

188

W700

ENGINEERS  
LEVEL BOOK  
NO. 4127

# 700

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be  $30.6 + (20 - 16) \times 2$  or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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542.51  
6.12  
536.39

35 x 2.9  
12" CM, 10  
11' cover  
45

Please Return to  
City of San Diego Water Dept.  
Room 268 Civic Center  
Telephone Main 5161

This Field Book is manufactured of a High Grade 50% Rag Paper having a WATER RESISTING SURFACE, and is sewed with Bing Special Enamel Waterproof thread.

Made in U. S. A.









Profile <sup>WASTE</sup> BRINE LINE FROM  
Alverado Tr. PLANT

	+	H.I.	-	Elev
	6.70	543.09 ✓		536.39
T. P. @ 0+00	0.19	538.23 ✓	5.05	538.04 ✓
+50			2.8	535.4 ✓
1+00			5.0	533.2 ✓
+50			7.6	530.6 ✓
2+00			10.0	528.2 ✓
+50			12.0	526.2 ✓
T. P.	1.27	527.69 ✓	11.81	526.42 ✓
3+00			4.1	523.6 ✓
+50			6.3	521.4 ✓
4+00			9.0	518.7 ✓
T. P.	1.13	515.92 ✓	12.90	514.79 ✓
+50			2.0	513.9 ✓
5+00			7.1	508.8 ✓
TP	0.17	503.14 ✓	12.95	502.97 ✓
+50			2.6	500.5 ✓
6+70			6.9	496.2 ✓
+78			10.5	492.6 ✓

8-22-46  
Clear-Hot

Nelson  
Leonard  
Eaton

2

B.M. TOP dant City. datun7

Hvb @ 0+00 center pt Layout AXIS.

503.14 ✓

5789 10.7 492.4 ✓

T.P 0.03 490.49 ✓ 12.68 490.46 ✓

6+00 1.0 490.5 ✓

T.P 0.55 ✓ 478.49 ✓ 12.55 477.74 ✓

+50 3.9 474.6 ✓

+84 12.7 465.8 ✓

7+00 17.8 460.7 ✓

+07 18.3 460.2 ✓

+12 14.2 464.3 ✓

+50 2.3 476.2 ✓

T.P 10.54 487.73 ✓ 1.30 477.19 ✓

+68<sup>03</sup> 2.1 485.6 ✓

8+00 3.4 484.3 ✓

+50 5.7 482.0 ✓

9+00 8.0 479.7 ✓

+50 9.7 478.0 ✓

T.P 0.09 ✓ 474.76 ✓ 13.05 474.68 ✓

10+00 0.3 474.5 ✓



474.76 ✓

10+50 4.2 470.6

11+00 6.0 68.8

+50 8.9 65.9

12+00 11.7 63.1

T.P. 0.03 461.79 ✓ 13.00 461.76 ✓

+50 2.0 59.8

13+00 4.9 56.9

+50 7.8 54.0

14+00 10.80 51.0

Set P.P. B.M. 0.16 451.54 ✓ 10.41 451.38 ✓

+50 4.7 46.8

15+00 6.9 44.6

+50 10.6 40.9

T.P. 0.28 438.88 ✓ 12.94 438.60 ✓

16+00 0.7 38.2

+50 3.4 35.7

17+00 6.7 32.2

+50 9.5 29.4

Hdwall Leftside Highway opp 14+00

438.88 ✓

18+00 12.4 426.5

T.P. 0.59 426.69 ✓ 12.78 426.10 ✓

+50 3.0 23.7

19+00 5.9 20.8

+50 9.2 17.5

20+00 12.2 19.5

T.P. 0.12 413.73 ✓ 13.08 413.61 ✓

+50 2.2 11.5

21+00 5.4 8.3

+50 7.5 6.2

22+00 9.5 4.2

+50 11.3 2.4

23+00 13.4 400.3

TP +50 0.11 400.78 ✓ 13.06 400.67 ✓

+50 2.2 398.6

24+00 3.8 397.0

+50 5.5 395.3

25+00 7.5 393.3 ✓

5



	400.78 ✓✓		
+50		9.3	391.5
26+00		11.1	389.7
T.P	0.34	388.15 ✓✓	12.97 387.81 ✓✓
+50		0.6	387.6 ✓
27+00		2.5	385.7 ✓
+50		4.1	384.1 ✓
28+00		5.5	382.7 ✓
+50		6.0	382.2 ✓
+60		6.0	382.2 ✓
+74		13.2	375.0 ✓
29+00		13.6	374.6 ✓
+13		8.6	379.6 ✓
+25		7.6	380.6 ✓
+50		6.0	382.2 ✓
30+00		5.8	382.4 ✓
+50		4.9	383.3 ✓
T.P		2.45	385.70 ✓✓
CK B.M.		5.13	383.02 + 6.12

= 389.14 = 389.12<sup>B.M.</sup> ON RT Wheel Guard of Bridge

	12.35	398.05 ✓		385.70 ✓
31700			12.6	385.5
+50			8.8	389.3
32700			5.1	393.0 ✓
+50			1.1	397.0
T.P.	12.03	409.81 ✓	0.27	397.78 ✓
33700			9.0	400.8
+50			5.0	404.8
34700			1.1	408.7
T.P.	12.23	422.03 ✓	0.01	409.80 ✓
+50			9.2	412.8
35700			5.4	416.6
+50			1.8	420.2
T.P.	12.80	439.47 ✓	0.36	421.67 ✓
36700			10.6	423.9
+50			7.0	427.5
37700			2.7	431.8
T.P.	12.71	446.78 ✓	0.40	434.07 ✓
+50			11.3	435.5

T.P



446.78 ✓ ✓

38+00 7.6 439.2

+50 7.4 442.4

39+00 0.5 446.3

T.P. 11.89 458.38 ✓ 0.29 446.49 ✓

+50 8.2 450.2

40+00 7.6 453.8

+50 1.3 457.1

T.P. 10.95 469.27 ✓ 0.06 458.32 ✓

41+00 8.8 460.5

Set  
B.M. 4.60 464.67 ✓

+50 6.5 462.8

42+00 3.9 465.4

+50 1.3 468.0

T.P. 10.32 479.59 ✓ 0.00 469.27 ✓

43+00 5.0 474.6 ✓

+50 6.4 473.2 ✓

44+00 5.1 474.5 ✓

44+15 5.0 474.6 ✓

8

TOP FIRE PLUG OPP STA 41+25

477.59 ✓✓

44+50 5.1 474.5

45+00 6.0 473.6

+50 7.4 472.2

46+00 8.9 470.7

+50 10.4 469.2

47+00 12.0 467.6

T.P. 1.63 469.40 ✓✓ 11.82 467.77 ✓✓

+50 3.3 466.1

48+00 4.8 464.6

+30 5.6 463.8

+50 4.9 464.5

+67 4.7 464.7

49+00 5.6 463.8

+50 5.8 463.6

50+00 6.4 463.0

+50 6.9 462.5

51+00 7.8 461.6

+50 9.0 460.4

E1 C2 J017



469.90 ✓

44+ 52+00 10.6 458.8

45+ T.P. BM 7.31 468.18 ✓ 8.53 460.87 ✓

#71097  
Nail in Pole RT STA 52+23

+50 8.6 459.6

46 53+00 7.9 460.3

+50 7.2 461.0

47 54+00 6.4 461.8

T.P. +50 5.4 462.8

55+00 4.3 463.9

48 +50 3.2 465.0

56+00 2.5 465.7

+50 1.8 466.9

57+00 1.9 466.8

+50 1.7 466.5

4 T.P. 1.45 467.96 ✓ 1.67 466.51 ✓

50 58+00 2.2 465.8

+50 3.1 464.9

5 59+00 4.4 463.6

+50 5.5 462.5

467.96 ✓✓

60+00		6.6	461.4
+50		7.3	460.7
61+00		7.8	460.2
+50		8.3	459.7
62+00		8.8	459.2
T.P.	4.12	463.35 ✓	8.73 459.23 ✓
+50		4.4	459.0
63+00		4.5	458.9
+50		4.6	458.8
64+00		4.6	458.8
+50		4.8	458.6
65+00		5.0	458.4
+50		5.2	458.2
66+00		5.2	458.2
+50		5.3	458.1
67+00		5.6	457.8
+50		5.6	457.8
T.P.	1.49	459.41 ✓	5.43 457.92 ✓

11.



✓✓  
459.41

68+00 1.7 457.7

+50 2.0 457.4

69+00 2.5 456.9

+50 2.8 456.6

70+00 3.2 456.2

+50 3.7 455.7

71+00 4.5 454.9

+50 5.1 454.3

72+00 5.7 453.7

+50 6.3 453.1

73+00 6.8 452.6

+50 7.3 452.1

74+00 8.0 451.4

+50 8.7 450.7

75+00 9.3 450.1

P.I +15 9.6 449.8

I.P. 0.37 454.90 ✓✓ 4.88 454.53 ✓✓

B.M. 0.37 454.90 ✓✓ 4.88 454.53 ✓✓

+50 7.9 447.1

TOP FIRE PLUG Left sta 73+85

459.70 ✓

76+00

11.9 443.0

T.P.

13.07 441.83 ✓

CROSS SECTIONS OPEN DITCH 13.  
Espoil BANK parallel to LA MESA  
SEWER NEAR ALAMO ST

M.H. 40+38.9  
38+31  
35+00  
30+01

LA MESA  
SEWER  
STATIONS

LA MESA SEWER LINE

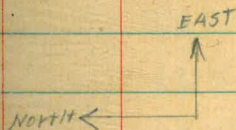
+0.7 +0.3 -3.0 -4.4 +1.3 +5.1 +0.2 0.0 40+60  
30 25 19 8 6 11 16 SEWER #  
= -4.0

+0.8 +0.1 -3.5 -4.4 -3.4 0.0 +4.0 +5.5 0.3 0.0 38+48  
32 24 19 10 7 6 3 14 19 SEWER #  
-6.4

-0.5 -0.7 -4.2 -4.5 -4.0 -0.1 +4.8 -0.3 0.0 37+31  
35 28 22 15 11 8 11 16 SEWER #  
-6.3

8-28-46

Clear-Ho T



NE 1/5 OF  
LEONARD  
EATON



Bliss  
Fabr  
Newell  
Baker  
8/8/47

Spring line offsets  
Grossmont Tunnel

	Lt	Rt
721	3.78	3.49
22	3.84	3.89
23	3.67	3.57
24	3.68	3.67
25	3.64	3.67
26	3.75	3.60
27	3.80	3.56
28	3.82	3.55
29	3.76	3.55
730	3.72	3.55
31	3.70	3.55
32	3.66	3.58
33	3.69	3.58
34	3.72	3.51
35	3.70	3.54
36	3.62	3.60
37	3.64	3.60

14

BM	5.04	554.58	549.54	Mon #9
721			230 mb 720 +2.35	556.93 556.75
22			+2.41	56.99 "
23			+2.30	56.88 "
24			+2.35	56.93 556.83
25			+2.37	56.95 "
26			+2.40	56.98 556.84
27			+2.43	57.01 "
28			+2.38	56.96 "
29			+2.50	57.08 "
730			+2.45	57.03 "
31			+2.48	57.06 "
32			+2.32	56.90 556.76
33			+2.28	56.86 556.77
34			+2.34	56.92 "
35			+2.32	56.90 "
36			+2.31	56.89 "
37			+2.29	56.87 "

	Lt	Rt
38	368	356
39	366	358
740	362	362
41	363	361
42	366	361
43	358	366
44	355	371
45	367	358
46	363	357
47	361	363
48	365	362
49	365	361
750	360	363
51	359	366
52	360	365
53	355	365
54	352	367
55	346	369

	T 554.58	15
738	+2.28	556.86 556.77
39	+2.28	56.86 556.78
740	+2.32	56.90 "
41	+2.34	56.92 "
42	+2.34	56.92 "
43	+2.35	56.93 "
44	+2.37	56.95 "
45	+2.39	56.97 556.79
46	+2.34	56.92 "
47	+2.35	56.93 "
48	+2.40	56.98 "
49	+2.38	56.96 "
750	+2.40	56.98 "
51	+2.40	56.98 556.80
52	+2.39	56.97 "
53	+2.42	57.00 "
54	+2.42	57.00 "
55	+2.41	56.99 "



LT	RT	
756	352	3.65
57	358	3.55
58	359	3.58
59	360	3.62
760	356	3.65
61	361	3.68
62	360	3.65
63	354	3.70
64	351	3.75
65	345	3.73
66	355	3.68
67	362	3.65
68	360	3.65
69	357	3.70
770	360	3.68
71	358	3.70
72	358	3.70
73	353	3.70

	$\pi$ 55458		16
756	+2.49	557.07	556.80
57	+2.45	57.03	"
58	+2.43	57.01	556.81
59	+2.40	56.98	"
760	+2.40	56.98	"
61	+2.56	57.14	556.89
62	+2.59	57.17	"
63	+2.55	57.13	"
64	+2.49	57.07	556.90
65	+2.40	56.98	556.82
66	+2.38	56.96	"
67	+2.39	56.97	"
68	+2.60	57.18	556.90
69	+2.50	57.08	"
770	+2.55	57.13	556.91
71	+2.53	57.11	"
72	+2.56	57.14	"
73	+2.36	56.94	556.83

wt	wt	wt
774	3.44	3.80
75	3.42	3.78
76	3.45	3.75
77	3.51	3.70
78	3.58	3.72
79	3.60	3.66
780	3.56	3.66
81	3.56	3.70
82	3.60	3.70
83	3.66	3.64
84	3.66	3.62
85	3.72	3.54
86	3.63	3.71
87	3.55	3.80
88	3.45	3.75
89	3.50	3.75
790	3.60	3.67
91	3.55	3.67

	554.58	17
774	+2.39	556.97 556.83
75	+2.42	57.00 "
76	+2.51	57.09 556.92
77	+2.55	57.13 "
78	+2.43	57.01 "
79	+2.56	57.14 "
780	+2.41	56.99 556.84
81	+2.42	57.00 "
82	+2.52	57.10 556.92
83	+2.38	56.96 556.85
84	+2.54	57.12 556.93
85	+2.55	57.13 "
86	+2.52	57.10 "
87	+2.51	57.09 "
88	+2.44	57.02 556.86
89	+2.39	56.97 "
790	+2.40	56.98 "
91	+2.42	57.00 "



	Lt	Rt
792	355	367
793	358	365
94	356	367
95	355	375
96	360	366
97	366	360
98	365	364
99	362	363
800	363	364
01	362	365
02	365	364
03	363	364
04	371	352
05	373	353
06	361	361
07	365	364
08	361	370
09	361	372

557.58

181

792	+2.40	556.98	556.86
93	+2.40	56.98	"
94	+2.45	57.03	"
95	+2.59	57.17	556.95
96	+2.44	57.02	556.87
97	+2.48	57.06	"
98	+2.45	57.03	"
99	+2.45	57.03	"
800	+2.45	557.03	"
TX	-4.82	549.76	"

For 5/1/76  
 AS 80/76  
 100/300  
 FB 700 254-72  
 5M Mon  
 10.  
 Record 549.76

810	358	371
11	360	369
12	360	371
13	358	370
14	358	371
15	356	375
16	350	381
17	357	374
18	356	372
19	345	382
820	350	370
21	349	361
22	364	358
23	364	358
24	361	362
25	360	361
26	361	355
27	357	364



	Lt	Rt
828	350	370
29	354	370
830	360	363
31	363	365
32	360	361
33	360	369
34	362	368
35	360	370
36	360	372
37	356	372
38	357	366
39	366	365
840	354	370
41	363	366
42	375	356
43	368	363
44	370	358
45	380	354

	LT	RT
846	3.82	3.46
47	3.90	3.42
48	3.70	3.59
49	3.63	3.68
850	3.65	3.68
51	3.66	3.65
52	3.62	3.65
53	3.58	3.71
54	3.56	3.70
55	3.58	3.68
56	3.55	3.63
57	3.48	3.81
58	3.52	3.68
59	3.65	3.60
860	3.60	3.63
→ 61	3.68	3.58
Call Switch		3.56
62		3.61
63		3.61



	Lt	Rt
64		365
65		362
66		366
67		366
68		367
69		377
870		376
71		368
72		376
73		371
End Cal switch		
74	359	368
75	350	375
76	357	374
77	366	360
78	374	360
79	368	369
880	363	366
81	367	362

	Lt	Rt
82	358	375
83	350	380
84	352	372
85	342	380
86	340	378
87	355	369
88	352	371
89	354	372
890	348	370
91	356	374
92	346	378
93	348	377
94	351	374
95	354	372
96	355	376
97	360	368
98	351	370
99	342	385



	Lt	Rt
900	3.50	3.81
01	3.45	3.78
02	3.61	3.62
03	3.42	3.75
04	3.47	3.76
05	3.42	3.84
06	3.39	3.89
07	3.33	3.90
08	3.38	3.94
09	3.35	3.83
910	3.38	3.62
11	3.40	3.88
12	3.58	3.65
13	3.54	3.72
14	3.53	3.72
15	3.52	3.73
16	3.51	3.78
17	3.66	3.72

	LT	RT
918	3.57	3.63
19	3.62	3.68
920	3.59	3.70
21	3.55	3.74
22	3.65	3.66
23	3.54	3.71
24	3.60	3.69
25	3.62	3.67
26	3.66	3.66
27	3.62	3.71
28	3.60	3.67
29	3.61	3.69
930	3.63	3.62
31	3.55	3.70
32	3.60	3.68
33	3.62	3.67
34	3.60	3.70
35	3.65	3.68



	Lt	Rt
936	3.65	3.64
37	3.63	3.64
38	3.62	3.63
39	3.60	3.65
940	3.70	3.63
41	3.64	3.75
42	3.55	3.72
43	3.54	3.71
44	3.52	3.77
45	3.63	3.65
46	3.61	3.65
47	3.60	3.65
48	3.59	3.69
49	3.62	3.68
950	3.58	3.75
51	3.54	3.75
52	3.58	3.70
53	3.55	3.70

	Lt.	Rt.
254	354	370
55	358	370
56	356	3.72
57	3.48	3.80
58	3.68	3.64
59	3.63	3.66
360	3.62	3.64
61	3.64	3.64
62	3.65	3.65
63	3.65	3.66
64	3.64	3.59
65	3.62	3.66
66	3.58	3.62
67	3.68	3.62
68	3.68	3.57
69	3.68	3.64
970	3.55	3.74
71	3.60	3.69



	LT	RT
72	3.63	3.69
73	3.62	3.67
74	3.69	3.60
75	3.60	3.67
76	3.66	3.72
77	3.59	3.70
78	3.58	3.72
79	3.57	3.75
80	3.51	3.73
81	3.62	3.69
82	3.58	3.74
83	3.55	3.75
84	3.58	3.74
85	3.54	3.72
86	3.55	3.74
87	3.52	3.75
88	3.61	3.70
89	3.59	3.73

	LT	RT
90	3.56	3.74
91	3.55	3.74
92	3.58	3.66
93	3.60	3.72
94	3.61	3.68
95	3.64	3.67
96	3.60	3.71
97	3.65	3.66
98	3.60	3.70
99	3.56	3.74
1000	3.54	3.77
01	3.62	3.70
02	3.59	3.75
03	3.53	3.75
04	3.61	3.70
05	3.56	3.71
06	3.62	3.71
07	3.60	3.74



	Lt	Rt
1008	358	374
09	364	366
10/10	362	370
11	3.65	3.73
12	3.58	3.75
13	3.56	3.80
14	3.60	3.69
15	372	364
16	3.44	3.48
17	3.69	3.44
18	3.62	3.70
19	3.68	3.49
10 20	3.66	3.69
21	3.72	3.64
22	375	3.59
23	3.69	3.69
24	3.68	3.68
25	3.74	3.64

1026	3.66	3.60
27	3.68	3.62
28	3.64	3.70
29	3.63	3.64
30	3.68	3.66
31	3.60	3.63
32	3.64	3.69
33	3.65	3.69
34	3.67	3.64
35	3.66	3.65
36	3.64	3.69
37	3.70	3.64
38	3.70	3.66
39	3.67	3.70
1040	3.62	3.69
41	3.55	3.69
42	3.58	3.69
43	3.54	3.70



44	3.68	3.63
45	3.74	3.64
46	3.74	3.60
47	3.72	3.52
48	3.66	3.64
49	3.64	3.66
1050	3.58	3.52
51	3.74	3.54
52	3.67	3.58
53	3.65	3.69
54	3.61	3.75
55	3.58	3.74
56	3.58	3.75
57	3.66	3.73
58	3.65	3.75
59	3.62	3.71
1060	3.52	3.72
61	3.62	3.73

	LT	RT
1062	3.68	3.72
63	3.62	3.65
64	3.70	3.55
65	3.62	3.66
66	3.62	3.76
67	3.66	3.71
68	3.71	3.64
69	3.78	3.62
1070	3.70	3.68
71	3.60	3.69
72	3.57	3.77
73	3.58	3.79
74	3.61	3.70
75	3.65	3.60
76	3.62	3.71
77	3.66	3.72
78	3.62	3.65
79	3.70	3.58



1080	3.70	3.63
81	3.74	3.65
82	3.67	3.76
83	3.67	3.69
84	3.65	3.70
85	3.76	3.63
86	3.69	3.61
87	3.70	3.63
88	3.67	3.70
89	3.66	3.67
1090	3.66	3.73
91	3.65	3.63
92	3.70	3.55
93	3.75	3.62
94	3.72	3.68
95	3.69	3.64
96	3.64	3.76
97	3.63	3.70

for- 7 for- Alex 34

See FB 702 Page 73

517	555.22	550.05	
	+2.38	557.60	
	+2.30	57.60	557.48
	+2.41	57.63	"
	+2.45	57.67	"
	+2.31	57.53	"
	+2.36	57.58	"
	+2.39	57.61	557.49
	+2.36	57.58	"

for Ribbley  
Drill Bit  
on 23 501195

	LT	PT
1098	3.65	3.67
99	3.65	3.70
1100	3.65	3.68
01	3.64	3.67
02	3.66	3.75
03	3.68	3.75
04	3.67	3.67
05	3.66	3.67
06	3.68	3.68
07	3.67	3.67
08	3.64	3.69
09	3.66	3.69
1110	3.64	3.69
11	3.65	3.78
12	3.62	3.71
13	3.70	3.66
14	3.74	3.65
15	3.66	3.65

	for	Rib T 55522	Elevs for-	Elev	35
1098			+2.42	557.64	557.49
99			+2.40	57.62	"
1100			+2.35	57.57	"
01			+2.40	57.62	"
02			+2.36	57.58	557.50
03			+2.34	57.56	"
04			+2.39	57.61	"
05			+2.42	57.64	"
06			+2.38	57.60	"
07			+2.36	57.58	"
08			+2.36	57.58	557.51
09			+2.40	57.62	"
1110			+2.40	57.62	"
11			+2.47	57.69	"
12			+2.43	57.65	"
13			+2.60	57.82	"
14			+2.48	57.70	557.52
15			+2.43	57.65	"



	Lt	Rt
1116	371	364
17	368	364
18	374	364
19	369	364
1120	37~	373
21	369	360
22	368	362
23	367	367
24	360	373
25	365	37~
26	362	366
27	370	368
28	373	364
29	373	370
1130	362	362

	T 55522	36
1116	+2.44	557.66 557.52
17	+2.44	57.66 "
18	+2.41	57.63 "
19	+2.44	57.66 "
1120	+2.39	57.61 "
21	+2.41	57.63 557.53
22	+2.41	57.63 "
23	+2.48	57.70 "
24	+2.40	57.62 "
25	+2.38	57.60 "
26	+2.45	57.67 "
27	+2.42	57.69 557.54
28	+2.42	57.69 "
29	+2.43	57.65 "
1130	+2.47	57.69 "
check starting 817	-5.17	550.05 ✓
T Grand on 2.6 + 1130	+2.42	557.64 ✓

Invert Elevations on Rib

Rib #	+	π	-	Elev
BM	3.57	5340		549.83
#-16			4.31	549.09
-15T			4.30	549.10
-14T			4.34	549.06
-13T			4.39	549.01
-12T			4.40	549.00
-11T			4.40	549.00
-10T			4.41	548.99
-9T			4.46	548.94
-8T			4.42	548.98
-7T			4.45	548.95
-6T			4.45	548.95
-5T			4.47	548.93
-4T			4.47	548.93
-3T			4.43	548.97
-2T			4.43	548.97

Fish plate  
on N. Side  
Spur to E.  
part of  
Sec 1871  
p44

Spreaders or Cross Members

-1T			4.35	549.05
#1T			4.28	549.17
#2T				
T.P	5.03	5362	4.81	548.59
#18S			5.14	548.48
11			5.07	548.55
12			5.01	548.61
13			5.16	548.46
14			5.45	548.17
15			5.50	548.17
16			5.50	548.17
17			5.36	548.26
18			5.41	548.21
19			5.41	548.21
20			5.27	548.35
21			5.51	548.11

57

Bliss Notes  
King T  
Fahy-Rod  
8/11/97



553.62

22 S	5.50	548.12
23 "	5.49	548.13
24 "	5.62	548.00
25 "	5.62	548.00
26 "	5.55	548.07
27 "	5.56	548.05
28 "	5.58	548.04
29 "	5.46	548.16
30 "	5.54	548.08
31 "	5.44	548.18
32 "	5.40	548.22

Note Pigs from here to 139 Not available until Tunnel

T.P.	4.99	553.28	5.32	548.30	548.29
33 S			5.03	548.25	
34 "			5.08	.20	
35 "			5.03	.25	
36 "			5.01	.27	
37 "			4.79	.49	

38

553.28

38 S	4.80	548.48
39 T	4.50	.78
40 T	4.48	.80
41 T	4.52	.76
42 T	4.58	.70
43 S	4.72	.56
44 T	4.38	548.90
45 T	4.19	548.09
46 T	4.12	549.16
47 T	4.08	.20
48 T	4.03	.19
49 T	4.10	.18
50 T	4.09	.19
51 T	4.11	.17
52 T	4.14	.14
53 T	4.19	.09
54	4.25	.03
55	4.21	.07

553.78

56T	4.24	549.04
57	4.27	.01
58	4.26	.02
59	4.25	.03
60	4.22	.06
61	4.19	.09
62	4.30	548.98
63.5	4.72	548.56
64	4.73	.55
65	4.85	.43
66.5	4.94	.34
67.5	4.93	.35
68.5	4.90	.38
69.5	4.89	.39
70.5	4.82	.46
71.5	4.79	.49
72.5	4.79	.49
73.5	4.78	.50

39

553.28

74.5	4.72	548.56
75.5	4.40	.88
76.5	4.30	.98
77.5	4.49	.79
78.5	4.48	.80
79.5	4.53	.75
80.5	4.38	.90
81.5	4.40	.88
82.5	4.29	.99
83.5	4.37	.91
84.5	4.36	.92
85.5	4.34	548.94
T.P. Mon #2	3.86	549.42
BM	4.31	553.75
411 Steel Struts		
326.5	4.51	549.24
27	4.55	549.20
28	4.52	549.18
29	4.50	549.25

Mon. 6  
Sec. F.B.  
708.9.94



	+	π	-	Elev	Mon
307	4.31	553.75		549.44	#5
R.6# 330			5.00	548.75	
31			4.65	549.10	
32			4.79	548.96	
33			4.88	548.87	
34			4.87	548.88	
35			4.76	548.99	
36			4.79	548.96	
37			4.47	549.28	
38			4.60	549.15	
39			4.66	549.09	
340			4.68	549.07	
41			4.67	549.08	
42			4.46	549.29	
43			4.40	549.35	
44			4.50	549.25	
45			4.39	549.36	
46			4.54	549.21	
47			4.39	549.36	

					40
				55375	
348			4.45	549.30	
49			4.69	549.06	
350			4.67	549.08	
351			4.80	548.95	
52			4.89	548.86	
53			4.90	548.80	
54			4.82	548.93	
55			4.79	548.96	
56			4.66	549.04	
57			4.75	549.00	
58			4.79	548.96	
59			4.64	549.11	
360			4.52	549.23	
61			4.52	549.23	
62			4.52	549.23	
63			4.56	549.19	
64			4.64	549.11	
65			4.79	548.96	

553.75

366	5.03	548.72
67	4.95	548.80
68	4.80	548.95
69	4.77	548.96
370	4.76	548.99
71	4.80	548.95
72	4.75	549.-
73	4.75	549.-
74	4.76	548.99
75	4.70	549.05
76	4.57	549.18
77	4.52	549.23
78	4.59	549.16
79	4.68	549.07
80	4.50	549.25
81	4.44	549.31
82	4.52	549.23
83	4.82	548.93

553.75

41

84	4.69	549.06
85	4.70	549.05
86	4.52	549.23
87	4.56	549.19
88	4.76	548.99 South Rib Slip
89	4.57	549.18
390	4.49	549.26
91	4.48	549.27
92	4.53	549.27
93	4.59	549.16
94	4.60	549.15
95	4.61	549.14
96	4.48	549.27
97	4.51	549.24
98	4.44	549.41
99	4.59	549.16
400	4.61	549.14
1	4.47	549.28



553.75

402	4.69	549.06
3	4.60	549.15
4	4.68	549.07
5	4.75	549.~
6	4.58	549.17
7	4.70	549.05
8	4.64	549.11
9	4.75	549.~
410	4.60	549.15
11	4.62	549.13
12	4.47	549.28
13	4.44	549.31
14	4.44	549.31
15	4.50	549.25
16	4.49	549.26
17	4.48	549.27
18	4.51	549.24
19	4.61	549.14

553.75

420	4.65	549.10
21	4.61	549.14
22	4.61	549.14
23	4.37	553.81
28	4.72	549.09
24	4.75	549.06
25	4.60	549.22
26	4.62	549.20
27	4.55	549.26
28	4.52	549.29
29	4.56	549.25
30	4.57	549.24
1	4.50	549.31
2	4.50	549.31
3	4.48	549.43
4	4.45	549.36
5	4.46	549.35
6	4.34	549.27

553.81

437	4.65	549.16
38	4.62	549.19
39	4.68	549.13
40	4.42	549.39
41	4.42	549.39
42	4.45	549.36
43	4.53	549.26
44	4.44	549.37
45	4.50	549.31
46	4.48	549.33
47	4.50	549.31
48	4.45	549.36
49	4.48	549.33
50	4.54	549.27
51	4.54	549.27
52	4.54	549.27
53	4.53	549.28
54	4.50	549.31

553.81

43

455	4.45	549.36
56	4.48	549.33
57	4.54	549.27
58	4.60	549.21
59	4.54	549.27
60	4.50	549.31
61	4.46	549.35
62	4.46	549.35
63	4.48	549.33
64	4.49	549.32
65	4.48	549.33
66	4.49	549.32
67	4.48	549.33
68	4.46	549.35
69	4.49	549.32
70	4.52	549.29
71	4.54	549.27
72	4.53	549.28



553.81

473	4.51	549.30
74	4.47	549.34
75	4.54	549.27
76	4.55	549.25
77	4.51	549.30
78	4.51	549.30
79	4.50	549.31
80	4.49	549.32
81	4.48	549.33
82	4.48	549.33
83	4.48	549.33
84	4.48	549.33
85	4.45	549.36
86	4.42	549.39
87	4.44	549.37
88	4.46	549.35
89	4.47	549.34
90	4.46	549.35

553.81

44

491	4.50	549.31
92	4.52	549.29
93	4.51	549.30
94	4.53	549.28
95	4.55	549.26
96	4.50	549.31
97	4.44	549.37
98	4.47	549.34
99	4.54	549.27
500	4.60	549.21
1	4.56	549.25
2	4.55	549.24
T.P	4.73	554.17
	4.36	549.45
		549.49
3	4.83	549.30
4	5.00	549.17
5	5.02	549.11
6	4.91	549.26
7	4.85	549.32

554.17

508	4.81	549.36
9	4.82	549.35
510	4.79	549.38
11	4.85	549.32
12	4.91	549.26
13	4.95	549.22
14	4.96	549.21
15	4.99	549.18
16	4.98	549.19
17	4.87	549.30
18	4.92	549.23
19	4.99	.18
20	5.00	.17
21	5.00	.17
22	4.92	.25
23	4.88	.29
24	4.89	.28
25	4.87	.30

554.17

45

526	4.84	549.33
27	4.85	.32
28	4.81	.36
29	4.81	.36
30	4.79	.38
31	4.79	.38
32	4.78	.39
33	4.77	.40
34	4.79	.38
35	4.75	549.42
36	4.78	.39
37	4.81	.36
38	4.82	.35
39	4.77	.40
40	4.72	.35
41	4.71	.36
42	4.78	.39
43	4.82	549.35



554.17

544	4.83	549.34
45	4.83	.34
46	4.82	.35
47	4.74	.43
48	4.73	.44
49	4.71	.46
550	4.68	.49
51	4.73	.44
52	4.77	549.40
53	4.80	.37
54	4.75	.42
55	4.78	.39
56	4.78	.39
57	4.71	.46
58	4.71	.46
59	4.64	.53
560	4.67	.50
61	4.76	549.41

46

554.17

~~549.~~

562	4.83	549.34
63	4.83	.34
64	4.79	.38
65	4.80	.37
66	4.77	.40
67	4.78	.39
68	4.81	.36
69	4.80	.37
70	4.79	.38
71	4.78	549.39
72	4.91	.26
73	4.90	.27
74	4.88	.29
75	4.83	.34
76	4.81	.36
77	4.81	.36
78	4.78	.39
79	4.76	549.41

554.17

580	4.81	549.36
1	4.82	.35
2	4.90	.27
3	4.92	.25
4	4.87	.20
5	4.80	.37
6	4.71	.46
7	4.75	.42
8	4.78	.39
9	4.77	549.40
590	4.81	.36
1	4.80	.37
2	4.78	.39
3	4.74	.43
4	4.75	.42
5	4.78	.39
6	4.69	.48
7	4.64	549.53

47

554.17

598		4.64	549.53
9		4.62	.55
600		4.61	.56
T. 450	25408	4.59	459.58 459.58
1		4.52	549.52
2		4.59	.49
3		4.58	.50
4		4.57	.51
5		4.60	.48
6		4.55	.53
7		4.63	.45
8		4.62	.46
9		4.60	.48
610		4.59	.49
11		4.52	.56
12		4.47	.61
13		4.47	.61
14		4.59	549.49



Σ574.08

15	4.59	549.49
16	4.60	.48
17	4.62	.46
18	4.69	.39
19	4.74	.34
20	4.71	.37
21	4.66	.42
22	4.54	549.54
23	4.59	.49
24	4.58	.50
25	4.57	.51
26	4.73	.35
27	4.72	.36
28	4.78	.30
29	4.69	.39
630	4.75	.33
31	4.78	.30
32	4.72	549.36

48

Σ574.08

33	4.66	549.42
34	4.63	.45
35	4.55	.53
36	4.56	.52
37	4.62	.46
38	4.77	.31
39	4.60	.48
640	4.55	.53
41	4.52	549.52
42	4.56	.53
43	4.50	.58
44	4.56	.52
45	4.59	.49
46	4.60	.48
47	4.58	.50
48	4.61	.47
49	4.61	.47
650	4.59	549.49

554.08

651	4.60	549.48
52	4.74	.34
53	4.78	.30
54	4.74	.34
55	4.62	.46
56	4.62	.46
57	4.57	.51
58	4.58	.50
59	4.61	549.47
60	4.63	.45
61	4.65	.43
62	4.68	.40
63	4.64	.44
64	4.65	.43
65	4.69	.39
66	4.67	.41
67	4.62	.46
68	4.55	549.53

49

554.08

69	4.53	549.55
70	6.52	.56
71	6.52	.56
72	6.52	.56
T.P.	4.60	554.46
73	4.92	549.52
74	4.93	.53
75	4.89	.57
76	4.90	.56
77	4.94	.52
78	4.98	.48
79	5.00	.46
680	5.03	.43
1	4.94	.52
2	4.92	.54
3	4.90	.56
4	4.86	.60
5	4.87	.59



	554.46	4.93	549.53
686		4.89	549.57
7		4.95	.51
8		4.92	.54
9		4.89	.57
690		4.94	.52
1		4.95	.51
2		4.96	.50
3		4.82	.64
4		4.84	.62
5		4.89	.57
6		4.92	.54
7		4.90	.56
8		4.77	.69
9		4.76	.70
700		4.67	.79
1		4.59	549.87
2		4.40	550.06
3		4.30	550.10

50

	554.46		
4		4.42	550.04
5		4.35	549.91
6		4.69	.77
7		4.78	.68
8		4.80	.66
9		4.77	.69
710		4.71	.75
1		4.72	.74
2		4.73	.73
3		4.79	.67
4		4.84	.62
5		4.76	549.70
6		4.70	.76
7		4.73	.73
8		4.80	.66
9		4.80	.66
720		4.69	.77

554.46

721	4.63	549.83
722	4.64	.82
23	4.75	.71
24	4.80	.66
25	4.78	.68
26	4.78	.68
27	4.70	.76
28	4.71	.75
29	No struts	—
730	do do	—
31	do do	—
32	4.82	.64
33	4.79	.67
34	4.77	.69
35	4.80	.66
36	4.81	.65
37	4.90	.56
38	4.93	549.53

51

554.46

739	4.89	549.57
740	4.78	.68
1	4.74	.72
2	4.80	.66
3	4.83	.63
4	4.74	.72
5	4.75	.71
6	4.80	.66
7	4.78	.68
8	4.69	.77
9	4.71	.75
750	4.64	.82
1	4.69	.77
2	4.80	.66
3	No struts	—
4	do do	—
5	do do	—
6	do do	—



554.46

757	No struts	—
8	do do	—
9	do do	—
760	do do	—
T.P.	3.91	554.27
	4.10	550.36
761	4.47	549.80
2	4.45	.82
3	4.46	.81
4	4.57	.90
5	4.60	.67
6	4.62	.65
7	4.59	.68
8	4.50	.77
9	4.52	.75
770	4.54	.73
1	4.47	.80
2	4.49	549.78
3	No struts	—

554.27

52

774	No struts	—
5	do do	—
6	do do	—
7	do do	—
8	4.64	549.63
9	4.53	.74
780	4.51	.76
1	4.50	.77
2	4.57	.70
3	4.58	.69
4	4.52	.75
5	4.50	.77
6	4.55	.72
7	4.50	.77
8	4.47	.80
9	4.54	.73
790	4.50	.77
1	4.48	549.79

554.27

792 4.55 549.72

3 4.55 .72

4 4.48 .79

5 4.46 .81

6 4.50 .77

7 4.47 .80

8 4.49 .78

9 4.51 .76

800 4.50 .77

1 4.52 .75

2 4.51 .76

CHECK  
BM-Mon10

4.55 549.72

549.74

Record  
corrected  
to BM.

4.51 554.25

803 4.50 549.75

4 4.44 .81

5 4.45 .80

6 4.45 .80

7 4.43 .82

53

554.25

808 4.44 549.81

9 4.46 .79

810 4.46 .79

1 4.50 .75

2 4.44 .81

3 4.43 .80

4 4.44 .81

5 4.44 .81

6 4.38 .87

7 4.37 .88

8 4.39 .86

9 4.50 .75

820 No struts —

1 do do —

2 do do —

3 do do —

4 do do —

5 do do —



554.25

826	No struts	—
7	do do	—
8	do do	—
9	do do	—
830	do do	—
1	do do	—
2	do do	—
3	do do	—
4	do do	—
5	do do	—
6	do do	—
7	do do	—
8	do do	—
9	do do	—

840	4.36	.89
1	4.38	.87
2	4.40	.85
3	4.50	549.75

554.25

844	4.55	549.70
5	4.57	.68
6	4.49	.76
7	4.47	.78
8	4.47	.78
9	4.47	.78
850	4.50	.75
1	4.62	.63
2	4.56	.69

check  
Mon  
#10

451 549.74

See FB

708

p44

JH Aug 47

54

Bliss Notes

King T

Fahy 8/12/47

Check BM

+63

+52<sup>E</sup>

449

+54

Elevation

448.132<sup>05</sup>432.143<sup>82</sup>432.143<sup>7</sup>

432.140

182<sup>35</sup>

+74

+64

TP.

+25

+13

438

437.62<sup>82</sup>

Set BM.

JM.

Profile of a Portion of

4.28 549.97

8.1 545.1

4.9 548.2

5.3 547.9

5.1 548.1

4.9 548.3

4.7 548.5

4.8 548.4

4.7 548.5

3.3 549.9

4.16 553.15<sup>2</sup>

9.66 549.99

8.8 550.9

9.3 550.4

6.1 553.6

0.7 559.0

7.51 559.65

10.31 553.24

1.10 552.74

542.93

BM  
Record  
549.831st RP  
to BC on S  
437.62<sup>82</sup>Spike  
in PP  
# 26781

See plan

55

El Monte P.L. Sec<sup>2</sup> from 437.62<sup>82</sup> to 449.63  
Tunnel Portal



Strut Elevations

from # 86 to 139

3.88 55330 549.42

Rib#	+	π	-	Ek
86			4.43	548.87
87			4.45	548.85
88			4.21	549.09
89			4.17	549.13
90			4.15	549.15
91			4.20	.10
92			4.17	.13
93			4.15	.15
94			4.21	.09
95			4.28	.02
96			4.25	.05
97			4.27	.03
98			4.24	.06
99			4.39	548.91
100			4.27	549.03

π  
553.90

Rod.

56

101	4.45	548.85
102	4.45	.85
103	4.22	549.08
104	4.16	.14
105	4.29	.01
106	4.16	.14
107	4.24	.06
108	4.25	.05
109	4.29	.01
110	4.38	548.92
111	4.42	.88
112	4.33	.97
113	4.27	549.03
114	4.24	.06
115	4.28	.02
116	4.34	548.96
117	4.32	.98
118	4.27	549.03

π  
555.80

119	4.16	549.14
120	4.12	.18
121	4.13	.17
122	4.10	.20
123	4.17	.13
124	4.21	.09
125	4.31	548.99
126	4.29	549.01
127	4.22	.08
128	4.18	.12
129	4.18	.12
130	4.12	.18
131	4.11	.19
132	4.21	.09
133	4.28	.02
134	4.30	549.00
135	4.29	.01
136	4.33	548.97

π  
555.80

57

137	4.27	549.03
138	4.28	.02
139	4.27	.03
B.M.	4.39	548.91



FINAL X-SETS - EAST TUNNEL Portal  
Sta 438+22 - 449+62<sup>40</sup> Portal

B.M. 12.97535.90		542.93
438+22	2.7	53.2
+40	4.8	51.1
+50	4.0	51.9
+65	5.0	50.9
FC* 8238	5.8	50.1
439+20	7.5	48.4
439+18	5.8	50.1

Nail in P. Pole

47.3	50.2	52.2	56.2					
-5.9	-3.0	-2.0	+3.0					
58	8	5	18					
47.0	50.8	51.1	53.0	55.6				
-4.1	-0.3	0.0	+1.9	+4.5				
50	10	4	6	22				
45.5	45.5	46.7	48.3	51.6	51.9	54.0	55.7	
-6.4	-6.4	-3.2	-3.6	-0.3	0.0	+2.1	+3.8	
64	55	50	37	31	12	16	25	
47.9	46.0	46.3	47.2	51.6	53.0	53.1	55.3	56.5
-3.0	-4.9	-4.6	-3.7	+0.7	+3.1	+2.2	+4.4	+3.6
65	59	47	38	5	9	23	27	32
48.9	47.8	46.2	46.4	51.3	53.8	54.1	56.6	57.5
-1.2	-2.3	-3.9	-3.7	+1.3	+3.7	+4.0	+6.5	+7.4
63	58	52	46	12	21	36	38	43
49.5	48.6	46.6	46.8	49.0	55.1			
+1.1	+0.2	-1.8	-1.6	+0.6	+6.7			
60	56	54	30	8	39			
51.9	51.3	47.9	48.7	48.1	50.1	53.0		
+1.8	+1.2	-2.2	-1.4	-2.0	0.0	+2.9		
60	57	53	40	12	21	46		

555.90

439+23 5.9 550.9

439+30 4.8 51.1

Eq  
439+43.8 3.9 52.2  
448+206 7.00

448+50 1.9 54.0

T.P. 13.04 568.94 0.00 555.90

448+80 12.5 56.4

+93 11.6 57.3

449+00 11.3 57.6

59

53.7	53.0	49.8	51.1	8+ 52.8	52.7	54.6
+2.8	+2.1	-1.1	+0.2	+1.9	+1.8	+3.7
60	58	53	39	20	38	50

53.3	52.6	49.3	50.4	52.3	53.7
+2.2	+1.5	-1.8	-0.7	+1.2	+2.6
60	56	53	39	37	50

51.2	51.4	52.7	53.2
-1.0	-0.8	+0.5	+1.0
44	35	25	35

52.4	53.4	55.7	59.2
-1.6	-0.6	+1.7	+5.2
40	16	25	50

55.0	56.1	57.5	60.0
-1.4	-0.3	+1.1	+3.6
40	9	12	30

55.9	56.9	58.3	62.1
-1.4	-0.4	+1.0	+4.8
40	10	10	35

56.2	57.1	58.1	61.6
-1.4	-0.5	+0.5	+4.0
40	11	6	25



568.94

449458

6.7

562.2

449462<sup>48</sup> Tunnel Portal

5.3

63.6

E

T.P.

0.06

556.05

12.95

555.99

B.M.

13.11

542.94

2+

RT

60

58.2

58.5

66.3

69.3

-4.0  
50'

-3.7  
35'

+4.1  
75'

+2.1  
25'

59.4

59.1

70.0

-4.2  
55'

-4.5  
48'

+6.4  
25'

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.3	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be  $41.9 + (20 - 16) \div 2$  or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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5246  
2.93  
49.53

4.44  
4.41  
4.53

Please Return to  
City of San Diego Water Dept.  
Room 268 Civic Center  
Telephone Main 5161