G-246

ENGINEERS

FIELD BOOK

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.

G-246

to page # 64

except pages #4, 18 to 20

Hidden Valley Rd 1-17

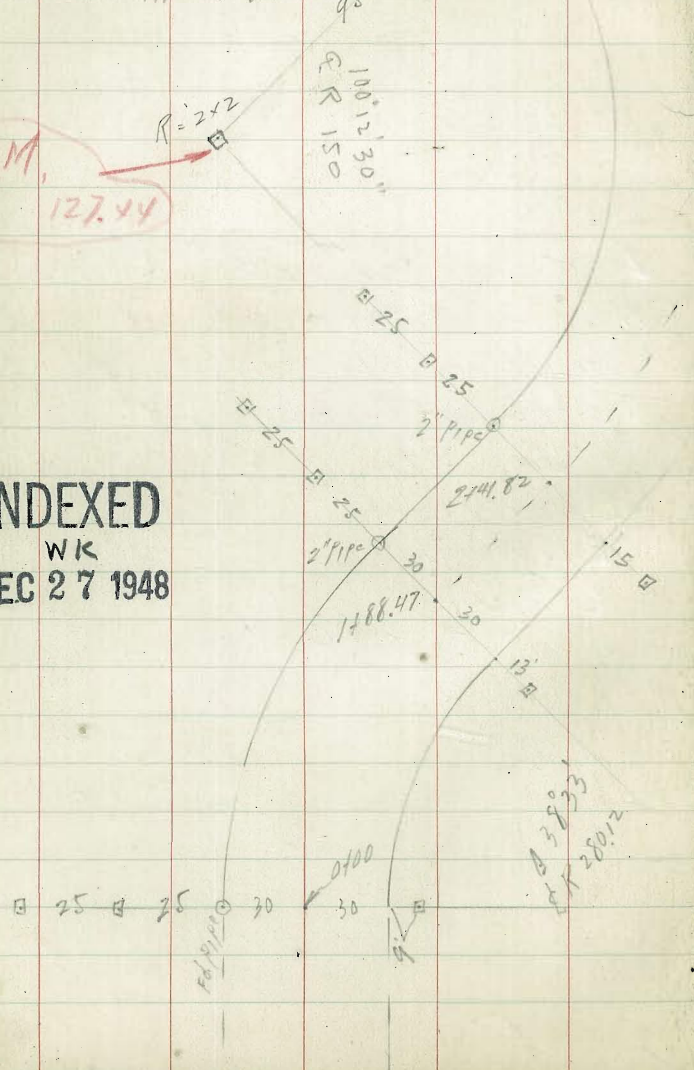
Sewer const.
Line changes in Overlook Hts

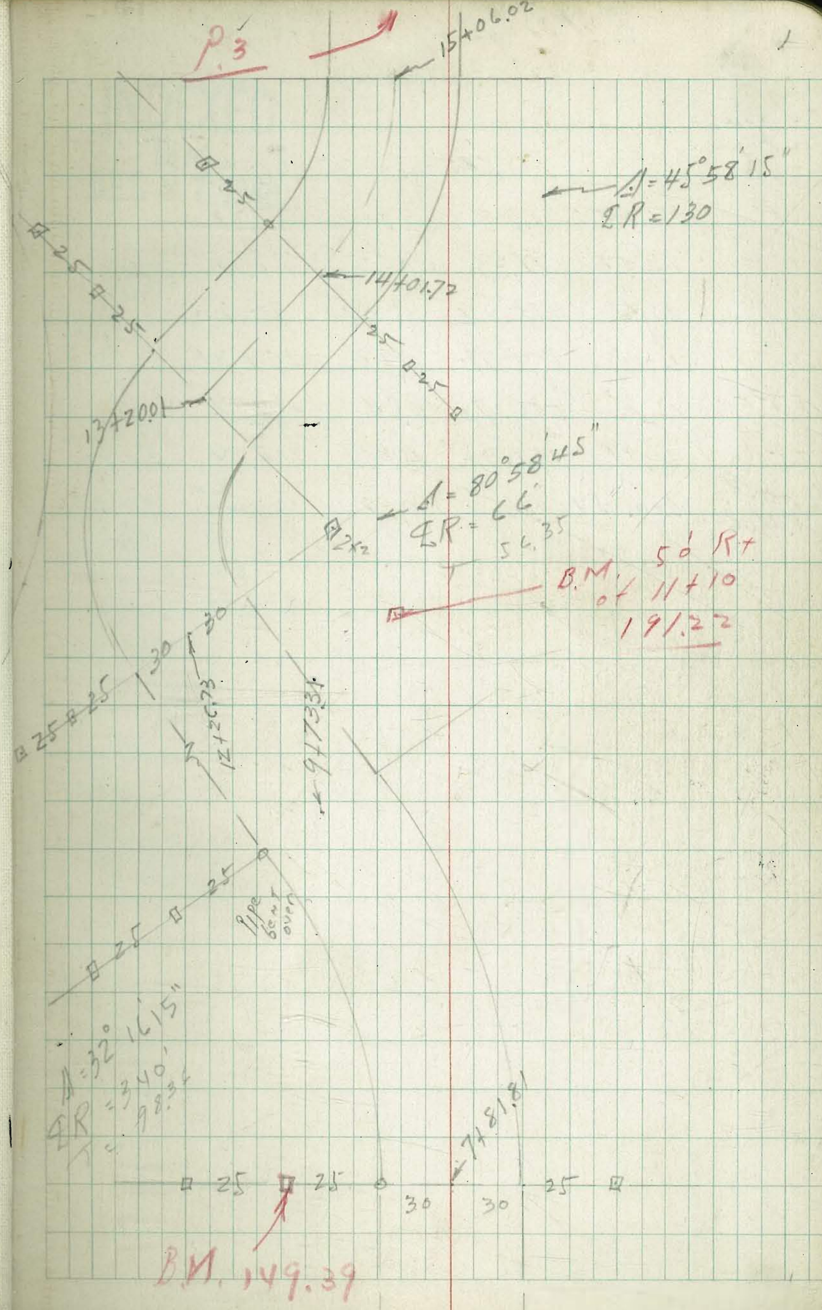
R.P.'s of Align.
Hidden Valley Rd.

Moore
Bega
Sherman
Bunch
6-11-48.

W.O 80033

O = Fd. 2" Pipe L.S. 2341

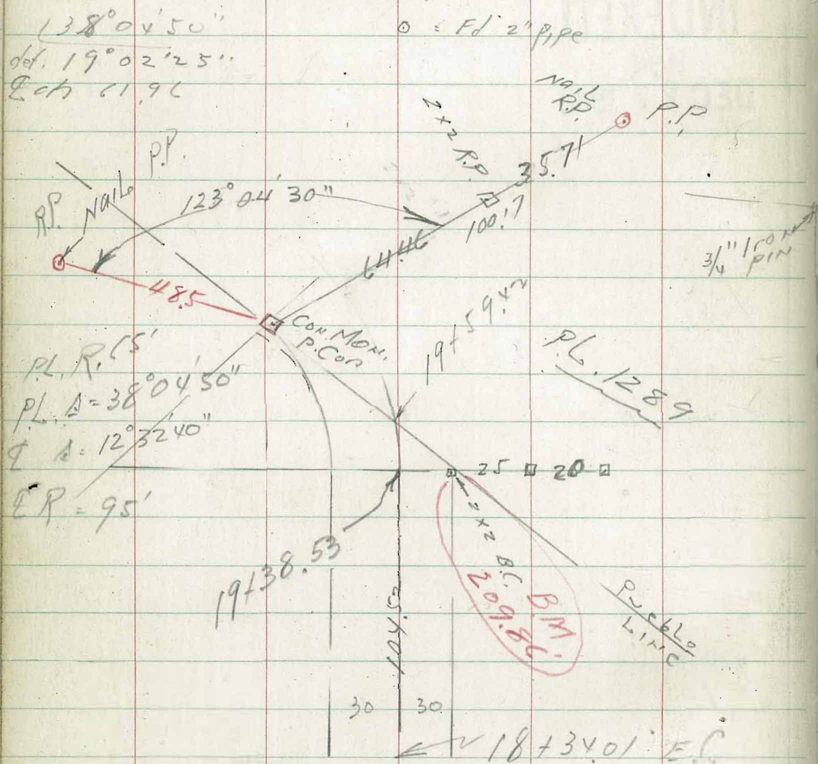


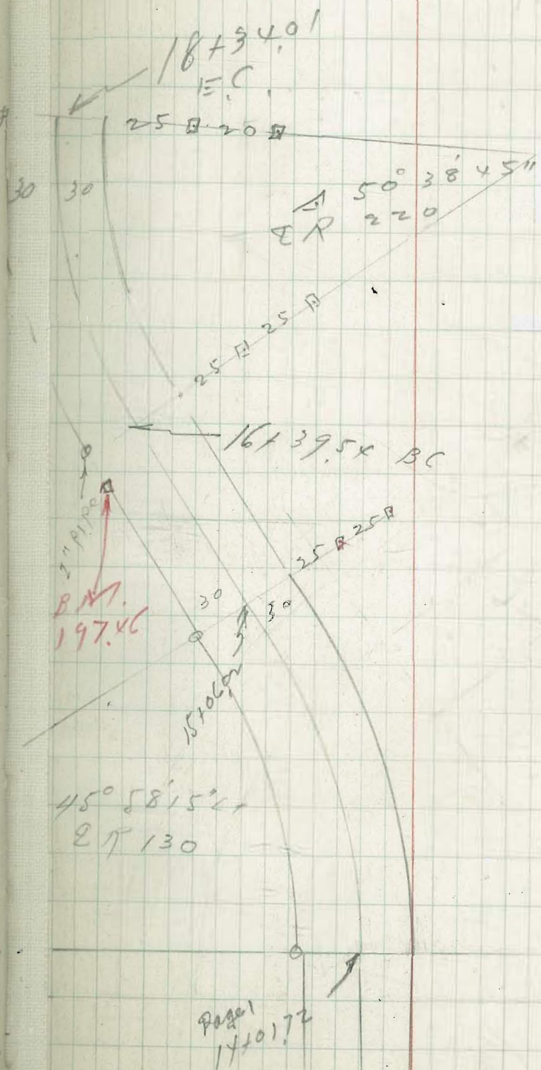


B.M.s Hidden Valley Rd

B.M. 58 Spike Tel. Pole	8.22	70.68		62.46	NW Hydrant Torrey Rd
TP	12.05	79.33	3.40	67.28	
TP	12.58	91.26	0.65	78.68	
T.P.	12.67	103.49	0.44	90.82	
T.P.	11.46	114.77	0.18	103.31	
T.P.	12.56	126.75	0.58	114.19	
T.P.	11.99	127.93	10.81	115.94	Lt stub 3+75.
Set B.M. R.Hub	Sta. 5+0416		0.49	127.44	~~126.92~~ error page 7
				127.44	

Hidden Valley Rd.





x

Curb Grades
Hidden Valley Rd. W.O. 80033

staked to sub-grade 8-10-48

1+57.05	16°03.7			

1+25.64	12°51.0			
T.P.	12.87	101.41	0.64	88.54
T.P.1	10.04	(108.53)	0.09	98.49
+94.23	9°38.2			
+62.82	6°25.5			
+31.41	3°12.7			
	12.48	89.16	0.17	76.68
	12.28	76.85		64.57
0+00 B.C. & STA.				
T.P.	10.58	(98.58)	0.47	88.00
T.P.	11.77	88.47	0.27	76.70
T.P. NAIL 1130	12.40	76.97		64.57

1753-43

3' offset R.P.s Lt & Rt.

Red = Finish 8-9-48

Lt curb	℄	Rt curb
93.12 / 15.4 / 7.3 / C 8.1 — 34.6 out	92.85	93.12 / 5.5 / 12.0 / F 6.5 — 33' out
90.14 / 18.4 / 9.7 / C 8.7 — 37.0 out	89.88	90.14 / 8.5 / 9.7 / F 1.2 — 27.2
(108.53)		
87.17 / 17.4 / 0.3 / 17.1 — 37.6 = 3' R.P.	86.91	87.17 / 7.3 / 7.6 / F 0.7 — 27.5 = 3' out
84.20 / 14.4 / 0.8 / C 13.6 — 39.9 out	83.94	84.20 / 4.3 / 4.3 / 0.0 — 27.1 = 3'
81.22 / 17.4 / 4.5 / C 12.9 — 39.4 out	80.97 / 89.16	81.22 / 7.2 / 6.7 / C 0.5 — 27.5 out = 3' R.P.
78.25 / 20.4 / 10.0 / C 10.4 — 37' out / (98.58)	78.0 / 88.47	78.25 / 10.2 / 9.3 / C 0.9 — 27.7 from ℄ = 3' out

+25	34° 59.2				
11	E.V.C. 30° 12.7				
T.P.	3.94	(119.39)	3.71	115.94 ~~115.45~~ error 0.49	3+75 Stk Lt.
+75	25° 26.3				
T.P.	12.65	122.72	1.65	110.07	
3+50	20° 39.8				
+25	15° 53.3				
3	11° 06.9	111.72 119.16			

Lt c6		℄	Rt c6	
116.42 3.0 1.9 C 1.1	27.8	116.17 ✓	116.42 3.0 3.5 F 0.5	27.4 3' R.P.
(119.39) 114.47 4.9 3.3 C 1.6	28.6	114.22 ✓	114.47 4.9 5.9 F 1.0	28.2 3' R.P.
112.49 6.7 3.7 C 3.0	29.8 out	112.24 ✓	112.49 6.9 8.5 F 1.6	29.5 3' R.P.
110.46 8.7 4.2 C 4.5	31.1	110.21 ✓	110.46 8.9 10.6 F 1.7	28.8 out 3' R.P.
108.37 10.8 4.6 C 6.2	32.8	108.12 ✓ (119.39)	108.37 11.0 13.2 F 2.2	30' out 3' R.P.
106.24 13.0 5.1 C 7.9	34.8 out	105.99 ✓ (108.53)	106.24 2.3 5.1 F 2.8	31 out

5+45

5+20

5.52 (132.96) 127.44

SET. B.M. ON R. Hub. 127.44 – P.P.
STA. 5+04.16 ~~4.40~~ ~~126.92~~ error

6.35 (133.79) 127.44

5+04.16 E.C. 50° 06.25

BM 1.40 127.47 127.44

T.P. 9.34 128.87 3.19 119.52

4+95 48° 22.3

4+70 B.V.C. 43° 35.9

T.P. 12.57 (131.32) 0.64 118.75

4+50 39° 46.7
122.72
119.39

Lt. C6 ℄ Rt C6 9

27.6 Out 3' RP — 126.76 / 6.2 / 6.2 / 0.0 — 126.51 — 126.76 / 6.2 / 6.4 / F 0.2 — 27.6 3' RP

124.27 / 8.7 / 9.0 / F 0.3 — 28.1 — 124.02 — 124.27 / 8.7 / 8.4 / C 0.3 — 27.0 3' RP

122.8 / 10.2 / 10.4 / F 0.2 — ~~122.81 / 8.5 / 9.3 / F 0.8~~ — 122.56 — 122.8 / 10.2 / 10.3 / F 0.1 — 122.81 / 8.5 / 9.1 / F 0.6 — 28.1 3' RP

28.5 3' RP — 122.00 / 9.3 / 9.9 / F 0.6 — 121.75 — 122.00 / 9.3 / 9.8 / F 0.5 — 27.9 3' RP

27.6 — 119.94 / 11.4 / 11.1 / C 0.3 — 119.69 — 119.94 / 11.4 / 11.7 / F 0.3 — 27.6 3' RP

118.37 / 11.0 / 10.5 / C 0.5 — 27.0 Out 3' RP — 118.12 — 118.37 / 12.9 / 13.3 / F 0.4 — 27.6 3' RP

(119.39) H.I. (131.32) H.I.

T.P.	11.99	158.15	0.19	146.16
7	E.C.			
T.P.	12.60	(155.89)	0.83	143.29
+75				
+50				
+25				
T.P.	12.88	146.35	0.32	133.47
6	B.C.			
T.P.	11.66	(144.12)	0.50	132.46
5+70	E.C.			
		133.79		
		(132.96)		

L.C.6 | ℄ | R.C.6 | 9

L.C.6	℄	R.C.6
27.2 out; 143.33 / 12.6 / 12.5 / C 0.1	143.08 ✓	143.33 / 12.6 / 8.6 / 4.0; 30.4 / 3' R.P.
27.4 / 3' R.P.; 140.85 / 3.3 / 3.0 / C 0.3	140.60 ✓	140.85 / 3.3 / 0.0 / C 3.3; 29.5
27 out / 3' R.P.; 138.27 / 5.8 / 5.7 / C 0.1	138.02 ✓	138.27 / 5.8 / 3.6 / C 2.2; 28.8 out
27.6 / 3' R.P.; 135.62 / 8.5 / 9.0 / F 0.5	135.37 ✓	135.62 / 8.5 / 8.0 / C 0.5; 27.5
27.3 out / 3' R.P.; 132.84 / 11.3 / 11.1 / C 0.2	132.59 ✓	132.84 / 11.3 / 11.2 / C 0.1; 27.5=3'
27.7 3' R.P.; 129.46 / 3.5 / 3.7 / F 0.2	129.21 ✓	129.46 / 3.5 / 2.8 / C 0.7; 27.7

T.P.	11.68	(183.34)	1.64	171.66	
9+35		12° 54' 24"			
8+96.71		9° 40' 48"			
T.P.	11.82	(173.30)	0.47	161.48	
8+58.41		6° 27' 12"			
T.P.	12.94	(170.91)	0.18	157.97	
8+20.11		3° 13' 36"			
T.P. B.M.	12.56	(161.95)	6.50	149.39	25' Lt E.C.
7+81.81 B.C. Lt.					
7+50		158.15 155.89			

	Lt c6	℄	Rt c6	
27.8	166.79 7.0 6.4 C 0.6	166.04	166.29 7.0 2.3 C 4.7	31.3
27.8 3' R.P.	162.55 10.8 9.9 C 0.9	162.30	162.55 10.8 7.7 C 3.1	30 3' R.P.
27.2	158.8 3.1 3.3 F 0.2	158.55	158.8 3.1 0.4 C 2.7	29.3
27.6	155.06 6.9 7.3 F 0.4	154.81	155.06 6.9 4.5 C 2.4	28.7
R.P. Hub 6 Sta. 7+81.81				
27.04	151.32 4.6 4.6 0.0	151.07	151.32 4.6 2.5 C 2.1	28.7
27.3 3' R.P.	148.21 7.7 8.1 F 0.4	147.96	148.21 7.7 4.6 C 3.1	29.6 3' R.P.

					Lt c6			Rc6	
+80					27.3	178.19 17.0 17.0 0.0	177.94 ✓	178.19 17.0 9.7 C 7.3	33.6
T.P.	12.73	(195.19)	0.88	182.46					
+55					27.6 3' R.P.	176.74 6.6 7.3 F 0.7	176.49 ✓	176.74 6.6 0.6 C 6.0	32.[illegible]
+30					28.7	175.0 8.3 9.4 F 1.1	174.75 ✓	175.0 8.3 3.0 C 5.3	31.8
10+05					29.1	172.98 10.3 12.0 F 1.7	172.73 ✓	172.98 10.3 4.9 C 5.4	31.7
9+80	BVC					170.68	170.43 ✓	170.68	
T.P. E stub	11.52	181.14	1.29	169.85 ✓					
9+73.31	E.C.	16°08' 170.91 (183.34)			29 3' R.P.	170.03 13.3 14.6 F 1.3	169.78 ✓	170.03 13.3 8.0 C 5.3	31.8 3' R.P.

Station						Lt 0.6		℄	Rt 0.6	
12+50	B.V.C.	10°06'								
T.P.	7.10	(189.02)	13.22	181.92		33 out	181.71 7.3 11.3 F 4.0	181.46	181.71 7.3 5.2 C 2.1	28' out
B.M. 11+10	3.92	195.14		191.22						
12+26.73	B.C. Rt					29.5 3' R.P.	181.54 13.7 15.5 F 1.8	181.29	181.54 13.7 10.5 C 3.2	29' out 3' R.P.
11+80	E.C.					28.8 3' R.P.	181.19 14.0 12.4 C 1.6	180.94	181.19 14.0 6.3 C 7.7	34.5 out
+55						29' out 3' R.P.	180.86 14.4 12.6 C 1.8	180.61	180.86 14.4 4.4 C 10.0	36 out 3' R.P.
T.P.	7.61	187.43	1.31	179.82						
+30						28.6	180.26 15.0 13.5 C 1.5	180.01	180.26 15.0 3.9 C 11.1	38.5 3' R.P.
11+05		181.14 (195.19)				27.8 3' R.P.	179.36 15.8 15.2 C 0.6	179.11	179.36 15.8 7.1 C 8.7	35.4 3' R.P.

14+01.72 BC L+

+75

13+50

B.M.	0.95	192.17		191.22	P.1
check to B.M.	~~0.95~~		1.17	191.24	191.22 / 0.02
T.P.	1.17	192.41	1.15	186.28	

13+20.1 E.C. 40°29.2

20

13 31°46.

24.84

12+75 20°56

24.84 187.43 (189.02)

13

	L+	℄	R+	
31.2	185.80 / 3.2 / 6.1 / F 2.9	185.55 ✓	185.80 / 3.2 / 3.4 / F 0.2	27.7
29.1	184.64 / 4.4 / 5.7 / F 1.3	184.39 ✓	184.64 / 4.4 / 4.7 / F 0.3	28 OUT
28.	183.74 / 5.3 / 6.7 / F 1.4	183.49 ✓	183.74 / 5.3 / 5.9 / F 0.6	28.5
29.1 3' R.P.	182.86 / 6.2 / 7.4 / F 1.2	182.61 ✓	182.86 / 6.2 / 6.8 / F 0.6	28.5
31.8	182.40 / 6.6 / 9.8 / F 3.2	182.15 ✓	182.40 / 6.6 / 7.0 / F 0.4	28' 3' R.P.
33.5 3' R.P.	181.97 / 7.0 / 11.2 / F 4.2	181.72 ✓ 2.5	181.97 / 7.0 / 6.6 / C 0.4	27' 3' R.P.

T.P. BM 30' Rt 16+30			8.35	197.50	197.46 .004
16					
15+50					
T.P.	11.87	202.92	1.17	191.05	11' LT of E.C.
T.P.	12.01	(205.85)	5.52	193.84	
15+06.02 E.C. 22°59'07"					
+78.01 16°48.7'					
14+50 EVC 10°38.6					
T.P.	12.02	(199.36)	1.68	187.34	
14+25 5°08.02		192.17 (189.02)			

Lt 06 ℄ Rt 15

	Lt	℄	Rt	
29.1 / 3'RP	197.19 8.7 10.2 F 1.5	196.94	197.19 8.7 0.0 C 8.7	33.2 / 3'RP
34.2 / 3'RP	194.25 11.6 17.6 F 6.0	194.0	194.25 11.6 3.7 C 7.9	33.7 / 3RP
33' out 3'RP =	191.66 7.7 13.6 F 5.9	191.41	191.66 7.7 1.3 C 6.4	32.8 / 3'RP
31.5	190.0 9.4 18.6 F 9.2	189.75	190.0 9.4 5.5 C 3.9	30.7
29.2	188.35 11.1 14.4 F 3.3	188.10	188.35 11.1 9.8 C 1.3	27.7
29.1 3'RP	186.95 2.0 4.1 F 2.1	186.70	186.95 2.0 1.7 C 0.3	27' / 3'RP

17+60	15°41.4				
17+35	12°26.1				
17+10	9°10.8				
T.P.	9.04	210.61	1.35	201.57	
+85	5°55.5				
			Set Lt. side First		
16+60	2°40'		H.I. for Rt side.		
T.P.	11.45	(220.54)	0.14	209.09	202.92 / 5.45 / 197.47
BM.	11.77	209.23		197.46	
16+39.54 B.C. Rt	202.92	H.I. Lt side			197.46 BM. P 3
BM. Hub 30' Rt of 16+30	10.01	(207.47)		197.46	

Lt of ℄ Rt of 15

27.6	205.16 / 2.3 / 2.6 / F 0.3	204.91 ✓	205.16 / 15.3 / 3.0 / C 12.3	38.5 3' R.P.
28.5	204.23 / 3.3 / 4.3 / F 1.0	203.98 ✓	204.23 / 16.3 / 3.8 / C 12.5	38.4
29.1 2' R.P.	203.16 / 4.3 / 6.1 / F 1.8	202.91 ✓	203.16 / 17.4 / 5.0 / C 12.4	38.4
29.4 2' R.P.	201.99 / 5.5 / 6.7 / F 1.2	201.74 ✓	201.99 / 18.5 / 6.5 / C 12.0	37.9
28.8	200.70 / 6.8 / 8.0 / F 1.2	200.45 ✓	200.70 / 19.8 / 8.2 / C 11.6	38.8
29.1 3' R.P.	199.52 / 8.0 / 9.5 / F 1.5	199.27 ✓	199.52 / 21.0 / 9.4 / C 11.6	37.5 3' R.P.
	(207.47)		(220.54)	

check to BM. P.M.			#18	209.86	209.86
19+38.53 BC Lt					
19+11.75					
18+85 EVC.					
T.P.	4.88	212.19	3.30	207.31	℄ 5 Tvl 18+60
T.P.	3.75	(214.04)	12.04	210.29	
18+60					
18+34.01 E.C.		25° 19.25			
18+10		22° 12.07		H.I. for Rt. side	
T.P.	3.04	(222.33) (220.54)	1.25	219.29	
17+85	18° 56.8		HI		
T.P.	7.22	(213.46)	1.23	206.24	
H.I. for Left side Fwd.		(207.47) 210.61			

	Lt 6	℄	Rt 6	16
26.9	208.66 / 4.8 / 11.6 / F 6.8	208.41 ✓ 208.11 ✓	208.66 / 5.3 / 4.2 / C 1.1	27.7
41.1	208.06 / 5.4 / 14.8 / F 9.4	207.81 ✓	208.06 / 6.0 / 5.5 / C 0.5	27.3
39.5	207.72 / 5.8 / 14.5 / F 8.7	207.47 ✓	207.72 / 14.6 / 12.0 / C 2.6	27.3 3' RR
27.3	207.23 / 6.3 / 5.9 / C 0.4	206.98 ✓	207.23 / 15.1 / 6.0 / C 9.1	35.1
27.7	206.68 / 6.8 / 5.9 / C 0.9	206.43 ✓ (222.33)	206.68 / 15.6 / 2.5 / C 13.1	39.3 3' R.P.
27.3 3' RR	206.0 / 7.5 / 6.9 / C 0.6 (213.46)	205.74 ✓	206.0 / 14.5 / 1.3 / C 13.2 (220.54)	39.4 3' R.P.

Check B.M.
P.3

2.3? 209.87 209.86

B.M. n.l. E.C.
19+38.53

3.60 209.86

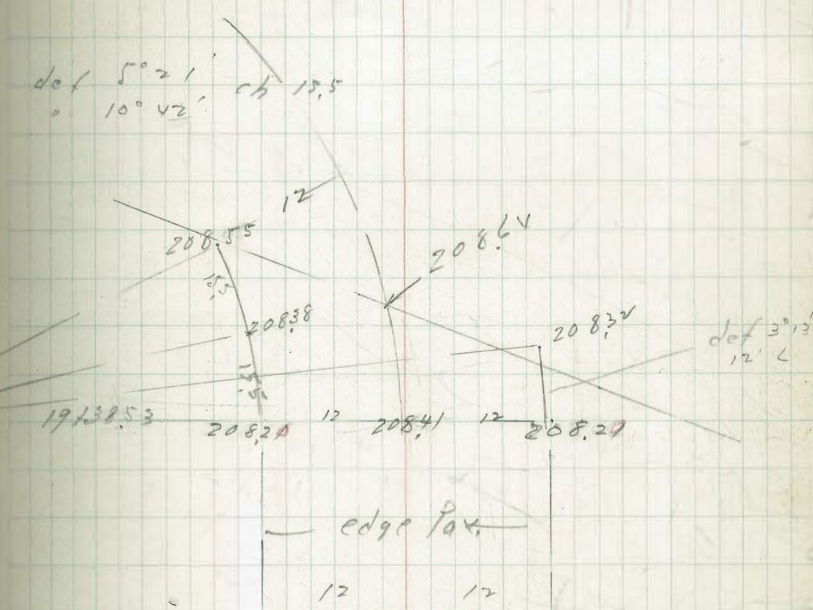
20+01.67 E.C. 19°02'25" Lt
L.C. from B.C. 61.96

19+59.42 6°16'20" Lt.

212.19

(213.46)

Ch 207.6
20.89



415
3IRF

209.14
4.4
7.9
F 3.5

208.89
4.6
Not set

208.64
4.9
3.9
C 1.0 Nail Fence Post

(213.46)

Moore
Begg
Bunch
6-21-48

Water grades
on Missouri St.

(R.P.S F.B. 1729-2)

W.O. 31189

3			58.9 10.0 6.8 C 3.2	
+50			59.6 9.3 5.9 C 3.4	
2			60.3 8.6 5.3 C 3.3	
+50			61.0 7.9 4.5 C 3.4	
1			61.7 7.2 3.5 C 3.7	
0+50			62.4 6.5 3.3 C 3.2	
0+00 W.L.	N. Shore Highlands		63.1 5.8 3.2 C 2.6	
	6.75	68.93	62.18	5/1729 BM spike on Pole Missourie + Dawes

+	HI	−	El
+50			52.75 10.6 7.3 C 3.3
2			53.4 9.9 7.1 C 2.8
+50			54.1 9.2 6.4 C 2.8
1			54.80 8.5 5.8 C 2.7
+50			55.43 7.94 4.4 3.5
1.12	63.30	6.75	62.18
0+00 W.L. Dawes			56.1 12.8 9.8 C 3.8
E Dawes			56.7 12.2 8.8 C 3.4
3+97.2 F.H. 7' Back curb	66. 60.35 8.58 8.23 C 0.35		57.4 11.5 8.1 C 3.4
3+50			58.2 10.7 7.3 C 3.4

68.93

Missouri Water

11.80 51 50 51.52
SW Leade
Tack
Missouri +
Cass

5 E L Cass
49.4
13.9
11 3
C 2.6
1729/5

+50
50 1
13.2
10.4
C 2.8

4
50 7
12.6
9 9
C 2.7

+50
51.4
11.9
9 1
C 2.8

3
52.1
11.2
8 1
C 3.1

63.30

Water Grades
chalcedony, N.S. Hglds W. to Cass and to Bayard

+50				67.2 / 11.1 / 7.3 / C 3.8	
3				68.0 / 10.3 / 6.4 / C 3.9	
+50				68.7 / 9.6 / 5.9 / C 3.7	
2				69.5 / 8.8 / 5.2 / C 3.6	
+50				70.3 / 8.0 / 4.5 / C 3.5	
1				71.0 / 7.3 / 3.9 / C 3.4	
+50				71.8 / 6.5 / 3.5 / C 3.0	
0+00 W.L. N.Shore Hglds				72.6	5.7 / 2.9 / C 2.8
T.P. City disk	9.53	(78.25)	1.37	68.72 ←	B.M. 10' T/C SE Cor Chalcedony Dawes
B.M. spike Tel. Pole NE Cor Missouri & Dawes	7.91	70.09		62.18	

2+50		61.0 / 9.4 / 6.1 / C 3.3
2		61.8 / 8.6 / 5.2 / C 3.4
+50		62.6 / 7.8 / 4.4 / C 3.4
1		63.4 / 7.0 / 3.6 / C 3.4
+50		64.2 / 6.2 / 2.6 / C 3.6
0+00		
4+92.6 W.L. Dawes		65.0 / 5.4 / 1.8 / C 3.6
4+52.6 E Dawes		65.6 / 4.8 / 1.7 / C 3.1
	1.65 (70.37)	
3+97.7 F.H.	curb grade 69.47 / 8.78 / 8.18 / C 0.60	66.4 / 11.9 / 8.2 / C 3.7
7' Back cb.		

Chalcedony Water
Cass to Bayard

1				
0+50				
0+00	W.L. Cass			56.6
5	E.L. Cass			57.0 13.4
+50				57.8 12.6 9.3 C 3.3
4				58.6 11.8 8.7 C 3.1
+50				59.4 11.0 8.1 C 2.9
3+00				60.2 10.2 7.3 C 2.9
		70.37		

5+41 ℄ Bayard

5+01 E.L. Bayard
cb. gr.

4+90 F.H.
S.E. Bayard

+50

4

+50

3

+50

2

1+50

W. M. Line & grade
Missouri - Cass to Dawes

3' Back of Curb and 3' EAST		N cb		S cb
5+00 WL Dawes		59.75		59.00
4+70		59.35 1.67 0.99 C 0.68		
4+57.5				58.42 2.60 2.06 C 0.54
4+07.5				57.76 3.26 3.32 F 0.06
3+32.5				56.78 4.24 4.54 F 0.30
2+95				56.29 4.73 5.00 F 0.27
2+67.5		56.63 4.39 4.52 F 0.13		
1+95				54.98 6.04 5.79 C 0.25
1+32.5				54.16 6.86 6.86 0.0
1+07.5		54.48 6.54 6.24 C 0.30		
0+55		53.79 7.23 7.19 C 0.04		
0+00 = EL Cass		53.05		52.43
BM. SW 7 C.T.	9.50	61.02		51.52

Cass & Missouri

W. M. grades on Missouri
Dawes ELy

Hto.?				S cb
				65.93
3+70				65.34 3.75 2.60 C 1.15
3+20				64.64 4.45 3.74 C 0.71
0+00 EL Dawes				60.15
T.P.	9.06	69.09 61.02	0.99	60.03

Water Line grades on
Missouri ST. Westend Ely to Cass

3+50				36.0 6.5 3.4 C 3.1	
3+00				35.4 7.1 3.9 C 3.2	
+50				34.6 7.9 4.6 C 3.3	
2+00				34.2 8.3 5.0 C 3.3	
+50				33.8 8.7 5.4 C 3.5	
1				33.4 9.1 5.5 C 3.6	
0+50 = C "T"				33.0 9.5 5.6 C 3.9	2" B.O. 33.0 9.5 5.8 C 3.7
0+00 90° Bend				32.8	9.7 6.0 C 3.7
T.P. NW 7' C.T.	2.02	(42.48)	10.06	40.46	Missouri Mission Bl
NEBP	2.03	50.52		48.49	
Chalcedony Mission Blvd					

3		39.1 8.1 4.6 C 3.5	
+50		38.8 8.4 5.1 C 3.3	
2		38.4 8.8 5.3 C 3.5	
+50		38.1 9.1 5.6 C 3.5	
1		37.8 9.4 6.0 C 3.4	
0+50		37.4 9.8 6.6 C 3.2	
0+00 EL Mission		37.1 10.1 7.0 C 3.1	
6.70	(47.16)	40.46	new 7' CT No. E Mission
3+80 WL Mission		36.5 6.0 2.9 C 3.1	

Missouri

+50
43.6
9.3
5.6
C 3.7

1
42.8
10.1
6.4
C 3.7

+50
42.2
10.7
7.1
C 3.6

0+11 F.H.
41.5
11.4
7.5
C 3.9

C6
F.H.
44.42
8.48
7.72
C 0.76

0+00 E.L. Bayard
41.3
11.6
7.5
C 4.1

E Bayard
SW Mon. 10.10 (52.90)
40.8
12.1
8.5
C 3.6

42.80 ← BM. SW Missouri Bayard

5 W L Bayard
40.4
6.8
2.9
C 3.9

47.16
4.37
42.79 B.M. Mon.

+50
40.0
7.2
3.4
C 3.8

4
39.8
7.4
3.8
C 3.6

3+50
39.4
7.8
4.3
C 3.5

(47.16)

5 W L Cass
~~4~~8.7
4.2
1.3
E on Pav. → 2.9

+50
48.1
4.8
1.8
C 3.0

4
47.2
5.7
2.5
C 3.2

+50
46.6
6.3
2.8
C 3.5

3
45.8
7.1
3.7
C 3.4

+50
45.2
7.7
4.4
C 3.3

2
44.4
8.5
5.1
C 3.4

Missouri St Location of W Meters
Mission Blvd Wly to Ocean

Stubs 3' E and 3' back of curb	S cb	N cb
3+45		37.1 5.4 5.4 0.0
3+05	36.8 6.3 5.8 C 0.5	
2+55	36.5 6.0 5.6 C 0.4	37.6 4.9 5.0 F 0.1
2+05	36.8 5.7 5.4 C 0.3	
1+55		38.3 4.2 3.8 C 0.4
1+05	38.0 4.5 4.0 C 0.5	39.0 3.5 3.2 C 0.3
0+42.5	38.90 3.6 3.3 C 0.3	40.00 2.5 2.5 0.0
0+00 W.L. Miss. Blvd.		

(W) Missouri St
Mission to Bayard

	N	S
4+70 at Bayside		43.2 4.4 3.5 C 0.9
3+70	43.4 4.2 3.6 C 0.6	
3+20	43.0 4.6 4.0 C 0.6	
3+07.5		42.1 5.5 5.1 C 0.4
2+70	42.7 4.9 4.4 C 0.5	41.8 5.8 5.3 C 0.5
2+20	42.4 5.2 4.8 C 0.4	41.5 6.1 5.8 C 0.3
1+82.5	42.1 5.5 5.0 C 0.5	
1+45	41.9 5.7 5.6 C 0.1	
1+20		40.8 6.8 6.2 C 0.6
0+70		40.6 7.0 6.6 C 0.4
0+32.5	41.2 6.4 6.3 C 0.1	
0+20 Miss Blvd = 0+00		40.2 7.4 6.7 C 0.7
B.M. Mon. SW Cor	4.81 (47.61)	42.80 Mo. + Bayard

(W) Missouri, Bayard to Cass 29

	N	S
5+00 Cass		
4+70	51.0 1.6 1.6 0.0	
4+20		50.3 2.3 2.4 F 0.1
3+20	48.9 3.7 3.4 C 0.3	
2+70		48.2 4.4 4.5 F 0.1
2+20	47.4 5.2 5.0 C 0.2	
1+57.5		46.6 6.0 5.7 C 0.3
0+30	44.7 7.9 7.3 C 0.6	
9.80 (52.60)	42.80	B.M.

Bayard = 0+00

Water Line Grades
Chalcedony St
Mission to Bayard

5	W.L. Bayard	48.4 / 7.2 / 3.7 / C 3.5
+50		48.0 / 7.6 / 4.2 / C 3.4
4		47.5 / 8.1 / 4.7 / C 3.4
+50		47.1 / 8.5 / 5.4 / C 3.1
3		46.7 / 8.9 / 5.8 / C 3.1
+50		46.3 / 9.3 / 6.1 / C 3.2
2		45.9 / 9.7 / 6.5 / C 3.2
+50		45.4 / 10.2 / 7.0 / C 3.2
1		45.0 / 10.6 / 7.5 / C 3.1
+50		44.6 / 11.0 / 7.8 / C 3.2
0+00	E.L. Miss. Blvd	44.2 / 11.4 / 8.4 / C 3.0

(55.59)

5+00	WL Cass		56.7 / 4.5 / 1.6 / C 2.9
+50			56.1 / 5.1 / 2.1 / C 3.0
4			55.4 / 5.8 / 2.9 / C 2.9
+50			54.6 / 6.6 / 3.6 / C 3.0
3			53.8 / 7.4 / 4.3 / C 3.1
+50			53.0 / 8.2 / 4.8 / C 3.4
2			52.3 / 8.9 / 5.4 / C 3.5
+50			51.5 / 9.7 / 6.3 / C 3.4
1			50.7 / 10.5 / 7.1 / C 3.4
0+50			50.0 / 11.2 / 7.6 / C 3.6
0+11	F.H.	6 gr. 52.17 / 9.08 / 8.45 / C 0.63	49.2 / 12.0 / 8.1 / C 3.9
T.P.	.850 (61.25)	2.84	52.75 BM
0+00	E.L. Bayard		49.0 / 6.6 / 2.6 / C 4.0
℄ Bayard			48.7 / 5.9 / 3.2 / C 3.7

(55.59)

B.M. NW 7' C.T. Chalcedony and Bayard

(W) on Chalcedony
Mission to Bayard
N S

4+20	curbed	
3+70	curbed	
2+20	curb	
1+70	curbed	
1+20	curb in	
0+70		47.7 7.9 7.7 C 0.2
0+30	curb in	47.36 8.23 8.00 C 0.23
E.L. Mission 0+00		

NEBP 7.10 (55.59) V8.49
Chalcedony
Mission B

(W) Chalcedony 31
Bayard to Cass
N

SW 7'C.T. Chalcedony and Cass
T.P. 1.71 59.54 SW 7'C.T.

4+70	6.014 1.11 1.21 F 0.10	
4+20	59.38 1.87 2.24 F 0.37	None on South under contract
3+32.5	58.05 3.20 3.44 F 0.24	
2+20	56.34 4.91 4.71 C 0.20	
0+80	54.22 7.03 7.03 0.0	
E L Bayard 0+00		

(C 1.25)
P.30

W chalcedony Per Plan
Cass to Dawes

	N		S
3+05	65.8 / 7.2 / 1.7 / C 0.5		
0+95	62.6 / 5.4 / 5.0 / C 0.4		
0+55			61.0 / 7.0 / 6.7 / C 0.3
SW 7' C.T. 8.41 chalcedony and Cass	67.95		59.54

W chalcedony
Dawes Ely

	N		S
2+45	74.02 / 3.92 / 2.88 / C 1.04	3+80	75.06 / 2.88 / 2.50 / C 0.38
0+30	70.70 / 7.24 / 6.36 / C 0.88	1+20	71.08 / 6.86 / 5.70 / C 1.16
SE 10' R.P. chalcedony Dawes	9.22 (77.94)		68.72

P. 23

Curb inlet & drain W.O. 60271
Foot of Chalcedony

N. side

Curb	grate	F.L. Pipe inlet
30.16	29.17	26.0
1.83	2.82	5.99
8.83	8.83	8.83
F 7.00	F 6.01	F 2.84

C6 South side

			grate	F.L. Pipe
West end →	30.0	30.36	29.17	25.0
	1.99	1.63	2.82	6.99
	1.70	1.15	1.60	1.60
	C 0.29	C 0.48	C 1.22	C 5.39

F.L. 0+00	0+30 Brk	0+65 = outlet F.L.
25.0	22.0	5.00
6.99	9.99	14.98
1.60	7.79	14.16
C 5.39	C 2.20	C 0.82

T.P.	0.10	(19.98)	12.11	18.88	
T.P.	1.15	(31.99)	7.92	30.84	
T.P.	1.94	38.76	12.72	36.82	
N.E.B.P.	1.05	49.54		48.49	Chalcedony Mission

Missouri drain

N. side

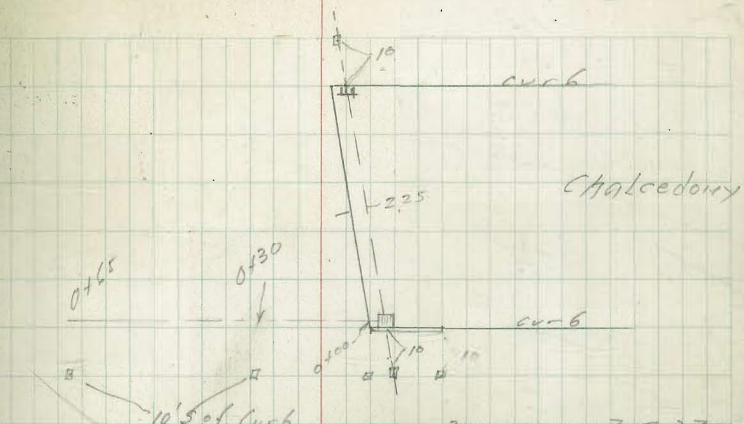
Curb	grate	F.L. Pipe inlet
36.36	35.53	32.40
5.58	6.41	9.54
4.77	4.77	4.77
C 0.81	C 1.64	C 4.77

S. side

		E end Curb inlet	grate	F.L. Pipe at Box
W. end inlet →	35.40	35.45	34.57	30.40
	6.54	6.49	7.37	11.54
	6.01	6.02	6.02	6.02
	C 0.53	C 0.47	C 1.35	C 5.52

F.L. 0+00	F.L. 0+30 = Brk.	F.L. 0+63
30.40	27.40	5.00
11.54	14.54	3.64
6.02	7.30	4.57
C 5.52	C 7.24	F 0.95

T.P.	0.51	19.31	12.20	18.80
T.P.	1.48	31.00	12.42	29.52
B.M. N.W. 7 Cr. Missouri and Mission	1.45	(41.94)		40.49



South side

25.00
5.39
30.39
4.83
35.22 HI

35 22
30
5 22
4 93
C 0.29

35 22
30 35
4 87
4 43
C .44

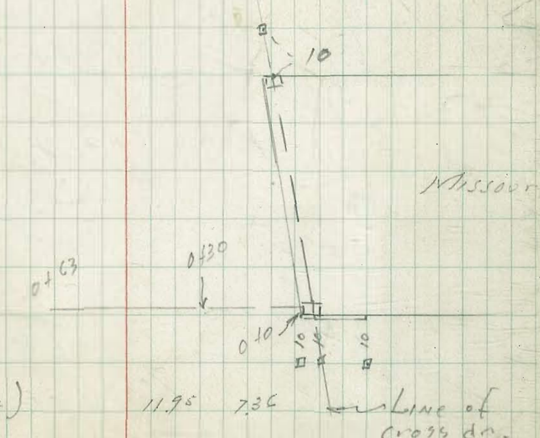
35 22
29 17
6.05
4.83
1.22
grate

North

35 22
26
9.22
9.61
F 0.39 FL

curb
35.22
30.16
5.06
9.81
F 4.75

35 22
29 17
6.05
9.61
F 3.56 grate



T.P.	1.26	(8.62)	11.95	7.36

19.31

CITY (W) Missouri, Dawes Ely

	N			S	
3+75	66.3 0.9 + .2 C 1.1		4 12 3 75 37		3+75
3+16	65.5 1.7 1.3 C 0.4				
2+75	65. 2.2 1.8 C 0.4		2+70	64.0 3.2 2.4 C 0.8	
2+67	64.8 2.4 2.0 C 0.4		2+44	63.6 3.6 3.0 C 0.6	
2+17	64.1 3.1 2.9 C 0.2		1+93	62.8 4.4 3.5 C 0.9	
1+76	63.5 4.7 3.6 C 1.1		1+40	62.1 5.1 3.7 C 1.4	
1+34	63. 4.2 4.7 F 0.5		0+93	61.4 5.8 4.6 C 1.2	
0+26 E.L. Dawes = 0+00	61.40 5.8 6.3 F 0.5	—	0+40	60.7 6.5 5.2 C 1.3	
	5.04	67.22		62.18	mail on pl. Dawes & Missouri

Re stake
62.18
6 93
69.11
66 3
2.8
2.1
C 0.7

Chalcedony Mission to Bayard

	N			S	
4+20					
3+70					
2+20		curbs in place	Void		
1+70					
1+20			0+70		
+30			0+30	See p 31	

0+00 = E Line Mission

Chalcedony Bayard to Cass for City

N

See p 31

SW Chalcedony & Cass

S

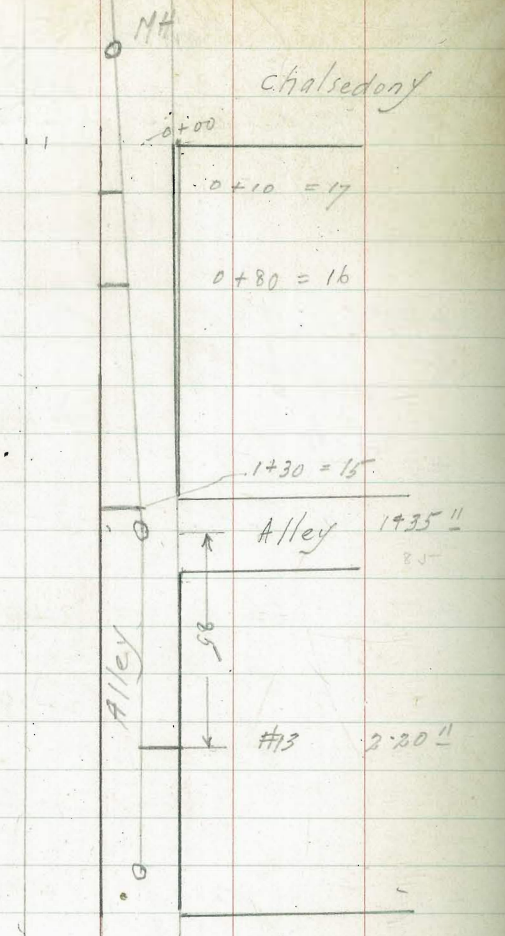
59.54
2.22
61.76

618

N Station	N	S Station	S
3+87	58.8 / 3.9 / 3.9 / F 0.1		
2+97 ?	57.4 / 4.4 / 4.3 / C 0.1	4+59	59.0 / 2.8 / 2.5 / C 0.3
		3+74	57.7 / 4.1 / 4.2 / F 0.1
2+00	56.0 / 5.8 / 5.4 / C 0.4	3+33	57.1 / 4.7 / 4.6 / C 0.1
		2+78	56.2 / 5.6 / 5.3 / 0.3
1+30	55.0 / 6.8 / 6.8 / 0.0	2+26	55.4 / 6.4 / 6.0 / C 0.4
0+72	54.0 / 7.8 / 7.6 / C 0.2	1+76	54.7 / 7.1 / 6.5 / C 0.6
		1+26	54.0 / 7.8 / 7.4 / C 0.4
0+49	53.7 / 8.1 / 7.7 / C 0.4	0+78	53.4 / 8.4 / 8.2 / C 0.2
0+0 Bayard	53.0 / 8.8 / 8.4 / C 0.4	0+29	52.5 / 9.3 / 8.7 / C 0.6

0+00 = 52.00

~~Bogg~~
Sherman
Burch



				Missourie	
			4 38 4.17	30.21 30 42	Ocean Blvd 30.39
TP	0 14	34.59	8.55	34.45	
TP	6.56	43.00	12.08	36.44	
	0.03	48.52		48.49	

Sewer Laterals

	Sewer Main	Chimney	Prop.
2+22" = 13	26 24	43 32.78 10.22 4.37 5.85	43 32 98 10 02 4 37 5.65
1+30 = #15	25.87	43 34 35 8 65 3 05 C 5.60	43 34 55 8 45 3 05 C 5 40
0+80 #16	25.66	43 32.67 10 33 5 30 C 5.03	43 32.87 10 13 5 30 C 4.83
0+10 = #17	25 38	43 00 30.03 12.97 8 32 C 4 65	43 00 30 23 12 77 8 32 C 4 45

0+00 = S Line Chalsedony

S Line Chalsedony Mon

43 00

NE BP Chalsedony & Mission Blvd

Watermain Chalsedony

Mission Blvd Westerly

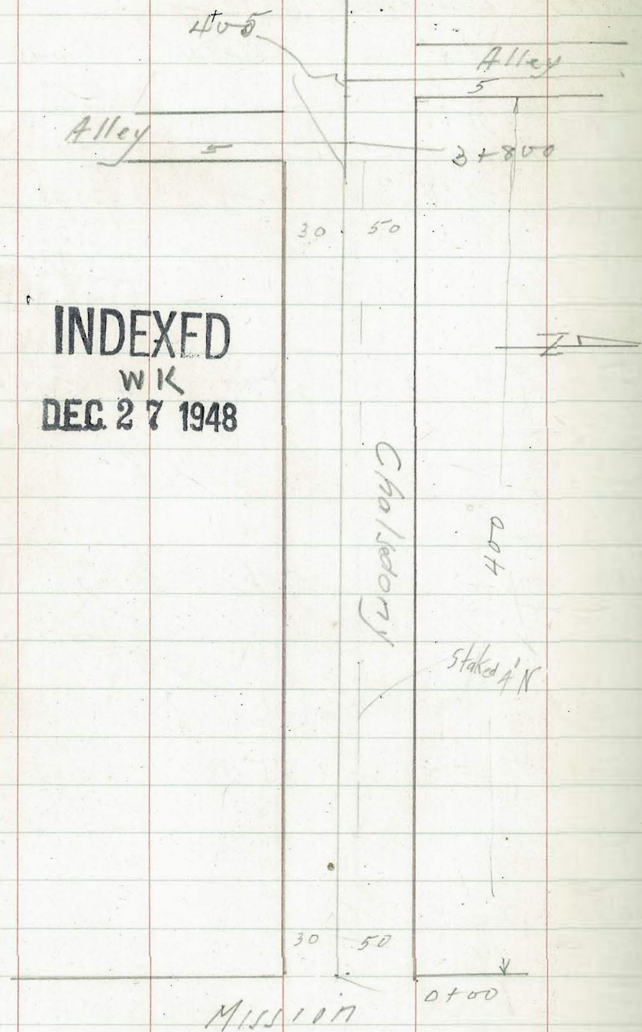
2+00

1+50

1+00

+50

0+20



0+00 W Prop Mission Blvd

0.66 49.15 48 49

40.6
8.6
4.9
C 3.7

41.2
8.0
4.5
C 3.5

41.8
7.4
3.8
C 3.6

42.4
6.8
3.2
C 3.6

49.2
42.9
6.3
2.8
C 3.5

7' NEBP

Water main Chalsedony from Mission Blvd Westerly

8.74 3893 8.67 3019 Mon.

Line Chals-
& Ocean

4+05 Rt L Bend staked at 4+05

31.2
7.7
4.6
C 3.1

30.8
8.1
4.7
C 3.4

3+80 T

32.2
6.7
4.3
C 2.4

38 9
33.50
5.4
3.4
C 2.0

3+60

2.18 38.86 12.47 36.68

38 86

3+20

36.6
12.6
10.4
C 2.2

2+80

39.1
10.1
6.5
C 3.6

40.2
9.0
5.4
C 3.6

~~2+40~~

49 15

49 15

Water Services Contract

	N			N	
3+30	39.4		3+80	39.2	
	10.8			36.0	
	12.9			3.2	
	F 2.1			4.7	
			F	1.5	
2+80	42.8				
	7.4				
	7.8				
	F 0.4				
2+30	44.1				
	6.1				
	6.4		9.07	30.17	Mon
	F 0.3	2.00	39.24 12.92	37.24	
1+80	44.7				
	5.5				
	5.8				
	F 0.3				
1+30	45.4				
	4.8				
	5.0				
	F 0.2		South		
				50.16	HI
			$3+17^5$	40.0	
				10.16	
0+80	46.0			10.3	
	4.2			F 0.1	
	4.3				
	F 1.0			N	
$0+17^5$	46.8				
	3.4				
0+00 Mission Blvd W Line	3.7		3+80	36.0	
	F 0.3		12.92	37.24	
	1.67	50.16		48.49	

Chalsedony from Mission westerly

East & West Alley
Sewer Services Alley bet Missourie & Chalsedony & Westerly from Mission

Bl. 117 Ocean & Grand Sub.

stake 3' East on Prop. line

	Sewer	chimney	& Property
3+15 (14) N	34 13	46 01 34.92 11.09 5 28 C 5.81	35.12 C 5.61
2+65 (12) S	34 58	46 01 34.89 11.12 5.83 C 5.29	35 09 C 5.09
1+65 (11) S	35 47	46 01 35.77 10 24 4 65 C 5.59	35 97 C 5.39
1+15 (10) S	35.92	46 01 36 17 9.84 4 40 C 5.44	36 37 C 5.24
0+65 (9) S	36 37	46 01 36.87 9.14 3 80 C 5 34	46 01 37 07 8 94 3 80 C 5 14

0+00 = W. Line Mission

TP	1.60	46 01	6.28	Set TP	44 41
	2.20	5 0 69		fdt of garage 48 49	

Bl. 117 Pacific ~~Grand~~ Purple ~~Sunt~~ Map 943

Water main Alley bet. Chalsedony & Missourie West of Mission Blvd

staked 4 ~~Ft~~ East of pipe

					E line Elev	- 3.2	= WM El
1+45	S Line of Cross alley				39.5		36.3 / 8.4 / 5.2 / C 3.2 ✓
1+25	N Line of cross Alley				39.50		36.3 / 8.4 / 5.3 / C 3.1 ✓
	6.31	44.68	0.56	38.37		44.7	
1+00					38.6		35.4 / 3.5 / 0.6 / C 2.9 ✓
			0.6				
0+60					37.3		34.1 / 4.8 / 1.8 / C 3.0 ✓
0+20					36.00		32.8 / 6.1 / 3.3 / C 2.8 ✓
0+00	Property ~~Curb~~ line chalsedony				35.28		32.1 / 6.8 / 5.4 / C 1.4 ✓
	8.74	38.93		30.19		38.9	

			8.73	30.19	BM
	2 + 4	38.92	8.60	36.08	
2 + 70					
2 + 20					
1 + 80					
		44.68			
		~~38.93~~			

Mon S Line Chalsedony & Ocean

36.87	33.7 11.0 7.7 C 3.3
37.9	34.7 10.0 7.0 C 3.0
38.8	35.6 9.6 C 3.1

44.7

contract - N & S
Water Services Alley west Mission Blvd
Bet Chalsedony & Missouri

stake 5 West of Property

1+50		4 2 1 39.4 2 7 C 0.3	
		2.4	
1+00		4 2 1 38.6 3 5 1 6 C 1.9	
		1.6	
0+37.5		4 2 1 36.3 5 8	
		F 7.6 1.8	

0+00 S Line Chalsedony

11.90 42.09 30.19 Mon

Alley
Sewer Services   Dawes to
stakes set on Prop. ℄ 3 E

Blk 120
Ocean Front Sub.

5+02 ①

5+00 Prop Dawes

2+35 ③

1+10 #4

62 95 HI
2 39
60.56
8 70
69.26
7 08
62.18 BM check

0+10 6 & 7

8 & 5
0+00 Prop line Cass on CB ~~Return~~ End

(HI for 4 5 6 7 & 8)

TP 3.11 62.95 9.23 59.84
6.89 69.07 62.18 Spike on Pole Missourie & Dawes

HI for (1 & 3)

Cass bet Chalsedony & Missourie

Rt

10 R
69 07
59.07
10.00
4.75
C 5.25

10 R
69 07
54 28
14 79
9 23
C 5.56

10 R
62 95
53.08
9.87
4 61
C 5.26

⑦ 10 L
62 95
51.88
11.07
5 58
C 5.49

⑥ 10 R
62 95
51 52
11.43
5 74
C 5 69

⑧ 10 L
62 95
51.64
11.31
6 04
C 5.27

⑤ 10 R
62 95
51.27
11.68
6 56
C 5 12

Rough Grades on Missouri St.

		L cb	R = N cb grade
3		61.72 7.9 7.7 C 0.2	62.68 6.9 6.2 C 0.7
+50		62.42 7.2 7.0 C 0.2	63.38 6.2 5.0 C 1.2
2		63.12 6.5 6.6 F 0.1	64.08 5.5 4.1 C 1.4
+50		63.82 5.8 5.6 C 0.2	64.78 4.8 2.7 C 2.1
1		64.53 5.1 5.0 C 0.1	65.48 4.1 2.6 C 1.5
+50		65.23 4.4 3.6 C 0.8	66.18 3.5 0.8 C 2.7
0+00 W.L. N.S. Hgts		65.93 3.7 2.8 C 0.9	66.88 2.7 0.6 C 2.1
Spike Pole N.E. Cor Missouri Dawes	7.38	69.56	62.18

		L		Rt
+50		55.72 7.8 8.4 F 0.6 ✓		56.40 7.1 6.8 C 0.3 ✓
2		56.37 7.1 7.9 F 0.8 ✓		57.07 6.4 6.3 C 0.1 ✓
+50		57.03 6.5 7.2 F 0.7 ✓		57.74 5.8 5.5 C 0.3 ✓
1		57.69 5.8 6.2 F 0.4 ✓		58.41 5.1 4.8 C 0.3 ✓
0+50		58.34 5.2 5.3 F 0.1 ✓		59.08 4.4 3.3 C 1.1 ✓
0+00 W.L. Dawes		59.0 4.5 4.5 0.0 ✓		59.75 3.8 2.5 C 1.1 ✓
T.P.	1.28	63.46	7.38	62.18
4+12.2 E.L. Dawes		60.15 9.5 9.3 C 0.2		61.10 8.5 7.4 C 1.1
3+50		61.03 8.6 8.5 C 0.1		61.98 7.6 7.1 C 0.5
			69.55	

Missouri

		L	R	
1		50.03 4.9 5.5 F 0.6	51.03 3.9 3.8 C 0.1	
+50		50.76 4.2 4.7 F 0.5	51.76 3.2 2.4 C 0.8	
0+00 W.L. Cass		51.48 3.5 3.6 F 0.1	52.48 2.5 1.9 C 0.6	
B.M. SW 7' C.T.	3.42	54.94	51.52	Missouri and Cass St
5 E.L. Cass		52.43 11.1 11.5 F 0.4	53.05 10.5 9.8 C 0.7 ✓	
+50		53.09 10.4 10.8 F 0.4 ✓	53.72 9.8 9.5 C 0.3 ✓	
4		53.74 9.8 10.3 F 0.5	54.39 9.1 8.8 C 0.3 ✓	
+50		54.40 9.1 9.9 F 0.8 ✓	55.06 8.4 7.3 C 1.1 ✓	
3		55.06 8.5 9.3 F 0.8 ✓ 63.46	55.73 7.8 6.8 C 1.0	

Bayard + Mo.

R = Nor

Sw Mon		L		R
		9.39	42.80	42.80
5 E.G. Bayard		44.25 8.0 7.8 C 0.2		45.25 7.0 5.6 C 1.4
+50		44.97 7.2 7.4 F 0.2		45.97 6.2 5.1 C 1.1
4		45.70 6.5 6.7 F 0.2		46.70 5.5 4.5 C 1.0
+50		46.42 5.8 6.2 F 0.4		47.42 4.8 4.1 C 0.7
T.P.	3.30	52.19	6.05	48.89
3		47.14 7.8 8.3 F 0.5		48.14 6.8 6.0 C 0.8
+50		47.87 7.0 7.8 F 0.8		48.87 6.0 5.5 C 0.5
2		48.59 6.3 7.1 F 0.8		49.59 5.3 4.8 C 0.5
1+50		49.31 5.6 6.4 F 0.8		50.31 4.6 4.4 C 0.2
		54.94		

Missouri

		L=S.L.		R=N.L.
+50		41.15 5.0 5.2 F 0.2		41.96 4.2 3.4 C 0.8
T.P.	3.24	46.20	7.16	42.96
3		41.48 8.6 8.8 F 0.2		42.29 7.8 7.2 C 0.6
+50		41.82 8.3 8.5 F 0.2		42.62 7.5 6.7 C 0.8
2		42.16 8.0 8.2 F 0.2		42.94 7.2 6.5 C 0.7
+50		42.49 7.6 7.6 0.0		43.27 6.8 6.0 C 0.8
1		42.83 7.3 7.0 C 0.3		43.60 6.5 4.7 C 1.8
0+50		43.16 7.0 6.5 C 0.5		43.92 6.2 4.4 C 1.8
0+00 W.L. Bayard		43.50 6.6 6.1 C 0.5		44.25 5.9 4.3 C 1.6
B.M. S.W. Mon. Missouri Bayard	7.32	50.12		42.80

		L		R	
1+45		37.40 5.90 5.69 C 0.21		38.40 4.90 4.38 C 0.52	
1+20 P.V.C.		37.75 5.55 5.62 F 0.07		38.75 4.55 4.00 C 0.55	
0+70		38.50 4.80 5.04 F 0.24		39.50 3.80 3.36 C 0.44	
0+20 Break		39.25 4.05 4.56 F 0.51		40.25 3.05 3.68 C 0.37	
W.L. Mission 0+00 Blvd.		43.30 π 39.70 3.60 +		43.30 π 40.41 2.89 +	
T.P. N.W. 7' C.T.	2.84	43.30	5.74	40.46	Missouri Mission Blvd.
E.L. 5+00 Blvd		40.14 6.1 6.0 F 0.1		40.98 5.2 4.8 0.4	
+50		40.48 5.7 5.6 C 0.1		41.31 4.9 4.0 C 0.9	
4		40.81 5.4 5.4 0.0		41.63 4.6 3.6 C 1.0	
		46.20			

Missouri

	L	R
W.L. 3+95 alley North	35.87 / 7.43 / 7.33 / C 0.10	36.87 / 6.43 / 6.00 / C 0.43
E.L. 3+75 alley North	35.97 / 7.33 / 7.15 / C 0.18	36.97 / 6.33 / 5.55 / C 0.78
W.L 3+45 alley So.	36.12 / 7.18 / 7.18 / x	37.12 / 6.18 / 5.91 / C 0.27
E.L. 3+25 alley So.	36.22 / 7.08 / 6.57 / C 0.51	37.22 / 6.08 / 5.78 / C 0.30
2+72.5	36.48 / 6.82 / 6.86 / F 0.04	37.48 / 5.82 / 5.41 / C 0.41
2+20 E.V.C	36.75 / 6.55 / 6.72 / F 0.17	37.75 / 5.55 / 4.62 / C 0.93
1+95	36.90 / 6.40 / 6.40 / x	37.90 / 5.40 / 4.81 / C 0.59
1+70	37.12 / 6.18 / 6.28 / F 0.10	38.12 / 5.18 / 4.60 / C 0.58

	L	R
4+94.65 ↑ ocean St. ↓	—	36.36 / 6.94 / 5.47 / C 1.47
4+88.3	35.40 / 7.90 / 7.33 / C 0.57	36.40 / 6.90 / 5.82 / C 1.08
4+41.65	35.63 / 7.67 / 7.30 / C 0.37	36.63 / 6.67 / 6.00 / C 0.67

Chalcedony

	L		R	
El. 0+00 cass	6120 7.3 6.7 C 0.6		6032 8.2 8.5 F 0.3	S.W. 7' cf. cass chalcedony
T.P.	8.99	68.54	4.31	59.55
W.L. 5 cass	6059 3.3 2.6 C 0.7		5959 4.3 4.6 F 0.3	
+50	5983 4.1 3.6 C 0.5		5883 5.1 5.0 C 0.1	
4	5907 4.8 4.5 C 0.3		5807 5.8 6.4 F 0.6	
+50	5831 5.6 5.1 C 0.5		5731 6.6 7.0 F 0.4	
3	5755 6.4 5.4 C 1.0		5655 7.4 7.6 F 0.2	
T.P.	7.67	63.86	4.40	5619
+50	56.80 3.8 3.2 C 0.6		5580 4.8 4.8 0.0	
2	5604 4.6 3.6 C 1.0 6059		5504 5.6 5.6 0.0	

	L		R	
4	6744 6.9 5.6 C 1.3		66.46 7.9 8.5 F 0.6	
+50	6666 7.7 6.5 C 1.2		6570 8.6 9.2 F 0.6	
3	6588 8.4 7.5 C 0.9		6493 9.4 9.2 C 0.2	
T.P.	9.21	74.27	3.48	6506
+50	6510 3.4 3.0 C 0.4		6416 4.4 4.6 F 0.2	
2	6432 4.2 4.1 C 0.1		6334 5.1 5.9 F 0.8	
+50	6354 5.0 4.8 C 0.2		62.62 5.9 7.4 F 1.5	
1	6276 5.8 5.1 C 0.7		6186 6.7 7.9 F 1.2	
0+50	6198 6.6 6.0 C 0.6	6854	6109 7.5 8.0 F 0.5	

Chalcedony

		L		R = S.L.
+50		74.10 7.4 5.8 C 1.6		73.09 8.4 8.4 0.0
2		73.33 8.2 6.5 C 1.7		72.32 9.2 9.0 C 0.2
+50		72.56 9.0 7.1 C 1.9		71.55 10.0 9.8 C 0.2
T.P.	7.64	81.51	0.40	73.87
1		71.79 2.5 0.4 C 2.1		70.78 3.5 3.3 C 0.2
0+50		71.02 3.3 1.7 C 1.6		70.02 4.3 3.7 C 0.6
0+00 E.L. Dawes		70.25 4.1 2.7 C 1.4		69.25 5.1 4.8 C 0.3
5+00 W.L. Dawes		69.00 5.3 4.0 C 1.3		68.00 6.3 6.1 C 0.2
4+50		68.22 6.1 4.4 C 1.7		67.23 7.1 7.0 C 0.1
		74.27		

Rough Grades

curb O.K.

	L	R = S
W.L. N. Shore Highlands 4+12.65	76.62 4.9 3.2 C 1.7	75.58 5.9 5.6 C 0.3
4+00	76.42 5.1 3.4 C 1.7	75.39 6.1 5.6 C 0.5
3+50	75.65 5.8 4.3 C 1.5	74.62 6.9 6.8 C 0.1
3+00	74.87 6.6 5.0 C 1.6	73.85 7.7 7.4 C 0.3
	81.51	

Bayard St.

	Lt.	Rt. = East
2+35	42.54 5.5 5.1 C 0.4	43.05 5.0 4.5 C 0.5
2	41.79 6.2 6.4 F 0.2	42.30 5.7 5.1 C 0.6
1+50	40.72 7.3 7.4 F 0.1	41.22 6.8 6.4 C 0.4
1+00	39.64 8.4 8.6 F 0.2	40.15 7.9 6.3 C 1.6
0+50	38.57 9.5 9.3 C 0.2	39.07 9.0 7.4 C 1.6
0+00 N.L. Diamond	37.49 10.55 cb	38.00 10.04 cb
B.M. Mon. SW Bayard + Missouri	5.24 48.04	x2.80

2.151 %

2.148 %

Rough Grades

	L	Rt
2+00	49.45 5.3 4.9 C 0.4	50.10 4.6 3.6 C 1.0
1+50	48.28 6.4 5.8 C 0.6	48.89 5.8 4.8 C 1.0
1+00	47.10 7.6 7.0 C 0.6	47.67 7.0 5.5 C 1.5
0+50	45.92 8.8 8.2 C 0.6	46.46 8.3 6.9 C 1.4
T.P.	6.92 54.72 0.24	47.80
0+00 N.L. Missouri	44.75 3.3 3.2 C 0.1 48.04 0.33 47.71	45.25 2.8 1.4 C 1.4
2+70 S.L. Missouri	43.30 4.7 4.0 C 0.7	43.80 4.2 3.7 C 0.5

Set B.M. Cross 47.71
on Lower Con. Step
NE Cor. Bayard + Mo.

48.04

2.351 %

2.425 %

Bayard St. Grades

	L	RT = EAST	
1+50	55.75 5.4 5.1 C 0.3	56.16 5.0 4.2 C 0.8	
2.007 %			
1+00	54.75 6.4 6.3 C 0.1	55.18 5.9 5.2 C 0.7	1.977 %
0+50	53.75 7.4 7.6 F 0.2	54.19 6.9 5.6 C 1.3	
0+00 N.L. Chalcedony	52.75 8.4 8.5 F 0.1	53.20 7.9 6.9 C 1.0	
2+70 S.L. Chalcedony	51.10 3.6 3.6 0.0	51.80 2.9 2.1 C 0.8	
T.P. NW TCT Chalc. Bayard 8.40	61.14	1.98 52.74	
2+35	50.27 4.4 4.1 C 0.3 54.72	50.95 3.8 2.8 C 1.0	

	LT		RT
Check to NW BP Law & Bayard		2.32	58.82 58.85 = 61.74 58.93 = Sewer #2
S.L. Law 2+70	58.17 2.9 2.8 C 0.1		58.54 2.6 2.1 C 0.5
2+50	57.75 3.4 2.2 C 1.2		58.14 3.0 1.4 C 1.6
2+00	56.75 4.4 3.2 C 1.2	61.14	57.15 4.0 2.5 C 1.5

Dawes Rough grade.
Diamond to Chalcedony

10-4-48
CHB

	West	East	
			S.W. 7' L+T Missouri + Cass P. 46 51.52 9.56 61.08 1.97 59.11 2.33 61.44 x 9.39 52.05 = Disk. W.L. Dawes
2+00	57.18 4.26 4.24 C 0.02	Nail-on Line 57.98 3.46 2.61 C 0.85	
1+50	55.88 5.56 5.51 C 0.05	N. 0' in street. 56.68 4.76 3.76 C 1.00	N. 7' Diamond 9.39 61.44 x 1.07 60.37 9.92 70.29 x
1+00	△-3' west 54.58 6.86 6.13 C 0.73	55.38 6.06 4.96 C 1.10	
0+50	53.28 8.16 7.38 C 0.78	54.08 7.36 6.06 C 1.30	
0+00 N.L. Diamond	61.44 x 51.98 9.46 8.28 C-1.18	61.44 x 52.78 8.66 6.66 C 2.00	

Dawes

	West	East
1+50	64.64 5.65 5.59 C 0.06	65.24 5.05 3.69 C 1.36
1+00	63.20 7.09 7.02 C 0.07	63.80 6.49 5.44 C 1.05
0+50	61.75 8.54 8.50 C 0.04 x	N. on line 62.35 7.94 6.54 C 1.40
0+00 N.L. Missouri	70.29 x 60.30 9.99 9.66 C 0.33	70.29 x 60.90 9.39 8.50 C 0.89
2+70 S.L. Missouri	61.44 x 59.00 2.44 2.50 F 0.06	61.44 x 59.80 1.64 1.07 C 0.57
2+35	58.09 3.35 3.31 C 0.04	△-1' out 58.89 2.55 1.71 C 0.84

Dawes

5+00 - on chalcedony P. 51.		70.29 68.00 - on. So. = Co^2 2.29 2.14 C 0.15
2+70 S.L. Chalcedony	68.10 2.19 2.26 F 0.07	68.70 1.59 0.85 C 0.74
2+35	67.09 3.20 2.94 C 0.26	67.69 260 1.60 C 1.0
2+00	66.08 4.21 4.10 C 0.10	70.297 66.68 361 2.51 C 1.10

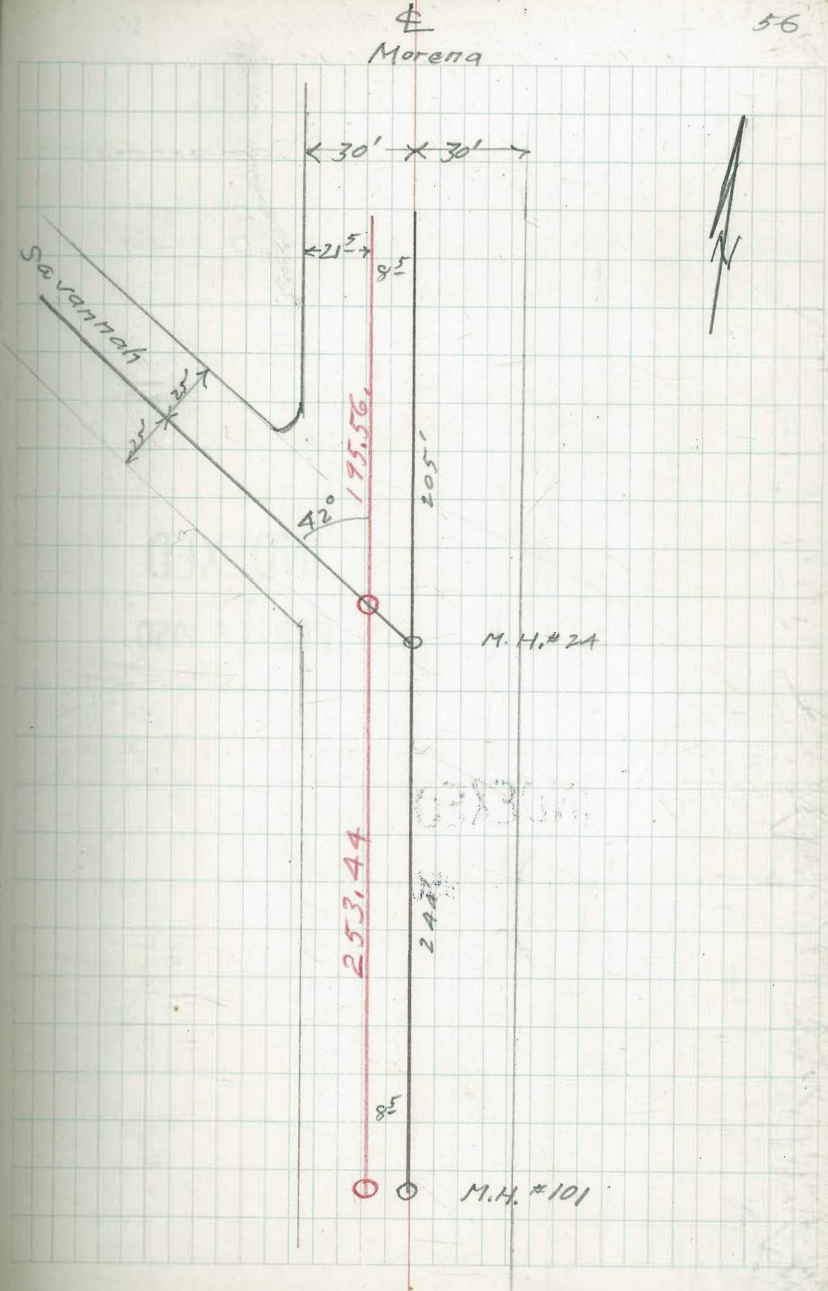
Line Change Morena at Savannah
(Sheet 1343 D)

7-15-49 Plotted 1343D. Sommermeyer
9-22-49 - McQ

Lines in black shown as on 1343-D
" " Red show change in line.

Grades + Stations in $\frac{Q\ 25^2}{62}$

Also F.B. 1791



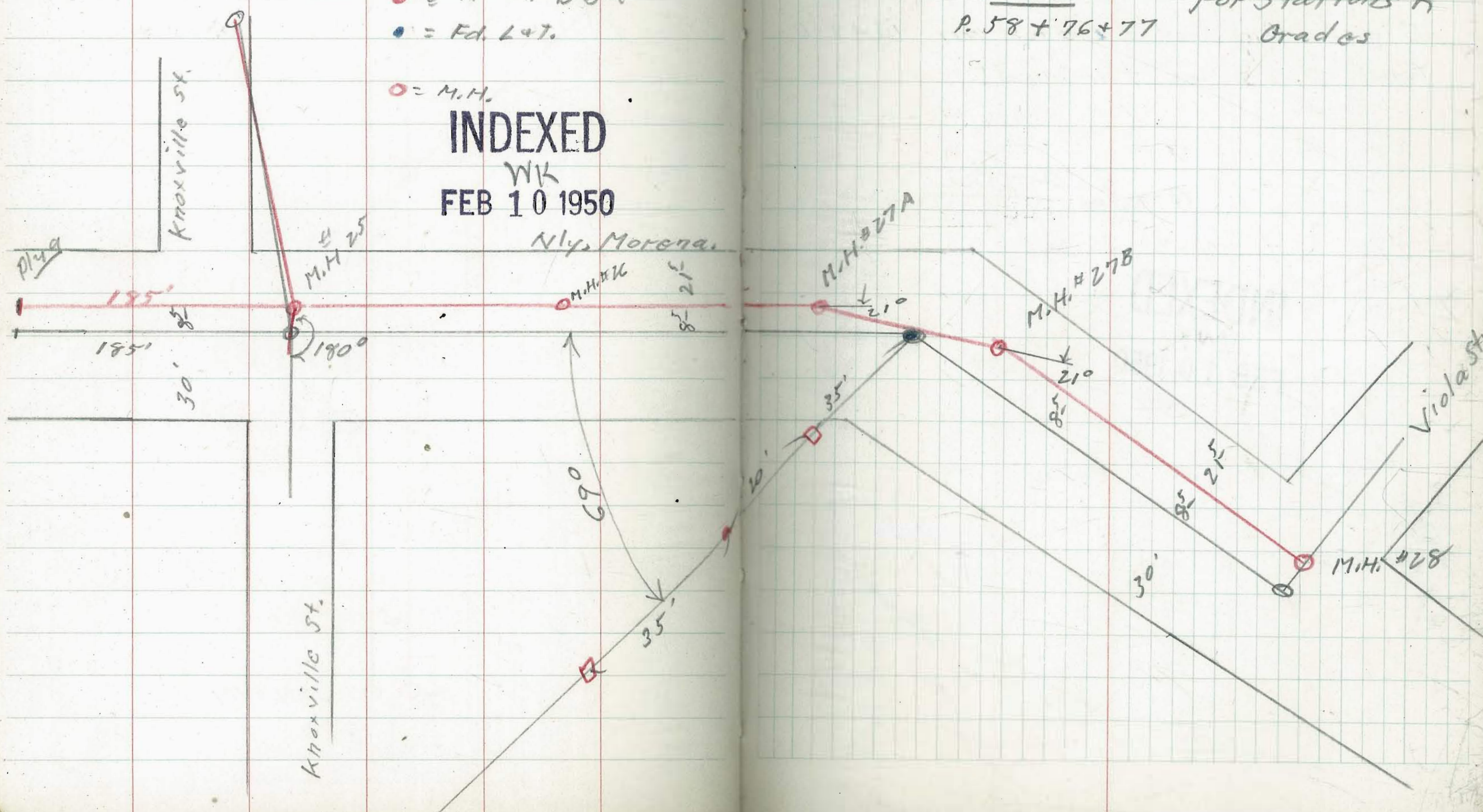
Sewer Cont. Morena - Knoxville to Viola
Line Change 7-15-49

Sommermeyer.

Black = line as on sheet D 1343
D 1344
Red = " " constructed.

See G 252
P. 58 + 76 + 77
for Stations & Grades

□ = Set R.P. Hub
● = " " Disk
● = Fd. L+T.
○ = M.H.



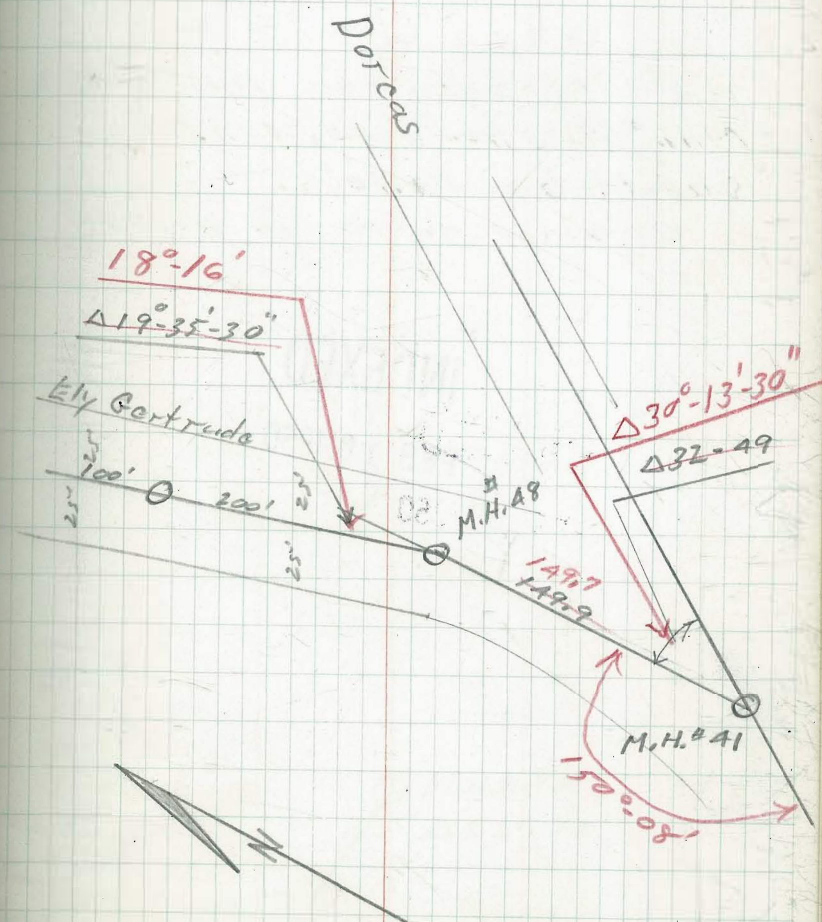
Gertrude St.
change in Data

Sommermeyer.

Line laid in position as
shown on sheet 1349-D.

Black figures = ∠s as on 1349-D.
Red. = ∠s as turned.

Grades $\frac{\text{Ġ } 252}{31}$

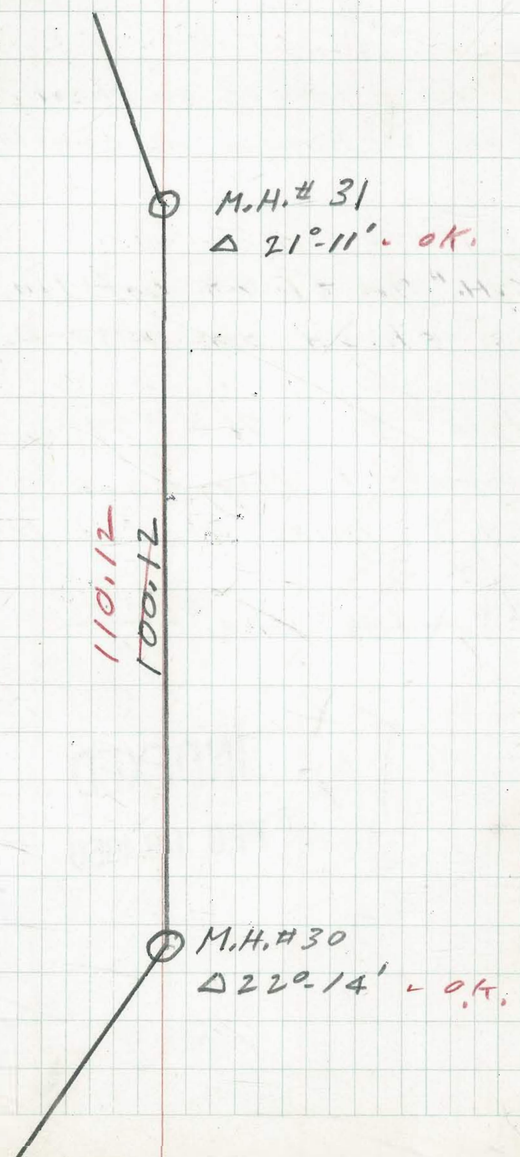


Viola Street Sewer.
Correction in distance.

See sheet 1344-D.

Sommermeyer

distance between M.H. #30 &
M.H. #31 shown as 100.12'
should be 112.10'
Original notes in error



Everview. - Sewer
Line change

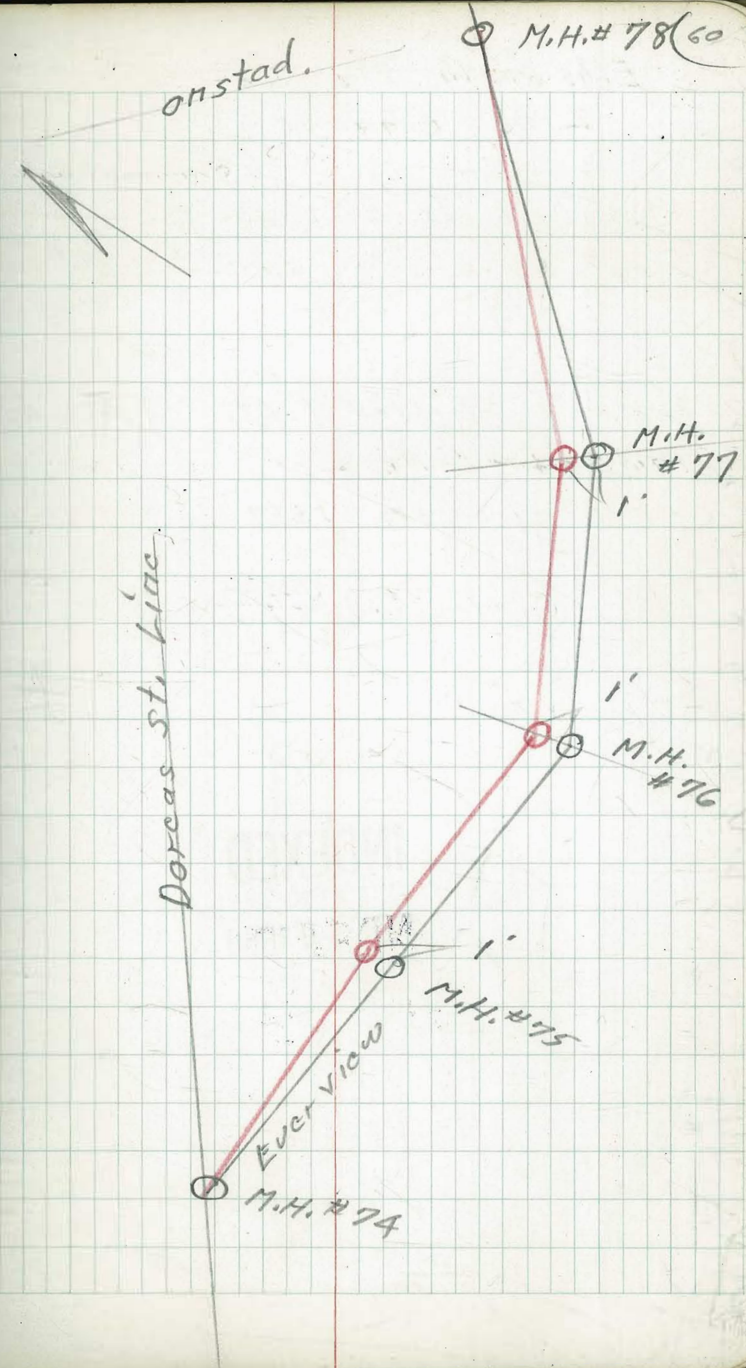
sommermeyer

Black = line as on sheet # 1350-D.
Red. = change as constructed.

M.H. # 74 + # 78 Left in position
as shown on 1350-D.

M.H. # 75 - # 76 + # 77 were
moved 1' N'ly. as shown so
as to miss water line.

Grades in G 252 / 34



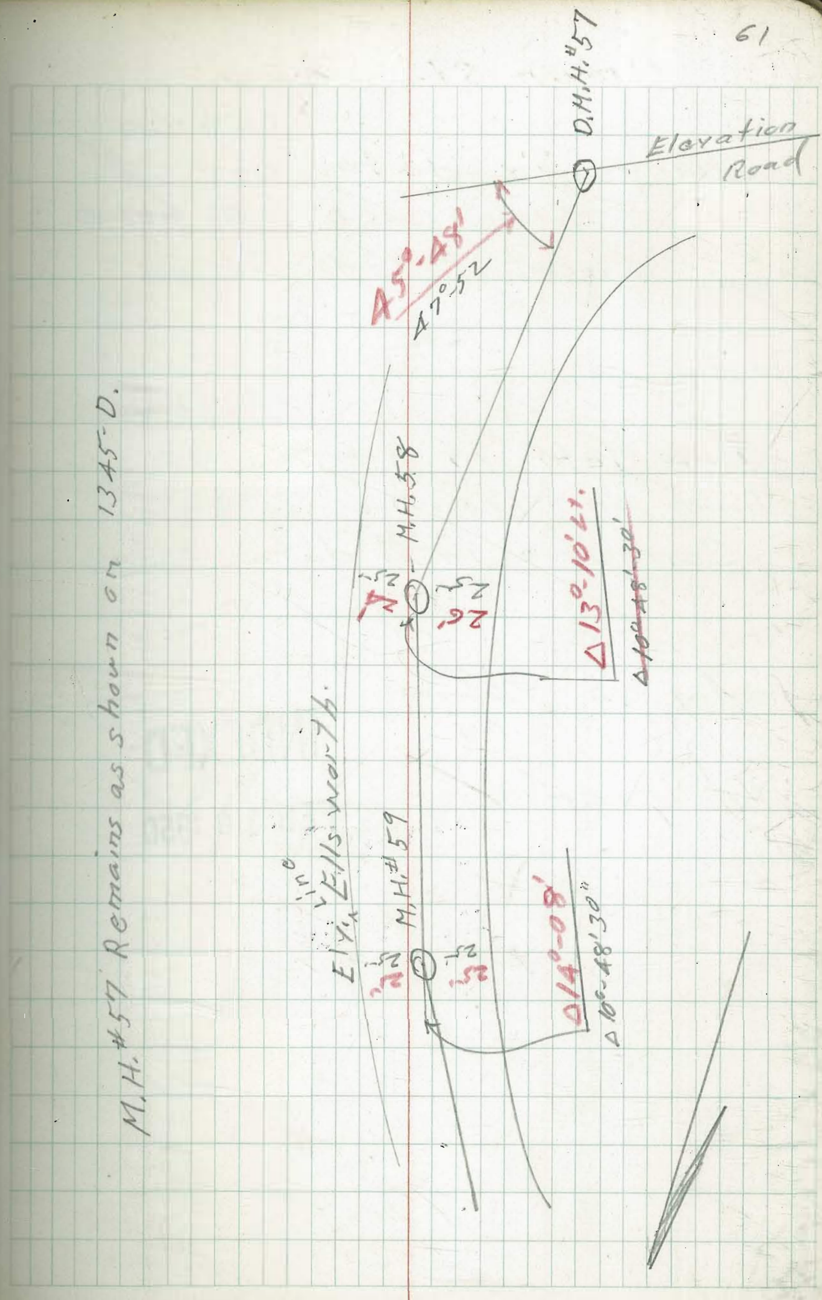
Ellsworth St. Sewer
Line change

Sommermeyer

See sheet # 1345-D.

M.H.#58 shifted 1' Rt. so as to miss water line.

Grades in $\frac{G152}{48}$



Crown St. Sewer.

Sommermeyer

Change in data.

Plotted - 1345-D McQ 9-23-49

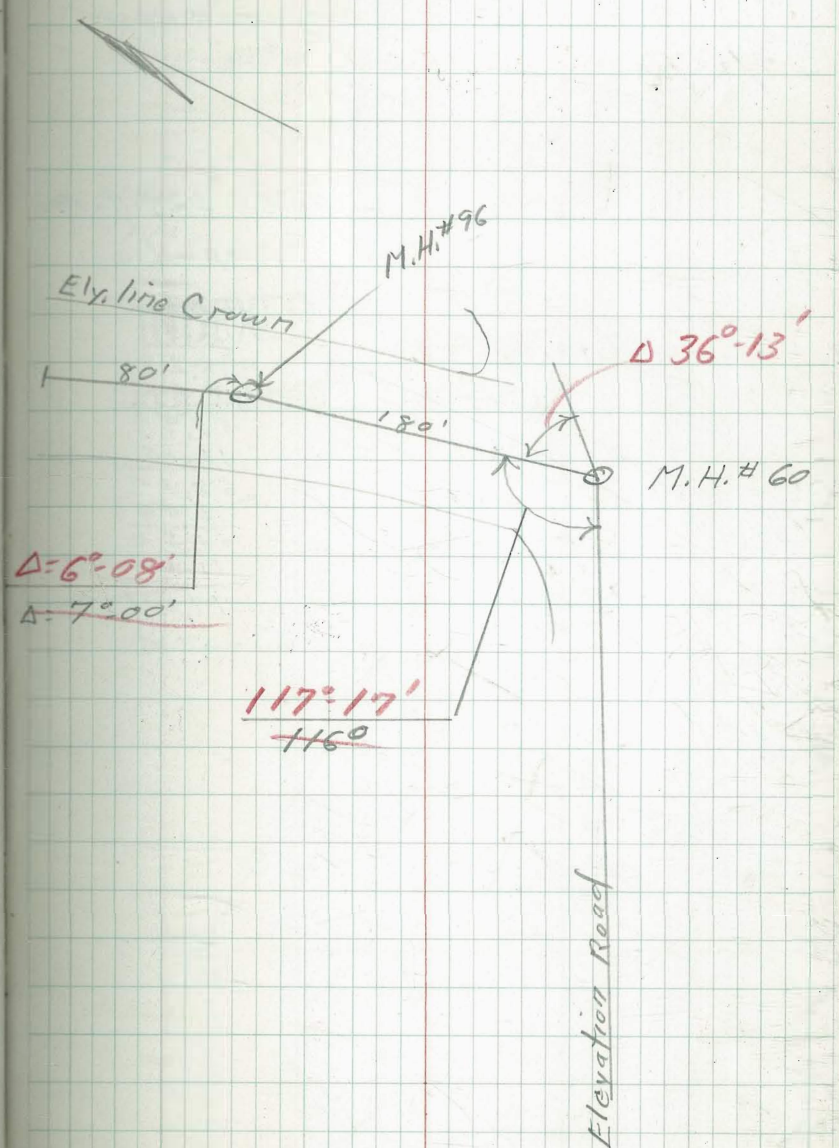
See sheet # 1345-D

Line left in position as shown on 1345-D.

Correction in Δ data only.

Grades in $\frac{Q25^2}{47}$

F.B. 1544 + 1791



7/28/49

Sommermeyer
McCoy
Allen
Rohr

SEBP La Jolla Ave
+ Ampudia

43.75
12.53
56.28
0.29
55.99
12.15
68.14 ⊼
2.64
65.50
11.57
77.07 ⊼

A = 0+00 trias st.

68.14 ⊼

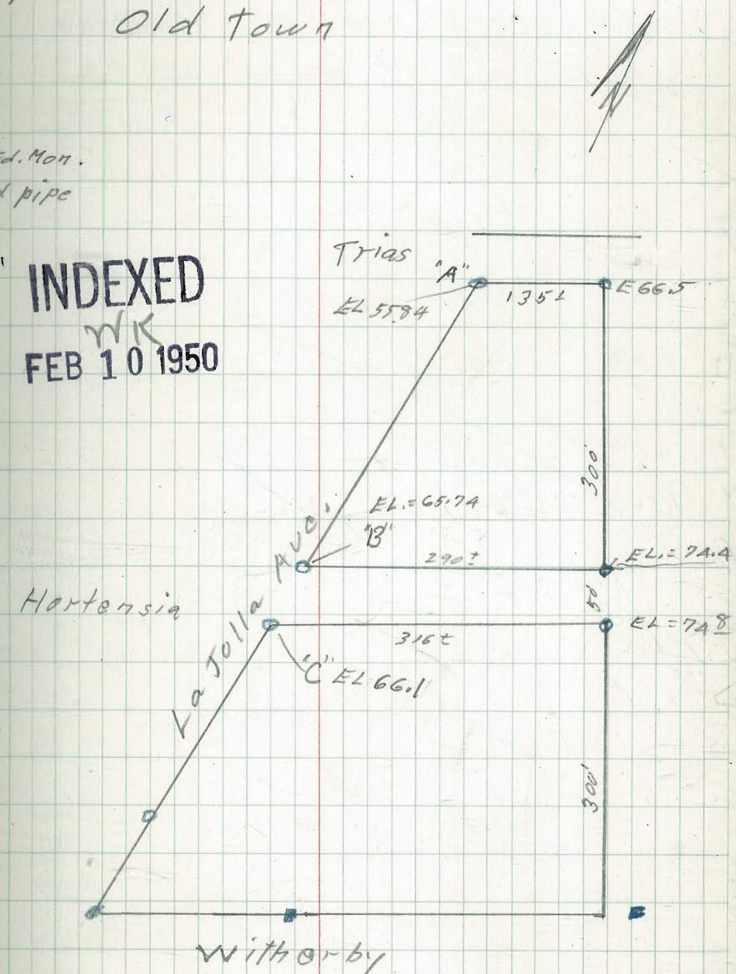
1+35
66.50
1.64
7.28
F. 5.64

0+35
57.10
11.04
10.78
C. 0.26

0+00
55.84
12.30

Rough Grade - Blks 535 + 548
Old Town

■ = Fd. Mon.
O = Fd pipe



"B" (P. 63) = 0+00 Nly Hortensia
3% grade

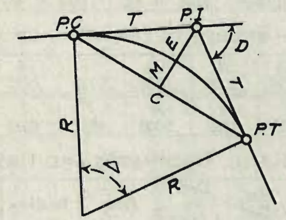
2+90	74.4 2.67 3.5 F 0.8
2+00	71.7 5.37 5.9 F 0.5
1+00	68.7 8.37 9.6 F 1.2
0+00	65.7 11.37

"C" (P. 63) = 0+00 Sly line of Hortensia 2.75% grade

3+16	74.8 2.3 2.3 x
2+00	71.7 5.4 5.1 C 0.3
1+00	68.9 8.2 7.5 C 0.7
0+00	66.1 10.97 11.00 x

Sewer lateral.
13
15
16 - Sewer in Alley
17

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

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

Tangent=T=Rtan$\frac{\Delta}{2}$ (3) Length of Curve=L=100$\frac{\Delta}{D}$ (4)

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

External=E=Ttan$\frac{\Delta}{4}$(7)=R ÷ cos.$\frac{\Delta}{2}$—R(8)=Rexsec$\frac{\Delta}{2}$(9)

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

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. Δ=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 Δ=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′.

.36
4.5
180
144
16.20

4.5/10 x .36

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 an 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.

MADE IN U.S.A.