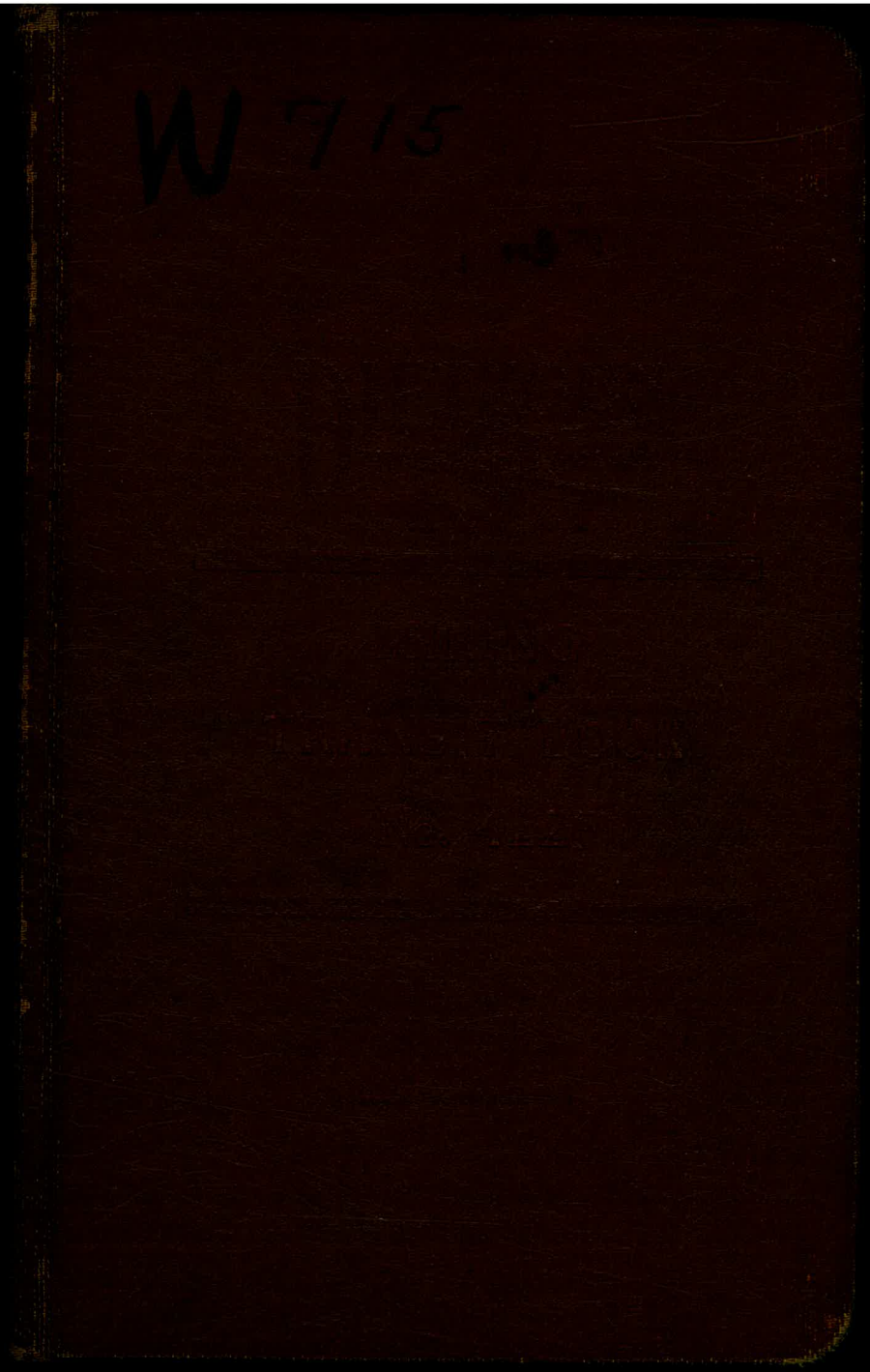

W
7
15

#715

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

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

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

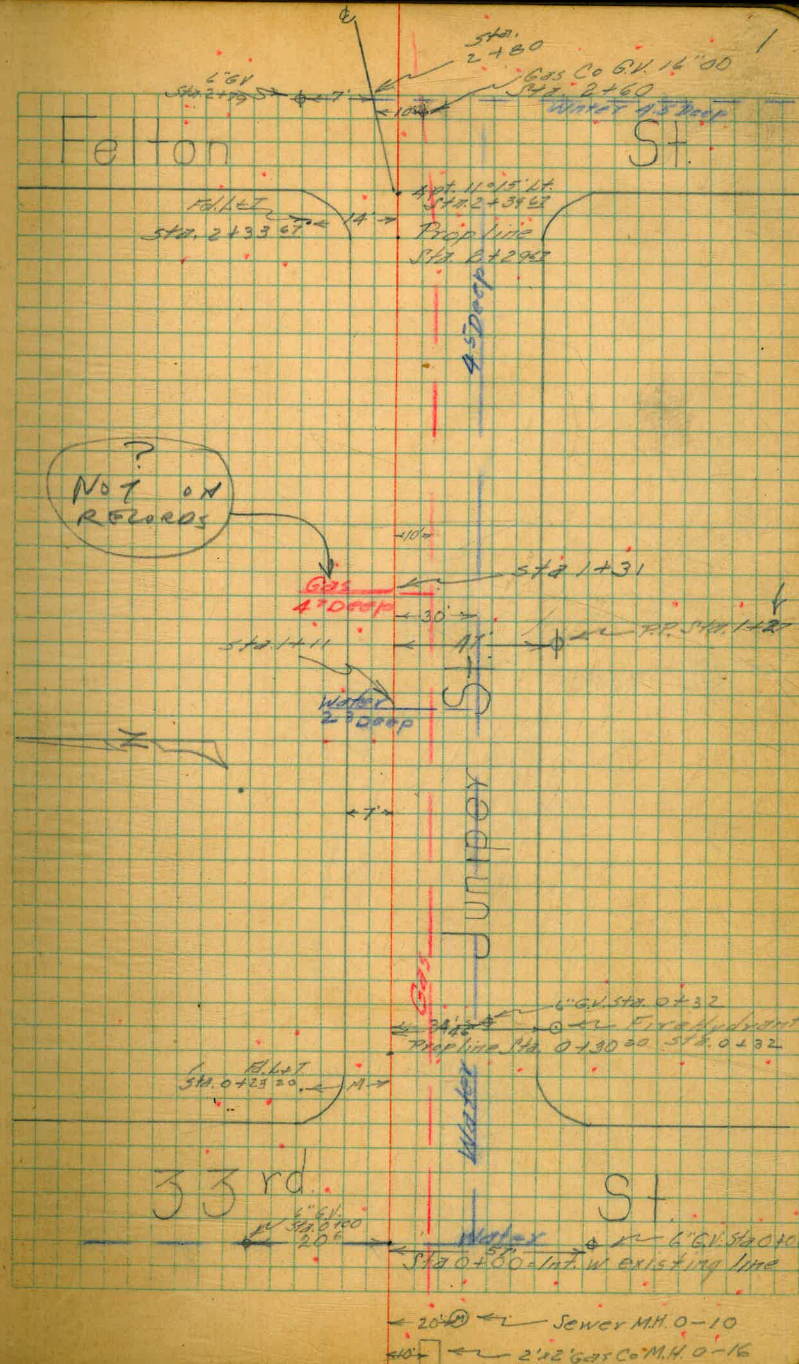
This Field Book is manufactured of a High Grade 50% Rag Paper having a **WATER RESISTING SURFACE**, and is sewed with Bing Special Enamel Waterproof thread.

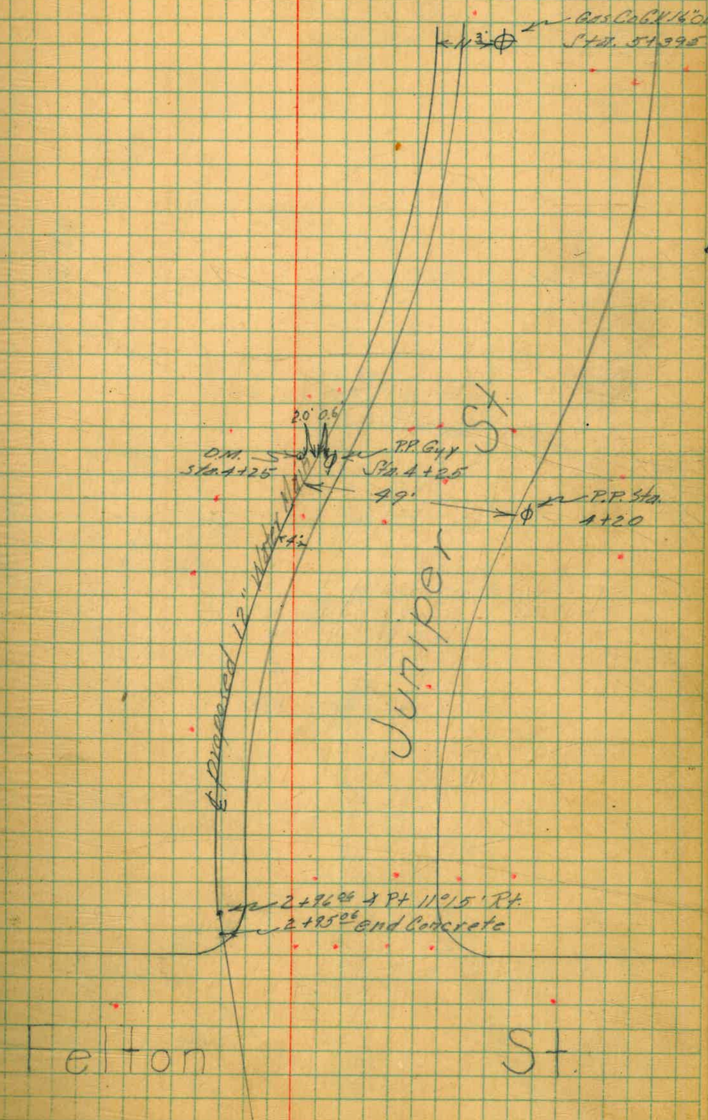
Made in U. S. A.

Notes

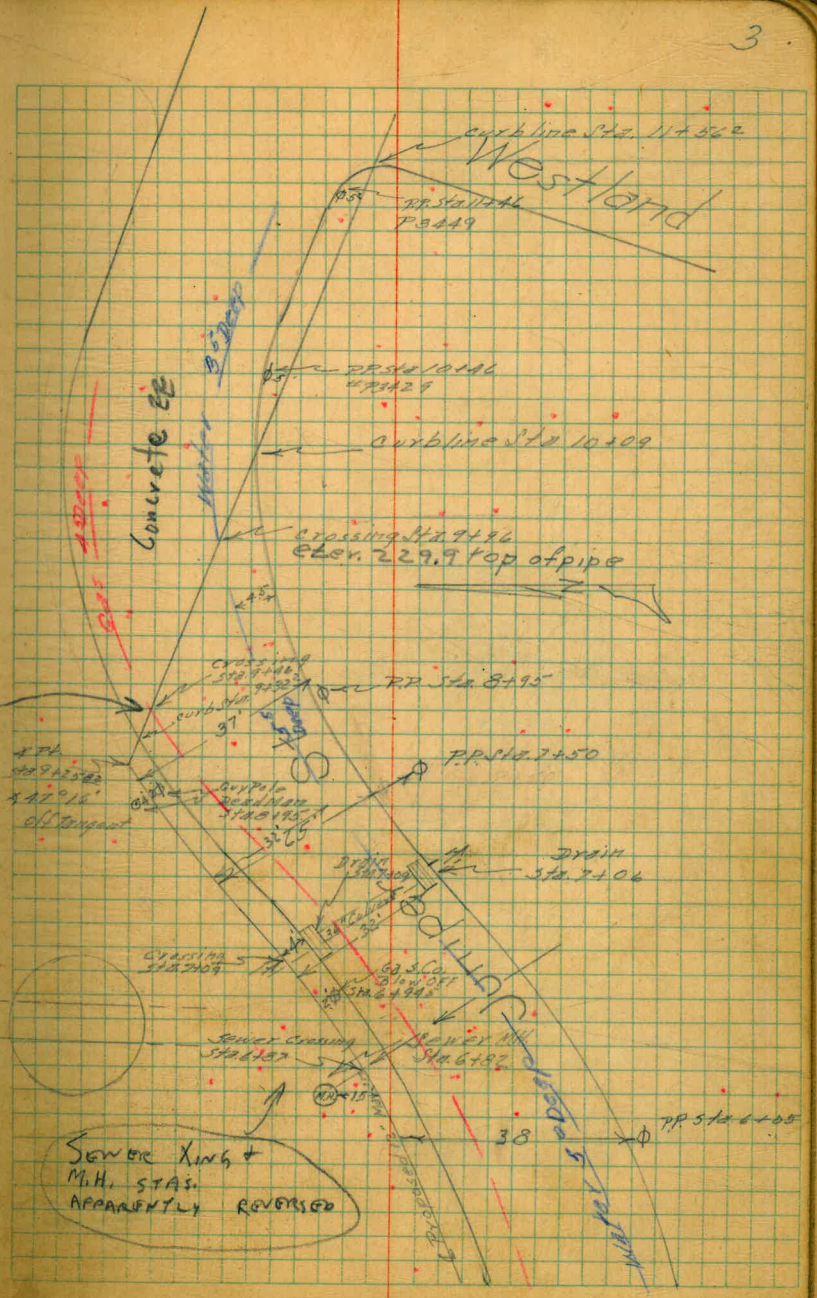
Date	Indexed By	No. Points	Reduced or Plotted Date	Mapped By
6/12/47	24	M.P.V		
2/27/48	39	M.P.V.		

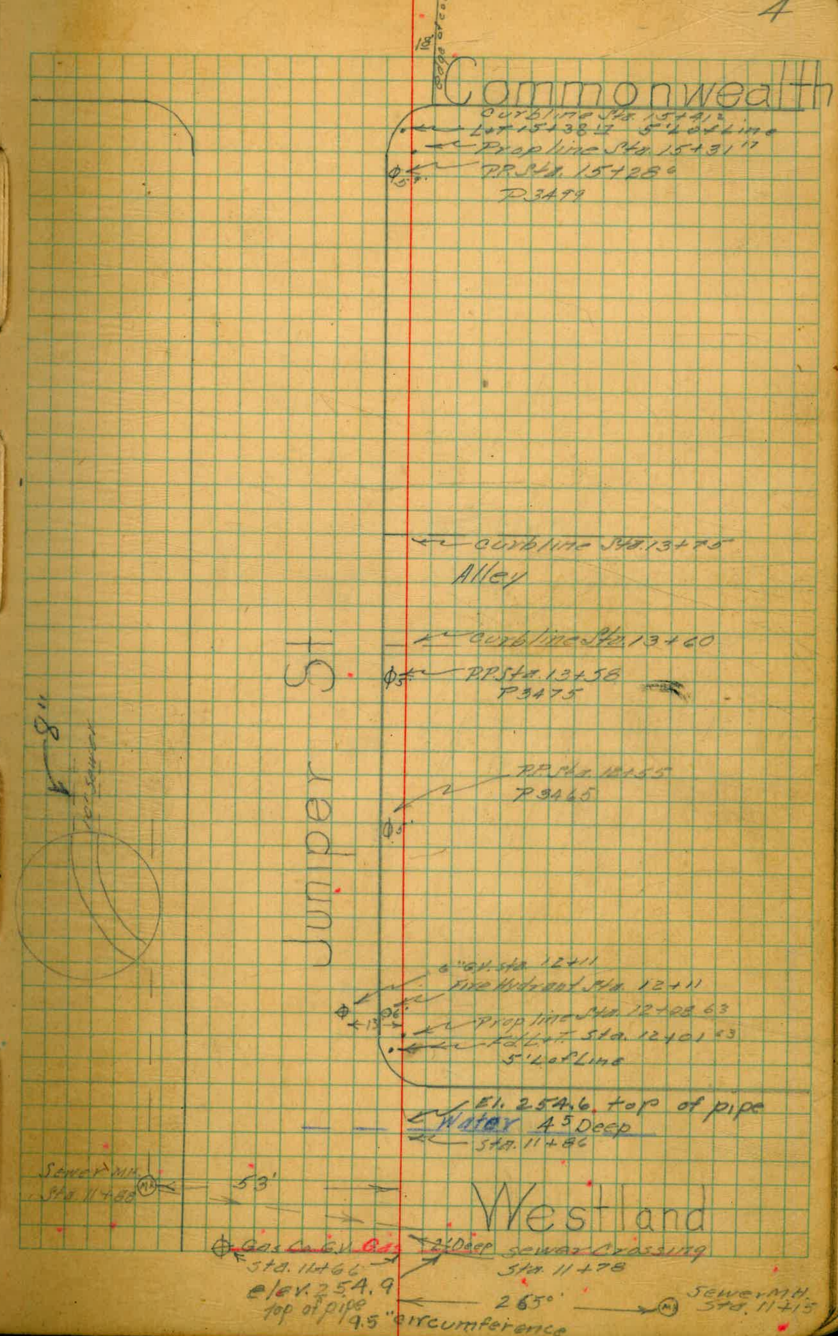
Index


Felton St
Gas Co G.V. 16"OD
Water 4.5 Deep
4.5 Deep
NOT ON RECORDS
Gas
4 Deep
Sta. 1+31
Sta. 1+11
Water
2 Deep
Juniper St
Gas
Water
Fire Hydrant
33rd St
Sta 0+00 - Int. w existing line
Sewer M.H. 0-10
2'x2' Gas Co M.H. 0-16


Gas Co. 6" W 16" O.D.
Sta. 51+395
3'
20' 0.6'
O.M.
Sta. 4+25
P.P. Guy
Sta. 4+25
49'
P.P. Sta.
4+20
4'
℄ proposed 12" Water Main
Juniper St
2+96.06 ℄ Pt 11°15' Rt.
2+95.06 End Concrete
Felton St

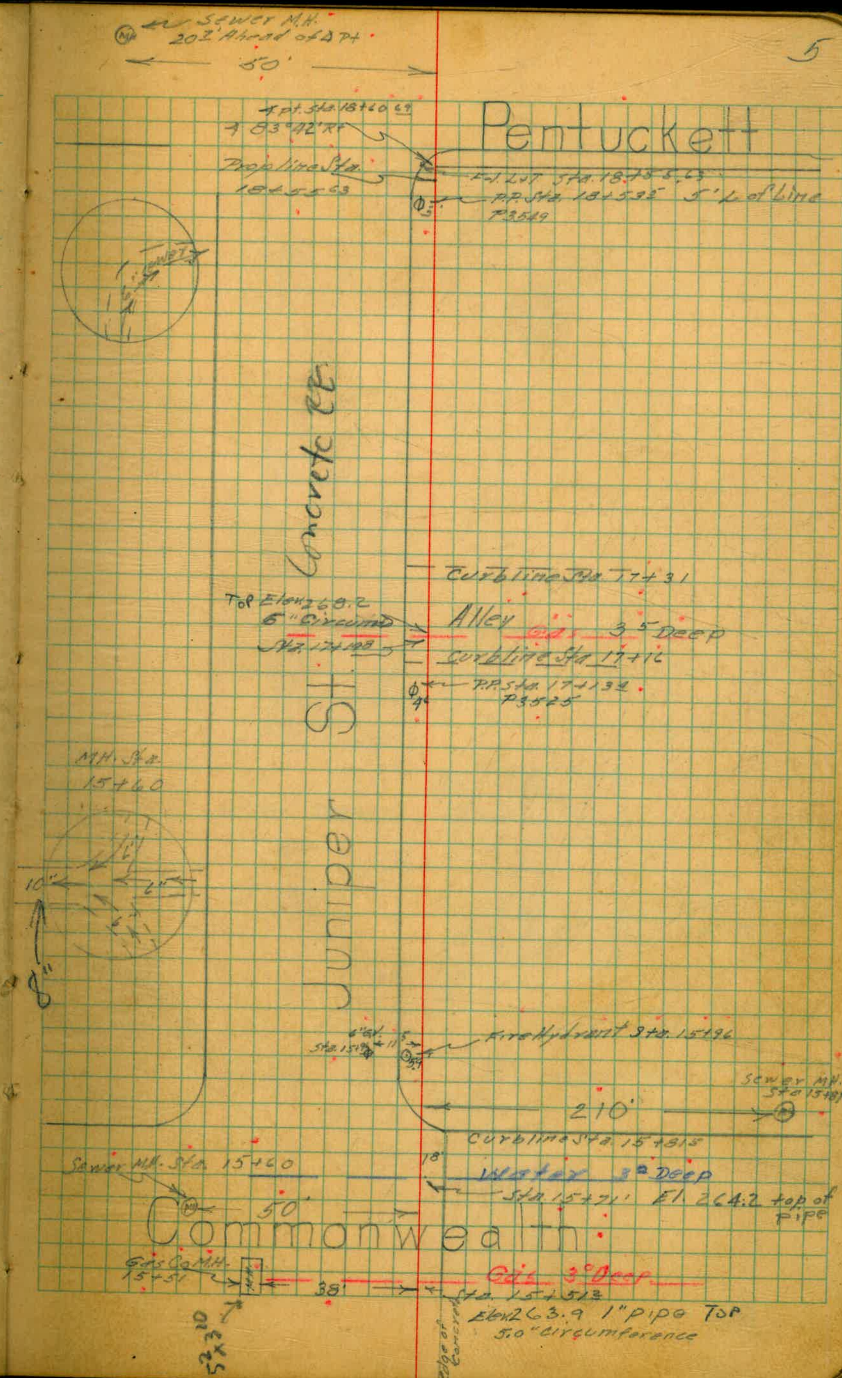
DEPTH TO CTR.
4" H.P.G. AT X.ING
CHECKED BY ROGNOR'
PIPE FINDER 9/11/87
AT 4.0'




Commonwealth
Curbline Sta. 15+41
Lot 15+38 17 5' Lot Line
Prop line Sta. 15+31 17
P.P. Sta. 15+28
P3499
Curbline Sta. 13+75
Alley
Curbline Sta. 13+60
P.P. Sta. 13+56
P3475
P3465
Jumper St
8"
6" G.V. Sta. 12+11
Fire Hydrant Sta. 12+11
Prop line Sta. 12+08 63
Sta. 12+01 63
5' Lot Line
El. 254.6 top of pipe
Water 4 5 Deep
Sta. 11+86
Sewer MH.
Sta. 11+88
53'
Westland
2' Deep Sewer Crossing
Sta. 11+78
Sta. 11+66
elev. 254.9
top of pipe
9.5" circumference
265'
Sewer MH.
Sta. 11+15

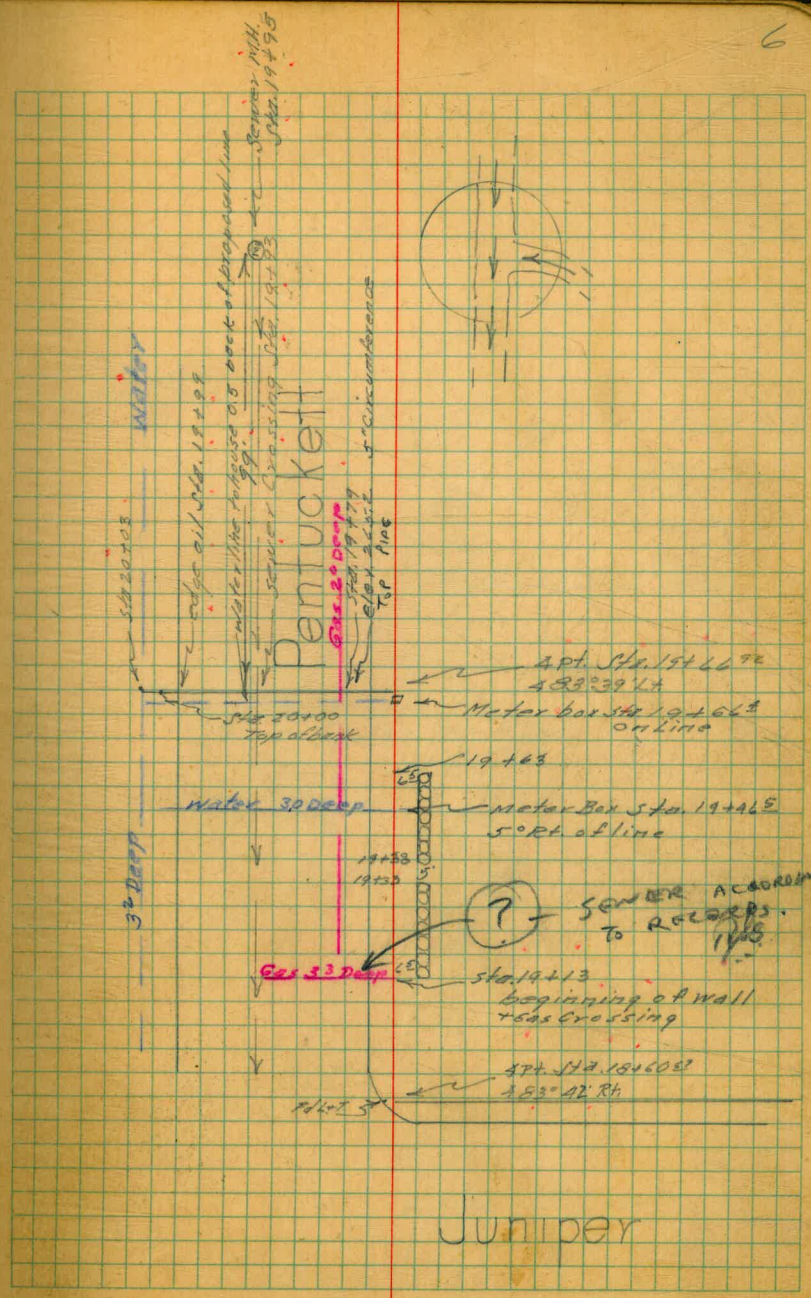
5

5

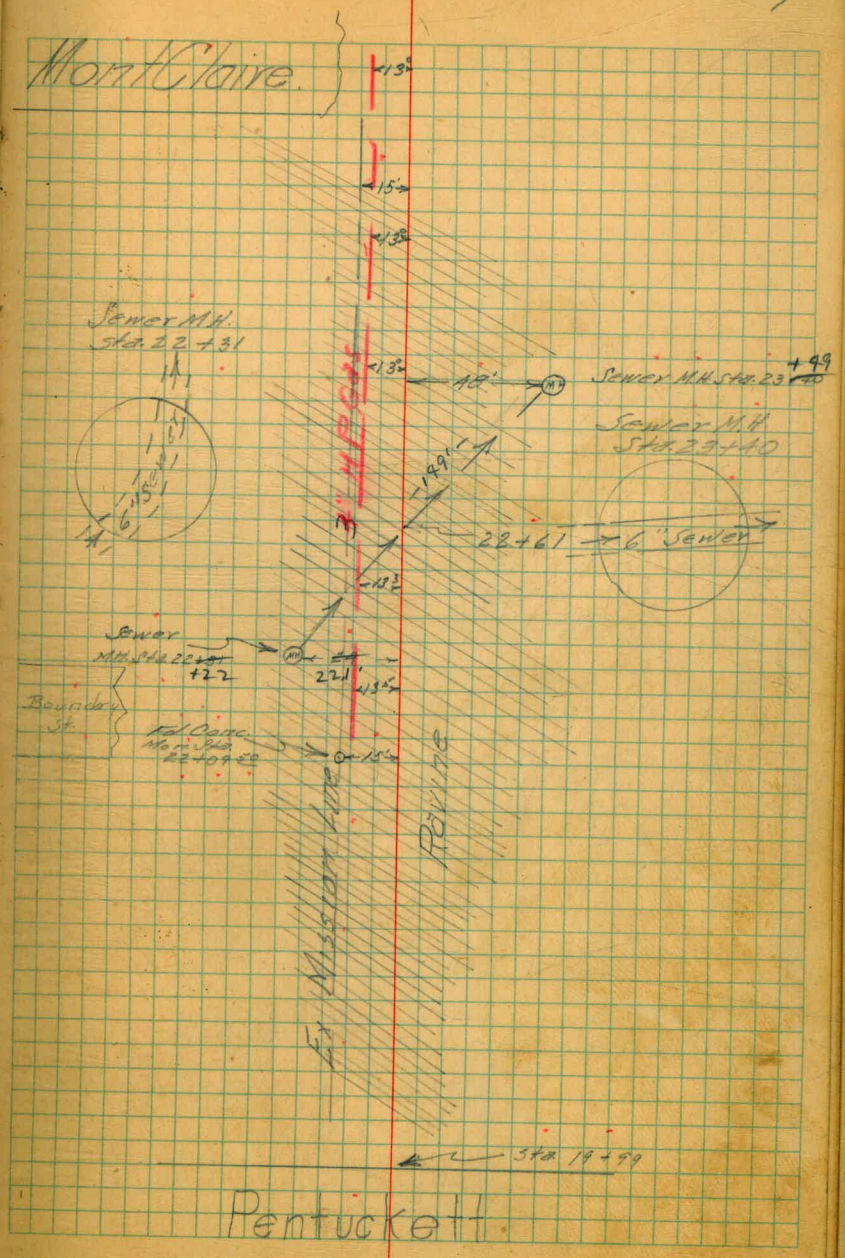


Sewer M.H.
20± Ahead of Δ Pt
50'
Δ pt. Sta. 18+60 69
Δ 83°42' Rt
Prop line Sta.
18+55 63
Pentuckett
P.I. L.J.T. Sta. 18+55.63
P.P. Sta. 18+53.5 5' L of Line
P3549
Concrete RR
Juniper St.
Curbline Sta. 17+31
Top Elev 268.2
6" Circum
Sta. 17+108
Alley
Gas 3.5 Deep
Curbline Sta. 17+16
P.P. Sta. 17+13.2
P3525
M.H. Sta.
15+60
10"
8"
Fire Hydrant Sta. 15+96
Sewer M.H.
Sta. 15+87.5
210'
Curbline Sta. 15+81.5
Sewer M.H. Sta. 15+60
18'
Water 3' Deep
Sta. 15+71' El. 264.2 top of pipe
50'
Commonwealth
Gas Co M.H.
15+51
38'
Gas 3' Deep
Sta. 15+51.3
Elev 263.9 1" pipe Top
5.0" circumference
Edge of Concrete

6

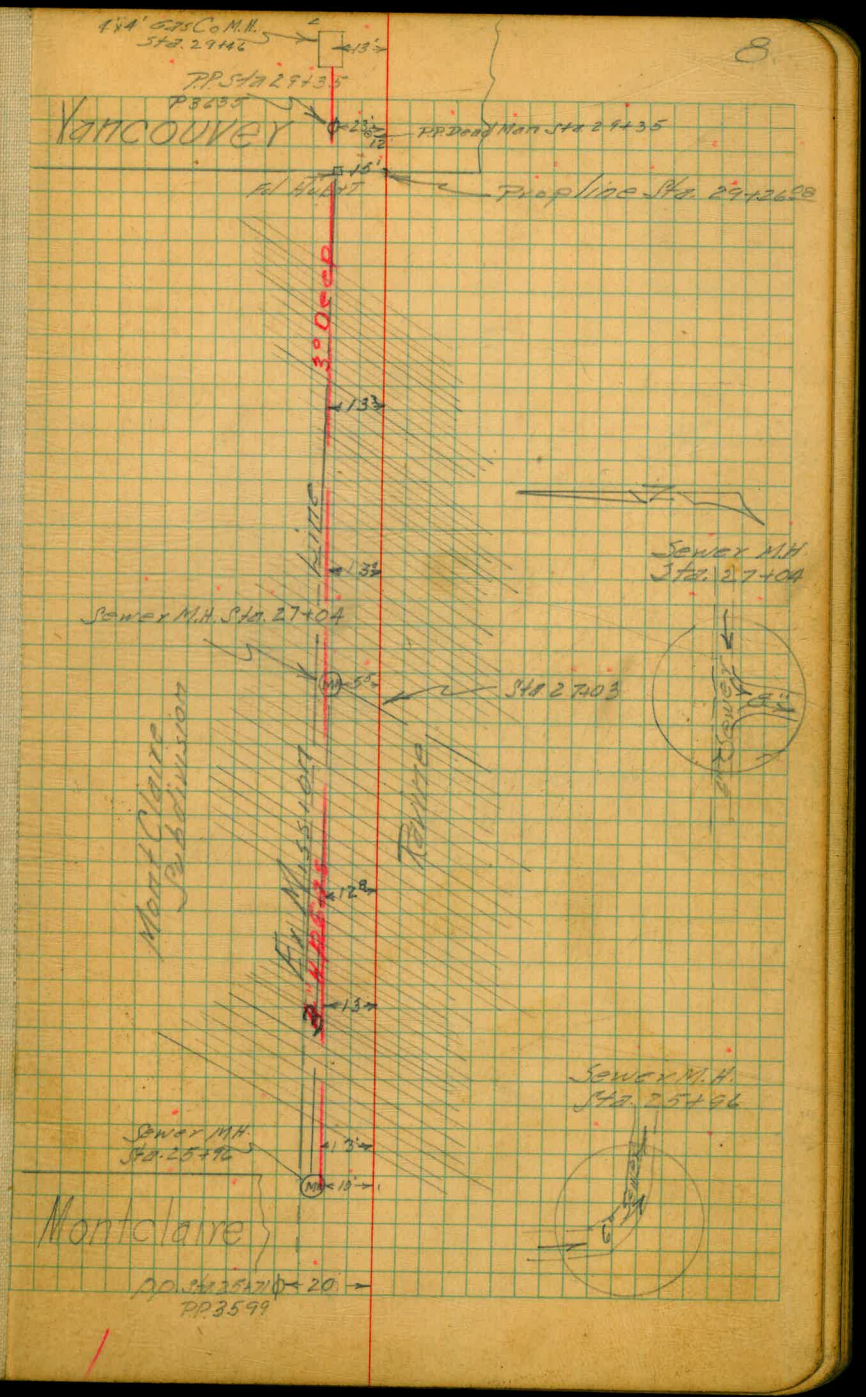

Pentuckett
Juniper
Water
Gas 2.0 deep
Top Pipe
Sta 20+05
Sta 20+00
top of bank
Apt. Sta. 19+66
Meter box Sta 19+64
on line
19+63
Water 30 Deep
Meter Box Sta. 19+65
5° Rt. of line
19+53
19+50
3' Deep
Gas 3.3 Deep
Sta. 19+13
beginning of Wall
+Gas Crossing
Apt. Sta. 18+60
183° 42' Rt.
Point 3

7


Mont Claire.
Sewer M.H. Sta. 22+31
Sewer M.H. Sta. 23+99
Sewer M.H. Sta. 23+40
22+61
6" Sewer
Sewer M.H. Sta. 22+22
Boundary St.
Mont Claire M.H. Sta. 22+09.50
Ft. Mason Line
Revere
Sta 19+99
Pentucket

8

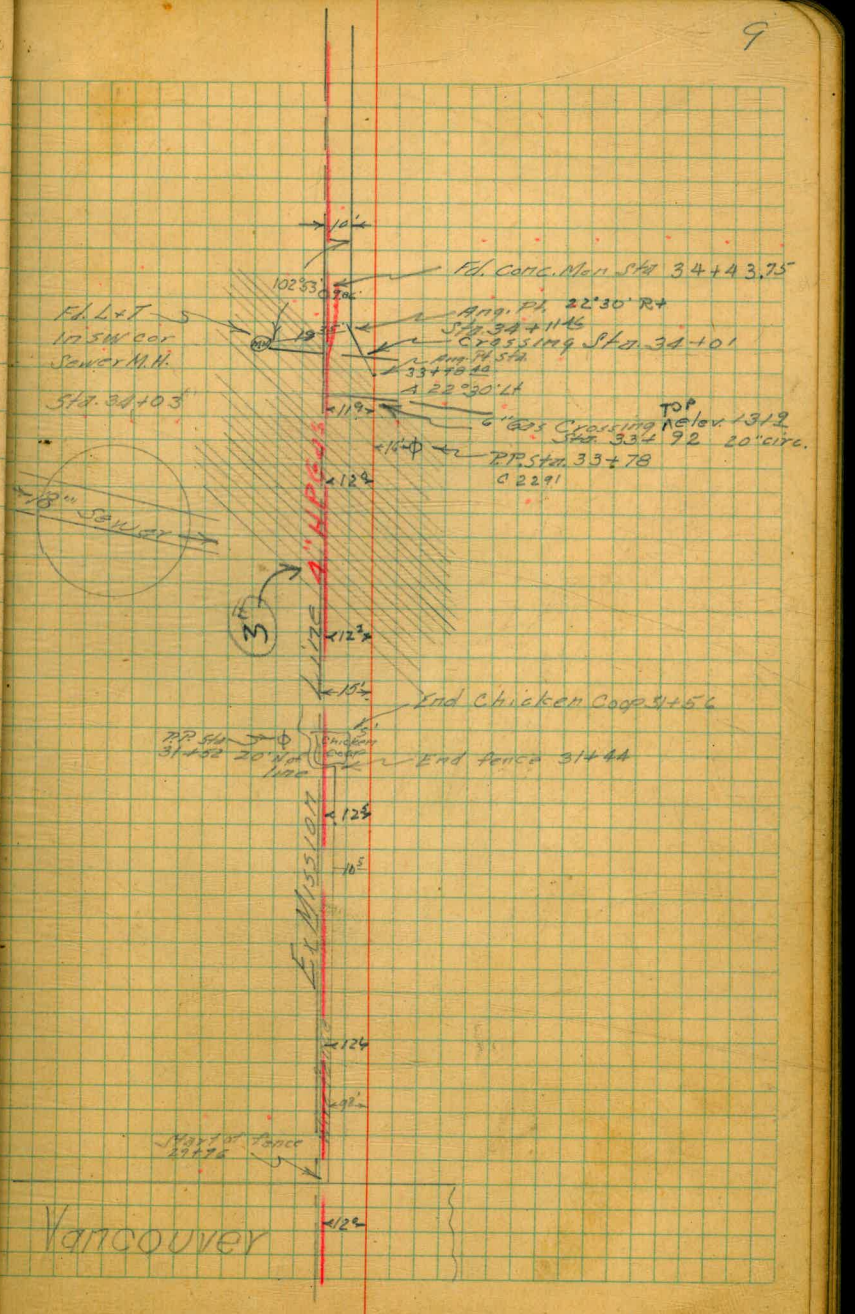
8


44' Gas Co M.H. Sta. 29+42
PP Sta 29+35
PP 3599
Vancouver
PP Dead Man Sta 29+35
Prop Line Sta. 29+26.28
3° Deep
Sewer M.H. Sta. 27+04
Sewer M.H. Sta. 27+04
Sta 27+03
Mont Claire Subdivision
Sewer M.H. Sta. 25+96
Sewer M.H. Sta. 25+96
Montclaire
P.O. Sta 25+71.0
PP 3599

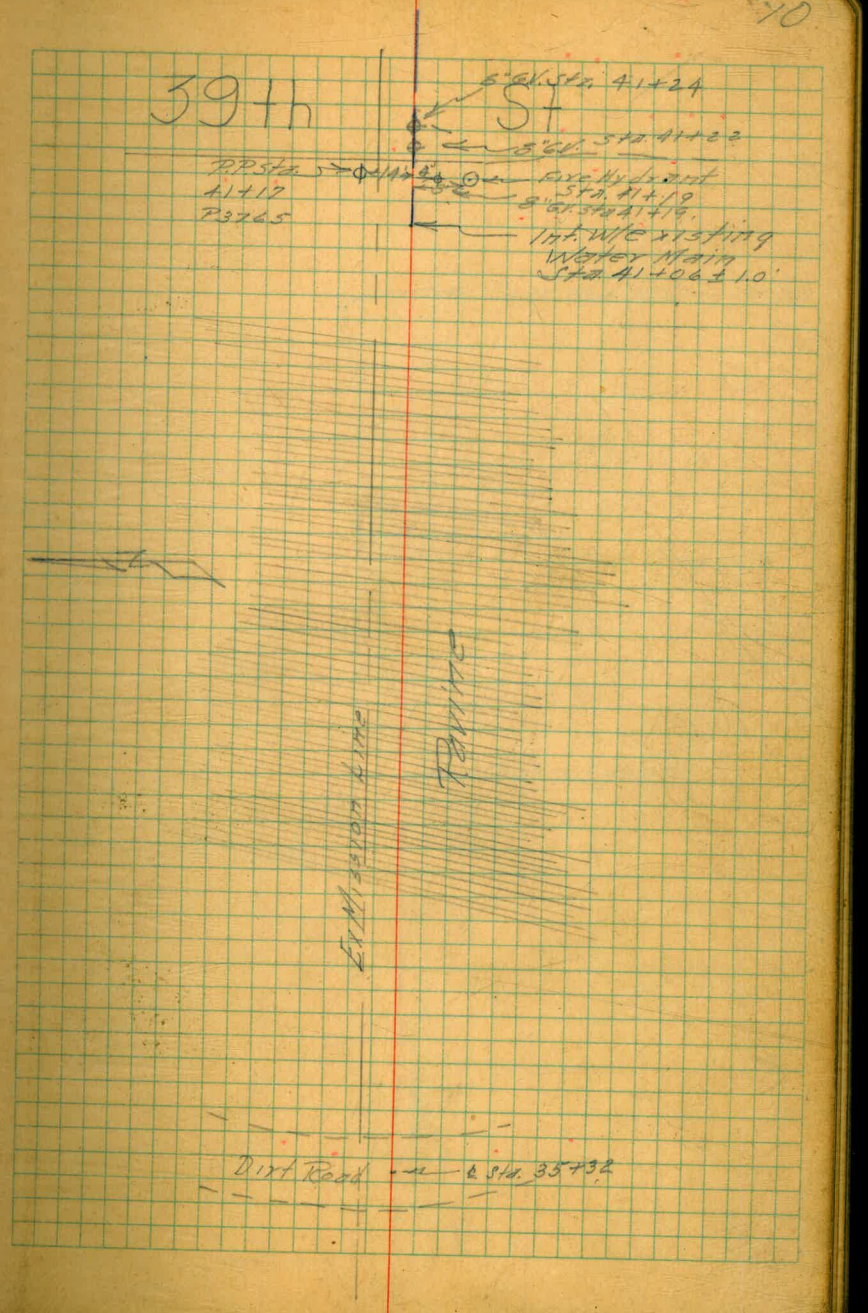
8

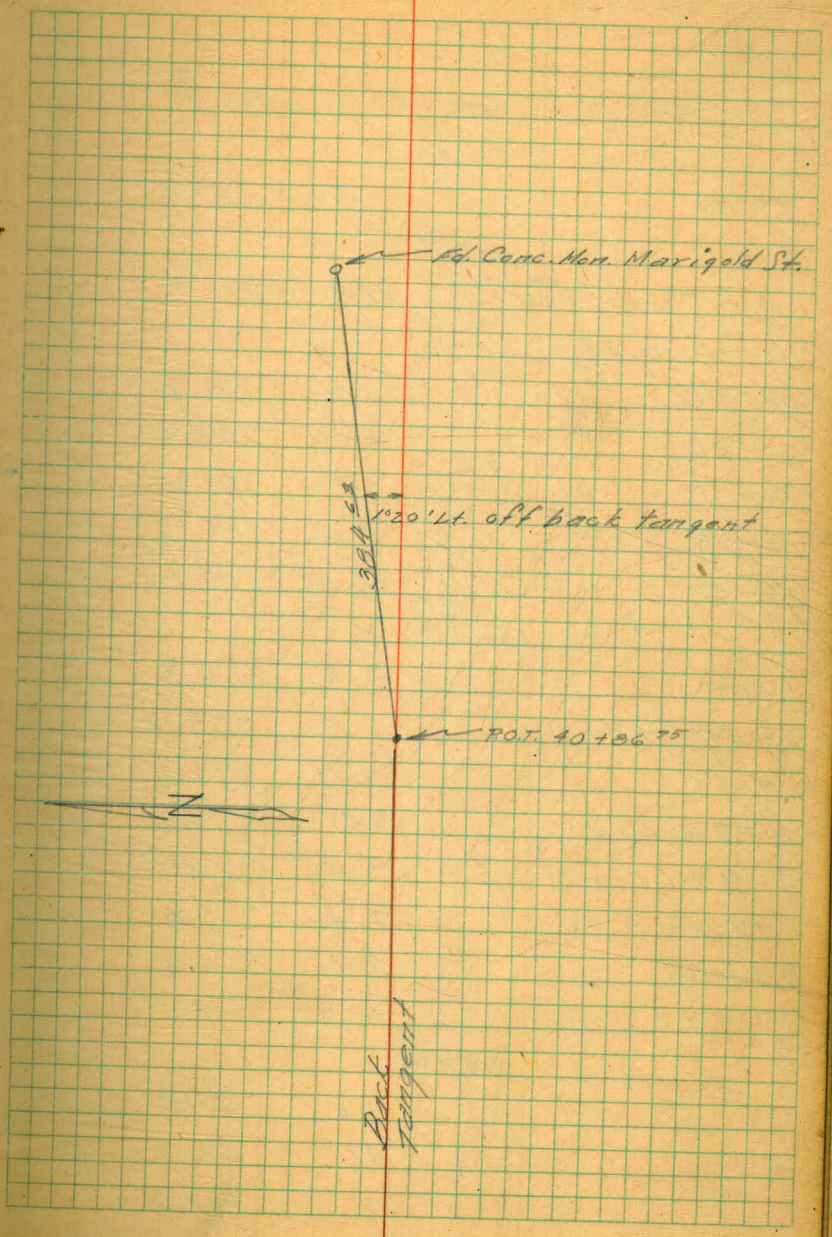
9

9


Fd. Conc. Mon. Sta 34+43.75
Ang. Pt. 22°30' Rt
Sta 34+11.46
Crossing Sta. 34+01
Ang. Pt. Sta 33+78.46
Δ 22°30' Lt
TOP
6" CI Crossing Elev 1312
Sta 33+92 20° circ.
P.T. Sta 33+78
C 2291
18" Sewer
Line "A" AIP
End Chicken Coop 31+56
P.P. Sta 31+92 20" N.H. Line
Chicken Coop
End Fence 31+44
Ft. Missoula
Vancouver

10


39th ST
6" GV Sta. 41+24
8" GV Sta. 41+22
Ext. Hydrant
Sta. 41+19
8" GV Sta. 41+19
Int. W/E existing
Water Main
Sta. 41+06±1.0'
RP Sta. 5
41+17
P3765
PAVING
EXIST. EDGE OF PAVING
Dirt Road
℄ Sta. 35+32


Fd. Conc. Mon. Marigold St.
1°20' Lt. off back tangent
P.O.T. 40+86.75
Back Tangent

Profiles Juniper St Pipeline

June 4, 1947 June 5, 6, 9 1947 Rainey King Baker

12

BM BP SE Cor Bancroft & Juniper				293.87
	2.10	295.97		
T.P. #1			12.71	282.26
	0.60	283.86		
Set TBM. Top F.H. SE. Cor. 33 rd & Juniper			11.85	272.01
	0.43	273.44		
0+00			0.5	271.9
0+50			4.3	268.14
1+00			8.2	264.24
1+50			12.0	260.44
T.P. #2			12.50	259.91
	0.27	268.18		
2+00			3.4	256.8
2+39.67	℄ Pt		6.2	254.0
2+50			7.0	253.2
2+94	Gut		9.0	251.2
2+94	Curb		8.52	251.69
2+96 ∝	℄ Pt		9.4	251.8
3+14.09			9.4	250.8
T.P. #3			12.98	247.23
	0.00	247.23		
3+50			1.4	245.8
4+00			11.0	236.2
			12.	235.2

Profile Juniper St. Pipeline

		247.84 (23)		
T.P. #4			12.69	235.15 (4.54)
	0.98	236.82 (5.52)		
4+50			8.0	227.52
T.P. #5			12.43	223.09
	0.15	223.85 (24)		
5+00			5.1	218.1
5+50			11.4	211.8
T.R. #6			12.48	211.47 (210.76)
	0.48	211.95 (24)		
~~5+50~~	VOID		~~1.0~~	~~210.2~~
6+00			5.1	206.1
6+50			6.3	204.9
7+00			7.2	204.0
7+06		Inv. 25.5 On Grate 7.2		185.74 204.0
7+09		Inv. 25.1 Grate 7.9		186.14 203.3
6+87		Rim	13.2	198.04
7+50			6.5	204.7
8+00			4.1	207.1
T.P. #7			1.45	209.50 (.77)
T.P. #7	12.25	222.45 (.09)		
8+50			9.2	212.8
9+00			2.0	220.0
T.P. #8			0.16	222.59 (1.88)
	12.03	234.72 (3.91)		

13

Drain 32' S of line

Drain 4' S of line

M.H. 15' N of line appx 20' Deep

Profile Jumper St. Pipeline

		3.91 234.67			
9+25.82	end dirt		10.0	223.9	
9+32.20	Curb - conc.		9.4	224.5	
9+32.20	Gutter - conc		10.0	223.9	
9+50			7.7	226.2	
10+00			1.0	232.9	curb 233.4
I.P. #9			0.02	3.89 234.66	
	12.46	6.35 247.06			
10+09	Cut		12.2	234.2	
10+09	Curb, end Conc.		11.5	234.9	
10+33			7.3	239.1	
10+38			5.9	240.5	
10+50			3.3	243.1	curb 241.8
I.P. #10			0.78	5.57 246.28	
	11.60	17 257.88			
11+00			5.2	252.0	curb 249.9
I.P. #11			0.97	20 256.97	
	10.24	6.44 267.15			
11+50			9.0	257.4	curb 256.8
11+74			8.1	258.3	
11+77	On Conc.		8.8	257.6	
11+88		Inv.	16.9	249.54	
		Rim	7.90	258.54	
11+97?	Cut		8.4	258.0	
11+97?	Curb		7.8	258.6	
12+07			7.5	258.9	
11+15		Inv.	18.1	248.34	
		Rim	6.2	260.24	

Lt. Rt.

+1.7 +10.1 +11.0
11 20 25

+1.8 +8.0 +9.0
5 10 20

-2.0 +7.3 +7.3
7 7 15

+1.1 +4.0 +4.0
3 6 15

-0.9 +3.0 +3.5
2 9 15

+1.4
15

Sewer MH. 53' Nof line

+1.3
15

+3.0 +30
11.5 15

Sewer MH. 285'30 of line

15 Profile Juniper St Pipeline

		26 ~~2.15~~ 6.44		
12+50			6.6	259.8
13+00			5.5	260.9
13+50			4.3	262.1
13+60	Curb		3.9	262.5
13+60	Gut		4.2	262.2
13+75	Gut		4.0	262.4
13+75	Curb		3.7	262.7
14+00			3.0	263.4
14+50			1.7	264.7
15+00			0.5	265.9
TP #2			0.47	~~266.68~~ 5.97
	7.55	27 ~~4.23~~ 3.52		
15+41.2	Curb		6.9	266.6
15+41.2	Gut		7.3	266.2
15+50			7.1	266.4
15+60		Inv.	22.4	251.12
		Rim	6.4	267.12
15+81.5	Gut		6.6	266.9
15+81.5	Curb		6.0	267.5
15+87.5		Inv.	20.8	252.72
		Rim	11.4	262.17
16+00			5.5	268.0
16+50			3.4	270.1
17+00			2.6	270.9
17+16	curb		2.7	270.8
17+16	Gut		3.0	270.5

Rt.

+1.1 +0.1
4 15

Sewer M.H. 50' N of line

Sewer M.H. 210' S of line

0.0 0.0
5 15
0.0 +1.5 +1.6
3 4 15

16 Profile Juniper St.

				3.52
				270.23
17+31	Curb		2.9	270.6
17+35			2.6	270.9
17+50			3.5	270.0
18+00			6.5	266.7
18+50			11.5	262.0
				10.61
T.P. #13			12.91	261.32
	10.78	272.10	1.39	
18+60	⊕ Pt. 83°42'Rt		10.1	261.3
18+60		Inv.	18.5	252.89
		Rim	10.1	261.29
18+62			10.1	261.3
18+66			6.4	265.0
19+00			6.2	265.2
19+50			4.1	267.3
19+66	⊕ Pt. 83°39'Lt.		3.5	267.9
19+71	edge oil		4.4	267.0
19+93		Inv.	17.5	258.89
		Rim	1.7	269.69
20+00			6.3	265.1
20+23			15.1	256.3
				8.90
T.S. #14			12.49	259.61
	0.24	259.85	1A.	
20+50			5.0	254.1
20+59			5.3	253.8
20+63			9.1	250.0
				6.53
T.P. #14			12.61	247.24
	0.31	247.55	687	

16

Rt.

+3.6 +3.6
4.5 15
+1.5 +5.5 +5.8
2 3.5 15
+1.0 +9.0 +5.1
3 5 15

Sewer M.H. 20' Ahead of ⊕ Pt. 50' Nor. Line

Sewer M.H.

Profile Juniper St. Pipeline

		6.87 / ~~247.58~~		
20+91			4.0	242.9
20+93			5.4	241.5
21+00			6.9	240.0
T.P. #15			12.53	4.29 / ~~235.00~~
	0.77	235.~~77~~ 04		
21+50			6.9	228.2
T.P. #16			12.76	230 / ~~223.01~~
	0.35	2.65 / ~~22~~		
22+00			11.8	210.9
T.P. #17			12.04	0.61 / ~~21.32~~
	0.30	0.91 / ~~21.62~~		
~~22+21~~ 22+22		Inv. Rim	16.5	194.41
			8.3	202.61 ✓
T.P. #18			6.92	203.99 / ~~204.70~~
	0.12	204.11		
22+50			7.1	197.0
22+63			8.9	195.2
22+75			8.9	195.2
23+00			8.9	195.2
23+12			9.9	194.2
23+29			13.0	191.1
23+30			13.9	190.2
23+32			14.6	189.5
23+33			13.0	191.1
T.P. #19			12.11	192.00
	7.30	199.30		

17

M.H. (Sewer) 22.1' / ~~24'~~ N of line

Profile Juniper St. Pipeline

		199.30		
23+~~40~~ 49		Inv. Rim	14.1 7.30	185.2 192.0
23+50			6.8	192.5
23+65			2.8	196.5
T.P. #20			0.05	199.25
	11.87	211.12		
T.P. #21			0.74	210.38
	12.30	222.68		
24+00			11.9	210.8
T.P. #22			0.83	221.85
	11.58	233.43		
24+33			12.2	221.2
24+50			9.1	224.3
25+00			1.6	231.8
T.P. #23			0.95	232.48
	11.21	243.69		
25+24			7.3	236.4
25+50			6.4	237.3
25+96		Invert Rim	15.0 7.93	228.69 235.76
26+00			10.8	232.9
T.P. #24			12.35	231.34
	0.65	231.99		
T.P. #25			12.83	219.16
	0.14	219.30		
26+50			3.0	216.3

Sewer M.H. 48'S of line

Sewer M.H. 15'N of line

Profile Juniper St. Pipeline

		219.30		
T.P. #26			12.80	206.50
	2.66	209.16		
26+83			3.3	205.9
27+00			12.5	196.7
27+04			13.3	195.9
		Inv.	17.5	191.66
27+04		Rim	10.37	198.79
27+05			13.9	195.3
27+08			14.5	194.7
27+09			13.3	195.9
T.P. #27			0.51	208.65
	11.49	220.14		
27+50			5.9	214.2
T.P. #28			0.43	219.71
	13.00	232.71		
T.P. #29			0.21	232.50
	11.99	244.49		
28+00			6.5	238.0
T.P. #30			0.62	243.87
	12.20	256.07		
28+36			6.1	250.0
28+50			2.2	253.9
T.P. #31			0.38	255.69
	11.13	266.82		

Sewer M.H. 35 N of line.

Profile - Juniper St. Pipeline

		266.82		
29+00			4.6	262.2
29+26			3.6	263.2
29+30			4.1	262.7
30+00			7.9	258.9
T.P. #32			3.42	263.40
	1.28	264.68		
30+13			7.8	256.9
30+50			22.1	242.6
30+65			15.3	249.4
31+00			7.7	257.0
31+32			10.4	254.3
31+50			13.0	251.7
T.P. #33			12.73	251.95
	0.61	252.56		
31+89			8.3	244.3
32+00			11.8	240.8
T.P. #34			12.64	239.92
	1.56	241.48		
32+31			10.7	230.8
T.P. #35			12.39	229.09
	0.09	229.18		
32+50			10.4	218.8
32+51			11.5	217.7
32+52			13.6	215.6

20

Profile Juniper St. Pipeline

		229.18		
T.P. #36			12.00	217.18
	0.65	217.83		
32+70			11.7	206.1
T.P. #37			12.66	205.17
	0.25	205.42		
T.P. #38			11.96	193.46
	2.47	195.93		
33+00			13.5	182.4
T.P. #39			12.80	183.13
	2.01	185.14		
T.P. #40			11.92	173.22
	0.09	173.31		
33+25			9.1	164.2
T.P. #41			11.36	161.95
	0.39	162.34		
T.P. #42			12.08	150.26
	0.74	151.00		
33+60			8.2	142.8
33+66			10.0	141.0
T.P. #43			12.67	138.33
	1.14	139.47		
33+68			3.0	136.5
33+98.40	℄ Pt. 22°30' Rt.		4.5	135.0
		Inv.	10.8	128.7
34+03		Rim	2.89	136.58

21

Sewer M.H. 21' N of line

Profile Juniper St. Pipeline

		139.47		
34+11 44	& Pt. 22°30' Rt.		5.4	134.1
34+16			5.9	133.6
34+39			6.0	133.5
34+41			4.8	134.7
34+50			4.7	134.8
34+57			5.2	134.3
34+58			5.9	133.6
34+64			6.2	133.3
34+80			6.1	133.4
34+81			5.5	134.0
35+00			4.5	135.0
35+50			4.6	134.9
T.P. #44			4.72	134.75
	10.68	145.43		
36+00			11.4	134.0
36+19			10.6	134.8
36+21			8.9	136.5
36+46			7.3	138.1
36+50			6.1	139.3
T.P. #45			0.51	144.92
	12.48	157.40		
36+82			7.1	150.3
37+00			2.8	154.6
T.P. #46			0.95	156.45
	11.95	168.40		

Wedge dry stream

Edge dry stream

Pacific Juniper Sh. Pipeline

		168.40		
37+50			11.8	156.6
37+63			11.3	157.1
37+65			10.7	157.7
37+78			9.5	158.9
37+80			8.3	160.1
38+00			5.8	162.6
38+15			3.0	165.4
T.P.#47			0.34	168.06
	12.18	180.24		
38+50			8.5	171.7
T.P.#48			0.48	179.76
	12.88	192.64		
39+00			8.0	184.6
T.P.#49	12.41		0.41	192.23
	12.41	204.64		
39+38			8.5	196.1
39+39			8.7	195.9
39+50			6.6	198.0
39+56			5.8	198.8
39+60			2.0	202.6
T.P.#50			0.36	204.28
	13.07	217.35		
39+85			8.7	208.7
39+87			7.5	209.9

Profile Juniper St. Pipeline

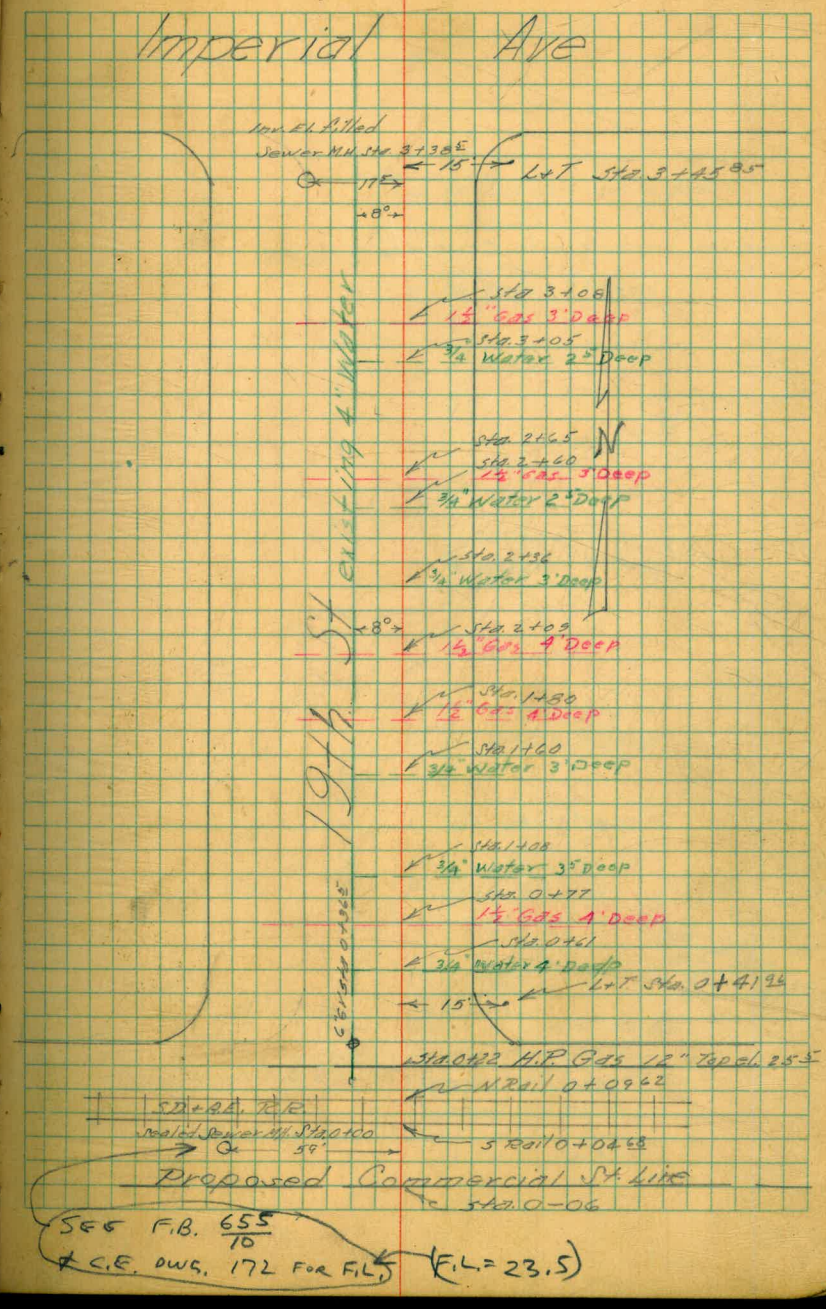
			217.35		
40+00			3.9	213.5	
T.P. #1			0.31	217.04	
	10.96	228.00			
40+50			2.7	225.3	
T.P. #2			0.32	227.68	
	11.42	239.10			
40+75			9.0	230.1	
40+83			5.2	233.9	
40+91			7.4	231.7	
41+06	end of line		5.9	233.2	
T.B.M. S.E. Cor. Marigold & Juniper.			0.00	239.10	Corr. 239.15

25 19th St. Pipeline

Oct. 15, 1947
Oct. 30, 1947

Rainey
King
Nielsen

25

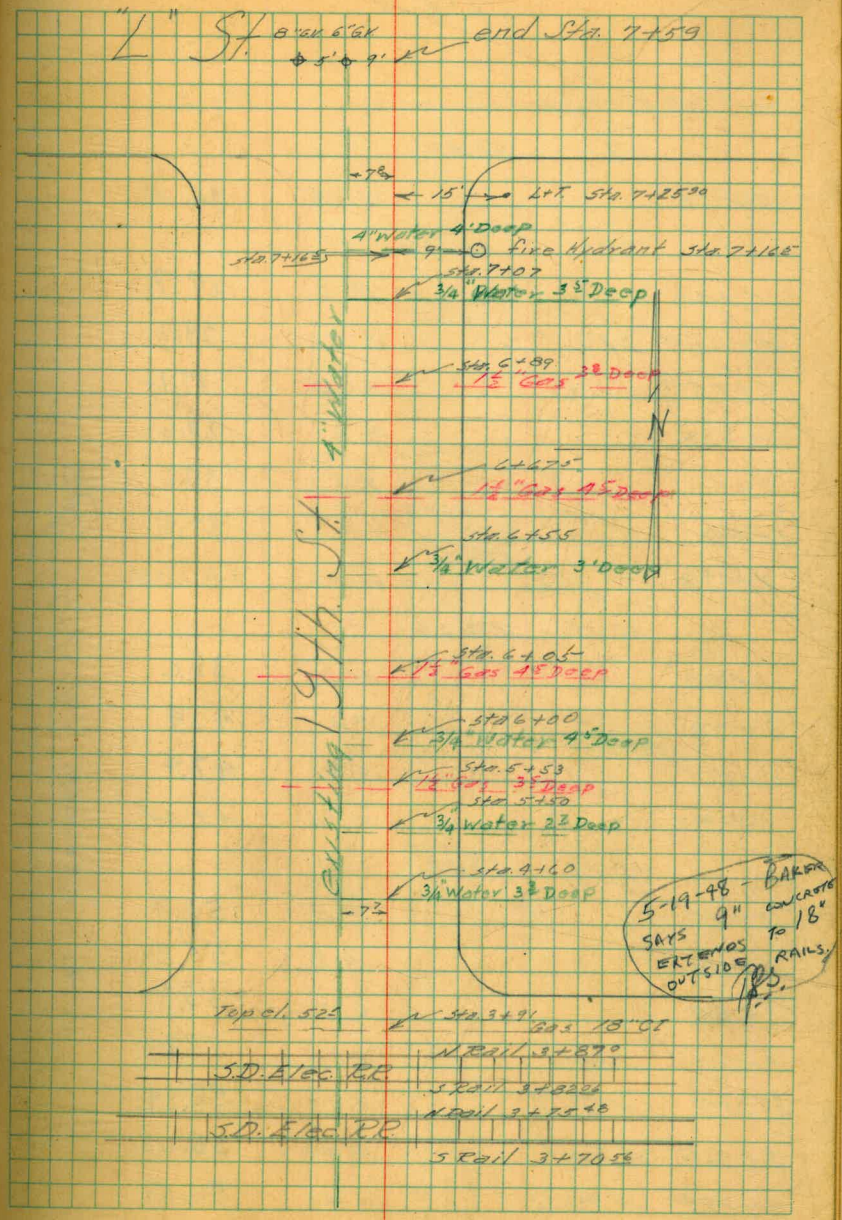


SEE F.B. 655/10
& C.E. DWG. 172 FOR F.L.

(F.L. = 23.5)

19th St. Pipeline

26



19th St Pipeline

Profile

B.M. BP	N.W. Cor. 2Nd + Commercial			41.02
	1.91	42.93		
T.P. #1			12.44	30.49
	7.81	38.30		
0+00			8.6	29.7
0+04.63	S Rail		8.60	29.7
0+09.62	N Rail		8.58	29.72
0+28			8.7	29.6
0+50			7.7	30.6
1+00			4.3	34.0
T.P. #2			0.23	38.07
	12.19	50.26		
1+50			11.7	38.6
2+00			7.4	42.9
2+50			2.9	47.4
T.P. #3			0.52	49.74
	11.74	61.48		
3+00			9.8	51.7
3+38			6.2	55.3
3+50			6.0	55.5
3+70.56	S Rail		5.65	55.83
3+75.48	N Rail		5.64	55.84
3+82.09	S Rail		5.40	56.08
3+87.02	N Rail		5.41	56.07

NOTES REDUCED 10/17/47

27

19th St. Pipeline Profiles

		61.48			
4+00			5.7	55.8	
4+06			6.0	55.5	
4+50			4.5	57.0	
5+00			3.7	57.8	
5+50			2.9	58.6	
6+00			2.0	59.5	
6+50			1.2	60.3	
7+00			0.4	61.1	
7+50			+0.2	61.7	
7+59	end of line		+0.2	61.7	
TP #4			5.86	55.62	
	2.08	57.70			
TP #5			12.84	44.86	
	2.87	47.73			
			6.69	41.04	Corr. 41.02

NOTES REDUCED 10/17/47 T.P.S.

28

Jan. 7, 1948 Rainey
Jan 8, 1948 K.M.G. Nielsen

Juniper St. Pipeline for Construction

cut

T.B.M. 33rd + Juniper				272.01		
	0.64	272.65				
0+50			4.3	268.4	264.3	4.1
1+00			8.0	264.7	260.7	4.2
1+50			11.8	260.9	256.7	4.2
T.P. #1			12.83	259.82		
	0.95	260.77				
2+00			3.7	257.1	253.1	4.0
2+39.67	⊥ Pt.		6.2	254.6	250.3	4.3
2+50			7.1	254.1	249.6	4.5
2+96.06			9.5	251.3	247.4	3.9
T.P. #2			0.95	259.82		
	12.29	272.11				
			0.10	272.01		
2+94 P.I.2				251.69		
	0.17	251.86				
3+25			3.2	248.7	244.4	4.3
3+50			7.4	244.5	241.2	3.3
3+75			11.8	240.1	237.2	2.9
T.P. #1			12.96	239.50		
	0.09	239.59				
4+00			3.5	236.1	232.4	3.7
4+50			12.3	227.3	223.4	3.9
T.P. #2			12.61	226.98		
	0.01	226.99				

Juniper St. Cont.
for Construction

		226.99				
5+00			8.8	218.2	214.4	3.8
5+25			13.3	513.7	209.9	3.8
T.P.#3			13.08	213.91		
	0.32	214.23				
5+50			4.4	209.8	206.3	3.5
5+75			7.1	207.1	203.8	3.3
6+00			8.7	205.5	202.3	3.2
6+50			10.1	204.1	201.3	2.8
7+00			10.8	203.4	200.3	3.1
7+50			10.0	204.2	201.1	3.1
8+00			7.9	206.3	203.3	3.0
8+25			5.8	208.4	205.7	2.7
8+50			2.1	212.1	209.0	3.1
T.P.#4			0.35	213.88		
	11.51	225.39				
9+00			6.0	219.4	216.1	3.3
9+25 Rt. & Pt.			2.2	223.2	218.4	4.8
T.P.#5			0.44	224.95		
	11.43	236.38				
9+50			10.5	225.9	220.6	5.3
9+75			6.0	230.4	223.8	6.4
10+00			2.4	234.0	228.0	6.0
T.P.#6			0.08	236.30		
	11.91	248.21				

Juniper St.
for Construction

		248.21				
10+38			8.9	239.3	236.0	3.3
10+50			7.0	231.2	238.0	3.2
T.P.#7			0.31	247.90		
	10.34	258.24				
11+00			8.3	249.9	246.3	3.6
11+25			4.4	253.8	249.6	4.2
11+50			2.1	258.1	251.5	4.6
12+00			0.4	247.8	252.7	5.1
T.P.#8			0.56	257.68		
	5.21	262.89				
Rim M.H.	P.14 53'N	11+88	4.32	258.57		
T.B.M. Top F.H.		+Juniper Westland	1.97	260.91		
	6.03	266.94				
12+50			7.3	259.6	256.0	3.6
13+00			6.2	260.7	257.2	3.5
13+25			5.6	261.3	257.8	3.5
13+75			4.9	262.0	258.8	3.2
14+00			3.8	263.6	259.8	3.3
14+25			3.0	263.9	260.3	3.6
14+75			1.7	265.2	261.4	3.8
T.P.#1			0.86	266.08		
	7.11	273.19				
15+25			6.7	266.5	261.6	4.9
15+75			6.3	266.9	261.8	5.1
16+00			5.0	268.2	263.2	5.0
16+25			4.3	268.9	264.8	4.1

JAN. 21, 1948 Rainey
JAN. 22, 1948 Kirby Nichols

		273.19			
16+50			3.3	269.9	266.3
16+75			2.7	270.5	266.6
17+00			2.6	270.6	266.9
17+25			3.2	270.0	266.9
17+50			3.5	269.7	266.4
18+00			6.8	266.4	263.0
18+50			11.9	261.3	258.5
18+60	49 BK		12.4	260.8	257.6
"	AH		12.6	260.6	257.6
Rim of MH.			11.85	261.34	✓
	10.45	271.79			
19+00			5.9	265.9	257.4
19+66	92 4 Pt		2.8	269.0	257.3
20+00			7.1	264.7	257.0
			10.45	261.34	
	2.64	263.98			
20+25			8.0	256.0	251.5
20+50			12.1	251.9	246.3
T.P. #1			12.08	251.90	
	0.64	252.54			
21+00			13.2	239.3	236.0
T.P. #2			12.85	239.69	
	0.47	240.16			
21+25			7.0	233.2	230.0
T.P. #3			12.86	227.30	
	0.36	227.66			

3.6
3.9
3.7
3.1
3.3
3.4
2.8
3.2
3.0

20.7 Rk. of 4 Pt. P16

8.5
11.7
7.7

4.5
5.0

3.3

3.2

		227.66			
21+50			1.4	226.3	222.8
21+75			9.3	218.4	215.6
T.P. #4			12.79	214.87	
	0.22	215.09			
22+00			5.3	209.8	207.2
22+25			12.5	202.5	199.8
T.P. #5			12.49	202.60	
	0.29	202.89			
22+55			5.4	197.5	190.0
23+00			3.8	199.1	186.9
23+25			6.6	196.3	185.6
23+45			10.2	192.7	185.6
23+75			2.8	200.1	196.4
T.P. #6			0.10	202.79	
	12.05	214.84			
24+00			3.8	211.0	206.4
T.P. #7			0.49	214.35	
	12.35	226.70			
24+25			6.9	219.8	214.9
24+50			1.1	225.6	220.1
T.P. #8			0.23	226.47	
	12.31	238.78			
24+75			9.2	229.6	224.0
25+25			1.4	237.4	229.2

3.5
2.8
2.6
2.7
7.6
12.2
10.7
7.1
3.7
4.6
4.9
5.5
5.6
8.2

						cuts
		238.78				
25+50			+0.2	239.0	230.5	8.5
25+65			-0.1	238.7	230.5	8.2
26+00			4.9	233.9	228.7	5.2
26+25			11.6	227.2	220.5	6.7
T.P. #9			12.52	226.26		
	0.65	226.91				
26+50			8.4	218.5	211.4	7.1
T.P. #10			12.54	214.07		
	0.56	214.63				
26+75			4.7	209.9	200.8	9.1
T.P. #11			12.33	202.30		
	8.97	211.27				
27+00			12.4	198.9	189.4	9.5
27+16			12.8	198.5	189.4	9.1
27+25			9.2	202.1	198.4	3.7
T.P. #12			0.20	211.07		
	12.29	223.36				
T.P. #13			0.07	223.29		
	12.33	235.62				
27+75			7.8	227.8	221.6	6.2
T.P. #14			0.06	235.56		
	12.81	248.37				
28+00			9.7	238.7	231.7	7.0

		248.37			
T.P.#15			0.23	248.14	
	12.48	260.62			
28+55			5.8	254.8	250.7
T.P.#16			1.26	259.36	
	8.52	267.88			
29+00			5.2	262.7	254.9
Set TBM.			4.12	263.76	
	X Sections 30+30-50-70				
				1-30-48	
TBM.				263.76	
	0.76	264.52			
			12.56	251.96	
	4.69	256.65			
30+30					
30+50					
30+70					

Lt's Rt's

A.1

7.8

Pipe on S. side P.P. Sta 29+30

251.7	251.6	298.1	296.2	
5.0	5.1	8.6	10.5	
10		1	40	

250.7	297.1	294.7	293.9	293.1	232.1	226.2
6.0	8.6	12.2	12.8	13.6	24.6	30.5
21.5	15	7	12	14	33	37

253.0	251.2	238.9
3.2	5.5	17.8
9		30

Feb. 3, 1948 Rainey

Cont.

Eng. Nielsen

Juniper St. for Construction

T.B.M.				263.76	
	1.22	264.98			
T.P. #1			12.96	252.02	
	0.81	252.83			
T.P. #2			12.59	240.24	
	0.55	240.79			
32+10			2.3	238.5	233.4
32+25			7.1	233.7	228.7
T.P. #3			11.86	228.93	
	0.62	229.55			
32+50			11.7	217.9	211.6
T.P. #4			11.67	217.88	
	0.94	218.82			
T.P. #5			12.46	206.36	
	0.96	207.32			
T.P. #6			12.49	194.83	
	0.67	195.50			
33+00			12.5	183.0	178.2
T.P. #7			12.54	182.96	
	0.06	183.02			
T.P. #8			12.73	170.29	
	0.14	170.43			
33+25			4.5	165.9	159.8
T.P. #9			11.89	158.54	
	0.08	158.62			

51

50

6.3

48

33+12.5 C 5.5

61

Juniper St.
For Construction

		158.62			
33+50			10.0	148.6	143.3
T.P. #10			12.39	146.23	
	0.14	146.37			
33+68			8.5	137.9	130.4
33+83			10.5	135.9	128.0
33+98.40			11.1	135.3	126.4
T.P. #11			9.73	136.64	
	3.89	140.53			
34+11.46			6.0	134.5	126.4
34+25			6.6	133.9	126.4
34+50			5.6	134.9	127.7
35+00			5.2	135.3	130.2
35+50			5.7	134.8	130.3
36+00			5.8	134.7	130.4
36+25			3.7	136.8	131.7
36+50			1.7	138.8	134.3
T.P. #12			0.17	140.36	
	13.03	153.39			
36+75			4.8	148.6	142.1
T.P. #13			0.33	153.06	
	12.76	165.82			
37+00			11.5	154.3	150.0
37+50			8.6	157.2	152.1
37+75			7.9	157.9	154.4

Cut

5.3

7.5

7.9

8.9

8.1

7.5

7.2

5.1

4.5

4.3

5.1

4.5

6.5

4.3

5.1

3.5

		165.82			
38+00			4.2	161.6	158.0
I.P. #14			0.45	165.37	
	12.78	178.15			
38+50			8.1	170.1	167.8
I.P. #15			0.40	177.75	
	12.41	190.16			
39+00			6.6	183.6	180.3
I.P. #16			0.16	190.00	
	12.63	202.63			
39+60			0.3	202.3	195.4
I.P. #17			0.27	202.36	
	12.73	215.09			
39+87.5			5.6	209.5	203.9
I.P. #18			0.62	214.47	
	12.79	227.26			
40+25			8.2	219.1	214.0
40+50			1.9	225.4	220.0
I.P. #19			0.75	226.51	
	10.69	237.20			
40+70			7.9	229.3	224.0
40+90			4.6	232.6	227.0
41+06			4.1	233.1	228.6
I.P. #20	60	22	1.60	235.60	
	4.95	240.55			
B.M. SE. Cor. Marigold & Juniper			1.35	239.20	Corr. 239.15

Cuts

3.6
2.3
3.3
6.9
5.6
5.1
5.4
5.3
5.6
4.5

Juniper St. cont.

				263.76		
	1.79	265.55				
30+00			5.9	259.7	254.7	5.0
30+75			10.5	255.1	250.8	4.3
31+25			9.1	256.5	248.2	8.3
TP#1			9.05	256.50		
	0.85	257.35				
31+50			4.7	252.7	245.6	7.1
31+75			10.1	247.3	241.7	5.6
T.P.#2			10.12	247.23		
	0.16	247.39				
31+90			4.0	243.4	238.6	4.8
			8.9	238.5		

19 St. P.L. Commercial to L St.
Profile over 6 OE Sets

T.B.M.	10.74	40.46		29.72	
0+25 - Begin Work			10.8	29.7	23.0
0+50			9.9	30.6	24.1
1+00			6.5	34.0	27.2
1+25			4.3	36.2	29.8
1+50			1.8	38.7	33.2
T.P.	12.34	52.59	0.23	40.23	
1+75			12.0	40.6	35.8
2+00			9.8	42.8	38.0
+50			5.3	47.3	42.4
3+00			0.8	51.8	46.8
T.P.	9.99	62.42	0.16	52.43	

3.2.48 King Leonard 40
1

Top North Rail - Page 27
Cut
6.7
6.5
6.8
6.4
5.5
4.8
4.8
4.9
5.0

41

62.42

3+25		8.3	54.1	48.3
3+50		6.9	53.5	49.4
4+00		6.4	56.0	49.6
4+50		5.5	56.9	52.0
5+00		4.7	57.7	52.8
5+50		3.8	58.6	53.6
6+00		3.1	59.3	54.4
6+50		2.3	60.1	53.2
7+00		1.5	60.9	56.0
7+50		0.5	61.9	56.2
		63.1	56.11	52.07

5.8

6.1

6.4

4.9

4.9

5.0

4.9

4.9

4.9

5.7

42 Chaining of Juniper St. on Slopes for Corr. pipe lengths

2+95.06 to 11+56.2 on backfill
868.15

19+66.22 to 29+26.08 on backfill
990.85

32+25 to 40+92 on backfill
901.75

May 9 1957
Beatty
Smith

Profile over 12" P.L.
E'ly of Pentucket St on Juniper St P.L.

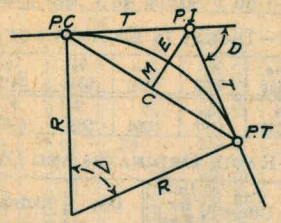
TBM.	12.78	215.39		202.61
22+22			10.4	205.4
+095			7.5	207.9
22+00			4.9	210.5
P	12.47	227.18	0.68	214.71
21+75			6.0	221.2
P	11.13	238.31	0.00	227.18
21+59			10.1	228.2
+50			9.0	229.3
+41			7.8	230.5
+31			3.1	235.2
+18			0.4	237.9
P	13.03	251.30	0.04	238.27
21+00			12.7	238.6
+86			10.8	240.5
(+78	(Break in main.?)		9.5)	241.8
+81			6.8	244.5
+72			6.1	245.2
+72			3.1	248.2
P	13.29	264.15	0.44	250.86
+61			9.1	255.1
+61	on Conc walk		8.18	255.97
+33	Fin. Floor 0.5 higher on Conc walk		8.03	256.12
+23	Top Conc. Wall		3.2	261.0
+32			7.7	256.5

Pg 17 3/4 rim San MH 22+22 ℄ MH is 24' LT.

		264.15		
20+27		6.9	257.3	
+23		4.2	260.0	
+17		0.6	263.6	
+13	Top curb	0.00	264.15	
20+00	& 6" water	0.15	264.00	
CK H		2.78	261.35	261.34

rim of MH. pg. 32

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$(1) Degree of Curve=D and sin. $\frac{D}{2}=\frac{50}{R}$ (2)

Tangent=T=R tan $\frac{\triangle}{2}$ (3) Length of Curve=L=$100\frac{\triangle}{D}$ (4)

Middle ordinate=M=R(1—cos. $\frac{\triangle}{2}$) (5)=R vers $\frac{\triangle}{2}$ (6)

External=E=T tan $\frac{\triangle}{4}$ (7)=R ÷ cos. $\frac{\triangle}{2}$—R(8)=R exsec $\frac{\triangle}{2}$ (9)

Long Chord=C=2 R sin. $\frac{\triangle}{2}$ (10) $\triangle$=Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. $\triangle$=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and ÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157 +45.50. Also from (4) L=746.00 and P. T.=Sta. P. C.+L=164+91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 $(54.50 \div 100)^2$=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26)$=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′ ÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6 ÷8⅓=115.27 and from Table V correction=.10 or E=115.37 ft. Or suppose $\triangle$=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and ÷42=5.5 or D=5° 30′.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	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)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.

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