

276

S.M.P.L. ~ ~ ~
LEVEL NOTES
90-185

W276

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2-54

Profile Levels on Otay-San Diego
Second Main Pipe Line Survey.
Sta. 87+98⁷⁶ to Sta. 311+00
(Location Line to Sta. 284.)

55-61

Alternate Line for Tunnel #4
Location. East of Present Tunnel.
"W" Line, Sta. 284+15⁴⁰ to Sta. 309+78⁰⁹
(Location Line).

62-79

Profile Levels from Sta. 311+00 to
Sta. 385+00. Contd. from Page 54.
(Location Line)

Profile Levels for Otay - San Diego
Second Main Pipe Line

Contd. from Book #275 Page #31

B.M. #21			392.41 ✓
	7.93	400.34 ✓	
B.M. #22		3.90	396.44 ✓
84+58 ³⁸ P.O.T. & P. Lines = 87+98 ²⁶ P.T.		8.1	392.2 ✓
88+50		8.0	392.3 ✓
89		7.8	392.5 ✓
T.P.		3.90	396.44 ✓
	1.94	398.38 ✓	
		4.1	394.3 ✓
+50		6.5	391.9 ✓
90		7.1	391.3 ✓
+50		7.3	391.1 ✓
+65		7.6	390.8 ✓
+80		10.0	388.4 ✓
91		11.0	387.4 ✓
T.P.		12.96	385.42 ✓
	1.28	386.70 ✓	
+17		1.3	385.4 ✓
+50		7.6	379.1 ✓
T.P.		12.80	373.90 ✓
	0.08	373.98 ✓	
92		9.0	365.0 ✓
T.P.		12.88	361.10 ✓
	0.20	361.30 ✓	

Hot

7/22/29

Simpson
Goodbody
Sagado

Air Valve B.M. #93 on original Line of Levels

Top Air Valve 60' L sta 89+90

376.46

End of Alternate Line

Top of W.S. Pipe at Air Valve 89+90

Peg. 91+17

Peg. 91+70

Peg. 92+12

✓ m 9/6/29

		361.30 ✓		
92+91			9.9	351.4 ✓
T.P.			12.84	348.46 ✓
	0.86	349.32 ✓		
T.P.			12.90	336.42 ✓
	0.46	336.88 ✓		
+95			9.7	327.2 ✓
93			13.9	323.0 ✓
B.M. #23			8.99	327.89 ✓
+06			14.5	322.4 ✓
+44			4.7	332.2 ✓
T.P.			0.12	336.76 ✓
	12.89	349.65 ✓		
T.P.			0.75	348.90 ✓
	12.95	361.85 ✓		
			11.5	350.3 ✓
94			9.2	352.6 ✓
T.P.			0.31	361.54 ✓
	12.88	374.42 ✓		
T.P.			1.26	373.16 ✓
	12.72	385.88 ✓		
+77			11.1	374.8 ✓
95			10.6	375.3 ✓
+41			10.7	375.2 ✓
+50			10.3	375.6 ✓
T.P.			4.01	381.87 ✓

Peg. 92+48

Peg. 92+75

Nail in sill of Trestle #13 sta. 92+90

Peg. 93+57

Peg. 93+88

Top of w.s. pipe center of Trestle #13

Peg. 94+27

Peg. 94+68

Peg. 95+95 - 18'L

9/16/24
✓ m

			381.87 ✓
	12.83	394.70 ✓	
96			9.8 384.9 ✓
+47			6.3 388.4 ✓
B.M. #29 (#91)			0.30 394.40 ✓
			2.8 391.9 ✓
+83			5.6 389.1 ✓
97			6.1 388.6 ✓
T.P.			6.05 388.65 ✓
	1.67	390.32 ✓	
+25			3.6 386.7 ✓
+45			6.2 384.1 ✓
T.P.			12.72 377.60 ✓
	1.36	378.96 ✓	
+88			6.1 372.9 ✓
98			11.2 367.8 ✓
			4.6 374.4 ✓
T.P.			12.82 366.14 ✓
	1.10	367.24 ✓	
+18			7.2 360.0 ✓
+30			12.4 354.8 ✓
+45			19.4 347.8 ✓
+55			22.0 345.2 ✓
B.M. #25			6.90 360.34 ✓
+84			6.4 360.8 ✓
T.P.			0.20 367.04 ✓

Air Valve 96 + 43

Top w. S. Pipe at Air Valve

Peg. 97+00

Peg. 97+68

Top of w. S. pipe center of Trestle #14

Peg. 98+03

Nail in sill of Trestle #14 sta. 98+45

Peg. 98+97

394.42
40
.02

9/6/9
✓ STW

			367.04 ✓
	12.41	379.45 ✓	
99			11.1 368.3 ✓
+25			3.2 376.2 ✓
T.P.			0.34 379.11 ✓
	12.57	391.68 ✓	
+42			9.2 382.5 ✓
+85			2.0 389.7 ✓
T.P.			0.20 391.48 ✓
	8.99	400.47 ✓	
100+35			6.7 393.8 ✓
+81			6.0 394.5 ✓
B.M. #26 (#90)			3.52 396.95 ✓
			5.9 394.6 ✓
101			6.4 394.1 ✓
+50			8.3 392.2 ✓
T.P.			12.90 387.57 ✓
	0.60	388.17 ✓	
102			3.6 384.6 ✓
+04			4.6 383.6 ✓
+37			10.9 377.3 ✓
T.P.			12.96 375.21 ✓
	0.66	375.87 ✓	
+73			5.8 370.1 ✓
103			12.2 363.7 ✓
T.P.			12.98 362.89 ✓

Peg. 99+30 - 2'R

Peg. 100+00

Air Valve 60'R Sta 100+84

Top W.S. pipe at Air Valve 100+84

Peg. 101+88

Peg. 102+47

Peg. 103+05

98
396.95
1.03

✓ W

			362.89 ✓
	1.35	364.24 ✓	
103+13		2.8	361.4 ✓
+28		6.9	357.3 ✓
+50		11.5	352.7 ✓
T.F.		12.78	351.46 ✓
	0.04	351.50 ✓	
+92		8.8	342.7 ✓
+95		10.6	340.9 ✓
104		10.8	340.7 ✓
+03		11.0	340.5 ✓
T.F.		12.68	338.82 ✓
	0.67	339.49 ✓	
+16		6.7	332.8 ✓
+27		11.4	328.1 ✓
		9.2	330.3 ✓
T.F.		12.66	326.83 ✓
	0.28	327.11 ✓	
+66		10.6	316.5 ✓
+72		11.6	315.5 ✓
+83		18.7	308.4 ✓
+95		18.3	308.8 ✓
105		23.0	304.1 ✓
+10		18.0	309.1 ✓
+20		16.3	310.8 ✓
+35		12.4	314.7 ✓

Peg. 103+56

Peg. 104+06

Top of W.S. pipe center of Trestle #15
Peg. 104+32

	327.11 ✓		
105+50		8.5	318.6 ✓
+75		0.9	326.2 ✓
B.M. # 27		10.52	316.59 ✓
T.F.		0.91	326.20 ✓
12.71	338.91		
106		4.5	334.4 ✓
T.F.		0.14	338.77 ✓
12.77	351.54		
+25		11.4	340.1 ✓
+43		7.5	344.0 ✓
T.F.		2.11	349.43 ✓
12.32	361.75		
+79		8.6	353.2 ✓
107		2.0	359.8 ✓
T.F.		0.13	361.62 ✓
12.31	373.93		
+22		6.6	367.3 ✓
+40		0.6	373.3 ✓
T.F.		0.21	373.72 ✓
12.64	386.36		
+61		6.9	379.5 ✓
+88		2.3	384.1 ✓
T.F.		0.66	385.70 ✓
8.97	394.67		
B.M. # 28		4.60	390.07 ✓

7

Nail in sill of Trestle # 15 60' R. sta. 105+06
Peg. 105+75

Peg. 106+16

Peg. 106+56 15' R

Peg. 106+95 18' R

Peg. 107+40 1' R

ON P.O.T. Hub 108+02 ²⁸

ON AIT Valve 60' R sta. 108+15

390.87
1.01

✓ w.

		394.67 ✓		
			6.9	387.8 ✓
T.F.			6.42	388.25 ✓
	2.50	390.75 ✓		
108+50			3.3	387.5 ✓
+75			5.8	385.0 ✓
109			8.4	382.4 ✓
+25			11.7	379.1 ✓
T.F.			12.99	377.76 ✓
	0.94	378.70 ✓		
+50			4.3	374.4 ✓
+74			8.7	370.0 ✓
110			14.3	364.4 ✓
+05			15.3	363.4 ✓
+07			19.3	359.4 ✓
+12			14.4	364.3 ✓
+26			7.3	371.4 ✓
T.F.			0.19	378.51 ✓
	12.80	391.31 ✓		
+53			9.7	381.6 ✓
+77			5.7	385.6 ✓
111			1.0	390.3 ✓
T.F.			0.92	390.39 ✓
	4.32	394.71 ✓		
+37			3.1	391.6 ✓
+75			3.6	391.1 ✓

ON W.S. pipe at Air Valve

Req. 109+32

Req 110+45 20'L

Req. 111 100

394.71 ✓

112		6.0	388.7 ✓
+20		7.5	387.2 ✓
+46		10.4	384.3 ✓
+77		14.7	380.0 ✓
113		10.3	384.4 ✓
T.F.		8.28	386.43 ✓

12.93 399.36 ✓

+50		11.8	387.6 ✓
+75		9.9	389.5 ✓
114		7.9	391.5 ✓
+25		6.5	392.9 ✓
+50		5.4	394.0 ✓
+75		4.3	395.1 ✓
115		3.1	396.3 ✓
B.M.# 29		2.43	396.93 ✓
		4.8	394.6 ✓
T.F.		3.12	396.24 ✓

2.30 398.54 ✓

+50		2.3	396.2 ✓
116		3.4	395.1 ✓
+26		6.0	392.5 ✓
+61		9.0	389.5 ✓
T.F.		12.96	385.58 ✓

0.78 386.36 ✓

117 2.0 384.4 ✓

on P.C. Hub 113+36¹²

on Air Valve

on W.S. pipe at Air Valve sta. 115+25
Peg. 115+00

396.⁹³_{.01}

Peg 116+90

✓ W

		386.36 ✓		
117+20			4.8	381.6 ✓
+50			10.0	376.4 ✓
T.F.			12.78	373.58 ✓
	0.52	374.10		
118			7.6	366.5 ✓
T.F.			12.90	361.20 ✓
	0.04	361.24		
+50			5.7	355.5 ✓
+84			12.2	349.0 ✓
T.F.			12.82	348.42 ✓
	0.87	349.29		
119			3.1	346.2 ✓
+40			13.0	336.3 ✓
T.P.			12.75	336.54 ✓
	2.91	339.45		
+60			9.4	330.1 ✓
+68			17.2	322.3 ✓
+78			9.5	330.0 ✓
+88			7.3	332.2 ✓
120			2.6	336.9 ✓
B.M. #30			4.31	335.14 ✓
			0.7	338.8 ✓
T.P.			0.31	339.14 ✓
	12.65	351.79		
+35			5.6	346.2 ✓
+60			0.0	351.8 ✓

Peg. 117+66

Peg. 118+21

Peg. 118+88

Peg 119+39

Bottom Canyon

Nail in West Sill Trestle #16 60' R. 119+90 ✓
 Top W.S. Pipe Center Trestle #16 119+80
 Peg 120+07

7-23-29
 Converse
 Simpson
 Goodbody
 Sagado.

	351.79		
T.P.		0.26	351.53 ✓
12.47	364.00 ✓		
+75		8.2	355.8 ✓
121		3.7	360.3 ✓
+15		0.4	363.6 ✓
T.P.		0.41	363.59 ✓
12.57	376.16 ✓		
+30		9.3	366.9 ✓
+60		3.9	372.3 ✓
+80		0.4	375.8 ✓
T.P.		0.38	375.78 ✓
12.56	388.34 ✓		
122		11.0	377.3 ✓
+10		10.1	378.2 ✓
+25		9.3	379.0 ✓
+50		6.4	381.9 ✓
+80		5.1	383.2 ✓
123		4.1	384.2 ✓
		6.4	381.9 ✓
+20		4.6	383.7 ✓
+35		3.8	384.5 ✓
+50		4.2	384.1 ✓
+75		6.0	382.3 ✓
124		5.1	383.2 ✓
+30		6.0	382.3 ✓

Peg 120+59 2'R.

Peg 121+15

Peg 121+80

On N.S. Pipe 60'R 123

388.34 ✓

+60		4.7	383.6 ✓
125		3.0	385.3 ✓
		1.8	386.5 ✓
T.P.		1.64	386.70 ✓
	12.43		399.13 ✓
+50		9.1	390.0 ✓
+85		6.8	392.3 ✓
126		5.1	394.0 ✓
+10		4.5	394.6 ✓
+25		4.3	394.8 ✓
+50		3.3	395.8 ✓
+75		2.3	396.8 ✓
127		1.5	397.6 ✓
+25		1.5	397.6 ✓
+50		1.8	397.3 ✓
+65		0.2	398.9 ✓
+75		0.9	398.2 ✓
+80		1.0	398.1 ✓
128		3.1	396.0 ✓
+15		3.5	395.6 ✓
+35		4.8	394.3 ✓
+51		4.1	395.0 ✓
+65		4.7	394.4 ✓
+75		5.6	393.5 ✓
+85		6.4	392.7 ✓

-3.7 382.8

Top W.S. Pipe 60' R 125
Peg 125+13

	399.13 ✓		
129		5.0	394.1 ✓
+09		5.9	393.2 ✓
+10		8.8	390.3 ✓
+25		3.9	395.2 ✓
+30		3.0	396.1 ✓
B.M.#31 (⁸⁷)		2.26	396.87 ✓
		4.7	394.4 ✓ -37-390.7
+50		5.3	393.8 ✓
+75		6.4	392.7 ✓
T.P.		4.73	394.40 ✓ -3.7-390.7
	5.08	399.48	
130		7.3	392.2 ✓
		5.0	394.5 ✓
+50		6.2	393.3 ✓
131		4.7	394.8 ✓
+50		4.0	395.5 ✓
132		4.0	395.5 ✓
+50		4.9	394.6 ✓
133		4.3	395.2 ✓
+50		5.6	393.9 ✓
134		5.4	394.1 ✓
		5.1	394.3 ✓ -3.7 390.6
+50		4.9	394.5 ✓
+70		6.1	393.4 ✓
+83		1.1	398.4 ✓

Small Wash

Top A.V. 11' R. 128+95

Top W.S. Pipe

Top Pipe 3' R. 129+84

Top W.S. Pipe 3' R. 130

Top W.S. Pipe 3' R. 134

$$\begin{array}{r} 396.87 \\ \underline{.02} \\ 396.85 \end{array}$$

Thru deep cut. Old Pipe line 3' R. of E

	✓	399.48		
135			4.1	395.4 ✓
+25			6.0	393.5 ✓
T.P.			5.84	393.64 ✓
	0.54	394.18 ✓		
+37			1.1	393.1 ✓
+50			5.7	388.5 ✓
+55			8.2	386.0 ✓
+65			10.2	384.0 ✓
+75			14.8	379.4 ✓
+75			11.5	382.7 ✓ <small>-2.2-380.5</small>
			9.9	384.3 ✓ <small>-3.7-380.6</small>
+83			11.8	382.4 ✓
B.M. #32 (=86)			8.99	385.19 ✓
			10.7	382.5 ✓
T.P.			12.89	381.29 ✓
	1.09	382.38 ✓		
136			1.9	380.5 ✓
+09			5.6	376.8 ✓
+16			8.2	374.8 ✓
+25			11.6	370.8 ✓
			5.6	376.8 ✓
T.P.			12.92	369.46 ✓
	4.17	373.63 ✓		
+50			10.8	362.8 ✓
+52			11.9	361.7 ✓

Top P.I. Hub 135-26 ⁵⁰

Ground Elev.
 Top 20" W.S. Pipe Coronado Line
 Top C.I. "T" at Jct. Coronado + Otay Lines

Top Air Valve. 36" W.S. Pipe $385.\overset{19}{16}$ _{.03}
 Top W.S. Pipe at A.V.

Top W.S. pipe center of Trestle #18 136+50
 Peg. 136+29

Bottom Short Canyon

	373.63 ✓		
136+54		10.4	363.2 ✓
B.M.#33		8.59	365.04 ✓
+75		5.4	368.2 ✓
137		0.6	373.0 ✓
T.P.		0.22	373.41 ✓
	12.97		386.38 ✓
+15		11.2	375.2 ✓
+30		10.3	376.1 ✓
+50		6.7	379.7 ✓
+65		6.1	380.3 ✓
+80		4.7	381.7 ✓
138		3.2	383.1 ✓
+15		1.5	384.9 ✓
+45		1.5	384.9 ✓
T.P.		0.96	385.42 ✓
	5.25		390.67 ✓
+70		5.1	385.6 ✓
139		4.4	386.3 ✓
		4.4	386.3 ✓
+15		5.1	385.6 ✓
+35		3.3	387.4 ✓
+50		3.1	387.0 ✓
+75		4.5	386.2 ✓
+90		5.1	385.6 ✓
140		4.2	386.5 ✓

Nail in sill of Trestle #18 Sta 136+69 20'R ✓

Peg 137+02 ✓

Peg 138+50 ✓

On W.S. Pipe 23R. of 139 ✓

390.67 ✓

+75	4.9	385.8 ✓
+50	5.3	385.4 ✓
+75	4.0	386.7 ✓
141	3.3	387.4 ✓
+25	3.6	387.1 ✓
+35	0.0	390.7 ✓
+45	+ 0.4	391.1 ✓
	2.4	388.3 ✓
T.P.	2.42	388.25 ✓
12.10	400.35 ✓	
+75	9.6	390.8 ✓
142	9.3	391.1 ✓
+25	7.9	392.5 ✓
+45	9.8	390.6 ✓
+80	7.3	393.1 ✓
143	6.2	394.2 ✓
+40	6.1	394.3 ✓
+65	5.3	395.1 ✓
+90	3.2	397.2 ✓
144	4.1	396.3 ✓
+20	5.2	395.2 ✓
+50	0.5	399.9 ✓
B.M.#34	3.81	396.54 ✓
T.P.	0.20	400.15 ✓

3.25 403.40 ✓

Top narrow ridge of Spoil Bank
" " " " "

Top N.S. Pipe 10'R. 141+45.
Top Pipe Band.

Top Narrow ridge of spoil bank

396+8
Top A.V. 13'R 144+14 Pipe Buried deep
Peg 144+64 - 1'R

	403.40 ✓		
145		2.3	401.1 ✓
+13		1.4	402.0 ✓
+20		2.2	401.2 ✓
+30		3.3	400.1 ✓
		9.5	393.9 ✓
		5.2	398.2 ✓
			400.15 ✓
	12.66	412.81 ✓	
145 +40		8.7	404.1 ✓
+45		5.4	407.4 ✓
+50		4.6	408.2 ✓
+60		2.2	410.6 ✓
+65		1.2	411.6 ✓
T.P.		0.19	412.62 ✓
	12.64	425.26 ✓	
+70		15.0	410.3 ✓
+75		16.9	408.4 ✓
+80		15.2	410.1 ✓
+93.06		8.0	417.3 ✓
146		6.6	418.7 ✓
+15		3.4	421.9 ✓
T.P.		0.48	424.78 ✓
	12.51	437.28 ✓	
+33		11.3	426.0 ✓
+43		8.8	428.5 ✓

Top. Pipe So. Portal Tunnel #1 } 60' R. 146+33
 Top Cap " " " #1 }

Peg. 1' R. 144+64

12' L. 145+50

Proposed So. Portal Tunnel #1. 2nd. Stay Pipeline

Peg 2' L. 146+27

Opp. old Portal

✓ W

9.
437.28

+65		8.0	429.3	✓
+78		2.8	434.5	✓
T.P.		0.64	436.64	✓
	12.64		449.28	✓
147		7.9	441.4	✓
+10		7.3	442.0	✓
+20		5.2	444.1	✓
T.P.		0.70	448.58	✓
	12.83		461.41	✓
+50		8.4	453.0	✓
T.P.		0.61	460.80	✓
	12.99		473.79	✓
148		10.2	463.6	✓
+50		0.3	473.5	✓
T.P.		0.30	473.49	✓
	12.92		486.41	✓
149		3.7	482.7	✓
T.P.		0.27	486.14	✓
	12.80		498.94	✓
+50		9.1	489.8	✓
150		4.3	494.6	✓
T.P.		3.24	495.70	✓
	6.22		501.92	✓
+50		3.7	498.2	✓
151		2.1	499.8	✓

Peg 146+84

Peg 147+33

Peg 147+87

Peg 148+50

Peg 149+22

Peg 150+10

501.92 ✓

151 + 50 2.9 499.0 ✓

152 5.7 496.2 ✓

+50 10.6 491.3 ✓

T.P. 12.97 488.95 ✓

0.33 489.28 ✓

153 2.2 487.1 ✓

+50 6.1 483.2 ✓

154 8.9 480.4 ✓

+50 11.7 477.6 ✓

T.P. 12.90 476.38 ✓

0.83 477.21 ✓

155 2.2 475.0 ✓

+50 4.8 472.4 ✓

156 7.3 469.9 ✓

+50 11.7 465.5 ✓

T.P. 12.85 464.36 ✓

B.M. #35 12.35 464.86 ✓

464.36 ✓

0.35 464.71 ✓

157 3.2 461.5 ✓

+50 6.9 457.8 ✓

158 11.9 452.8 ✓

T.P. 12.88 451.83 ✓

1.44 453.27 ✓

Peg 153 + 00 28' L

Peg 154 + 69

Peg 156 + 68

Nail in S.W. Cor. Post Air Shaft Tunnel #1.
60' R. 156 + 53.83

Peg 158 + 14

453.27 ✓

+50		3.9	449.4	✓
159		6.0	447.3	✓
+50		6.8	446.5	✓
160		7.6	445.7	✓
+50		8.2	445.1	✓
161		8.8	444.5	✓
+50		9.2	444.1	✓
162		10.3	443.0	✓
T.P.		10.27	443.00	✓
	1.02		444.02	✓
+50		2.0	442.0	✓
163		3.5	440.5	✓
+50		5.9	438.1	✓
164		7.8	436.2	✓
+50		10.4	433.6	✓
T.P.		12.88	431.14	✓
	0.53		431.67	✓
165		1.9	429.8	✓
+50		4.4	427.3	✓
166		7.4	424.3	✓
+50		11.1	420.6	✓
T.P.		12.80	418.87	✓
+72.94	0.80		419.67	✓
167		1.2	418.5	✓
		1.9	417.8	✓
+20		3.7	416.0	✓

Peg 162+00

Peg 10' L. 164+96

Peg 166+67

60' L. of Old Portal. No. End #1.

	+19.67 ✓		
+38		5.9	413.8 ✓
+65 ⁰⁶		7.9	411.8 ✓
+70		8.5	411.2 ✓
+83		8.5	411.2 ✓
+92		9.8	409.9 ✓
168		10.0	409.7 ✓
+12		10.4	409.3 ✓
+25		12.8	406.9 ✓
T.P.		12.79	406.88 ✓
	1.44	408.32 ✓	
		14.3	394.0 ✓
		17.7	390.6 ✓
		10.7	397.6 ✓
B.M. #36		17.32	396.00 ✓
+45		3.3	405.0 ✓
+50		3.7	404.6 ✓
+78		5.0	403.3 ✓
169		5.6	402.7 ✓
+15		5.7	402.6 ✓
+30		4.3	404.0 ✓
+50		6.0	402.3 ✓
+95		6.8	401.5 ✓
170		8.3	403.0 ✓
+05		4.4	403.9 ✓
+20		4.8	403.5 ✓

Proposed No. Portal. #1.

411.8
390.5
21.3

Peg 168+25

Top Pipe No. Portal Tunnel #1.

Bottom Elev. of Tunnel.

Top Cap
Nail in diag. Post. Face of Tunnel.

166+72.94



408.32 ✓

+25	6.4	401.9	✓
+35	7.1	401.2	✓
+50	10.3	398.0	✓
+70	12.0	396.3	✓
+75	13.4	394.9	✓
+85	14.4	393.9	✓
+93	20.0	388.3	✓
171	17.0	391.3	✓
+05	15.0	393.3	✓
+15	11.7	396.6	✓
+25	11.4	396.9	✓
+38	8.0	400.3	✓
T.P.	7.87	400.45	✓
B.M. #37 (#84)	11.52	396.80	✓
	13.9	394.4	✓
	16.8	391.5	✓
T.P.		400.45	✓
12.77	413.22		
+40	14.0	399.2	✓
+50	11.9	401.3	✓
+60	9.8	403.4	✓
+75	8.5	404.7	✓
172	4.8	408.4	✓
+05 ⁵⁰	3.6	409.6	✓

22

Bottom Canyon

Peg at 171+38
 { Nail in Face of Cap So. Portal #2. 396.88
 172+24 } Top Pipe So. Portal Tunnel #2
 Bottom of Tunnel

Proposed So. Portal Tunnel #2.

409.6
 391
 18.6

		413.22 ✓		
T.P.			0.15	413.07 ✓
	11.98	425.05 ✓		
+18			12.0	413.0 ✓
+24 ⁰⁰			10.5	414.5 ✓
+50			7.9	417.1 ✓
+65			4.6	420.4 ✓
+75			4.9	420.1 ✓
+85			1.9	423.1 ✓
T.P.			0.10	424.95 ✓
	12.63	437.68 ✓		
173			11.3	426.3 ✓
+50			4.3	433.3 ✓
T.P.			0.17	437.41 ✓
	12.71	450.12 ✓		
174			10.3	439.8 ✓
+50			5.0	445.1 ✓
175			0.3	449.8 ✓
T.P.			0.41	449.71 ✓
	12.50	462.21 ✓		
+50			7.0	455.2 ✓
176			1.7	460.5 ✓
T.P.			0.26	461.95 ✓
	10.11	472.06 ✓		
+50			7.0	465.1 ✓
177			4.3	467.8 ✓

Peg 172+18

Opposite Old So. Portal Tunnel #2

Peg 172+92

Peg 173+84

Peg 175+00

Peg 176+14

		472.06 ✓		
+50			5.2	466.9 ✓
178			7.3	464.8 ✓
+50			9.3	462.8 ✓
179			9.8	462.3 ✓
+50			9.5	462.6 ✓
180			8.2	463.9 ✓
T.P.			7.50	464.56 ✓
	12.07	476.63 ✓		
+50			11.6	465.0 ✓
181			10.1	466.5 ✓
+50			8.8	467.8 ✓
182			7.4	469.2 ✓
+50			6.4	470.2 ✓
183			4.9	471.7 ✓
T.P.			4.37	472.26 ✓
	11.42	483.68 ✓		
B.M.#38			2.32	481.36 ✓
T.P.				472.26 ✓
	12.97	485.23 ✓		
+50			11.9	473.3 ✓
184			10.0	475.2 ✓
+50			6.7	478.5 ✓
185			3.2	482.0 ✓
T.P.			0.47	484.76 ✓
	12.75	497.51 ✓		

Peg 180+00

Peg 183+00

Nail in S.W. Cor. Bill. Air Shaft Tunnel #2. 60'R. 181+71

Peg 185+30

	497.51			
+50		10.5	487.0	✓
186		5.1	492.4	✓
+50		2.8	494.7	✓
187		3.3	494.2	✓
+50		6.4	491.1	✓
188		13.1	484.4	✓
T.P.		13.08	484.43	✓
	0.47	484.90		
+50		8.6	476.3	✓
T.P.		12.95	471.95	✓
	0.12	472.07		
189		5.5	466.6	✓
T.P.		12.81	459.26	✓
	0.01	459.27		
+50		2.4	456.9	✓
190		11.1	448.2	✓
T.P.		12.92	446.35	✓
	0.06	446.41		
+50		7.4	439.0	✓
T.P.		12.91	433.50	✓
	0.16	433.66		
191		3.7	430.0	✓
+17.2		7.3	426.4	✓
+50		12.1	421.6	✓
T.P.		12.85	420.81	✓

Peg 188+00

Peg 188+73

Peg 189+40

Peg 190+11

Peg 190+83

Old Portal No. End Tunnel #2

Peg 191+56

✓ w

			420.81 ✓
	0.15	420.96 ✓	
+65		1.2	419.8 ✓
+75		4.6	416.4 ✓
192		4.6	416.4 ✓
+15		8.8	412.2 ✓
+20.50		10.7	410.3 ✓
+25		12.5	408.5 ✓
T.P.		12.48	408.48 ✓
	0.61	409.09 ✓	
+47		9.5	399.6 ✓
+65		10.3	398.8 ✓
T.P.		12.92	396.17 ✓
	1.91	398.08 ✓	
B. M. #39 (#83)		2.73	395.35 ✓
		5.8	392.3 ✓
		5.7	392.4 ✓
		9.4	388.7 ✓
			396.17 ✓
	0.07	396.24 ✓	
+90		7.5	388.7 ✓
193		8.7	387.5 ✓
+30		8.6	387.6 ✓
+40		7.8	388.4 ✓
+50		10.1	386.1 ✓

7/24/29
Converse
Simpson
Godbody
Sagado
Clear + Colm.

Proposed portal No. End Tunnel #2.

Peg 192+25

#83
395.46

Peg 192+72

Top A.V. 100' N. of N. Portal #2 }
Top Pipe } 60' R. 191+77
Top Pipe No. Portal Tunnel #2 }
Floor of Tunnel } 191+17.8

Peg 192+72

396.24 ✓

+60		10.7	385.5 ✓
+65		12.6	383.6 ✓
+70		12.5	383.7 ✓
T.P.		12.80	383.44 ✓
	0.13		383.57 ✓
+75		2.1	381.5 ✓
+82		1.6	382.0 ✓
+97		6.2	377.4 ✓
194		7.8	375.8 ✓
T.P.		12.68	370.89 ✓
	0.55		371.44 ✓
+25		9.9	361.5 ✓
T.P.		12.66	358.78 ✓
	0.53		359.31 ✓
+35		2.3	357.0 ✓
+50		4.3	355.0 ✓
		6.5	352.8 ✓
+65		3.7	355.6 ✓
+78		5.3	354.0 ✓
+85		10.0	349.3 ✓
195		8.3	351.0 ✓
+10		8.5	350.8 ✓
+15		10.3	349.0 ✓
+25		10.0	349.3 ✓
+40		12.0	347.3 ✓

Peg 193+74

Peg 194+10

Peg 194+31

Top N.S. Pipe 50'R. 194+50

✓ n

359.31 ✓

+43		14.1	345.2	✓
+48		14.1	345.2	✓
+53		11.5	347.8	✓
+60		11.4	347.9	✓
+70		13.0	346.3	✓
+80		10.2	349.1	✓
+90		9.8	349.5	✓
+95		8.6	350.7	✓
196		9.1	350.2	✓
T.P.		9.13	350.18	✓
	12.43		362.61	✓
+10		13.6	349.0	✓
+50		12.3	350.3	✓
197		3.1	354.5	✓
+35		2.2	360.4	✓
T.P.		0.19	362.42	✓
	10.07		372.49	✓
+85		9.2	363.3	✓
198.		8.4	364.1	✓
+25		8.1	364.4	✓
+50		7.2	365.3	✓
+75		6.1	366.4	✓
199		5.4	367.1	✓
+25		4.1	368.4	✓
+45		2.5	370.0	✓

} Bottom Canyon

Peg 196+00

2'R 197+66

	372.49 ✓		
+50		2.4	370.1 ✓
T.P.		0.40	372.09 ✓
12.32	384.41 ✓		
200		11.2	373.2 ✓
+50		7.7	376.7 ✓
201		4.3	380.1 ✓
+30		2.8	381.6 ✓
+50		3.1	381.3 ✓
+80		1.9	382.5 ✓
202		1.0	383.4 ✓
T.P.		0.15	384.26 ✓
11.08	395.34 ✓		
+40		10.4	384.9 ✓
+50		8.0	387.3 ✓
+65		7.0	388.3 ✓
203		7.5	387.8 ✓
+50		7.6	387.7 ✓
204		4.8	390.5 ✓
+08		5.6	389.7 ✓
B.M #40 (#82)		2.87	392.47 ✓
+15.		5.5	389.8 ✓
+20		4.6	390.7 ✓
+30		2.0	393.3 ✓
+35		2.5	392.8 ✓

Peg 199+85

Peg 202+10

Top W.S. Pipe at Line crossing
 Top Air Valve 27' L. Sta 204+56

$$\frac{392.54}{.07}$$

v m

B.M. #40		392.47	✓
12.65	405.12		
	13.1	392.0	✓
	16.5	388.6	✓
204 + 50	7.7	397.4	✓
+60	6.8	398.3	✓
T.P.	0.47	404.65	✓
12.81	417.46		
+90	10.4	407.1	✓
+95	10.7	406.8	✓
205	9.5	408.0	✓
+18 ⁶⁶	4.1	413.4	✓
+25	2.6	414.9	✓
+35	0.8	416.7	✓
T.P.	0.62	416.84	✓
12.69	429.53		
+50	13.3	416.2	✓
+70	8.3	421.2	✓
+80	5.5	424.0	✓
T.P.	0.09	429.44	✓
12.76	442.20		
+97 ⁸⁸	12.4	429.8	✓
206	12.11	430.1	✓
+15	11.1	431.1	✓
+30	6.3	435.9	✓
+50	1.8	440.4	✓

Top W.S. Pipe So. Portal Tunnel #3 } Sta. 205+97⁸⁸
Tunnel Floor

Peg 2'R 204+81

Proposed So. Portal Tunnel #3

Peg 205+39

Peg 4'R 205+95

60' L. So. Portal #3.

		442.20 ✓				
T.P.			0.23	441.97 ✓		Peg 3'R. 206+53
	12.67	454.64 ✓				
207			4.4	450.2 ✓		
T.P.			0.38	454.26 ✓		Peg. 207+26
	12.74	467.00 ✓				
+50			8.8	458.2 ✓		
208			2.2	464.8 ✓		
T.P.			0.45	466.55 ✓		Peg. 208+13
	12.91	479.46 ✓				
+50			8.7	470.8 ✓		
209			3.9	475.6 ✓		
+50			0.5	479.0 ✓		
T.P.			0.06	479.40 ✓		Peg 209+53
	12.98	492.38 ✓				
210			10.4	482.0 ✓		
+50			6.6	485.8 ✓		
211			3.7	488.7 ✓		
+50			1.4	491.0 ✓		
T.P.			0.39	491.99 ✓		Peg. 211+74
	6.43	498.42 ✓				
B.M. #41			6.07	492.35 ✓		Nail in N.E. Cor. Air shaft Tunnel #3 60'L 212+17
212			5.7	492.7 ✓		
+50			5.1	493.3 ✓		
213			4.4	494.0 ✓		
+50			2.8	495.6 ✓		

	498.42			
T.P.		0.03	498.39	✓
214	12.52	510.91		
+50			11.5	499.4 ✓
215			6.7	504.2 ✓
B.M. #42 (#81)			2.4	508.5 ✓
			3.58	507.33 ✓
216	10.56	517.89		
+50			5.8	512.1 ✓
217			3.1	514.8 ✓
+50			4.1	513.8 ✓
T.P.			7.6	510.3 ✓
	0.54	505.53	12.90	504.99 ✓
+50			1.0	504.5 ✓
218			6.8	498.7 ✓
+50			11.5	494.0 ✓
T.P.			12.77	492.76 ✓
	0.50	493.26		
219			3.1	490.2 ✓
+50			7.7	485.6 ✓
T.P.			12.94	480.32 ✓
	0.31	480.63		
220			0.9	479.7 ✓
+50			8.7	471.9 ✓
T.P.			12.78	467.85 ✓

Peg. 213+86

507.12

(This pole has been repaired)
Nail in Tel. Pole 100' L. 215+53.

7.33
507.12
21

Peg 217+46

Peg 218+70

Peg 219+97

Peg 220+76

			467.85 ✓
	0.24	468.09 ✓	
221			5.0 463.1 ✓
T.P.			12.83 455.26 ✓
	0.42	455.68 ✓	
+50			1.3 454.4 ✓
222			10.6 445.1 ✓
T.P.			12.90 442.78 ✓
	0.10	442.88 ✓	
+50			6.9 436.0 ✓
T.P.			12.97 429.91 ✓
	0.38	430.29 ✓	
223			2.1 428.2 ✓
+50			10.7 419.6 ✓
+70			13.1 417.2 ✓
T.P.			12.99 417.30 ✓
	0.19	417.49 ✓	
+85			1.9 415.6 ✓
224			4.8 412.7 ✓
+5 ²⁸			6.1 411.4 ✓
+10			7.1 410.4 ✓
+20			9.0 408.5 ✓
+30			9.0 408.5 ✓
+40			8.9 408.6 ✓
+50			9.8 407.7 ✓
+60			11.3 406.2 ✓

Peg 221+45

Peg 222+14

Peg 222+88

Peg 223+68

Proposed No. Portal Tunnel #3. Present Portal 60' Left.

	417.49 ✓		
+70		12.1	405.4 ✓
+80		12.6	404.9 ✓
T.P.		12.98	404.51 ✓
	0.60	405.11 ✓	
+90		1.0	404.1 ✓
225		2.3	402.8 ✓
+10		4.1	401.0 ✓
+20		4.5	400.6 ✓
+30		4.2	400.9 ✓
+40		6.2	398.9 ✓
+50		6.2	398.9 ✓
+63		6.3	398.8 ✓
+70		9.3	395.8 ✓
+82		10.6	394.5 ✓
+88		12.9	392.2 ✓
		13.6	391.5 ✓
		17.0	388.1 ✓
T.P.		21.88	393.23 ✓
	1.89	395.12 ✓	
+97		3.8	391.3 ✓
226		7.0	388.1 ✓
		9.0	386.1 ✓
+06		6.9	388.2 ✓
+10		4.2	390.9 ✓
+20		4.5	390.6 ✓

Peg 224+85

Top W.S. Pipe No. Portal Tunnel #3. } 224+05.28
 Tunnel Floor
 Top Valve Bolt. Top Air Valve 225+97

Top W.S. Pipe at Line Crossing

Bottom drain ditch 3'R. Sta. 226

	395.12 ✓		
+27		6.1	389.0 ✓
+35		4.4	390.7 ✓
+40		2.8	392.3 ✓
+50		2.5	392.6 ✓
B.M. #43 (#80)		0.21	394.91 ✓
227		3.4	391.7 ✓
+50		4.9	390.2 ✓
228		5.9	389.2 ✓
+50		7.3	387.8 ✓
229		9.1	386.0 ✓
+50		10.5	384.6 ✓
230		11.6	383.5 ✓
T.P.		11.63	383.49 ✓
	0.54	384.03 ✓	
+50		2.2	381.8 ✓
231		3.6	380.4 ✓
+50		4.5	379.5 ✓
232		5.7	378.3 ✓
+50		6.4	377.6 ✓
+75		7.1	376.9 ✓
233		8.8	375.2 ✓
+20		9.4	374.6 ✓
+25		8.8	375.2 ✓
+50		9.6	374.4 ✓
T.P.		9.33	374.70 ✓

Edge Road

Top Air Valve 25' R. 226 + 64 (Valve Has been changed) $\frac{394.91}{.25}$ 394.66

Line on Inside of Graveled Road

Peg 230+00

Edge Road ✓

Peg 2'R. 234+00

✓ m

			374.70	✓	
	11.14	385.84			
234			11.1	374.7	✓
+25			11.9	373.9	✓
+30			12.6	373.2	✓
+35			12.2	373.6	✓
+50			12.2	373.6	✓
+75			11.8	374.0	✓
+95			10.7	375.1	✓
235			10.3	375.5	✓
+50			5.8	380.0	✓
+75			3.7	382.1	✓
236			3.0	382.8	✓
+50			5.0	380.8	✓
+80			7.1	378.7	✓
237			3.2	382.6	✓
T.P.			0.39	385.45	✓
	10.54	395.99			
+50			6.1	389.9	✓
+80			3.5	392.5	✓
238			2.5	393.5	✓
B.M. #44 (#79)			6.14	389.85	✓
			9.1	386.9	✓
+50			1.7	394.3	✓
239			2.8	393.2	✓
+50			8.8	387.2	✓
T.P.			10.73	385.26	✓

Bottom Canyon

Small Draw

Peg 237+16

Top Air Valve
Top PipeR. 238+43 (Valve has been
changed)389.71⁸⁵
14

v m

385.26 ✓

1.97 387.23 ✓

239+93 5.2 382.0 ✓

240 4.7 382.5 ✓

+50 2.0 385.2 ✓

+78 2.1 385.1 ✓

241 1.5 385.7 ✓

+50 5.5 381.7 ✓

242 11.0 376.2 ✓

T.P. 12.95 374.28 ✓

0.67 374.95 ✓

+50 6.6 368.4 ✓

T.P. 12.93 362.02 ✓

0.31 362.33 ✓

243 1.7 360.6 ✓

+40 5.9 356.4 ✓

+50 6.3 356.0 ✓

+70 9.8 352.5 ✓

+85 6.7 355.6 ✓

+85 7.8 354.5 ✓

244 7.2 355.1 ✓

+15 8.0 354.3 ✓

+20 13.2 349.1 ✓

+25 14.2 348.1 ✓

+28 13.2 349.1 ✓

+30 9.6 352.7 ✓

+50 7.8 354.5 ✓

Peg. 242+14

Peg. 242+91

Top W.S. Pipe 30'R, 243+50

} Bottom Pogy Canyon

362.33 ✓

	+75		7.7	354.6	✓
245			8.7	353.6	✓
	T.P.		8.17	354.16	✓
	9.31	363.47			
	+25		9.6	353.9	✓
	+50		9.9	353.6	✓
246			10.2	353.3	✓
	+50		10.2	353.3	✓
247			8.8	354.7	✓
	+50		7.0	356.5	✓
248			5.0	358.5	✓
	+50		3.8	359.7	✓
	+65		3.4	360.1	✓
	+80		1.2	362.31	✓
	T.P.		0.22	363.25	✓

Peg 245+00

12.52 375.77 ✓

249			11.1	364.7	✓
	+50		6.5	369.3	✓
250			1.5	374.3	✓
	T.P.		1.01	374.76	✓
	3.00	377.76			
	+15		2.2	375.6	✓
	+35		2.8	375.0	✓
	+50		4.2	373.6	✓
	+75		3.2	374.6	✓

Peg 248+88

Peg 250+00

	377.76 ✓		
251		6.6	371.2 ✓
+25		14.0	363.8 ✓
+37		17.6	360.2 ✓
+50		15.2	362.6 ✓
+65		11.2	366.6 ✓
252		5.3	372.5 ✓
T.P.		2.13	375.63 ✓
	12.48		375.2 ✓
	388.11		376.1 ✓
+50		12.0	
T.P.		0.70	387.41 ✓
	6.31		
	393.72 ✓		
B.M.#45 (#78)		0.48	393.24 ✓
		2.3	391.4 ✓
			375.63 ✓
	3.08		
	378.71 ✓		
253		3.2	375.5 ✓
+20		3.6	375.1 ✓
+50		4.7	374.0 ✓
254		6.5	372.2 ✓
+30		7.8	370.9 ✓
+50		9.8	368.9 ✓
+65		12.0	366.7 ✓
T.P.		12.86	365.85 ✓
		4.2	374.5 ✓

Bottom short Canyon

Peg 252+28

Top Air Valve 60' R. 252+62

Top W.S. Pipe

Peg 252+28

Peg 254+69

Top W.S. Pipe Center Trestle #20 255+17

393.30
.24
.06

✓N

	8.33	374.18		365.85	✓
B.M. #46			10.68	363.50	✓
255			15.5	358.7	✓
+20			15.2	359.0	✓
+35			15.7	358.5	✓
+50			13.1	361.1	✓
+70			3.1	371.1	✓
+80			1.4	372.8	✓
T.P.			0.77	373.41	✓
	11.52	384.93			
256			10.7	374.2	✓
+30			6.3	378.6	✓
+50			4.8	380.1	✓
+85			3.7	381.2	✓
257			3.6	381.3	✓
+25			3.5	381.4	✓
+50			4.3	380.6	✓
+75			5.0	379.9	✓
258			5.5	379.4	✓
+25			6.0	378.9	✓
+50			6.8	378.1	✓
T.P.			6.27	378.66	✓
	12.74	391.40			
	4.74	394.78	1.36	390.04	✓
B.M. #41 (H77)			2.76	392.02	✓
			4.5	390.3	✓

Nail in sill Trestle #20, 60'R, 255+17

Bottom Canyon

Peg 255+93

257+85

Peg 258+50

Top Air Valve 60'R 257+85

Top W. S. Pipe

392.07
 .02
 .05 ✓

			378.66	✓
	3.55	382.21		
+85			4.9	377.3 ✓
259			4.8	377.4 ✓
+20			5.7	376.5 ✓
+35			7.5	374.7 ✓
+50			9.5	372.7 ✓
+75			11.2	371.0 ✓
+85			12.4	369.8 ✓
260			16.6	365.6 ✓
+25			20.9	361.3 ✓
+35			19.9	362.3 ✓
+50			14.2	368.0 ✓
+75			6.4	375.8 ✓
261			3.4	378.8 ✓
+50			2.9	379.3 ✓
T.P.			1.29	380.92 ✓
	12.16	393.08		
B.M.# 48 (# 76)			0.65	392.43 ✓
			2.4	390.7 ✓
				380.92 ✓
	1.54	382.46		
262			2.7	379.8 ✓
+50			3.5	379.0 ✓
+75			3.4	379.1 ✓

Bottom short draw

Peg 7' R 261+43

Top Air Valve 60' R. 261+37

Top W.S. Pipe

261+43

392.49
 $\frac{.43}{.06}$

	382.46			
263		4.5	378.0	✓
+50		6.4	376.1	✓
+80		7.9	374.6	✓
264		10.5	372.0	✓
T.P.		12.82	369.64	✓
	0.09		369.73	✓
+35		7.8	361.9	✓
+50		12.9	356.8	✓
T.P.		12.88	356.85	✓
	0.77		357.62	✓
+75		10.1	347.5	✓
+85		13.6	344.0	✓
265		15.2	342.4	✓
+10		16.1	341.5	✓
+25		13.0	344.6	✓
+50		5.9	351.7	✓
B.M.# 49		11.62	346.00	✓
T.P.		0.19	357.43	✓
	13.09		370.52	✓
		10.3	360.2	✓
+88		6.9	363.6	✓
266		4.2	36 3 ⁶ 3	✓
T.P.		0.41	370.11	✓
	12.80		382.91	✓
+25		11.4	371.5	✓

Peg 264+14

Peg 264+50

Bottom Canyon

Nail in sill Trestle #22, 60'R 265+10

Peg 265+68

Top W.S. Pipe Center Trestle #22, 265+10

Peg 266+18

		382.91 ✓		
267	+50		7.8	375.1 ✓
	+75		5.0	377.9 ✓
267			2.2	380.7 ✓
T.P.			1.24	381.67 ✓
T.P.	12.29	393.96 ✓		
	+25		12.8	381.2 ✓
	+50		16.6	377.4 ✓
	+60		18.2	375.8 ✓
	+90		12.8	381.2 ✓
268			12.2	381.8 ✓
	+50		10.6	383.4 ✓
269			10.1	383.9 ✓
B.M. #50	(# 75)		1.00	392.96 ✓
			3.3	390.7 ✓
T.P.			9.57	384.39 ✓
	2.17	386.56 ✓		
	+35		3.6	383.0 ✓
	+50		4.7	381.9 ✓
	+85		10.2	376.4 ✓
270			14.4	372.2 ✓
	+30		28.0	358.6 ✓
	+50		34.7	351.9 ✓
	+78		26.0	360.6 ✓
271			18.3	368.3 ✓
	+10		15.9	370.7 ✓

This B.M. changed to 6

Peg 267+19

Bottom Small Drain

Top Air Valve 60'R. 268+33
Top W.S. Pipe

393.01
2.96
.06

269+00 Top Guard Stake

July 25, 1929.
Clear & Calm.
Converse
Simpson
Goodbody
Sagado.

Bottom Canyon

		386.56 ✓		
	+15		23.9	362.7 ✓
	+20		13.5	373.1 ✓
2	+50		9.1	377.5 ✓
	T.P.		9.11	377.45 ✓
	10.79	388.24 ✓		
	271+93 ⁸⁷		5.43	382.81 ✓
	272		4.7	383.5 ✓
	+25		2.8	385.4 ✓
	+50		1.7	386.5 ✓
2	+75		1.9	386.3 ✓
	273		3.2	385.0 ✓
2	+25		4.8	383.4 ✓
B	+50		6.8	381.4 ✓
	+80		10.3	377.9 ✓
	274		12.8	375.4 ✓
	T.P.		12.82	375.42 ✓
			382.81	✓
2	B.M. #51 (74)	12.73 395.54 ✓	2.57	392.97 ✓
			4.9	390.6 ✓
			375.42	✓
2		0.56 375.98 ✓		
	+20		2.7	373.3 ✓

Small Wash. from break in W.S. Pipe

Peg 271+50

Top P.C. Hub

Peg 274+00

Top P.C. Hub

Top Air Valve 272+60.60'R.

Top W.S. Pipe

Peg 274+00

297
392.97
0.00

	375.98 ✓		
+40		7.0	369.0 ✓
+50		9.4	366.6 ✓
T.P.		12.91	363.07 ✓
		11.0	365.0 ✓
	0.63	363.70 ✓	
+70		4.4	359.3 ✓
275		16.0	347.7 ✓
+15		20.6	343.1 ✓
+40		21.9	341.8 ✓
+50		21.7	342.0 ✓
+85		19.4	344.3 ✓
276		15.6	348.1 ✓
T.P.		0.44	363.26 ✓
	12.55	375.81 ✓	
+50		10.1	365.7 ✓
+75		2.3	372.5 ✓
T.P.		0.21	375.60 ✓
	12.22	387.82 ✓	
277		8.9	378.9 ✓
+40		3.1	384.7 ✓
+50		2.7	385.1 ✓
+75		1.5	386.3 ✓
278		1.2	386.7 ✓
		1.67	386.15 ✓
+25		1.5	386.3 ✓

Peg 274+61
Top W.S. Pipe Center Trestle #24

} Bottom Canyon.

Peg 276+42

Peg 276+83

Top P.O.S. Hub 278+13.23

	387.82 ✓		
+50		2.9	384.7 ✓
+65		3.6	384.2 ✓
+75		5.8	382.0 ✓
279		7.1	380.7 ✓
+25		10.4	377.4 ✓
+50		15.1	372.7 ✓
+75		11.8	376.0 ✓
+90		9.0	378.8 ✓
280		7.8	380.0 ✓
+25		6.0	381.8 ✓
+50		4.5	383.3 ✓
T.P.		4.18	383.64 ✓
			386.15 ✓
B.M. # 52 (#73)	9.86 396.01 ✓	4.10	391.91 ✓
		5.8	390.2 ✓
			383.64 ✓
	8.64 392.28 ✓		
+75		8.1	384.2 ✓
281		7.8	384.5 ✓
+40		6.9	385.4 ✓
+50		6.3	386.0 ✓
+55		2.7	389.6 ✓
		6.5	385.8 ✓

280+50 Top Sta. Stake

Top P.O.S.T. Hub.

Top Air Valve 60' R. 277+80

391.91
101

Top W.S. Pipe

T.P. 280+50

Top W.S. Pipe R. of 281+50

	392.28 ✓		
+65		8.1	384.2 ✓
+90		7.9	384.4 ✓
282		9.9	382.4 ✓
+30		9.1	383.2 ✓
+40		9.9	382.4 ✓
+50		12.7	379.6 ✓
+70		14.6	377.7 ✓
+95		12.1	380.2 ✓
		6.9	385.4 ✓
283		13.4	378.9 ✓
+15		7.9	384.4 ✓
+35		4.4	387.9 ✓
B.M. #53 (#72)		0.37	391.91 ✓
		2.6	389.7 ✓
	9.17	401.08 ✓	
+65		11.8	389.3 ✓
+80		12.0	389.1 ✓
284		11.9	389.2 ✓
+25		10.9	380.2 ✓
+50		11.1	390.0 ✓
+70		9.3	391.8 ✓
285		10.8	390.3 ✓
+15		11.1	390.0 ✓
+25		10.2	390.9 ✓
+35		8.8	392.3 ✓

See Page 55

Bottom Small draw

Top W.S. Pipe R. Sta 282+90

Top Air Valve R. Sta 283+40

Top W.S. Pipe

6.9

	401.08 ✓		
+50		11.9	389.2 ✓
+55		10.8	390.3 ✓
+65		13.5	387.6 ✓
+70		10.6	390.5 ✓
+90		8.9	392.2 ✓
286		8.6	392.5 ✓
+05		11.6	393.5 ✓
+25		7.6	393.5 ✓
+40		6.5	394.6 ✓
T.P.		2.4	398.7 ✓
B.M. #54 (=71)		0.23	400.85 ✓
		5.90	395.18 ✓
		11.3	389.8 ✓
		14.4	386.7 ✓
			400.85 ✓
12.50	413.35 ✓		
+65		7.9	405.5 ✓
286+86 ¹⁷		5.6	407.8 ✓
287		3.7	409.7 ✓
+33		1.3	412.1 ✓
T.P.		0.35	413.00 ✓
12.93	425.93 ✓		
+65		8.6	417.3 ✓
+70		8.0	417.9 ✓
288		2.7	423.2 ✓
T.P.		0.95	424.98 ✓

Top W.S. Pipe 20' R. 286

Peg 6' L. 286+40

Top Concrete Cap S.W. Cor. So. Portal #4	} SoR. 287+70
Top W.S. Pipe So. Portal Tunnel #4	
Floor of Tunnel Portal	

Proposed South Portal Tunnel #4

Peg. 287+41

Opposite So. Portal Tunnel #4

Peg. 288+17

	12.97	437.95 ✓		429.98 ✓
+50			9.6	428.4 ✓
289			2.4	435.6 ✓
T.P.			0.31	437.64 ✓
	13.06	450.70 ✓		
+50			8.6	442.1 ✓
290			1.4	449.3 ✓
T.P.			0.39	450.31 ✓
	11.59	461.905 ✓		
+50			4.5	457.4 ✓
T.P.			0.11	461.79 ✓
	12.56	474.35 ✓		
291			6.2	468.2 ✓
T.P.			1.12	473.23 ✓
	12.71	485.94 ✓		
+50			9.5	476.4 ✓
292			4.1	481.8 ✓
T.P.			0.43	485.51 ✓
	12.93	498.44 ✓		
+50			11.6	486.8 ✓
293			6.1	492.3 ✓
+50			2.1	496.3 ✓
+65			1.7	496.7 ✓
294			3.0	495.4 ✓
T.P.			6.58	491.86 ✓

Peg 289+19

Top Sta. Stake 290+00

Peg 4' R. 290+74

Peg 291+30

Peg 292+41

35' R. 294+18 Peg.

			491.86 ✓
	0.80	492.66 ✓	
+25			1.0 491.7 ✓
+50			7.4 485.3 ✓
T.P.			12.95 479.71 ✓
	0.21	479.92 ✓	
295			6.0 473.9 ✓
T.P.			12.88 467.04 ✓
	0.18	467.22 ✓	
+50			9.3 457.9 ✓
T.P.			12.87 454.35 ✓
	0.30	454.65 ✓	
296			8.2 446.4 ✓
T.P.			12.94 441.71 ✓
	0.46	442.17 ✓	
+50			6.0 436.2 ✓
T.P.			13.00 429.17 ✓
	0.44	429.58 ✓	
297			6.6 423.0 ✓
T.P.			12.93 416.65 ✓
	1.25	417.90 ✓	
+45			4.5 413.4 ✓
+55			7.2 410.7 ✓
+74.7			12.7 405.2 ✓
T.P.			12.71 405.19 ✓
	0.51	405.70 ✓	

Peg. 294+73

Peg. 295+23

Peg. 295+76 2'R

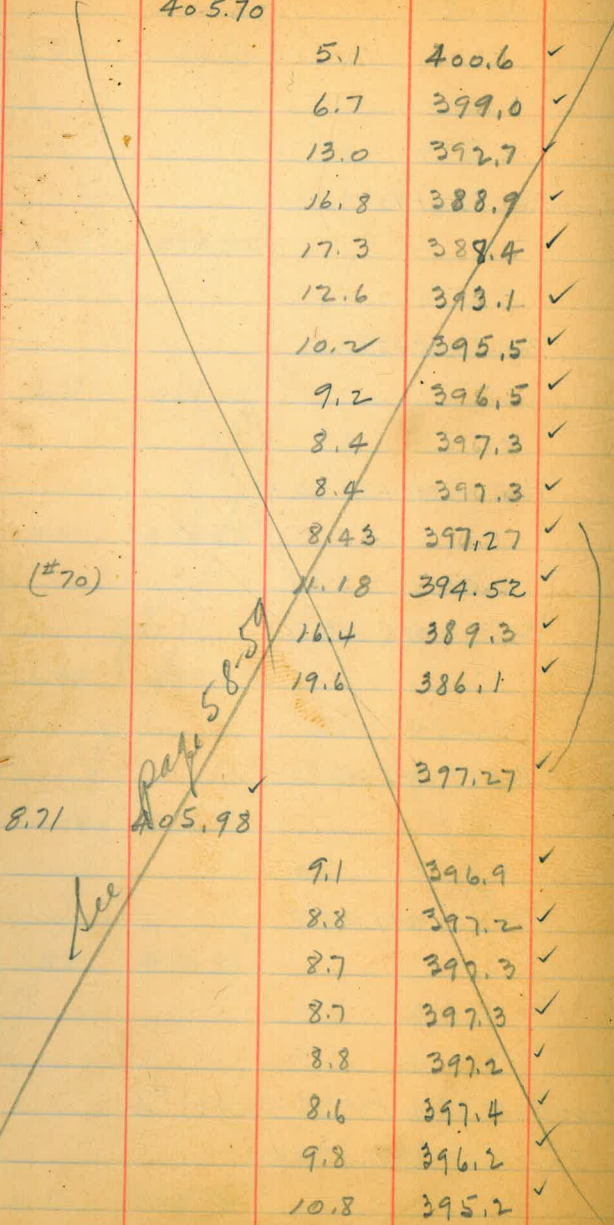
Peg. 296+19

Peg. 296+81

Peg. 297+25

Proposed No. Portal Tunnel #4
Top Hub 297+74.7

	405.70 ✓		
+94		5.1	400.6 ✓
298		6.7	399.0 ✓
+25		13.0	392.7 ✓
+40		16.8	388.9 ✓
+50		17.3	389.4 ✓
+75		12.6	393.1 ✓
299		10.2	395.5 ✓
+25		9.2	396.5 ✓
+50		8.4	397.3 ✓
+75		8.4	397.3 ✓
T.P.		8.43	397.27 ✓
B.M. #55 (#70)		11.18	394.52 ✓
		16.4	389.3 ✓
		19.6	386.1 ✓
			397.27 ✓
8.71	405.98 ✓		
300		9.1	396.9 ✓
+25		8.8	397.2 ✓
+50		8.7	397.3 ✓
+75		8.7	397.3 ✓
301		8.8	397.2 ✓
+25		8.6	397.4 ✓
+50		9.8	396.2 ✓
+75		10.8	395.2 ✓



Opposite Old Portal #4 No. End

} Bottom Canyon

Top Hub 299+76²⁰ P.C.
 Top Concrete Cap S.E. Cor. No. Portal Tunnel #4 } 394.39
 Top W.S. Pipe }
 Tunnel Floor. } 297+94

	405.98 ✓		
302		10.5	395.5 ✓
		16.9	389.1 ✓
+50		10.1	395.9 ✓
+70		9.6	396.4 ✓
303		10.3	395.7 ✓
+50		9.6	396.4 ✓
304		9.6	396.4 ✓
T.P.		9.10	396.88 ✓
	3.28	400.16 ✓	
+50		3.4	396.8 ✓
+85		2.2	398.0 ✓
305		2.9	397.3 ✓
+15		2.8	397.4 ✓
+35		4.0	396.2 ✓
+50		3.7	396.5 ✓
306		6.9	393.3 ✓
B.M.# 56 (65)		8.68	391.48 ✓
		12.1	388.1 ✓
+20		8.5	391.7 ✓
T.P.		12.79	387.37 ✓
	0.64	388.01 ✓	
+50		0.9	387.1 ✓
+70		3.5	384.5 ✓
307		8.6	379.4 ✓
+20		10.3	377.7 ✓

Top W.S. Pipe 15' R. 302+00

Peg 304+00

Top Air Valve 15' R. 306+15

391.43

Top W.S. Pipe

Peg 306+48

		388.01 ✓		
T.P.			12.84	375.17 ✓
	0.55	375.72 ✓		
+50			4.0	371.7 ✓
+75			9.0	366.7 ✓
308			12.5	363.2 ✓
T.P.			12.47	363.25 ✓
	0.29	363.54 ✓		
+20			7.4	356.1 ✓
T.P.		61	12.94	350.60 ✓
	0.18	350.78 ✓		
+50			3.3	347.5 ✓
+75			11.1	339.7 ✓
T.P.			12.98	337.80 ✓
	0.63	338.43 ✓		
309			6.6	331.8 ✓
+30			12.8	325.6 ✓
T.P.			12.99	325.44 ✓
	12.24	337.68 ✓		
+60			14.9	322.8 ✓
+85			17.8	319.9 ✓
310			16.3	322.9 321.4 ✓
			20.1	317.6 ✓
+20			12.2	325.5 ✓
+35			10.1	327.6 ✓
+50			8.5	329.2 ✓

Contd. from P. 61.

Peg 307+34

Top P.O.T. Hub 308+00

Peg 308+40

Peg 308+80

Peg 309+32

Bottom Canyon

Top W.S. Pipe R. Sta. 310

311

B.M. #57 (#68)

337.68 ✓

2.2 335.5 ✓

1.27 336.41 ✓

4.0 333.7 ✓

Contd. on Page # 62

54

Top Air Valve .50'R. 312+00

Top W.S. Pipe

336.34
41
07

✓ m

"W." Line. Alternate Line for Tunnel
 Tunnel #4 Location. East of Present
 Tunnel.

B.M. #53	6.53 ✓	391.91 ✓	
284+15 ⁴⁸	"A" P.O.T. 398.44		
284+15 ⁴⁸	"W" P.C. =		
+25	8.8	389.6 ✓	
+50	8.3	390.1 ✓	
+75	8.5	389.9 ✓	
285	6.1	392.3 ✓	
+10	3.8	394.6 ✓	
+25	3.4	395.0 ✓	
+26	7.2	391.2 ✓	
+35	11.3	387.1 ✓	
+44	8.4	390.0 ✓	-3.7
+45	11.1	387.3 ✓	386.6
+50	6.5	391.9 ✓	
+60	5.8	392.6 ✓	
+75	3.0	395.4 ✓	
+85	3.1	395.3 ✓	
+90	2.5	395.9 ✓	
+98	4.0	394.4 ✓	
286	5.3	393.1 ✓	
+10	4.8	393.6 ✓	
+15	4.6	393.8 ✓	
+20	5.5	392.9 ✓	
+25	4.4	394.0 ✓	
T.P.	5.1	393.3 ✓	
	0.13	398.31 ✓	

Top Air Valve 283+40

Bottom Trench
 Top W.S. Pipe Line Crossing
 Bottom Trench

Peg 286+41

✓ m.

"W" Line

			398.31	✓
287	12.36	410.67		
+50			8.2	402.5 ✓
+60			5.3	405.4 ✓
+75			2.0	408.5 ✓
T.P.			0.16	410.51 ✓
	12.47	422.98		
287			10.3	412.7 ✓
+08 ⁴²			9.3	413.7 ✓
+35			6.5	416.5 ✓
+50			5.9	417.1 ✓
+85			4.0	419.0 ✓
288			1.8	421.2 ✓
+02 ⁶⁴			1.6	421.4 ✓
T.P.			0.69	422.29 ✓
	12.95	435.24		
+45			11.3	423.9 ✓
+50			2.6	426.6 ✓
289			6.7	428.5 ✓
+50			1.6	433.6 ✓
2 T.P.			0.16	435.08 ✓
	12.89	447.97		
290			11.1	436.9 ✓
+50			2.3	445.7 ✓
T.P.			0.26	447.71 ✓
	12.16	459.87		

Peg 286 + 85

Proposed Portal. So. End Tunnel #4

Present Portal. So. End Tunnel #4. 50' L.
Peg 288 + 43 8' L.

Peg

"W" Line

		459.87 ✓		
291			7.1	452.8 ✓
	T.P.		0.08	459.79 ✓
	12.56	472.35 ✓		
	+50		12.10	460.4 ✓
292			2.9	469.5 ✓
	T.P.		1.07	471.28 ✓
	12.62	483.90 ✓		
			10.69	473.21 ✓
	+50		7.2	476.7 ✓
293			3.3	480.6 ✓
	+50		2.4	481.5 ✓
	T.P.		2.33	481.57 ✓
	2.53	484.10 ✓		
294			2.6	481.5 ✓
	+50		3.5	480.6 ✓
295			8.1	476.0 ✓
	+20		11.1	473.0 ✓
	T.P.		12.63	471.47 ✓
	0.35	471.82 ✓		
	+50		6.4	465.4 ✓
	T.P.		12.89	458.93 ✓
	0.48	459.41 ✓		
296			4.8	454.6 ✓
	T.P.		12.80	446.61 ✓
	0.55	447.16 ✓		

Peg 291+30 "A" Line

473.23
<u>21</u>
.02

Peg 293+50

"N" Line

	447.16 ✓		
+50		2.5	444.7 ✓
297		12.8	434.4 ✓
T.P.		12.82	434.34 ✓
0.73	435.07 ✓		
+50		12.7	422.4 ✓
T.P.		12.92	422.15 ✓
0.37	422.52 ✓		
+65		4.2	418.3 ✓
+80		9.5	413.0 ✓
T.P.		12.80	409.72 ✓
1.35	411.07 ✓		
298		3.8	407.3 ✓
+03.42		4.1	407.0 ✓
+18		7.1	404.0 ✓
+45		12.8	398.3 ✓
T.P.		12.81	398.26 ✓
2.45	400.71 ✓		
B.M. #55		6.22	394.49 ✓
0.08	398.34 ←		
+60		2.9	395.4 ✓
+65		4.0	394.3 ✓
+70		4.6	393.7 ✓
299		10.6	387.7 ✓
T.P.		12.82	385.52 ✓
1			

Peg 297+93

Proposed Portal No. End Tunnel #4

Peg 298+45

S.E. Cor. Concrete Cap. No. Portal #4

July 26, 1929
Clear + Calm
Converse
Simpson
Goodbody
Sagado

Peg 299+17

"N" line

		385.52 ✓
	1.37	386.89 ✓
+20		1.0 385.9 ✓
+40		4.0 382.9 ✓
+50		6.5 380.4 ✓
+80		13.0 373.9 ✓
+88		15.3 371.6 ✓
+86		12.9 374.0 ✓
300		6.6 380.3 ✓
+15		6.7 380.2 ✓
+24		9.4 377.5 ✓
+35		7.6 379.3 ✓
+50		10.8 376.1 ✓
+60		12.4 374.5 ✓
+85		11.6 375.3 ✓
307		11.4 375.5 ✓
+50		13.5 373.4 ✓
T.P.		12.74 374.15 ✓
	8.23	382.38 ✓
302		10.4 372.0 ✓
+15		9.8 372.6 ✓
+20		13.9 368.5 ✓
+30		9.8 372.6 ✓
+50		9.6 372.8 ✓
303		8.2 374.2 ✓
+50		7.4 375.0 ✓

59

Bottom Canyon

Peg 1' L. 301+50

Small Wash Provide drain

✓ m.

"N" Line

382.38 ✓

+65	7.0	375.4	✓
+75	9.2	373.2	✓
+80	6.9	375.5	✓
304	5.8	376.6	✓
+50	4.0	378.4	✓
+75	2.0	380.4	✓
305	2.0	380.4	✓
+15	1.0	381.4	✓
T.P.	0.89	381.49	✓

2.44 383.93 ✓

+50	1.5	382.4	✓
+65	1.2	382.7	✓
306	0.7	383.2	✓
+20	0.3	383.6	✓
B.M. #56 (#69)		391.48	
+25	0.8	383.1	✓
+50	1.6	382.3	✓
+75	3.3	380.6	✓
+85	5.0	378.9	✓
307	6.5	377.4	✓
+10	6.5	377.4	✓
+15	8.0	375.9	✓
+25	8.4	375.5	✓
+40	9.9	374.0	✓
+50	11.3	372.6	✓

Small Wash

Peg Sta. 305+17

Top Air Valve L. 306+10

"W" Line

61

	383.93 ✓		
+65		13.9	370.0 ✓
T.P.		12.88	371.05 ✓
	0.51		371.56 ✓
+80		1.4	370.2 ✓
+85		2.2	369.4 ✓
+98		7.8	363.8 ✓
308		11.3	360.3 ✓
+12		10.6	361.0 ✓
T.P.		13.01	358.55 ✓
	0.31		358.86 ✓
+27		4.2	354.7 ✓
+34		1.3	357.6 ✓
+50		8.7	350.9 ✓ 350.2 ✓
T.P.		12.99	345.87 ✓
	0.10		345.97 ✓
+75		4.3	341.7 ✓
+79		4.6	341.4 ✓
309		12.9	333.1 ✓
T.P.		13.02	332.95 ✓
	5.57		338.52 ✓
+25		9.8	328.7 ✓
+50		14.8	323.7 ✓
309+78 ^{9"} "W"		16.9	321.6 ✓
309+72 ^{2"} "A"			
B.M. # 57 (#68)		2.10	336.42 ✓

Contd. on Page 53.

Peg 307+57

Bottom Trench

Top W.S. Pipe Line Crossing

Bottom Trench

Peg 308+64

Peg 309+05

End of "W" Line

Top Air Valve 50'R 312+00

✓ n.

"A" Line Contd. from Page #54.

B.M. #57	(#68)		336.41	✓
	5.39	341.80		
311+50		3.5	338.3	✓
+87		0.8	341.0	✓
312		0.7	341.1	✓
+31		1.5	340.3	✓
+50		3.2	338.6	✓
313		12.0	329.8	✓
T.P.		12.86	328.94	✓
	0.21	3.29.15		
+30		5.4	323.8	✓
+50		7.3	319.9	✓
T.P.		12.89	316.26	✓
	0.64	316.90		
314		6.1	310.8	✓
+23		10.0	306.9	✓
+24		13.3	303.6	✓
+50		11.5	305.4	✓
T.P.		12.96	303.94	✓
	6.87	310.81		
+73		9.4	301.4	✓
+76		10.3	300.5	✓
+95		11.8	299.0	✓
315		11.5	299.3	✓
+08		11.0	299.8	✓
+14		11.1	299.7	✓

Top of Air Valve 50' R 312+00

Req. 313+04

Req. 313+70

Req. 314+62

Bottom Telegraph Canyon

		310.81			
+42			6.8	304.0	✓
+57			6.9	303.9	✓
+68			4.8	306.0	✓
+82			6.6	304.2	✓
316			4.6	306.2	✓
T.F.			0.10	310.71	✓
	12.01	322.72			
+44			11.3	311.4	✓
+55			11.7	311.0	✓
+58			11.2	311.5	✓
+81			9.6	313.1	✓
317			8.0	314.7	✓
+40			1.3	321.4	✓
T.F.			0.28	322.44	✓
	12.75	335.19			
+61			10.0	325.2	✓
+92			5.8	329.4	✓
318			4.9	330.3	✓
T.F.			0.15	335.04	✓
	12.58	347.62			
+94			8.5	339.1	✓
319			7.6	340.0	✓
+35			1.7	345.9	✓
T.F.			0.14	347.48	✓
	13.03	360.51			

Peg. 316+36

Peg. 317+48

Peg. 318+49

Peg. 319+35 10'P

	360.51		
+55		11.3	349.2 ✓
+75		8.2	352.3 ✓
+99		5.6	354.9 ✓
320		4.1	356.4 ✓
T.F.		0.38	360.13 ✓
12.63	372.76		
+50		8.6	364.2 ✓
+75		5.3	367.5 ✓
321		1.7	371.1 ✓
T.F.		0.63	372.13 ✓
12.50	384.63		
+25		11.2	373.4 ✓
+50		9.9	374.7 ✓
+68		9.7	374.9 ✓
322		10.0	374.6 ✓
+50		9.8	374.8 ✓
+77		8.6	376.0 ✓
323		8.3	376.3 ✓
T.F.		8.66	375.97 ✓
T.F.		0.67	383.96 ✓
9.39	393.35		
B.M. #58		1.06	392.29 ✓
		4.4	389.0 ✓
			375.97 ✓
9.13	385.10		

Req. 320 + 25

Req. 321 + 12

Req. 323 + 31

Top of Air Valve 60'R 321 + 37

Top w.s. pipe

Req. 323 + 31

	385.10 [✓]		
323+75		8.8	376.3 ✓
324		8.5	376.6 ✓
+25		8.1	377.0 ✓
+50		7.8	377.3 ✓
+77		8.9	376.2 ✓
325		9.2	375.9 ✓
+50		9.2	375.9 ✓
326		8.8	376.3 ✓
T.F.		8.70	376.40 ✓
T.F.		1.67	383.43 ✓
B.M. #59	9.08 392.51 [✓]	1.87	390.64 ✓
	(#66)		376.40 ✓
	0.84		377.24 ✓
326+20		1.4	375.8 ✓
+60		4.2	373.0 ✓
327		11.4	365.8 ✓
T.F.		12.94	364.30 ✓
	0.19		364.49 ✓
+48		8.4	356.1 ✓
T.F.		13.02	351.47 ✓
	0.36		351.83 ✓
+80		6.0	345.8 ✓
328		12.7	339.1 ✓

Req. 326+00

Top of Air Valve 60'R 324+18

$$\begin{array}{r} 64 \\ 390.54 \\ \hline .10 \end{array}$$

Req. 326+00

Req. 327+06

Req. 327+60

		351.83 ✓		
T.P.			12.85	338.98 ✓
	0.49	339.47 ✓		
328+07			2.2	337.3 ✓
+12			5.0	334.5 ✓
+18			5.2	334.3 ✓
+26			7.9	331.6 ✓
T.P.			13.05	326.42 ✓
	0.22	326.64 ✓		
+71			7.7	318.9 ✓
329			14.2	312.4 ✓
+17			15.0	311.6 ✓
+50			12.5	314.1 ✓
+80			7.7	318.9 ✓
330			4.6	322.0 ✓
+16			1.4	325.2 ✓
T.P.			1.25	325.39 ✓
	12.76	338.15 ✓		
+51			3.4	334.8 ✓
T.P.			0.18	337.97 ✓
	12.81	350.78 ✓		
331			2.6	348.2 ✓
T.P.			0.60	350.18 ✓
	12.80	362.98 ✓		
+29			7.3	355.7 ✓
+50			2.2	360.8 ✓

Feg. 328+00

Feg. 328+45

Feg. 330+16

Feg. 8'R 330+65

Feg. 2'R 331+08

		362.98 ✓		
T.F.			0.25	362.73 ✓
	12.70	375.43		
+91			6.2	369.2 ✓
332			3.7	371.7 ✓
T.F.			0.12	375.31 ✓
	12.77	388.08 ✓		
+42			7.0	381.1 ✓
+55			4.1	384.0 ✓
+62			3.3	384.8 ✓
+75			1.7	386.4 ✓
T.F.			1.00	387.08 ✓
	9.10	396.18 ✓		
333			7.4	388.8 ✓
+25			6.5	389.7 ✓
+50			7.0	389.2 ✓
+75			7.6	388.6 ✓
334			8.7	387.5 ✓
+10			8.9	387.3 ✓
+40			12.8	383.4 ✓
B.M. # 60 (#65)			5.32	390.86 ✓
T.F.			12.72	383.46 ✓
	2.10	385.56 ✓		
+80			9.3	376.3 ✓
335			10.9	374.7 ✓
+44			14.4	371.2 ✓

Req. 331+59

Req. 332+16

Req. 332+75

Pipe Burried Deep
 on Air Valve, 6' R 333+15
 Req. 334+40

390.86
 81
 .05

	385.56 ✓		
335+88		11.5	374.1 ✓
336		9.9	375.7 ✓
+22		6.6	379.0 ✓
T.P.		2.17	383.39 ✓
12.13	395.52 ✓		
+45		10.5	385.0 ✓
337		6.6	388.9 ✓
+13		5.6	389.9 ✓
+34		5.5	390.0 ✓
+50		3.7	391.8 ✓
338		0.4	395.1 ✓
B.M. #61 (#64)		4.88	390.64 ✓
5.02	395.66 ✓		
+36		0.8	394.9 ✓
+50		1.6	394.1 ✓
339		6.4	389.3 ✓
+50		9.0	387.0 386.7 ✓
+74		8.8	386.9 ✓
+90		9.9	385.8 ✓
340		9.8	385.9 ✓
+13		11.0	384.7 ✓
+27		10.2	385.5 ✓
T.P.		12.84	382.82 ✓
0.47	383.29 ✓		

Req. 336+43 10'L

Top of Air valve sta. 338+20
Pipe Burried Deep

390.67
64
.03

Req. 340+40

✓ 2

	383.29 ✓		
+85		8.1	375.2 ✓
341		12.7	370.6 ✓
T.P.		12.96	370.33 ✓
0.04	370.37 ✓		
+19		5.8	364.6 ✓
T.P.		12.81	357.56 ✓
0.98	358.54 ✓		
+53		2.6	355.9 ✓
+67		5.0	351.6 353.5 ✓
T.P.		13.02	345.52 ✓
0.67	346.19 ✓		
342		5.2	341.0 ✓
+10		6.7	339.5 ✓
+27		10.9	335.3 ✓
T.P.		12.82	333.37 ✓
5.23	338.60 ✓		
		8.4	330.2 ✓
+82		7.5	331.1 ✓
+88		9.0	329.6 ✓
343		9.1	329.5 ✓
+40		9.3	329.3 ✓
+60		8.0	330.6 ✓
+84		8.6	330.0 ✓
344		5.9	332.7 ✓
+15		4.8	333.8 ✓

Peg. 341 + 01

Peg. 341 + 44

Peg. 341 + 87

Peg. 342 + 50

on W.S. pipe.

off. sta. 342 + 50

		338.60 ✓		
344+34			5.2	333.4 ✓
+50			2.3	336.3 ✓
T.F.			0.34	338.26 ✓
	12.85	351.11 ✓		
+87			2.8	348.3 ✓
345			2.0	349.1 ✓
T.F.			1.34	349.77 ✓
	12.33	362.10 ✓		
+33			6.2	355.9 ✓
T.F.			0.42	361.68 ✓
	12.29	373.97 ✓		
346			5.6	368.4 ✓
+23			1.6	372.4 ✓
T.F.			0.43	373.54 ✓
	11.63	385.17 ✓		
+37			10.3	374.9 ✓
+59			10.1	375.1 ✓
+75			9.0	376.2 ✓
347			7.6	377.6 ✓
+25			5.5	379.7 ✓
+50			3.2	382.0 ✓
+75			3.7	381.5 ✓
348			4.4	380.8 ✓
+22			5.5	379.7 ✓
+50			7.0	378.2 ✓

Req. 344+59

Req. 345+05

Req. 345+59

Req. 1'R 346+24

	385.17 ✓		
349		11.2	374.0 ✓
T.F.		11.87	373.30 ✓ ← 373.30
T.F.		0.48	384.69 ✓
	7.70		
B.M. #62 (#63)	392.39 ✓		
		2.63	389.76 ✓
		4.4	388.0 ✓
			373.30 ✓ ←
	0.75		374.05 ✓
+36		4.0	370.0 ✓
+68		10.8	363.2 ✓
T.F.		12.92	361.13 ✓
	0.34		361.47 ✓
+88		2.3	359.2 ✓
350		6.0	355.5 ✓
+16		10.5	351.0 ✓
T.F.		12.95	348.52 ✓
	0.52		349.04 ✓
+45		7.6	341.4 ✓
+55		12.9	336.1 ✓
T.F.		12.93	336.11 ✓
	0.67		336.78 ✓
+70		11.5	325.3 ✓
T.F.		12.75	324.03 ✓
	1.59		325.62 ✓

349+09

on Top of Air Valve sta 347+33 $\frac{389.82}{.06}$
 on Top W.S. pipe off. sta. 246+97

Peg. 349+75 2'R

Peg. 350+23

Peg. 350+55

Peg. 350+84

325.62 ✓

351		5.8	319.8	✓
+15		7.9	317.7	✓
+20		8.8	316.8	✓
+25		8.0	317.6	✓
+30		7.3	318.3	✓
+50		7.0	318.6	✓
S.M. #63 (#62)		4.75	320.87	✓
+80		4.4	321.2	✓
352		2.4	323.2	✓
T.P.		0.22	325.40	✓
	12.44		337.84	
+30		11.0	326.8	✓
+50		3.8	334.0	✓
T.P.		0.76	337.08	✓
	12.57		349.65	
+80		8.8	340.8	✓
+90		5.6	344.0	✓
353		4.2	345.4	✓
T.P.		0.16	349.49	✓
	12.61		362.10	
+50		5.0	357.1	✓
+60		3.1	359.0	✓
+70		8.1	367.0	✓
T.P.		0.09	362.01	✓
	12.63		374.64	

Bottom Canyon

Nail Top Hub 32 R. Sta. 351+50

320.91
<u>87</u>
04

Peg 7'L. 352+11

Peg 352+62 3'L.

Peg 10'L. 353+15

Peg 353+70

		374.64 ✓		
354			6.7	367.9 ✓
+35			0.8	373.8 ✓
T.P.			0.20	374.44 ✓
	11.77	386.21 ✓		
355			5.4	380.8 ✓
+25			4.2	382.0 ✓
+50			3.9	382.3 ✓
+75			3.9	382.3 ✓
356			4.1	382.1 ✓
+50			5.7	380.5 ✓
357			8.1	378.1 ✓
+50			10.2	376.0 ✓
+85			11.7	374.5 ✓
T.P.			12.62	373.59 ✓
			5.15	381.065 ✓
	6.94	388.00 ✓ ←		
B.M #64	(#62)		1.66	386.34 ✓
	0.14	373.73 ✓		373.59 ✓
358			0.6	373.1 ✓
+20			3.2	370.5 ✓
+55			5.7	368.0 ✓
359			10.2	363.5 ✓
+40			13.0	360.7 ✓

Peg 354+40

July 27, 1929.
Clear + Calm
Converse
Simpson
Goodbody
Sagado

Peg 357+95

T.P.

Top Air Valve 60' R 356+00
Pipe Burried.

386.39
34
105

Peg 357+95

✓ W.

	373.73 ✓		
T.P.		12.95	360.78 ✓
0.46	361.24		
+75		6.0	355.2 ✓
360		10.1	351.1 ✓
T.P.		12.84	348.40 ✓
0.34	348.74		
+15		0.4	348.3 ✓
+45		4.4	344.3 ✓
+70		10.2	338.5 ✓
T.P.		12.91	335.83 ✓
0.88	336.71		
+90		5.1	331.6 ✓
361		5.7	331.0 ✓
+10		6.6	330.1 ✓
+20		10.3	326.4 ✓
+30		10.1	326.6 ✓
+35		10.0	326.7 ✓
+40		8.0	328.7 ✓
+50		7.9	328.8 ✓
+65		6.6	330.1 ✓
+90		3.4	333.3 ✓
362		0.7	336.0 ✓
T.P.		0.14	336.57 ✓
12.46	349.03		
+30		3.7	345.3 ✓

Peg 359+59

Peg 360+15

Peg 360+77

} Bottom Canyon. W.S. Pipe Buried

Peg 362+01 I.R.

	349.03 ✓		
+50		0.2	348.8 ✓
T.P.		0.54	348.49 ✓
	10.54		359.03 ✓
+70		7.1	351.9 ✓
363		4.9	354.1 ✓
+15		3.1	355.9 ✓
+25		3.3	355.7 ✓
+50		3.5	355.5 ✓
+75		3.9	355.1 ✓
364		5.8	353.2 ✓
+15		7.0	352.0 ✓
+35		10.1	348.9 ✓
+50		10.6	348.4 ✓
+55		12.0	346.9 ✓
+90		11.7	347.3 ✓
+92		12.2	346.8 ✓
+95		12.0	347.0 ✓
365		10.7	348.3 ✓
+20		7.6	351.4 ✓
+50		1.0	358.0 ✓
T.P.		0.09	358.94 ✓
	12.64		371.58 ✓
+89		6.7	364.9 ✓
366		5.5	366.1 ✓
+26		2.1	369.5 ✓

Peg. 2' L. 362+49

Bottom Short Draw

Peg 365+54

	371.58 ✓		
366 +50		0.5	371.1 ✓
T.F.		0.49 ✓	371.09 ✓
	7.68		
	378.77 ✓		
367		2.7	376.1 ✓
+22		2.1	376.7 ✓
+50		4.9	373.9 ✓
+63		4.6	374.2 ✓
B.M. #65 (#59)		2.86	375.91 ✓
		4.6	374.2 ✓
+75		6.8	372.0 ✓
+91		7.3	371.5 ✓
368		8.4	370.4 ✓
+09		9.9	368.9 ✓
+20		10.8	368.0 ✓
+50		14.3	364.5 ✓
+70		14.5	364.3 ✓
369		16.4	362.4 ✓
+50		14.7	364.1 ✓
+78		12.6	366.2 ✓
3.70		11.4	367.4 ✓
+50		8.0	370.8 ✓
T.F.		8.02	370.75 ✓
	8.89		
	379.64 ✓		
371		9.1	370.5 ✓
+50		9.0	370.6 ✓

Feg. 366+50

Top Air valve opp. 367+63

Top. w.S. pipe At Air valve

$$\begin{array}{r} 375.95 \\ 91 \\ \hline 04 \end{array}$$

Feg. 370+50

	✓		
		379.64	
372		8.6	371.0 ✓
+50		6.9	372.7 ✓
373		3.2	376.4 ✓
T.P.		0.46	379.18 ✓
6.00	✓	385.18	
+50		4.0	381.2 ✓
374		3.6	381.6 ✓
+15		3.2	382.0 ✓
B.M.#66 (#58)		1.98	383.20 ✓
		3.7	381.5 ✓
+45		4.3	380.9 ✓
+80		5.7	379.5 ✓
375		7.4	377.8 ✓
+50		10.6	374.6 ✓
T.P.		13.04	372.14 ✓
0.25	✓	372.39	
376		0.8	371.6 ✓
+30		2.5	369.9 ✓
+40		3.2	369.2 ✓
+50		3.9	368.5 ✓
377		5.4	367.0 ✓
			366.6 ✓
+35		5.2	367.2 ✓
+50		6.0	366.4 ✓
+65		6.9	365.5 ✓
+90		9.5	362.9 ✓

Peg 373+30

Top Air Valve 60'R. 374+29
Top W.S. Pipe

383.24
20
104

Peg 1'L. 375+86

14

	372.39		
378		10.6	361.8 ✓
+40		15.7	356.7 ✓
+50		16.6	355.8 ✓
379		13.3	359.1 ✓
+25		11.8	360.6 ✓
+50		8.6	363.8 ✓
380		2.8	369.6 ✓
+20		0.6	371.8 ✓
T.P.		0.83	371.56 ✓
	10.49	382.05	
+40		9.2	372.8 ✓
+50		8.5	373.5 ✓
381		5.6	376.4 ✓
+35		4.8	377.2 ✓
+50		4.9	377.1 ✓
382		5.0	377.0 ✓
+35		3.6	378.4 ✓
+50		3.6	378.4 ✓
383		3.7	378.3 ✓
+35		2.6	379.4 ✓
+50		1.6	380.4 ✓
T.P.		0.06	381.99 ✓
	10.50	392.49	
384		8.9	388.6 ✓
+30		7.2	385.3 ✓

Swale

Peg 380+18

Peg 3'L. 383+70

m

392.49 ✓

+85

5.6

386.9 ✓

385

5.7

386.8 ✓

B.M.#67 (#57)

1.56

390.93 ✓

4.9

387.6 ✓

Contd in Book #277 Page #3.

Top Air Valve 60' R. 385+16

390.96

93

103

	B.M.#62			389.76
38	1.29	390.05		
B			12.83	377.22
	0.54	377.76		374.26
			2.46	372.30
				373.54
	12.63	386.17		
			12.87	373.30

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope 1/2 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

IMPROVED TABLES AND INFORMATION

TABLE No. 2.

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections. Degree of curve with a given I may be found by dividing tangent (or external), opposite I by given tangent (or external). The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

405
335
70

9