

1.

FIELD BOOK

360

97

KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

" Copyright, 1895, by Keuffel & Esser Co."

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

Calculated by Julien A. Hall, M. Am. Soc. C. E.

FOR KEITH'S RAILROAD CURVE TABLES SEE END OF BOOK.

NE Cor of Freight Emp
 Depot 2422 125
 NW Cor of Freight
 Depot 3525
 City Monuments

107.9
 E. 0.01

FINAL ST

Hub @ N. End Old Willow St. Control
 @ Final 8 \$173-02
 N. Side Willow 366-04
 1/2 in. of W. 77-49
 @ Final 145-38
 Long to W. 1200-02
 Side of S. 240-04 For B.S.

104.65

Stone on E Brood & N. Bdry

Globe Ts.

Wood Plug & Tack Top Wall
 Stone 4 Bd 72-26
 7.5. Line 144-51
 Stone in Creek. 71.78
 Wood Plug & Tack 71.78
 City Walk 9.97
 Drive & Long's



Iron Pin @ Hackney Ave

and on Monument Line of Broad St.

{ 38.16 Fire Plug Fashion taken
 47.60 Conc. Curb S.W.
 5.53 " " East

Iron Plug at N. End Conc. Br. on Broad & FINE STS

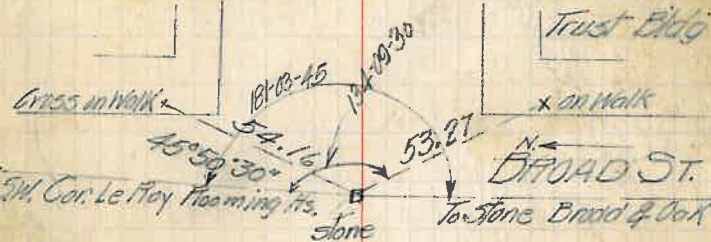
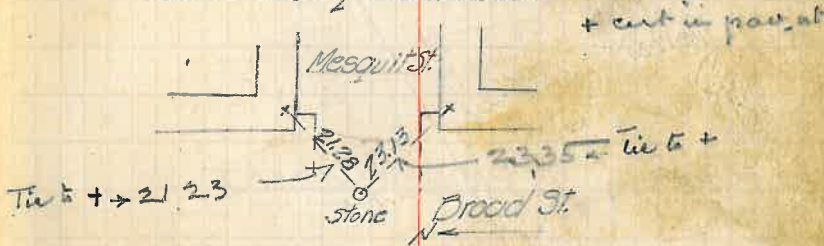


Ties & Final
 @ W. Pl. Willow { 20.87 Nail in tin Elec Pole South
 13.88 " " " Fence Post North
 40.77 " " " 3x4 in. Globe Lumber Co.
 23.37 " " Pole Stump & Gate Post N.W.

Ties Hub at N. End Old Willow { Nail W. face Tel. pole St. 61.45
 Cross on the Mases's north 47.55

Iron Pin @ N. End Hill St & Old N. Bdry
 Globe Ts. { Gate post East 1.29
 " " West 2.76

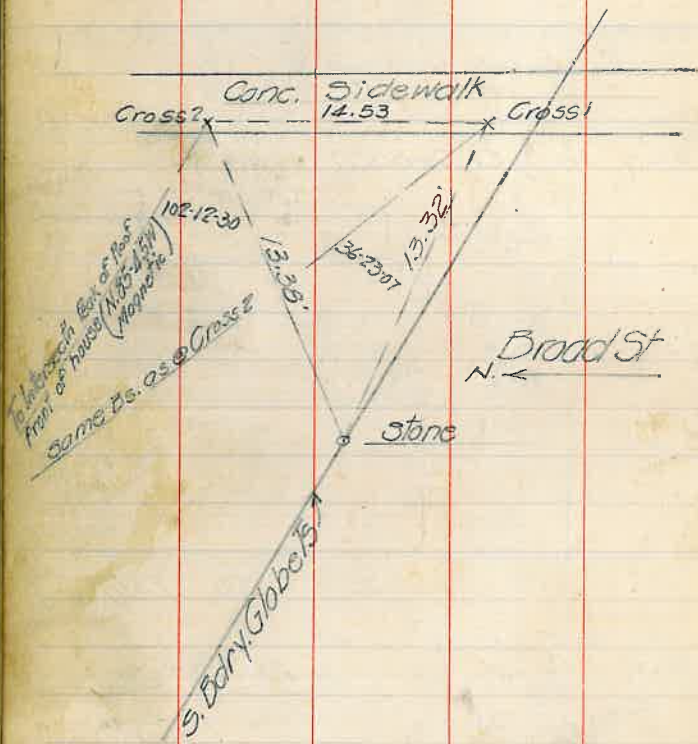
Stone Mesq & Brood.



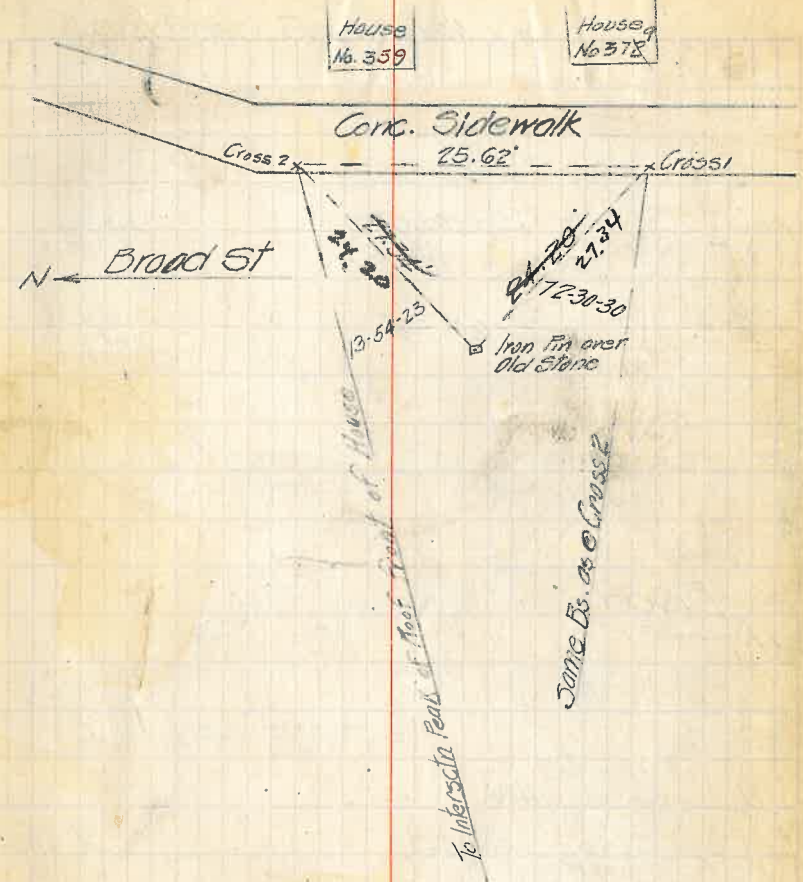
see page 3 for other data on Broad St.

Typing City Monuments

Conc. Block House

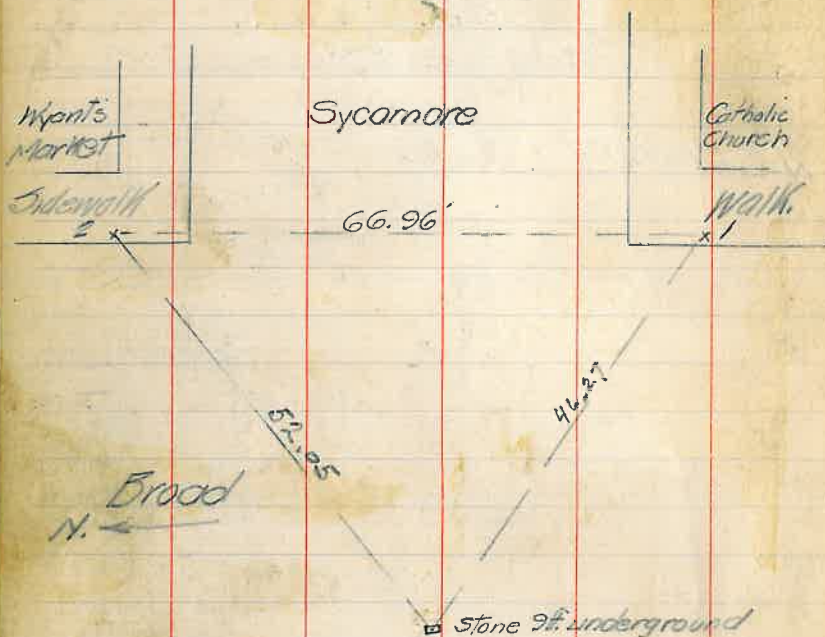


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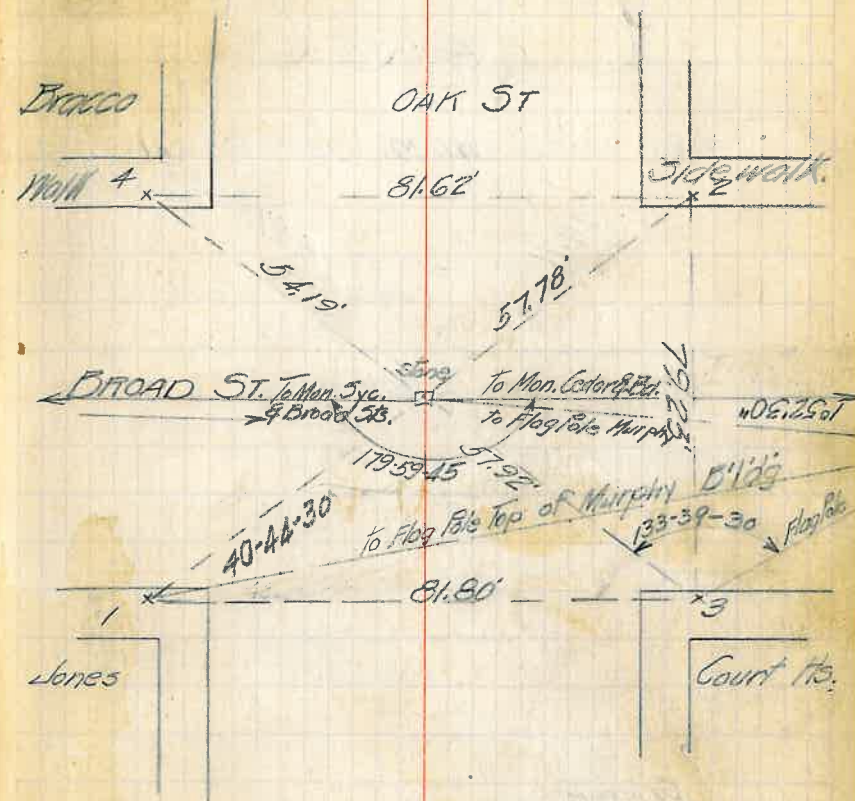


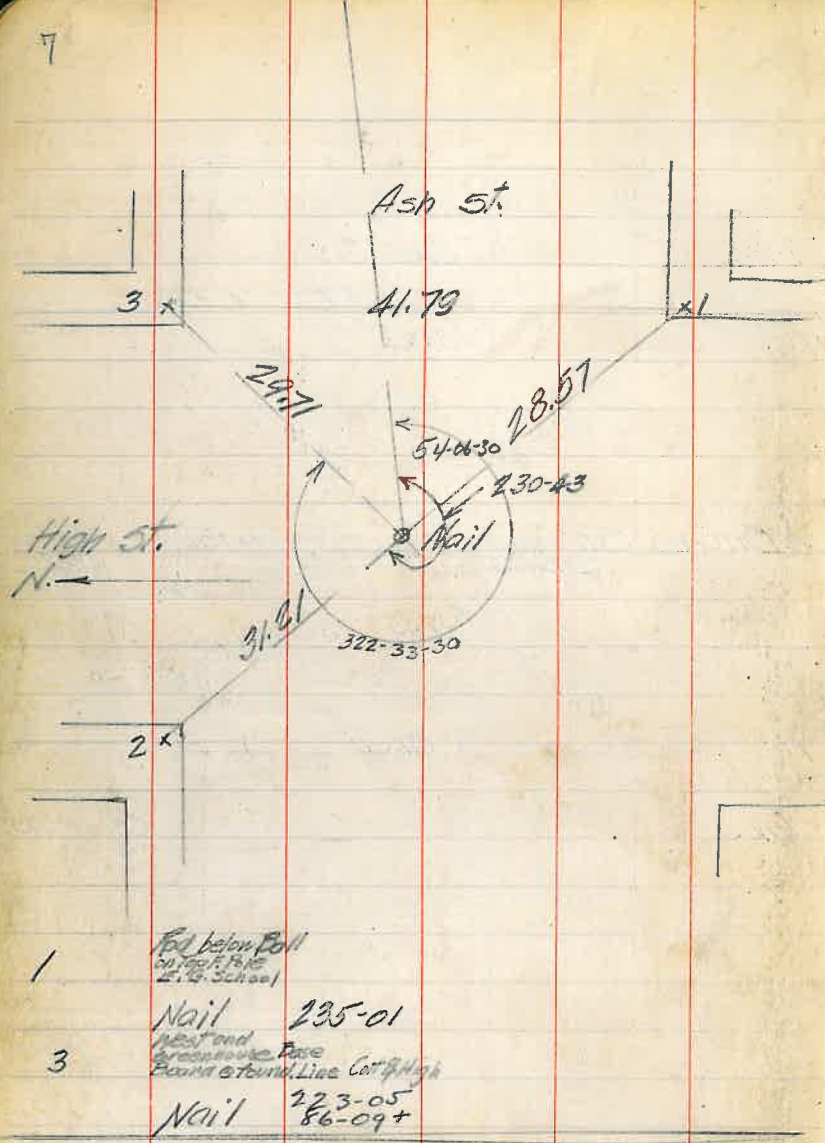
(11)

City Monuments Cont'd.



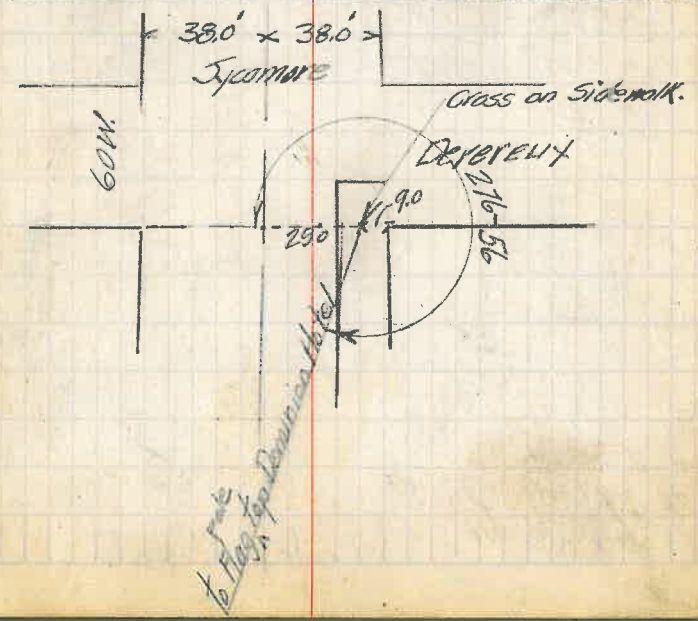
- 1 Flag Pole
Top Murphy Hotel
Stone 310-72-37 46.27
- 2 Flag Pole
Top Murphy Hotel
Stone 224-49-15 52.05
- Stone
Flag Pole
Top Murphy Hotel
Stone
Oak St Blvd 358-47-15



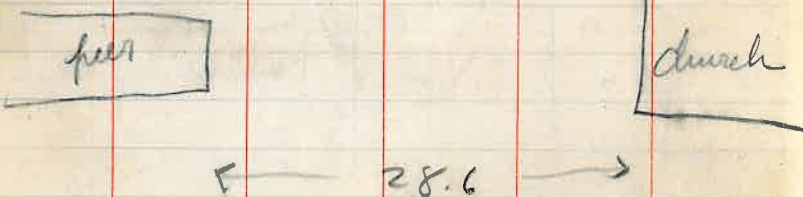
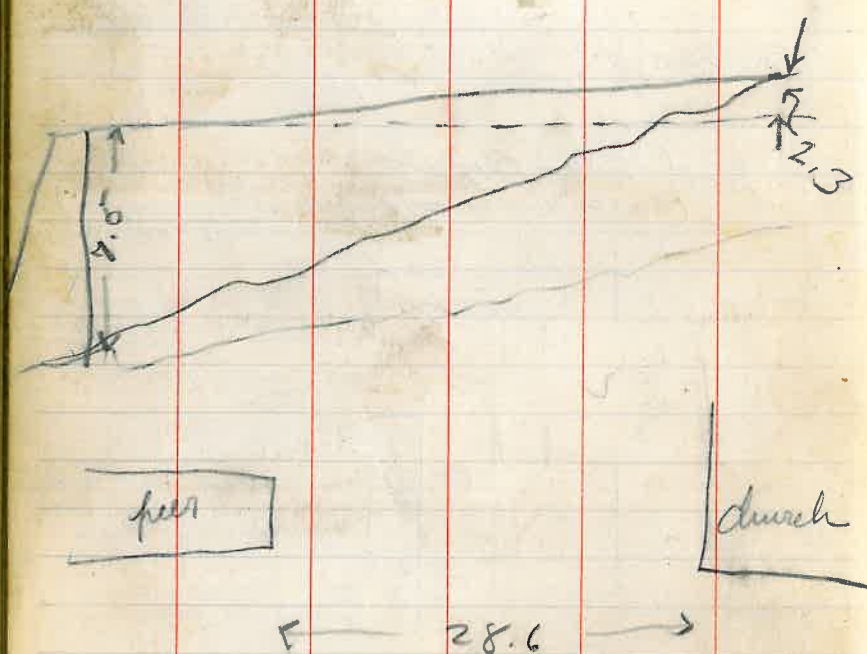


- 1 Nail 235-01
- 3 Nail 223-05
86-09+
- Jones & Ash 2nd } 42.1 Meloy Conc Wall
- } 42.5 Nail Top of Fence post N.W
- } 42.2 Iron fence post S.E.

- Yuma & High } 50.01 nail in W. Face Elec pole S.E.
- } 49.08 Fence Cor. S.W.
- } 20.82 Nail in E. Face Elec pole N.W
- Nail on S.P. } 29.15 fence post N.W. Cor BIK 22
- Alme & one High } 30.01 " " N.E. " " 39
- E Mesquite & High } 27.35 Top Conc. Wall N.E.
- } 27.38 Base " " S.E.
- } 39.25 Cor. " " S.W
- E East & Oak } 43.10 Last Bolt on Top of W end Conc Wall S.E
- } 34.34 Nail in E. Face Elec Pole N.E
- } 36.37 Cross on flange of 6" Valve N.W
- E Syc. & East } 24.83 F. Plug N.E
- } 19.54 Plug in Wall Curd S.E

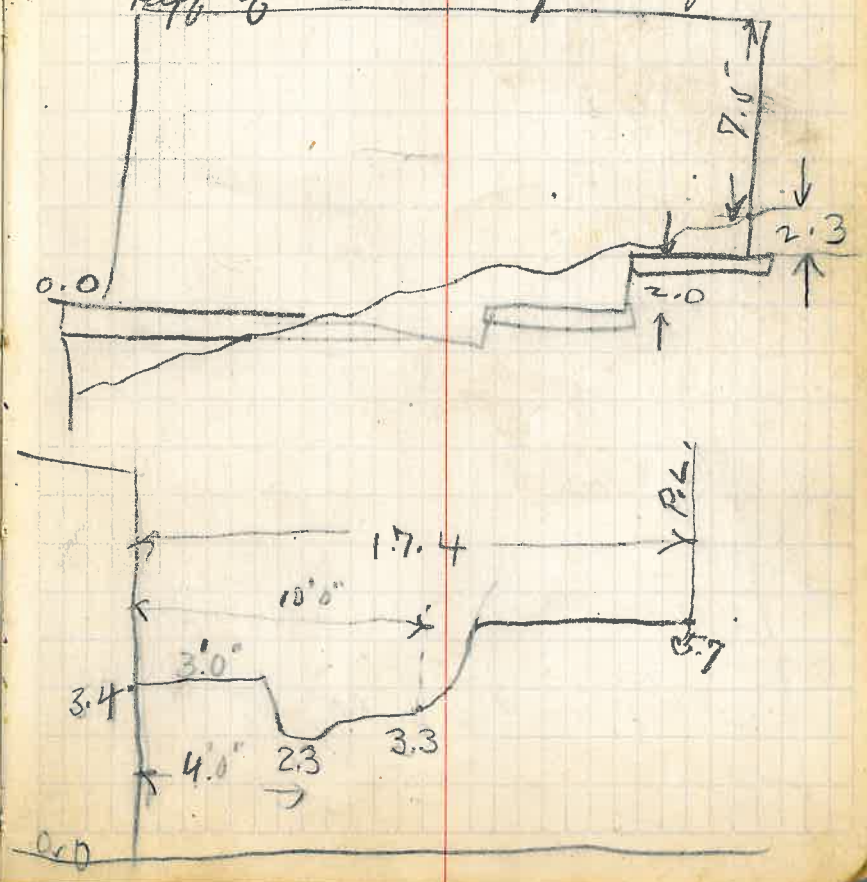


		H-1.	-	Elev
Top of Pier	+	8.0		8.0
ground				
pier			2.3	5.7
		2.3	5.7	3.6
				2.4
				3.4
				0.0
				5.7



width of Church 20' + alley = 28 1/2'

Dist. from end of pier to Church = 28.6'
 77.77 10
 69.27
 Ht. of wall at church above ground = 3.11
 9.0
 5.7
 2.3
 Vert. Ht. of pier from ground = 7.5
 Top of found is 2-3' below surface of ground
 Diff. of 2.3 in 65 ft. in grade



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 RIVAL CREEK. TOPOGRAPHY FOR
 PROPOSED STRUCTURE

Feb 1924

Station	A	Dist	M. B.	Stadia Dist	Elev.
✓	29°-33'E	71.0	S 47°-00' W		00.0
✓	Tangent	30.0	S 44°-15' E		00.5
✓	13°-25' L	148.5	S 04°-00' W		02.1 01.8 Ground
✓	119°-50' E	121.1	N 43°-45' W		07.7 Top
✓	52°-44' E	103.0	N 70°-00' W		08.0 Top
✓	76°-03' L	103.1	S 58°-30' E		07.5 Ground 00.0 Top
✓	57°-28' L	105.7	S 40°-00' E		07.5 Ground 00.1 Top
✓	43°-58' L	117.8	S 26°-30' E		07.0 05.4 Ground
✓	113°-50' L	147.0	N 83°-30' E		00.7 Top 05.0 Ground 00.0 Top
✓	120°-50' L	175.2	N 77°-00' E		
✓	135°-00' L		N 62°-30' E	84	
✓	80°-12' L		S 62°-45' E	135	
✓	56°-32' L		S 39°-00' E	232	

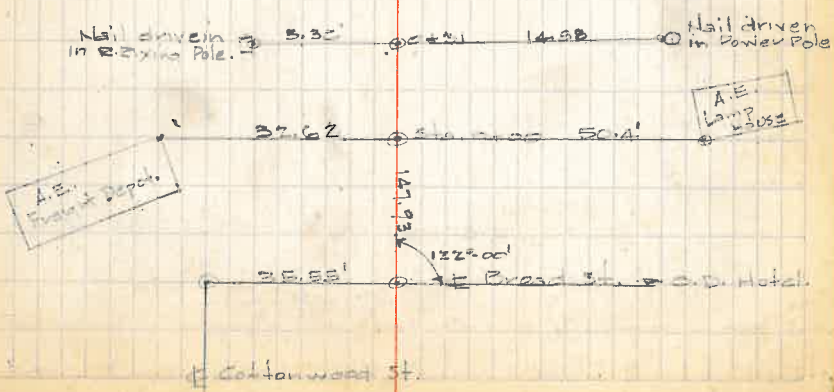
24

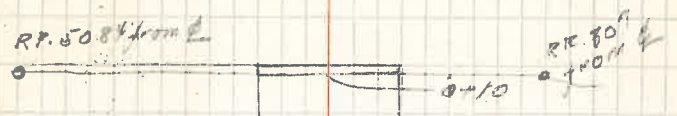
- To N.E. Corner of Adobe House (Carl Eder) ✓
- To Lumber Breakwater. ✓
- To N.E. Corner of Adobe House (Carl Eder) ✓
- To Angle of Concrete Breakwater. ✓
- To Concrete Breakwater.
- To South Pier of Cable Bridge
- To South Anchor Abutment of Cable Bridge
- To South End of Bridge - (End of Sand Breakwater)
- To North Pier of Cable Bridge.
- To North Anchor Abutment Cable Bridge. (Concrete Wall)
- # of Road.
- # of Road.
- # of Road.

LINE FOR PROPOSED STRUCTURE ACROSS
PINAL CREEK. Feb. 1924.

Station	Δ	Elev.
1+98	Also of A. Line.	96.2
1+66	65° 52'	96.1
1+18		93.4
0+71		94.5
0+60		93.2
0+31		101.2
0+05	of A. E. P. P. Main line	101.0
0+00		104.0

B.M. Top of N.W. Corner of South Anchor
Abutment of Cable Bridge.





RR 2503
from E

RR 468
from E

135



$$\begin{array}{r} 130.6 \\ 38.15 \\ \hline 168.75 \end{array}$$

TABLE IV. — Tangents and External to a 1° Curve.

Angle	Tangent	External	Angle	Tangent	External	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	40.00	40	1200.5	124.41
50	191.74	3.20						126.20

= 10.07. Say a 10° Curve.
 an. in Tab. IV opp. 23° 20' = 1183.1
 $1183.1 \div 10 = 118.31$
 Tab. V correction for A. 23° 20' for a 10° Cur. = 0.16
 $118.31 + 0.16 = 118.47 = \text{corrected Tangent.}$
 (If corrected Ext. is required find in same way)
 $\text{Ang. } 23^\circ 20' = 23.33^\circ \div 10 = 2.3333 = \text{L. C.}$

2° 19½' = def. for sta.	542	I. P. = sta.	542 + 72
4° 49½' = " " "	+50	Tan. =	1.18.47
7° 19½' = " " "	543	B. C. = sta.	541 + 53.53
9° 49½' = " " "	+50	L. C. =	2.33.33
11° 40' = " " "	543 +	E. C. = Sta.	543 + 86.86
	86.86		

$100 - 53.53 = 46.47 \times 3' (\text{def. for 1 ft. of } 10^\circ \text{ Cur.}) = 139.41' =$
 $2^\circ 19\frac{1}{2}' = \text{def. for sta. } 542.$
 Def. for 50 ft. = 2° 30' for a 10° Curve.
 Def. for 36.86 ft. = 1° 50½' for a 10° Curve.
 (These tables are published in Field Books of
 KEUFFEL & ESSER Co., New York, N. Y.)

