100

GRADES

ENGINEERS'

FIELD BOOK

No. 403

G100

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

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

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

Chicago

H	C
0	8
1	9
2	10
3	11
4	12
5	13
6	14
7	15
8	16
9	17
10	18
11	19
12	20
13	21
14	22
15	23
16	24
17	25
18	26
19	27
20	28
21	29
22	30
23	31
24	32
25	33
26	34
27	35
28	36
29	37
30	38
31	39
32	40

E
to be
of roa
examp
30.6 =

Radio Drive Grades.

1

	±	%
E L 60th	236.00	
11.08 E = 0	236.56	
25	237.84	
55	239.37	
80	240.64	
100	241.66	
125	242.94	
150	244.21	
175	245.48	
200	246.76	
225	248.03	
250	249.30	
283.4 = 0	251.00	
27.0 L	251.64	2.25%
52.0 L	252.17	
77.0 L	252.73	
102.0 L	253.29	
127.0 L	253.85	
152.0 L	254.42	
177.0 L	254.98	
202.0 L	255.54	
227.0 L	256.11	
252.0 L	256.67	
277.0 L	257.23	
302.0 L	257.79	

Radio Drive

	℄	%
327.04	258.35	2.25%
352.04	258.92	
377.04	259.48	
402.04	260.04	
427.04	260.60	
452.04	261.17	
477.04	261.73	
502.04	262.29	
527.04	262.85	
552.04	263.42	
577.04	263.98	
602.04	263.54	6.38%
627.04	265.31	
652.04	266.91	
677.04	268.51	
687.04	269.15	
695.00	270.1	
702.04	270.74	
727.04	272.34	
752.04	273.94	
777.04	275.53	
809.94	276.99	1.19%
10.69 E of W.L. Burian	277.12	
25.21 E of Curb = ¼	277.42	
25.21 E of ¼ = Cent.	277.72	
28.75 E of C = Δ Pt.	278.06	

= West Line Burian St.

= West Curb Line

Radio Drive

	℄	%	
13.96 E of ΔPt.	278.23	1.19%	
25.27 E of ΔPt.	278.37		= Curb
35.96 E of Pt. = 0+00	278.49	2.0%	= E. L. Burian St.
25	279.0		
50	279.5		
75	280.0		
100	280.5		
125	281.0		
150	281.5		
175	282.0		
200	282.5		
225	283.0		
250	283.5		
275	284.0		
310	284.7		
3.25 350	285.0 285.25	1.022%	
375	285.51		
400	285.76		
425	286.02		
450	286.27		
475	286.53		
500	286.78		
525	287.04		
550	287.29		
575	287.55		

Radio Drive

		℄		%	
600		287.8		1.022%	
625		288.06			
650		288.31			
675		288.57			
700		288.82			
711		288.94			
721		289.06			
725		289.08			
732		289.15			
740		289.24			
750		289.34			
= 765.75		289.5		1.2+%	= ΔPt = 0+00
26.55		289.82			
51.55		290.14			
76.55		290.42			
101.55		290.75			
126.55		291.06			
151.55		291.37			
176.55		291.68			
201.55		292.00		1.096%	
226.55	25	291.72			
251.55	25	291.45			
276.55	25	291.17			
301.55		290.9			
311.76		290.79	New Cross Sect From 311.76 To		
329.77		290.59			

Radio Drive		℄	%	
3+35.8		290.53		
3+41.81		290.46		
3+47.83		290.38		= P.R.C.
3+83.9	36.08	290.00	3.37	
4+19.98		291.21		= P.R.C.
4+56.05	36.07			
4+51.38 = E.C.		292.43		
	25.27			
476.55		293.27		
501.55	25	294.12		
526.55	25	294.96		
551.55	25	295.80		
576.55	25	296.64		
601.55	25	297.48		
623.55	22	298.23		
0+00 = 645.83		298.89		
West Curb	10	299.15	1.58	= W. Curb Winnett St Parallel to Winnet St.
West ¼	20	299.31		
Center	30	299.47		
E ¼	40	299.63		
E Curb	50	299.80		
SE of E Curb	55	299.89		
E.L Winnet St. = 0+00	60	300.00	1.5%	
	25	300.37		
	50	300.75		

Radio Drive

	℄	%
75	301.12	1.5%
100	301.5	
125	301.87	
150	302.25	
200	303.00	
250	303.75	
275	304.12	
300	304.5	
325	304.87	
350	305.26	3.0%
345 375	305.8	
400	306.55	
425	307.30	
450	308.05	
475	308.8	
498	309.49	
500	309.55	
525	310.30	
550	311.05	
575	311.8	
600	312.55	
625	313.3	
650	314.05	
675	315.0	5.09%
700	317.55	

Radio Drive

	℄	%	
725	318.82	5.09%	
750	320.09		
775	321.37		
825	322.64		
850	323.91		
875	325.18		
900	326.47		
△Pt. 920.45	327.5	1.888%	= 0+00
28.85	328.04		
53.85	328.51		
103.85	329.45		
153.85	330.4		
203.85	331.34		
228.85	331.81		
243.85	332.09		
258.85	332.38		
278.85	332.76		
303.85	333.28		
353.85	334.23		
378.85	334.70		
403.85	335.17		
428.85	335.64		
453.85	336.12		
478.85	336.59		
503.85	337.06		
528.85	337.53		

Radio Drive	℄	%	
553.85	338.00	1.888%	
603.85	338.95		
653.85	339.89		
678.85	340.36		
703.85	340.84		
735.85	341.39		
767.86 =	342.00	2.5%	West Line ATTIX St. 60' wide
W.L Curb 10'	342.25		
West ¼ = 20'	342.50		
Center = 30'	342.75		
East ¼ = 40	343.0		
East Curb = 50	343.25		
E. L = 60	343.50	2.68%	East Line of ATTIX St. = 0+00
75	344.17		
50	344.84		
75	345.51		
100	346.18		
122.38 = Δ = 0+00	346.77		
26.42	347.48		
51.42	348.15		
74.42	348.77		
0+00 = 101.42	349.50	1.66%	West Line of Paradise St.
W.L. Curb 10	349.66		
West ¼ = 20	349.83		
Center = 30	349.99		

Radio Drive	E	%
East ¼ = 40	350.16	1.66%
E.L. Curb = 50	350.33	
E.L. Street 60	350.50	4.25%
25	351.56	
50	352.62	
100	354.74	
150	356.87	
200	358.99	
250	361.12	
275	362.18	
300	363.24	
350	365.37	
400	367.50	0.5%
450	367.75	
475	367.87	
500	368.00	
525	368.12	
550	368.25	
600	368.50	3.08%
650	370.04	
675	370.81	
700	371.58	
742	372.87	
775	373.88	
788	374.31	

East Line of Paradise St. = 0+00

Radio Drive	℄	%
800	374.68	3.08%
8.22.21 = Δ = 0+00	375.36	
53.19	377.00	
103.19	377.16	
128.19	377.93	
153.19	378.69	
178.19	379.46	
203.19	381.0 381.31	1.57%
228.19	381.70	
253.19	382.09	
278.19	382.49	
299.97 = Δ = 0+00	382.83	
27.54	383.46	
52.54	383.65	
77.54	384.05	
127.54	384.83	
152.54	385.22	
177.54	385.62	
200.05 = Δ = 0+00	386.00	5.166%
28.51	387.47	
53.51	388.76	
78.51	390.05	
103.51	391.34	
128.51	392.63	
138.51	393.19	
145.55	393.51	

= P.I taken on Radius

Radio Drive

		℄		%	
163.5		394.43		5.166%	
191.51		395.88			
228.51		397.79			
253.51		399.08			
278.51		400.37			
300.02 = △ = 0+00	△	401.5		4.338%	
28.13		402.71			
43.13		403.36			
78.13		404.88			
128.13		407.04			
178.13		409.22			
203.13		410.29			
253.13		412.46			
278.13		413.54			
303.13		414.62			
353.13		416.79			
403.13		418.95			
428.13		420.03			
0+00 = 434.15		420.33			
0+15.36	△	421.00			

From 449.51' on paving has been shifted to side of Road.

Radio Drive From 23rd Angle Point So. of Orange St. North

			℄
0+00			6.65%
~ +28.37		21.87	
+78.37		25.19	
1+08.37		27.19	
1+48.37		29.52	
1+70.32		31.32	
+27.6		33.16	
+62.6		35.49	
+87.6		37.15	
1+12.6		38.82	
1+27.6		39.81	
1+52.6		41.48	
1+77.6		43.14	
1+97.6		44.47	
2+27.6		46.47	
2+52.6		48.14	
2+87.6		50.47	
0+00 = 3+23.08		52.83	= P.C
+12.72	△	53.67	2.75%
+25		54.01	
+50		54.70	
+75		55.39	
+94		55.91	
0+00 = 1+04.39		56.20	= E.C.

New Cross Sections for paving

1+04.39 = 0+00		456.20	2.757%
+11		456.50	
+35.		57.16	
+35.26	△	57.17	2.270%
0+00 = +47.18		57.44	= P.C.
+10		57.67	
+36		58.26	
+63		58.83	
+68.69	△	59.00	— 3.833%
46.74 0+00 +85.43		58.36	
13.26 +30	△	57.85	
+50		57.15	
+75		56.55	
1+00		56.36	
1+25		56.018	
1+50		56.12	
1+70		56.40	
1+90		56.85	
2+00		57.25	
2+15		57.79	
2+25	△	58.15	3.936%
10 2+35		58.54	
20 2+55		59.33	
20 2+75		60.11	
10 2+85		60.51	

		℄	
3+00		∠61.10	
0+00 3+22.8	△	∠62.0	= East Line Front or 69th St.
+07.5		62.24	
+15		62.50	
+22.5		62.74	
+30		∠63.0	

Marlin Drive from Co. Highway to N.L Hollywood Dr.

			% (Market)	
N.L. Co Highway		162.0	2.4206%	
+ 3.84 = 0+00	3.8 H	161.91		
+ 20	23.8 H	161.43		
+ 40	43.8 H	160.94		
+ 54	57.8 H	160.61		
+ 59	62.8 H	160.49		
+ 66	69.8 H	160.32		
+ 71	74.8 H	160.2		
+ 79.6	83.4 H	159.97		
1 + 40 (+800)	143.8 H	159.53		
1 + 45.58	149.6 V	159.5		N.L. Bridge
1+49	152.8 H	159.55		
1+54	157.8 H	159.6 V		
1+79.58	183.6 V	160.0	5.0329%	Brk. in Grade
37.4 V				
2+12	215.8 H	161.63		
5				
2+17	220.8 H	161.88		
13				
2+30	233.8 H	162.53		
38.7				
2+68.7	272.5 H	164.48		
20.0				
2+88.7	292.5 H	165.49		= S.L. Hollywood Drive 40' wide
20.3				
3+68.73	313.57	166.50		
℄ Hollywood		167.0		
N.L. Hollywood		167.5		

(Market)
Hollywood Drive from W.L. of Merlin to E.C. of Curve on Tyrant St. to (Radio Dr.)

W.L. Merlin	167.0	+ 1.25%	
+40	167.5		
1+20	168.5	- 2.56%	
1+90	166.71		
0+00 = 2+25	165.82		= P.C
+35.24	165.00		= ½ Curve
+44.07	165.19	+ 2.20%	= 5/8 "
+53.01	165.38		= 3/4 "
+61.84	165.57		= 7/8 "
+70.68	165.78		= E.C. Curve

Tyrant St.

Sta	Grade	%
0+00	165.80	3.271%
+50	167.43	
+75	168.24	
1+00	169.06	
1+50	170.70	
1+75	171.50	
2+00	171.68	0.75%
2+25	171.85	
2+40	171.98	
2+65	172.16	
2+80	172.27	
2+85	172.30	
2+95	172.37	
3+10	172.44	
3+40	172.7	
0+00 3+75	173.0	1.25%
+20	173.25	
0+00 +40	173.5	1.7061%
+25	173.92	
0+00 +44.11	174.25 ←	
+20	174.59	
+23	174.64	
+30	174.76	
+36	174.86	
+45	175.01	

S.L. Kenwood St
E " "
N.L. " "

= P.C.

+70	175.44		
1+00	175.95		
1+25	176.37		
1+45	176.71		
1+75	177.23		
2+00	177.65		
2+10	177.82		
2+25	178.24		
2+35	178.41		
0+00 = 2+48.95	178.50	3.50%	P.C.
+10	178.85		
+20	179.2		
+40	179.9		
+60	180.6		
+75	181.12		
+95	181.82		
1+25	182.87		
1+30	183.05		
1+33	183.15		
1+38	183.33		
1+49	183.71		
1+75	184.62		
2+00	185.59		
2+25	186.47		
2+62.82	187.79		P.C.
2+86.09	188.60		

3+09.36		189.41	
0+00 = 3+32.63		190.15	
+25		191.02	
+56.04		192.01	
+67.55		192.5	1.52%
+80		192.69	
1+00.39		193.00	2.71%
1+11.89	11.5	193.31	
1+25	13.11	193.66	
1+50	25	194.34	
1+75	25	195.02	
1+93	18	195.51	
2+00	7	195.69	
2+10	10	195.97	
2+25	15	196.37	
2+50	25	197.05	
2+75	25	197.73	
3+00	25	198.41	
3+25	25	199.08	
0+00 = 3+52.08	27.08	199.82	P.C.
+50		201.17	
1+00		202.53	
1+50		203.88	
2+00		205.24	
2+37.22		206.0	

E.C.

S.L. Brooklyn W
S.L. " E
N.L. " W
N.L. " E

2+75	206.60	1.61257%
3+00	207.01	
3+25	207.41	
3+54	207.88	
3+67	208.09	
3+80	208.30	
3+90	208.46	
4+05	208.70	
4+20	208.94	
4+35	209.18	
4+75	209.82	
5+00	210.23	
5+25	210.63	
5+50	211.03	
6+00	211.84	
6+25	212.24	
6+50	212.65	
⊙ 6+72.33	213.00	6.72267%
+17	214.14	
+34	215.28	
+51	215.42	
+60	216.03	
+69	216.57	
+78.9	217.30	
7+00	218.72	

P.C

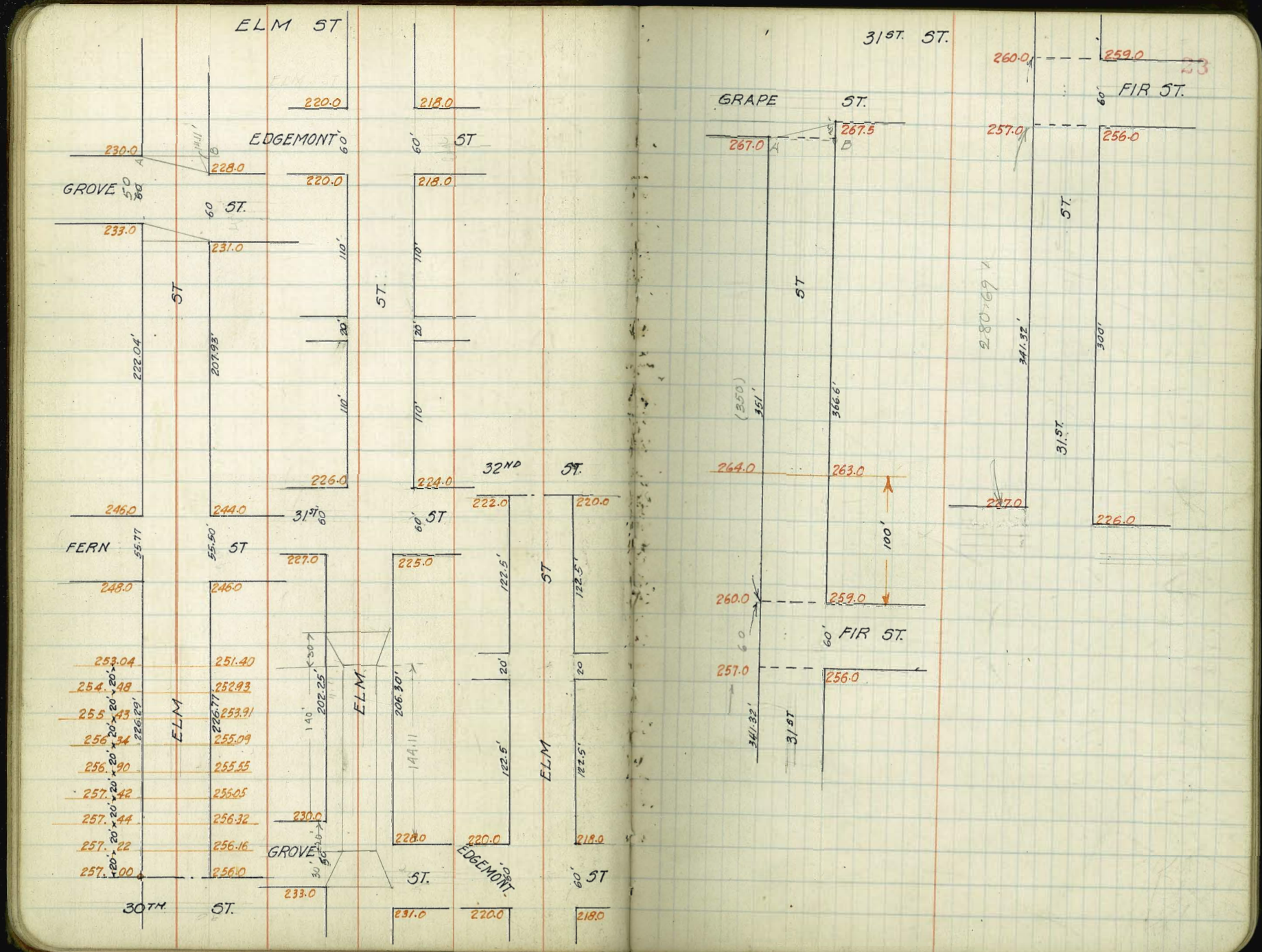
=P.R.C

1+20		220.06	
1+45		221.75	
1+66.86		223.22	
1+92.01		224.91	
2+17.22		226.60	
2+42.4		228.29	
2+67.59		229.99	0.921799%
2+90	22.41	231.20 ✓	
3+00	32.41	231.29 ✓	
3+25	57.41	231.52 ✓	
3+50	82.41	231.75 ✓	
→ 3+67.59 3+75	107.41	231.98 ✓	
4+00	132.41	232.22 ✓	
4+25	157.41	232.45 ✓	
4+70	202.41	232.86	
5+00	232.41	233.14	
5+30	262.41	233.41	
0+00 = 5+64.6	297.01	233.73	
+50.9	347.91	234.20	
+86.9	383.91	234.52	
0+00 1+01.83	398.84	234.67	
+35	433.84	235.00	

P.C.C.

E.C.

P.C.


ELM ST
EDGEMONT 60 ST
GROVE 50 80 ST.
60 ST.
FERN 55.77 ST
55.50
31ST 60
30TH ST.
GROVE 30 50
EDGEMONT 60
32ND ST.
60 ST
ELM
ST.
110'
20'
222.04'
207.93'
144.11'
202.25'
206.30'
122.5'
220.0
218.0
230.0
228.0
233.0
231.0
226.0
224.0
246.0
244.0
227.0
225.0
222.0
253.04
254.48
255.43
256.34
256.90
257.42
257.44
257.22
257.00
251.40
252.93
253.91
255.09
255.55
256.05
256.32
256.16
256.0
31ST. ST.
GRAPE ST.
60' FIR ST.
267.0
267.5
(350)
351'
366.6'
264.0
263.0
100'
260.0
259.0
257.0
256.0
341.32'
31.5T
280.69'
300'
227.0
226.0

X Book 1008

ELM ST

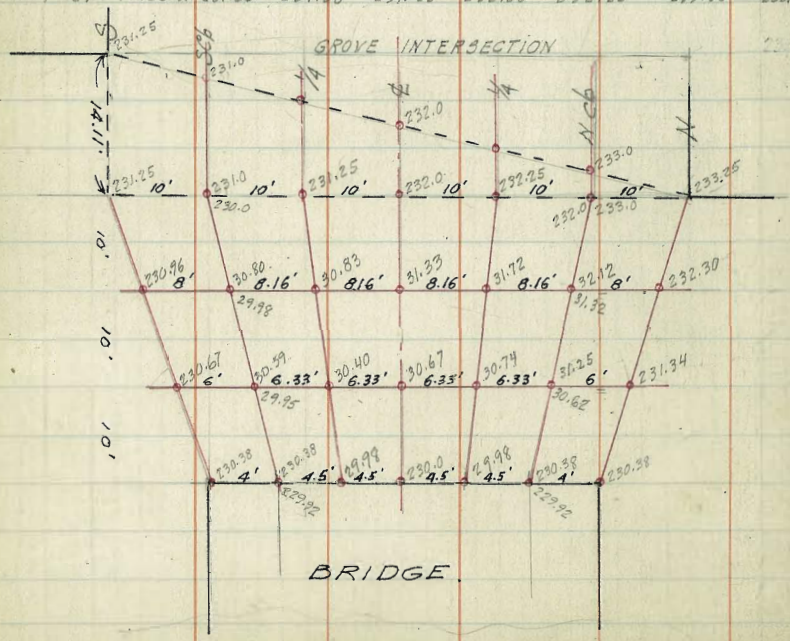
E. line of 30th to W line 32nd.
60' Wide
10' Walks 10' Quarters

	S. Line	cb	1/4	℄		1/4	cb	N. Line
E Line 30th	256.25	256.00	256.00	256.50	256.	50	257.00	257.25
20' E	256.41	256.16	256.14	256.67	256.	69	257.22	257.47
40' E	256.57	256.32	256.36	256.95	256.	97	257.44	257.69
60' E	256.30	256.05	256.12	256.72	256.	82	257.42	257.67
80' E	255.80	255.55	255.60	256.20	256.	30	256.90	257.15
100 E	255.34	255.09	255.11	255.69	255	76	256.34	256.59
120	254.16	253.91	254.05	254.77	254	80	255.43	255.68
140	253.18	252.93	253.03	253.68	253	83	254.48	254.73
160	251.65	251.40	251.39	252.24	252	39	253.04	253.29
180	250.03	249.78	249.85	250.67	250	85	251.53	251.78
200	248.41	248.16	248.31	249.10	249	31	250.02	250.27
224 E	246.47	246.22	246.46	247.21	247	46	248.20	248.45
=226.77 S 226.29 N. W Line Fern	246.25	246.00	246.25	247.00	247.	25	248.00	248.25

Fern Intersection Graded

ELM ST.

	S. line	cb	¼	℄	¼	cb	N. line
E line Fern	244.25	244.00	244.25	245.00	245.25	246.00	246.25
20' E	243.08	242.83	243.06	243.79	244.02	244.75	245.00
50' "	241.38	241.23	241.27	241.97	242.17	242.87	243.11
78 "	239.68	239.43	239.60	240.27	240.45	241.12	241.37
100' "	238.40	238.15	238.29	238.94	239.44	240.10	240.35
125	236.93	236.68	236.80	237.43	237.55	238.18	238.43
150	235.47	235.22	235.30	235.91	236.02	236.62	236.87
175	234.00	233.75	233.81	234.39	234.48	235.06	235.31
200	232.54	232.29	232.32	232.88	232.94	233.50	233.75
207.93 = WL. Grove on S	232.07	231.82	231.85	232.40	232.45	233.0	233.25
207.93 "N 222.04 on S } W. Line Grove	231.25	231.00	231.25	232.00	232.25	233.00	233.25



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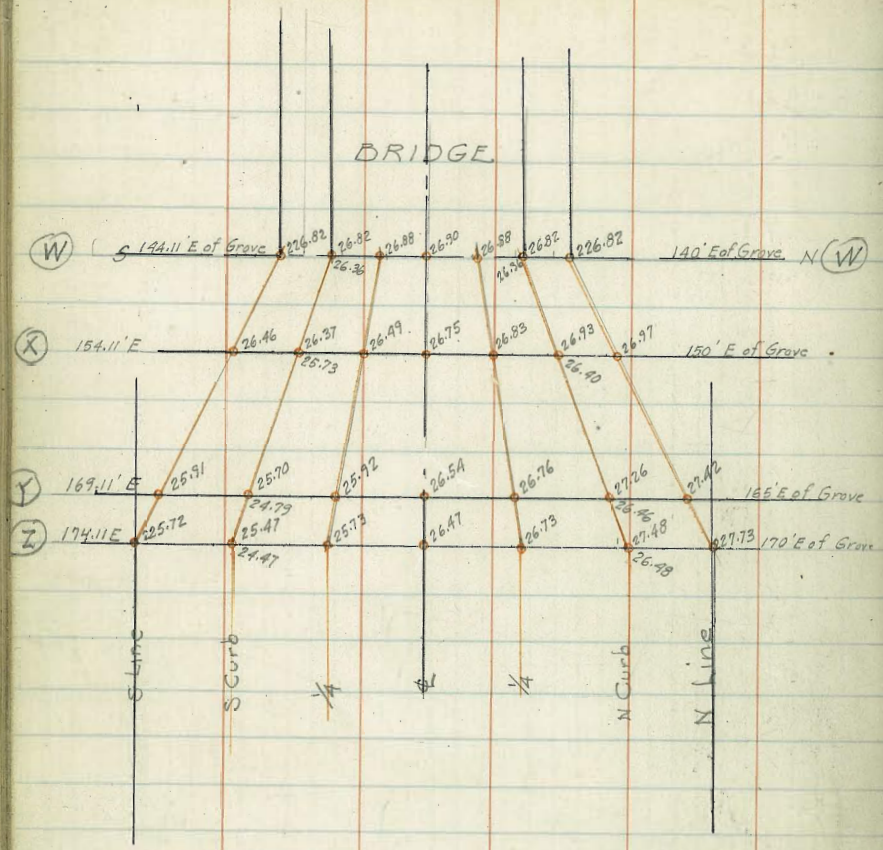

BRIDGE
W
S 144.11' E of Grove
226.82
26.82
26.88
26.30
26.88
26.87
226.82
140' E of Grove
N W
26.36
26.36
X
154.11' E
26.46
26.37
26.49
26.75
26.83
26.93
26.97
150' E of Grove
25.73
26.40
Y
169.11' E
25.91
25.70
25.92
26.54
26.76
27.26
27.42
165' E of Grove
24.79
26.46
Z
174.11 E
25.72
25.47
25.73
26.47
26.73
27.48
27.73
170' E of Grove
24.47
26.48
S Line
S Curb
1/4
1/2
1/4
N Curb
N Line

ELM ST.

	S. line	cb	¼	℄	¼	cb	N Line
170' E of E.L. Grove (N)	225.72	225.47	225.73	226.47	226.73	227.48	227.73
175' E	225.65	225.40	225.66	226.40	226.66	227.41	227.66
202.25 E = W.L. 31st	225.25	225.00	225.25	226.00	226.25	227.00	227.25

31ST INTERSECTION 60'-10' quarters

W Line 31st	225.25	225.00 224.00	225.25	226.00	226.25	227.00 226.00	227.25
W Curb	225.00 224.00	224.00	225.08	225.83	226.08	226.00	227.00 226.00
¼	224.50	223.75	224.92	225.67	225.92	225.75	226.50
℄	224.50	223.50	224.75	225.50	225.75	225.50	226.50
¼	224.00	223.25	224.58	225.33	225.58	225.25	226.00
E Curb	223.00 224.00	223.00	224.42	225.17	225.42	225.00	225.00 226.00
E Line 31st	224.25	223.00 224.00	224.25	225.00	225.25	225.00 226.00	226.25

ELM. ST.

	S Line	Cb	¼	℄	¼	Cb	N. Line
E Line 3/1st St	224.25	224.00	224.25	225.00	225.25	226.00	226.25
25' E	223.62	223.37	223.62	224.37	224.62	225.37	225.62
50' E	222.98	222.73	222.98	223.73	223.98	224.73	224.98
75' E	222.36	222.11	222.36	223.11	223.36	224.11	224.36
100' E	221.74	221.49	221.74	222.49	222.74	223.49	223.74
125' E	221.11	220.86	221.11	221.86	222.11	222.86	223.11
140' E	220.73	220.48	220.73	221.48	221.73	222.48	222.73
150' E	220.48	220.23	220.48	221.23	221.48	222.23	222.48
161' E	220.20	219.95	220.20	220.95	221.20	221.95	222.20
175' E	219.85	219.60	219.85	220.60	220.85	221.60	221.85
188' E	219.52	219.27	219.52	220.27	220.52	221.27	221.52
200 E	219.12	218.97	219.12	219.97	220.12	220.97	221.12
225 E	218.59	218.34	218.59	219.34	219.59	220.34	220.59
237 E	218.29	218.04	218.29	219.04	219.29	220.04	220.29
238.59 = W.L. Edgemont	218.25	218.00	218.25	219.00	219.25	220.00	220.25

EDGEMONT INTERSECTION GRADED.

ELM ST.

	S. line	Cb	1/4	℄	1/4	cb	N. Line
E. Line Edgemont	218.25	218.00	218.25	219.00	219.25	220.00	220.25
25 E	218.44	218.19	218.44	219.19	219.44	220.19	220.44
50 E	218.62	218.37	218.62	219.37	219.62	220.37	220.62
75 E	218.82	218.57	218.82	219.57	219.82	220.57	220.82
100 E	219.01	218.76	219.01	219.76	220.01	220.76	221.01
125 E	219.19	218.94	219.19	219.94	220.19	220.94	221.19
150 E	219.38	219.13	219.38	220.13	220.38	221.13	221.38
175 E	219.57	219.32	219.57	220.32	220.57	221.32	221.57
190 E	219.68	219.43	219.68	220.43	220.68	221.43	221.68
200 E	219.76	219.51	219.76	220.51	220.76	221.51	221.76
210 E	219.84	219.59	219.84	220.59	220.84	221.59	221.84
225 E	219.95	219.70	219.95	220.70	220.95	221.70	221.95
250 E	220.14	219.89	220.14	220.89	221.14	221.89	222.14
265.49 = W.L. 32nd.	220.25	220.00	220.25	221.00	221.25	222.00	222.25

31 ST ST.

60' Wide
10' Walks
10' 1/4's

	W. Line	cb	1/4	℄	1/4	cb.	E Line
S. Line Grape	267.25	267.00	266.87	267.25	267.12	267.50	267.75
"A-B" A 60' B	267.25	267.00	266.85	267.21	267.06	267.42	267.67
2'S of "A B"	267.23	266.98	266.82	267.18	267.03	267.39	267.64
25'S	266.95	266.70	266.59	266.84	266.85	267.08	267.33
50 S	266.65	266.40	266.18	266.47	266.25	266.74	266.99
75 S	266.35	266.10	265.84	266.10	265.84	266.39	266.64
100 S	266.05	265.80	265.51	265.73	265.44	266.05	266.30
125 S	265.75	265.50	265.17	265.35	265.03	265.71	265.96
150	265.45	265.20	264.84	264.98	264.62	265.37	265.62
175	265.15	264.90	264.51	264.61	264.22	265.03	265.28
200	264.85	264.60	264.17	264.24	263.81	264.68	264.93
225	264.55	264.30	263.84	263.87	263.41	263.34	263.59
250	264.25	264.00	263.50	263.50	263.00	263.00	263.25
275	263.25	263.00	262.50	262.50	262.00	262.00	262.25
300	262.25	262.00	261.50	261.50	261.00	261.00	261.25
325	261.25	261.00	260.50	260.50	260.00	260.00	260.25
350 = N.L. Fir	260.25	260.00	259.50	259.50	259.00	259.00	259.25

31 ST. ST.

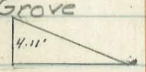
FIR ST. INTERSECTION

	W.	CB'	¼	℄	¼	CB	E
N Line Fir	260.25	260.00 (259.0)	259.50	259.50	259.00	259.00 (258.00)	259.25
N Curb	259.75	259.50	259.00	259.00	258.50	259.00 (258.00)	259.00 (258.00)
N ¼	259.25	259.00	258.50	258.50	258.00	257.25	258.00
℄	258.75	258.50	258.00	258.00	257.50	256.50	257.50
S ¼	258.25	258.00	257.50	257.50	257.00	255.75	256.50
S Curb	257.75	257.50	257.00	257.00	256.50	255.00 256.00	255.00 256.00
S. Line Fir	257.25	257.00	256.50	256.50	256.00	255.00 256.00	256.25
S Line Fir	257.25	257.00	256.50	256.50	256.00	256.00	256.25
25' South	254.56	254.31	253.91	253.91	253.44	253.50	253.75
50' "	251.90	251.65	250.27	250.33	250.88	251.00	251.25
75 "	249.23	248.98	248.66	248.74	248.32	248.50	248.75
100 "	246.56	246.31	246.04	246.16	245.76	246.00	246.25
125 "	243.89	243.64	243.43	243.57	243.20	243.50	243.75
150 "	241.21	240.96	240.82	240.97	240.65	241.00	241.25
175 "	238.54	238.29	238.10	238.40	238.09	238.50	238.75
200 "	235.87	235.62	235.59	235.81	235.53	236.00	236.25
225 "	233.19	232.94	232.97	233.23	232.97	233.50	233.75
250 "	230.52	230.27	230.36	230.64	230.41	231.00	231.25
275 "	227.85	227.60	227.75	228.05	227.86	228.50	228.75
280.69 " = CD	227.25	227.00	227.15	227.47	227.27	227.94	228.19
N Line Elm (18.68' 299.37)	227.25	227.00	226.50	226.50	226.00	226.00	226.00

FIR ST

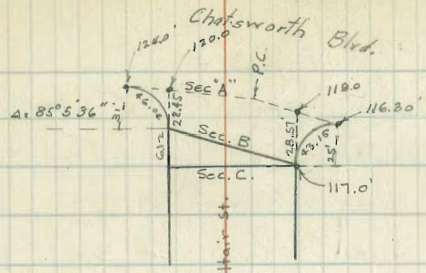
	3 line	cb	1/4	℄	1/4	cb	N Line
W. Line Grove	231.25	231.00	231.25	232.00	232.25	233.00	233.25
W curb	231.00 230.00	231.00 230.0	30.75	31.5	31.75	233.00 232.00	233.00 232.00
W 1/4	229.00	229.25	30.25	31.0	31.25	231.25	232.00
℄	229.5	228.50	29.75	29.5	30.75	230.50	231.50
E 1/4	228.5	227.75	29.25	29.0	30.25	229.75	230.50
E Curb	227.00 228.00	227.0 228.0	28.75	28.5	29.75	229.00 230.00	229.00 230.00
E.L. Grove	228.25	228.00	228.25	229.00	229.25	230.00	230.25

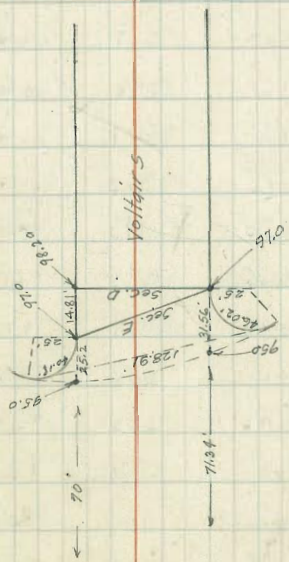
FIR ST

	S Line	℄	¼	℄	¼	℄	N Line
E.L. Grove	228.25	228.00	228.25	229.00	229.25	230.00	230.25
AB 	228.25	228.00	228.25	229.0	229.25	230.0.0	230.25
10 E	228.10	227.85	28.10	28.85	29.10	29.85	30.10
20	227.96	227.71	27.96	28.71	28.96	29.71	29.96
30	227.80	27.55	27.80	28.55	28.80	29.55	29.80
40	227.66	27.41	27.66	28.41	28.66	29.41	29.66
50	227.51	27.26	27.51	28.26	28.51	29.26	29.51
60	227.36	27.11	27.36	28.11	28.36	29.11	29.36
70	227.21	26.96	27.21	27.96	28.11	28.96	29.21
80	227.06	26.81	27.06	27.81	28.06	28.81	29.06
90	226.91	26.66	26.91	27.66	27.91	28.66	28.91
100	226.77	26.52	26.77	27.52	27.77	28.52	28.77
110	226.62	26.37	26.62	27.37	27.62	28.37	28.62
120	226.47	26.22	26.47	27.22	27.47	28.22	28.47
130	226.32	26.07	26.32	27.07	27.32	28.07	28.32
140	226.17	25.92	26.17	26.92	27.17	27.92	28.17
150	226.02	25.77	26.02	26.77	27.02	27.77	28.02
165	225.80	25.55	25.80	26.55	26.80	27.55	27.80
175	225.65	25.40	25.65	26.40	26.65	27.40	27.65
202.25 W.L. 31st	225.25	225.00	225.25	226.00	226.25	227.00	227.25

Voltaire St.

	Berm	curb	℄	Curb.	Berm	
Sec. "A" W. L. Chatsworth	118.8	118.9	119.0	118.9	118.8	
Sec. B	17.78	17.88	117.98	17.88	17.78	
Sec. C	17.61	17.71	117.81	17.71	17.61	
25' W	16.61	16.71	116.81	16.71	16.61	
50' W	15.54	16.64	115.74	15.64	15.54	
75' W	14.35	14.45	114.55	14.45	14.35	
100 W	13.05	13.15	113.25	13.15	13.05	
125 W	11.06	11.16	111.26	11.16	11.06	
150 W	9.06	9.16	109.26	9.16	9.06	
175 W	7.09	7.19	107.29	7.19	7.09	
200 W	5.05	5.15	105.25	5.15	5.05	
225 W	3.11	3.21	103.31	3.21	3.11	
250 W	1.12	1.22	101.32	1.22	1.12	
275 W	9.14	9.24	99.34	9.24	9.14	
296.87	7.40	7.50	97.60	7.50	7.40	= Sec. D.
Sec. E = 7.40'	6.80	6.90	97.00	6.90	6.80	
E. L. Villa Drv.	4.80	4.90	95.00	4.90	4.80	
E Curb 10	4.52	4.62	94.72	4.62	4.52	
E ¼ 12.5	4.17	4.27	94.37	4.27	4.17	
℄	3.80	3.90	94.0	3.90	3.80	
W ¼	3.45	3.55	93.65	3.55	3.45	
W Curb	3.07	3.17	93.27	3.17	3.07	

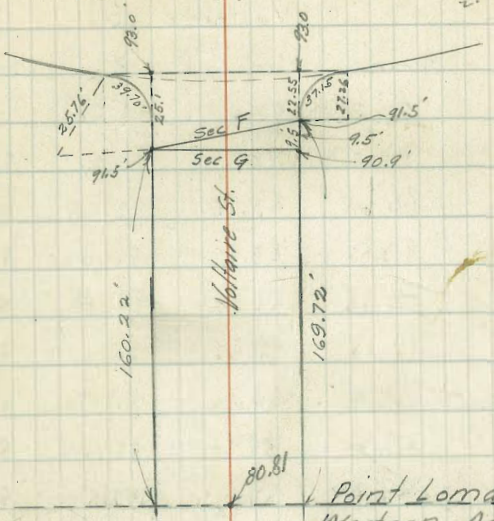




Berm = 5'

Voltaire St.

	Berm	Curb	℄	Curb	Berm
W.L. Villa Drv	92.8	92.9	93.00	92.9	92.8
Sec. F	91.3	91.4	91.50	91.4	91.3
Sec. G	91.0	91.10	91.20	91.10	91.0
25 W	89.38	89.48	89.58	89.48	89.38
50'	87.76	87.86	87.96	87.86	87.76
75'	86.13	86.23	86.33	86.23	86.13
100'	84.51	84.61	84.71	84.61	84.51
125'	82.89	82.99	83.09	82.99	82.89
0+00=160.22	80.61	80.71	80.81	80.71	80.61
5' W	80.28	80.38	80.48	80.38	80.28
25 W	79.02	79.12	79.22	79.12	79.02
45'	77.88	77.98	78.08	77.98	77.88
58'	77.37	77.47	77.57	77.47	77.37
64'	77.13	77.23	77.33	77.23	77.13
73	76.83	76.93	77.03	76.93	76.83
86	76.55	76.65	76.75	76.65	76.55
100	76.29	76.39	76.49	76.39	76.29
125	76.13	76.23	76.33	76.23	76.13
150	76.42	76.52	76.62	76.52	76.42
175	77.36	77.46	77.56	77.46	77.36
200	78.56	78.66	78.76	78.66	78.56
225	80.15	80.25	80.35	80.25	80.15
250	81.9	82.0	82.10	82.0	81.9
260	81.6	82.7	82.80	82.7	81.6



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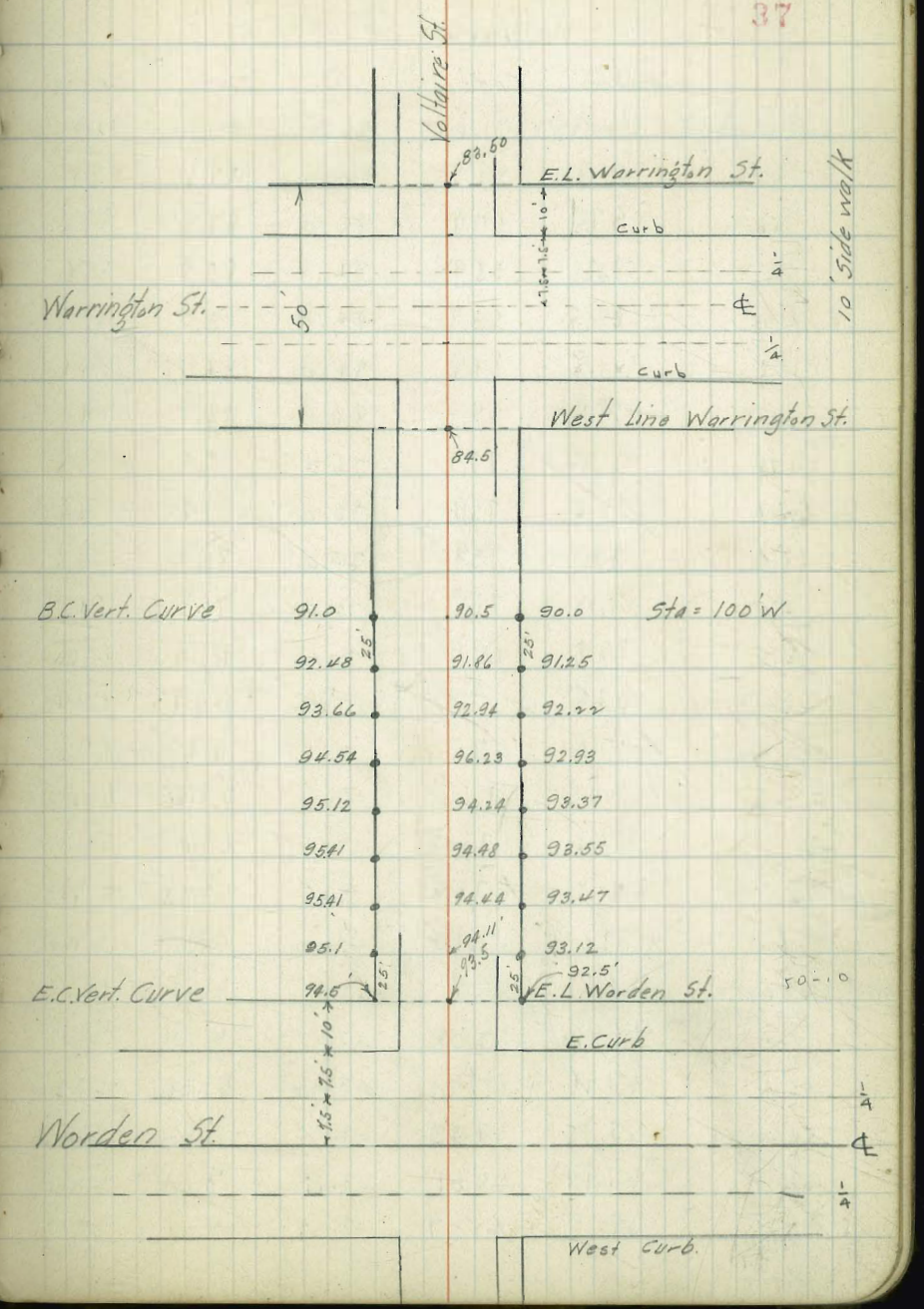
B.C. Vertical Curve	79.60	79.5	79.40 Sta 20'W of 0+00
	78.16	78.08	78.01
	77.15	77.09	77.04
	76.56	76.52	76.48
	76.40	76.37	76.35
	76.66	76.59	76.53
	77.35	77.34	77.34
	78.46	78.45	78.46
E.C. Vert. Curve	80.00	80.0	80.0 Sta 2+20'W of 0+00

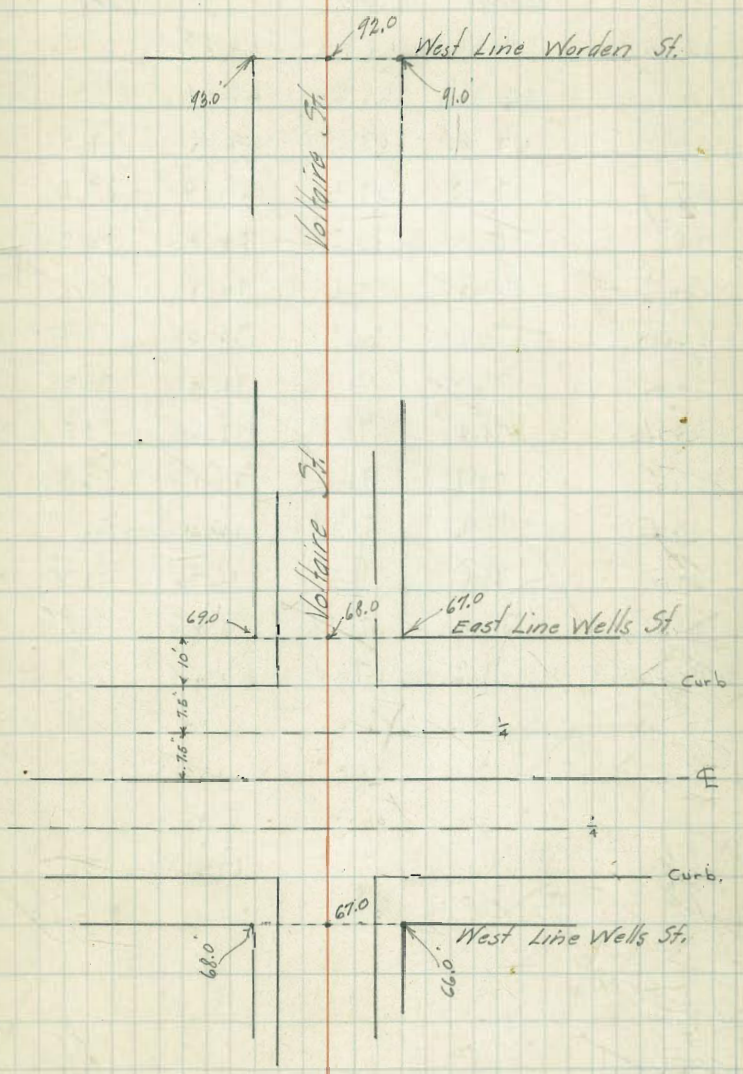
Voltaire St.

	Berm	Curb	℄	Curb	Berm
270	83.3	83.4	83.50	83.4	83.3
East Curb	83.5	83.6	83.70	83.6	83.5
" ¼	83.65	83.75	83.85	83.75	83.65
℄	83.8	83.9	84.00	83.9	83.8
West ¼	83.95	84.05	84.15	84.05	83.95
" Curb	84.15	84.25	84.35	84.25	84.15
W. L. Warrington	84.3	84.40	84.50	84.40	84.3
25' W	85.8	85.90	86.00	85.9	85.8
50'	87.3	87.4	87.50	87.4	87.3
75'	88.8	88.9	89.0	88.9	88.8
100'	90.3	90.4	90.50	90.4	90.3
125'	91.66	91.76	91.86	91.76	91.66
150'	92.74	92.84	92.94	92.84	92.74
175'	95.03	95.13	96.23	95.13	95.03
200'	94.04	94.14	94.24	94.14	94.04
225'	94.28	94.38	94.48	94.38	94.28
250'	94.24	94.34	94.44	94.34	94.24
275'	93.91	94.01	94.11	94.01	93.91
300'	93.30	93.40	93.50	93.40	93.30
East Curb	93.0	93.10	93.20	93.10	93.0
" ¼	92.78	92.88	92.98	92.88	92.78
℄	92.55	92.65	92.75	92.65	92.55
West ¼	92.33	92.43	92.53	92.43	92.33
" Curb	92.1	92.20	92.30	92.20	92.1



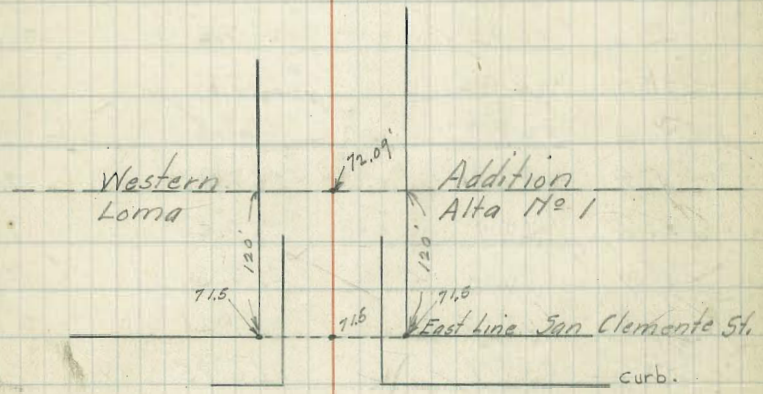
Voltaire St.

	Berm	Curb	℄	Curb	Berm
West Line Worden St	91.8	91.9	92.0	91.9	91.8
25' W	89.8	89.9	90.0	89.9	89.8
50' W	87.8	87.9	88.0	87.9	87.8
75'	85.8	85.9	86.0	85.9	85.8
100	83.8	83.9	84.0	83.9	83.8
125	81.8	81.9	82.0	81.9	81.8
150	79.8	79.9	80.0	79.9	79.8
175	77.8	77.9	78.0	79.9	77.8
200	75.8	75.9	76.0	75.9	75.8
225	73.8	73.9	74.0	73.9	73.8
250	71.8	71.9	72.0	71.9	71.8
275	69.8	69.9	70.0	69.9	69.8
300	67.8	67.9	68.0	67.9	67.8
East Curb	67.6	67.7	67.8	67.7	67.6
" ¼	67.45	67.55	67.65	67.55	67.45
℄	67.3	67.4	67.50	67.4	67.3
West ¼	67.15	67.25	67.35	67.25	67.15
" Curb	67.0	67.10	67.20	67.10	67.0
West Line Wells	66.8	66.9	67.0	66.9	66.8
10' W	66.98	67.08	67.18	67.08	66.98
25' W	67.26	67.36	67.46	67.36	67.26
50' W	67.73	67.83	67.93	67.83	67.73
60'	67.91	68.01	68.11	68.01	67.91
75'	68.19	68.29	68.39	68.29	68.19



Voltaire St.

	Berm	Curb	℄	Curb	Berm
85' W	68.38	68.48	68.58	68.48	68.38
110'	68.84	68.94	69.04	68.94	68.84
130'	69.21	69.31	69.41	69.31	69.21
150'	69.58	69.68	69.78	69.68	69.58
185'	70.23	70.33	70.43	70.33	70.23
200'	70.51	70.61	70.71	70.61	70.51
225'	7088	7098	71.08	70.98	70.88
240	71.26	71.36	71.46	71.36	71.26
252	71.48	71.58	71.68	71.58	71.48
275	71.9	72.0	72.10	72.00	71.9
300 (290)	71.99	71.99	72.09	71.99	71.89
350	71.6	71.7	71.80	71.70	71.6
375	71.45	71.55	71.65	71.55	71.45
400	71.3	71.4	71.50	71.40	71.3



ALBATROSS ST.

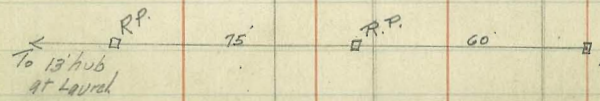
	E Curb	Center	W Curb
N.L. Robinson	267.0	266.5	266.0
N 25	267.23	266.74	266.25
N 50	267.47	266.99	266.51
N 75	267.71	267.24	266.77
N 100	267.95	267.49	267.03
N 116	268.1	267.65	267.2
125	268.14	267.71	267.29
136	268.2	267.8	267.4
150	268.2	267.8	267.4
156	268.2	267.8	267.4
175	267.94	267.61	267.33
176	267.9	267.6	267.3
196	267.6	267.3	267.0
200	267.5	267.21	266.92
216	267.1	266.85	266.6
225	266.7	266.45	266.2
230	266.53	266.28	266.03
250	265.84	265.59	265.34

Kalmia St

	Curb	¼	℄	¼	Curb.
W.L. 30-1/2			290.0		
50'			290.56		
80'			290.91		
100'			291.13		
125'			291.42		
160'			291.81		
200'			292.27		
235			292.69		
6.5 13.5 255			292.63		
280			292.41		
300			292.24		
320			292.07		
370			291.64		
400			291.38		
450			290.94		
500			290.51		
601.5			287.0		

Kalmia St. bet. 29th & 30th St. - 80' St.

	N	Curb	¼	℄	¼	Curb	S
W.L. 30th St.	290.25	290.00	289.75	290.0	289.75	290.0	290.25
50'	290.87	290.62				290.52	290.77
80'							
100'	291.49	291.24				291.04	291.29
125'							
150.	292.11	291.86				291.56	291.80
200	292.73	292.48				292.07	292.32
235							
241.5	293.25	293.00				292.50	292.75
255							
280							
301.5	292.79	292.54				291.9	292.17
351.5	292.40	292.15				291.46	291.69
370							
401.5	292.07	291.77				90.96	291.21
451.5	291.63	291.38				90.48	290.73
500							
501.5	291.25	291.00				290.00	290.25
551.5	289.50	289.25					288.50
EL. 29th - 601.5	287.75	287.50				286.50	286.75



289.71 SE 30th + Kalmia
737
297.08

290.77 / 6.31 / -1.1
291.29 / 5.79 / -1.1
291.80 / 5.28 / -0.4
292.32 / 4.76 / +1.2
292.75 / 4.33 / 0.0
293.17 / 4.91 / -0.3
293.69 / 5.39 / -0.4

290.87 / 6.21 / -1.1
291.49 / 5.59 / -1.4
291.91 / 4.97 / -0.3
292.73 / 4.35 / +0.4
293.25 / 3.82 / +0.1
293.79 / 4.29 / -0.2
293.40 / 4.68 / -0.3

291.71 / 5.87 / -0.2
290.78 / 6.80 / +0.2
290.76 / 6.83 / -0.1
288.50 / 8.58 / +0.5
286.75 / 10.33 / +0.1

+ & - 1/20/21 Gregory

291.92 / 5.06 / -0.5
291.63 / 5.45 / 00
291.25 / 5.83 / 0.0
289.50 / 7.58 / +0.6
287.75 / 9.33 / +1.0

289.71 SE 30th + Kalmia
813
297.84

290.77 / 7.07
291.29 / 6.55
291.80 / 6.04
292.32 / 5.52
292.75 / 5.09
293.17 / 5.67
293.69 / 6.15
291.71 / 6.63
290.78 / 7.11

290.87 / 6.99
291.49 / 6.37
291.91 / 5.79
292.73 / 5.11
293.25 / 4.59
293.79 / 5.05
293.40 / 5.44
292.92 / 5.82
291.63 / 6.21

290.25 / 7.59
289.50 / 8.34
287.75 / 10.09

curb + prop. 1/26/21 Gregory Miller Shaw

289.71 / 746 / 297.36

290.62 / 6.74
291.24 / 6.12
291.86 / 5.50
292.48 / 4.88
292.54 / 4.82
293.00 / 4.36
292.92 / 4.44
292.15 / 5.21
291.77 / 5.59

291.38 / 5.97
291 / 6.36
289.25 / 8.11
287.50 / 9.86

290.52 / 6.84
291.04 / 6.32
291.55 / 5.81
292.07 / 5.29
292.58 / 4.78
293.10 / 4.26
293.46 / 3.90
292.96 / 4.40
292.46 / 4.90

290.77 / 6.59
289.25 / 8.11
286.50 / 10.86

Laurel St. bet 29th & 30th St. Vordsee pg 45

	N	Curb	℄	℄	℄	Curb	S
W.L. 30th St.	282.75	282.5	283.0	284.0	284.5	285.5	285.75
3' W	282.92	282.67	283.16	284.16	284.65	285.65	285.90
7' W	283.16	282.91	283.39	284.37	284.85	285.84	286.09
14' W	283.58	283.33	283.78	284.75	285.21	286.19	286.44
21' W	283.99	283.74	284.17	285.12	285.57	286.53	286.78
25' W	284.23	283.98	284.40	285.34	285.78	286.72	286.97
50' W	285.71	285.46	285.81	286.68	287.06	287.95	288.20
61.3' W	286.35	286.1	286.45	287.3	287.65	288.5	288.75
81.3' W	287.41	287.16	287.49	288.27	288.59	289.39	289.64
100' W	288.14	287.89	288.17	288.95	289.22	290.0	290.25
101.3' W	288.20	287.95	288.22	289.0	288.27	290.05	290.30
121.3' W	288.71	288.46	288.76	289.97	289.91	290.49	290.74
141.3' W	288.95	288.70	289.20	289.70	290.2	290.7	290.95
160' W	289.04	288.79	289.04	289.79	290.04	290.79	291.04
200' W	289.24	288.99	289.24	289.99	290.24	290.99	291.24
250' W	289.49	289.24	289.49	290.24	290.49	291.24	291.49
300' W	289.74	289.49	289.74	290.49	290.74	291.49	291.74
325' W	289.86	289.61	289.85	290.62	290.85	291.61	291.86
350' W	289.99	289.74	289.99	290.74	290.99	291.74	291.99
351.3' W	290.00	289.75	290.00	290.75	291.00	291.75	292.00
376.3' W	289.98	289.73	289.98	290.73	290.98	291.73	291.98

289.71 B.P. SE Kalmia + 30E ±85.70 BM. Stk. ref Laurel + 30th
291.99 Spk. S side N60W.

43

289.71 .500 294.71 | 289.90 10.72 .00 286.98 793 +3.7 | 286.35 8.36 4.16 298.75 596 406 +1.9 | 287.41 7.80 4.20 2.81 289.04 3.07 4.17 +0.9 | 287.20 6.51 4.38 2.27 290.50 4.01 4.01 +0.4 | 287.71 2.03 4.72 +1.8 290.74 3.94 4.21 -0.1 | 288.95 .576 4.72 +1.3 290.96 3.76 3.66 +0.1 | 289.24 5.47 5.1 +0.3 291.14 3.49 3.77 -0.3 | 289.49 5.22 5.2 -0.6 291.49 3.27 3.42 -0.2

289.74 4.97 5.97 -1.0 291.74 2.99 3.07 -0.1 | 289.99 4.72 6.50 -1.7 291.99 2.77 3.5 -0.8 | 290 4.71 6.5 -1.8 292 2.71 3.3 -0.6 | 289.98 4.73 6.5 -1.8 291.98 2.73 3.0 -0.3 | 293.80 | 288.67 5.15 2.4 2.8 | 288.95 4.92 2.4 2.5 288.42 5.34 5.6 -0.2

285.70 .250 285.20 | 290 4.20 291.90 | 291.99 1.81 293.80 | 288.65 5.15 -0.2

293.80 | 288.18 5.62 -0.3 288.68 5.17 +3.0 | 287.75 6.05 +3.4 | 287.25 6.55 -0.5 287.75 6.05 +3.6 | 286.75 7.55 -1.9 286.78 7.02 +3.0 | 285.78 8.52 -4.0 285.78 8.02 +1.5 | 284.25 9.55 -8.3 284.75 9.05 -0.2

Laurel bet. 29th & 30th 57.

	N	Curb.	¼	℄	¼	Curb.	S
400'W	289.71	289.46	289.71	290.46	290.71	291.46	291.71
401.3'W	289.69	289.44	289.69	290.44	290.69	291.44	291.69
426.3'W	289.11	288.86	289.11	289.86	290.11	290.86	291.11
435'W	288.81	288.56	288.81	289.56	289.81	290.56	290.81
451.3'W	288.75	288.0	288.75	289.00	289.25	290.0	290.25
465'W	287.70	287.45	287.70	288.45	288.70	289.45	289.70
500'W.	286.30	286.05	286.30	287.05	287.30	288.05	288.30
550'W	284.30	284.05	284.30	285.05	285.30	286.05	286.30
575'W	283.30	283.05	283.30	284.05	284.30	285.05	285.30
601.3'W	282.75	282.0	282.25	283.0	283.25	284.0	284.25

Wind 57 Sw

294.71 28869 289.11 288.75 285.30 282.25

28869 289.11 288.75 285.30 282.25
507 560 646 9.21 1246
0.9 8.5 10.7 -5.0 13.8
-1.7 -2.5 -3.9 288.30 282.25
291.69 291.11 288.25 6.41 1246
3.02 3.60 4.46 -.71 1.01
30.2 36 46 -1.0 +.03
0.0 +0.2 -0.7

29350 29160 28869 28895 28895
3.11 4.19 3.83 3.83
+1.9
28919 288.62
4.61 5.18
+2.5

Curved sidewalk intersection Voltaire St & Chatsworth Blvd:

R = 92.13'
Δ = 85°08'

Set 10 chords of 94.13 Radius = stakes 2' outside curb

Angles turned from radius tied:

	End Curb		Ele: 117.00	B.M. Hub 113.90 see sketch: 7.34 = 127.24 ℸ
P.C.	00	00° 0'	117.22	Rods 10.02 ✓
	1	8° 31'	117.90	9.34 ✓
	2	17° 02'	118.58	8.66 ✓
	3	25° 32'	119.26	7.98 ✓
	4	34° 02'	119.93	7.31 ✓
	5	42° 34'	120.61	6.63 ✓
	6	51° 05'	121.29	5.95 ✓
	7	59° 36'	121.97	5.27 ✓
	8	68° 06'	122.64	4.60 ✓
	9	76° 37'	123.32	3.92 ✓
E.C.	10	85° 08'	124.00	3.24 ✓

Δ = 98° 53' 30"
R = 35.54'

		+44.57'	115.16	7.19	B.M. 115.90 2.45 = 122.35 ℸ
P.C.	00	00° 00'	116.96 +17.00	5.39 ✓	
	1	16° 29'	117.34	5.01 ✓	
	2	32° 58'	117.42	4.93 ✓	
	3	49° 27'	117.49	4.86 ✓	
	4	65° 56'	117.27	5.08 ✓	
	5	82° 25'	116.92	5.43 ✓	
	6	98° 54'	116.30	6.05 ✓	

122.35 ℸ see above:
115.00
3.35
1.88
+1.47 for intake:

122.35 ℸ
−12.77
109.58
+ 0.59
110.17 ℸ
−12.75
97.42
+ 1.16
98.58 ℸ
−12.66
85.92
+ 0.97
86.79 ℸ

122.35 ✓
113.50
8.85 ✓

110.17
105.33
4.84 ✓ ?

98.58
97.00
1.58 ✓

98.58
91.50
7.08 ✓

86.79
85.01
1.78 ✓

86.79
79.50
7.29
6.29
+1.00

86.79
77.10
9.69
8.29
+1.40

86.79
76.37
10.42
9.52
+0.90

86.79
77.34
9.45 ✓

Grades on Thorn St. bet. 29th St. & Granada St.

	Curb	Gutter	¼	℄	¼	Gutter	Curb.
W.L. 29th	322.0	321.0	321.62	321.75	321.37	320.5	321.5
2' W	322.01	321.01	321.63	321.76	321.38	320.51	321.51
25' W	322.14	321.14	321.76	321.89	321.51	320.64	321.64
50' W	322.28	321.28	321.90	322.03	321.65	320.78	321.78
75' W	322.42	321.42	322.03	322.16	321.78	320.91	321.91
100' W	322.55	321.55	322.17	322.30	321.92	321.05	322.05
125' W	322.69	321.69	322.31	322.44	322.06	321.19	322.19
135' W	322.75			322.50			
150' W	322.83	321.83	322.45	322.58	322.20	321.33	322.33
170' W	322.97			322.64			
175' W	322.97	321.97	322.59	322.72	322.34	321.47	322.47
200' W	323.11	322.11	322.73	322.86	322.48	321.61	322.61
220' W	323.25			322.97			
225' W	323.25	322.25	322.87	323.00	322.62	321.75	322.75
250' W	323.39	322.39	323.01	323.14	322.76	321.89	322.89
270' W = E.L. Granada	323.50	322.50	323.12	323.25	322.87	322.0	323.0

7.31 322 / 6.61 / 328.51 — 322.25 / 6.25 / 6.2 / +1.1 — 322.175 / 6.174 / +0.1 / 322.3 / 6.2 / +1.4 — 322.03 / 6.48 / 4.9 / +1.6 — 322.58 / 6.0 / +2.7 — 322.80 / 5.9 / +2.0 — 323.0 / 5.4 / +1.7 — 322.5 / 6.0 / +1.6

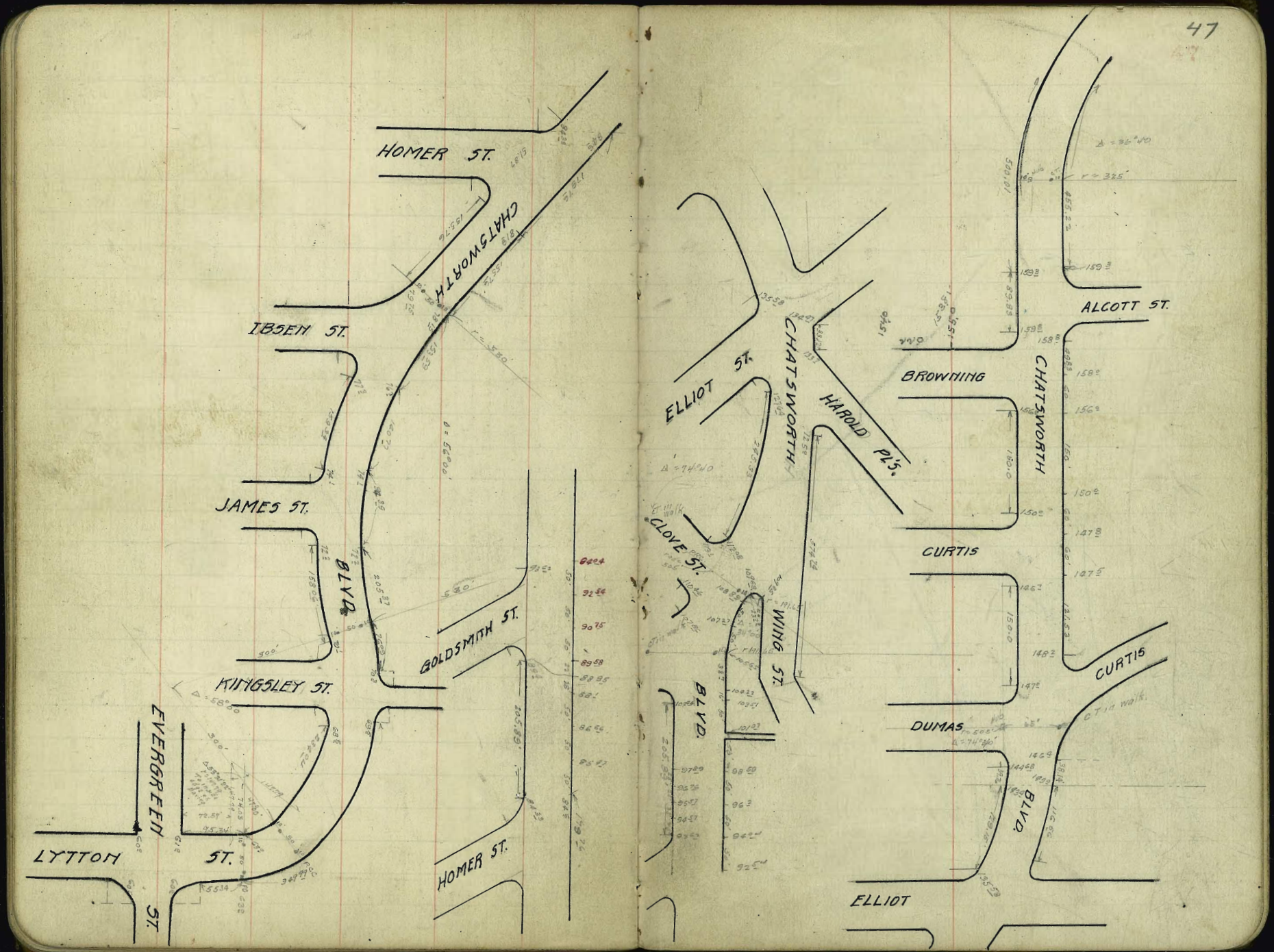
+ = − 4/6/20 Gregory Moore Miller Shaw

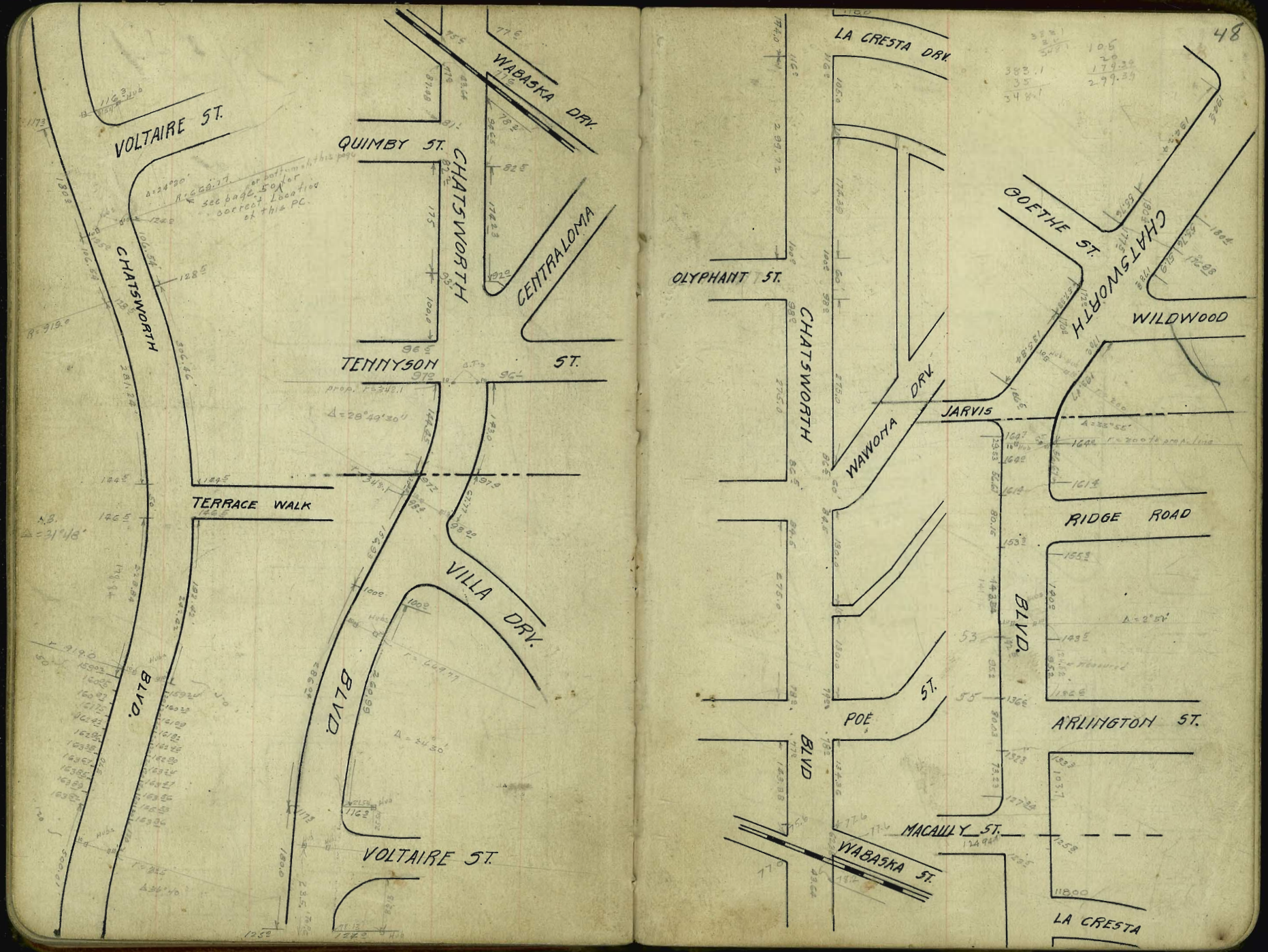
323.49 NE Thorn & Granada / 5.07 / 328.56 — 322.75 / 4.35

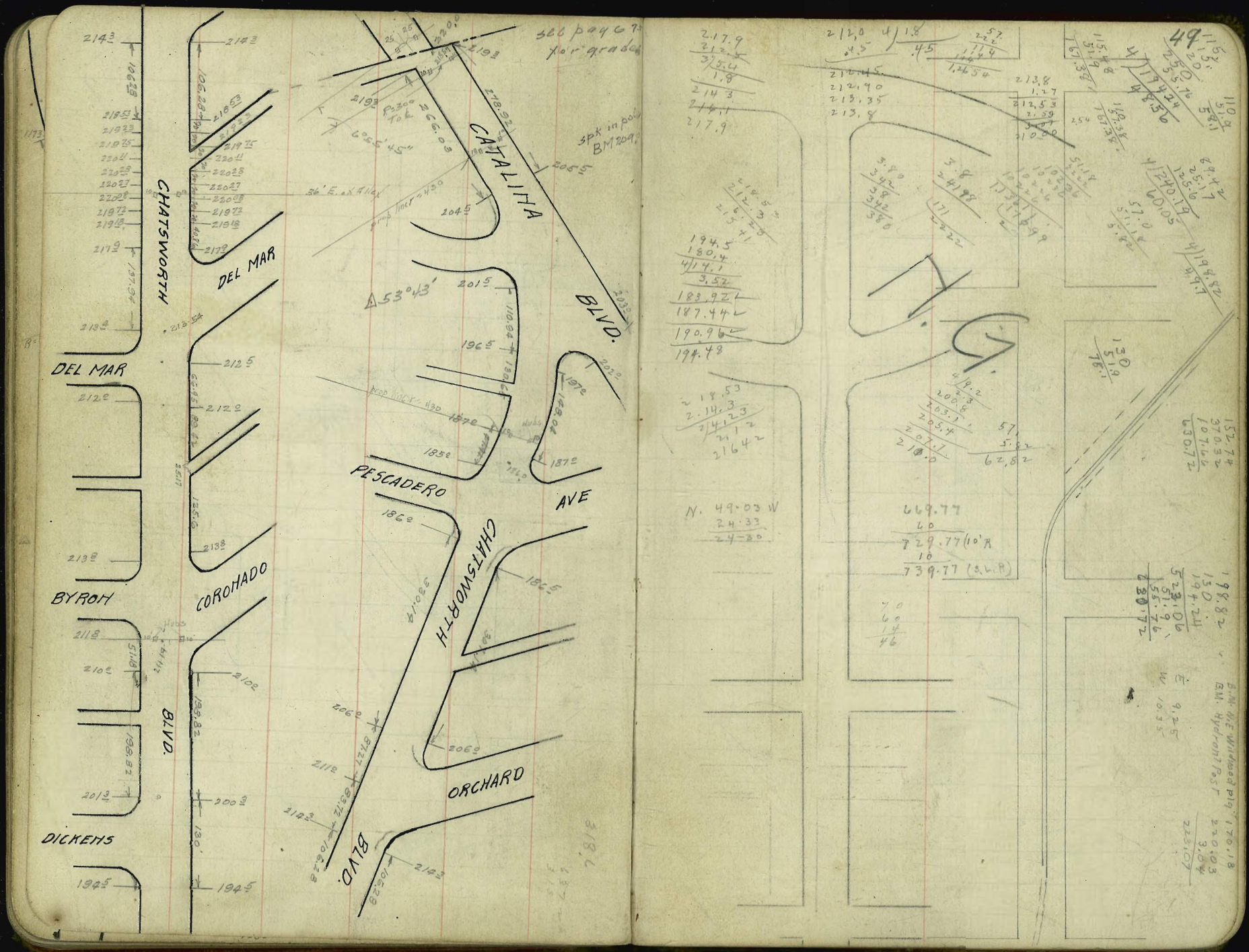
322.374 / 4.81 / 1.00 — 323.44 / 5.09 / 4.7 / +0.4 — 323.19 / 5.37 / 4 / +1.3 — 323 / 5.56 / 4.5 / +1.1 — 322.80 / 4.06 / +1.6 — 322.69 / 5.87 / 4.6 / +1.3 — 322.89 / 5.69 / 5.2 / +0.2 — 322.75 / 5.31 / 5.5 / −0.2

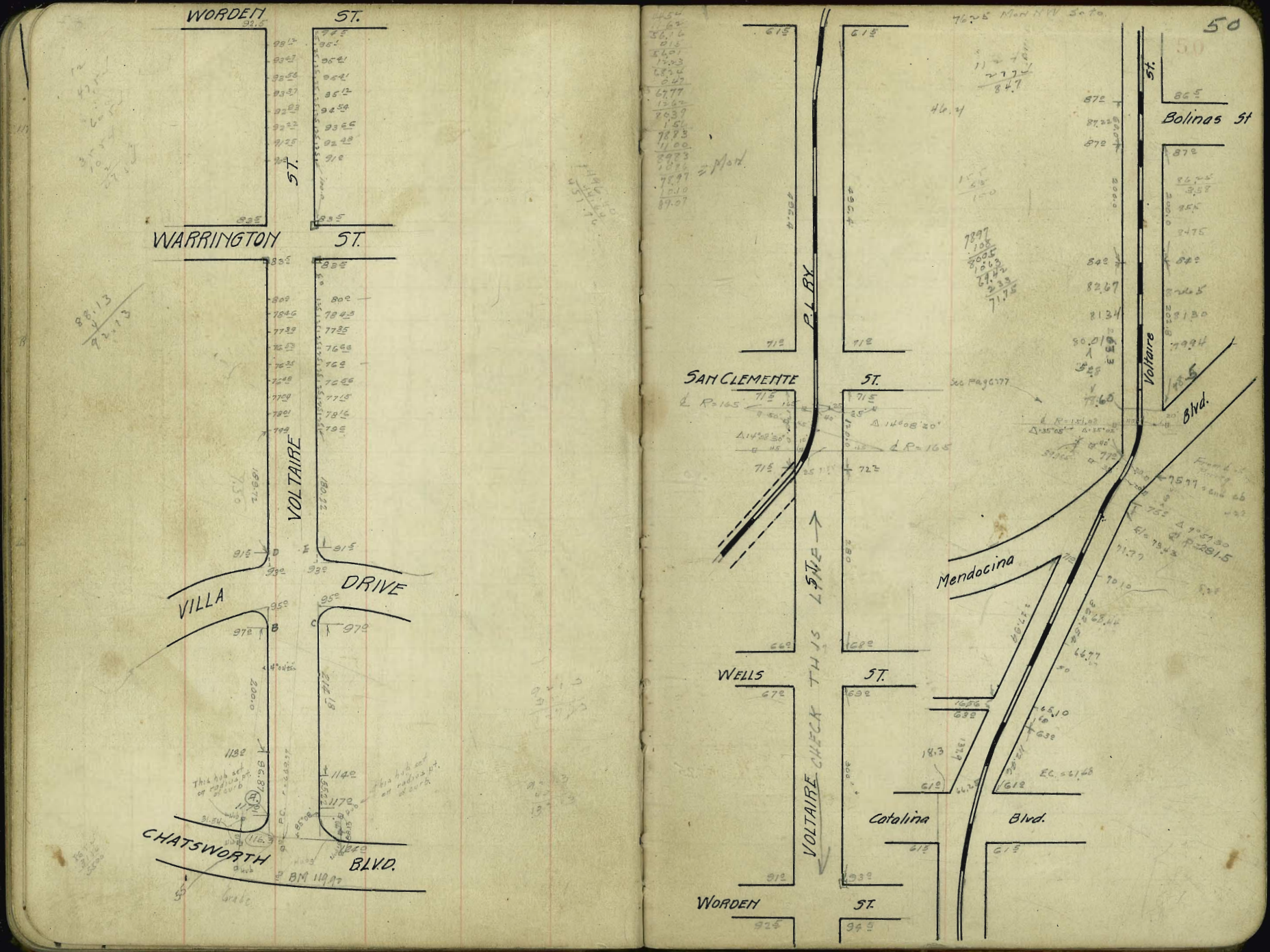
323.49 / 4.61 / 328.10 — 323.19 / 4.91 — 323.00 / 5.10 / +1.0 — 322.80 / 5.20 / +0.4 — 322.58 / 5.47

321.21 / 6.32 / 327.53 — 322.53 / 5.00 — 322.50 / 4.73 — 322 / 4.53


HOMER ST.
CHATSWORTH BLVD.
IBSEN ST.
JAMES ST.
KINGSLEY ST.
GOLDSMITH ST.
EVERGREEN ST.
LYTTON ST.
HOMER ST.
ELLIOT ST.
CHATSWORTH BLVD.
HAROLD PL'S.
GLOVE ST.
MING ST.
ALCOTT ST.
BROWNING
CHATSWORTH BLVD.
CURTIS
DUMAS
CURTIS
ELLIOT


VOLTAIRE ST.
WABASKA DRV.
QUIMBY ST.
CHATSWORTH
CENTRALOMA
TENNYSON ST.
CHATSWORTH BLVD.
TERRACE WALK
VILLA DRV.
BLVD.
VOLTAIRE ST.
LA CRESTA DRV.
OLYPHANT ST.
CHATSWORTH
GOETHE ST.
CHATSWORTH
WILDWOOD
WAWONA DRV.
JARVIS
RIDGE ROAD
BLVD.
POE ST.
ARLINGTON ST.
BLVD
MACAULY ST.
WABASKA ST.
LA CRESTA


CHATSWORTH
DEL MAR
DEL MAR
CATALINA
BLVD.
PESCADERO
AVE
CHATSWORTH
BYRON
COROHADO
BLVD.
ORCHARD
BLVD.
DICKENS
49
S.M.W.E. Wildwood Plg. 170.18
B.M. Hydrant Post
N. 49-03 W
24.33
24.30
669.77
60
729.77 (10' R
10
739.77 (B.L.R)


WORDEN ST.
WARRINGTON ST.
VOLTAIRE ST.
VILLA DRIVE
CHATSWORTH BLVD.
SAN CLEMENTE ST.
WELLS ST.
WORDEN ST.
VOLTAIRE CHECK THIS LATER
P.L. BK.
Voltaire St.
Bolinas St
Mendocina
Catalina Blvd.
50

Grades on F St.

<14'>gutter<11'>CL

PL <11'> 8.4 <5'> Hrail strail

W.L. 1st	9.50	9.5		8.0	8.50	8.00	8.0	
25	9.31	9.43			8.17	7.89	7.66	
37	9.22	9.34						
50	8.74		8.41	8.41	7.83	7.18	7.37	
76	7.33		8.0	8.0	7.51	6.87	7.06	7.31
100	7.87		7.56	7.56	7.18	6.56	6.75	7.0
124	7.53	7.49	7.20	7.20	6.85	6.25		6.65
150		6.92	6.85	6.85	6.50	5.93		6.37
175		6.71	6.64	6.60	6.19	5.62	5.81	6.06
E.L. Front	7.00	6.53	6.44	6.44	5.96	5.32	5.5	5.75
Gutter	6.66			6.47	5.96	5.64	5.52	5.26
Center Front	6.98			6.17	6.01	5.64	5.67	5.80
				6.11	5.91	5.72	5.53	5.33
Gutter	6.30			6.24 <14.2> 5.98 <14.2> 5.81 <14.2> 5.72 <5'> 4.95				
W.L. Front	6.60		6.41	6.41	5.93	5.63	5.15	5.26

693 SW 2nd & I

12W6	5.20	5.50	4.95	5.75	6.00	6.75	6.46	7.00											
14.61	4.61	4.72	4.96	4.96	3.9	2.96	5.26	2.71											
7.22	6.5	7.11																	
7.36	2.9	2.6																	
7.35																			
9.71																			
12W6	6.60	6.62	6.63	6.75	6.59	5.93	5.92	5.15	5.75	4.92	5.33	5.60							
4.08	3.10	3.01	3.07	2.95	2.81	3.77	4.09	4.55	4.45	4.72	4.37	4.20							
14.54																			
7.02	5.60	5.20	5.32	5.44	5.51	5.78	5.91	5.77	5.53	5.07									
1.46	4.30	4.50	4.38	4.46	4.19	3.92	3.77	3.98	4.19	4.03									
3.26																			
9.70	5.96	5.42	5.22																
	3.74	4.06	4.38																

	1.26	HD 32.58	31.32	
P.C.			31.32	
			30.83	1.75
			30.35	2.23
			29.86	2.72
			29.38	3.20
E.C.			28.89	3.69
				4.10
				5.15
P.C.			26.32	
			~~25.97~~	6.61
			25.62	6.96
			25.27	7.31
			24.92	7.66
E.C.			24.57	8.01
break E.C. + t			24.50	
		2382 / 521		
P.C.		29.03	24.19	4.86
			240	5.01
E.C.			23.43	5.60
P.C.			23.20	5.83
			23.16	5.87

	29.03	23.12	591
		23.19	~~594~~ 584
		23.31	572
P.R.C.		23.5	553
		24 25	478
		25.0	403
		25.75	328
P.R.C.	26.5 / 10 27 / 36.77	26.5	253
		27.26	951
		28.02	875
		28.78	799
		29.54	723
		30.3	647
P.C.C.		31.75	502
		33.8	

6/20/20 Gregor / E mandark / Miller Shaw. X Section of Alley bet Wash & Lewis 3rd & 4th

	10.63	293.75	283.12	SW BP 4th & Lewis	
	S. Curb Lewis				
E		5.18	288.5	on curb	
	S. Line Lewis				
E		4.6	89.1		
C		4.4	89.3		
W		4.2	89.5		
	31' S.				
-4.7		2.0	91.7	= garage	
W		2.1	91.6		
C		2.4	91.3		
E		2.6	91.1		
+4.0		2.5	91.2	= garage	
	47.5' S.				
-4.7		2.3	91.4		
W		2.3	91.4		
	51' S.				
-4		2.9	90.8	= garage	
E		2.9	90.8		
	87' S.				
E		2.7	91.0		
C		2.4	91.3		
W		2.1	91.6		
+1.8		2.1	91.6	= garage	

	129' S.			
-4		2.4	291.3	
W		2.6	91.1	
C		2.6	91.1	
E		2.9	90.8	
	167' S.			
-0.4		1.9	91.8	cement floor
E		2.2	91.5	
C		2.2	91.5	
W		2.1	91.6	
	191' S.			
-6		1.9	91.8	= garage
W		2.0	91.7	
C		2.0	91.7	
E		2.1	91.6	
	209' S.			
E		1.8	91.9	cement = garage
C		1.9	91.8	
W		1.7	92.0	
	245' S.			
W		1.2	92.5	= same as floor of garage with entrance to South
C		1.4	92.3	
E		1.7	92.0	
+9'		1.9	91.8	= garage
T.P.	2.40	294.88	292.48	

	345' S.			
E		3.0	291.9	
C		3.2	91.7	
W		3.3	91.6	= elev. of floor of garage with entr. to South.
	414' S			
-1.5		3.6	91.3	wood floor
W		3.9	91.0	
C		4.0	90.9	
E		3.9	91.0	
	434' S.			
3' E of E.L.		3.8	91.1	= wood floor
	468' S			
E		4.9	90.0	
C		4.8	90.1	
W		4.8	90.1	
+3.8		4.7	90.2	= garage
	507' S.			
-3.8		5.0	89.9	= garage
W		5.1	89.8	
C		5.4	89.7	
E		5.4	89.5	
	530' S.			
-6.3		5.2	89.7	= ctr. door double
E		5.2	89.7	
C		5.4	89.5	
W		5.5	89.4	

+3.8			
-4.1			
W			
C			
E			
+2.3			
-1.5			
E			
C			
W			
W			
C			
E			

5.9	289.0	= S. side of door
574' S		
4.8	90.1	ctr. door
5.4	89.5	
5.7	89.2	
5.5	89.4	
		= S. side door
604' S		
5.6	89.3	= garage
5.6	89.3	
5.6	89.3	
5.6	89.3	
639.3' S = N.L. Wash		
6.5	88.4	on curb
6.8	88.1	on gate.
6.6	88.3	on curb

GRADES ON ARNOLD PL. (Maryland PL)

	So. Line			
Int. Maryland	295.42			295.41
+52.98 on S.	296.22		30 Curve	296.15
1+05.96	297.02			296.90
1+58.95	297.83	break. P.C.C		297.65
1+73.87 break.	298.05			
		P.R.C.	300 Curve	297.35
				297.05
End of St.	298.25	297.5		296.75

298.22 C.T. in wall SW
3 W0
301.64 Arnold + Maryland

296.22 297.02 297.83 298.05 298.25
5.42 4.62 3.81 3.59 3.39
+2.6 +1.8 +0.6 +0.4 −0.1

295.41 295.45 296.90 297.65 297.35 297.05 296.75
6.23 5.99 4.94 3.99 4.29 4.59 4.89
−0.3 −2.5 −2.6 −1.6 −3.1 −5.5 −2.9

Cuts + fills set 2' N + S of respective lines of grading 7/3/20

Gregory Miller Shaw

298.22 297.5 297.59
5.32
303.56 6.06 6.01 5.97 5.92 5.86 5.53

298.05 298
5.51 5.76
6.11

6.47 6.82 7.18 7.53 7.89 298.33
8.28

298.24 3N)
3.03
301.27 301.27 301.27 301.27 301.27
295.42 296.22 24702 297.63
5.75 5.05 4.75 3.52

check OK Moore Hooker 7/7/20

301.27 301.27 301.27 301.27
29806 29615 2964 29765
3.44 B 5.12 4.37 3.26 B

301.27 301.27 301.27
29772 29766 29780
3.77 3.62 3.77

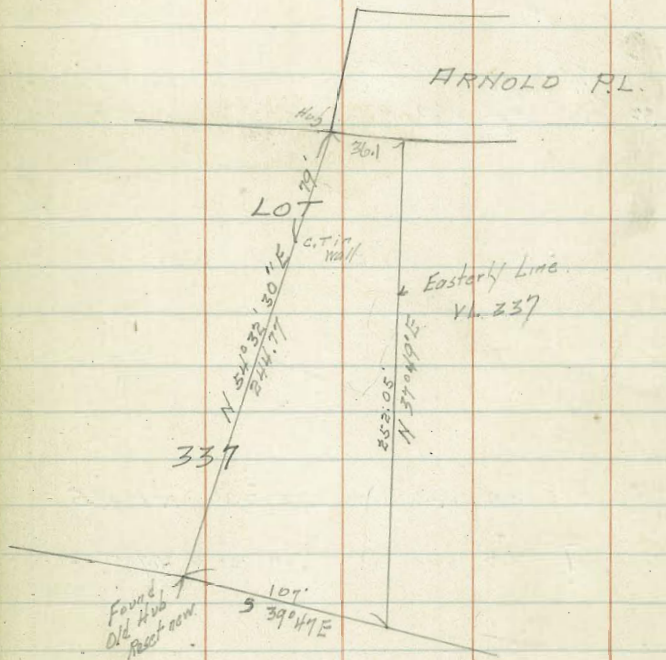
298.22 298.33 5.13 4.78 4.43 4.07 3.72 3.36 3.01 3.06
5.48
300.81 297.72
310 317 324 330 337 343 349 355 361

298.8 298.4 298.0
4.33 4.29 4.21 4.17 4.13
304.13

298.22 5.73 5.41 4.97 4.48 4.05 3.30 2.98 2.55 2.22 1.88
3.19
301.43 297.0 297.2 297.6 297.9 298.2 298.6 298.9 299.2 299.6

10/9/20 Gregory Miller Shaw

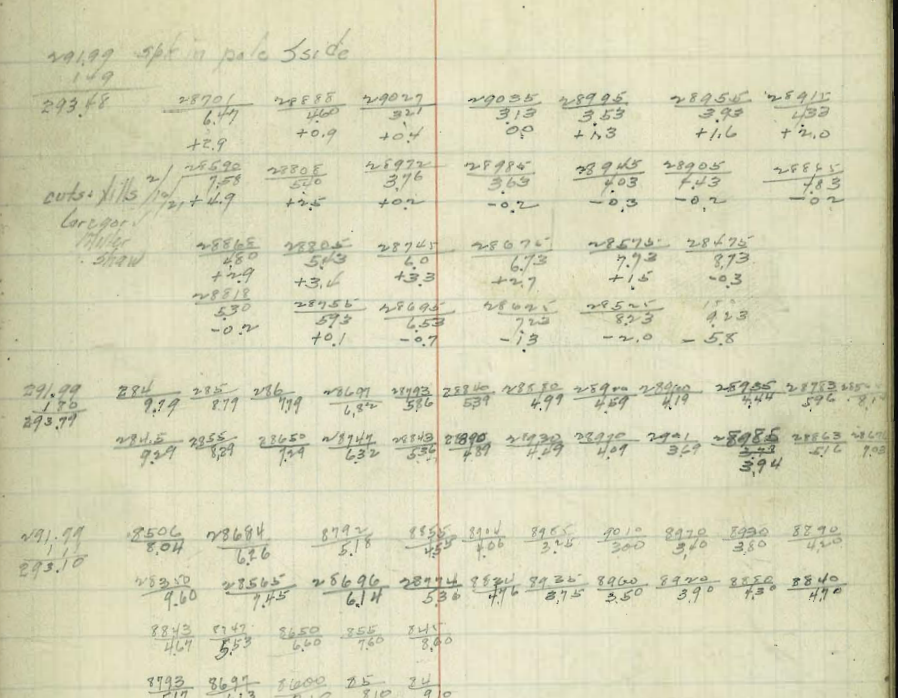
Survey of a division Line Thru V.L. 337 of the resub of P Lots D + 1117



Angle = 86°13'30"

Laurel St 29th St to 30th

	N. Line	Cb		¼	℄	¼	Cb.	S. Line
W.L. 30th	0	283.75	283.50	283.60	284.20	284.30	285.06 / ~~284.9~~	285.15
	+3 W	283.88	283.61	28371	284.31	284.41	285.01	285.26
	+7 W	284.05	283.80	283.89	284.49	284.57	285.16	285.41
	+14 W	284.35	284.10	284.19	284.77	284.84	285.42	286.67
	+21	284.65	284.40	284.45	285.03	285.10	285.68	286.93
	+25	284.82	284.57	284.63	285.20	285.26	285.83	286.08
	+50	285.90	285.65	185.68	286.21	286.23	286.84 / 287.92	287.01
	+80		286.96					
X	1+00	288.00	287.83 / 288.36	287.78	288.23	288.18	288.63 / 289.06	288.88
X	+60	289.72	289.35	289.35	289.25	289.63	289.85	~~288.27~~
	2+00	289.85	289.60	289.47	289.85	289.72	290.10	290.35
	+50	289.45	289.20	289.07	289.45	289.32	289.70	289.95
	3+00	289.05	288.80	288.67	289.05	288.92	289.30	289.55
	+25	288.85	288.60	288.47	288.85	288.72	289.10	289.35
	+50	288.65	288.40	288.27	288.65	288.52	288.90	289.15
	4+00	288.18	287.93	287.80	288.18	288.05	288.43	288.68 Not
	~~+35~~	~~287.55~~	~~287.30~~ / 286.97	287.17	287.55	287.42	~~287.80~~	~~288.05~~
	~~4+68~~	~~286.95~~	~~286.70~~	~~286.57~~	~~286.95~~	~~286.82~~	~~287.20~~ / 287.47 Not 1??	~~287.45~~
	5+00	286.25	286.00	285.87	286.25	286.12	286.50	286.75
	+50	285.25	285.00	284.87	285.25	285.12	285.50	285.75 Not.
	+75	284.75	284.50	284.37	284.75	284.62	285.00	285.25
	6+01.3 = E.L. 29th St.	284.25	284.00	283.87	284.25	284.12	284.5	284.75



SW BP 3rd & Lewis N 91.99
NW BP 3rd & Wash N 287.50
Univ 284.5 N

287.50 − 4.75 = 282.75

87.34 / 5.0°
87.39 / 4.89
87.56 / 4.72
87.74 / 4.54
87.91 / 4.27

91.99 / 4.88 = 4.39
287.50

86.74 / 4.59
86.84 / 4.49
86.36 / 4.97

284.50 − 3.33 = 281.33

284.5 N − 4.61 = 279.13

W&B 284.47 N/4 C E/4 E/4 E/4
284.06 284.20 84.43 84.46 84.34 84.32
.18 E .16 E .11 E

91.99 − 4.17 = 276.11

91.73 / 4.38
91.9 / 4.24

287.50 − 4.78 = 282.72

87.45 / 4.98
87.4 / 4.83
87.32 / 5.01

58

St. Lewis St.

291.5 91.73 91.9 91.73 91.5

287.0

87.91
87.74
87.56
87.39
287.21

287.5

287.24 87.45 87.4 87.32
.13 E .13 E .08 E

287.5

Washington St.

287.0 287.0

87.91 87.74 86.84 86.36 86.00

N.L. Univ. Ave.

285.0

		+2.56	+9.3	1+9.6	2+3.8	2+9.2	3+6.0
E side		288.79	289.43	290.42	290.82	291.34	292.0
		3.80	3.16	2.17	5.99	5.47	4.81
		+1.0	+1.0	+1.0	+1.0	+1.0	+1.0
		+4.85	1+4.9	1+8.1	2+3.8	2+9.4	3+5.6
W side		288.46	289.70	290.24	290.93	291.81	292.16
		3.93	2.89	2.25	3.88	3.00	4.65
		+1.0	+1.0	+1.0	+1.0	+1.0	+1.0

		3+9.4	4+8.0	5+6.0	5+52.8		6+0.0	6+2.0
	E	91.86	91.65	91.16	90.88		90.45	89.68
		4.95	5.31	5.85	5.23		5.66	6.43
		+1.0	+1.0	+1.0			+1.0	+2.0
			4.58.5	4+9.1	5+6.4	5+8.4	6+0.5	6+2.0
	W		91.83	91.71	91.41	91.24	90.52	90.16
			4.98	5.10	4.90	4.97	5.29	5.95
			+1.0	+1.0	+1.0	+1.0	+1.0	+2.0

28750	8898	8902	8950	9000	8998	9038	9046	9106	9098
553	4.05	4.01	3.53	3.01	3.05	2.49	2.57	1.97	2.09
293.03	9157	9142	9188	9170	9220	92			
2.38	4.53	4.68	4.32	4.50	3.90	4.10			
90.15	9201	9179	9138	9158	9116	9139			
5.35	4.09	4.31	4.78	4.52	4.76	4.73			
96.10	9145	9116	9174	9094	9046	9018			
	4.85	4.14	4.84	5.16	6.14	5.92			

519
91.62
.49
96.11

90.66
90.96
90.18
90.56
90.56

Lewis

289.25			288.65
290.66	290.16		289.68 290.18
290.96	290.82		290.45 290.56
291.26	291.26		290.94 290.94
291.45			291.16
291.64			291.37
291.82			291.58
292.01			291.79
292.20			292.00
✓	91.88	91.70	
✓	91.87	91.42	
✓	91.06	90.92	
✓	90.54	90.46	
✓	90.02	89.98	
✓	89.50	89.50	
✓	88.98	89.02	
288.46			288.54

r=.01039

r=.00961

O.J.M.

WASH.

≈6.45 B.P. SW. Col. a A.

≈6.45
4.47
30.9≈

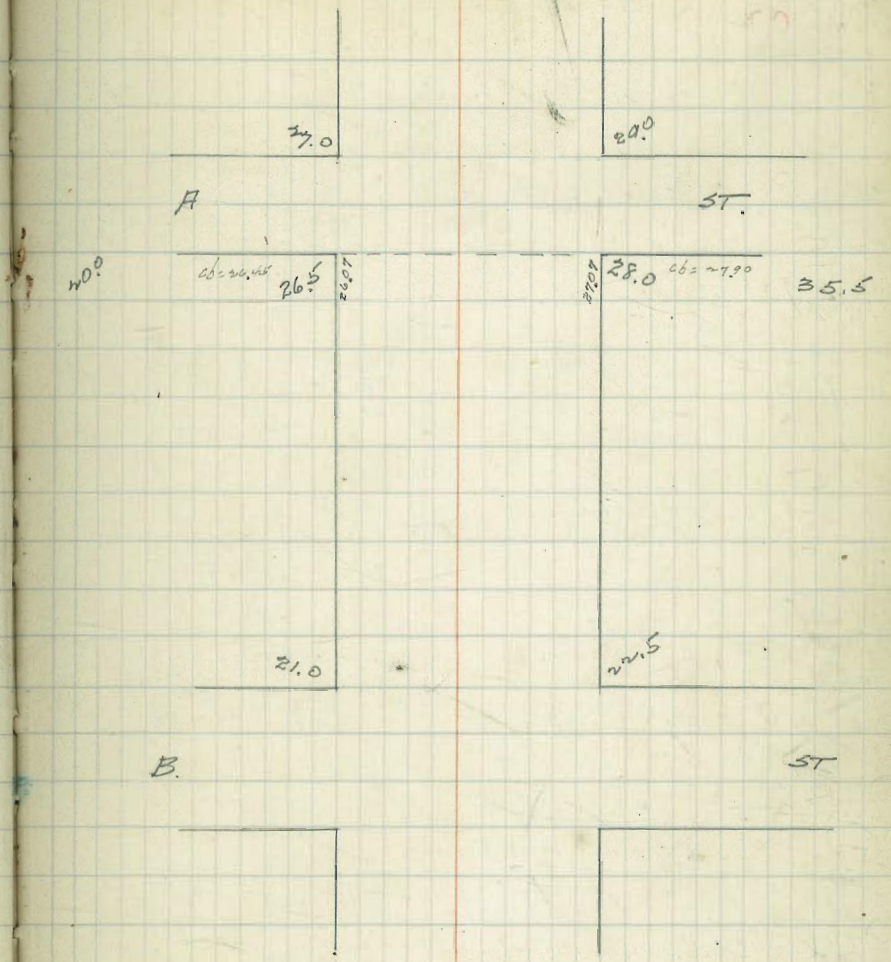
≈707
3.85

≈607
4.85

≈6.4⁵

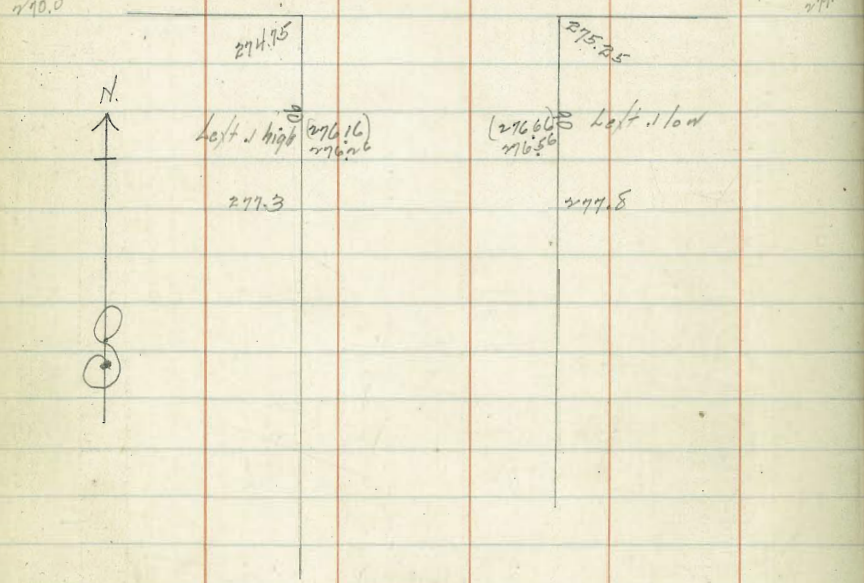
COLUMBIA ST.

60



3/7/21

BLOCK 10
BROOKES ADD



61

279.34 NW Perm + 3rd.
0.85
280.19

Stakes for concrete 3/7/21
Gregory
Miller
Shaw

274.41	273.94
5.78	6.27
275.75	274.75
4.94	5.44
276.56	276.76
3.63	3.93

Con From Page 76

	E		℄	W	
65.	26		200.8		S. Line Dickens
65.	27		197.65		
48.56	28		194.5		N. Line Dickens
48.56	29		190.97		
48.56	30		187.49		
48.56	31		183.92		
55.76	32		180.4		
51.9	33		177.19		
58.1	34		173.80		
57.88	35		172.00		
42.05	36		170.00		
16.75	37	168.82		168.82	
16.75	38	168.49		168.34	
24.16'	39	168.15		167.86	21.82'
24.16'	40	167.70		167.24	21.82'
24.16'	41	167.25		166.62	21.82'
24.16'	42	166.80		166.00	21.82'
24.16'	43	166.04		165.23	21.82'
24.16'	44	165.27		164.46	21.82'
16.75'	45	164.50		163.70	
16.75'	46	163.40		163.00	
23.18'	47	162.30		162.30	
40.08	48		161.40		
40.07	49		157.85		
55.55	50		154.30		
55.98	51		149.88		

Con'd Page 5 New Book.

Check stub sta 32: E 183.15 − 180.30 = 2.85; 3.61; +0.24 See page 76:

62

BM 170.18 N.E WILDWOOD.B.P.
12.97
183.15 π

170.18
1.13
171.31 π

W	33	E	E	34	W		35	
177.09		177.09	173.70		173.70	171.90		171.90
6.06		6.06	8.45		8.45	11.85		11.85
6.26		6.73	9.16		9.91	11.12		12.63
−0.20		−0.67	+0.29		−0.36	+0.13		−1.38
					+0.24?			

W	36	E	E	37	W	E	38	W	E	39	W
165.90		169.90	168.82		168.82	168.49		168.34	168.15		167.86
1.41		1.41	2.49		2.49	2.82		2.97	3.16		3.45
1.24		1.09	2.98		3.03	3.00		3.89	3.34		4.06
+0.17		+0.32	−0.49		−0.54	−0.18		−0.92	−0.18		−0.61

E	40	W	E	41	W	E	42	W	E	43	W
167.70		167.24	167.25		166.62	166.80		166.00	166.04		165.23
3.61		4.07	4.00		4.69	4.51		5.31	5.27		6.08
3.73		3.71	4.65		4.15	5.45		4.64	5.56		5.53
−0.12		+0.36	−0.59		+0.54	−0.94		+0.67	−0.69		+0.55

E	44	W	E	45	W	E	46	W	E	47	W
165.27		164.46	164.50		163.70	163.40		163.00	162.30		162.30
6.04		6.85	6.81		7.61	7.91		8.31	9.01		9.21
6.75		6.30	8.13		6.82	8.62		7.70	9.22		8.65
−0.71		+0.55	−1.32		+0.79	−0.71		+0.61	−0.21		+0.56

BM 160.41 RIDGE ROAD:
+3.34
163.75 π
12.65
151.10
0.83
151.93 π
12.36
139.57
0.64
140.21 π
12.54
127.67
0.15
127.82 π
9.84
117.98 = B.P.

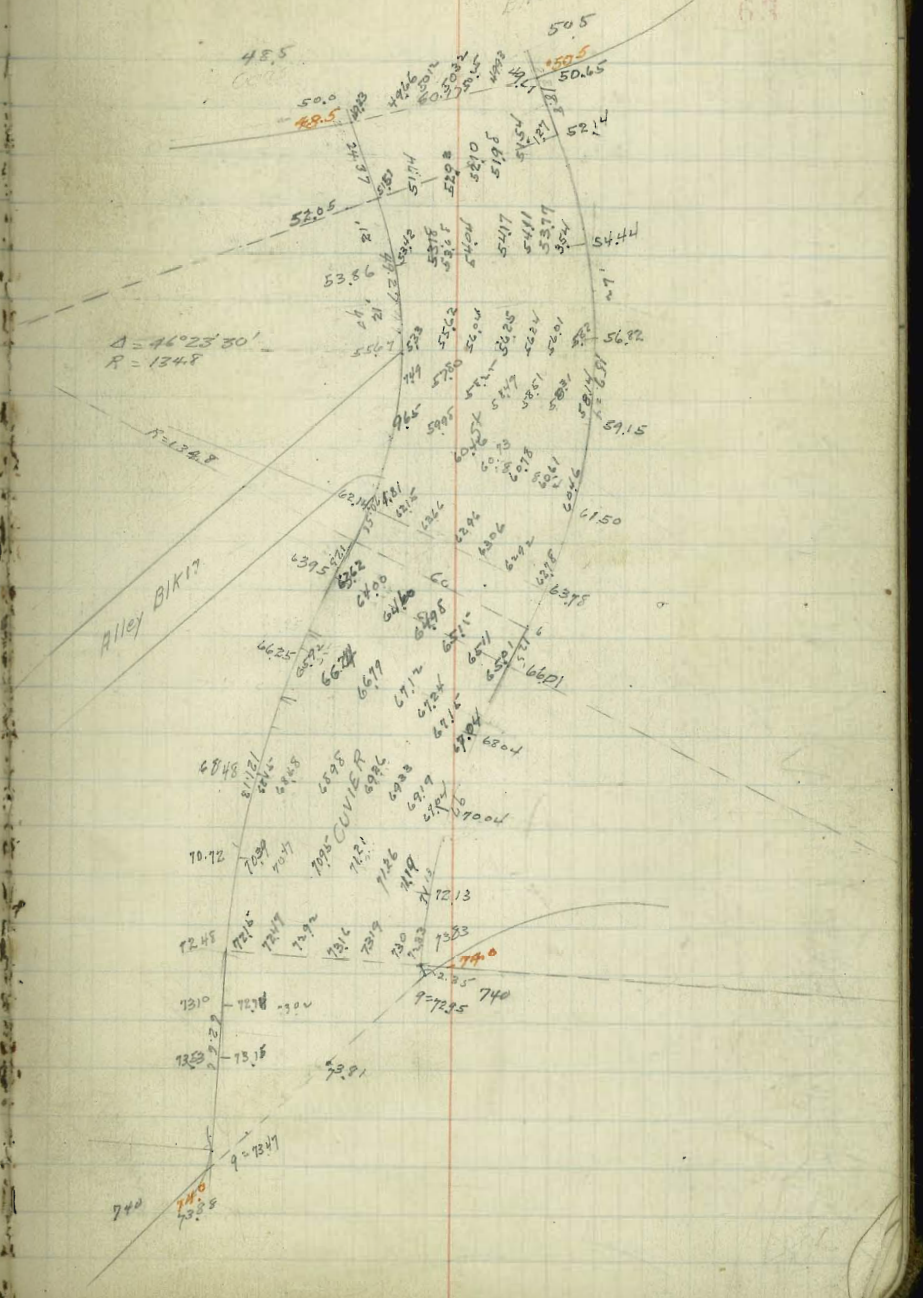
E	47	W	Check:
162.30		162.30	
1.45		1.45	
1.67		1.09	
+0.28		+0.36	

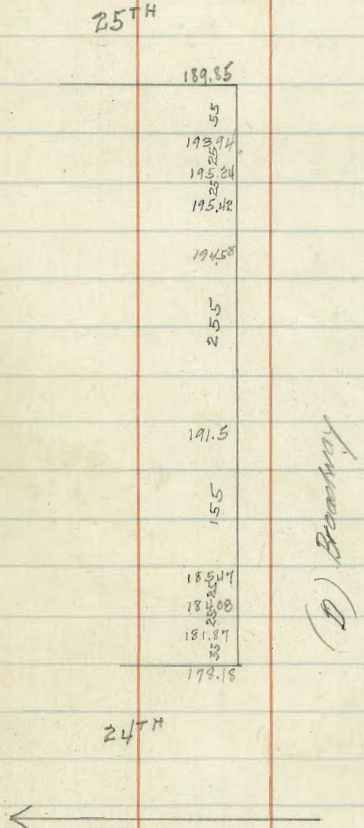
E	48	W	E	49	W	E	50	W
161.30		161.30	157.75		157.75	154.20		154.20
2.45		2.45	6.00		6.00	9.55		9.55
3.40		2.25	6.33		5.31	9.44		9.06
−0.95		+0.20	−0.33		+0.69	+0.11		+0.49

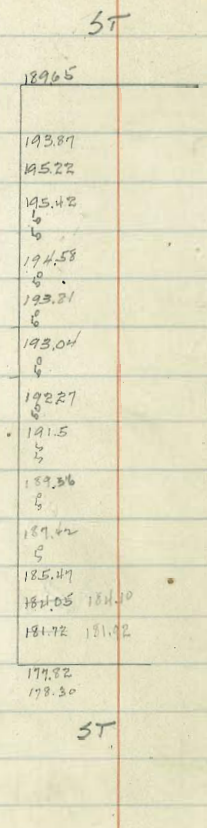
E	51	W	E	52	W	W	53	E
149.78		149.78	145.35		145.35	142.90		142.90
2.15		2.15	6.58		6.58	9.03		9.03
2.82		3.48	8.29		6.95	10.29		9.51
−0.67		−1.33	−1.71		−0.37	−1.26		−0.48

E	54	W	E	55	W	E	56	W
139.70		139.70	136.50		136.50	134.60		134.60
0.51		0.51	3.71		3.71	5.61		5.61
1.43		2.11	4.30		4.38	6.32		5.41
−0.92		−1.60	−0.59		−0.67	−0.71		+0.21

E	57	W
132.70		132.70
7.51		7.51
8.16		7.56
−0.65		−0.05


Δ = 46°23'30"
R = 134.8
Alley Blk 17
CUVIER
Q = 7295
Q = 7349





187.03 34 D=25

40 →

187.03	N	183.94	185.24	195.42	194.58	194.50	193.81	193.04	192.24	191.5	189.36		
11.22		4.29	2.39	2.81	3.65	3.73	4.42	5.19	3.14	2.34	4.99		
198.25		+1.0	00	00		+1.0	0.0	00	00	00	+1.0		
5.56	S	193.87	195.22	195.42				193.04					
192.67		4.36	2.01	4.21	3.65	+0.2	00	1.81	00		+1.9		
1.58		+0.4	00	00									
194.36													
10.14													
184.21													
6.61													
184.82		187.42	185.47	185.08	184.59								
		6.93	8.88	10.27	2.95								
		+1.0	00	+0.5	+1.9								
				185.07	181.64								
		40	00	0.97	3.10								
				+0.4	+1.0								

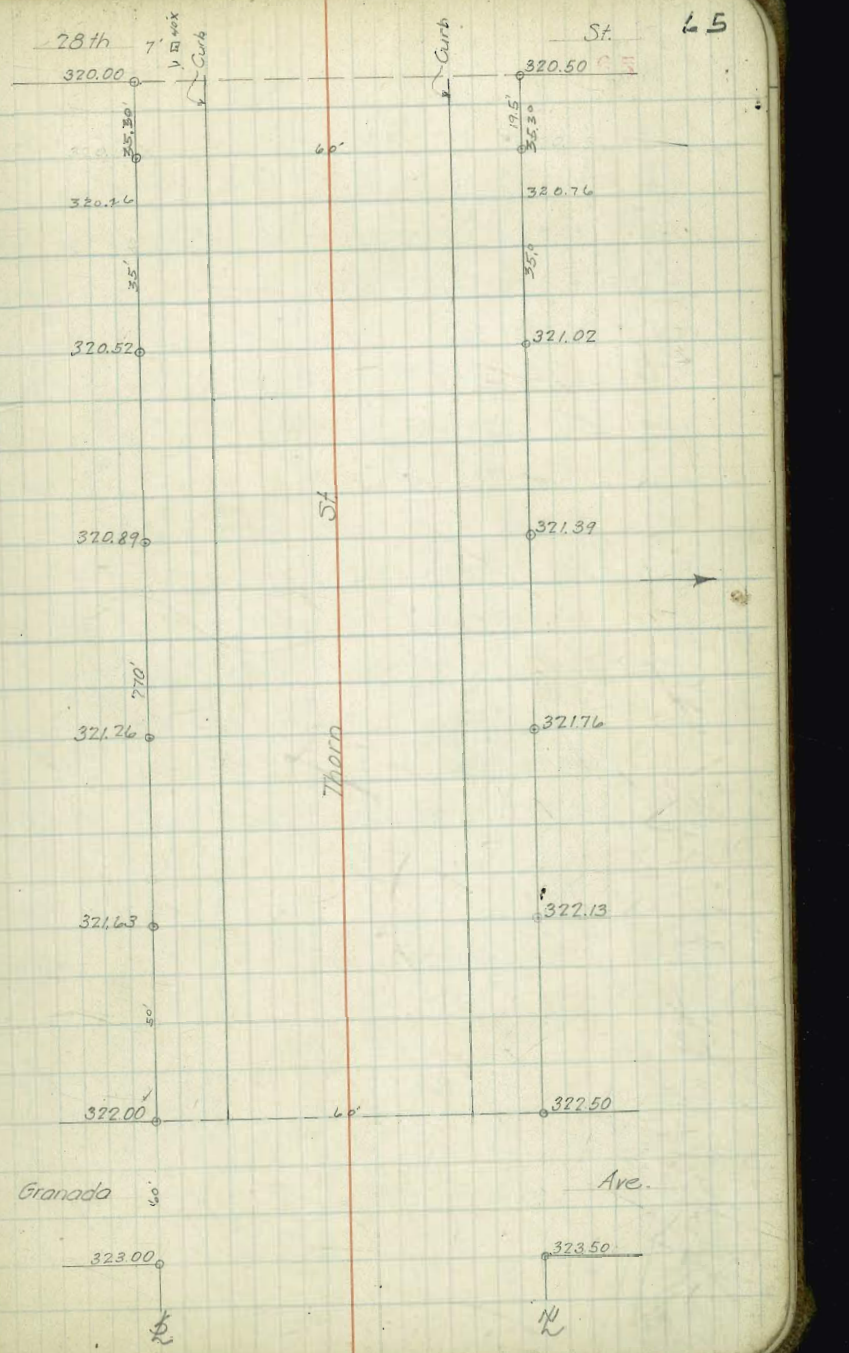
178.43	181.97	178.18	184.10	185.47	187.42	189.36	
10.96	8.46	10.20	6.28	4.91	2.99	1.05	
189.39							
190.41	181.51		185.05				
0.98	8.51		6.98				
189.43							
5.61	191.5	192.27	191.03	193.04	193.81	194.50	195.42	195.22
178.13	6.63	5.86	5.09		4.32	3.63	2.71	4.91
	193.94	192.57					
	4.19	4.26					

321.49
328.43

BP NE Granada

S	320.75	320.51	320.77	321.14	321.51	321.85	322.21
	8.18	7.92	7.66	7.29	6.92	6.55	
	+0.2	+0.6	+1.2	+0.8	+1.4	+1.7	
N	320.75	321.01	321.27	321.64	321.91	322.25	
	7.68	7.42	7.16	6.79	6.42	6.06	
		+2.6	+2.1	+1.6	+0.9	+1.8	

CUT & FILLS 4/22/21 Gregory Moore Miller



31st St. Myrtle to Thorn

	W		Cb		¼		℄		¼		Cb		℄
℄ Myrtle	327.25		327.00		326.71		326.75		326.46		326.50		326.75
+4	327.28		327.03		326.74		326.78		326.49		326.53		326.78
+15	327.35		327.10		326.82		326.86		326.58		326.62		326.87
+50	327.58		327.33		327.06		327.12		326.86		326.92		327.17
+75	327.75		327.50		327.24		327.31		327.05		327.12		327.37
+100	327.91		327.66		327.42		327.50		327.25		327.33		327.58
+125	328.08	328.00	327.83	327.83	327.59	327.50	327.69	327.67	327.45	327.33	327.54	327.58	327.79
+150	328.25		328.00		327.77		327.88		327.65		327.75		328.00
+200	328.58		328.33		328.12		328.25		328.04		328.16		328.41
+225	328.75		328.50		328.30		328.44		328.24		328.37		328.62
+250	328.91		328.66		328.48		328.63		328.44		328.58		328.83
ℕ Upas = 0+00													
+300	329.25		329.00		328.83		329.00		328.83		329.00		329.75
	328.58		328.33								328.33		328.58
+15	329.00		329.00		329.00		329.00		329.00		329.00		329.00
	328.33		328.33								328.33		328.33
+24	329.00		329.00		328.83		329.00		328.83		329.00		329.00
℄ Upas = 0+00													
+30	329.25		329.00		328.83		329.00		328.83		329.00		329.25

(cont)

31st St. Myrtle to Thorn
Cont'

℄ Upas	W	Cb	¼	℄	¼	Cb	E
0+00	329.25	329.00	328.83	329.00	328.83	329.00	329.25
+50	328.42	328.17	328.02	328.21	328.06	328.25	328.50
+100	327.58	327.33	327.20	327.41	327.29	327.50	327.75
+150	326.75	326.50	326.39	326.62	326.51	326.75	327.00
+200	325.91	325.66	325.57	325.83	325.74	326.00	326.25
+250	325.08	324.83	324.76	325.04	324.97	325.24	325.49
+300	324.25	324.00 (.0828)	323.95	324.24 (.0586)	324.20 (.0502)	324.49	324.74
+350	323.41	323.16 (.0828)	323.13	323.45 (.0586)	323.43 (.0502)	323.74	323.99
+400	322.58	322.33	322.32	322.66	322.65	322.99	323.24
+450	321.74	321.49	321.50	321.86	321.88	322.24	322.49
+500	320.91	320.66	320.69	321.07	321.11	321.49	321.74
+550	320.08	319.83	319.88	320.28	320.34	320.74	320.99
+595	319.33	319.08	319.14	319.56	319.64	320.06	320.31
℄ Thorn +599	319.25	319.00	319.08	319.50	319.58	320.00	320.25

3/3/22 Moore

SCP Grim + Thorn

320.90
7.40
328.30
2.80
325.50
1.87
327.37

324.7
3.56

329.99
4.31

328.24
4.56

324.49
4.38

Alley - Blk 5 Breed + Chase Sub

	S	C	N
= W 25th St. 0+00	185.92	185.67	186.08
+12	186.65	186.39	186.79
+35	188.06	187.77	188.14
+56	189.34	189.03	189.38
+90	190.31	189.98	190.31
1+00	190.20	189.87	190.20
+40	189.05	188.72	189.05
+51	188.73	188.40	188.73
2+05	187.22	186.89	187.22
+50	186.53	186.20	186.53
+75	186.15	185.82	186.15
3+10	185.61	185.28	185.61
+57	184.76	184.43	184.76
4+00	183.29	182.96	183.29
+50	181.58	181.25	181.58
+75	180.72	180.39	180.72
5+00	179.87	179.54	179.87
+25	178.97	178.64	178.97
+34	178.54	178.21	178.54
+50	177.53	177.22	177.58
+75	175.51	175.25	175.65
+97	173.64	173.42	173.86
= E 24th St. 6+00.80	173.38	173.17	173.62

K Street ℄ 32nd East –

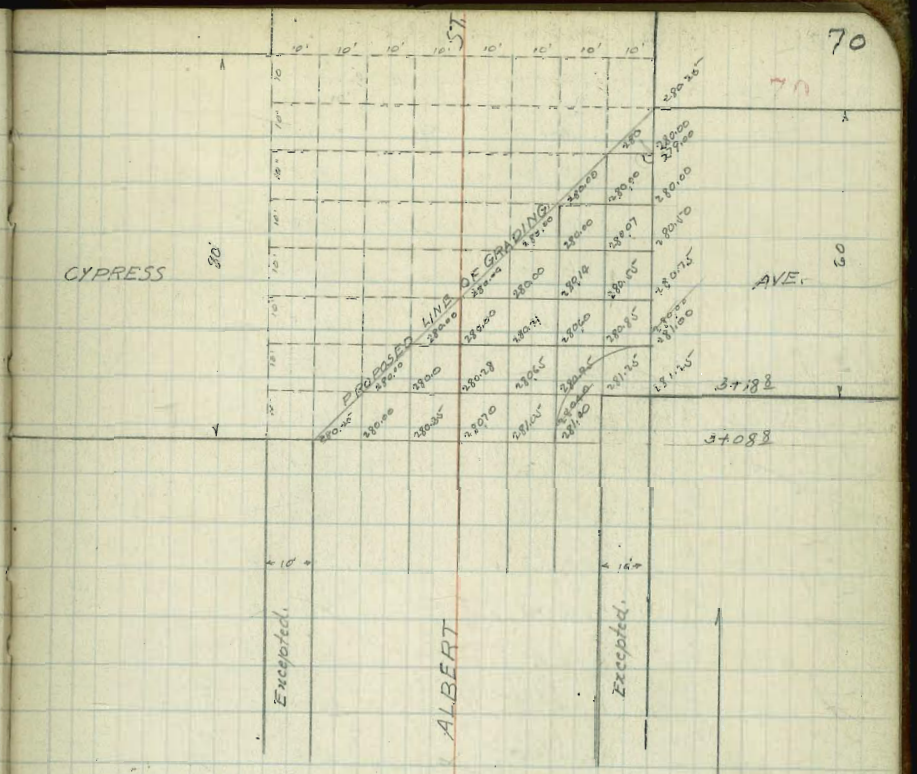
	℄	Ob	¼	℄	¼	Ob	N
℄ 32nd 0+00	81.25	81.00	80.87	81.25	81.12	81.50	81.75
+10	81.17	80.92	80.80	81.17	81.04	81.42	81.67
+25	81.06	80.81	80.68	81.06	80.93	81.31	81.56
+50	80.87	80.62	80.50	80.87	80.74	81.12	81.37
+75	80.69	80.44	80.31	80.69	80.56	80.94	81.19
100	80.50	80.25	80.12	80.50	80.37	80.75	81.00
125	80.31	80.06	79.93	80.31	80.18	80.56	80.81
150	80.12	79.87	79.74	80.12	80.00	80.37	80.62
175	79.94	79.69	79.56	79.94	79.81	80.19	80.44
Apex →		79.50	79.37	79.75	79.62	80.00	
(V.C.) 200	79.41	79.16	79.03	79.41	79.28	79.66	79.91
225	78.19	77.94	77.81	78.19	78.06	78.44	78.69
250	76.63	76.38	76.25	76.63	76.50	76.88	77.13
275	75.06	74.81	74.68	75.06	74.93	75.31	75.56
280		74.50	74.37	74.75	74.62	75.00	75.25
295							
328							

.0075 .0250 .0500

ALBERT ST. FROM N.L. BROOKS TO N.L. CYPRESS.

	W.L.	W.C.	W.G	W ¼	℄	E ¼	E.G	E.C.	E.L.
N.L. Brooks	287.25	287.00	286.00	287.00	287.50	287.50	287.00	288.00	288.25
5	287.22	286.97	285.97	286.97	287.47	287.47	286.97	287.97	288.22
10	287.19	286.94	285.94	286.94	287.44	287.44	286.94	287.94	288.19
25	287.10	286.85	285.85	286.85	287.35	287.35	286.85	287.85	288.10
35	287.04	286.79	285.79	286.79	287.29	287.29	286.79	287.79	288.04
50	286.95	286.70	285.70	286.70	287.20	287.20	286.70	287.70	287.95
70	286.84	286.59	285.59	286.59	287.09	287.09	286.59	287.59	287.84
75	286.81	286.56	285.56	286.56	287.06	287.06	286.56	287.56	287.81
100	286.66	286.41	285.41	286.41	286.91	286.91	286.41	287.41	287.66
125	286.51	286.26	285.26	286.26	286.76	286.76	286.26	287.26	287.51
135	286.46	286.21	285.21	286.21	286.71	286.71	286.21	287.21	287.46
145 Break.	286.40	286.15	285.15	286.15	286.65	286.65	286.15	287.15	287.40
160	286.23	285.98	284.98	285.98	286.48	286.48	285.98	286.98	287.23
170 Break.	286.02	285.77	284.77	285.77	286.28	286.28	285.79	286.79	287.04
175	285.89	285.64	284.64	285.64	286.15	286.15	285.66	286.66	286.91
195 Break.	285.17	284.92	283.92	284.93	285.45	285.47	284.99	285.99	286.24
200	284.95	284.70	283.70	284.72	285.24	285.26	284.79	285.79	286.04
225	283.87	283.62	282.62	283.66	284.20	284.24	283.78	284.78	285.03
250	282.79	282.54	281.54	282.60	283.15	283.21	282.77	283.77	284.02
275	281.71	281.46	280.46	281.53	282.11	282.19	281.77	282.77	283.02
300	280.63	280.38	279.38	280.47	281.07	281.16	280.76	281.76	282.01
308.8 = S.L on W.	280.25	280.00	279.00	280.10	280.70	280.80	280.40	281.40	281.65

See grade sheet in Xsection sheets.



280.31 BP NE Cypress

11.40	28402	28624	28704	28740		28768	28795
291.71	1.7	5.47	4.67	3.31		4.03	3.76
10.10	+5.0	+3.0	+1.7	+1.6		+1.8	+1.6
281.61							
1.47	28025	28279	28517				28695
283.08	2.83	8.92	6.54				4.76
	-9.4	~1.2	+1.3	+8.9	+1.1	+2.1	+3.6

See diagram in Xsection sheets.

Xsections Book 1075. Page 52.

Estimate " 10 " 293.

Roman.

Alley between Univ. Ave & Robinson
& between Herbert & Center Sts.

	Sta			℄	℄
	℄ Univ. Ave.			303.80	303.83
	+ 4	4		303.93	303.93
.03340	+ 12	8		304.20	304.20
	+ 25			304.66	304.66
	+ 41			305.1	305.1
⊕	+ 50		W.C.	305.26	305.26
	+ 70			305.4	305.4
	+ 75			305.39	305.39
	100	25		305.27	305.27
	1+33	33		305.12	305.12
.00458	1+65	32		304.98	304.98
	2+00	35		304.82	304.82
	2+24	24		304.70	304.70
	2+68.5	44.5		304.50	304.50
⊕	2+90	21.5		304.40 V	304.40
	2+93	3		304.35	304.35
.01600	3+00	7		304.24	304.24
	3+14	14		304.02	304.02
	3+65	51		303.20	303.20
⊕	3+90	25		302.80 V	302.80
	3+92	2		302.77	302.77
	4+25	33		302.28	302.28
	4+57	32		301.81	301.81
	5+00	43		301.18	301.18
.01476	5+25	25		300.81	300.81
	5+37	12		300.63	300.63
	5+59	22		300.30	300.30
	5+70	11		300.14	300.14
	5+75			300.07 V	300.07
⊕	6+00		W.C.	299.18	299.18
	6+17			298.0	298.0
.09735	6+25			297.25	297.25
	6+35			296.27	296.27
	℄ Robin 6+43.9			295.31	295.39

GRADES ON VOLTAIRE
see sketch page 50

	Curb Grade				Curb Grade
6 T 68.4					
6 - 43.4	78.01				78.16
6 + 18.4	79.4		79.5		79.6
			-10.6		
			85.01		
5 + 33.42			+3.8		
85.0 -					
4 + 38.1 / PE					91.5
4 + 33.42			91.5		
4 + 16.27 PT D	91.5				
3 + 11+18 = P+C.					97.0
3 + 04.03			97.0		
2 + 96.87 = PT B.	97.0				
1 + 96.87			105.53		
0 + 96.87	113.0	113.2	113.5	113.7	114.0
52.30					
0 + 44.57 = End of Curb	115.16				117.0
PT A = 0.00	117.0				118.75
	116.96				120.5
Y.C.	117.42				122.25
	119.27				
	116.3				124

BM. 119.90 +3.73 = 123.63 +2.19 = 125.82 +3.33 = 129.15 -3.56 = 125.59

E	124	122.25	120.5	118.75	117	112.7	108.3	96.8
	1.77	3.52	5.3	7.0	8.77	12.1	20.4	16.8
	-0.3	0.0	+2.1	+2.9	+3.9	+5.4	+8.4	+9.1
W.	116.3	117.27	116.9	117	115.1	113.2	20.4	96.8
	9.5	8.5	8.8	8.8	10.6	12.6		16.8
	00	+0.2	+2.4	+2.1	+3.0	+4.5	+6.5	+7.0

E	10.2	84.81	79.3					
	-2.0	16.56	+2.7					
W	91.2	+3.2	-13.7					
	10.2							
	+0.5	+4.8	-11.2					

	105.53	96.8	91.5	85	84.8	79.5		
	19.6	16.5	10.0	16.5	16.7	24		

22.5 25.1
71.34 70.
31.56 25.2
125.40 120.3
120.30 2.55
5.10 122.85
25.5

129.39
122.85
6.54

119.90
5.03
124.93
12.64
112.29
1.03
113.32
12.78
100.54
0.59
101.13
12.62
88.96
0.20
89.16
12.85
76.31
6.80
77.11

196.87
107.16
304.03

443.342
304.03
139.39
196.87
107.16

116.86

17.02
16.30
1.12

117.01
.179

116.80 117.27 117.42 116.96

+ finish grades Donman : See page 45

	Curb		Curb
150			
100		76.0 +2.2	
50			
NL Worden			
300 SL Worden	94.5	93.5 +10.7	94.5
275			
250	93.47	94.44 +10.0	95.41
225			
200	93.37	94.24 +9.1	95.17
175			
150	92.27	93.24 +7.9	93.66
125			
100	90.	90.6 +8.1	91.0
50'			
NL Warrington	83.6	83.5 +11.7	83.6
8+68.4 = SL Warrington	83.5	83.5 +9.3	83.5
50			
x 8+18.4	80.0	80.0 +6.0	80.0
7+93.4	78.46		78.46
50			
x 7+68.4	77.24	77.24 -1.5	77.35
7+43.4	76.53		76.66
50			
x 7+18.4	76.36	76.37 +9.9	76.4
6+93.4	76.48		76.56
50			
x 6+68.4	77.04	77.10	77.15

101.86 on Wentstake marked +8.6

90.99 BM on SE Hub Warrington

6630	E	76.90	76.17	77.14	79.8	83.3	83.3	90.3	94.74	94.04
		10.6	9.99	+0.7	8.4	15.6	15.6	8.6	15.1	13.8
		-21.9	-16.7	-4.6	+3.7	+9.3	+11.3	+8.3	+8.7	+10.8
7600	W		0.25	11.1				90.3		
		-16.6	-7.1	+0.7	+1.6	+8.0	+12.9	17.5	+7.5	+8.8
								+8.1		
	E10	94.24	93.3	92	83.8	75.8				
		13.6	14.5	1.23	4.3	96.2				
		+11.7	+11.9	+9.3	+5.5	+4.1				
9926	W	+9.2	+9.6	+7.9	+3.8	-0.6				

				77.14	79.8	83.3	90.3	94.74	94.04	93.3
					8.3	19.5	16.9	18.7	16.2	14.9	14.1	15.7
				91.8	83.8	75.8				
				17.2	12.9	8.5				

706 1170 20 3400

79

71.04 S.E. Hub Wells.

74

E +3.4 +2.8 −10.2 −27.1 −18.5

W +0.7 −1.4 −22.5 −15.2 −1.4

8' from Inlet end

400 71.5

350

300 71.79

280 71.5 71.86 −7.5 72.2

250

200 −24.4

150

100 68.93 −16.1

50

NL-Wells 67.0 ×0.9

300 = SL. Wells 67 68.0 ×2.8 69 BM.

450

CHATSWORTH GRADES

		W		E.
0+00 = End on Pueblo Line		+0.86	220.0	+0.17
0+22.34 = P.C.		+0.13	218.57	+0.26
1+14.8		+0.14	217.59	−0.28
1+64.49		−0.83	209.35	−0.09
1+86.27	208.23	−0.22	208.05	+0.07 −0.03
2+08.07 P.C.	207.50	−0.22	207.10	+0.28
2+29.87		+0.13	206.46	+0.15
2+51.67 (Leave out)		+0.33	205.96	+0.05
2+95.27		+0.44	204.97	+0.36
3+38.87		+0.43	203.98	−0.42
3+82.47		+0.03	202.99	−0.63
4+26.07		+0.02	201.72	−1.48
4+69.67		+0.27	199.89	−0.97
5+13.27		+0.23	197.50	−0.04
5+56.87		−0.07	194.56	−0.15
6+00.47		−0.17	191.33	−0.05
6+44.07 E.C.		+0.12	188.10	+0.32
6+92.07		+0.03	185.75	−0.24
7+26 add.			184.50	
7+60.07		+0.34	184.15	−0.29
7+94.07		+0.71	184.75	−0.22
8+28.07		−0.06	186.22	−0.43
8+96		−0.26	190.3	−0.52
9+79.4		−0.21	195.6	−0.62
10+62.7		−0.36	200.9	−0.50
11+46.0	−0.32		205.9	−0.50
12+33.3	210.5 −0.84		210.9	−0.46
13+17.0	−1.31		214.3	−0.10

209.16 E 206.06 / 3.10 | 205.56 / 5.20 | 204.57 / 4.59 | 203.58 / 5.58 | 202.59 / 6.57

W 206.26 / 2.3 | 206.36 / 2.30 | 205.37 / 3.79 | 204.38 / 4.98 | 203.39 / 5.77

E 201.32 / 7.84 | 199.49 / 967 | 197.10 / 1206 | 194.16 / 2.20 | 190.93 / 5.43 | 187.90 / 8.46 | 185.52 / 10.81

W 200.12 / 7.04 | 200.29 / 8.87 | 197.90 / 11.26 | 194.96 / 1.40 | 191.73 / 4.63 | 188.60 / 7.76 | 185.96 / 10.41

1793
1962 3
013
176.36
056
19580
194
207.74
1077
218.51

E 184.05 / 12.31 | 184.65 / 11.71 | 186.17 / 10.24 | 190.2 / 6.16 | 195.2 / 1.16

W

		W	L	E	
54.2			214.3 —		N.Line Orchard
54.2	1		216.42		
20.0	2		218.53		
20.0	3		219.23		
20.0	4		219.75		
20.	5		220.11		
20	6		220.28		
20	7		220.27		
20	8		220.08		
20	9		219.72		
40.86	10		219.18		
57.0	11		~~217.9~~	217.60	S.Line Del Mar
57.0	12		~~216.1~~ 216.84	215.70	
57.0	13		~~214.3~~ 214.18	213.80	
66.95	14		212.5 —		N. Line Del Mar
60.05	15		212.0		
60.05	16		212.45		
60.05	17		212.9		
60.05	18		213.35		
57.0	19		213.8		S. Line Coronado
62.82	20		~~212.53~~	212.35 ~~212.85~~	
51.18	21		~~211.14~~	211.80	
49.7	22		210.0		N. Line Coronado
49.7	23		207.7		
49.7	24		205.4		
49.7	25		208.1		
	26		200.8		S. Line Dickens.

Continued Page 62

B.M. Spk. Chatsworth Blvd, 700'E of Catalina: Spk hydrant Post 220.03 219.91

Base Chatsworth & Wilbur

	E	W	E	W	E	W	E	W
	0		1		2		3	
	214.20	214.20	216.32	216.32	218.43	218.43	221.53	221.53
	7.33	7.33	5.21	5.21	3.10	3.10	2.40	2.40
	7.84	8.97	5.75	6.57	4.05	4.43	3.29	3.81
	-0.51	-1.64	-0.54	-1.36	-0.95	-1.33	-0.89	-1.41
	(0.30)	(1.31)						
	Bob							
	E	W	E	W	E	W	E	W
	4		5		6		7	
	219.65	219.65	220.01	220.01	220.18	220.18	220.17	220.17
	1.88	1.88	1.52	1.52	1.35	1.35	1.36	1.36
	1.90	3.42	1.45	2.48	0.95	1.90	1.23	1.71
	-0.02	-1.54	+0.07	-0.96	+0.40	-0.55	+0.13	-0.35
			-0.03?	-1.00?				
	E	W	E	W	E	W	E	W
	8	219.98	9	219.62	219.62	10 219.08	219.08	11 217.50	217.50
	1.55	1.55	1.91	1.91	2.45	2.45	4.03	4.03
	1.38	1.79	1.96	2.09	2.55	2.79	3.89	4.42
	+0.17	-0.24	-0.05	-0.18	-0.10	-0.34	+0.14	-0.39
	E	W	E	W	W	E	E	W
	12	215.60	13	213.70	212.40	14 212.40	15 211.90	211.90
	5.93	5.93	7.83	7.83	9.13	9.13	9.63	9.63
	5.67	6.45	7.53	8.53	9.00	9.05	9.90	8.85
	+0.26	-0.52	+0.30	-0.70	+0.13	+0.08	-0.27	+0.78
	E	W	E	W	E	W	E	W
	16	212.35	17	212.80	213.25	18 213.25	213.70	213.70
	6.00	6.00	5.55	5.55	5.10	5.10	4.65	4.65
	6.50	5.58	6.13	5.22	5.41	5.14	4.84	4.72
	-0.50	+0.42	-0.58	+0.33	-0.31	-0.04	-0.19	-0.07
	E	W	E	W	W	E	W	E
	20		21		22		23	
	212.75	212.75	211.04	211.04	209.90	209.90	207.60	207.60
	5.60	5.60	7.31	7.31	8.45	8.45	10.75	10.75
	4.76	4.88	6.69	6.25	8.70	8.85	10.86	10.95
	~~+0.84~~	~~+0.72~~	+0.62	+1.06	-0.25	-0.40	-0.11	-0.20
	206.26 = π	0.22 Raise						
	E	W	E	W	W	E	E	W
	24		25		26		27	
	205.30	205.30	203.00	203.00	200.70	200.70	197.55	197.55
	0.96	0.96	3.26	3.26	5.56	5.56	8.71	8.71
	0.98	1.37	3.20	4.45	6.64	5.07	7.80	9.42
	-0.02	-0.41	+0.26	-1.19	-1.08	+0.49	+0.91	-0.71
			193.91 = π					
	E	W	E	W	E	W	E	W
	28		29		30		31	
	194.40	194.40	190.87	190.87	187.34	187.34	183.82	183.82
	11.86	11.86	3.04	3.04	6.57	6.57	10.09	10.09
	11.49	12.93	2.03	3.73	5.56	7.11	8.63	10.46
	+0.37	-1.07	+1.01	-0.69	+1.01	-0.54	+0.46	-0.37
	182.32 = π							
	E	W						
	32							
	180.30	180.30						
	2.02	2.02						
	1.79	2.00						
	+0.23	+0.02						

℄ Ground Ele:

1	2	3	4	5	6	7	8	9	10	11	12
	π = 221.5										
5.6	3.6	3.0	2.4	1.8	1.3	1.3	1.5	1.9	2.5	4.1	6.3
215.9	217.9	218.5	219.1	219.7	220.2	220.2	220.0	219.6	219.0	217.4	215.2

π = 218.4

13	14	15	16	17	18	19	20	21	22	23	24
8.2	9.2	9.6	9.2	8.8	8.4	8.0	4.9	6.6	8.9	11.0	13.0
213.3	212.3	211.9	212.3	212.7	213.1	213.5	213.5	211.8	209.5	207.4	205.4

206.3 = π

193.9 = π

25	26	27	28	29	30	31	32
3.2	5.6	8.5	12.3	3.2	6.6	10.1	13.6
203.1	200.7	197.8	194.0	190.7	187.3	183.8	180.3

Shot on 21 stub, then moved stub

Change at 21:

		E	21	W
211.04		211.70		211.70
1.06		4.31		4.31
212.10 = Stub W.		4.68		4.19
3.91		-0.37		+0.12
216.01 = π				

Curved sidewalk Voltaire & Mendocino 6/2-22 {Doman / Miller

R = 260.00 to Curb:

Δ = 25° 06' 12° 33' = T. 22.261: S.T. = 57.88 Comes 2' on Curb constructed

E = 6.36' 12° 33' = Ex S = 0.2448

Arc = 60.5 = 3 chords 20.17 d = 2° 13' 30" / 4° 27' 00" / 6° 40 30" } 2' extra = 0° 13

6° 53' 30"

L = 113.88'

End Curb = 78.60

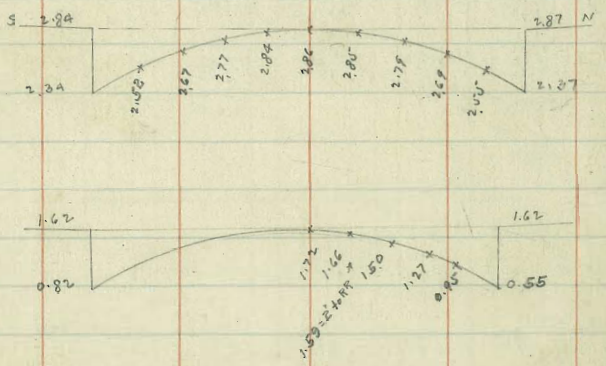
End Work = 77.00

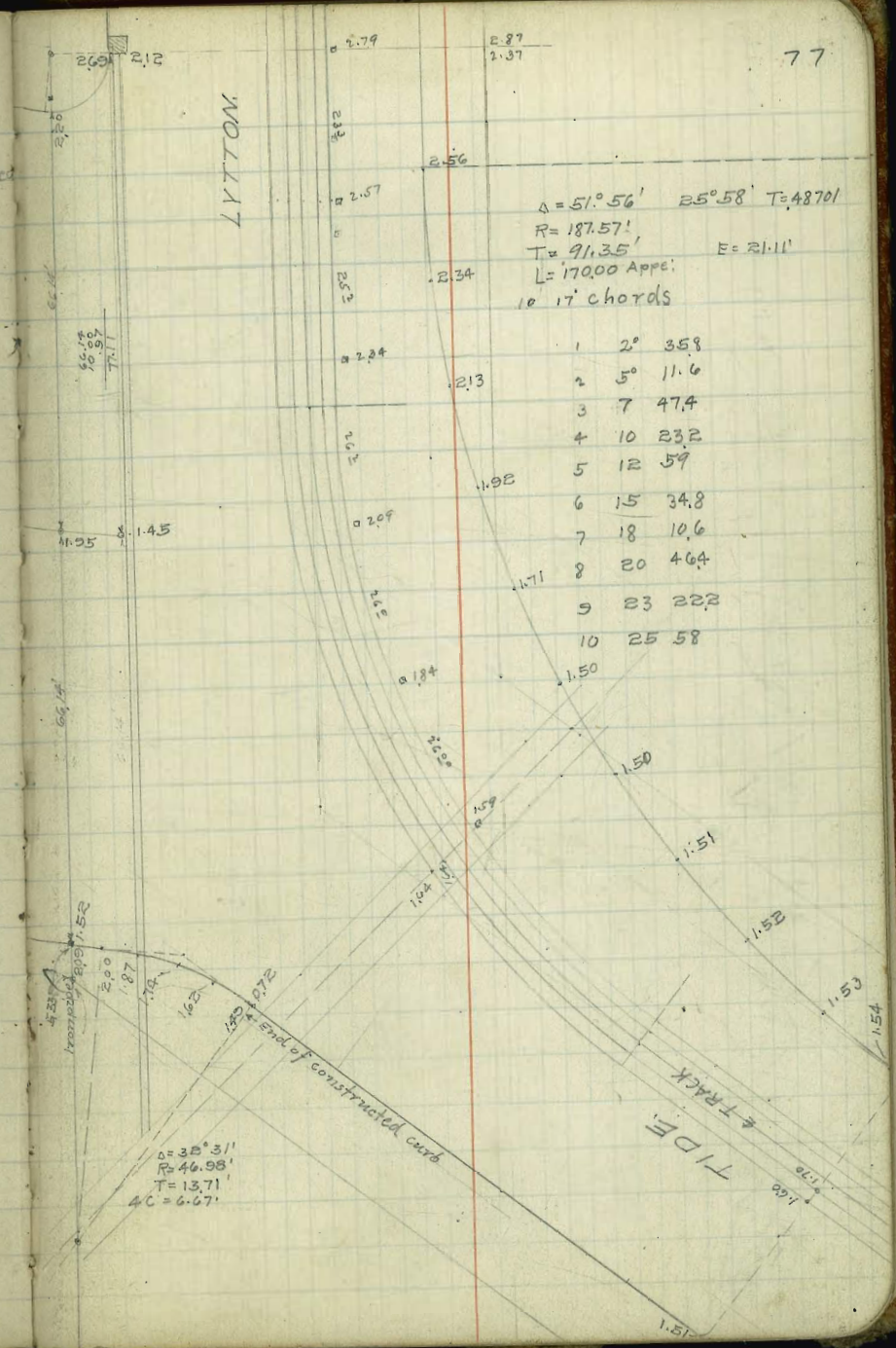
Distance 60.5 = 2.645% 78.60 (18.17) 78.12 (20.17) 77.59 (22.16) 77.00

B.M. Mon 79.00
3.86
82.86

82.86	82.86	82.86	82.86	
77.00	77.59	78.12	78.60	
5.86	5.27	4.74	4.26	checked curb
6.53	6.14	5.56		
0.67	0.87	0.82		
F = 0'-8"	F = 0'-10½"	F = 0-9⅞"		

Curve sidewalk



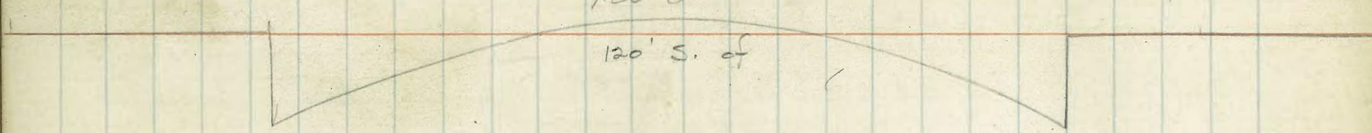


Δ = 51° 56' 25° 58' T = 48701
R = 187.57'
T = 91.35' E = 21.11'
L = 170.00 Appx.
10 17' chords

1	2°	35.8
2	5°	11.6
3	7	47.4
4	10	23.2
5	12	59
6	15	34.8
7	18	10.6
8	20	46.4
9	23	22.2
10	25	58

H.I. 176.25

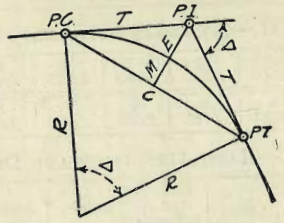
3.8 N | 3.6 | 3.5 | 2.1 | 1.7 | 1.3 | 1.2 S



H.I. .253.41
1.4
2.6
2.3

1.7 | 2.7 | 5.6 | 5.0 | 5.1 | 4.3 | 1.2

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

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

Tangent=T=R tan $\frac{\Delta}{2}$ (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=T tan $\frac{\Delta}{4}$ (7) =R ÷ cos $\frac{\Delta}{2}$ —R (8)=R exsec $\frac{\Delta}{2}$ (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 ÷ 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 ÷ (2 x 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 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′.

Table I.—Minutes in Decimals of a Degree.

1′	.0167	11′	.1833	21′	.3500	31′	.5167	41′	.6833	51′	.8500
2	.0333	12	.2000	22	.3667	32	.5333	42	.7000	52	.8667
3	.0500	13	.2167	23	.3833	33	.5500	43	.7167	53	.8833
4	.0667	14	.2333	24	.4000	34	.5667	44	.7333	54	.9000
5	.0833	15	.2500	25	.4167	35	.5833	45	.7500	55	.9167
6	.1000	16	.2667	26	.4333	36	.6000	46	.7667	56	.9333
7	.1167	17	.2833	27	.4500	37	.6167	47	.7833	57	.9500
8	.1333	18	.3000	28	.4667	38	.6333	48	.8000	58	.9667
9	.1500	19	.3167	29	.4833	39	.6500	49	.8167	59	.9833
10	.1667	20	.3333	30	.5000	40	.6667	50	.8333	60	1.0000

Table II.—Inches in Decimals of a Foot.

1–16	3–32	1/8	3–16	1/4	5–16	3/8	1/2	5/8	3/4	7/8
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729

1	2	3	4	5	6	7	8	9	10	11
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167

Table III.—Radii, Ordinates and Deflections.

Deg.	Radius	Mid. Ord.	Tan. Offset	Def. for 1 Foot	Deg.	Radius	Mid. Ord.	Tan Offset	Def. for 1 Foot
0° 10′	34377.5	.036	.145	0.05′	7°	819.02	1.528	6.105	2.10′
20	17188.8	.073	.291	0.10	20′	781.84	1.600	6.395	2.20
30	11459.2	.109	.436	0.15	30	764.49	1.637	6.540	2.25
40	8594.42	.145	.582	0.20	40	747.89	1.673	6.685	2.30
50	6875.55	.182	.727	0.25					
1	5729.65	.218	.873	0.30	8	716.78	1.746	6.976	2.40
10	4911.15	.255	1.018	0.35	20	688.16	1.819	7.266	2.50
20	4297.28	.291	1.164	0.40	30	674.69	1.855	7.411	2.55
30	3819.83	.327	1.309	0.45	40	661.74	1.892	7.556	2.60
40	3437.87	.364	1.454	0.50	9	637.28	1.965	7.846	2.70
50	3125.36	.400	1.600	0.55	20	614.56	2.037	8.136	2.80
2	2864.93	.436	1.745	0.60	30	603.80	2.074	8.281	2.85
10	2644.58	.473	1.891	0.65	40	593.42	2.110	8.426	2.90
20	2455.70	.509	2.036	0.70	10	573.69	2.183	8.716	3.00
30	2292.01	.545	2.181	0.75	30	546.44	2.292	9.150	3.15
40	2148.79	.582	2.327	0.80	11	521.67	2.402	9.585	3.30
50	2022.41	.618	2.472	0.85	30	499.06	2.511	10.02	3.45
3	1910.08	.655	2.618	0.90	12	478.34	2.620	10.45	3.60
10	1809.57	.691	2.763	0.95	30	459.28	2.730	10.89	3.75
20	1719.12	.727	2.908	1.00	13	441.68	2.839	11.32	3.90
30	1637.28	.764	3.054	1.05	30	425.40	2.949	11.75	4.05
40	1562.88	.800	3.199	1.10	14	410.28	3.058	12.18	4.20
50	1494.95	.836	3.345	1.15	30	396.20	3.168	12.62	4.35
4	1432.69	.873	3.490	1.20	15	383.07	3.277	13.05	4.50
10	1375.40	.909	3.635	1.25	30	370.78	3.387	13.49	4.65
20	1322.53	.945	3.718	1.30	16	359.27	3.496	13.92	4.80
30	1273.57	.982	3.926	1.35	30	348.45	3.606	14.35	4.95
40	1228.11	1.018	4.071	1.40	17	338.27	3.716	14.78	5.10
50	1185.78	1.055	4.217	1.45	18	319.62	3.935	15.64	5.40
5	1146.28	1.091	4.362	1.50	19	302.94	4.155	16.51	5.70
10	1109.33	1.127	4.507	1.55	20	287.94	4.374	17.37	6.00
20	1074.68	1.164	4.653	1.60	21	274.37	4.594	18.22	6.30
30	1042.14	1.200	4.798	1.65	22	262.04	4.814	19.08	6.60
40	1011.51	1.237	4.943	1.70	23	250.79	5.035	19.94	6.90
50	982.64	1.273	5.088	1 75	24	240.49	5.255	20.79	7.20
6	955.37	1.309	5.234	1.80	25	231.01	5.476	21.64	7.50
10	929.57	1.346	5.379	1.85	26	222.27	5.697	22.50	7.80
20	905.13	1.382	5.524	1.90	27	214.18	5.918	23.35	8.10
30	881.95	1.418	5.669	1.95	28	206.68	6.139	24.19	8.40
40	859.92	1.455	5.814	2.00	29	199.70	6.360	25.04	8.70
					30	193.18	6.583	25.88	9.00

Note. Chord Deflection=2 times tangent deflection.

Table IV.—Tangents and Externals to a 1° Curve.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
1°	50.00	.22	11°	551.70	26.50	21°	1061.9	97.57
10′	58.34	.30	10′	560.11	27.31	10′	1070.6	99.16
20	66.67	.39	20	568.53	28.14	20	1079.2	100.75
30	75.01	.49	30	576.95	28.97	30	1087.8	102.35
40	83.34	.61	40	585.36	29.82	40	1096.4	103.97
50	91.68	.73	50	593.79	30.68	50	1105.1	105.60
2	100.01	.87	12	602.21	31.56	22	1113.7	107.24
10	108.35	1.02	10	610.64	32.45	10	1122.4	108.90
20	116.68	1.19	20	619.07	33.35	20	1131.0	110.57
30	125.02	1.36	30	627.50	34.26	30	1139.7	112.25
40	133.36	1.55	40	635.93	35.18	40	1148.4	113.95
50	141.70	1.75	50	644.37	36.12	50	1157.0	115.66
3	150.04	1.96	13	652.81	37.07	23	1165.7	117.38
10	158.38	2.19	10	661.25	38.03	10	1174.4	119.12
20	166.72	2.43	20	669.70	39.01	20	1183.1	120.87
30	175.06	2.67	30	678.15	39.99	30	1191.8	122.63
40	183.40	2.93	40	686.60	40.99	40	1200.5	124.41
50	191.74	3.21	50	695.06	42.00	50	1209.2	126.20
4	200.08	3.49	14	703.51	43.03	24	1217.9	128.00
10	208.43	3.79	10	711.97	44.07	10	1226.6	129.82
20	216.77	4.10	20	720.44	45.12	20	1235.3	131.65
30	225.12	4.42	30	728.90	46.18	30	1244.0	133.50
40	233.47	4.76	40	737.37	47.25	40	1252.8	135.35
50	241.81	5.10	50	745.85	48.34	50	1261.5	137.23
5	250.16	5.46	15	754.32	49.44	25	1270.2	139.11
10	258.51	5.83	10	762.80	50.55	10	1279.0	141.01
20	266.86	6.21	20	771.29	51.68	20	1287.7	142.93
30	275.21	6.61	30	779.77	52.89	30	1296.5	144.85
40	283.57	7.01	40	788.26	53.97	40	1305.3	146.79
50	291.92	7.43	50	796.75	55.13	50	1314.0	148.75
6	300.28	7.86	16	805.25	56.31	26	1322.8	150.71
10	308.64	8.31	10	813.75	57.50	10	1331.6	152.69
20	316.99	8.76	20	822.25	58.70	20	1340.4	154.69
30	325.35	9.23	30	830.76	59.91	30	1349.2	156.70
40	333.71	9.71	40	839.27	61.14	40	1358.0	158.72
50	342.08	10.20	50	847.78	62.38	50	1366.8	160.76
7	350.44	10.71	17	856.30	63.63	27	1375.6	162.81
10	358.81	11.22	10	864.82	64.90	10	1384.4	164.86
20	367.17	11.75	20	873.35	66.18	20	1393.2	166.95
30	375.54	12.29	30	881.88	67.47	30	1402.0	169.04
40	383.91	12.85	40	890.41	68.77	40	1410.9	171.15
50	392.28	13.41	50	898.95	70.09	50	1419.7	173.27
8	400.66	13.99	18	907.49	71.42	28	1428.6	175.41
10	409.03	14.58	10	916.03	72.76	10	1437.4	177.55
20	417.41	15.18	20	924.58	74.12	20	1446.3	179.72
30	425.79	15.80	30	933.13	75.49	30	1455.1	181.89
40	434.17	16.43	40	941.69	76.86	40	1464.0	184.08
50	442.55	17.07	50	950.25	78.26	50	1472.9	186.29
9	450.93	17.72	19	958.81	79.67	29	1481.8	188.51
10	459.32	18.38	10	967.38	81.09	10	1490.7	190.74
20	467.71	19.06	20	975.96	82.53	20	1499.6	192.99
30	476.10	19.75	30	984.53	83.97	30	1508.5	195.25
40	484.49	20.45	40	993.12	85.43	40	1517.4	197.53
50	492.88	21.16	50	1001.7	86.90	50	1526.3	199.82
10	501.28	21.89	20	1010.3	88.39	30	1535.3	202.12
10	509.68	22.62	10	1018.9	89.89	10	1544.2	204.44
20	518.08	23.38	20	1027.5	91.40	20	1553.1	206.77
30	526.48	24.14	30	1036.1	92.92	30	1562.1	209.12
40	534.89	24.91	40	1044.7	94.46	40	1571.0	211.48
50	543.29	25.70	50	1053.3	96.01	50	1580.0	213.86

99795 | 4100 98 | 41.09
349 188
108200
99795
840500

TABLE VIII.—NATURAL TRIGONOMETRICAL FUNCTIONS.

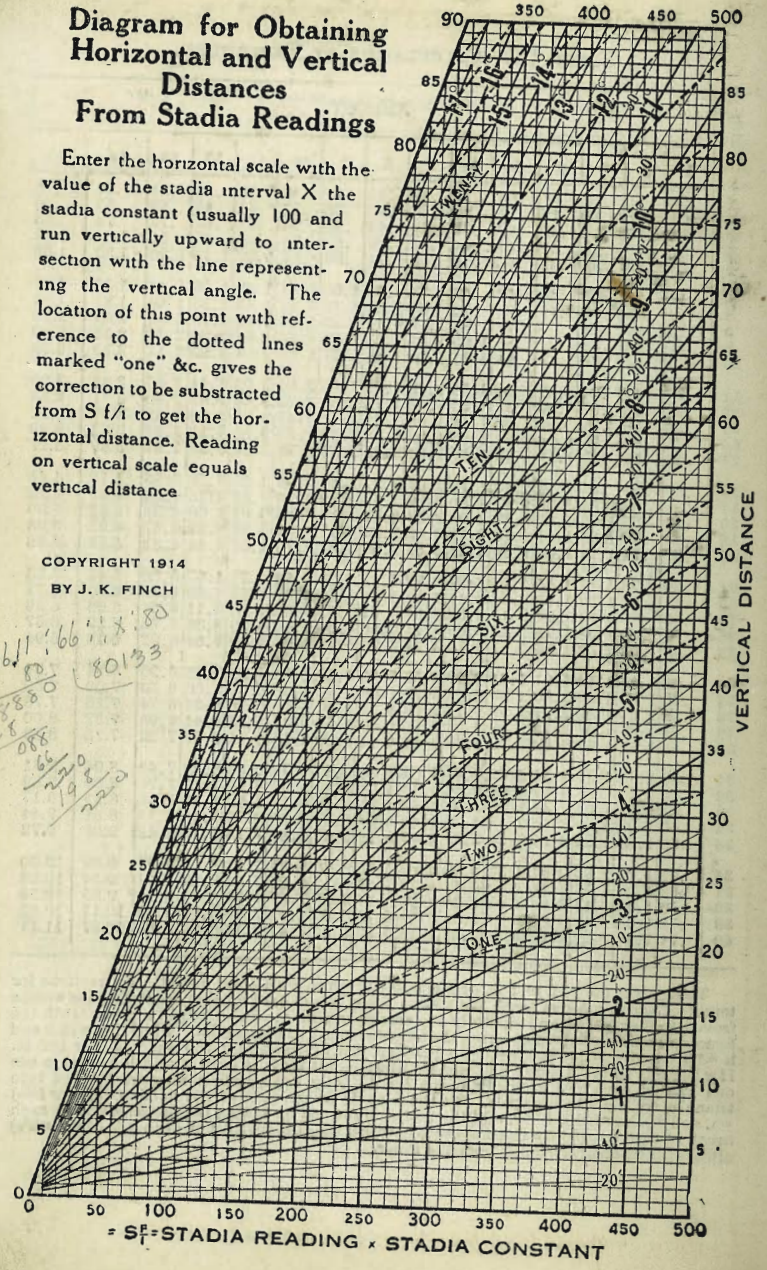
Angle	Sine.	Tan.	Cotg.	Cosin.		Angle	Sine.	Tan.	Cotg.	Cosin.	
°						°					
0	0	0	00	1	90	8	.1392	.1405	7.115	.99027	82
10	.0029	.0029	343.8	1	50	10	.1421	.1435	6.968	.98986	50
20	.0058	.0058	171.9	.99998	40	20	.1449	.1465	6.827	.98944	40
30	.0087	.0087	114.6	.99996	30	30	.1478	.1495	6.691	.98902	30
40	.0116	.0116	85.94	.99993	20	40	.1507	.1524	6.561	.98858	20
50	.0145	.0145	68.75	.99989	10	50	.1536	.1554	6.435	.98814	10
1	.0175	.0175	57.29	.99985	89	9	.1564	.1584	6.314	.98769	81
10	.0204	.0204	49.10	.99979	50	10	.1593	.1614	6.197	.98723	50
20	.0233	.0233	42.96	.99973	40	20	.1622	.1644	6.084	.98676	40
30	.0262	.0262	38.19	.99966	30	30	.1650	.1673	5.976	.98629	30
40	.0291	.0291	34.37	.99958	20	40	.1679	.1703	5.871	.98580	20
50	.0320	.0320	31.24	.99949	10	50	.1708	.1733	5.769	.98531	10
2	.0349	.0349	28.64	.99939	88	10	.1736	.1763	5.671	.98481	80
10	.0378	.0378	26.43	.99929	50	10	.1765	.1793	5.576	.98430	50
20	.0407	.0407	24.54	.99917	40	20	.1794	.1823	5.485	.98378	40
30	.0436	.0437	22.90	.99905	30	30	.1822	.1853	5.396	.98325	30
40	.0465	.0466	21.47	.99892	20	40	.1851	.1883	5.309	.98272	20
50	.0494	.0495	20.21	.99878	10	50	.1880	.1914	5.226	.98218	10
3	.0523	.0524	19.08	.99863	87	11	.1908	.1944	5.145	.98163	79
10	.0552	.0553	18.07	.99847	50	10	.1937	.1974	5.066	.98107	50
20	.0581	.0582	17.17	.99831	40	20	.1965	.2004	4.989	.98050	40
30	.0610	.0612	16.35	.99813	30	30	.1994	.2035	4.915	.97992	30
40	.0640	.0641	15.60	.99795	20	40	.2022	.2065	4.843	.97934	20
50	.0669	.0670	14.92	.99776	10	50	.2051	.2095	4.773	.97875	10
4	.0698	.0699	14.30	.99756	86	12	.2079	.2126	4.705	.97815	78
10	.0727	.0729	13.73	.99736	50	10	.2108	.2156	4.638	.97754	50
20	.0756	.0758	13.20	.99714	40	20	.2136	.2186	4.574	.97692	40
30	.0785	.0787	12.71	.99692	30	30	.2164	.2217	4.511	.97630	30
40	.0814	.0816	12.25	.99668	20	40	.2193	.2247	4.449	.97566	20
50	.0843	.0846	11.83	.99644	10	50	.2221	.2278	4.390	.97502	10
5	.0872	.0875	11.43	.99619	85	13	.2250	.2309	4.331	.97437	77
10	.0901	.0904	11.06	.99594	50	10	.2278	.2339	4.275	.97371	50
20	.0929	.0934	10.71	.99567	40	20	.2306	.2370	4.219	.97304	40
30	.0958	.0963	10.39	.99540	30	30	.2334	.2401	4.165	.97237	30
40	.0987	.0992	10.08	.99511	20	40	.2363	.2432	4.113	.97169	20
50	.1016	.1022	9.788	.99482	10	50	.2391	.2462	4.061	.97100	10
6	.1045	.1051	9.514	.99452	84	14	.2419	.2493	4.011	.97030	76
10	.1074	.1080	9.255	.99421	50	10	.2447	.2524	3.962	.96959	50
20	.1103	.1110	9.010	.99390	40	20	.2476	.2555	3.914	.96887	40
30	.1132	.1139	8.777	.99357	30	30	.2504	.2586	3.867	.96815	30
40	.1161	.1169	8.556	.99324	20	40	.2532	.2617	3.821	.96742	20
50	.1190	.1198	8.345	.99290	10	50	.2560	.2648	3.776	.96667	10
7	.1219	.1228	8.144	.99255	83	15	.2588	.2679	3.732	.96593	75
10	.1248	.1257	7.953	.99219	50	10	.2616	.2711	3.689	.96517	50
20	.1276	.1287	7.770	.99182	40	20	.2644	.2742	3.647	.96440	40
30	.1305	.1317	7.596	.99144	30	30	.2672	.2773	3.606	.96363	30
40	.1334	.1346	7.429	.99106	20	40	.2700	.2805	3.566	.96285	20
50	.1363	.1376	7.269	.99067	10	50	.2728	.2836	3.526	.96206	10
					82						74
	Cosin.	Cotg.	Tan.	Sine.	Angle.		Cosin.	Cotg.	Tan.	Sine.	Angle.

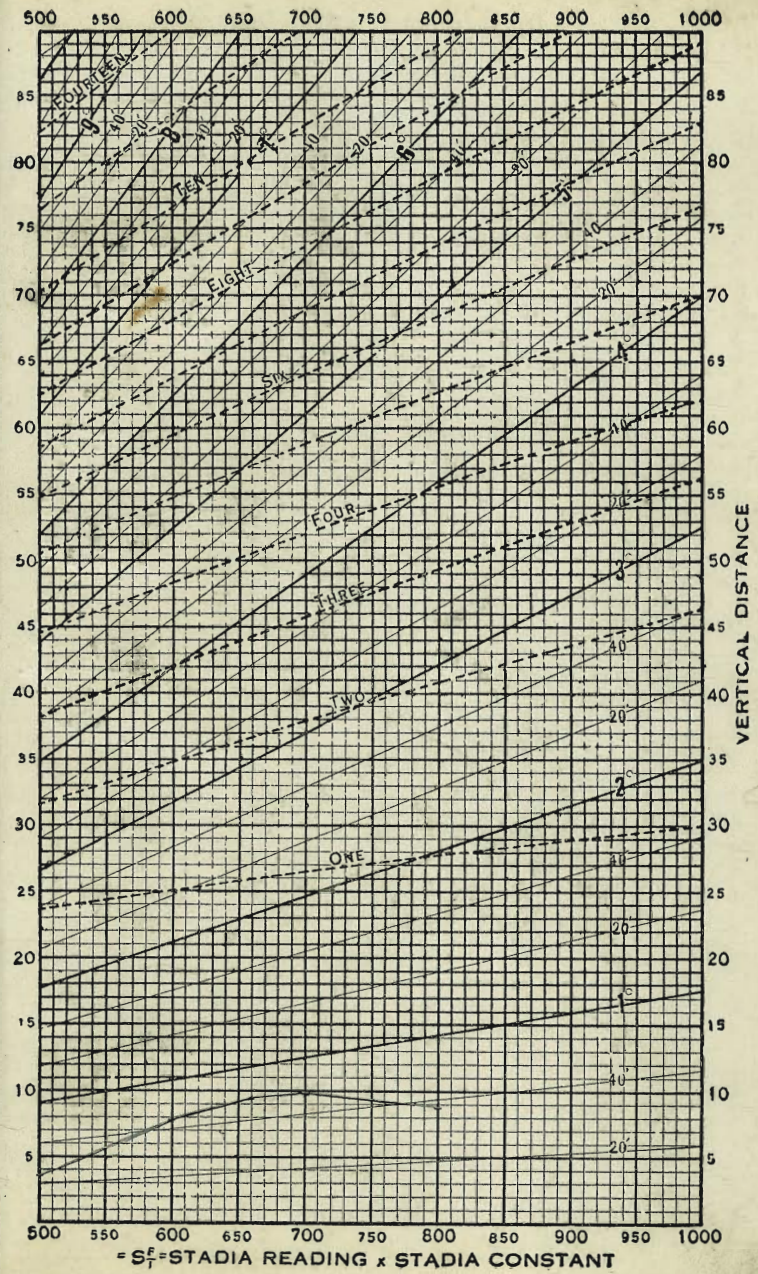
TABLE VIII.—NATURAL TRIGONOMETRICAL FUNCTIONS.

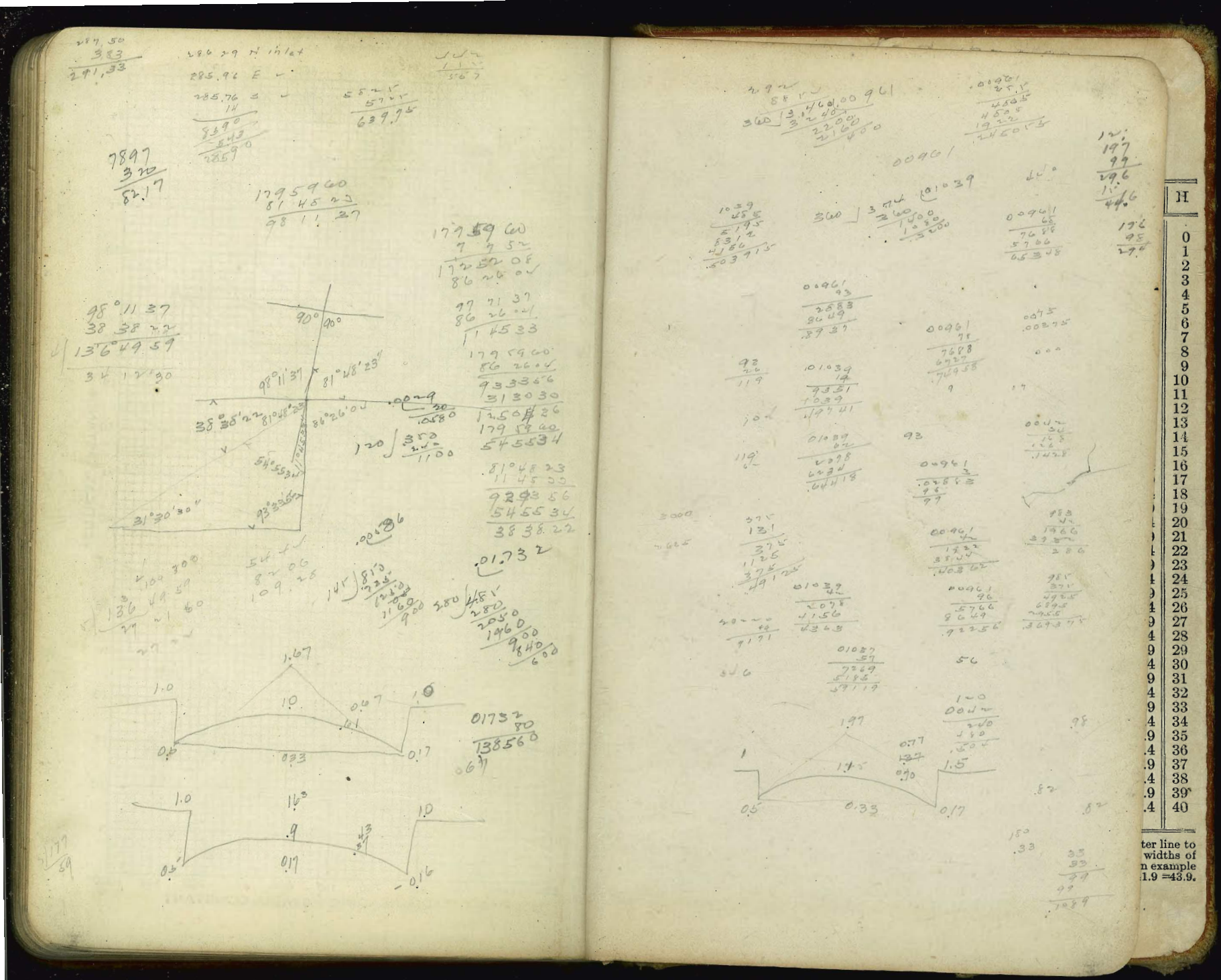
Angle	Sine.	Tan.	Cotg.	Cosin.		Angle	Sine.	Tan.	Cotg.	Cosin.	
°						°					
16	.2756	.2867	3.487	.96126	74	24	.4067	.4452	2.246	.91355	66
10	.2784	.2899	3.450	.96046	50	10	.4094	.4487	2.229	.91236	50
20	.2812	.2931	3.412	.95964	40	20	.4120	.4522	2.211	.91116	40
30	.2840	.2962	3.376	.95882	30	30	.4147	.4557	2.194	.90996	30
40	.2868	.2994	3.340	.95799	20	40	.4173	.4592	2.177	.90875	20
50	.2896	.3026	3.305	.95715	10	50	.4200	.4628	2.161	.90753	10
17	.2924	.3057	3.271	.95615	73	25	.4226	.4663	2.145	.90631	65
10	.2952	.3089	3.237	.95545	50	10	.4253	.4699	2.128	.90507	50
20	.2979	.3121	3.204	.95459	40	20	.4279	.4734	2.112	.90383	40
30	.3007	.3153	3.172	.95372	30	30	.4305	.4770	2.097	.90259	30
40	.3035	.3185	3.140	.95284	20	40	.4331	.4806	2.081	.90133	20
50	.3062	.3217	3.108	.95195	10	50	.4358	.4841	2.066	.90007	10
18	.3090	.3249	3.078	.95106	72	26	.4384	.4877	2.050	.89879	64
10	.3118	.3281	3.048	.95015	50	10	.4410	.4913	2.035	.89752	50
20	.3145	.3314	3.018	.94924	40	20	.4436	.4950	2.020	.89623	40
30	.3173	.3346	2.989	.94832	30	30	.4462	.4986	2.006	.89493	30
40	.3201	.3378	2.960	.94740	20	40	.4488	.5022	1.991	.89363	20
50	.3228	.3411	2.932	.94646	10	50	.4514	.5059	1.977	.89232	10
19	.3256	.3443	2.904	.94552	71	27	.4540	.5095	1.963	.89101	63
10	.3283	.3476	2.877	.94457	50	10	.4566	.5132	1.949	.88968	50
20	.3311	.3508	2.850	.94361	40	20	.4592	.5169	1.935	.88835	40
30	.3338	.3541	2.824	.94264	30	30	.4617	.5206	1.921	.88701	30
40	.3365	.3574	2.798	.94167	20	40	.4643	.5243	1.907	.88566	20
50	.3393	.3607	2.773	.94068	10	50	.4669	.5280	1.894	.88431	10
20	.3420	.3640	2.747	.93969	70	28	.4695	.5317	1.881	.88295	62
10	.3448	.3673	2.723	.93869	50	10	.4720	.5354	1.868	.88158	50
20	.3475	.3706	2.669	.93769	40	20	.4746	.5392	1.855	.88020	40
30	.3502	.3739	2.675	.93667	30	30	.4772	.5430	1.842	.87882	30
40	.3529	.3772	2.651	.93565	20	40	.4797	.5467	1.829	.87743	20
50	.3557	.3805	2.628	.93462	10	50	.4823	.5505	1.816	.87603	10
21	.3584	.3839	2.605	.93358	69	29	.4848	.5543	1.804	.87462	61
10	.3611	.3872	2.583	.93253	50	10	.4874	.5581	1.792	.87321	50
20	.3638	.3906	2.560	.93148	40	20	.4899	.5619	1.780	.87178	40
30	.3665	.3939	2.539	.93042	30	30	.4924	.5658	1.767	.87036	30
40	.3692	.3973	2.517	.92935	20	40	.4950	.5696	1.756	.86892	20
50	.3719	.4006	2.496	.92827	10	50	.4975	.5735	1.744	.86748	10
22	.3746	.4040	2.475	.92718	68	30	.5000	.5774	1.732	.86603	60
10	.3773	.4074	2.455	.92609	50	10	.5025	.5812	1.720	.86457	50
20	.3800	.4108	2.434	.92499	40	20	.5050	.5851	1.709	.86310	40
30	.3827	.4142	2.414	.92388	30	30	.5075	.5890	1.698	.86163	30
40	.3854	.4176	2.394	.92276	20	40	.5100	.5930	1.686	.86015	20
50	.3881	.4210	2.375	.92164	10	50	.5125	.5969	1.675	.85866	10
23	.3907	.4245	2.356	.92050	67	31	.5150	.6009	1.664	.85717	59
10	.3934	.4279	2.337	.91936	50	10	.5175	.6048	1.653	.85567	50
20	.3961	.4314	2.318	.91822	40	20	.5200	.6088	1.643	.85416	40
30	.3987	.4348	2.300	.91706	30	30	.5225	.6128	1.632	.85264	30
40	.4014	.4383	2.282	.91590	20	40	.5250	.6168	1.621	.85112	20
50	.4041	.4417	2.264	.91472	10	50	.5275	.6208	1.611	.84959	10
					66						58
	Cosin.	Cotg.	Tan.	Sine.	Angle.		Cosin.	Cotg.	Tan.	Sine.	Angle.

Diagram for Obtaining Horizontal and Vertical Distances From Stadia Readings

Enter the horizontal scale with the value of the stadia interval X the stadia constant (usually 100 and run vertically upward to intersection with the line representing the vertical angle. The location of this point with reference to the dotted lines marked "one" &c. gives the correction to be substracted from S f/i to get the horizontal distance. Reading on vertical scale equals vertical distance







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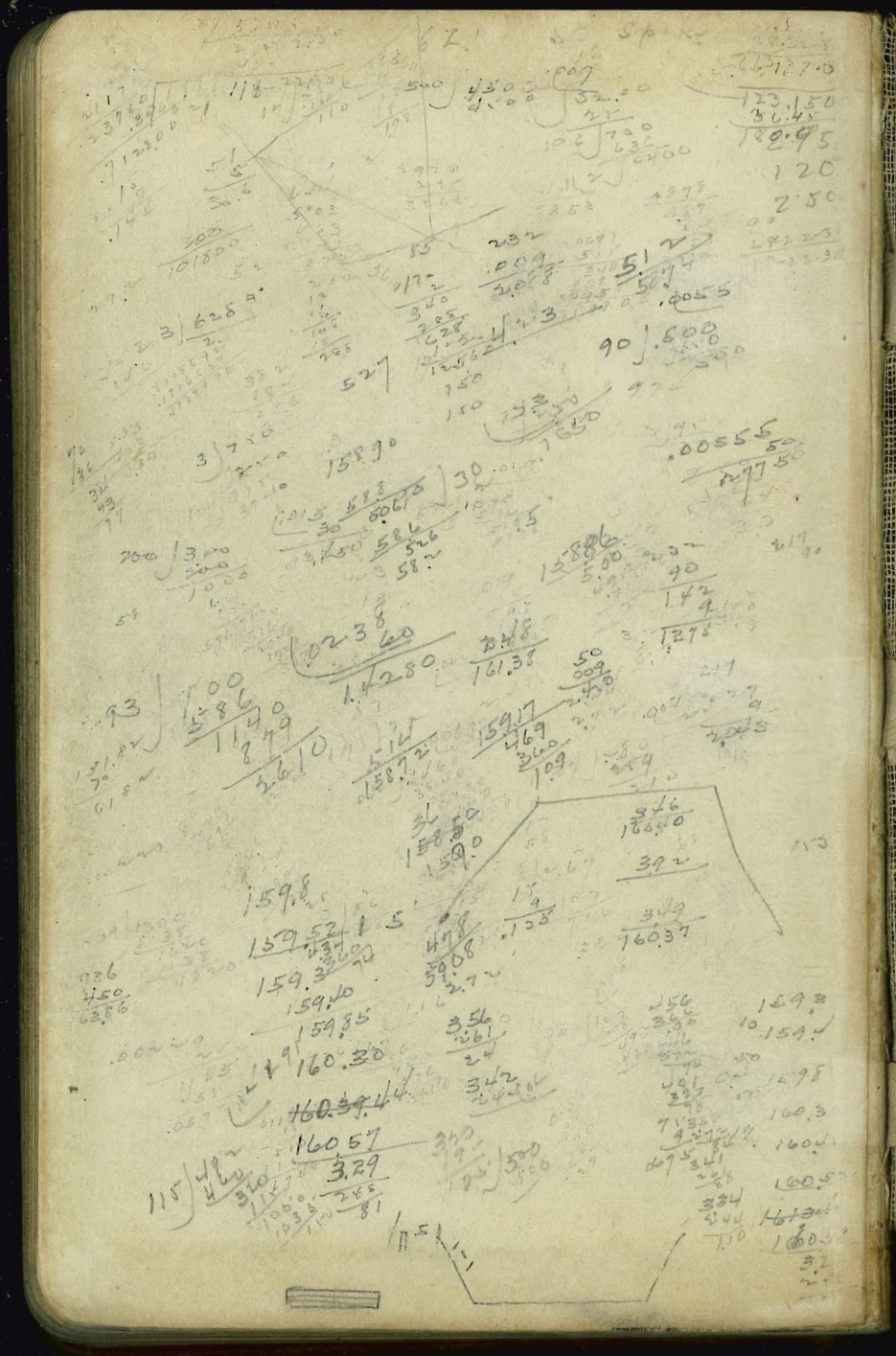

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

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	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)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.