

McGraw-Hill  
ENGINEERING

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ENGINEERS'  
LEVEL BOOK

No. 412 F

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

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

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Room 268 Civic Center  
Telephone Main 5161

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Grade 50% Rag Paper having a WATER  
RESISTING SURFACE, and is sewed with  
Bing Special Enamel Waterproof thread.

Made in U. S. A.

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Es  
to be  
of road  
examp  
30.6 =

Profile Cuts - Commercial St.

30 St - East

P. 9-

Profile to river bed for B.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. 114-18

Rest of book Comm.

st. pipeline const.

grades

BM	3.81	488.58		484.77	Top Cor. Wall East End Spillway 500 + 8' 08" 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 3182.5" L + BC of 20' 13' 68" P 74
Set BM	4.17	462.31	6.50	458.14	100' RP for EC 16422" see page 29
Set BM	2.18	457.49	7.00	455.31	NW Cor. Can Box. West city camp
check <sup>BM</sup>			1.78	455.71	Nail in RP West Sid. city Camp
Set BM	3.22	453.76	6.95	450.54	chisel X in paving 26' RP 24 see page 14 F 8581
Set BM	4.64	453.73	4.67	449.09	20' RP X in paving 30' 31' 80" BC

		$\pi$ 453.73			
Set BM	3.20	453.85	3.08	450.65	Gross Cap on Con 1100 Marked Run chod. logon
TP	5.94	455.19	4.60	449.25	
Set BM	5.33	456.76	3.76	451.43	2nd R.P. LC. 80 36700
Set BM	5.73	458.28	4.21	452.55	2nd R.P. 80.40 + 18.64
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

		$\pi$ 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 TP 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 72864
Set BM	2.31	424.88	4.84	422.57	PP 72860
TP	2.87	424.87	2.88	422.00	PP 72858

		x			
		424.87			PP#73972
TP Nail	3.00	423.42	425	420.62	
					IVail M.P.P #73971
Check BM	3.10	421.85	487	418.75	Record
				418.70	0.05
					PP
Nail					
TP	4.14	420.26	573	416.12	73350
					PP#
Set BM	3.72	418.76	522	415.04	73348
RR Spike					
BM			620	412.56	
				412.42	Record
				0.10	error
					See FB
					681 P.57

CHECK GROUND LEVELS IN FIELD  
BETWEEN STA. 435 AND 440 ON  
EL MONTE PIPE LINE, SECT. II. LEONARD &  
BAKER RD

JAN-21, 48

B.M.	+3.18	366.15	362.97		
		15	15	30	
		LEFT	RIGHT	RIGHT	30' R.
237+00		-4.5			
+50	31	-5.25	-5.2	-5.15	-4.8
					-4.1
238+00	31	-5.0	-5.1	-4.95	-4.7
					-4.4
+50	31	-5.8	-5.0	-4.75	-4.8
					-4.6
239+00	30	-5.0	-4.8	-4.7	-4.7
					-4.8
+50	28	-4.5	-4.3	ON BOX	-4.2
					-4.2
240+10	33	-4.15	-4.0	-3.8	-3.65
					-3.4
+33	36	-3.8	-3.5	-3.5	-3.2
					-3.0
					TOP OF COVER.
					CENTER OF MANHOLE OPPOSITE BOX
					-4.60

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	
	A.W	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	3.75	417.88	413.63	P.P. 233.45
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+112-00	Profile to South in Gutter		5.2	412.2	
0+30			5.2	412.2	
0+50			5.2	412.2	
1+00			5.5	411.9	

Chamber San Vicente 2nd Main

	Grade	C. Rod	-	
0+00	411.14	6.24	8.19	F.P. 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				
ELEV. FOR				
B.M.				P. Pole Elev 733.45
	+8.99	H. d.	417.62	
TOP OF BLOW OFF PIPE.	-5.69		411.93	ON EDGE FLANGE.
GROUND AT STILLING BOX	-4.80		412.82	

Feb. 2, 1913  
LOANARY CURSE



GRADES FOR STILLING CHAMBER  
SAN VICENTE RND P.L.

HILL  
LEONARD  
NIENOW  
SHIPMAN  
# 31-48.  
P. POLE  
# 73296

R.M.	+407	H. d. 417.70		418.68	
10.3'	DRAINPIPE EAST SIDE	411.14			CUT
45 <sup>5</sup>	PYMT.	410.62	-4.71	412.99	2.4
63 <sup>5</sup>	WEST EDGE PYMT.	410.34	-4.69	413.01	2.7
75 <sup>0</sup>	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  
KATNER  
7  
JAN 23, '48.

	+ GRADE	G. ROD	-	CUT	
R.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 <sup>81</sup>		550	19.1	50	14.1
487+52 <sup>12</sup>		549.6	19.5	6.3	13.2
487+69 <sup>92</sup>		548.	21.1	1.9	19.2
487+79 <sup>75</sup>		546.8	22.3	4.6	17.7
488+11 <sup>18</sup>		542.8	26.3	11.7	14.6
T.P.	0.30	558.20		11.24	537.90
487 <sup>12</sup>		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

8

+ H.d. GRADEd - CUT

437+07<sup>11</sup> 538.6 19.6 8.2 11.0+23<sup>18</sup> 538.4 19.8 8.2 11.2+39<sup>16</sup> 539.25 19.0 8.5 10.5

448+50 541.4 16.8 4.4 12.4

T.P. 11.27 <sup>56.0</sup> 568.96 0.51 557.69+91<sup>14</sup> 545.1 23.9 8.3 15.6449+06<sup>92</sup> 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

+62<sup>18</sup> partial 547.98

T.P. 3.12 552.46 8.53 544.34

check starting BM 954 542.92 ✓  
542.93 record

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

King  
 Leonard  
 Nichols 3-11-48  
 9

B.M. 5.86 72.00 - 72.14

cut.

<del>138154</del>	<del>6.6</del>	<del>71.4</del>	<del>66.20</del>	<del>5.2</del>
<del>+46</del>	<del>5.9</del>	<del>72.1</del>	<del>66.2</del>	<del>5.9</del>
<del>+25 Nail</del>	<del>6.5</del>	<del>71.5</del>	<del>64.4</del>	<del>7.1</del>
<del>+10 See page 11. 4-5-48 N</del>	<del>6.1</del>	<del>71.9</del>	<del>64.4</del>	<del>7.5</del>
<del>138400</del>	<del>5.9</del>	<del>72.1</del>	<del>64.9</del>	<del>7.2</del>
<del>13777903</del>	<del>5.8</del>	<del>72.2</del>	<del>66.0</del>	<del>6.2</del>
<del>137150</del>	<del>5.7</del>	<del>72.3</del>	<del>66.4</del>	<del>5.9</del>
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

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
+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
+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
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126+91.05	5.9	72.9	66.7
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126+59.09	6.5	72.3	65.0
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126+43.03	6.8	72.0	64.5
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78.74

124	72	71.6	64.5
+50	7.6	71.2	64.5
125	3.7	75.1	64.5
	7.20	71.52	71.52
T.B.M.	4.72	74.04	

COMMERCIAL ST. PIPELINE.

4-5-48

REALIGNMENT AT 30TH ST.

LEONARD

NIENOW

SHIPMAN

SOUTH &amp; COMM.

B.M. +4.44 76.58 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+63	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
137+68	64.95	11.6	4.4	7.2

11

7.1

6.7

10.6

Top 30 R.R. 1-126401

Top Ft. Hydr. S.W. Cor 32<sup>nd</sup> Corn 22<sup>nd</sup>

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 <sup>th</sup>
SET				+ 12 <sup>th</sup> ST.
R.M.			-3.21	212+49
	+2.92	H. d.	+8.46	
211+75		-4.0	12.46	5.32
212+00				5.12
212+09 <sup>50</sup>	1st PIPE	-4.0	12.46	5.08
212+30		-4.0	12.46	5.04
212+79	2ND PIPE	-4.0	12.46	4.88
212+90 <sup>70</sup>		-4.0	12.46	4.76
213+49 <sup>40</sup>	3rd PIPE	-4.0	12.46	3.83
213+59 <sup>60</sup>		-4.0	12.46	3.81

SEE R.I.T.M. PAGE 18. FOR ADDITIONAL R.R. CROSSINGS.

Profile & Cuts on 8' offsets 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 5.6 107.1 100.1

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 99.82

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  
LOOKARD  
NICHOLS

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

101.33

30450 10.7 90.6 83.7

6.9

T.P. 0.49 90.15 11.67 89.66

31400 2.4 87.7 80.8

6.9

+50 5.9 84.8 77.8

7.0

32400 8.5 81.6 74.8

6.8

+50 11.4 78.7 71.8

6.9

T.P. 0.45 77.86 12.74 77.41

33400 2.1 75.8 68.8

7.0

+50 5.0 72.9 66.3

6.6

34400 7.7 70.2 63.8

6.4

+50 9.9 68.0 61.2

6.8

35400 12.2 65.7 58.7

7.0

T.P. 1.54 66.49 12.93 64.93

15

	66.49	8'00"	Grade
35+50		3.0	63.5 57.0
36+00		4.6	61.9 55.7
+50		6.0	60.5 54.3
37		6.7	59.8 53.0
37+12		6.6	59.9 53.0
		6.42	59.87 59.87

Cut:

6.5

6.2

6.2

6.8

6.9

14

247 @ Imperial @ 45 ft

B.M.	1.82	185.64		183.82
0+15		1.8	183.8	176.2
0+25		1.9	183.7	176.5
0+50		2.1	183.5	176.1
0+75		2.6	183.0	175.6
1+00		3.1	183.5	175.2
1+25		3.7	182.9	174.6
Ec 1+56 <sup>23</sup>		4.6	181.0	173.8
2+00		5.6	180.0	173.8
+50		6.9	178.7	171.5

X-Top Conc. Box - 0+00 Imp + Churchward

7.1

7.2

7.4

7.4

8.3

8.3

7.2

7.2

7.2



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	146.7 144.5	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	145.24	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

15+00 5.4 143.4 136.8

+50 5.8 143.0 136.3

15+75 6.1 142.6 136.0

16+00 6.7 142.0 135.3

+50 8.1 140.6 134.0

17+00 9.8 138.9 131.9

+50 11.5 137.2 130.1

T.P. 0.31 136.19 12.80 135.88

18 0.9 135.3 128.3

+50 3.0 133.2 126.5

19 5.0 131.2 124.2

+50 7.1 129.1 122.3

20 9.2 127.0 120.0

+50 11.7 124.5 117.6

17

6.7

6.6

6.7

6.6

6.7

6.6

7.0

7.1

7.0

6.7

6.5

6.8

7.0

6.9

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
-----	-----	-------	-------

6.5

23	9.4	114.7	107.9
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6.8

B.C. 27+23 <sup>2</sup>	10.1	114.0	107.0
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7.1

PRE. 22+30	10.8	113.3	106.1
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7.2

E.C. 22+69 <sup>3</sup>	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 <sup>2</sup>	} 5 SETS TRACKS
219+04 <sup>2</sup>	

220+91	} 2 SETS TRACKS
221+22 <sup>6</sup>	

18

COMMERCIAL		ST. PIPE LINE.		LEONARD NIENOW SHIPMAN.	
STA.	+ GRADE	G. ROD	-	CUT	
B.M.	H.d.		32.00	N.W. R.P.	
			Commercial	67.03	
124+75	76.60	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 <sup>08</sup>		61.8	14.8	8.1	6.7
123+07 <sup>12</sup>		60.6	16.0	8.5	7.5
122+71 <sup>16</sup>		57.5	19.1	10.9	8.2
T.P.			-10.95	65.68	ON HUB 122+71 <sup>16</sup> @
	+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.			-12.70	53.03	
	+0.45	H.d. 53.46			
122+00		49.0	11.5	2.1	9.4
121+75 <sup>2</sup>	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				19	
STA.	+ GRADE	G. ROD	-	CUT	
T.P.	H.I.		ELEV.		
	+2.07	43.15	41.08		
121+00		35.4	7.9	1.2	6.6
120+75		31.7	11.5	3.9	7.6
120+50 <sup>17</sup>	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 <sup>12</sup>	E.C.	17.3	15.2	9.6	5.6
119+42 <sup>13</sup>		16.6	15.9	10.3	5.6
119+25 <sup>68</sup>	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 H.V.D. 32.0 & 3 STEEL

STA.	+	GRADE	G. ROD	LEONARD NIENOW SHIPMAN	4-13-98 COT FIRE HYD. 3RD & STEEL
T.P.	+2.76	25.31		22.55	
117+13 <sup>70</sup>		<sup>*13.5</sup> 14.0	11.9	5.1	6.2
116+70 <sup>70</sup>		14.0	11.9	5.3	6.0
116+54 <sup>70</sup>		15.6	11.7	5.4	6.3
116+38 <sup>76</sup>		12.9	12.4	5.4	7.0
116+06 <sup>80</sup>		10.8	14.5	5.5	9.0
115+75		10.8	14.5	5.7	8.8
115+49 <sup>80</sup>		10.8	14.5	5.8	8.7
115+26 <sup>80</sup>		10.5	14.8	5.9	8.9
115+10 <sup>80</sup>		10.0	15.3	6.0	9.3
114+94 <sup>82</sup>		9.4	15.9	6.1	9.8
114+80 <sup>82</sup>		9.4	15.9	5.7	10.2
T.P.			-5.11	20.20	CORNER CONG. WALL 3RD & DURANT S.E. UNDER WHITE FENCE
	+3.67	23.87			
114+67 <sup>83</sup>		9.8	14.1	4.7	9.4
114+51 <sup>78</sup>		10.6	13.3	4.7	8.6
114+35 <sup>75</sup>		11.8	12.1	4.7	7.4
114+19 <sup>77</sup>		12.6	11.3	4.6	6.7

STA.	+	GRADE	G. ROD	LEONARD NIENOW SHIPMAN	4-15-98 20 COT
		23.87			
117+05 <sup>77</sup>		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 <sup>77</sup>		12.8	11.1	4.8	6.3
T.P.			-5.77	18.10	IRON PIPE PROP COR. NE COR. DURANT & 24 <sup>TH</sup> ST.
	+8.25	26.35			
109+80		12.0	14.4	7.4	7.0
109+64 <sup>09</sup>		11.0	15.4	8.3	7.1
109+48 <sup>58</sup>		9.7	16.7	10.0	6.7
109+40 <sup>44</sup>		9.0	17.4	10.5	6.9
109+24 <sup>81</sup>		7.6	18.8	9.1	9.7
108+22 <sup>83</sup>		4.8	21.6	11.0	10.6

4-15-48				
STA.	+	GRADE	G. ROD	- CUT
		26.35		
107+76 <sup>83</sup>		4.8	21.6	10.4 11.2
107+71 <sup>84</sup>		12.8	13.6	2.9 10.7
T.P.			-0.06	26.29 FENCE POST
	+11.50	37.79		
108+76 <sup>70</sup>		18.1	19.7	10.3 9.4
108+72 <sup>44</sup>		21.6	16.2	7.6 8.6
108+67 <sup>76</sup>		28.4	9.4	2.1 7.3
T.P.			-0.62	37.17 Rock in ROADWAY
	+12.59	49.76		
107+96 <sup>19</sup>		33.8	16.0	9.7 6.3
107+74 <sup>21</sup>		38.0	11.8	6.0 5.8
107+52 <sup>41</sup>		40.9	8.9	3.3 5.6
107+45 <sup>71</sup>		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
GRADE LOWERED		55.8	21.6	9.7
TO CLEAR		57.2	20.2	10.1
105+50		58.2	19.2	9.1
SEWER LINE		59.6	17.8	8.1
105+00		60.6	16.8	7.1
104+50		62.4	15.0	6.0
105+36 <sup>±</sup>		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
T.P.	+6.65	100.19	-3.57	93.54	84.64 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 <sup>88</sup>		88.4	11.8	0.2	11.6
98+98 <sup>85</sup>		88.4	11.8	0.5	11.3
98+00		84.7	15.5	2.6	12.9
97+69 <sup>52</sup>		82.3	17.9	5.6	12.3
97+31 <sup>30</sup>		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 <sup>63</sup>		89.0	12.1	6.3	5.8
83+87 <sup>2</sup>		89.8	14.3	6.3	8.0
83+55 <sup>2</sup>		87.6	14.2	6.0	8.2
83+24		90.5	11.1	5.1	6.0
83+00		91.7	10.2	4.3	5.9
82+50		93.3	8.6	2.6	6.0
82+00		95.0	6.9	0.9	6.0
T.P.	+12.55	113.83	-0.64	101.28	
81+50		97.2	16.6	10.9	5.7

	+	GRADE H. d. 115.83	G. ROD	-	CUT
81+00		97.7	16.1	8.2	7.9
80+52 <sup>00</sup>		99.2	14.6	5.5	9.1
80+20 <sup>4</sup>		102.8	11.0	3.7	7.3
80+04 <sup>5</sup>		104.4	9.4	2.9	6.5
79+88 <sup>5</sup>		105.5	8.3	2.0	6.3
79+72 <sup>5</sup>		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 <sup>15</sup>		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. POP	-	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
72+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.	+0.22	120.56	-5.97	120.34	117.0
CHECK R. 11.			-8.02	112.54	RECORD = 112.58
70+82 <sup>15</sup>		110.7			
70+50		109.9			
70+00		108.7			
69+50		107.4			

						24
FH SF Cor 40th + Imp.				112.58		
4+00	6.63	119.21				
70+82 <sup>15</sup>		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	105.7	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 <sup>20</sup>	3 FT BK.	7.8	111.4	104.6	6.8	
68+30 <sup>20</sup>	3 FT BK.	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	
65		8.7	105.4	99.6	5.9	
66		9.9	104.2	98.4	5.8	
65		10.3	103.8	97.9	5.9	
65		10.9	103.2	97.5	5.7	

	114.05				
64+85		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.	4.73	109.37 110.37	104.64 105.64		
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+00		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 1. P No. 1 11	

25

Levels over 8' offsets  
on 24" P.L. - West from 30 SL

139+00		71.9	16.5	5.4
B.M.	3.90	76.04		72.14
A 139+33.9		4.1	71.9	66.0 5.9
139+65		4.6	71.4	65.6 5.8
139+82.3 Back		4.6	71.4	65.6 5.8
139+68.4 <sup>1/2</sup> 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
+30		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 5.3
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 <sup>97</sup>		4.8	69.8	63.8	6.0
145+16 <sup>73</sup>		5.0	69.6	61.1	8.5
+50		5.1	69.5	60.6	8.9
B.M. 147. N. 20. G.		5.59	69.04	ek 69.05	
TBM in T Pole			101.75		
	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
58+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+98 <sup>82</sup>					
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		10.1	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	Cing			26
		Baker			
		West			
B.M. 147 N.W. cor. 20th & Comm		69.05			
	3.74	72.79			
146+00		3.7	69.1	60.2	8.9
146+20			69.3	60.0	9.3
146+50		3.4	69.4	60.0	9.4
146+76 <sup>22</sup>		3.8	69.0	60.0	9.0
147+00 <sup>66</sup>		3.7	69.1	63.3	5.8
147+50		3.8	69.0	63.2	5.8
148+00		3.9	68.9	63.0	5.9
148+50		4.3	68.5	62.9	5.6
149+00		4.5	68.3	62.7	5.6
149+50		4.7	68.1	62.6	5.6
150+00		5.0	67.8	62.4	5.4
150+50		5.0	67.8	62.3	5.5
150+71 <sup>85</sup> 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+00			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
----	--	--	-----	-------------

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

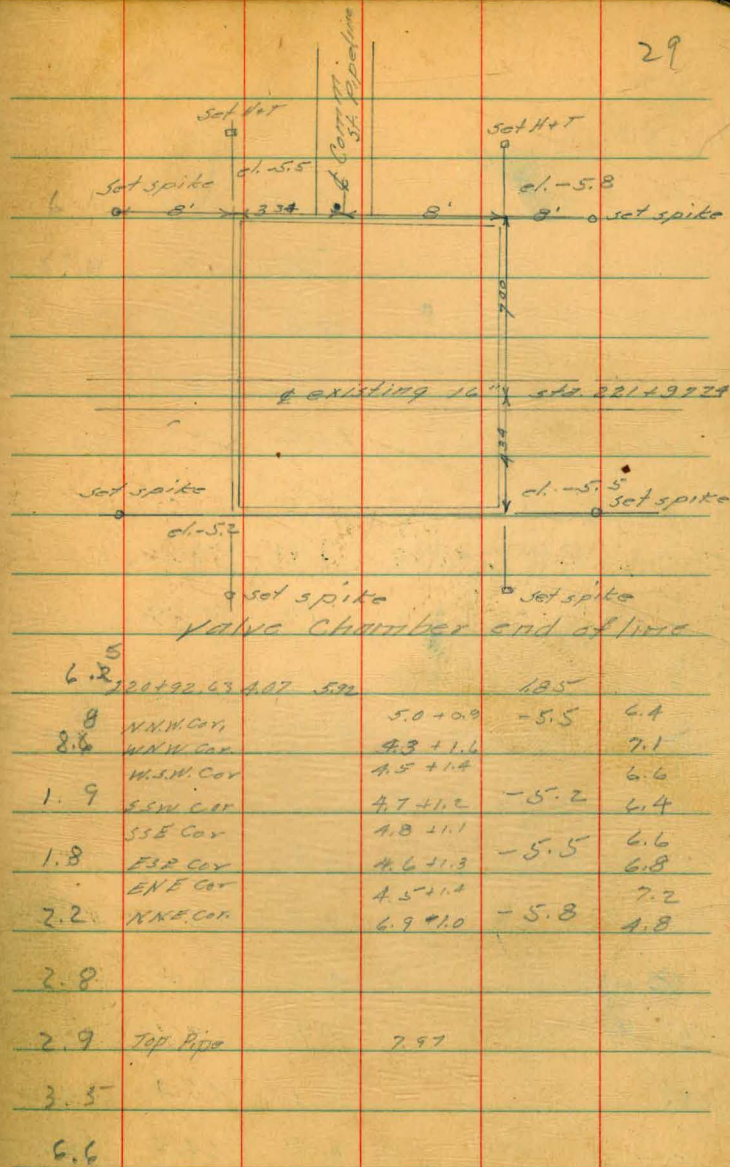
5.6

T.P.	1.72	101.58	12.66	99.86	
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46+50		2.3	99.3	91.7	7.6
46		6.0	95.6	89.5	6.1
45+50		8.5	93.1	86.6	6.5
45		10.1	91.5	85.7	7.8
T.P.	12.3	92.70	10.11	91.47	91.45
44+50		4.8	87.9	80.8	7.1
44		8.1	84.6	78.0	6.6
43+50		11.2	81.5	75.2	6.3
X.P.			73.7	66.9	6.8

28

		92.70			
T.P.	204	81.81	12.93	79.77	
43+00			3.3	78.5	72.4 6.1
42+50		5.8	76.0	69.6	6.4
		8.33	73.48		ON QUINNEY 42+13-E
		77.90			
41+85			13.7	64.2	48.6 15.6
B.M.	233	62.20		59.87	45th Imp.
37+51.24			2.7	59.5	53.3
38+00			2.6	59.6	51.0
38+52.04			9.4	52.8	50.9
38+52.04			9.5	52.7	50.9
39+00			9.2	53.0	50.8
+50			8.7	53.5	50.7
40+00			8.9	53.3	50.4
+173			8.9	53.3	49.8
+65.65			9.2	53.0	46.4



62.20

40+81<sup>40</sup> 9.1 53.1 45.0

T.P. 2.65 55.12 9.13 53.07

41+130<sup>3</sup> 7.0 48.1 40.0

41+29 8.5 46.6 39.0

41+45 8.2 46.9 39.0 <sup>83</sup>41+60<sup>91</sup> 7.5 47.6 40.3 <sup>77</sup>

T.P. 8.35 60.99 2.48 52.64

1.11 59.88

3 Pt. 150+71<sup>58</sup> 67.79

368 71.47

150+71<sup>58</sup> 3.7 67.8 62.5 <sup>5.5</sup>150+92<sup>48</sup> 3.8 67.7 62.2 <sup>5.5</sup>151+40<sup>2</sup> 4.0 67.5 58.0 <sup>9.5</sup>151+70<sup>5</sup> 4 Pt. 4.1 67.4 58.0 <sup>9.2</sup>152+00 4.1 67.4 58.0 <sup>9.2</sup>152+50 4.7 66.8 58.0 <sup>8.8</sup>152+68<sup>11</sup> 4.7 66.8 58.0 <sup>8.8</sup>

30

8.1

8.1

7.6

7.9

7.3

71.97

153+00 4.7 66.8 60.5 <sup>6.3</sup>153+15<sup>96</sup> 4.6 66.9 61.8 <sup>5.1</sup>153+50 4.9 66.6 61.8 <sup>4.8</sup>154+00 5.1 66.4 61.8 <sup>4.6</sup>154+11<sup>28</sup> 5.1 66.4 61.8 <sup>4.6</sup>154+50 5.3 66.0 58.8 <sup>7.2</sup>154+75<sup>85</sup> 3 Pt. 5.6 65.9 56.5 <sup>9.4</sup>

4 Cl 5.72 65.75

153+47<sup>96</sup> C 4.9153+00<sup>2</sup> C 8.8



			65.75		
340	69.15				
154+280		3.2	66.0	56.5	9.5
155+08 <sup>73</sup>	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 <sup>51</sup>		4.0	65.2	57.0	8.3
156+41 <sup>25</sup>		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 <sup>60</sup>		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 <sup>15</sup>		6.2	63.0	57.8	5.2

			69.15		
159+75		6.4	62.8	56.5	6.3
159+92 <sup>20</sup>		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 <sup>22</sup>	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" 675		6.8	64.6		
1 1/2" 601				61.2	
154+28					
4" 625				68.9	

Hensley + Commercial  
Tops of pipes

LET. <sup>E</sup> 1st Cor. 2844		68.34	
2.44	70.78		
4" Water Sta. 154+01.3	6.46	64.32	
Sta. (Pipe)	5.38	<del>84.40</del>	61.40
14" Sewer (Bell)	9.24	61.54	
48" Drain 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 + Comm			
		72.14	
4.26	76.40		
\$ on curb	4.3	72.1	66.8
			67.2 62.0
LET. C Imp. + 1544		59.87	
4.31	64.18		
37+28 38" Water	9.92		
37+22 bot. Com. Line	11.00		
37+33 4" Gas	7.02		

Rainey  
King  
Baker  
West

32

bell 0.5 No. 8 trenches

Co. can move this line ~~11/11~~

72

cut

5.3

68.6



Commercial St.  
Pipeline

N.W. 1/4 T. 25th & Comm	54.38			
2.60	56.98			
173+50	4.4	52.6	47.0	5.6
174+75	4.7	52.3	47.0	5.3
174+100	4.9	52.1	46.7	5.4
174+50	5.3	51.7	46.4	5.3
175+100	5.8	51.2	45.9	5.3
175+50	6.3	50.7	45.3	5.4
176+100	6.7	50.3	44.8	5.5
176+50	7.1	49.9	44.3	5.6
177+100	7.6	49.4	43.7	5.7
177+50	8.1	48.9	43.2	5.9
178+100	8.5	48.5	42.6	5.9
178+125	8.5	48.5	42.4	6.1
178+50 <sup>20</sup>	8.7	48.3	39.8	8.5
178+66 <sup>20</sup>	8.7	48.3	39.8	8.5
1/4 T N.E. Cor. 24th & Comm	7.98	49.06		

June 14, 1918  
Ramey  
Paper  
West

39  
21949582

Under R.R. Tracks				
T.B.M. on P.P.				
4.43	6.99	2.56		5.2
220+62 <sup>63</sup>	6.91	0.08	5.1	5.18
220+92 <sup>63</sup>	5.14	1.85	5.1	7.0
3M. 1/4 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 2/4	4.6	48.8	42.8	6.0
180+100	4.4	49.0	42.8	6.2
180+50	4.1	49.3	42.8	6.5
181+100	4.1	49.3	42.8	6.5
181+125	4.2	49.2	42.8	6.4
181+50	4.5	48.9	42.4	6.5
182+100	4.9	48.5	41.9	6.6
TR	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

Lat. N. E. Cor. 30th. & Cass. 76.14

4.49 76.63

Pt. A 7.12

Pt. B 8.65

Pt. C 8.65

Pt. D 8.63

Int.  
top 24" water 7.00

B.M. 4.49 76.14

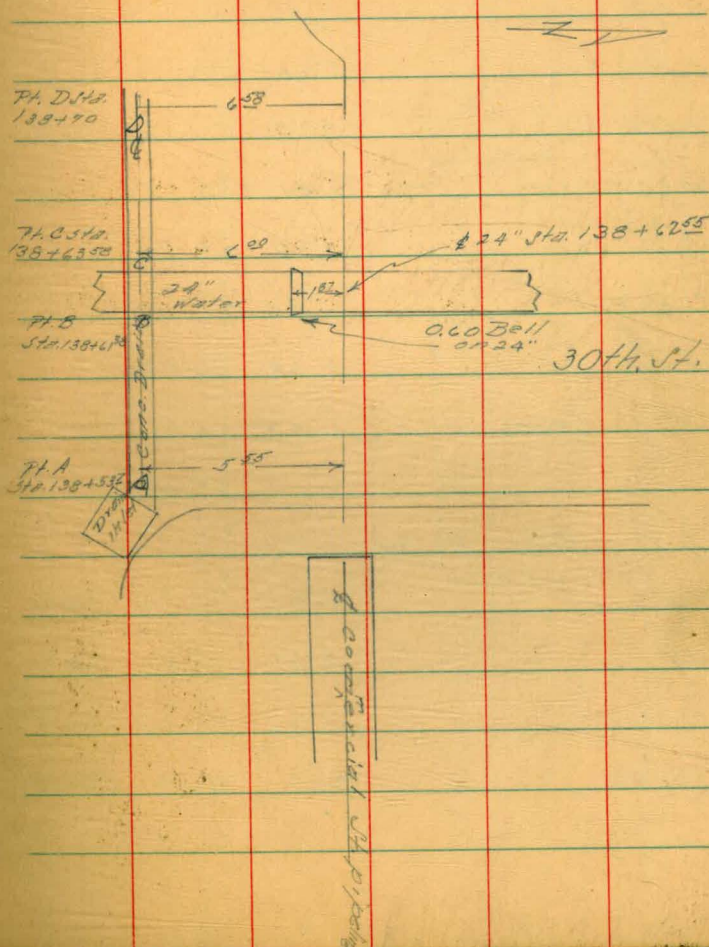
May

Raney  
Baker  
West

37

Chamber 30th & Cass

width of drain 1.85



Valve Chamber  
30th + Commercial

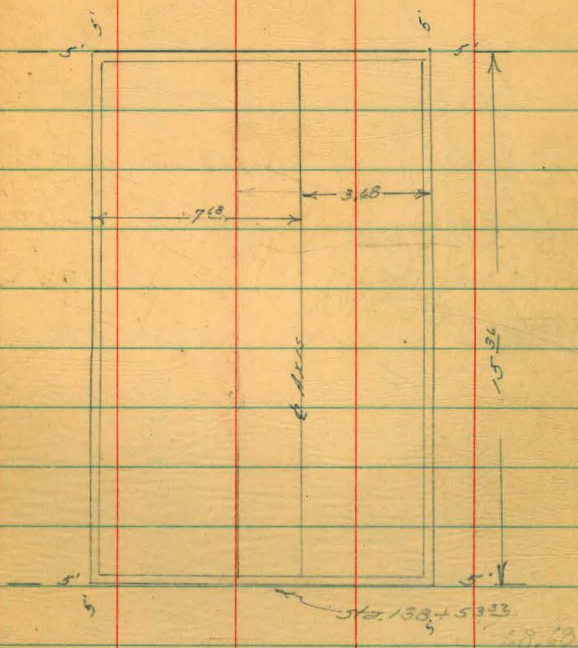
May 5, 1948

Rainey  
King  
Baker

74

NE 1/4 T 30th + Comm.	72.14		
5.32 77.46		3.24	48.9
ENE Cor.	5.35	72.11	
NNE Cor	5.36	71.50	
NNW Cor	5.39	72.13	
WNW Cor	5.35	72.13	
WSW Cor	5.41	72.05	
SPW Cor	5.40	72.06	
SPE Cor	5.83	71.63	
ESE.	6.38	71.08	
Top of pipe - 3.25	11.85	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

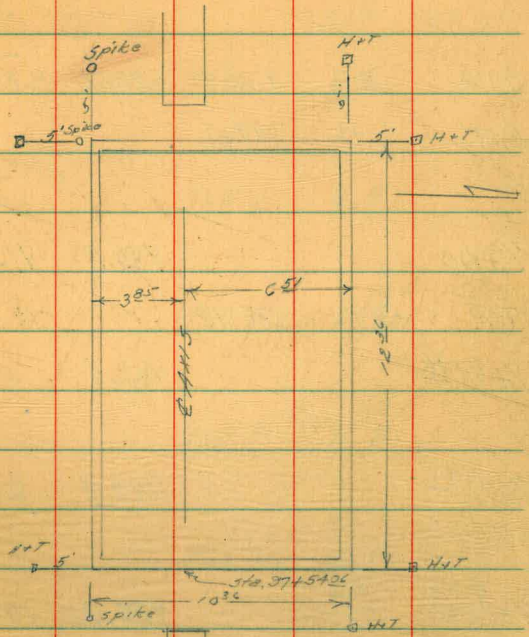
7.27

Valve Chamber  
36th + Imperial

B.M. B.P.M. Cor. but <sup>4 imp.</sup> <del>at</del> <sup>at</sup>			97.91	
1.69	99.60			
N.W. Cor.	7.02	92.6	80.3	
N.N.W. Cor.	6.43	93.2	80.3	
N.N.E. Cor.	8.21	91.4	80.6	
E.N.E. Cor.	10.24	89.4	80.6	
E.S.E. Cor.	10.62	89.0	80.8	
S.S.E. Cor.	5.32	94.3	80.8	
S.W. Cor.	4.59	95.0	80.5	
W.S.W. Cor.	10.59	89.0	80.5	
Bottom of			81.8	
E.H. 36th + Imp.	0.03	96.10	96.07	
			11.07	85.03
	8.10	93.13		
N.E. Cor.	13.12	80.01	90.70	
N.W. Cor.	13.34	79.79	90.70	
S.W. Cor.	13.20	79.93	90.80	
S.E. Cor.	12.90	80.23	90.80	
5.82	96.75	2.20	90.93	
		0.68	96.07	

82.3  
12.7  
94.6

12.3  
12.9  
10.8  
8.8  
8.2  
13.5  
14.5  
8.5



10.29  
10.91  
10.87  
10.57

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.d.	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	489.42
7+45 <sup>26</sup>			482.4	5.7	
7+77 <sup>84</sup>			479.7	8.4	
7+93 <sup>75</sup>			478.0	10.1	
T.P.	1.30	476.70		12.73	475.40
8+41 <sup>44</sup>			472.1	4.6	
8+73 <sup>32</sup>			468.8	7.9	

STA	+	H.d.	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 <sup>25</sup>			458.2	8.9	
					+8464 = AMER. PINE E.O. PT.
10+01 <sup>23</sup>			457.3	9.8	
10+25			456.1	11.0	
10+50			455.0	12.1	
CHECK B.M.				9.76	457.35
T.P.	+5.53	466.21		-11.43	455.68
10+81 <sup>25</sup>			453.4	2.8	
10+97 <sup>23</sup>			453.0	3.2	
11+25			452.9	3.3	

54

B.M.  
ELEV.

RECORD B.M.  
457.34

457.35



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	<sup>39</sup> B.M. ELEV.
		456.21			
13+75			453.8	2.4	
14+00 <sup>90</sup>			453.9	2.3	

CHECKED ELEV. OF GRADE AT STA 13+75 O.K.

## SAN VICENTE 2ND MAIN PIPE LINE.

Feb. 16, 1948.

KING, LEONARD, BAKER

	+	GRADE	G. ROD	-	CUT.
R.M.	+ 9.44	<sup>H.S.</sup> 494.21		484.77	TOP OF CONC. WALL

0+28 <sup>5</sup>		478.6	15.6	9.4	6.2
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0+49 <sup>5</sup>		472 <sup>5</sup>	17.0	9.4	7.6
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	+	GRADE	G.P.O.D	-	CUT
		494.21			
1400		477.2	17.0	9.7	7.3
1456 <sup>5</sup>		477.2	17.0	5.0	12.0
1472		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
T.P.	+10.56	503.60 H.d.		-1.17	485.04
2450		488.1	15.5	6.1	9.4
2499 <sup>79</sup>		493.6 H.d.	10.0	2.5	7.5
T.P.	+5.86	508.81		-0.65	502.95
3+156 <sup>9</sup>					
3+176 <sup>8</sup>	Gr.	495.9	18.4	4.0	9.4
3+247 <sup>6</sup>		495.7	18.1	3.9	9.2

	+	GRADE	G.P.O.D	-	CUT
		508.81			4/
3+72 <sup>90</sup>		497.8	11.0	2.4	8.6
3+88 <sup>79</sup>		499.4	10.7	2.0	8.4
T.B.M.	+0.85	507.56 H.d.		-2.10	506.71
4+04 <sup>79</sup>		498.8	8.8	0.6	8.2
4+20 <sup>79</sup>		499.0	8.6	0.4	8.2
4+32 <sup>53</sup>		499.0	8.6	1.1	7.5
5+00 <sup>76</sup>		495.0	12.6	4.1	8.5
5+50		493.5	14.1	6.1	8.0
5+88 <sup>81</sup>		492.3	15.3	7.0	8.3
6+04 <sup>19</sup>		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 ON 6+50 HUB
T.P.	+0.29	497.18		-10.67	496.89
7+00		485.3	11.9	1.4	10.5
7+45 <sup>96</sup>		482.4	14.8	4.1	10.7
7+77 <sup>84</sup>		479.7	17.5	6.4	11.1
7+85 <sup>76</sup>		478.0	19.2	6.5	12.7
T.P.	+0.58	484.68		-13.08	484.10
8+41 <sup>44</sup>		472.1	12.6	4.0	8.6
8+73 <sup>52</sup>		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 Recd.

	+	GRADE	G. Rod	-	CUT
B.M.	5.73	H.d. 468.66			CHISEL X ON PUTT. PAGES. 462.93
9+84 <sup>64</sup>	} E.A.				
9+85 <sup>52</sup>		488.7	10.5	0.6	9.9
10+11 <sup>28</sup>		487.3	11.4	1.2	10.2
10+25		486.1	12.6	1.9	10.7
10+50		485.0	13.7	2.3	11.4
10+81 <sup>25</sup>		483.4	15.3	2.4	7.9
10+97 <sup>23</sup>		483.0	15.7	8.1	7.6
11+25		482.9	15.8	7.9	7.9
11+50		482.8	15.9	6.8	9.1

	+	GRADE	G. ROD	-	CUT
		468.66			
11+25		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 <sup>20</sup>		453.9	13.1	2.3	10.8
T.P.	+11.96	469.30		-9.71	457.34
14+25 <sup>20</sup> EQUATION		454.0	15.3	5.5	9.8
14+50 <sup>06</sup>		455.4	13.9	3.5	10.4
14+57 <sup>54</sup>		458.0	11.3	1.2	10.1
T.P.	11.85	480.95		-0.20	469.10
15+00		461.8	19.1	11.0	8.1
15+21 <sup>29</sup>		463.8	17.1	6.5	10.8
15+37 <sup>12</sup>		466.1	14.8	4.8	10.0
15+52 <sup>69</sup>		469.8	11.1	1.1	10.0
T.P.	11.28	491.16		-1.07	479.88
15+67 <sup>59</sup>		474.5	16.7	6.3	10.4

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

	+	GRADE	G. ROD	-	COT
		491.16			44
					ON ROCK
	0.62	483.86		-7.92	483.24
17+20 <sup>40</sup>		465.9	18.0	-8.7	9.3
T.P.	+0.76	472.96		-11.66	472.20
17+35 <sup>92</sup>		462.1	10.9	3.0	7.9
T.P.	+0.87	461.36		-12.47	460.49
17+82 <sup>32</sup>		451.6	9.8	2.0	7.8
17+98 <sup>69</sup>		449.3	12.1	5.6	6.5
18+14 <sup>59</sup>		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 <sup>62</sup>		446.4	15.0	7.4	7.6
19+38 <sup>±</sup>					Venturi Tube and concrete chamber.
19+45 <sup>68</sup>		446.2			NOT USED

	+	GRADE	G. ROD	-	CUT
		461.56			
19+50		446.2	15.2	7.5	7.7
T.P.	} SAME POINT.		-6.52	454.84 =	454.76 OFF .08
T.P.			-1.84	454.76	454.76 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		443.5 456.60 T	13.1	5.0	8.1

	+	GRADE	G. ROD	-	CUT
					45
23+77 <sup>42</sup>		443.3	13.3	5.1	8.2
23+92 <sup>23</sup>		442.1	14.5	5.8	8.7
24+09 <sup>06</sup>		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 <sup>01</sup>		438.4	18.2	6.1	12.1
25+09 <sup>25</sup>		No CUT STAKE			
25+17 <sup>02</sup>		438.4	18.2	6.2	12.0
25+32 <sup>84</sup>		439.2	17.4	6.4	11.0
25+50		439.2 456.60 T	17.4	6.5	10.9

	+	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.S.P. FEE
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+96.80				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 <sup>47</sup>		439.5	15.3	4.3	11.0
36+61 <sup>28</sup>		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	+2.61	454.80			
B.M.			-4.27	452.19 = 452.19	
E.C.					
38+00 <sup>86</sup>		441.0	15.5	5.2	10.3
		456.46			
		π			

NAIL IN P.P. - 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 <sup>40</sup>		441.0	15.5	4.4	11.1
R.C.					
42+18 <sup>64</sup>					
42+25		442.7	13.8	4.1	9.7
		456.46			
		π			

NO CUT STAKE

	+	GRADE	G. P. 0	-	CUT
42+52 <sup>92</sup>		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 <sup>28</sup> 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. 0	-	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.		445.0	10.4	2.3	8.1
46+35 <sup>22</sup>		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 <sup>82</sup>		442.4	13.0	5.0	8.0
B.C. 47+33 <sup>27</sup>		NO CUT STAKE.			
47+47 <sup>28</sup>		441.7	13.7	5.7	8.0
47+63 <sup>24</sup>		441.0	14.4	6.3	8.1
47+79 <sup>20</sup>		440.2	15.2	7.0	8.2
E.C. 47+89 <sup>20</sup>		NO CUT STAKE.			
47+89 <sup>76</sup>		439.4	16.0	7.3	8.7
48+05 <sup>45</sup>		437.8	17.6	8.0	9.6
48+37 <sup>22</sup>		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		455.91		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			

v9  
Record.

CORRECTED GRADE.

	+	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
T.P.	+2.47	444.25			
		↑			
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
		438.66			

	+	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
72+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	421.9 438.66 π		-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
		421.9 437.31 π			

	+	GRADE	G. ROD	-	CUT <sup>52</sup>
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
		421.8 437.31 π			

	+	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 K		-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
		↑ K 434.54			

	+	GRADE	B. ROD	-	CUT <sup>59</sup>
+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 K 434.54			429.34 R.M.

	+	GRADE	G. ROD	-	CUT NAIL INSOLE #78974 RECORD
CHECK R.M.			-9.36	429.34	= 429.37
90 to		418.8	13.9	5.4	8.5
750		418.6	14.1	6.3	7.8
91		418.3	14.4	6.6	7.8
750		418.0	14.7	6.1	8.6
92		417.7	15.0	Not used, etc.	
701 <sup>36</sup>		417.7	15.0	7.0	8.0
733 <sup>18</sup>		415.9	16.8	9.2	7.6
749 <sup>12</sup>		414.5	18.2	6.9	11.3
<del>93</del>		414.5	18.2	Duplicate Station 194.	
	↖	432.71			

	+	GRADE	G. ROD	-	54 CUT.
<del>750</del>		414.5	18.2	Duplicate Station, 194.	
93		414.5	18.2	7.9	10.3
750		414.5	18.2	8.6	9.6
94		414.5	18.2	6.6	11.6
750		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
750		414.4	13.8	2.7	11.1
96 to		414.4	13.8	2.8	11.0
750		414.4	13.8	2.6	11.2
	↖	428.17			



	+	GRADE	G. ROD	-	CUT
9770		414.4	13.8	4.9	8.9
750		414.4	13.8	5.7	9.1
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
100+		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

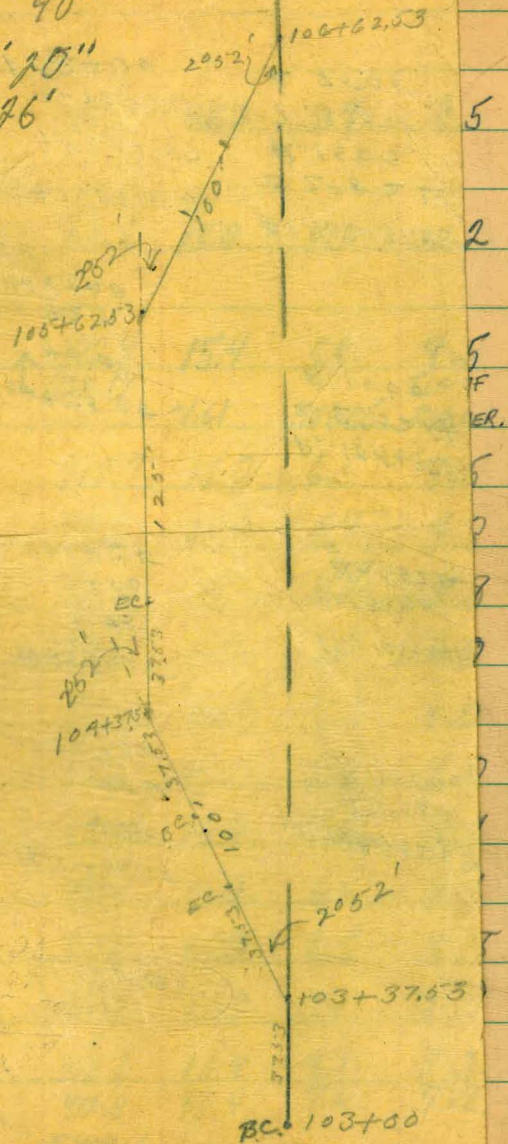
Deflection:

$$18^\circ = 28' 40''$$

$$58^\circ = 57' 20''$$

$$E.C. = 1076'$$

Huber's 0.15' shift



+	GRADE	B. Rod	-	CUT 53
750	418.0	15.2	5.7	9.5
102	417.9	15.3	5.1	10.2
750	412.8 428.17	15.4	5.9	9.5
T.P.	+2.12	-1.61	426.05	TOP OF BOULDER.
103	412.7	15.0	6.5	8.5
+25	412.7	15.0	5.7	9.2
750	412.6	15.1	6.3	8.8
75	412.6	15.1	7.1	8.0
75	412.6	15.1	7.1	8.0
+25	412.6	15.1	7.1	8.0
+50	412.5	15.2	7.1	8.1
+75	412.5	15.2	6.6	8.6
75	412.4	15.3	6.5	8.8
+25	412.4	15.3	7.4	7.9
750	412.3	15.4	8.1	7.3
+75	412.3 427.66	15.4	7.6	7.8

(over)

B.C. 103+00  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 103+37.53  
 E.C. 103+75.05  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 103+37.53  
 E.C. 104+75.05  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 104+37.53  
 B.C. 106+25  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 106+37.53  
 E.C. 106+75.05  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 106+37.53  
 B.C. 107+25  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 107+37.53  
 E.C. 107+75.05  
 T. 750  
 R. 1500  
 Δ 205.2 LF  
 P. 107+37.53

9710  
 750  
 985  
 750  
 99  
 750  
 1001  
 750  
 101

		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	410.8 477.66	16.9	7.2	9.6 No. 1 in 7 P
check BM			-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
115		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	Book	410.5	12.8	49 7.9
150		410.3	13.0	46 8.4
119		410.1	13.2	55 7.7
119.50		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		

f50	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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f50	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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f50	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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f50	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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128f50	406.4	14.2	6.4	7.8
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420.58

58

129	406.3	14.3	5.4	7.9
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f50	406.2	14.4	6.3	8.1
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T.P.	5.77	420.58	4.78	413.81
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130	406.0	12.8	4.8	7.8
-----	-------	------	-----	-----

f50	405.9	12.7	4.9	7.8
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131	405.8	12.8	4.9	7.9
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f50	405.7	12.9	5.2	7.7
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132	405.6	13.0	5.1	7.9
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f50	405.4	13.2	5.1	8.1
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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				

	Grate	G. Rod	-	59 cuts
138	404.1	12.5	4.4	8.1
+25	404.0	12.6	4.4	8.2
+52 <sup>82</sup>	404.0	12.6	4.5	8.1
+75	402.0	14.6	4.5	10.1
139+00 <sup>69</sup>	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	1.54	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			

149<sup>2</sup> 399.7 15.5 ✓ 4.3 11.2 ✓

164<sup>9</sup> 398.8 16.4 ✓ 4.4 12.0 ✓

143+81<sup>5</sup> 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 ✓

127<sup>97</sup> <sup>50 bore</sup> 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 ✓ 3.2 14.5 ✓

T.P. 352 411.14 12.88 407.52  
420.40

150 397.2 22.8 ✓ 12.8 10.0 ✓

146+167<sup>52</sup> 399.2 21.2 ✓ 9.2 12.0 ✓

146+98<sup>78</sup> 404.0 16.4 ✓ 3.2 13.2 ✓

147+14<sup>50</sup> 405.0 15.4 ✓ 1.2 14.2 ✓

check 811 6.78 420.40 7.82 413.62

151<sup>40</sup> 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

				cuts
150+0	405.2	15.7	4.2	11.5 ✓
150	405.3	15.6	4.1	11.5 ✓
151	405.3	15.6	4.1	11.5 ✓
150	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
150	405.4	17.9	5.9	12.0 ✓
153	405.4	17.9	5.9	12.0 ✓
150	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
152 <sup>62</sup>	405.4	17.9	5.4	12.5 ✓
159 <sup>97</sup>	410.0	13.3	5.1	8.2 ✓
155	410.2	13.1	4.8	8.3 ✓
150	410.4	12.9	4.3	8.6 ✓
156	410.6	12.7	4.0	8.7 ✓
155/150	410.8	12.5	3.9	8.6 ✓
157	410.8	14.5	3.6	10.9
	410.8	14.5	4.1	8.4 ✓
157/150	410.8	14.5	4.0	10.5
	410.8	12.5	4.1	8.4 ✓
158+0	410.8	14.5	4.4	10.1
	410.8	12.5	4.0	8.5 ✓
	423.27			
T.P.	421.92	0.52	420.50	



12/2/47					
BM	1036	421.02		410.66	
158+4 <sup>77</sup>		410.8	10.2	1.3	<del>2.9</del>
158+58 <sup>71</sup>		410.6	10.4	1.4	<del>2.0</del>
					9.0
159		409.7	11.3	2.2	<del>2.5</del>
					9.1
159+50		408.7	12.3	3.3	<del>2.7</del>
					9.1
160+02 <sup>20</sup>		407.9	13.4	4.2	9.2
150 <sup>14</sup>		407.4	13.6	4.8	8.8
4° Bench 165 <sup>83</sup>		407.2	13.8	5.0	8.8
181 <sup>77</sup>		406.8			
160+37 <sup>31</sup>		404.4			

Grade  
change

Changed  
from original  
12/6/47

		41.0 Grade	G. Rod		61 cut
		42.85			
5° Bench 161+13 <sup>66</sup>		403.0	18.0	5.4	12.6
11/26/47 BM	6.80	417.46		410.66	
150		402.9	18.1	5.8	12.3
162		402.8	14.7	5.4	9.3
150		402.7	14.8	7.0	7.8
162+89 <sup>85</sup>		402.6	14.9	6.8	8.1
163+04 <sup>83</sup>		401.5	16.0	7.0	9.0
163+20 <sup>28</sup>		399.0	18.5	7.1	11.4

	+	$\pi$ 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 <sup>81</sup>		394.0	19.6	3.5	16.1
164		388.6	25.0	8.2	16.8
+47 <sup>21</sup>		383.3	30.3	11.3	19.0
+63 <sup>26</sup>	1.57	382.7	30.9	11.8	17.1
Set-BM	1.57	402.17	13.03	400.60	Top steel Rise opp 166+70+
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

	+	$\pi$ 402.17 Grade	- G. Rod	Elev -	cut 62
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 400.37	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 400.37	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	19.1
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

43

Top Large  
Granite  
Boulder  
SEnd Bridge  
100+ ft  
19.1

	+	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

		π	-		64
		401.73			cut
		Grade	G. Rod	-	
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' L/H - 5 to 18 ft on
	+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

	$\pi$ 400.11			
	Grade	Grade	-	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
TP	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

	$\pi$ 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 <sup>37</sup>	384.0	16.3	6.2	10.1
195+03 <sup>42</sup>	384.2	16.1	6.3	9.8
+19 <sup>44</sup>	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 <sup>4</sup>	387.7	12.6	1.5	11.1
TP	4.29	403.09	1.54	398.80
+38 <sup>02</sup>	388.0	15.1	4.4	10.7
Set BM	4.85	403.52	4.42	398.67
check BM		5.48	398.04	197+50
		Record	37 TD	0.06

	+	GRADE	G. Rod	-	CUT
	4.30	402.97		398.67	
196+ <sup>43</sup> / <sub>16</sub>		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

	+	GRADE	G. Rod	-	CUT
					66
201+50		388.4	96.8	6.2	8.4
201+00		388.5	96.9	6.1	8.4
+25 <sup>26</sup>		388.5	97.0	6.0	8.5
				5.93	397.09
E.C.					
+29 <sup>29</sup>					
T.P.					
+25 <sup>25</sup>		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 PUMPY AT 201+85<sup>26</sup> (10)

-8.60 997.15

	+	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	8.7
		394.2	11.5		8.4
+50		394.4	11.3	3.1	8.7
		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			

	+	GRADE	G. ROD	-	CUT
T.P.	1.76	410.43		NAIL IN R.P. -7.41	#487115H 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 <sup>95</sup>		402.0	14.1	4.9	9.2
+75 <sup>95</sup>		401.8 401.9 416.08 ↑ ↑	14.3	4.9	9.4

68

	+	GRADE	G. ROD	-	CUT
215+91 <sup>95</sup>		401.4 <del>401.6</del>	14.7	5.0	9.7
216+22		400.4 400.9	15.7	5.5	10.2
+55 <sup>95</sup>		399.3 400.1	16.8	6.4	10.4
+61 <sup>94</sup>		399.1 400.0 416.08 ↑	17.0	6.5	10.5
T.P.	+7.09			-0.82	T.P. Elev. 408.99
+72 <sup>94</sup>		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. Pop. Box

END OF SAN VICENTE RND MAIN PIPE LINE.



Levels on Proposed B.O.  
Sta 25+09

	6.32	452.39	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 R.R. MAIN PL. KING  
LEONARD  
NIENOW

69

Top Pipe at B.O.

5

low spot

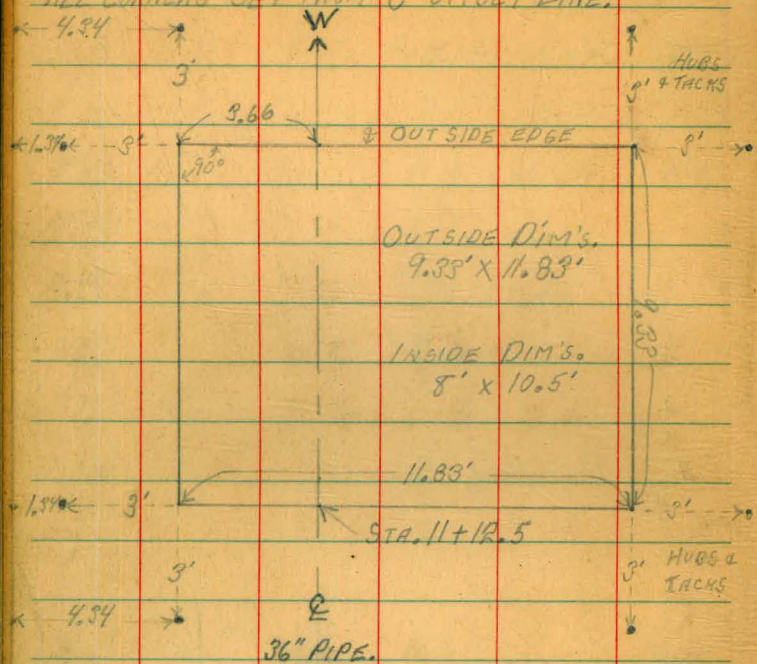
same on out

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. ROD	-	CUT
R.M.	3.56	H. I. 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
N.W. 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

48" d. dmp.  
137.89

SET R.M. ONLY AT 49<sup>TH</sup> d. dmp. 11 - 0.88 147.46

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

CUT STAKES ON SOUTH-WEST LINE.

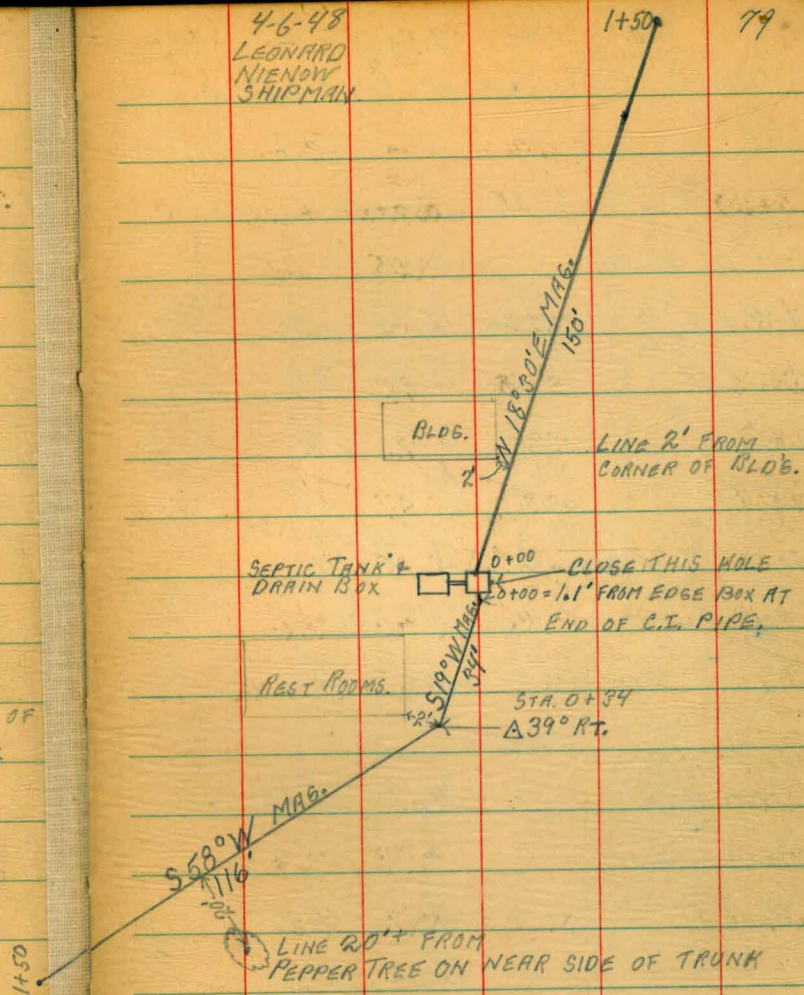
	G. ROD	-	CUT	
	8.17		FLOW LINE	PIPE.
0+00	8.22		BOTTOM OF EXISTING	
0+25	8.25	5.05		3.2
1+0+34	8.26	5.16		3.1
0+50	8.28	4.98		3.3
0+75	8.31	5.21		3.1
1+00	8.34	5.54		2.8
1+25	8.37	5.77		2.6
1+50	8.40	5.40		3.0

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.

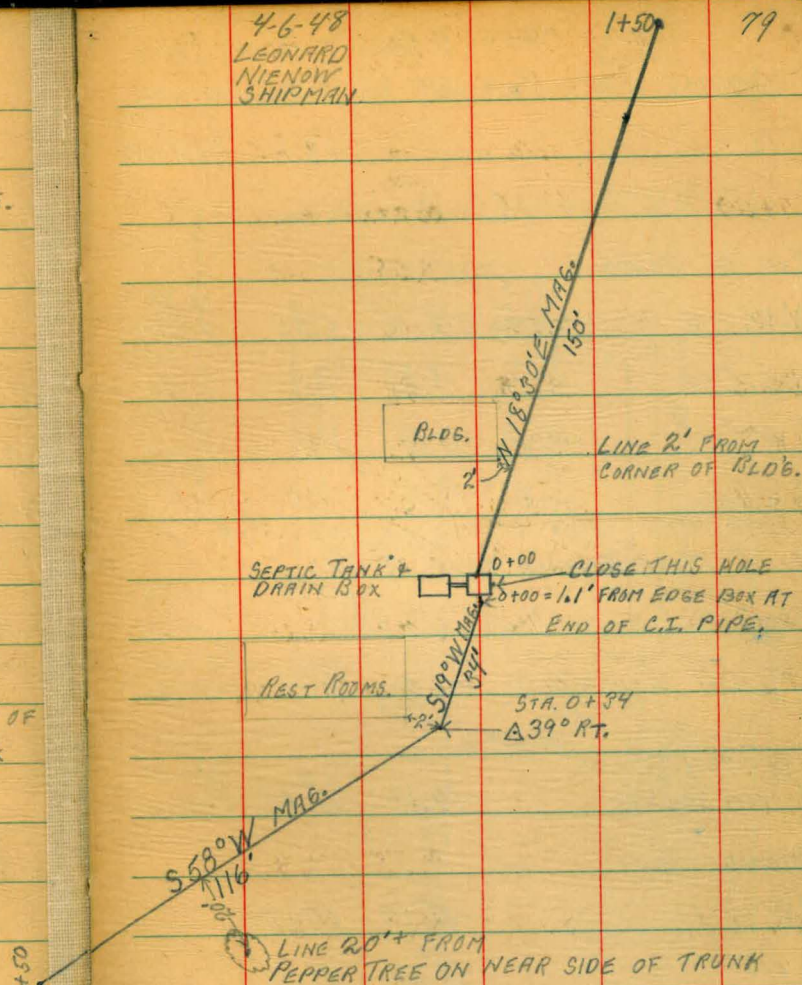
	G. ROD	-	CUT	
	8.17		FLOW LINE	PIPE.
	8.22		BOTTOM OF EXISTING	
0+00				
0+25	8.25	5.05	3.2	
1+0+34	8.26	5.16	3.1	
0+50	8.28	4.98	3.3	
0+75	8.31	5.21	3.1	
1+00	8.34	5.54	2.8	
1+25	8.37	5.77	2.6	
1+50	8.40	5.40	3.0	

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 37+12.

+4.35 64.25

TOP OF FLOOR:

	51.7			7.30
N.W. COR.	52.0	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	8.05

4-26-48 NOTE: ABOVE GRADES LOWERED .5 FT. TO MEET EXISTING ELEV. OF PIPE.

CHECK BOTTOM OF HOLE AND PIPE.	4-23-48	LEONARD NIENOW SHIMMAN PAGE 23
R.M. - 1st IMP & 45TH. ONE	59.87	F.B. 1722

+2.70  
hd. 67.57

STA 37+11.70			0.56 FT. BELOW GRADE.
BOTTOM OF PIPE.	-10.13	52.44	

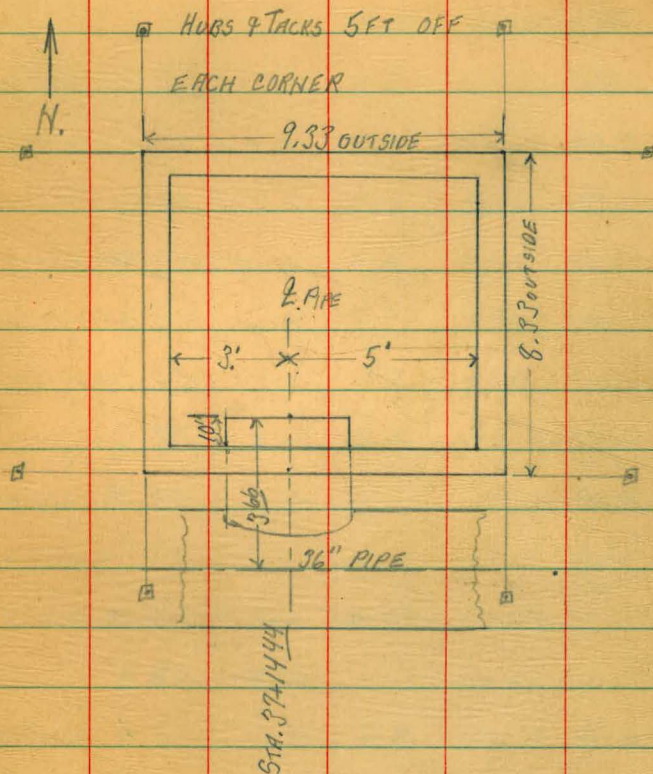
BOTTOM OF HOLE:

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 SHIMMAN.

80



Valve Box  
45 1/4 x 1 1/4 in.

Cont. from P 34

81

19.18

		59.87	
	3.98	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	60.8	
SE Cor "	4.0	60.1	
SW Cor "	4.5	59.6	

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+50	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 + Corner	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 <sup>22</sup>	2.6	30.2	24.9	53
191+29 <sup>65</sup>	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	4.6
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

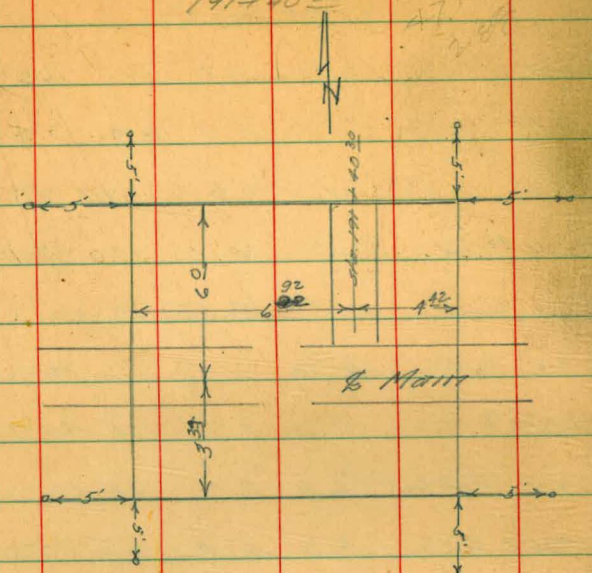
Rainey  
Baker  
West 92

27.55

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 <sup>26</sup> B.C.	10.6	17.0	7.4	9.6
T.P. on Sep	10.43	17.12		
1.01	18.13			
192+75	1.7	16.4	7.2	9.2
197+95 <sup>26</sup> 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 <sup>28</sup> E.C.	3.7	14.4	6.9	7.5
199+00	4.9	13.2	6.8	6.4
199+33 <sup>55</sup>	5.6	12.5	6.4	6.1
199+81 <sup>29</sup>	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 + Corn	5.64	12.49		12.52

19th + Comm.

191+9020



TBM N.E. COR. 18th St.	25.46			
	8.33	33.79		
Top Pops	8.0	25.2	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
SSE	4.6	29.2	21.0	8.2

80

0.45

7729				
211+9522	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	4.3	-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 <sup>APK</sup>	2.4	10.7	2.9	7.8
200+75	3.6	4.5	2.9	6.6
201+25 <sup>APK</sup>	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	8.0	0.5	5.5
204+00	7.8	5.3	-0.1	5.4
204+45 <sup>22</sup>	8.2	4.9	-0.54	5.4
204+77 <sup>22</sup>	8.6	4.5	-2.50	7.0
205+00	8.7	4.4	-2.5	6.9
205+41 <sup>03</sup>	9.6	3.5	-2.50	6.0
206+00	10.2	2.9	-5.5	8.4

84

P.M. R.P.N.E. Col. 1122+1344 3.00

6.43 9.43

206+37 <sup>04</sup>	6.6=2.8	-7.0	9.8
206+85 <sup>04</sup>	6.5=2.9	-7.0	9.9
207+17 <sup>04</sup> <sup>APK</sup>	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 <sup>22</sup>	6.0=3.4	-4.4	7.8
209+40 <sup>22</sup>	6.2=3.2	-1.8	5.0
209+87 <sup>24</sup> <sup>BK</sup>	5.8=3.4	-1.7	5.3
209+87 <sup>36</sup> <sup>APK</sup>	5.8=3.4	-1.7	5.3
209+90 <sup>23</sup>	5.7=3.7	-1.4	5.1
210+06 <sup>22</sup>	5.8=3.6	0.0	3.6
210+38 <sup>51</sup>	5.8=3.6	0.0	3.6
210+70 <sup>43</sup>		-4.6	5.0
210+73 <sup>45</sup> <sup>BK</sup>	6.0=3.4	-1.8	5.2
211+09 <sup>38</sup> <sup>APK</sup>	6.2=3.4	-1.8	5.2
211+45 <sup>24</sup>	6.3=3.1	-2.4	5.5
T.P.	6.27	3.16	

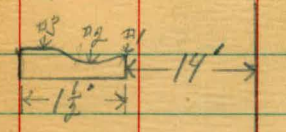
5.29 8.45  
Cont P 83

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

B.M.	+3.37	+ 8.91		5.54	P.P. 12' R.T. 212+49
	GRADE	G. Rod	-	CUT.	
218+07 <sup>3</sup>	ON TAN.	-4.0	12.91	-6.78	6.13
218+35 <sup>8</sup>	ON $\frac{3}{4}$	-4.0	12.91	-6.45	6.46
SET B.M.			-6.35	ELEV. IN T. PIPE 39 FT. P.P. 218+00	2.56

4-29-97 LEONARD  
NIENOW  
SHIPPAN 85.  
COMMERCIAL ST. PIPE LINE.  
AIR VALVE AT STA. 114+20

T.B.M.	+4.63	24.83		20.20	CORNER STAD & DORANT.
	TOP OF CONCRETE CHAMBER.	-4.81		20.02	
	NOTE: VALVE IS AT STA. 113+99 <sup>42</sup>				
	VALVE IS	60.47'	EAST OF E. LINE R.R. ST.		
B.M.	+4.18	24.58		20.20	
ON CURB # 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	399.85	
		Elev. Grade	G. Rod	Gr.
SW		394.70	12.78	11.78 C10
N.W		394.90	12.58	11.58 C10
N.E.		395.20	12.28	8.28 C40
SE		395.0	12.48	

## Vicinity Pipe Line at Lakeside

86

	2.98	6.52	
Top Conc. Drain	210+15	8.91	-0.89
Top 6" W.P. Gas	210+25	8.04	+0.48
Top 6" Water	210+36	7.69	+0.83
Sta. 210+06		4.85	+3.67

554

Top of Conc. Dr. -0.33

Bliss  
Leonard  
Baker

Grades for Water Main

9/31/47

Pescadero Drive Between Bermuda +

Pescadero Ocean Beach

277	8.58	31.23	8.47	22.65 22.76	
					cut
2700	20.2	11.0	8.8		2.2
0450	21.1	10.1	7.9		2.2
1400	22.0	9.2	6.8		2.4
730	22.5	8.7	5.6		3.1
754 <sup>84</sup> L	23.0	8.2	4.4		3.8
769 <sup>84</sup> BK	23.1	8.1	4.2		3.9
2400	24.0	7.2	3.7		3.5

E Top Alley  
Cb. N Line  
Bermuda  
Sec. City P.D.  
319 P. 41

3/23

87

68

cut

2750	25.6	5.6	2.5		3.1
277 <sup>84</sup> 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
750	27.9	8.3	5.6		2.7
4700	28.8	7.4	4.5		2.9
724 <sup>8</sup>	29.6	6.6	3.7		2.9
Checkab East Side		37.4	32.51		

Bl  
L  
S  
3/2

BM 450 466.94 402.44

Average  
Ground 4.8 402.14

Bottom Pipe 389.0

Top " 394.0

Elev Natural Ground 402.14

394  
814. Flonkin  
8.64 4.8 baroff

412.4  
410  
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109.8  
1.8  
113.2  
416  
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412.4  
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89.2

74.63

55.9

64.8

69.04

51.8

2.6

84.4

22.5

1.9

12.7  
8.2  
4.8  
1.9

1.56

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.