0	93.1
+56		-5.1	93.0
+59		-4.3	93.8
+61		-4.85	93.2
+62		-4.85	93.7
+65		-4.4	93.7
+69		-4.7	93.4
+70		-4.6	93.5
+72		-5.15	92.9
+73		-5.25	1892.8

	1898.07		
149+75		-4.85	1898.2
+77		-4.4	93.7
+78		-4.85	93.2
+80		-4.7	93.4
+82		-4.55	93.5
+84		-4.95	93.1
+86		-4.8	93.3
+89		-4.2	93.9 .2 HI
+90		-4.95	93.1
+92		-5.0	93.1
+94		-5.05	93.0
+97		-4.75	93.3
150+00		-4.65	93.4
T.P. +4.02	1898.18	-3.91	1894.16
150+02		-4.2	1894.0 .3 HI
+04		-4.7	93.5
+06		-5.1	93.1
+08		-4.85	93.3
+12		-4.35	93.8

	1898.18		
150+15		-4.75	1893.4
+17		-4.25	93.9 .2 HI
+18		-4.4	93.8
+19		-4.1	94.1 .4 HI
+23		-4.7	93.5
+26		-4.95	93.2
+28		-4.8	93.4
+33		-4.55	93.6
+36		-4.8	93.4
+37		-4.45	93.7
+40		-4.55	93.5
+45		-4.2	94.0 .3 HI
+50		-4.55	93.6
+52		-4.3	93.9 .2 HI
+54		-4.5	93.7
+58		-4.05	94.1 .4 HI
+61		-4.9	93.5
+64		-4.3	93.9 .2 HI
+67		-4.85	1893.5

	1898,18		
150+69		-4,6	1893.6
+73		-4,65	1893.5
+74		-4,3	93.9 .2 HI
+77		-5,15	93.0
+80		-4,4	93.8
+83		-5,15	93.0
+86		-5,25	92.9
+87		-4,95	93.2
+88		-4,6	93.6
+91		-5,0	93.2
+93		-5,25	92.9
+95		-4,45	93.7
+98		-5,05	93.1
151+00		-4,7	93.5
+02		-4,35	93.8
+04		-5,0	93.2
+08		-4,85	93.3
+13		-4,9	93.3
+14		-4,9	1893.3

	1898.18		
151+17		-4.6	1893.6
+20		-4.4	93.8
+21		-4.15	94.0. 3 HI
+22		-4.45	93.7
+23		-4.25	93.9. 2 HI
+24		-4.65	93.5
+28		-4.45	93.7
+31		-4.8	93.4
+32		-4.55	93.6
+35		-5.0	93.2
+37		-4.65	93.5
+42		-4.6	93.6
+46		-4.7	93.5
+49		-4.6	93.6
+50		-4.65	93.5
+55		-4.9	93.3
+57		-4.45	93.7
+60		-4.45	93.7
+64		-4.9	1893.3

	1898,18		
151+68		-4.9	1893.2
+71		-5.05	1893.1
+73		-4.55	93.6
+76		-5.0	93.2
+78		-4.6	93.6
+81		-5.05	93.1
+84		-4.7	93.5
+87		-4.9	93.3
+91		-4.95	93.2
+95		-5.05	93.1
+97		-4.45	93.7
152+00		-4.60	93.6
+03		-5.0	93.2
+05		-5.2	93.0
+07		-5.05	93.1
+09		-5.05	93.1
+11		-4.7	93.5
+15		-5.0	93.2
+18		-4.6	1893.6

~~B.M. #4 STEEL DRILL ROD E. TOE, 1.52+50 N.6.~~
B.M. #4 WAS
DISTURBED DURING CLEAN-UP, LOOSE IN ROCK.

	1898.18		
152+20		-4.9	1893.3
+22		-4.5	93.7
+25		-5.1	93.1
+27		-5.1	93.1
+29		-4.85	93.3
T.P.		-3.37	1894.81
+3.19	1898.00		
152+31		-5.0	1893.0
+34		-4.25	93.7
+38		-4.7	93.3
+40		-4.8	93.2
+43		-4.95	93.0
+45		-4.6	93.4
+47		-4.75	93.2
+50		-4.6	93.4
+52		-4.3	93.7
+54		-4.6	93.4
+57		-4.25	93.7
+58		-4.85	1893.1

SUB GRADE = 1893.67

1898.00

152+60		-4.8	1893.2
+62		-4.4	93.6
+64		-4.4	93.6
+69		-4.8	93.2
+71		-4.15	93.8 ./ HI
+75		-4.55	93.4
+75		-4.75	93.2
+80		-4.3	93.7
+82		-4.2	93.8 ./ HI
+84		-4.9	93.1
+87		-4.6	93.4
+88		-4.4	93.6
+91		-4.6	93.4
+94		-4.4	93.6
+96		-4.3	93.7
+97		-4.7	93.3
+99		-4.6	93.4
153+00		-4.85	93.1
+02		-4.3	1893.7

1898.00

153+04		-4.8	1893.2
+07		-4.5	93.5
+10		-4.85	93.1
+12		-4.4	93.6
+15		-4.85	93.1
+19		-4.15	93.8
+21		-4.55	93.4
+25		-4.25	93.7
+25		-5.0	93.0
+27		-4.7	93.3
+30		-4.65	93.3
+31		-4.85	93.1
+34		-4.45	93.5
+39		-4.7	93.3
+43		-4.15	93.85 .2 HI
+46		-4.6	93.4
+48		-4.45	93.5
+50		-4.3	93.7
+54		-4.25	1893.75 .1 HI

1898.00

153+56		-4.9	1893.1
+60		-4.85	93.1
+61		-4.3	93.7
+63		-4.45	93.6
+67		-4.2	93.8 .1 HI
+69		-4.65	93.3
+72		-4.6	93.4
+76		-4.45	93.5
+82		-4.4	93.6
+85		-4.95	93.0
+88		-4.4	93.6
+92		-4.65	93.3
+95		-4.85	93.1
+97		-4.8	93.2
+99		-4.55	93.4
154+00		-4.6	93.4
+03		-4.85	93.1
+05		-4.55	93.4
+07		-4.85	1893.15

1898.00

154+11		-4.2	1895.8 .1 HI
+13		-4.0	1894.0 .3 HI
+15		-4.55	93.4
+17		-4.95	93.0
+18		-5.1	92.9
+20		-4.2	93.8 .1 HI
+23.		-4.75	93.2
+25.		-4.4	93.6
+27		-4.95	93.0
+29		-5.0	93.0
+31		-4.3	93.7
+34		-4.85	93.1
+36		-4.45	93.1
+38		-4.7	93.5
+41		-4.45	93.5
+43		-4.7	93.5
+47		-4.15	93.85 .2 HI
+50		-4.3	93.7
+54		-4.35	1893.6

	1898.00		
154+55		-3.85	1894.15.5 HI
+57		-4.75	93.2
+60		-4.15	93.85.2 HI
+63		-4.65	93.3
+67		-4.95	93.0
+71		-4.25	93.75.1 HI
+73		-4.85	93.15
+76		-4.25	93.75
+78		-4.8	93.2
+80		-4.15	93.85.2 HI
+84		-5.1	92.9
+86		-4.75	93.25
+87		-4.2	93.8.1 HI
+90		-4.6	93.4
+92		-4.35	93.65
+93		-4.85	93.15
+95		-4.15	93.85.2 HI
+98		-4.65	93.35
155+00	SPAD ELEV.	-4.45	1893.55
CHECK SPAD #9.	1901.57	+3.56	1901.56

NOTE: B.M. #3 LOST DURING CLEAN-UP.

~~B.M. #3 STEEL ROD W. TOE, 155+81. ELEV.: 1894.80~~

T.B.M.

NOTE: NOTES ON PAGES #16 TO #24 REDUCED BY DAVE KEMP, ENG. AIDE.

CONDITION OF TUNNEL ATMOSPHERE VERY FOGGY DUE TO LACK OF AIR CIRCULATION. VISIBILITY LIMITED.

JAN. 9, '54.
FORENOON.

LEONARD - T. & NOTES 16.
KEMP - ROD
ALEXANDER. - CHAIN.

BOTTOM PROFILE BLACK CANYON TUNNEL, CONTD

SPAD #37. - 2.77	1898.46		1901.23
155+01		-4.8	1893.65
+03		-5.0	1893.45
+04		-4.85	1893.6
+06		-4.75	1893.7
+07		-4.7	1893.75
+08		-5.2	1893.25
+11		-4.75	1893.7
+14		-4.85	1893.6
+16		-4.6	1893.85
+19		-4.7	1893.75
+21		-4.45	1894.00
+25		-5.4	1893.05
+27		-5.4	1893.05
+28		-4.7	1893.75
+30		-5.05	1893.4
+31		-4.9	1893.55
+32		-5.2	1893.25
+34		-4.9	1893.55

H.d.	1898.46		
155+35		-5.2	1893.25
+38		-4.95	1893.5
+40		-4.55	1893.9
+41		-4.6	1893.85
+43		-5.4	1893.05
+45		-4.7	1893.75
+49		-4.5	1893.95
+53		-5.25	1893.2
+56		-5.05	1893.4
+60		-4.75	1893.7
+62		-5.1	1893.35
+64		-4.6	1893.85
+66		-5.6	1893.85
+69		-4.75	1893.7
+71		-4.95	1893.5
+72		-4.55	1893.9
+74		-5.15	1893.3
+77		-5.3	1893.15
+79		-4.75	1893.7

1898.46

155+83		-4.6	1893.85
+86		-4.8	1893.65
+90		-5.0	1893.45
+93		-4.95	1893.5
+95		-4.95	1893.5
+98		-4.55	1893.9
156+00		-4.55	1894.10 ,45H1
+04		-4.9	1893.55
+08		-4.6	1893.85
+10		-5.0	1893.45
+12		-4.6	1893.85
+14		-4.8	1893.65
+18		-4.25	1893.2
+21		-4.8	1893.65
+24		-4.4	1893.05
+26		-4.8	1893.65
+32		-4.25	1893.2
+34		-4.8	1893.65
+48		-4.8	1893.65

T.P.

1898.46

156+54		-5.4	1893.05
+58		-4.8	1893.65
Scho°54-3.75	1897.56	+2.85	1901.31
156+59		-3.8	1893.75
+60		-4.4	1893.15
+62		-3.9	1893.65
+65		-4.25	1893.3
+68		-3.8	1893.75
+72		-4.25	1893.3
+76		-4.0	1893.55
+77		-4.45	1893.1
+81		-4.05	1893.5
+86		-4.45	1893.1
+91		-4.0	1893.55
+96		-4.3	1893.25
157+00		-4.0	1893.55
+07		-5.2	1892.35
+11		-4.4	1893.15
+13		-4.7	1892.85

H.D.	1897.56		
157+17		-4.35	1893.2
+22		-4.9	1892.65
+24		-4.4	1893.15
+26		-4.85	1892.7
+30		-4.2	1893.35
+35		-4.8	1892.75
+37		-4.5	1893.05
+39		-4.7	1892.85
+44		-4.2	1893.35
+49		-3.85	1893.7
+54		-4.8	1892.75
+59		-5.1	1892.45
+63		-4.5	1893.05
+68		-4.35	1893.2
+71		-4.7	1892.85
+76		-5.0	1892.55
+81		-5.2	1892.35
+83		-4.1	1893.45
+85		-5.0	1892.55

1897.56

157+58		-4.15	1893.4
+90		-5.2	1892.35
+93		-4.7	1892.85
+99		-5.2	1892.25
158+00		-5.15	1892.4
+03		-4.15	1892.4
+07		-4.8	1892.75
+10		-4.6	1892.95
+13		-4.8	1892.75
+16		-5.1	1892.45
+20		-5.15	1892.4
+27		-3.95	1893.6
+34		-5.15	1892.4
+39		-4.2	1893.35
+42		-4.75	1892.8
+44		-4.55	1893.05
+47		-5.15	1892.4
+50		-4.8	1892.75
+52		-5.2	1892.35

	1897.56		
158+54		-4.9	1892.65
+58		-5.65	1891.9
+60		-4.9	1892.65
+62		-5.5	1892.05
+67		-5.0	1892.55
+71		-4.8	1892.75
+75		-5.2	1892.35
+79		-4.85	1892.7
+84		-5.2	1892.35
+86		-5.05	1892.5
+89		-5.45	1892.1
+92		-4.7	1892.85
+94		-5.3	1892.25
+98		-5.0	1892.55
159+00		-4.75	1892.8
+04		-5.25	1892.3
+06		-4.8	1892.75
+08		-5.3	1892.25
+13		-4.45	1893.1

1897.56

159+15		-4.95	1892.6
+16		-4.8	1892.75
+18		-5.9	1891.65
+21		-5.35	1892.2
+28		-5.5	1892.05
+32		-5.0	1892.55
+34		-5.75	1891.8
+37		-5.3	1892.25
+39		-5.6	1891.95
+43		-5.3	1892.25
+46		-5.45	1892.1
+52		-5.25	1892.3
+54		-5.15	1892.4
+60		-5.95	1891.6
+63		-5.5	1892.05
+67		-5.45	1892.1
+69		-5.0	1892.55
+72		-5.0	1892.55
+76		-5.65	1891.9

	1897.56		
159+78		-5.1	1892.45
+80		-5.5	1892.05
+83		-5.15	1892.4
+87		-5.05	1892.5
+90		-5.2	1892.35
+95		-5.05	1892.5
160+00		-5.00	1892.55
+03		-4.85	1892.7
+10		-4.95	1892.6
+15		-5.25	1892.3
+17		-5.1	1892.45
+20		-5.55	1892.00
+25		-5.2	1892.35
+29		-4.65	1892.9
Spad "27		+3.21	1900.77
			1900.77

T.P. Check.

JAN. 9, '54
AFTERNOON.

LEONARD - π & NOTES. 25.
KEMP - ROD
ALEXANDER - CHAIN

ATMOSPHERE CLEARED UP - BLOWER RUNNING.

SPAD #27. -3.72	1897.05		1900.77
160+31		-4.6	1892.45
+34		-4.3	92.75
+38		-4.0	93.05
+42		-4.85	92.20
+45		-4.5	92.55
+49		-3.9	93.15
+52		-4.45	92.60
+58		-4.7	92.35
+60		-4.1	92.95
+63		-4.8	92.25
+68		-4.35	92.70
+71		-4.9	92.15
+75		-4.2	92.85
+78		-4.8	92.25
+81		-4.4	92.65
+83		-4.3	92.75
+85		-4.6	92.45
+88		-4.5	1892.55

	1897.05		
160+91		-5.15	1891.90
+95		-4.25	92.80
161+00		-4.7	92.35
+03		-4.25	92.10
+08		-4.6	92.45
+12		-4.5	92.55
+14		-4.9	92.15
+15		-4.45	92.60
+18		-4.5	92.55
+22		-4.85	92.20
+27		-4.45	92.60
+30		-4.3	92.75
+36		-4.7	92.35
+38		-4.4	92.65
+42		-4.9	92.15
+47		-4.6	92.45
+52		-4.5	92.55
+55		-5.0	92.05
+62		-4.15	1892.90

1897.05

161+69		-4.45	1892.60
+77		-4.5	92.55
+84		-4.6	92.45
+86		-4.5	92.55
+91		-4.15	92.90
+94		-4.45	92.60
+97		-5.0	92.05
+99		-4.45	92.60.
162+00		-4.65	92.40
+03		-4.5	92.55
+06		-4.95	92.10
+08		-4.15	92.90
+11		-5.35	91.70
+15		-4.75	92.30
+19.		-4.3	92.75
+22		-4.4	92.65
+27		-4.95	92.10
+31		-5.45	91.60
+32		-5.6	1891.45

	1897.05		
162+34		-5.2	1891.85
+40		-4.8	92.25
+42		-5.25	91.80
+45		-4.75	92.30
+48		-5.15	91.90
+50		-4.8	92.25
+56		-5.2	91.85
+59		-5.0	92.05
+63		-4.65	92.40
+66		-5.3	91.75
+68		-5.1	91.95
+71		-5.05	92.00
+72		-4.8	92.25
+75		-4.85	92.10
+80		-5.25	91.80
+82		-5.0	92.05
+89		-5.35	91.70
+93		-5.05	92.00
+95		-5.3	1891.75

1897.05

162+98		-4.85	1892.10
163+00		-5.1	91.95
+02		-5.0	92.05
+04		-5.3	91.75
+06		-5.15	91.90
+09		-4.95	92.10
+15		-4.4	92.65
+18		-4.1	92.95
+27		-4.7	92.35
+29		-4.35	92.70
+33		-4.75	92.30
+37		-4.15	92.90
+40		-4.2	92.85
+43		-4.9	92.15
+47		-4.25	92.80
+54		-4.95	92.10
+59		-4.6	92.45
+62		-4.95	92.10
+67		-4.9	1892.15

	1897.05		
163+72		-4.85	1892.20
+79		-4.25	92.80
+82		-4.9	92.15
+86		-4.15	92.90
+92		-5.15	91.90
+98		-4.5	92.55
164+00		-4.15	92.90
+02		-4.0	93.05
+04		-4.8	92.25
+07		-4.5	92.65
+08		-4.95	92.10
+10		-4.55	92.50
+16		-4.5	92.55
+20		-4.75	92.30
+22		-4.85	1892.20
T.P. & CHECK.			
SPAD #19 -4.41	1897.05	+4.37	1901.42 = 1901.41
169+23		-4.4	1892.60
+27		-4.05	1892.95
+31		-4.0	1893.00

			1897.00
164+39		-4.65	1892.35
+40		-4.0	93.0
+45		-4.55	92.45
+52		-4.45	92.55
+56		-3.75	93.25
+58		-3.75	93.25
+62		-4.4	92.6
+63		-3.85	93.05
+71		-4.85	92.15
+75		-4.75	92.25
+80		-4.75	92.25
+82		-4.55	92.45
+88		-4.35	92.65
+90		-4.2	92.80
+93		-4.25	92.25
165+00		-4.45	92.55
+03		-4.25	92.75
+05		-4.9	92.10
+08		-4.45	1892.55

	1897.00		
1654 10		-4.75	1892.25
+15		-4.4	92.6
+20		-4.45	92.55
+25		-4.95	92.05
+27		-4.55	92.45
+32		-4.4	92.6
+37		-4.25	92.75
+40		-4.75	92.25
+44		-4.15	92.85
+46		-4.6	92.4
+50		-4.05	92.95
+52		-4.55	92.45
+55		-4.0	93.0
+59		-3.85	93.15
+62		-4.45	92.55
+64		-4.0	93.0
+67		-4.4	92.6
+70		-3.8	93.2
+75		-4.45	1892.55

1897.00

165+78		-4.05	1892.95
+82		-4.0	93.0
+87		-4.05	92.95
+90		-4.25	92.75
+94		-3.8	93.2
+97		-4.55	92.45
+99		-4.0	93.0
166+00		-4.15	92.85
+01		-4.35	92.65
+04		-3.8	93.2
+07		-4.8	92.2
+09		-4.55	92.45
+12		-4.4	92.6
+15		-4.25	92.75
+21		-4.75	92.25
+24		-4.45	92.55
+27		-5.1	91.9
+32		-4.7	92.3
+37		-4.3	1892.7

1897.00

166+42		-4.8	1892.2
+45		-4.35	92.65
+48		-4.95	92.05
+51		-4.15	92.85
+53		-4.7	92.3
+57		-4.3	92.7
+60		-4.6	92.4
+63		-5.15	91.85
+67		-4.4	92.6
+68		-5.1	91.9
+74		-4.3	92.7
+79		-5.25	91.75
+81		-4.7	92.3
+86		-4.8	92.2
+90		-4.9	92.1
+92		-4.55	92.45
+98		-4.55	92.45
167+00		-4.65	92.35
+05		-5.0	1892.0

H.d.	1897.00		
167+06		-4.45	1892.55
+09		-4.35	92.65
+12		-4.65	92.35
+16		-4.45	92.55
+18		-5.0	92.0
+22		-4.35	92.65
+26		-4.8	92.8
+30		-4.75	92.25
+35		-4.95	92.05
+39		-5.2	91.8
+44		-4.3	92.7
+46		-4.9	92.1
+49		-4.75	92.25
+55		-4.6	92.4
+59		-4.9	92.1
+65		-4.45	92.55
+70		-4.65	92.35
+74		-4.4	92.6
+77		-4.5	1892.5

1897.00

167+85		-4.45	1892.55
+88		-5.45	91.55
+90		-5.2	91.8
+93		-5.75	91.25
+95		-5.1	91.9
+98		-5.35	91.65
168+00		-4.65	92.35
+01		-4.3	92.7
+04		-5.2	91.8
+07		-4.9	92.1
+09		-5.25	91.75
+12		-4.8	92.2
+15		-4.95	92.05
+19		-4.1	92.9
+22		-5.0	92.0
+24		-4.8	92.2
+29		-4.6	92.4
+33		-4.3	92.7
+38		-4.4	1892.6

	1897.00		
168+42		-4.8	1892.2
+47		-4.25	92.75
+54		-4.8	92.2
+60		-4.75	92.25
+68		-4.35	92.65
+72		-4.5	92.5
+75		-4.85	92.15
+77		-4.7	92.3
+83		-5.4	91.6
+86		-4.7	92.3
+90		-4.9	92.1
+93		-4.75	92.25
+95		-4.8	92.2
+99		-5.2	91.8
169+00		-4.95	1892.05
CHECK SHOT #9.		+2.74	1899.74 =
			1899.74.

Recross-Section S. End - After Trimmed

(Con't from Book #845-A - Pg 79

	Deg	Dist	Deg	Dist	Deg	
171+95	0	5.9	10	6.0	20	6.1
	30	6.2	45	5.9	55	5.6
	65	4.75	75	4.4	90	4.05
	92	4.3	100	4.2	120	4.2
	135	4.55	155	4.2	170	4.0
	180	3.95	190	3.95	205	3.95
	220	4.35	230	5.0	240	4.8
	260	4.3	270	4.2	280	4.5
	295	4.8	310	4.85	320	5.1
	330	5.45	340	515	350	5.2
171+90	0	5.6	10	5.1	20	4.95
	35	4.6	50	4.6	55	4.3
	80	4.25	90	4.4	110	4.65
	135	5.0	145	4.6	160	4.1
	180	4.0	195	4.1	205	4.3
	220	4.4	240	4.9	260	4.35
	270	4.2	290	4.3	305	4.63
	325	4.95	330	4.90	340	5.0
	3.45	5.5	350	5.65		

Cut-off Collar

EXTRA PAY AREA FOR EXCAVATION OF CUT OFF COLLARS = 29.4° SQ FT. X 2' = 58.8 CU. FT.

Not Completed Between 125° & 225°

	Deg	Dist	Deg	Dist	Deg	Dist
171 + 87	0	6.6	20	6.6	30	6.1
	45	5.95	65	5.7	80	5.25
	90	5.15	105	5.2	115	5.35
	125	5.5	225	5.15	235	4.85
	245	5.0	260	5.1	270	5.1
	285	5.2	295	5.6	310	5.9
	320	6.3	330	6.4	340	6.6
	350	6.6				
171 + 85	0	5.9	15	5.6	30	5.65
	40	4.95	50	5.25	55	5.0
	70	5.45	80	5.3	90	4.9
	105	4.7	125	5.0	135	5.15
	145	4.65	160	4.3	180	4.2
	195	4.3	205	4.4	215	4.3
	230	4.8	240	4.65	270	3.8
	275	4.1	290	4.2	305	4.65
	325	6.0	330	6.2	340	5.8
	350	5.9				

	Deg	Dist	Deg	Dist	Deg	Dist
171+80	0	5.75	10	5.7	25	5.4
	35	5.8	45	5.7	55	5.85
	75	5.0	80	5.3	90	5.1
	100	4.9	105	5.1	120	5.1
	135	5.3	140	4.7	160	4.3
	180	4.15	205	4.35	225	4.75
	240	4.25	255	4.3	270	3.9
	290	4.15	300	4.6	315	4.8
	325	5.15	330	5.75	340	5.85
	350	5.8				
171+75	0	5.0	10	5.0	25	5.1
	40	5.1	55	4.95	65	4.8
	75	4.9	90	4.95	100	4.75
	105	4.95	120	5.4	130	5.4
	145	4.65	165	4.15	180	4.1
	190	4.2	210	4.35	225	4.55
	240	4.95	250	4.65	270	4.2
	285	4.3	300	4.3	315	4.6

	Deg	Dist	Deg	Dist	Deg.	Dist
171+75 (Con't)	330	4.75	340	4.8	350	5.0
171+70	0	5.15	15	4.95	35	4.9
	50	4.75	55	5.1	65	5.05
	75	4.75	90	4.45	100	4.55
	110	4.9	120	5.15	130	4.8
	140	4.55	155	4.3	165	4.15
	180	4.05	195	4.0	210	4.25
	220	4.5	230	4.6	240	5.1
	255	4.3	270	4.0	285	4.0
	300	4.4	310	4.65	330	4.8
	340	4.95	350	5.0		
171+65	0	4.65	15	4.7	30	4.9
	45	5.1	55	5.3	65	4.6
	75	4.35	90	4.25	105	4.5
	120	4.45	130	4.75	140	5.3
	150	5.1	160	4.7	170	4.65
	180	4.65	190	4.75	205	5.25

	Deg	Dist	Deg	Dist	Deg	Dist
171+65	220	5.5	230	4.95	250	4.25
(con't)	265	4.5	270	4.25	285	4.4
	300	4.25	305	4.35	315	4.2
	330	4.3	340	4.35	350	4.5
171+60	0	5.15	10	5.35	15	5.1
	30	4.75	45	4.8	55	5.05
	60	4.6	75	4.7	90	4.7
	100	4.5	110	4.9	120	5.15
	135	5.8	145	5.25	155	4.7
	165	4.8	180	4.65	190	4.65
	205	5.05	215	5.1	225	5.05
	235	4.9	250	4.3	270	4.0
	280	4.15	295	4.2	305	4.5
	315	4.1	325	3.9	330	4.25
	335	4.3	345	4.4	350	4.95
171+55	0	4.75	15	4.35	40	4.8
	55	4.95	65	4.95	80	4.65

	Deg	Dist	Deg	Dist	Deg	Dist
171+55	90	6.45	100	4.5	105	4.9
(Con't)	115	4.85	125	5.1	135	5.4
	145	5.0	160	4.45	180	4.35
	190	4.45	210	4.8	220	5.0
	225	5.15	240	4.45	260	4.60
	270	4.65	280	4.9	295	4.95
	310	5.15	315	4.95	330	4.75
	340	5.1	350	5.05		
171+50	0	5.7	20	4.15	30	3.95
	45	3.95	55	4.2	65	3.9
	75	4.2	90	4.0	105	4.8
	115	4.85	135	5.2	145	4.85
	160	4.45	180	4.4	200	4.45
	215	4.75	230	5.3	245	5.2
	260	5.05	270	5.1	285	5.0
	300	5.2	315	5.4	330	5.75
	340	5.4	350	6.0		

	Deg	Dist	Deg	Dist	Deg	Dist
171+45	0	4.4	10	4.9	20	5.1
	30	4.65	40	4.7	50	4.5
	60	4.1	70	3.95	80	4.1
	90	4.2	100	4.35	130	5.2
	145	4.85	160	4.65	170	4.55
	180	4.4	190	4.35	200	4.25
	220	4.5	230	4.9	240	5.1
	255	4.45	270	5.7	290	6.2
	295	5.1	310	5.15	315	4.6
	320	4.55	330	4.9	340	4.95
	345	5.55	350	5.7		
171+40	0	4.95	20	5.15	25	4.70
	40	6.0	45	5.05	65	5.3
	75	5.75	85	5.7	90	5.5
	95	5.7	100	5.5	120	5.2
	135	5.3	145	5.0	155	5.0
	165	4.55	180	4.5	190	4.35
	200	4.85	215	5.35	220	4.95

	Deg	Dist	Deg	Dist	Deg	Dist
171+40	230	5.3	240	5.3	255	5.8
(Con't)	260	5.35	270	5.9	280	6.0
	290	6.4	305	6.0	325	6.1
	330	5.4	340	6.5	350	5.3
171+35	0	5.5	15	5.15	30	5.0
	40	5.35	60	6.6	65	5.65
	80	6.0	85	5.05	90	4.7
	110	4.15	115	4.75	130	4.8
	140	4.9	155	4.35	170	4.1
	180	3.95	190	3.95	215	4.65
	230	5.1	240	5.5	245	5.6
	255	5.0	265	5.1	270	4.9
	280	5.2	290	5.35	305	5.7
	320	6.5	335	6.6	345	6.0
	350	5.8				
171+30	0	4.65	15	4.3	30	4.25
	50	4.55	65	4.4	80	4.6

	Day	Dist	Day	Dist	Day	
171+30	90	4.65	105	4.4	115	4.8
	130	5.1	135	4.6	145	4.75
	155	4.4	170	4.3	180	4.15
	195	4.1	205	4.05	220	4.55
	235	5.15	240	5.2	250	4.85
	260	4.95	270	4.8	280	4.7
	290	4.75	300	4.7	315	5.0
	330	5.3	340	5.2	350	4.8
171 +26.5	0	5.9	10	5.75	20	5.55
Cutoff	30	5.4	40	5.3	55	5.15
Collar	70	5.3	80	5.2	90	5.2
	105	5.25	120	5.3	130	5.35
Bottom of	140	5.55	150	5.1	165	4.75
Grove = 1' wide	180	4.65	195	4.8	205	5.05
	220	5.2	240	5.15	250	5.45
	270	5.15	285	5.2	300	5.25
	315	5.3	325	5.5	335	5.65
	345	5.8	350	5.8		

	Day	Dist	Day	Dist	Day	Dist
171 +25	0	5.1	10	5.0	20	4.5
	30	4.4	35	4.05	45	4.15
	60	4.0	75	3.9	90	4.35
	100	4.1	105	4.4	115	4.55
	130	5.1	145	4.55	155	4.2
	165	4.4	170	4.6	180	4.5
	195	4.7	205	4.85	220	5.0
	230	5.25	240	5.45	250	4.8
	270	4.45	285	4.2	300	4.5
	315	4.4	330	4.25	345	4.5
	355	4.95				
171+20	0	4.7	15	4.65	30	4.45
	45	4.3	60	4.15	70	3.9
	80	4.0	90	3.9	105	4.45
	115	4.8	125	4.75	135	4.75
	145	4.9	155	4.7	170	4.5
	180	4.25	195	4.35	210	4.55
	220	4.8	230	4.8	240	4.6

	Day	Dist	Day	Dist	Day	Dist
171+20	255	4.6	260	3.9	270	4.0
(Con't)	285	4.05	300	4.05	315	4.1
	325	4.35	330	4.55	340	4.75
	350	4.7				
171+15	0	5.15	10	4.75	25	4.9
	40	5.0	50	4.9	55	4.4
	70	4.15	80	4.25	90	4.3
	100	3.8	105	4.3	115	4.3
	130	5.0	140	4.9	150	4.55
	170	4.25	180	4.2	195	4.1
	205	4.3	225	4.6	235	5.0
	245	4.55	250	4.7	270	4.15
	285	4.2	295	4.25	310	4.45
	317	5.15	325	5.0	330	5.35
	335	5.6	345	5.4	350	5.2
171+10	0	6.2	15	6.2	25	5.4
	35	4.6	50	4.45	60	4.0

	Deg	Dist				
171+10	75	4.2	90	4.0	110	4.15
(Cont)	125	4.4	140	5.0	150	4.4
	165	3.9	180	3.8	195	3.85
	205	4.05	225	4.5	235	4.5
	250	4.85	270	4.55	285	4.6
	290	4.5	300	4.8	310	5.3
	330	5.5	340	5.8	350	6.0
171+05	0	5.6	15	5.1	30	4.85
	45	4.6	55	4.7	65	4.1
	75	4.1	90	4.35	110	4.15
	135	4.6	150	4.2	180	3.7
	200	3.95	220	4.55	230	4.65
	245	4.65	260	5.1	270	4.8
	285	4.55	295	4.55	310	5.05
	325	5.55	335	5.3	345	5.3
171+00	0	4.75	15	4.65	30	4.2
	40	4.0	55	4.05	70	4.4

	Deg	Dist	Deg	Dist	Deg	Dist
171+00	90	4.2	105	4.5	115	5.0
(Con't)	130	5.5	140	4.65	155	4.5
	165	4.15	180	3.7	200	3.85
	220	4.35	230	4.85	250	4.25
	270	4.4	285	4.5	295	4.7
	310	5.2	325	5.0	330	4.85
	340	5.5	350	5.0		
170+95	0	5.33	15	4.8	35	4.6
	55	5.0	75	6.1	80	6.5
	90	6.0	105	5.75	125	6.2
	130	5.65	145	5.0	160	4.6
	180	4.15	195	4.15	225	5.0
	230	5.1	240	4.5	260	4.5
	270	4.2	285	4.45	300	5.0
	320	5.5	330	6.0	340	6.2
	350	5.9				

170+90	0	6.0	10	5.8	25	5.65
	50	6.1	60	5.65	70	5.7
	90	5.6	105	5.5	120	6.0
	140	4.65	155	4.3	165	4.3
	175	4.05	180	3.95	200	4.1
	210	4.25	235	4.55	245	4.95
	265	5.25	285	4.9	300	4.5
	320	4.7	335	5.1	355	5.2
170+85	0	5.75	15	5.55	35	5.6
	45	5.15	60	4.6	70	5.1
	85	5.55	90	4.65	105	4.7
	120	4.3	135	4.5	155	4.0
	170	4.15	180	4.1	190	4.1
	210	4.2	220	4.65	235	5.3
	250	5.45	260	5.35	270	5.15
	290	5.2	300	5.4	305	5.6
	315	5.5	325	5.8	330	6.3
	340	6.2	350	6.4		

	Day	Dist	Day	Dist	Day	Dist
170+80	0	5.2	25	5.3	30	4.6
	40	4.3	50	4.3	65	4.2
	80	4.0	90	4.5	105	3.95
	115	4.1	130	4.8	140	4.7
	155	4.3	170	4.25	180	4.25
	190	4.35	210	4.7	215	4.5
	230	4.75	245	4.8	255	4.9
	270	4.55	290	4.8	305	5.15
	320	5.05	340	5.35	350	5.1
170+75	0	5.5	10	4.2	20	4.5
	35	4.6	50	5.0	60	4.6
	75	4.4	90	4.5	110	4.2
	120	4.7	135	5.0	150	4.65
	165	4.35	180	4.15	200	4.35
	210	4.15	230	4.4	247	4.1
	260	4.7	270	4.7	300	4.25
	315	4.45	325	5.05	335	5.7
	352	495				

170+70	0	5.15	15	4.55	30	4.6
	40	5.3	60	5.75	65	5.05
	80	4.8	90	4.6	100	4.7
	110	4.7	115	5.2	130	5.4
	135	4.8	155	4.15	165	4.2
	180	4.2	205	4.55	215	4.45
	225	4.3	240	4.05	260	4.55
	270	4.6	280	4.35	290	3.95
	305	4.15	325	3.9	340	4.0
	350	4.5				
170+65	0	5.1	15	4.3	25	3.9
	30	4.75	45	5.1	60	5.6
	70	5.35	80	4.9	90	5.0
	100	5.6	110	5.4	125	5.3
	130	4.6	142	4.65	150	4.45
	165	4.15	180	4.1	195	4.1
	215	4.45	235	4.5	245	5.0
	270	4.25	290	4.0	305	4.3

170+65	325	4.8	3.40	4.35	350	4.3
(Con't)	355	4.8				
170+60	0	4.85	15	5.2	30	5.0
	45	4.95	50	4.6	70	5.05
	90	5.0	95	5.1	105	4.55
	115	4.35	125	4.6	135	4.35
	140	4.65	150	4.7	165	4.4
	180	4.05	195	4.55	215	4.75
	230	4.85	240	4.4	250	4.9
	270	4.55	295	4.5	310	4.3
	325	4.55	340	4.4	350	4.7
170+55	0	5.15	10	5.5	20	5.0
	30	4.9	45	4.7	60	4.8
	75	5.5	85	5.4	90	4.95
	100	5.35	110	4.9	112	5.25
	120	5.35	135	5.3	145	4.75
	160	4.4	~~195~~ 180	4.3	195	4.4

170+55 (Con't)	205	4.2	225	4.8	240	4.6
	260	5.0	270	4.7	290	4.95
	300	3.8	320	5.1	330	4.9
	350	4.4				
170+50	0	5.55	25	4.9	60	5.3
	70	5.25	80	4.75	90	5.0
	100	4.65	105	5.2	115	5.2
	130	5.5	140	4.7	155	4.05
	170	4.1	180	4.25	195	4.3
	210	4.9	225	5.35	235	5.1
	245	5.7	270	5.3	300	5.5
	320	4.4	325	4.95	340	4.8
	350	5.1				
170+45	0	5.7	10	5.6	20	5.3
	35	5.4	45	5.25	50	4.7
	65	4.9	80	4.5	90	4.4
	100	4.6	110	4.45	120	5.1

170 +45 (Con:t)	130	5.6	140	5.0	155	4.1
	165	4.0	180	4.15	200	4.4
	215	5.0	240	6.3	250	5.4
	270	5.1	280	4.8	295	4.55
	305	4.3	320	4.55	330	5.6
	340	5.15	350	5.2		
170 +40	0	4.15	20	4.75	30	5.4
	45	4.9	55	4.15	65	4.8
	80	5.0	90	5.15	100	4.55
	106	4.1	120	4.6	135	5.3
	150	4.25	160	4.4	170	4.2
	180	4.05	200	4.3	220	4.85
	233	5.6	250	5.25	270	5.0
	285	4.9	305	4.75	325	4.4
	335	4.6	340	5.0	350	4.35
170 +35	0	5.0	12	5.1	18	4.15
	30	4.1	45	4.45	60	5.2

170 +35 (Con't)	70	4.95	80	4.75	90	4.7
	105	4.5	115	4.8	130	4.6
	140	4.75	155	4.2	165	4.25
	180	4.15	195	4.05	205	4.05
	225	4.65	240	4.0	257	3.95
	265	4.25	270	4.2	280	4.1
	290	4.6	305	5.8	310	5.4
	330	5.1	340	4.7	345	5.15
	350	5.0				
170 +30	0	4.5	10	4.7	20	4.55
	30	4.7	45	5.0	60	4.8
	75	4.95	90	5.05	95	5.15
	115	4.4	125	4.7	138	5.3
	145	4.9	165	4.1	180	3.9
	190	3.8	205	4.5	220	4.95
	228	5.7	243	4.85	270	5.15
	275	5.3	280	4.95	290	4.65
	300	4.65	310	5.2	320	4.95

170 +30 (Cont)	330	4.6	340	4.7	350	4.6
170 +25	0	4.85	12	5.1	20	4.45
	35	4.4	50	4.25	70	4.5
	90	4.05	110	4.15	125	4.6
	137	5.2	145	5.0	155	4.6
	180	4.25	200	4.25	270	4.85
	230	5.05	245	5.0	270	4.45
	280	4.1	295	4.3	305	4.95
	315	5.4	330	5.15	340	4.85
	350	5.8				
170 +20	0	5.75	10	5.25	30	5.65
	40	5.5	45	5.1	65	5.25
	80	4.65	90	4.4	105	4.8
	120	4.65	130	4.6	140	5.1
	150	4.65	165	4.4	180	4.4
	190	4.25	205	4.25	215	4.05
	235	4.35	255	4.1	270	4.25

170 +20 (Con't)	290	4.5	305	4.8	315	5.35
	330	5.2	340	5.7	3.50	6.0
170 +15	0	5.8	10	5.6	25	5.25
	35	4.65	50	4.8	60	4.9
676	70	4.85	90	4.65	105	4.25
	115	4.85	125	4.95	135	5.3
	145	5.0	152	4.3	155	4.55
	170	4.5	180	4.5	200	4.7
	215	5.05	220	5.4	230	5.3
	245	4.9	255	4.45	260	4.8
	270	5.1	280	5.45	310	6.5
	320	6.4	330	6.8	3.40	6.3
	350	6.2				
170 +10	0	5.15	20	5.0	40	4.85
677	65	5.2	80	5.15	90	5.15
	105	5.0	112	4.25	130	4.45
	140	5.1	150	4.65	180	4.45

170+10 (Con't)	205	4.25	225	4.7	240	4.7
	270	4.45	290	4.9	305	4.6
	320	5.2	340	5.45	345	5.0
	350	5.1				
170+05	0	4.9	20	5.15	35	5.3
	40	5.0	50	5.2	60	5.35
678	80	5.15	90	6.5	100	6.0
	110	5.6	115	6.1	120	5.5
	130	5.55	140	5.2	150	4.7
	180	4.4	205	4.5	220	4.85
	245	4.0	265	3.95	280	4.0
	300	4.35	320	4.8	335	4.6
	345	4.95	350	4.55		
170+00	0	5.0	10	5.25	20	5.35
679	35	5.3	45	5.5	55	5.1
	65	5.3	70	5.5	90	5.85
	100	5.8	115	5.9	130	5.8

	Deg	Dist				
170+00 (Con't)	150	4.8	180	4.35	200	4.4
	220	4.85	245	4.2	265	3.85
	290	4.6	310	5.2	325	5.25
	335	5.35	345	5.4		
169+95 680	0	5.5	20	5.4	35	5.15
	50	5.4	70	5.15	80	5.35
	90	5.45	100	5.3	110	5.6
	127	6.3	140	5.5	160	4.4
	180	4.25	200	4.35	220	4.85
	230	5.2	250	5.0	270	5.3
	290	5.3	305	5.5	315	6.2
	330	5.65	345	5.85		
169+90 681	0	5.7	20	49	35	5.15
	45	5.5	60	5.05	70	4.8
	80	4.4	90	4.25	100	4.45
	110	4.75	120	5.0	130	5.8
	145	4.65	160	4.5	180	4.35

	Deg	Dist	Deg	Dist	Deg	Dist
169+90	200	4.3	220	4.7	235	5.5
(Con't)	245	5.25	255	5.2	270	5.6
	290	5.5	305	6.0	315	5.8
	320	5.1	335	5.4	350	5.3
169+85	0	5.85	10	5.8	25	5.65
682	40	5.2	60	5.35	70	4.9
	80	5.2	90	4.65	100	4.45
	110	4.75	120	5.3	135	5.2
	145	4.75	160	4.25	180	4.15
	200	4.25	225	5.1	240	4.4
	260	4.2	270	4.05	280	4.45
	300	4.3	320	4.5	330	4.7
	340	5.5	350	5.6		
169+80	0	5.35	20	5.1	35	5.0
683	50	4.9	65	5.0	70	5.4
	90	5.6	105	5.25	115	5.35
	125	5.1	135	4.95	145	4.9

169+80 (Con't)	150	4.6	180	4.4	200	4.2
	215	4.3	230	4.8	240	4.70
	250	4.15	270	4.3	290	4.4
	300	4.35	320	4.5	330	4.35
	335	4.75	350	4.35		
169+75	0	5.1	15	4.7	25	4.6
684	40	4.65	55	5.2	65	5.25
	80	5.3	90	5.3	100	4.7
	115	5.1	125	5.15	135	5.2
	150	4.6	165	4.45	180	4.05
	200	4.25	220	4.6	230	4.65
	250	4.35	270	4.25	285	4.4
	305	4.8	320	4.6	330	4.6
	340	4.8	350	4.9		
169+70	0	4.8	20	4.6	30	4.6
685	40	5.0	60	4.3	75	4.05
	90	4.3	105	4.4	120	4.45

169+70	135	5.1	145	4.6	160	4.25
(Con't)	180	4.0	200	4.2	220	4.8
	230	4.9	240	4.65	250	4.55
	270	4.15	285	4.55	300	4.4
	315	4.7	330	4.6	340	4.95
	350	4.75				
169+65	0	4.75	15	5.0	30	4.8
686	40	4.6	60	4.25	70	4.2
	90	4.5	105	4.5	120	4.48
	130	4.9	140	4.65	150	4.2
	180	3.9	200	4.05	225	4.95
	235	5.2	245	4.6	260	4.5
	270	4.15	285	4.0	300	4.45
	320	4.3	335	4.3	350	4.65
169+60	0	4.8	15	4.6	30	4.5
687	40	4.1	60	4.8	70	4.9
	85	5.15	90	4.55	105	4.3

169+60 (Con't)	115	4.35	140	5.1	155	4.45
	180	4.0	200	4.3	210	4.7
	220	4.4	230	4.4	250	4.45
	260	4.2	270	3.95	290	4.05
	295	4.35	315	4.2	330	4.3
	350	4.3				
169+55	0	4.75	20	4.15	30	4.4
688	40	4.55	60	4.5	75	4.35
	90	4.6	100	4.35	110	4.4
	130	4.85	140	4.7	150	4.25
	180	3.85	200	4.25	225	4.65
	245	4.1	260	4.35	270	4.45
	290	4.3	305	4.5	310	4.7
	320	4.55	335	4.7	345	4.25
	355	4.7				
169+50	0	4.3	30	4.25	45	4.25
689	55	4.9	65	5.0	70	5.3

169 + 50	80	4.85	90	4.65	105	4.7
(Cont)	125	4.25	145	4.5	155	4.1
	180	4.1	200	4.15	220	4.6
	240	4.0	255	3.75	270	3.8
	285	4.3	305	4.8	320	4.7
	340	4.3	350	4.2		
169 + 45	0	4.65	20	4.45	30	4.45
690	45	4.4	60	4.05	75	3.95
	90	4.15	100	4.15	110	4.45
	125	4.25	130	4.6	140	4.55
	155	4.15	165	4.1	180	3.95
	195	4.05	215	4.35	230	4.1
	245	3.9	260	3.8	270	3.9
	285	3.7	300	3.85	320	4.1
	335	4.5	345	4.3	350	4.5
169 + 40	0	4.55	25	4.25	40	4.1
691	55	3.85	60	4.0	75	4.0

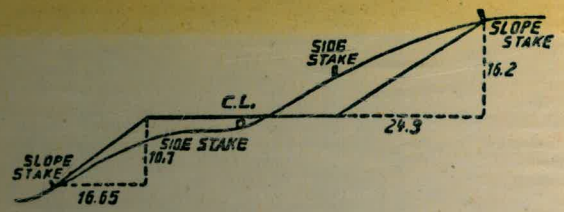
169+40	90	4.25	105	4.0	115	4.1
(Con't)	120	4.4	130	4.6	140	4.75
	150	4.35	165	4.15	180	4.15
	195	4.0	215	4.55	220	4.65
	230	4.0	245	3.85	260	4.1
	270	4.2	285	4.05	295	4.2
	310	4.6	330	4.1	325	4.8
	335	4.25	340	4.65	350	4.65
169+35	0	4.9	10	5.0	20	4.6
692	25	4.7	35	3.85	45	4.2
	60	4.2	65	4.4	80	4.15
	90	4.0	110	4.1	125	4.05
	140	4.55	155	4.25	180	3.95
	205	4.35	220	4.75	230	4.4
	250	4.45	~~255~~	~~4.85~~	270	4.45
	290	4.3	300	4.4	310	4.4
	330	4.6	335	5.0	345	5.3
	350	5.4				

169+30	0	4,45	15	4,25	25	4,5
693	40	4,25	55	4,25	70	4,2
	80	4,15	90	4,45	100	4,5
	110	4,35	120	4,25	135	5,15
	140	4,75	155	4,15	180	3,9
	200	4,1	220	4,6	240	4,05
	245	4,45	260	4,25	270	3,95
	290	4,0	310	4,3	325	4,4
	330	4,3	345	4,5		
169+25	0	4,7	15	5,0	25	5,3
694	30	5,3	45	5,15	55	4,8
	70	5,1	80	5,4	90	5,5
	110	7,0	120	7,0	130	5,4
	150	4,6	180	4,05	200	4,25
	215	4,65	220	4,95	240	4,3
	250	4,4	265	4,5	270	4,2
	290	4,2	310	4,4	320	4,4
	340	4,85	350	4,85		

169+20	0	5.45	15	4.75	40	4.55
695	55	4.85	75	6.0	90	6.1
	100	6.2	120	7.2	125	6.0
	135	5.5	150	4.4	180	4.0
	200	4.2	210	4.4	225	4.9
	250	3.8	270	3.65	290	4.15
	300	4.3	310	4.25	325	4.45
	340	5.35	350	5.5		
169 +15	0	5.0	20	4.1	30	4.4
696	45	4.3	55	4.55	65	4.85
	80	4.4	90	4.25	105	3.8
	120	3.8	135	4.3	150	4.35
	165	4.3	180	4.4	200	4.8
	210	5.1	220	4.55	240	4.0
	260	3.8	270	4.0	285	3.95
	300	3.85	305	4.2	320	4.25
	330	4.1	340	4.2	350	4.65

169+10	0	4,8	15	4,55	30	4,05
697	40	3,9	55	4,0	65	4,0
	85	4,15	90	3,85	105	3,75
	110	3,85	120	3,9	135	4,65
	140	4,95	155	4,5	180	4,35
	205	4,65	220	5,0	230	4,35
	240	4,4	250	3,8	260	4,1
	270	3,95	285	4,0	300	4,05
	320	4,2	330	4,4	340	4,85
	350	5,0				
169+05	0	4,4	15	4,2	30	4,0
698	40	3,85	55	4,1	65	4,2
	75	4,3	90	4,1	100	4,25
	130	4,65	140	4,75	160	4,1
	180	4,1	205	4,2	225	4,9
	245	4,1	270	3,7	285	3,8
	300	3,95	320	4,35	330	4,05
	345	4,1				

169+00	0	4,35	20	4,2	30	4,25
699	45	4,55	60	4,15	80	4,0
	90	3,9	100	4,05	110	4,25
	120	4,7	130	5,0	140	4,9
	155	4,55	180	4,2	200	4,15
	215	4,25	225	4,5	250	3,85
	270	3,85	290	3,5	300	3,5
	315	4,0	325	4,1	335	4,15
	345	3,75	355	4,1		



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.20	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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