

G-113

DIETZGEN  
TRADE MARK

---

ENGINEERS'  
FIELD BOOK  
NO. 404

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# 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  $30.6 + (20 - 16) \div 2$  or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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MICROFILMED

APR 7 1965

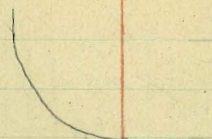
13  
27  
22  
50  
49  
38  
108  
76  
Most Corb...  
B+C 300  
H.M.H. at B

20-21-Subst.

354  
SL  
W.L. 21 = 117.00  
117.0  
118.01  
E.L. 20 = 70.00  
68.0  
40 20  
43.46  
17.10  
4.92



8/6/1906 PRINGLE - KETTNER



MOLEALY

ST

TITUS



9498 9449

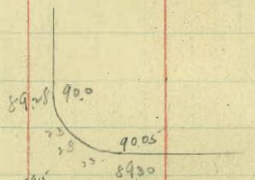
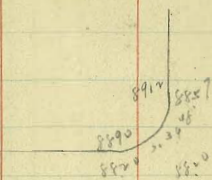
9602

9630 9706

9921

T.P. TOPWELL

KETTNER



8917 8827  
8890 8827  
8827 8820

8960

8928 9000  
8905 8930  
8950

MCKEE

8815  
8805 8935  
8750

8945 8950  
8914

8725 8760  
8720  
8600 8725

8841

8800 8825  
8825 8900  
8800 8875

ST



Beardsley  
Crosby  
Kearney  
Julian

ALLEY PAVING  
BIK 187 M + S ADD

20' wide

	S.L.	N.L.
EL Beardsley	45.79	45.72
40' E = BREAK	47.20	47.0
90' E	47.39	
140'	47.60	
190'	47.79	
240'	47.98	
290'	48.18	
340'	48.37	
390'	48.57	
440'	48.77	
490' E	48.96	
540' E	49.08	
550' E = BREAK	49.20	49.0
600' = WIL CROSBY	50.65	50.85

0.39%  
% grade

Raked from BREAK to BREAK

Moore

10/20/25

40' E = BREAK	
75' E = 0.05 Low	
100' E = 0.08 Low	
125' E = 0.05 Low	
150' E = 0.05 Low	
175' E = 0.01 High	
200' E = 0.03 High	
225' E = 0.05	
250' E = 0.02 High	
270' E = 0.03 High = MH	
300' E = 0.03 High	
325' E = 0.09 High	
350' E = 0.01 High	
375' E = 0.06 Low	
385' E = 0.19 Low = NW end of puddle	
400' E = 0.08 Low = Middle	
420' E = 0.24 Low = E end	
430' E = 0.17 Low	
450' E = 0.13 Low	
475' E = 0.10 Low	
500' E = 0.08 Low	
525' E = 0.04 Low	
550' E = BREAK	



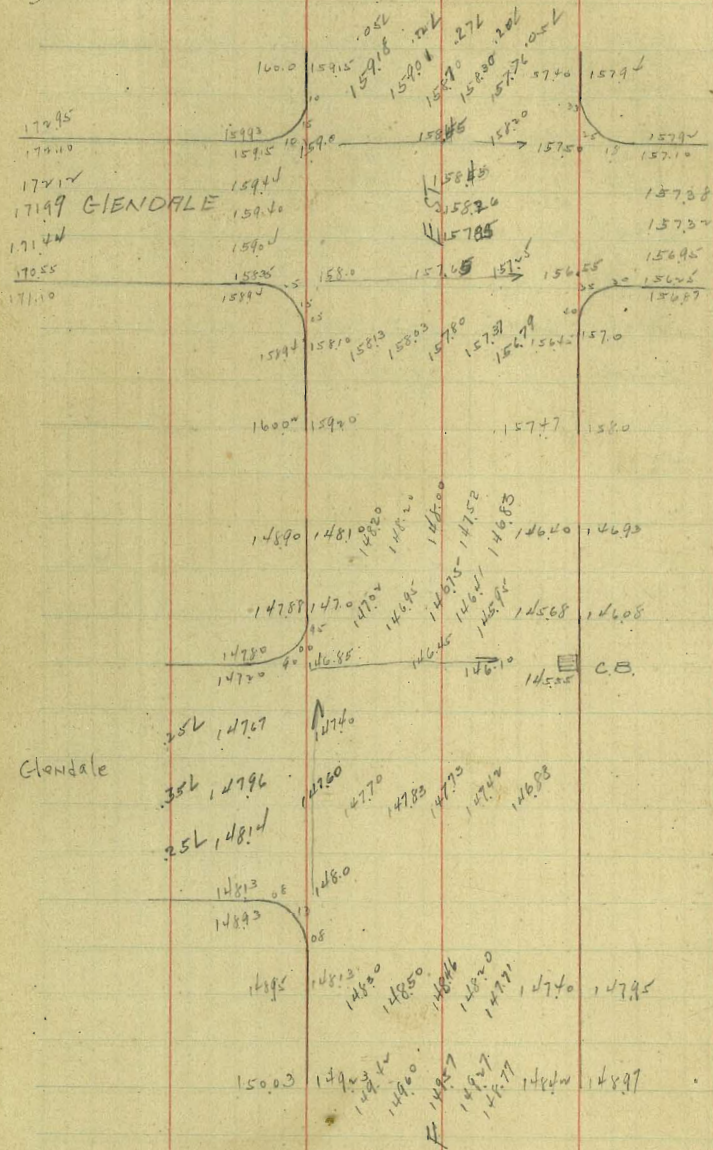




8/20/53

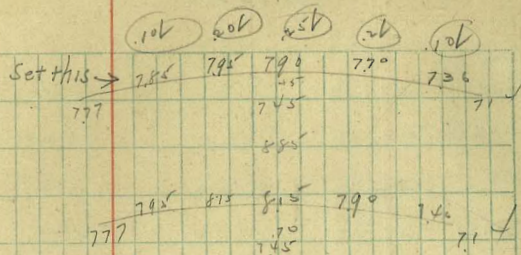
GLENDALE AT E & F STS  
PIPING Jacobsen

Moore

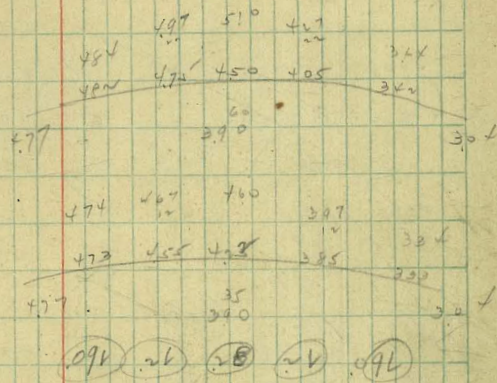


499 WL 20th + E

4



20th + F ST



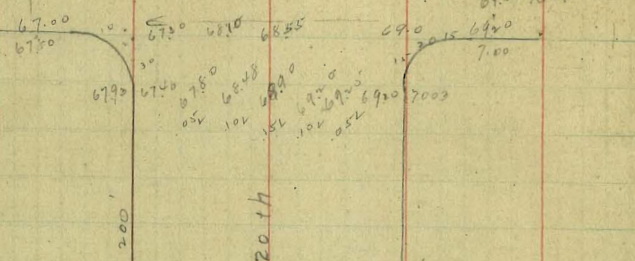






B

66.00	68.00
65.50	67.80
65.00	67.60
64.50	67.40
64.00	67.20
63.50	67.00
63.00	66.80
62.50	66.60
62.00	66.40
61.50	66.20
61.00	66.00



BREAK

Lowered to 85.01 85.91

20th

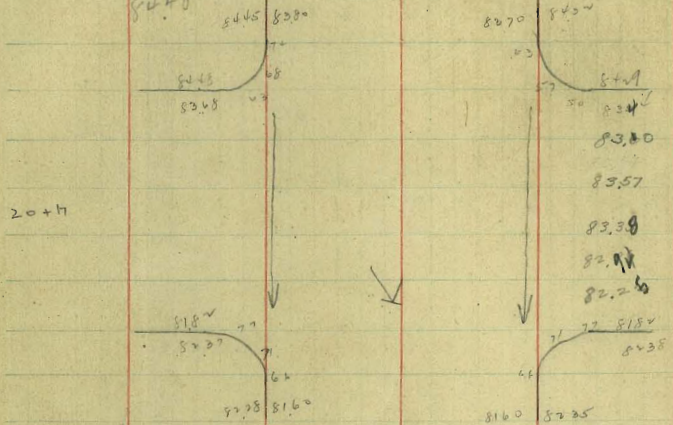
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20th ST PAVING

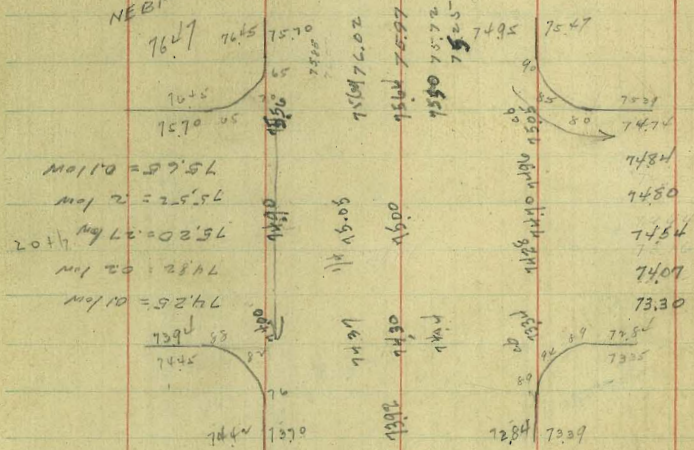
LS

NEBP  
8448



20th

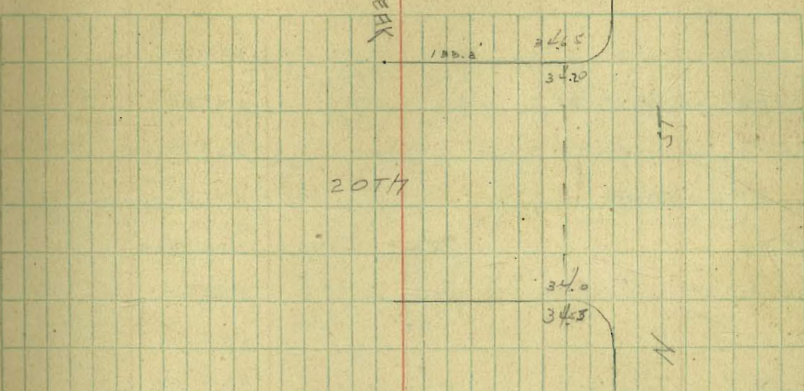
NEBP



LS

7

BREX



20th

57.03 NE IMP + 20th  
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0.19  
45.51  
11.5  
81.50  
11.5  
11.5  
11.5  
11.5  
11.5  
11.5



CONSTRUCTION OF CULVERT  
BOUNDARY ST.

0+00	344.5
+60 = Δ 40° 2' LT	341.60
1-	339.67
+45 = BREAK	337.5 = Flowline 36" pipe 337.0 = 18" ✓
2	336.34
+50	335.74
3	335.14
+5	334.54
↓	333.94
+20 = Δ 14° 00' LT	333.70
+50	333.34
5	332.73
+56.7"	332.00
6 x 0.8	331.45
+46	330.70

88

Flowline 36"  
Flowline 18"

3530 ✓	341.60	339.67	337.5	337.0	336.34	335.74
1.37	13.83	15.76	17.93	18.23	19.09	11.91
355.43	10.93	10.55	11.88	11.88	12.75	3.56
12.75	9.1	7.36	6.05	6.55	6.34	8.35
347.65	7.183	5.368	4.05	4.55	4.34	3.56
12.56	9.1	7.36	6.05	6.55	6.34	8.35
335.89	7.183	5.368	4.05	4.55	4.34	3.56
6.90	9.1	7.36	6.05	6.55	6.34	8.35
341.99	7.183	5.368	4.05	4.55	4.34	3.56
351.6	13.11	13.71	13.95	14.31	14.92	15.29
12.51	5.47	6.95	9.73	10.88	13.29	13.29
7.48	7.64	6.76	4.22	3.43	1.43	1.43
+5.02	7.64	6.76	4.22	3.43	1.43	1.43
332.10	2.145	3.070	3.070	3.070	3.070	3.070
9.99	10.54	11.29	11.29	11.29	11.29	11.29
9.72	8.93	10.52	10.52	10.52	10.52	10.52
+0.27	+1.61	+0.77	+0.77	+0.77	+0.77	+0.77



MISSION FIVE GRADES  
MISS. TO ALA.

SL STA.	N.L. STA.	NL	SL
WL MISS=00	=00	336.75	337.25
50 W	4637W	336.23	335.63
100	78.8W	335.85	334.02
+50	96.3 W	335.30	332.40
✓	146.3	333.73	330.79
+50	196.3	332.16	329.17
3+13	246.3	330.59	327.14
3+59.3	296.3	329.02	325.65
→ EL ALA. 359.3		327.05	

327.64 T

99

NL	336.50	336.12	335.58	334.3	333.7	332.7	332.6
	1.2	1.4	1.8	1.2	3.9	5.4	7.0
	2.0	2.0	2.5	2.9	3.5	5.7	7.7
	-0.6	-0.6	-0.7	-0.6	-1.6	-2.3	-0.7
SL	337.25	335.6	334.0	332.4	330.8	329.7	327.1
	0.40	2.0	3.4	5.0	6.8	8.4	10.5
	0.3	1.1	2.4	4.1	5.6	7.3	9.2
	+0.1	+0.4	+1.2	+1.1	+1.2	+1.1	+1.3
NL	329.0	326.80					
	8.6	10.80					
	9.7	10.80					
	+1.1						
SL	325.40	325.65					
	12.20	12.0					
	14.20	13.5					



MISSION AVE GRADES  
LOUISIANA TO MISSISSIPPI

SL STA.	NL STA	NL	SL
WL LOUIS=00	00	342.25	341.65
50'	46.7	341.74	341.11
100'	96.7	341.18	340.57
150	146.27	340.63	340.03
200	196.27	340.07	339.49
250	246.27	339.52	338.94
313	296.27	338.95	338.46
359.35 EL MISS.	359.3	338.25	337.75

34231 SEBP  
MADISON + ha  
342.16  
336.71  
337.6

SL	341.40	341.11	340.6	340.0	339.5	339.0	338.5
	3.70	2.10	1.5	5.1	4.6	2.1	6.3
	✓	2.10	5.0	3.5	4.6	5.6	6.9
		+1.5	+1.5	+1.6	+1.0	+0.5	0.10
NL	342.2	341.7	341.2	340.6	340.0	339.5	339.0
	2.9	2.4	5.9	0.5	5.1	5.6	6.1
	0.0	2.4	2.8	3.4	4.3	4.6	5.4
		+0.5	+1.0	+1.1	+0.8	+1.0	+0.7
							7.1
							2.1

34100



Mission Five Grades  
Georgia To Florida

	NL	SL
EL Georgia		344.20
13.5 E=PC.PL.		344.0
78.8 E=BREAK=0+100	343.75	342.35
50'E	340.15	338.65
100'E	336.55	335.05
150	332.95	331.45
200	329.35	327.85
2PC N+6V	324.90	323.40
WL Florida PC	320.85	321.25
WL Florida	320.45	

SE Georgia + Mission

	NL	SL	SL	SL	SL	SL
344.20						
441						
348.61						
1246						
336.15	NL	343.7	340.2	326.5	323.0	329.4
105		4.9	8.0	12.1	15.6	7.8
337.20		3.0	2.0	4.0	12.4	4.2
13.00		+1.9	+5.0	+5.1	+2.2	+3.6
324.20						
145	SL	344.0	42.3	338.6	335.0	331.4
325.68		1.6	6.3	10.0	13.6	5.8
		2.6	3.0	4.1	6.1	4.4
		+2.0	+3.2	+5.9	+7.5	+1.4
	NL	320.8	320.2			
		16.4	5.4			
		12.0	5.9			
		+2.1	+0.19 on ch			
	SL	327.8	323.40	321.0		
		9.4	12.8	4.68		
		5.8	11.3	2.9		
		+3.6	+2.5	-2.61 on ch WL		



Morrel ST Grades

	WL	EL
NL Garnet=00	66.75	65.25
+50 N	67.77	66.35
1	68.78	67.46
+50	69.80	68.57
N	70.82	69.68
+35	71.83	70.76
+70=SL Feldspar	72.25	71.25
NL ✓	73.75	72.75
50 N	75.97	74.97
1	78.19	77.19
50	80.41	79.41
✓	82.63	81.63
35	84.18	83.18
70=SL Emerald	85.75	84.75
NL ✓	87.25	86.25
50 N	88.91	87.91
1	90.58	89.58
50	92.24	91.24
✓	93.91	92.91
+35	95.07	94.07
+70=SL Diamond	96.25	95.25

SIX GARNET  
LAMPONIT

12

	WL	66.20	67.77	68.78	69.80	70.82	71.83	72.25	73.75	75.97
EL	65.0	66.25	67.46	68.57	69.68	70.76	71.83	72.75	74.97	77.19
TP		+1.5	+1.1	+1.3	+1.9	+1.1	+1.1	+1.1	+1.1	+1.1
EL	77.19	80.41	82.63	84.18	85.75	87.25	88.91	90.58	92.24	93.91
EL	77.19	79.41	81.63	83.18	84.75	86.25	87.91	89.58	91.24	92.91
EL	93.91	95.07	96.25							

DIAMOND ST. BM. on Hub  
75 X 75 X 75 X 75 X 75 X 75 X 75 X 75 X 75 X 75 X

EMERALD ST

FELDSPAR ST

GARNET ST

NOXES ST



EMERALD - ST Grades  
LAMONT T. NOYES

	SL	NL
EL LAMONT	99.5	100.25
50 E	98.78	99.78
	98.20	99.30
+60 = BREAK	97.75	98.75
N	96.33	97.40
50	94.57	95.70
3	92.80	94.01
50	91.0	92.20
↓	89.27	90.63
50	87.51	88.9
5 = WL Morral	85.75	87.25
EL ✓	84.75	86.25
50 E	82.90	84.40
1	82.05	84.55
50	82.20	83.70
✓	81.35	82.85
50	80.50	82.0
3	79.65	81.15
50	78.80	80.30
↓	77.95	79.45
50	77.10	78.60
5 = WL Noyes	76.25	77.75

100.7 TF  
100  
87.75  
100

77  
91  
100

113

	SL	99.0	98.75	98.20	97.75	96.33	94.57	92.80	91.0
		5.0	5.3	5.7	6.3	1.3	3.1	4.8	6.6
			5.5	6.4	6.0	2.7	4.5	7.3	8.1
			-0.2	-0.7	+0.3	-1.4	-1.4	-2.5	-1.5
	NL	100.25	99.78	99.30	98.75	97.40	95.70	94.01	92.20
		5.8	4.3	4.7	5.3	6.6	1.9	3.6	5.3
		3.2	2.3	1.3	0.3	2.0	0.6	4.0	5.8
		+0.2	+0.0	+3.4	+5.0	+4.6	+1.3	-0.7	-0.5
	SL	89.27	87.51	85.75	84.75	83.90	83.05	82.20	
		8.4	10.1	11.9	3.0	3.8	0.7	5.5	
		9.7	11.7	13.8	3.5	5.4	6.2	6.7	
		-1.3	-1.6	1.6	-0.5	-1.6	-1.7	40.8	
	NL	90.63	88.9	87.25	86.25	85.40	84.55	83.70	
		7.0	8.7	10.4	2.3	3.0	3.2	4.0	
		7.2	9.1	10.9	3.0	3.0	3.0	1.1	
		-0.2	-0.4	1.4	-0.7	0.2	0.2	2.7	
	SL	81.35	80.50	79.65	78.80	77.95	77.10	76.25	
		6.4	7.4	8.1	8.9	9.5	10.6	11.5	
		5.4	7.4	9.3	10.5	10.7	10.9	12.1	
		+1.0	-0.2	-1.2	-1.6	-0.9	-0.3	-0.6	
	NL	82.85	82.0	81.15	80.30	79.45	78.60	77.75	
		4.9	5.7	6.6	7.4	8.3	9.1	10.0	
		4.1	6.0	6.8	7.3	7.7	8.9	9.3	
		+0.5	-0.3	-0.2	+0.1	+0.6	+0.2	+0.7	



11/15 Sewer Construction thru BIK D BelleCrest  
 Moore Roselawn to Euclid

← CASTLE + BIK D = 0.000	329.56
50 S	329.06
100	329.76
50	329.82
2	329.92
50	330.06
2 + 1.84' = M.H. Δ	330.12
50 S of 281.84	330.22
100	330.7
150	331.05
200	331.34
250	331.68
300 ± DE	332.0
B + 31.54	330.22
381.54	330.32
+ 30.34 = M.H. # Roselawn Δ 1/2 201' RT.	330.42
+ 50 S	330.52
500	330.62
550	330.74
600	330.82
656.40 Δ 55' ± 5' LT	330.97
700	331.0
750	331.15

Pipe SW Roselawn  
 CASTLE STAKES SET 6' from #

14

3400 329 329.70	329.56 12.14 329.34 0.57 329.79 476 329.13 76.4	329.66 14.04 329.46 4.62 329.84 13.28 76.4 329.97	329.76 15.94 329.56 4.62 329.94 11.47 76.4 329.97	329.82 15.84 329.62 7.24 329.84 5.84 76.4 329.97	329.96 13.74 329.76 7.05 329.81 6.03 76.4 329.97	330.06 13.64 329.86 6.27 329.92 4.77 76.4 329.97	330.12 13.58 329.92 10.07 330.02 0.64 76.4 329.97
	330.143	330.7	331.05	331.36	331.65	332.0	
	13.27 21.38 +1.89	8.15 11.47 -5.32	7.84 5.84 +2.0	7.53 6.03 +1.50	7.1 2.74 +4.25	6.24 0.64 +6.23	
	330.22	330.32	330.42	330.52	330.62	330.72	
	8.67 4.2 +4.55	8.57 3.50 +5.07	8.47 3.4 +5.00	8.37 3.75 +4.62	8.27 4.05 +4.22	8.17 4.54 +3.63	
	330.82	330.87	331.0	331.5			
	8.07 4.65 +3.39	8.22 6.72 +1.30	7.84 5.50 +2.39	7.74 4.76 +2.98			



SEWER CONSTRUCTION Thru BKD  
 Roselawn To Euclid Bellecrest

800	331.30
850	331.45
893.67 DMH @ Euclid	331.60
938.67 Δ S	332.05
983.67 = DE	332.50

893.67 DMH @ 200	332.50
+0 N	333.10
80	333.75
120	334.37
160 N = DE	335.0

3497

0.00  
 341.10  
 610

349.00	331.30	331.45	331.40	332.05	332.50
322.00	16.47	105.4	10.37	99.4	4.47
328.00	7.96	62.4	11.90	58.2	7.00
310.00	3.61	+14.28	+5.47	+4.10	+2.77
	332.50	333.10	333.75	334.37	335.0
	9.47	8.85	8.24	7.60	6.97
	1.90	4.00	3.49	2.91	2.51
	+4.47	+2.83	+4.72	+4.69	+4.46



Sta.

## Mission St. Grades

Madison to Texas

	NL	SL
NL inc. Mission top ch. =	343.42	344.62
NL-PC	343.71	P.C.C. = 344.50
Sta. ①	343.85	344.53
②	343.99	344.15
③	344.13	343.98
4	344.27	343.80
5	344.41	343.63
6	344.55	343.45
7	344.69	343.25
8	344.84	
9	344.99	
10 = E.C.	345.14	
NL Improvement = Old E.C.	345.25	
50' North of E.C. = Break	345.54	
100' N	345.04	
150' N	344.54	
200' N	344.04	
250' N	343.54	

342.31

7.79

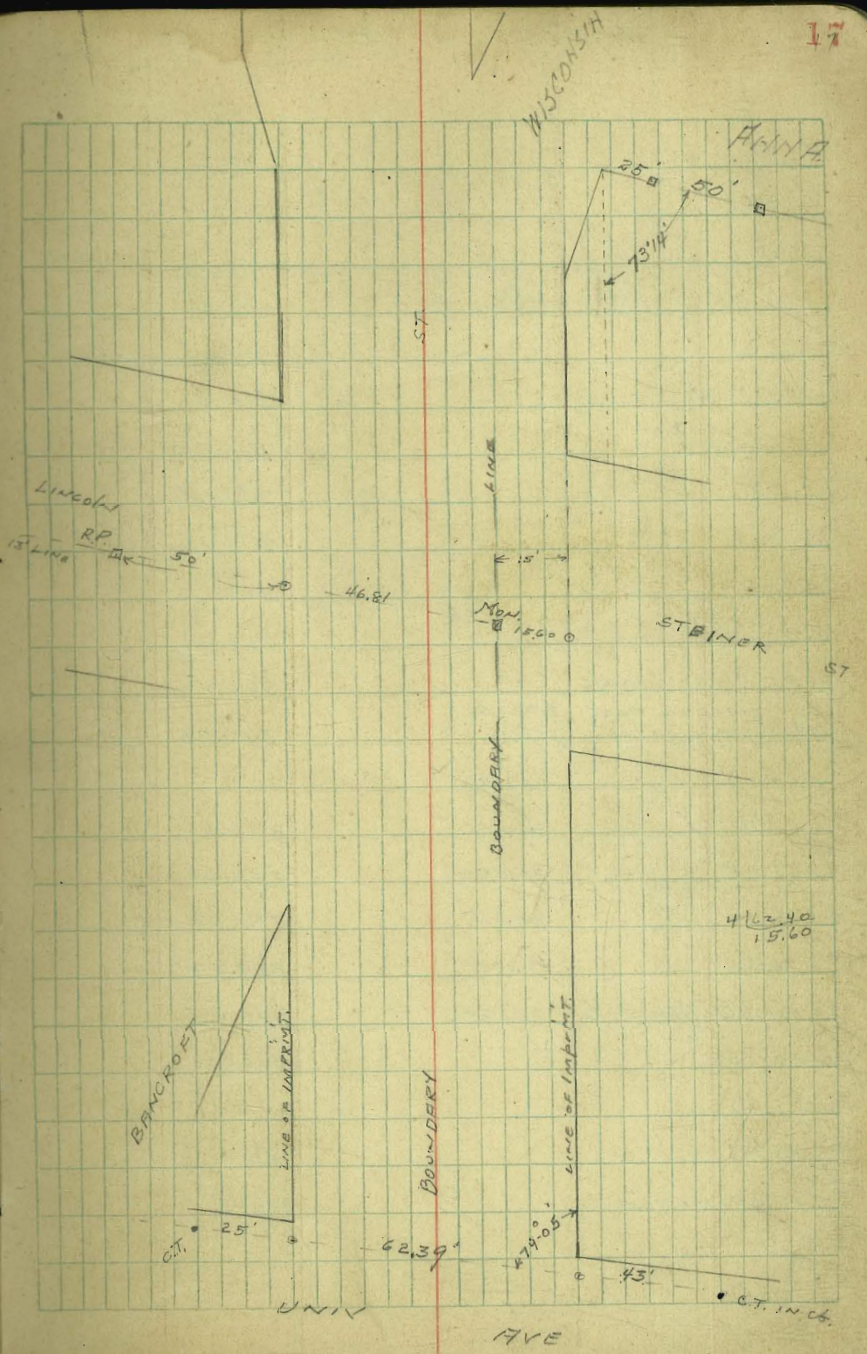
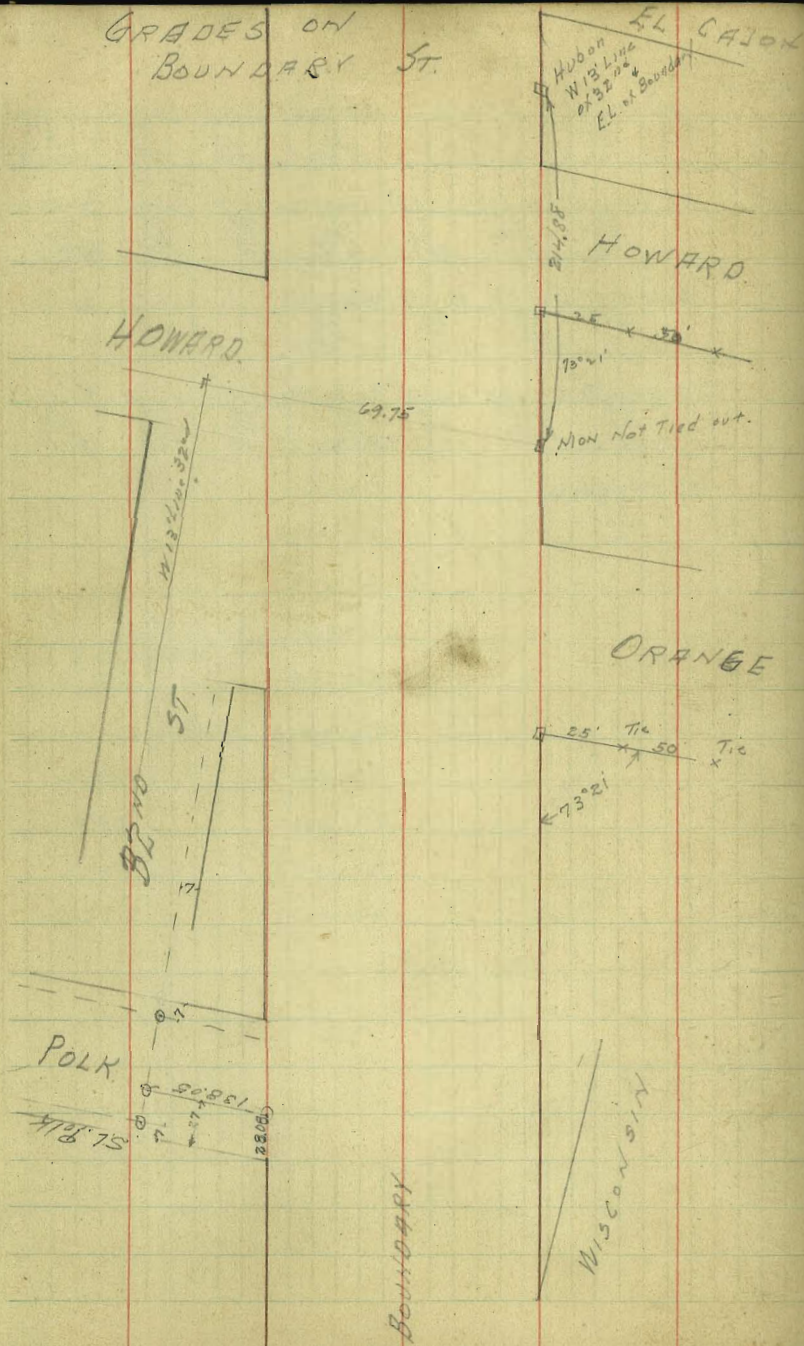
350.09

1616

NL 342.71	343.85	343.99	344.13	344.27	344.41	
63 57	62 56	61 55	60 54	59 53	58 52	
+1.1	+1.1	+1.0	+0.9	+0.9	+1.0	
NL 344.55	344.69	344.84	344.99	345.14	345.25	345.54
64 58	63 57	62 56	61 55	60 54	59 53	58 52
+1.1	+1.3	+1.3	+1.5	+1.8	+1.0	+1.0
NL 345.04	344.84	344.04	343.54			
60 54	55 49	60 54	65 59			
+0.3	-0.2	+0.6	+1.4			
SL 344.50	344.33	344.15	343.98	343.80	343.63	343.45
55 49	54 48	53 47	52 46	51 45	50 44	49 43
+1.2	+2.1	+2.5	+2.4	+3.0	+2.0	+1.0
SL 343.85						
68 62						
-0.3						



GRADES ON  
BOUNDARY ST.









Grades on Boundary St.  
Cont.

W.L. sta.	W.L.	F.L. Sta.	F.L.
0+00 = SL PAH	347.25	0+00 = SL PAH	344.25
0+28.12 = NL Alley	347.06	0+52.30	343.91
1+00 .90 = SL Alley	346.57	0+60.65	
1+41.96 = Δ 9'16" 27"	346.29	1+09.79	343.54
1+88.50	345.98	1+52.93	343.22
2+35.04 = Δ 9'16" 27"	345.67	2+02.07	342.90
2+84.74	345.34	2+57.21	342.58
3+34.44	345.00	3+04.35	342.26
3+84.14	344.66	3+55.49	341.94
4+33.84	344.33	4+13.6	341.55
4+83.54	344.00		
5+33.24	343.66		
5+82.94	343.33		
6+32.64 = NL Lincoln	343.00		

35304 = R.P. 58 Cont. PAH + 32' incl.

W.L.	F.L.	W.L.	F.L.	W.L.	F.L.	W.L.	F.L.
343.57	347.25	347.06	346.57	346.29	345.98	345.67	345.34
55.8	8.77	8.94	2.58	2.86	3.17	3.48	
349.15	3.3	3.6	1.5	0.3	2.4	3.2	
WL 345.34	345.00	344.66	344.33	344.00	343.66		
4.8	4.2	4.17	4.82	5.2	5.47		
5.2	4.3	3.7	3.4	3.1	2.2		
WL 343.33	343.00						
5.92	6.2						
3.1	6.3						
-1.3	-0.1						
FL 344.25	343.91	343.54	343.22	342.90	342.58		
4.9	5.2	5.6	5.9	6.2	6.57		
5.3	7.3	12.2	12.5	17.5	16.6		
-0.4	-2.1	-6.6	-6.9	-11.3	-10.0		
FL 342.26	341.94	341.55					
6.79	7.2	7.6					
1.59	14.0	9.1					
-9.0	-6.8	-7.5					



Grades on Boundary  
UNIV. TO LINCOLN

20

The right page of the notebook features a large grid of graph paper. The grid is composed of 20 columns and 20 rows of small squares. A vertical red margin line is positioned on the left side of the grid, approximately one-fifth of the way across the page. The grid is otherwise empty.



Sewer Location & Construction  
Neale St. So Pringle

B.M.	2.42	267.49	265.07	HW Pringle Washburn
0+00 DE		7.78	59.71	57.00 + 2.71
+50 A.L. Break		8.51	58.93	55.00 + 3.93
TP	0.47	256.14	11.82	255.67
* 1+00 A.R. Bkt		4.32	51.82	245.00 + 6.82
+50 Bkt		6.13	50.01	242.00 + 8.01
TP	0.89	244.20	12.83	243.31
2+00		2.14	41.76	
+02 Bkt			37.51	232.50 + 5.01
+27 A.L. E. Neale Bkt		10.28	33.92	229.00 + 4.92
TP	0.18	231.58	12.80	231.40
+75		3.79	21.79	216.04 + 5.75
TP	0.30	218.77	13.11	218.47
3+25		11.59	7.18	02.52 + 4.66
TP	0.37	206.15	12.99	205.78
TP	0.47	193.96	12.61	193.49
3+75 Break		12.5	92.71	189.00 + 3.71
4+02 E. Keating M.H.		2.08	91.82	26.93 + 6.89
+35 O Break		15.00	88.10	184.40 + 3.70
TP	0.61	181.49	13.08	180.88
+75 Bkt		9.90	71.59	168.00 + 3.59
TP	0.32	168.81	13.00	168.49
TP	0.46	156.23	13.64	155.77
5+25		8.72	47.51	46.09 + 1.42
TP	0.42	143.65	13.00	143.23
TP	2.60	133.80	12.45	131.20
5+73 Existing M.H. Top		3.65	30.15	
Flow 4.0 c		9.61	124.20	125.00 + 5.00

21  
3.21.10  
S. Pringle  
Washburn

11.25	0.20	92.21	92.01	
+29		1.0	91.2	
+44		9.2	83.0	
+55		12.1	80.1	
TP	0.53	79.68	13.04	79.15
+75		8.0	71.7	
TP	0.26	67.16	12.78	66.90
5+00		7.3	59.9	

E. Neale St.  
1888 H.

0+0 M.H. 2+27		229.00	
30' A. Break	7.72	411.4	387.00 + 4.16
65' N	4.25	441.3	340.00 + 4.63
100' N DE	11.5	477.3	343.00 + 4.73



Grades on Polk  
32<sup>nd</sup> to Boundary

	SL	NL
0+00 = 3L CB	353.06	NL CB = 352.94
0+00 = Prop. Grades	353.31	353.19
0+38.63	351.62	351.21
0+77.26	349.93	349.23
1+15.90 = NL Polk + 32 <sup>nd</sup>	348.24	347.25
1+38.76 = SL Polk + 32 <sup>nd</sup>	347.25	

353.04 = B.M. SE COR. POLK + 32<sup>nd</sup> incl  
299  
356.02

	NL 351.21	349.23	347.25
	$\frac{4.8}{4.2}$	$\frac{6.7}{5.2}$	$\frac{8.0}{7.5}$
	+ 0.6	+ 1.2	+ 1.3
SL 351.62	349.93	348.24	347.25
	$\frac{4.4}{3.5}$	$\frac{6.10}{5.6}$	$\frac{7.8}{7.1}$
	+ 0.9	+ 0.50	- 5.3
			- 12.1
			- 5.8



4th St West PAVING

SW.B.P. 1.39

1.44 1.01

1.52 1.52

0.88

1.37

0.72 0.76

1.23 1.31

0.65 0.68

1.10 1.10

0.75

1.09 1.12

0.71

1.18

0.74

1.22 1.36

0.80

SW.B.P. 4.91

5.21 4.65

5.47 5.82

4.53

5.27

4.49 4.49

5.10 5.12

4.32

4.28

5.08 5.20

4.36

5.0 4.40

5.02 5.45

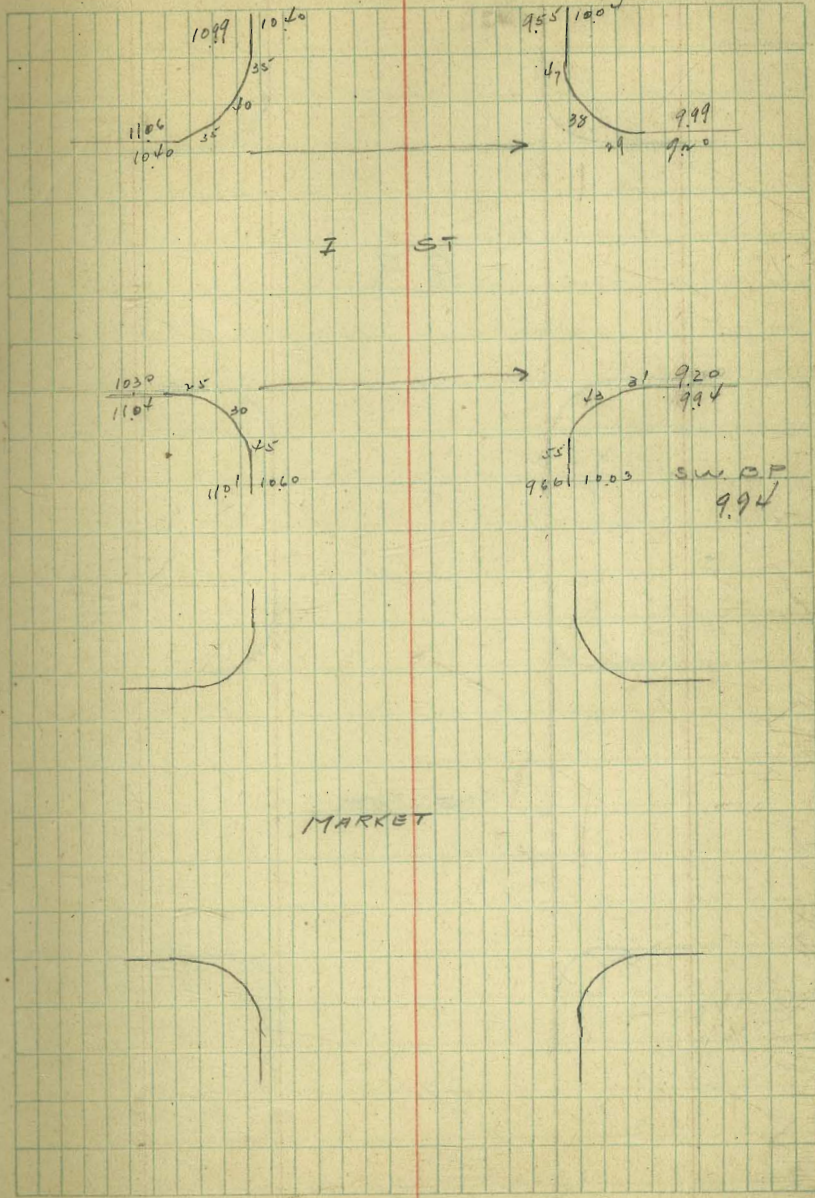
4.93

5.14 5.41

4.97 4.97

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I ST

MARKET

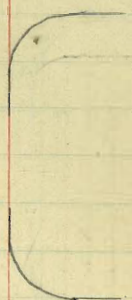
Calculated by E.O.W. 194



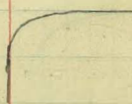
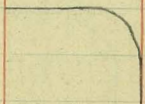
4th ST PAVING



G ST



F ST

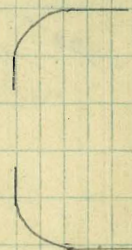


4th ST PAVING

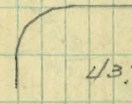
24



E ST



BROADWAY



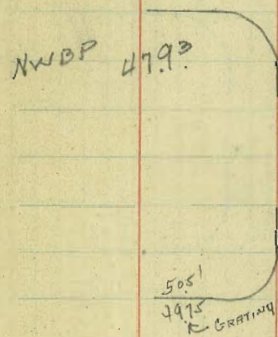
4371 SWBP



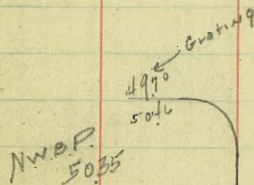
4th ST PAVING



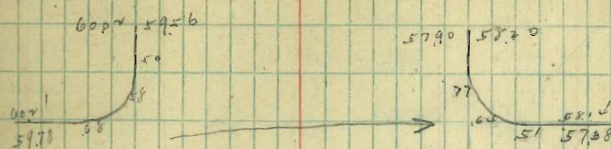
C ST



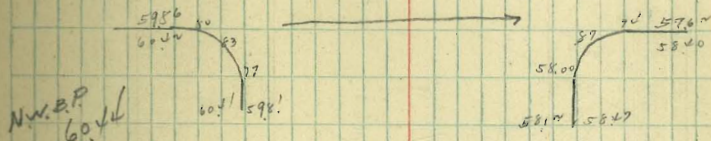
B ST.



4th ST PAVING



A ST









9/21/21 Corogorof

GRADES ON  
STRAND WAY  
BLK 389 Pacific Beach  
W.L. F.L.

3L Pacific Ave.	6.15	5.99
50' S	5.80	5.54
100'	5.45	5.18
125' - 1/2 L Alley	5.28	5.00
3L Alley	5.14	4.90
25' S	4.97	4.67
75'	4.61	4.21
125' - 1/2 L Alley	4.25	3.75

111 Nail in pole 35 Pacific + Mission Blvd  
7.76

125' 11.20 9.2 7.2 2.16 2.77  
11.20 5.2 3.2 1.20 1.77  
11.20 5.2 3.2 1.20 1.77

	3L Pacific	50'	100'	1/2 L Alley	3L Alley	25'	75'
W	315 221 615 + 0.06	270 5.66 580 - 0.17	414 522 513	449 489 528 - 0.41	439 497 514 - 0.17	471 465 497 - 0.32	
E	371 565 878 - 0.25	371 565 582 + 0.11	438 506 518 - 0.12				519 419 467 - 0.48
W	467 467 461 + 0.08	471 465 425 + 0.40					
E	427 509 421 + 0.88	403 333 378 - 0.42					E 528 4.51 3.48 4.26

111 Nail Pole S.E. Pacific + Mission Blvd  
7.76

	W 6.15	5.80	5.45	5.28	N Alley	S Alley	4.97	4.61	4.25
	2.72	3.07	3.42	3.59	3.73	3.90	4.26	4.61	4.62
	2.67	3.10	3.45	3.64	3.73	3.87	4.26	4.61	4.61
	0.054	0.052	0.021	0.026	0.11	0.034	0.01	0.014	0.014
E	5.90	5.54	5.18	5.00	4.90	4.67	4.21	3.75	
	2.87	3.33	3.67	3.87	3.97	4.20	4.66	5.12	
	2.43	3.33	3.67	3.78	3.94	4.11	4.58	5.11	
	0.024	0.01	0.024	0.024	0.114	0.074	0.074	0.074	0.074
W	3.18	3.55	3.93	4.06	4.16	4.40	4.88	5.18	



GRADES IN  
ALLEY BLK LOMA GRANDE  
✓ 11 BROOKES

	W.L.	E.L.
3 L. Brookes		
10' S	272.8	273.0
55' S	277.2	277.35
100' S	281.6	281.7
130' S	282.8	283.0
180' S	283.2	283.4
226.67 S	282.93	283.06
273.33 ~	282.67	282.73
320' S	282.4	282.4
365' S	281.94	281.94
410' S	281.47	281.47
455' S	281.0	281.0
500' S	280.53	280.53
545' S	280.07	280.07
590' S	279.6	279.6
600' S = NL Walnut		

268.82 Walnut  
277.27 Brookes

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	W	E	W	E	W	E
TR	276.59	276.59	276.59	276.59	276.59	276.59
10' S	4.84	4.84	4.84	4.84	4.84	4.84
55' S	1.23	1.23	1.23	1.23	1.23	1.23
100' S	3.38	3.38	3.38	3.38	3.38	3.38
130' S	1.00	1.00	1.00	1.00	1.00	1.00
180' S	1.00	1.00	1.00	1.00	1.00	1.00
226.67 S	1.00	1.00	1.00	1.00	1.00	1.00
273.33 ~	1.00	1.00	1.00	1.00	1.00	1.00
320' S	1.00	1.00	1.00	1.00	1.00	1.00
365' S	1.00	1.00	1.00	1.00	1.00	1.00
410' S	1.00	1.00	1.00	1.00	1.00	1.00
455' S	1.00	1.00	1.00	1.00	1.00	1.00
500' S	1.00	1.00	1.00	1.00	1.00	1.00
545' S	1.00	1.00	1.00	1.00	1.00	1.00
590' S	1.00	1.00	1.00	1.00	1.00	1.00
600' S = NL Walnut						

1.20  
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13.48  
26.7  
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9/28/25  
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5 3/10

Grades 17  
E. + W. Alley Bk 139 Univ Hgts.  
Cleveland to Maryland.

S. L.

N. L.

Est. Maryland.

3+80	300. 0	299. 80
3+60 Brk.	301. 00	300. 80
3+20	302. 0	301. 75
2+80 Brk.	303. 00	302. 70
2+50	303. 00	302. 95
2+20 Brk	303. 50	303. 20
1+80 - W. Alley on N	302. 95	302. 30
1+63 - E. Alley on N	302. 60	302. 10
1+40 Break.	302. 60	302. 30
0+80	303. 60	303. 47
0+40	304. 60	304. 64
74.7 on N	202.00	
87.3 on S	Break	305. 80
436.5 Won S	307. 09	
36.35 Won N		307. 30
W. Cleveland	308. 55	308. 81

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312.02 SE Cleveland + Tyler

387							
31599							
7.8							
30791							
4.24							
31315							
7.10							
30525	N	30730	30584	30464	30347	30230	30110
372		5.85	7.35	4.16	5.33	6.50	6.70
30984		4.02	4.11	4.42	5.52	6.22	5.70
4.54		+7.88	+3.24	-0.29	-0.19	+0.28	+1.00
30230							
4.58							
30688							
	S	30797	30560	30460	30360	30260	30160
		4.08	7.55	8.54	5.20	6.20	6.40
		4.08	5.54	5.77	4.80	5.28	5.40
		+2.00	+2.00	-0.22	+1.00	-0.08	+1.00
	N	30230	30340	30290	30270	30175	30080
		6.50	5.60	5.85	6.10	5.13	6.08
		7.36	4.60	4.22	5.80	4.89	6.03
		-0.86	+1.00	+1.95	+0.20	+0.76	+0.05
	S	30291	30250	30225	302	30100	301.00
		5.85	5.34	5.58	5.80	4.88	5.88
		2.85	4.30	3.55	4.80	4.29	4.25
		+3.00	+1.00	+2.00	+1.00	+0.19	+1.00
	N	29980					
		7.08					
		+0.60					
	S	300					
		6.85					
		1.2					
		+0.76					



9/28/21

GRADES ON 19TH ST  
Broadway to B ST

	W.L.	E.L.
300' N = SLB	62.25	62.25
250' N	62.75	63.07
200' N	63.25	63.89
150' N	63.75	64.71
100' N	64.25	65.52
50' N	64.75	66.33
N.L. C ST	65.25	66.90
300' N = SL C	65.25	66.75
250' N	69.25	70.86
200' N	73.25	74.71
150' N	77.25	78.59
100' N	81.25	82.42
50' N	85.25	86.28
N.L. Broadway	89.25	89.88
		90.13

62373  
34530

8904 SW 19th St Broadway

	50	100	150	200	250	300
82.25						
82.25						
82.34						
82.34						
82.19						
82.07						
82.92						
82.18						
82.10						
81.12						
81.98						
81.44						
81.00						
81.40						
81.71						
81.71						
E	12.56	2.55	5.79	6.72	0.54	9.35
	84.72	83.64	80.40	79.47	75.56	66.75
	86.28	82.4	78.57	74.71	70.86	
	-1.6	+1.2	+1.8	+4.8	+4.7	
W	1.46	3.33	3.21	6.65	4.62	11.10
	85.62	83.90	84.07	80.63	81.57	85.00
	85.04	81.22	79.25	73.21	68.25	
	+1.04	+1.46	+1.68	+19.4	+12.3	
W	64.75	64.25	63.75	63.25	62.75	62.25
	2.1	3.2	3.7	4.19	3.4	3.86
	2.8	1.8	7.1	10.16	4.9	7.01
	0.0	+1.4	-3.4	-6.00	-1.5	-3.7
E	66.33	65.52	64.91	63.89	63.07	62.25
	1.11	1.92	2.7	3.59	4.4	3.86
	2.1	2.2	3.6	5.98	6.0	4.85
	-1.0	+0.17	-2.7	-2.4	-1.6	-0.5







Survey Construction: Lantana Drive

From Existing M.H. Euclid to D.F.

C' offset N

0 + 09 = D Euclid Lantana	330.92
+ 57.75	331.18
1 + 03.5	331.43
+ 55.25	331.69
2 + 07.0	331.94
+ 58.75	332.20
3 + 10.5	332.46
+ 62.25	332.71
4 + 14.05 = M.H. Δ	332.97
48' 5 of 119.05	332.21
95.98	333.45
1143.97	333.69
+ 91.96	333.93
2 + 39.96	334.17
+ 87.95	334.41
3 + 35.95 = M.H.	334.65
48.33' 5 of 3 + 35.95	334.89
96.66	335.13
1 + 45	335.37
+ 93.33	335.61
2 + 41.66	335.85
+ 90.0 D.F.	336.10

341.10 51.25 at 153 4117.52	345.13 5.10 349.53 M.H.	345.63 31.12 144.5 3.60 + 11.45	345.13 31.20 142.0 3.20 + 11.00	345.13 31.27 139.4 2.97 + 9.97	
341.66 7.77	345.63 31.92 32.20 13.67 4.41 + 9.23	345.63 32.20 32.46 13.43 4.37 + 9.05	345.63 32.46 32.71 13.17 4.22 + 9.43	345.63 32.71 32.97 12.98 4.00 + 8.98	
337.29 = 337.27					
	345.63 33.21 12.23 3.97 + 8.45	346.60 33.45 13.15 4.37 + 8.78	346.60 33.69 12.91 4.56 + 8.35	346.60 33.93 12.67 4.32 + 8.39	346.60 34.19 12.43 4.54 + 7.87
	346.60 33.41 12.10 4.41 + 7.78	346.60 33.65 11.95 4.20 + 7.55 M.H.	346.60 33.89 11.71 4.22 + 7.47	346.60 34.13 11.47 4.22 + 7.60	346.60 34.37 11.23 4.22 + 7.37
	346.60 35.21 10.90 4.55 + 4.44	346.60 35.45 10.75 4.22 + 3.26	346.60 35.70 10.50 4.22 + 1.55		

10.75  
Gasson  
Bliss  
Northern



Pairing A No. 1 Blk 1 U+H Sub. Gettysburg Kansas State  
 From H.L. Adams to S.L. Works - 20' wide  
 (3uncres) E.L.

N.L.		E.L.
H.L. Adams	388.72	388.78
40' N Blk	389.50	389.50
50' N	389.45	389.45
100' N	389.24	389.22
150' N	389.02	389.00
200' N	388.81	388.77
250' N	388.59 S.L. Works Ave	388.59

33.25  
 53.50  
 91.50  
 145.25

389.04 S.E. Adams 30' x 50'

389.12		389.04	389.88	389.87	389.82	389.64
389.13	F	388.78	389.50	389.45	389.82	389.02
389.14		5.84	4.37	4.37	4.10	4.62
389.15		4.97 CB	4.45	4.33	4.73	4.58
389.16			-0.73	+0.04	-0.73	+0.06
389.17						
389.18		389.82	389.82	389.82	389.64	389.64
389.19	H	388.72	389.50	389.45	389.72	389.02
389.20		5.10	4.37	4.37	4.40	4.62
389.21		4.97 CB	4.45	4.33	4.51	4.71
389.22	Adams 30'		+1.07	+1.69	-0.11	-0.09
389.23						
389.24		389.64	389.64			
389.25	E	388.77	389.54			
389.26		4.87	5.10			
389.27		5.28	5.41			
389.28		-0.21				
389.29						
389.30	H	389.64	389.64			
389.31		388.81	388.59			
389.32		4.83	5.05			
389.33		4.78	5.50 Pairing			
389.34		+0.04				



Myrtle Street Parking

34 10-25

Richmond

SE Myrtle Richmond

280.02

278.04 277.48

278.42 279.01

300

275.09 274.47

274.25 Top Catch Basin

275.50 276.17

Catch Basin Top  
275.10

100

272.03 271.45

278.40 278.98

North Corb Lime

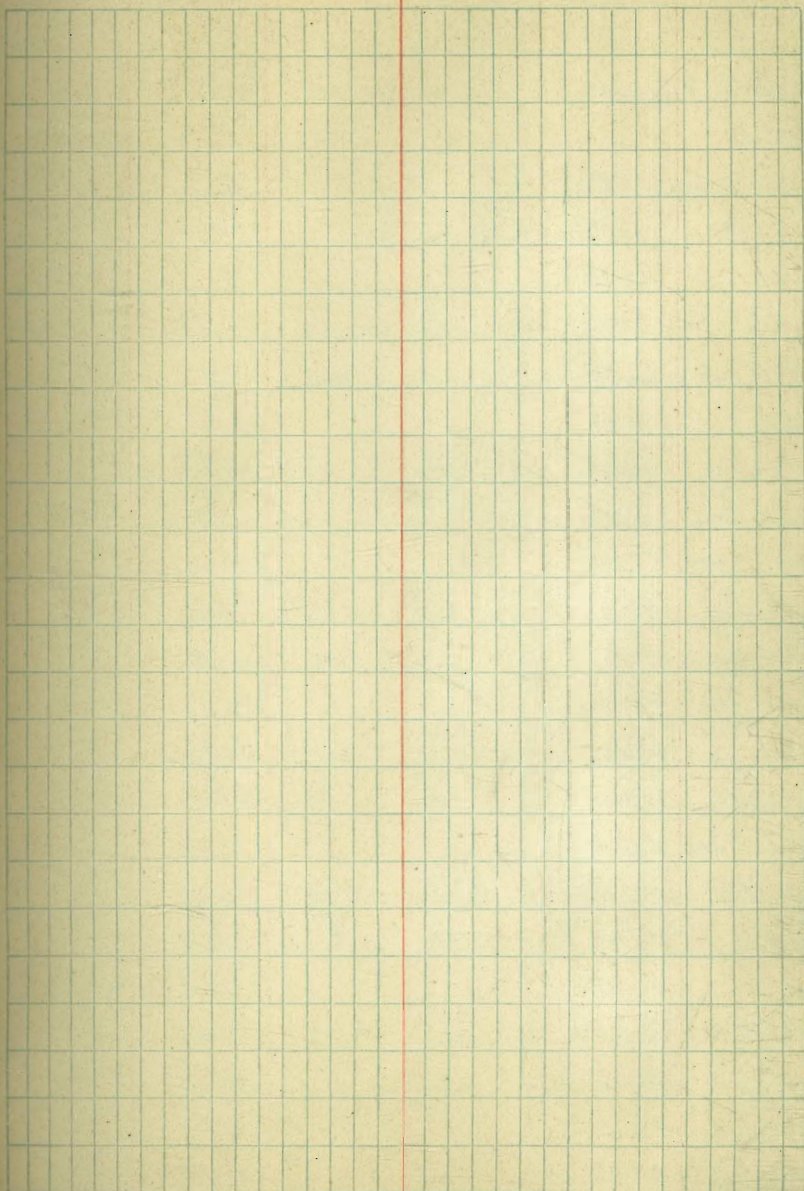
Myrtle

South Corb Lime

281.03 280.51  
T.P. 109

280.56 281.05  
T.P. 109

Vermont



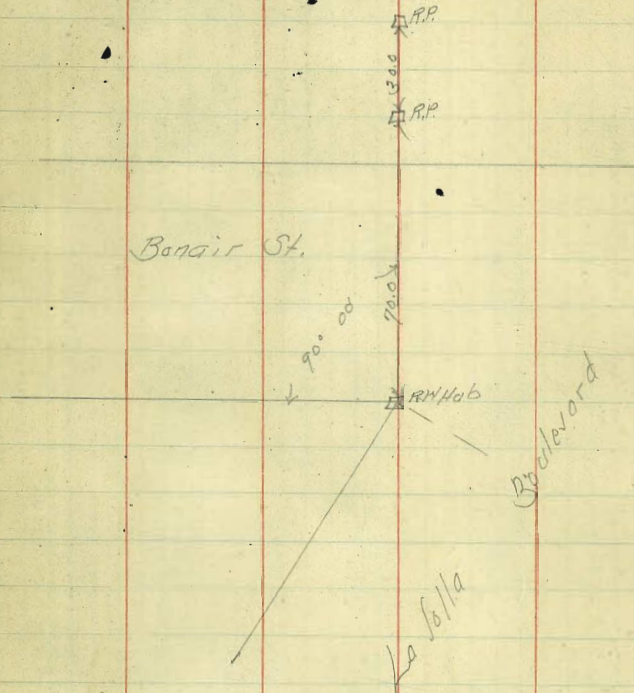






Grades on Bonair Street

Seh	N.L.
1065.3'N 36.75	37.25
1113.6'N 32.75	33.25
1162.0'N 28.75 EL. Station Place	29.25



40.09			
N	52.06	40.09	40.09
	37.25	33.25	29.25
	7.8	6.8	4.0
	10.5	7.2	10.1
	+7.3	+4.4	+0.7
S	40.09	40.09	40.09
	36.75	33.25	29.25
	3.3	7.3	11.3
	6.0	7.7	11.2
	-2.7	-0.4	+1.7 on top
	3.6		
		40.09	
		33.25	
		6.8	
		7.2	
		-0.9	







Grades on 35<sup>th</sup> St  
From S Line National to 160<sup>th</sup> South

	E Line	N Line
S Line National 12841.39	42.25	40.75
50' S 129	41.09	39.66
100' S 148	39.92	38.57
160' S 171	38.52	37.27
187' S	38.21	37.54
163' S	38.20	36.98
National		
	36.77	36.99
		41.05 41.96
36.76 <sup>Header</sup> 87.19 <sup>24</sup>	36.98	36.44
		37.38 38.24
		Header

44.19 SE National +35 12841.39 44.71	E	45.71 42.25 3.46 3.70	45.71 41.09 4.62 4.68	45.71 39.66 5.99 6.05	45.71 38.57 7.14 7.14
44.71			+2.10	+3.0	+1.9
44.71 39.66 44.39	N	45.71 40.75 4.96 5.83	45.71 39.66 6.05 3.97	45.71 38.57 7.14 4.87	45.71 37.27 8.44 6.26
			+2.1	+2.3	+1.6
44.42 37.54 1.90 5.95 +0.95		44.42 36.88 7.46 7.71 +2.75		44.39 36.91 7.48 7.67 +2.79	
44.42 36.88 5.63 5.89 +0.24	E	44.42 36.88 7.54 7.54 +0.24	44.42 36.88 7.54 7.54 +0.24		

38.75



Grades on Alley Between National & Newton  
West of 35th St. BIK 5, Chollas Add.

	NL	SL
NL 35th St	3740	3720
30' W	3775	3755
60' W	3809	3789
70' W	3812	3792
80' W	3800	3780
115' W	3727	3707
150' W	3654	3634

39.95	N	39.60	39.95	39.95	39.55	39.95	39.95	39.95
37.70		37.60	37.75	38.09	38.14	38.00	37.87	36.54
17.16		5.24	1.10	1.86	1.85	1.95	2.68	3.61
41.46		2.82	1.2	2.84	0.93	0.95	0.68	1.61
		+8.0	1.0	+1.00	1.18	1.00	2.0	1.00
		39.95	39.95	39.95	39.55	39.95	39.95	39.95
	S	37.60	37.55	37.89	37.91	37.80	37.07	36.34
		1.75	1.40	2.08	2.03	2.15	2.88	3.61
		0.95	1.8	2.84	2.43	2.69	2.88	1.61
		70.8	-0.4	-0.6	-0.4	-0.5	0.0	-0.00



Levels in Alley 187. N.E. Add

			N.L.	N.E. Section Beardsley
BM	5.22	50.12	44.90	
0+0 = 100' E.E.L. Beardsley			2.80	47.32
+20			2.75	47.37
+40			2.73	47.39
+60			2.60	47.52
+80			2.53	47.59
+100			2.50	47.62
+120			2.47	47.65
+140			2.34	47.78
TP	4.94	53.03	2.03	48.09
+60			5.09	47.94
+80			5.00	48.03
2+00			4.94	48.09
+20			4.88	48.15
+40			4.83	48.20
+60			4.72	48.31
+80			4.74	48.29
3+00			4.79	48.24
+20			4.72	48.31
+40			4.64	48.39
+60			4.46	48.57
+80			4.34	48.69
4+00			4.20	48.83
TP	2.58	50.34	5.27	47.76
BM			5.14	44.90

		Slope	
3.13	47.00	2.71	47.41
3.64	47.08	2.61	47.51
2.96	47.16	2.47	47.65
2.84	47.28	2.37	47.75
2.75	47.37	2.27	47.85
2.69	47.43	2.16	47.96
2.61	47.51	2.06	48.06
2.54	47.58	2.03	48.09
5.37	47.64	4.91	48.12
5.27	47.76	4.83	48.20
5.20	47.83	4.69	48.34
5.14	47.99	4.52	48.51
5.05	47.98	4.54	48.49
5.02	48.03	4.53	48.50
5.01	48.02	4.58	48.45
5.04	47.99	4.55	48.48
5.02	48.01	4.51	48.52
4.98	48.15	4.35	48.62
4.75	48.22	4.29	48.74
4.68	48.35	4.23	48.80
4.57	48.46	4.20	48.83

44.90  
50.34

N.E. Section  
Beardsley







Grades N + S Alley Bk II Mission Hills  
 From 34. Fort Stockton Dr to N.L. E. W. Alley

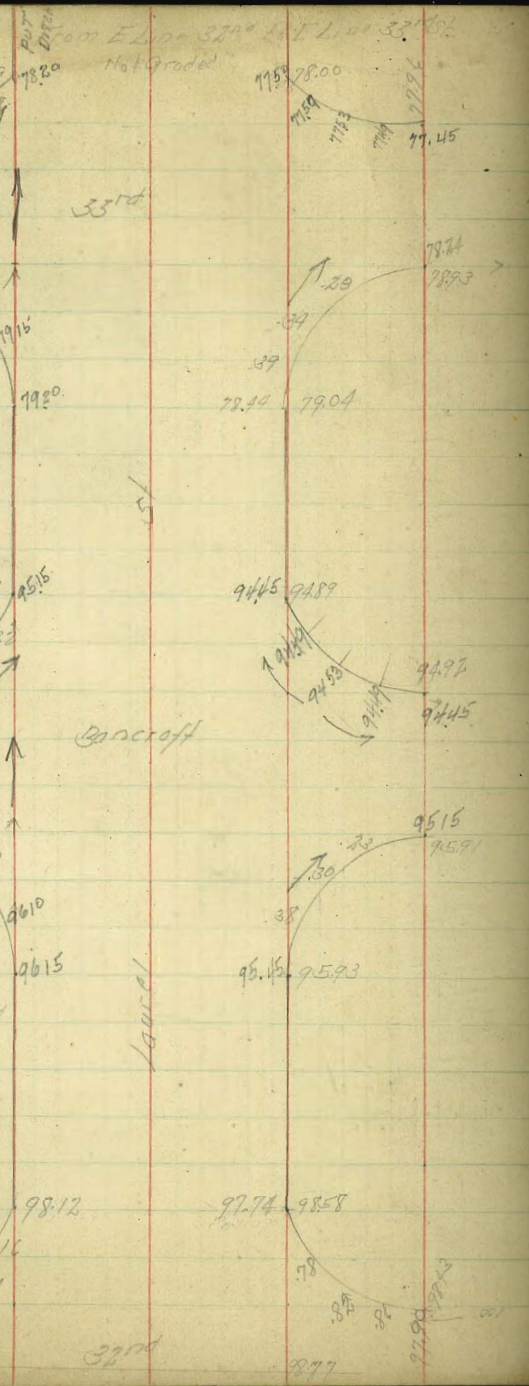
	NL	EL
N.L. E. W. Alley	274.80	274.60
52.88 N	274.12	274.02
105.76 N	273.43	273.46
158.64 N VC	272.75	272.88
166.14 N VC	272.48	272.60
173.64 N VC	271.88	271.91
196.14 S L 157 Stockton		269.22
199.5 N	268.90	

12  
 5300  
 3155  
 Northern

1104					
1056					
277.50		277.50	277.50	277.50	
277.50	N	271.88	272.88	272.75	
277.50		5.62	5.02	4.75	
273.68		8.82	2.22	4.54	
275.50			40.3	0.27	
277.26					
		277.50	277.50	277.50	
	E	272.22	272.10	272.88	
		8.28	4.90	2.62	
		8.51	4.61	2.50	
			40.4	40.1	
		277.50	279.26	279.26	
	N	272.43	272.88	272.80	
		2.07	5.14	4.46	
		3.60	5.82	4.12	
		7.05	10.1	4.30	
		272.50	279.26	279.26	
	E	273.11	274.02	274.02	
		4.04	5.77	4.66	
		3.86	5.80	4.62	
		4.02	0.0	0.0	

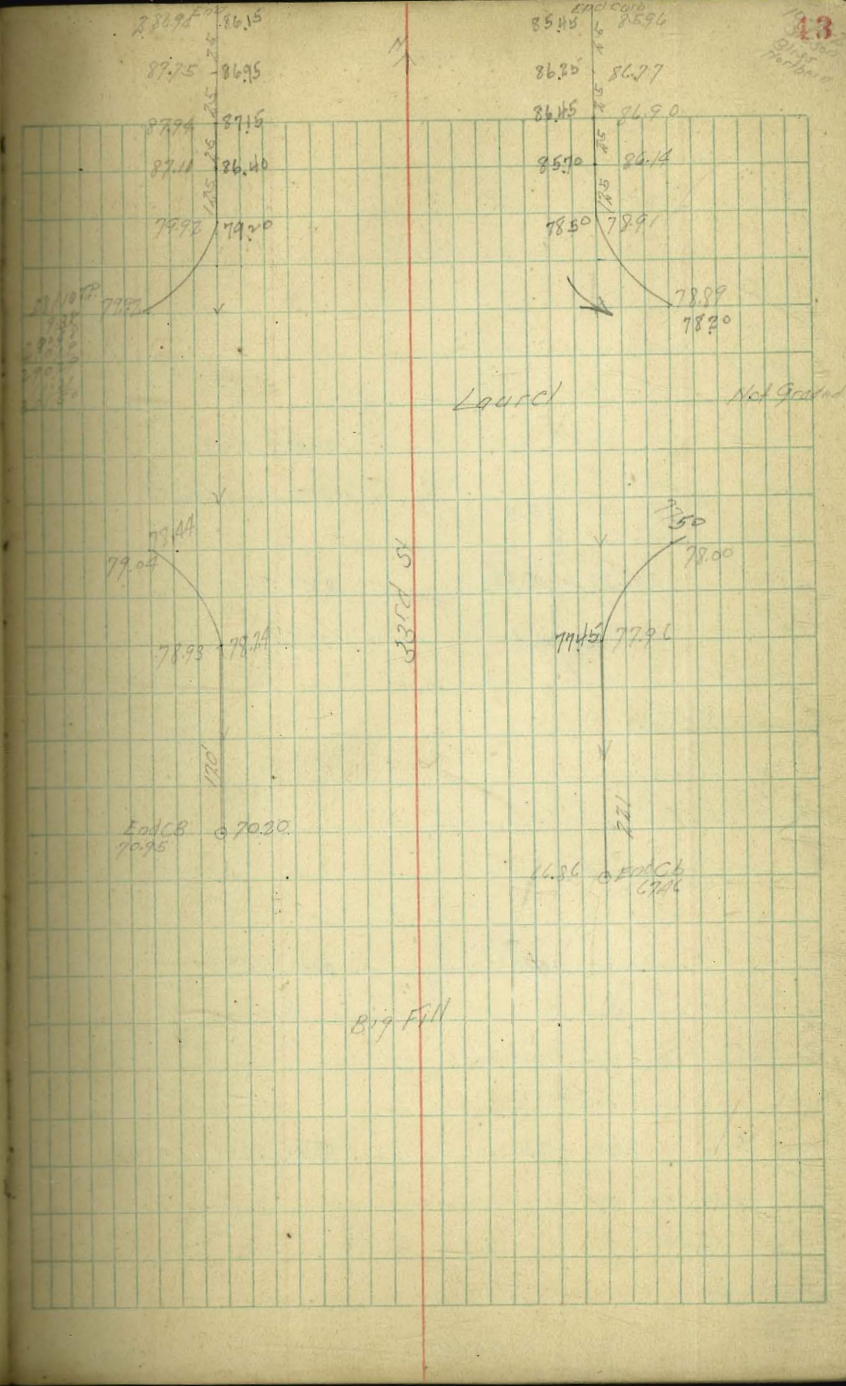


Laurel St Paving



- 778.10
- 2.43
- 301.03
- 12.57
- 288.51
- 0.53
- 287.04
- 11.26
- 275.78
- 278.23

End  
788.53



13

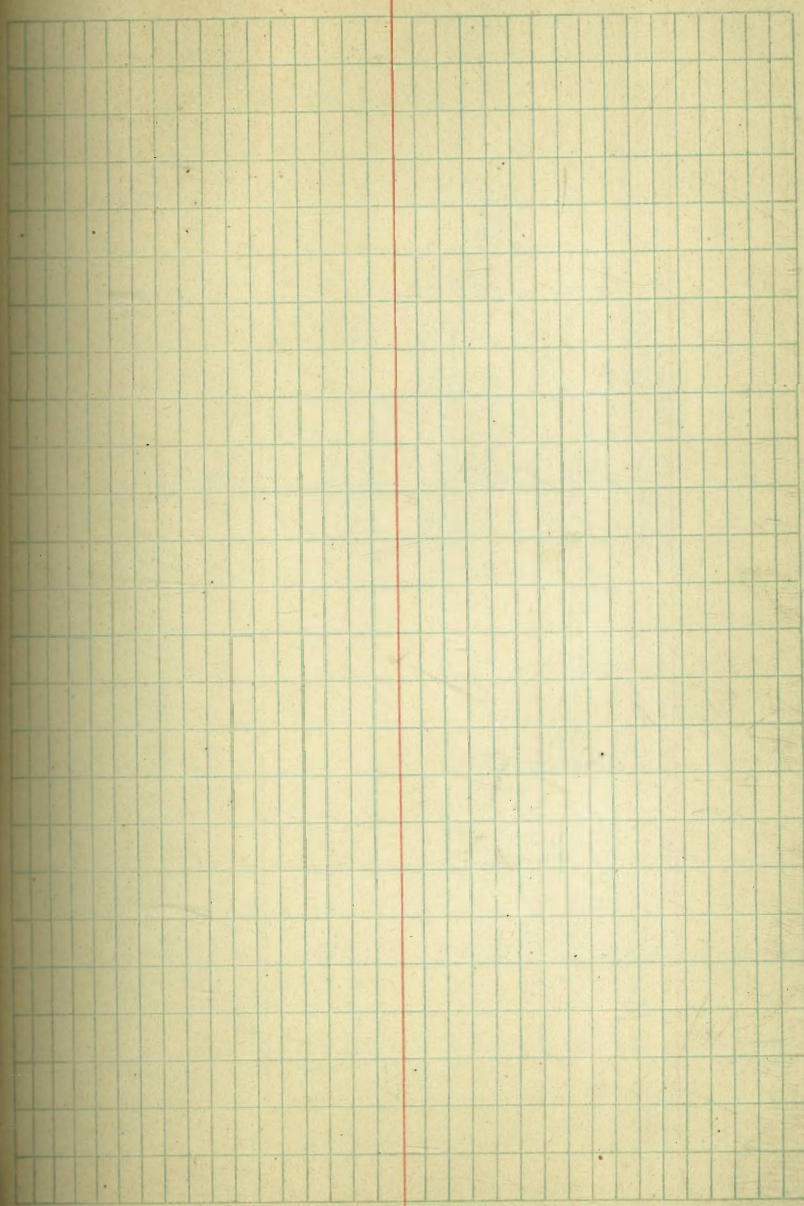
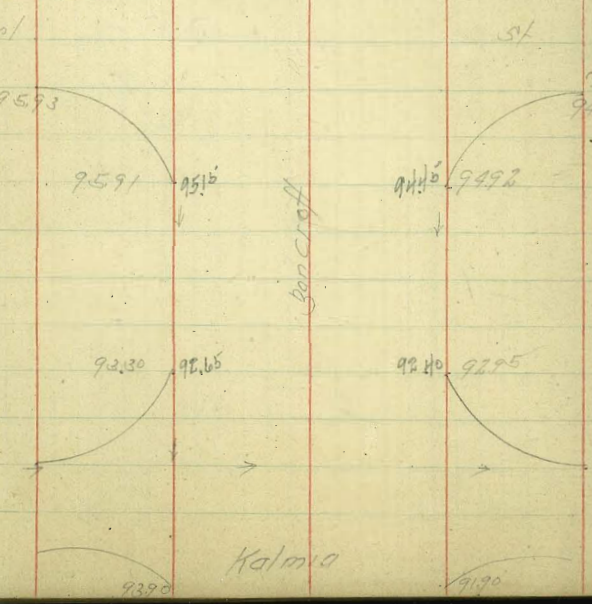
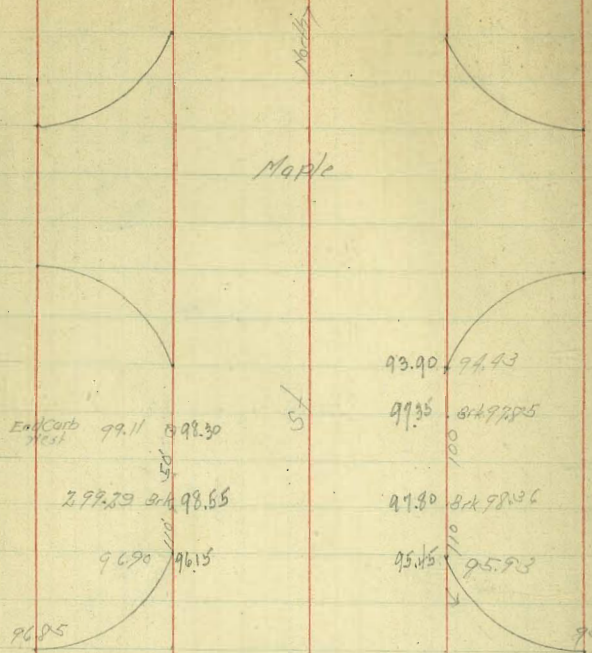
End CB  
70.20

Big Elm



Bancroft St. Fairway  
From Slino Maple to N. Line Kalmia

301.50 Hl.  
2.47  
299.03  
1.07  
300.10  
3.22  
296.33  
5.66  
301.90  
3.37  
298.53 2M  
298.



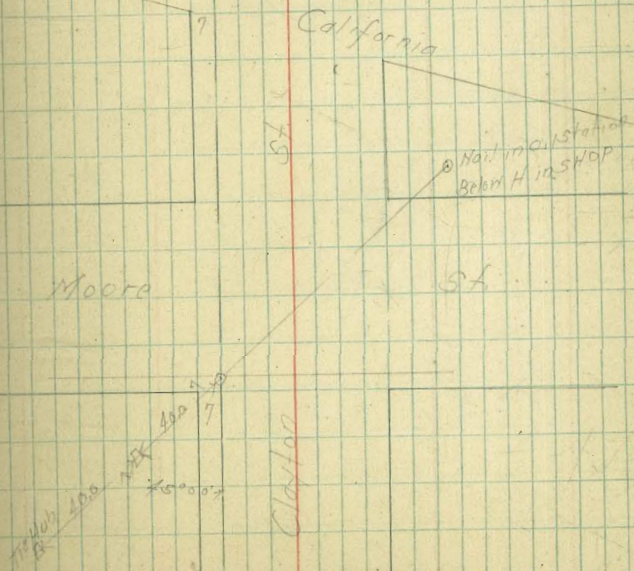


Clayton St Grades  
From S.L. California to N.L. Hancock

AS 25  
1930  
Gins  
Harber

	N	E
S.L. Calif	60.25	60.00
49.5'S	54.25	
99.0 S - N.L. Moore	48.25	50.25
S.L. Moore	48.25	48.75
50'S	43.75	44.13
100'S	39.25	39.50
150'S	34.75	34.88
200'S - N.L. Hancock	30.25	30.25

	60.43	60.13	60.63		
1000 ft to D. H. Moore	60.00	54.25	49.25		
	0.43	5.88	1.40		
	0.2088	6.08	1.60		
		1.83	1.45		
		1.77			
			60.63		
			50.25		
			10.30		
			6.69		
			+3.69		
	49.27	49.27	49.27	39.36	39.36
100 ft	48.25	43.25	39.25	34.75	30.25
	1.0	5.5	1.00	4.6	9.1
	4.6	8.7	12.8	6.0	8.6
	-3.6	-3.3	-2.8	-1.4	7.05
	49.27	49.27	49.27	39.36	39.36
	48.25	44.13	39.50	34.88	30.25
	0.5	5.1	9.8	4.5	9.1
	0.7	6.8	10.8	5.2	8.1
	-0.2	-1.7	-1.0	+0.3	+1.0





Carb Stakes ON PUTERBAUGH  
Pringle West 250ft.

	N.L.
11.6 Pringle	229.00
35' W	229.50
70' W Brk.	230.00
100' W	229.25
130' W Brk	228.50
160' W	225.25
190' W Brk	222.00
220' W	217.50
250' W	213.00

11-26.5

227.76	50' Pringle	N	228.00	229.50	230.00	
1.07	100' Pringle		2.94	2.34	1.84	
237.84				2.18	2.09	
9.22				10.18	-0.25	
228.50						
0.26						
228.56	N	229.25	228.50	225.25	222.00	222.76
3.07		2.59	3.34	6.59	9.84	5.26
229.69		2.23	3.37	5.77	9.34	3.07
10.62		-0.14	-0.03	10.82	+0.50	12.19
220.37						
2.22						
227.76	N	213.00				
	250'	9.76				
		12.30				
		-2.54				







CONSTRUCTION OF CULVERT  
SIERRA AVE.

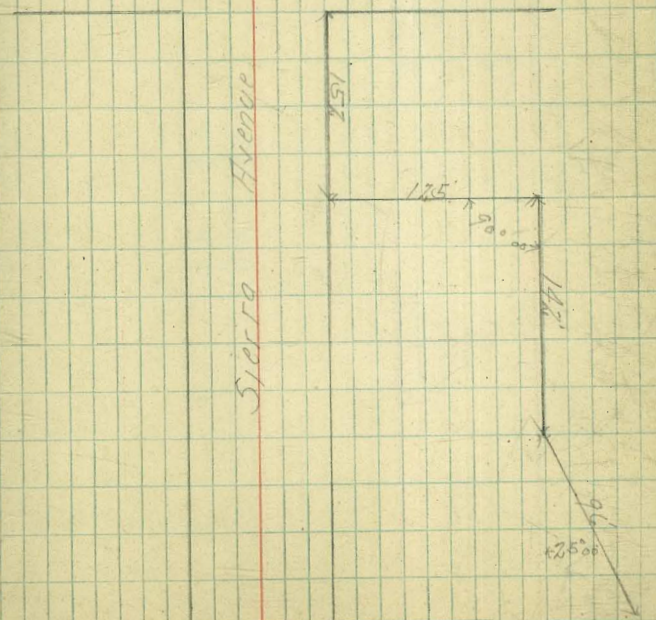
11-28.25

0+0 = E.L. Sierra Ave	331.15	Flow Line
+50	330.65	
+100	330.15	
+125 ΔR 90°00'	329.90	
+75	329.40	
2+25	328.90	
+67 <sup>85'</sup> ΔL 75°00'	328.50	
3+17	324.07	
+63	320.00	

335.15 Slab at 1450.00 F

330.00					
12.75					
327.25	331.15	330.65	330.15	329.90	329.40
326.69	78	8.35	8.85	9.10	9.60
322.97	35	2.1	1.2	1.8	2.2
	+7.3	+6.2	+7.7	+7.8	+6.9
	329.90	328.50	324.07	328.90	328.00
	10.1	10.5	12.9	12.9	
	5.1	6.8	12.8	12.1	
	+5.0	+3.7	+2.1	+0.8	

Castle St



Howard St















Grades in Alley  
Block A Bloirs Highland Addition  
16' wide

	E.L.	N.L.
S.L. Redwood	313.45	312.99
30'S	314.40	314.20
60'S Bk	314.50	314.50
100'S	314.25	314.25
140'S Bk	314.00	314.00
180'S	313.00	313.00
220'S	312.00	312.00
260'S	311.00	311.00
300'S Bk	310.00	310.00
350'S	308.10	308.10
400'S	306.20	306.20
450'S	304.30	304.30
478'S Bk	302.20	302.20
519'S	303.20	302.90
558'S	303.20	302.60
598'S N.H. Palm	303.20	302.30

12-6-25  
5705

	30'S	60'	100'	140'	180'
312.95	312.17	312.17	312.17	312.17	312.17
312.97	312.95	312.40	312.51	312.65	312.65
312.99	-5.72	0.77	2.27	4.92	5.17
313.01		0.82	3.20	5.68	5.17
313.02		+1.10	40.97	+1.00	11.00
313.03		11.28			
313.04		11.28			
313.05		5.11			
313.06					
313.07					
313.08					
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313.94					
313.95					
313.96					
313.97					
313.98					
313.99					
314.00					











Grades in Alley Back 73 Ocean Beach  
From EL Abbott to N.L. Bacon

700 Side

155.85

	N.L.	S.L.
EL Abbott	5.95	6.00
50'E	6.28	6.33
100'E	6.60	6.67
150	6.93	7.00
200	7.25	7.33
250	7.58	7.67
300	7.90	8.00
350	8.23	8.33
400	8.55	8.67
450	8.88	9.00
500	9.20	9.33
550	9.53	9.67
600 = N.L. Bacon	9.85	10.00

SP NE	17.15	17.15	17.15	17.15	17.15	17.15
Repair EL Abbott	17.15	17.15	17.15	17.15	17.15	17.15
N	6.28	6.60	6.93	7.25	7.58	7.90
	11.80	10.87	10.55	10.26	9.90	9.53
		9.27	9.05	8.70	8.30	7.90
		+1.00	+1.50	+1.66	+1.90	+2.13
S	6.00	6.33	6.67	7.00	7.33	7.67
BM	11.15	10.88	10.49	10.13	9.78	9.46
NE		9.33	8.58	8.13	7.54	7.00
Bacon 1105		+1.50	+1.90	+6.04	+6.08	+7.06
						-0.37
N	8.23	8.55	8.88	9.20	9.53	9.85
	5.95	6.28	6.60	6.93	7.25	7.58
	9.25	8.45	6.34	7.08	5.19	5.37
	-0.38	-0.05	+0.16	+0.84	+0.86	
S	9.33	9.67	10.00	10.33	10.67	11.00
	8.88	8.55	8.23	7.90	7.58	7.25
	6.40	5.18	4.06	3.09	2.25	1.50
		+0.09	+1.04	+0.93	+0.98	



17-16-25  
526  
Herbers

Hog Canon Road Change

11+50	0.30	300.30		300.00		
11+0			18	298.5	298.0	
+6.8	PT.		2.9	297.4		
10+0			5.0	295.3	295.0	+0.3
+7.50			5.7	294.6	293.5	+1.1
9+00	2.38°		4.6	295.7	292.0	+3.7
+7.50			7.6	292.7	290.5	+2.2
8+0			10.0	290.3	289.0	+1.3
+88.7	PC. 414°		2.4	290.9		
+50			12.4	287.9	287.5	+0.4
7+00			13.8	286.5	286.0	+0.5
+7.50			9.5	290.7	288.5	+2.2
6+00			11.9	288.4	281.0	+7.4
TP	0.48	287.99	12.79	287.51		
+7.50			4.1	283.9	278.5	+5.4
5+0			9.0	279.0	276.0	+3.0
+7.50			12.6	275.4	273.5	+1.9
4+00			11.7	276.1	271.0	+5.1
+7.50			12.6	275.4	268.5	+6.9
TP	0.42	275.51	12.90	275.09		
3+0			4.0	271.5	266.0	+5.5
+7.50			8.3	267.2	263.5	+3.7
TP	2.30	266.05	12.76	262.25		
2+00			4.2	261.8	261.0	+0.8
+7.50			8.4	257.6	258.5	-0.9
TP	3.00	256.62	12.43	253.62		
1+0			5.4	251.2	256.0	-4.8
+7.50			5.0	251.6	253.5	-1.9
0+0			6.96	249.66	251.0	-1.3

0+0 = 20+0 on 1/46

+300.2

+100.15



Grades On 30° S  
From S.L. Woolman to  
(Ocean View)

	E		W	
S.L. Woolman	86.25	86.00	88.25	88.00
50's	84.50		86.75	
100's	82.75		84.50	
150's	81.00		82.75	
200's	79.25		80.92	
250's	77.50		79.08	
300's - N.L. Valle	75.75		77.25	

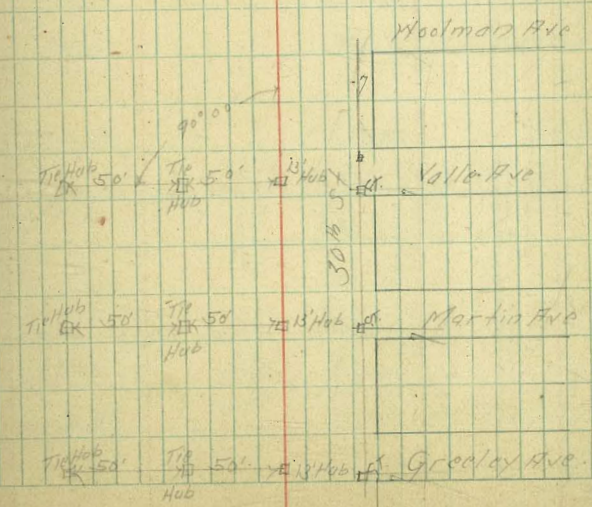
S.L. Valle	74.25		75.25	
50's	73.50		74.75	
100's	72.75		73.50	
150's	72.00		72.75	
200's	71.25		71.92	
250's	70.50		71.09	
300's - N.L. Martin	69.75		70.25	

2-57  
1.5

N.L. Woolman  
+304

100'	92.67	92.7	92.67	92.7	92.67	92.7	92.67	92.7
200'	88.25	88.50	88.25	88.60	88.25	88.50	88.25	88.50
300'	6.4	7.2	6.9	7.7	6.4	7.2	6.9	7.7
400'	6.7	7.4	7.1	8.2	6.7	7.4	7.1	8.2
500'	-0.3	+0.8	+0.8	+3.7	-0.3	+0.8	+0.8	+3.7
600'								
700'								
800'								
900'	92.67	92.7	92.67	92.67	92.7	92.67	92.7	92.67
1000'	88.25	88.50	88.25	88.25	88.50	88.25	88.50	88.25
1100'	7.7	6.3	8.1	8.9	7.7	6.3	8.1	8.9
1200'	3.9	3.1	4.9	4.7	3.9	3.1	4.9	4.7
1300'								
1400'	+0.5	+2.7	+3.3	+5.1	+0.5	+2.7	+3.3	+5.1
1500'								
1600'								
1700'								

100'	72.90	72.8	72.90	72.90	72.90	72.90	72.90	72.90
200'	72.25	72.50	72.25	72.00	72.25	72.50	72.25	72.00
300'	3.7	4.5	5.2	6.0	3.7	4.5	5.2	6.0
400'	5.6	7.5	7.8	12.5	5.6	7.5	7.8	12.5
500'	-1.7	-2.8	-2.6	-0.5	-1.7	-2.8	-2.6	-0.5
600'								
700'								
800'	72.90	72.8	72.90	72.90	72.90	72.90	72.90	72.90
900'	72.25	72.48	72.25	72.25	72.48	72.25	72.48	72.25
1000'	7.7	3.6	4.0	5.2	7.7	3.6	4.0	5.2
1100'	1.2	1.8	3.1	5.6	1.2	1.8	3.1	5.6
1200'								
1300'	+1.5	+1.8	+0.8	-0.7	+1.5	+1.8	+0.8	-0.7
1400'								
1500'								





Grades On 30th St

	E	N
S.L. Martin	71.25	72.25
50	71.75	72.75
100	72.25	73.25
150	72.75	73.75
200	73.25	74.25
250	73.75	74.75
300 N.L. Greedy	74.25	75.25
S.L. Greedy	74.25	75.25
50	73.96	74.63
100	73.67	74.00
150	73.55	73.75
160	73.04	73.20
210	72.41	72.50
260	71.77	71.80
300 N.L. Logan	71.25	71.25
S.L. Logan	70.25	70.25
50	69.42	
100	68.58	
150	67.75	
200	66.92	
250	66.08	
300 N.L. National	65.25	65.25

	E	79.94 71.25	79.94 71.75	79.94 72.25	79.94 72.75	79.94 73.25	79.94 73.75	79.94 74.25	79.94 74.75
			8.4 +0.7	8.8 +0.8	9.2 +0.7	9.6 +1.15	10.0 +1.5	10.4 +1.5	10.8 +1.5
	N	79.94 72.25	79.94 72.75	79.94 73.25	79.94 73.75	79.94 74.25	79.94 74.75	79.94 75.25	79.94 75.75
			7.2 +1.4	7.6 +1.4	8.0 +1.0	8.4 +1.5	8.8 +1.5	9.2 +1.5	9.6 +1.5
	E	78.39 74.25	78.39 73.96	78.39 73.67	78.39 73.37	78.39 73.04	78.39 72.71	78.39 72.38	78.39 72.05
			4.1 +1.1	4.5 +1.1	4.9 +1.0	5.3 +1.0	5.7 +1.1	6.1 +1.1	6.5 +1.0
	N	78.39 74.45	78.39 74.13	78.39 73.80	78.39 73.47	78.39 73.14	78.39 72.81	78.39 72.48	78.39 72.15
			3.1 +0.5	3.5 +0.7	3.9 +0.6	4.3 -0.3	4.7 +0.4	5.1 +0.5	5.5 +0.0
	E	72.81 70.00	72.81 69.22	72.81 68.57	72.81 68.25	72.81 67.92	72.81 67.59	72.81 67.26	72.81 66.93
			8.4 +0.7	8.8 +0.6	9.2 +0.7	9.6 +0.7	10.0 +0.3	10.4 +0.3	10.8 +0.3
	N	72.81 70.00	72.81 69.22	72.81 68.57	72.81 68.25	72.81 67.92	72.81 67.59	72.81 67.26	72.81 66.93
			3.4 +0.3	3.8 +0.3	4.2 +0.4	4.6 +1.0	5.0 +1.0	5.4 +1.0	5.8 +1.0





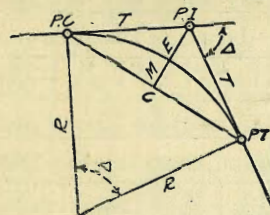


4/11/15 LEVELS ON BASEMENT FLOOR of  
 Moore CHURCH UNDER CONSTRUCTION 6th + FIRST

NWB	575	163.75	158.00	Flr + 5th
Basement Floor Elev.		8.20	155.49	
Flowline Sewer M.H. 6th + FIRST		9.0	154.71	
	10.89	165.60	10.55	Flowline Sewer Bldg.
3rd stake at		155.05		

## DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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### CURVE FORMULAS

- Radius= $R = \frac{50}{\sin \frac{D}{2}}$  (1) Degree of Curve= $D$  and  $\sin \frac{D}{2} = \frac{50}{R}$  (2)
- Tangent= $T = R \tan \frac{\Delta}{2}$  (3) Length of Curve= $L = 100 \frac{\Delta}{D}$  (4)
- Middle ordinate= $M = R(1 - \cos \frac{\Delta}{2})$  (5)  $= R \text{vers } \frac{\Delta}{2}$  (6)
- External= $E = T \tan \frac{\Delta}{4}$  (7)  $= R + \cos \frac{\Delta}{2} - R$  (8)  $= R \text{exsec } \frac{\Delta}{2}$  (9)
- Long Chord= $C = 2 R \sin \frac{\Delta}{2}$  (10)  $\Delta = \text{Central Angle}$

### EXPLANATION AND USE OF TABLES

**Stations.**—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T.  $\Delta = 62^\circ 10'$   $D = 8^\circ 20'$ . From Table IV for  $1^\circ$  curve  $T = 3454.1$  and  $+8\frac{1}{3} = 414.49$  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 =  $158 - \text{Sta. P. C.} = 54.50$ , 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 =  $\frac{1}{2} D$  for 100 ft.,  $\frac{1}{4} D$  for 50 ft., etc. For c ft. = (in minutes)  $.3 \times C \times D^\circ$  or = defl. for 1 ft. from Table III  $\times C$ . For Sta. 158 of above curve =  $.3 \times 54.5 \times 8\frac{1}{3} = 136.2'$  or  $2^\circ 16.2'$ , or =  $2.50 \times 54.5 = 136.2'$  from Table III. For Sta. 159 deflection angle =  $2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$ , etc.

**Externals.**—May be found in similar manner to tangents. Thus  $E$  for curve above is 91.37. For from Table IV for  $1^\circ$  curve  $E = 960.6$  for  $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 91.27$  and from Table V correction = .10 or  $E = 91.37$  ft. Or suppose  $\Delta = 32^\circ$  and  $E$  is measured and found to be 42 ft. What is  $D$ ? From Table IV  $E = 230.9$  and  $\div 42 = 5.5$  or  $D = 5^\circ 30'$ .



1237  
 577  
 11.12  
 135.46  
 136.60  
 124.08  
 12.50  
 131.5  
 32.5  
 66.65  
 29.1  
 26.7  
 56.0  
 99.2  
 95.0  
 470  
 391  
 1869  
 430  
 1.0402  
 60  
 64.1260  
 4691  
 15.60  
 15.471  
 10.89  
 165.60  
 15471  
 10.89  
 165.60  
 10.55  
 8391  
 70900000  
 689368  
 326320  
 250223  
 265728  
 250989  
 197810  
 83421  
 397  
 15.1  
 277  
 22.1  
 3.45  
 22.1  
 11.5  
 11.45  
 22.1

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	25.2	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  $41.9 + (20 - 16) \times 2$  or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.