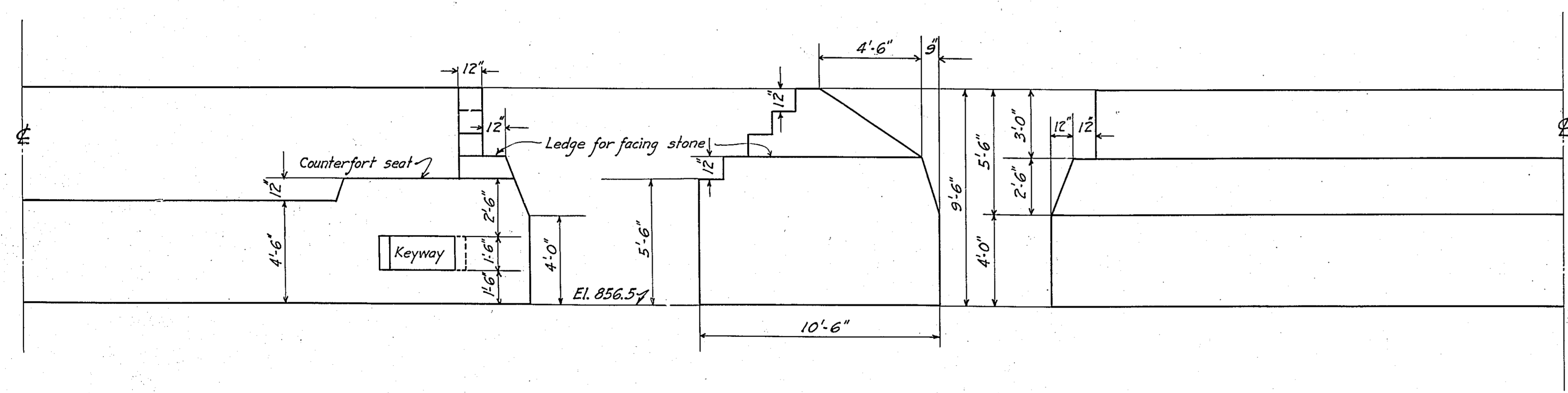
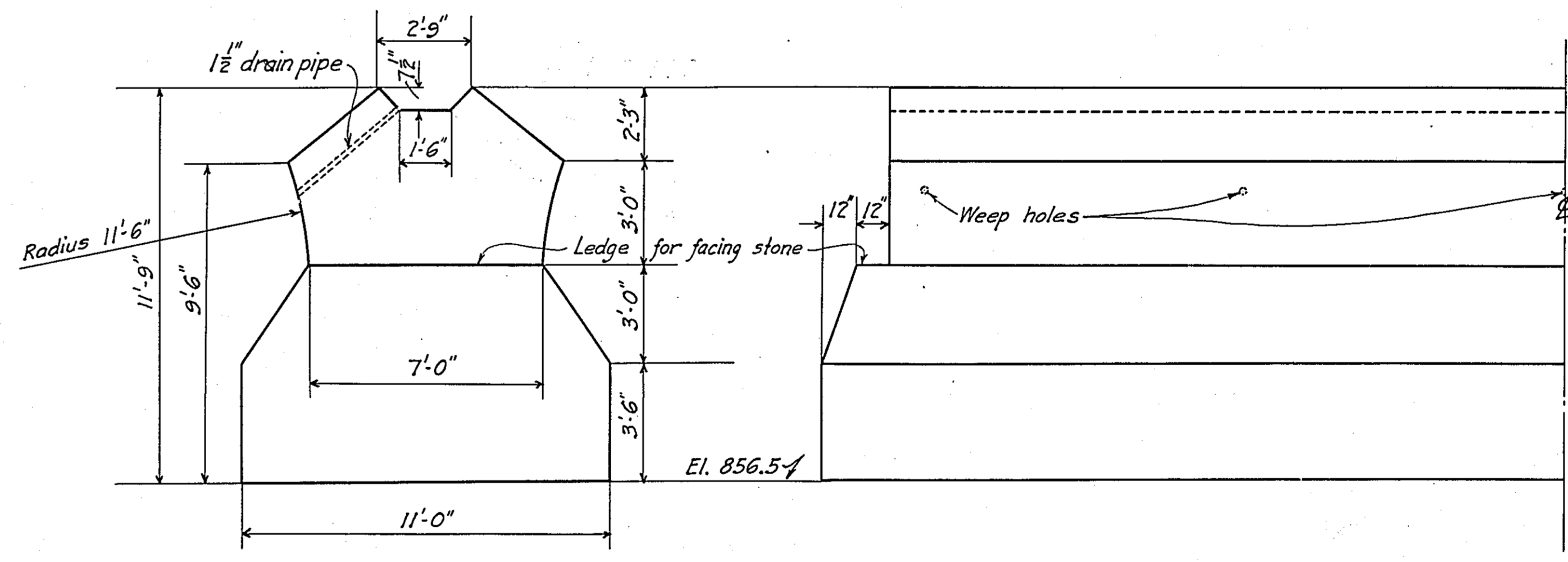


PILING PLAN

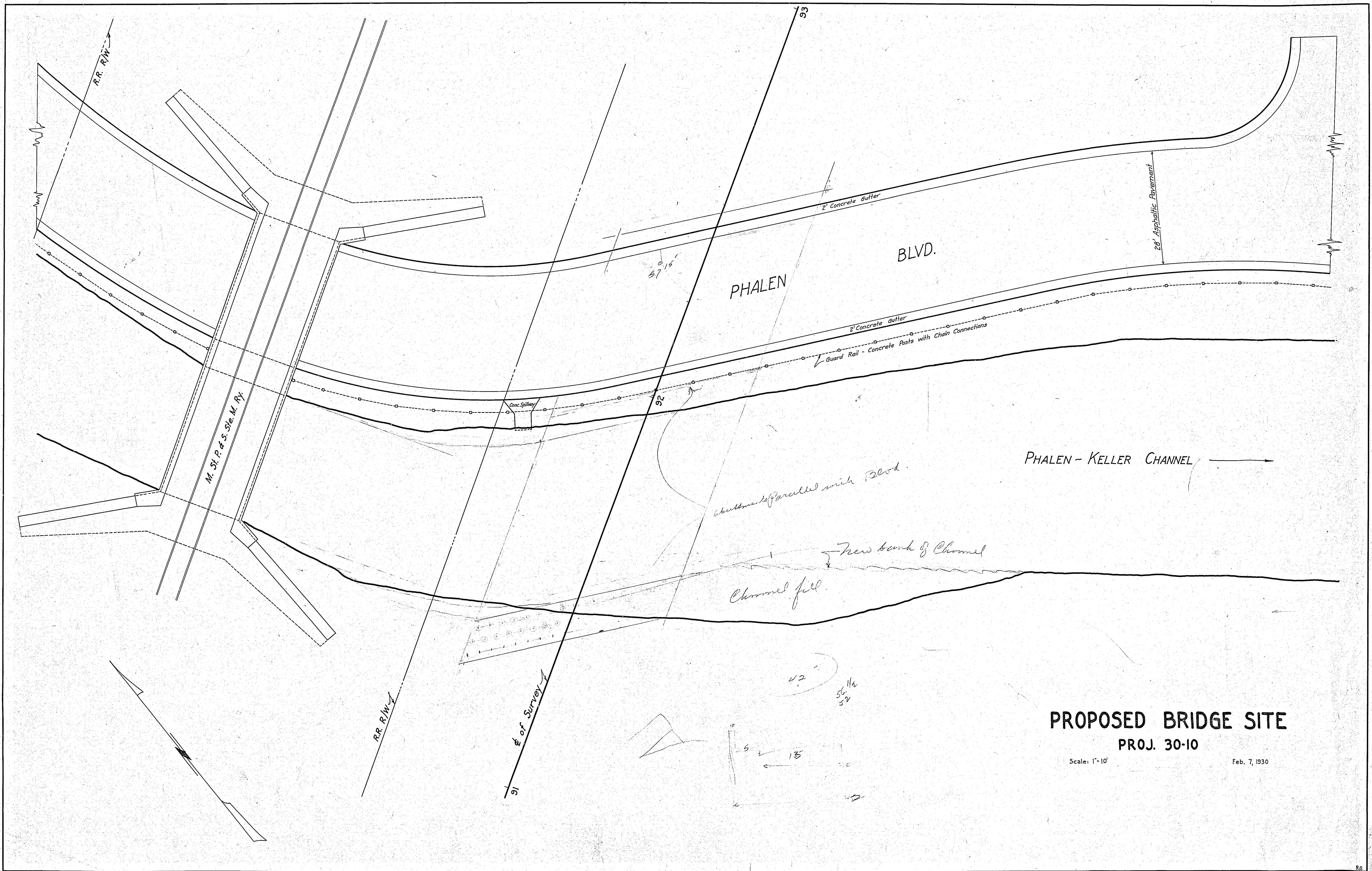


DETAIL OF END ABUTMENT



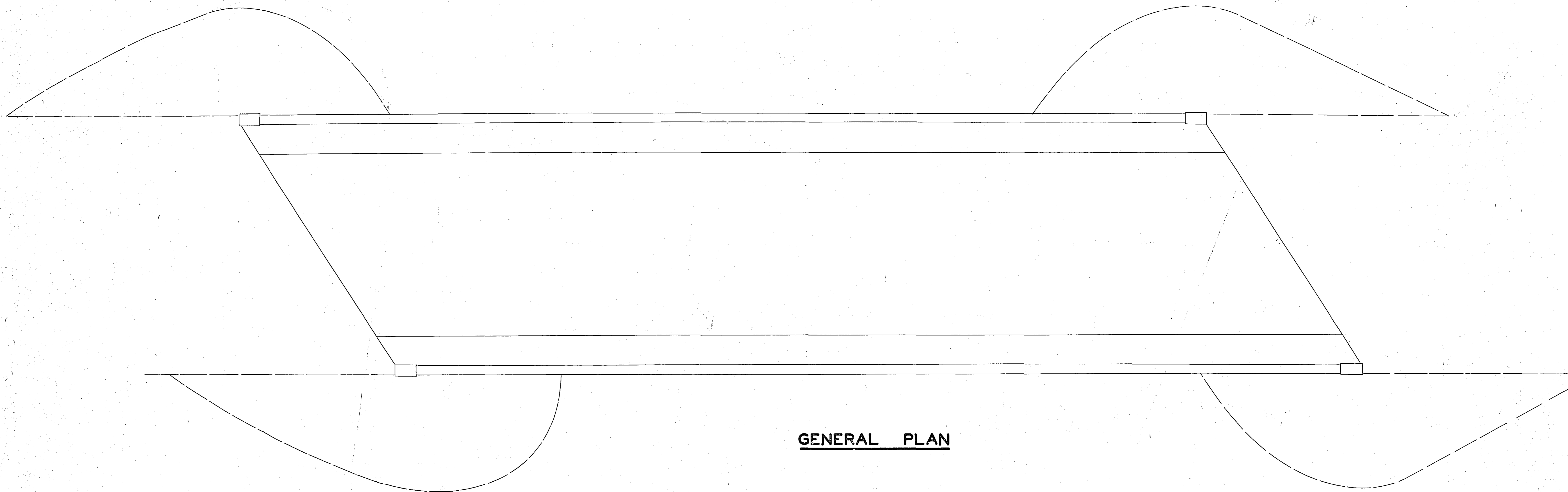
DETAIL OF CENTER PIER

OFFICE OF COUNTY ENGINEER
 RAMSEY CO. MINN.
REINFORCED CONCRETE ARCH BRIDGE
 OVER
PHALEN BLVD. AND KELLER-PHALEN CANAL
 IN NEW CANADA TWP.
 SEC. 16 TWP. 29N. RGE. 22W.
 SCALE: 1/4" IN. = 1 FT. - 0 IN. MARCH 1930
 BRIDGE NO. 4784

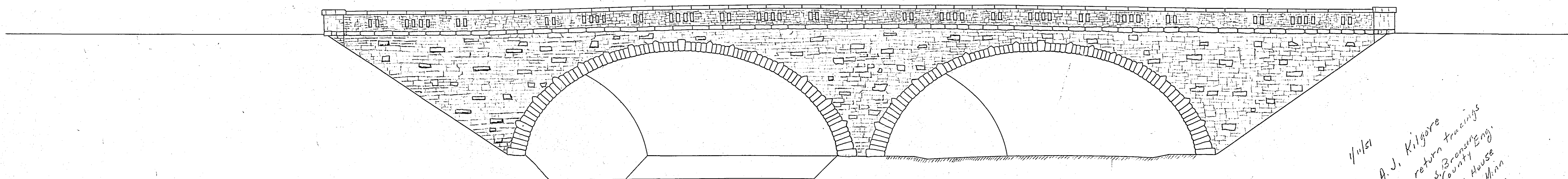


PROPOSED BRIDGE SITE
PROJ. 30-10

Scale: 1"=10' Feb. 7, 1930



GENERAL PLAN

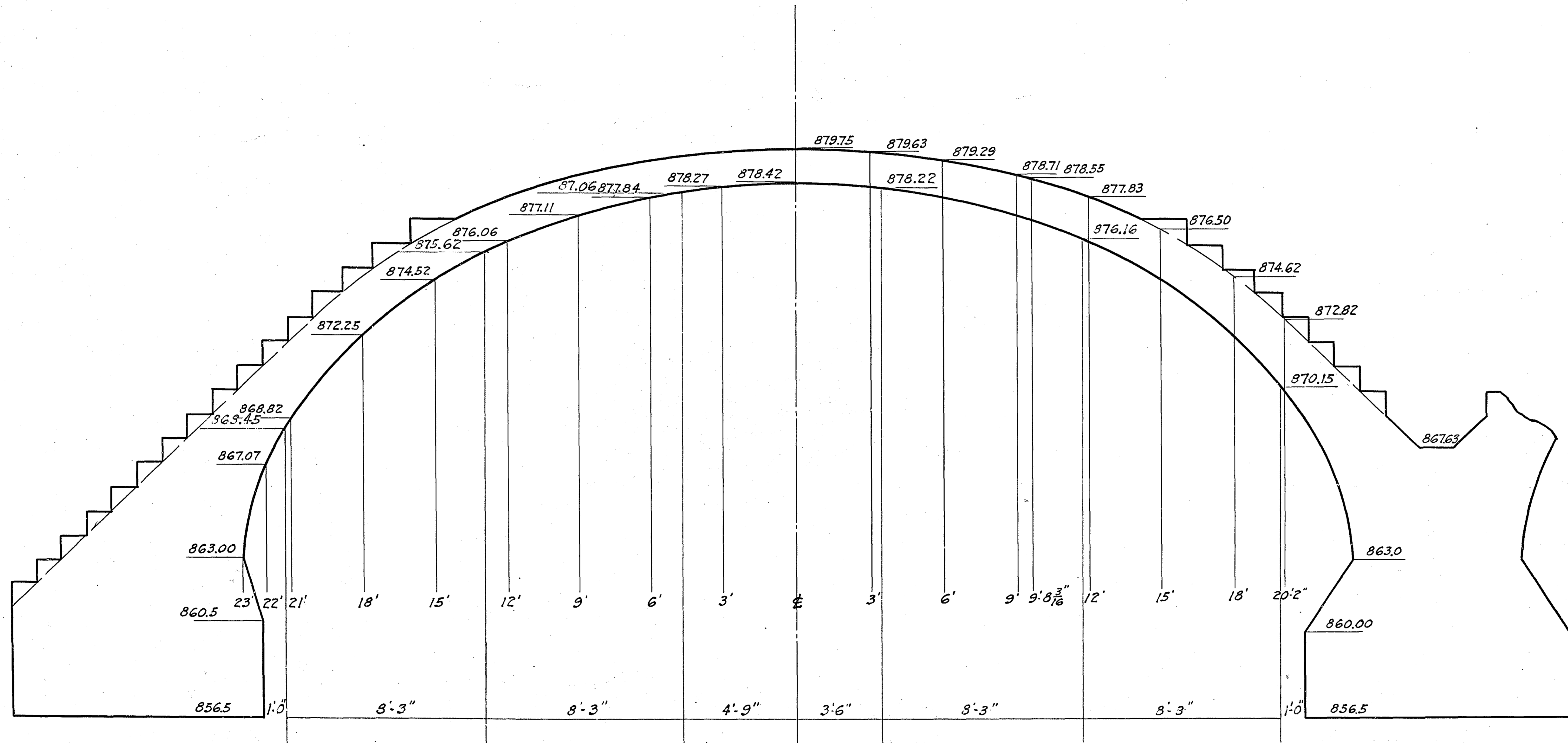


GENERAL ELEVATION

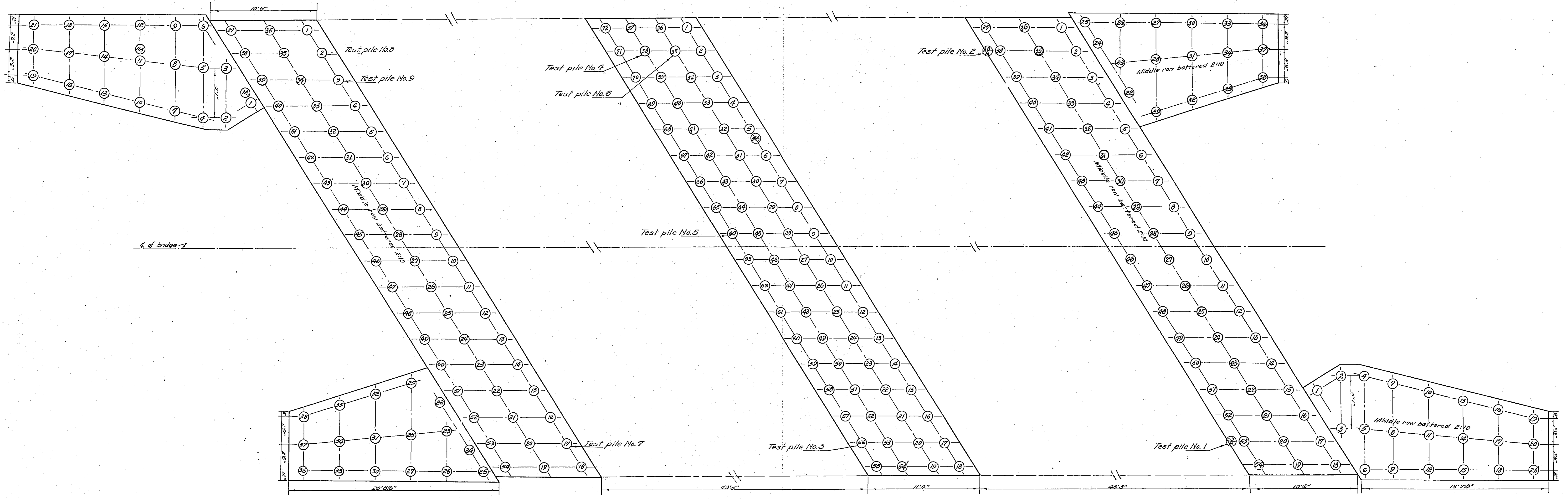
Planned By Paul N. Cooke
 HIGHWAY ENGINEER FOR Ramsey Co. COUNTY
 Recommended for Approval W. H. Schumann
 BRIDGE ENGINEER
 Recommended for Approval O. Kripps
 STATE CONSTRUCTION ENGINEER
 Approved Mar. 14 1930 J. J. Quinn
 CHIEF ENGINEER & DEPUTY COMMISSIONER

4/11/31
 Mr. A. J. Kilgore
 Please return tracings
 To Mr. H. S. Bronseng
 Ramsey County Eng.
 367 Court House
 St. Paul Minn
 Attn. Mr. Bremer

OFFICE OF COUNTY ENGINEER
 RAMSEY CO. MINN.
REINFORCED CONCRETE ARCH BRIDGE
 OVER
PHALEN BLVD. AND KELLER-PHALEN CANAL
 IN NEW CANADA TWP.
 SEC. 16 TWP. 29 N. RGE. 22W.
 SCALE: 1/8 IN. = 1 FT. - 0 IN. MARCH 1930
 BRIDGE NO: 4984

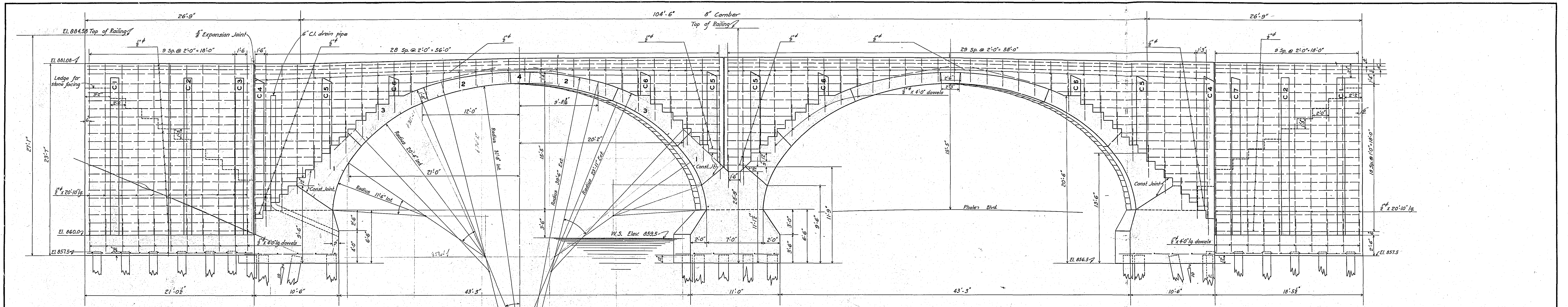


5702

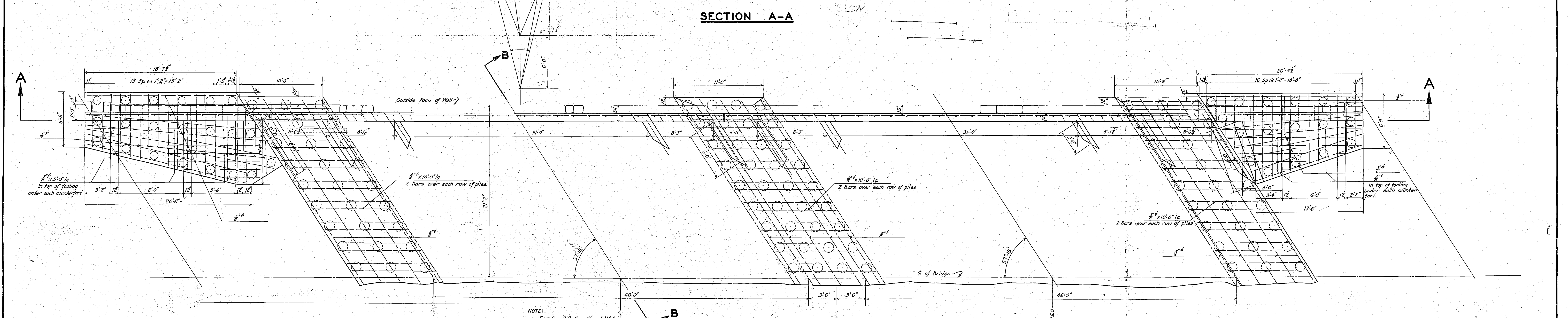


WEST FOOTINGS									
NO.	KIND	DIAM. OF POINT	DIAM. OF BUTT	LENGTH IN LEADS	CUT OFF	PENE-TRATION	AV. PENE. PER BLOW IN LAST 20	BEAR. IN TONS	REMARKS
1	Hammer Pile	8"	12"	211	30	11.2	1/2"		Break off
2	"	8"	12"	203	30	11.5	1/2"		Extra
3	"	8"	12"	203	30	10.5	1/2"		
4	"	8"	12"	202	30	10.5	1/2"		
5	"	8"	12"	202	30	10.5	1/2"		
6	"	8"	12"	202	30	10.5	1/2"		
7	"	8"	12"	202	30	10.5	1/2"		
8	"	8"	12"	202	30	10.5	1/2"		
9	"	8"	12"	202	30	10.5	1/2"		
10	"	8"	12"	202	30	10.5	1/2"		
11	"	8"	12"	202	30	10.5	1/2"		
12	"	8"	12"	202	30	10.5	1/2"		
13	"	8"	12"	202	30	10.5	1/2"		
14	"	8"	12"	202	30	10.5	1/2"		Crack off
15	"	8"	12"	202	30	10.5	1/2"		Extra
16	"	8"	12"	202	30	10.5	1/2"		
17	"	8"	12"	202	30	10.5	1/2"		
18	"	8"	12"	202	30	10.5	1/2"		
19	"	8"	12"	202	30	10.5	1/2"		
20	"	8"	12"	202	30	10.5	1/2"		
21	"	8"	12"	202	30	10.5	1/2"		
22	"	8"	12"	202	30	10.5	1/2"		
23	"	8"	12"	202	30	10.5	1/2"		
24	"	8"	12"	202	30	10.5	1/2"		
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32	"	8"	12"	202	30	10.5	1/2"		
33	"	8"	12"	202	30	10.5	1/2"		
34	"	8"	12"	202	30	10.5	1/2"		
35	"	8"	12"	202	30	10.5	1/2"		
36	"	8"	12"	202	30	10.5	1/2"		
37	"	8"	12"	202	30	10.5	1/2"		
38	"	8"	12"	202	30	10.5	1/2"		
39	"	8"	12"	202	30	10.5	1/2"		
40	"	8"	12"	202	30	10.5	1/2"		
41	"	8"	12"	202	30	10.5	1/2"		
42	"	8"	12"	202	30	10.5	1/2"		
43	"	8"	12"	202	30	10.5	1/2"		
44	"	8"	12"	202	30	10.5	1/2"		
45	"	8"	12"	202	30	10.5	1/2"		
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53	"	8"	12"	202	30	10.5	1/2"		
54	"	8"	12"	202	30	10.5	1/2"		
55	"	8"	12"	202	30	10.5	1/2"		
56	"	8"	12"	202	30	10.5	1/2"		
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85	"	8"	12"	202	30	10.5	1/2"		
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88	"	8"	12"	202	30	10.5	1/2"		
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90	"	8"	12"	202	30	10.5	1/2"		
91	"	8"	12"	202	30	10.5	1/2"		
92	"	8"	12"	202	30	10.5	1/2"		
93	"	8"	12"	202	30	10.5	1/2"		
94	"	8"	12"	202	30	10.5	1/2"		
95	"	8"	12"	202	30	10.5	1/2"		
96	"	8"	12"	202	30	10.5	1/2"		
97	"	8"	12"	202	30	10.5	1/2"		
98	"	8"	12"	202	30	10.5	1/2"		
99	"	8"	12"	202	30	10.5	1/2"		
100	"	8"	12"	202	30	10.5	1/2"		
TOTALS				7748	3672	410.8			

WEST ABUTMENT									
NO.	KIND	DIAM. OF POINT	DIAM. OF BUTT	LENGTH IN LEADS	CUT OFF	PENE-TRATION	AV. PENE. PER BLOW IN LAST 20	BEAR. IN TONS	REMARKS
1	Hammer Pile	8"	12"	208	30	11.2	1/2"		Test pile No. 8
2	"	8"	12"	208	30	11.5	1/2"		Test pile No. 2
3	"	8"	12"	208	30	10.5	1/2"		
4	"	8"	12"	208	30	10.5	1/2"		
5	"	8"	12"	208	30	10.5	1/2"		
6	"	8"	12"	208	30	10.5	1/2"		
7	"	8"	12"	208	30	10.5	1/2"		
8	"	8"	12"	208	30	10.5	1/2"		
9	"	8"	12"	208	30	10.5	1/2"		
10	"	8"	12"	208	30	10.5	1/2"		
11	"	8"	12"	208	30	10.5	1/2"		
12	"	8"	12"	208	30	10.5	1/2"		
13	"	8"	12"	208	30	10.5	1/2"		
14	"	8"	12"	208	30	10.5	1/2"		
15	"	8"	12"	208	30	10.5	1/2"		
16	"	8"	12"	208	30	10.5	1/2"		
17	"	8"	12"	208	30	10.5	1/2"		Test pile No. 7
18	"	8"	12"	208	30	10.5	1/2"		
19	"	8"	12"	208	30	10.5	1/2"		
20	"	8"	12"	208	30	10.5	1/2"		
21	"	8"	12"	208	30	10.5	1/2"		
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60	"	8"	12"	208	30	10.5	1/2"		
61	"	8"	12"	208	30	10.5	1/2"		
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63	"	8"	12"	208	30	10.5	1/2"		



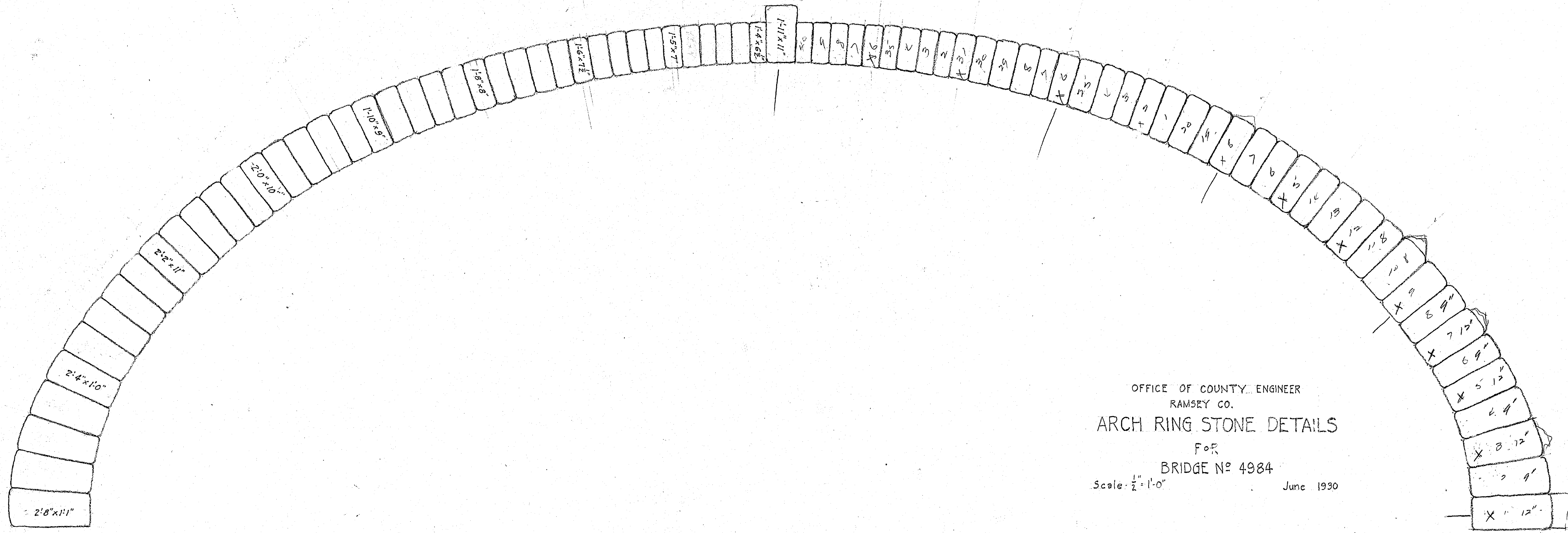
SECTION A-A



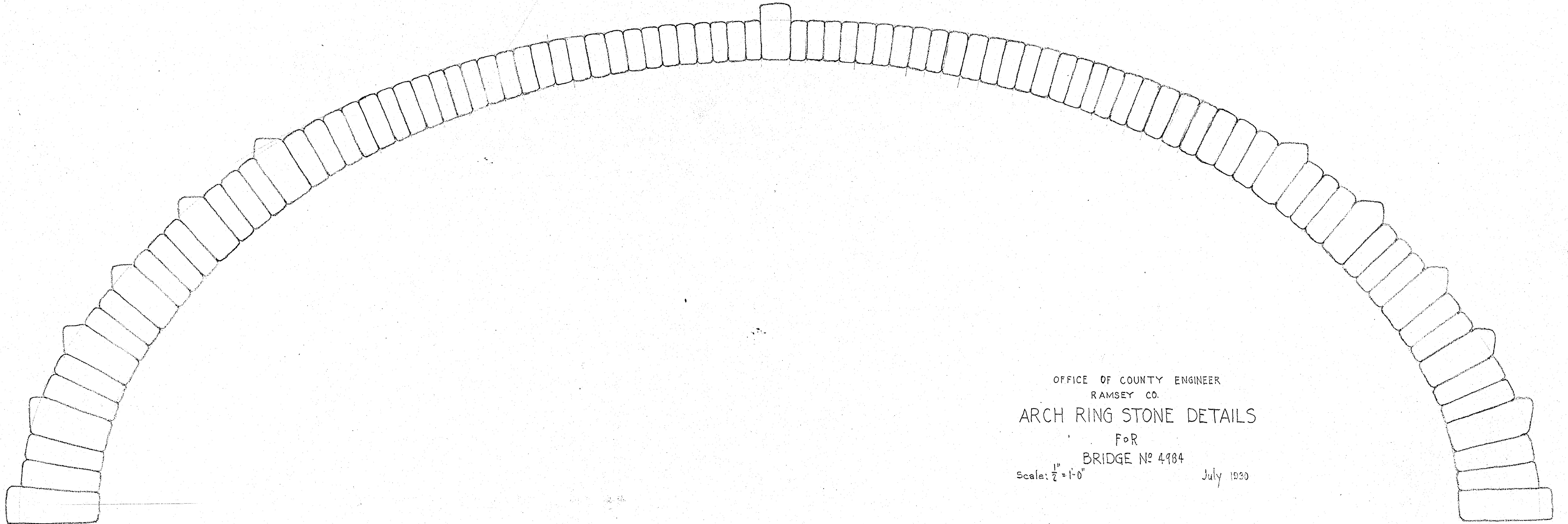
HALF PLAN

NOTE:
For Sec. B-B See Sheet N#4

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.
REINFORCED CONCRETE ARCH BRIDGE
OVER
PHALEN BLVD. AND KELLER-PHALEN CANAL
IN NEW CANADA TWP.
SEC. 16 TWP. 29N RGE. 22W.
SCALE: 1/4" IN = 1 FT. - 0 IN. MARCH 1930
BRIDGE NO. 4784

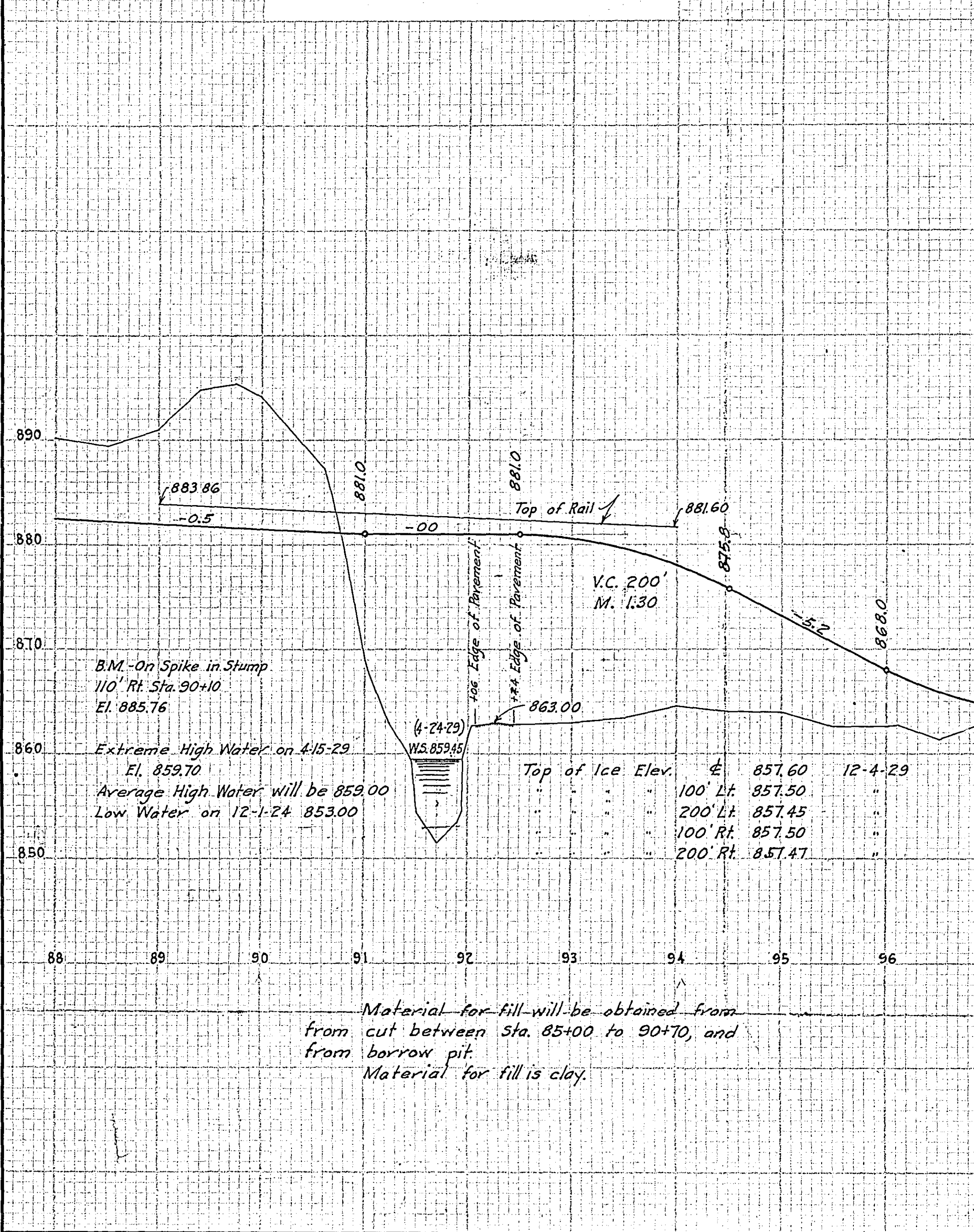


OFFICE OF COUNTY ENGINEER
 RAMSEY CO.
 ARCH RING STONE DETAILS
 FOR
 BRIDGE NO 4984
 Scale: $\frac{1}{2}'' = 1'-0''$ June 1930



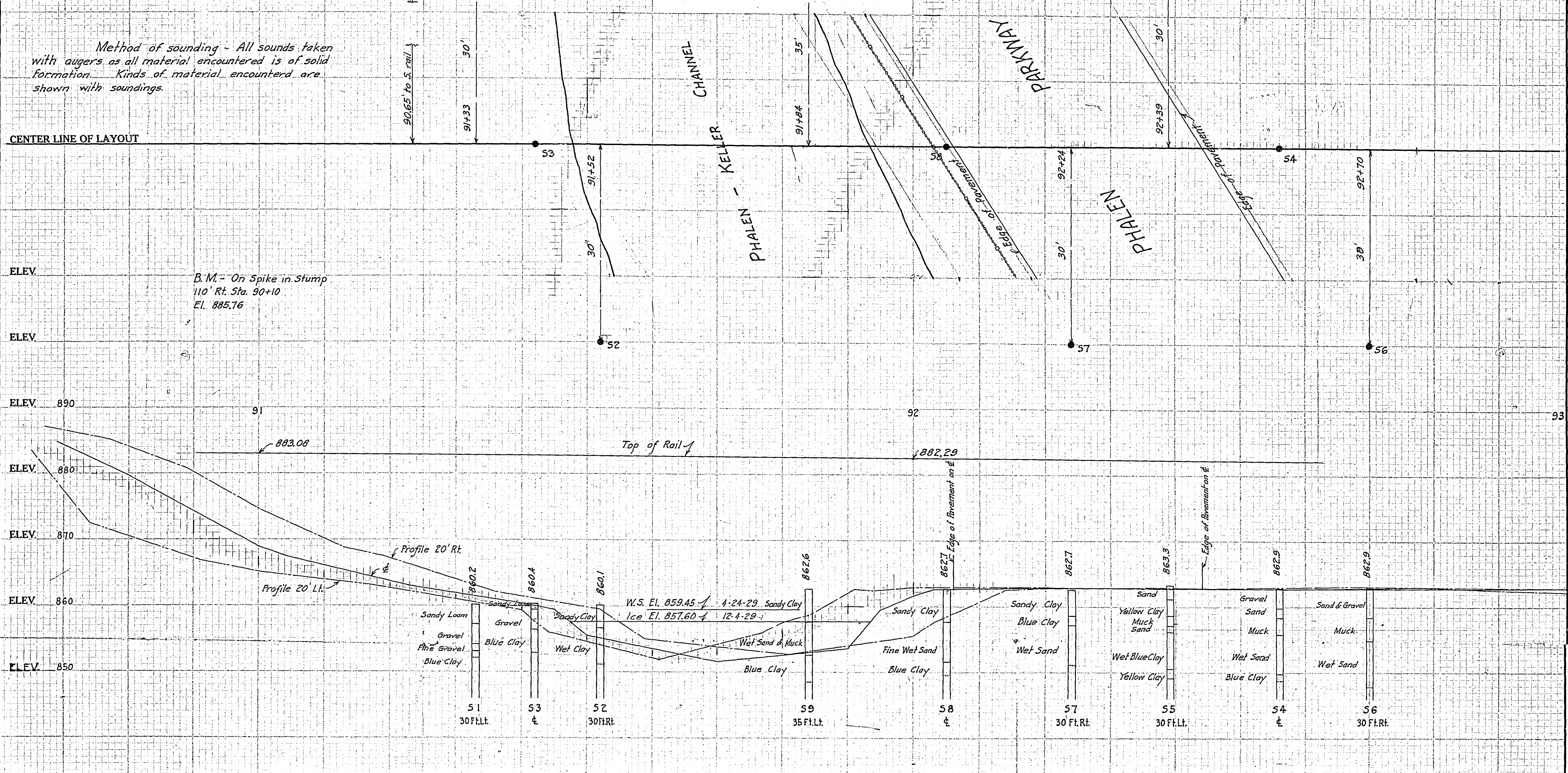
OFFICE OF COUNTY ENGINEER
RAMSEY CO.
ARCH RING STONE DETAILS
FOR
BRIDGE No 4984
Scale: $\frac{1}{2}$ " = 1'-0"
July 1930

CONTRACTED PROFILE
SCALE: HOR. 1" = 100', VERT. 1" = 10'



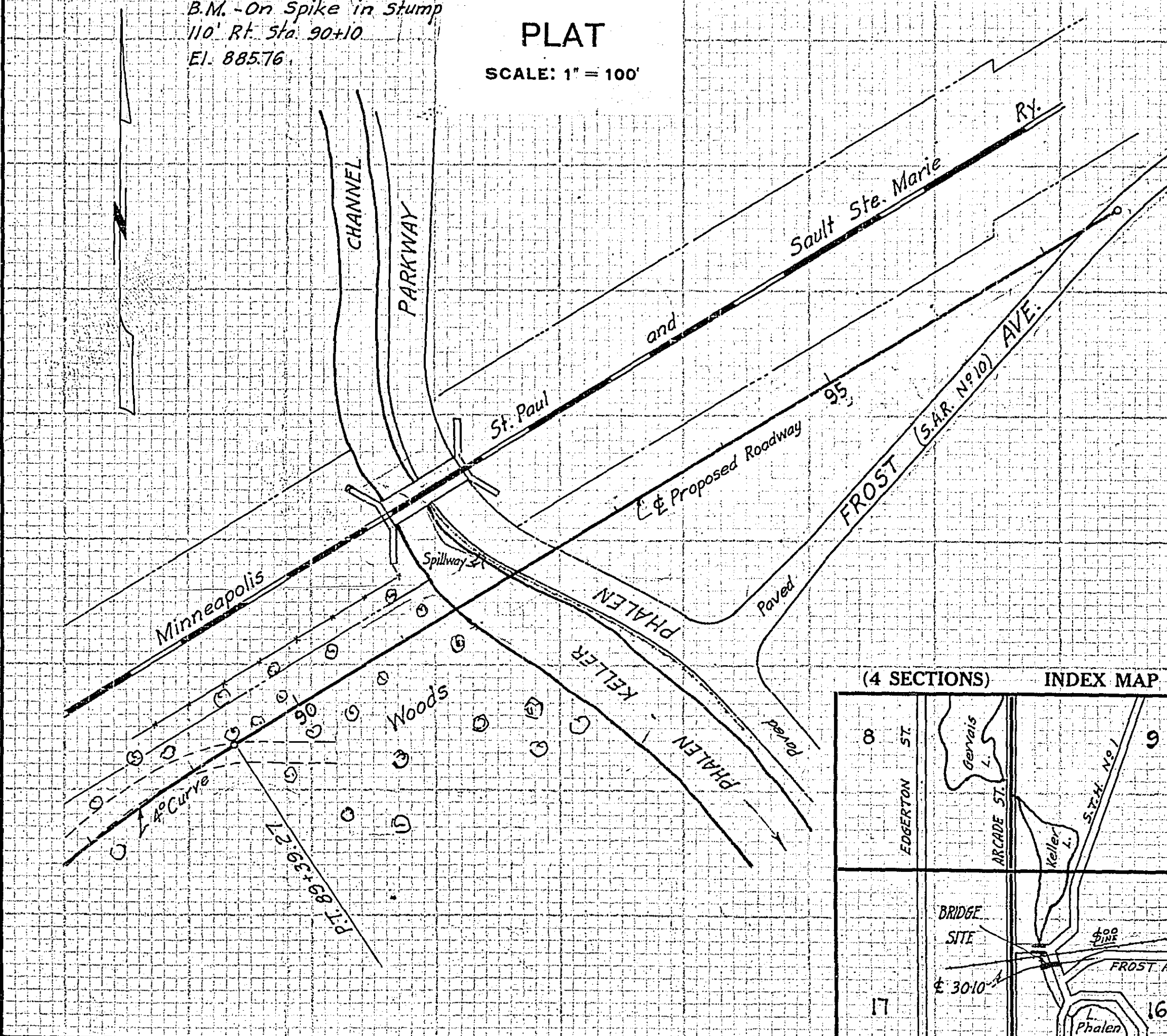
Material for fill will be obtained from cut between Sta. 85+00 to 90+70, and from borrow pit. Material for fill is clay.

PLAN AND PROFILE
SCALE: 1" = 10'



Method of sounding - All sounds taken with augers as all material encountered is of solid formation. Kinds of material encountered are shown with soundings.

PLAT
SCALE: 1" = 100'



SHOW ON CONTRACTED PROFILE

- Present and proposed grades of roadway for a sufficient distance from each end of bridge to show present and proposed spillways, if any, grades of steep approaches, and where material will be taken for fills, also approximate profile of natural surface of ground.
- Present and proposed grades of bridge floor.
- High and low water stages. Give average high water and extreme high water and state how often extreme high water occurs. Give date by years.
- Kind of material for proposed fill.
- Proposed elevation of bottom of footings.
- Elevation of water surface taken at edge of water, at bridge site, and 100 ft. and 200 ft., both above and below bridge site, also at any sudden drops or waterfalls.

DATA

- Recommendations of Engineer:
 - Span and Type of Superstructure: Double Skew Span-Reinforced Concrete-Elliptical Arches of Unequal Length-To be faced with rough limestone as indicated in attached cut and sketch. Type of Railing: Reinforced concrete faced with rough limestone
 - Width of Roadway on Bridge: 30 feet Number and width of sidewalks, if any: Two sidewalks, each 5 feet wide.
 - Types of abutments, length of wings and their angle with face of abutment: As shown in attached sketch
- If a skew span is used, the angle of skew should be Approximately 58° with road centerline
- Is piling required? Yes If required, bottom of pile should penetrate to Elev. _____ for Abutments; and Elev. _____ for Pier.
- Special Features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding earth, logging, etc. None
- Changes: In height or length from that of old bridge, and reasons why: New bridge
- Other bridges over same stream:
 - Location, length, height above water, and estimated age: Soo Line Ry. Bridge immediately adjacent to site of proposed bridge - Bridge on S.T.H. No. 1: about 1000 feet north of proposed site.
 - Spillways and flood conditions: No appreciable flow at any time in Phalen-Keller Channel.
- Reason why these bridges are, or are not, fair indications of what length the proposed bridge should be: Present bridges adequate length.
- Purchase of Right of Way: For change in channel or road: R.O.W. owned by Ramsey County.
- Information and evidence in regard to the high water stage was obtained as follows: Ramsey County Lake data.
- Must contractor provide for traffic during construction of proposed bridge: Yes if so, by what means? On Phalen Parkway which is to be spanned by new bridge

SHOW ON LARGE PROFILE

- Cross-section of stream on center line of proposed bridge (full black line), cross-sections parallel to, and 20 feet on each side of the center line (dashed and dotted black lines).
- A layout showing station and distance out from proposed center line, to all soundings.
- Number the soundings S1, S2, S3, etc., and show plainly on profile what materials are encountered in each sounding and at what elevations the various materials are encountered. Show number of blows required for the driving of each foot of rod and final elevation of bottom of each rod.
- Location, elevation and description of a permanent bench mark.

MATERIAL

Nearest or most convenient shipping point for steel, cement and other material is Gloster which is about one miles from bridge site, condition of the road is paved

Local Gravel: _____

- Location of pit _____
- Length of haul from pit to bridge site is _____ miles.
- Condition of the road from pit to bridge site _____
- Probable price of gravel in pit _____
- Number of parts of sand screened from ten (10) parts of pit run. used 1/2-inch screen _____

Imported Gravel: and Rough Lime _____

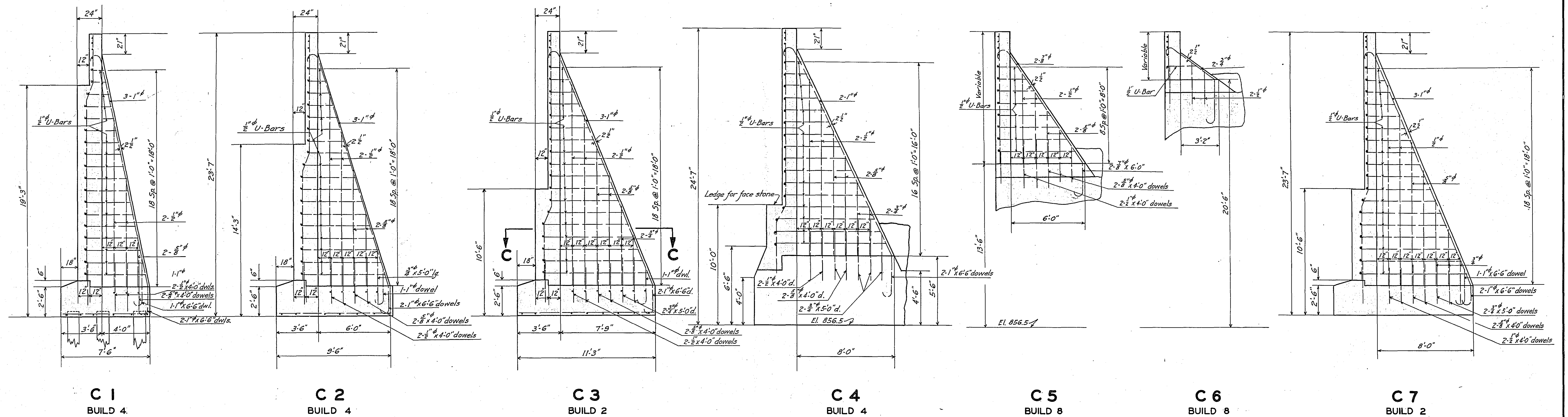
- Can be shipped from _____
- Probable price of ss _____

SHOW ON PLAT

- North upward. (Show by arrow)
- Course of stream 250 feet or more above and below bridge site.
- Direction of flow.
- Location of existing and proposed roads, clear widths of same and the stationing.
- Location of present bridge with general dimensions and description of same.
- Location of proposed bridge, giving station of proposed center of main span.
- Location of points where flood waters are likely to scour the banks and bed of stream and description of any pools which may have formed near bridge site.
- Recommended change of channel.
- Small sketch of four sections showing approximate course of stream and road, also location of proposed bridge.
- Location, elevation and description of permanent bench mark.
- Show name of road, and if a state road, give number.
- Show name of stream, state whether it is a River, Creek, Drainage Ditch, Ravine or Dry Run, etc.

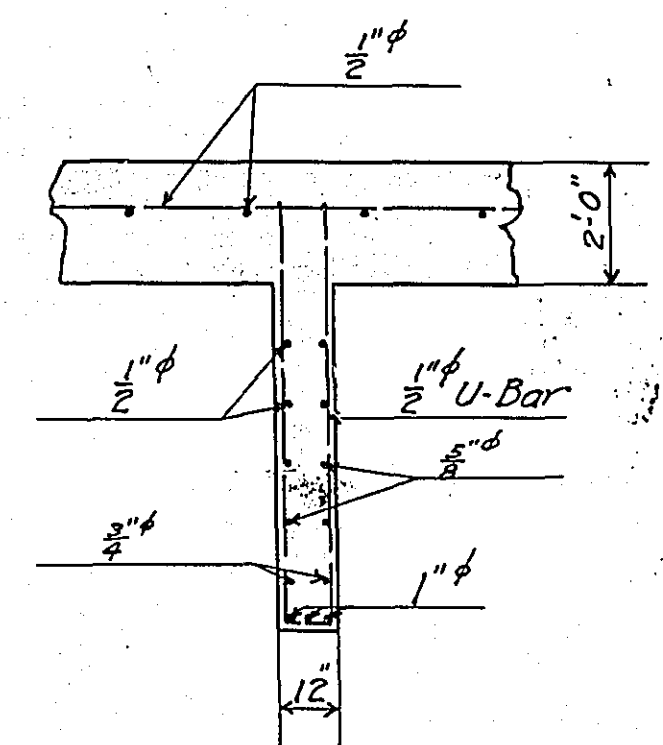
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
REPORT OF BRIDGE SURVEY

SEC. 16 T. 29 N. R. 22 W.
N.W. Canada TOWNSHIP
Ramsey COUNTY
P.J. Crane 19 29
R.V.K.
DIV. ENGR.
BRIDGE No. _____

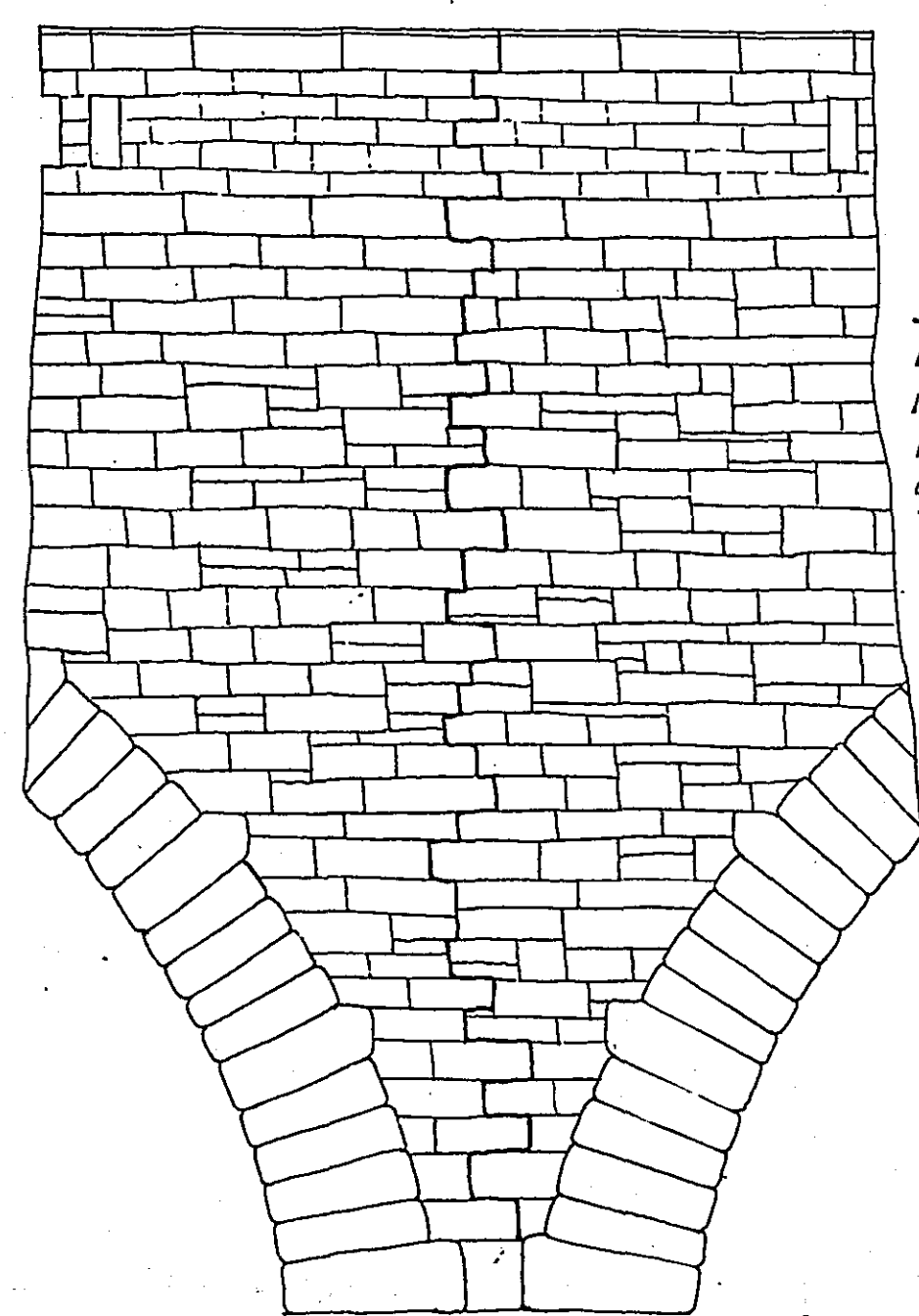


COUNTERFORT DETAILS

1/4 IN. = 1 FT. - 0 IN.



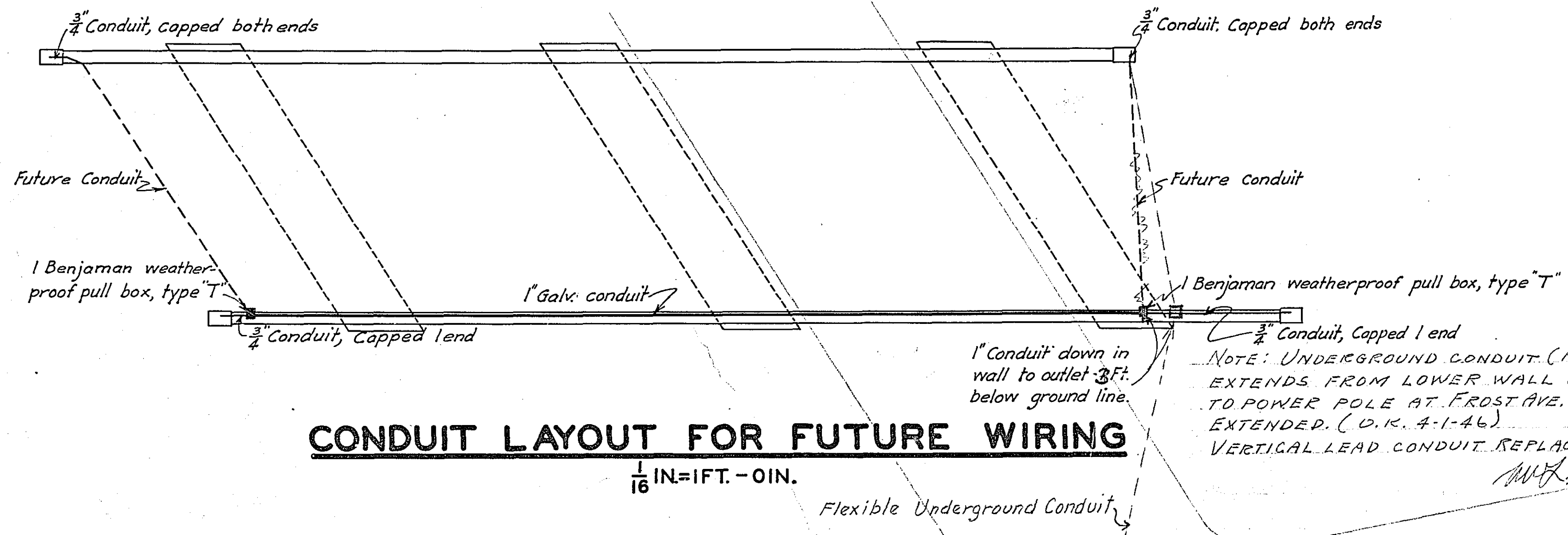
SEC. C-C



DETAIL OF EXPANSION JOINT THROUGH FACING

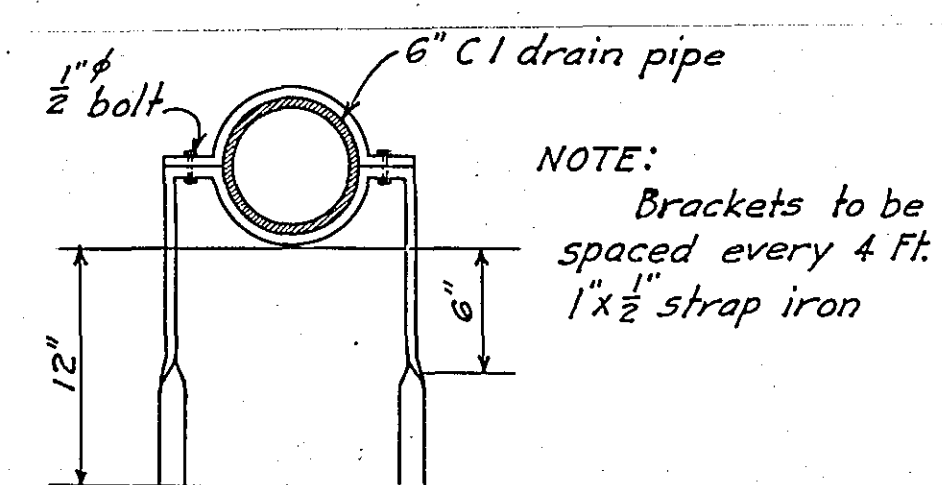
1/4 IN. = 1 FT. - 0 IN.

For every Sq. Ft. of Stone Face area place 1 piece of No. 10 galv. iron wire 4 Ft. long and looped as shown. To be used as a tie for stone facing. This by bridge contractor.



CONDUIT LAYOUT FOR FUTURE WIRING

1/16 IN. = 1 FT. - 0 IN.



DRAIN PIPE BRACKET

1 IN. = 1 FT. - 0 IN.

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

**REINFORCED CONCRETE ARCH BRIDGE
OVER
PHALEN BLVD. AND KELLER-PHALEN CANAL**

IN NEW CANADA TWP.
SEC. 16 TWP. 29N. RGE. 22W.

SCALE: AS SHOWN

MARCH 1930

BRIDGE NO. 4984