ENGINEERS'

LEVEL BOOK

No. 410

~90 ~E

ABASH ~ DIST. 52

ghland Dist. 55

culin - Dist. 57

F.B. 559

ETZGEN

TRADE MARK

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.

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MICROFILMED
1964

ENGINEERING DEPARTMENT,
CITY OF EAST SAN DIEGO,
CALIFORNIA.

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X-Sections	Wabash Cajon orange	1
Finish Stakes	Wabash Cajon orange	3

PAGE

Stationed 7/14/22 Chisholm, Brown, Wight
Sections 7/28/22 Chisholm X Book
Wight Brown Rod
Rods Red Wight 7-28-22

X-SEC. WABASH AVE N.L. ORANGE S.L. EL CAJON

1

STA.	+	H.I.	−	ELEV.
Bench				371.11
N.L. Orange				
0+00	6.67	377.78		
+50				
1+00				
+50				
2+00				
+50				
T. P. W.S.			3.59	374.19
3+00	4.89	379.08	~~4.52~~	
+50				
4+00				
+50				
5+00				
+50				
S.L. Cajon				
6+07				

CURB GRADE	W curb		℄		Curb E	CURB GRADE
	Brass Plug N.W. Cor Wabash and Orange					
+0.1	6.8	6.67 6.7	6.5	6.4	6.14 5.8	−0.3
371.1	371.0	371.1	371.3	371.4	372.0	371.7
−0.4	5.9	5.6	5.1	5.1	4.5	−1.2
371.47	371.9	372.2	372.7	372.7	373.3	372.05
−1.7	4.3	5.1	4.6	4.3	4.5	−0.9
371.84	373.5	372.7	373.2	373.5	373.3	372.40
−1.4	4.2	4.6	4.6	4.7	3.4	−1.6
372.21	373.6	373.2	373.2	373.1	374.4	372.76
−2.3	2.9	3.9	3.9	3.3	2.2	−2.5
372.58	374.9	373.9	373.9	374.5	375.6	373.11
−1.2	3.7	3.6	3.6	2.4	2.2	−2.1
372.95	374.1	374.2	374.2	375.4	375.6	373.47
−0.9	4.9	4.6	4.4	4.1	3.8	−1.5
373.32	374.2	374.5	374.7	375.0	375.3	373.82
−0.7	4.7	4.5	4.0	4.0	4.0	−0.9
373.69	374.4	374.6	375.1	375.1	375.1	374.17
−0.1	4.9	5.0	4.6	4.4	4.0	−0.6
374.06	374.2	374.1	374.5	374.7	375.1	374.53
+0.4	5.1	5.0	4.8	4.6	4.3	Grade
374.43	374.0	374.1	374.3	374.5	374.8	374.88
Grade	4.3	4.6	4.6	4.3	3.3	−0.6
374.80	374.8	374.5	374.5	374.8	375.8	375.24
+0.8	4.7	4.4	4.2	4.2	3.5	Grade
375.17	374.4	374.9	374.9	374.9	375.6	375.59
+0.6	4.1	4.0	4.0	3.3	3.2	+0.1
375.6	375.0	375.1	375.1	375.8	375.9	376.0

Sept. 18, 1922
Chisholm
Wright

FINISH STAKES

WABASH ORANGE TO CAJON

STA.	+	H.I.	−	ELEV
B.M.				371.11
N.W. Wabash Orange				371.10
N.E. Wabash Orange				371.70
N.W. Wabash Cajon				375.60
N.E. Wabash Cajon				376.00

Iron plug in curb.
North West corner. Wabash and Orange

HIGHLAND AVE.

Sta.	+	HI	−	Elev
B.M. N. City Boundary				
0+00				
+50				
1+00				
+50				
2+00				
+50				
3+00	5.89	364.18		
+50			3.49	
4+00				
+50				
5+00				
+50				
6+00				
+50	4.77	361.78		
T.P. 7+00			4.22	
+50				
8+00				
+50				

CAJON TO BOUNDARY — Sept. 19 1927 — Wighty Bank, Chisholm & Miles — Rod E

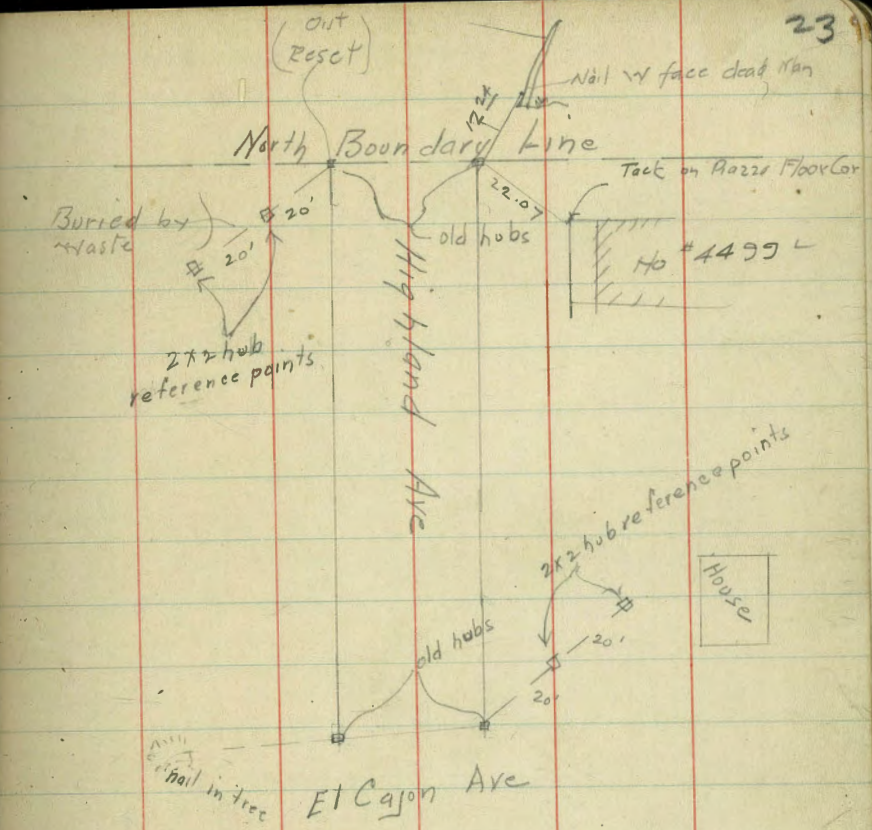
W	15	℄		E
Rods Rod wigs 9/19/22				
−0.2 50	49 13 5.3	49	46	50 −0.2
359.0 59.2	59.3 13 58.9	59.3	59.6 13 5.4 48	59.2 359.4
−0.5 48	49 13 5.6	48	46	−0.3
358.9 59.4	59.3 13 58.6	59.4	58.8 59.4	59.6 359.3
−1.0 45	49 13 5.3	48	50	45 −0.6
358.7 59.7	59.3 13 58.9	59.4	59.2 13 5.1 18 4.4	59.7 359.1
−1.6 40	41	5.2	48	44 −0.8
358.6 60.2	60.1 18 4.8	59.0 13 5.4	59.4	59.1 13 5.3 18 4.7 59.8 46 359.0 −0.7
−1.6 41			50	
358.5 60.1	59.4 18 5.0	58.8 13 5.8	59.2	58.9 13 6.1 18 5.0 59.5 59.6 358.9
−1.0 48			54	51 −0.4
358.4 59.4	59.2	59.4 13 6.3	58.8	58.1 13 6.2 57 59.2 59.1 358.7
−0.4 56	56		57	51 −0.5
358.2 58.6	58.6 18 3.6	57.9 13 4.3	58.5	58.0 13 4.1 58.5 18 3.1 59.1 358.6
−0.2 35			34	31 −0.2
358.1 58.3	58.2 18 3.6	57.5 13 4.4	58.4	57.7 13 4.0 58.7 18 3.4 58.7 358.5
−0.1 37			32	31 −0.4
358.0 58.1	58.2	57.4 13 4.5	58.6	57.8 13 4.3 58.4 36 58.7 358.3
−0.3 36	34		35	30 −0.6
357.9 58.2	57.9	57.3 13 4.5	58.3	57.5 13 4.3 58.2 17 3.5 58.8 358.2
41	39		35	32 −0.5
357.7 57.7	57.9 20 4.5	57.3 10 5.1	58.3	57.5 10 4.8 58.3 58.6 358.1
+0.4 46			42	42 36 −0.3
357.6 58.2	57.3	56.7 10 4.3	57.6	57.0 13 5.0 57.6 58.2 357.9
+0.7 50	44		45	47 43 +0.3
357.5 56.8	56.9 28 5.0	56.5 13 5.3	57.3	56.8 13 5.2 57.1 57.5 357.8
+1.0 54	47		46	48 48 +0.7
357.4 56.4	56.8	57.1 13 5.0	56.5	57.2 13 4.9 56.6 57.0 57.0 357.7
+0.9 49	45		40	43 42 +0.5
357.2 56.3	56.7	56.2 13 5.2	57.2	56.3 13 5.1 56.9 57.0 357.5
+1.0 51	45		41	46 41 +0.3
357.1 56.1	56.7	56.0 13 5.3	57.1	56.1 13 5.2 56.6 57.1 357.4
+1.2 54	47		43	47 48 +0.8
357.0 55.8	56.5	55.9 13 5.8	56.9	56.0 13 5.8 56.5 56.4 357.2
+1.3 56	50		50	50 53 +1.2
356.9 55.6	56.2		56.2	55.4 56.2 55.9 357.1

	+	H.I	−	Elev.
9+00				
+50				
10+00	4.58	361.23		
T.P. +50			4.19	
11+00				
+50				
12+00				
+50				
Mt. Cajon East +66				
N.L. Cajon West +76.2	4.72	360.84		
B.M.				356.12

Curb Grade W	15'	℄	15'	E	Curb Grade
+0.5 50	18' 48	13' 5.4 45	13 5.6 51	55	+1.3
356.7 56.2	56.4	55.8 13	56.7	55.6 56.1	55.7	357.0
−0.2 44	44	5.5 47	13 5.4 49	50	+0.6
356.6 56.8	56.3	55.7	56.5	55.8 56.3	56.2	356.8
−0.2 45	50	13 5.4 46	13 5.4 49	49	−0.1
356.5 56.7	56.2	55.8 13	56.6	55.8 56.3	56.8	356.7
−0.1 43	47	5.1 42	13 51 46	42	
356.4 56.5	56.1	55.7	56.6	55.7 56.2	18' 56.6	356.6
46	49	46	49	45	44
356.2 56.2	55.9	56.2	55.9	56.3	56.4	356.4
−0.6 41	46	46	49	46	+0.1
356.1 56.7	56.2	56.2	55.9	18' 4.2	56.2	356.3
−0.3 45	48	44	47	43	−0.3
356.0 56.3	56.0	56.4	56.1	56.6	56.5	356.2
−0.5 44	48	44	48	42	−0.6
355.9 56.4	56.0	55.9	56.0		56.6	356.0
−0.7 43	48	50	45		39	−0.9
355.8 56.5	56.0	55.8 46	56.3		56.9	356.0
−0.7 43	48	56.2			
355.8 56.5	56.0				

S.W. Cor. Highland & Cajon

356.8
355.2


Out
Reset
Nail W face dead Man
North Boundary Line
Tack on Piazza Floor Cor
22.07
Buried by waste
20'
20'
old hubs
Ho #4499
2x2 hub reference points
Highland Ave
2x2 hub reference points
House
20'
20'
old hubs
nail in tree
El Cajon Ave

22.07

Highland Ave.
8' culvert 842' So. of North city Boundary Line

	+	H.I.	−	Elev.	Grade of Bottom of Pipe at curb Line	cut				
B.M.				356.12		B.P.	S.W.	Highland + El Cajon		
TP	509	361.21								
			4.68	356.53						
TP	4.35	360.88								
W. Side			5.41	355.47	354.57	0.90		Stake set 3' W. of property line		
E. Side			4.49	356.39	355.39	1.00		" " " E " " "		
				356.53						55.39 54.57
B.M.	4.93	361.46	5.34	356.12		B.P.	S.W.	Highland o El Cajon		

change of Culvert Elev.

W-Side				355.47	354.87	0.60
E-Side				356.39	354.99	1.40

Chisholm Hile Seifert Rod

Highland Ave

	+	TP	El
BP SW Cor Cajon BM p. 25	4.30 360.42		356.12
		3.48	356.95
12+66		4.42	
12+76.2		4.62	
T.P. SW Cor Garage TBM E side	4.735 361.285	3.87	356.55
		4.300	356.985
	Check 361.285	Back	
	3.35 360.33	4.300	356.980
BM above		4.22	356.11
	4.910 361.895		356.985
6+50		4.105	
"		4.495	
	4.36 360.48		356.12
TP	356.385	4.095	356.385
	4.26 360.645		
6+50			

Curb Grades

1/5/23

E Gr	W. G.			
~~356.0~~		"	"	"
356.0				
	355.80			

NE Cor Cajon

NW

+	8.52
+9.035	-7.65
-8.170	0.87
+0.865	356.12
356.12	
356.985	356.99

361.89
357.5
4.39

61.89
357.6
4.29

Grade

E	W.
357.700	
	357.400
4.47	4.465
356.1	356.015
W	~~E~~
3.09	2.95
357.555	357.695

B.M
3.675
:: 356.97

	+		—	
	3.670	360.655		356.985
T.P.	4.225	360.580	4.300	356.355
			4.460	356.12
			4.78	
	4.92	361.905		356.985
6+50			4.50	

Highland Ave El Cajon No

BM Garage	356.985	362.810	5.825	
TBM	358.542	4.268	364.379	5.837
BM	359.827	4.552		
		Check	Back	
BM	359.827	364.511	4.684	
TP	359.059	5.452	362.954	3.895
	356.996	5.958		

+ 11.662
− 8.820
+ 2.842

+ 11.410
+ 8.579
+ 2.831

BM Telpole N W Cor Highland + City Bdy Elev = 359.821

Highland Ave Check

BM @ Garage

BM

355.80 NW Cor Cajon

BM @ Garage Cor E side Highland

Grade
357.40 W

1/19/23

6+50 E.P.L.

Spike in light El pole NW Cor Highland + No City Bdry

2.831
2.842
5.673
2.836
356.985
359.821

Highland Ave

		− Rod	+ Rod
BM Garage	356.985	362.943	5.958
6+50		5.24	5.24
"		5.24	5.54
BM Bdry NW Cor	359.821	364.311	4.490
0+00		5.31	
"		4.91	
BM Garage	356.98	362.06	5.08
7+50	357.14	4.92	
"	357.44	4.62	
BM Tel Pole NW Cor City Bdy 0+27	359.82	364.746	4.925
	359.00	5.74	
	359.42	5.32	

Grades Step #21

1/19/23

W	E	
3	357.7	
357.4	357.7	
357.4		
359.0	359.4	City No Bdry

Resetting after Storm

2/5/23

BM Loose

Cu Curb W @ 7+50

E

Gr Stake W side 0+0

E side

Euclid Ave University – Castle

Sta	+	H.I	–	Elev
B.M.				340.63
	1.55	342.18		
S.L. University			1.10	341.08
0+00	2.44	343.52		
+50				
+75				
1			10.41	333.11
+25	3.54	336.65		
1+40 vert P.I. 338.2 +50				
+75				
2			1.72	334.93
+50	10.03	344.96		
3				
+50				
4				
+50			2.63	342.33
5	4.84	347.17		
+50				
6 (Grade E+W 340.50				
+50				
6+80 Elev 340.0 E+W				
7				

WPL Rate = 1.428% EPL same @ P.I.

Chisholm A 34
Hile Rod

W. Curb Grade B.P.	W. N.W.		12' University		℄ 30 + Euclid		12'		E. El	E. Curb Grade
+0.2	3.3		3.4		3.4		3.0	1'W 0.8	2.0	+0.9
340.0	40.2		40.1		40.1		40.5	42.7	341.5	340.6
+0.9	3.3	9 6.1	6.3		5.9	22 5.9	4.8 4.3		2.0	+1.8
39.3	40.2	37.4	37.2		37.6	37.6	39.2		41.5	339.7
-5.0	9.6		6.6		6.8		6.1		3.3	+1.0
38.9	33.9		36.9		36.7		37.4		40.2	339.2
-10.8	15.7	9.3	20 7.6		7.2		7.3		8.6	-3.9
38.6	27.8	34.2	35.9		36.3		36.2		34.9	338.8
-17.9	16.4		9.5	24 0.8	0.7	23 1.2	6.0		9.7	-11.3
38.2	20.3		27.2	35.9	36.0	35.5	30.7		27.0	338.3
-14.9	13.5		7.7	22 1.8	1.1	25 1.7	9.8		16.4	-17.8
38.1	23.2		29.0	34.9	35.6	35.0	26.9		20.3	338.1
-9.7	8.2		7.5	23 1.2	0.9	24 1.3	9.7		15.2	-16.7
38.2	28.5		29.2	35.5	35.6	35.4	27.0		21.5	338.2
-10.6	7.3		0.2		0.8	22 1.7	4.5		8.4	-10.0
38.3	37.7		36.5		35.9	35.0	32.2		28.3	338.3
+2.0	4.4		4.6	20 8.3	8.6	22 8.4	16 6.0		8.2	-1.8
38.6	40.6		40.4	36.7	36.4	36.6	39.0		36.8	338.6
+2.8	3.3		4.8	17 6.0	6.1	20 5.8	4.6		5.3	+0.8
38.9	41.7		40.2	39.0	38.9	39.2	40.4		39.7	338.9
+2.7	2.2	6 3.9	4.4		5.0		3.9		3.5	+2.4
39.1	42.8	41.1	40.6		40.0		41.1		41.5	339.1
+3.9	1.7		3.4		3.7	20 3.8	2.2		2.6	+3.0
39.4	43.3		41.6		41.3	41.2	42.8		42.4	339.4
+4.2	0.7		2.4		2.0	17 2.7	1.1		1.5	+3.8
39.7	44.3		42.6		43.0	42.3	43.9		43.5	339.7
+4.3	2.9		3.1		3.2	15 3.5	2.6		3.0	+4.2
40.0	44.3		44.1		44.0	43.7	44.6		44.2	340.0
+3.1	3.9		3.4		2.8		3.3		3.1	+3.9
40.2	43.3		43.5		44.4		43.9		44.1	340.2
+1.8	4.9		4.3		3.8		4.0		3.4	+3.3
40.5	42.3		42.9		43.4		43.2		43.8	340.5
+2.0	5.0		4.8		4.5		4.6		4.0	+3.0
40.2	42.2		42.4		42.7		42.6		43.2	340.2
+1.9	5.4		5.0	16 6.8	5.9	15 6.4	5.2		5.2	+2.1
39.9	41.8		41.6	40.4	41.5	40.8	42.0		42.0	339.9

	+	H.I	-	Elev.	
7+50		347.17			
8			8.95	338.22	
+50	1.84	340.06			
+75					
Grade E+W 9 (339.00					
+50			0.82	339.24	
10	11.38	350.62			
10+8.6 M.H. Elev 340.52					
+50					
11					
+50					
12 Grade E+W 344.00 +64					
			11.37	339.25	
	4.73	343.98	1.39	342.59	
	4.92	347.51	7.00	340.51	
B.M	1.83	342.34	1.70	340.64	340.63

Culvert should be @ 170' so of Klauber St SPL

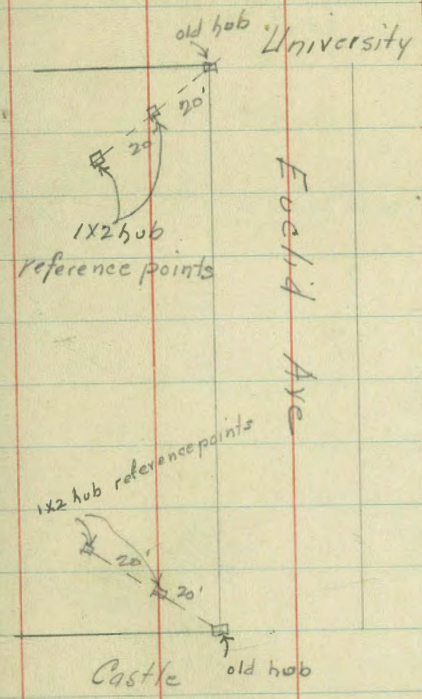
Rate = +1.373%

Castl

W/S ℄ E/S 35

Grade	El								Grade
+0.5	7.0		7.0		7.1		6.8	6.6	+0.9
39.7	40.2		40.2		40.1		40.4	40.6	339.7
-2.9	10.6		9.2		8.3		8.1	8.6	-0.9
39.5	36.6		38.0		38.9		39.1	38.6	339.5
-5.9	6.8	5 9.8	7.3	18 4.9	4.8	18 4.7	3.5	2.5	-1.6
39.2	33.3	32.3	32.8	35.2	35.3	35.4	36.6	37.6	339.2
-5.9	6.9		7.0	20 5.0	5.2	18 5.7	6.8	9.1	-8.1
39.1	33.2		33.1	35.1	34.9	34.4	33.3	31.0	339.1
-3.8	4.9		5.3		5.3	20 5.8	10.2 2 14.4	12.0	-10.9
39.0	35.2		34.8		34.8	34.3	29.9 25.7	28.1	339.0
-0.4	0.8		1.8	15 2.9	2.9		3.2	3.4	-3.0
39.7	39.3		38.3	37.2	37.2		36.9	36.7	339.7
+3.5	6.7		7.5		8.6		9.3	9.7	+0.5
40.4	43.9		43.1		42.0		41.3	40.9	340.4
+4.8	4.7		5.2		5.6		6.4	6.8	+2.7
41.1	45.9		45.4		45.0		44.2	43.8	341.1
+4.8	4.1		4.5		4.5		4.8	5.1	+3.8
41.7	46.5		46.1		46.1		45.8	45.5	341.7
+3.3	4.9		5.1		4.3		4.6	4.7	+3.5
42.4	45.7		45.5		46.3		46.0	45.9	342.4
+1.8	5.7		5.4		4.7	16 5.4	4.6	4.6	+2.9
43.1	44.9		45.2		45.9	45.2	46.0	46.0	343.1
+0.3	6.3		5.8		5.4		5.3	5.3	+1.3
44.0	44.3		44.8		45.2		45.3	45.3	344.

B.P. N.W. Euclid + University


University
old hub
20'
20'
1X2 hub
reference points
Euclid Ave
1X2 hub reference points
20'
20'
Castle
old hub

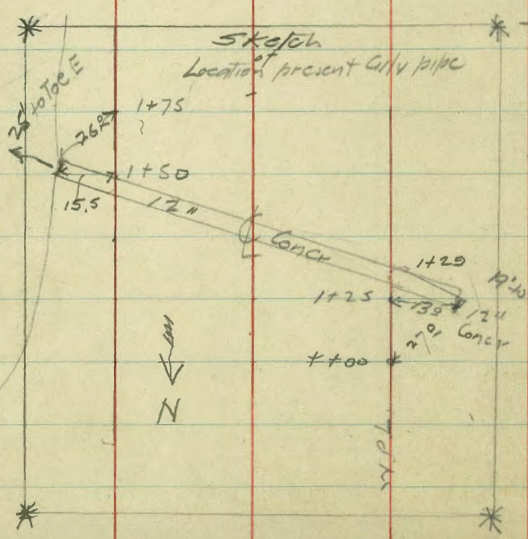
EUCLID AVE

2/17/23
A E Franklin
J E Ellis
L S Sievert

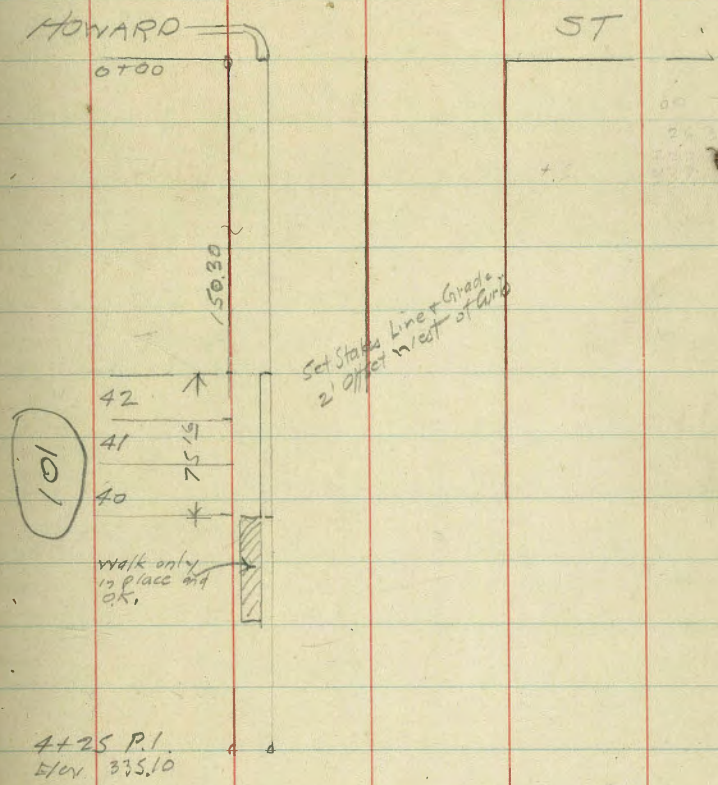
Sta	X Sect Tops of Fill for Culv Lengths				Grade W.P.L.	Univ	Univ Ave South		Grade EPL
		−	E X	+ V				E.	
BM NW Cor Univ	340.63		342.34	1.71		26 / 155	341.82 − 13.28 = 328.54 + 2.13 = 330.67	342.34 − 11.93 = 330.41 T.P. + 0.81 = 331.22	
SPL Univ									
0+00	340.63		341.82	1.19					
Invert W side	329.7		12.1		W Toe				
E side	314.2 = 60' below 1+50							EPL	339.00
+50					1.6 / 40.2 / 339.55	W.P.L. + 0.7			
									2.15 / 40.2 / 39.45 +0.8
					10.0 +50 / 8.1 / 33.7				
+75				−6.2 / 9.8	39.15	−5.4			+75 00
1+00				−18.8 / 28.2	2.9 / 27.8 / 338.85	−11.0		−4.0	7.4 / 35.0 / 339.05 −4.6 / 6.9
			1+15 ℄ Wash (19 ft pipe West Side) 12" Concr in place now W	−10.0 / 28.5					
+25				−17.5 / 26.25	10.1 / 20.6 / 38.45	−17.4		−11.6	4.25 / 26.95 / 38.55 13.8 / 20.7
+50				−12.0 / 18.0	2.65 / 32.3 / 38.35	−15.35		−16.1	11.0 / 32.0 / 38.35 −19.6 / 29.4
+58 ℄							Wash +58		−24.4 / 36.6
+75				−7.0 / 10.6	13.3 / 28.5 / 38.45	−9.0		−17.0	9.85 / 32.4 / 38.45 −20.8 / 31.2
2+00					4.0 / 37.8 / 38.55	−0.7 / 0.0	2+00	−10.3	3.0 / 32.2 / 38.55 −17.6 / 25.8
+25								−5.5	9.10 / 33.2 / 38.70 −10.0 / 15.0
+50					38.85			−2.0	5.5 / 36.8 / 38.85 −3.1 / 4.6
+50									

Invert W side 329.7 12.1 W Toe
E side 314.2 = 60' below 1+50

Sketch
Location of present Culv pipe



	Fairmount El	−	AVE ⊼	+	3/13/23 AE Franklin JE Ellis LH Sievert
NW Cor Howard BM B.P. Bk 9467	331.98		338.17	6.19	
4+25	335.10	3.07			



stat.	+	H.I.	—	Elev.	
B.M.	1.570	335.01	3.72	333.44	N.W. Cor of Pueblo + Univers
					S.E. " " " + "
N.W. Cor. Mission Pueblo					
T.B.M.	12.535		12.535	322.475	322.50 Gr. On N End Conr Curb Return N rr Cor Univ + Mission
	+		—		
	7.835	330.310			
T.P.	12.395	342.060	0.645	329.665	
			11.440		(Walk Conr.) Sou'l End
			11.670		Curb " "
			8.115		Conr Walk No End
			8.260		Curb No End
BM			1.895	340.165	
	21.800		15.075		6.725
	1.780	340.945			
T.P.	1.070	329.753	12.262	328.683	
T.P.	12.780	334.278	8.255	321.498	.033 .016 Cor Mission & Univ Ave N rr Cor (Mission)
			1.805	332.473	
	15.630		22.322		6.692
BM	2.14	342.30		340.16	Grade BM 337.0
			5.3		337.0 Sw Cor Steiner

HHH Ch
AEF R
LHS
JEF Jan 2/23

Mission Ave

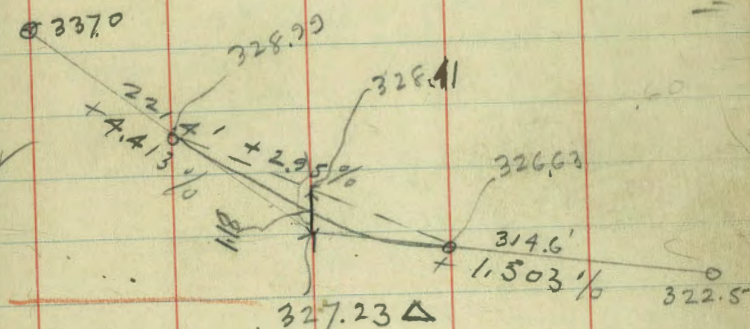
Sleiner to Univ Ave
West Side Curb Grades

	+	⊼	−		Grade
NE Cor Sleiner Curb BM Curb 4' Offset Sw Cor on Mission	1.89	342.05		340.16	
			5.05		337.00
			4.26		
	1.88	342.04		340.16	
T.P.	1.75	333.67	10.12	331.92	
		6.67			327.00
TP above	1.05	332.97		331.92	
			5.97	327.00	"
El of P.I. of Sag 314.6 No. of Univ Ave			5.74	327.23	

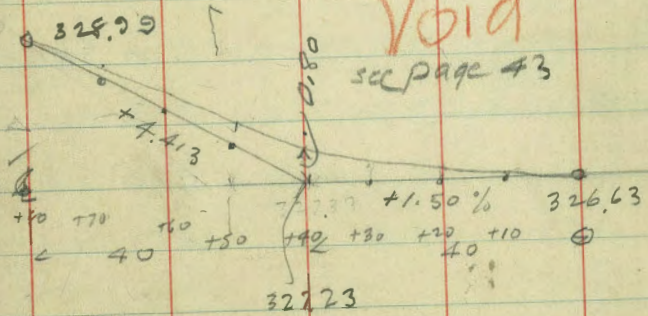
On Int Sec Vert Curve

5.05
4.26
0.79 high

" 33.67
5.65
28.02



			SUB GRADE	Grade
0	332.97	6.34	326.63 + 0 (+15)	326.63
+10		6.14	326.78 + .05 = (+15)	326.83
+20		5.84	326.83 + .20 = (+15)	327.13
+30		5.44	327.08 + .45 = (15)	327.53
+40 ℄		4.94	327.23 △ + .80 = (+44)	328.03 ℄
+50		4.85	327.67 + .45 = (+44)	328.12
+60		4.66	328.11 + .20 = (+44)	328.31
+70		4.37	328.55 + .05 =	328.60
+80		3.98	328.99 + 0 =	328.99



Void
see page 43

Jan 3/23
HHH
AEF
L.H.
J.E.E.

S.W. Cor Mission & Steiner

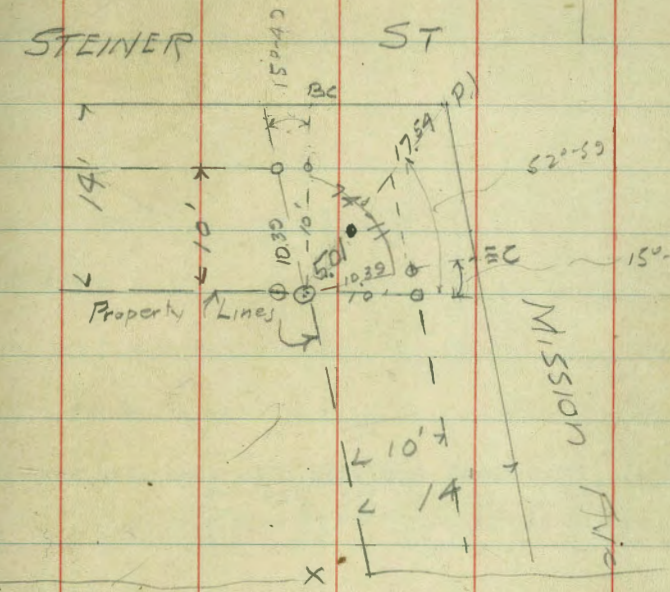
+ ⊼ —

2.065 342.225 340.16

5.22

Grade

337.0



105-49
52-55

Elev & Diff Top of C. Basins + Curb West Side

Page 40 TBM 6.40 328.88 322.48

7.03 321.85

5.65 323.23 1.38

3.40 325.48

4.53 324.35 1.13

Mission Ave just North of Univ Ave 1/3/23

Top Concr of Catch Basin N.W. Cor (Univ Ave Mission W side of Mission) 15-49 45

4' Curb Grade Stake 20' ± North of C. Basin 50' No of PL

" " " " 200' North of Cor P.L.

Top Concr of C. Basin 200' North of above Cor " "

Mission Ave

Revision Vert Curve W side (old curve p41)

BM Curb Return page 40

		9.03	331.51	322.48
		4.90		326.61
		2.52		328.99

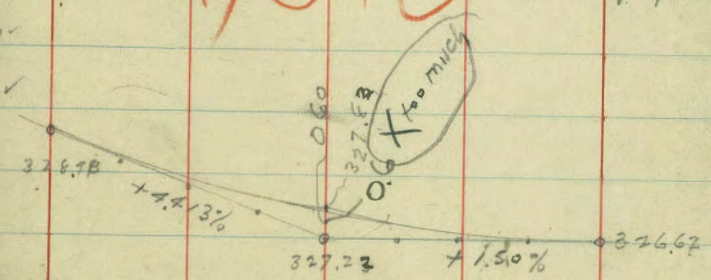
21.51
3.51
328.00

			Rod	Grade
		331.51		
0	Lower end		4.89	326.62
+10			4.71	326.80
+20			4.44	327.07
+30			4.16	327.35
+40 ℄			3.69	327.82
+50			3.57	327.94
+60			3.26	328.25
+70			2.94	328.57
+80	Upper End		2.53	328.98

328.98	28.98	28.54	28.10	27.66	27.22	27.07	26.92	26.77	26.62
		.03	.15	.29	.60	.28	.15	.03	
327.82		28.57	28.25	27.94	27.62	27.35	27.07	26.80	

VOID

Next page



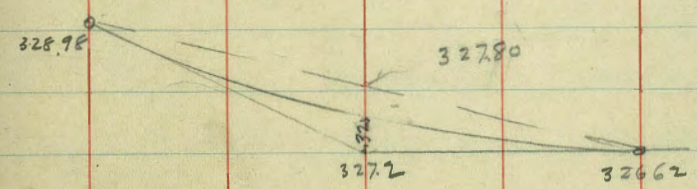
+80	+70	+60	+50	+40	+30	+20	+10	0
328.98	28.84	28.10	27.66	27.22	27.07	26.92	326.77	

MISSION Ave
Revision Vert Curve W Side Steiner to Univ
3/11/23
AEF

		Rod	Grade
	⊼ page 43 331.51		
0		4.89	326.62
+10		4.72	326.79
+20		4.51	27.00
+30		4.26	27.25
+40 ℄		3.97	27.54
+50		3.67	27.84
+60		3.33	28.18
+70		2.95	28.56
+80		2.53	328.98

M Ord = 0.32

+80	+70	+60	+50	℄	+30	+20	+10	0
328.98	28.54	28.10	27.66	27.22	27.07	26.92	26.77	26.62
	.02	.08	.18	.32	.18	.08	.02	
328.98	28.56	28.18	27.84	27.54	27.25	27.00	26.79	26.62



Univ So Euclid Ave Curb Grades

	W Curb			E Curb	
BM Univ + Euclid	340.63		345.14	4.51	
OTO	340.00	5.14		340.60	4.54
On Curb in Place	340.06	5.08			
	340.63		345.20	4.57	
1+40 E Side				338.0	7.20 / 6.11
1+40 W "				338.0	6.01
	340.63		343.610	2.980	
TP	340.314	3.206	345.264	4.950	
"	340.289	4.975	345.046	4.757	
	344.456	0.590			
	340.630		343.496	2.866	
	340.486	3.010	344.213	3.727	4.21
					5.21
	340.63		344.95	4.32	
	340.63	338.10	6.85 / 345.50	4.87	
		338.10	7.40		

W Curb return in place is 0.06 high

720
611
1.09 Cut

720
6.01
1.19 Cut

119
4.73
5.92

Klauber 345.26 / 340.5 / 4.76 6+00 W DL same E DL

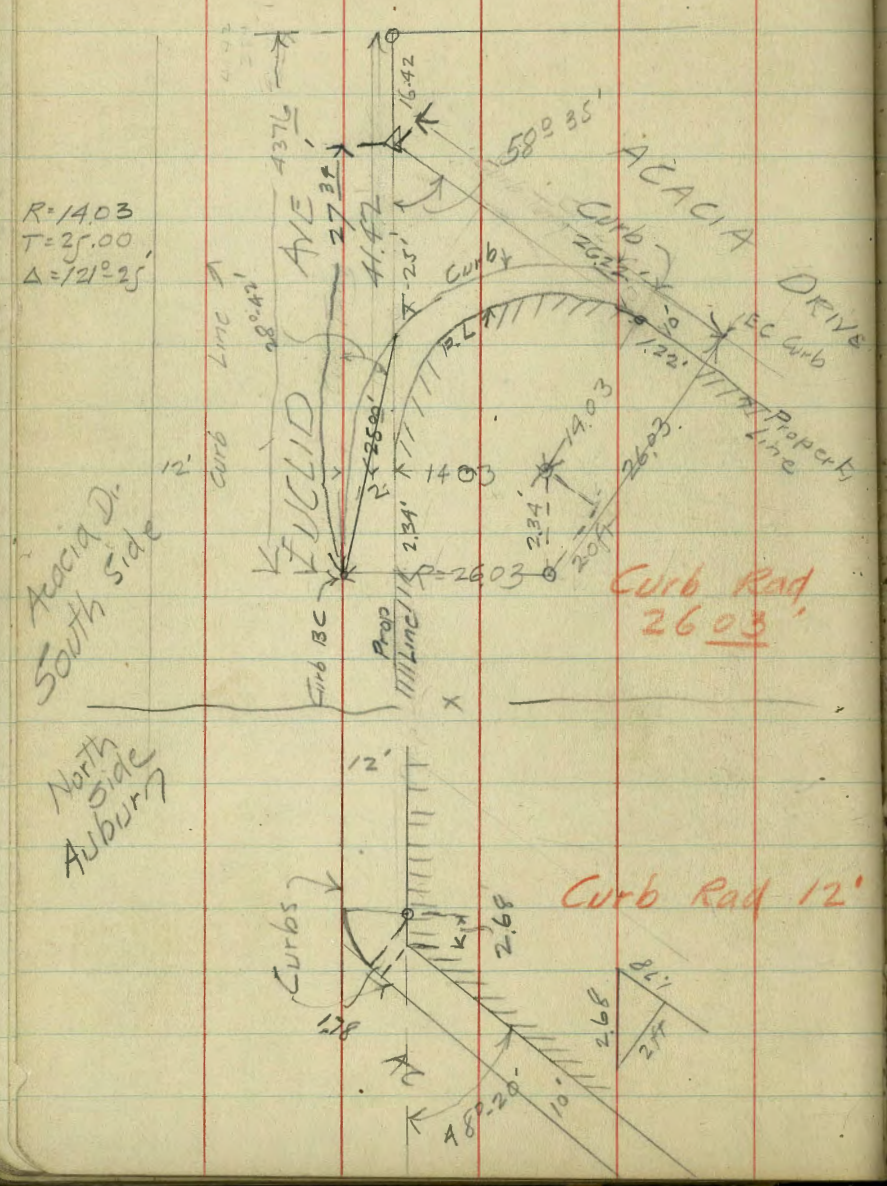
5.77
1.09
4.68

434
340.80

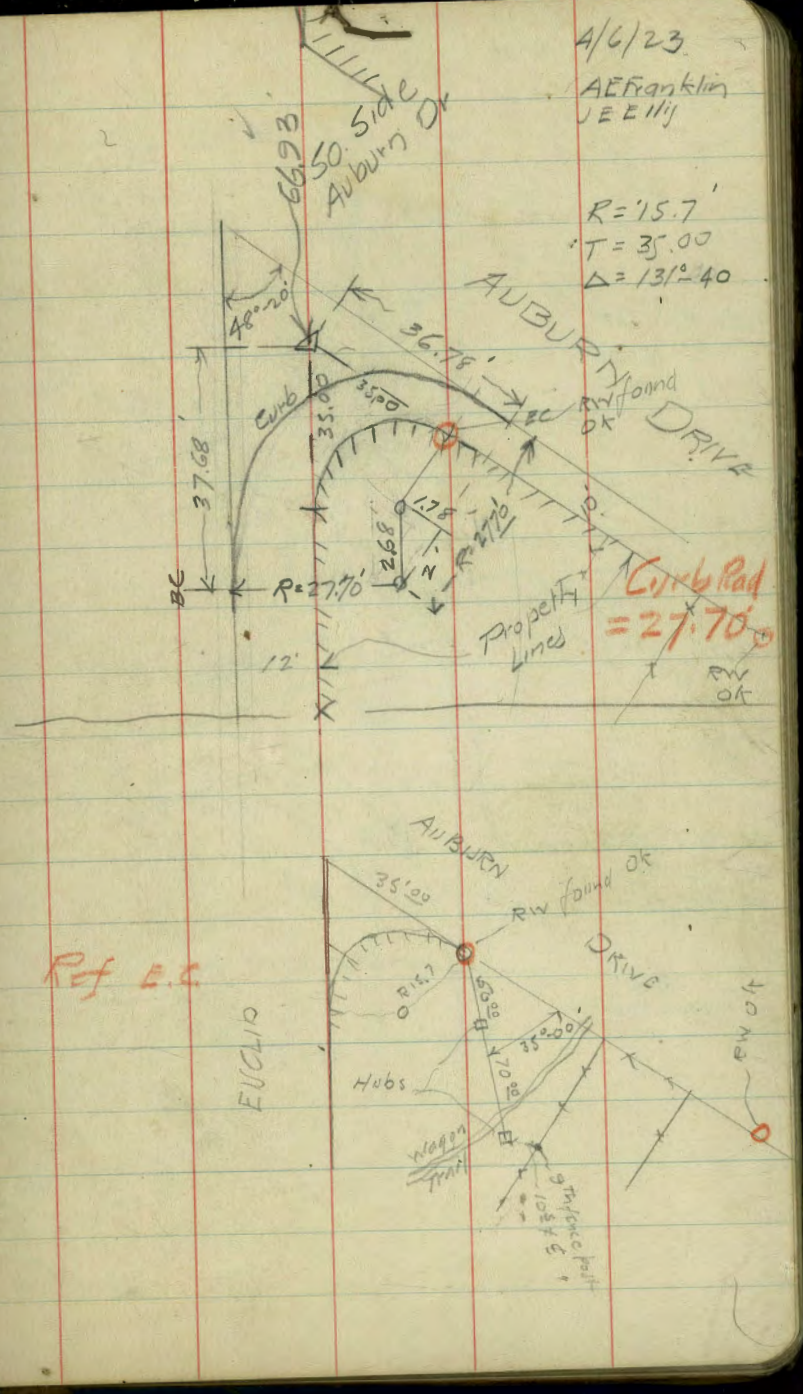
4720
4222
.498

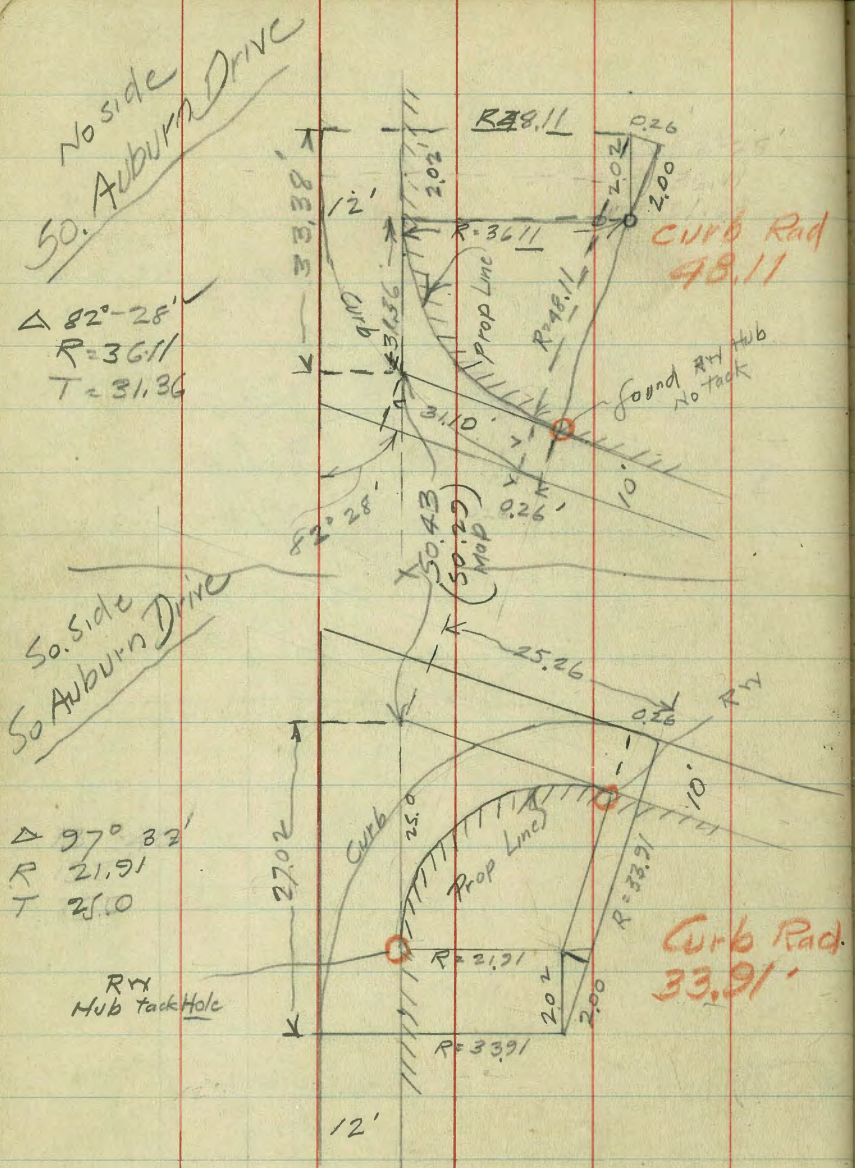
344.456
498
343.958

EUCLID AVE Univ to Castle
Odd Curb Returns East side

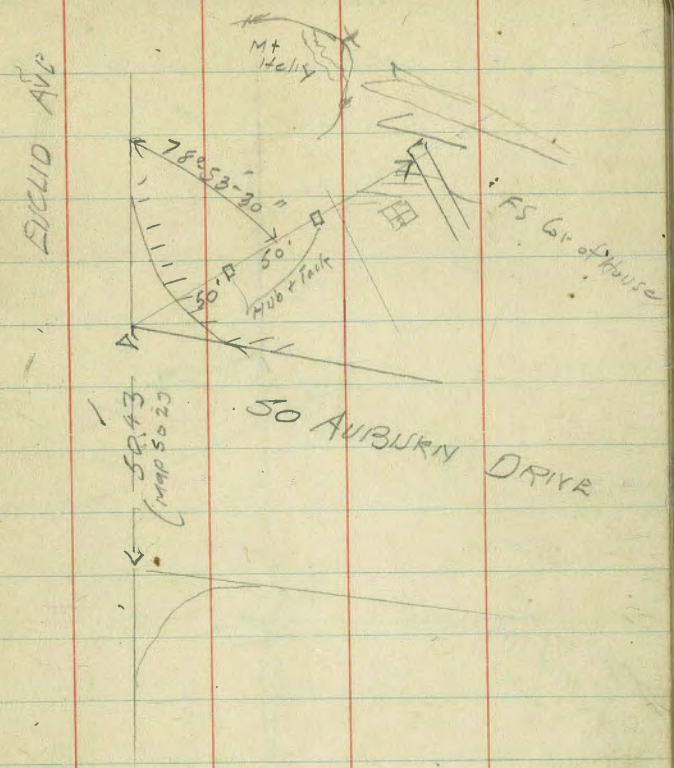


4/6/23
AEFranklin
JEEllis




No side
So. Auburn Drive
Δ 82°-28'
R=36.11
T=31.36
R=48.11
0.26
2.02
2.00
12'
33.38'
R=36.11
Curb Rad
48.11
Prop Line
R=48.11
Curb
31.36
Found RW Hub
No tack
31.10'
10'
0.26'
82°28'
50.43
(50.29 Map)
So. Side
So Auburn Drive
25.26
0.26
RW
10'
Δ 97° 32'
R 21.91
T 25.0
27.02
Curb
25.0
Prop Line
R=33.91
Curb Rad
33.91'
R=21.91
RW
Hub tack Hole
2.02
2.00
R=33.91
12'

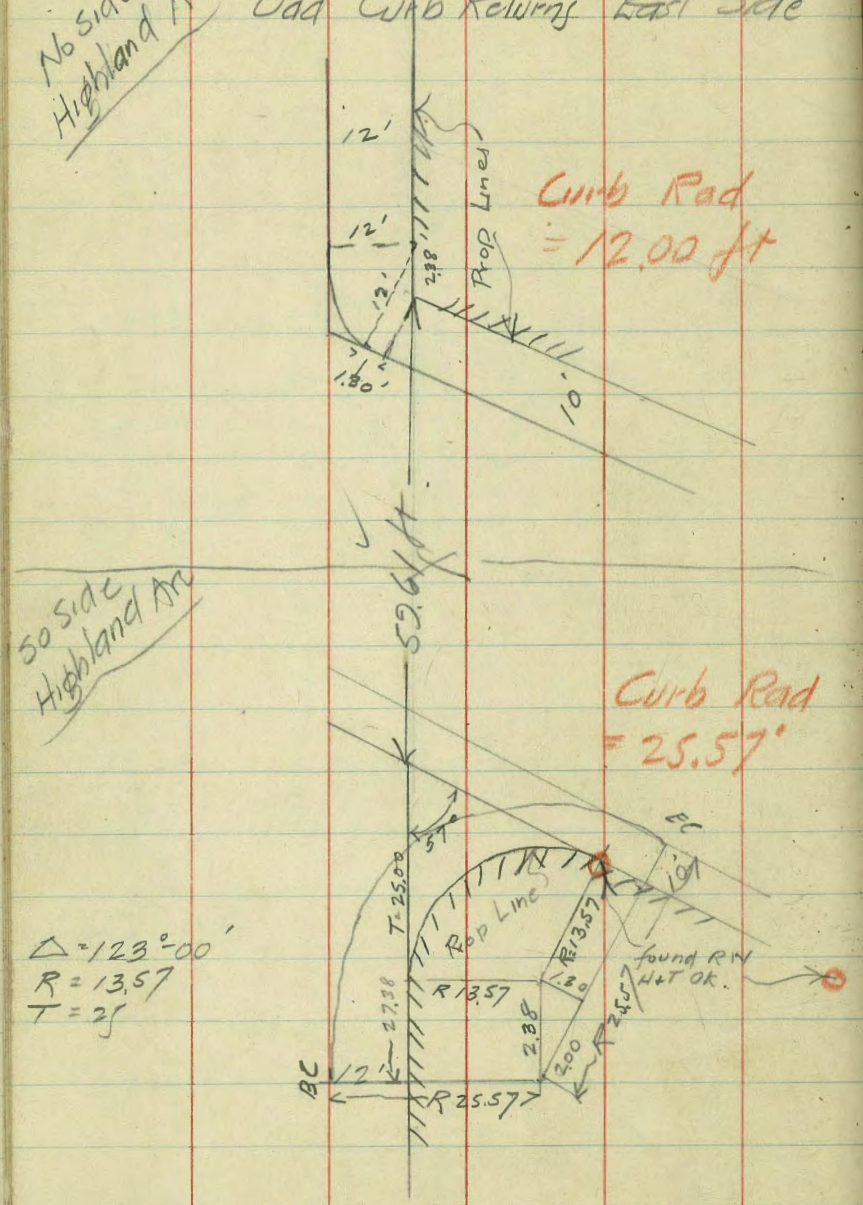
Ref Pl.


EUCLID AVE
Mt Helix
78°53'30"
50'
50'
Hub + Tack
FS Cor of House
50.43
(Map 50.29)
SO AUBURN DRIVE

EUCLID AVE (Univ to Castle

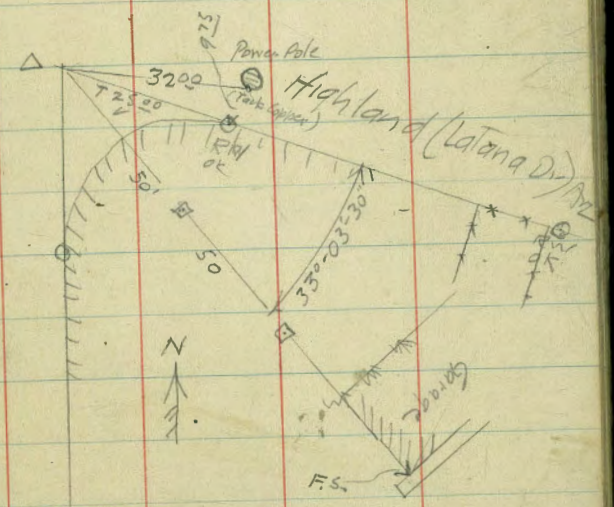
Odd Curb Returns East Side

3/7/23
AE Franklin
JE Ellis



Δ = 123°-00'
R = 13.57
T = 25

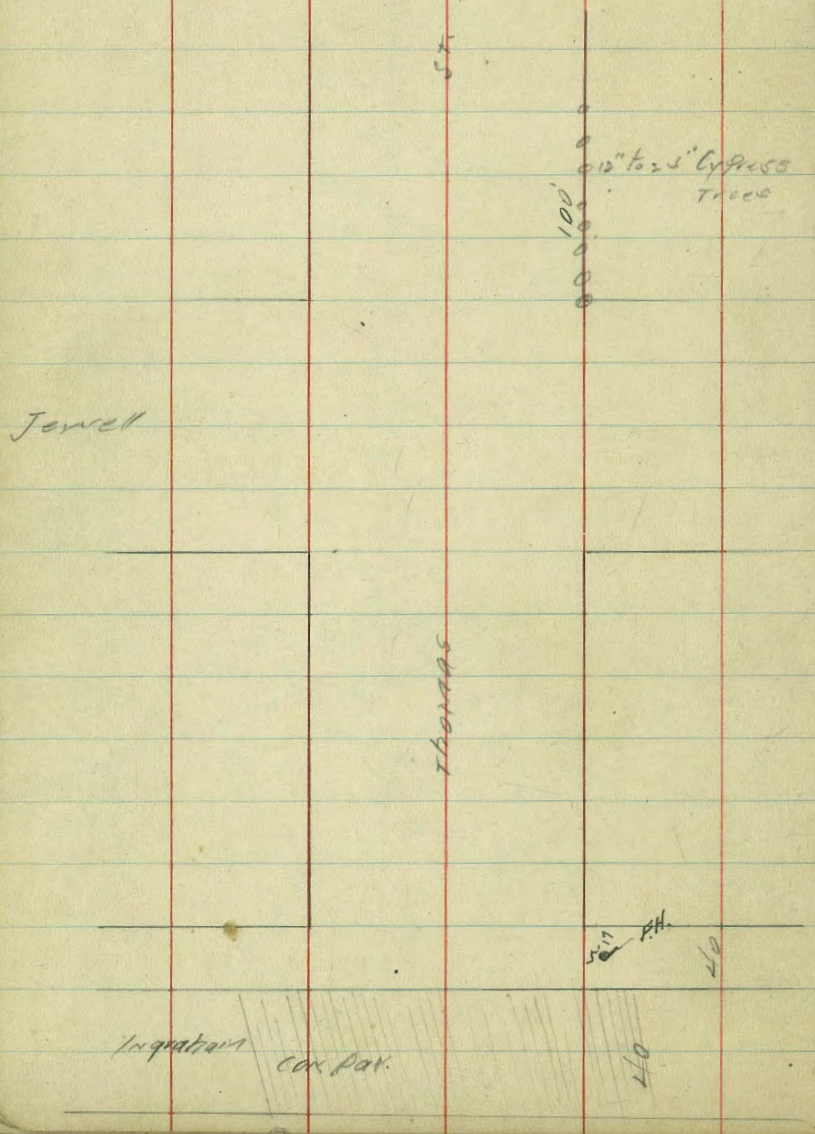
Ref. P.I.

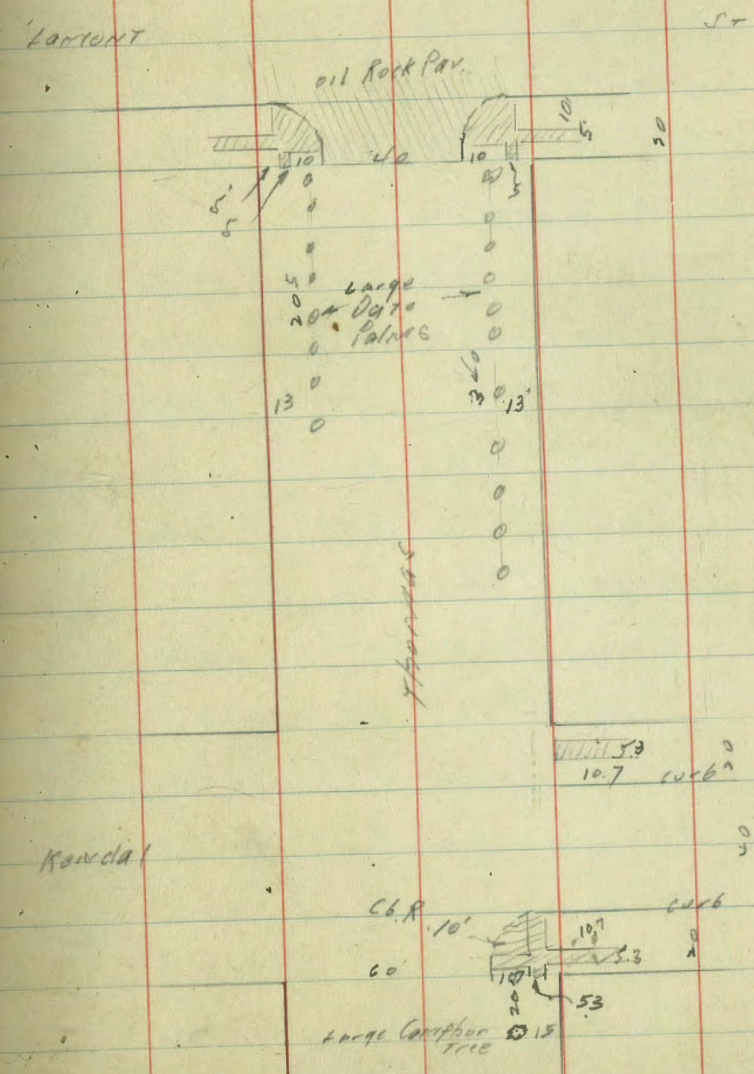


Moore
5-19-39

Xsec Thomas 80' wide
20 0.65
10' 1/45

Ingraham to Lamont





X 502 Thomas

NEBP	0.68	56.53		55.85	Grand Ingraham
0-50 E Ingraham					
N			7.01	49.52	
C on Ld. + C.T.			7.52	49.01	
S			8.05	48.48	
0-40 E edge Pav.					
-50			9.03	47.50	
S			8.27	48.26	
C			7.77	48.76	
N			7.25	49.28	
+50			6.37	50.16	
0-20 E cb					
N			7.7	48.8	
cb			8.4	48.1	
1/4			8.7	47.8	
C			8.7	47.8	
1/4			8.8	47.7	
cb			8.8	47.7	
S			9.1	47.4	

56.53

0+00 E.L. Ingraham					
-5			9.0	47.5	
S			8.9	47.6	
cb			9.1	47.4	
1/4			9.2	47.3	
C			9.1	47.4	
1/4			9.0	47.5	
cb			8.7	47.8	
N			7.8	48.7	
+5			7.4	48.9	
0+50					
-5			10.3	46.2	
N			10.4	46.1	
cb			10.3	46.2	
1/4			10.4	46.1	
C			10.3	46.2	
1/4			10.2	46.3	
cb			10.6	45.9	
S			11.4	44.9	
+5			12.0	44.5	

56.53

1+00				
-5		13.0	43.5	
S		12.8	43.7	
cb		12.8	43.7	
1/4		12.3	44.2	
c		12.1	44.4	
1/4		11.8	44.6	
cb		11.6	44.7	
N		11.3	45.2	
+5		11.4	45.3	
1+50				
-5		11.4	45.1	
N		11.6	44.9	
cb		11.8	44.7	
1/4		12.4	44.3	
c		12.3	44.2	
1/4		12.5	44.0	
cb		12.8	43.7	
S		13.2	43.3	
+5		13.3	43.2	

56.53

T.P.	7+00	51.16	12.39	44.14
2+00				
-5			7.9	43.3
S			7.7	43.5
cb			7.4	43.8
1/4			7.1	44.1
c			6.8	44.4
1/4			6.8	44.4
cb			6.7	44.5
N			5.9	45.3
+5			5.9	45.3
2+50				
-5			5.4	45.8
N			5.6	45.6
cb			6.4	44.8
1/4			6.6	44.6
c			6.6	44.6
1/4			7.0	44.2

cb			7.4	43.8
S			7.8	43.4
+5			7.9	43.3
	3+00			
-5			7.1	44.1
S			7.0	44.2
cb			6.7	44.5
1/4			6.2	45.0
C			6.3	44.9
1/4			5.8	45.4
cb			5.7	45.5
N			5.1	46.1
+5			4.9	46.3
	3+50			
-5			4.7	46.5
N			4.8	46.4
cb			5.4	45.8
1/4			5.5	45.7
C			5.5	45.7
1/4			5.7	45.5

cb			6.0	45.2
S			6.2	45.0
+5			6.3	44.9
	4+00			
-5			5.4	45.8
S			5.4	45.8
cb			5.2	46.0
1/4			5.0	46.2
C			4.7	46.5
1/4			4.9	46.3
cb			5.0	46.2
N			4.8	46.4
+5			4.8	46.4
	4+50			
-5			4.8	46.4
N			4.7	46.5
cb			4.9	46.3
1/4			4.6	46.6
C			4.4	46.8
1/4			4.4	46.6

		51.14		
cb			4.5	46.7
S			4.4	46.8
+5			4.4	46.8
	H +99.70	W℄ Jewell		80' wide 20' curbs
-5			2.7	48.5
S			2.9	48.3
cb			3.6	47.6
1/4			4.0	47.2
c			4.1	47.1
1/4			4.4	46.8
cb			4.7	46.5
N			4.6	46.6
+5			4.8	46.4
	W curb = 20'			
-5			4.9	46.3
N			4.6	46.6
cb			4.4	46.8
1/4			4.1	47.1
c			3.5	47.7
1/4			3.1	48.1

		51.16		
cb			3.0	48.2
S			2.1	49.1
+5			1.8	49.4
	℄ Jewell			
-5			1.2	50.0
S			1.7	49.5
cb			2.9	48.3
1/4			3.4	48.0
c			3.6	47.6
1/4			4.0	47.2
cb			4.3	46.9
N			4.7	46.5
+5			4.8	46.4
T.P.	11.07	59.51	2.72	48.44
	℄ cb = 20'			
-5			13.1	46.4
N			12.4	46.9
cb			12.3	47.2

59.51

1/4			11.8	47.7	
c			11.0	48.5	
1/4			10.7	48.8	
cb			10.4	49.1	
5			9.0	50.5	
0+00 Et. Jewell					
5			7.9	51.6	
cb			9.4	50.1	
1/4			10.1	49.4	
c			10.6	48.9	
1/4			11.3	48.2	
cb			12.0	47.5	
N			12.4	46.9	
+5			13.0	46.5	
0+50					
-5			11.8	47.7	
N			11.5	48.0	
cb			10.7	49.3	
1/4			9.4	50.1	
c			8.4	51.1	

59.51

1/4			7.5	52.0	
cb			6.3	53.2	
5			4.5	55.0	
1+00					
5			2.7	57.3	
cb			4.1	55.4	
1/4			4.8	54.7	
c			5.7	53.8	
1/4			6.2	53.3	
cb			7.1	52.4	
N			9.1	50.4	
+5			9.5	50.0	
1+25					
-5			8.1	51.4	
N			7.8	51.7	
+10			5.9	53.6	
cb			4.8	54.7	
1/4			4.2	55.3	
c			3.7	55.8	
1/4			3.3	56.2	

		59.51			
cb			2.9	56.6	
S			1.7	57.8	
	1+50				
S			1.0	58.5	
cb			1.8	57.7	
1/2			2.1	57.4	
c			2.2	57.3	
1/2			2.7	56.8	
cb			3.1	56.4	
N			4.2	55.3	
	1+75				
N			3.0	56.5	
cb			2.4	57.1	
1/4			2.0	57.5	
c			1.7	57.8	
1/4			1.4	58.1	
cb			1.3	58.2	
S			0.3	59.2	
T.P.	4.83	63.08	1.26	58.25	

		63.08			
	2+00				
S			4.1	59.0	
cb			5.0	58.1	
1/4			5.0	58.1	
c			5.3	57.8	
1/4			5.5	57.6	
cb			5.9	57.2	
N			6.5	56.6	
	2+50				
N			6.0	57.1	
cb			5.5	57.6	
1/4			5.2	57.9	
c			5.2	57.9	
1/4			5.0	58.1	
cb			5.1	58.0	
S			5.1	58.0	
	3+00				
S			4.1	59.0	
cb			4.7	58.4	
1/4			5.1	58.0	

		63.08			
c			5.0	58.1	
1/4			4.8	58.3	
cb			4.6	58.5	
N			4.7	58.4	
	4+50				
N			4.6	58.5	
cb			4.6	58.5	
1/4			4.8	58.3	
c			4.8	58.3	
1/4			5.2	57.9	
cb			5.0	58.1	
S			5.5	57.6	
	4+00				
S			6.0	57.1	
cb			5.9	57.2	
1/4			5.8	57.3	
c			5.7	57.4	
1/4			5.4	57.7	
cb			5.1	58.0	
N			5.0	58.1	

		63.08			
	4+50				
N			5.7	57.4	
cb			5.8	57.3	
1/4			6.5	56.6	
c			7.1	56.0	
1/4			7.0	56.1	
cb			6.9	56.2	
S			7.1	56.0	
T.P.	117	56.88	7.37	55.71	
	4+99.40	W.L. Kendal =	80' wide 20' curbs		Look up for old grade 70 ft
S			1.7	55.2	
cb	Top end return		1.88	55.00	
gut			2.2	54.7	
1/4			2.3	54.6	
c			2.3	54.6	
1/4			1.7	55.2	
cb			1.9	55.0	
N			1.5	55.4	

56.88

W cb			
N		2.5	54.4
cb		2.9	54.0
1/c		2.9	54.0
c		3.2	53.7
1/c		3.0	53.9
cb		3.1	53.8
S guy		3.0	53.9
S top curb		2.01	54.89
℄ Kendal			
S		3.6	53.3
cb		3.4	53.5
1/c		3.4	53.5
c		3.3	53.6
1/c		3.2	53.7
cb		3.2	53.7
N		3.3	53.6
E cb			
N		3.0	53.9
cb		3.9	53.0

56.88

1/c	4.0	52.9	
c	3.7	53.2	
1/c	3.7	53.2	
cb	3.8	53.1	
S	3.7	53.2	
S top end curb	3.03	53.85	plaster top gone
0+00 E Kendal			
S	3.0	53.9	
cb	3.7	53.2	
1/c	4.2	52.7	
c	4.2	52.7	
1/c	4.2	52.7	
cb	3.0	53.9	
N	3.0	53.9	
0+29			
S 3' Cem. walk	3.76	53.12	on back
0+50			
N	4.5	52.4	
cb	4.9	52.0	
1/c	5.4	51.5	

56.88

c			5.5	51.4	
1/4			5.4	51.3	
cb			5.4	51.5	
S			4.6	52.3	
	0+71				
N	3' cem. walk		4.54	52.34	6' in 5
	1+00				
S			6.0	50.9	
cb			6.3	50.6	
1/4			6.3	50.6	
c			6.2	50.7	
1/4			6.2	50.7	
cb			5.7	51.2	
N			5.3	51.6	
	1+14				
S	3' Cem. walk		6.32	50.56	
	1+40				
S	3' Cem. "		6.56	50.32	
	1+50				
N			5.7	51.2	

56.88

cb			6.0	50.9	
1/4			6.7	50.2	
c			6.7	50.2	
1/4			7.0	49.9	
cb			6.9	50.0	
S			7.0	49.9	
	1+73				
S	3' Cem. walk		7.08	49.80	
	2+00				
S			7.5	49.4	
cb			7.6	49.3	
1/4			7.5	49.4	
c			7.4	49.5	
1/4			7.2	49.7	
cb			6.0	50.9	
N			5.8	51.1	
	2+50				
N			6.6	50.3	
cb			7.1	49.8	
1/4			7.5	49.4	

		56.88			
c			7.6	49.3	
1/4			8.0	48.9	
cb			8.1	48.8	
S			7.9	49.0	
	2+56				
S	& ribbon drive		7.29	48.99	Cent.
	2+81				
S	3' Cent. Walk		7.87	49.01	
	3+00				
S			8.0	48.9	
cb			8.6	48.3	
1/4			8.6	48.3	
c			8.3	48.6	
1/4			8.1	48.8	
cb			8.0	48.9	
N			6.9	50.0	
	3+04				
S	& 7' Cent. drive		8.15	48.73	
T.P.		1.54	49.62	8.78	48.10

		49.62		
	3+25			
S	3' Cent. Walk		1.12	48.50
	3+50			
N			0.7	48.9
cb			1.1	48.5
1/4			1.5	48.1
c			1.6	48.0
1/4			2.0	47.6
cb			1.8	47.8
S			1.8	47.8
	3+62			
N	& 7' Cent. Drive		0.85	48.77
	3+84			
N	3' Cent. Walk		1.20	48.42
	4+00			
S			3.1	46.5
cb			3.5	46.1
1/4			4.0	45.6
c			3.5	46.1

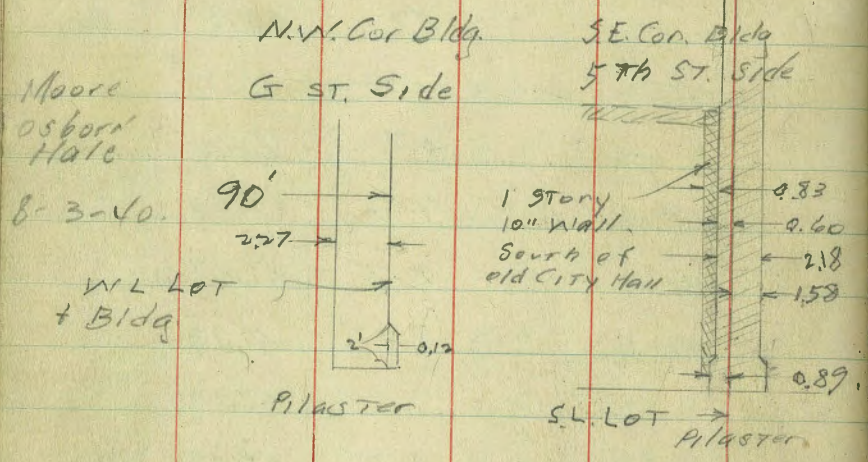
		49.62			
1/4			3.6	46.0	
cb			3.4	46.2	
+10			2.1	47.5	
N			1.8	47.8	
	4+50				
N			3.7	45.9	
+10			3.7	45.9	
cb			5.3	44.3	
1/4			5.7	43.9	
C			5.7	43.9	
1/4			5.7	43.9	
cb			5.9	43.7	
+10			4.6	45.0	
S			4.7	44.9	
	4+77				
S	4' Cem. walk		5.39	44.23	
	4+95				
S			6.5	43.1	
+15			6.4	43.0	
cb			7.8	41.7	

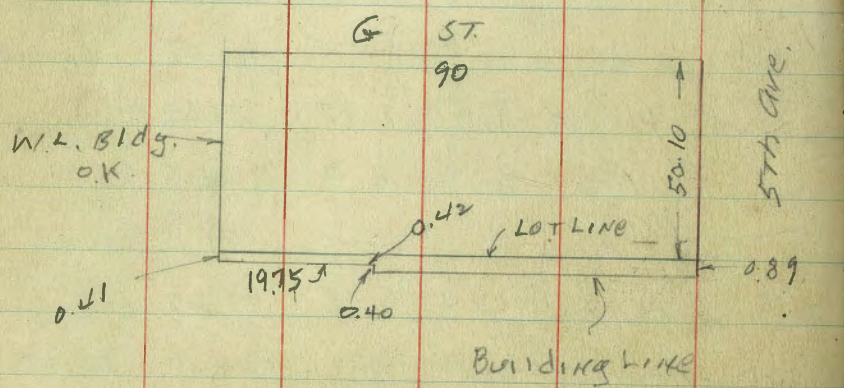
		49.62			
1/4			7.9	41.7	
c			7.8	41.8	
1/4			7.7	41.9	
cb			7.4	42.2	
+5			5.6	44.0	
N			5.1	44.5	
	5+00	W.L. Lamont St.			
N			6.7	42.9	
cb	Top end Ret.		7.03	42.59	
gut	Pav.		7.75	41.87	
1/4	"		7.83	41.79	
c	"		7.92	41.70	
1/4	"		8.20	41.42	
gut	"		8.55	41.07	
cb	Top end Ret.		7.97	41.65	
S			8.0	41.6	
T.P.	10.97	52.64	7.95	41.67	
NW Cor. Lamont + Grand			2.23	50.41	50.37
curb bulged up.					

Survey Lot L

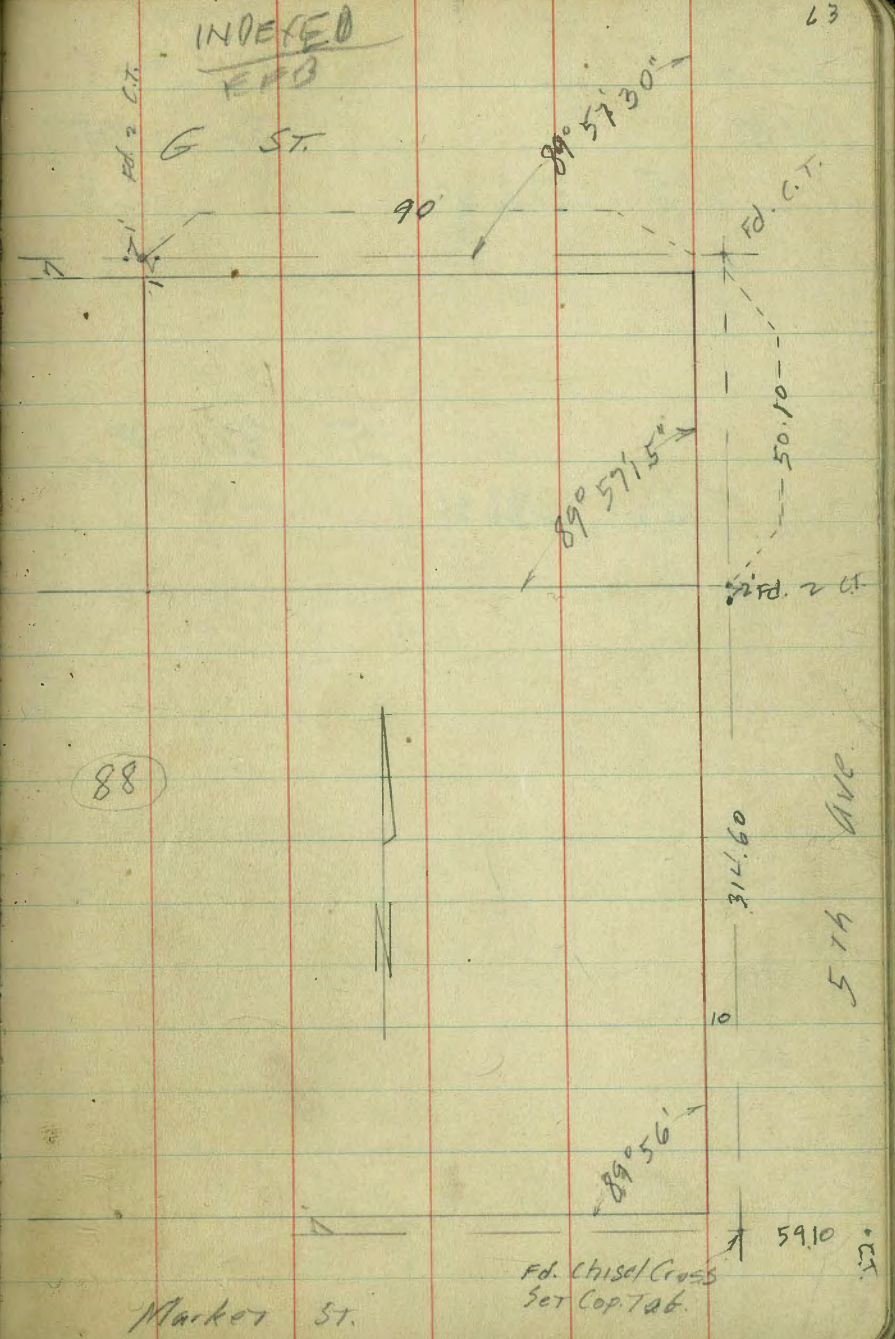
Blk 88 Horton's Add.

Location of Sly line of old City Hall Bldg.





INDEXED
FEB



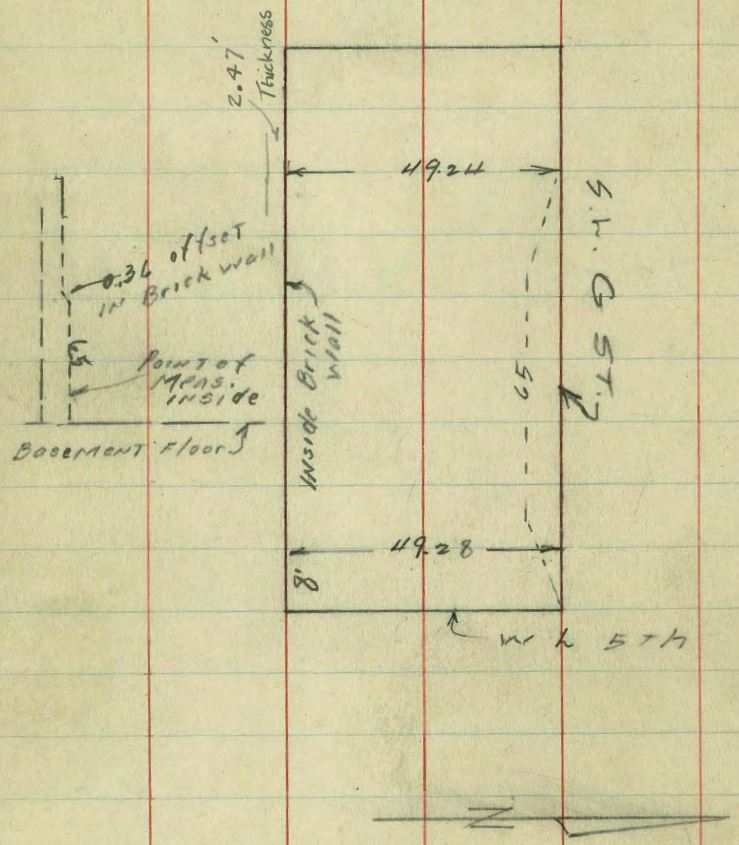
Sta						West				East
						26'	13'	℄	13'	26'
BM				321	321.				1/4	Center
1	5	326.00						5.0/5.0	5.1	
								5/5.1		
2		"	5	321	3					
	521	326 21.				TP on				

Moore
Osborne
S'Meyer
4-24-41

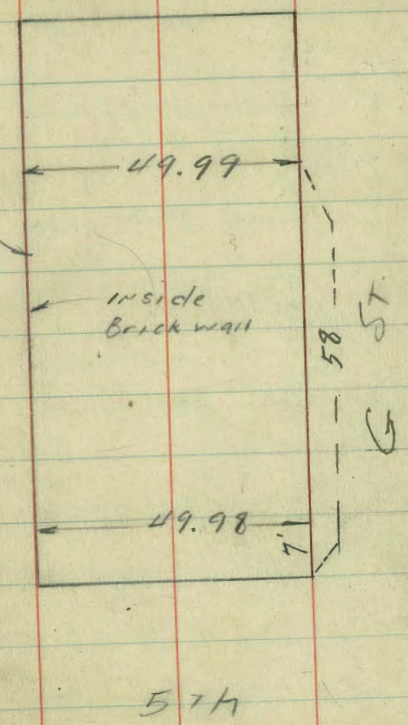
Survey Old City Hall
Location of inside 5th & G St
South Wall.

Indexed
LM

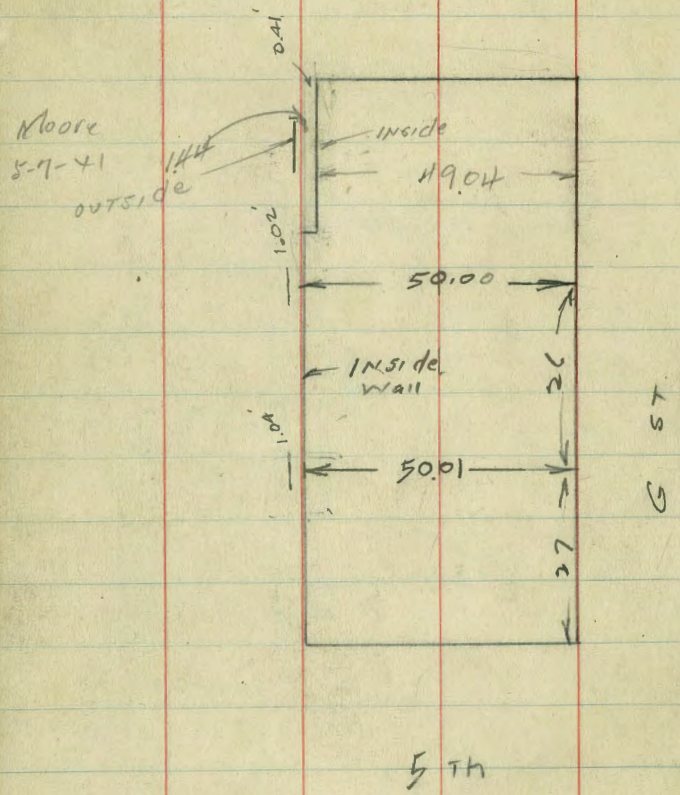
Basement Floor



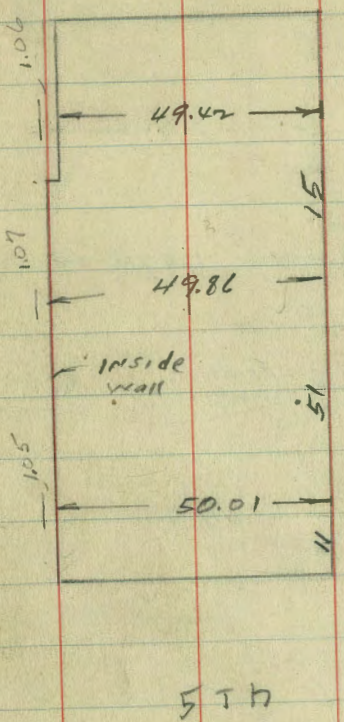
1 st Floor



2nd Floor

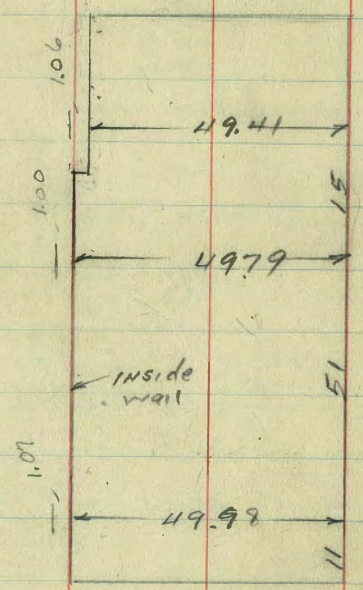


3d Floor



49.42
1.06
50.48
50.0
38

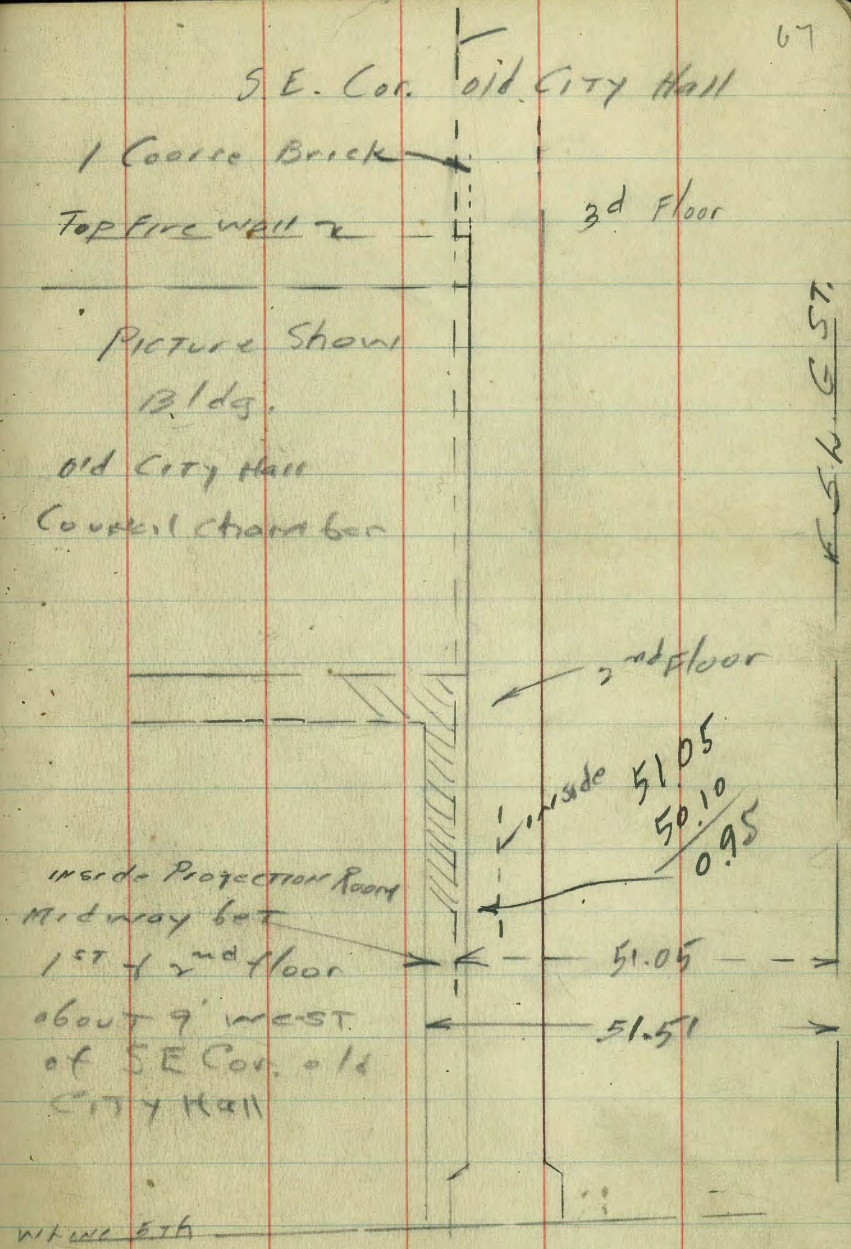
4th Floor

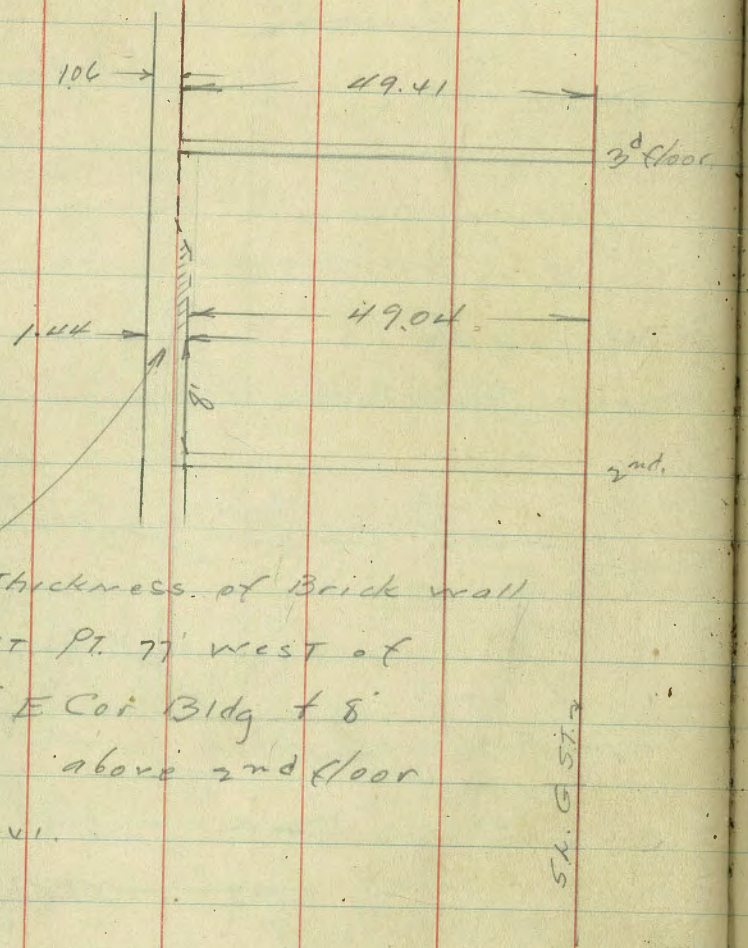


5th

G 57

S.E. Cor. old City Hall

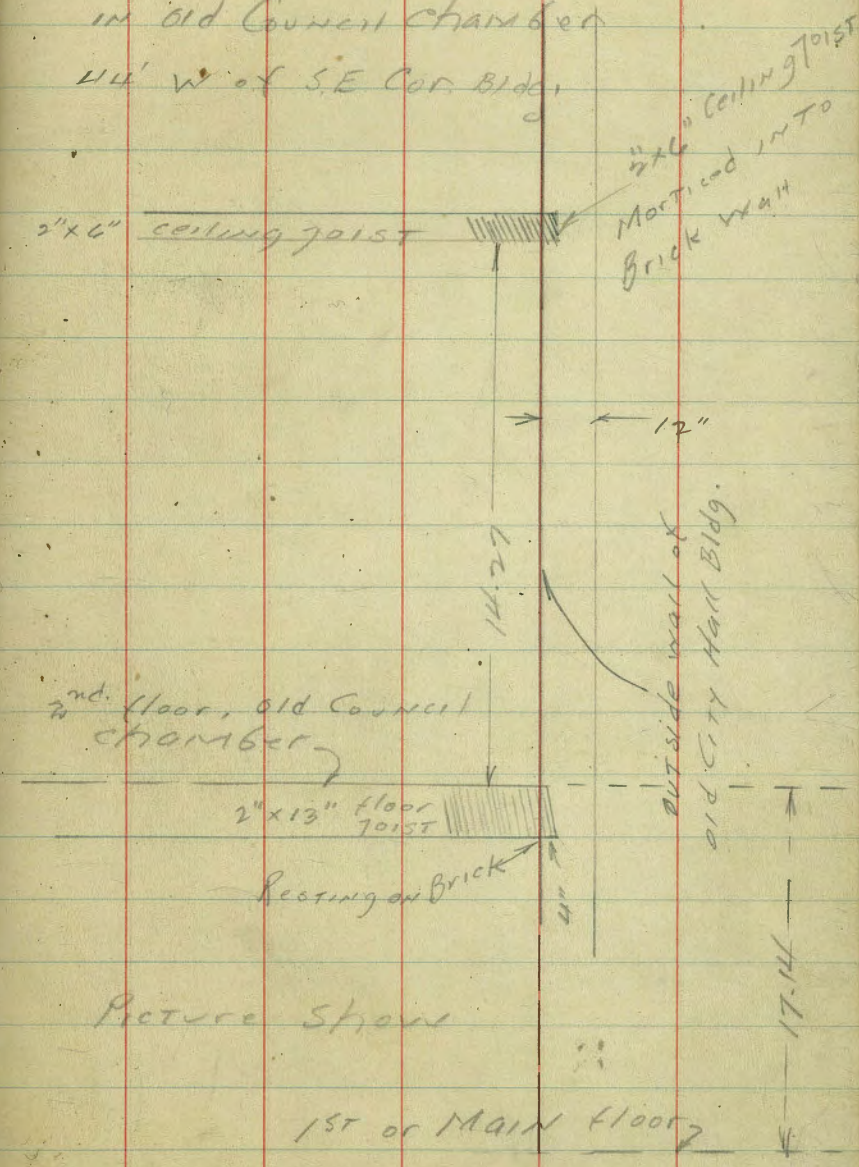




Thickness of Brick wall
at Pt. 77' west of
S E Cor Bldg + 8'
above 2nd floor

Moore
5-7-41.

Location of 2"x13" floor joist
& 2"x6" ceiling joist
in Old Council Chamber
44' W of S.E Cor. Bldg.



+	HI	−
		6.10
361		
		5.84
5.27		
		4.75
4.60		
		4.85

El 341.08
+Rod 1.91
π 342.99

			366.60
7.25	373.85	2.76	371.09
5.29	376.38	2.24	374.14
5.19	379.33		
	75.60		
	3.93	37	
	372.00		

608
6 | 37.00
36
1208 | 100.00
664

2nd Floor Council Room

14 - 3 1/4" floor to Bot.

Ceiling joice - 6" Ceiling joice

~~44' W of WL Grand & Lanient~~

5th NWBP 5037

2nd Floor Council Chamber

2" x 13" fl. 7'1"

8' above

2nd floor

Brick wall 17 1/4"

Main 0.2 C 17.14

ENGINEERING DEPARTMENT
CITY OF EAST SAN DIEGO.
CALIFORNIA.

Width	HEIGHT														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
18	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00
19	.35	.70	1.06	1.41	1.76	2.11	2.46	2.82	3.17	3.52	3.87	4.22	4.57	4.92	5.28
20	.37	.74	1.11	1.48	1.85	2.22	2.59	2.96	3.33	3.70	4.07	4.44	4.81	5.18	5.56
21	.39	.78	1.17	1.55	1.94	2.33	2.72	3.11	3.50	3.89	4.28	4.67	5.06	5.44	5.33
22	.41	.81	1.22	1.63	2.04	2.44	2.85	3.26	3.67	4.07	4.48	4.89	5.30	5.70	6.11
23	.43	.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26	4.68	5.11	5.54	5.96	6.39
24	.44	.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	4.89	5.33	5.78	6.22	6.67
25	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17	4.63	5.09	5.56	6.02	6.48	6.94
26	.48	.96	1.44	1.92	2.41	2.89	3.37	3.85	4.33	4.82	5.30	5.78	6.26	6.74	7.24
27	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
28	.52	1.04	1.55	2.07	2.59	3.11	3.63	4.15	4.67	5.18	5.70	6.22	6.74	7.26	7.78
29	.54	1.07	1.61	2.15	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.30	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if w =16.2 and h =5.3, cu. yds. =1.48+.028+.089 =1.597 cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) =h, and ½ the roadbed =w, add the triangles formed by taking the distance out to each break in turn (=w's) by the difference between the cuts (or fills) on each side of it (=h's) always subtracting the outer from the inner.

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

point is 22.6 ft. above grade, how far should it be from center line to ...e point? Ans. from Table 41.9. For same slopes but other widths of ...ect above figures by one-half difference in width of roadbed; thus in example ...or 20 ft. roadbed distance will be 41.9+(20—16)÷2 or 2 ft. added to 41.9 =43.9. ... of 1 on 1 see inside of front cover.

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