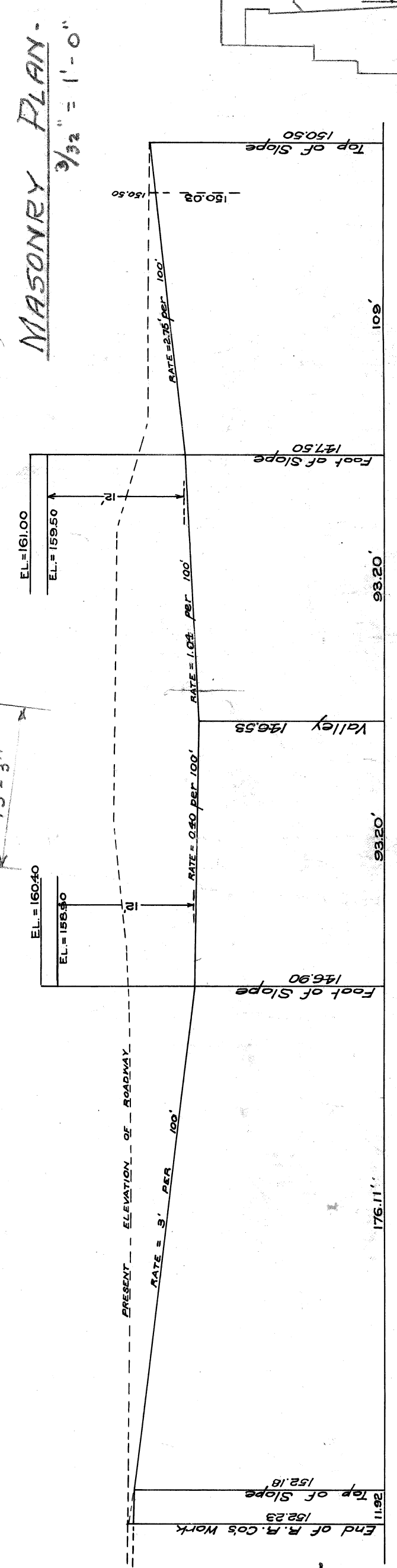
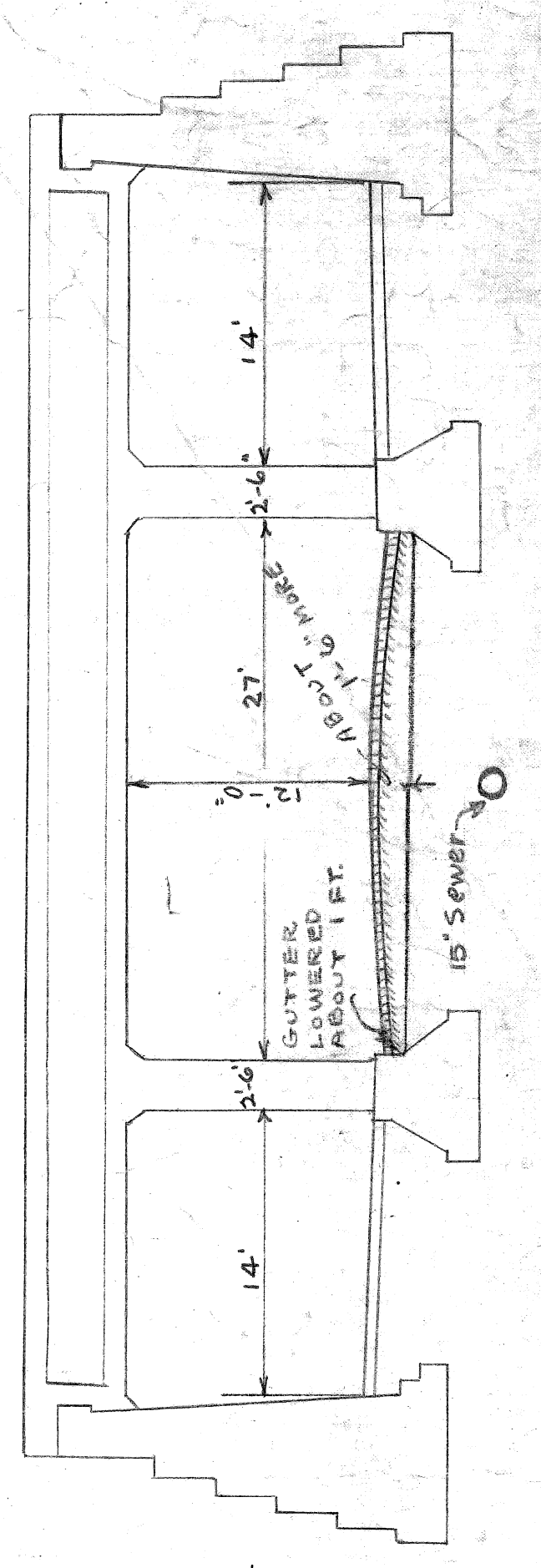
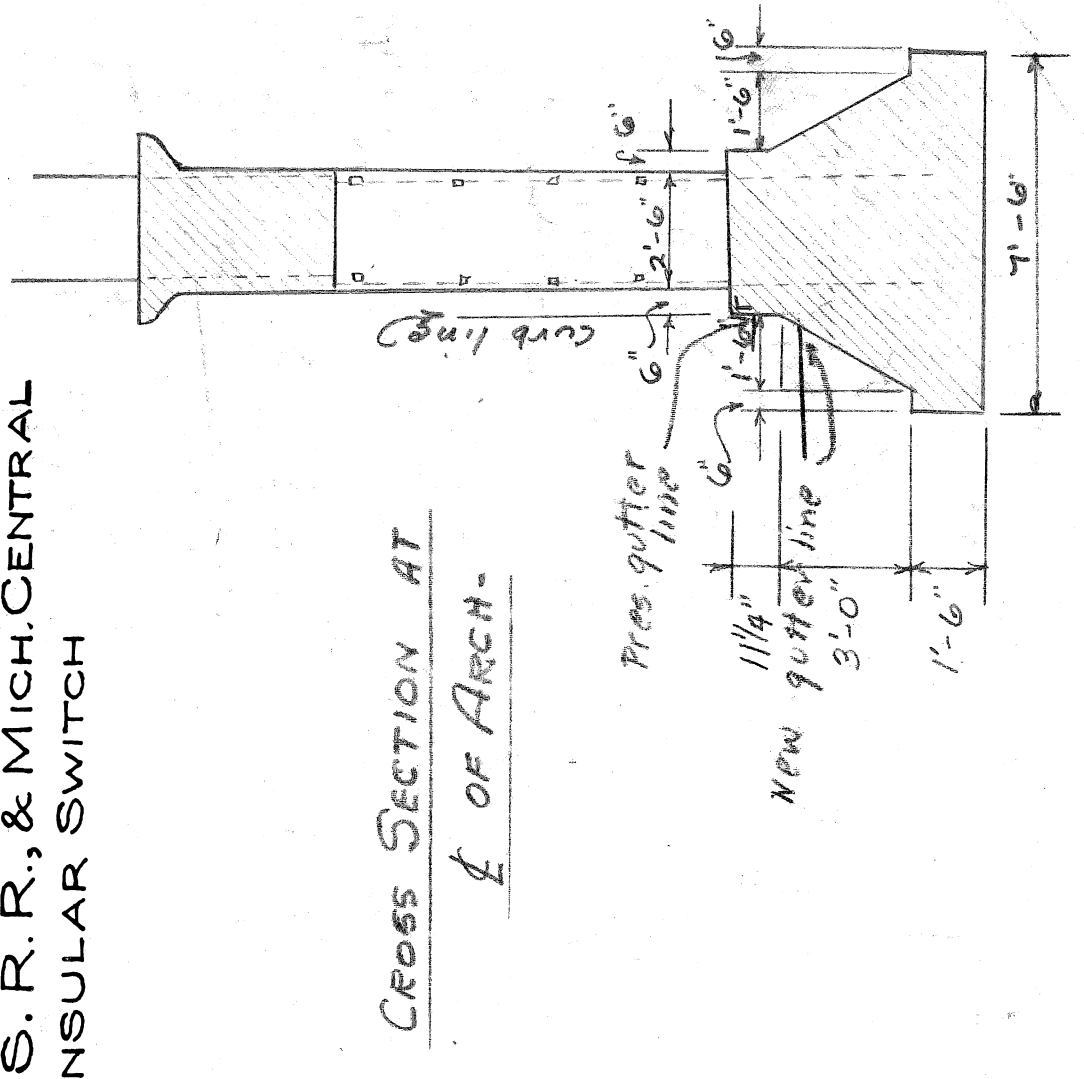


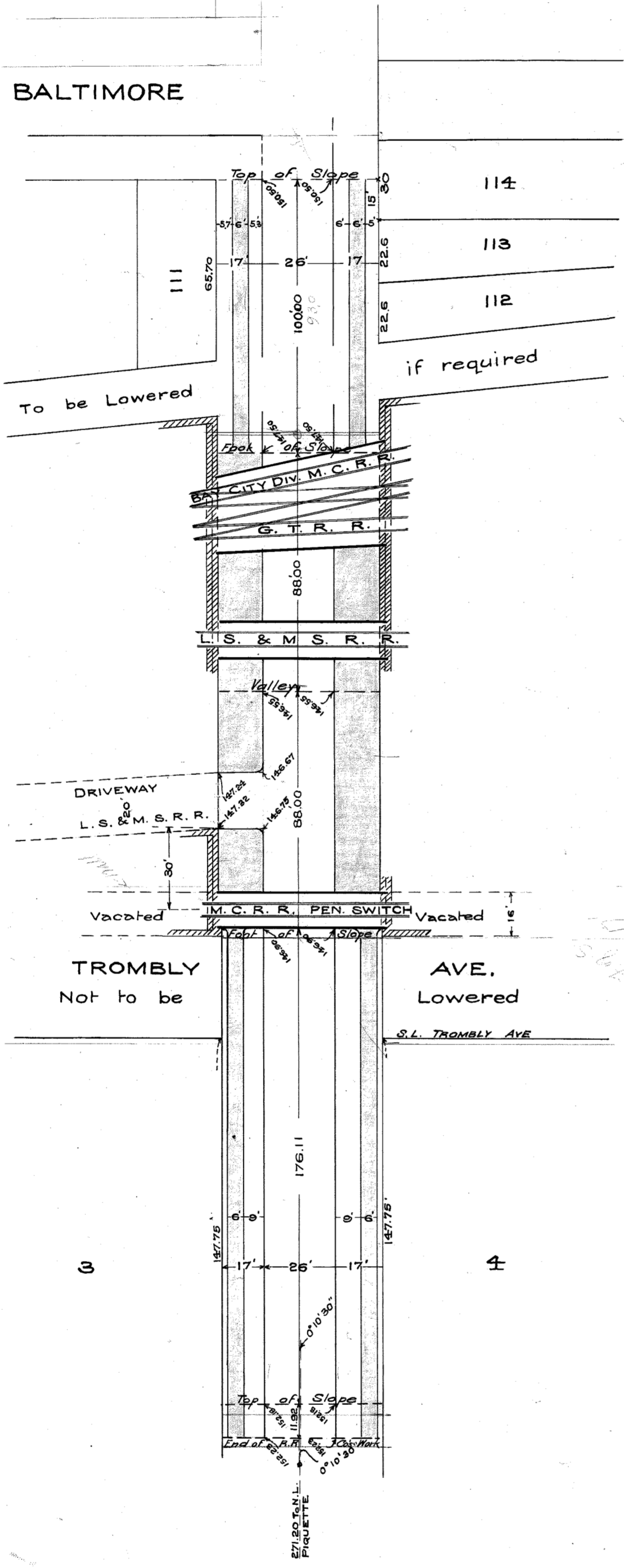
Approved: April 1, 1910.  
*W. H. Conroy* City Engineer.  
*W. H. Conroy* Chief Engineer M.C.R.R.

PLAN OF  
 PROPOSED SUBWAY IN  
 BRUSH STREET  
 UNDER BAY CITY DIV. OF M.C.R.R., G.T.R.R.,  
 L.S. & M.S. R.R., & MICH. CENTRAL  
 PENINSULAR SWITCH



CITY ENGINEER'S OFFICE  
 CURB SEPARATION & BRIDGES  
 A  
 Drawn by J.W. Reid, Jun. 31910.



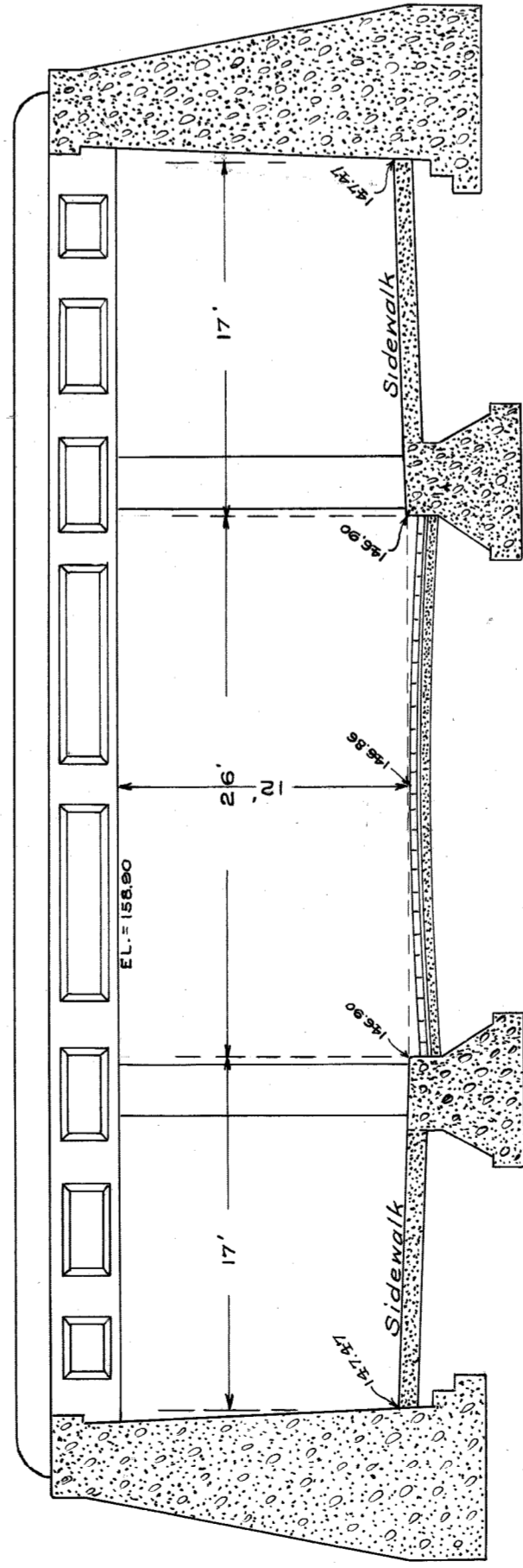


Approved: \_\_\_\_\_  
City Engineer.

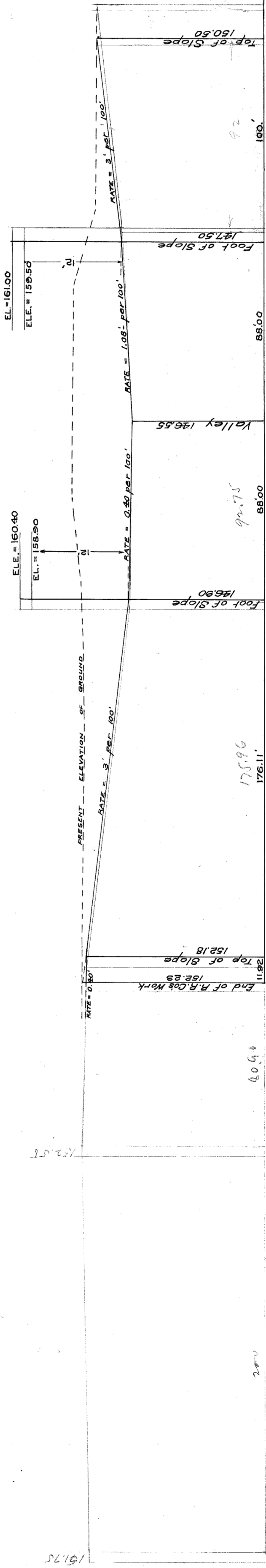
PLAN OF  
PROPOSED SUBWAY IN  
BRUSH STREET  
UNDER BAY CITY DIV. OF M.C.R.R., G.T.R.R.,  
L. S. & M. S. R. R., & MICH. CENTRAL  
PENINSULAR SWITCH

PLAN  
Scale, one inch = 40 Feet.

*The New Green Tunnel  
Necessary by changing  
location of G.T.R.R.  
Jan 31/10*

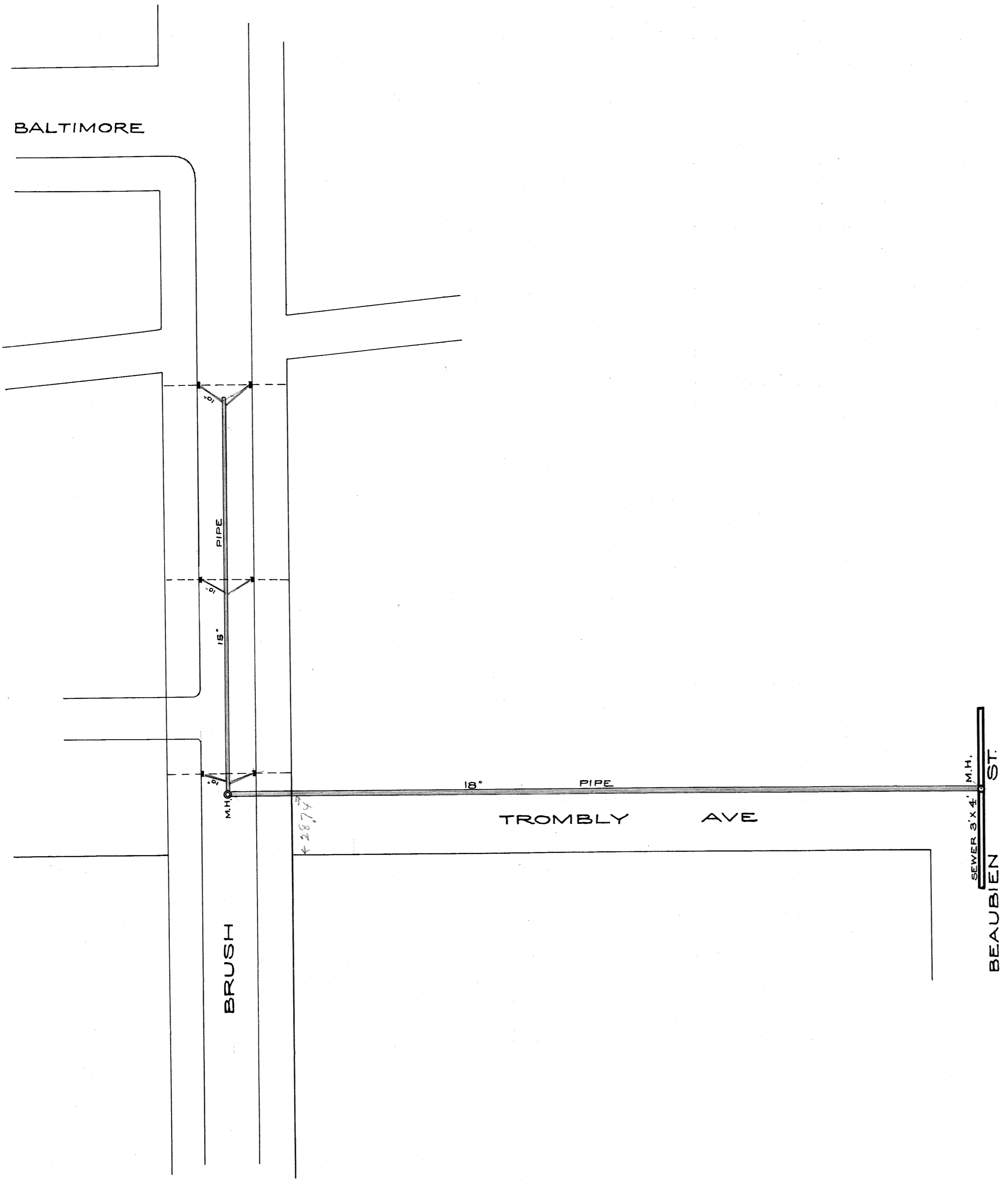


CROSS SECTION

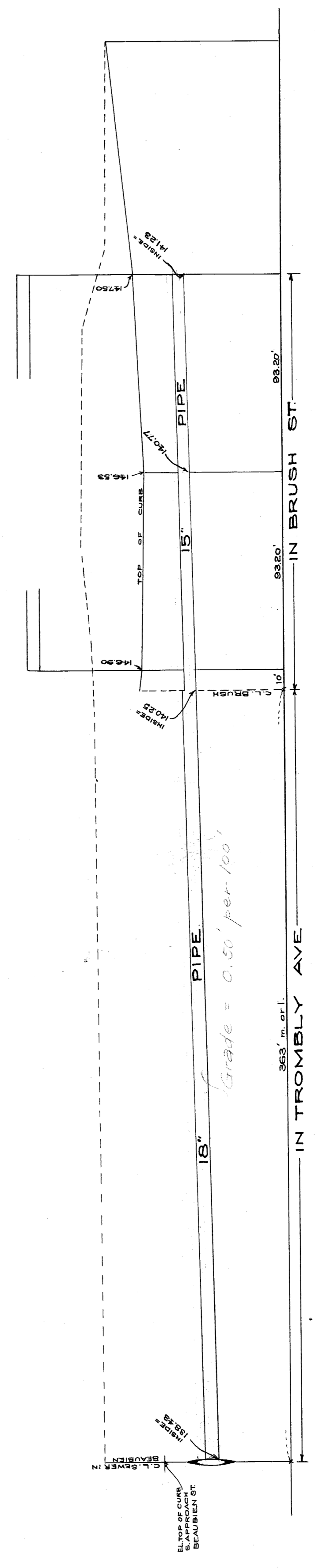


LONGITUDINAL SECTION

Hor. Scale, one inch = 40 feet  
Ver. " " = 10 "



DRAINAGE PLAN  
FOR  
BRUSH ST. SUBWAY



HOR. SCALE, ONE INCH = 40 FEET.  
VER. " " " = 10 " "

CITY ENGINEER'S OFFICE  
GRADE SEPARATION & BRIDGES

Case: A    Drawing: 4    SHEET 2-C

CITY ENGINEER'S OFFICE  
DRAWN BY J. W. REID, APRIL 1910









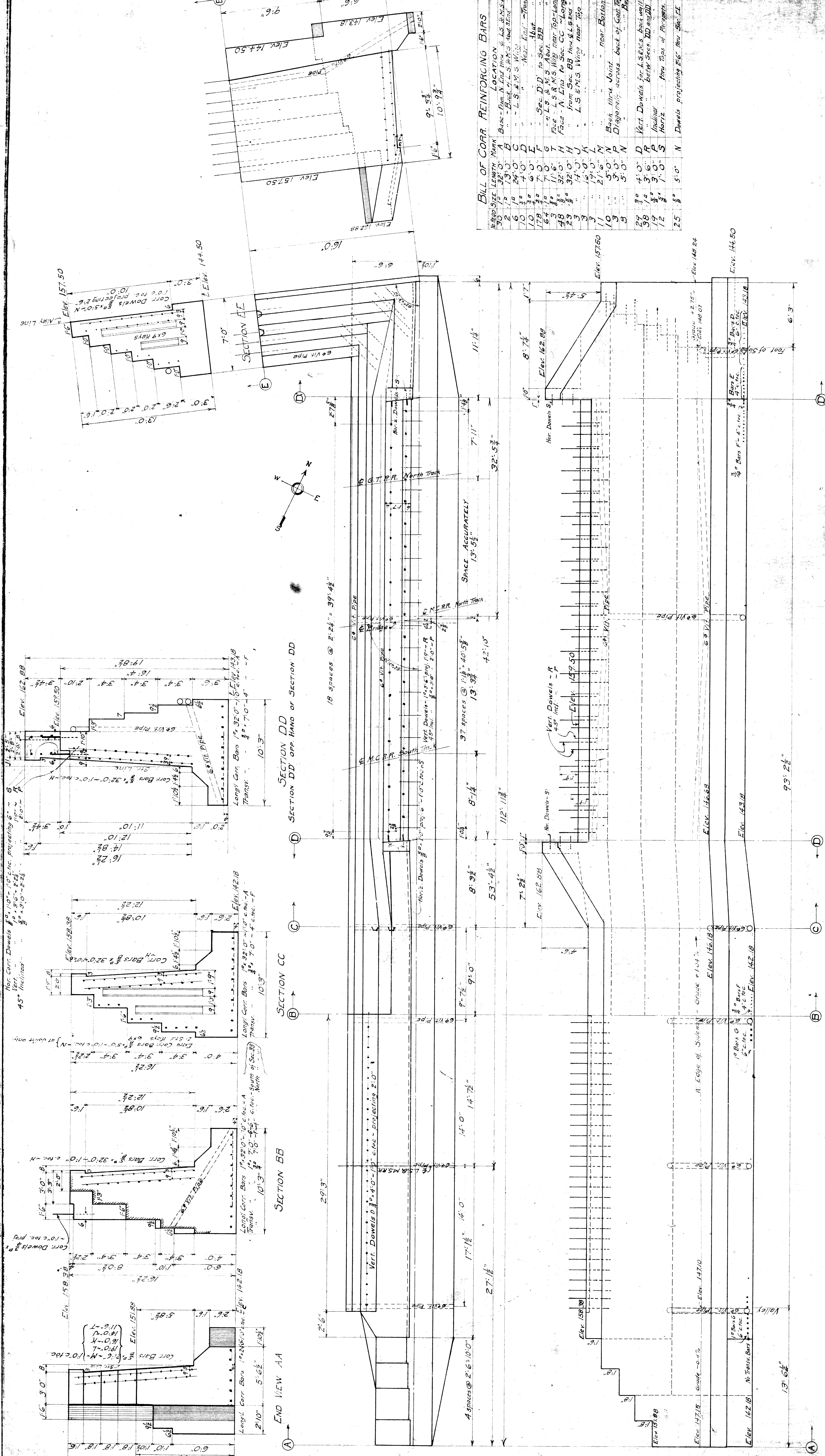












**BILL OF CORR REINFORCING BARS**

BAR NO.	SIZE	LENGTH	MARK	LOCATION
1	3/8"	13'-0"	A	Back - from N End Trk. to S.S. & M.S. W. 1/2"
2	3/8"	24'-0"	B	Back - from S.S. & M.S. W. 1/2"
3	3/8"	4'-0"	C	Back - from S.S. & M.S. W. 1/2"
4	3/8"	7'-0"	D	Back - from S.S. & M.S. W. 1/2"
5	3/8"	7'-0"	E	Back - from S.S. & M.S. W. 1/2"
6	3/8"	7'-0"	F	Back - from S.S. & M.S. W. 1/2"
7	3/8"	11'-6"	G	Face - L.S. & M.S. W. 1/2"
8	3/8"	32'-0"	H	Face - N. End to Sec. CC - Longitudinal
9	3/8"	32'-0"	I	Face - N. End to Sec. CC - Longitudinal
10	3/8"	14'-0"	J	Face - N. End to Sec. CC - Longitudinal
11	3/8"	14'-0"	K	Face - N. End to Sec. CC - Longitudinal
12	3/8"	14'-0"	L	Face - N. End to Sec. CC - Longitudinal
13	3/8"	14'-0"	M	Face - N. End to Sec. CC - Longitudinal
14	3/8"	14'-0"	N	Face - N. End to Sec. CC - Longitudinal
15	3/8"	14'-0"	O	Face - N. End to Sec. CC - Longitudinal
16	3/8"	14'-0"	P	Face - N. End to Sec. CC - Longitudinal
17	3/8"	14'-0"	Q	Face - N. End to Sec. CC - Longitudinal
18	3/8"	14'-0"	R	Face - N. End to Sec. CC - Longitudinal
19	3/8"	14'-0"	S	Face - N. End to Sec. CC - Longitudinal
20	3/8"	14'-0"	T	Face - N. End to Sec. CC - Longitudinal
21	3/8"	14'-0"	U	Face - N. End to Sec. CC - Longitudinal
22	3/8"	14'-0"	V	Face - N. End to Sec. CC - Longitudinal
23	3/8"	14'-0"	W	Face - N. End to Sec. CC - Longitudinal
24	3/8"	14'-0"	X	Face - N. End to Sec. CC - Longitudinal
25	3/8"	14'-0"	Y	Face - N. End to Sec. CC - Longitudinal

**NOTES TO BUILDER**

MAKE CONCRETE 1 PART CEMENT: 2 1/2 PARTS SAND: 4 1/2 PARTS BROKEN STONE  
 CONTENTS - 392 CU. YDS.  
 WIRE MESH AND INTERSECTIONS WITH #14 WIRE  
 LAP LONG BARS 2'-6" AT SPLICES, WRAPPING SECURELY WITH 24 TURNS OF #14 WIRE  
 FILE BROKEN STONE AROUND OPEN UPPER ENDS OF DRAIN PIPES, AND TAKE CARE THAT  
 NO CONCRETE GETS INTO THE PIPES DURING CONSTRUCTION.  
 PLACE BULKHEADS SO THAT A LENGTH OF WALL CAN BE POURED FROM FOOTING TO  
 COPING IN A DAY'S RUN.  
 KEYS 6'-9" AND EXTRA RODS 3'-5" IN EACH OF VERTICAL JOINTS  
 FINISH VERTICAL JOINTS WITH A 3/4" x 1/2" TRIANGULAR MOLDING  
 FINISH OUTSIDE CORNERS AND EDGES WITH A QUARTER ROUND BEAD OF 1/4" RADIUS  
 PAINT BACKS OF WALLS WITH 1-COAT SARCO PRIMER AND 1-COAT SARCO #1

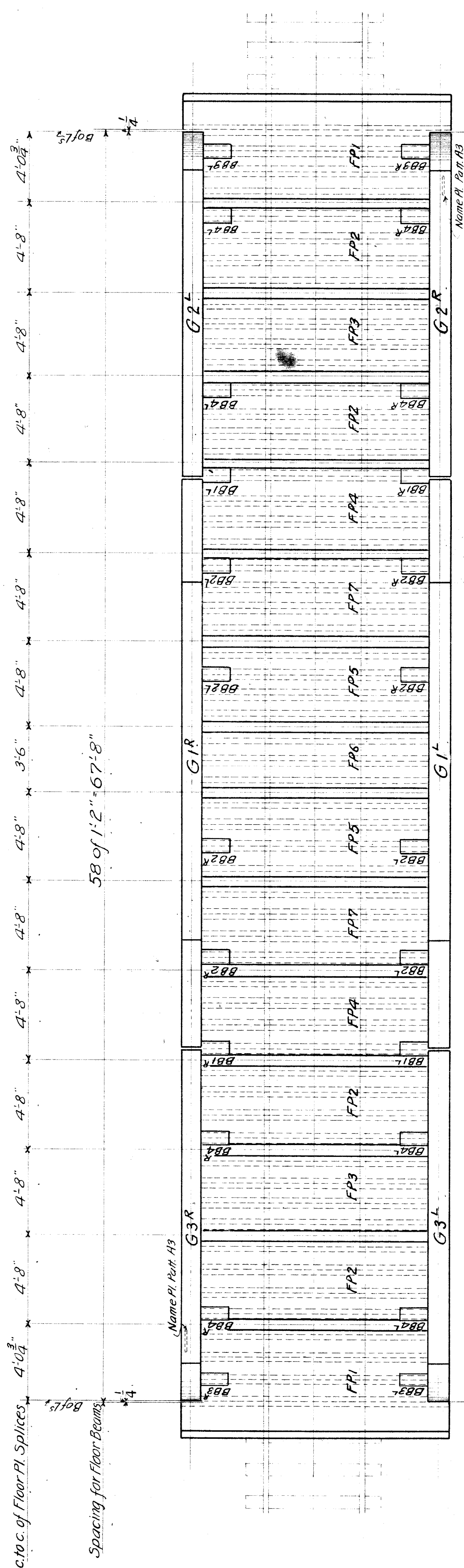






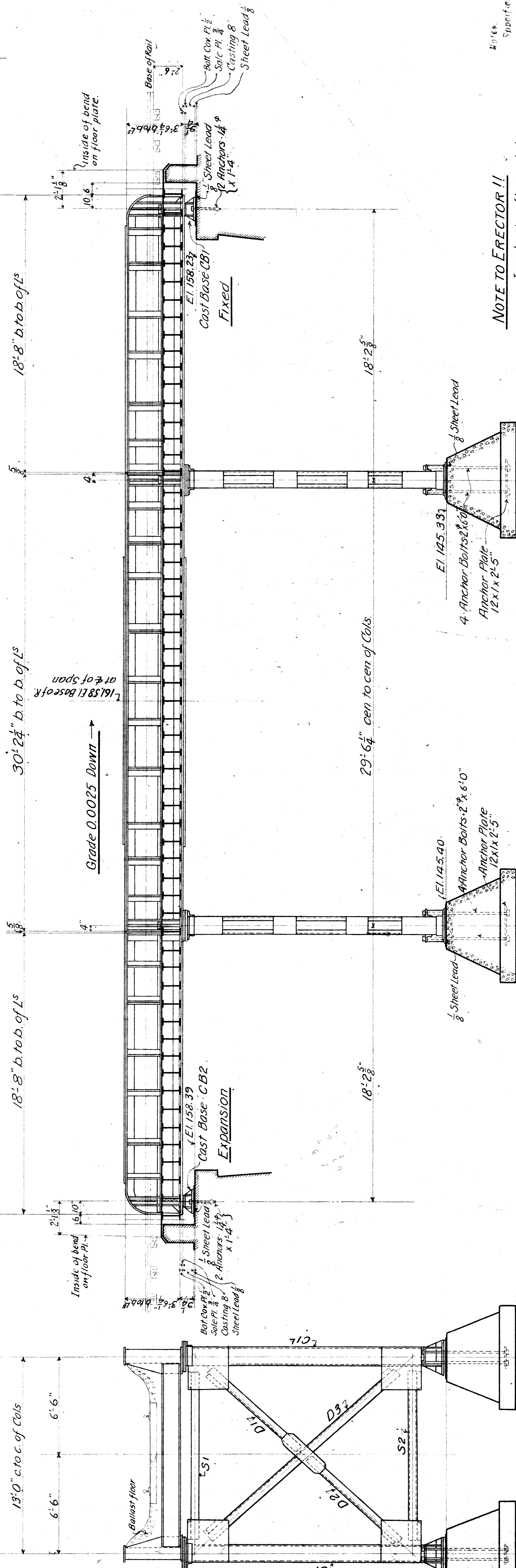






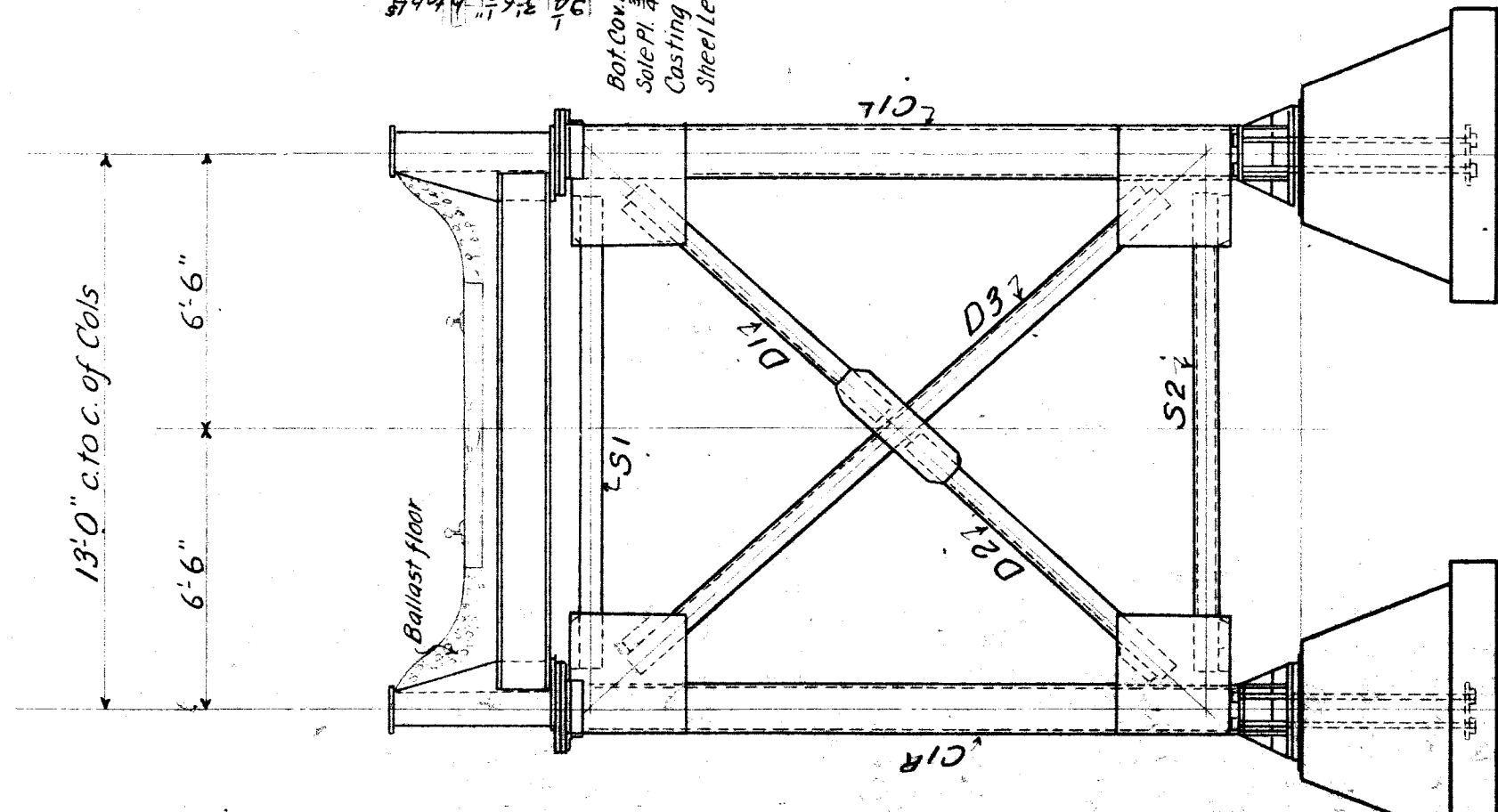
**FLOOR PLAN**

67'-7 1/2" b. to b. of L's



**SECTIONAL ELEVATION**

**NOTE TO ERECTOR !!**  
In placing floor plates  
turn splice plates toward abutments.



**END VIEW 2'-BENT**

LIST OF DRAWINGS	
GIRDERS	1
GIRDERS	2
COLS & BRACING	3
FLOOR BEAMS	4
FLOOR PLATES	5
CAST BASES	C1
COL ANCHORS	C2
BOLTS & ANCHORS	C3
SUMMARY FIELD RIVETS	C4
ERECTOR'S USE FIELD RIVETS	C5
SHOP BILLS	S1-5
SHIPPING BILLS	R1-3

BRIDGE 5.92 BRUSH ST.  
DETROIT MICH.

M. C. R. R. CO.  
BAY CITY DIV. - PENINSULAR SPUR

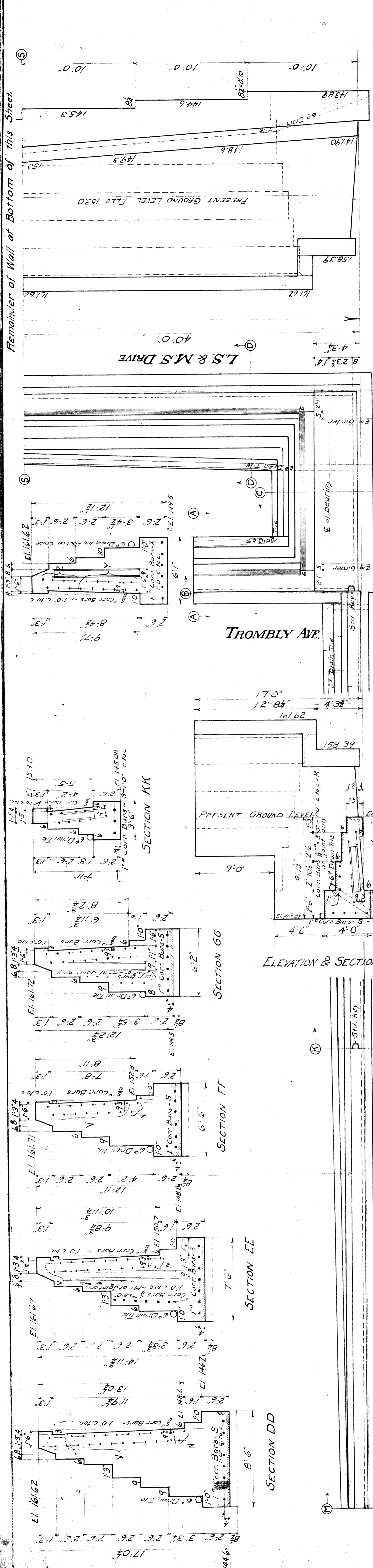
ERECTION DIAGRAM  
SCALE 1/4" = 1'-0"

AMERICAN BRIDGE COMPANY  
DRAWING MADE AT Toledo  
WORK FABRICATED AT Toledo  
IN CHARGE OF Raymond  
DRAWN BY C. C.  
DATE 7-15-10  
CHECKED BY  
ORDER NO. 547  
SHEET NO. 8  
C 3726  
E1

INSPECTION: Specifications, N. Y. C. Lines, 1910.  
Inspector, M. C. R. R. CO.  
Field Point: By others  
Shop Point: One coat red lead and oil.  
Surfaces in contact each one coat.  
Preparations: 100% pure red lead to 4 gal. open kettle  
bolted lines of 1/2" or less of turpentine Japan  
Fibers, etc.  
Open Holes: via  
Reaming: Except as noted below all holes are to be  
punched 1/8" smaller & reamed to 1/8" larger than rivet.  
Punching full size where noted, as to all bracing,  
bottom plates, lattice bars, floor plates,  
and top flanges of all beams.  
Field connections reamed assembled, or to an iron  
template, except parts noted above punch full size.  
Painting: Material over 1/2" thick drilled  
No drilling full size unless drilled and all assembled parts

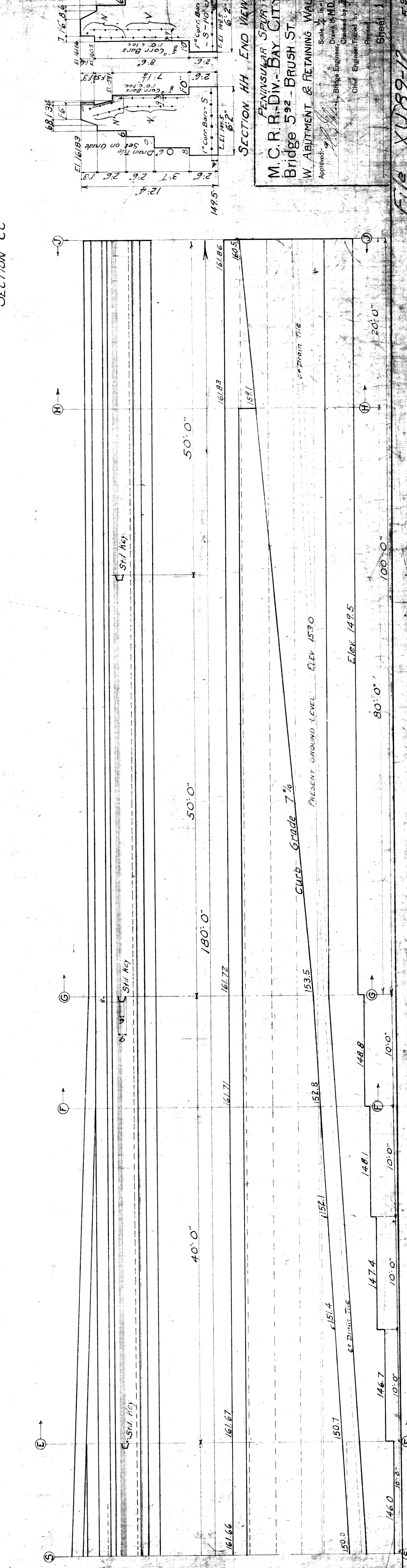
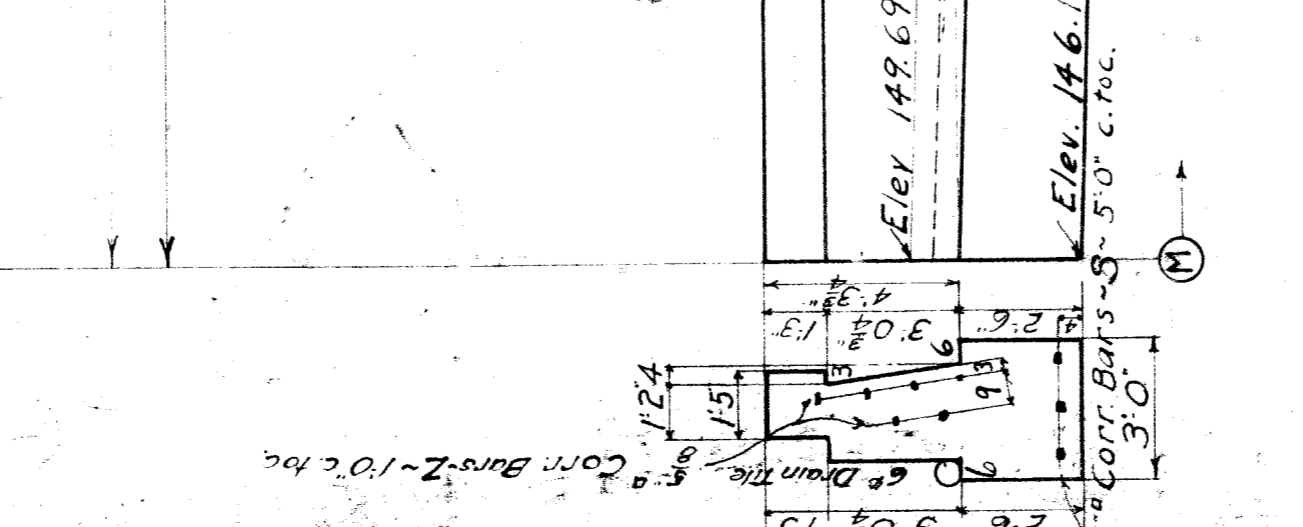
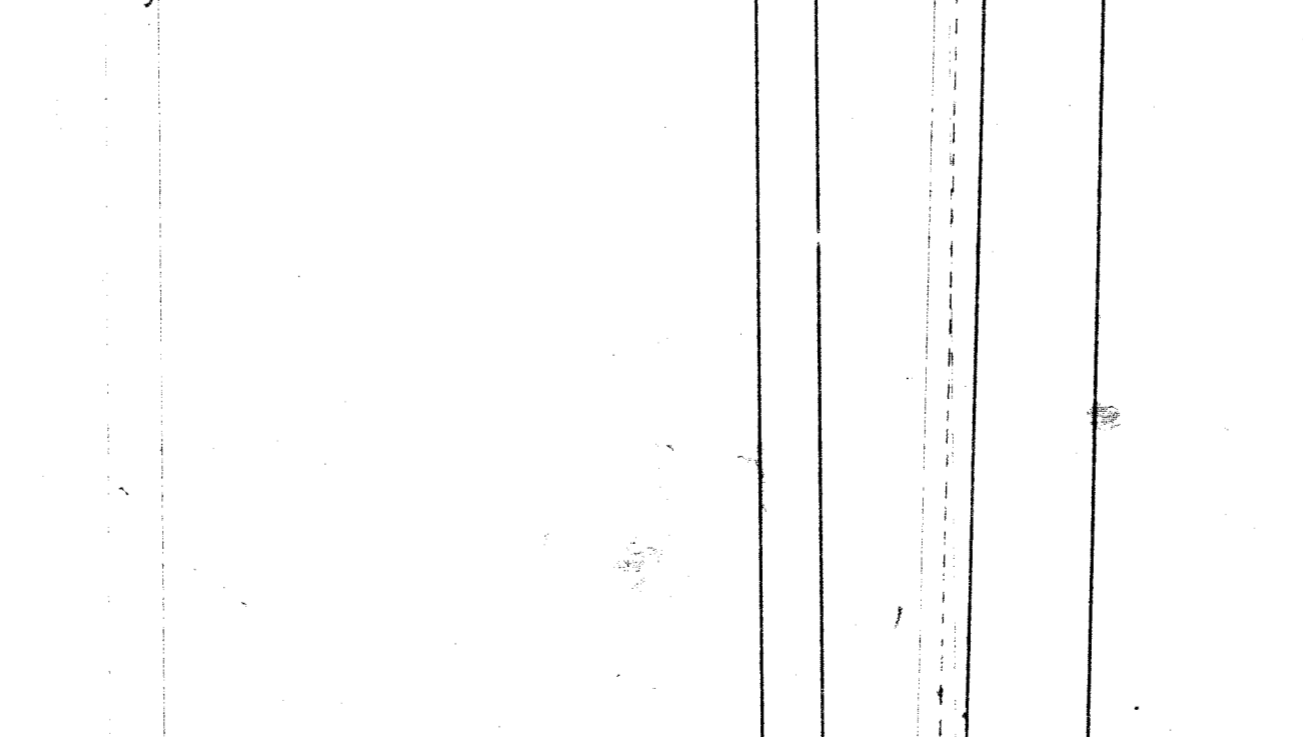
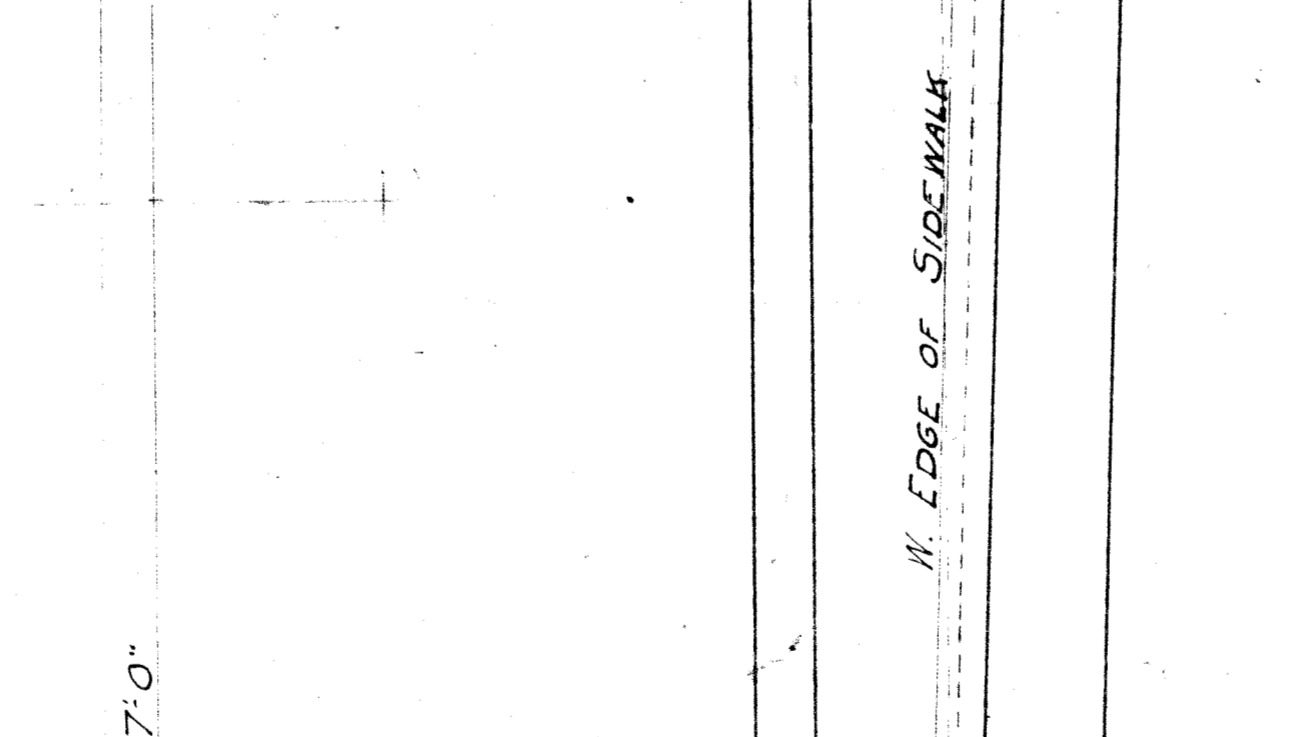
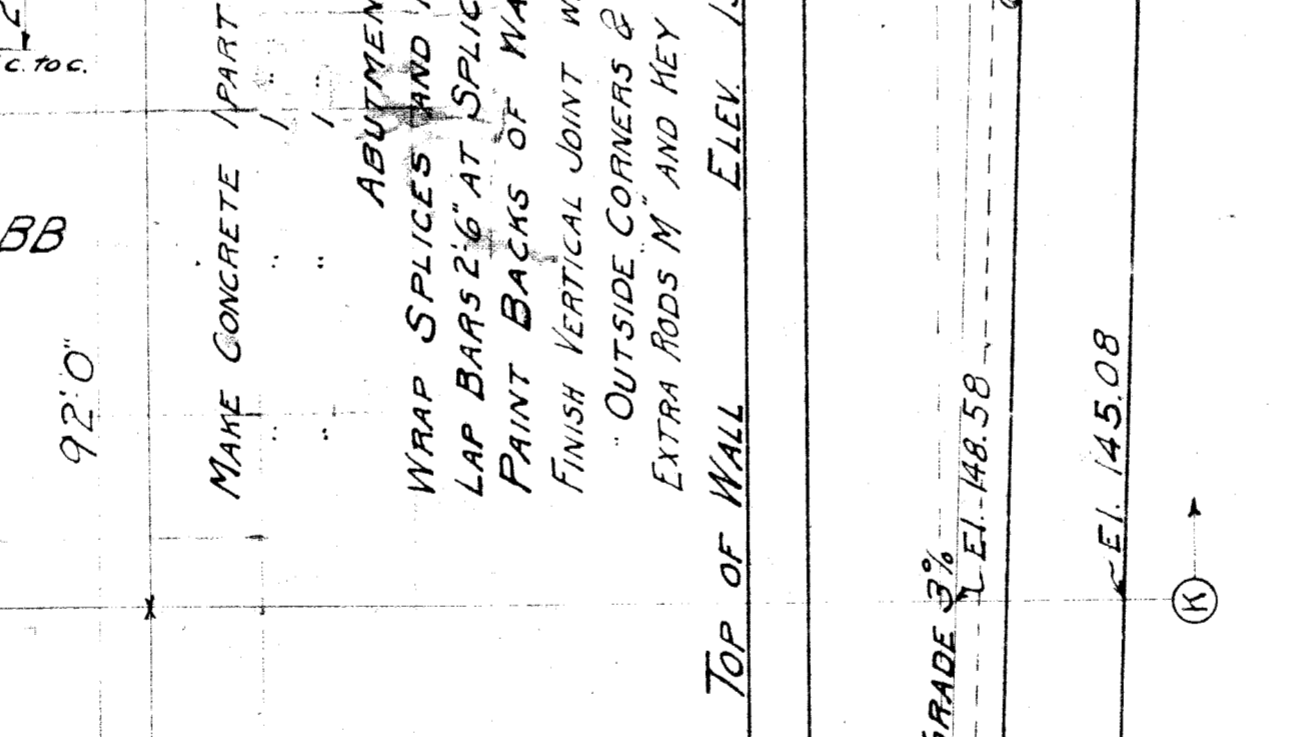
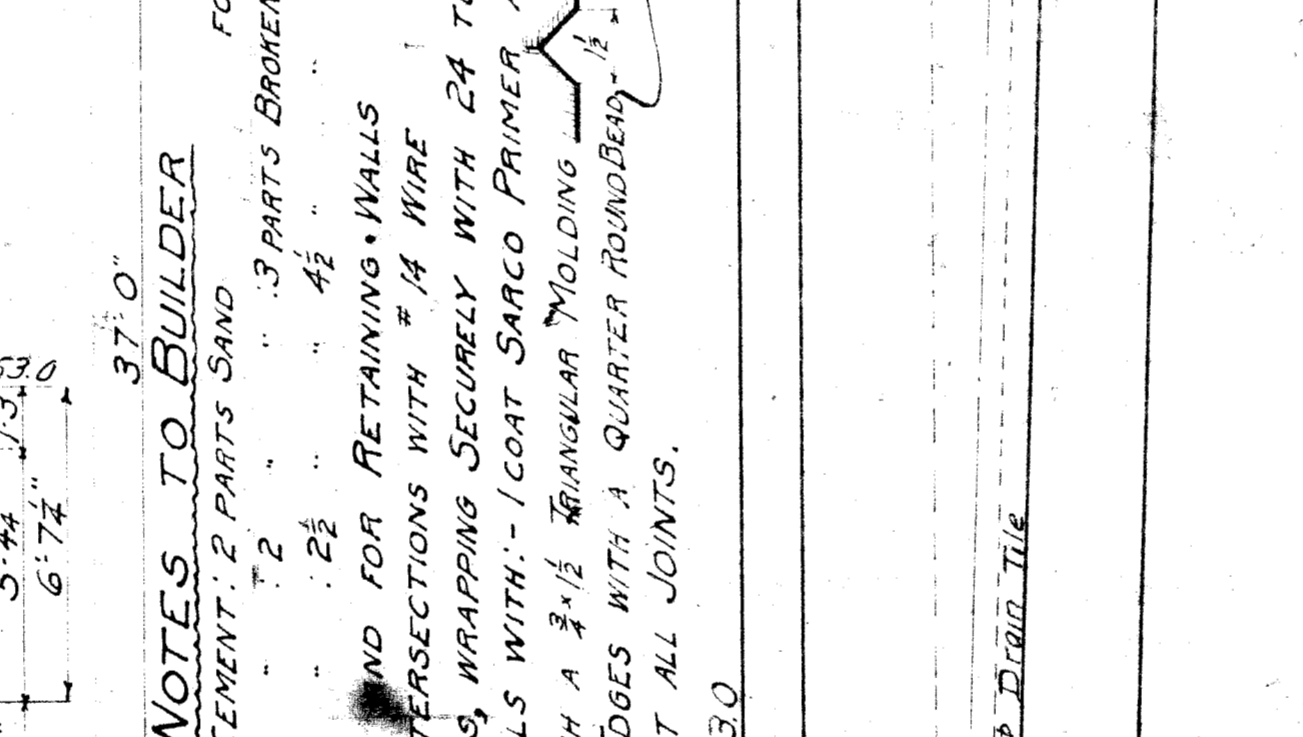
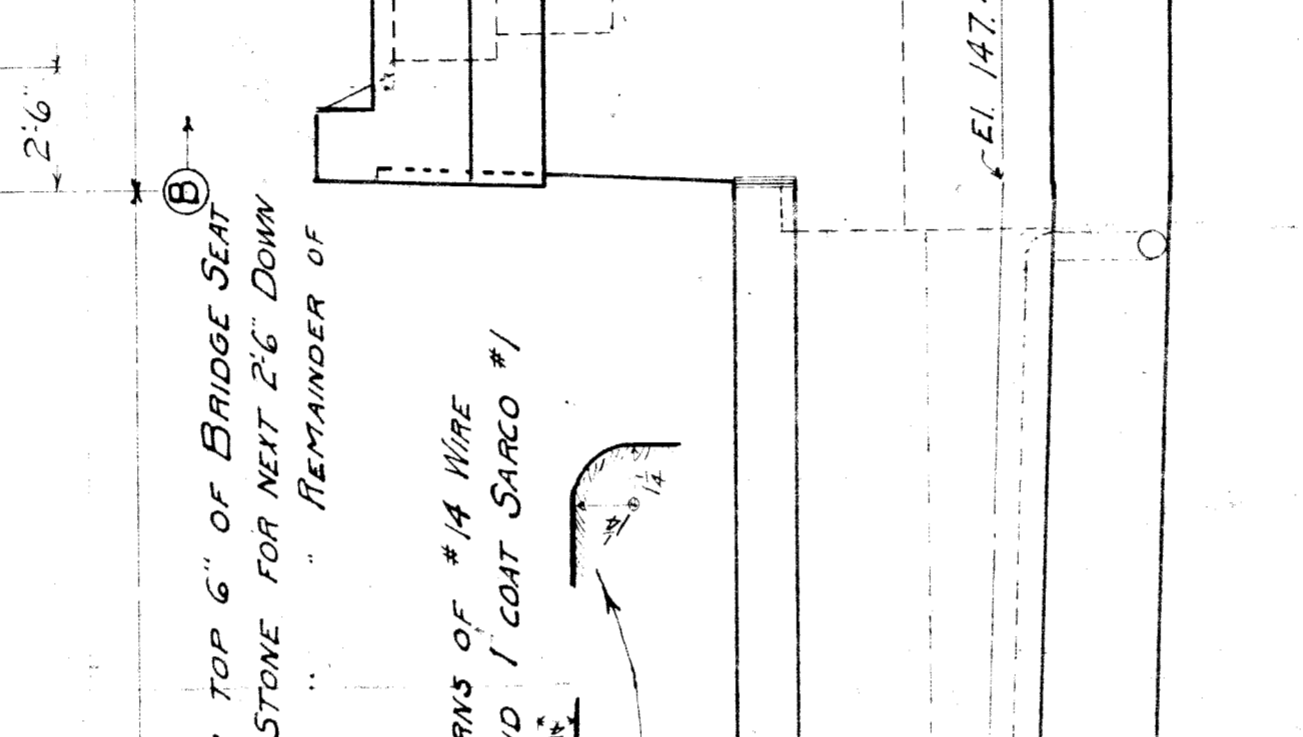
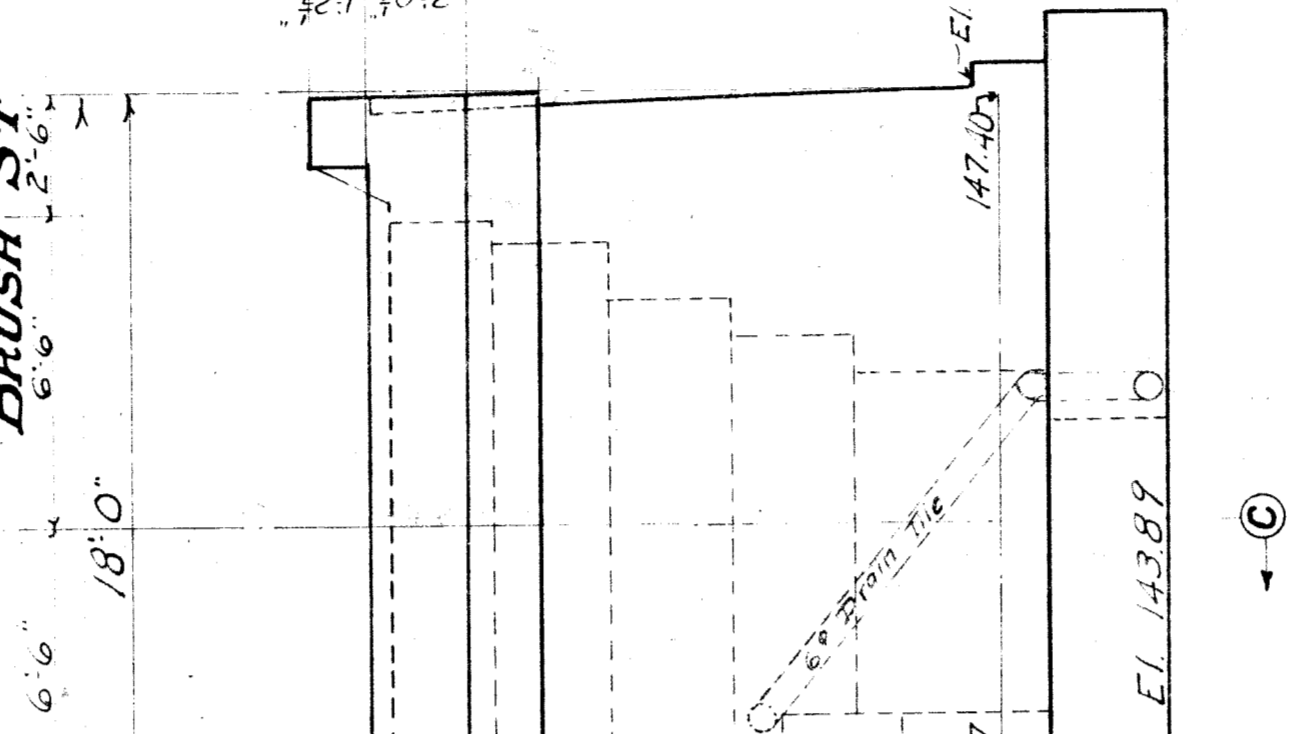
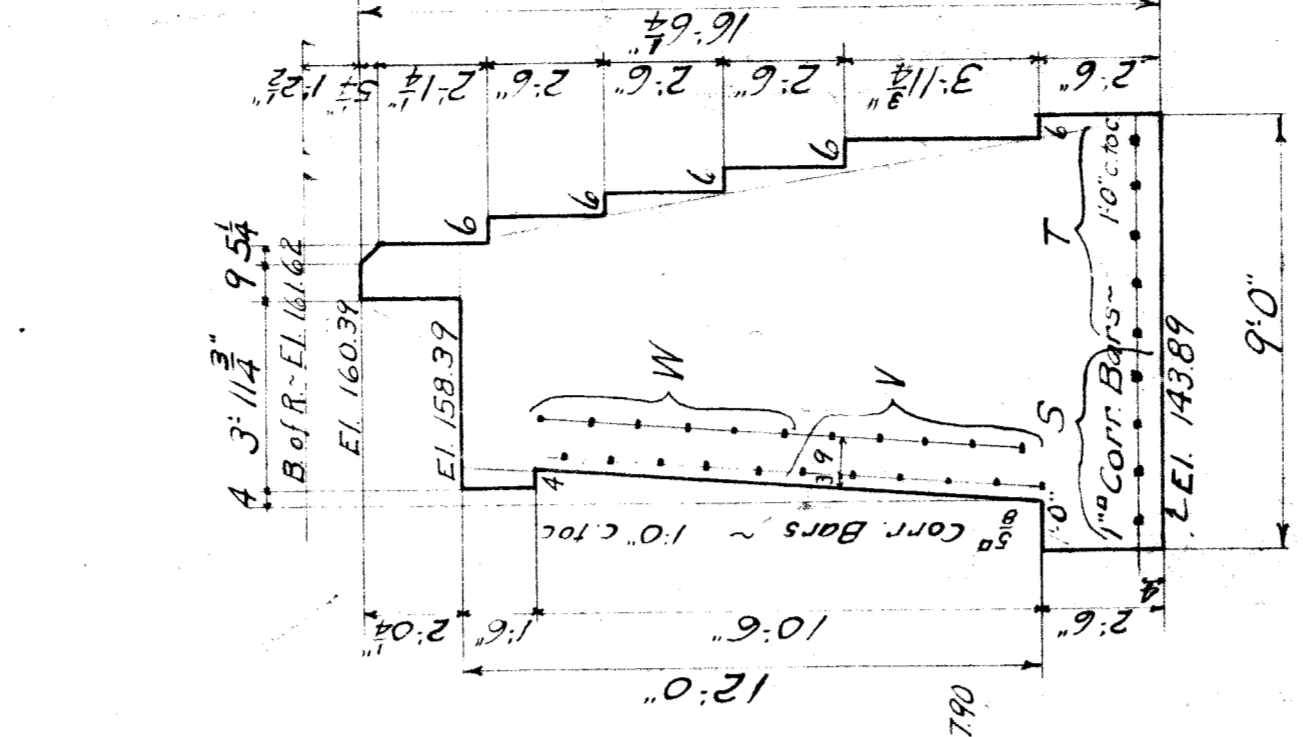


Remainder of Wall at Bottom of this Sheet



**BILL OF REINFORCING BARS**

Subtotal	Bar Length	Wall Location	Bar Size	Quantity	Notes
1	12'-0"	Trombly Face	#4	1	Base
2	16'-0"	Trombly Face	#4	1	Base
3	10'-0"	Back	#4	1	Face thru Sec. BB
4	10'-0"	Back	#4	1	Face thru Sec. BB
5	10'-0"	Back	#4	1	Face thru Sec. BB
6	10'-0"	Back	#4	1	Face thru Sec. BB
7	10'-0"	Back	#4	1	Face thru Sec. BB
8	10'-0"	Back	#4	1	Face thru Sec. BB
9	10'-0"	Back	#4	1	Face thru Sec. BB
10	10'-0"	Back	#4	1	Face thru Sec. BB
11	10'-0"	Back	#4	1	Face thru Sec. BB
12	10'-0"	Back	#4	1	Face thru Sec. BB
13	10'-0"	Back	#4	1	Face thru Sec. BB
14	10'-0"	Back	#4	1	Face thru Sec. BB
15	10'-0"	Back	#4	1	Face thru Sec. BB
16	10'-0"	Back	#4	1	Face thru Sec. BB
17	10'-0"	Back	#4	1	Face thru Sec. BB
18	10'-0"	Back	#4	1	Face thru Sec. BB
19	10'-0"	Back	#4	1	Face thru Sec. BB
20	10'-0"	Back	#4	1	Face thru Sec. BB
21	10'-0"	Back	#4	1	Face thru Sec. BB
22	10'-0"	Back	#4	1	Face thru Sec. BB
23	10'-0"	Back	#4	1	Face thru Sec. BB
24	10'-0"	Back	#4	1	Face thru Sec. BB
25	10'-0"	Back	#4	1	Face thru Sec. BB
26	10'-0"	Back	#4	1	Face thru Sec. BB
27	10'-0"	Back	#4	1	Face thru Sec. BB
28	10'-0"	Back	#4	1	Face thru Sec. BB
29	10'-0"	Back	#4	1	Face thru Sec. BB
30	10'-0"	Back	#4	1	Face thru Sec. BB
31	10'-0"	Back	#4	1	Face thru Sec. BB
32	10'-0"	Back	#4	1	Face thru Sec. BB
33	10'-0"	Back	#4	1	Face thru Sec. BB
34	10'-0"	Back	#4	1	Face thru Sec. BB
35	10'-0"	Back	#4	1	Face thru Sec. BB
36	10'-0"	Back	#4	1	Face thru Sec. BB
37	10'-0"	Back	#4	1	Face thru Sec. BB
38	10'-0"	Back	#4	1	Face thru Sec. BB
39	10'-0"	Back	#4	1	Face thru Sec. BB
40	10'-0"	Back	#4	1	Face thru Sec. BB
41	10'-0"	Back	#4	1	Face thru Sec. BB
42	10'-0"	Back	#4	1	Face thru Sec. BB
43	10'-0"	Back	#4	1	Face thru Sec. BB
44	10'-0"	Back	#4	1	Face thru Sec. BB
45	10'-0"	Back	#4	1	Face thru Sec. BB
46	10'-0"	Back	#4	1	Face thru Sec. BB
47	10'-0"	Back	#4	1	Face thru Sec. BB
48	10'-0"	Back	#4	1	Face thru Sec. BB
49	10'-0"	Back	#4	1	Face thru Sec. BB
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94	10'-0"	Back	#4	1	Face thru Sec. BB
95	10'-0"	Back	#4	1	Face thru Sec. BB
96	10'-0"	Back	#4	1	Face thru Sec. BB
97	10'-0"	Back	#4	1	Face thru Sec. BB
98	10'-0"	Back	#4	1	Face thru Sec. BB
99	10'-0"	Back	#4	1	Face thru Sec. BB
100	10'-0"	Back	#4	1	Face thru Sec. BB



**NOTES TO BUILDER**

MADE CONCRETE (PART CEMENT: 2 PARTS SAND)

FOR TOP 6" OF BRIDGE SEAT

3 PARTS BROKEN STONE FOR NEXT 2'6" DOWN

REMAINDER OF

ABUTMENT AND FOR RETAINING WALLS

WRAP SPLICES AND INTERSECTIONS WITH #14 WIRE

LAP BARS 2'6" AT SPLICES, WRAPPING SECURELY WITH #14 WIRE

PAINT BACKS OF WALLS WITH: 1 COAT SARCO PRIMER AND 1 COAT SARCO #1

FINISH VERTICAL JOINT WITH A 3/4" TRIANGULAR MOLDING

EXTRA ROUNDS M AND KEY AT ALL JOINTS.

TOP OF WALL ELEV. 1530

11" EDGE OF SIDEWALK GRADE 3%

10" EDGE OF SIDEWALK GRADE 3%

**SECTION HH END VIEW JJ**

FENINSULAR SPUR

M. C. R. R. DIV. - BAY CITY

Bridge 592 - BRUSH ST.

W. ABUTMENT & RETAINING WALLS

Scale: 1" = 10'-0"

Drawn by M.D.K. Approved by [Signature]

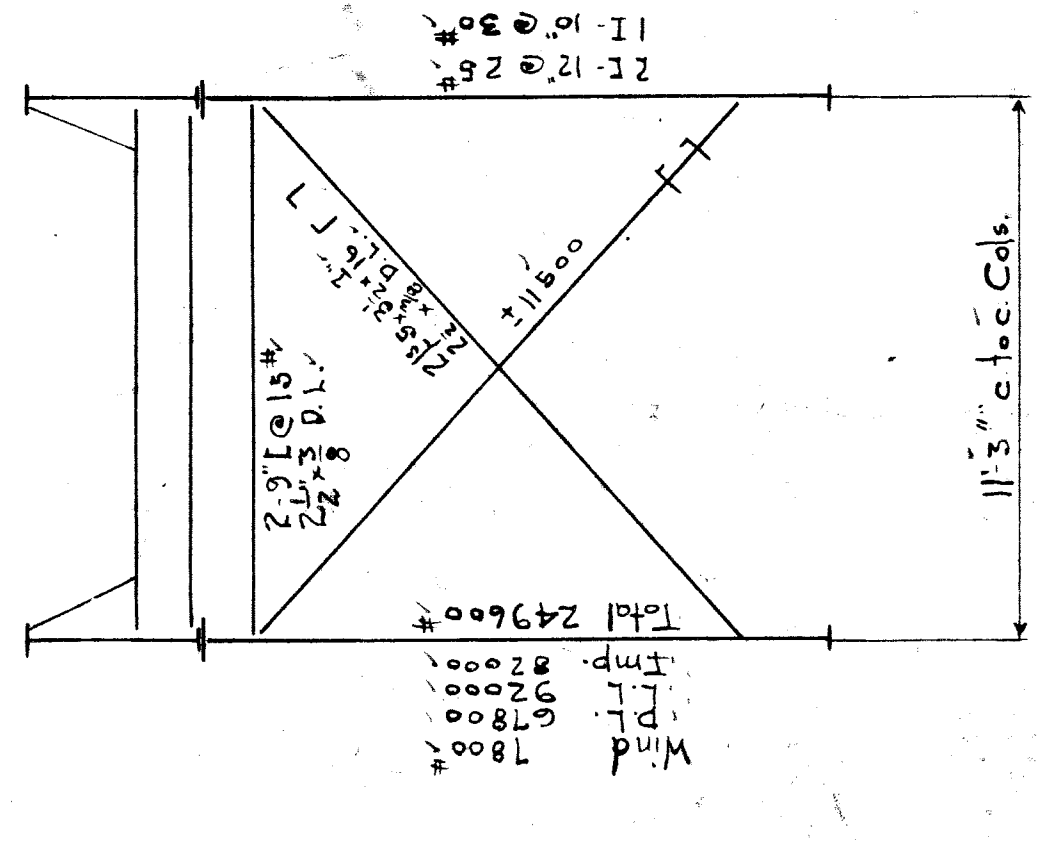
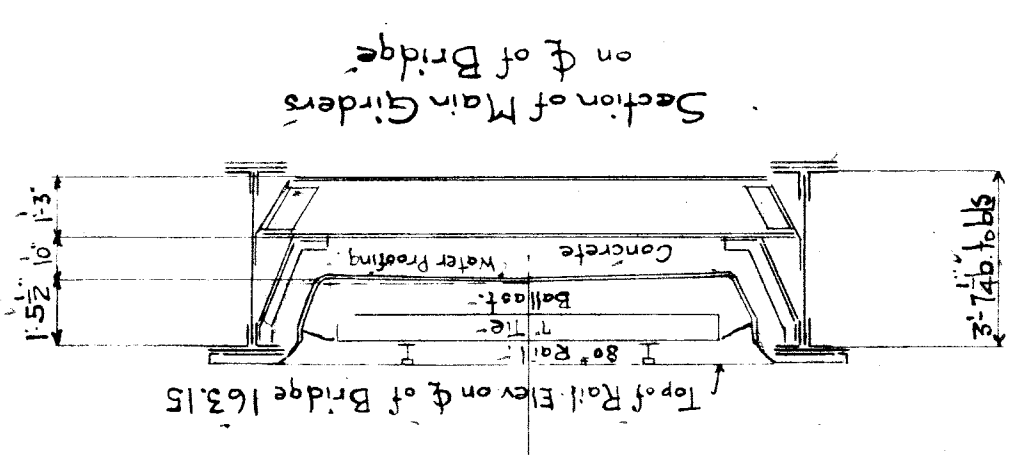
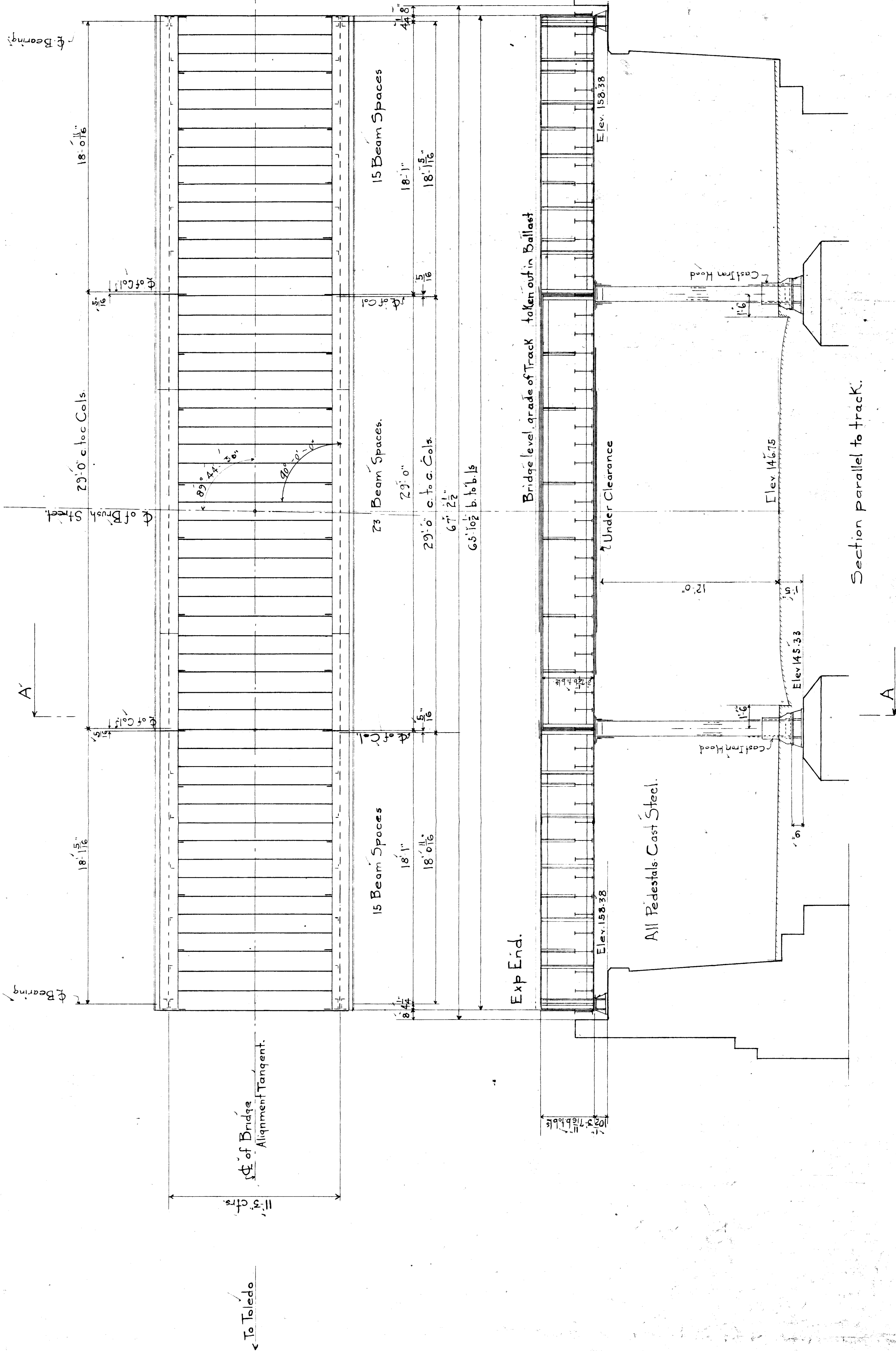
Checked by [Signature]

Chief Engineer [Signature]









Floor Beams 15' c to c. about. Designed for 15,000# per lin. ft. single track L.L. D.L.

Moment	D.L.	9400'
	L.L.	26500'
	Imp.	26500'
Total		62400'
Sec. Mod. Req.		466
Shear	D.L.	3350'
	L.L.	9475'
	Imp.	9475'
Total		22300'

Main Girders 29'0" c to c. Designed for 50 L.L. End Rivet Pitch 24" 5800# per lin. ft. D.L.

Moment	D.L.	305000#
	L.L.	485000'
	Imp.	443000'
Total		1233000#
Shear	D.L.	42000#
	L.L.	71000'
	Imp.	70500'
Total		183000#

11x16" Full Length Top Flg  
 1-Pl-14x16 22" Bottom  
 1-Pl-14x16x16 3" Top Butt.  
 2-15-6x6x3/4 Each Flg  
 43x8" Web without Stiff

Side Walk Girders 18'1" c to c. Designed for 50 L.L. End Rivet Pitch 24" 5700# per lin. ft. D.L.

Moment	D.L.	116500#
	L.L.	212500'
	Imp.	200250'
Total		529000#
Shear	D.L.	28800#
	L.L.	58400'
	Imp.	58400'
Total		130200#

11-8x6x3/8 } Top Flg.  
 11-6x6x3/8 } Bottom  
 43x8" Web Pl

Specifications - New York Central Lines - Steel Railroad Bridges 1916.  
 Rivets 1" except where noted.  
 Erection by L. S. & M. S. Ry.  
 Add 1/2 pound of lamp black to each gallon of shop paint  
 Unit Stresses used 16000# for tension  
 11000# for shear

Section A-A.  
 Set Beams parallel with Street.





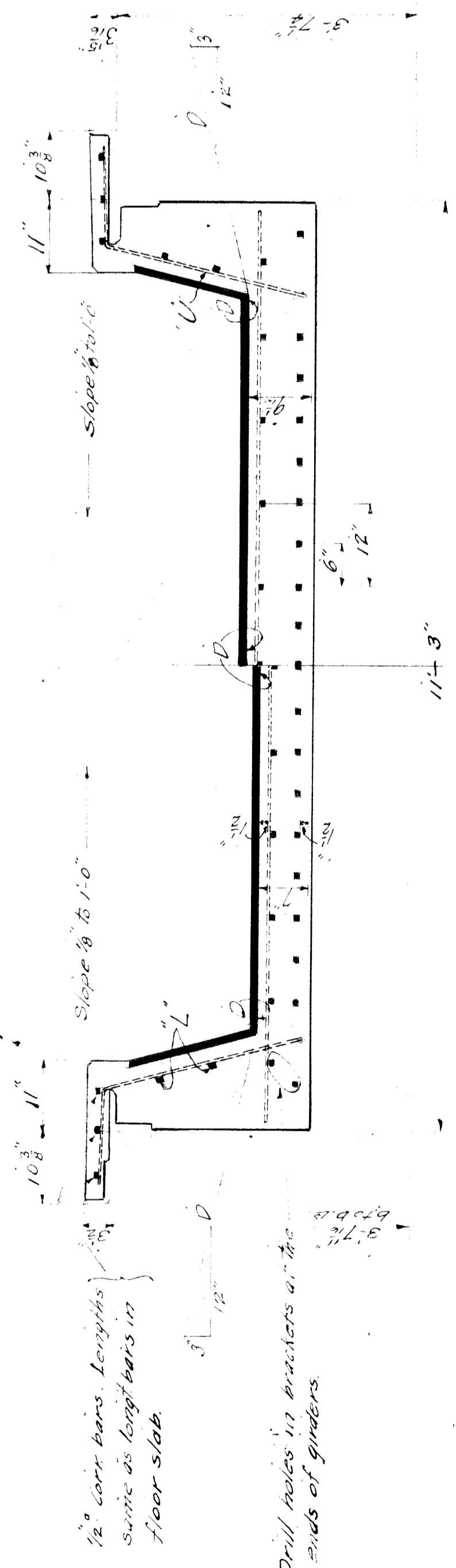


Note.

Chamfer all exposed edges.  
 Fasten upright bars  $4 \times 6 \text{ L}$ .  
 Floor slab below line D-D must be completed in one continuous operation. Whenever a part of the concreting is finished and allowed to stand for any length of time, on joining with new concrete the joint must be thoroughly cleaned of all broken concrete, and then thoroughly wetted and slushed with rich cement mortar, before proceeding with new concreting.

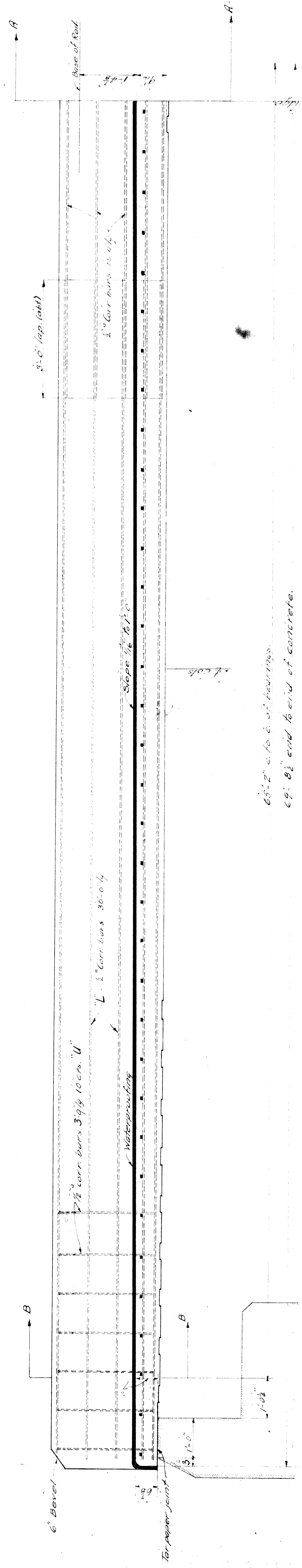
Bill of Material (1 Track)

- Concrete.  
 92 cu yds concrete 1:2:4 mix.  
 80 bbls cement  
 14 cu yds sand  
 28 " crushed stone. (18)  
 Waterproofing.  
 Steel Bars.  
 80 -  $\frac{1}{2}$ " corr bars 30'-0" long  
 40 -  $\frac{1}{2}$ " " " 15'-0" "  
 69 -  $\frac{1}{2}$ " " " 7'-6" (Truss)  
 168 -  $\frac{1}{2}$ " " " 3'-9" (Upright)  
 These bars can be cut from 138-30' pcs.



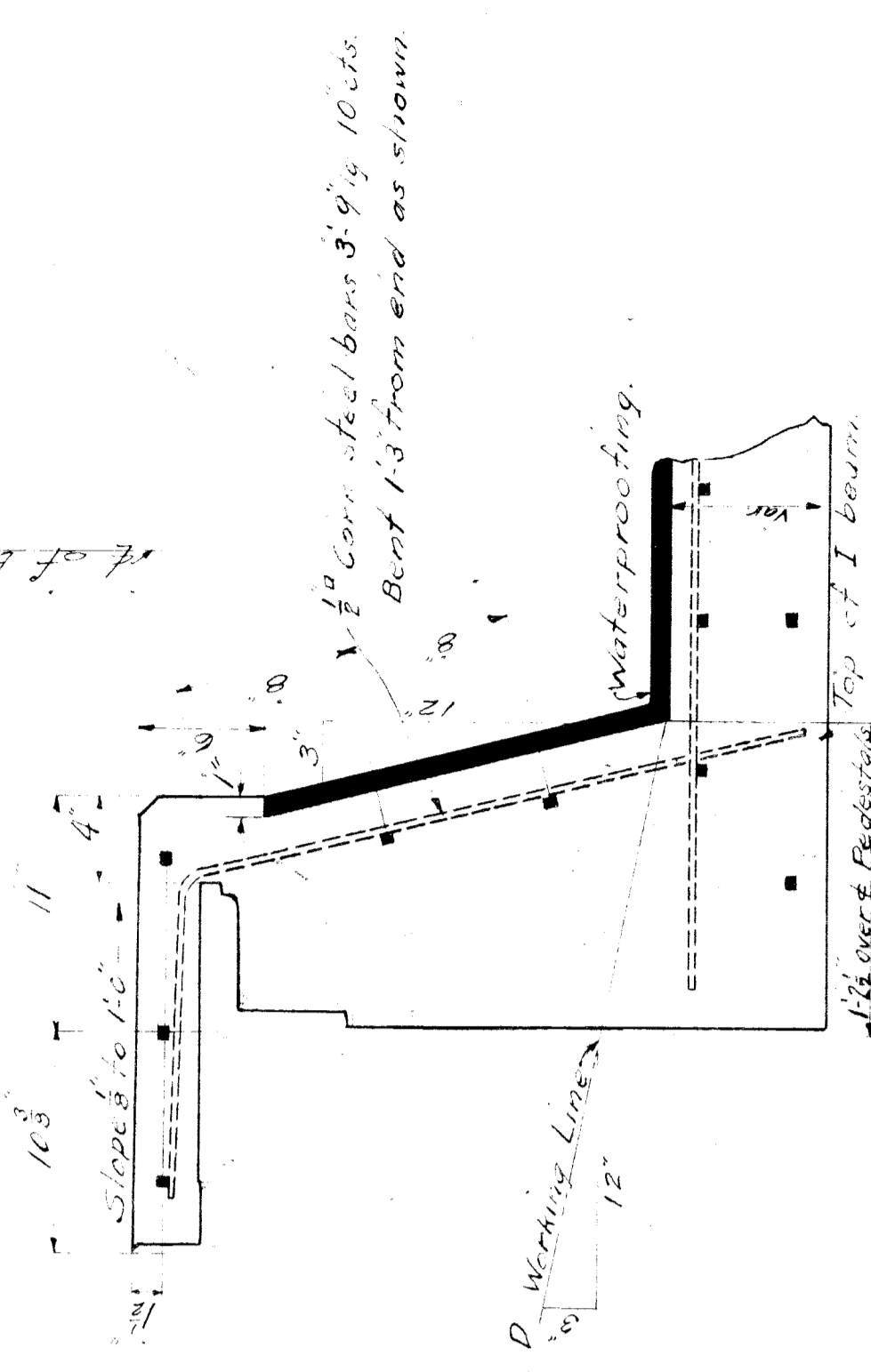
Enlarged Section A-A.

Enlarged Section B-B.

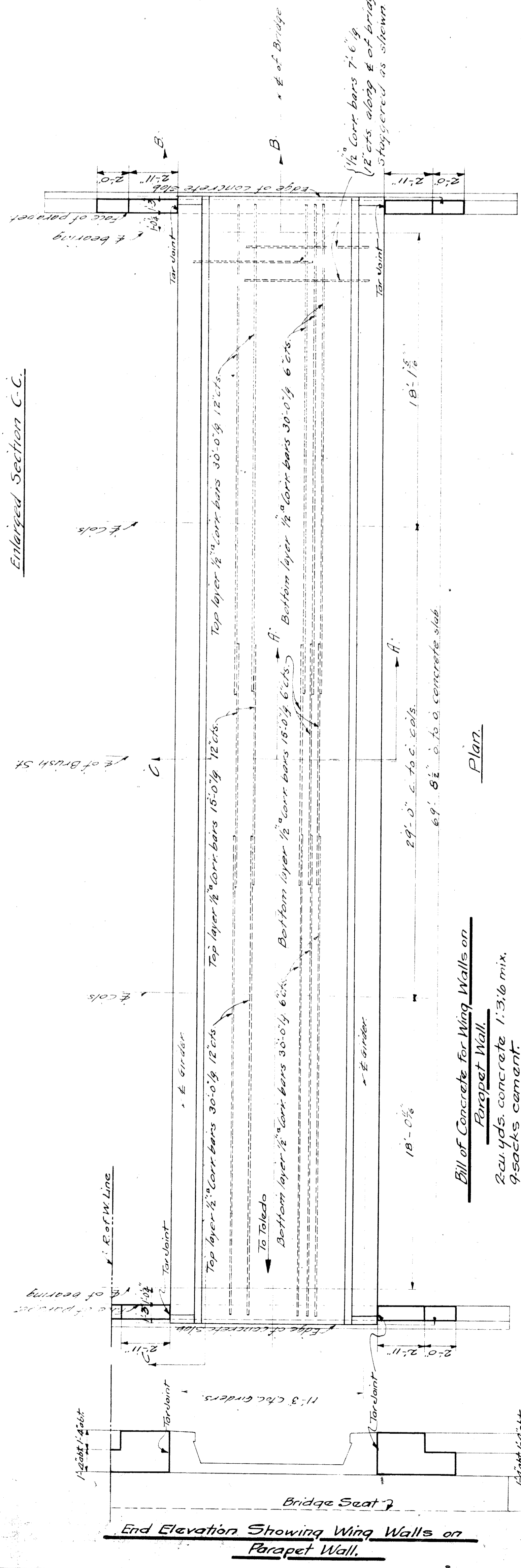


Enlarged Section C-C.

Enlarged Section D-D.



Part Section Showing Flange Reinforcement.



Plan.

Bill of Concrete for Wing Walls on Parapet Wall.  
 2 cu yds concrete 1:3:6 mix.  
 9 sacks cement.  
 1 cu yd. sand.  
 2 cu yds. stone.

L.S. & M.S. Ry.	Bridge Dept. S. Reckwell, C.E.
Bridge No.	Over Brush Street
Sheet No.	Detroit, Mich.
Scale:	1/2" = 1'-0"
Drawn:	B. H. A. A. B.