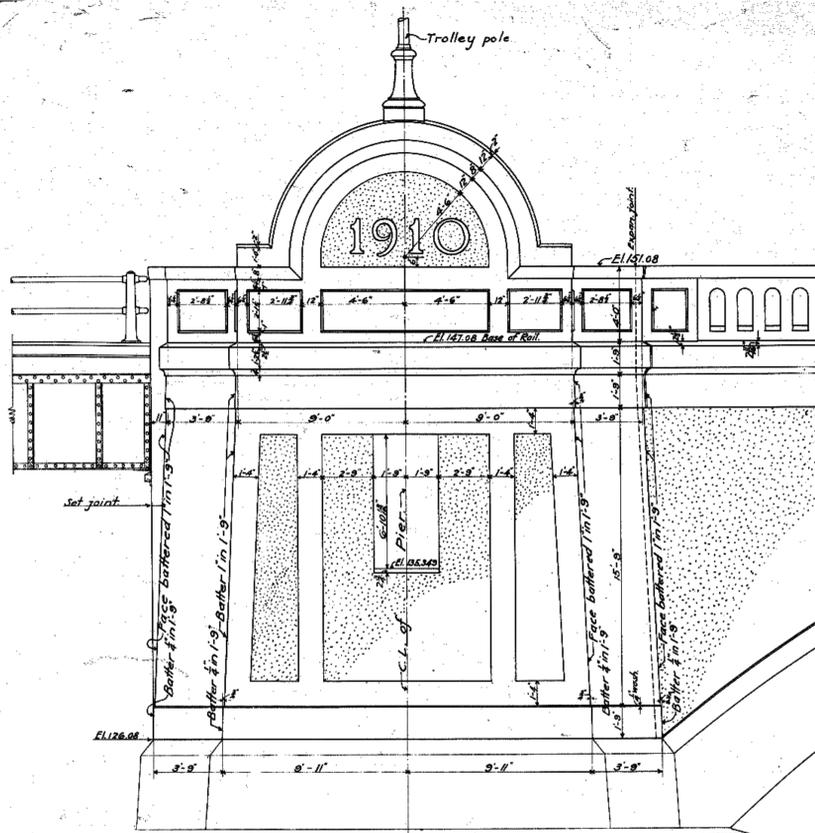


**BOSTON ELEVATED RAILWAY**  
 — ELEVATED CONSTRUCTION —  
**EAST CAMBRIDGE EXTENSION**  
**CHARLES RIVER BRIDGE**  
**DETAILS OF SUPERSTRUCTURE PIER No. 1.**

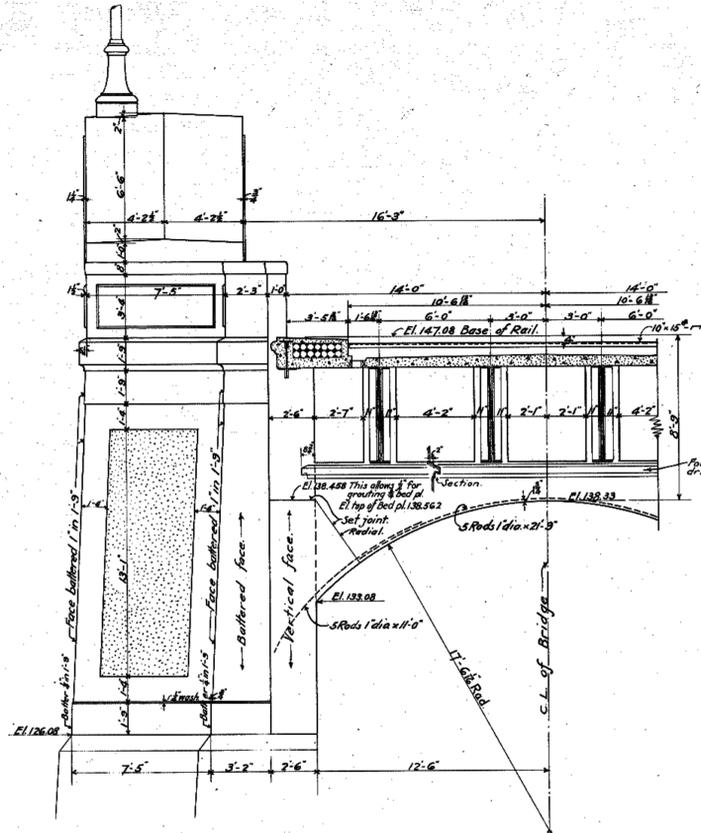
Scale  $\frac{1}{4}'' = 1'-0''$  Dec. 1910.

Desig. Engineer *J. A. Womack*  
 Correct. *C. J. Russell*  
 Asst. Engineer

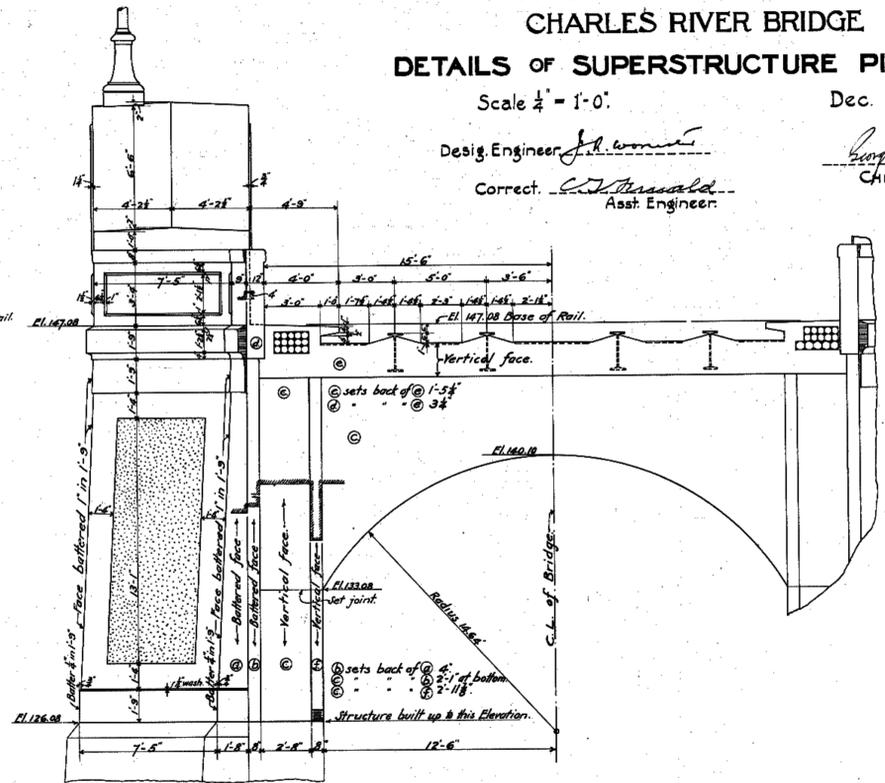
*George A. Kimball*  
 CHIEF ENGINEER.



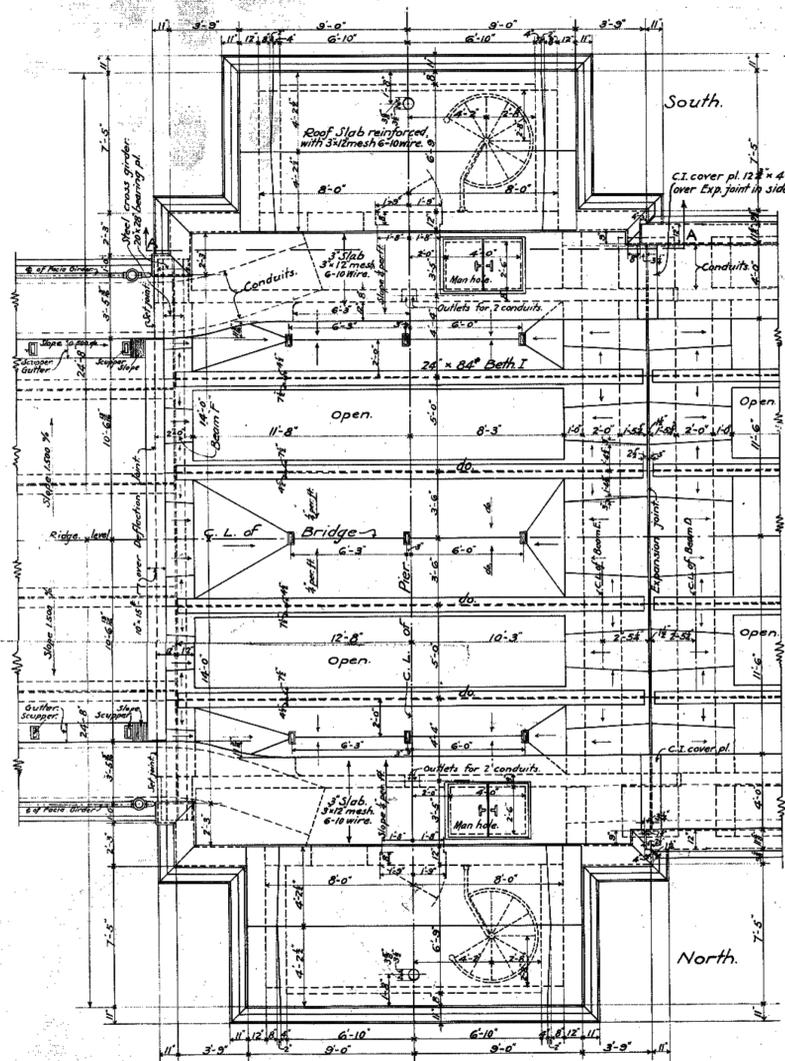
**NORTH ELEVATION.**  
**SOUTH ELEVATION THE REVERSE.**



**EAST ELEVATION.**

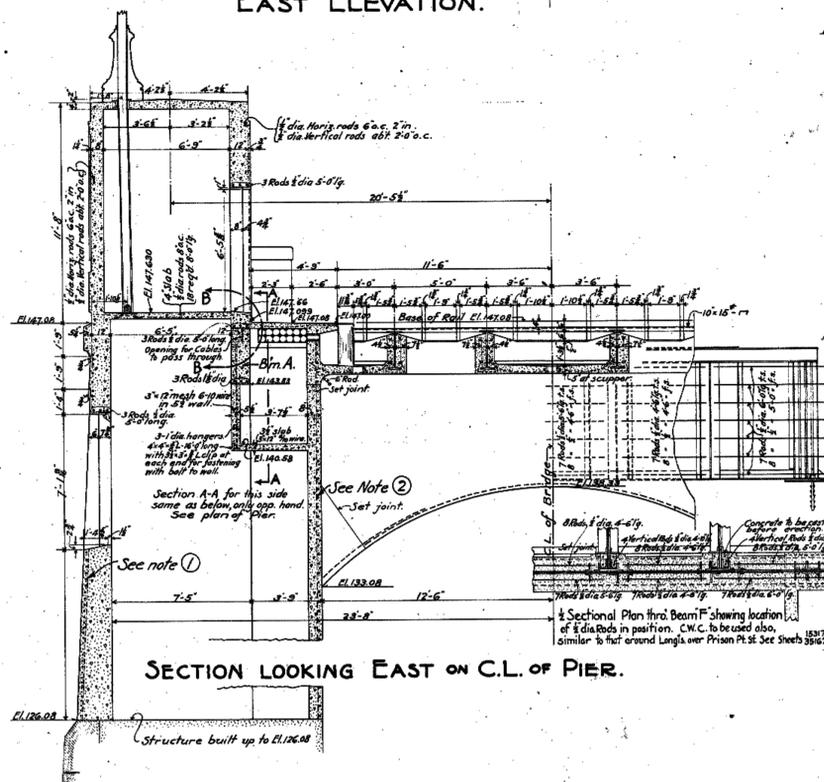


**WEST ELEVATION.**

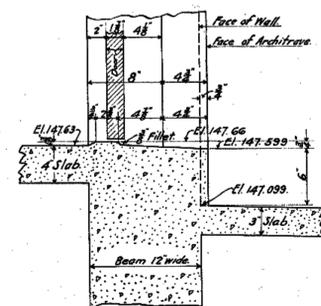


**PLAN.**

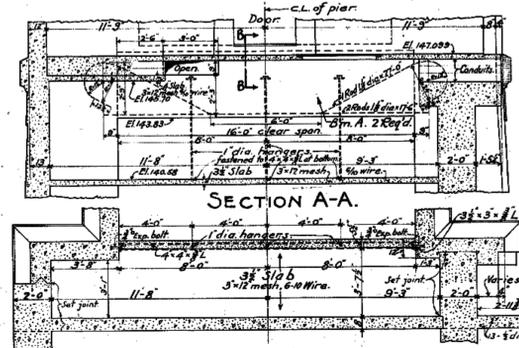
**Note:**  
 ① Reinforcement of Battering Walls to be  $\frac{1}{2}$  dia Rods 6' o.c. at top, varying to 3' o.c. at bottom, running horizontally 2' from outer face, or the equivalent in Clinton Wire Cloth. Horizontal rods to be bent around corners to give full continuous reinforcement. Where splices occur rods shall lap at least 2'-0".  
 ② Reinforcement of Interior walls to be  $\frac{1}{2}$  dia Rods 6' o.c. running horizontally. Vertical spacers to be tee irons punched for horizontal rods to pass through.



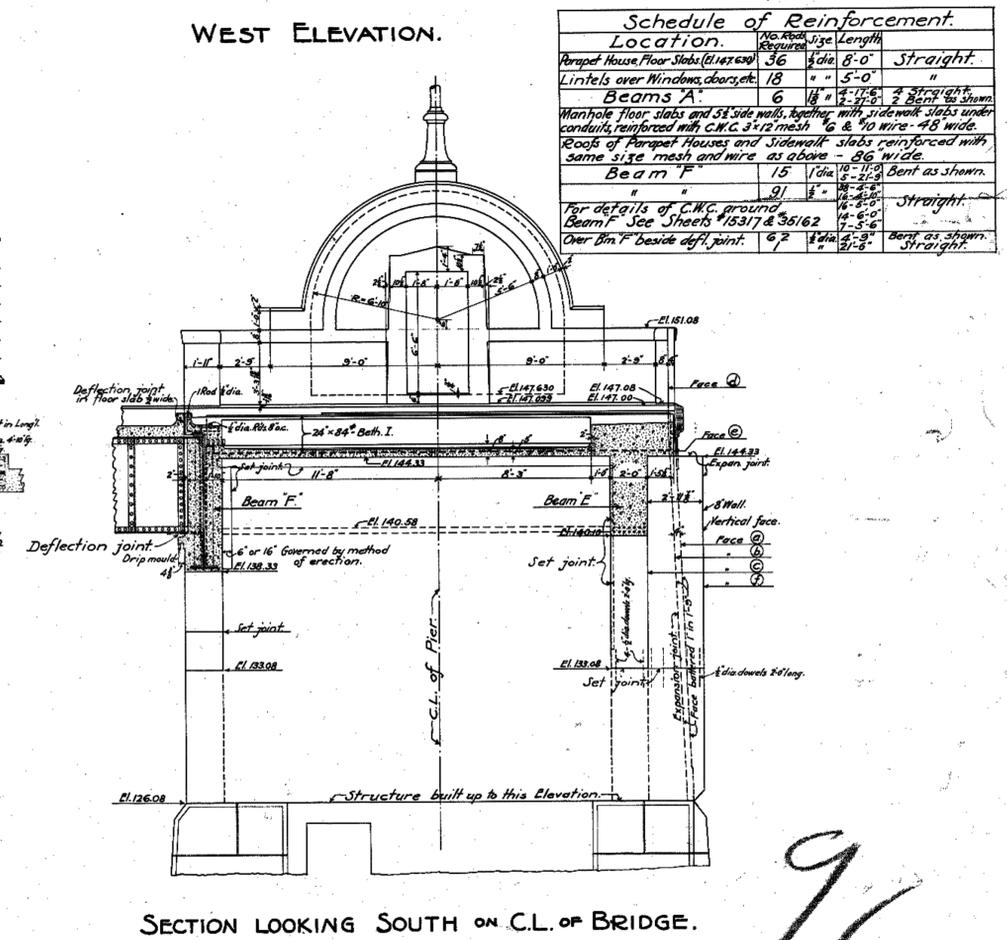
**SECTION A-A LOOKING EAST ON C.L. OF PIER.**



**SECTION AT B-B.**  
 Scale  $\frac{1}{2}'' = 1'-0''$ .



**SECTIONAL PLAN OF HANGING FLOOR.**



**SECTION LOOKING SOUTH ON C.L. OF BRIDGE.**

**Note:** This Pier is symmetrical about the  $\perp$  of Bridge.

| Schedule of Reinforcement.   |                   |                   |                                |
|--|-------------------|-------------------|--------------------------------|
| Location.  | No. Rods Required | Size              | Length                         |
| Parapet House Floor Slabs (El. 147.500)  | 36                | $\frac{3}{4}$ dia | 8'-0" Straight.                |
| Lintels over Windows, doors, etc.  | 18                | " "               | 5'-0" "                        |
| Beams A  | 6                 | $\frac{1}{2}$ "   | 4'-11-6" Bent as shown.        |
| Man-hole Floor Slabs and Sidewalks, together with sidewalk slabs under conduits, reinforced with C.W.C. 3" x 2" mesh, $\frac{1}{2}$ " & 40 wire - #8 wide. |                   |                   |                                |
| Roofs of Parapet Houses and Sidewalk Slabs reinforced with same size mesh and wire as above - #8 wide.   |                   |                   |                                |
| Beam F   | 15                | $\frac{1}{2}$ "   | 10'-11-9" Bent as shown.       |
|  | 91                | $\frac{1}{2}$ "   | 14'-6-0" Straight.             |
| For details of C.W.C. around Beam F See Sheets #15317 & 15162  |                   |                   |                                |
| Over Bm F beside defl. joint.  | 62                | $\frac{3}{4}$ dia | 2'-6" Bent as shown. Straight. |

96



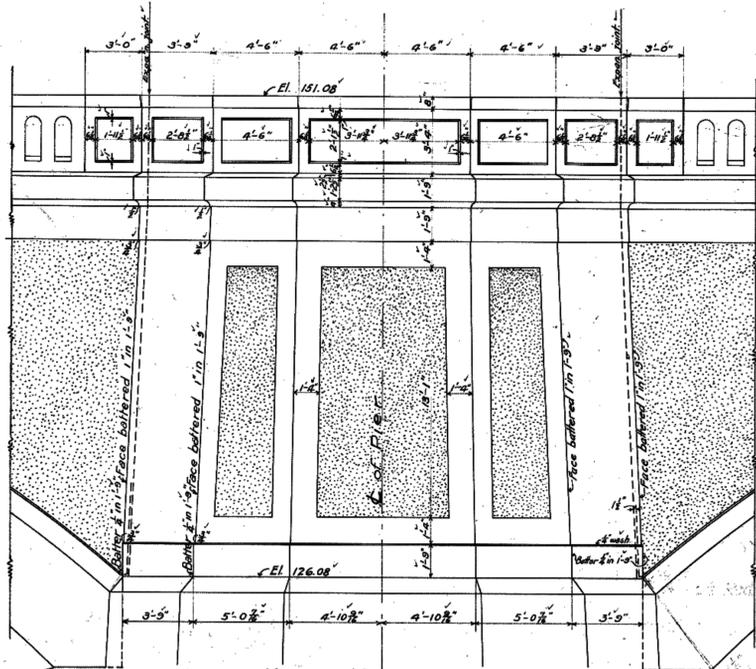
BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 DETAILS OF SUPERSTRUCTURE PIERS NO 9 & 10.

Scale  $\frac{1}{4} = 1-0$ .

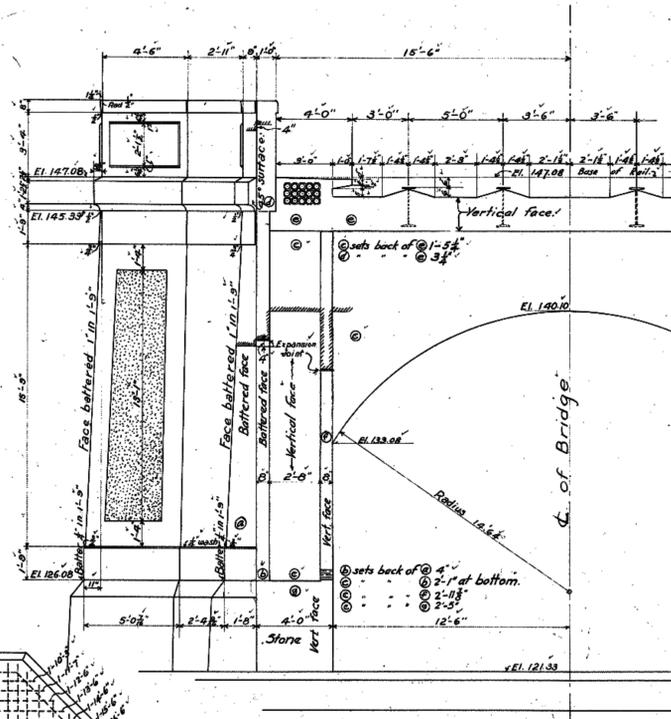
July 20, 1910.

Desig. Engineer: *J. W. ...*  
 Correct: *C. ...*  
 Asst. Engineer.

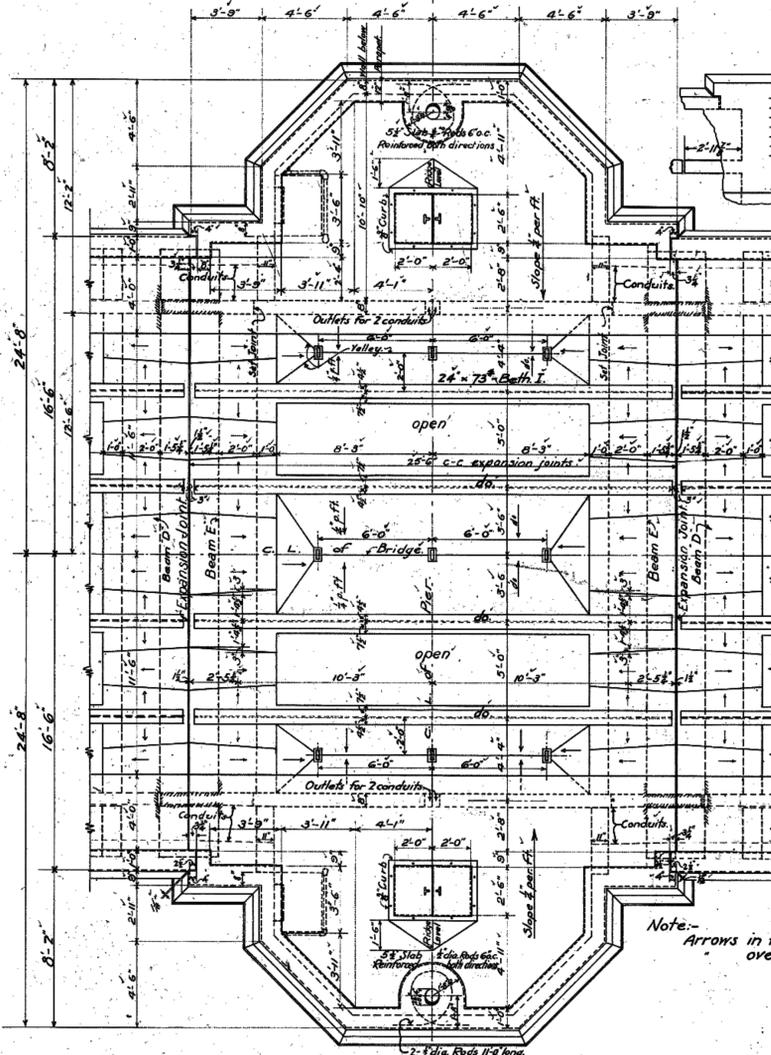
*George A. Newball*  
 CHIEF ENGINEER.



NORTH ELEVATION.  
 SOUTH ELEVATION THE SAME.



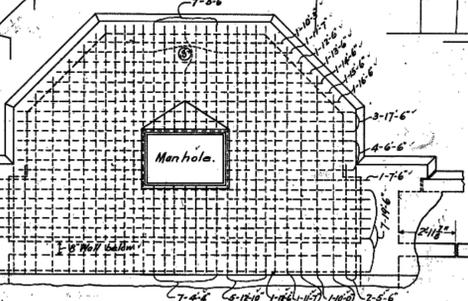
EAST ELEVATION.  
 WEST ELEVATION THE SAME.



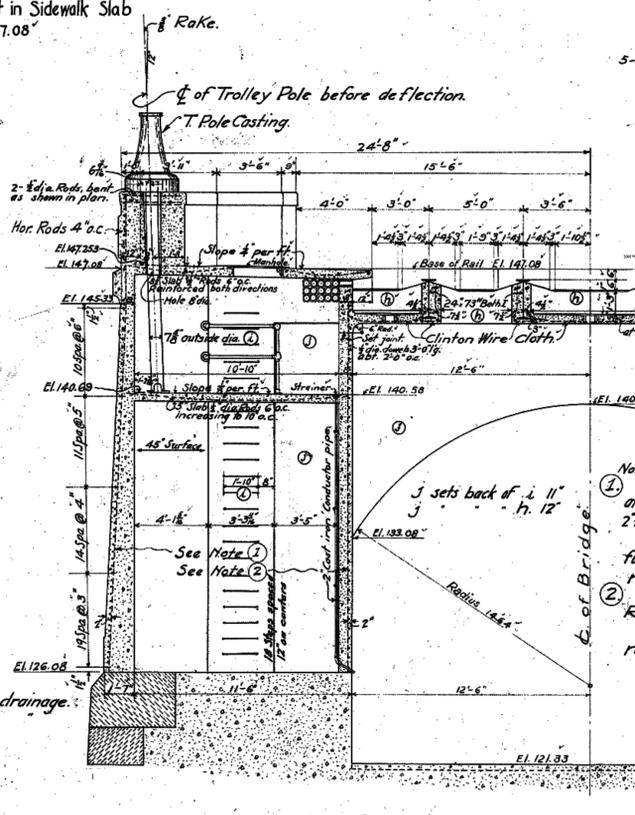
PLAN.

Note: Arrows in floor panels indicate slope for drainage over beams.

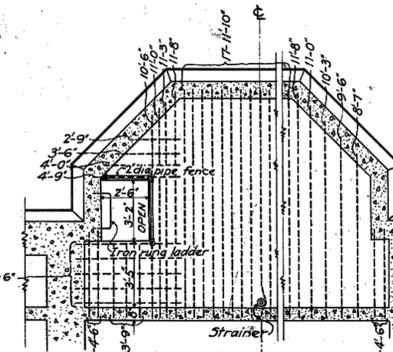
Note: This Pier is symmetrical about  $\perp$  of Bridge.



Plan showing Reinforcement in Sidewalk Slab over Pier at abt. El. 147.08

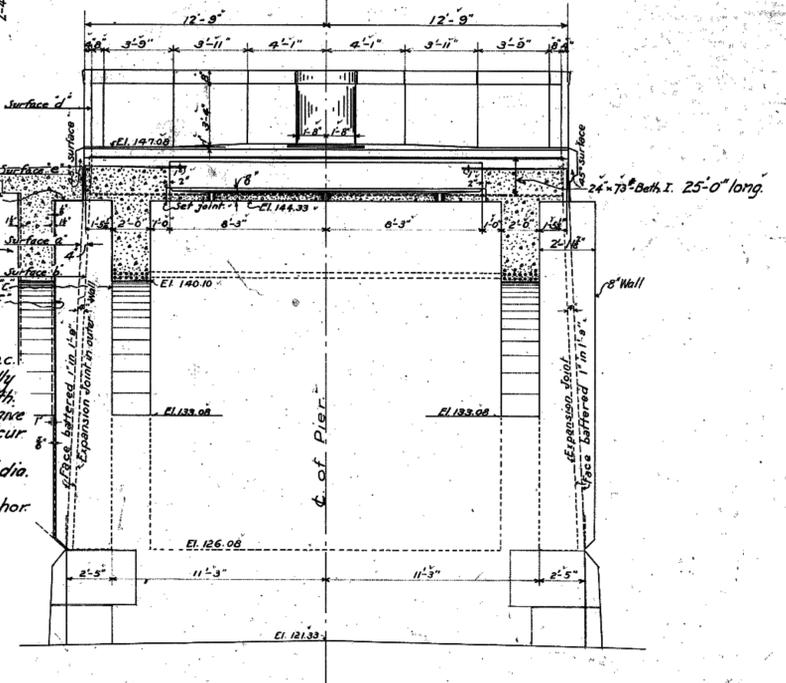


SECTION ON  $\perp$  OF PIER.



Section at abt. El. 140.69 showing Reinforcement in Floor Slab.

| Schedule of Reinforcement for each Pier.                                   |                   |                    |         |                                   |
|--|-------------------|--------------------|---------|-----------------------------------|
| Location   | No. Rods Required | Size               | Length  | Shape                             |
| In Sidewalk at abt. El. 147.08   | 14                | $\frac{1}{2}$ dia. | 4'-4"   | Straight                          |
|  | 22                | "                  | 5'-6"   | "                                 |
|  | 16                | "                  | 6'-6"   | "                                 |
|  | 4                 | "                  | 7'-6"   | "                                 |
|  | 4                 | "                  | 9'-3"   | "                                 |
|  | 4                 | "                  | 10'-0"  | "                                 |
|  | 2                 | "                  | 10'-3"  | "                                 |
|  | 4                 | "                  | 11'-0"  | "                                 |
|  | 4                 | "                  | 11'-0"  | Bent as shown in top of pedestal. |
|  | 6                 | "                  | 11'-7"  | Straight                          |
|  | 6                 | "                  | 12'-6"  | "                                 |
|  | 20                | "                  | 12'-10" | "                                 |
|  | 2                 | "                  | 13'-6"  | "                                 |
|  | 2                 | "                  | 14'-6"  | "                                 |
| 2  | "                 | 15'-6"             | "       |                                   |
| In floor at El. 140.69   | 38                | "                  | 11'-10" | Straight                          |
|  | 4                 | "                  | 11'-0"  | "                                 |
|  | 4                 | "                  | 10'-3"  | "                                 |
|  | 4                 | "                  | 9'-6"   | "                                 |
|  | 4                 | "                  | 8'-9"   | "                                 |
|  | 4                 | "                  | 8'-0"   | "                                 |
| For Reinforcement of Vertical Walls see Notes (1) & (2) below.             |                   |                    |         |                                   |
| For Reinforcement of Beams E see Plan No 15310.                            |                   |                    |         |                                   |
| For Clinton Wire Cloth in Floor Panels & around Stringers See Sheet #15311 |                   |                    |         |                                   |
| Along I Bm. Stringers  | 28                | $\frac{1}{2}$ dia. | 17'-0"  | Straight.                         |



SECTION ON  $\perp$  OF BRIDGE.

Note: Reinforcement of Bastion Walls to be  $\frac{1}{2}$  dia. Rods 6" o.c. at top, varying to 3" o.c. at bottom, running horizontally 2' from outer face, or the equivalent in Clinton wire cloth. Horizontal Rods to be bent around corners to give full continuous reinforcement. Where splices occur rods shall lap at least 2'-0".  
 Reinforcement of 8" Interior Walls to be  $\frac{1}{2}$  dia. Rods 6" o.c. running horizontally. Vertical Spacers to be Tee Irons punched for hor rods to pass through.

BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 DETAILS OF SUPERSTRUCTURE PIER No 13

Scale  $\frac{1}{4} = 1'-0"$

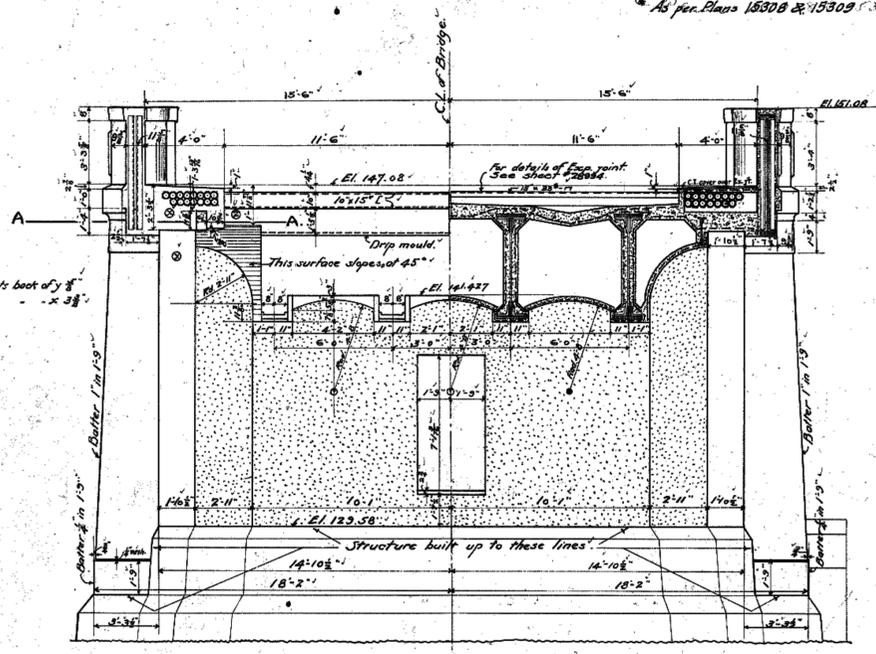
June 28 1910.

Desig. Engineer. *J. L. ...*

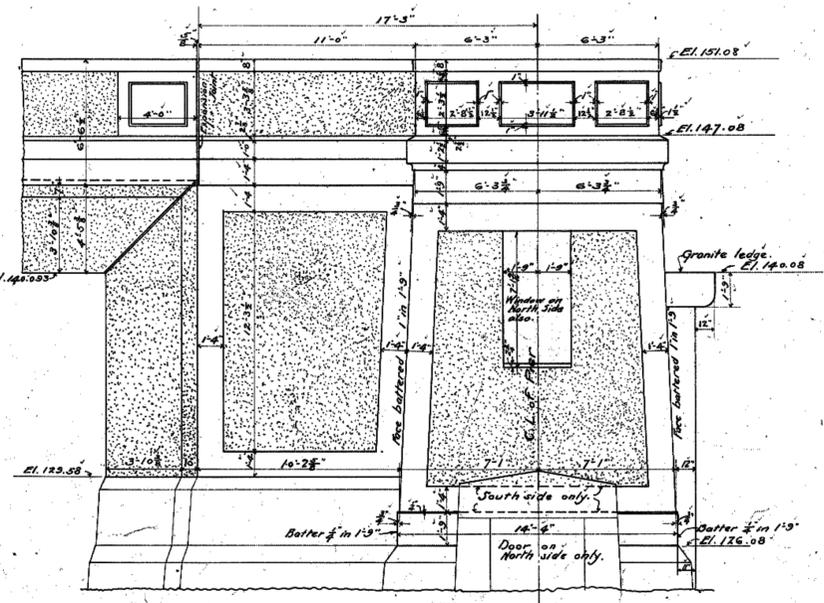
*George A. ...*  
 CHIEF ENGINEER.

Correct. *W. H. ...*  
 Asst. Engineer.

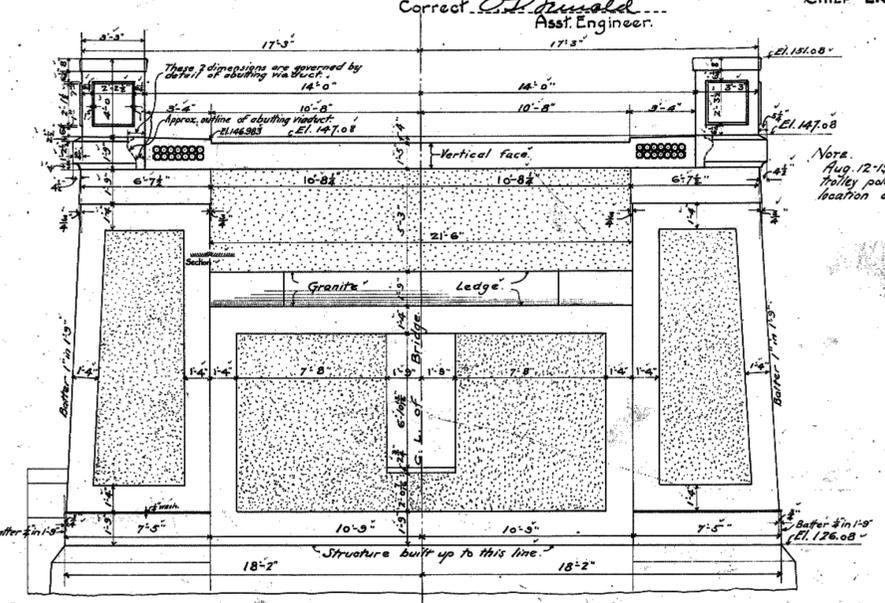
| Schedule of Reinforcement.   |                    |                    |   |
|--|--------------------|--------------------|---|
| Location.  | No. Rods Required. | Size.              | Length.   |
| Main Floor Slab, Wall to Wall.   | 13                 | $\frac{3}{4}$ dia. | 28'-0" Bent as Shown.   |
| " " " Curb to Curb.  | 17                 | "                  | " " " " " " " "   |
| " " " Over Bm T.   | 35                 | "                  | " " " " " " " "   |
| " " " West Wall.   | 33                 | "                  | " " " " " " " "   |
| In Manhole Floor Slabs El. 142.67  | 42                 | "                  | 8'-0" Straight.   |
| " Sidewalks around Manholes.   | 28                 | "                  | Variable See Plans.   |
| " Brs between stringers & Sidewalks.   | 4                  | "                  | " " " " " " " "   |
| " Lintels over Windows.  | 14                 | "                  | " " " " " " " "   |
| " Lintel - Door.   | 4                  | $\frac{3}{4}$ dia. | 8'-6" See Sheet #28916.   |
| " Beams along Curb.  | 4                  | 1 dia.             | 11'-6" See Wire Cloth Schedule (includes also wrapping for Gdr. C.B. & Parapet Trusses C.P.M. & C.P.E.) |
| Sidewalks over Conduits reinforced with 3-12 mesh $\frac{3}{8}$ @ 9" wire for Reinforcement of Beam T & of Stringers under rails see separate details. |                    |                    |   |
| As per Plans 18308 & 15309 1/30/7  |                    |                    |   |



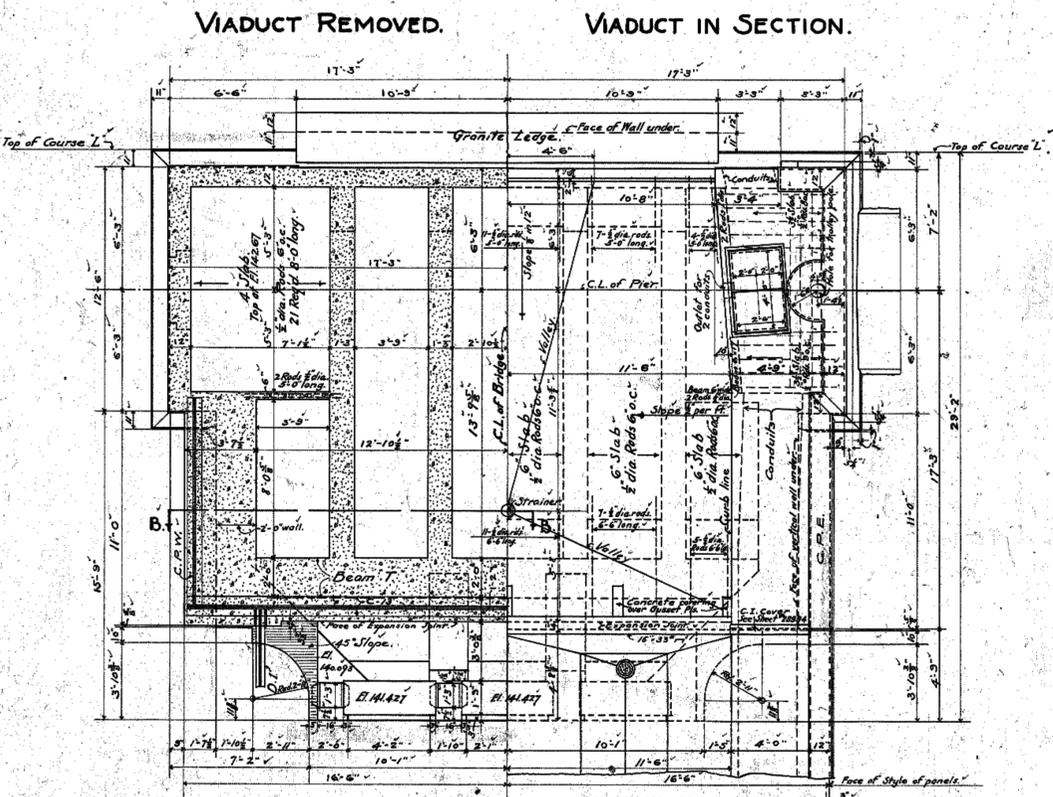
EAST ELEVATION.



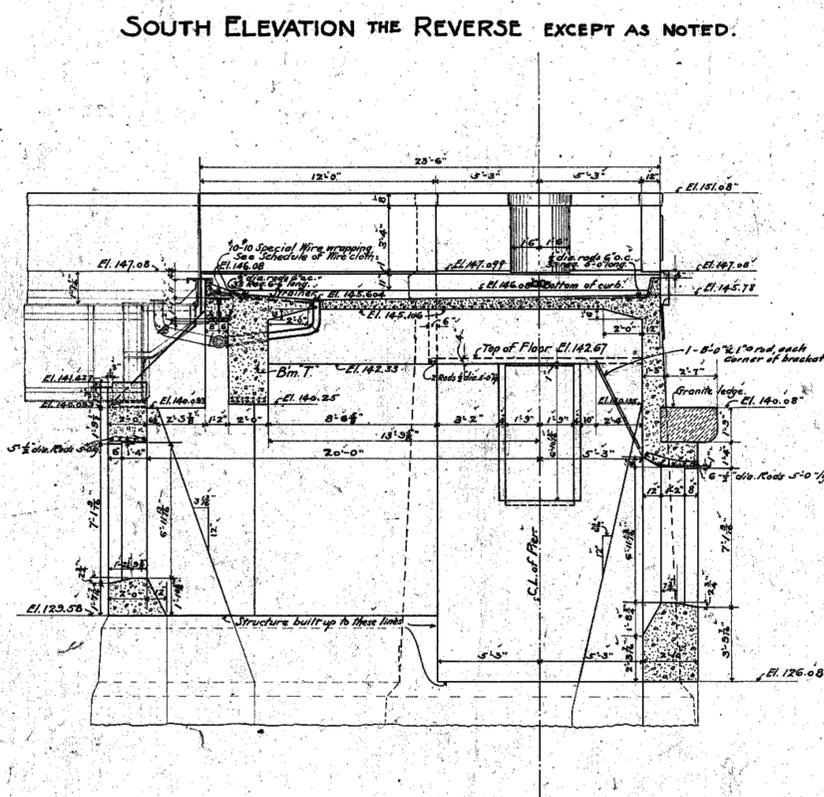
NORTH ELEVATION.



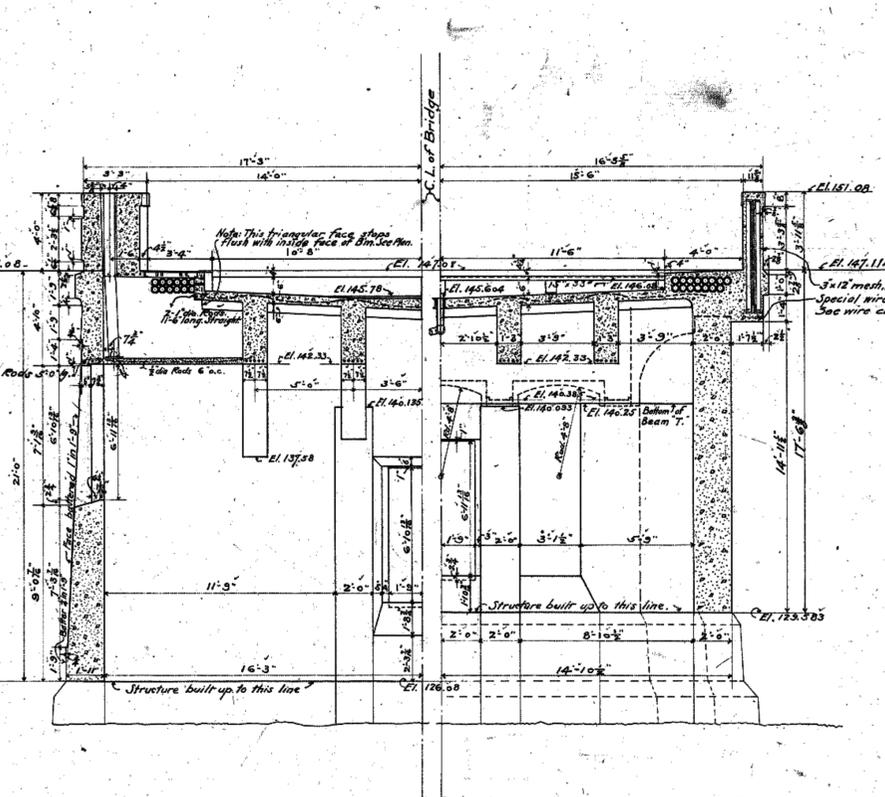
WEST ELEVATION.



SECTIONAL PLAN ON LINE A-A



SECTION ON C OF BRIDGE LOOKING SOUTH.



SECTION ON C OF PIER LOOKING WEST.

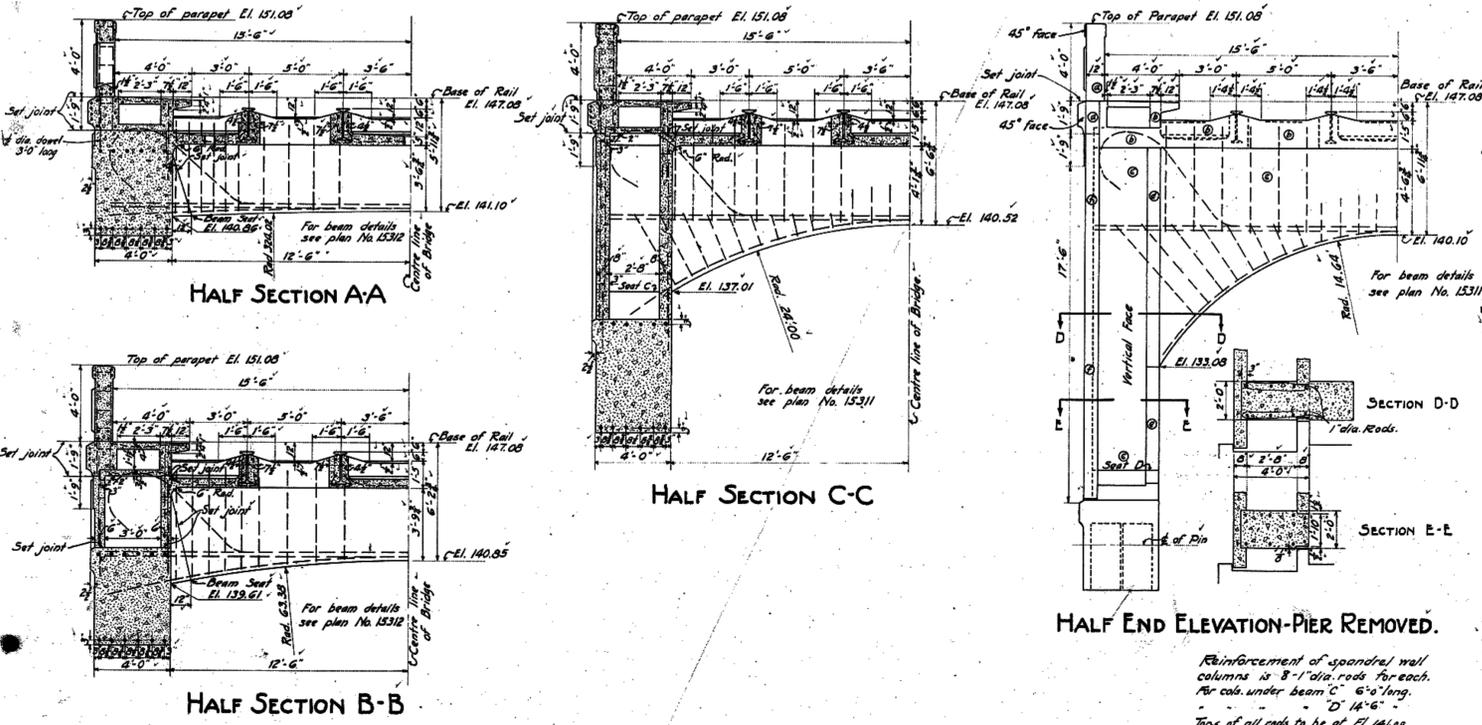
SECTION ON LINE B-B LOOKING EAST.

Note:- This pier is symmetrical about C of bridge except as noted on North Elevation.

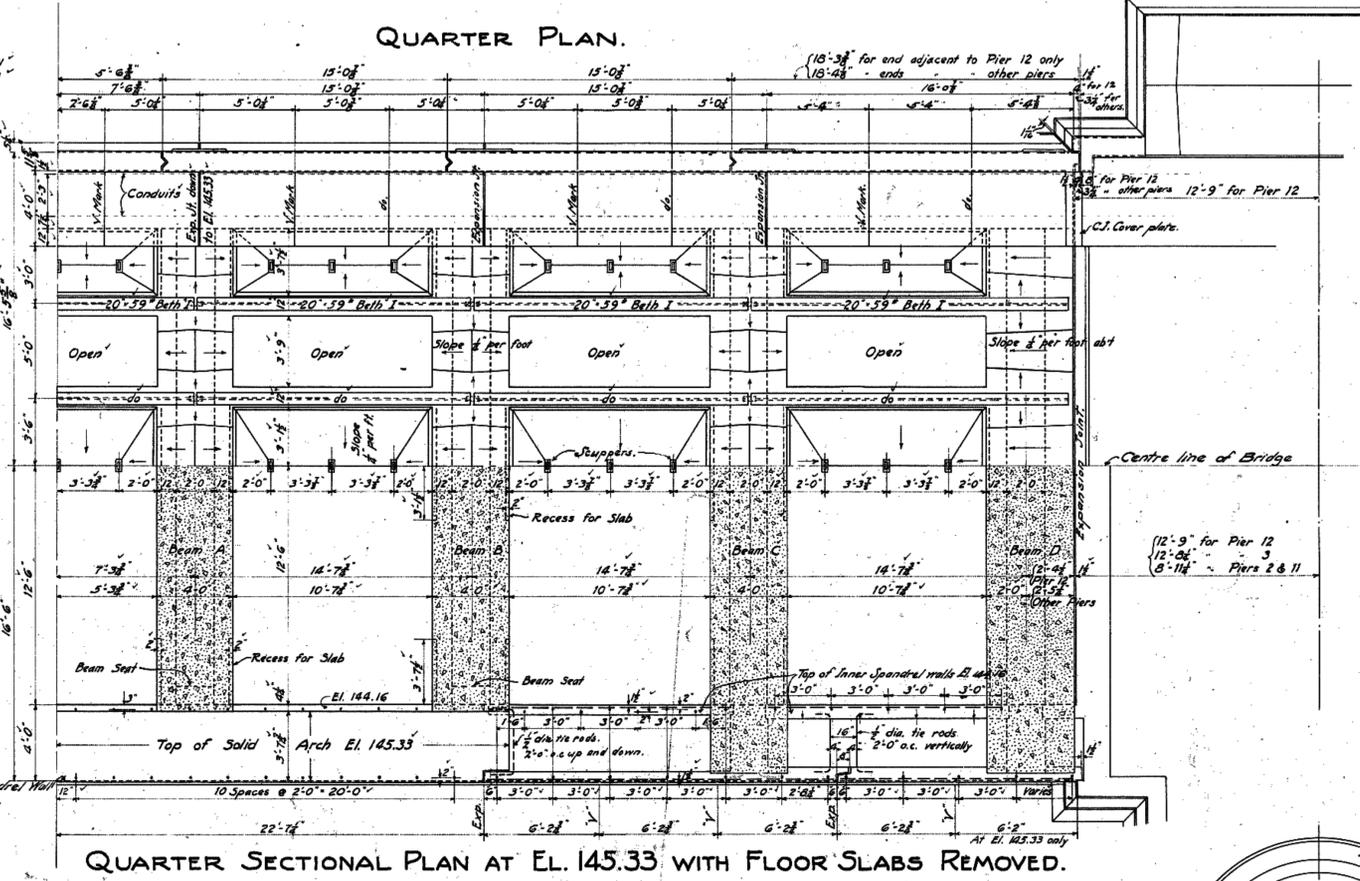
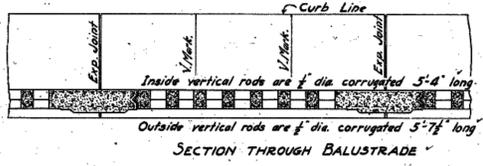
BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 DETAILS OF ARCHES Nos 1-2-10 AND 11

Scale  $\frac{1}{4}'' = 1'-0''$  Aug. 10 - 1910  
 Desig. Engineer. J. R. W...  
 Correct. C. J. ...  
 Chief Engineer. ...

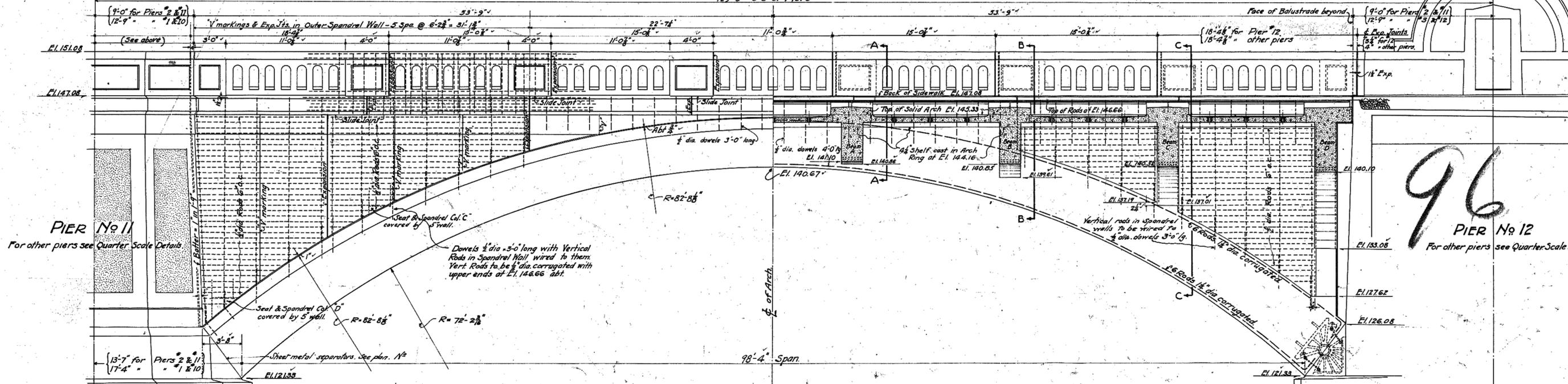
- sets back of ○ 3' adjacent to Piers 1, 2, 3, 10 & 11.
- 1' 6" - Pier 12.
- 4" - Pier 12.
- 1' 0" in all cases.
- is battered. See elevations of various piers.



Note  
 For parapet details  
 see plan No. 15318



Reinforcement of spandrel wall columns is 8" dia. rods for each. For col. under beam "C" 6" dia. rods. Tops of all rods to be at El. 141.00



96  
 PIER No 12  
 For other piers see Quarter Scale Details.

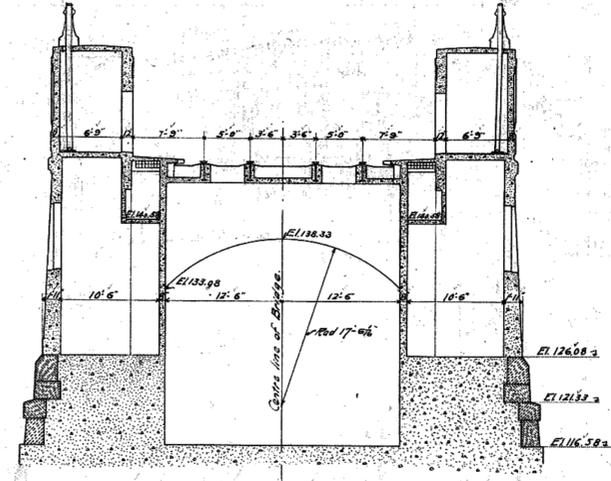




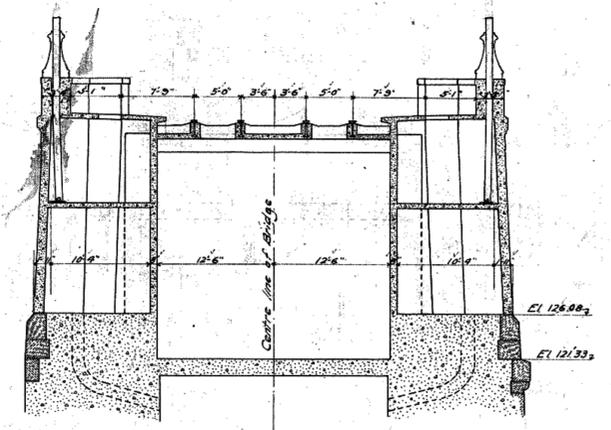
BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 GENERAL DRAWING SPANS NOS 1 AND 2

Scale  $\frac{1}{8}'' = 1'-0''$  Oct. 31 - 1910.

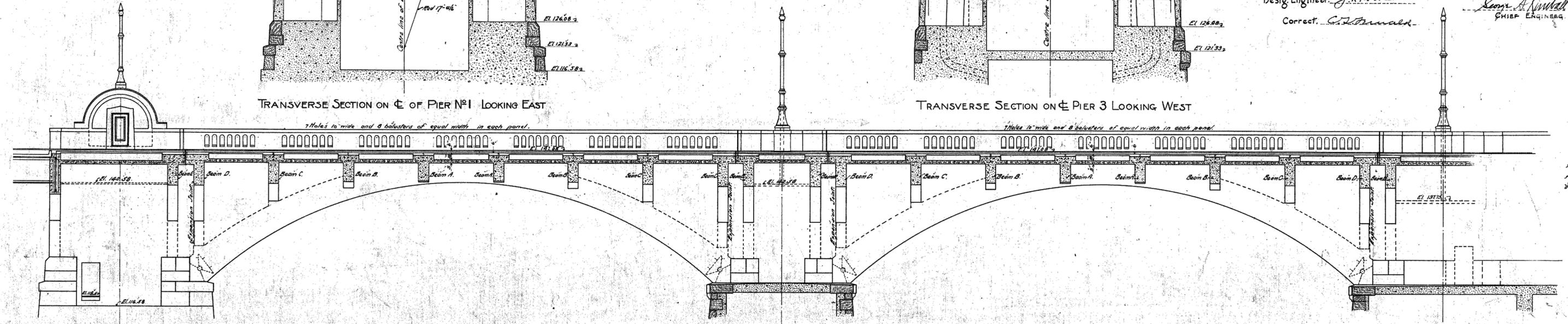
Desig. Engineer: *J.R. Warner*  
 Correct: *C. Sturtevant* *Leon A. Woodhall*  
 CHIEF ENGINEER



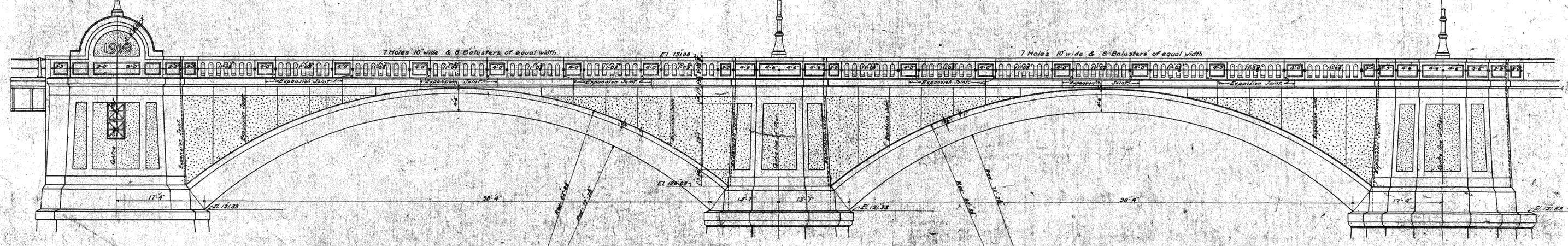
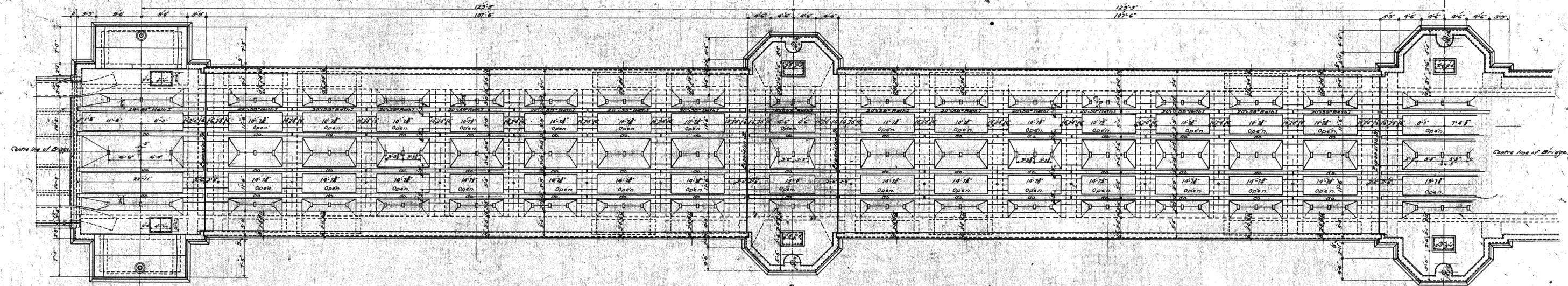
TRANSVERSE SECTION ON C of Pier No 1 Looking East



TRANSVERSE SECTION ON C of Pier 3 Looking West



LONGITUDINAL SECTION ON C of BRIDGE



PIER 1  
Sta. 367 + 6.752

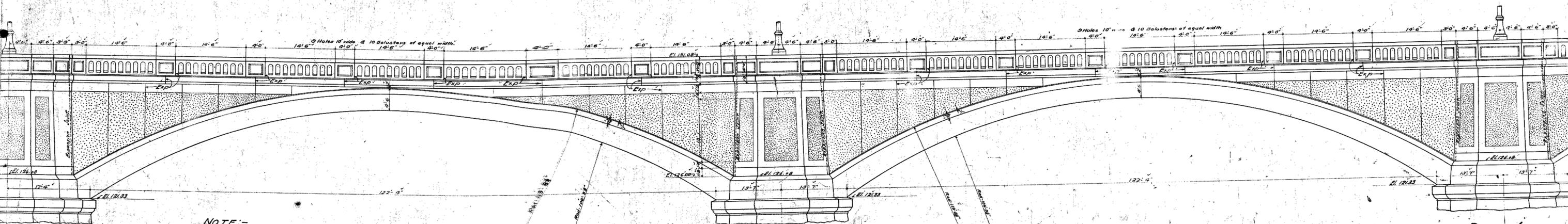
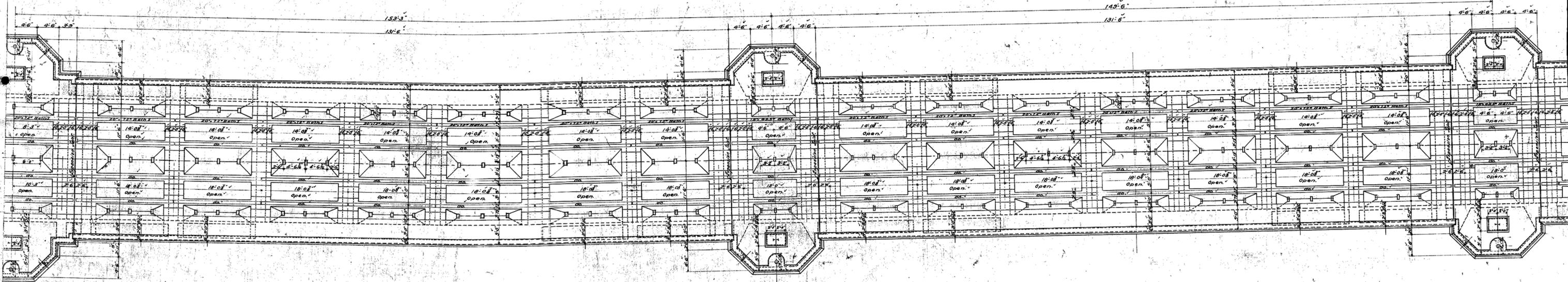
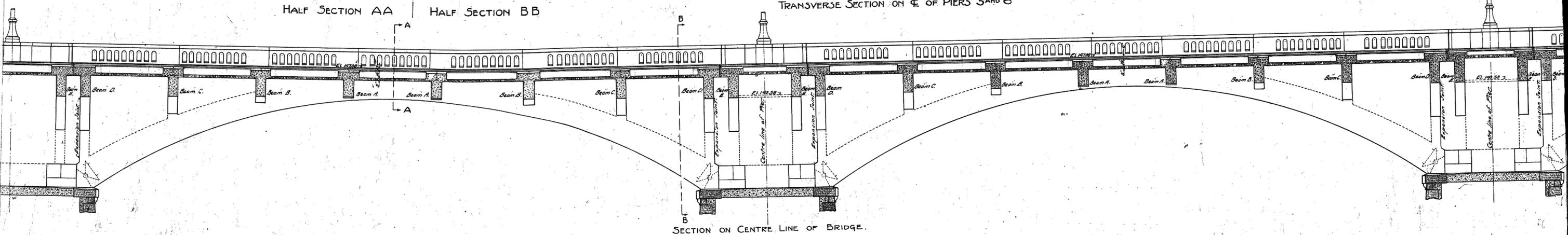
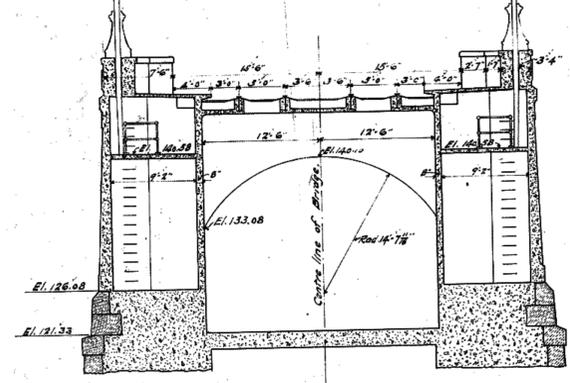
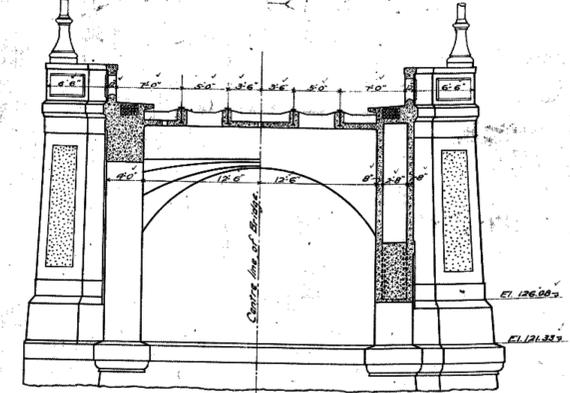
PIER 2  
Sta. 374 + 6.208

PIER 3  
Sta. 381 + 6.752

BOSTON ELEVATED RAILWAY  
 —ELEVATED CONSTRUCTION—  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 GENERAL DRAWING SPANS Nos. 4 AND 5  
 Scale  $\frac{1}{8}'' = 1'-0''$   
 Oct. 31 - 1910.

Desig. Engineer *J. R. Wilson*  
 Correct. *C. J. Small*  
 Asst. Engineer

*Leon A. Kirtland*  
 CHIEF ENGINEER



PIER 4  
 STA. 40+25.458

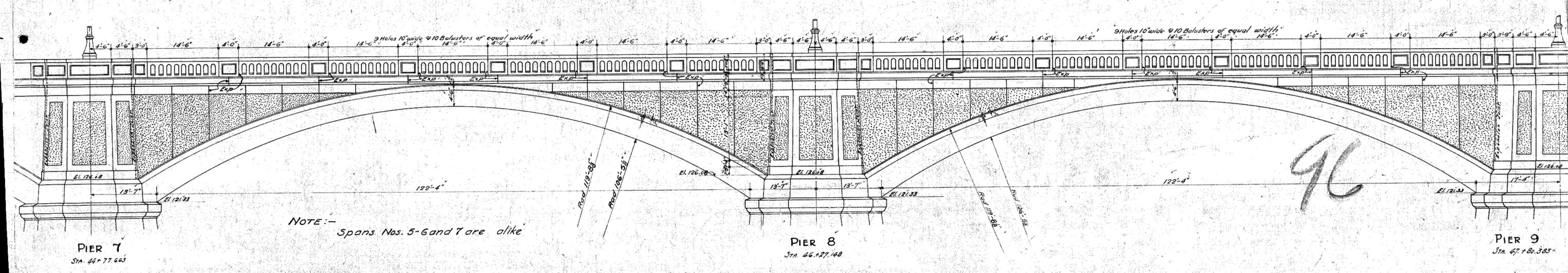
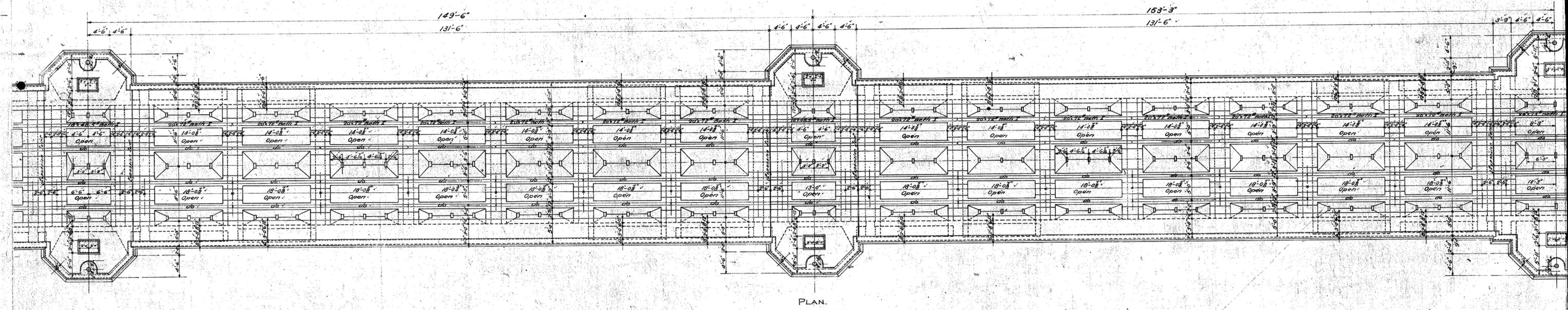
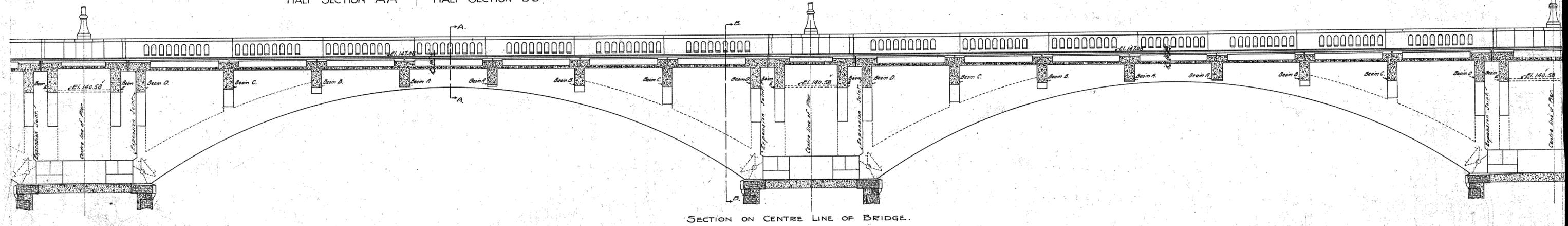
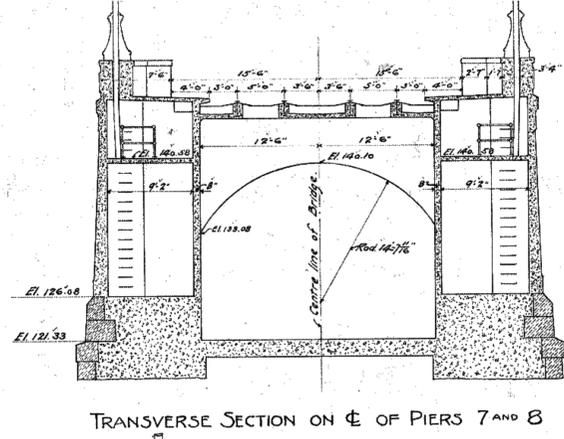
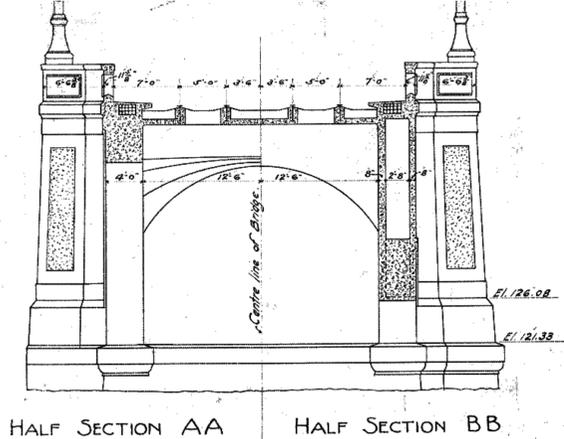
NOTE:-  
 Spans Nos. 5-6 and 7 are alike

PIER 5  
 STA. 41+78.693

PIER 6  
 STA. 43+26.178

BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 GENERAL DRAWING SPANS Nos 7 and 8  
 Scale  $\frac{1}{8}'' = 1'-0''$  Oct. 31 -1910.

Desig Engineer *J. P. ...*  
 Correct *C. J. ...*  
*George A. Kimball*  
 CHIEF ENGINEER

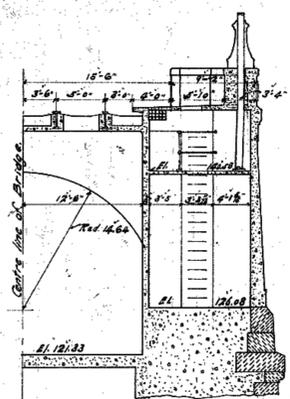


BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 GENERAL DRAWING SPANS Nos. 9 AND 10

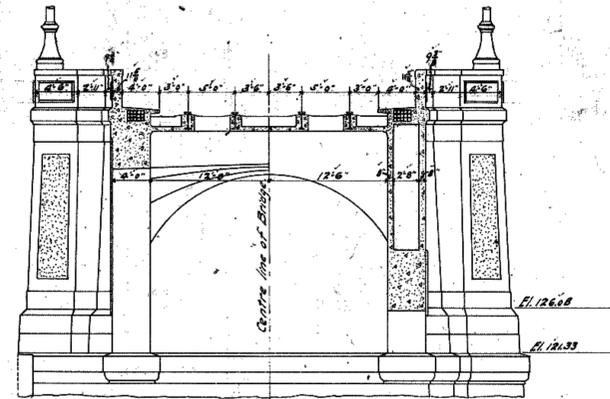
Scale  $\frac{1}{8}'' = 1'-0''$  Oct. 31 - 1910.

Desig Engineer *J. H. ...*  
 Correct *C. P. ...*  
 Asst. Engineer

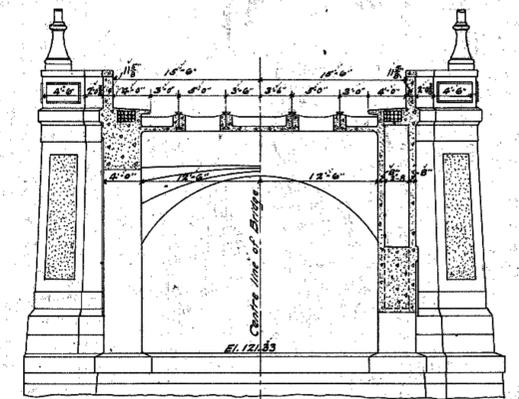
*George A. ...*  
 CHIEF ENGINEER.



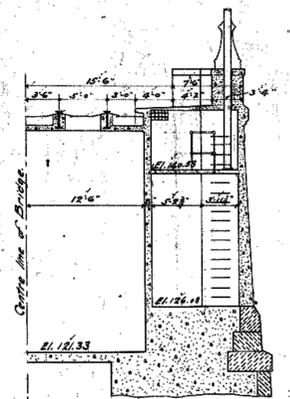
HALF SECTION ON  $\epsilon$  PIER 9



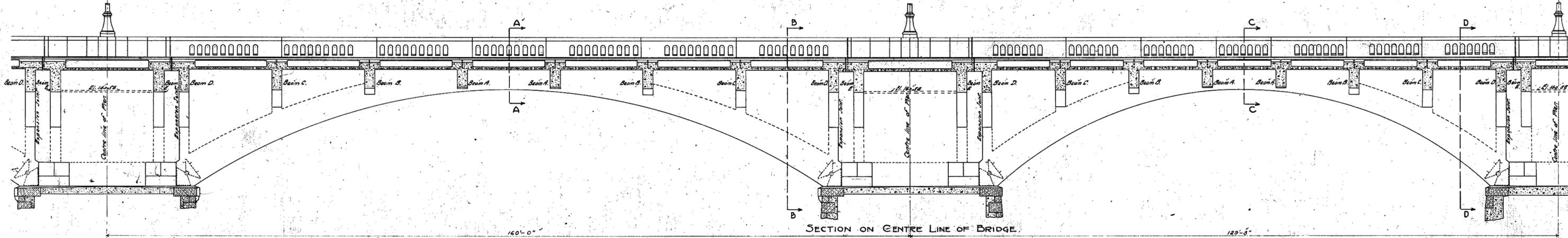
HALF SECTION A A HALF SECTION B B



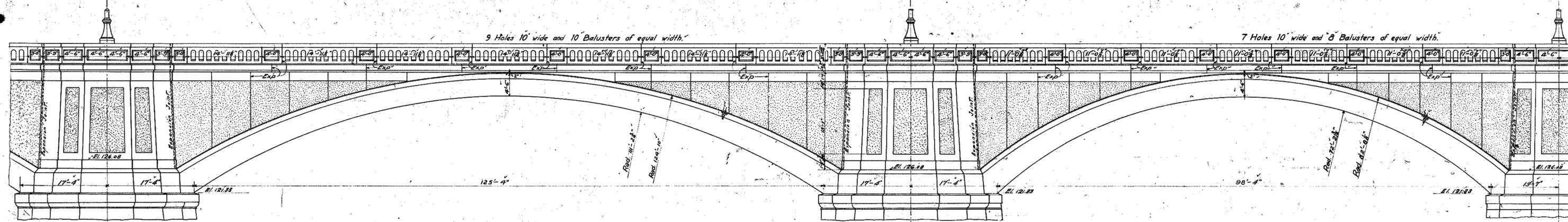
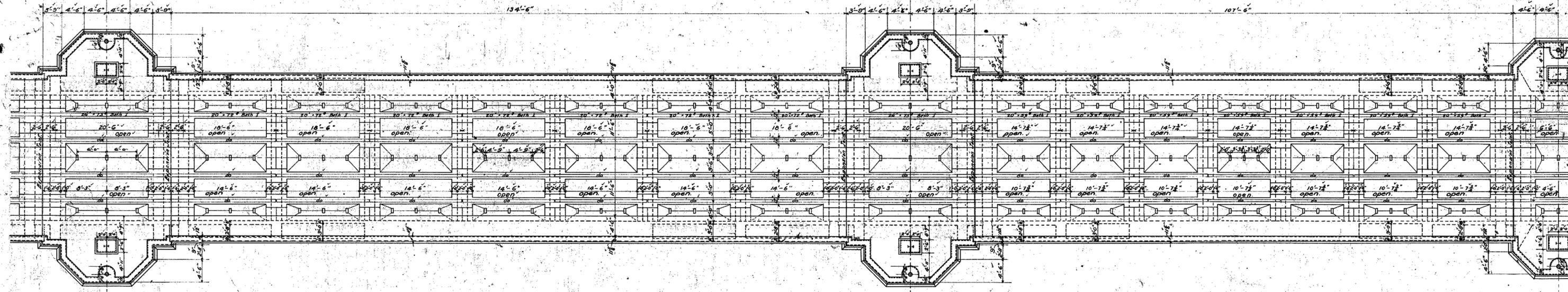
HALF SECTION C C HALF SECTION D D



HALF SECTION ON  $\epsilon$  PIER 11



SECTION ON CENTRE LINE OF BRIDGE.



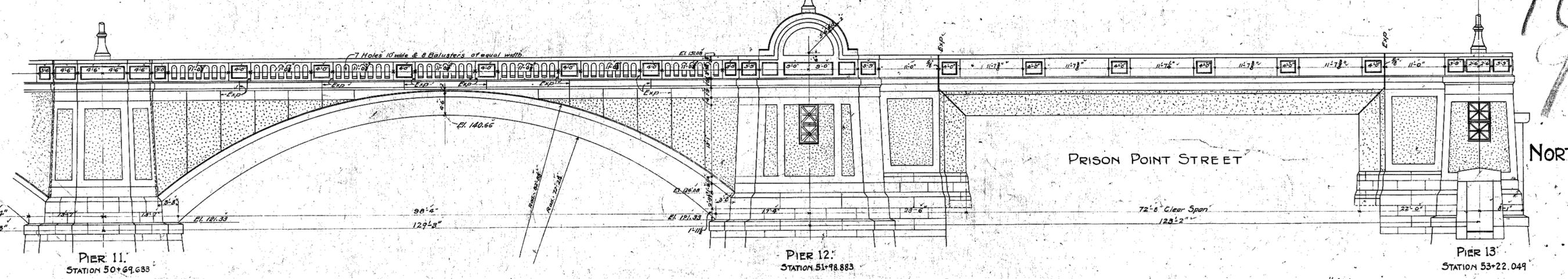
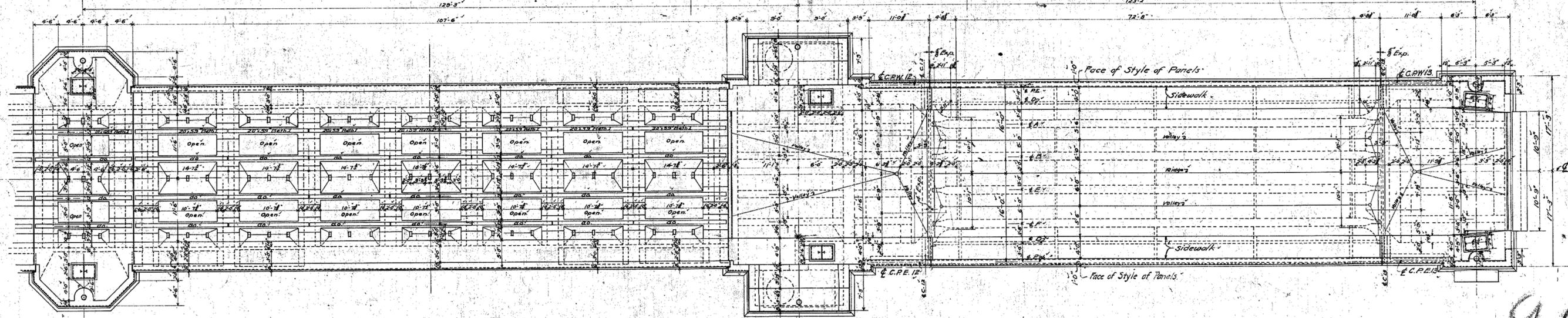
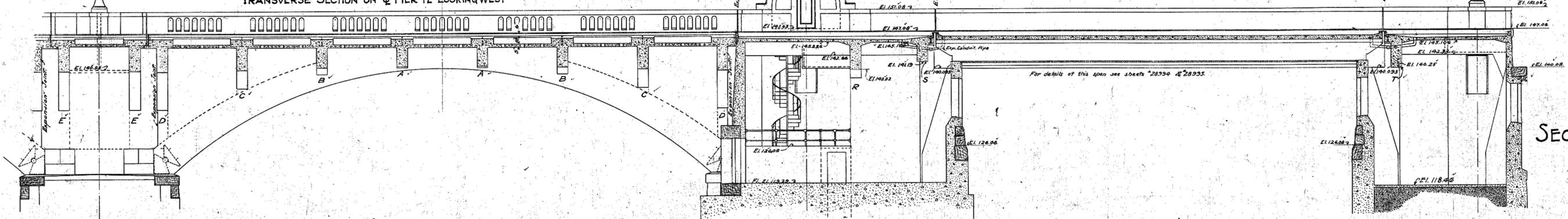
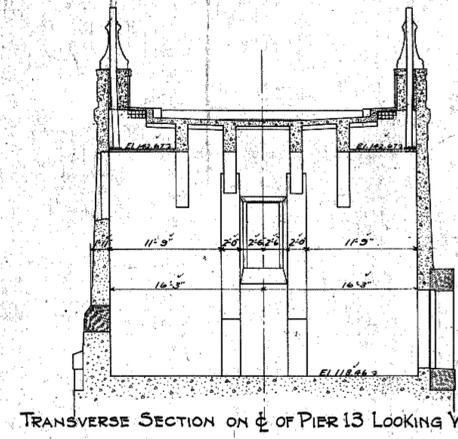
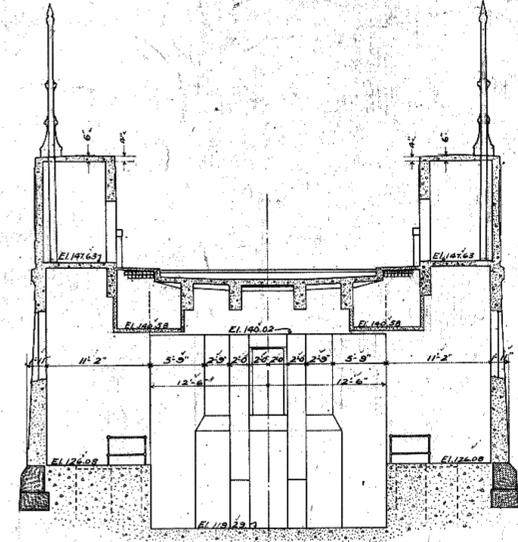
PIER 9  
 STA. 47+80.383

PIER 10  
 STA. 49+40.383

PIER 11  
 STA. 50+60.383

BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 GENERAL DRAWING SPANS Nos. 11 AND 12  
 Scale  $\frac{1}{8}'' = 1'-0''$   
 Oct. 31 - 1910.

Desig. Engineer *J. H. Worcester*  
 Correct *C. J. Small* Asst. Engineer  
*George A. Kimball* CHIEF ENGINEER

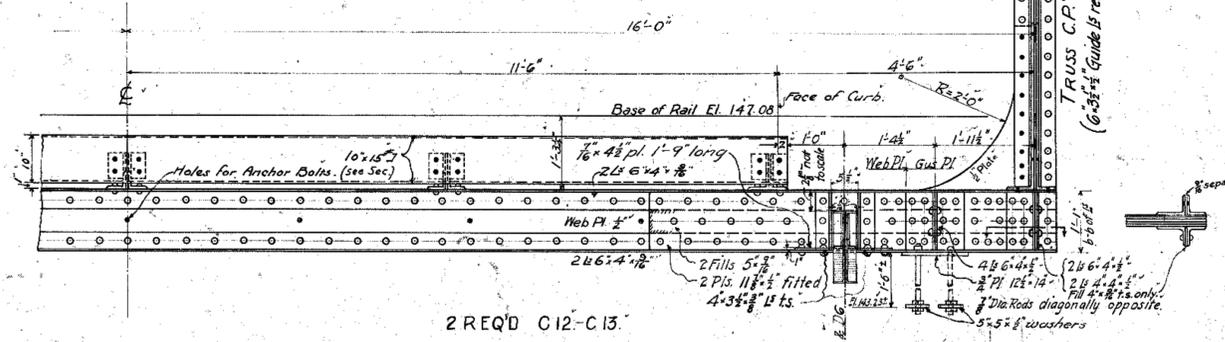
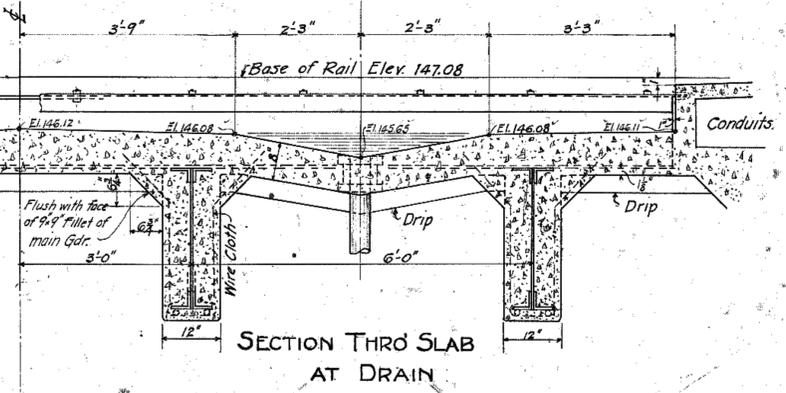


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J. K. WORCESTER & CO.

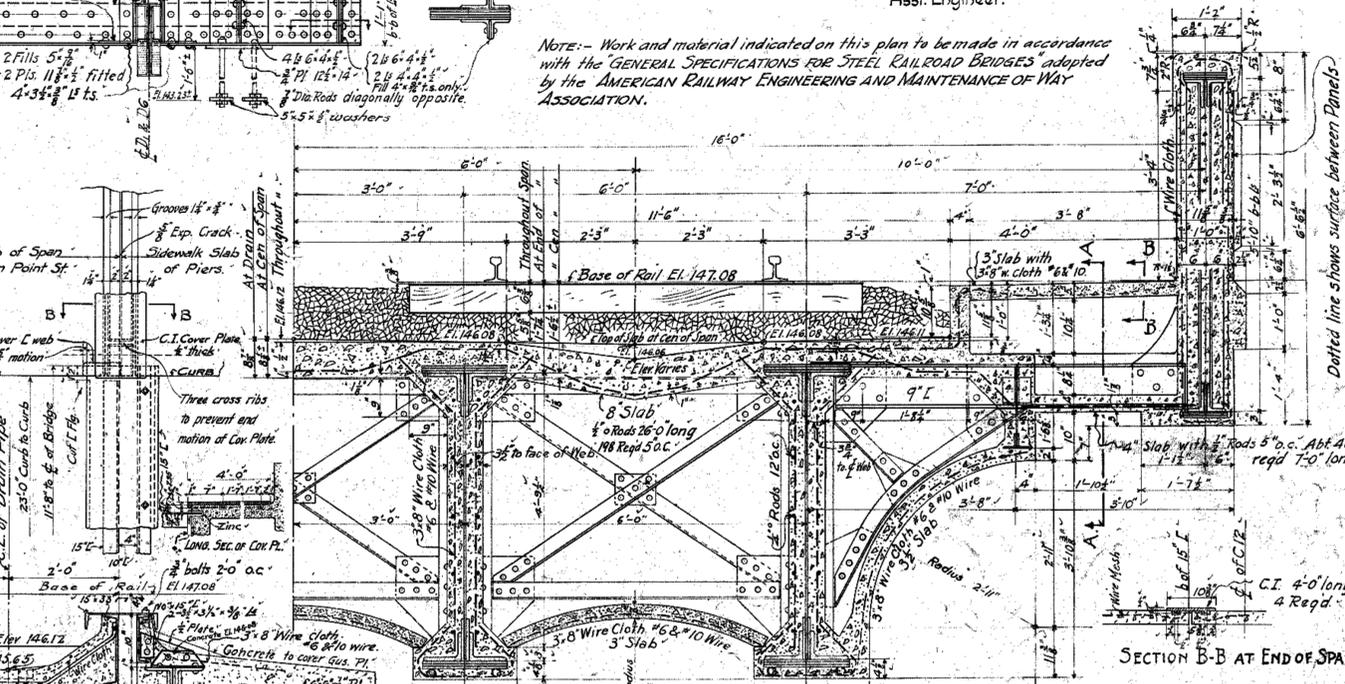
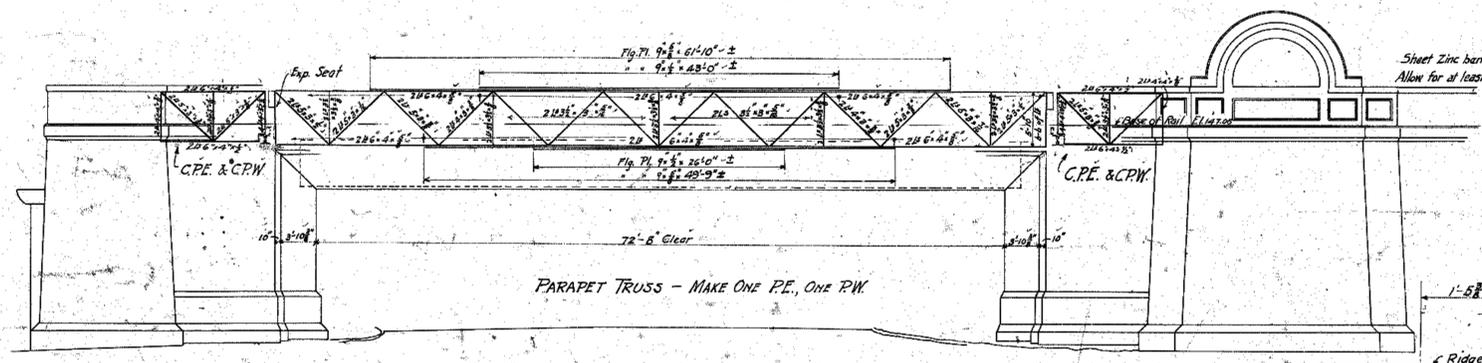
BOSTON ELEVATED RAILWAY  
 — ELEVATED CONSTRUCTION —  
 EAST CAMBRIDGE EXTENSION  
 CHARLES RIVER BRIDGE  
 SPAN OVER PRISON POINT ST.

Scales  $\frac{1}{8}$ " &  $\frac{1}{4}$ " = 1'-0"  
 June 7, 1910.  
 Revised to June 13, 1910.  
 Desig. Engineer, J. A. W. ...  
 Corrected by C. ...  
 Chief Engineer, George A. ...

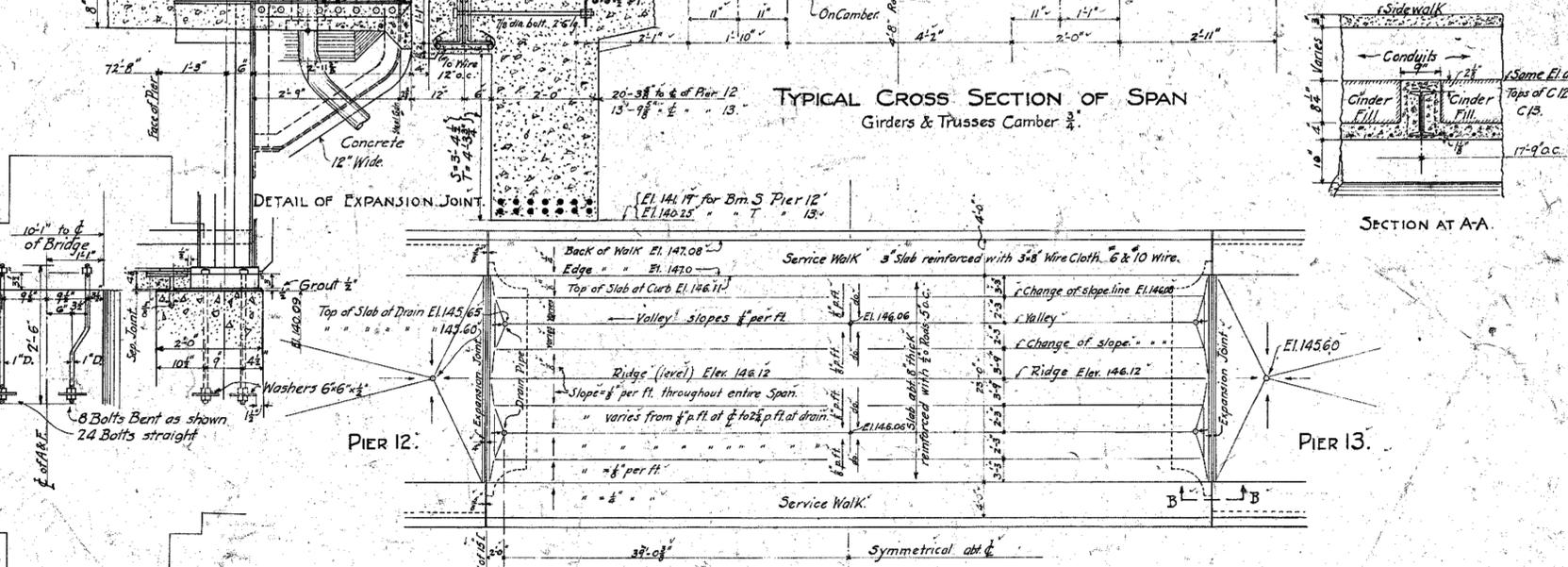
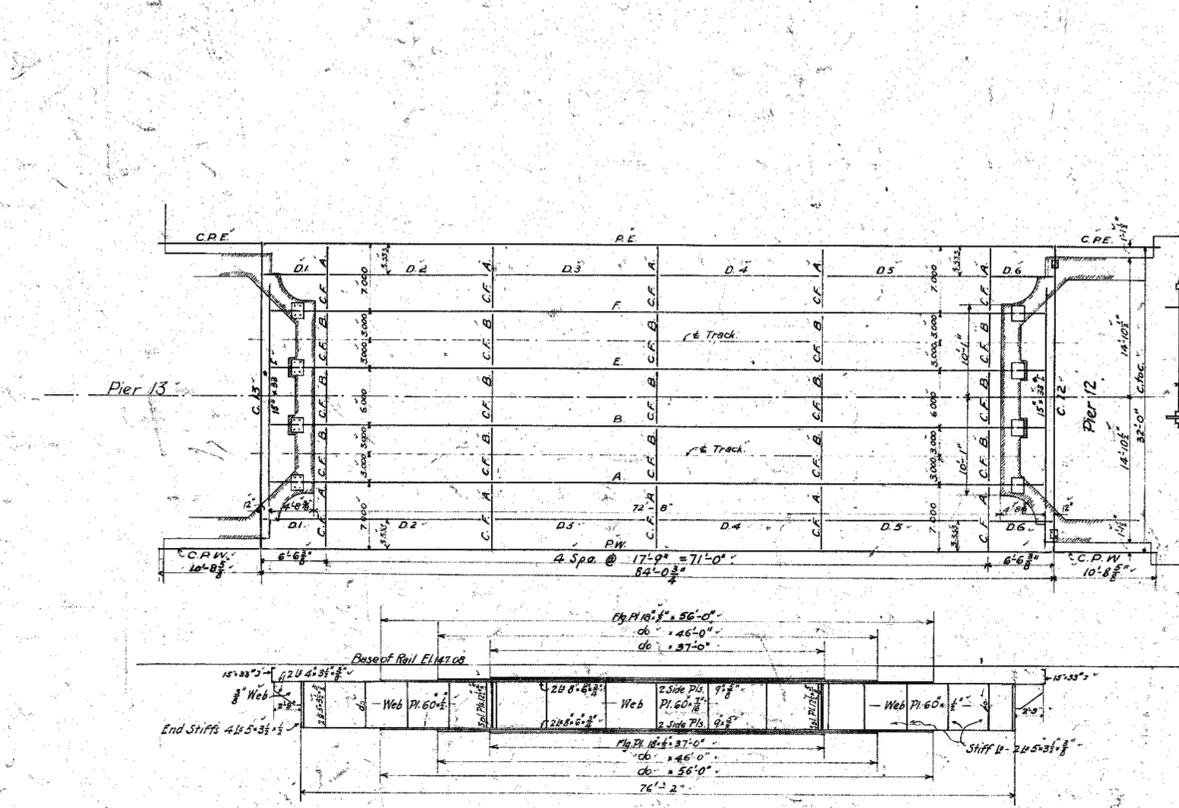


NOTE: - Work and material indicated on this plan to be made in accordance with the GENERAL SPECIFICATIONS FOR STEEL RAILROAD BRIDGES adopted by the AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION.

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Dotted line shows surface between Panels.



TRACK LONGLS. 4 REQD. A.B.E.F.  
 Sym. abt.  $\frac{1}{2}$

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