

WILEY & SONS

NEW YORK

ENGINEERS'

LEVEL BOOK

No. 412 F

722

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	MICROFILMED								.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	0		
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	1		
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	2		
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12.0	3		
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	13.0	4		
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	14.0	5		
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0	6		
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0	7		
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	17.0	8		
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	18.0	9		
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	19.0	10		
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	20.0	11		
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	21.0	12		
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	22.0	13		
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	23.0	14		
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	24.0	15		
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	25.0	16		
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	26.0	17		
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	27.0	18		
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	28.0	19		
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	29.0	20		
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.0	21		
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	22		
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	32.0	23		
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33.0	24		
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	34.0	25		
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	35.0	26		
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	36.0	27		
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	37.0	28		
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	38.0	29		
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	39.0	30		
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	40.0	31		
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	41.0	32		
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	42.0	33		
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	43.0	34		
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	44.0	35		
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	45.0	36		
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	46.0	37		
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	47.0	38		
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	48.0	39		
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	49.0	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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to $30.6 = 32.6$. For slopes of 1 on 1½ see inside of back cover.

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

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RESISTING SURFACE, and is sewed with
Bing Special Enamel Waterproof thread.

Made in U. S. A.

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Es
to be t
of road
examp
30.6 =

Proposed cuts - Commercial St.

30 St - East

P. 9-

Propose to river bed for R.O.

Sta 25709 P. 69

SAND TRAP

Box on Commercial St. line at P. 78

SEPTIC TANK DRAIN LINES AT
CITY RECREATION AREA, FOSTER.

P. 79

COMMERCIAL ST. AL.

P. 85

R.R. CROSSINGS ON 13TH ST.

P. 11 & 18

Rest of book Comm.

st. pipeline const.

grades

BM	3.81	488.58		484.77	Top Cor. Wall East End Spillway see F868 p 6
TP	0.34	476.24	12.68	475.90	
TP	3.84	471.28	8.80	467.44	
Set BM	1.71	464.64	8.35	462.93	Chisel X on paving RP 28' RP 3122 L + BC of see p 3 681
Set BM	4.17	462.31	6.50	458.14	FTV 100' RP for EC 14722 see page 29
Set BM	2.18	457.49	7.00	455.31	NW Cor Can Box. West city comp
BM check			1.78	455.71	Nail in RP + West Side city Comp.
Set BM	3.22	453.76	6.95	450.54	Chisel X in paving 26' RP 24 + 55 see page 14 F 8581
Set BM	4.64	453.73	4.67	449.09	20' RP X in paving 30 + 31 80 BC

		1			
		453.73			
Set BM	3.20	453.85	3.00	450.65	Gross Cap on coil 1100 Marked Run
TP	5.94	455.19	4.60	449.25	Chokelagon
Set BM	5.33	456.76	3.76	451.43	2nd R.P. LC. 30700
Set BM	5.73	458.28	4.21	452.55	2nd R.P. 80.421864
Set BM	1.48	450.08	3.68	448.60	
Check BM	1.51	445.18	6.26	443.82	
				443.67	Record.
				0.15	Diff
					Corrected to above BM
TP	3.28	442.83	5.63	439.55	
Set BM	2.79	441.43	4.17	438.66	PP # 72902
TP	3.87	440.87	4.45	437.00	PP 73986

		1			
		440.87			3
Check BM	1.88	437.85	4.90	435.97	PP # 73984 See FB 601 P.50
TP	3.40	436.29	4.96	432.89	PP # 73982
Set BM	2.40	433.61	5.16	431.13	PP # 73978
TP	3.81	432.36	5.06	428.55	# 73976 Transformer pole
Check BM			2.94	429.42	Nail in PP 73974 See FB 601 P.54
Set BM	3.05	429.68	5.73	426.63	# 72866 PP
TP	3.08	427.41	5.35	424.33	PP 72866
Set BM	2.31	424.88	4.84	422.57	PP 72866
TP	2.87	424.87	2.88	422.00	PP 72858

JAN. 23, 1948, 5
LEONARD - BAKER,

CUTS FOR TOP OF CHAMBER
ON EL MONTE - EL CAPITAN "Y"
AT LAKESIDE.

	+	H.d.	-	ELEV.	
B.M.				407.45	
	2.13	409.58			
Q HIGHWAY			-3.18	406.40	EAST EDGE.
"			-3.64	405.94	WEST EDGE.
TOP OF CHAMBER			-4.08	405.50	EAST EDGE WEST
"			-4.54	405.04	EDGE
BOTTOM OF 10" COVER			-4.91	404.67	EAST EDGE WEST
"			-5.37	404.21	EDGE

NOTE: TOP OF BOX SLOPED .46' FROM EAST
EDGE TO WEST EDGE TO CONFORM
WITH GRADIENT OF HIGHWAY,
PER INSTRUCTIONS OF MR. HILL.

Grades for Blow-off + Stilling

RR	BM Spike	375	417.38	413.63	PP# 23345
0+00			8.19	409.19	
0+39			4.9	412.5	
0+71			5.2	412.2	
0+75			4.5	412.9	
0+76-00	Profile to South in gutter		5.2	412.2	
0+80			5.2	412.2	
0+50			5.2	412.2	
1+00			5.5	411.9	

Chamber San Vicente 2nd main

6

	Grade	C. Rod	-	
0+00	411.14	6.24	0.19	411.95 To ch 8" pipe
0+25	410.7	4.68	4.29	2.39
0+50	410.6	6.58	4.33	2.25
0+75	410.5	6.48	4.65	1.83

SEE PAGE 7

FEB. 2, 1925

LOANARK, CALIF.

ELEV FOR

R.M.

P. PILE

413.85

413.85

H. d.

+8.99

417.62

ON EDGE

TOP OF BLOW OFF PIPE.

-5.69

411.93

FLANGE.

GROUND AT STILLING BOX

-4.80

412.82

GRADES FOR STILLING CHAMBER
SAN VICENTE RND PL.

HILL
LEONARD
NIENOW
SHIMAN
2-21-48.
P. POLE
73396

	H. d.				
B.M. +407	417.70		418.63		
10.3' DRAIN PIPE EAST SIDE	411.14			CUT	
45' PYMT.	410.62	-4.71	412.99	2.4	
63' WEST EDGE PYMT.	410.34	-4.69	413.01	2.7	
75' STILLING CHAMBER	410.18	-4.96	412.74	2.6	

NOTE: GRADES AND CUTS FIGURED TO $\frac{1}{2}$
OF DRAIN PIPE PER REQUEST OF
MR. FRANK MORAN, CITY INSPECTOR.
GRADE RATE = .0148 FROM END OF
SECTION 10.3' OUT FROM CENTER OF
48" SAN VICENTE RND MAIN P.L.

CUT STAKES AT EAST PORTAL
GROSSMONT TUNNEL.

BLISS
LEONARD
KAMMER
7
JAN 28, '49.

	+ GRADE	G. ROD.		CUT
B.M. 11.32	554.25			542.93
T.P. 11.74	565.04	0.95		553.30
T.P. 5.24	569.14	1.14		563.90
487+16 ⁸¹	550	19.1	50	14.1
487+32 ¹²	549.6	19.5	6.3	13.2
487+63 ⁸¹	548.	21.1	1.9	19.2
487+79 ⁷⁵	546.8	22.3	4.6	17.7
488+11 ¹⁸	542.8	26.3	11.7	14.6
T.P. 0.30	558.20		11.24	557.90
+27 ¹²	540.9	17.3	3.9	13.4
+50	540.2	18.0	5.4	12.6
+75	539.4	18.8	6.5	12.3

558.20

+ H.d. GRAPEL - BUS

437+074 538.6 19.6 8.6 11.0

+2318 538.4 19.8 8.6 11.2

+3916 539.25 19.0 8.5 10.5

448+50 541.4 16.8 4.4 12.4

T.P. 11.27 ⁵⁶⁹ 568.96 0.51 557.69

+9114 545.1 23.9 8.3 15.6

449+06¹² 546.0 23.0 6.6 16.4

+50 547.5 21.5 0.7 20.8

T.P. 1.44 557.87 12.53 556.43

+62⁴⁸ portal 547.98

T.P. 3.12 552.46 8.53 544.34

check 9.54 542.92 ✓

Starting BM 542.93 record

8

Commercial St. P.L. - 30 St. East
 Profiles & Cuts - 8'0" E

B.M. 5.84 78.00 - 72.14

138454	6.6	71.4	66.20	5.2
+46	5.9	72.1	66.2	5.9
+25 Nail	6.5	71.5	64.4	7.1
+10 See page 11. 4-5-48 N	6.1	71.9	64.4	7.5
138400	5.9	72.1	64.9	7.2
13777903	5.8	72.2	66.0	6.2
137150	5.7	72.3	66.4	5.9
137	5.5	72.5	66.7	5.8
+50	5.4	72.6	66.9	5.7
136	5.2	72.8	67.2	5.6
+50	5.0	73.0	67.4	5.6
135	4.8	73.2	67.6	5.6
+50	4.5	73.5	67.8	5.7
134	4.4	73.4	67.8	5.8
+50	4.2	73.8	67.8	6.0
133	4.4	73.6	67.8	5.8

cul.

King
 Leonard
 Nichols

3-11-48

9

78.00

132450	4.3	73.7	67.9
132	4.1	73.9	67.9
+50	3.8	74.2	68.0

T.P.	4.52	78.76	3.76	74.24
------	------	-------	------	-------

131400	4.2	74.6	68.1
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+50	4.2	74.6	68.1
-----	-----	------	------

130	4.0	74.8	68.2
-----	-----	------	------

+50	3.8	75.0	68.3
-----	-----	------	------

129	3.6	75.2	68.3
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+50	3.8	75.0	68.3
-----	-----	------	------

128	4.2	74.6	67.9
-----	-----	------	------

+50	4.9	73.9	67.6
-----	-----	------	------

127+67.04	5.6	73.2	67.3
-----------	-----	------	------

126+91.05	5.9	72.9	66.7
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126+59.09	6.5	72.3	65.0
-----------	-----	------	------

126+43.03	6.8	72.0	64.5
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18

56

6.0

6.2

6.5

6.5

6.6

6.7

6.8

6.7

6.7

6.3

5.9

6.2

7.3

7.8

78.76

126	7.2	71.6	64.5
+50	7.6	71.2	64.5
125	3.7	75.1	64.5
	7.20	71.56	71.56
T.B.M.	4.72	74.04	

COMMERCIAL ST. PIPELINE.

4-5-48

REALIGNMENT AT 30TH ST.

LEONARD

NIENOW

SHIPMAN

B.M. +4.44 76.58

N.E. COR.
30TH & COMM.
72.14

	GRADE	G. ROD	-	CUT
138+54	66.2	10.4	5.2	5.2
138+14	66.2	10.4	4.3	6.1
137+93	64.4	12.2	4.9	7.3
137+77	64.4	12.2	4.5	7.7
137+65	65.3	11.3	4.4	6.9
137+47	66.0	10.6	4.4	6.2
137+31	66.5	10.1	4.3	5.8
137+00	66.7	9.9	4.2	5.7
L 137+68	64.95	11.6	4.4	7.2

11

7.1
6.7
10.6

Top 20 R.R. 1-126+01

Top F.Hydr. S.W. COR 32nd COMM ST.

COMMERCIAL ST. PIPELINE,

LEONARD

NIENOW

SHIPMAN

4-19-48

R.R. CROSSINGS ON 13TH ST, 8' OFFSETS.

STA.	+ GRADE	G. ROD	-	CUT
R.M.	5.75	8.75	3.00	R.P. 13 th + 12' RT P.P. 12' RT
SET R.M.			-3.21	212+99
	+2.92	H.I. +8.46		
211+75		-4.0	12.46	5.32
212+00				7.14
212+09 ⁵⁰		-4.0	12.46	5.12
				7.34
212+50		-4.0	12.46	5.08
				7.38
212+79		-4.0	12.46	5.04
				7.42
212+79		-4.0	12.46	4.88
				7.58
212+90 ⁷⁰		-4.0	12.46	4.76
				7.70
213+49 ⁴⁰		-4.0	12.46	3.83
				8.63
213+59 ⁶⁰		-4.0	12.46	3.81
				8.65

SEE BOTTOM PAGE 18. FOR ADDITIONAL R.R. CROSSINGS.

Profile & Cuts on 8' GE Sets 36" P.L.

B.M.	0.58	112.75		112.17
24+00		0.9	111.8	104.2
+50		2.5	110.2	102.8
25+00		4.1	108.6	101.5
+50		3.4	107.1	100.1
26+00		7.3	105.4	98.8
+50		8.7	104.0	97.4
27+00		10.2	102.5	96.0
+50		11.6	101.1	94.7
28+00		12.9	99.8	93.3
T.P.	1.51	101.33	12.93	99.80
28+50		2.8	98.5	91.7
29+00		4.3	97.0	90.0
+50		6.1	95.2	88.4
30+00		8.2	93.1	86.7

King
Leopard
Nienow

12

47th - 45th St. - Imperial St.

B.P.S.E. cor. 47th & Imperial

7.6
7.4
7.1
7.0
6.6
6.6
6.5
6.4
6.5

6.8

7.0

6.8

6.4

10.33

30450 10.7 90.6 83.7

T.P. 0.49 90.15 11.67 89.66

31400 2.4 87.7 80.8

+50 5.8 84.8 77.8

32400 8.5 81.6 74.8

+50 11.4 78.7 71.8

T.P. 0.45 77.86 12.74 77.41

33400 2.1 75.8 68.8

+50 5.0 72.9 66.3

34400 7.7 70.2 63.8

+50 9.9 68.0 61.2

35400 12.2 65.7 58.7

T.P. 1.54 66.49 12.93 64.93

13

6.9

6.9

7.0

6.8

6.9

7.0

6.6

6.4

6.8

7.0

125.64

3+00 8.4 177.2 170.3

+50 9.9 175.7 169.1

4+00 11.7 173.9 166.9

+

T.P. 0.49 173.35 172.86

4+50 1.5 171.8 164.8

5+00 3.7 169.6 162.6

+50 6.0 167.3 160.5

6+00 8.3 165.0 158.3

+50 10.6 162.7 156.2

7+00 12.9 160.4 154.0

T.P. 0.98 160.24 160.26

7+50 3.1 158.1 151.8

8+00 5.3 155.9 149.7

+50 7.4 153.8 147.5

15

6.9

6.4

7.0

7.0

7.0

6.8

6.7

6.5

6.4

6.3

6.2

6.3

161.24

9+00		9.3	151.9	145.4
+50		10.8	150.4	143.9
B.C. 10+1084		12.4	148.8	142.1
Ec. 10+3702		13.1	148.1	141.3

T.P. 0.48 148.68 13.04 148.20

B.C. 10+5720		1.1	147.6	140.2
Ec. 10+8346		1.7	147.0	139.9
11+00		2.2	146.7	139.5
B.C. 11+5728		2.7	146.0	139.3
Ec. 11+8644		3.2	145.5	139.0
B.C. 11+9455		3.3	145.2	138.7
Ec. 12+2121 = 12+2323 # head		3.7	145.0	138.2
12+75		4.3	144.7	138.2
13+00		4.6	144.1	137.9
+50		4.8	143.9	137.5
14+00		5.0	143.7	137.1

18

6.5

6.5

6.6

6.8

6.9

7.1

7.2

7.0

Set corrected with level 4-7-48.14.

6.7

6.5

6.7

6.8

6.7

6.2

6.4

6.6

148.60

14+50 5.1 143.6 136.9 6.7

15+00 5.4 143.4 136.8 6.6

+50 5.8 143.0 136.3 6.7

15+75 6.1 142.6 136.0 6.6

16+00 6.7 142.0 135.3 6.7

+50 8.1 140.6 134.0 6.6

17+00 9.8 138.9 131.9 7.0

+50 11.5 137.2 130.1 7.1

T.P. 0.31 136.19 12.80 135.88

18 0.9 135.3 128.3 7.0

+50 3.0 133.2 126.5 6.7

19 5.0 131.2 124.2 6.5

+50 7.1 129.1 122.3 6.8

20 9.2 127.0 120.0 7.0

+50 11.7 124.5 117.6 6.9

17

19619

T.P. 0.70 124.14 12.75 123.44

21+00	2.0	122.1	115.2
21+25	3.1	121.0	114.0
+50	4.2	119.9	113.2

6.9

7.0

6.7

22	6.2	117.9	111.5
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6.4

+50	7.9	116.2	109.7
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6.5

23	9.4	114.7	107.9
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6.8

B.C. 27+23 ²³	10.1	114.0	107.0
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7.1

PRE. 21+6 ³⁰	10.8	113.3	106.1
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7.2

E.C. 22+69 ³⁷	11.4	112.7	105.2
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7.5

B.M.	12.04	122.10	112.17
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R.P. CROSSINGS NEAR HARBOR DRIVE:

Sta's AT 2 1/2 FT. FROM OUTSIDE RAIL.

218+25 ⁸⁰	} 5 SETS TRACKS
219+04 ⁰⁰	

220+91	} 2 SETS TRACKS
221+22 ⁶⁰	

COMMERCIAL ST. PIPE LINE. 30" PIPE, I.D. CUT STATES SET 8' OFF.					LEONARD NIENOW SHIPMAN.
STA.	+	GRADE H.d.	G. ROD	- 32.40 L IMPERIAL	CUT N.W. R.P. 67.03
B.M.	9.60	76.6 ⁹			
124+75		64.4	12.2	1.4	10.8
124+50		64.1	12.5	1.5	11.0
124+00		63.5	13.1	2.1	11.0
123+50		62.9	14.7	5.3	9.4
123+25 ⁰⁸		61.8	14.8	8.1	6.7
123+07 ¹²		60.6	16.0	8.5	7.5
122+71 ¹⁶		57.5	19.1	10.9	8.2
T.P.			-10.95	65.68	ON AUG 122+71 ¹⁶ @
	+0.08	H.I. 65.76			
122+50		55.4	10.4	5.0	5.4
122+25		50.0	15.8	8.4	7.4
T.P.			-12.73	53.03	
	+0.43	H.d. 53.46			
122+00		49.0	11.5	2.1	9.4
121+75 ²	E.C.	38.5	15.0	6.9	8.1
121+50		37.6	15.9	7.2	8.7
121+25		37.4	16.1	7.6	8.5
T.P.			-12.38	41.08	

4-12-48					
STA.	+	GRADE H.I.	G. ROD	- ELEV.	CUT
T.P.	+2.07	43.15		41.08	19
121+00		35.4	7.9	1.2	6.6
120+75		31.7	11.5	3.9	7.6
120+50 ¹⁷	OC.	28.5	14.7	6.2	8.5
120+25		25.3	17.8	8.7	9.1
T.P.			-12.70	30.45	
	+2.09	H.I. 32.54			
120+00		21.8	10.7	2.1	8.6
119+75		18.1	14.4	6.2	8.2
119+57 ¹²	E.C.	17.3	15.2	9.6	5.6
119+42 ¹³		16.6	15.9	10.3	5.6
119+25 ⁶⁸	OC.	15.8	16.7	10.9	5.8
119+00		15.6	16.9	11.3	5.6
118+50		15.1	17.4	11.6	5.8
118+00		14.7	17.8	12.1	5.7
117+50		14.2	18.3	12.3	6.0
117+25		14.0	18.5	12.4	6.1
T.P.			-9.99	22.55	FIRE HYD. 32.0 & STEEL

STA.	+	GRADE	G. ROD	LEONARD NIENOW SHIPMAN	4-13-48 CUT FIRE HYD. SPR & STEEL
T.P.	+2.76	25.31 *13.5		22.55	
117+13 ⁷⁰		14.0	11.3	5.1	6.2
116+70 ⁷⁰		14.0	11.3	5.3	6.0
116+54 ⁷⁰		15.6	11.7	5.4	6.3
116+38 ⁷⁵		12.9	12.4	5.4	7.0
116+06 ⁸⁰		10.8	14.5	5.5	9.0
115+75		10.8	14.5	5.7	8.8
115+42 ⁸⁰		10.8	14.5	5.8	8.7
115+26 ⁸⁰		10.5	14.8	5.9	8.9
115+10 ⁸⁰		10.0	15.3	6.0	9.3
114+94 ⁸²		9.4	15.9	6.1	9.8
114+83 ⁸²		9.4	15.9	5.7	10.2
T.P.			-5.11	20.20	CORNER CONG. WALL SPR & DURANT S.E. UNDER WHITE FENCE
	+3.67	23.87			
114+67 ⁸³		9.8	14.1	4.7	9.4
114+51 ⁷⁸		10.6	13.3	4.7	8.6
114+35 ⁷⁵		11.8	12.1	4.7	7.4
114+19 ⁷⁷		12.6	11.3	4.6	6.7

STA.	+	GRADE	G. ROD	LEONARD NIENOW SHIPMAN	4-15-48 CUT
		23.87			
117+63 ⁷⁷		13.0	10.9	4.4	6.5
113+50		13.0	10.9	4.3	6.6
113+00		13.0	10.9	4.6	6.3
112+50		13.0	10.9	4.9	6.0
112+00		13.0	10.9	5.0	5.9
111+50		13.0	10.9	4.6	6.3
111+00		12.9	11.0	4.7	6.3
110+50		12.9	11.0	4.8	6.2
110+05 ⁷⁷		12.8	11.1	4.8	6.3
T.P.			-5.77	18.10	IRON PIPE PROP. COR. N.E. COR. DURANT & 34 TH ST.
	+8.25	26.35			
109+80		12.0	14.4	7.4	7.0
109+64 ⁸⁹		11.0	15.4	8.3	7.1
109+48 ⁸⁸		9.7	16.7	10.0	6.7
109+40 ⁸⁴		9.0	17.4	10.5	6.9
109+24 ⁸¹		7.6	18.8	9.1	9.7
108+22 ⁸³		4.8	21.6	11.0	10.6

4-15-48				
STA.	+	GRADE	G. ROD	- CUT
		26.35		
107+76 ⁸³		4.8	21.6	10.4 11.2
108+71 ⁸⁴		12.8	13.6	2.9 10.7
T.P.			-0.06	26.29 FENCE POST
	+11.50	37.79		
108+76 ⁷⁰		18.1	19.7	10.3 9.4
108+79 ⁴⁴		21.6	16.2	7.6 8.6
108+04 ⁷⁶		28.4	9.4	2.1 7.3
T.P.			-0.62	37.17 Rock in ROADWAY
	+12.59	49.76		
107+96 ¹⁹		33.8	16.0	9.7 6.3
107+74 ²¹		38.0	11.8	6.0 5.8
107+59 ⁴¹		40.9	8.9	3.3 5.6
107+45 ⁷¹		42.6	7.2	1.2 6.0
T.P.			-1.00	48.76 CONCRETE WALL
	+10.14	58.90		
107+00		46.6	12.3	5.3 7.0
T.P.			-0.29	58.61

4-19-48				
STA.	+	GRADE	G. ROD	- CUT
	+9.11	67.72		58.61
106+50		51.2	16.5	6.9 9.6
CHECK R.M.			-0.70	67.02 = 67.03 RECORD.
	+10.36	77.38		
106+00		54.8	22.6	10.7
105+50		55.8	21.6	9.7
105+50		57.3	20.2	10.1
105+00		58.2	19.2	9.1
105+00		59.6	17.8	8.1
104+50		60.6	16.8	7.1
104+50		62.4	15.0	6.0
104+50		63.0	14.4	5.4
104+00		63.3	14.1	9.0 5.1
103+50		63.6	13.8	7.2 6.6
103+00		64.4	13.0	6.2 6.8
102+80		65.0	12.4	4.2 8.2
102+64		65.8	11.6	1.9 9.7
102+48		66.8	10.6	1.5 9.1
T.P.			-1.64	75.74
	10.89	86.63		
102+00		70.4	16.2	9.0 7.2
101+50		72.8	13.8	6.7 7.1

	+	GRADE	G. ROD	-	CUT
		86.63			
101+00		76.1	10.5	4.5	6.0
100+50		79.5	7.1	0.8	6.3
CHECK R.M.	+12.47	97.11	-1.96	84.67	6.3 RECORD = 84.64
T.P.	+6.65	100.19	-3.57	93.54	ROCK IN ROADWAY
100+00		82.8	17.4	11.1	6.3
99+50		86.0	14.2	6.9	7.3
99+00		87.4	12.8	2.6	10.2
98+69 ⁸⁸		88.4	11.8	0.2	11.6
98+98 ⁸⁵		88.4	11.8	0.5	11.3
98+00		84.7	15.5	2.6	12.9
97+69 ³²		82.3	17.9	5.6	12.3
97+31 ³⁰		82.3	17.9	9.9	8.0
97+00		85.2	15.0	8.3	6.7
T.P.			-4.12	96.07	FIRE HYD. 36" dia.
	+6.77	102.84			
96+50		88.1	14.7	8.7	6.0
96+00		89.2	13.6	6.9	6.7
CHECK R.M.		-4.93		97.91	97.11 RECORD

	+	GRADE	G. ROD	-	CUT
		H. di 102.84			
95+50		91.4	11.4	5.6	5.8
95+00		91.8	11.0	5.3	5.7
94+50		91.8	11.0	5.2	5.8
94+00		91.9	10.9	5.1	5.8
93+50		91.9	10.9	4.8	6.1
93+00		92.0	10.8	4.5	6.3
92+50		92.0	10.8	4.3	6.5
92+00		92.1	10.7	4.2	6.5
91+50		92.1	10.7	4.0	6.7
91+00		92.2	10.6	3.8	6.8
90+50		92.2	10.6	3.7	6.9
T.P.			-3.28	99.56	
	+2.36	101.92			
90+00		92.1	9.8	2.9	6.9
89+50		91.9	10.0	3.2	6.8
89+00		91.8	10.1	3.4	6.7
88+50		91.6	10.3	3.8	6.5

GRADES SET

	+	GRADE H. d. 101.92	G. Rod	-	CUT
88+00		91.5	10.4	4.1	6.3
87+50		91.3	10.6	4.4	6.2
87+00		91.2	10.7	4.6	6.1
86+50		91.0	10.9	4.9	6.0
86+00		90.8	11.1	5.1	6.0
85+50		90.6	11.3	5.5	5.8
85+00		90.3	11.6	5.8	5.8
84+50		89.2	11.9	6.0	5.9
84+19 ⁶³		89.0	12.1	6.3	5.8
83+87 ²		89.8	14.3	6.3	8.0
83+55 ²		87.6	14.2	6.0	8.2
83+24		87.7	11.1	5.1	6.0
83+00		90.5	10.2	4.3	5.9
82+50		91.7	8.6	2.6	6.0
82+00		93.3	6.9	0.9	6.0
T.P.	+12.55	113.83	-0.64	101.28	
81+50		95.0	16.9	10.9	5.7

	+	GRADE H. d. 115.83	G. Rod	-	CUT
81+00		97.7	16.1	8.2	7.9
80+52 ⁰⁰		99.2	14.6	5.5	9.1
80+20 ⁴		102.8	11.0	3.7	7.3
80+04 ⁵		104.4	9.4	2.9	6.5
79+88 ⁵		105.5	8.3	2.0	6.3
79+72 ⁵		106.3	7.5	1.3	6.2
79+50		107.2	6.6	0.4	6.2
T.P.			-0.37	113.46	
	+12.85	126.31			
79+00		109.0	17.3	11.6	5.7
78+50		109.7	16.6	10.4	6.2
78.00		110.4	15.9	9.3	6.6
77+54 ¹⁵		111.0	15.3	8.4	6.9
77+00		112.3	14.0	8.0	6.0
76+50		113.5	12.8	7.1	5.7
76+00		114.8	11.5	6.1	5.4
75+50		116.0	10.3	5.0	5.3

	+	GRAPE	G. ROD	-	CUT
		126.31			
75.0		116.3	10.0	4.0	6.0
△ 74+88		116.4	9.9	3.8	6.1
74+50		116.7	9.6	3.0	6.6
74+00		117.0	9.3	2.4	6.9
73+50		116.9	9.4	2.7	6.7
73+00		116.8	9.5	4.0	5.5
72+50		115.4	10.9	5.4	5.5
71+00		114.0	12.3	6.8	5.5
71+50		112.6	13.7	8.3	5.4
71+00		111.2	15.1	9.3	5.8 6.1
T.P.	+0.27	120.56	-5.97	120.34	117.0
CHECK R.M.			-8.02	112.54	RECORD = 112.58
70+82 ¹⁵		110.7			
70+50		109.9			
70+00		108.7			
69+50		107.4			

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F.H. SF Con 40th + Imp.		112.58			
6+00	6.63	113.21			
70+82 ¹⁵			2.0	117.2	110.7 6.5
70+50			2.5	116.7	109.9 6.8
70+00			3.9	115.3	108.7 6.0
69+50	114.7		5.0	114.2	107.5 6.7
69+00			6.4	112.8	106.2 6.6
68+50			7.6	111.6	104.9 6.7
68+40 ²⁰ 3 Pt BK.			7.8	111.4	104.6 6.8
68+10 ²⁰ 3 Pt. Ab.			7.9	111.3	104.6 6.7
B.M.	1.47	114.05	6.63	112.58	
68+00			4.0	110.1	103.8 6.3
67+50			5.3	108.8	102.7 6.1
67			7.6	107.1	101.1 6.0
66+50			8.7	105.4	99.6 5.9
66			9.9	104.2	98.4 5.8
65+50			10.3	103.8	97.9 5.9
65			10.9	103.2	97.5 5.7

		114.05			
64+75		10.2	103.9	97.2	6.7
64+50		10.1	104.0	95.0	9.0
64+00		10.0	104.1	94.9	9.2
63+30		9.4	104.7	94.9	9.8
T.P.	4.23	109.37 110.37	104.64	102.64	
63		5.2	104.4	94.8	9.6
62+50		4.4	105.0	94.8	10.2
62		4.3	105.1	94.7	10.4
61+50		5.5	103.9	94.7	9.2
61+00		6.8	102.6	94.6	8.0
T.B.M.		7.62	101.75 102.75	To I.P. No. 1 11	

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Levels over 8' offsets
on 24" P.L. - West from 305A

139+00		71.9	16.5	5.4
B.M.	3.90	76.04		
		72.14		
Δ 139+37.5		4.1	71.9	66.0 5.9
139+65		4.6	71.4	65.6 5.8
139+82.5 Back		4.6	71.4	65.6 5.8
139+100.0 Ahead		4.6	71.4	65.6 5.8
140		4.7	71.3	65.6 5.7
450		4.8	71.2	65.6 5.6
141		5.0	71.0	65.6 5.4
+50		5.1	70.9	65.6 5.3
142		5.3	70.7	65.6 5.1
+50		5.5	70.5	65.3 5.2
143		5.6	70.4	65.1 5.1
T.P.	4.08	74.63	5.49	70.55
143+50		4.4	70.2	64.8 5.4
144		4.6	70.0	64.6 5.4
+50		4.7	69.9	64.3 5.6

	74.63			
144+84 ⁹⁷	4.8	69.8	63.8	6.0
145+16 ⁷³	5.0	69.6	61.1	8.5
+50	5.1	69.5	60.6	8.9
B.M. 147. N. 20. 6	5.59	69.04	ck 69.05	
TBM in T. Pole				
	3.28	105.03		
60+50	3.8	101.2	94.5	6.7
60+00	5.4	99.6	93.3	6.3
59+50	7.1	97.9	92.1	5.8
59+00	8.3	96.7	90.9	5.8
58+50	10.0	95.0	89.9	5.1
58+40	9.6	95.4	89.9	5.5
7+93 ⁸²				
58+00 APT.	8.3	94.7	90.8	5.9
57+50	7.2	97.8	92.5	5.3
57+00	4.9	100.1	94.2	5.9
56+75		100.7	95.0	5.7
56+50	3.1	101.9	96.5	5.4
56+00	+0.1	105.1	99.6	5.5
T.P. on Pipe	0.01	105.02		
	3.28	101.75		

May 14, 1948	Rainey			
May 18, 1948	King			26
	Baker			
	West			
B.M. 147. N. 20. 6	29th Comm	69.05		
	3.74	72.79		
46+00	3.7	69.1	60.2	8.9
46+20		69.3	60.0	9.3
46+50	3.4	69.4	60.0	9.4
46+76 ²²	3.8	69.0	60.0	9.0
47+07 ⁶⁶	3.7	69.1	63.3	5.8
47+50	3.8	69.0	63.2	5.8
48+00	3.9	68.9	63.0	5.9
48+50	4.3	68.5	62.9	5.6
49+00	4.5	68.3	62.7	5.6
49+50	4.7	68.1	62.6	5.6
50+00	5.0	67.8	62.4	5.4
50+50	5.0	67.8	62.3	5.5
50+71 ⁸ APT	5.1	67.7	62.2	5.5
		67.73		
on hub at APT.	5.06	67.79		

cut.

T.P.	0.84	120.51		119.67
55+50			11.9	108.6 102.6
55+60			9.6	110.9 105.6
54+50			6.4	114.1 108.7
54			3.5	117.0 111.0
53+50			2.1	118.4 111.8

6.0

5.3

5.4

6.0

6.6

T.P.	3.50	123.17	0.84	119.67
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53.			3.7	119.5 112.6
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6.9

52+50			4.0	119.2 112.5
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6.7

52			4.3	118.9 112.5
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6.4

51+50			5.4	117.8 112.4
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5.4

51			6.8	116.4 110.7
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5.7

50+50			9.0	114.2 108.6
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5.6

50			11.4	111.8 106.4
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5.4

T.P.	1.83	112.52	12.48	110.69
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112.52

49+50		2.6	109.9	104.3	5.6
+35			109.4	103.3	6.1
49		4.0	108.5	101.9	6.6
48+50		6.2	106.3	100.0	6.3
48		8.5	104.0	98.0	6.0
47+50		10.5	102.0	95.7	6.3
47		12.7	99.8	93.9	5.9

5.6

T.P.	1.72	101.58	12.66	99.86	
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46+50		2.3	99.3	91.7	7.6
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46		6.0	95.6	89.5	6.1
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45+50		8.5	93.1	86.6	6.5
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45		10.1	91.5	83.7	7.8
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T.P.	12.3	92.70	10.11	91.47	91.47
					80.45

44+50		4.8	87.9	80.8	7.1
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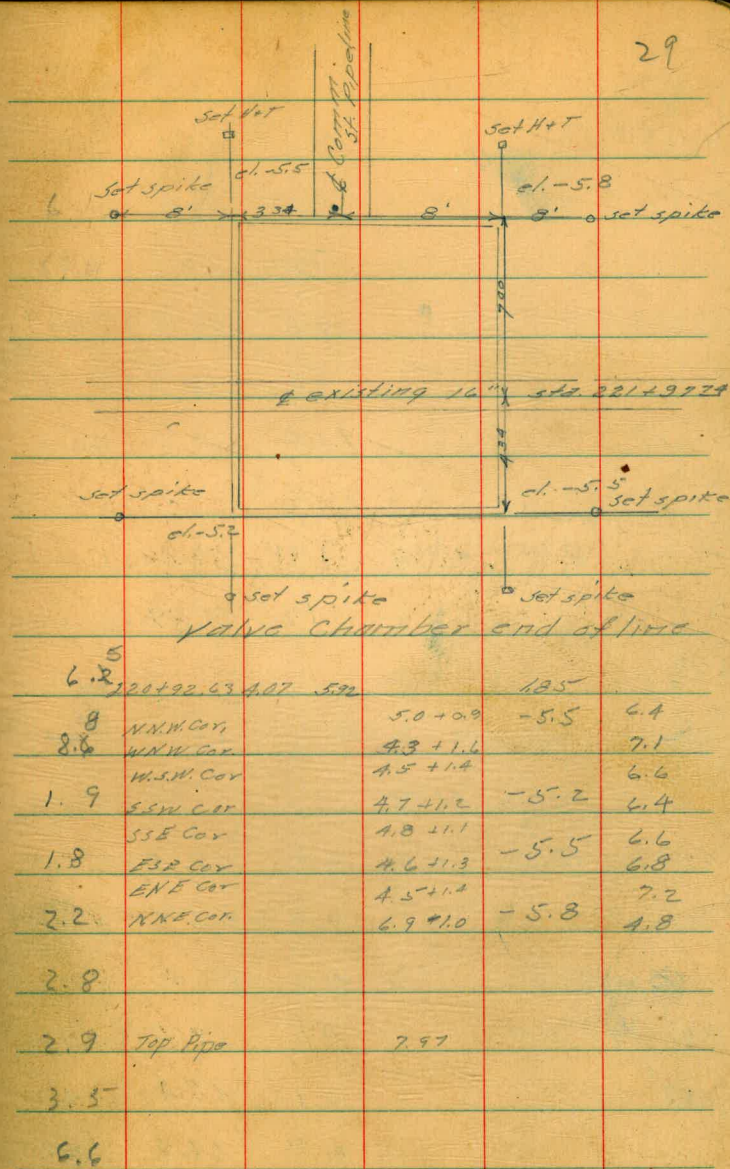
44		8.1	84.6	78.0	6.6
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43+50		11.2	81.5	75.2	6.3
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X.P.			73.7	66.9	6.8
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		92.70			
T.P.	2.04	81.81	12.93	79.77	
43400			3.3	78.5	72.4 6.1
42450			5.8	76.0	69.6 6.4
			8.33	73.48	ON 91 NN 48 42+13-E
		77.90			
41485			13.7	64.2	48.6 15.6
B.M.	2.33	62.20		59.87	45th Imp.
374524			2.7	59.5	53.3
38400			2.6	59.6	51.0
3845204			9.4	52.8	50.9
3845204			9.5	52.7	50.9
39400			9.2	53.0	50.8
+50			8.7	53.5	50.7
40400			8.9	53.3	50.4
+173			8.9	53.3	49.8
+6565			9.2	53.0	46.4



62.20

40+81⁴⁰ 9.1 53.1 45.0

T.P. 2.65 55.12 9.13 53.07

41+130³ 7.0 48.1 40.0

41+29 8.5 46.6 39.0

41+45 8.2 46.9 39.0 ⁸³41+60⁹¹ 7.5 47.6 40.3 ⁷⁷

T.P. 8.35 60.99 2.48 52.64

1.11 59.88

3 Pt. 150+71⁵⁸ 67.79

368 71.47

150+71⁵⁸ 3.7 67.8 62.5 ^{5.5}150+92⁴⁸ 3.8 67.7 62.2 ^{5.5}151+40² 4.0 67.5 58.0 ^{9.5}151+70⁵ 4 Pt. 4.1 67.4 58.0 ^{9.2}152+00 4.1 67.4 58.0 ^{9.2}152+50 4.7 66.8 58.0 ^{8.8}152+68¹¹ 4.7 66.8 58.0 ^{8.8}

30

8.1

8.1

7.6

7.9

7.3

71.47

153+00 4.7 66.8 60.5 ^{6.3}153+15⁹⁶ 4.6 66.9 61.8 ^{5.1}153+50 4.9 66.6 61.8 ^{4.8}154+00 5.1 66.4 61.8 ^{4.6}154+11²⁸ 5.1 66.4 61.8 ^{4.6}154+50 5.3 66.0 58.8 ^{7.2}154+75⁸⁵ 3 Pt. 5.6 65.9 56.5 ^{9.4}

4 Cl 5.72 65.75

153+47⁹⁶ C 4.9153+00² C 8.8

			65.75		
340	69.15				
154+2580		3.2	66.0	56.5	9.5
155+08 ⁷³	8'N	3.4	65.8	56.5	9.3
"	8'S	3.6	65.6	56.5	9.1
155+50		3.6	65.6	56.8	8.8
156+00		3.9	65.3	57.0	8.3
156+09 ⁵¹		4.0	65.2	57.0	8.3
156+41 ²⁵		4.2	65.0	59.0	6.0
157+00		4.4	64.8	59.0	5.8
157+50		4.8	64.4	59.0	5.4
158+00		5.1	64.1	59.0	5.1
158+50		5.4	63.8	58.6	5.2
158+90 ⁵⁰		5.7	63.5	58.3	5.2
159+00		5.7	63.5	58.2	5.3
159+25		5.9	63.3	58.0	5.3
159+50		6.2	63.0	57.9	5.1
159+61 ¹⁵		6.2	63.0	57.8	5.2

			69.15		
159+75		6.4	62.8	56.5	6.3
159+92 ²⁰		6.5	62.7	55.2	7.5
160+10		6.5	62.7	55.1	7.6
160+25		6.7	62.5	54.9	7.6
160+44 ²²	F.C.	6.8	62.4	54.9	7.5
	+ Corrim.				Corr.
N.E. LUTS' EVANS		3.92	65.23	65.17	
	Hensley + Corrim				
15				66.4	
	5.0	71.4			
154+013					
4" Water top		6.9	64.5		
154+118					
14" Sewer "		9.8	61.6		
1/2"					
4" Gas "		6.8	64.6		
1 1/2" Gas				61.2	
154+28					
4" Gas				68.9	

Hensley + Commercial
Tops of pipes

1st E				
1st W. Cor. 2844		68.34		
2.44	70.78			
4" Water Sta. 154+01.3	6.46	64.32		
Sta (pipe)	5.38	84.40	61.40	
14" Sewer (Bell)	9.24	61.54		
48" Drains Sta. 154+20.2	11.04	59.74		
4" Gas Sta. 154+23	7.97	62.81		
1 1/2" Gas Sta. 154+29	9.50	61.28	Gas	
3044 + Contin				
		72.14		
4.26	76.40			
4" Oil curb	4.3	72.1	66.8	
			67.2 68.6	
2nd E Imp. + 4544		59.87		
4.31	64.18			
37+28 28" Water	9.92			
37+22 Bot. Com. Line	14.00			
37+33 4" Gas	7.02			

Rainey
King
Baker
West

32

bell 0.5 No. 8 trenches

Can. can move this line ~~11/4~~

72

cut

5.3

68.6

Commercial St.
Pipeline

N.W. L&T 25th & Comm	54.38			
2.60	56.98			
173+50	4.4	52.6	47.0	5.6
173+75	4.7	52.3	47.0	5.3
174+00	4.9	52.1	46.7	5.4
174+25	5.3	51.7	46.4	5.3
175+00	5.8	51.2	45.9	5.3
175+50	6.3	50.7	45.3	5.4
176+00	6.7	50.3	44.8	5.5
176+50	7.1	49.9	44.3	5.6
177+00	7.6	49.4	43.7	5.7
177+50	8.1	48.9	43.2	5.7
178+00	8.5	48.5	42.6	5.9
178+25	8.5	48.5	42.4	6.1
178+50 ²⁰	8.7	48.3	39.8	8.5
178+66 ³⁰	8.7	48.3	39.8	8.5
L&T N of Con 24th & Comm	7.98	49.06		

June 14, 1918
Ramey
Paper
West

34
21949582

Under R.R. Tracks				
T.B.M. on P.P.				
4.43	6.99	2.56		
				5.2
220+62 ⁶³	6.91	0.08	5.1	5.18
220+92 ⁶³	5.14	1.85	5.1	7.0
3M. L&T		49.00		
4.42	53.42			
178+98.78	5.3	48.1	42.8	5.8
179+50	4.8	48.6	42.8	5.8
179+67.53 2 Ft.	4.6	48.8	42.8	6.0
180+00	4.4	49.0	42.8	6.2
180+50	4.1	49.3	42.8	6.5
181+00	4.1	49.3	42.8	6.5
181+25	4.2	49.2	42.8	6.4
181+50	4.5	48.9	42.4	6.5
182+00	4.9	48.5	41.9	6.6
CP	5.22	48.20		
	0.98	49.18		
182+50	1.1	48.1	41.5	6.6

Cont. P. 81

Detail of
Conc. Drain in Valve

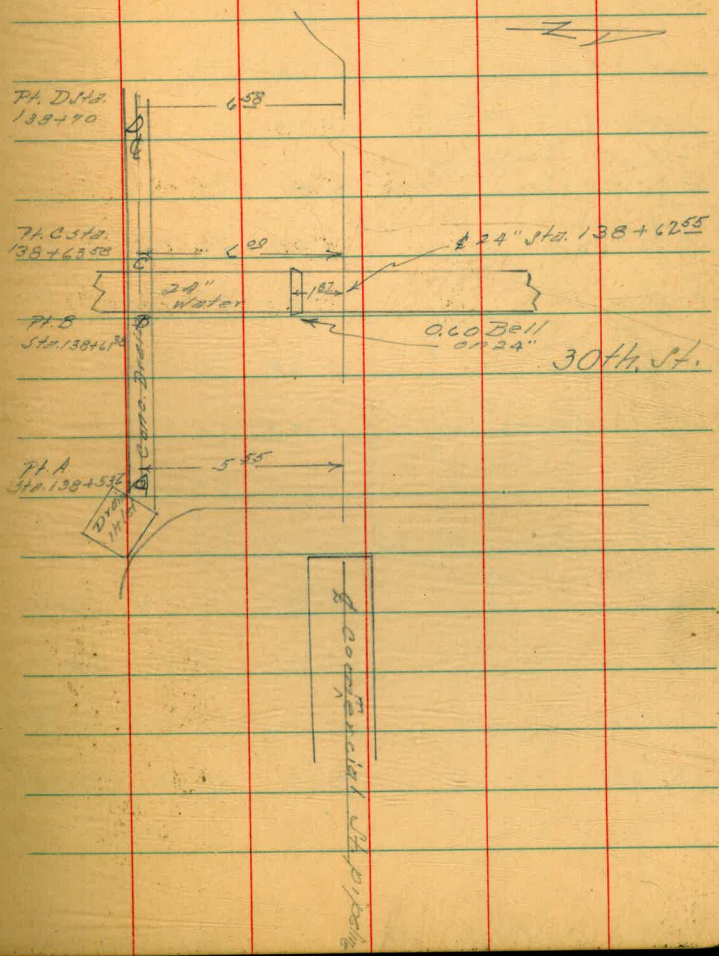
W. T. N. E. Cor. 30th. & Carroll. 76.14

4.49	76.63
Pt. A	7.12
Pt. B	8.65
Pt. C	8.65
Pt. D	8.63
8 int. top 24" water	7.00
B.M.	4.49 76.14

May
Raney
Baker
West 37

Chamber 30th & Carroll

width of drain 1.85



Valve Chamber
30th + Commercial

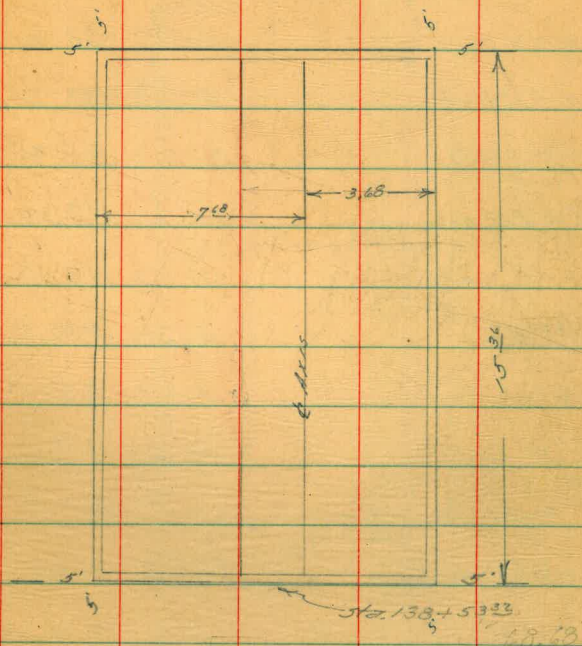
May 5, 1948

Rainey
King
Baker

76

NE 1/4 T 30th + Comm.	72.14	3.24	
5.32	77.46	68.9	
ENE cor.	5.35	72.11	
NNE cor	5.26	71.50	
NNW cor	5.33	72.13	
WNW cor	5.33	72.13	
WSW cor	5.41	72.05	
SSW cor	5.40	72.06	
SSE cor	5.83	71.63	
ESE	6.38	71.08	
Top of pipe	3.25	118.5	65.61
			72.14
4.25	76.39		
NW Cor	4.25	72.14	64.2
NE Cor	4.41	71.98	64.5
SW Cor	4.34	72.05	64.5
SE Cor	4.32	72.07	64.8

All 5 Points +



7.94

7.48

7.56

7.27

MARCH 16, 1948
KING, LEONARD, NIENOW.

REPLACED DESTROYED CUT STAKES WITH
GRADE STAKES IN DITCH ON SAN VICENTE
RND PIPE LINE, NEAR SAN VICENTE DAM.

STA.	+	H.S.	GRADE	G. ROD.	B.M. ELEV.
B.M.	0.12	497.01			HUB 6+50 496.89
7+00			485.3	11.7	
T.P.	+3.71	488.13		-12.59	489.12
7+45 ²⁶			482.4	5.7	
7+77 ⁸⁴			479.7	8.4	
7+93 ⁷⁵			478.0	10.1	
T.P.	1.36	476.70		12.73	475.40
8+41 ⁴⁴			472.1	4.6	
8+73 ³²			468.8	7.9	

STA	+	H.S.	GRADE	G. ROD	B.M. ELEV.
			476.70		
9+00			466.7	10.5	
T.P.	3.50	467.11		13.09	463.61
9+50			461.5	5.6	
9+85 ²⁵			458.2	8.9	
+8464 = AMER. PIPE EQ. PT.					
10+01 ²³			457.3	9.8	
10+25			456.1	11.0	
10+50			455.0	12.1	
CHECK B.M. T.P. +.53 466.21					
10+81 ²⁵			453.4	2.8	
10+97 ²³			453.0	3.2	
11+25			452.9	3.3	

RECORD B.M.
457.34
457.35
455.68

STA.	+	H.I.	GRADE	- G. ROD	B.M. ELEV.
		456.21			
11+50			452.8	3.4	
11+75			452.7	3.5	
12+00			452.6	3.6	
12+25			452.8	3.4	
12+50			452.9	3.3	
12+75			453.1	3.1	
13+00			453.3	2.9	
13+25			453.4	2.8	
13+50			453.6	2.6	

STA.	+	H.I.	GRADE	G. ROD	³⁹ B.M. ELEV.
		456.21			
13+75			453.8	2.4	
14+00 ⁹⁰			453.9	2.3	

CHECKED ELEV. OF GRADE AT STA 13+75 OK.

SAN VICENTE 2ND MAIN PIPE LINE.

Feb. 16, 1948.

KING, LEONARD, BAKER

	+	GRADE	G. ROD	-	CUT.
R.M.	+ 9.44	^{H.S.} 494.21		484.77	TOP OF CONC. WALL

0+28 ⁵		478.6	15.6	9.4	6.2
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0+44 ⁵		472 ⁵	17.0	9.4	7.6
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	+	GRADE	G. ROD	-	CUT
		474.21			
1400		477.2	17.0	9.7	7.3
1456 ⁵		477.2	17.0	5.0	12.0
1477		478.6	15.6	4.0	11.6
1488		481.2	13.0	5.6	9.4
2400		482.5	11.7	2.4	9.3
		H.d.			
T.P.	+10.56	503.60		-1.17	485.04
2450		488.1	15.5	6.1	9.4
2499 ⁷⁹		493.6	10.0	2.5	7.5
		H.d.			
T.P.	+5.86	508.81		-0.65	502.95
3456 ⁹					
3476 ⁸	G.	495.9	18.4	4.0	9.4
3497 ⁶		495.7	18.1	3.9	9.2

	+	GRADE	G. ROD	-	CUT
		508.81			4/
3476 ⁹⁰		497.8	11.0	2.4	8.6
3488 ⁷⁹		499.4	10.4	2.0	8.4
		H.d.			
T.B.M.	+0.85	507.56		-2.10	506.71
4404 ⁷⁹		498.8	8.8	0.6	8.2
4420 ⁷⁹		499.0	8.6	0.4	8.2
4432 ⁷³		499.0	8.6	1.1	7.5
5400 ⁷⁶		495.0	12.6	4.1	8.5
5450		493.5	14.1	6.1	8.0
5482 ⁸¹		492.3	15.3	7.0	8.3
6404 ¹⁹		491.6	16.0	7.6	8.4

NAIL IN POLE.

	+	GRADE	G. Rod	-	CUT
		507.56			
6+50		488.7	18.9	10.7	8.2 <small>ON 6+50 HOB</small>
T.P.	+0.29	497.18		-10.67	496.89
7+00		485.3	11.9	1.4	10.5
7+45 ⁹⁶		467.4	14.8	4.1	10.7
7+77 ⁸⁴		479.7	17.5	6.4	11.1
7+85 ⁷⁶		478.0	19.2	6.5	12.7
T.P.	+0.58	484.68		-13.08	484.10
8+41 ⁴⁴		471.1	12.6	4.0	8.6
8+73 ⁵⁴		468.5	15.9	8.3	7.6
9+00		466.2	18.5	10.9	7.6
T.P.	+0.70	472.44		-12.94	471.74
9+50		461.5	10.9	2.3	8.6
B.M.				-9.49	462.95 = 462.95 Rec'd.

	+	GRADE	G. Rod	-	CUT
					⁴²
B.M.	5.73	^{H.d.} 468.66			<small>CHISEL X ON PUMP. PAGE. 462.93</small>
9+84 ⁶⁴	} E.C.				
9+85 ⁵²		487.7	10.5	0.6	9.9
10+11 ²⁵		457.3	11.4	1.2	10.2
10+25		456.1	12.6	1.9	10.7
10+50		455.0	13.7	2.3	11.4
10+81 ²⁵		453.4	15.3	7.4	7.9
10+97 ³³		453.0	15.7	8.1	7.6
11+25		452.9	15.8	7.9	7.9
11+50		452.8	15.9	6.8	9.1

	+	GRADE	G. ROD	-	CUT
		468.66			
11+75		452.7	16.0	6.5	9.5
12+00		452.6	16.1	6.8	9.3
12+25		452.8	15.9	6.6	9.3
T.P.	+9.71	467.05		11.32	457.34
12+50		452.9	14.1	4.2	9.9
12+75		453.1	13.9	4.4	9.5
13+00		453.3	13.7	4.9	8.8
13+25		453.4	13.6	4.7	8.9
13+50		453.6	13.4	4.8	8.6
13+75		453.8	13.2	4.4	8.8

	+	GRADE	G. ROD	-	CUT
		467.05			
14+00 ²⁰		453.9	13.1	2.3	10.8
T.P.	+11.96	469.30		-9.71	457.34
14+25 ²⁰ EQUATION		454.0	15.3	5.5	9.8
14+50 ⁰⁶		455.4	13.9	3.5	10.4
14+57 ⁵⁴		458.0	11.3	1.8	10.1
T.P.	11.85	480.95		-0.20	469.10
15+00		461.8	19.1	11.0	8.1
15+21 ²⁹		463.8	17.1	6.5	10.8
15+37 ¹²		466.1	14.8	4.8	10.0
15+52 ⁶⁹		469.8	11.1	1.1	10.0
T.P.	11.28	491.16		-1.07	479.88
15+67 ⁵⁹		474.5	16.7	6.3	10.4

	+	GRADE	G. ROD	-	COT
		491.16			
15+87 ⁸⁴		477.9	13.3	3.0	10.3
15+98 ³³		479.9	11.3	2.4	8.9
16+14 ¹²		480.6	10.6	2.8	7.8
16+30		480.6	10.6	2.8	7.8
16+45 ⁹⁹		480.4	10.8	3.4	7.4
16+58 ⁵⁶		478.9	12.3	4.2	8.1
16+74 ³⁷		476.6	14.6	6.4	8.2
16+89 ⁸⁶		474.3	16.9	9.3	7.6
17+05 ¹³		470.7	20.5	11.3	9.2

-2.03

	+	GRADE	G. ROD	-	COT
		491.16			44
					ON ROCK
	062	483.86		-7.92	483.24
17+20 ⁴⁰		465.9	18.0	-8.7	9.3
T.P.	+0.76	472.96		-11.66	472.20
17+35 ⁹²		462.1	10.9	3.0	7.9
T.P.	+0.87	461.36		-12.47	460.49
17+82 ³²		451.6	9.8	2.0	7.8
17+98 ⁶⁹		449.3	12.1	5.6	6.5
18+14 ⁵⁹		448.0	13.4	6.2	7.2
18+50		447.4	14.0	7.0	7.0
19+00		446.5	14.9	7.3	7.6
19+26 ⁶²		446.4	15.0	7.4	7.6
19+38 [±]					
19+45 ⁶⁸		446.2			

Venturi Tube and concrete chamber.

NOT USED

	+	GRADE	G. Rod	-	CUT
		461.56			
19+50		446.2	15.2	7.5	7.7
T.P.	} SAME POINT.				OFF .08
T.P.		-6.52	454.84 = 454.76		
					ELEV. SPIKE IN LIGHT POLE. 50' LT. + STA. 20+00
20+00		445.8	10.8	2.9	7.9
20+50		445.5	11.1	3.3	7.8
21+00		445.2	11.4	4.0	7.4
21+50		444.8	11.8	4.0	7.8
22+00		444.5	12.1	4.4	7.7
22+50		444.2	12.4	4.4	8.0
23+00		443.8	12.8	4.7	8.1
23+50		443.5	13.1	5.0	8.1
		456.60			

	+	GRADE	G. Rod	-	CUT
					45
23+77 ⁴²		443.3	13.3	5.1	8.2
23+92 ²³		442.1	14.5	5.8	8.7
24+09 ⁰⁶		439.8	16.8	5.9	10.9
24+25		438.4	18.2	6.3	11.9
24+50		438.4	18.2	5.9	12.3
24+89		438.4	18.2	6.0	12.2
24+95.55		No CUT	STAKE		
25+01 ⁰¹		438.4	18.2	6.1	12.1
25+09 ²⁵		No CUT	STAKE		
25+17 ⁰²		438.4	18.2	6.2	12.0
25+32 ⁸⁴		439.2	17.4	6.4	11.0
25+50		439.2	17.4	6.5	10.9
		456.60			

	+	GRADE	G. ROD	-	CUT
25+75		439.2	17.4	6.6	10.8
	+4.58	456.60			
U.S.C.G.S. V-61				R.M.	U.S.G.S. ELEV.
1927 B.M.			-2.50	452.02 =	452.161
E.C. 15+98.07		439.2	15.3	4.6	10.7
26+50		439.2	15.3	4.8	10.5
27+00		439.2	15.3	4.9	10.4
27+50		439.3	15.2	5.1	10.1
28+00		439.3	15.2	5.3	9.9
28+50		439.3	15.2	5.4	9.8
29+00		439.3	15.2	5.6	9.6
29+50		439.3	15.2	5.6	9.6
		454.52			

	+	GRADE	G. ROD	-	CUT
		454.52			46
T.P.	+5.65		-5.98	448.87	
30+00		439.3	15.5	5.8	9.7
30+50		439.3	15.5	5.8	9.7
R.C. 30+91.80				No CUT	STAKE
31+00		439.4	15.4	5.8	9.6
31+50		439.4	15.4	5.9	9.5
32+00		439.4	15.4	5.9	9.5
32+50		439.4	15.4	5.9	9.5
33+00		439.4	15.4	5.9	9.5
33+50		439.4	15.4	5.9	9.5
34+00		439.4	15.4	5.7	9.7
		454.80			

	+	GRADE	G. ROD	-	CUT
34+50		439.4	15.4	5.6	9.8
35+00		439.5	15.3	5.3	10.0
35+50		439.5	15.3	5.0	10.3
36+00		439.5	15.3	4.5	10.8
36+29 ⁹⁷		439.5	15.3	4.3	11.0
36+61 ²⁸		441.0	13.8	4.1	9.7
37+00		441.0	13.8	3.9	9.9
37+50		441.0	13.8	3.7	10.1
CHECK B.M. E.C. 38+00 ³⁶	+2.61	454.80	-4.27	452.19 = 452.19	
		441.0	15.5	5.2	10.3
		456.46			
		π			

NAIL IN PP-RECORD B.M.

	+	GRADE	G. ROD	-	CUT
38+50		441.0	15.5	5.0	10.5
39+00		441.0	15.5	4.8	10.7
39+50		441.0	15.5	4.7	10.8
40+00		441.0	15.5	4.7	10.8
40+50		441.0	15.5	4.7	10.8
41+00		441.0	15.5	4.7	10.8
41+50		441.0	15.5	4.7	10.8
42+05 ⁴⁰		441.0	15.5	4.4	11.1
R.C. 42+18 ⁶⁴		No CUT	STAKE		
42+25		442.7	13.8	4.1	9.7
		456.46			
		π			

47

+	GRADE	G. P. 00	-	CUT
42+52 ⁹²	445.0	11.5	3.8	7.7
42+75	445.0	11.5	3.6	7.9
43+00	445.0	11.5	3.4	8.1
43+25	445.0	11.5	3.2	8.3
43+50	445.0	11.5	3.1	8.4
43+70 ²⁸ P.R.C.	NO CUT STAKE.			
43+75	445.0	11.5	3.0	8.5
44+00	445.0	11.5	2.9	8.6
44+25	445.0	11.5	2.8	8.7
T.P. +2.21	456.46		-1.16	454.25
44+50	445.0	10.4	1.6	8.8

+	GRADE	G. P. 00	-	CUT
44+75	445.0	10.4	1.6	8.8
45+00	445.0	10.4	1.5	8.9
45+25	445.0	10.4	1.4	9.0
45+50	445.0	10.4	1.3	9.1
45+75	445.0	10.4	1.5	8.9
46+00	445.0	10.4	1.7	8.7
46+25	445.0	10.4	2.1	8.3
E.C. 46+35 ²²	445.0	10.4	2.3	8.1
46+50	444.7	10.7	2.6	8.1
47+00	443.23	12.1	3.9	8.2

	+	GRADE	G. ROD	-	CUT
47+31 ⁸²		442.4	13.0	5.0	8.0
B.C. 47+33 ²⁷		NO CUT STAKE.			
47+47 ²⁸		441.7	13.7	5.7	8.0
47+63 ⁷⁴		441.0	14.4	6.3	8.1
47+79 ²⁰		440.2	15.2	7.0	8.2
E.C. 47+84 ²⁰		NO CUT STAKE.			
47+89 ⁷⁶		439.4	16.0	7.3	8.7
48+05 ⁴⁵		437.8	17.6	8.0	9.6
48+37 ²³		432.7	22.7	9.4	13.3
48+45		432.0	23.4	9.8	13.6
49+00		432.0	23.4	12.0	11.4
49+50		431.9	23.5	12.4	11.1
+11.74		455.41		B.M.	443.67
		↑			CORRECTED GRADE.

	+	GRADE	G. ROD	-	CUT
CHECK B.M.				-3.08	443.64 = 443.67
	+3.74	↑	446.72		
T.P.				-1.30	442.98
50+00		431.9	12.4	2.0	10.4
50+50		431.8	12.5	2.6	9.9
51+00		431.8	12.5	2.1	10.4
51+50		431.8	12.5	2.2	10.3
52+00		431.7	12.6	2.8	9.8
52+50		431.7	12.6	3.1	9.5
53+00		431.6	12.7	3.4	9.3
53+50		431.6	12.7	4.7	8.0
		↑	444.28		

49
Record.

	+	GRADE	G. ROD	-	CUT
54+00		431.5	12.8	4.9	7.9
54+50		431.4	12.9	5.0	7.9
55+00		431.4	12.9	5.2	7.7
55+50		431.3	13.0	5.3	7.7
56+00		431.2	13.1	4.8	8.3
56+50		431.1	13.2	5.2	8.0
57+00		431.1	13.2	5.8	7.4
57+50		431.0	13.3	4.0	9.3
58+00		430.9	13.4	3.8	9.6
	↑	444.28			
		⌊			

	+	GRADE	G. ROD	-	CUT
		444.28			
T.P.	+2.47	⌊	-0.33		441.81
58+50		430.8	11.3	2.0	9.3
59+00		430.8	11.3	2.0	9.3
59+50		430.7	11.4	2.4	9.0
60+00		430.6	11.5	3.0	8.5
60+50		430.3	11.8	4.3	7.5
61+00		430.0	12.1	4.3	7.8
61+50		429.7	12.4	4.8	7.6
62+00		429.4	12.7	4.7	8.0
62+50		429.1	13.0	4.8	8.2
		442.14			
		⌊			

	+	GRADE	G. ROD	-	CUT
63+00		428.8	13.3	4.9	8.4
63+50		429.5	13.6	5.2	8.4
64+00		428.2	13.9	5.5	8.4
64+50	↑	427.9	14.2	5.5	8.7
SET T.P.	+6.84	427.14		SPINE IN NEW POLE. -3.26	435.80
65+00		427.6	11.1	2.0	9.1
65+50		426.9	11.8	2.8	9.0
66+00		426.1	12.6	3.2	9.4
66+50		425.4	13.3	1.9	11.4
67+00		424.6	14.1	3.8	10.3

	+	GRADE	G. ROD	-	CUT 5)
67+50		424.5	14.2	4.0	10.2
68+00		424.4	14.3	4.1	10.2
68+50		424.3	14.4	4.9	9.5
69+00		424.2	14.5	5.6	8.9
69+50		424.1	14.6	6.0	8.6
70+00		424.0	14.7	6.0	8.7
70+50		423.0	15.7	6.6	9.1
71+00		422.0	16.7	7.1	9.6
71+50	↑	422.0	16.7	7.5	9.2
		438.66			

	+	GRADE	G. ROD	-	CUT
71+00		422.0	16.7	7.4	9.3
72+50		422.0	16.7	7.6	9.1
73+00		422.0	16.7	6.8	9.9
73+50		421.9	16.8	7.2	9.6
	+7.67	438.66		-6.32	430.99
74+00		421.9	15.4	6.3	9.1
74+50		421.9	15.4	6.3	9.1
75+00		421.9	15.4	6.5	8.9
75+50		421.9	15.4	6.7	8.7
76+00		421.9	15.4	6.9	8.5

	+	GRADE	G. ROD	-	CUT ⁵²
76+50		421.9	15.4	7.1	8.3
77+00		421.9	15.4	6.8	8.6
77+50		421.9	15.4	7.0	8.4
78+00		421.8	15.5	7.7	7.8
78+50		421.8	15.5	6.8	8.7
79+00		421.8	15.5	4.8	10.7
79+50		421.8	15.5	5.7	9.8
80+0		421.8	15.5	6.0	9.5
80+50		421.8	15.5	6.2	9.3

	+	GRADE	B. ROD	-	CUT
81+0		421.8	15.5	6.6	8.9
+50		421.8	15.5	6.1	9.4
82+0		421.8	15.5	6.6	8.9
T.P.	+4.00	427.31		-1.28	433.31
+50		421.7	12.8	4.2	8.6
83		421.7	12.8	4.3	8.5
+50		421.7	12.8	4.5	8.3
84+0		421.7	12.8	4.5	8.3
+50		421.7	12.8	4.8	8.0
85+0		421.7	12.8	4.9	7.9

\nearrow
 \nwarrow 434.54

	+	GRADE	B. ROD	-	CUT ⁵⁹
+50		421.4	13.1	5.2	7.9
85+0		421.1	13.4	5.2	8.1
+50		420.8	13.7	4.5	9.2
87		420.6	13.9	5.7	8.2
+50		420.8	14.2	6.3	7.9
88+0		420.0	14.5	6.6	7.9
+50		419.7	14.8	6.7	8.1
89+0		419.4	15.1	7.1	8.0
89+50		419.1	15.4	7.4	8.0
+5.20		424.54			429.34
					R.M.

	+	GRADE	G. ROD	-	CUT MAIL INBOX #22924 RECORD
CHECK R.M.			-9.36	429.34 =	429.37
90 to		418.8	13.9	5.4	8.5
+50		418.6	14.1	6.3	7.8
91		418.3	14.4	6.6	7.8
+50		418.0	14.7	6.1	8.6
92		417.7	15.0	Not used, ref.	
101 ³⁶		417.7	15.0	7.0	8.0
133 ¹⁸		415.9	16.8	9.2	7.6
+49m		414.5	18.2	6.9	11.3
93		414.5	18.2	Duplicate Station, ref.	
	↑	432.71			

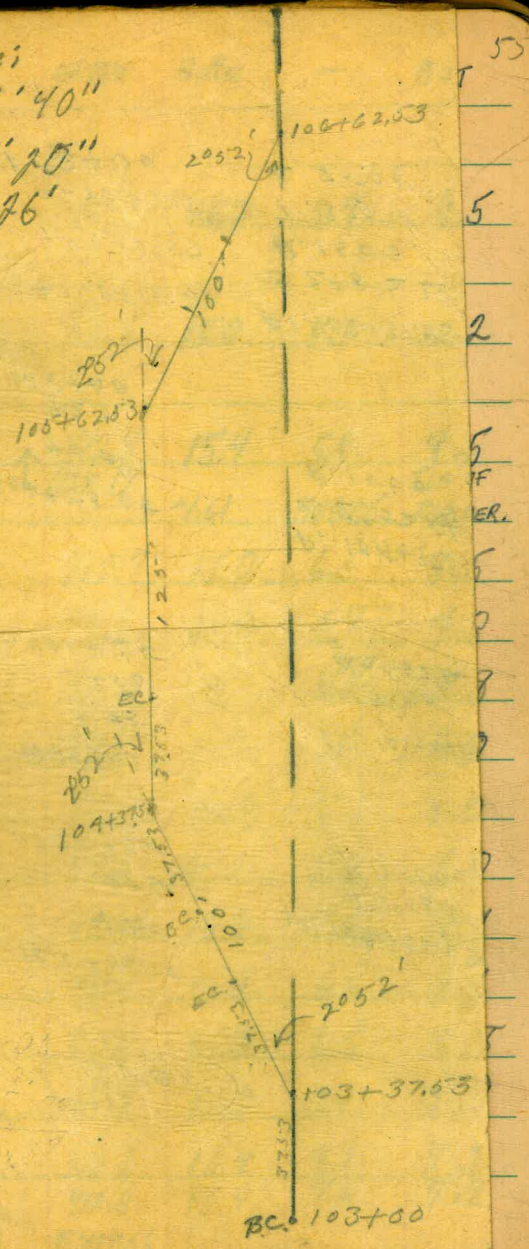
	+	GRADE	G. ROD	-	54 COT.
750		414.5	18.2	Duplicate Station, ref.	
93		414.5	18.2	7.9	10.3
+50		414.5	18.2	8.6	9.6
94		414.5	18.2	6.6	11.6
+50	↑	414.5	18.2	5.7	12.5
T.P.	+6.05	432.71	-1.51	416.66	Red top at 95+00
95		414.5	13.7	1.5	12.2
+50		414.4	13.8	2.7	11.1
96 to		414.4	13.8	2.8	11.0
+50	↑	414.4	13.8	2.6	11.2
	↑	428.17			

	+	GRADE	G. ROD	-	CUT
9710		414.4	13.8	4.9	8.9
750		414.4	13.8	5.7	8.1
989		414.4	13.8	3.4	10.4
750		414.4	13.8	3.8	10.0
99		414.4	13.8	4.5	9.3
750		414.1	14.1	3.8	10.3
10070		413.8	14.4	4.4	10.0
750		413.6	14.6	6.4	8.2
101		413.3	14.9	7.1	7.8

↑
428.17

Dist. = 28' 40"
58' = 57' 20"
E.C. = 1076'

Huber's 0.16' shift



		GRADE	G. ROD	-	CUT
106	+	412.2	15.5	7.9	7.6
+25		412.0	15.7	7.9	7.8
+50		411.8	15.9	8.0	7.9
+75		411.6	16.1	8.2	7.9
107		411.4	16.3	8.4	7.9
+50	Break	411.0	16.7	8.8	7.9
108		410.9	16.8	8.3	8.5
+50		410.9	16.8	8.2	8.5
109		410.9	16.8	6.6	10.2
+50	+5.76	410.8	16.9	7.2	9.6
check BM		427.66	-51.9	421.96	72.858
110		410.8	16.3	6.2	10.1
110 +50		410.8	16.3	7.5	8.8
		427.09			

		Grade	G. Rod	-	CUT
111		410.7	16.4	7.3	9.1
+50		410.7	16.4	7.8	8.5
112		410.7	16.4	8.3	8.1
+50		410.7	16.4	7.5	8.9
113		410.7	16.4	7.6	8.8
+50		410.6	16.5	8.6	7.9
114		410.6	16.5	8.5	8.0
+50		410.6	16.5	8.4	8.1
115 +50		410.6	16.5	8.2	8.3
		427.09			

	Gr	Gr Rod	-	Cut
TP	6.90	427.09	310	420.19
150		410.6	12.7	38 8.9
116		410.5	12.8	42 8.6
150		410.5	12.8	42 8.6
117		410.5	12.8	44 8.4
150		410.5	12.8	46 8.2
118	Druck	410.5	12.8	49 7.9
150		410.3	13.0	46 8.4
119		410.1	13.2	55 7.7
119+150		409.8	13.5	54 8.1
		423.29		

	Gr	Gr Rod	-	Cut
120		409.6	13.7	56 8.1
150		409.4	13.9	60 7.9
TP	4.95	423.29	338	418.34
141		409.2	12.5	47 7.8
150		409.0	12.7	48 7.9
122		408.7	13.0	49 8.1
150		408.5	13.2	52 8.0
123		408.3	13.4	53 8.1
150		408.10	13.6	56 8.0
124		407.9	13.8	58 8.0
		421.72		

57

Cut

Close to
10000
Grain 6 Bar

+50	407.6	14.1	5.9	8.2
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125	407.4	14.3	6.0	8.3
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+50	407.2	14.5	6.3	8.2
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126	407.0	14.7	5.8	8.9
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+50	406.9	14.8	6.5	8.3
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T.P.	5.08	421.72	3.94	414.64
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127	406.8	13.8	5.7	8.1
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+50	406.7	13.9	5.9	8.0
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128	406.5	14.1	6.1	8.0
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128+50	406.4	14.2	6.4	7.8
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420.58

58

129	406.3	14.3	6.4	7.9
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+50	406.2	14.4	6.3	8.1
-----	-------	------	-----	-----

T.P.	5.77	420.58	4.78	413.81
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130	406.0	12.8	4.8	7.8
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+50	405.9	12.7	4.9	7.8
-----	-------	------	-----	-----

131	405.8	12.8	4.9	7.9
-----	-------	------	-----	-----

+50	405.7	12.9	5.2	7.7
-----	-------	------	-----	-----

132	405.6	13.0	5.1	7.9
-----	-------	------	-----	-----

+50	405.4	13.2	5.1	8.1
-----	-------	------	-----	-----

133	405.3	13.3	4.8	8.5
-----	-------	------	-----	-----

418.59

+50	405.2	13.4	5.5	7.9	
134	405.1	13.5	5.6	7.9	
+50	405.0	13.6	5.7	7.9	
135	404.8	13.8	5.8	8.0	
+50	404.7	13.9	6.1	7.8	
136	404.6	14.0	6.4	7.6	
TP on BM	6.13	418.59	4.17	412.46	
+50	404.5	12.1	4.4	7.7	
+75	404.4	12.2	4.4	7.8	
137	404.4	12.2	4.0	8.2	
+25	404.3	12.3	4.0	8.3	
137+50	404.2	12.4	3.9	8.5	
+75	404.1	12.5	4.1	8.1	
	416.53				

	Grade	G. Rod	-	59 cuts
138	404.1	12.5	4.4	8.1
+25	404.0	12.6	4.4	8.2
+52 ⁸²	404.0	12.6	4.5	8.1
+75	402.0	14.6	4.5	10.1
139+00 ⁶⁹	399.8	16.8	4.3	12.5
+25	399.8	16.8	4.2	12.6
+50	399.8	16.8	4.2	12.6
+75	399.8	16.8	4.4	12.4
140	399.8	16.8	5.2	11.6
+25	399.8	16.8	4.6	12.2
+50	399.8	16.8	4.9	11.9
+75	399.7	16.9	4.7	12.2
141	399.7	16.9	4.9	12.0
+25	399.7	16.9	5.1	11.8
+50	399.7	16.9	5.0	11.9
+75	399.7	16.9	5.1	11.8
check BM	3.00	416.63	15.4	413.63 ✓
142	399.7	15.5	3.7	11.8 ✓
+25	399.7	15.5	3.7	11.8 ✓
+50	399.7	15.5	3.7	11.8 ✓
+75	399.7	15.5	4.0	11.5 ✓
143	451.7			

149² 399.7 15.5 ✓ 4.3 11.2 ✓

164⁹ 398.8 16.4 ✓ 4.4 12.0 ✓

143+81⁵ 396.8 ✓ 18.4 ✓ 4.6 13.8 ✓

T.P. 458 415.17 0.55 410.59

144+12 390.7 20.4 ✓ 8.8 11.6 ✓

127⁹⁷ 50 bare 389.2 21.3 ✓ 9.4 12.5 ✓

150 389.1 22.0 ✓ 8.8 13.2 ✓

145 389.1 22.0 ✓ 8.7 13.3 ✓

148+56 389.0 22.1 ✓ 3.8 13.3 ✓

146+0 393.0 18.1 ✓ 3.9 14.5 ✓

T.P. 352 411.14 12.88 407.52
420.40

150 397.6 22.8 ✓ 12.8 10.0 ✓

146+167⁵² 399.2 21.2 ✓ 9.2 12.0 ✓

146+98⁷⁸ 404.0 16.4 ✓ 3.2 13.2 ✓

147+14⁵⁰ 405.0 15.4 ✓ 1.2 14.2 ✓

check 811 6.78 420.40 7.32 413.62
5 bare

151⁴⁰ L 405.1 15.8 ✓ 5.8 10.0 ✓

148 405.1 15.8 ✓ 5.3 10.5 ✓

150 405.1 15.8 ✓ 4.8 11.0 ✓

149 405.2 15.7 ✓ 4.5 11.2 ✓

149+50 405.2 15.7 ✓ 4.2 11.5 ✓

420.94

				cols	
150+0	405.2	15.7	4.2	11.5	
750	405.3	15.6	4.1	11.5	
151	405.3	15.6	4.1	11.5	
750	405.3	15.6	3.9	11.7	
152	405.3	15.6	3.8	11.8	
T.P.	3.30	420.94	5.63	417.64	
750	405.4	17.9	5.9	12.0	
153	405.4	17.9	5.9	12.0	
750	405.4	17.9	5.6	12.3	
154	405.4	17.9	5.4	12.5	
1					

423.27

		Grade	G Rad	-	cut
	423.27				60
712 ⁶²	^{50 above} 405.4	17.9	5.4	12.5	
759 ⁹⁷	^{50 above} 410.0	13.3	5.1	8.2	
155	410.2	13.1	4.8	8.3	
750	^{OK} 410.4	12.9	4.3	8.6	
	No change				
156	410.6	12.7	4.0	8.7	
156+50	410.8	12.5	3.9	8.6	
157	410.8	14.5	3.6	10.9	
	425	4.1	8.4		
	^{changed} 425.3				
157+50	410.8	14.5	4.0	10.5	
		12.5	4.1	8.4	
158+0	410.8	14.5	4.4	10.1	
		12.5	4.0	8.5	
	423.27				
779	421.00	0.52	420.50		

BM	1036	421.02		410.66	
158+4 ⁷⁷		410.8	10.2	1.3	8.9 8.1
158+58 ⁷¹		410.6	10.4	1.4	9.0 9.0
159		409.7	11.3	2.2	8.5 9.1
159+50		408.7	12.3	3.3	8.7 9.1
160+02 ²⁰		407.5	13.4	4.2	9.2
150 ¹⁴		407.4	13.5	4.3	8.8
4° bend 165 ⁸³		407.2	13.8	5.0	8.8 7.4 5.2
181 ⁷⁷		405.8			
160+97 ²¹		404.4			

	Grade	G. Rod		cut
5° bend 161+13 ⁶⁶	421.0	180	5.4	12.6
11/26/47 BM	6.00	417.46		410.66
150	402.9	78.1	5.8	12.3
162	402.8	14.7	5.4	9.3
150	402.7	14.8	7.0	7.8
162+89 ⁸⁵	402.5	14.9	6.8	8.1
163+04 ⁶⁸	401.5	16.0	7.0	3.0
163+20 ²⁸	399.0	18.5	7.1	11.4

	+	π Elev. Grade	G.R.	Elev -	cut
BM	2.97	413.63		410.66	
163+36		396.5	17.1	3.4	13.7
163+57 ⁸¹		394.0	19.6	3.5	16.1
164		388.6	25.0	8.2	16.8
+4721		383.3	30.3	11.3	19.0
163 ²⁶	1.57	382.7	30.9	11.8	12.7
Set BM	1.57	402.17	13.03	400.60	<small>Top steel Rise opp 166+20+</small>
165		381.7	20.5	4.6	15.9
+50		380.5	21.7	5.8	15.9
166		379.2	23.0	5.5	17.5
+50		378	24.2	5.3	18.9

	+	π 402.17 Grade	- G. Rod	Elev -	62 cut
167		378.0	24.2	6.5	17.7
+50		378.0	24.2	5.9	18.3
168		378.1	24.1	4.4	19.7
+50		378.1	24.1	7.3	16.8
169		378.2	24.0	8.5	15.5
+50		378.2	24.0	7.8	16.2
T.P.	6.04	400.37	784	394.33	
170		378.3	22.1	5.3	16.8
+50		378.3	22.1	4.9	17.2
171		378.4	22.0	4.7	17.3

	X 40037			
	Grade	G. Rod	-	cut
+50	378.4	22.0	5.1	16.9
172	378.5	21.9	4.8	17.1
+50	378.5	21.9	4.7	17.2
173	378.6	21.8	4.8	17.0
+50	378.6	21.8	4.9	16.9
174	378.7	21.7	4.5	17.2
+50	378.7	21.7	4.7	17.0
175	378.8	21.6	5.1	16.5
+50	378.8	21.6	4.4	17.2

	T 40037			
	Grade	G. Rod	-	cut
176	378.9	21.5	4.9	16.6
Set BM	403	401.83	2.57	397.80
+50	378.9	22.9	3.8	13.1
177	379.0	22.8	3.3	19.5
+50	379.0	22.8	4.1	18.7
178	379.7	22.1	4.0	18.1
+50	380.3	21.5	4.1	17.4
179	381.0	20.8	5.2	15.6
+50	381.7	20.1	5.5	14.6
180	382.3	19.5	5.1	14.4

83

Top Large
Granite
Boulder
SEnd Bridge
100+ LF

	+	[↑] 401.83			
		Grade	G. Rod	-	cut
180	+50	383.0	18.8	5.0	13.8
181		383.0	18.8	5.0	13.8
T.P.	4.95	401.73	505	396.78	
	+50	383.1	18.6	4.5	14.1
182		383.1	18.6	6.4	12.2
	+50	383.1	18.6	6.0	12.6
183		383.2	18.5	4.8	13.7
	+50	383.2	18.5	4.4	14.1
184		383.2	18.5	3.8	14.7
	+50	383.3	18.4	4.6	13.8

		[↑] 401.73	-			64
		Grade	G. Rod	-		cut
185		383.3	18.4	6.3		12.1
	+50	383.3	18.4	6.5		11.9
186		383.4	18.3	6.0		12.3
Set BM	2.41	400.11	4.03	397.70		Spike in Cottonwood Tree 100' L4- 5 to 18' from
	+50	383.4	16.7	5.1		11.6
187		383.4	16.7	5.4		11.3
	+50	383.5	16.6	5.7		10.9
188		383.5	16.6	5.0		11.6
	+50	383.5	16.6	4.2		12.4
189		383.6	16.5	4.4		12.1

	π 400.11			
	Grade	Grade Rod	-	cut
189+50	383.6	16.5	2.4	14.1
190	383.5	16.5	2.5	14.0
+50	383.7	16.4	3.2	13.2
191	383.7	16.4	4.8	11.6
+50	383.7	16.4	5.5	10.9
T.P.	5.68	400.34	5.45	394.66
192	383.8	16.5	6.9	9.6
+50	383.8	16.5	5.8	10.7
193	383.8	16.5	4.7	11.8
+50	383.9	16.4	4.9	11.5

	π 400.34			
	Grade	G. Rod	-	cut
194	383.9	16.4	4.6	11.8
+50	383.9	16.4	5.1	11.3
+87 ³⁷	384.0	16.3	6.2	10.1
195+03 ⁴²	384.2	16.1	6.3	9.8
+13 ⁴⁴	384.6	15.7	6.3	9.4
+50	385.4	14.9	6.6	8.9
196	386.8	13.5	1.5	12.0
+31 ⁴	387.7	12.6	1.5	11.1
T.P.	4.29	403.09	1.54	398.80
+38.02	388.0	15.1	4.4	10.7
Set B.M. 4.85	403.52	4.42	398.67	SE Cor Gas Pump 30' R+
check B.M.	5.48	398.04	197+50	
	record	397.90	0.66	

	+	GRADE	G. Rod	-	CUT
	4.30	402.97		398.67	
196+ ⁴⁰ / ₁₆		388.0	97.2	5.8	9.2
+58.4		388.0	97.6	5.4	9.6
197+00		388.1	98.7	4.3	10.6
+50		388.1	98.5	4.5	10.4
198+00		388.1	97.8	5.2	9.6
+50		388.2	97.6	5.4	9.4
199+00		388.3	97.4	5.6	9.1
+50		388.3	97.4	5.6	9.1
200+00		388.4	97.1	5.9	8.7

66

	+	GRADE	G. Rod	-	CUT
201+50		388.4	96.2	6.2	8.4
201+00		388.5	96.9	6.1	8.4
+25 ²⁶		388.5	97.0	6.0	8.5
				5.93	397.04
E.P.					
+29 ²⁹					
T.P.					
+25 ²⁵		388.5	17.2	8.6	8.6
+50		388.5	17.2	8.5	8.7
202+00		388.6	17.1	8.5	8.6
+48		388.6	17.1	8.5	8.6
+64		388.9	16.8	8.3	8.5
		405.75			

No CUT STAKE.
SPRING IN PUMP AT 201+85⁹² (10)

-8.60 397.15

	+	GRADE	G. Rod	-	CUT
203+00		389.6	16.1	7.7	8.4
+50		390.6	15.1	6.4	8.7
204+00		391.6	14.1	5.4	8.7
+50		392.2	13.5	4.7	8.8
205+00		392.7	13.0	4.3	8.7
+50		393.3	12.4	4.1	8.3
206+00		393.8	11.9	3.7	8.2
		394.2	11.5		8.4
+50		394.4	11.3	3.1	8.2
		394.8	10.9		8.3
207+00		394.9	10.8	2.6	8.2

↑ 405.75

	+	GRADE	G. Rod	-	CUT
207+50		395.5	10.2	2.0	8.2
T.P.	+1.19	↑ 405.75		-5.87	404.56
208+00		396.0	14.4	5.7	8.7
+50		396.6	13.8	5.3	8.5
209+00		396.8	13.6	5.1	8.5
+50		397.0	13.4	4.9	8.5
210+00		397.2	13.2	4.8	8.4
+50		397.4	13.0	4.7	8.3
211+00		397.6	12.8	4.4	8.4
+50		398.4	12.0	3.9	8.1
		↑ 410.43			

67

SPIKE IN P.V.M.T. ST. INTSH.

	+	GRADE	G. ROD	-	CUT
T.P.	1.76	410.43		NAIL IN P.P. -7.41	#487113H 408.67
212+00		399.2	16.9	8.8	8.1
212+50		400.0	16.1	7.8	8.3
213+00		400.3	15.8	7.4	8.4
213+50		400.7	15.4	6.9	8.5
214+00		401.0	15.1	6.3	8.8
+50		401.4	14.7	5.8	8.9
215+00		401.7	14.4	5.3	9.1
+59 ⁹⁵		402.0	14.1	4.9	9.2
+75 ⁹⁵		401.8 401.9 416.08 ↑ ↑	14.3	4.9	9.4

	+	GRADE	G. ROD	-	CUT
		401.4			
215+91 ⁹⁵		401.6	14.7	5.0	9.7
		400.4 400.9	15.7	5.5	10.2
216+22		400.9	15.7	5.5	10.2
+55 ⁸⁵		399.3 400.1	16.8	6.4	10.4
+61 ⁸⁴		399.1 400.0 416.08 ↑	17.0	6.5	10.5
T.P.	+7.09			-0.82	T.P. ELEV. 408.99
+72 ⁸⁴		397.05 398.05	12.76 11.76	-12.76	CHECK EXISTING ELEVATION
		H.d. 409.81 ↑			
R.M.	+2.96		402.45		ON N.E. COR. BOX

END OF SAN VICENTE RND MAIN PIPE LINE.

Levels on Proposed B.O.
Sta 25+09

	6.32	452.34	452.02
0+00		15.15	443.19
1+00		7.9	450.4
2+00		7.4	450.9
+30		8.9	449.4
+65		9.9	448.4
3+00		8.2	450.1
0-10		7.93	450.41

SAN VICENTE RND MAIN PL.

KING
LEONARD
NIENOW

69

Top Pipe at B.O.

5

low spot

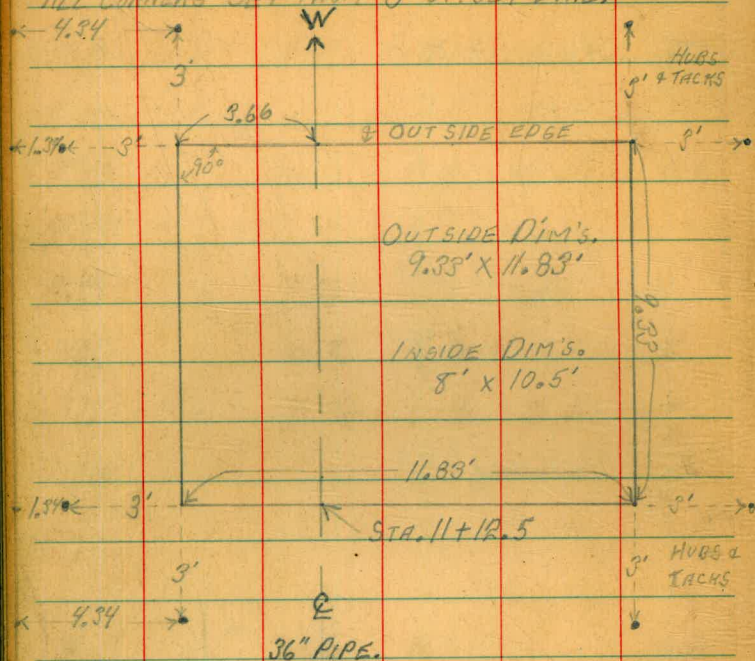
same on out

Top Paving

COMMERCIAL ST. PIPE LINE,
CORNER'S ON BOX AT SAND TRAP,
IMPERIAL AND 49TH ST.

4-5-48
LEONARD
NIENOW
SHIPMAN

ALL CORNERS SET FROM 8' OFFSET LINE.



← 8' OFFSET LINE PARALLEL TO IMPERIAL AVE.

SET 1" X 1" X 8" HUBS AND TACKS ON NORTH
CORNERS, AND NAILS IN BLACK-TOP PYMT
ON SOUTH CORNERS; ALL SET 3' OFF.

ELEVATIONS ON BOTTOM OF BOX 78
AT SAND TRAP.

	+	GRADE G. ROO	-	CUT
B.M.	3.56	151.02		147.46
STA 11+13				
GRADE ON PIPE		139.45		

SE. COR.	137.5	13.52	-4.60	8.92
SW. COR.	137.3	13.72	4.74	8.98
NE. COR.	137.3	13.72	4.62	9.10
NW. COR.	137.1	13.92	5.96	7.96

NOTE: GRADES SET FOR BOTTOM OF 8" FLOOR
IN CHAMBER.

R.M. +10.45 148.34

482' deep.
137.89

SET R.M. ONLET AT 49TH deep. 11' -0.88 147.46

NEW DRAIN LINES FROM SEPTIC TANK
AT CITY RECREATION AREA AT FOSTER.

CUT STAKES ON SOUTH-WEST LINE.

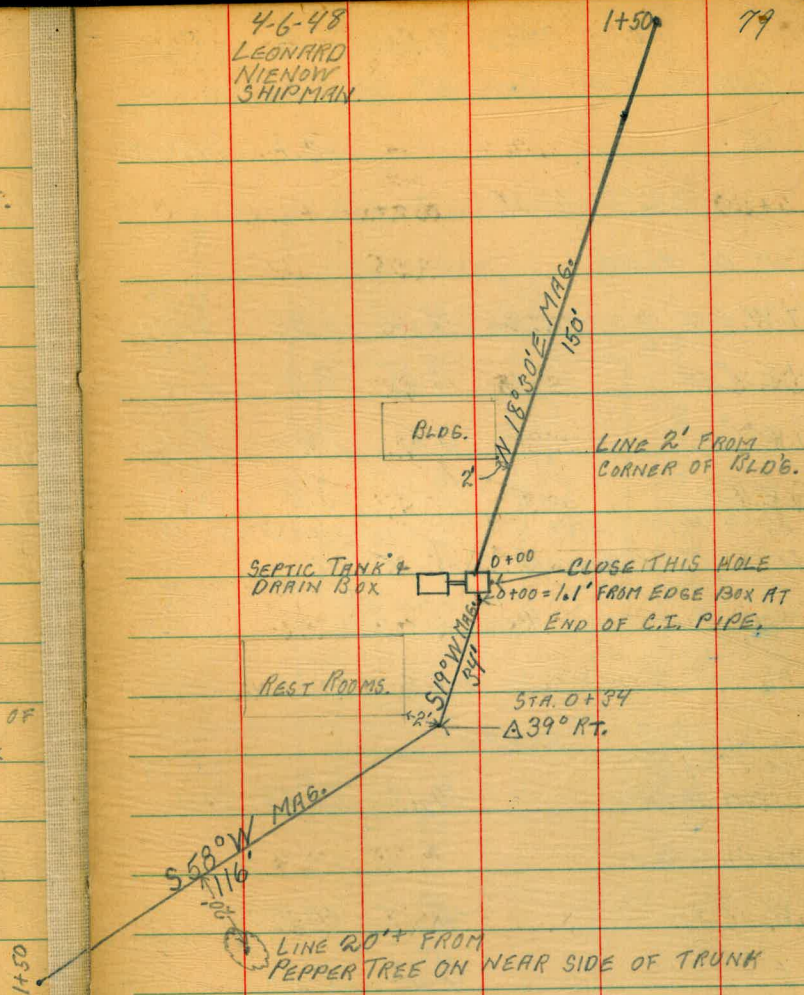
	G. ROD	-	CUT	
	8.17		FLOW LINE	PIPE.
0+00	8.22		BOTTOM OF EXISTING	
0+25	8.25	5.05		3.2
1+0+34	8.26	5.16		3.1
0+50	8.28	4.98		3.3
0+75	8.31	5.21		3.1
1+00	8.34	5.54		2.8
1+25	8.37	5.77		2.6
1+50	8.40	5.40		3.0

CUT STAKES ON NORTH-EAST LINE

				TOP OF BOX
0+00	8.22	6.09	2.13	
0+25	8.25	4.65	3.6	
0+50	8.28	4.38	3.9	
0+75	8.31	4.11	4.2	
1+00	8.34	4.14	4.2	
1+25	8.37	4.37	4.0	
1+50	8.40	4.00	4.4	

4-6-48
LEONARD
NIENOW
SHIPMAN

79



NEW DRAIN LINES FROM SEPTIC TANK
AT CITY RECREATION AREA AT FOSTER.

CUT STAKES ON SOUTH-WEST LINE.

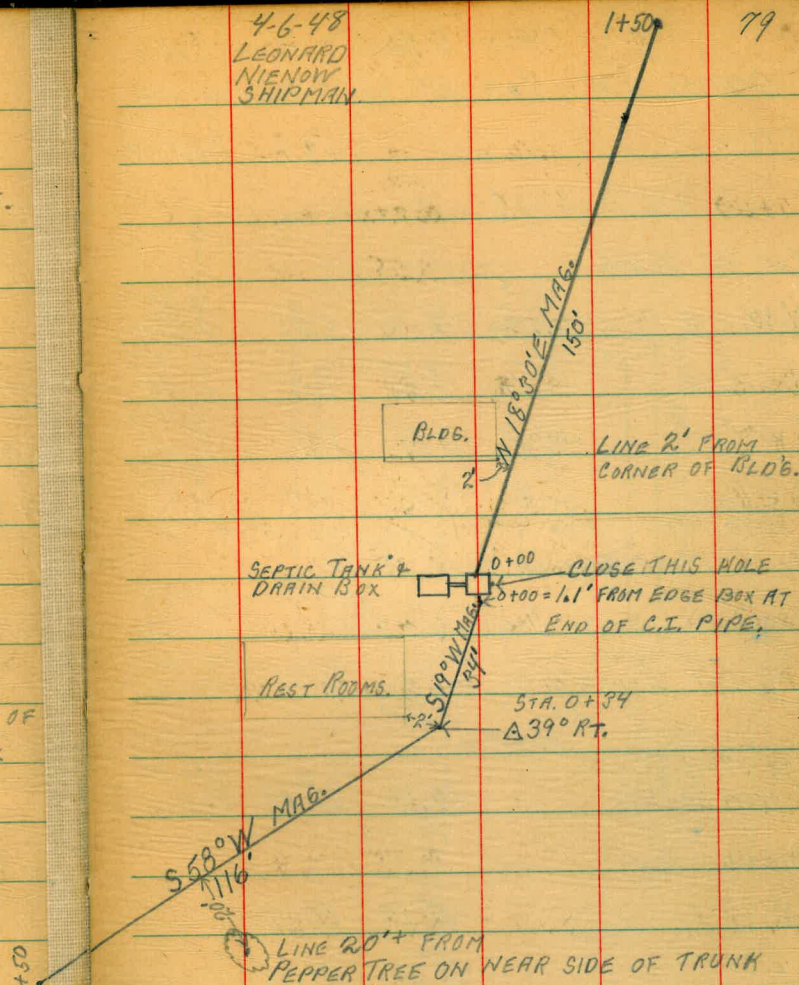
	G. ROD	-	CUT	
	8.17		FLOW LINE	PIPE.
	8.22		BOTTOM OF EXISTING	
0+00				
0+25	8.25	5.05	3.2	
1+0+34	8.26	5.16	3.1	
0+50	8.28	4.98	3.3	
0+75	8.31	5.21	3.1	
1+00	8.34	5.54	2.8	
1+25	8.37	5.77	2.6	
1+50	8.40	5.40	3.0	

CUT STAKES ON NORTH-EAST LINE

				TOP OF BOX
0+00	8.22	6.09	2.13	
0+25	8.25	4.65	3.6	
0+50	8.28	4.38	3.9	
0+75	8.31	4.11	4.2	
1+00	8.34	4.14	4.2	
1+25	8.37	4.37	4.0	
1+50	8.40	4.00	4.4	

4-6-48
LEONARD
NIENOW
SHIPMAN

79



	+	GRADE	G. ROD	-	CUT
GRADES FOR BOX AT 45TH & IMPERIAL,					
R.M.				59.9	8' OFFSET STA 97+12.

+4.95 64.25

TOP OF FLOOR:

	51.7			7.30
N.W. COR.	52.2	12.05	5.25	6.80
	51.5			8.45
N.E. COR.	52.0	12.25	4.3	7.95
	51.5			8.15
S.W. COR.	52.0	12.25	4.6	7.65
	51.3			8.35
S.E. COR.	51.8	12.45	4.1	8.25

4.26.48 NOTE: ABOVE GRADES LOWERED .5 FT. TO MEET EXISTING ELEV. OF PIPE.

	423.45			LEONARD NIENOW SHIPMAN PAGE 23
CHECK BOTTOM OF HOLE AND PIPE.				
R.M. - LET IMP & 45TH. ONE			59.87	F.B. 1722

+2.70 62.57

STA 97+11.72				0.56 FT. BELOW GRADE.
BOTTOM OF PIPE:		-10.13	52.44	

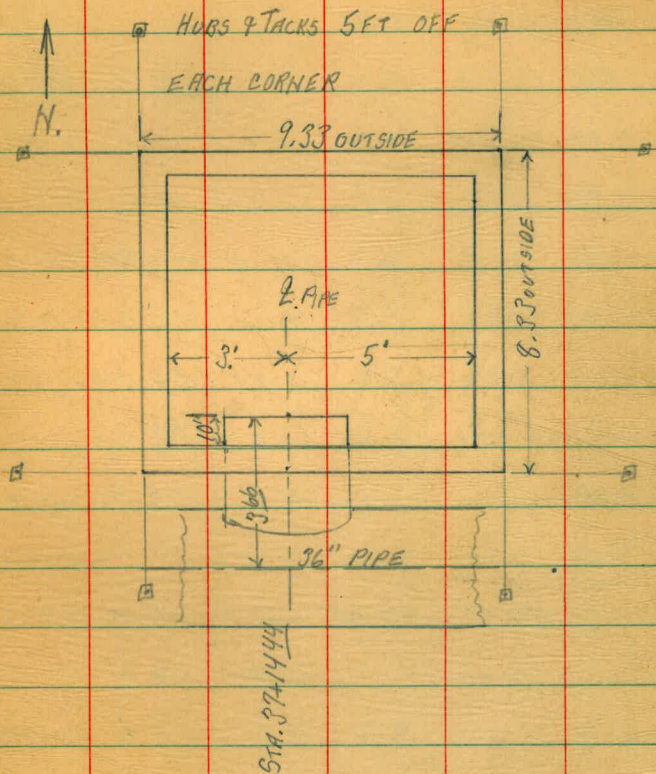
BOTTOM OF HOLE:

N.W.		-12.17	50.40
N.E.		-12.22	50.35
S.W.		11.94	50.63
S.E.		12.12	50.45

COMMERCIAL ST. PIPE LINE.
BOX AT 45TH AND IMPERIAL.

4.21-48 LEONARD NIENOW SHIPMAN.

80



Valve Box
45th + 1st P.

		59.87	
3.92	63.85		
SE Cor	12.50	51.35	
NE Cor	12.40	51.45	
NW Cor	12.26	51.59	
SW Cor	12.38	51.47	
NE edge paving	4.00	59.85	
NW edge oil	4.04	59.81	
NW end dirt	5.1	58.6	
NE end dirt	4.5	59.4	
N	4.18	64.05	59.87
NW Cor on dirt	4.8	59.3	
NE Cor "	4.0	60.2	
SE Cor "	4.0	60.1	
SW Cor "	4.5	59.6	

Cont. from P 34

81

49.18

183+00	1.6	47.6	41.0	6.6
183+50	2.0	47.2	40.6	6.6
184+00	3.2	46.0	40.2	5.8
184+50	4.4	44.8	39.8	5.0
185+00	5.6	43.6	38.3	5.3
185+38 ⁵⁵	6.6	42.6	37.1	5.5
185+70 ²⁷	7.2	42.0	34.1	7.9
186+00	7.9	41.3	34.1	7.2
186+53	9.4	39.8	34.0	5.8
186+75		39.3	34.0	5.3
187+00	10.5	38.7	33.4	5.3
187+50	11.7	37.5	32.3	5.2
B.P. NW Cor 21st + Cotton	8.21	40.97	40.98	
	2.27	43.25		
188+00	6.9	36.4	31.2	5.2
188+26 ³²	7.6	35.7	30.6	5.1
188+57 ⁸⁹	8.2	35.1	27.4	7.7
189+00	9.0	34.3	27.4	6.9
189+50	10.2	33.1	27.3	5.8

13.25

189+75	10.6	32.7	27.3	5A
190+00	11.1	32.2	26.8	5A
190+50	12.1	31.2	25.8	5A
T.P.	10.56	32.69		
0.10	32.79			
190+97 ²³	2.6	30.2	24.9	53
191+29 ⁶⁵	2.9	29.9	22.4	7.5
191+50	3.3	29.5	22.4	7.1
192+00	4.4	28.4	22.4	6.0
192+50	5.3	27.5	20.9	6.6
193+00	6.2	26.6	19.4	7.2
193+50	7.2	25.6	17.9	7.7
194+00	8.0	24.8	16.4	8.4
NE Cor 18th T.B.M. on curb	7.33	25.46		
2.09	27.55			
194+65	4.0	23.6	15.0	8.6
195+15	5.3	22.3	14.0	8.3
195+65	6.6	21.0	12.6	8.4

Rainey
Baker
West

27.55

92

196+15	7.7	18.9	11.2	8.7
196+65	8.7	18.9	9.5	9.4
197+15	9.8	17.8	7.8	10.0
197+50 ²⁶ B.C.	10.6	17.0	7.4	9.6
T.P. on step	10.43	17.12		
1.01	18.13			
192+75	1.7	16.4	7.2	9.2
197+95 ²⁶ P.P.C.	2.3	15.8	7.1	8.7
198+00	2.4	15.7	7.0	8.7
198+25	3.2	14.9	7.0	7.9
198+46 ²⁸ E.C.	3.7	14.4	6.9	7.5
199+00	4.9	13.2	6.8	6.4
199+33 ⁵⁵	5.6	12.5	6.4	6.1
199+81 ²⁹	6.7	11.4	3.0	8.4
200+00	6.8	11.3	3.0	8.3
200+50	7.9	10.2	2.9	7.3
B.M. B.P.N.E. Cor 18th + Cur	5.64	12.49		
				12.52

19th + Corrm.

191+9020



TBM N.E. COR. 18th St.	25.46			
	8.33	33.79		
Top Pops	8.0	25.2	-2.6	22.6
	8.8	25.0		22.4
ESE	4.3	29.5	21.0	8.5
ENE	4.0	29.8	20.7	9.1
NNE	4.2	29.6	20.7	8.9
NNW	4.4	29.4	20.4	9.0
WNW	4.4	29.4	20.4	9.0
WSW	4.7	29.1	20.7	8.4
SSW	4.8	29.0	20.7	8.3
SS.E.	4.6	29.2	21.0	8.2

80

9.45

7729				
211+9223	5.4	= 3.1	-4.0	7.1
212+50	5.3	= 3.2	-4.0	7.2
213+00	4.4	= 4.1	-4.0	8.1
CR TO B.M.	2.90	5.55		5.54
4.41				
220+9253				1.85
	4.25	6.10		
219+50	4.4	1.7	-4.0	5.7
219+7463	4.5	1.6	-4.0	5.6
219+9580	5.0	1.1	-4.7	5.8
220+50	6.3	-0.2	-5.1	4.9
221+3461	3.9	2.2	-5.1	7.3
221+445 4 Pt.	5.2	0.9	-5.1	6.0
221+60	10.1	-4.0	-8.2	4.2
221+7108	4.1	2.0	-8.2	10.2
221+7850	4.3	1.8	-7.2	9.0
9000 4 Pt.	4.4	1.7	-3.8	5.5

12.52

0.55 13.07

200+25 ² PH	2.4	10.7	2.9	7.8
200+75	3.6	9.5	2.9	6.6
201+25 ² PH	4.4	8.7	2.8	5.9
201+50	4.8	8.3	2.8	5.5
202+00	5.2	7.9	2.2	5.7
202+50	5.8	7.3	1.6	5.7
203+00	6.6	6.5	1.0	5.5
203+50	7.1	6.0	0.5	5.5
204+00	7.8	5.3	-0.1	5.4
204+45 ²²	8.2	4.9	-0.54	5.4
204+77 ²²	8.6	4.5	-2.50	7.0
205+00	8.7	4.4	-2.5	6.9
205+41 ²²	9.6	3.5	-2.50	6.0
206+00	10.2	2.9	-5.5	8.4

84

B.M. R.P. N.E. Cor. 1mp+13th 3.00

6.43 9.43

206+37 ²⁴	6.6=2.8	-7.0	9.8
206+85 ²⁴	6.5=2.9	-7.0	9.9
207+17 ²⁴ PH	6.5=2.9	-4.6	7.5
207+50	6.6=2.8	-4.5	7.3
208+00	6.5=2.9	-4.5	7.4
208+50	6.2=3.2	-4.5	7.7
209+08 ²²	6.0=3.4	-4.4	7.8
209+40 ²²	6.2=3.2	-1.8	5.0
209+87 ²⁴ BK	5.8=3.4	-1.7	5.5
209+87 ²⁴ PH	5.8=3.4	-1.7	5.5
209+90 ²³	5.7=3.7	-1.4	5.4
210+06 ²²	5.8=3.6	0.0	3.6
210+38 ²¹	5.8=3.6	0.0	3.6
210+70 ²³		-1.6	5.2
210+73 ²⁵ BK	6.0=3.4	-1.8	5.2
211+09 ³⁸ PH	6.0=3.4	-1.8	5.2
211+45 ²⁴	6.3=3.1	-2.4	5.5
T.P.	6.27	3.16	

5.23 8.45
Cont P 83

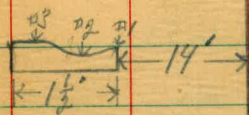
COMMERCIAL ST. PIPE LINE;
GRADES FOR R.R. CROSSING NEAR
HARBOR DRIVE.

	B.M.	+3.97	+8.91	5.54	P.P. 12' RT. 218+49
	GRADE	G. Rod	-	CUT.	
218+07 ³	ON TAN.	-4.0	12.91	-6.78	6.13
218+35 ⁸	ON G	-4.0	12.91	-6.45	6.46
SET B.M.		-6.35	ELEV. 2.56	39 FT. PG. 218+00	

4-29-97
COMMERCIAL ST. PIPE LINE.
LEONARD
NIENOW
SHIPTON
AIR VALVE AT STA. 114+20

85.

	T.B.M.	+4.63	24.83	20.20	CORNER STAD & DURANT
TOP OF CONCRETE CHAMBER.		-4.81		20.02	
NOTE: VALVE IS AT STA. 113+99.32					
G VALVE IS					60.47' EAST OF E. LINE R.R. ST.
B.M.	+4.18	24.98		20.20	
ON CORN # 1.			-4.90	19.48	
# 2.			-4.94	19.44	
# 3.			-4.63	19.75	
Back B.M.			-4.18	20.20	



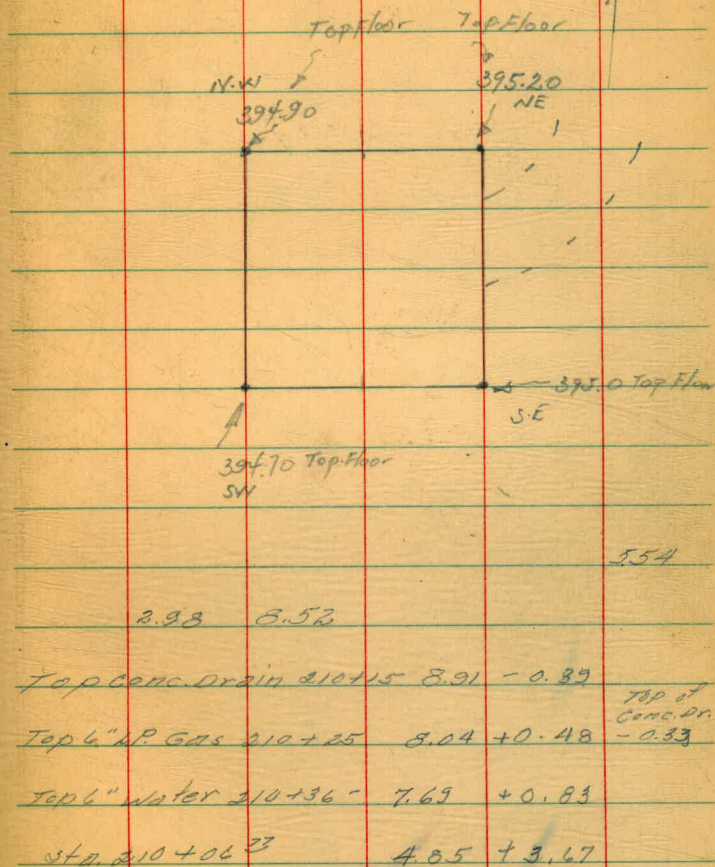
2
ST.

4/20/47

Grades for Valve Box on San

BM.	2.17	409.52		407.45	
TP	7.43	407.48	287.5	399.85	
		El. Grade	G. Rod	Gr.	
SW		394.70	12.78	1178	010
N.W		394.90	12.58	1158	010
NE		395.20	12.28	8.28	040
SE		395.0	12.48		

Vicente Pipe Line at Lakeside



Bliss
Leonard
Baker

Grades for Water Main

3/3/47

Pescadero Drive Between Bermuda +

Pescadero Ocean Beach

	Grade	Gr. T	-	cut
BM	8.58	31.23	22.65	
		8.47	22.76	
0700	20.2	11.0	8.8	2.2
0750	21.1	10.1	7.9	2.2
1100	22.0	9.2	6.8	2.4
130	22.5	8.7	5.4	3.1
154 ⁸⁴ L	23.0	8.2	4.4	3.8
169 ⁸⁴ BK	23.1	8.1	4.2	3.9
2100	24.0	7.2	3.7	3.5

E Top Alley
cb. N line
Bermuda
Sec. city PD
3/3/47

3/23

87

	Grade	Gr. T	-	cut
2150	25.6	5.6	2.5	3.1
247 ⁸⁴ L	26.6	4.6	2.6	2.0
77	766	36.25	26.6	28.59
3700	27.0	9.2	6.4	2.8
450	27.9	8.3	5.6	2.7
4700	28.8	7.4	4.5	2.9
124 ⁸	29.6	6.6	3.7	2.9
Checkab East Side	37.0	32.51		

Newton

30
30.05k

96.0
95.9

69.03

5.1
2.7

2.4 93.5

74.63

57.8

42.4



92.7

3.5

62.85

3.5

16

89.2

74.63

55.9

64.8

69.04

51.8

2.6

84.4

22.5

1.9

127.7
8.26
481

1.56

1.8

20

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

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
Roadway 16 feet wide. Side Slopes 1 on 1 1/2
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	26.2	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 be 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.