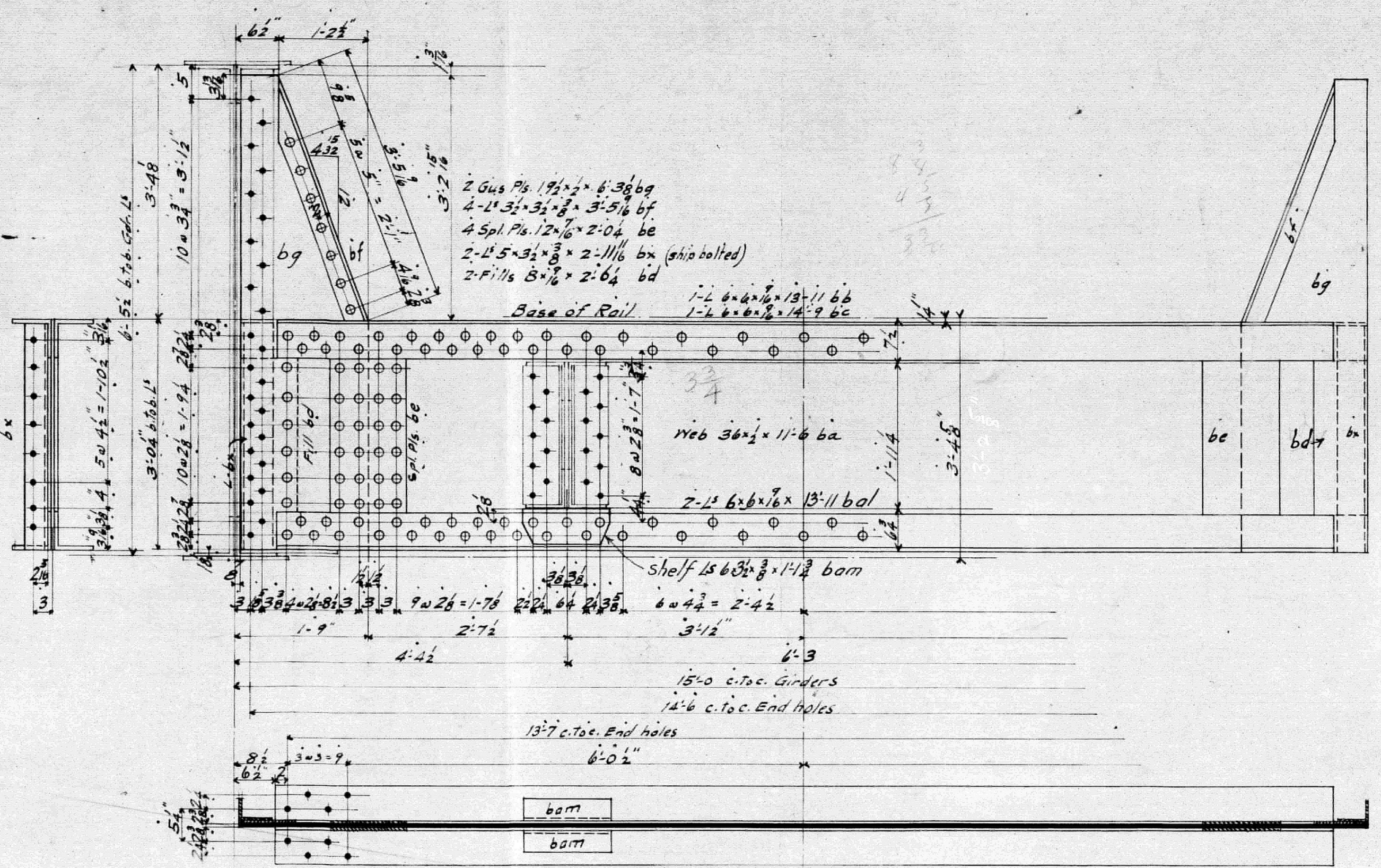
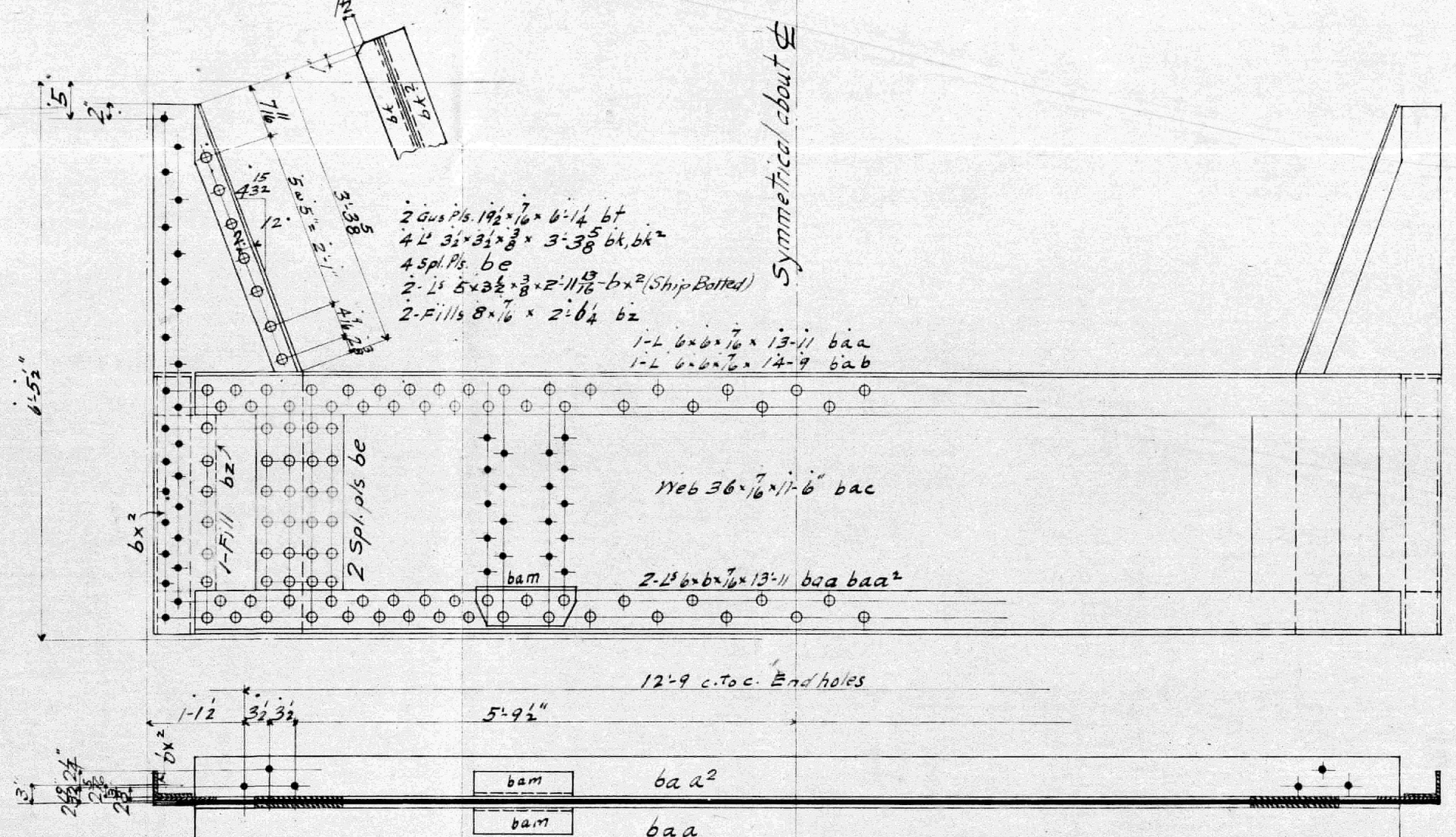


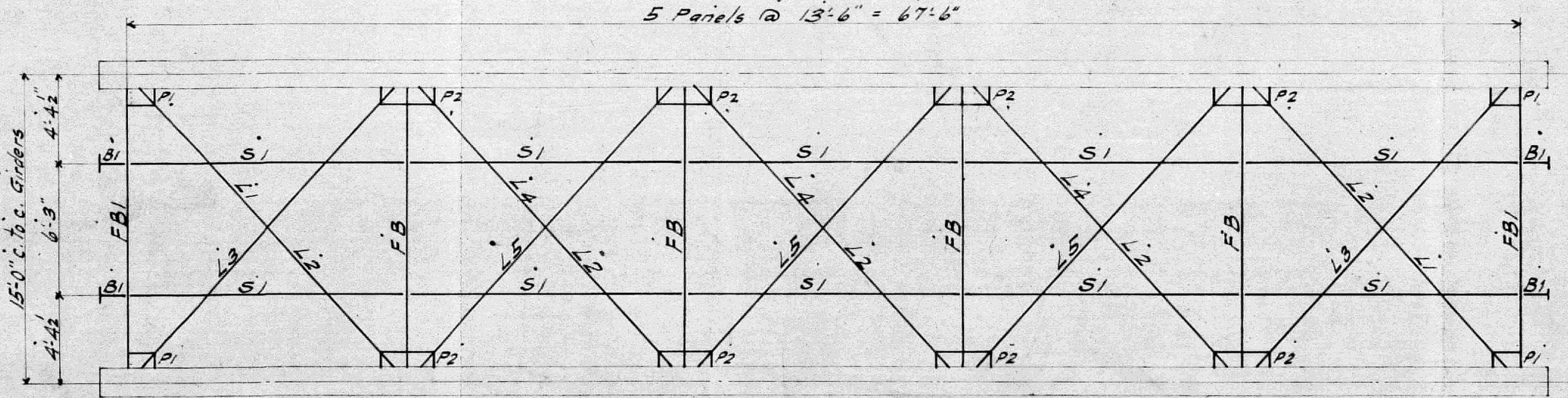
Rivets 7/8 in. diam.  
Open Holes 15-16 in diam.  
Holes For Floor Beam Connections to Be Reamed to an Iron Template.



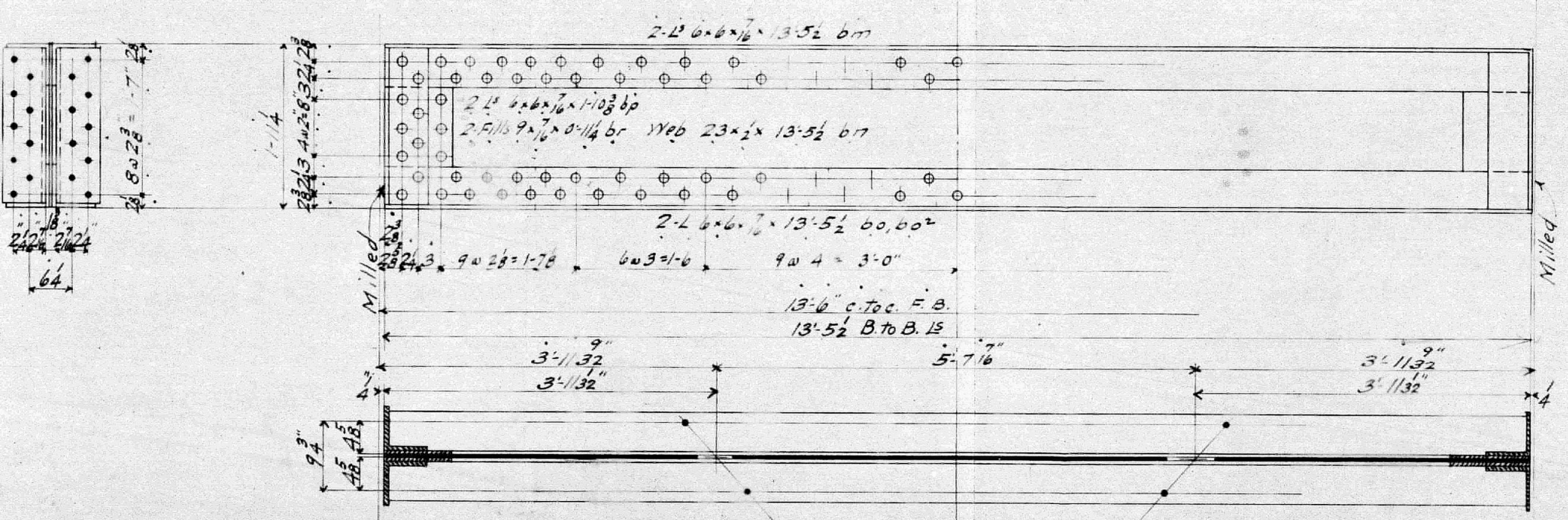
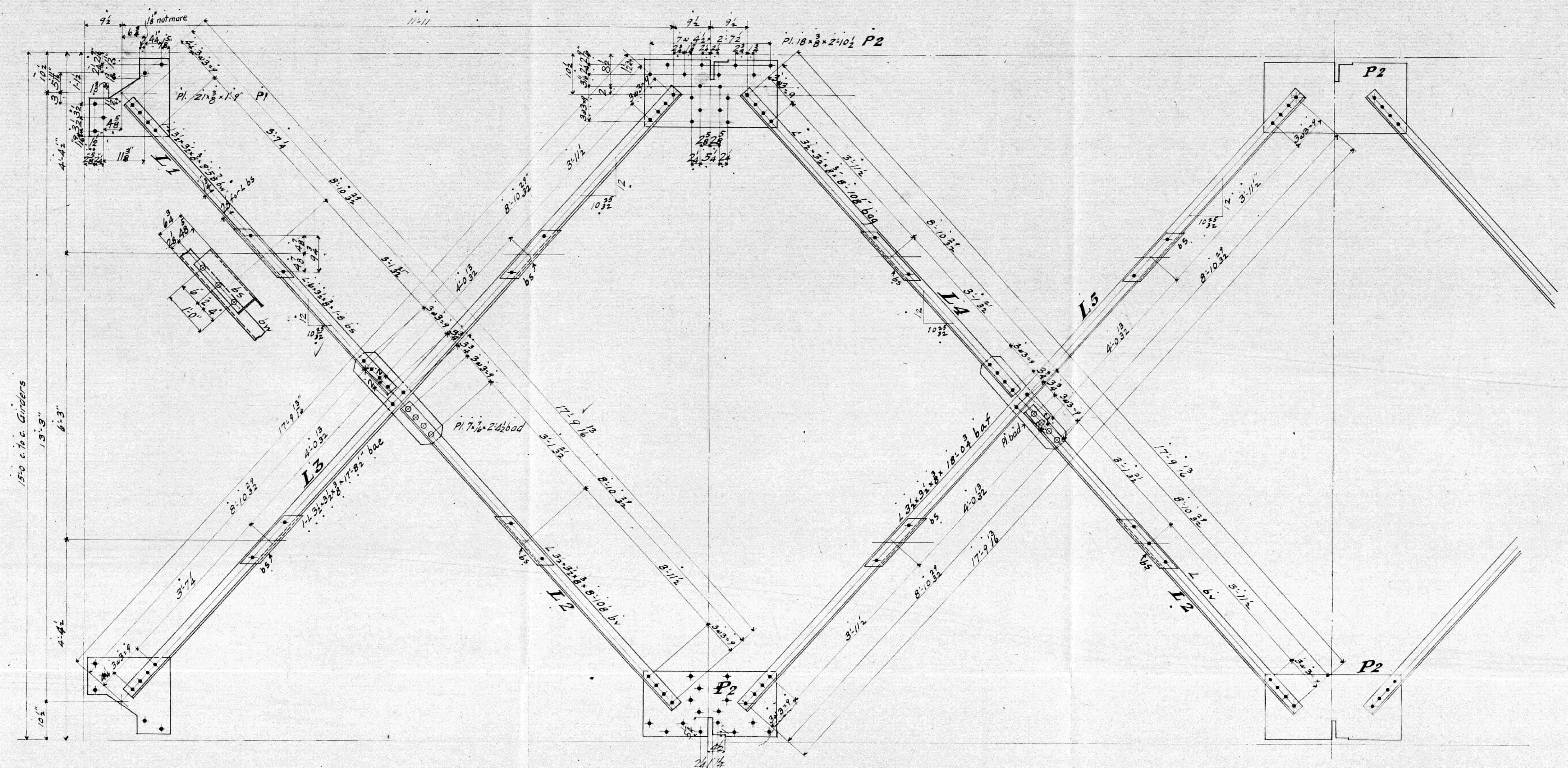
INT. FLOORBEAM FB



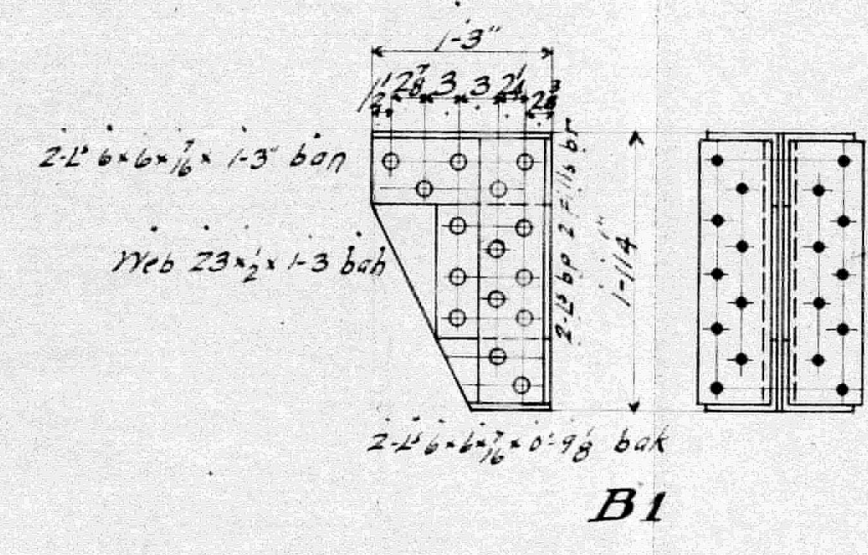
END FLOORBEAM FBI (same as FB except as shown)



Marking Diagram



S1



B1

REQUIRED

|    |                |     |
|----|----------------|-----|
| 4  | Floor Beams    | FB  |
| 2  | "              | FBI |
| 10 | Stringers      | S1  |
| 4  | Brackets       | B1  |
| 2  | Laterals       | L1  |
| 5  | "              | L2  |
| 2  | "              | L3  |
| 3  | "              | L4  |
| 3  | "              | L5  |
| 4  | Lateral Plates | P1  |
| 8  | "              | P2  |

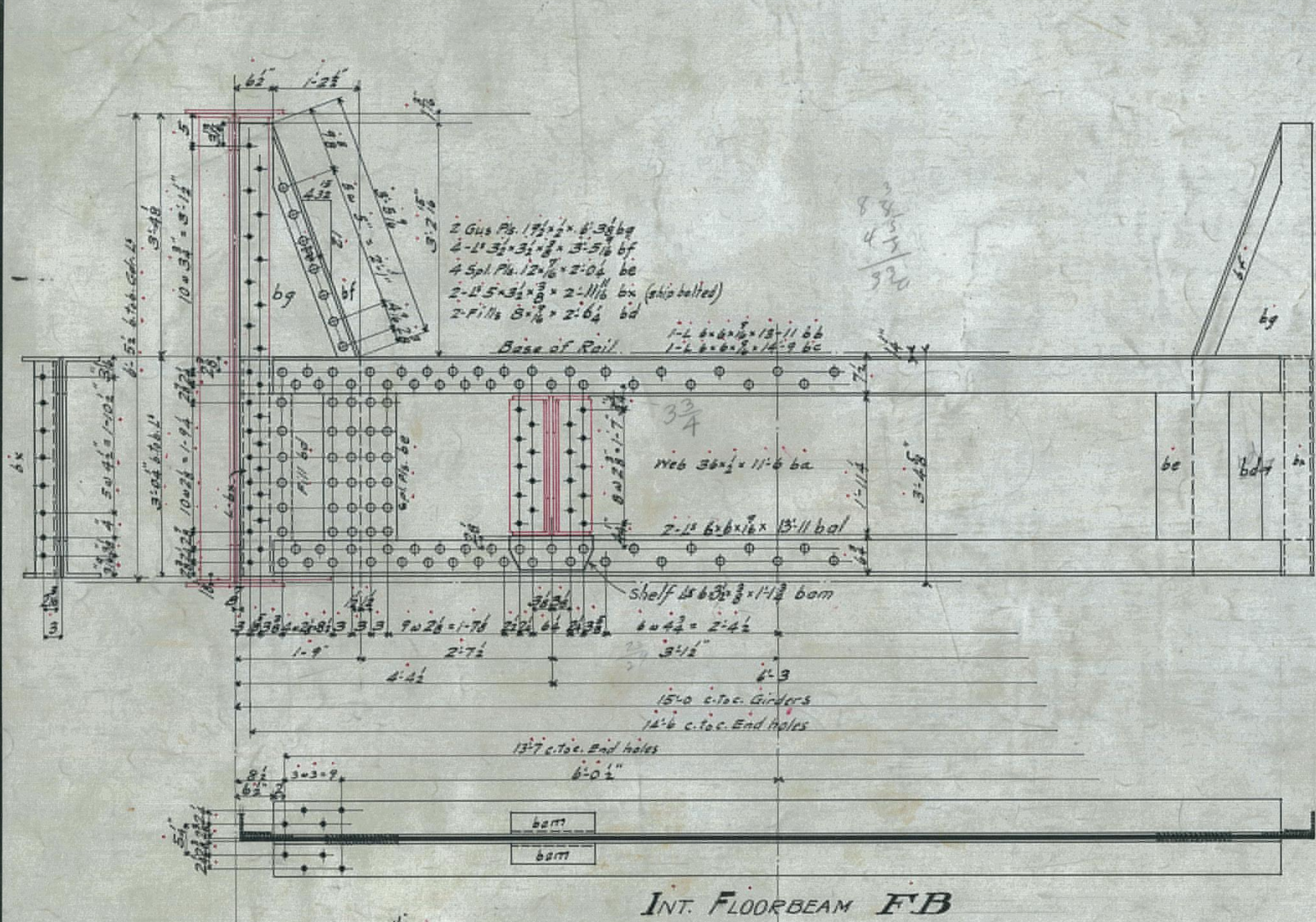
Floorbeams, Stringers & Bracing,  
1 - 70' - 0" S.T. Thro. Plate Girder Span,  
Bridge at Sta. No. 12  
Bangor & Aroostook R. R.  
BUILT BY  
THE PENNSYLVANIA STEEL CO.,  
Bridge & Construction Dep't,  
Steelton, Pa.

C 3555  
4

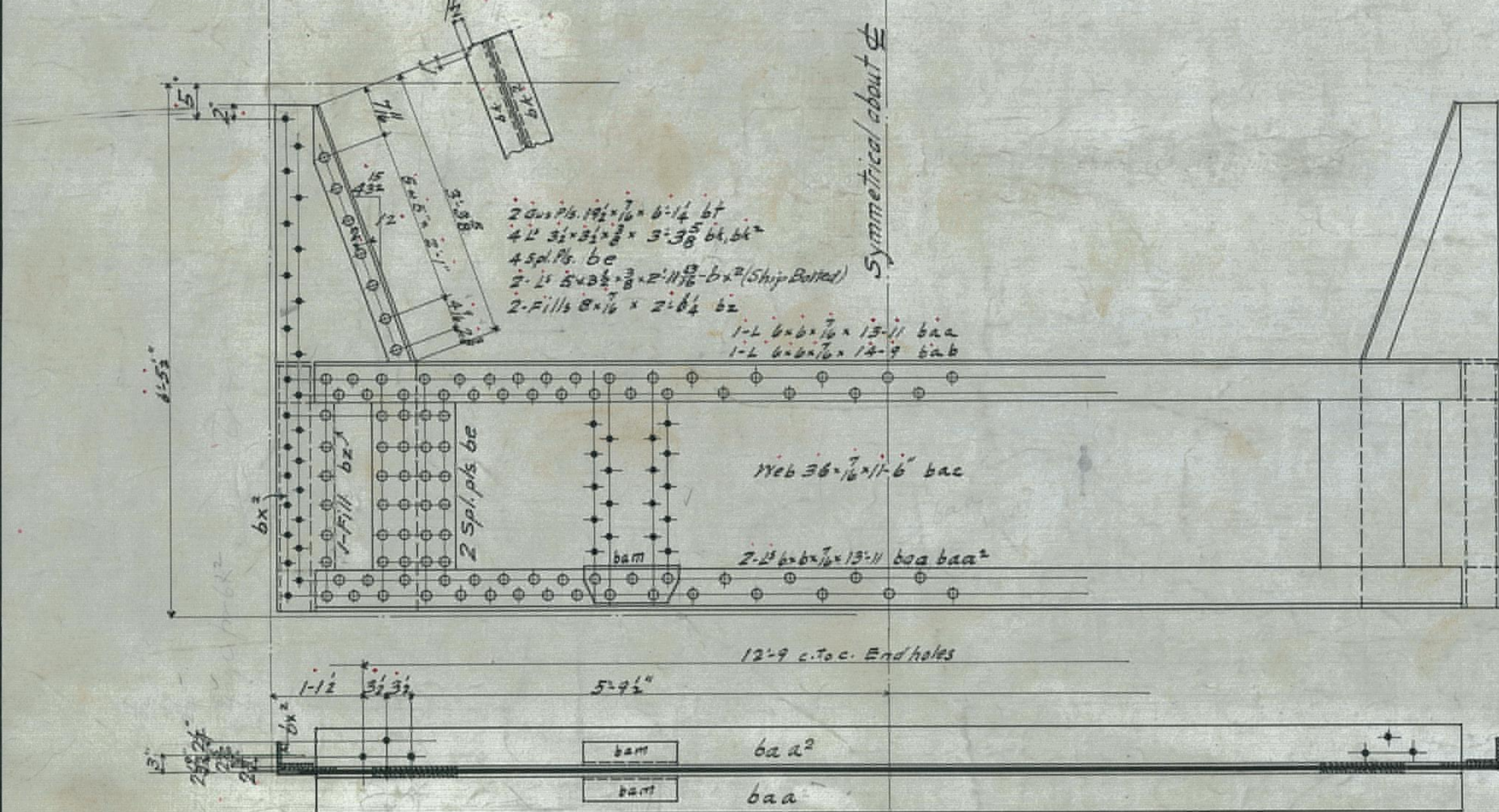
Scale: 3/4 in. / ft.  
Made by J.L.B.S.  
Traced by J.L.B.S.  
Checked by L.G.V. 8-18-09  
In Charge F.W. Goodwin  
Bill Sheets 40-41-42  
Aug. 8 1909

Paint: One coat of Linseed Oil.  
Red Lead for assembling.  
Parts inaccessible after erection two coats of Approved Graphite Paint.

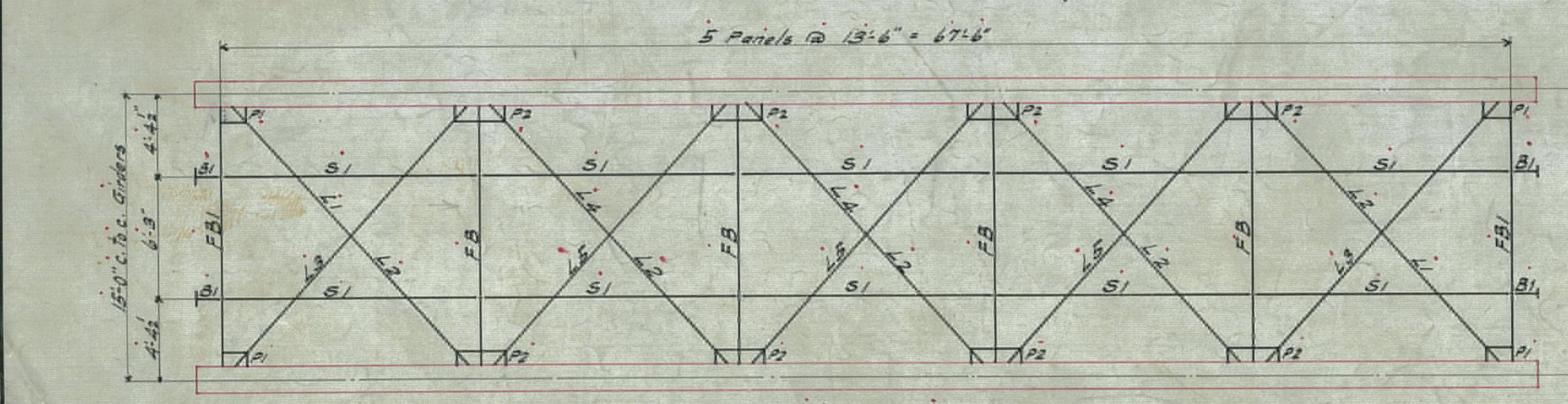
Structural  
 Open Holes 15-16 in diam.  
 Holes For Floor Beam Connections to Be Ramed to an Iron Template.



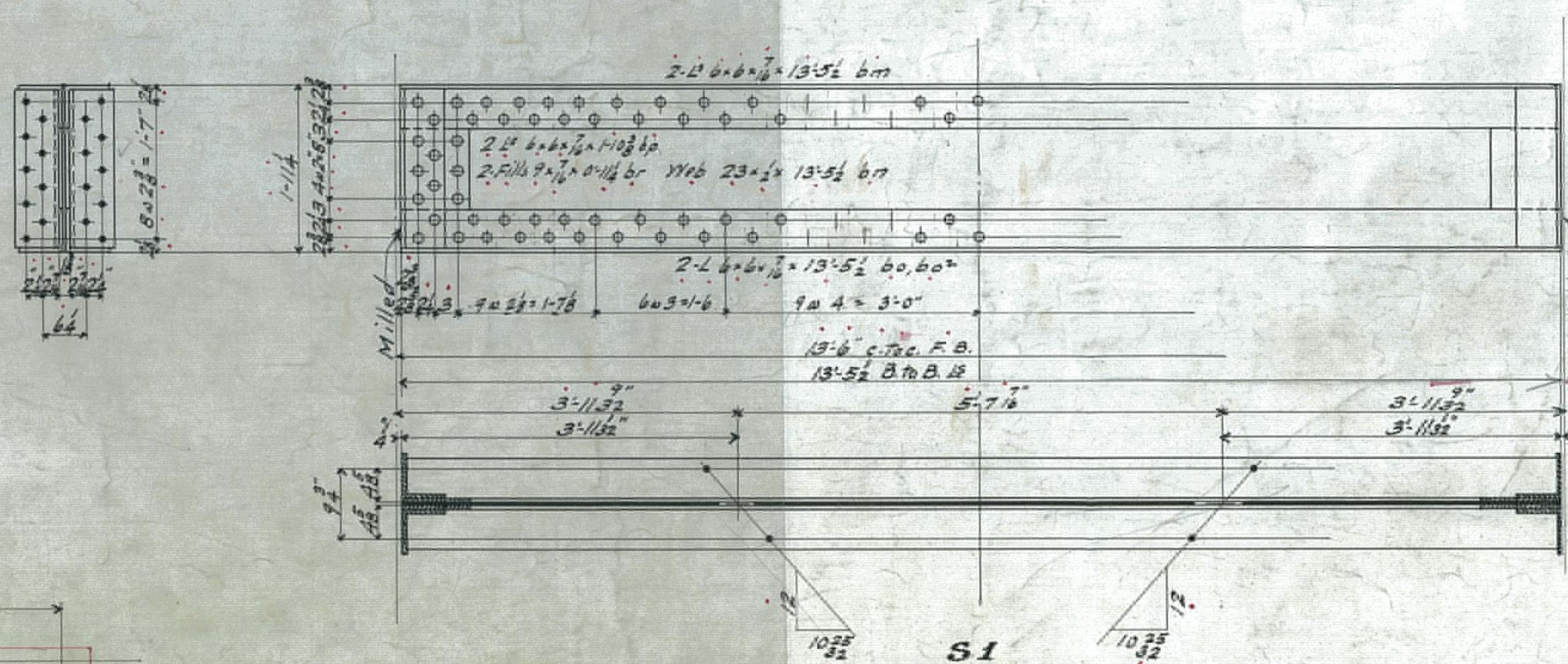
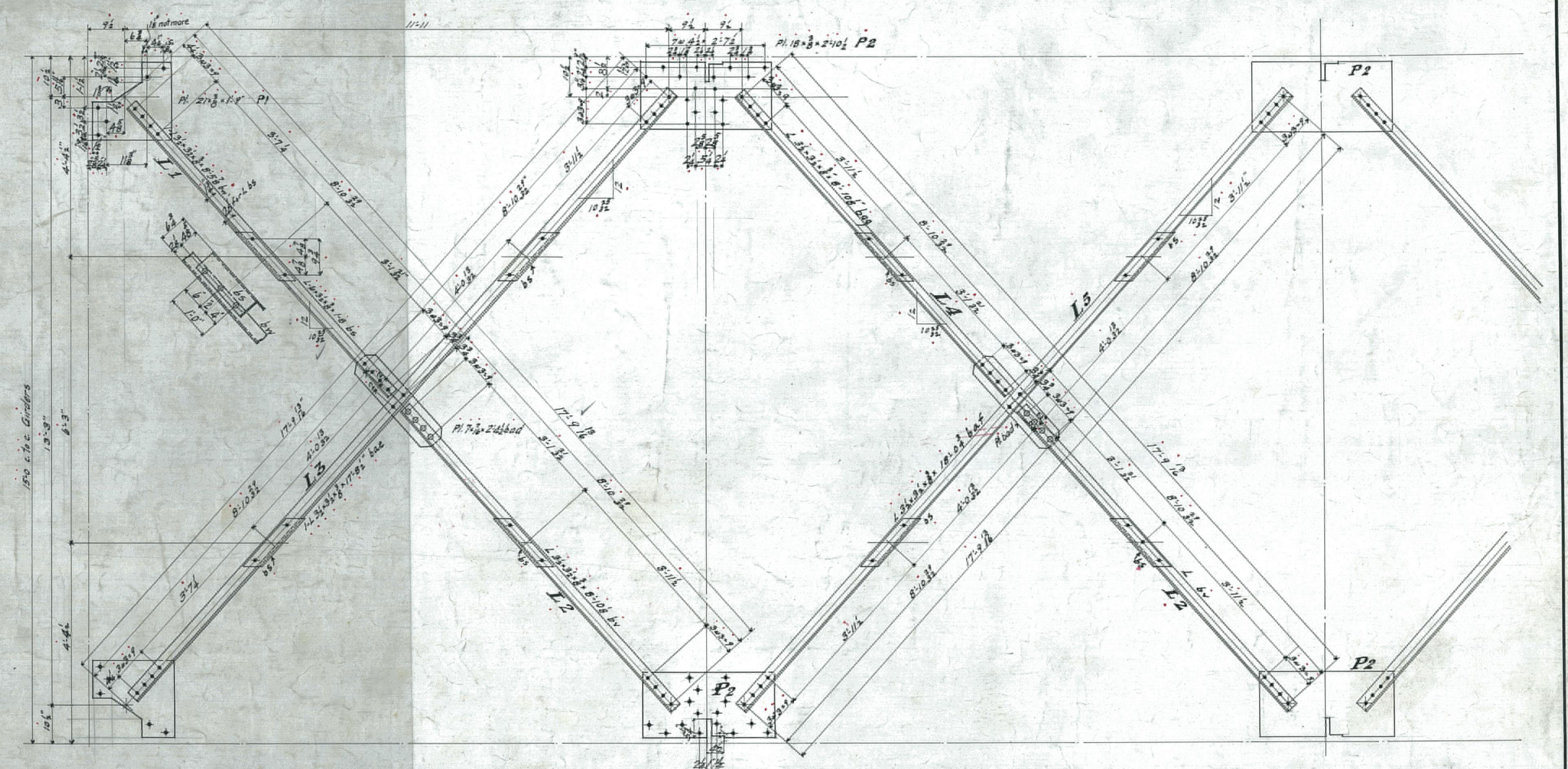
INT. FLOORBEAM FB



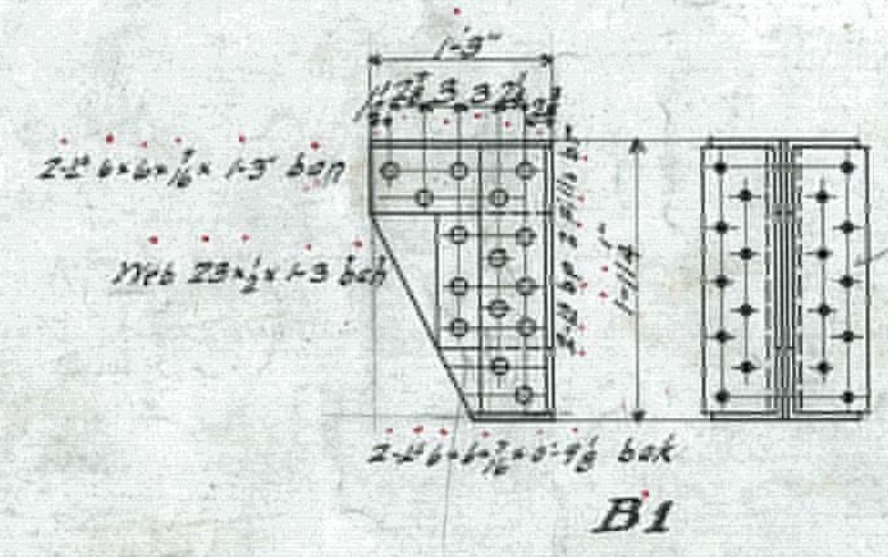
END FLOORBEAM FBI (same as FB except as span)



Marking Diagram



S1



B1

- REQUIRED
- 4 Floor Beams FB
  - 2 " " FB1
  - 10 Stringers S1
  - 4 Brackets B1
  - 2 Laterals L1
  - 5 " L2
  - 2 " L3
  - 3 " L4
  - 3 " L5
  - 4 Lateral Plates P1
  - 8 " P2

D 039  
 P-2491  
**Floorbeams, Stringers & Bracing,**  
 1 - 70' - 0" S.T. Thru. Plate Girder Span,  
 Bridge at Sta. No. 12  
**Bangor & Aroostook R.R.**  
 BUILT BY  
**THE PENNSYLVANIA STEEL CO.,**  
 Bridge & Construction Dep't,  
 Steelton, Pa.

C 3555  
 4

Scale:  $\frac{3}{4}$  in. / ft.  
 Made by J.L.B.S.  
 Traced by L.G.Y. 8-18-07  
 In Charge J.M. Campbell  
 Bill Sheets 40-1-12  
 Aug. 18 1909

Paint: One coat of Linseed Oil,  
 Red Lead for assembling.  
 Parts inaccessible after erection two coats of Approved Graphite Paint.



# THE PENNSYLVANIA STEEL CO.

BRIDGE & CONSTRUCTION DEPT. STEELTON, PA.

*Guard L - Hook Bolts & Guard Bolts*

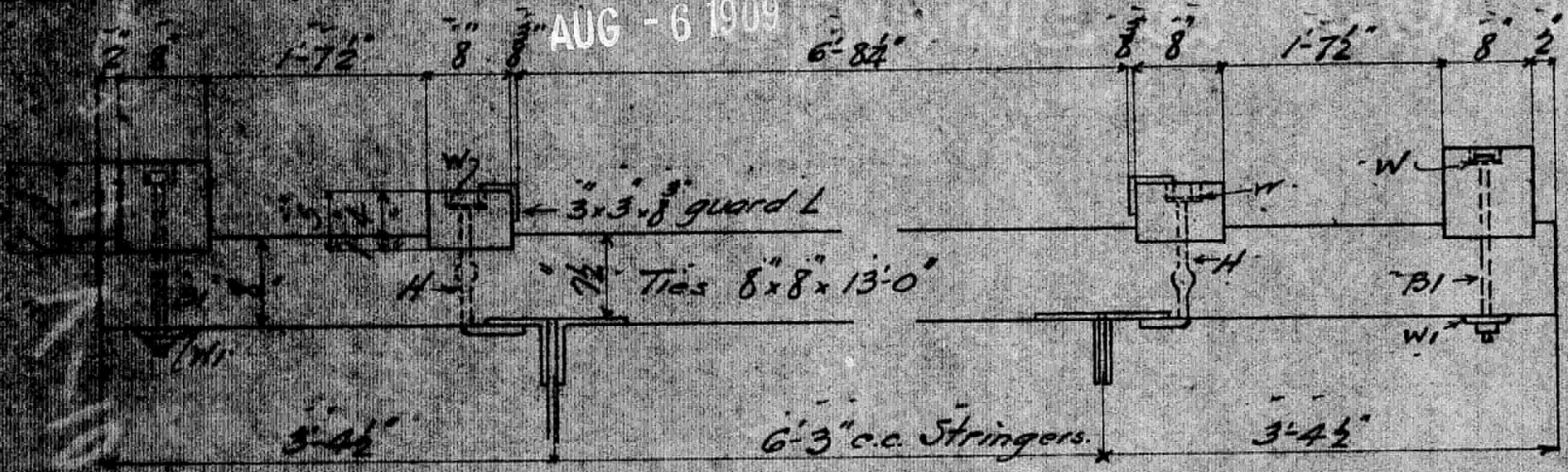
*10-0' S.Th. Thru Pl. Gdr. Span - Bangor & Croostock R.R.*

Material \_\_\_\_\_  
 Inspection \_\_\_\_\_  
 Paint \_\_\_\_\_

Drawn by *J.M.D.* 8-4-1909  
 Checked by *L.E.V.* 8-5-1909  
 Engr. in charge \_\_\_\_\_

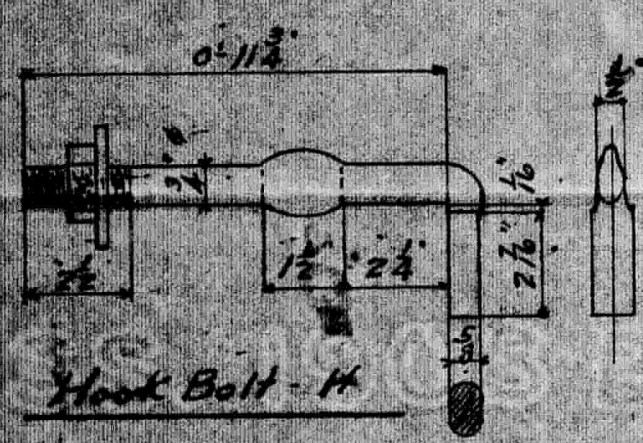
CONTRACT NO. 3555

DRAWING NO. F2

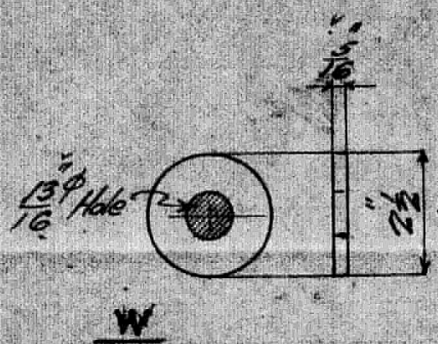


*Cast Iron Washer W1  
 Pat. # 13167*

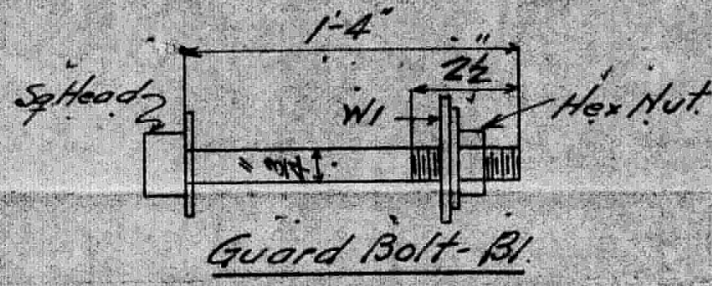
*Guard Rail Bolts BI every third tie.  
 Hook "H" every third tie.*



*Hook Bolt - H*



*W*



*Guard Bolt - BI*

|           |   |           |  |           |   |
|-----------|---|-----------|--|-----------|---|
| for GL3   | 4 | 1'-8"     | 3 @ 2'-0" = 6'-0"  | 1'-8"     | 4 |
| for GL2   | 4 | 1'-1 1/2" | 13 @ 2'-1" = 27'-1"                                      | 1'-1 1/2" | 4 |
| for GL3   |   |           | 10'-0"   |           |   |
| for GL3   |   |           | 30'-0"   |           |   |
| for GL3   | 2 | 2'-10"    | 2 @ 2'-0" = 4'-0"  | 2'-10"    | 2 |
| for GL2   | 2 | 2'-4"     | 12 @ 2'-1" = 25'-0"                                      | 2'-4"     | 2 |
| GL2 - GL3 |   |           | 1" 2" csk Holes for #24 Wood Screws (3/8" x 2 1/2" long) |           |   |

**APPROVED**

*Moss*  
 CHIEF ENGINEER

AUG 9 1909

## Bill of Material

| Shop No.<br>Mark | Description | Finished Size         |                    | Mark | Mill Order |         |        |      | Weight |      |
|------------------|-------------|-----------------------|--------------------|------|------------|---------|--------|------|--------|------|
|                  |             | Section               | Length             |      | No. Pcs    | Section | Length | Mill | Req'd  | Each |
| 42               | Hook Bolts  | 3/4"                  |                    | H    |            |         |        |      |        |      |
| 42               | Guard       | 3/8"                  |                    | BI   |            |         |        |      |        |      |
| 42               | Washers     | 2 1/2" x 1 1/2" thick |                    | W    |            |         |        |      |        |      |
| 42               | CI          | Pat. # B1167          |                    | W1   |            |         |        |      |        |      |
| 42               | Guard L     | 3x3x3/8               | 30'-0"             | GL2  | 4          | 72"     | 30'-0" |      |        |      |
| 42               | "           | 3x3x3/8               | 10'-0"             | GL3  | 4          | 72"     | 10'-0" |      |        |      |
| 42               | Wood Screws | #24                   | 3/8" x 2 1/2" long |      |            |         |        |      |        |      |

2055

THE PENNSYLVANIA STEEL CO.

APPROVED

BRIDGE & CONSTRUCTION DEPT., STEELTON, PA.

Material for Guard L's Hook Bolts - Guard Rails etc.

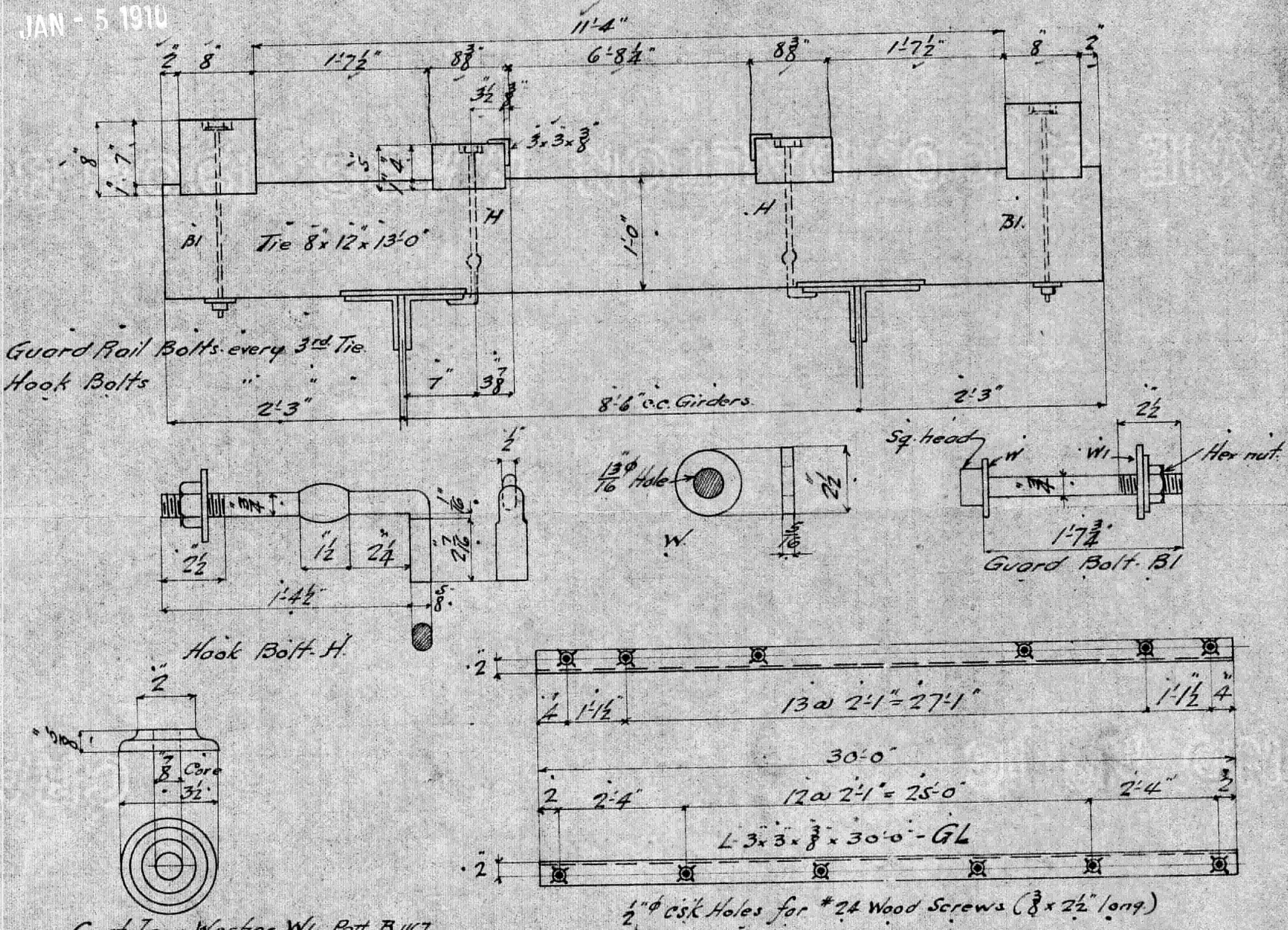
JAN 7 1910

For 2-30'-0" S.Tk Deck Pl. Gdr Spans - Bangor & Aroostook R.R. Co.

Material \_\_\_\_\_  
 Inspection \_\_\_\_\_  
 Paint \_\_\_\_\_  
 CONTRACT NO. 3690  
 DRAWING NO. F1

Drawn by J.W.D. 1-4-1909  
 Checked by L.G.V. 1-4-1900  
 Engr. in charge \_\_\_\_\_

JAN - 5 1910



Bill of Material

| Ship Mark | No | Description     | Finished Size        |                 | Mark | Mill Order |         |        |           | Weight |       |
|-----------|----|-----------------|----------------------|-----------------|------|------------|---------|--------|-----------|--------|-------|
|           |    |                 | Section              | Length          |      | No. Pcs    | Section | Length | Mill Req. | Each   | Total |
| H         | 36 | Hook Bolts      | 3/4"                 | 1'-4 1/2"       | H    |            |         |        |           |        | 27    |
| B1        | 36 | Guard "         |                      | 1'-7 3/4"       | B1   |            |         |        |           |        | 108   |
| W         | 72 | Washers         | 2 1/2" x 5/16" Thick |                 | W    |            |         |        |           |        |       |
| W1        | 36 | "               | Patt B 1167          |                 | W1   |            |         |        |           |        |       |
| GL        | 4  | Guard L's       | 3x3x3/8"             | 30'-0"          | GL   | 4          | 7.2*    | 30'-0" |           |        | 864   |
|           |    | 124 Wood Screws | #24                  | 3 x 2 1/2" long |      |            |         |        |           |        |       |
|           |    | 72 Hex Nuts     | 3/4" Top             |                 |      |            |         |        |           |        |       |

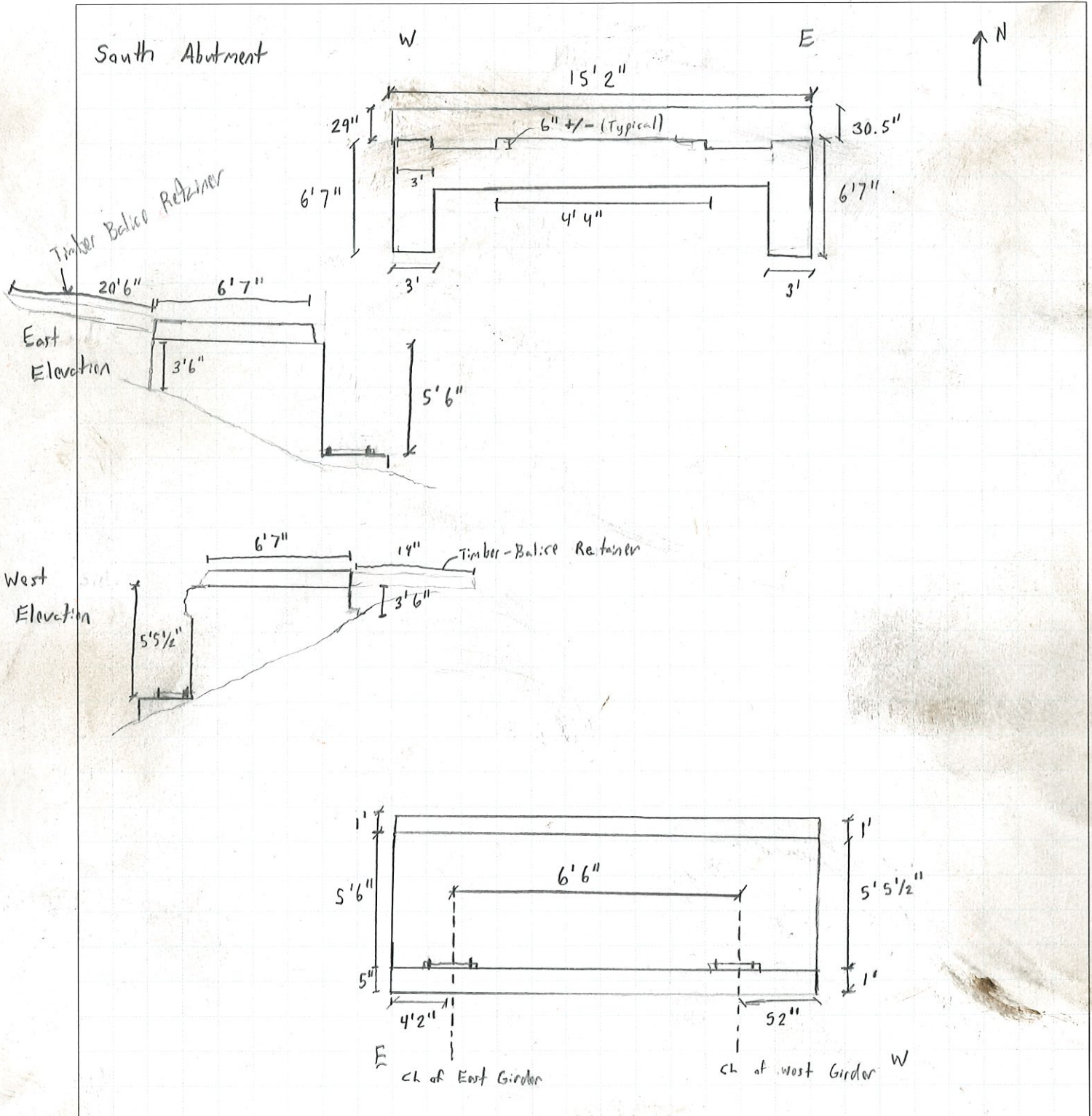




# Computations

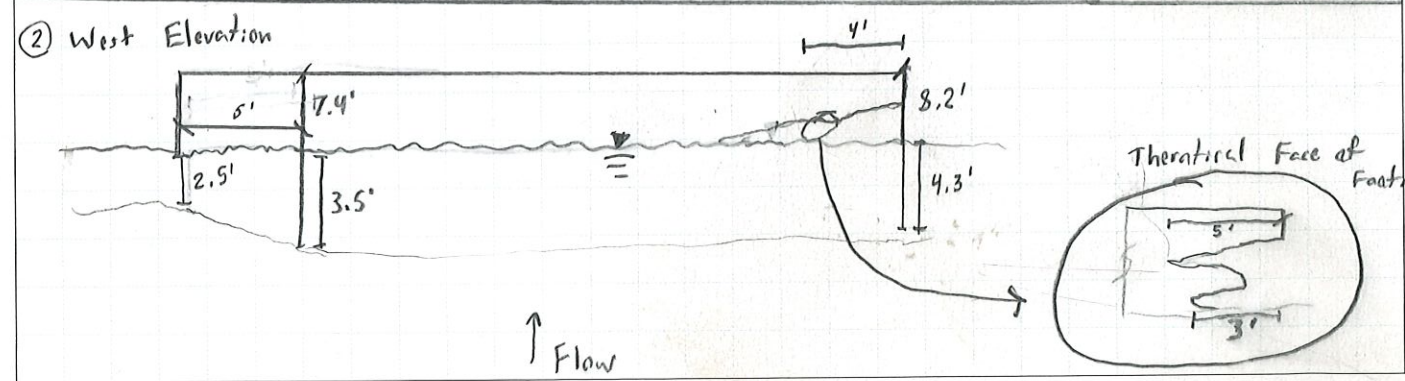
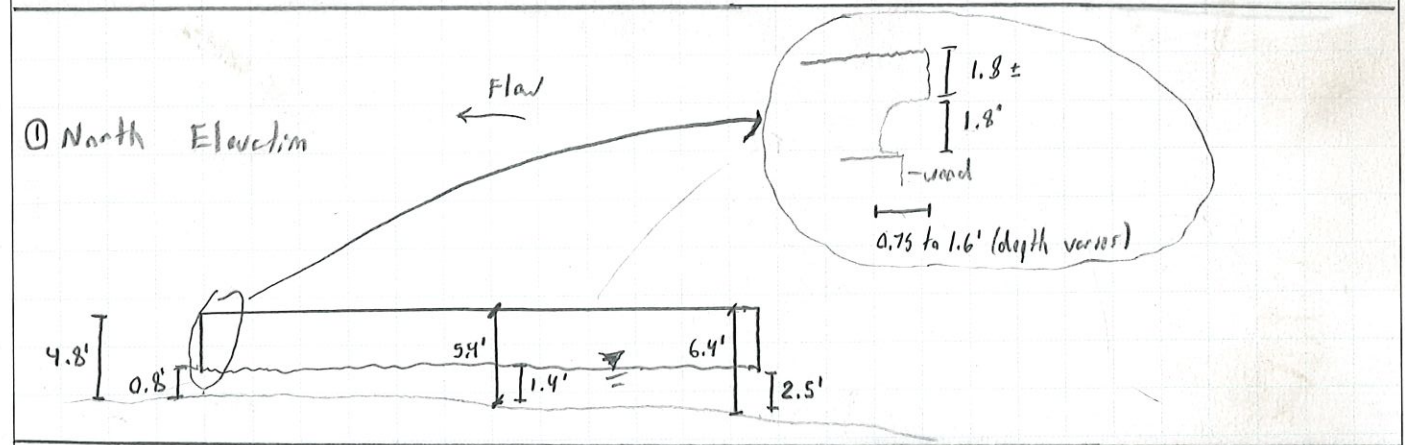
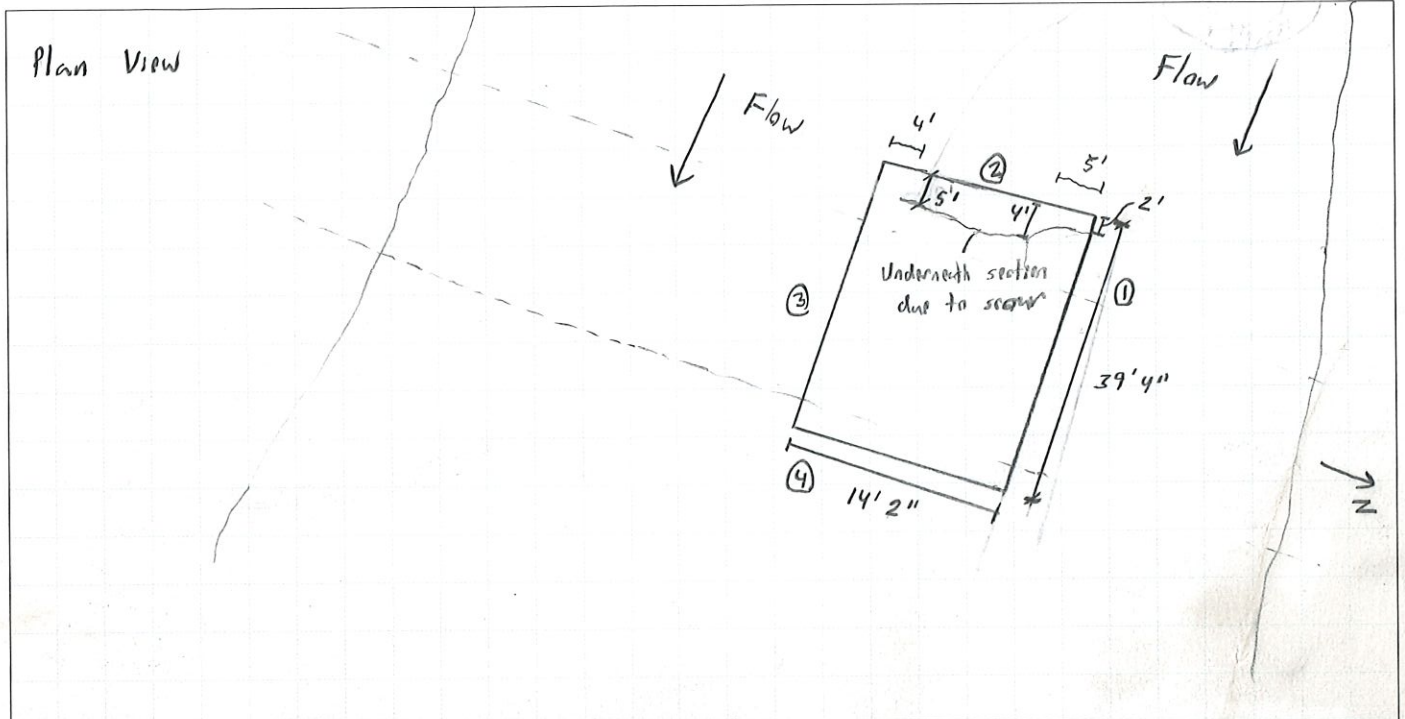
Houlton Br. No. 7750  
17.16

Project: Br. 7750 MP 17.16 Project #  
Location: Houlton, ME Sheet of  
Calculated by: JED Date: 10/3/2019  
Checked by: GSB Date: 10/3/19  
Title: Field Measurements - S. Abut



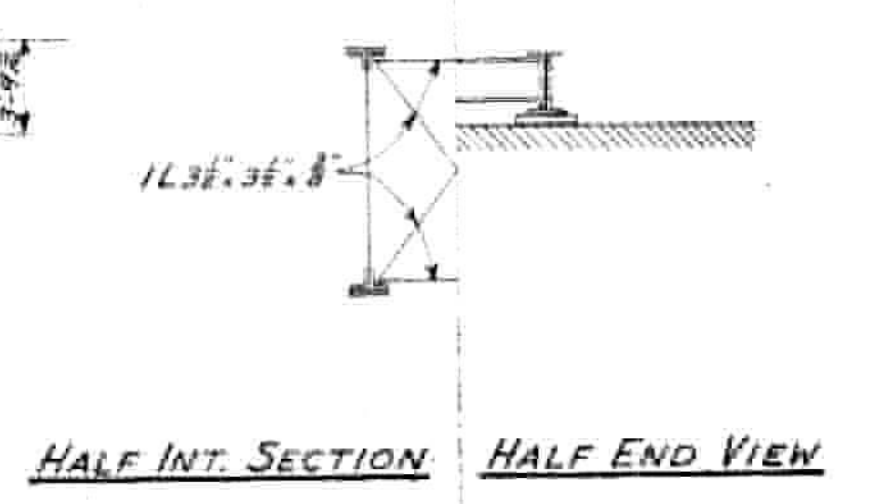
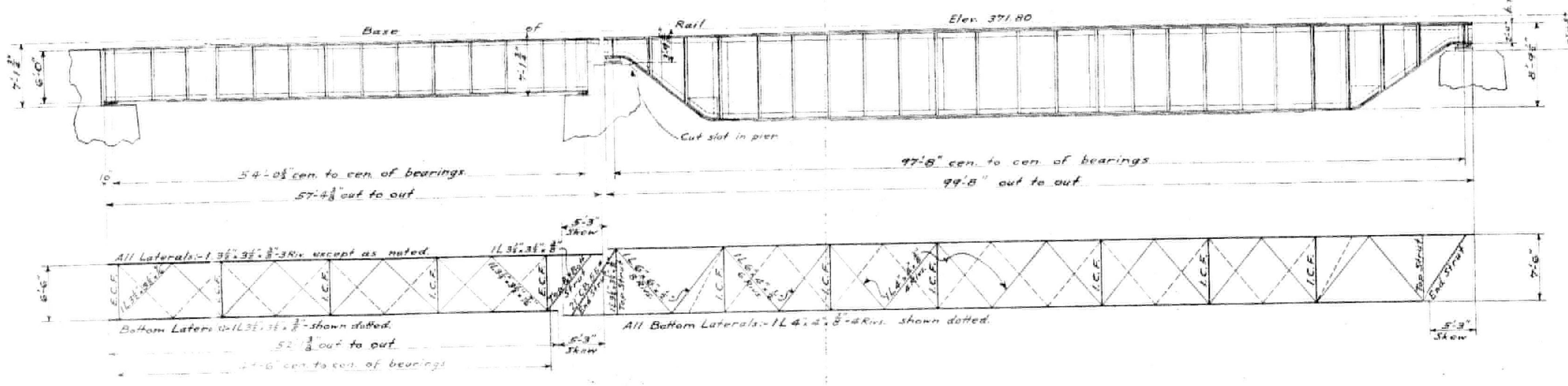
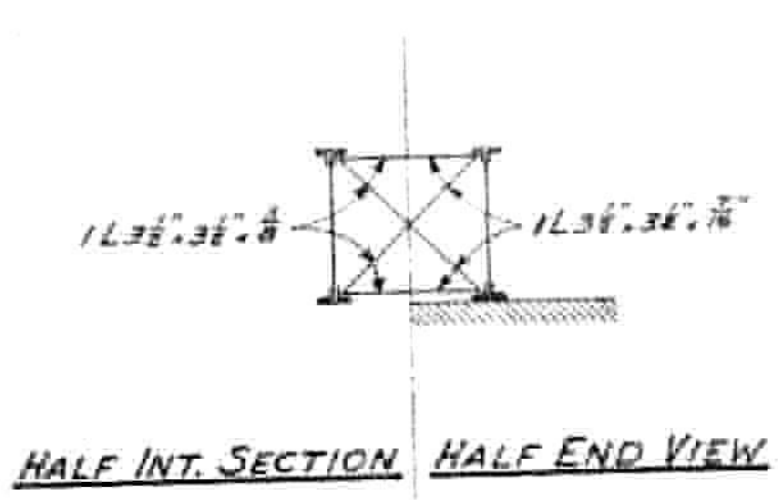
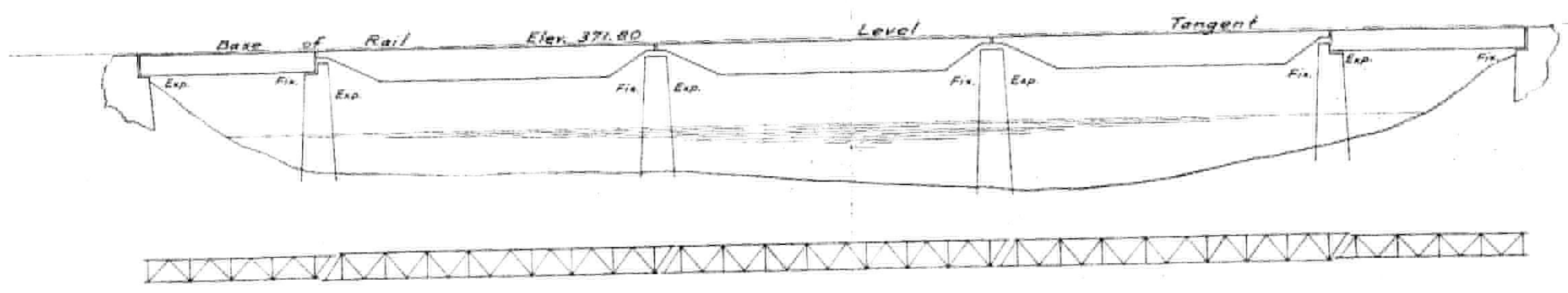


Project: Br. 7750 MP17.16 Project #  
 Location: Houlton, ME Sheet of  
 Calculated by: SED Date: 10/3/17  
 Checked by: GSG Date: 10/3/15  
 Title: Field Measurements - Pic 3









**GIRDER - 57'-4 1/2" long**

|                                   |   |
|-----------------------------------|---|
| Shear - D = 19400                 | Moment - D = 3270000                                  |
| L = 138.900                       | L = 20400.000   |
| I = 125.500                       | I = 6450.000  |
| 283.700                           | 42080.000   |
| @ 10000 = 28.4"                   | @ 712 = 591.000                                       |
| Web 7 1/2" x 3/16"                | @ 16000 = 370"  |
| @ 800 = 355" Br. on Masz.         | 8 Riv. 3.9"   |
| Masiz Pl. 20" x 20"               | 20.6" x 2" = 16.9% = 13.9%                            |
| End Stiffs - 4L5.36.8 - 4" Fl.    | 1 Cov. 16" x 1/2" = 11.0% = 9.6% - Full Top, 48" Bolt |
| Int. Stiffs - 2L5.36.8 - 4" Crimp | 1 - 16" x 1/2" = 11.0% = 9.6% - 32" Bolt & Bolt       |
|                                   | 370%  |

**GIRDER - 99'-8" long**

|                                   |   |
|-----------------------------------|---|
| Shear - D = 17500                 | Moment - D = 2640000                                  |
| L = 131.000                       | L = 17250.000   |
| I = 120.000                       | I = 15900.000   |
| 268.500                           | 35790.000   |
| @ 10000 = 26.9"                   | @ 70.8 = 506.000                                      |
| Web 7 1/2" x 3/16"                | @ 16000 = 316"  |
| @ 800 = 336" Br. on Masz.         | 8 Riv. 3.9"   |
| Masiz Pl. 20" x 20"               | 20.6" x 2" = 16.9% = 13.9%                            |
| End Stiffs - 4L5.36.8 - 4" Fl.    | 1 Cov. 16" x 1/2" = 11.0% = 9.6% - Full Top, 37" Bolt |
| Int. Stiffs - 2L5.36.8 - 4" Crimp | 1 - 16" x 1/2" = 6.0% = 5.2% - 23" Bolt & Bolt        |
|                                   | 32.6%   |

**GIRDER - 99'-8" long**

|                                      |   |
|--------------------------------------|---|
| Shear - D = 50000                    | Moment - D = 14650000                               |
| L = 220.600                          | L = 55600.000                                       |
| I = 167.000                          | I = 48750.000                                       |
| 437.600                              | 772500.000  |
| @ 10000 = 43.8"                      | @ 105.2 = 1070.000                                  |
| Web 10 5/8" x 3/16"                  | @ 16000 = 670"                                      |
| @ 800 = 547" Br. on Masz.            | 8 Riv. 6.0"   |
| Masiz Pl. 24" x 30" Bronze Exp. Pls. | 24.8" x 8" = 26.5% = 20.6%                          |
| Int. Stiffs - 2L6.4" x 8" - Crimp    | 1 Cov. 20" x 1/2" = 15.0% = 13.3% - Full Top & Bolt |
| End Stiffs - 4L6.4" x 8" - Fl.       | 1 - 20" x 1/2" = 15.0% = 13.3% - 66" Bolt & Bolt    |
|                                      | 1 - 20" x 1/2" = 15.0% = 13.3% - 48" Bolt & Bolt    |
|                                      | 67.1%   |

**ASSUMED DEAD LOAD:-**

|                    |                    |
|--------------------|--------------------|
| 57'-4 1/2" Spans   | 99'-8" Spans       |
| Track = 550"       | 550"               |
| Steel = 850        | 1500               |
| 1400" per lin. ft. | 2050" per lin. ft. |

**ASSUMED LIVE LOAD:- E60**

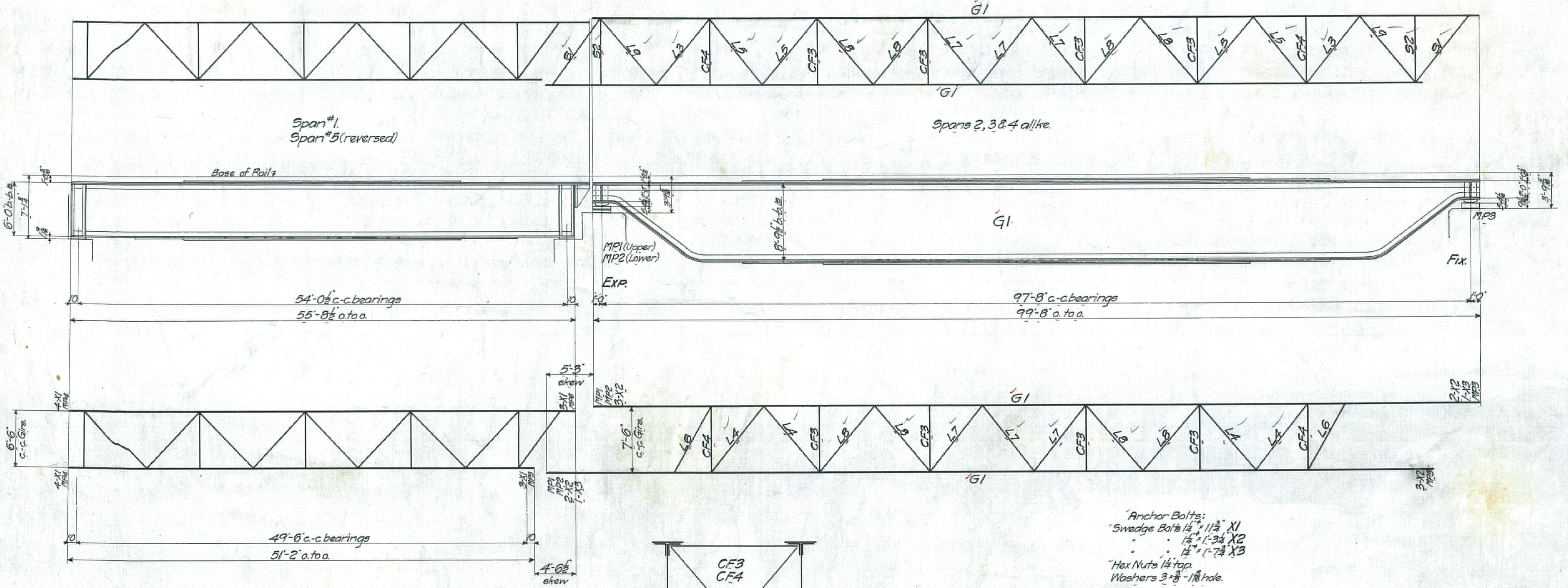
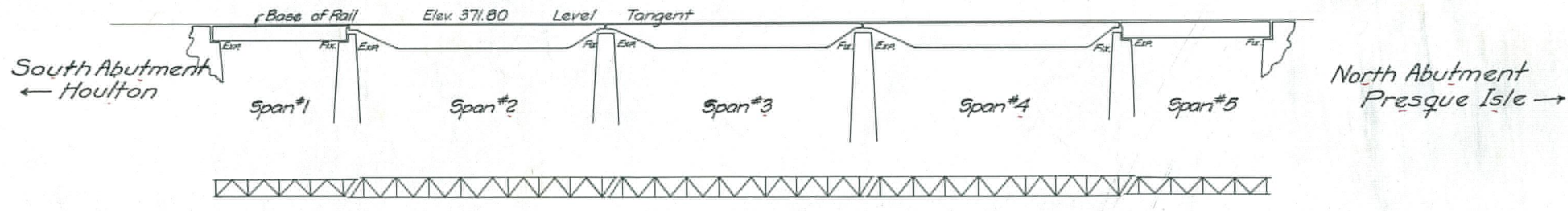
**SPECIFICATIONS:- A.R.E.A. 1929**  
**MATERIAL:- O.H. Steel.**  
**TIES:- 8" x 12" notched to 11 1/2"**  
**NOTE:- Use 1" rivets on 99'-8" girders.**

APPROVED  
Feb. 3, 1931.

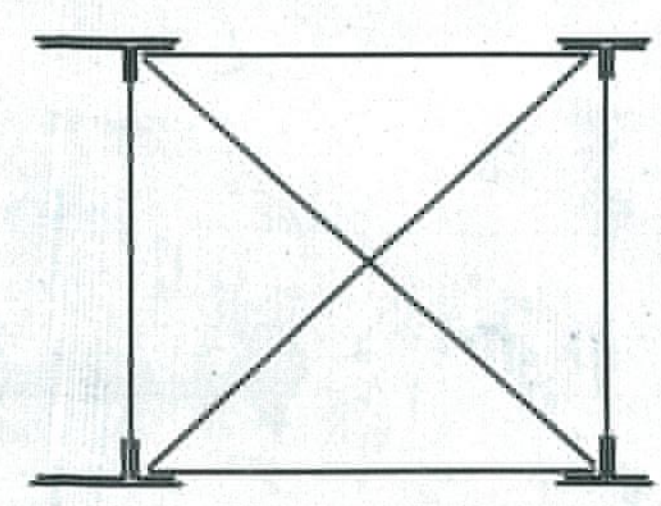
**BANGOR & AROOSTOOK RAILROAD CO.**  
**BRIDGE NO. 166.29**  
**SECOND CROSSING MEDUXNEKEAG RIVER**  
**HOULTON, MAINE**  
**2-S.T. Deck Plate Girder Spans 57'-4 1/2" out to out of girders (skew one end).**  
**3-S.T. Deck Plate Girder Spans 99'-8" out to out of girders (skew).**  
**STRESS SHEET**  
**Scale:- 3/8" & 1/4" = 1'-0"**

Copyright, American Bridge Company, 1931.  
 Inquiry No N-7033-C.  
 Order No G-672  
 American Bridge Company  
 New York Office  
 30 Church St., Jan. 19, 1931.  
 DRAWING NO. B-9991

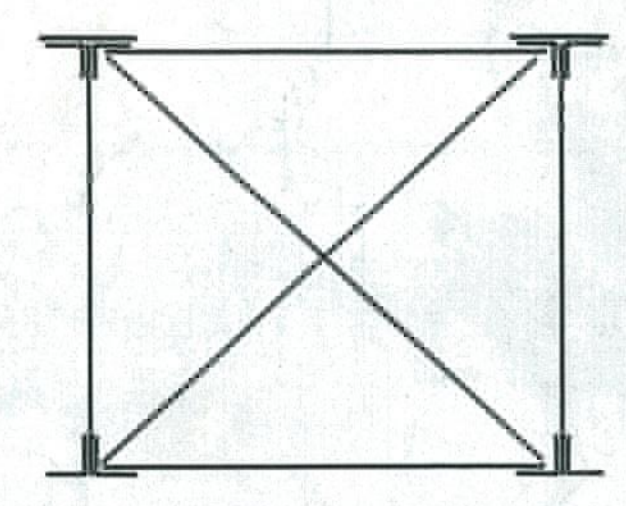
| LIST OF SHEETS |                  |
|----------------|------------------|
| E1             | Masonry Plan     |
| E2             | Erection Diagram |
| 1-a            | Girder           |
| 1-b            | "                |
| 2              | "                |
| 3              | Bracing          |
| 4              | "                |
| 5a             | Girder           |
| 5b             | "                |
| 5c             | "                |
| C1             | Masonry Plates   |
| C2             | "                |
| C3             | "                |
| CA             | anchors          |
| PI             | Sole Plates      |



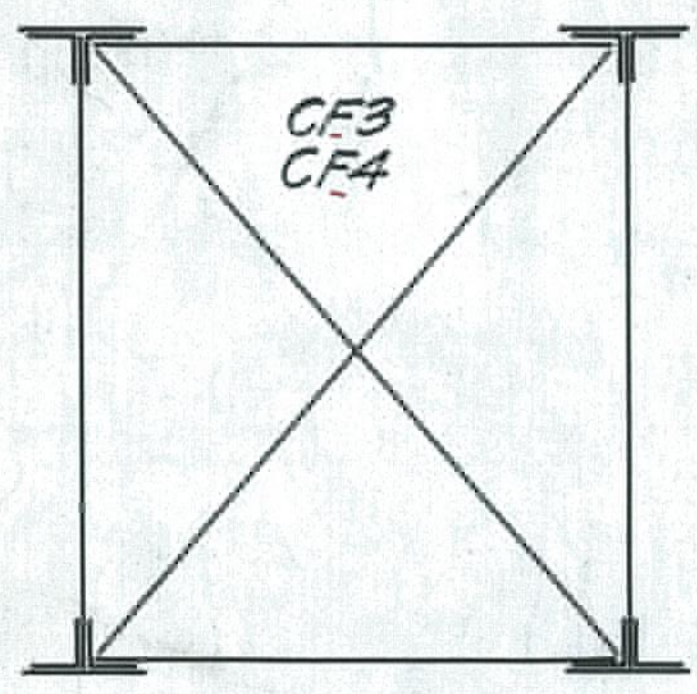
Anchor Bolts:  
 Swedge Bolts 1 1/2" x 11 1/2" X1  
 1 1/2" x 1-3/4" X2  
 1 1/2" x 1-7/8" X3  
 Hex Nuts 1 1/2" top  
 Washers 3" x 1-1/8" hole.



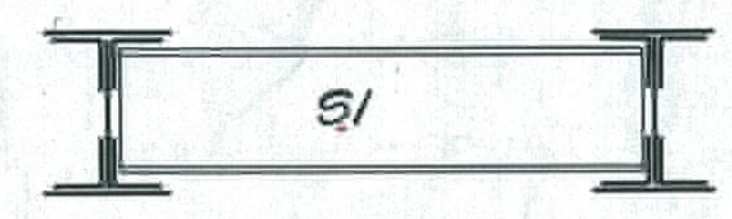
Int. Sec. Spans 1 & 5.



End View Spans 1 & 5.



Int. Sec. Spans 2, 3 & 4.



End View Spans 2, 3 & 4.

Field Connections Riveted

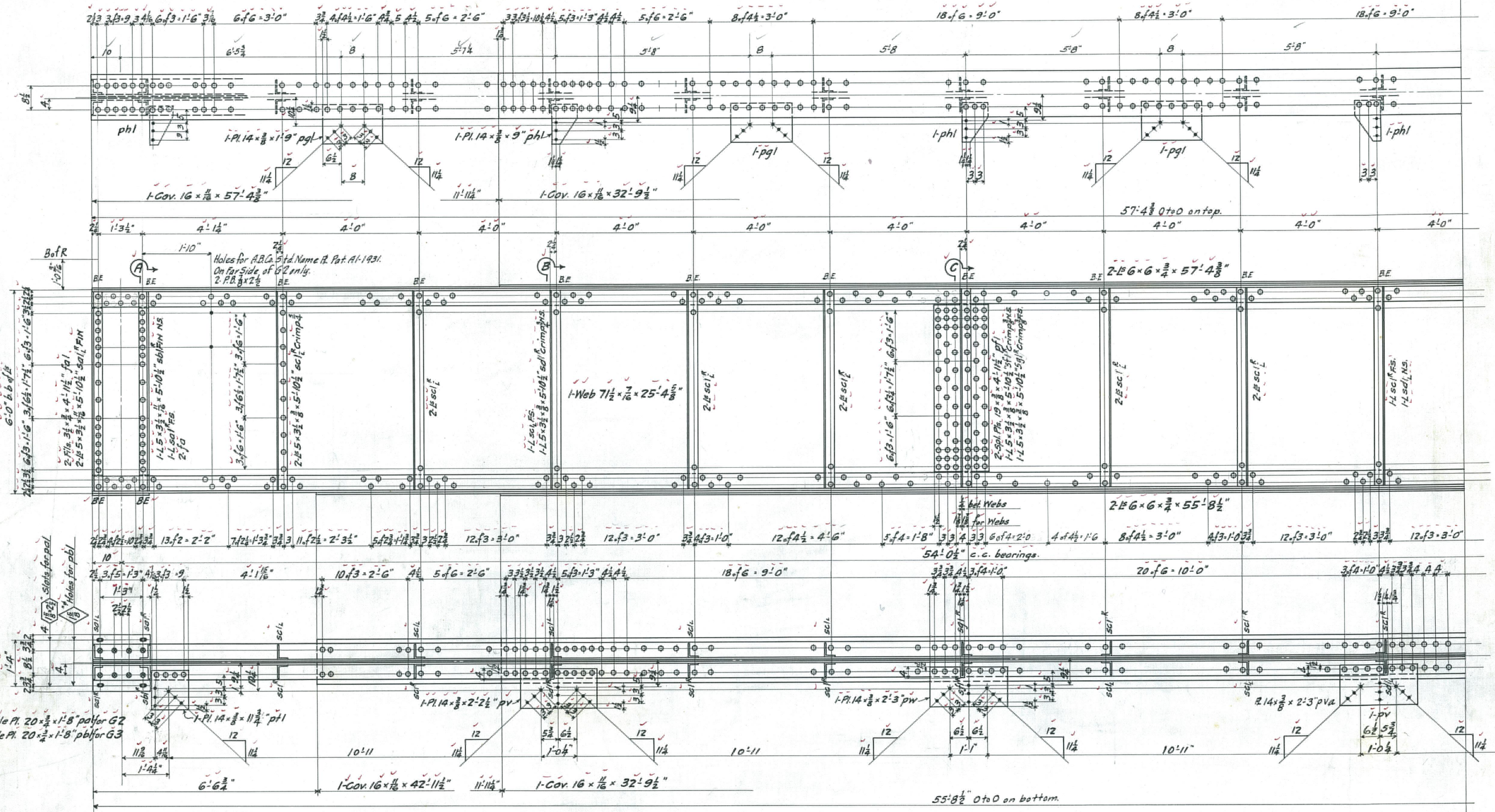
BANGOR & BROOKS RAILROAD Co.  
 BRIDGE No. 166.29  
 SECOND CROSSING MEDUXNEKEG RIVER  
 HOULTON, MAINE.

Erection Diagram  
 AMERICAN BRIDGE COMPANY.  
 DRAWINGS MADE AT Elmira PLANT.  
 WORK FABRICATED AT Elmira PLANT.  
 IN CHARGE OF Beebe  
 DRAW. MADE BY [Signature] DATE 2-6-31  
 DRAW. CHECKED BY [Signature] DATE 2-21-31

ORDER No. 6672 SHEET No. E2  
 (Sheet 12 of 17) 33-67

FILE J 99



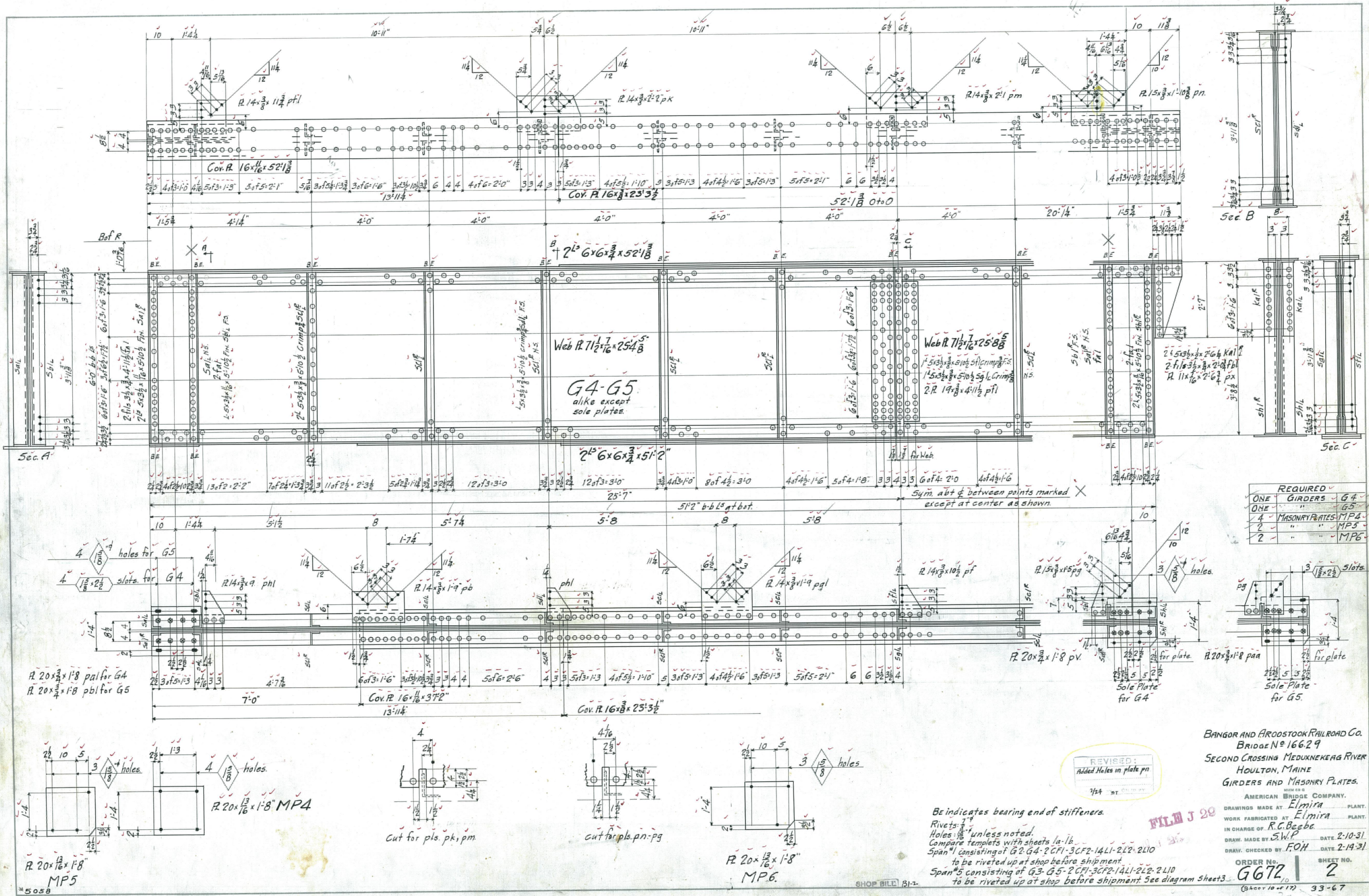


G2 } alike except for  
 G3 } sole plates.

BANGOR & ARROSTOOK R.R. CO.  
 BRIDGE No. 166.29  
 SECOND CROSSING MEDUXNEKEAG RIVER  
 HOULTON, MAINE  
 GIRDERS

AMERICAN BRIDGE COMPANY.  
 DRAWINGS MADE AT Elmira PLANT.  
 WORK FABRICATED AT Elmira PLANT.  
 IN CHARGE OF R.C. Beebe  
 DRAW. MADE BY Patricia DATE 2-11-31  
 DRAW. CHECKED BY FOH DATE 2-19-31  
 ORDER No. 6672 SHEET No. 16  
 (Sheet 9 of 17) 33-67

FILE 799



| REQUIRED |                      |
|----------|----------------------|
| ONE      | GIRDERS - G4         |
| ONE      | " - G5               |
| 4        | MASONRY PLATES - MP4 |
| 2        | " - MP5              |
| 2        | " - MP6              |

BANGOR AND AROOSTOOK RAILROAD CO.  
 BRIDGE No 16629  
 SECOND CROSSING MEDUXNEAG RIVER  
 HOULTON, MAINE  
 GIRDERS AND MASONRY PLATES.

AMERICAN BRIDGE COMPANY.  
 Elmira PLANT.  
 WORK FABRICATED AT Elmira PLANT.  
 IN CHARGE OF R.C. Beebe.  
 DRAWN BY S.W.P. DATE 2-10-31  
 DRAW. CHECKED BY FOH DATE 2-19-31

ORDER No. G672 | SHEET No. 2  
 (Sheet 10 of 17) 33-67

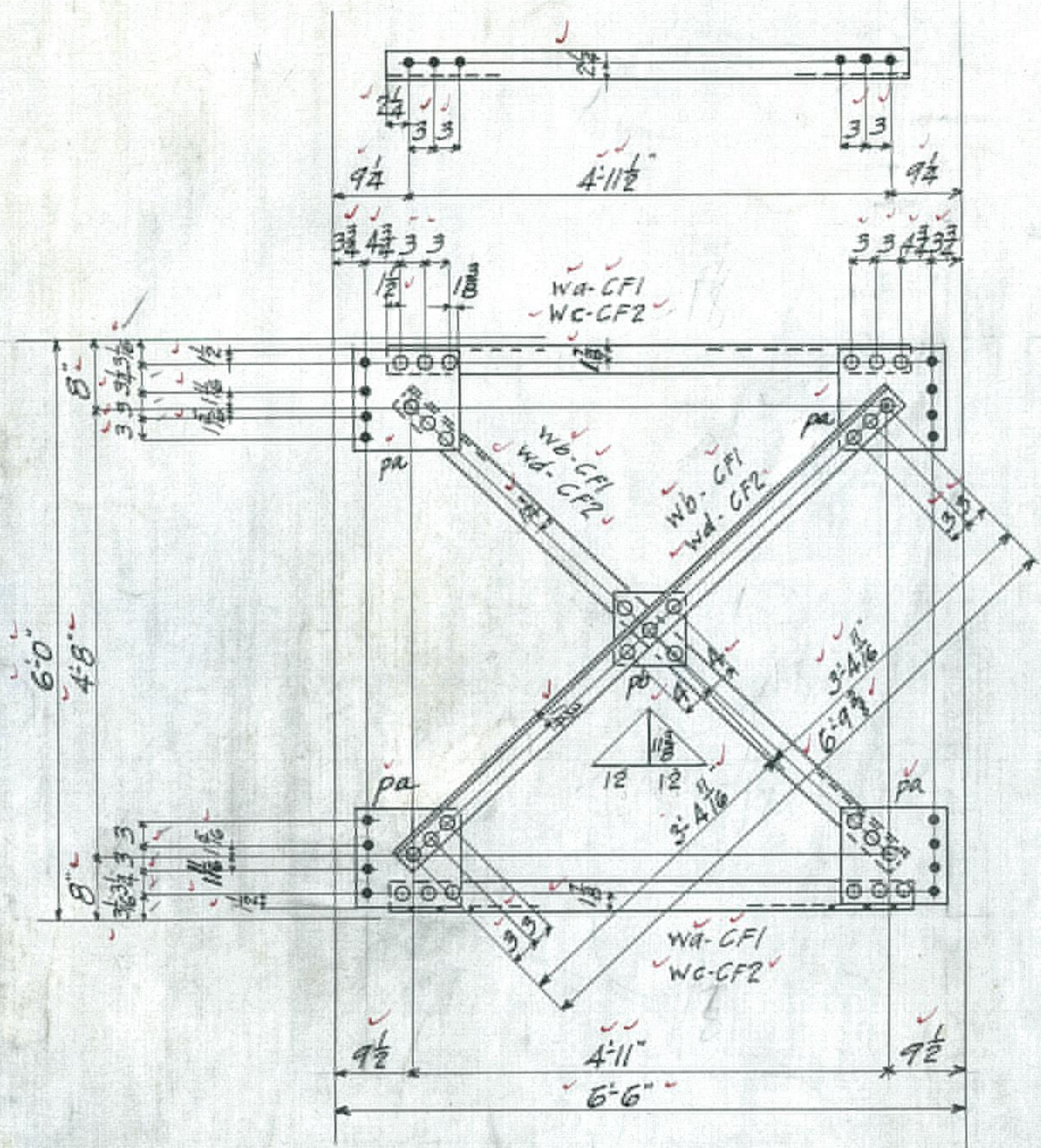
Be indicates bearing end of stiffeners.  
 Rivets: 7/8" unless noted.  
 Holes: 1/8" unless noted.  
 Compare templates with sheets la-lb.  
 Span #1 consisting of G2-G4-2CF1-3CF2-14L1-2L2-2L10  
 to be riveted up at shop before shipment.  
 Span #5 consisting of G3-G5-2CF1-3CF2-14L1-2L2-2L10  
 to be riveted up at shop before shipment. See diagram sheet 3.

REVISED:  
 Added Holes in plate pn  
 1/24

FILED J 29

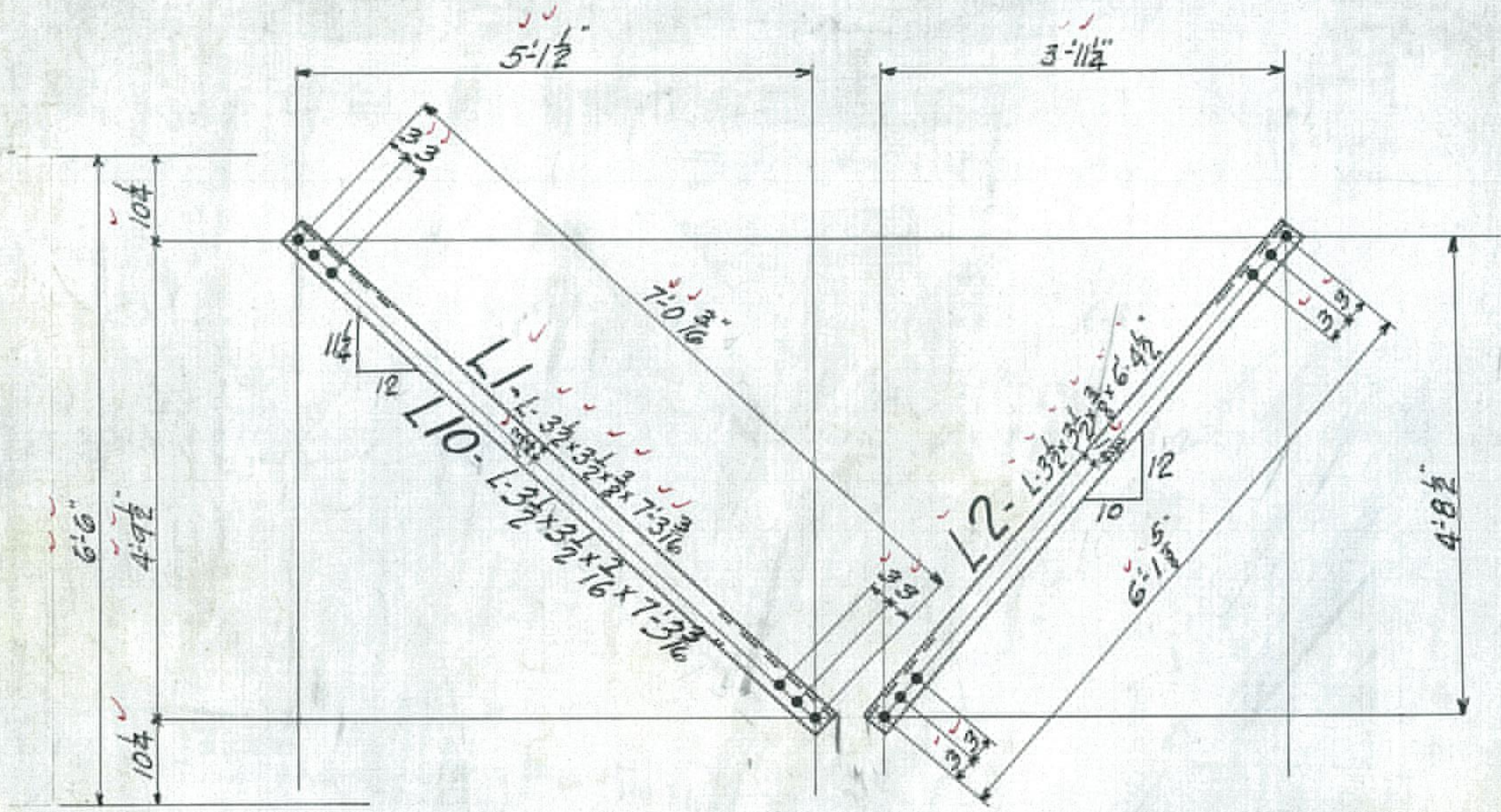
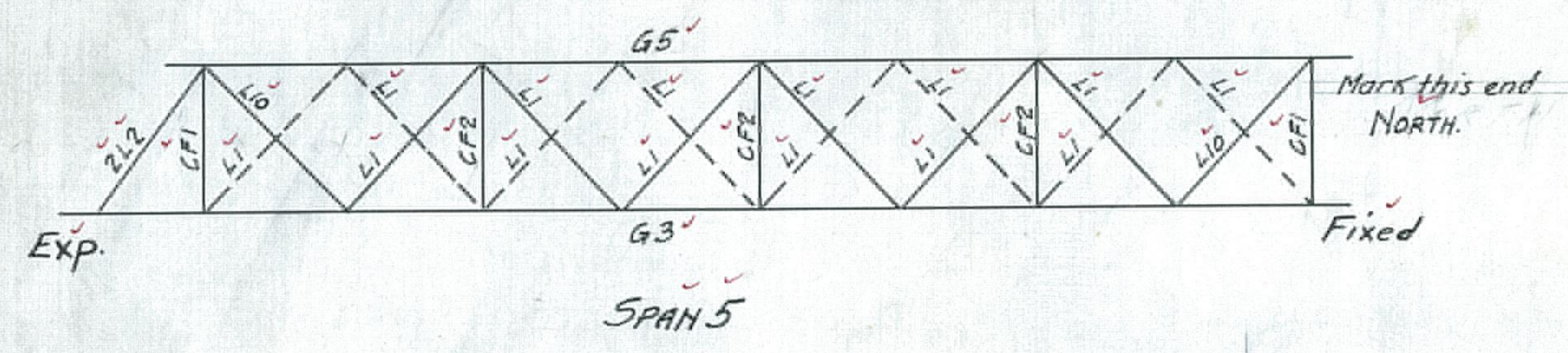
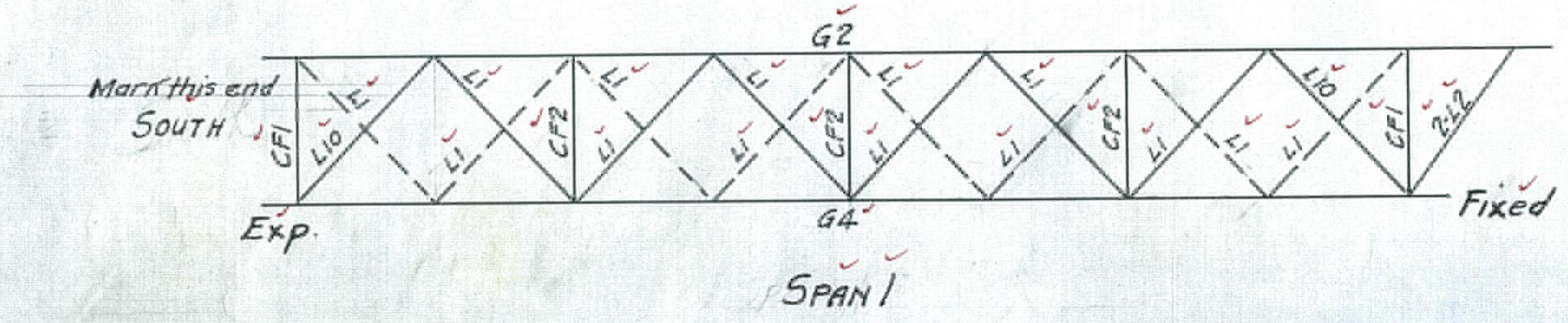
SHOP BILL B1-1

5058



**CF1**  
 2<sup>l</sup> 3<sup>1</sup>/<sub>2</sub> x 3<sup>1</sup>/<sub>2</sub> x 7<sup>0</sup>/<sub>16</sub> x 5'-4" WA  
 2<sup>l</sup> 3<sup>1</sup>/<sub>2</sub> x 3<sup>1</sup>/<sub>2</sub> x 7<sup>0</sup>/<sub>16</sub> x 7'-0" WB  
 4- R<sub>s</sub> 13 x 7<sup>1</sup>/<sub>2</sub> x 1<sup>1</sup>/<sub>2</sub> pa  
 1-R 9 x 7<sup>1</sup>/<sub>2</sub> x 9 pb

**CF2**  
 2<sup>l</sup> 3<sup>1</sup>/<sub>2</sub> x 3<sup>1</sup>/<sub>2</sub> x 7<sup>0</sup>/<sub>16</sub> x 5'-4" WC  
 2<sup>l</sup> 3<sup>1</sup>/<sub>2</sub> x 3<sup>1</sup>/<sub>2</sub> x 7<sup>0</sup>/<sub>16</sub> x 7'-0" WD  
 4- R<sub>s</sub> pa  
 1-R pb



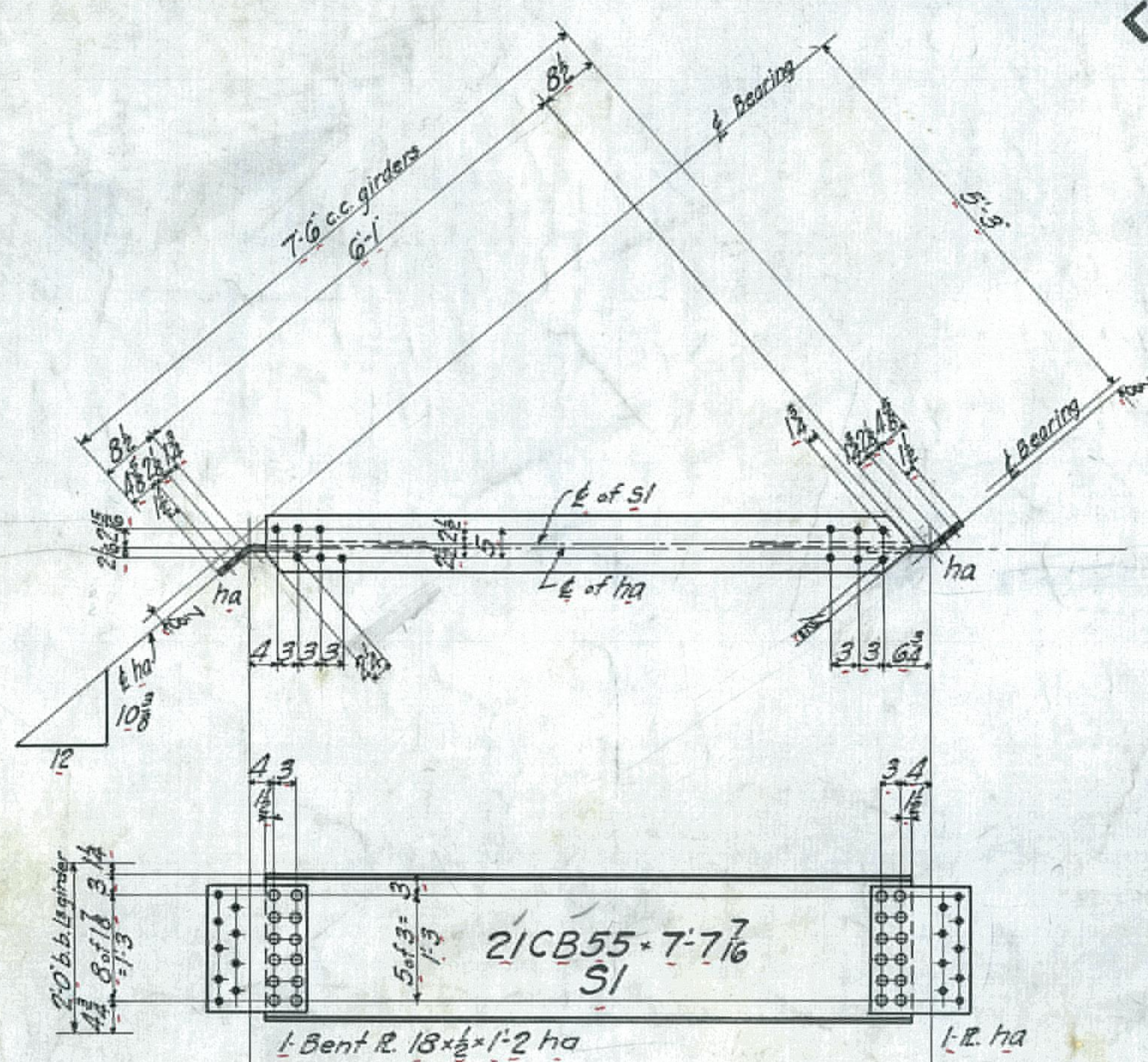
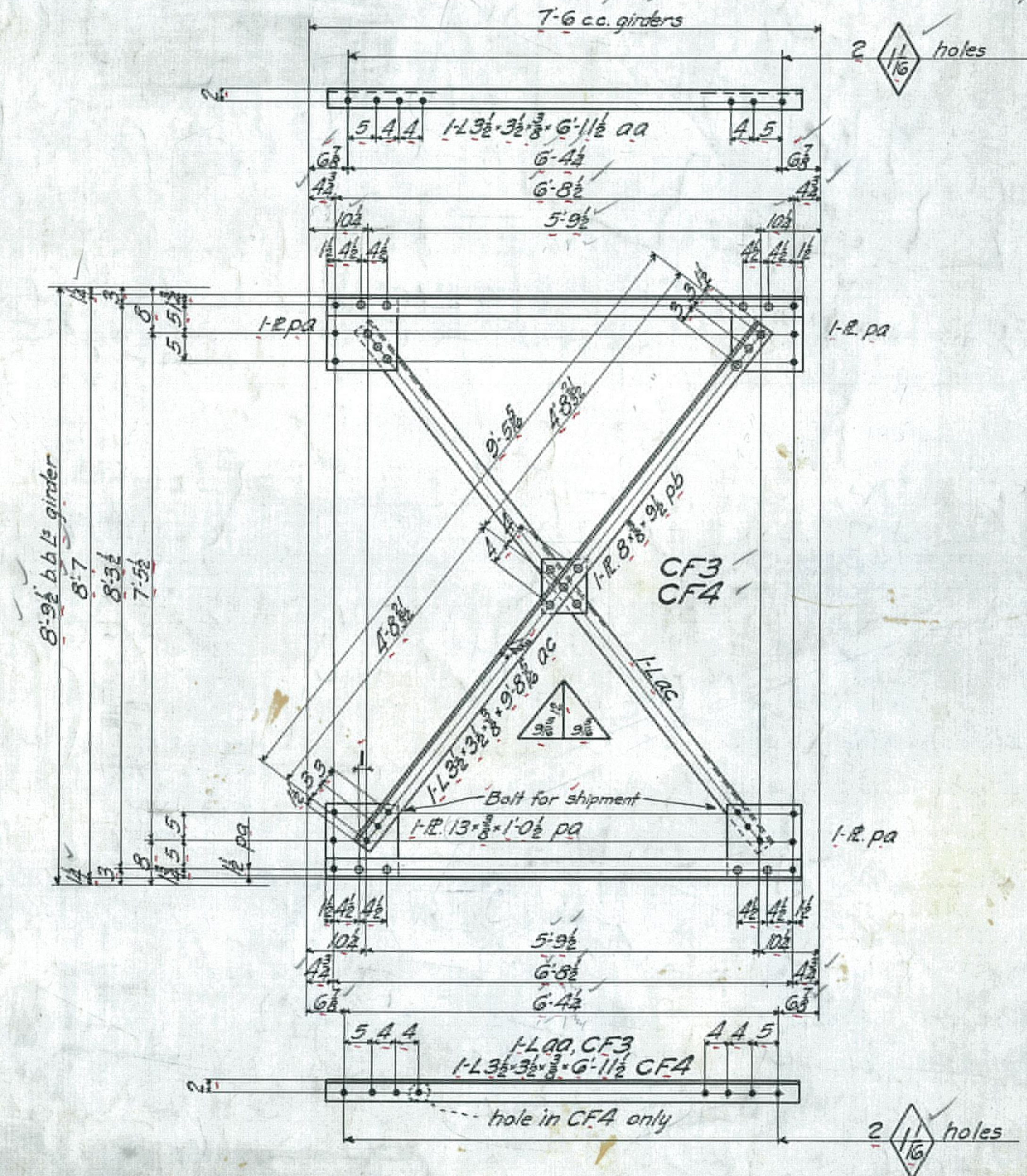
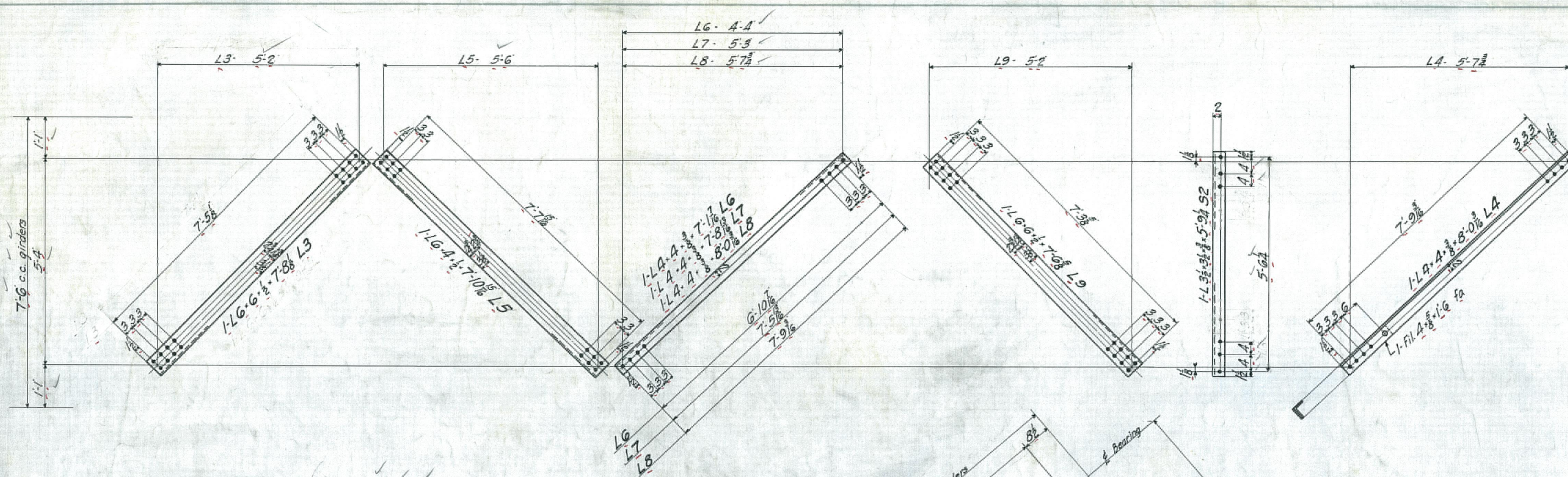
| REQUIRED |              |     |
|----------|--------------|-----|
| 4        | CROSS FRAMES | CF1 |
| 6        | "            | CF2 |
| 28       | LATERALS     | L1  |
| 4        | "            | L2  |
| 4        | "            | L10 |

BANGOR AND AROOSTOOK RAILROAD CO  
 BRIDGE No 166.29  
 SECOND CROSSING MEDUXNEKEAG RIVER  
 HOULTON, MAINE.  
 CROSS FRAMES & BRACING

AMERICAN BRIDGE COMPANY.  
 DRAWINGS MADE AT Elmira PLANT.  
 WORK FABRICATED AT Elmira PLANT.  
 IN CHARGE OF R. C. Beebe  
 DRAW. MADE BY S. W. P. DATE 2-6-31  
 DRAW. CHECKED BY F. Q. H. DATE 2-14-31

Rivets: 7/8"  
 Holes: 15/16"  
 CF1-CF2, L1, L2, L10 to be riveted up in  
 shop before shipment as noted on sheets 1 & 2.

ORDER No. **G672** | SHEET No. **3**  
 (Sheet 13 of 17) 33-67



| REQUIRED |              |     |
|----------|--------------|-----|
| 6        | Laterals     | L3  |
| 12       | "            | L4  |
| 12       | "            | L5  |
| 6        | "            | L6  |
| 18       | "            | L7  |
| 24       | "            | L8  |
| 6        | "            | L9  |
| 6        | Struts       | S1  |
| 6        | "            | S2  |
| 12       | Gross Frames | CF3 |
| 6        | "            | CF4 |

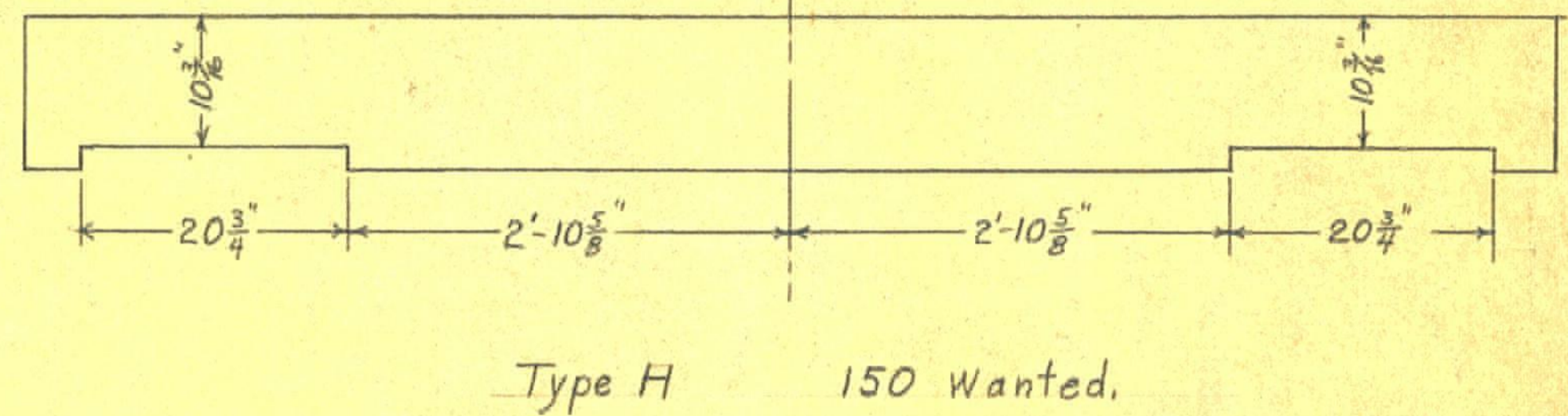
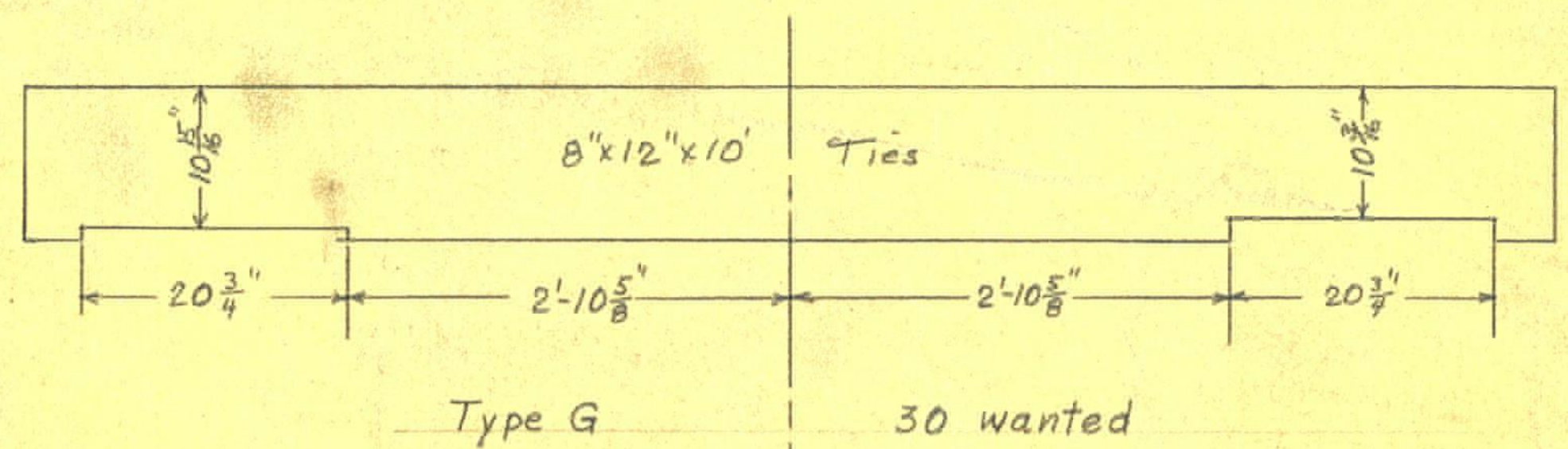
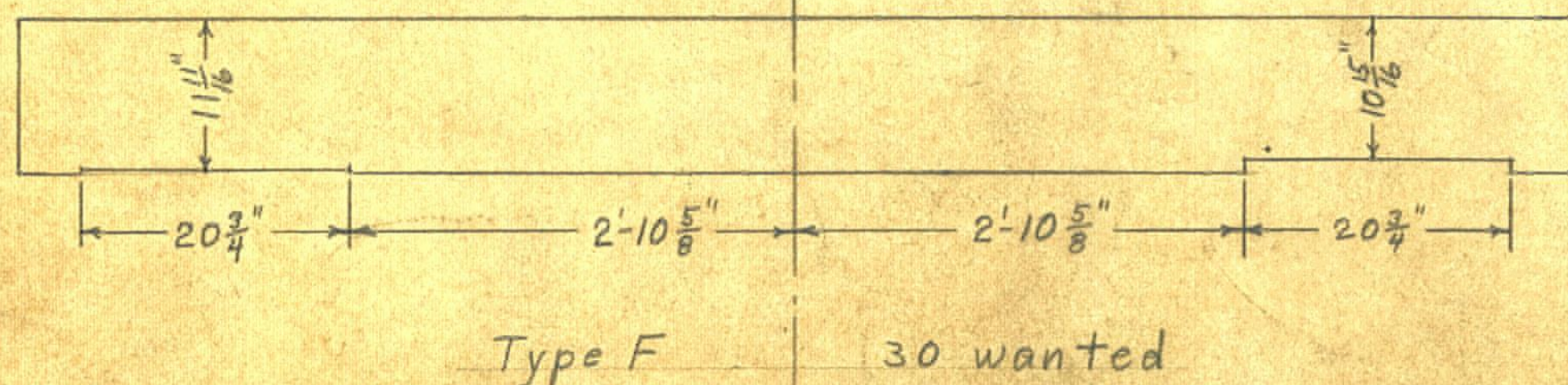
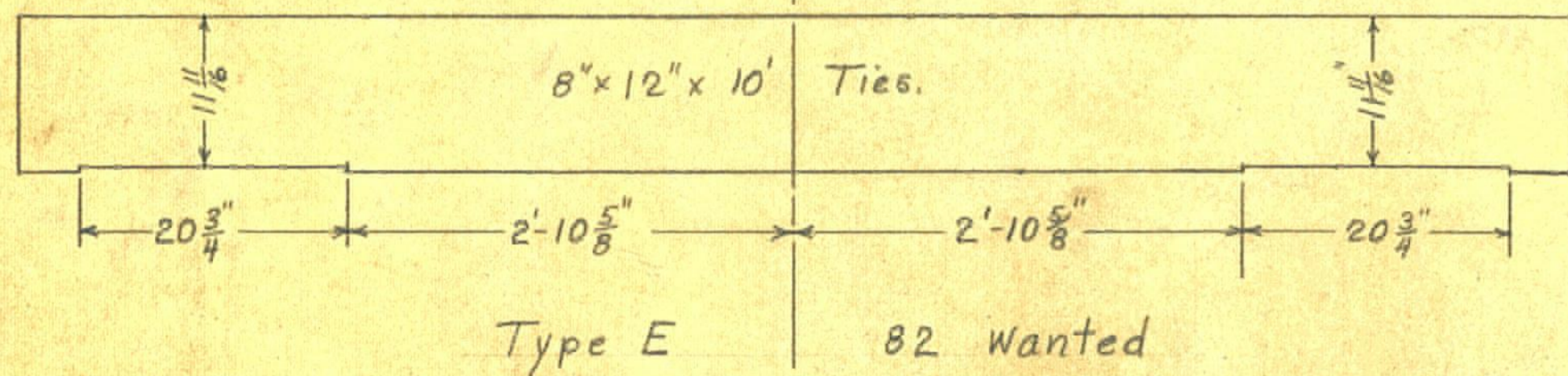
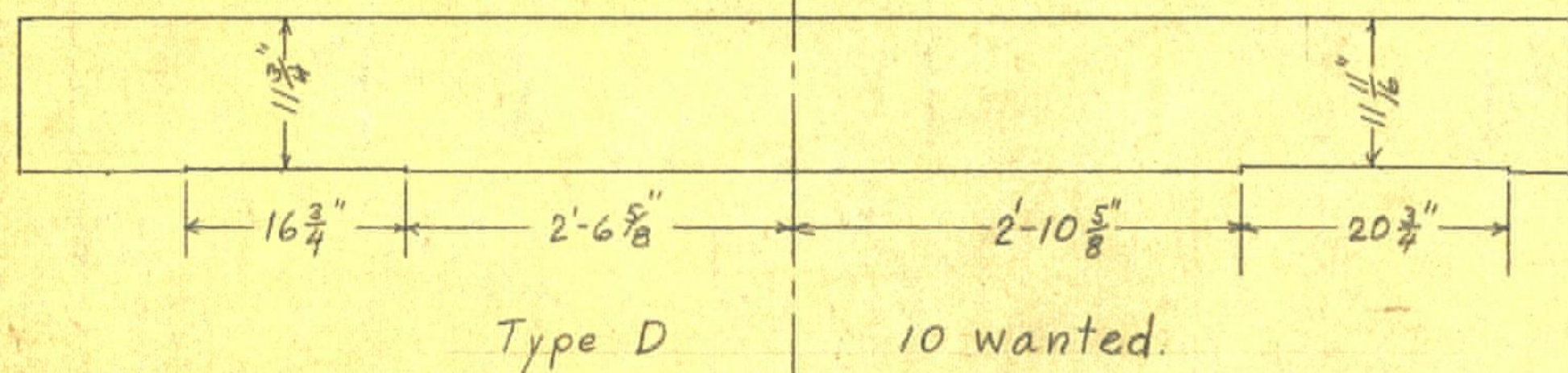
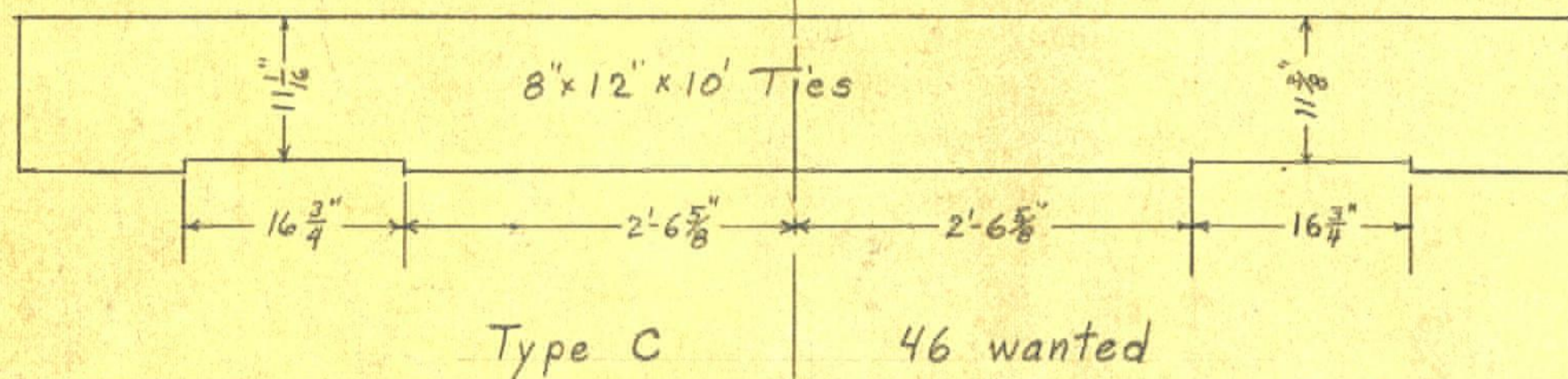
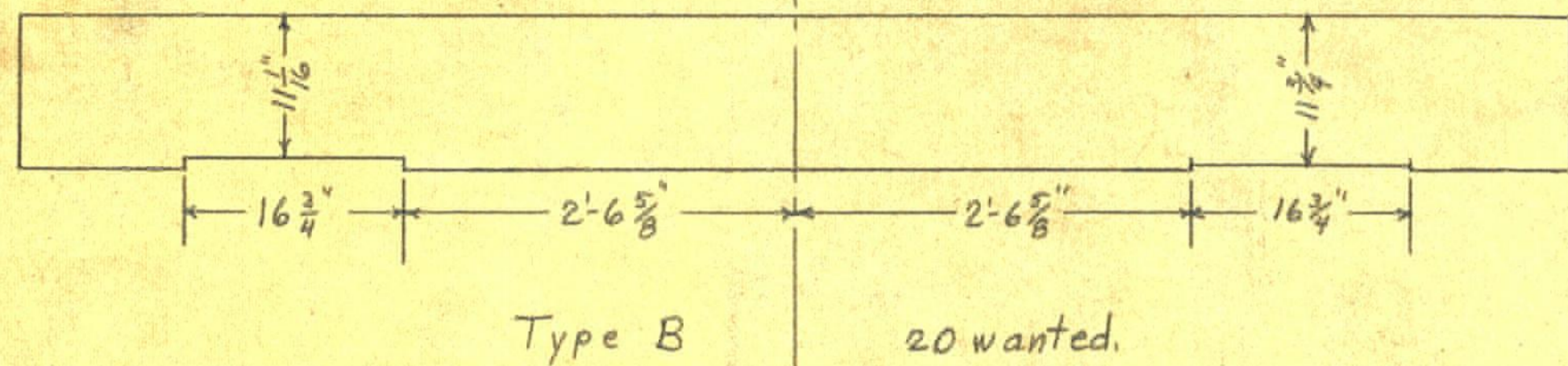
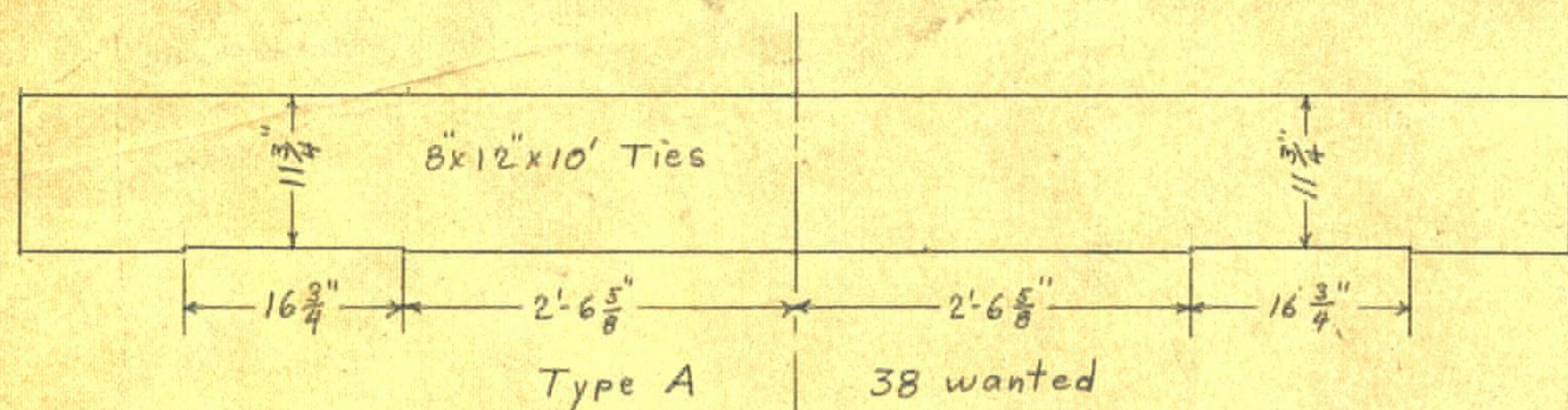
NOTES:  
Rivets 3/4"  
Holes 1/16" Unless noted.

REVISED:  
Note for Bot. View, S1 added  
DATE 2-23-31 BY R.A.H.

BANGOR AND AROOSTOOK RAILROAD CO.  
BRIDGE No. 16629  
SECOND CROSSING MEDUXNEKEAS RIVER  
HOUTON, MAINE  
Cross Frames, Laterals  
AMERICAN BRIDGE COMPANY.  
DRAWINGS MADE AT Elmira PLANT.  
WORK FABRICATED AT Elmira PLANT.  
IN CHARGE OF R.C. Beebe  
DRAW. MADE BY R.A.H. DATE 2-21-31  
DRAW. CHECKED BY J.S. DATE 2-21-31  
ORDER No. 6672 SHEET No. 4  
SHOP BILL B34  
(Sheet 14 of 17) 33-67

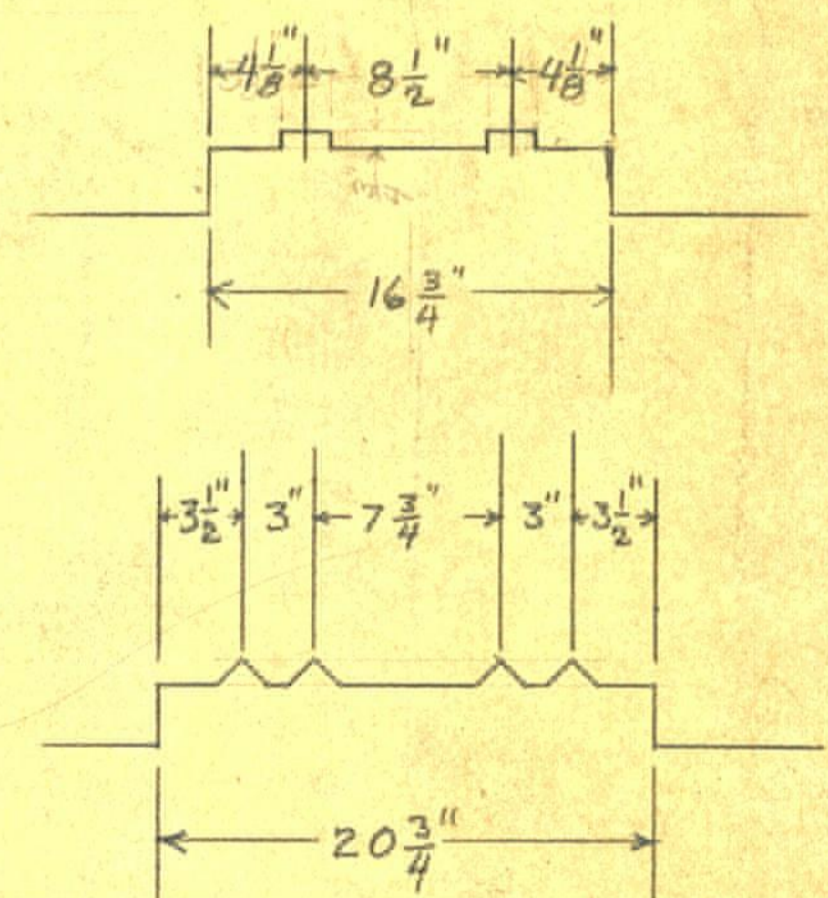






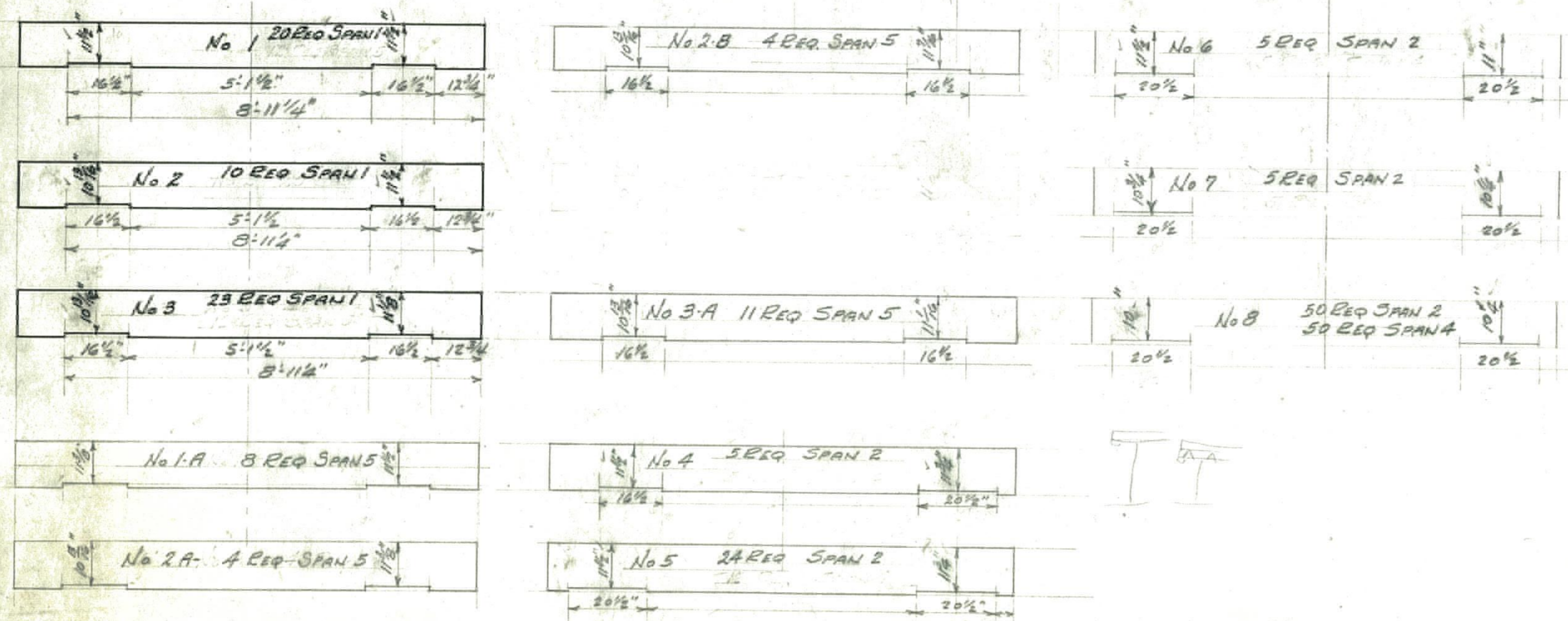
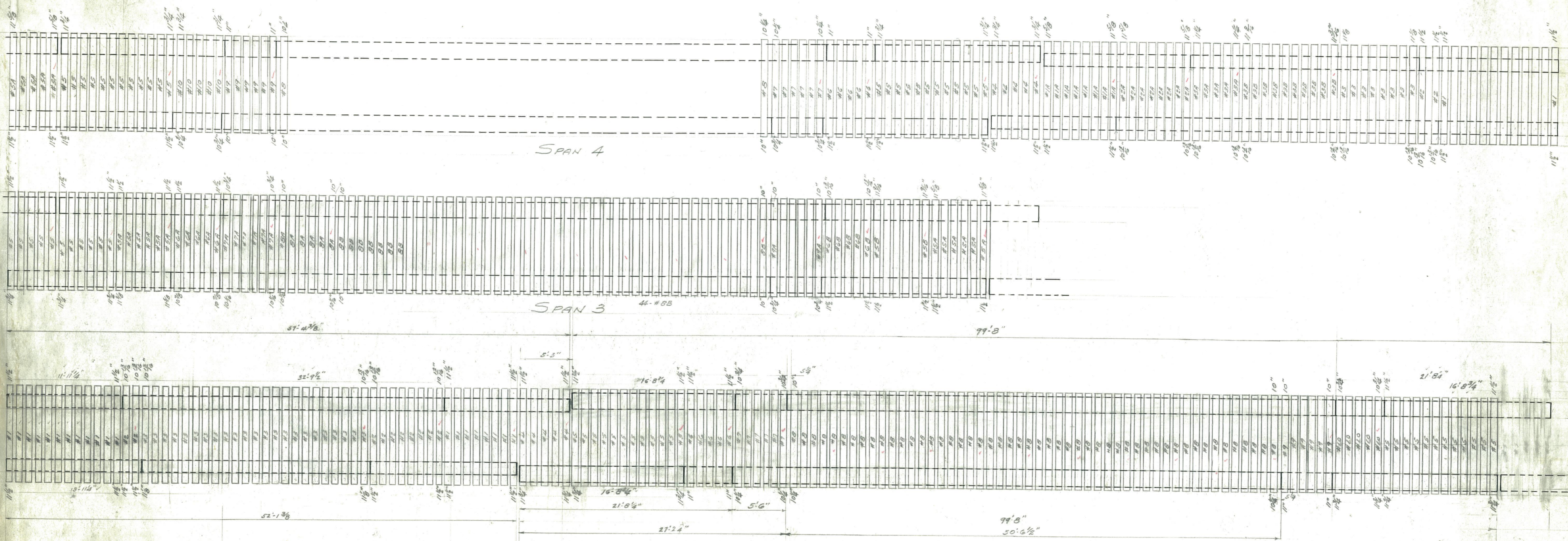
Place ties in following order going from South to North.

| Number | Type.                |
|--------|----------------------|
| 12     | A                    |
| 2      | B                    |
| 23     | C                    |
| 8      | B                    |
| 7      | A                    |
| 5      | D End short span.    |
| 12     | E                    |
| 5      | F                    |
| 5      | G                    |
| 50     | H                    |
| 5      | G                    |
| 5      | F                    |
| 29     | E End 1st long span. |
| 5      | F                    |
| 5      | G                    |
| 50     | H 2nd 3/4 long spans |
| 5      | G                    |
| 5      | F                    |
| 29     | E End 2nd long span. |
| 5      | F                    |
| 5      | G                    |
| 50     | H                    |
| 5      | G                    |
| 5      | F                    |
| 12     | E                    |
| 5      | D End 3rd long span. |
| 7      | A                    |
| 8      | B                    |
| 23     | C                    |
| 2      | B                    |
| 12     | A End Bridge.        |



DAPPING FOR RIVETS.

H-17.16  
Ties for Bridge ~~166.29~~  
Mar. 6, 1931. Scale: 1"=1'



BRIDGE DECKING  
 BC 166-29 H-17.16  
 Scale 1/4" = 1' 2/5/41

# 4208

11-12



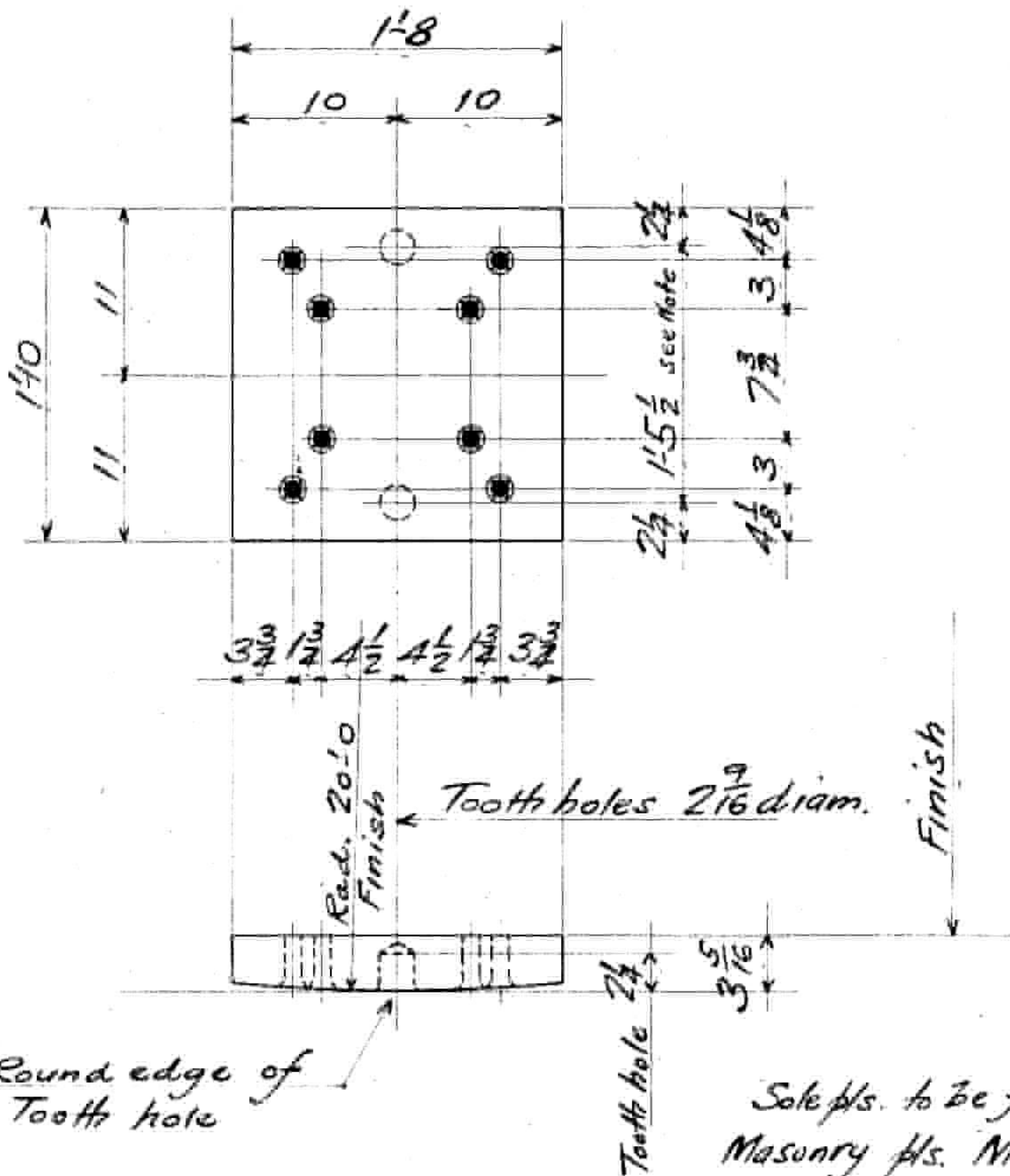
For Plan # 15020 Houston, Texas

Station 2+97.8 abutment and girder

| Point from 200              | 2'         | 4'         | 6'         | 8'         | 10'        | 12'        | 5'         |
|-----------------------------|------------|------------|------------|------------|------------|------------|------------|
| Moment D                    | 1,110,000  | 2,210,000  | 3,270,000  | 4,420,000  | 5,410,000  | 6,350,000  | 7,000,000  |
| L                           | 5,110,000  | 9,560,000  | 14,000,000 | 18,260,000 | 22,280,000 | 26,000,000 | 30,000,000 |
| I                           | 2,870,000  | 7,470,000  | 10,730,000 | 13,840,000 | 16,750,000 | 19,350,000 | 22,000,000 |
| M-Total                     | 10,100,000 | 19,240,000 | 28,000,000 | 36,520,000 | 44,740,000 | 51,700,000 | 59,000,000 |
| h                           | 23.6       | 41.6       | 61.6       | 81.6       | 98.4       | 107.8      | 59.7       |
| C = 1/10 =                  | 431,000    | 470,000    | 421,000    | 450,000    | 455,000    | 503,000    | 460,000    |
| T + C axis                  | 470,000    | 607,000    | 595,000    | 520,000    | 500,000    | 508,000    | 504,000    |
| A = T + 10,000              | 29.4       | 37.7       | 37.2       | 36.2       | 31.2       | 31.7       | 37.2       |
| Net moment / h              | 42.7       | 40.0       | 37.9       | 39.1       | 40.2       | 40.5       | 39.0       |
| Depth of web                | 25.8       | 44.0       | 63.8       | 82.5       | 100.6      | 105.0      | 53.0       |
| area                        | 1.29       | 1.29       | 1.29       | 1.29       | 1.10       | 1.00       | 1.00       |
| Stress D                    | 42,000     | 45,900     | 43,800     | 41,200     | 39,700     | 37,700     | 41,000     |
| L                           | 213,000    | 205,500    | 177,500    | 139,500    | 131,500    | 123,000    | 120,000    |
| I                           | 121,400    | 155,700    | 149,700    | 142,700    | 127,500    | 121,500    | 110,000    |
| V = Total                   | 422,400    | 407,100    | 391,000    | 375,000    | 359,200    | 344,500    | 378,000    |
| C Area                      | 190,000    | 380,000    | 370,000    | 364,000    | 237,000    | 230,000    | 316,000    |
| V <sub>1</sub> = V - C Area | 232,400    | 27,100     | 19,000     | 11,000     | 127,700    | 114,500    | 62,000     |
| V <sub>1</sub> + 10,000     | 23.7       | 2.7        | 1.9        | 1.1        | 14.0       | 14.2       | 2.2        |
| Web area                    | 30.4       | 53.1       | 31.9       | 41.8       | 50.3       | 54.0       | 27.0       |

| Section at 14'             | Section at 15' 24" | Section at 24'    | Head down on left on abutment at 12' from top |
|----------------------------|--------------------|-------------------|---|
| Plan = 475,000 + 6,130,000 | Plan = 7,500,000   | Plan = 15,150,000 | Head down on left on abutment at 12' from top |
| 2 x 15 x 12.5 = 4600       | 4115               | 13610             | It = V <sub>1</sub> + 10,000                  |
| 2 x 15 x 24 x 2.5 = 4700   | 5300               | 14070             | = 455,000 + 100,000                           |
| 4 x 8 x 2.5 = 340          | 340                | 720               | 11,840  |
| 2 x 21 x 2.5 = 540         | 540                | 24,150            | Plan moment transfer to columns assumed       |
| 1/2 x 15 x 15 = 150        | 60                 | 60                | In columns assumed                            |
| 2 x 2 x 10 x 2.5 = 579     | 620                | 22,670            | See above = 11,840                            |
| 2 x 4 x 10 x 2.5 = 771     | 820                | 12,640            |   |
| G.I. = 11,840              | 12,545             | 621,150           |   |
|                            | 10,920             | 1,272             |   |
| Net I = 10,200             | 11,425             | Net I = 13,750    |   |
| G.I. = 930                 | 931                | G.I. = 1000       |   |
| Net I = 249                | 878                | Net I = 780       |   |
| Net Ten = 7720             | 9,000              | 10,370            |   |
| G.I. Comp = 6600           | 8200               | 9,500             |   |
| Stress = 47.5              | 2800               | 7,900             |   |
|                            | 9,000              |                   |   |

SKETCH SHEET  
AMERICAN BRIDGE COMPANY



Sole pls. to be fitted to  
Masonry pls. MPI and MP3  
Before assembling with Gir.  
see sh. C1 & C3

12- Rocker Sole pls. RSI  
Riveted to bottom flange  
of Girders G1 see sh. 50.50.

| Line No. | Member |                  |      | Material |                |            |     | Remarks | Cal. Weight lbs. | Ordered |          |            |     |
|----------|--------|------------------|------|----------|----------------|------------|-----|---------|------------------|---------|----------|------------|-----|
|          | No PCS | Name             | Mark | No PCS   | Shape          | Length Ft. | In. |         |                  | + mg.   | No PCS   | Length Ft. | In. |
| 1        | 12     | Rocker Sole pls. | RSI  | 12       | pl. 20 x 3 1/8 | 1          | 10  |         |                  | 2       | 20-5 3/8 | 11 4 3     |     |
| 2        |        |                  |      |          |                |            |     |         |                  |         |          |            |     |

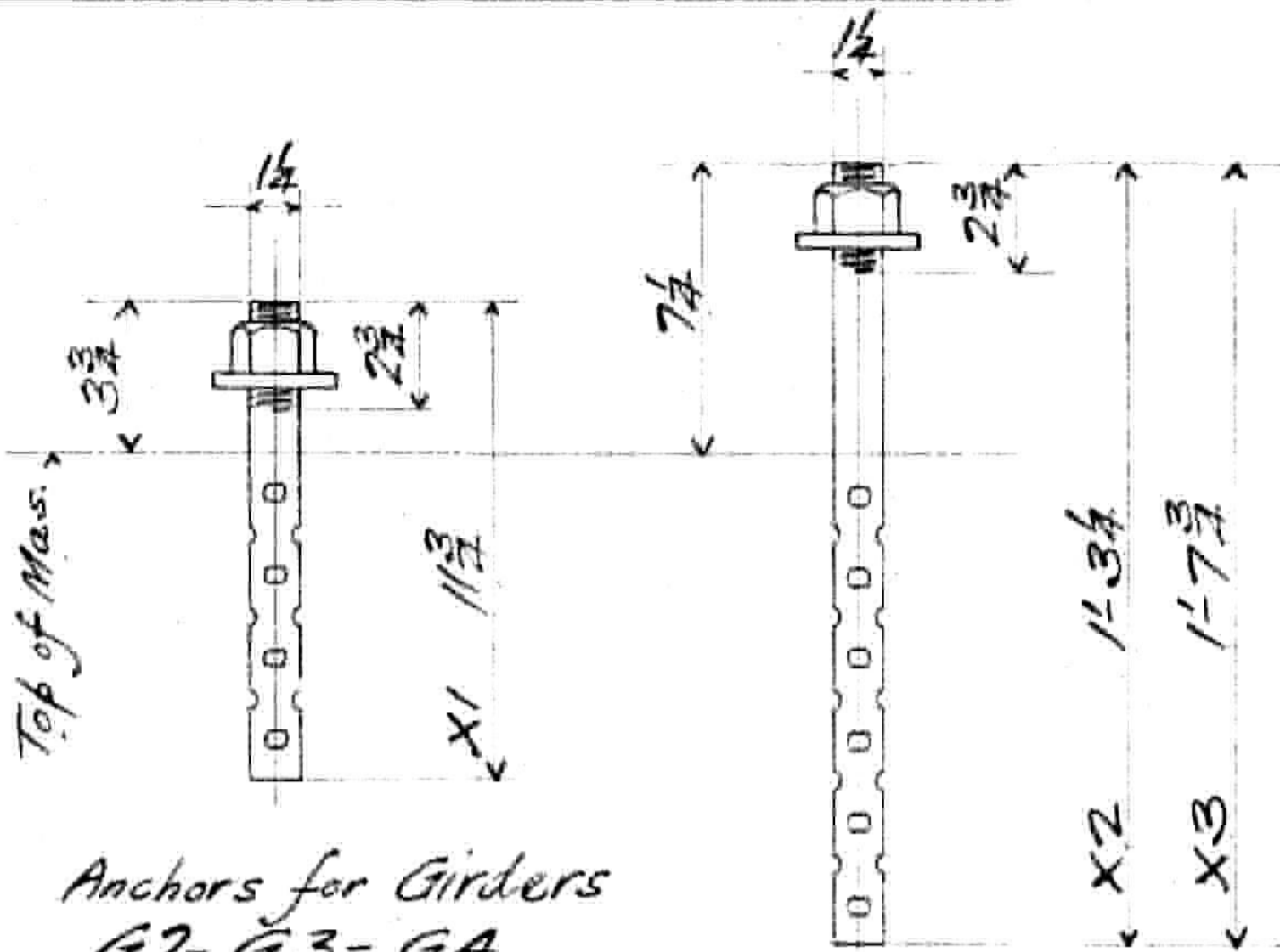
|              |       |             |      |                    |           |           |
|--------------|-------|-------------|------|--------------------|-----------|-----------|
| RIVETS       | HOLES | DATE        | DATE | DRAWINGS           | ORDER NO. | SHEET NO. |
| 1 1/2        | 1 1/2 | RSB 2-10-31 |      | Elmira FABRICATION | G672      | PI        |
| unless noted |       |             |      |                    |           |           |

NAME OF STRUCTURE

Bangor and Aroostook R.R. Co

Bridge No. 166.29 Second Crossing Meduxnekeag River Houlton Maine

AMERICAN BRIDGE COMPANY



Anchors for Girders  
G2-G3-G4  
and G5

In Piers 1 and A also  
North and South Abut.

Anchors for Girders  
G1

In Piers 1-2-3 and A

| LINE NO | MEMBER   |         |      | MATERIAL |               |                          | REMARKS | CALCULATED WEIGHT PER LINE NUMBER | ORDERED  |                          |      | SHIPMENTS |
|---------|----------|---------|------|----------|---------------|--------------------------|---------|-----------------------------------|----------|--------------------------|------|-----------|
|         | NO. PCS. | NAME    | MARK | NO. PCS. | SHAPE         | LENGTH<br>FT. INCH. INS. |         |                                   | NO. PCS. | LENGTH<br>FT. INCH. INS. | ITEM |           |
| 1       | 28       | Anchors | X1   | 28       | 1 1/2" diam.  | 0 11 3/4                 |         |                                   |          |                          | A    |           |
| 2       |          |         |      | 28       | Std. Hex Nuts | 1 1/2 Tap                |         |                                   |          |                          | A    |           |
| 3       |          |         |      | 28       | Washers       | 3 x 3/8 - 1 5/16 hole    |         |                                   |          |                          | A    |           |
| 4       |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 5       |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 6       | 30       | "       | X2   | 30       | 1 1/2" diam.  | 1 3 1/2                  |         |                                   |          |                          | A    |           |
| 7       |          |         |      | 30       | Std. Hex Nuts | 1 1/2 Tap                |         |                                   |          |                          | A    |           |
| 8       |          |         |      | 30       | Washers       | 3 x 3/8 - 1 5/16 hole    |         |                                   |          |                          | A    |           |
| 9       |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 10      |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 11      | 6        | "       | X3   | 6        | 1 1/2" diam.  | 1 7 3/4                  |         |                                   |          |                          | A    |           |
| 12      |          |         |      | 6        | Std. Hex Nuts | 1 1/2 Tap                |         |                                   |          |                          | A    |           |
| 13      |          |         |      | 6        | Washers       | 3 x 3/8 - 1 5/16 hole    |         |                                   |          |                          | A    |           |
| 14      |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 15      |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 16      |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 17      |          |         |      |          |               |                          |         |                                   |          |                          |      |           |
| 18      |          |         |      |          |               |                          |         |                                   |          |                          |      |           |

No Paint

|        |      |             |      |                                 |           |           |
|--------|------|-------------|------|---------------------------------|-----------|-----------|
| RIVETS | HOLE | DATE        | DATE | DRAWINGS                        | ORDER No. | SHEET No. |
|        |      | RSB 2-11-31 |      | Elmira<br>FABRICATION<br>Elmira | G 672     | CA        |

Bridge No. 166.29 Second Crossing Meduxnekeag River Houlton Maine *Bonjer & Frost* R.R. Co

# AMERICAN BRIDGE COMPANY

| LINE NO.       | NO. PCS. | DIAM.         | RIVETS        |  | LENGTH UNDER HEAD | BOLTS                |     |        |              | GRIP          | REMARKS       | ITEM | CALCULATED WEIGHT TOTAL | SHIPMENTS |
|----------------|----------|---------------|---------------|--|-------------------|----------------------|-----|--------|--------------|---------------|---------------|------|-------------------------|-----------|
|                |          |               |               |  |                   | HEAD                 | NUT | WASHER | TYPE OF BOLT |               |               |      |                         |           |
|                |          |               |               |  |                   |                      |     |        |              |               |               |      |                         |           |
|                |          |               |               |  |                   | <i>Eredor's Aist</i> |     |        |              |               |               |      |                         |           |
|                | 108      | $\frac{3}{8}$ | $\frac{3}{2}$ |  |                   |                      |     |        |              | $\frac{1}{2}$ | S1 * G1       |      |                         |           |
|                | 72       | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              | 1             | "             |      |                         |           |
|                | 144      | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              | $\frac{5}{8}$ | CFB4 * G1     | 507  |                         |           |
|                | 72       | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              | $\frac{1}{8}$ | "             | "    |                         |           |
|                | 180      | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              | $\frac{3}{4}$ | "             | "    | fig.                    |           |
|                | 12       | 1             | $\frac{4}{4}$ |  |                   |                      |     |        |              | $\frac{2}{8}$ | "             | "    | "                       |           |
|                | 12       | "             | $\frac{5}{8}$ |  |                   |                      |     |        |              | $\frac{3}{8}$ | "             | "    | "                       |           |
|                | 48       | "             | $\frac{5}{8}$ |  |                   |                      |     |        |              | $\frac{3}{8}$ | "             | "    | "                       |           |
|                | 36       | $\frac{3}{8}$ | $\frac{2}{2}$ |  |                   |                      |     |        |              | $\frac{5}{8}$ | S2 * G1       |      |                         |           |
|                | 336      | "             | $\frac{2}{8}$ |  |                   |                      |     |        |              | $\frac{7}{8}$ | 13-5-9 * G1   |      |                         |           |
|                | 432      | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              | $\frac{3}{2}$ | 1A6-78        |      |                         |           |
|                | 48       | "             | $\frac{2}{8}$ |  |                   |                      |     |        |              | $\frac{1}{8}$ | 1A            |      |                         |           |
|                | 108      | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              | $\frac{3}{8}$ | CFB-4 with 15 |      |                         |           |
| ~~~~~          |          |               |               |  |                   |                      |     |        |              |               |               |      |                         |           |
| <i>Summary</i> |          |               |               |  |                   |                      |     |        |              |               |               |      |                         |           |
|                | 25       | 1             | $\frac{4}{2}$ |  |                   |                      |     |        |              |               |               |      |                         | 31        |
|                | 25       | "             | $\frac{5}{8}$ |  |                   |                      |     |        |              |               |               |      |                         | 36        |
|                | 65       | "             | $\frac{5}{8}$ |  |                   |                      |     |        |              |               |               |      |                         | 102       |
|                | 1025     | $\frac{3}{8}$ | $\frac{2}{2}$ |  |                   |                      |     |        |              |               |               |      |                         | 615       |
|                | 380      | "             | $\frac{2}{8}$ |  |                   |                      |     |        |              |               |               |      |                         | 236       |
|                | 90       | "             | $\frac{2}{2}$ |  |                   |                      |     |        |              |               |               |      |                         | 58        |
|                | 90       | "             | $\frac{2}{8}$ |  |                   |                      |     |        |              |               |               |      |                         | 59        |
|                | 65       | "             | $\frac{2}{8}$ |  |                   |                      |     |        |              |               |               |      |                         | 46        |
|                | 130      | "             | $\frac{3}{2}$ |  |                   |                      |     |        |              |               |               |      |                         | 105       |

FIELD RIVETS AND BOLTS

DATE: APR 2 20 51

DATE: 19

DRAWING: Elmira FABRICATION

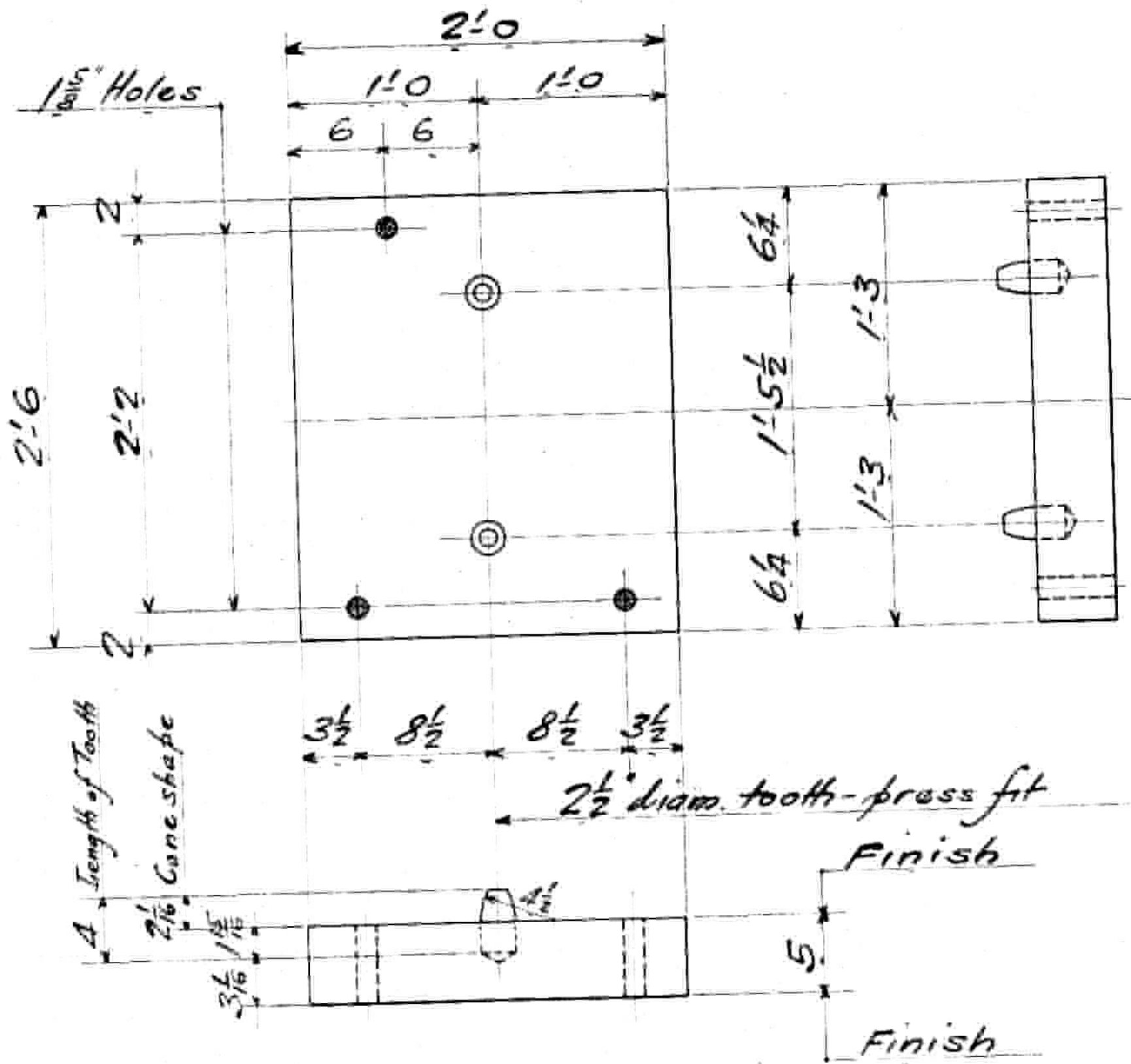
ORDER No. GG72

PAGE No. C5

NAME OF STRUCTURE

*Bangor & Aroostook R.R. Br. #166-29 over Meduxnekeag River, Houlton, Me.*

AMERICAN BRIDGE COMPANY

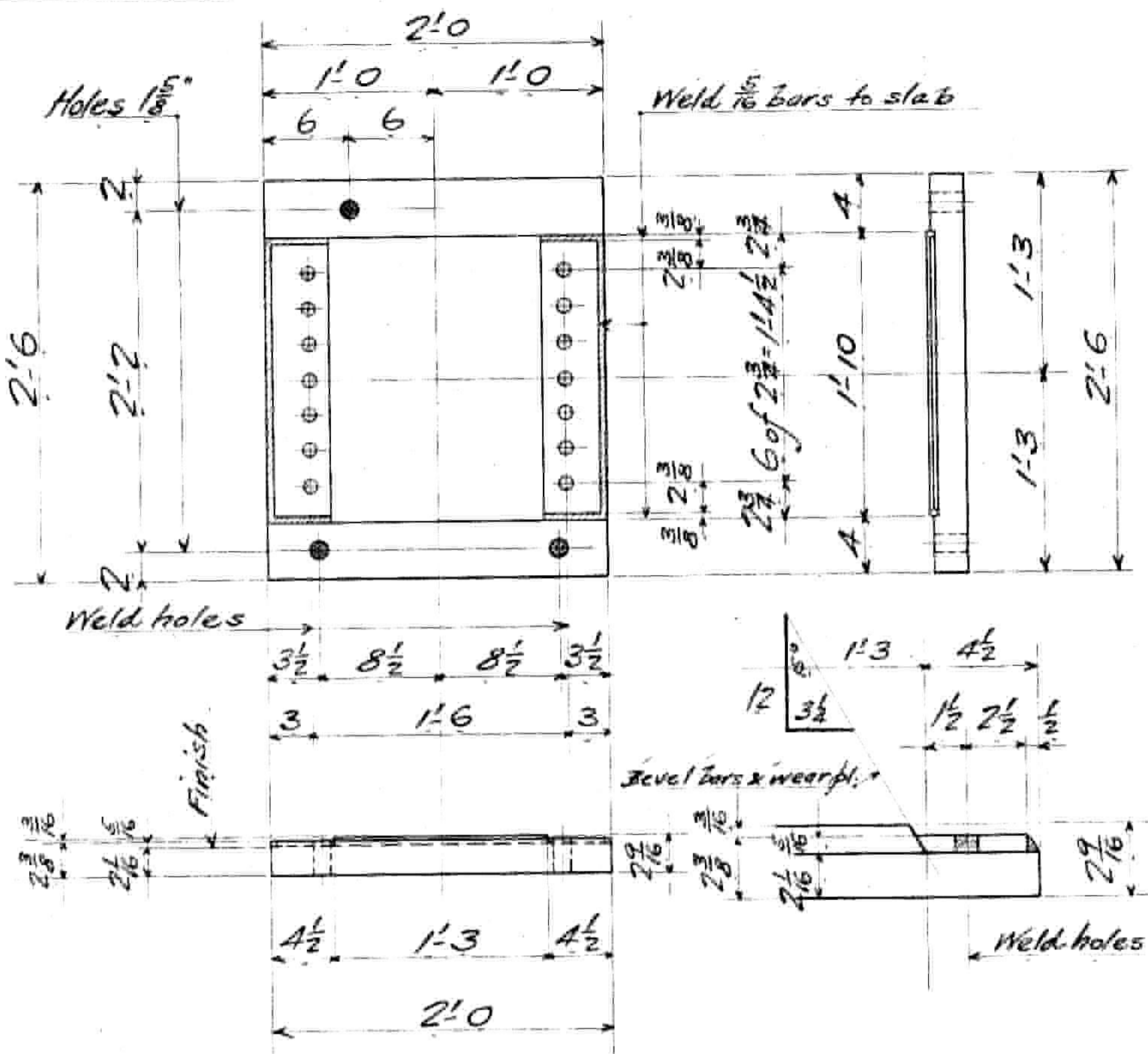


| LINE NO. | MEMBER  |             |      | MATERIAL |                  |                     | REMARKS | CALCULATED WEIGHT | ORDERED |                     |      | SHIPMENTS |
|----------|---------|-------------|------|----------|------------------|---------------------|---------|-------------------|---------|---------------------|------|-----------|
|          | NO. PCS | NAME        | MARK | NO. Pcs  | SHAPE            | LENGTH<br>FT. INCH. |         |                   | NO. PCS | LENGTH<br>FT. INCH. | ITEM |           |
| 1        | 6       | Mas. plates | MP3  | 6        | 24 x 7 1/16      | 2 6                 |         |                   | 1 plate | 15 4                | 2    |           |
| 2        |         |             |      | 12       | Ms. 24 x 5       | 2 6                 |         |                   |         |                     | 5    |           |
| 3        |         |             |      |          | Tooth 2 1/2 dia. | 0 4                 |         |                   |         |                     |      |           |

Paint - Fin. Surfaces W.L. & T.  
Spec. AREA 1929  
Inspec. Hildreth and Co.

|        |           |             |                    |           |           |
|--------|-----------|-------------|--------------------|-----------|-----------|
| RIVETS | HOLES     | DATE        | DRAWING            | ORDER No. | SHEET No. |
|        | See notes | RSB 2-11-31 | Elmira FABRICATION | G672      | C3        |

AMERICAN BRIDGE COMPANY

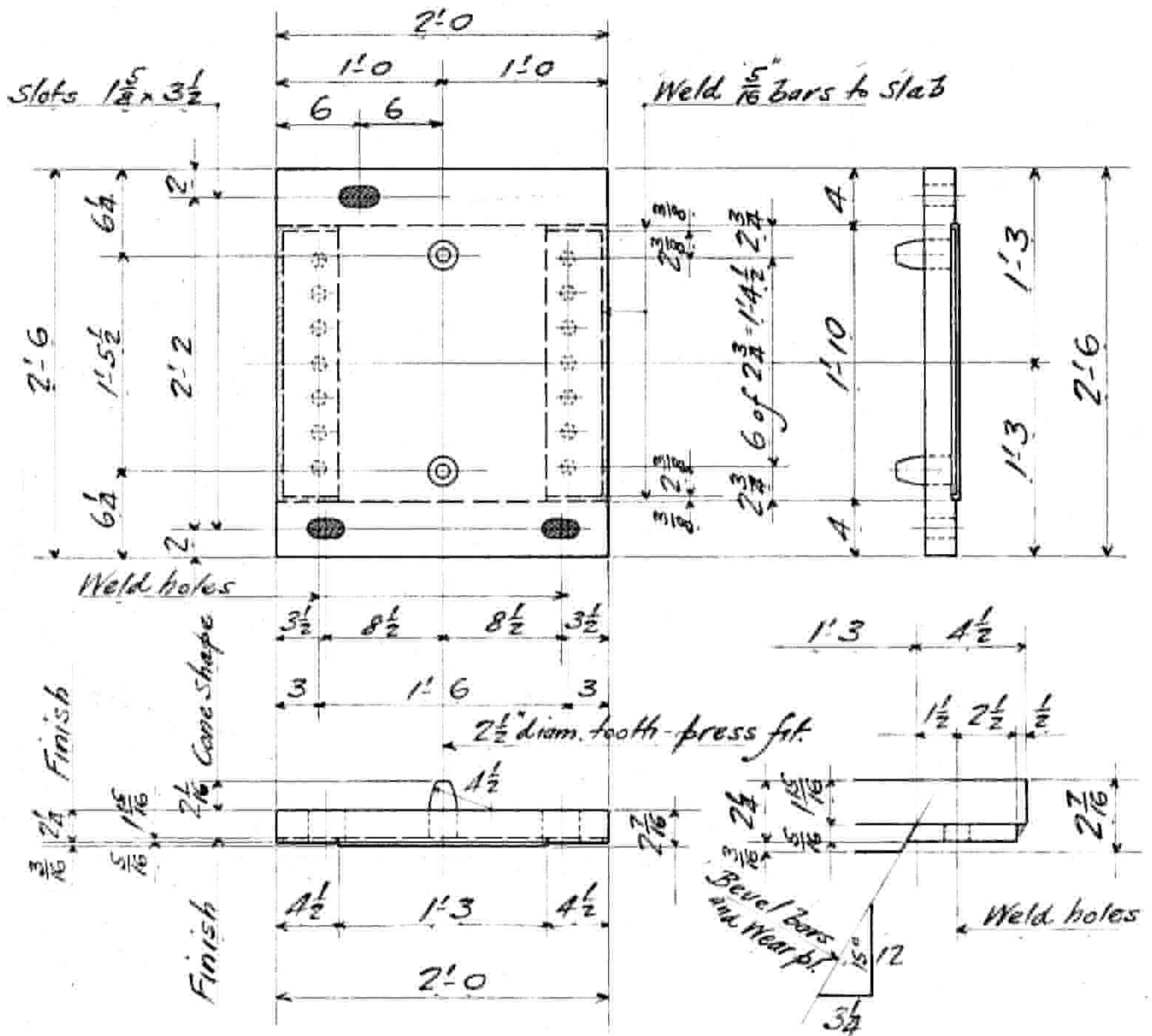


| LINE NO. | MEMBER  |        |      | MATERIAL |                   |                    | REMARKS | CALCULATED WEIGHT FOR ONE MEMBER | ORDERED |                    |             | SHIPMENTS |
|----------|---------|--------|------|----------|-------------------|--------------------|---------|----------------------------------|---------|--------------------|-------------|-----------|
|          | NO. PCS | NAME   | MARK | NO. PCS  | SHAPE             | LENGTH<br>FT. INCH |         |                                  | NO. PCS | LENGTH<br>FT. INCH | ITEM        |           |
| 1        | 6       | Lower  | MP2  |          | 24 x 2 7/16       | 2 6                |         |                                  | 2       |                    | 5           |           |
| 2        |         | Mas.   |      | 6        | Pls. 24 x 2 7/8   | 2 6                |         |                                  | 4       | 14                 | A           |           |
| 3        |         | plates |      | 12       | bars 4 1/8 x 5/16 | 1 9 1/2            |         |                                  |         |                    | A           |           |
| 4        |         |        |      | 6        | Wear pl. 15 x 1/2 | 1 10               | Bress   |                                  |         |                    | Req 8711-B. |           |

Paint. - Fin. Surfaces W. I. & T.  
 Spec. AREA 1929  
 Inspec Hildreth and Co.

|   |                          |                     |      |                                 |           |           |
|---|--------------------------|---------------------|------|---------------------------------|-----------|-----------|
| BRIVETS   | HOLES                    | DATE                | DATE | DRAWING'S                       | ORDER No. | SHEET No. |
|   | 15<br>16<br>unless noted | NAME<br>RSR 2-11-31 |      | Elmira<br>FABRICATION<br>Elmira | G672      | C2        |
| NAME OF STRUCTURE   |                          |                     |      | DANGER & BROOKS<br>R.R. Co      |           |           |
| Bridge No. 166.29 Second Crossing Meduxnekeag River Houlton Maine |                          |                     |      |                                 |           |           |

AMERICAN BRIDGE COMPANY



| LINE NO. | MEMBER   |                   |      | MATERIAL |                   |                    |       | REMARKS | CALCULATED WEIGHT PER LINE MEMBER | ORDERED  |                    |      | SHIPMENTS |                 |
|----------|----------|-------------------|------|----------|-------------------|--------------------|-------|---------|-----------------------------------|----------|--------------------|------|-----------|-----------------|
|          | NO. PCS. | NAME              | MARK | NO. PCS. | SHAPE             | LENGTH<br>FT. INS. | INS.  |         |                                   | NO. PCS. | LENGTH<br>FT. INS. | ITEM |           |                 |
| 1        | 6        | Upper Mas. plates | MPI  |          | 24 x 4 1/2        | 2                  | 6     |         |                                   |          |                    |      |           |                 |
| 2        |          |                   |      | 6        | pl. 24 x 2 1/2    | 2                  | 6     |         |                                   | 2        | 24 x 2 1/2         | 14   | 4         | 14              |
| 3        |          |                   |      | 12       | bars 4 1/2 x 5/16 | 1                  | 9 1/2 |         |                                   |          |                    |      |           | 11              |
| 4        |          |                   |      | 12       | Teeth 2 1/2" dia. | 0                  | 4     |         |                                   |          |                    |      |           | 5               |
| 5        |          |                   |      | 6        | Wear pt. 15 x 1/2 | 1                  | 10    | Brass   |                                   |          |                    |      |           | Req. 87 1/2 ft. |

Paint - Fin. surfaces W. I. & T.  
Spec. AREA 1929  
Inspection Hildreth and Co.

|              |       |      |      |         |         |           |           |
|--------------|-------|------|------|---------|---------|-----------|-----------|
| RIVETS       | HOLES | DATE | NAME | DATE    | DRAWING | ORDER No. | SHEET No. |
|              | 15    |      | RSB  | 2-11-31 | Elmira  | G672      | C1        |
|              | 16    |      |      |         | Elmira  |           |           |
| unless noted |       |      |      |         |         |           |           |

Bridge No. 166.29 Second Cross Medunnekeag River Houlton Maine Bangor and Aroostook R.R. Co.

