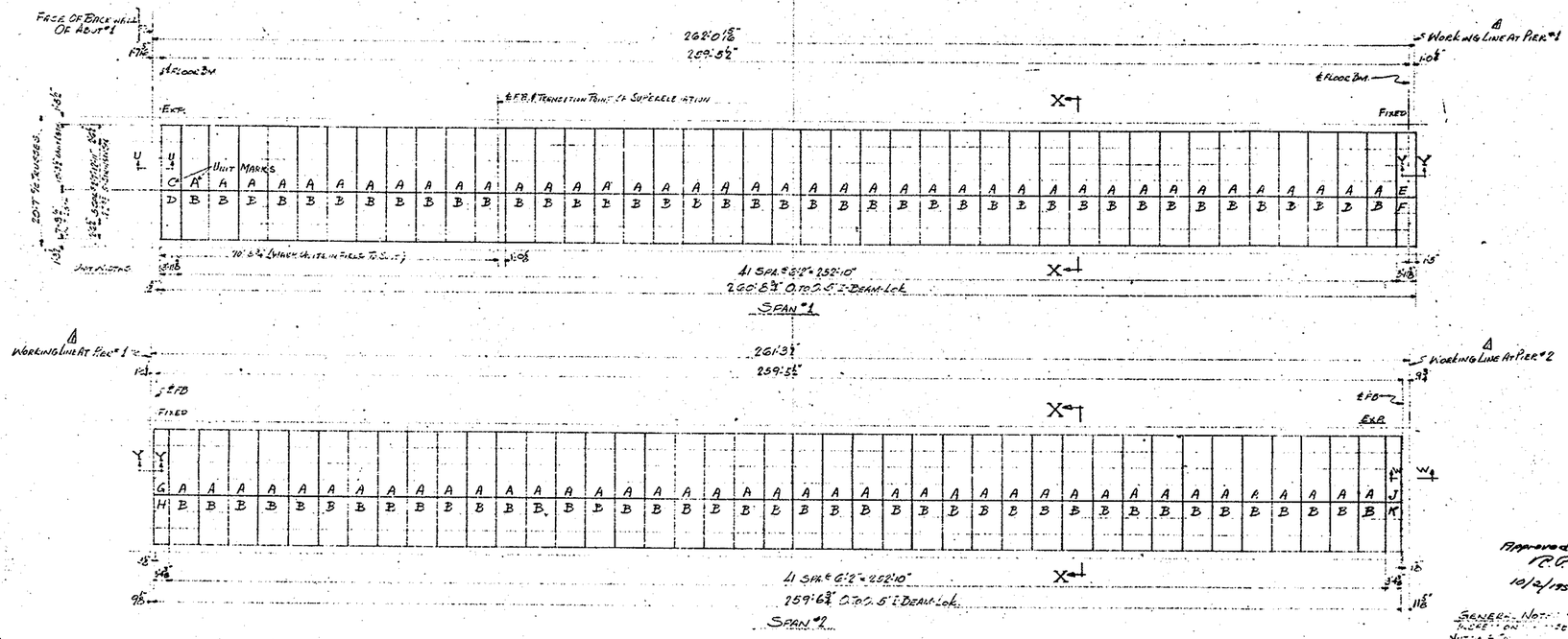


Approved
R.C. Dean
10/2/1953 1-11 incl.

GENERAL NOTES:
UNLESS OTHERWISE SHOWN ON PLANS, HIGH TEST H.S. RIVETS & BOLTS SHALL BE USED.
ALL MATERIAL SHOWN IN DOT & DASH LINES NOT IN I-BEAM-LOK CONTRACT.
SHOP PAINT: ONE DIP COAT OF LINSEED OIL RED LEAD POWER-FAST COAT
2ND COAT: ONE SPRAY COAT OF ALUMINUM PAINT CONFORMING TO SECT. 3.11.9 OF SPEC.
ALL UNITS FURNISHED FLAT; ANY WARPING OR CAMBERING REQD TO CONFORM TO SUPPORTING STRUCTURAL STEEL, TO BE DONE IN FIELD.
FOR TYPICAL FIELD WELDING SEE STANDARD ERECTION DETAILS.
FOR ADDITIONAL PLANS & SECTIONS SEE F-5090
FOR SHOP DETAILS SEE SHTS. 16-415 THRU 16-424
SHEETS #16-425 THRU #16-427 ARE FOR SHOP USE ONLY.

S.F. BEAM-LOK SHELL (TOP TYP.) PLAN
REFLOORING & CHEAT LAKE BRIDGE
OVER CHEAT RIVER AT ICE'S FERRY
PROJ. #2184 - MONONGALIA COUNTY, W.VA.
THE STATE ROAD COMMISSION OF WEST VIRGINIA
HATCHER BROS., INC. - CONTR.

REVISED (1) SHEET NO. ISSUE 4 (MISCELLANEOUS) 9-30-53

UNITED STATES STEEL CORP.
SPECIALTY PRODUCTS SALES
PITTSBURGH, PENNA.

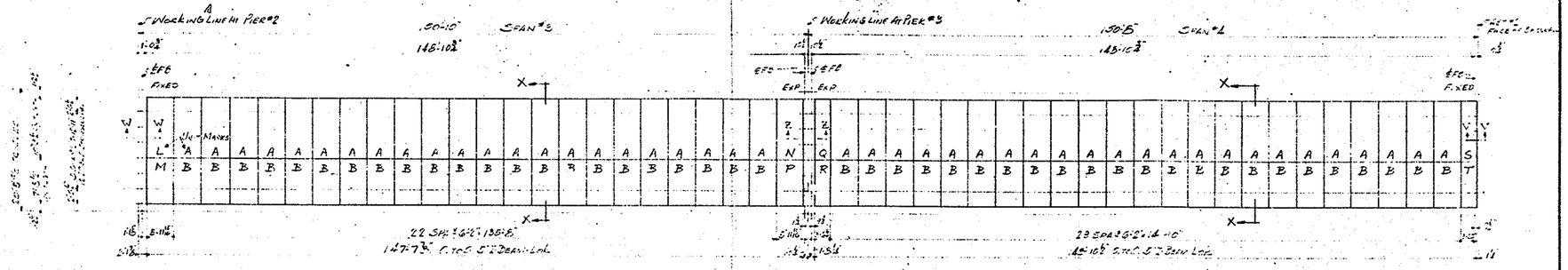
DRAWN BY W.J.K.	CHECKED BY [illegible]	DATE 8-4-53
SHEET 1 OF 11	DWG. NO. F-5089	

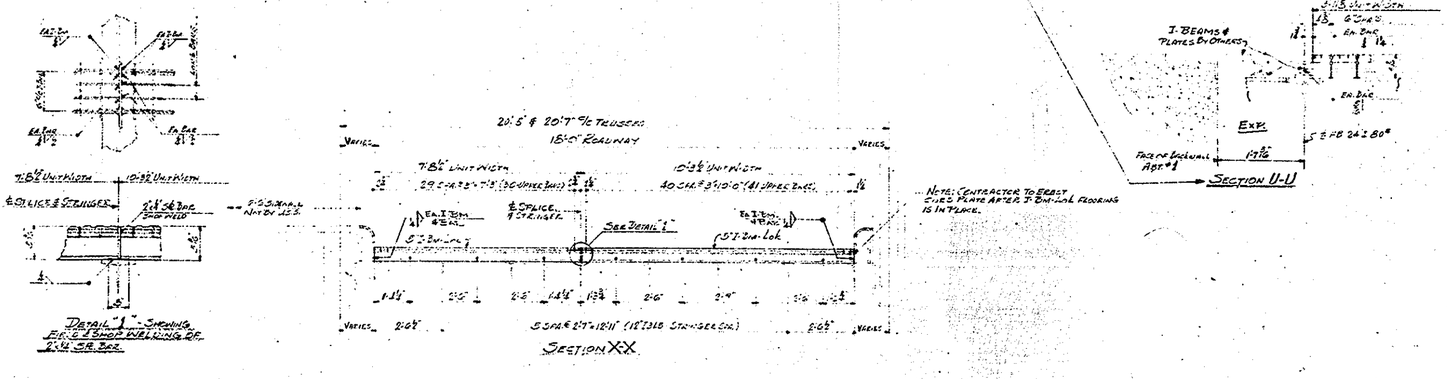
TOTAL AREA S.F. BEAM-LOK = 14,703 SQ.FT. APPROX. WT. = 139 TONS
MILL NO. R52083 GP

#410

1

101





For General Notes and Plotting Schedule F-5087

U.S. Bedplate Orientation, Plan & Sections
Replacing Other Legs & Use
Over Ohio River At Ices Ferry
Proj. # 2284 - Mason Co. & Mercer Co., W. Va.
The State Road Commission of West Virginia

Fletcher Bros., Inc. - Plate

Revised	Δ		

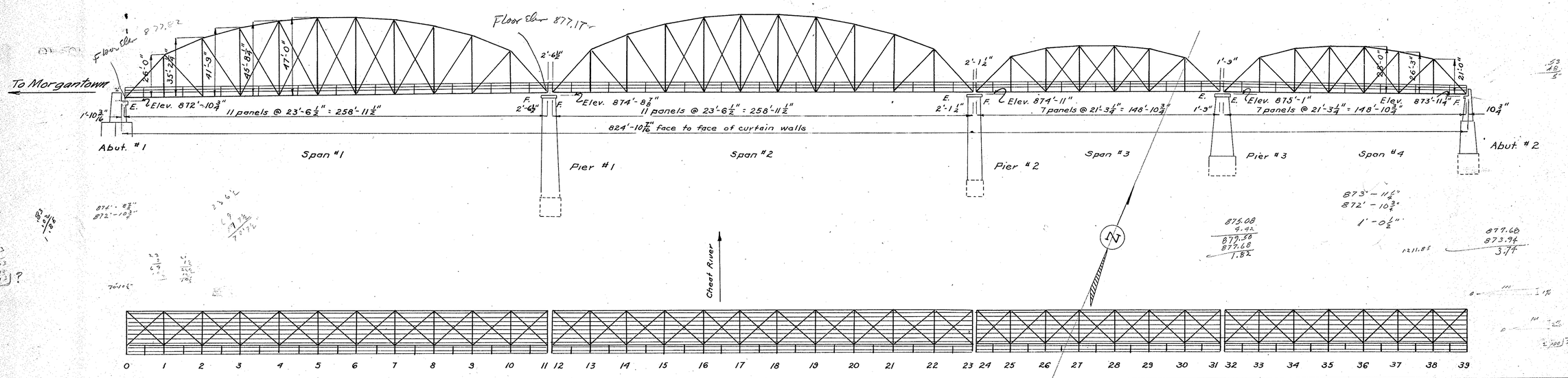
UNITED STATES STEEL CORP.
SPECIALTY PRODUCTS SALES
PITTSBURGH, PENNA.

Drawn by W.J.S.	Checked by	Date 5-4-53
Sheet 2 of 11	Dwg. No. F-5090	

Mill No. P-5208-G-GP

#470

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	1	10



GOVERNING SPECIFICATIONS

The State Road Commission of West Virginia Standard Specifications Roads and Bridges, adopted 1952, except as noted on Plans.

Minimum Wage Rates, Monongalia County. Special Provisions for Projects Financed with State Funds, dated February 17, 1948.

The Contractor shall furnish certified copies secured from the manufacturer of the results of tests for autoclave expansion and chemical analysis of all portland cement used in this project. Six of the certified copies shall be submitted to the Department of Tests, Mechanical Hall, Morgantown, W.Va.

All shop and field welding, work and materials, shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, 1947, and as revised. Welding by electric arc and covered electrodes shall be used. See Sheet #9 for general welding notes.

Public liability and property damage Liability Insurance.

GENERAL NOTES

The proposed roadway floor and reinforced Floor system designed for H15 loading.

Pres. = existing material Pro. = new material

The Contractor is to check all pertinent dimensions shown on Plans, get any additional dimensions that may be necessary and get any additional information that may be required for the successful completion of the work.

In order to provide for the erection of a true floor surface, the Contractor shall furnish shims or risers wherever necessary to correct for any slight differences of elevation of roadway stringers, sidewalk stringers and floor beams. Where the size and thickness of shims or risers are called for on the Plans, the shims or risers, complete in place, will be paid for under Item 93 "Fabricated Structural Steel, Complete in Place." The cost of all other shims or risers, complete in place, necessary to provide for the erection of a true roadway and sidewalk surface shall be included in the price bid for Item 96 R "Open Steel Grid for Roadway, Complete in Place", and Item 96 S "Open Steel Grid for Sidewalk, Complete in Place", respectively.

All Concrete To be Air-Entrained.

Contractor is to submit lump sum bid for Items 93, 127-A and 131 and unit bids on all other items shown in the Estimate.

ITEM 71B. "Class A Concrete in Substructure." This item shall include the cost of removing present masonry as called for on Plans. The removed masonry shall become the property of the Contractor and shall be disposed of off the right-of-way.

The cost of drilling all dowel holes and grouting dowel bars in place shall be included in this item.

ITEM 78. "Reinforcing Steel Bars." For Bill of Materials, See Sheet #9.

ITEM 93. "Fabricated Structural Steel" Complete in Place. Includes $3\frac{1}{2}" \times \frac{3}{16}"$ plates for exterior roadway stringers; Curb-posts at panel third points and at Floor beams; Knee-braces and Bars on knee-braces of downstream panel third-points together with connecting Dardelet Bolts; Sidewalk Support Angle; Sidewalk Finish Angle at Abut. #1; Roadway and Sidewalk Expansion Dams together with all Connecting and Supporting Steel at both abutments and at all piers; New Connecting Stringers and Connection Bolts at Pier #2; Risers under first three panels at West end of bridge to provide superelevation; Shims and Risers at Pier #2 and at Pier #3 to provide support for true roadway and sidewalk surfaces. All the above steel shall conform to W.Va. Standard Specifications, Roads and Bridges, 1952, - Section 3.9.8.

Also included in this weight estimate is the steel for the Curbs, Expansion Curb-plates and Bolts, to be fabricated by bending to the shapes shown on Plans. The steel for the curbs and expansion curb plates shall conform to the Tentative Specifications of A.S.T.M. for Low and Intermediate Tensile Strength Carbon Steel Plates of Structural Quality, Designation A283-50T Grade A.

All fabricated structural steel shall be given a shop coat of red lead paint, a field coat of red lead paint and a final field coat of aluminum paint, as per 1952 Standard Specifications, Roads and Bridges, except that the metal curbs and supporting posts shall not be given the coat of Aluminum paint.

ITEM 95. "Cleaning and Painting Existing Steel Bridge". All present metal of the bridge shall be painted with one complete field coat of red-lead paint followed by one coat of aluminum paint. Prior to the application of the red-lead paint all surfaces shall be thoroughly cleaned of rust, loose paint and scale, grease, dirt or other foreign material. All surfaces where the bare metal is exposed either before or after cleaning, shall be spot-painted with red-lead paint before applying the first field coat.

Approximate weight of present metal is 490 tons.

ITEM 96 R "Open Steel Grid for Roadway," Complete in Place. The grid shall be United States Steel Company "Standard Cleated Tread - 5" I-Beam-Lok Open Floor - T.R. Type" weighing 18.8# per sq. foot, or Equal. There shall be one ⅜" ϕ, or equal, longitudinal lower bar approximately midway between stringers. Adequate splicing angles shall be provided between grid units at each lower bar. All grid steel shall conform to the requirements of the W.Va. Standard Specifications, Roads and Bridges, 1952, - Section 2.96.2

After completion of fabrication of grid units, all grid shall have one dip coat of red-lead shop paint conforming to Section 3.11.6 of aforesaid Standard Specifications, or Dupont #733 or Equal and one field coat of aluminum paint conforming to Section 3.11.9 of the Specifications, which may be sprayed or clipped.

After placing the grid, all surfaces on which the paint has been damaged by welding, handling or other causes shall be cleaned and spot painted one coat red lead paint and one coat aluminum paint.

ITEM 96 S "Open Steel Grating for Sidewalk" Complete in Place. - See Detail - Sheet #9 - Grating shall be Blaw-Knox 336 or Equal weighing approximately 12.2# per sq. foot. Material for sidewalk grating shall be structural steel conforming to A.S.T.M. Specification A303-48T, Grade C and shall be copper bearing.

The painting shall be the same as for the Roadway Grid.

ITEM 127-A, "Maintaining Traffic" The Contractor shall maintain vehicular and pedestrian traffic at all times. One lane vehicular traffic will be permitted as described in note on Sheet 10. Where one lane traffic is being used, the Contractor shall furnish the necessary flagmen or shall provide a suitable signal light system for directing traffic. The price bid for this item will include the cost of building and maintaining the temporary bridge as shown in the plans, the cost of all flagmen or traffic signal devices and all other items involved in maintaining traffic at all times.

ITEM 130 "Removing Present Roadway and Sidewalk Floors". All material except roadway planking shall become the property of the Contractor and shall be removed from the right-of-way. The Contractor may use roadway planking for construction operations. On completion of the job, all roadway planking shall become the property of the State and shall be piled neatly along the right of way adjacent to the bridge, (with all nails either cutoff or bent) as directed by the Engineer. Roadway planks shall be removed with a minimum of damage to the planks.

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
71B	"Class A Concrete in Substructure"	6.60	Cu.Yds.
78	"Reinforcing Steel Bars"	528.	Lbs.
93	"Fabricated Structural Steel," complete in Place	70,613	Lbs.
* 95	"Cleaning and Painting Existing Steel Bridge"		Lump Sum
96R	"Open Steel Grid for Roadway"	14,703.	Sq. Ft.
96S	"Open Steel Grating for Sidewalk"	5,353.	Sq. Ft.
127-A	"Maintaining Traffic"		Lump Sum
130	"Removing Present Roadway and Sidewalk Floors"		Lump Sum
131	Amount to be deducted from total price bid for the project, as per note on plans.		Lump Sum

* Item 95 is not included in Contract for the New Floor

ROUTE NO. 73

PROJECT NO. 2284

PREPARED & RECOMMENDED
BRIDGE ENGINEER, STATE ROAD COMMISSION

REVIEWED
STATE CONSTRUCTION ENGINEER, STATE ROAD COMMISSION

APPROVED
STATE ROAD COMMISSIONER

May ___ 1953

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT NO. 2284.
SECRETARY

APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED ___ DAY OF May ___ 1953.
SECRETARY

Reference to item 127 A, the Contractor shall submit a lump sum bid, Item 131, showing the deduction he will make from the total price bid for the project if he is permitted to close the bridge to all vehicular traffic between the hours of 8:00 AM and 4:PM. on working days: Monday thru Friday of each week.

The bridge shall not be limited to one way traffic, or closed to traffic as specified under item 131, until sufficient material has arrived at the site to permit continous operation of the new construction.

MADE BY	F.A.S.	DATE	12-5-52	REVISIONS
TRACED BY	F.A.S.	DATE	12-6-52	
CHECKED BY	F.A.S.	DATE	12-8-52	

NEW FLOOR

CHEAT LAKE BRIDGE

OVER

CHEAT RIVER

AT

ICE'S FERRY

MONONGALIA COUNTY, W.VA.

GN'L. VIEW & NOTES

DESIGNED BY

STATE ROAD COMMISSION

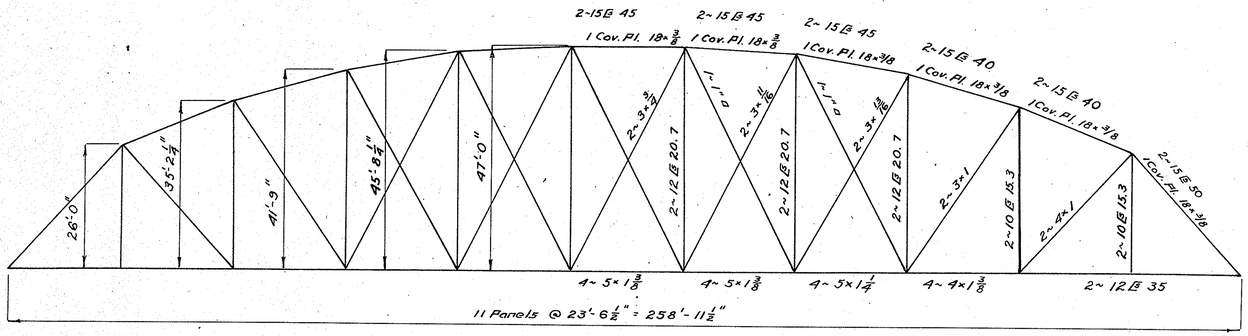
CHARLESTON, W.VA.

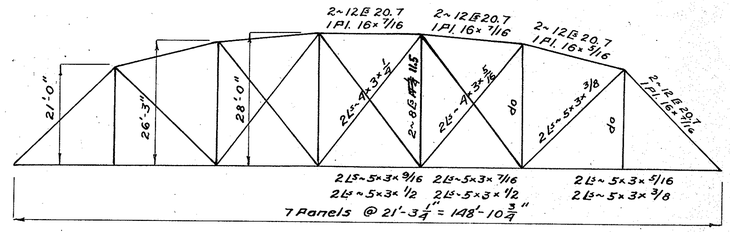
PROJECT NO. 2284 1952

SCALE AS SHOWN SHEET 1 OF 10

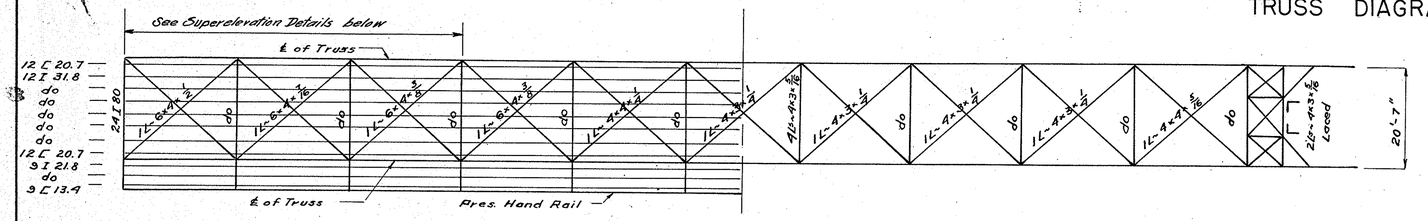
18'-0" ROADWAY AND ONE 5'-0" SIDEWALK 410

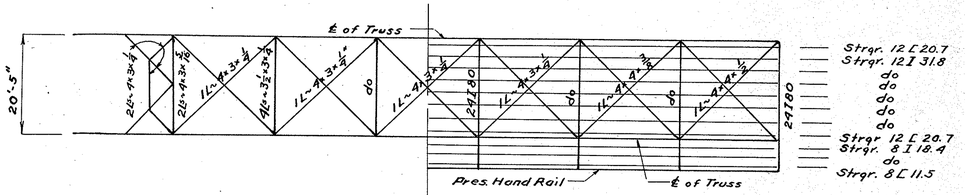
DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	2	10



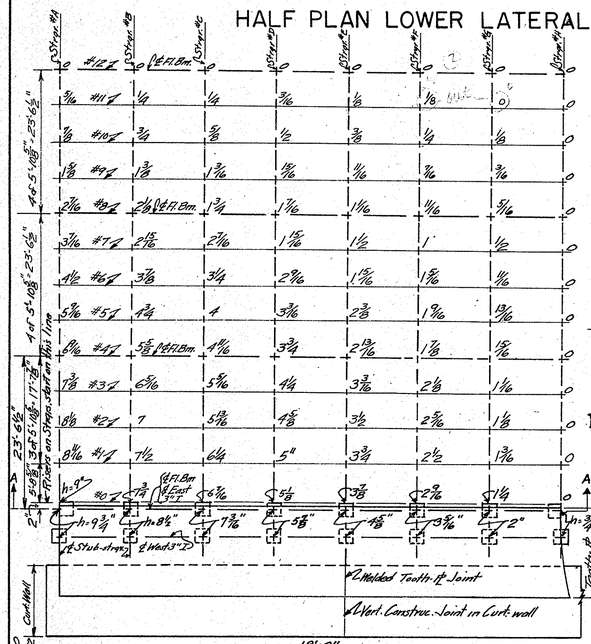


TRUSS DIAGRAMS





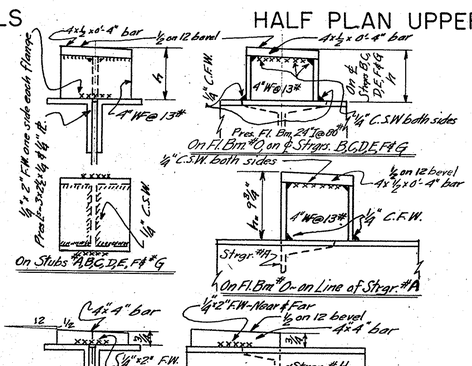
HALF PLAN LOWER LATERALS



SECT. A-A

RISERS ~ AT ABUT. #1 & ON PANELS #1, #2 & #3
No Scale

HALF PLAN UPPER LATERALS



RISERS ON STUB-STRGRS.
Scale-3"=1'-0"
Looking East

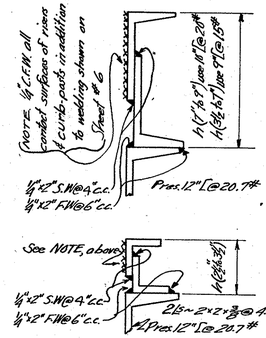
RISERS ON FL. BM. #0
Scale-3"=1'-0"
Looking East

NOTE
"Grid to Riser" welds to be same as "Grid to Stringer" welds. See Sheet No. 9 "Field Welding to Stringers"

NOTE.
Tooth-# & Top of Curtain-wall to be on same East & West grade as truss.

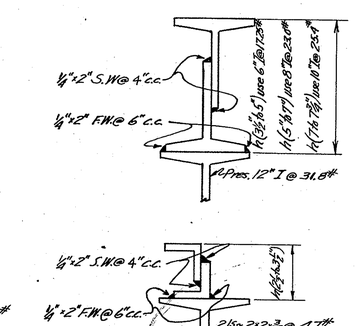
NOTE
If necessary to cut upper cross-bars of grid in order to fit grid to superelevation profile, they shall be welded to develop original strength of bars.

HALF PLAN UPPER LATERAL



RISERS ON STRINGER NO. A
Scale-3"=1'-0"
Looking East

HALF PLAN LOWER LATERALS



RISERS ON STRINGERS NO. B, C, D, E, F & G
Scale-3"=1'-0"
Looking East

MADE BY E. A. S.	DATE 11-22-52	REVISIONS
TRACED BY E. A. S.	DATE 12-4-52	— — —
CHECKED BY W. E. V.	DATE 12-6-52	— — —

NEW FLOOR
CHEAT LAKE BRIDGE
OVER
CHEAT RIVER
AT
ICE'S FERRY
MONONGALIA COUNTY, W.VA.

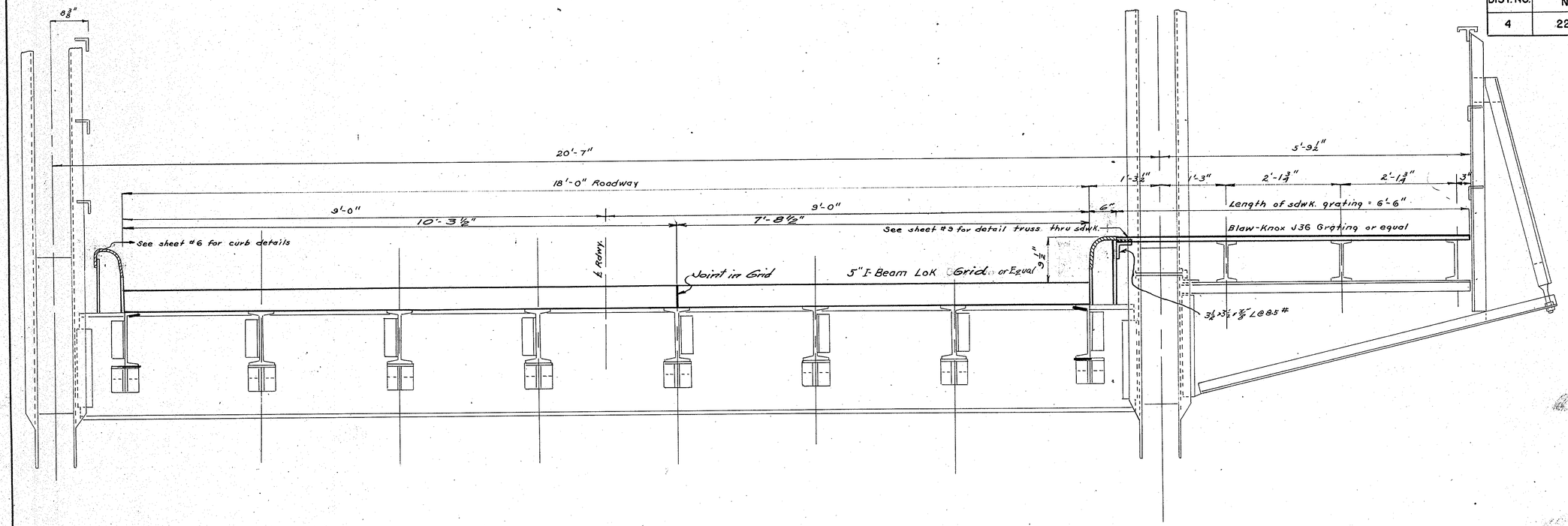
TRUSS DIAGRAMS

DESIGNED BY
STATE ROAD COMMISSION
CHARLESTON, W.VA.

PROJECT NO. 2284 1952
SCALE AS SHOWN SHEET 2 OF 10

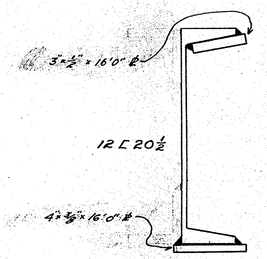
410

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEET
4	2284		Monongalia	3	10



TYPICAL SECTION — PRO. 259 FT. TRUSS ROADWAY

Scale: 1" = 1'-0"

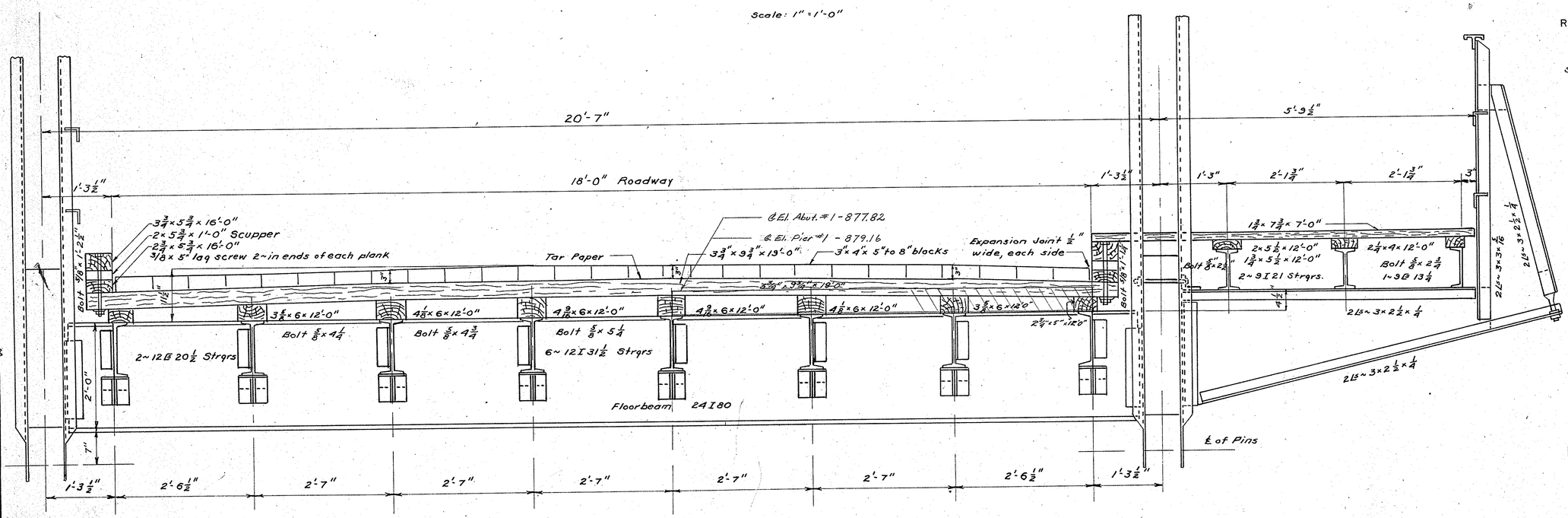


REINF. EXT. RDWY. STRGR.

Scale: 3" = 1'-0"

See sheet #9 for pos. of reinf. ℄

See Sheet #6 for welding



TYPICAL SECTION — PRES. 259 FT. TRUSS ROADWAY

Scale: 1" = 1'-0"

MADE BY	J.O.	DATE	7-21-50
TRACED BY	J.O.	DATE	8-19-50
CHECKED BY	E. A. S.	DATE	12-3-52

REVISIONS — — — —

NEW FLOOR

CHEAT LAKE BRIDGE
OVER
CHEAT RIVER
AT
ICE'S FERRY
MONONGALIA COUNTY, W.VA.

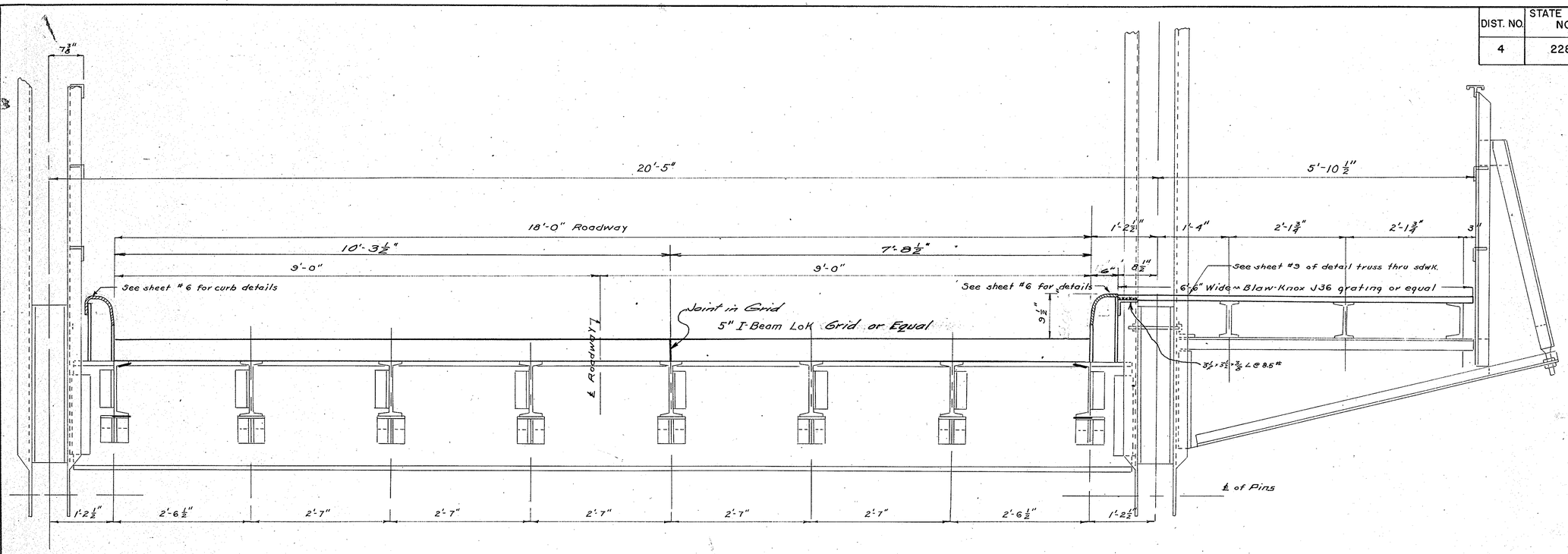
RDWY. SECT. ~ 259 FT. TRUSS

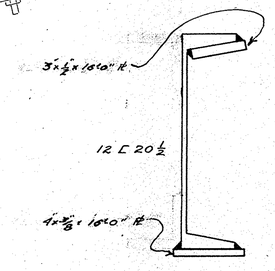
DESIGNED BY
STATE ROAD COMMISSION
CHARLESTON, W. VA.

PROJECT NO. 2284 1952
SCALE AS SHOWN SHEET 3 OF 10

410

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	4	10





REINF. EXT. RDWY. STRGR.

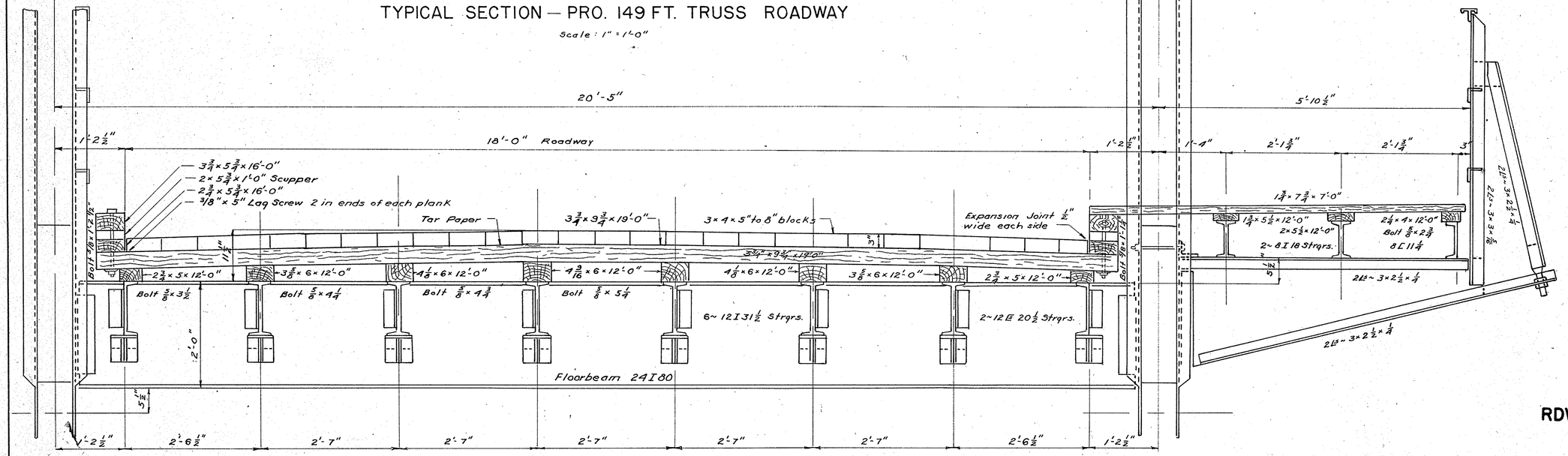
Scale: 3" = 1'-0"

See sheet #3 for pos. of reinf. Bs

See Sheet #6 for welding

TYPICAL SECTION — PRO. 149 FT. TRUSS ROADWAY

Scale: 1" = 1'-0"



TYPICAL SECTION — PRES. 149 FT. TRUSS ROADWAY

Scale: 1" = 1'-0"

MADE BY	J.O.	DATE 7-25-50
TRACED BY	J.O.	DATE 8-17-50
CHECKED BY	E.B.S.	DATE 12-1-52

REVISIONS

NEW FLOOR

CHEAT LAKE BRIDGE
OVER
CHEAT RIVER
AT
ICE'S FERRY
MONONGALIA COUNTY, W.VA.

RDWY. SECT.~149 FT. TRUSS

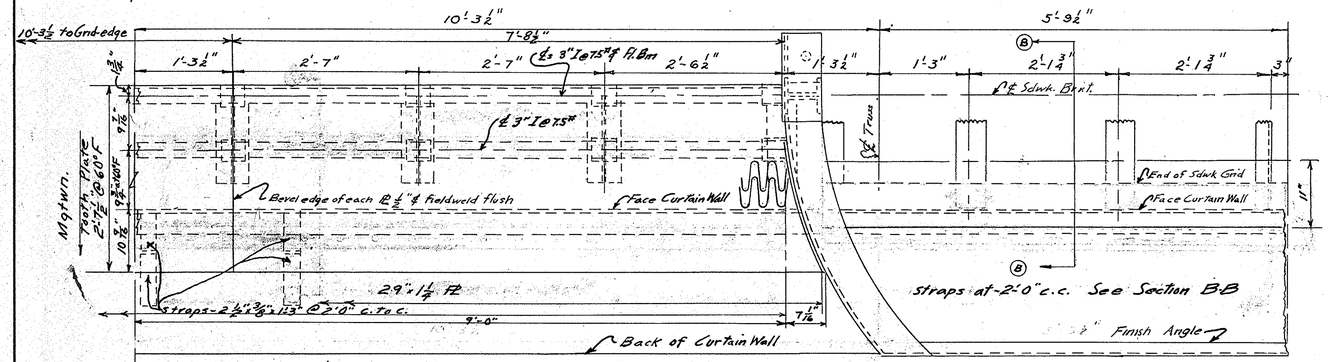
DESIGNED BY
STATE ROAD COMMISSION
CHARLESTON, W.VA.

PROJECT NO. 2284 — 1952

SCALE AS SHOWN — SHEET 4 OF 10

410

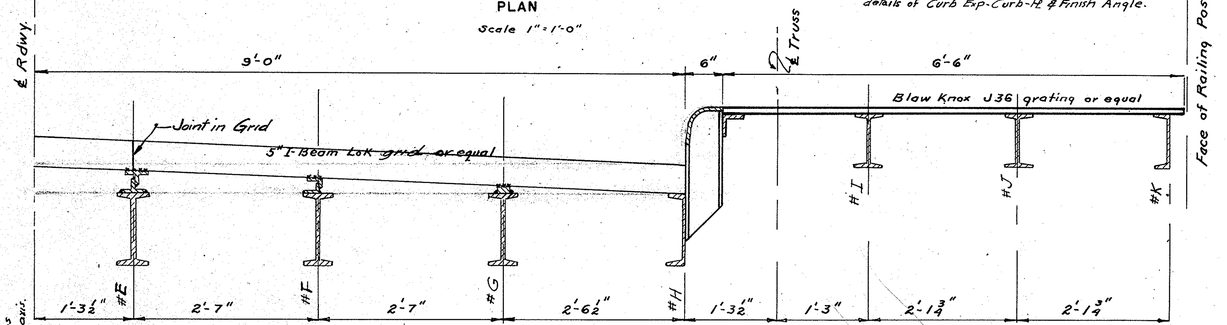
DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	5	10



PLAN

Scale 1"=1'-0"

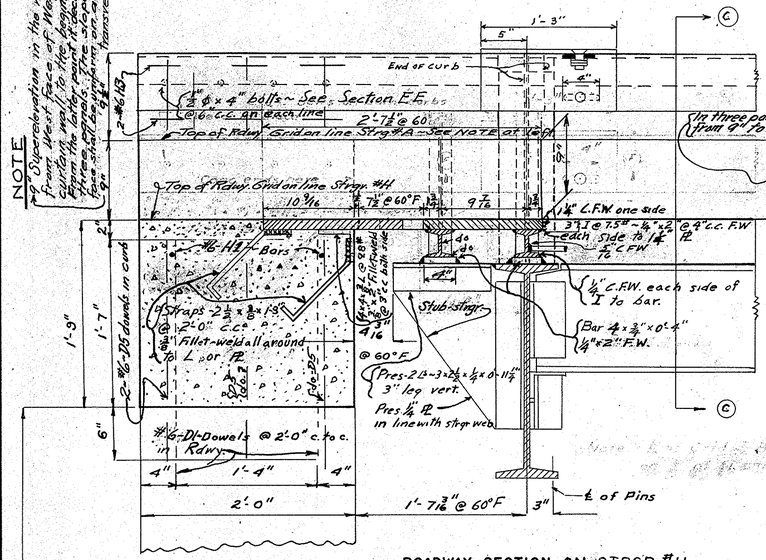
NOTE See Plan-Upstr. Curb ℄ Exp Curb ℄ for details of Curb Exp-Curb-℄ & Finish Angle.



SECTION C-C

Scale: 1" = 1'-0"

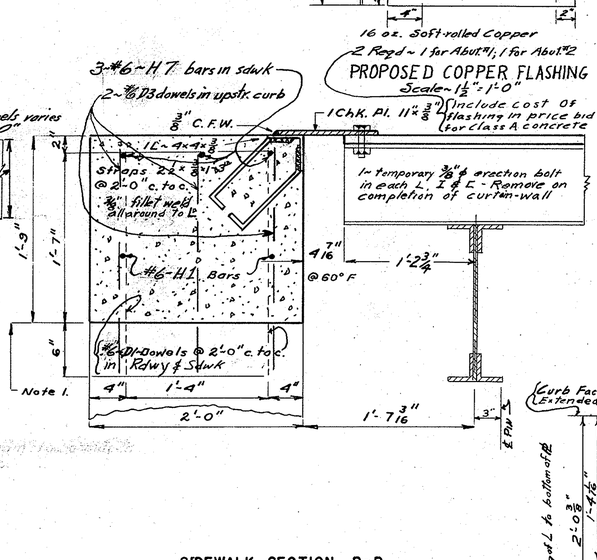
EXPANSION DAM AT ABUTMENT NO. 1



Note 1: Rebuild pres. bkwl. above this line with Class A concrete. Removing top pres. bkwl. and drilling all dowel holes to be included in price bid for Class A concrete also grouting of dowel bars.

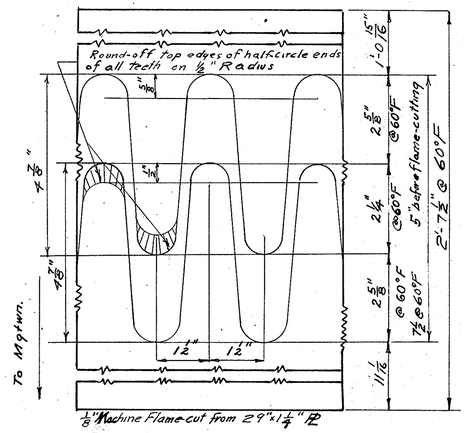
ROADWAY SECTION ON STRGR. #H

Scale: 1½" = 1'-0"



SIDEWALK SECTION B-B

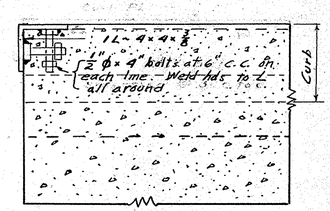
Scale: 1½" = 1'-0"



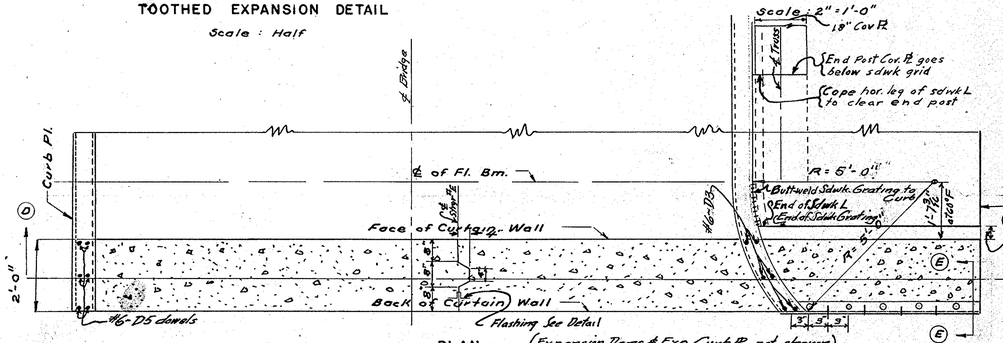
½" Machine Flame-cut from 29"x1¼" PL

TOOTHED EXPANSION DETAIL

Scale: Half

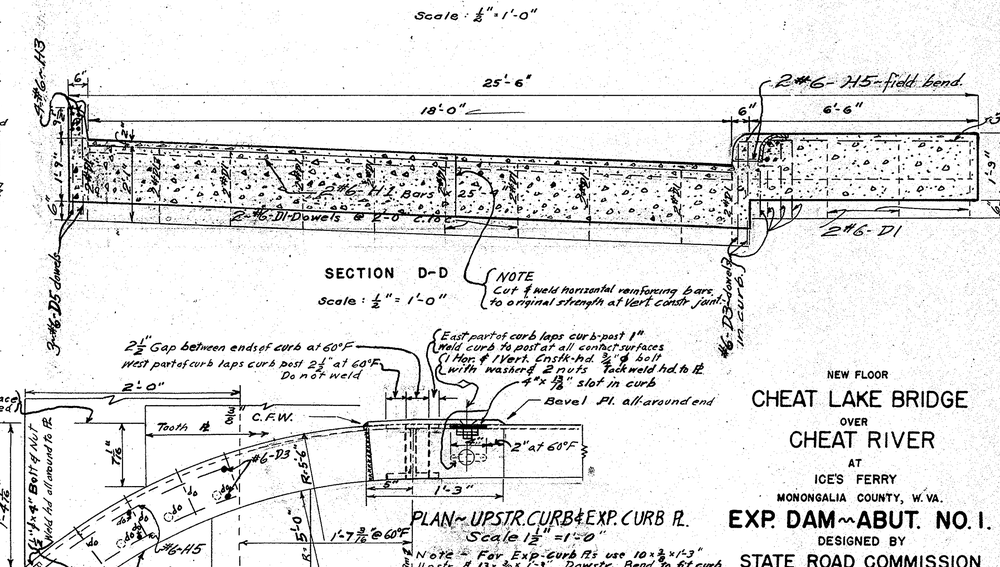


SECTION E-E



PLAN

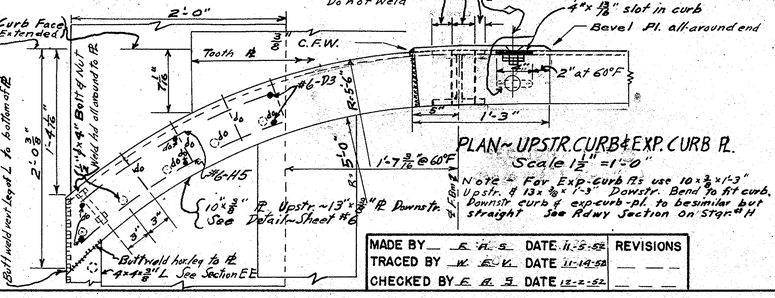
Scale: ½" = 1'-0"



SECTION D-D

Scale: ½" = 1'-0"

NOTE
Cut & weld horizontal reinforcing bars to original strength at Vert. constr. joint.



PLAN-UPSTR. CURB & EXP. CURB ℄

Scale 1½" = 1'-0"

Note - For Exp. Curb ℄s use 10"x⅜"x1'-3" Upstr. & 13"x⅜"x1'-3" Dowstr. Bend to fit curb. Furnish curb & exp. curb-℄ to be similar but straight See Rdwy Section on Strgr. #H

MADE BY	E. A. S.	DATE	11-5-52	REVISIONS
TRACED BY	W. E. V.	DATE	11-14-52	
CHECKED BY	E. A. S.	DATE	12-2-52	

NEW FLOOR

CHEAT LAKE BRIDGE

OVER

CHEAT RIVER

AT

ICE'S FERRY

MONONGALIA COUNTY, W. VA.

EXP. DAM-ABUT. NO. 1.

DESIGNED BY

STATE ROAD COMMISSION

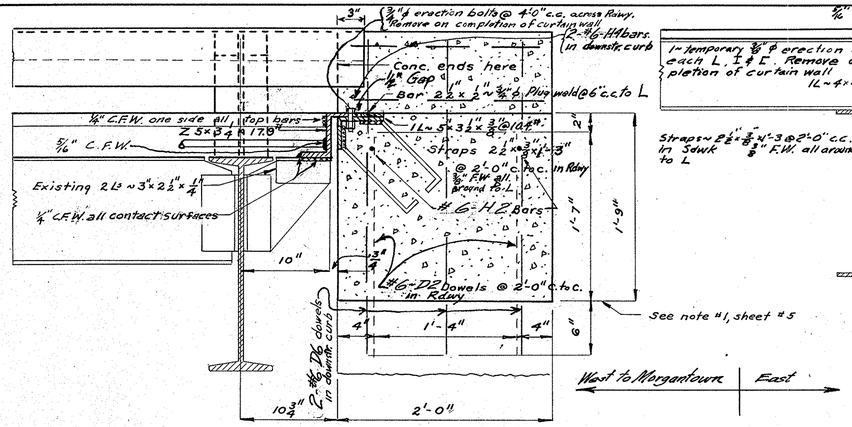
CHARLESTON, W. VA.

PROJECT NO. 2284 1952

SCALE AS SHOWN SHEET 5 OF 10

NO. 410

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		MONONGALIA	6	10



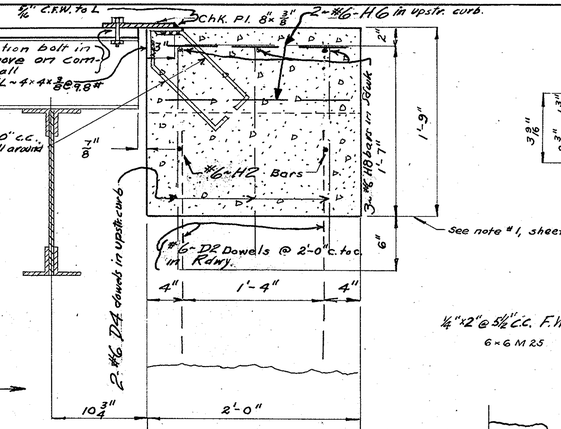
ROADWAY STRINGER

NOTE

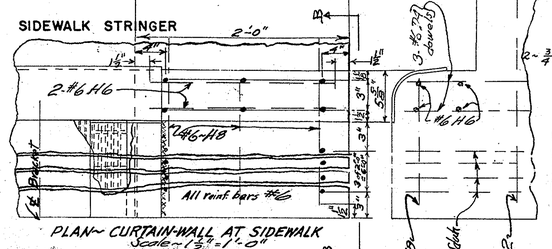
on line of Strgr. #E, same vertical construction joint, Flashing & welding of hor. reinforcing as on Abut #1. See PLAN-CURTAIN WALL- Sheet #5

EXPANSION DAM AT ABUTMENT NO. 2

Scale: 1½" = 1'-0"

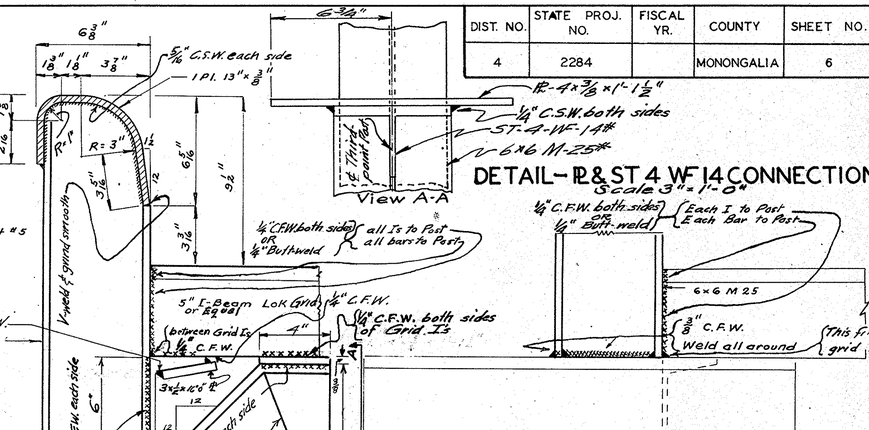


SIDEWALK STRINGER



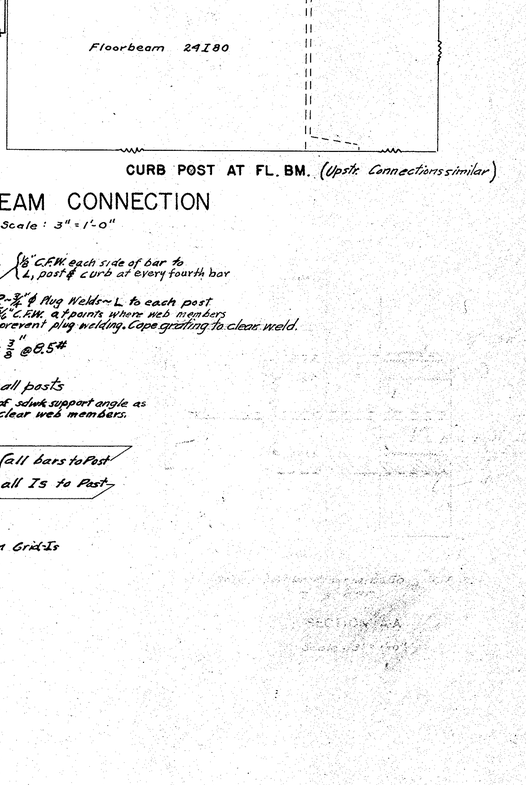
PLAN- CURTAIN-WALL AT SIDEWALK

Scale: 1½" = 1'-0"

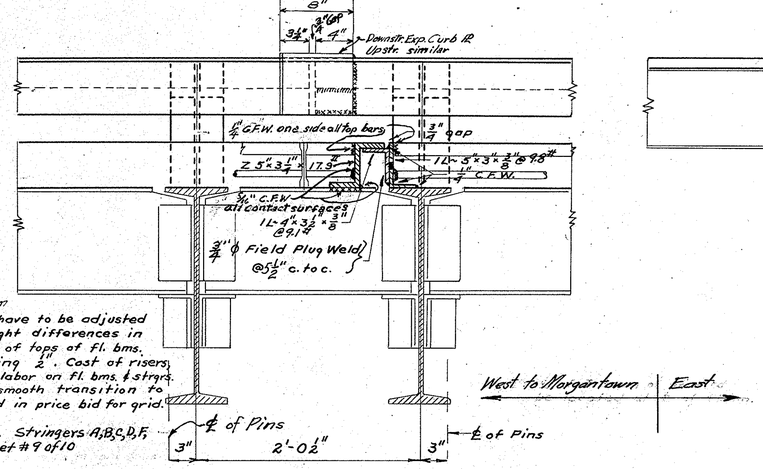


DETAIL- R & ST 4 WF 14 CONNECTION

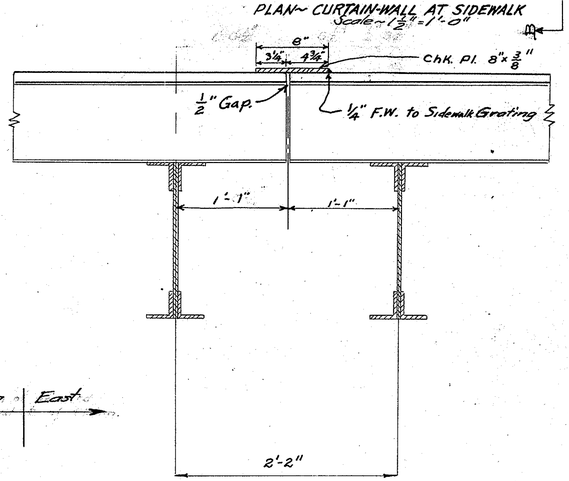
Scale 3" = 1'-0"



EXPANSION CURB ℔'s:
10" x ⅜" x 0'-8" Upstr. ~ 13" x ⅜" x 0'-8" Downstr.
Batter Exp. Curb ℔ to fit curb
½" C.F.W. Top of Bottom edges & East end of Exp. Curb ℔ to East part of curb
Bevel West end of Exp. Curb ℔ ¼"



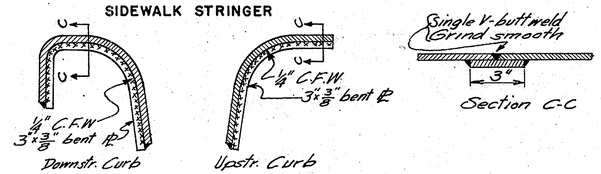
ROADWAY STRINGER



SIDEWALK STRINGER

EXPANSION DAM AT PIER NO. 1

Scale: 1½" = 1'-0"



DETAIL- CURB JOINTS

Scale ~ 3" = 1'-0"

UPSTREAM CONNECTION

Scale: 3" = 1'-0"

Note: Curb post connection at floor beam will be made similar to downstream connection.

MADE BY F.A.S. DATE 11-15-52	REVISIONS
TRACED BY W.E.V. DATE 11-29-52	
CHECKED BY F.A.S. DATE 12-1-52	

NEW FLOOR

CHEAT LAKE BRIDGE

OVER

CHEAT RIVER

AT

ICE'S FERRY

MONONGALIA COUNTY, W. VA.

EXP. DAMS & PIER NO. 1 & ABUT. NO. 2

DESIGNED BY

STATE ROAD COMMISSION

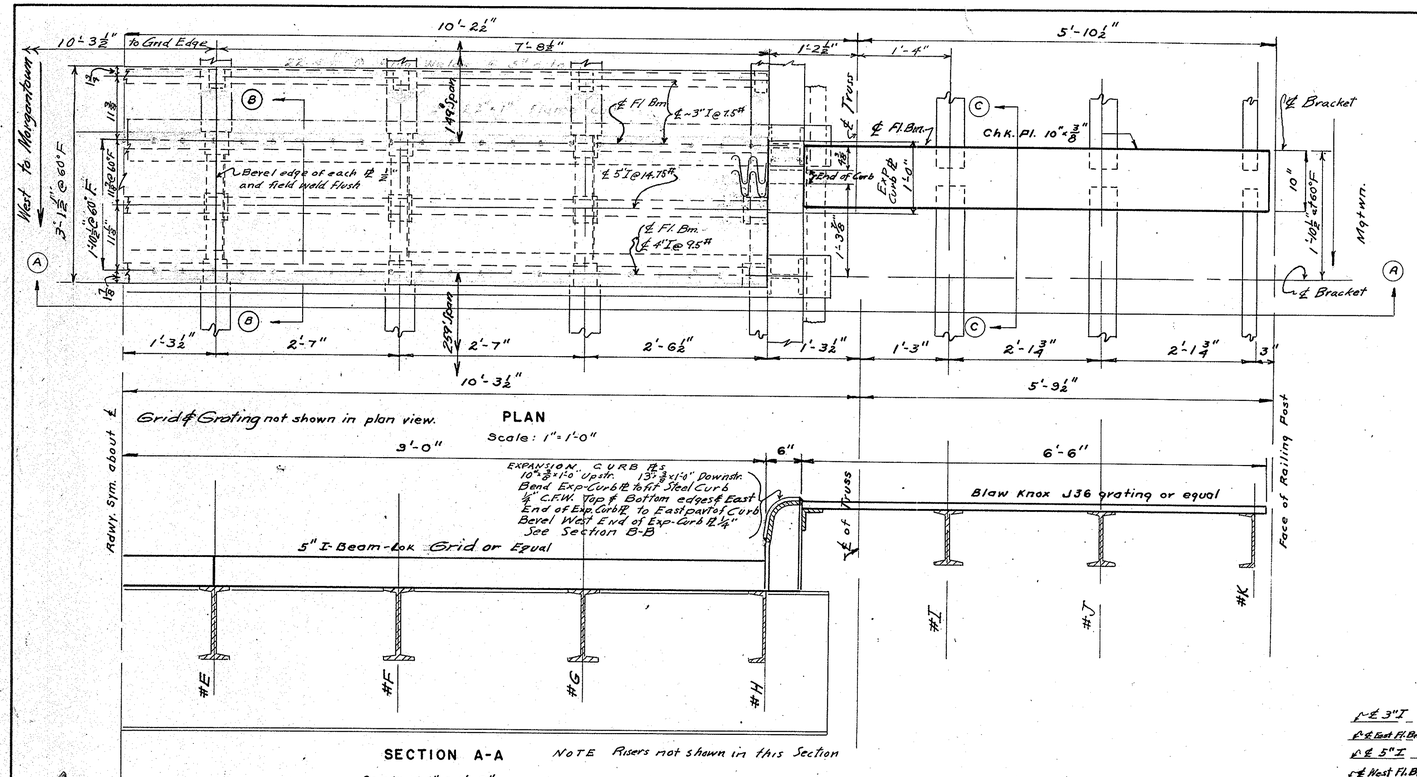
CHARLESTON, W. VA.

PROJECT NO. 2284 1952

SCALE AS SHOWN SHEET 6 OF 10

NO. 410

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	7	10



NEW FLOOR
CHEAT LAKE BRIDGE
OVER
CHEAT RIVER
AT
ICE'S FERRY
MONONGALIA COUNTY, W. VA.
EXP. DAM ~ PIER NO. 2.
DESIGNED BY
STATE ROAD COMMISSION
CHARLESTON, W. VA.

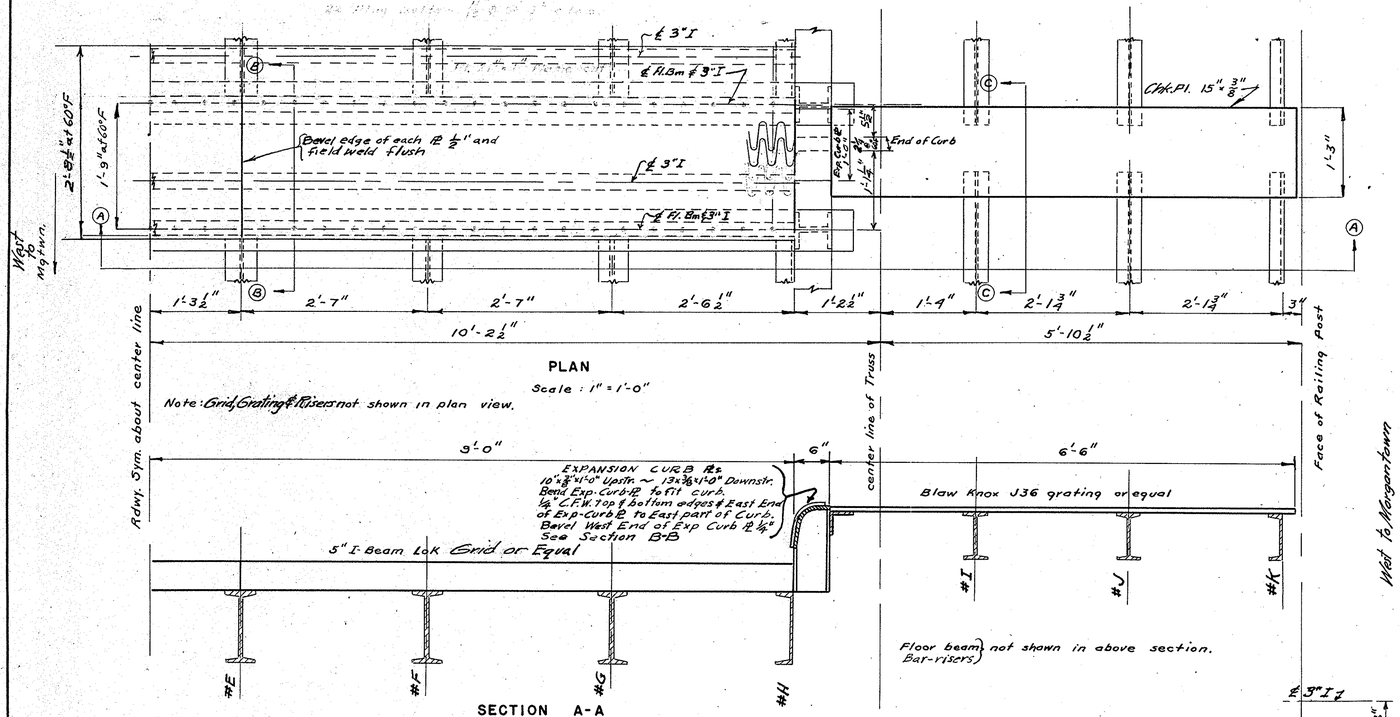
PROJECT NO. 2284 1952
SCALE AS SHOWN SHEET 7 OF 10

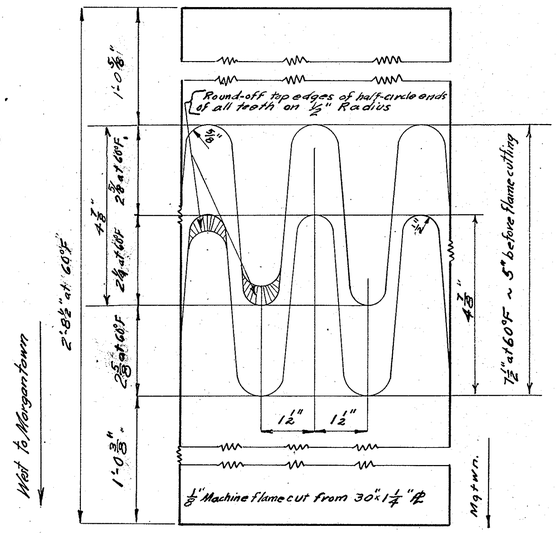
MADE BY	F.A.S.	DATE 11-13-52
TRACED BY	W.E.W.	DATE 11-25-52
CHECKED BY	F.A.S.	DATE 12-2-52

REVISIONS — — —

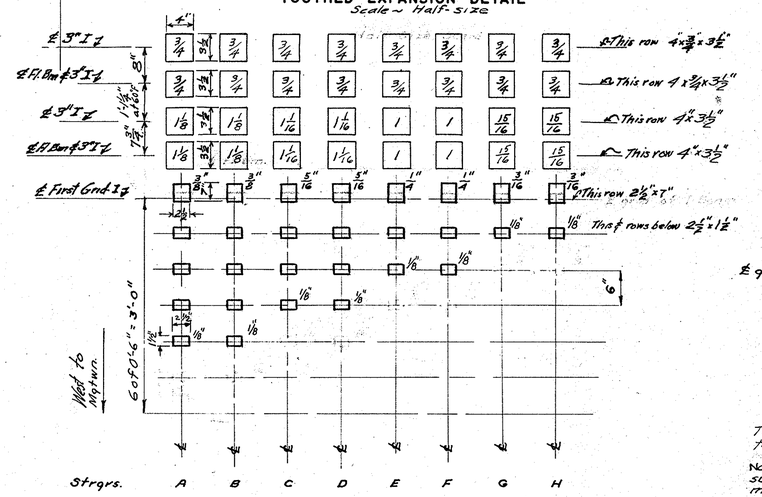
410

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	8	10





TOOTHED EXPANSION DETAIL
Scale ~ Half-size

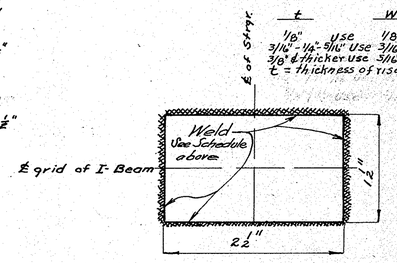


PLAN OF RDWY. RISER PLS.
Scale None

WELDING SCHEDULE

t	Weld
1/8"	Use 1/8" C.F.W.
3/16" - 1/4" - 5/16"	Use 3/16" C.F.W.
3/8" & Thicker	Use 5/16" C.F.W.

t = thickness of riser plates

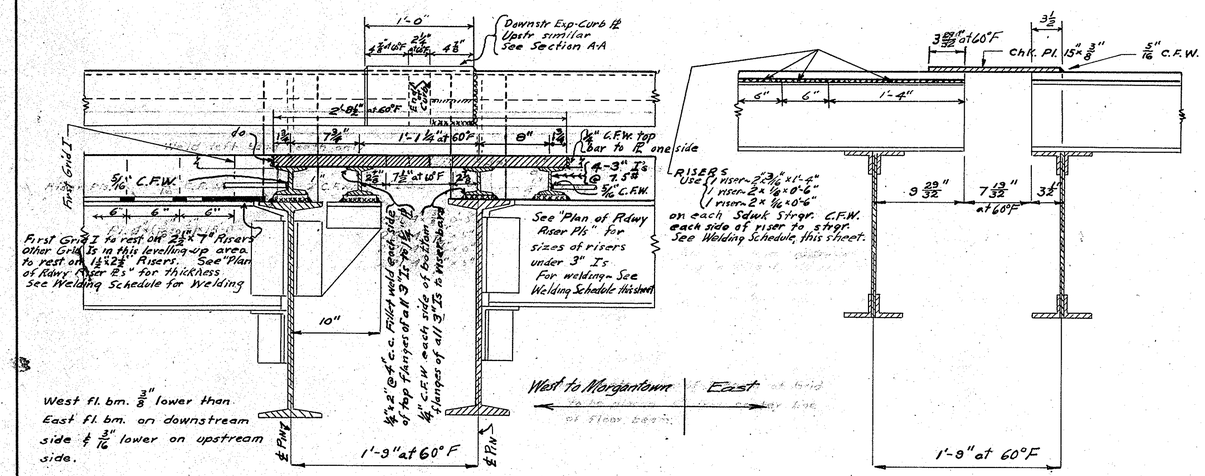


RDWY. RISER PL.
Full Size Scale

Thickness of risers to vary from ⅜" to ⅛" by 1/16" increments to fit conditions in field.

NOTE. If necessary, Fillers or risers shall be modified to suit conditions in the field. The objective is to maintain as true a plane or top of the floor of expansion dam and to have a firm bearing of the floor on its supports.

EXPANSION DAM AT PIER NO. 3



SECTION B-B
Scale : 1½" = 1'-0"

SECTION C-C
Scale : 1½" = 1'-0"

MADE BY F. R. S. DATE 11-3-52
TRACED BY W. E. V. DATE 11-6-52
CHECKED BY F. R. S. DATE 12-1-52
REVISIONS

NEW FLOOR

CHEAT LAKE BRIDGE
OVER
CHEAT RIVER
AT
ICE'S FERRY
MONONGALIA COUNTY, W.VA.

EXP. DAM ~ PIER NO. 3

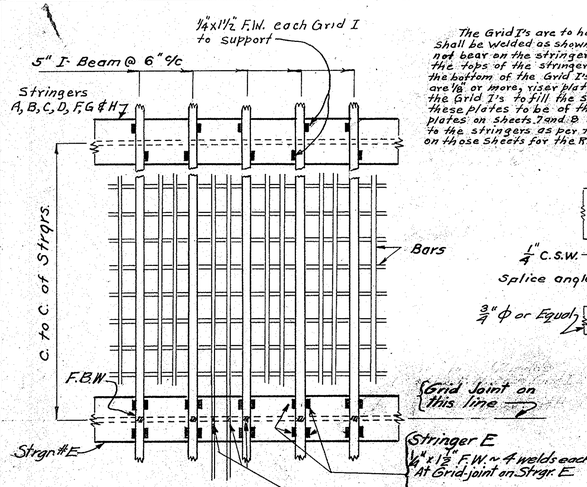
DESIGNED BY
STATE ROAD COMMISSION
CHARLESTON, W.VA.

PROJECT NO. 2284 1952
SCALE AS SHOWN SHEET 8 OF 10

410

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		Monongalia	9	10

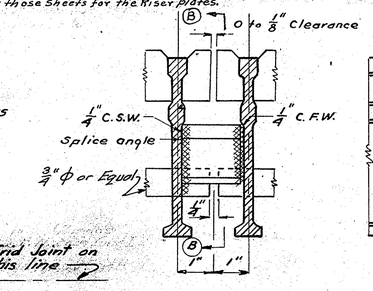
DPS - 8-30-82

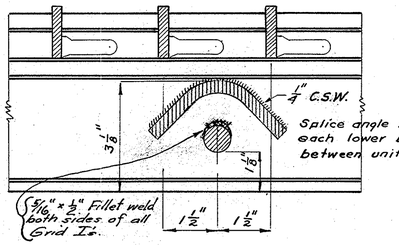


The Grid I's are to have firm support and shall be welded as shown. Where the Grid I's do not bear on the stringers, due to unevenness of the tops of the stringers and the space between the bottom of the Grid I's and the tops of the stringers are 1/8" or more, riser plates are to be placed under the Grid I's to fill the spaces, to the nearest 1/16", these plates to be of the size shown for riser plates on sheets 7 and 8 and are to be welded to the stringers as per the welding schedules shown on those sheets for the riser plates.

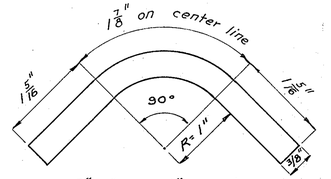
Where the Grid I's do not bear firmly on the supports and the space below the grid I's are less than 1/8", then an additional fillet weld 1/4" x 1 1/2" shall be added opposite each of the 1/4" x 1 1/2" F.W. shown for stringers A, B, C, D, F, G & H.

Where there is space between Grid I's and supports welds are to extend underneath Grid I's as far as possible, in order to provide as much bearing as possible.

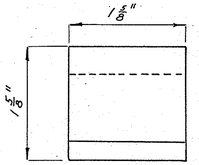




Splice angle located at each lower bar at ℄ between units.



Bar ~ 1 5/16" x 3/8" x 0'-4 1/2" ~ bent as shown, or Equal.



NOTE~REFERRING TO ERECTION OF RDWY. GRID

Where closed pockets are formed by the I's of the grid resting on top of floor beams, the pockets shall be drained by burning 1"(dia.) x 2"(long) holes at 1' c.c. in the lower part of the proper I's. These pockets may be formed either on account of the grade of the bridge or an account of there being two grid I's resting on a floor-beam flange. All costs of burning the holes shall be included in the price bid for Item 96R "Open Steel Grid for Roadway".

The Grid I to be welded to the floor beam between each hole with one 1/4" x 1 1/2" weld on each side of the grid I flange.

FIELD WELDING TO STRGRS.

(Similar Welding to Floor-beams & Risers)

Scale - 1 1/2" = 1'-0"

NOTE.

Where stringer flanges, at intersection with floor beams are coped, steel bars shall be welded to present steel to provide support for grid-I's, as necessary. Cost of material and labor shall be included in price bid for Item #96R.

If necessary to cut upper grid-crossbars in order to fit grid to supports and to provide a true surface, the cross-bars shall be welded to develop their original strength. This cost shall be included in price bid for Item #96 "Open Steel Grid for Roadway, Complete in Place".

SIDE SPLICE

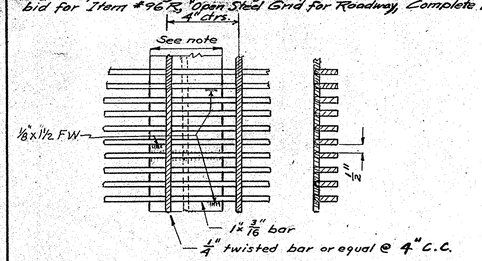
Half Scale

NOTE. At the grid-joint on ℄ Strgr. #E, the grid I-beams and upper bars shall be butt-welded to their corresponding abutting parts to develop the original strength of each I-beam and bar.

NOTE. At Stringer #E all joints in Expansion-dam L's, B, Z's & Bars shall be butt-welded to develop the original strength of the members. The cost shall be included in the price bid for Item No. R3, "Fabricated Structural Steel", complete in place.

SECTION B-B

Half Scale

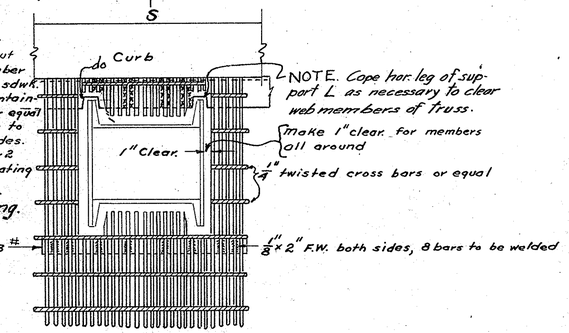


SIDEWALK GRATING DETAIL

Scale: 3" = 1'-0"

Note: Sidewalk grating bars shall be welded to each sidewalk stringer and support angle, at every fourth bar, with one 1/8" x 1 1/2" weld as shown.

At all openings for passage of truss members through sidewalk, flame cut grating between south side of member ℄ curb to permit erection. To fill in sdwk adjacent to curb, flame cut piece containing at least one twisted cross bars or equal from waste grating. Weld 4 ~ 1" x 3/16" bars to support angle, using 5/8" C.F.W. both sides. Provide on south side of opening 1T~2 x 2 x 4.3 passing under 4" of uncut grating at each end with stem extending down. Include cost of material & labor in price bid for sidewalk grating.



DETAIL TRUSS THRU SDWK

Scale: 1 1/2" = 1'-0"

SPLICE ANGLE DETAIL

Full Scale

BILL OF REINFORCING STEEL FOR CONCRETE

LOCATION	NO.	MK	SIZE	LENGTH	SHAPE
Abut. #1 ~ Curtain Wall	2	H1	#6	25'-4"	STR
Abut. #2 ~ Curtain Wall	2	H2	do	25'-4"	do
Abut. #1 Downstr. Curb.	4	H3	do	1'-9"	do
Abut. #2 Downstr. Curb.	4	H4	do	1'-9"	do
Abut #1 Upstr. Curb.	4	H5	do	1'-9"	Field Bend
Abut #2 Upstr. Curb.	4	H6	do	1'-9"	STR
Abut. #1 In Sdwk.	4	H7	do	6'-9"	do
Abut #2 In Sdwk.	4	H8	do	6'-9"	do
Abut. #1 In Rdwy & Sdwk	26	D1	do	2'-1"	do
Abut #2 In Rdwy & Sdwk	26	D2	do	2'-1"	do
Abut #1 In Upstr. Curb	6	D3	do	2'-1"	do
Abut #2 In Upstr. Curb	6	D4	do	2'-1"	do
Abut #1 In Downstr. Curb	6	D5	do	3'-0"	do
Abut. #2 In Downstr. Curb	6	D6	do	2'-10 1/2"	do

GENERAL NOTES FOR WELDING

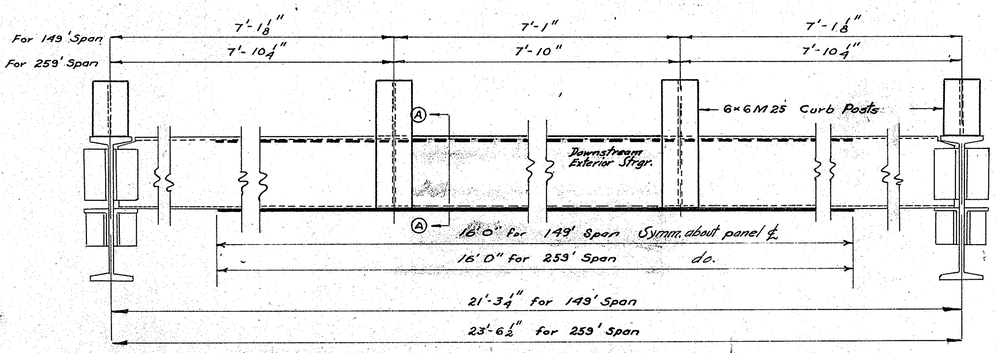
For general requirements for welding, see Specifications.

All welds not otherwise indicated shall be 1/4" continuous fillet welds. All butt welds shall be continuous.

Shop drawings shall show clearly the type, dimensions and location of all welds.

Typical Nomenclature.

1/4" C.S.W. indicates a 1/4" continuous shop fillet weld.
5/16" C.F.W. indicates a 5/16" continuous field fillet weld.
1/4" x 2" F.W. @ 5 1/2" c.c. indicates 1/4" intermittent field fillet welds 2" long at 5 1/2" centers.
1/4" x 1 1/2" F.W. indicates one 1/4" field fillet weld 1 1/2" long.
1/4" x 2" S.W. @ 6" c.c. indicates 1/4" intermittent shop fillet welds at 6" centers.
F.B.W. indicates field butt welds and S.B.W. indicates shop butt welds.

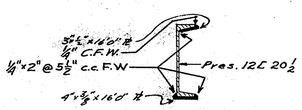


LOCATION OF STRINGER REINFORCING PLATES & CURB-POSTS

No Scale

Looking Upstream

{NOTE: SPAN NO. 4, PANEL 7 STRINGER B, 13 S 12 x 31.8 AND WAS NOT REINFORCED}



SECTION A-A

(Same reinforcing & welding on upstr. strgr.)

MADE BY E.E.S. DATE 11-8-82
TRACED BY W.E.L. DATE 11-18-82
CHECKED BY E.E.S. DATE 12-6-82

REVISIONS

NEW FLOOR

CHEAT LAKE BRIDGE

OVER

CHEAT RIVER

AT

ICE'S FERRY

MONONGALIA COUNTY, W.VA.

DETAILS

DESIGNED BY

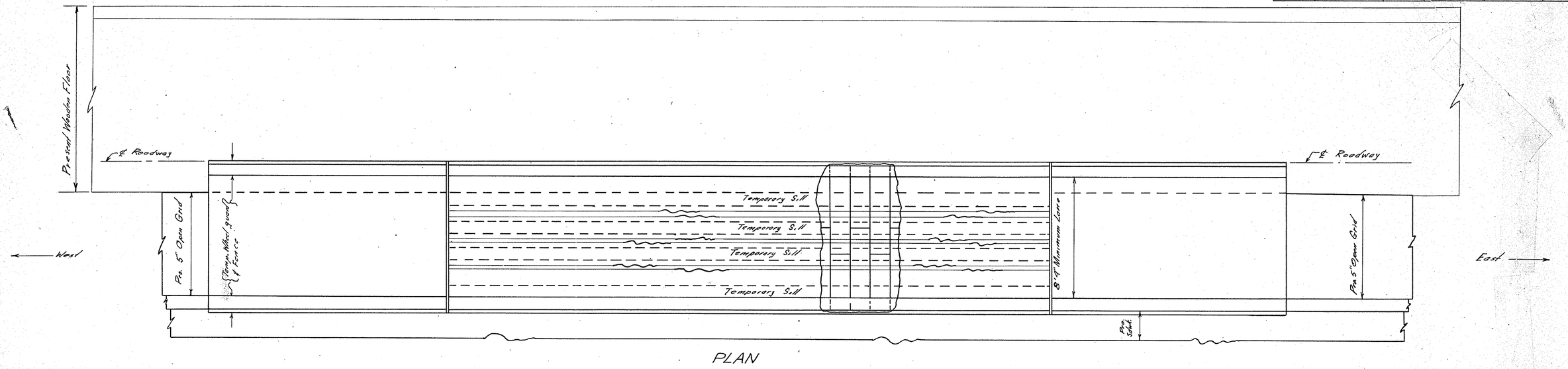
STATE ROAD COMMISSION

CHARLESTON, W.VA.

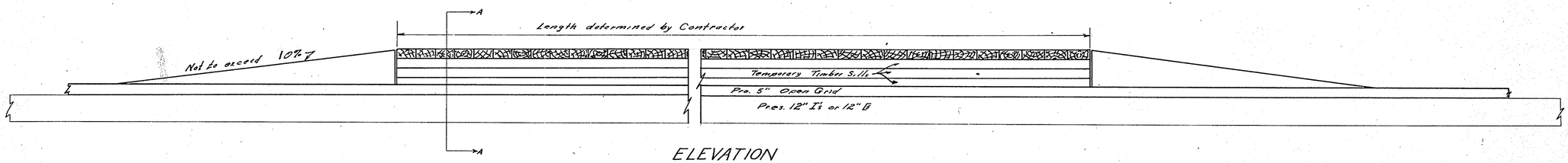
PROJECT NO. 2284 1952

SCALE AS SHOWN SHEET 9 OF 10

DIST. NO.	STATE PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	TOTAL SHEETS
4	2284		MONONGALIA	10	10



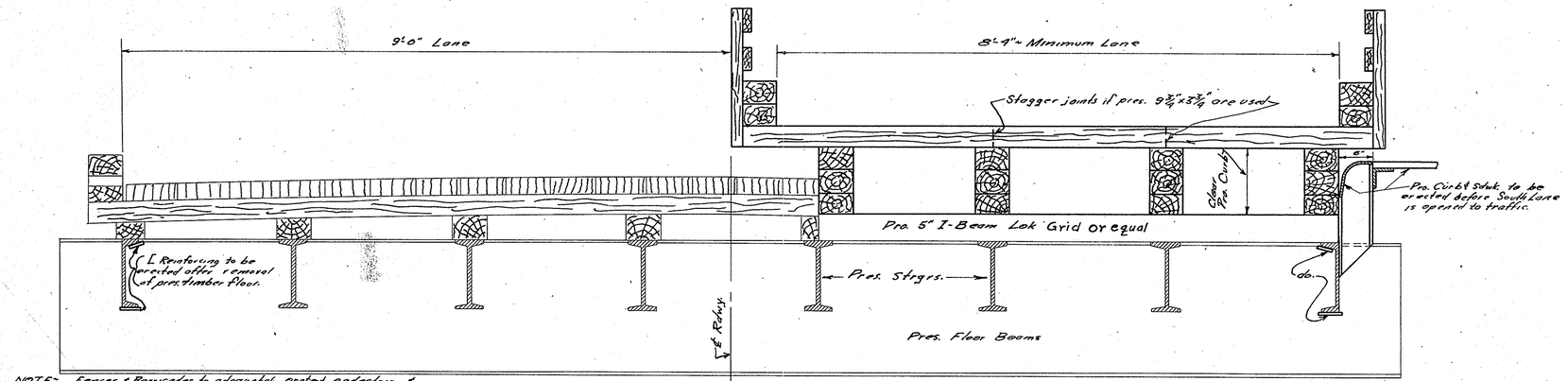
PLAN



ELEVATION

Wheelguards & Fences Not Shown Scale- 1/2"=1'-0"

NOTE:
Tempoary bridge and ramps shall be designed for 15 Ton gross weight truck. Minium width of lane for one way traffic shall be 8'-4"



NOTE- Fences & Barricades to adequately protect pedestrian & vehicular traffic shall be maintained at all times. While placing grid on South lane of Rdwy., single-lane traffic shall not exceed 300 feet. While placing grid on North lane of Rdwy. using suggested temporary bridge or any other method approved by the Engineer, single lane traffic shall not exceed 300 feet. The Contractor may use any removed timber that is in good condition for construction of tempoary bridge and ramps, fences and barricades. See Note.- ITEM 127A Sheet #1

SECTION A-A

SUGGESTED TEMPORARY BRIDGE ~ SOUTH LANE

Scale- 1"=1'-0"

MADE BY E. R.S.	DATE 8-12-52	REVISIONS
TRACED BY J. G.	DATE 8-20-52	
CHECKED BY E.R.S.	DATE 12-1-52	

NEW FLOOR

CHEAT LAKE BRIDGE

OVER

CHEAT RIVER

AT

ICE'S FERRY

MONONGALIA COUNTY, W. VA.

PRO. TEMPORARY BRIDGE

DESIGNED BY

STATE ROAD COMMISSION

CHARLESTON, W. VA.

PROJECT NO. 2284 1952

SCALE AS SHOWN SHEET 10 OF 10

NO. 410

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
	4	2284			Monongalia	1	4

PLAN
SURVEYED ... DATE
PLOTTED ... BY
NOTE BOOK ALIGNMENT CHECKED ... Smith
RT. OF WAY CHECKED ... Frank
NO. ...

PROFILE
SURVEYED ... DATE
PLOTTED ... BY
NOTE BOOK GRADES CHECKED ... Gress & Lacy
B. M. NOTED ... Mountaineer
NO. ... STRUCTURE NO. 47.7 (N.B.I.)

STA. 2+50 | STA. 2+00 | STA. 1+50 | STA. 1+00

MATCH MARK For Extension of Proj.

R.W.

Ditch Line

STONE WALL

EDGE OF PAVEMENT

2.0' | 10' | 16.5' | 2.0'

℄ OF SURVEY

TO MORGANTOWN

STA. 0+83.15

P.T.

18" R.C.P. Culv. 40'

Existing D.I.

D.I.

STONE STEPS

STA. 0+55± Remove Existing D.I. & Inlet Pipe

20' Rt. ℄ STA. 0+55± Build D.I. With 18" R.C.P. Culv. 40' Inlet & 18" R.C.P. Culv. 50' Outlet

P.I. Existing Curve

P.C. Existing Curve

1 CAR GARAGE - BLOCK

DRIVE WAY

18" R.C.P. Culv. 50'

PRIVATE DRIVE

STONE GATE POSTS

Cut Stone Curb

Top of

Curve Widening

STONE WALL

Tel. Pole

Power Pole

Utility Poles to be moved Outside of New Guard Rail 5' from Present Location

NOTE Remove Present Guard Rail From Bridge to Sta. 1+60 and Set Rail to Line of New Curve as Directed by Engineer

NOTE Remove Pavement in Hatched Area and Stabilize Shoulder

END OF APP. CONST.

BEG. OF APP. CONST.

CHEAT LAKE

℄ OF SURVEY

P.C.

P.T.

STA. 10+20

FACE OF CURTAIN WALL

CHEAT LAKE BRIDGE APPROACH
WEST END
SCALE 1" = 10.0'

OUTSIDE CURVE
P.I. = 61.59'
Δ = 103°30'
D = 118°
T = 61.59'
L = 87.70'

℄ SURVEY CURVE
P.I. = 58.60'
Δ = 103°56'
D = 125°
T = 58.60'
L = 83.15'

INSIDE CURVE
P.I. = 44.9'
Δ = 102°30'
D = 159°
T = 44.9'
L = 64.30'

VERT. SCALE 1" = 5'
HOR. SCALE 1" = 20'

592.42 | 580.69 | 568.96 | 557.23 | 545.49 | 533.76 | 522.03 | 510.30 | 498.57 | 486.83 | 475.10 | 463.37 | 451.64

2+00 | 1+80 | 1+60 | 1+40 | 1+20 | 1+00 | 0+80 | 0+60 | 0+40 | 0+20 | 0+00 | 0+18.33

B = 4.5 %

P.I. Sta. 0+18.06 | 879.06

P.C. Sta. 0+77.83 | 877.83

P.T. Sta. 1+77.85 | 877.85

0.18.5 %

℄ Sidewalk Grade

Floor Grade

ABUT. #1

PIER #1

SPAN #1

30' R.C.

920 | 890 | 880 | 870

STATE ROAD COMMISSION
CLARKSBURG, W.VA. DIST. #4

RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER ... DATE

APPROVED
STATE CONSTRUCTION ENGINEER ... DATE

PLATE 1 - PLAN - PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	Station to Station	Sheet No.	Total Sheets
	4	2284			Monongalia	2	4

PLAN
SURVEYED BY
DRAWN BY
NOTE BOOK
ALIGNMENT CHECKED BY
NO.
RT. OF WAY CHECKED BY
DATE

PROFILE
SURVEYED BY
DRAWN BY
NOTE BOOK
GRADES CHECKED BY
NO.
B.M.'S NOTED BY
STRUCTURE NOTATIONS CHKD BY
DATE

LAKE

CHEAT

STA. 0+00 FACE OF CURTAIN WALL

STA. 1+00

P.C. STA. 1+50

BEG OF APP. CONST.

END OF APP. CONST.

R.W.Y.

SHOULDER LINE

EDGE OF PAVEMENT

EAST END OF BRIDGE

℄ OF SURVEY

SIDEWALK

R.W.Y.

To Morgantown

Secondary Road

CHEAT LAKE BRIDGE APP.

EAST END

SCALE-1" = 10.0'

PROFILE SCALE
VERT. 3 - HORZ. 10

880
870
860

SPAN #4

ABUT. #2

P.V.C. STA. 0+00

E.V.C. STA. 1+00

-3.8 %

STATE ROAD COMMISSION
CLARKSBURG, W.VA. DIST. #4

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER DATE

APPROVED

STATE CONSTR. ENGINEER DATE

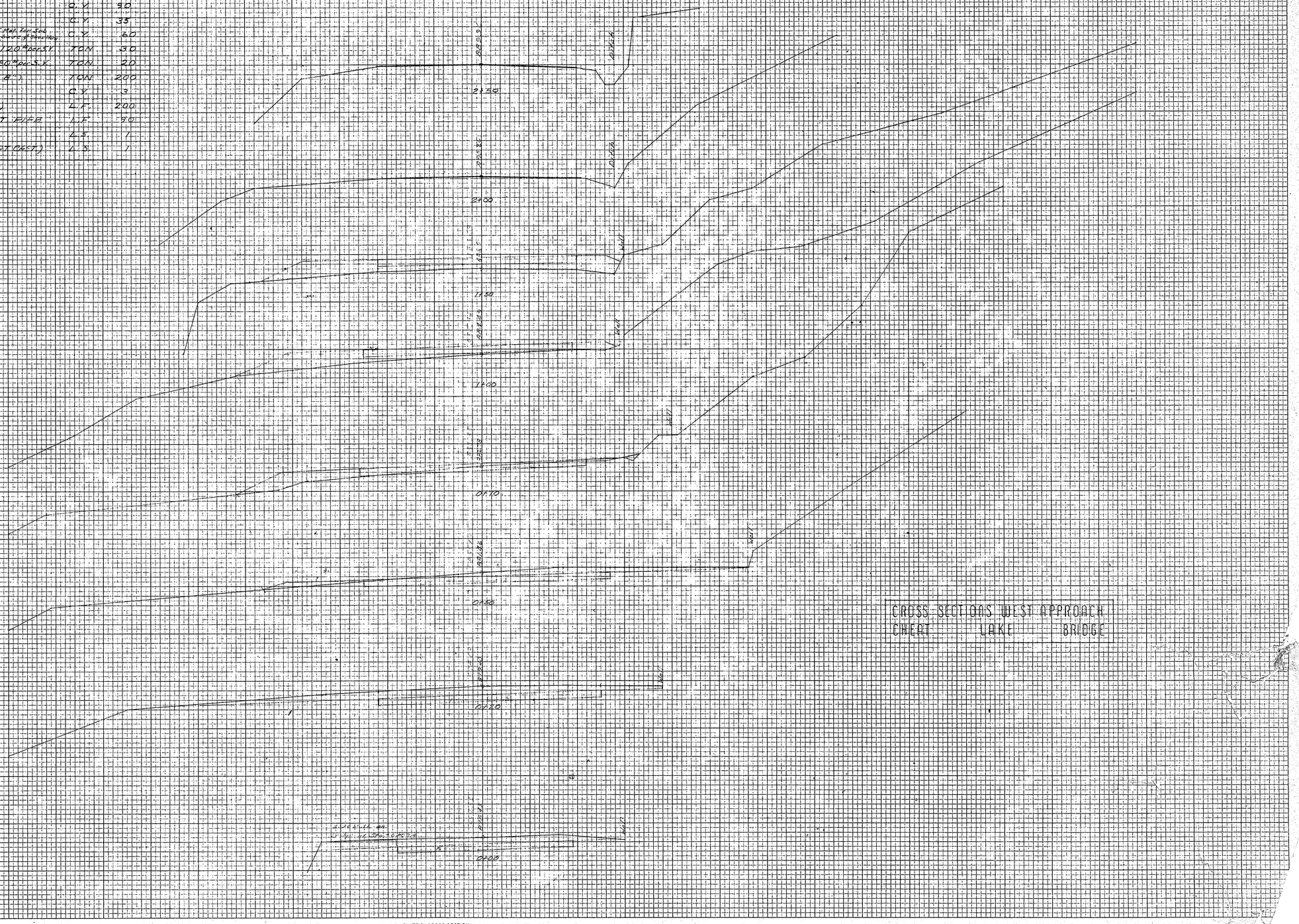
PLATE 1 - PLAN - PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Year	Sheet	Total Sheets
	4	2284			2+50	3 4

SCALE: 1"=5'-0"

ESTIMATE OF QUANTITIES

NO.	ITEM	UNIT	TOTAL
2	UNCLASSIFIED EXCAVATION	C.Y.	90
6-A	STRUCTURE EXCAVATION	C.Y.	35
15-A	CRUSHER RUN STONE BASE OR (Add for final course of pavement)	C.Y.	60
28-A	HOT LAID ASPH. CONC. BOTTOM OR 1 1/2" Base ST.	TON	30
28-B	HOT LAID ASPH. CONC. WEARING OR 60 "for S.K.	TON	20
28-D	HOT LAID ASPH. CONC. BASE OR (3")	TON	200
107	SAND FOR UNDERDRAINS	C.Y.	3
119	GUARD RAIL (STEEL BEAM TYPE)	L.F.	200
49-A-(18)	18" REINFORCED CONCRETE CULVERT PIPE	L.F.	90
113-B	DROP INLET CASTINGS	L.S.	1
114-B	DROP INLET COMPLETE (EXCEPT CASTINGS)	L.S.	1



CROSS SECTIONS WEST APPROACH
CHEAT LAKE BRIDGE

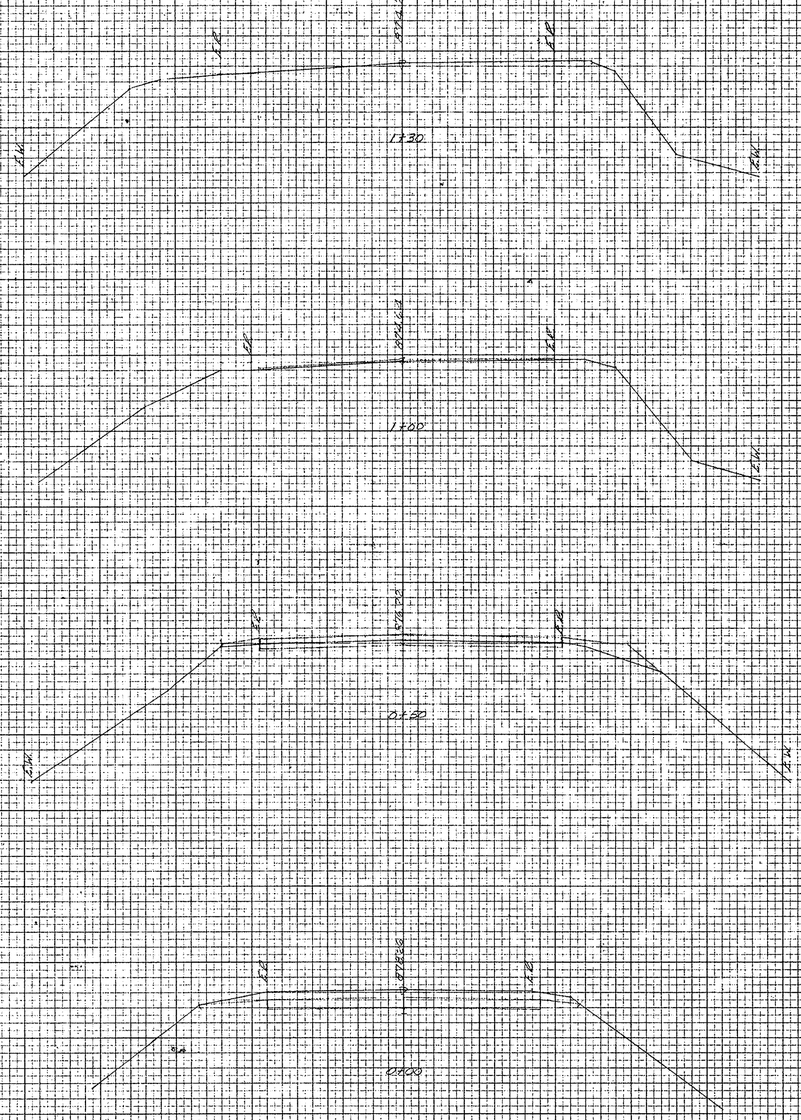
ORIGINAL SURVEY	BY	DATE
PLOTTED	J.A.L.	1-30-56
CHECKED	C.H.H.	1-31-56
TEMPLATE		
NOTE BOOK		
NO.		
AREAS CHECKED		

FINAL SURVEY	BY	DATE
PLOTTED		
CHECKED		
TEMPLATE		
NOTE BOOK		
NO.		
AREAS CHECKED		

Public Roads Div.	State Dist. No.
	4

ESTIMATE OF QUANTITIES

NO.	ITEM	UNIT	TOTAL
2	UNCLASSIFIED EXCAVATION	C.Y.	30
15-A	CRUSHED RUN STONE BASE CR. (Water Bound Macadam)	C.Y.	12
28-A	HOT LAID ASPH. CONC. BOTTOM CR. 120 Ton per S.Y.	TON	13
28-B	HOT LAID ASPH CONC. WEARING CR. 50 Ton per S.Y.	TON	9
28-D	HOT LAID ASPH CONC. BASE CR. (8")	TON	65



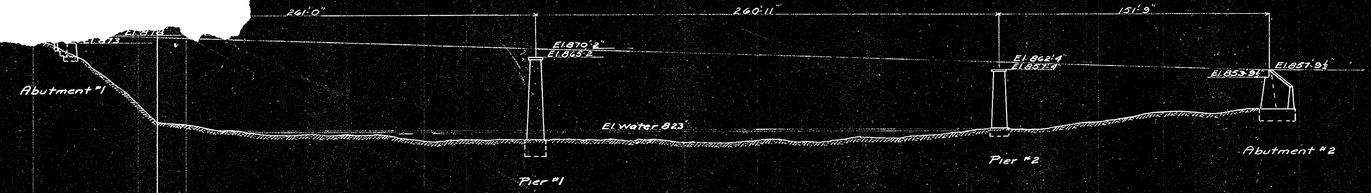
Fill 1,111 C.Yds.
Cut 25.13 C.Yds.
Net Surface 1,110.88

CROSS SECTIONS EA
OHEAT LAKE RA
Scale - 1"=5'

FINAL SURVEY	PLOTTED	BY	DATE
	CHECKED		
NOTE BOOK	TRIANGLE		
NO.	AREAS		
	AREAS CHECKED		

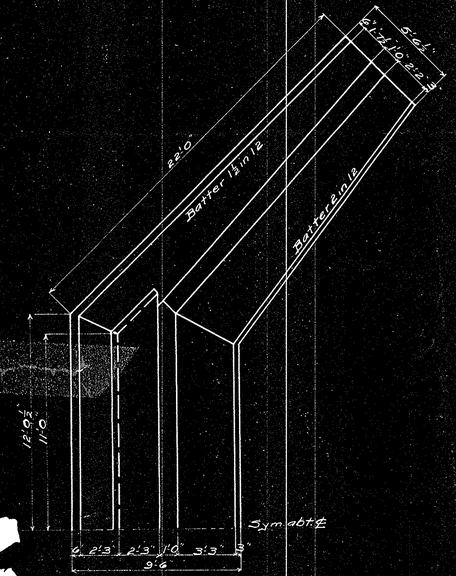
ORIGINAL SURVEY	PLOTTED	E.J.L.	1-20-54
	CHECKED	E.A.Sturgis	1-21-54
NOTE BOOK	TRIANGLE		
NO.	AREAS		
	AREAS CHECKED		

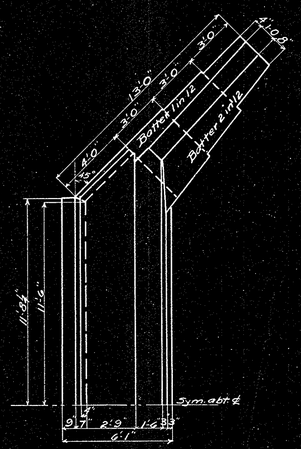
PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

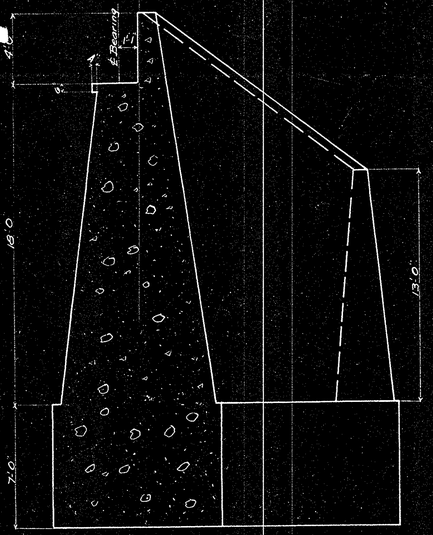


PROFILE
Scale 1:40'

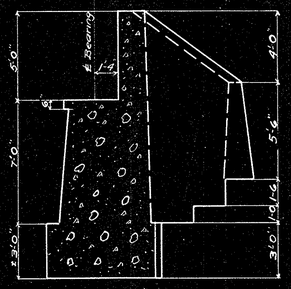
Notes
Bids will be received on concrete and stone masonry
Concrete 1:2½:5
One-man stone may be used in concrete over 2' thick. They shall not be placed within 6" of any surface nor within 6" of each other.
Specifications W. Va. S.R.C.



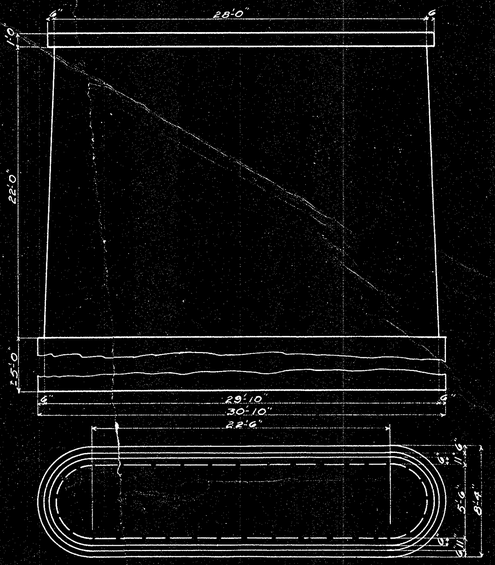




ABUTMENT #2 Scale ½"=1'



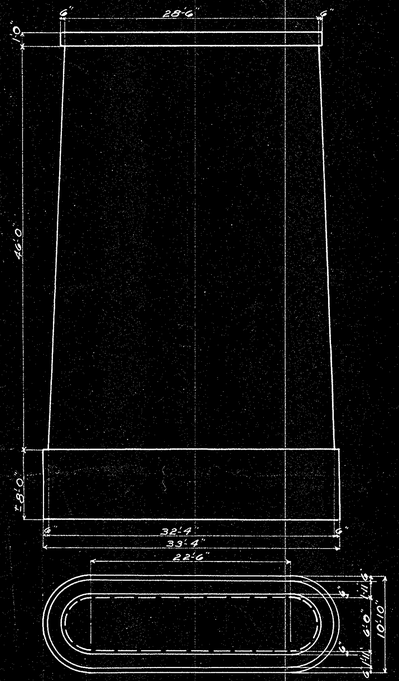
ABUTMENT #1
Scale ½"=1'



PIER #2
Scale ½"=1'

QUANTITIES

MASONRY OR CONCRETE	1080	CU.YDS.
EXCAVATION PIER #1	110	CU.YDS.
EXCAVATION PIER #2 & ABUT.	233	CU.YDS.



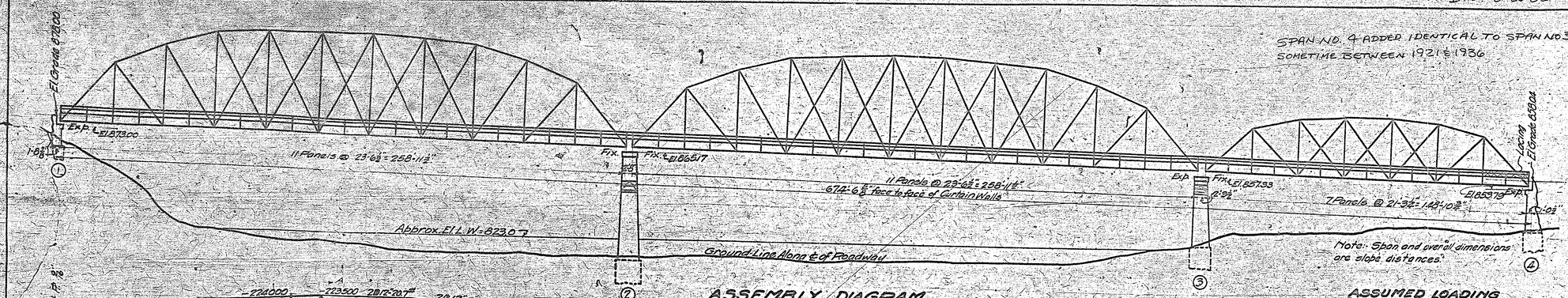
PIER #1
Scale ½"=1'

Proposed Design of
Substructure of Steel Bridge
OVER CHEAT RIVER AT ICES FERRY
Monongalia County, W. Va.
Designed by
State Road Commission
Charleston, W. Va.
Scales as shown Sept 16, 1919

#4100

DPS - 8-26-82

SPAN NO. 4 ADDED IDENTICAL TO SPAN NO 3
SOMETIME BETWEEN 1921 & 1936



Note: Span and overall dimensions are slope distances.

ASSEMBLY DIAGRAM

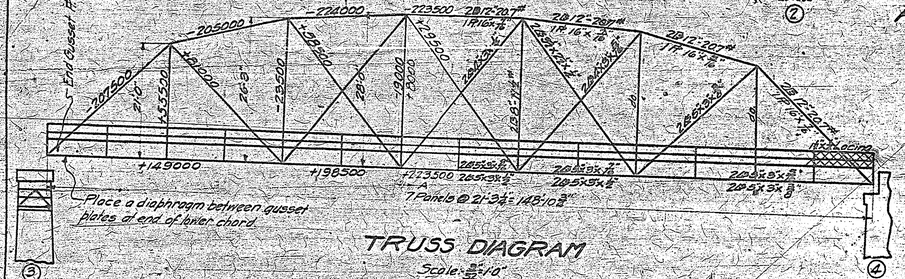
Scale: ⅛" = 1'-0"

View looking downstream

ASSUMED LOADING

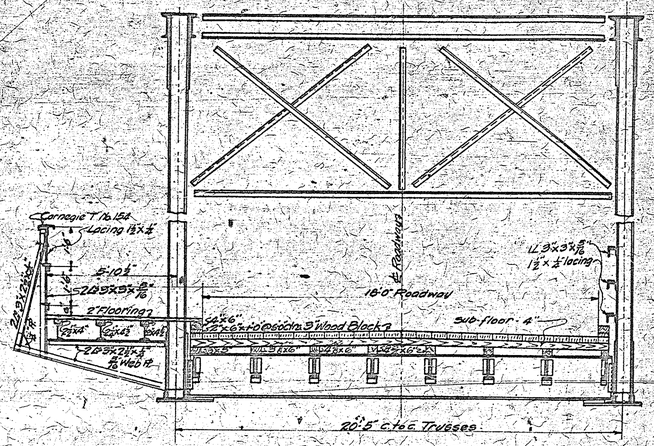
+148'-10⅜" SPAN

Assumed dead load 1020# per foot of truss.
Live load 2-75 ton rollers or 80# per sq.ft. of roadway and 60# per sq.ft of side walk and 20% impact.
Side walk designed for 100# per sq.ft.



TRUSS DIAGRAM

Scale: 1/32" = 1'-0"



SECTION OF ROADWAY

Scale: ⅜" = 1'-0"

HALF PLAN LOWER LATERALS

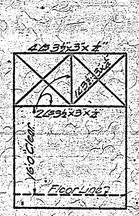
Scale: 3/32" = 1'-0"

HALF PLAN UPPER LATERALS

Scale: 3/32" = 1'-0"

NOTES

Rivets - ⅞"
Paint - Red lead
Specifications by State Road Commission, July 1920.
Contractors to submit a lump sum bid on superstructure.
Substructure completed.

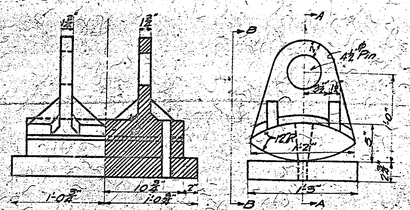


SECTION A-A

Scale: 3/32" = 1'-0"

SECTION OF END FLOOR BEAM

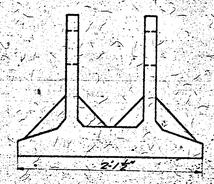
Scale: ¾" = 1'-0"



VIEW B-B SECTION A-A

DETAIL OF ROCKER FOR EXPANSION END

Rocker and Shoe - Cast Iron
Masonry Plate - Cast Steel 2½ x 1'-3" x 2'-2"



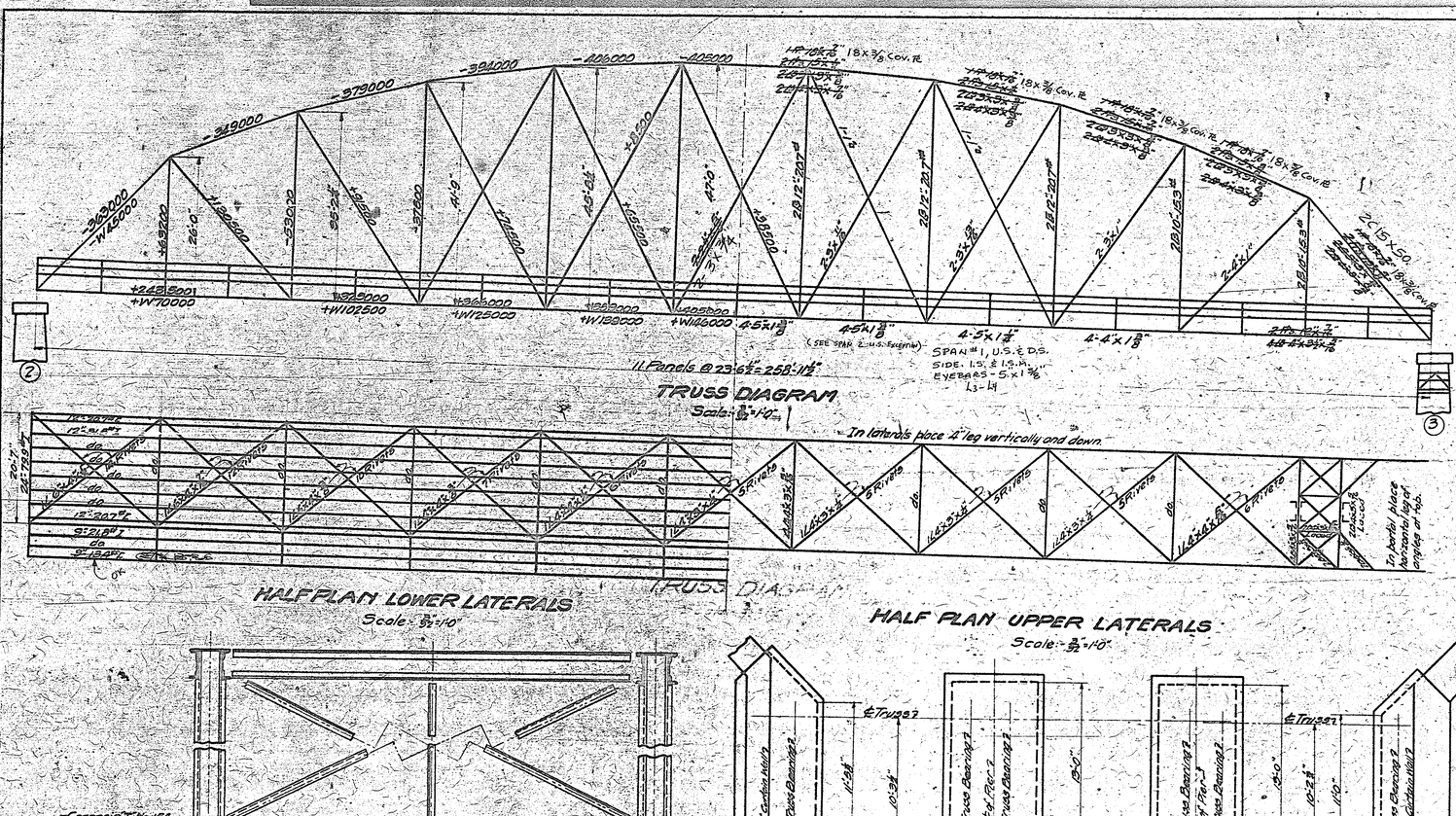
DETAIL OF SHOE FOR FIXED END

THRU STEEL TRUSS ICE'S FERRY BRIDGE

5 SPANS 2-258'-11½" AND 1-148'-10⅜", SIDEWALK 5'-0" ROADWAY 18'-0"
on
MORGANTOWN - UNIONTOWN TURN PIKE
over
CHEAT RIVER
at Ice's Ferry
MONONGALIA CO., W. VA.
Designed by
STATE ROAD COMMISSION, CHARLESTON, W. VA.
Scale: As shown Date: October 1921
PROJECT SHEET 1 OF 2 410

GFA.

1 410 65



TRUSS DIAGRAM

Scale:- ½"=1'0"

SPAN #1, U.S. & D.S.
SIDE - L5, & L5-M
EYEBARS - 5"x1 3/8"
L3-L4

(SEE SPAN 2 - U.S. Extreme)

4-5"x1 3/8" | 4-5"x1 3/8" | 4-4"x1 3/8"

2 Rivets

In laterals place 4" leg vertically and down.

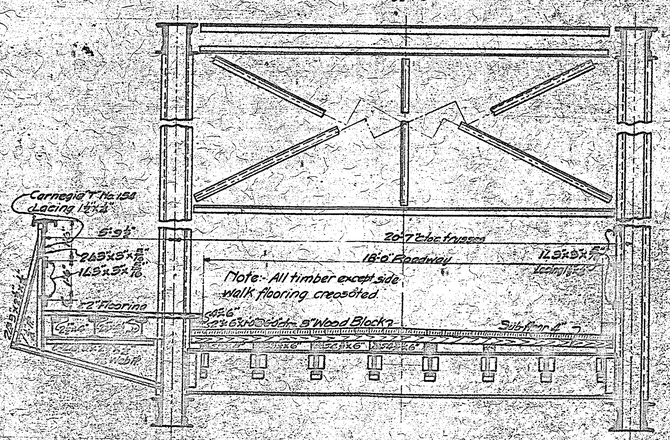
To permit placing horizontal lap of angles at Pts.

HALF PLAN LOWER LATERALS

Scale:- ½"=1'0"

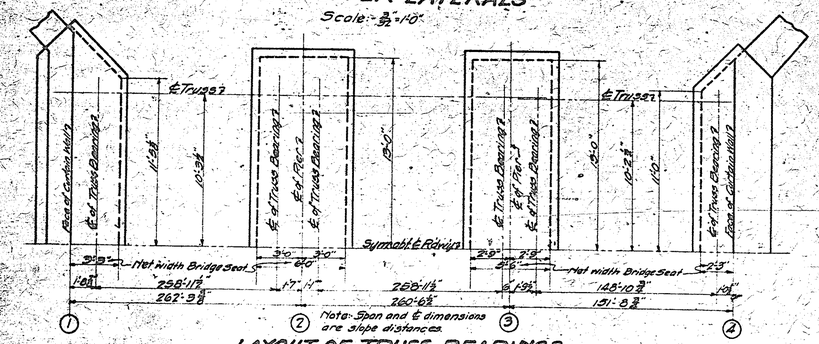
HALF PLAN UPPER LATERALS

Scale:- ½"=1'0"



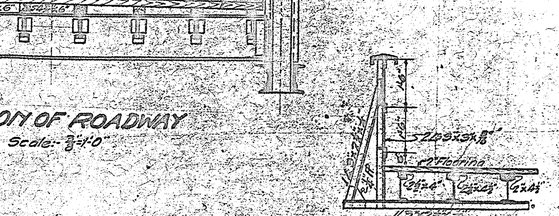
SECTION OF ROADWAY

Scale:- ½"=1'0"



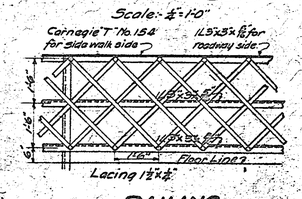
LAYOUT OF TRUSS BEARINGS

Scale:- ¼"=1'0"



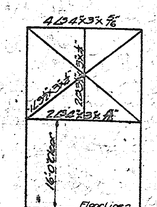
SIDE WALK BRACKET AT MID-PANELS

Scale:- ½"=1'0"



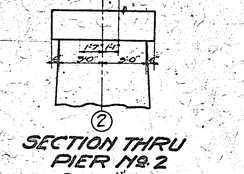
RAILING

Scale:- ½"=1'0"



SWAY

Scale:- ½"=1'0"



SECTION THRU PIER No. 2

Scale:- ½"=1'0"

ASSUMED LOADING

258'-11½" SPANS

Assumed dead load 1120# per foot of truss
Live live 2-15 ton rollers or 70# per sq.ft. of roadway and 525# per sq.ft. of side walk and 20% imp act.
Side walk designed for 100# per sq.ft.

DPS - 8-26-82

NOTES

Rivets- ⅞"
Paint - Red lead
Specifications by State Road Commission, July 1920.
Contractors to submit a lump sum bid on superstructure.
Substructure completed.

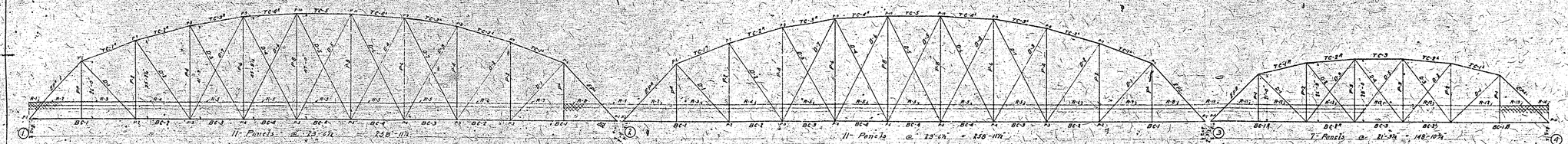
THRU STEEL TRUSS
ICE'S FERRY BRIDGE

SPANS- 2-256'-11⅞" AND 1-148'-10⅜" SIDE WALK 5'-0" ROADWAY-18'-0"
on
MORGANTOWN-UNIONTOWN TURN PIKE
over
CHEAT RIVER
at Ice's Ferry
MONONGALIA CO., W. VA.
Designed by
STATE ROAD COMMISSION, CHARLESTON, W.VA.

Scale: As shown Date: October 1921
PROJECT Sheet 2 of 2 410

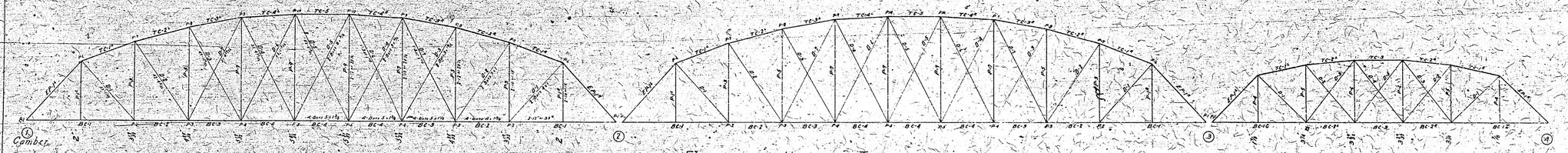
GFA.

Plan showing Top Laterals

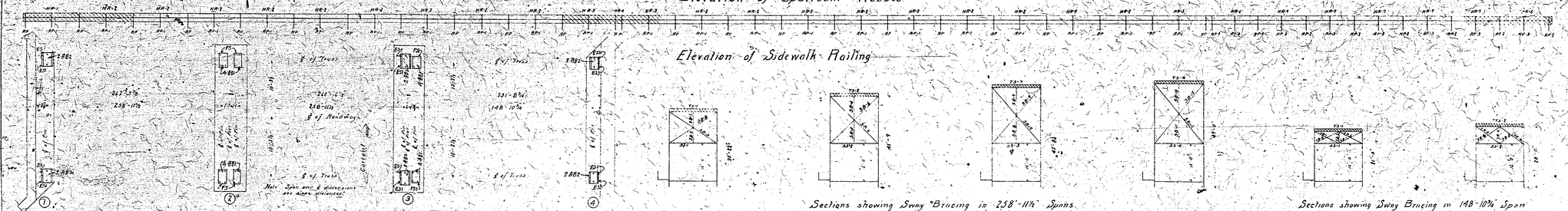


Section showing Elevation of Downstream Trusses

Plan showing Lower Laterals and Floor Beams



Elevation of Upstream Trusses

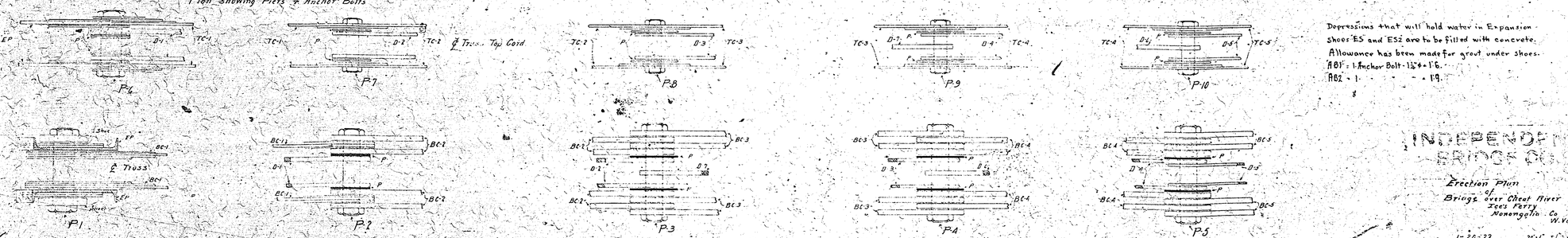


Plan showing Piers & Anchor Bolts

Elevation of Sidewalk Railing

Sections showing Sway Bracing in 258'-11½" Spans

Sections showing Sway Bracing in 148'-10½" Span

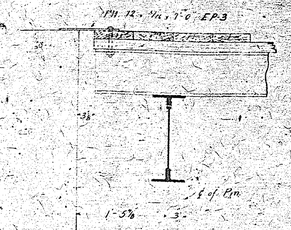


Depressions that will hold water in Expansion shoes ES and ES2 are to be filled with concrete.
Allowance has been made for grout under shoes.
AB1 = 1 Anchor Bolt - 1¼" ϕ - 1'6.
AB2 = 1 " " " - 1'9.

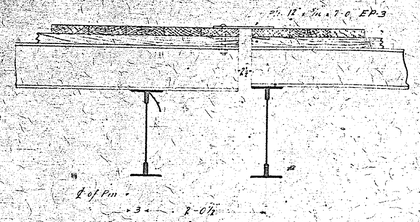
INDEPENDENCE BRIDGE CO.

Erection Plan of Bridge over Cheat River Iron Ferry Monongalia Co W. Va.

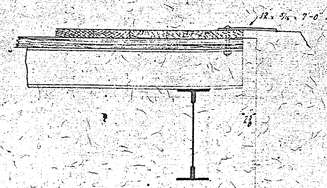
1-26-22 J.S.G. 1" = 1'-0" 207



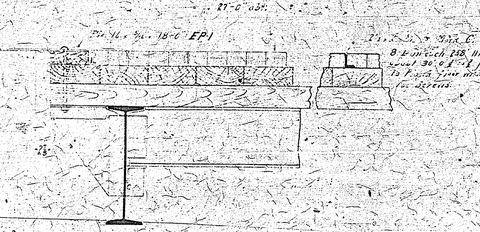
Section through Side Walk at "1 Abutment



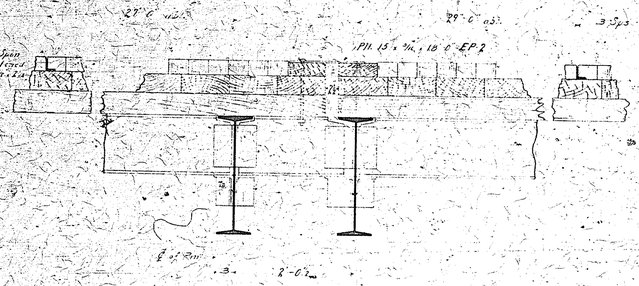
Section through Side Walk at "3 Pier



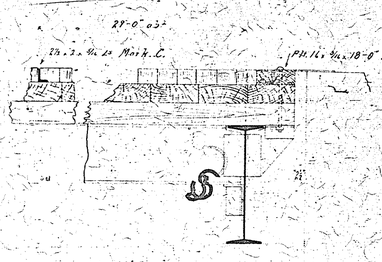
Section through Side Walk at "4 Abutment



Section through Roadway at "1 Abutment

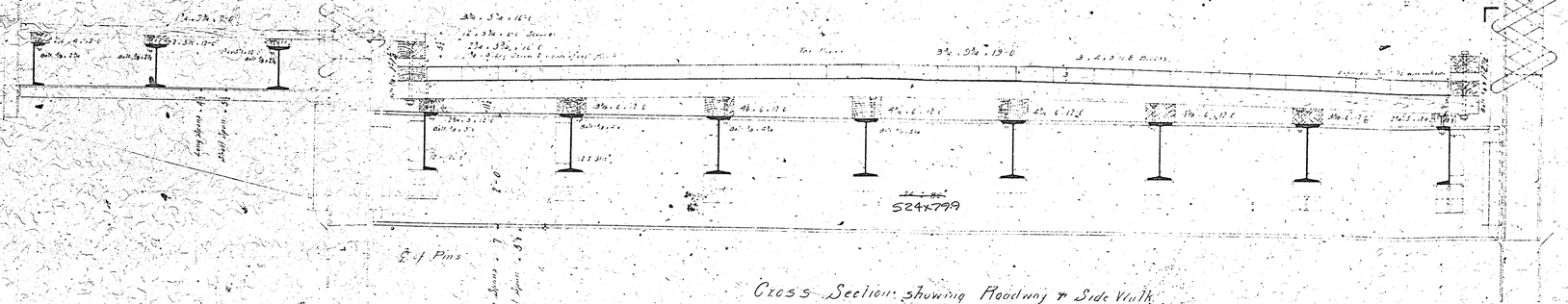


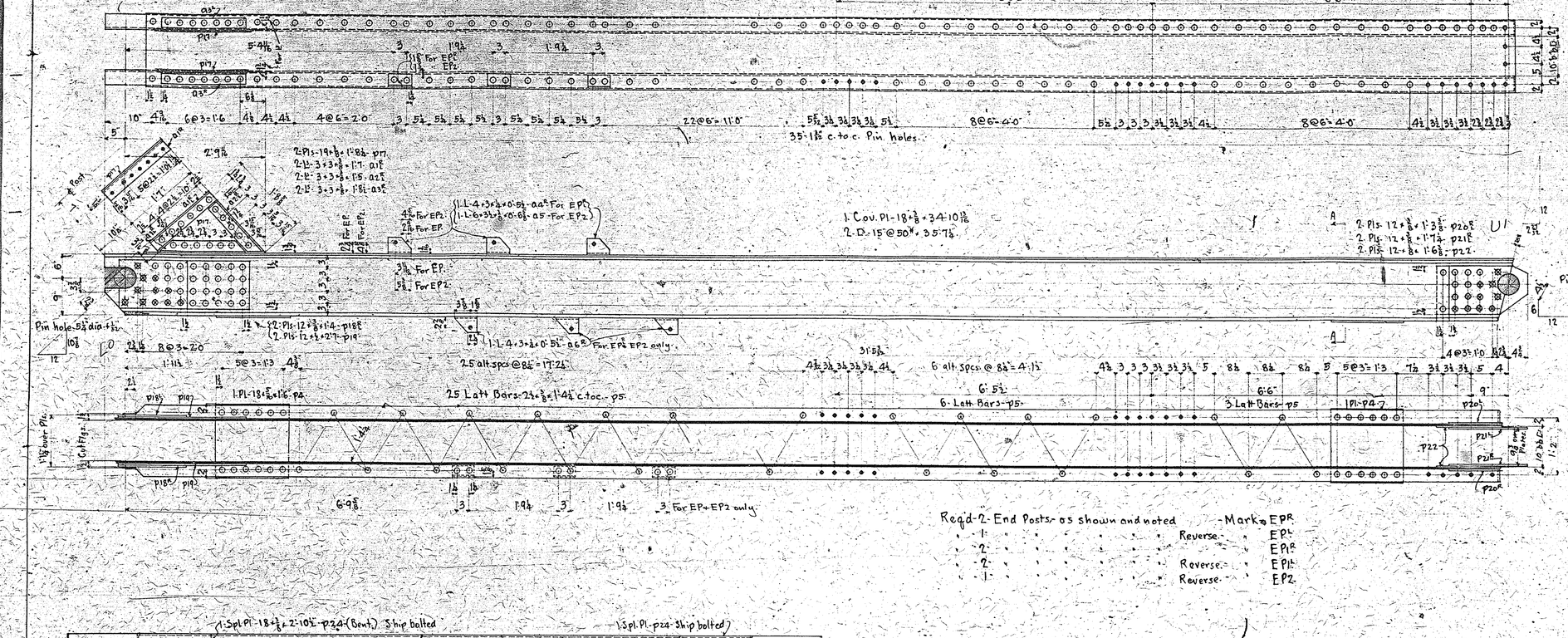
Section through Roadway at "3 Pier



Section through Roadway at "4 Abutment

Specification for placing floor.
After sub-planking is laid cover same with one layer of tar paper to prevent the hot pitch from going through the cracks.
A 2½ x 2 - 3/16 x 11' with 2½" leg vertical to be placed across the roadway of Bridge and fastened to the sub-planking with ¾" x 2½" leg screws about 18" ℄ these to be about 30'-0" apart.
Blocks to be laid loosely and to have approximately ½" joint between them.
Flush all joints of the floor until they are completely filled.
After joints have been filled cover roadway with sand.





Reqd-2-End Posts-as shown and noted -Mark-EP

1		Reverse	EP1
2			EP1R
2		Reverse	EP2
1		Reverse	EP2R

Reqd-4 Top Chords-as shown-Mark TC5.

Reqd-8-Bottom Laterals-as shown-Mark-BL5
A- BL6

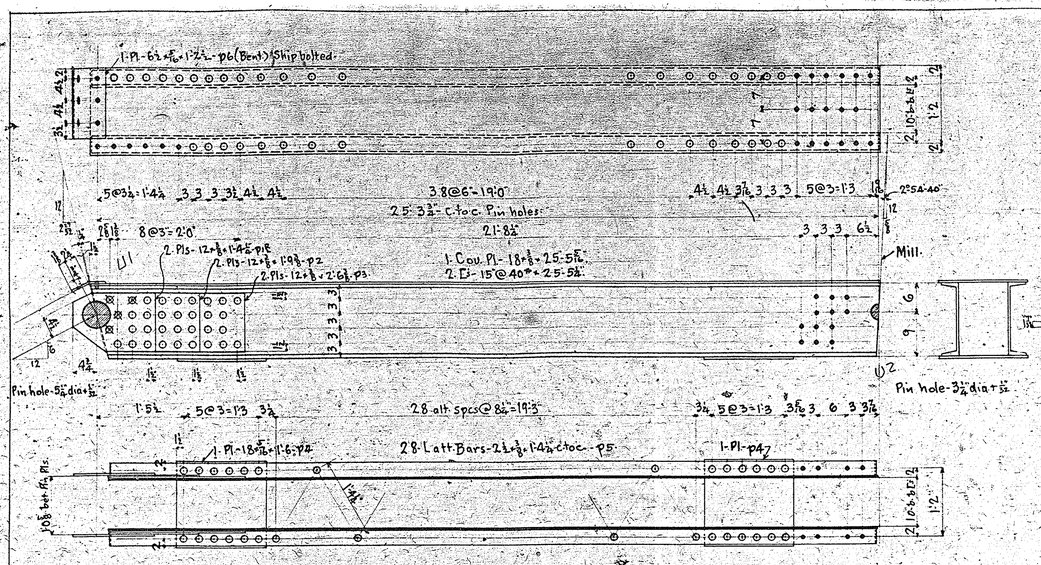
End Post + Top Chords-Bolt Lots 258-114 Spans
Bridge over Cheat River
Ices Ferry
Monongalia Co. W. Va.

Dwg Tied Lead 1-17-22 1:12 Down 20th

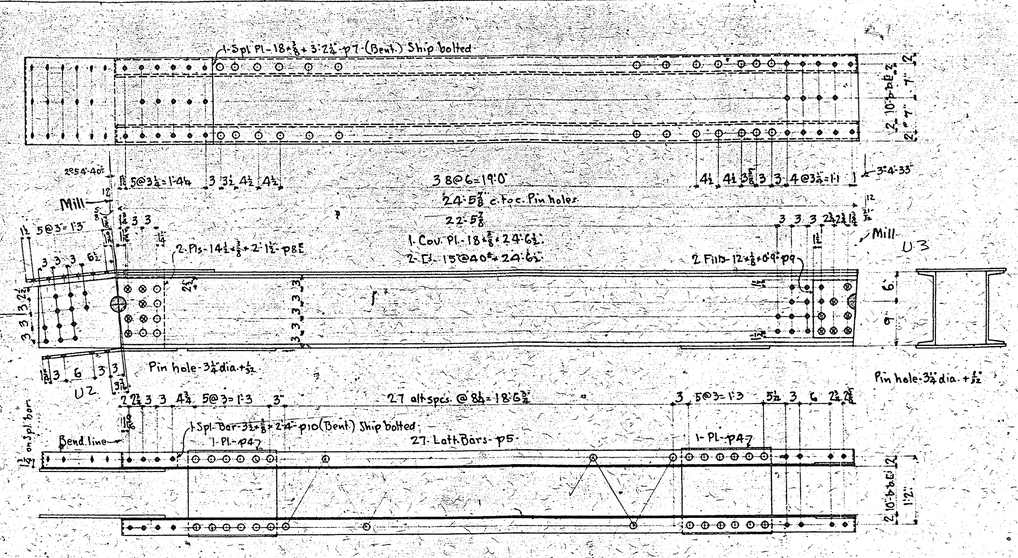
TAB 2-24-22

207-A

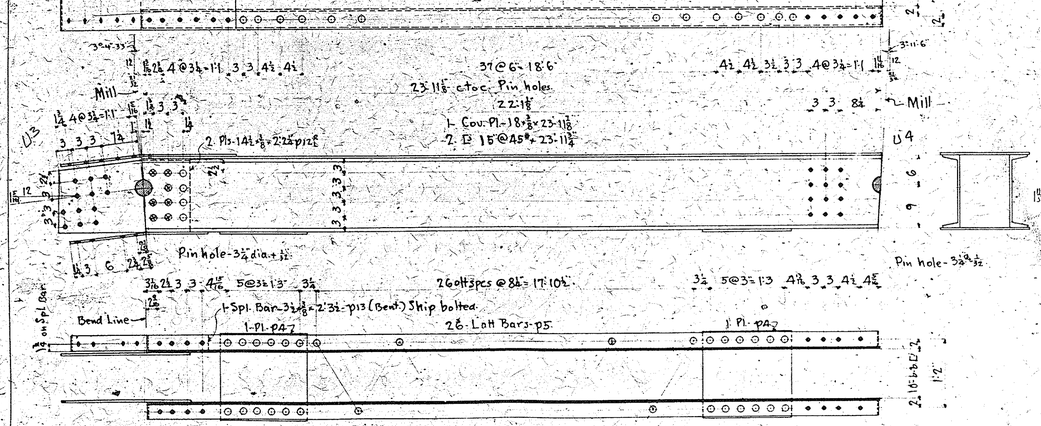
Bill Sheets 1-2



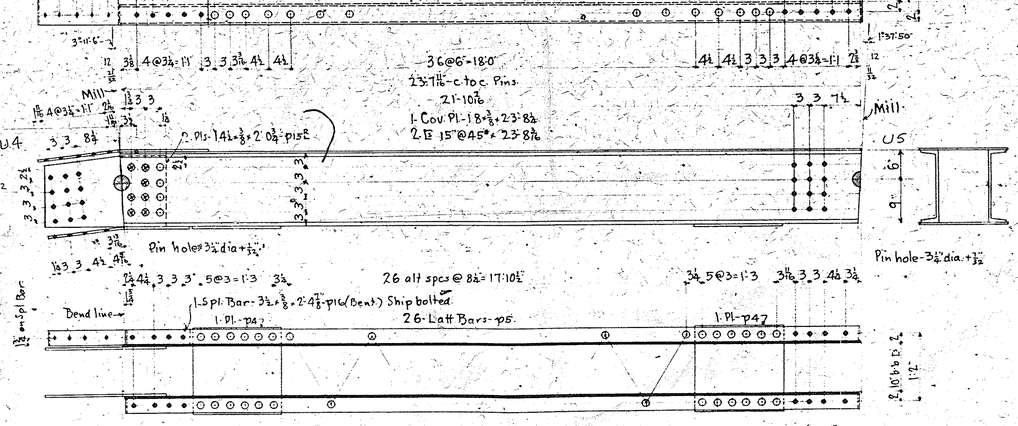
Reqd-4-Top Chords- as shown Mark- TC1R
" 4- " " " Reverse " TC1L



Reqd-4-Top Chords- as shown Mark-TC2R
" 4- " " " Reverse " TC2L



Reqd-4-Top Chords- as shown Mark-TC3R
" 4- " " " Reverse- " TC3L



Reqd-4-Top Chords- as shown Mark-TC4R
" 4- " " " Reverse- " TC4L

Rivets-¾" dia
Open holes-1⅛" dia

INDEPENDENCE BRIDGE

Top Chords 258'-11" Spans.
for
Bridge over Cheat River
Ices Ferry
Monongalia Co. W. Va.

1 Red Lead 1-16-22
Draw 1"=1'-0" 207.
Trace 2-24-22.

207-A

Shop Bills 1-4

8" Cut Flgs. Flush with mob.

53- Latt Bars- 2½"×⅜"×1'-11½" c.to.c. p36.

2-Pls-12"×½"×1'-2" p37

82- Latt Bars- p36.

2-Pls-15"×½"×1'-2" p38

1'-1½"

1-P.G. 8@32½"= 2'-11" b2.

Cut Flg.

3'-4⅛"

29 at 5pcs @ 6⅝"= 16'-0⅝"

41 at 5pcs @ 6⅝"= 22'-7⅛"

Pin hole 5⅜" dia.

47'-0½" c.to.c. Pin holes.

25'-5½"

19'-7⅝"

2-L-3½"×3½"×⅜"×10'-7" a10- For P8 only.

2-L-12"@20.7"= 47'-7½"

These holes in near E only.

Pin hole 3½" dia.×⅝"

2-Pls-12"×⅛"×0'-10" pp1.

4'-7⅛"

Open holes for P9.

2-Pls-12"×⅜"×1'-5" pp2.

Section X-X.

43'-7½" c.to.c. Pin hole.

Reqd A Posts- as shown - Mark- P8.

A - - as shown and noted - - : P9.

1-Pl-15"×⅝"×1'-5" p39

2-Pls-9"×⅝"×1'-3⅜" p41

2-Pls-9"×⅝"×1'-3⅜" p42

2-Pls-9"×⅝"×1'-5⅜" p43

2-Pls-9"×⅝"×1'-4½" p44

2-Pls-9"×⅝"×1'-4½" p45

2-Pls-9"×⅝"×1'-4½" p46

2-Pls-9"×⅝"×1'-5" p47

2-Pls-9"×⅝"×1'-5" p48

2-Pls-9"×⅝"×1'-5½" p49

2-Pls-9"×⅝"×1'-5½" pp50

2-Pls-9"×⅝"×1'-6½" p51

2-Pls-9"×⅝"×1'-6½" p52

2-Pls-9"×⅝"×1'-6½" p53

2-Pls-9"×⅝"×1'-6½" p54

2-Pls-17½"×⅝"×1'-9" p55

Cut Flg.

On pls.

1" on all pls

10@3"= 2'-6"

40@3"= 10'-0"

2'-10½"

2'-2½"

3'-3"

4'-11"

Pin hole 5⅜" dia.×½"

4 Tie c.to.c. Pin holes.

2-Pls-12"×½"×2'-0½" p56

2-Pls-12"×½"×3'-7½" p57

2-E-12"@35"= 48'-5"

2-Pls-10"×½"×1'-7½" p58

1'-10½"

8@3"= 2'-0"

2'-2½"

2-Pls-10"×½"×1'-11" p59

2-Pls-12"×⅜"×1'-11" p59

2-Pls-10"×⅝"×2'-5" p60

1-Pl-15"×⅝"×1'-3" pa0

1'-5"

Reqd-8-Bottom Chords-as shown- Mark-BC1.

1-Pl-18½"×⅝"×3'-4½" p108

1-Pl-15"×⅝"×2'-8¼" p110

BL1

BL2

BL3

BL4

1-L-6×4×½"×29'-5½"

1-L-4×3×⅜"×1'-4½" a23

1-L-4×3×⅜"×1'-4½" a22

1-L-6×4×½"×29'-4½"

1-L-4×3×⅜"×1'-4½" a25

1-L-4×3×⅜"×0'-11½" a26

1-L-4×3×⅜"×0'-6½" a28

1-L-4×4×½"×29'-4½"

1-L-4×3×⅜"×0'-11½" a27

1-L-4×3×⅜"×0'-6½" a29

1-Pl-17½"×⅝"×2'-0½" p107

1-Pl-17½"×⅝"×3'-0½" p106

2½" gage 0.5 Leg

2½" gage 0.5 Leg

5@21"= 1'-5"

7@21"= 1'-5½"

5@12"= 5'-0"

5@12"= 5'-0"

18'-9"

19'-1"

30'-0"

13'-4"

13'-9"

23'-5½"

23'-2½"

Section AA

Rivets- ¾" dia.

Open holes- 1½" dia.

INDEPENDENT BRIDGE

Vertical + Bottom Chord Lats. 258'-11½" Spans for Bridge over Cheat River Iees Ferry Monongalia Co, W.Va.

One Red Lead Coat

1-19-22 Down 1"=1'-0"

7466. 225.22 207

Sheet Bridge "S" 5-27.

207-A

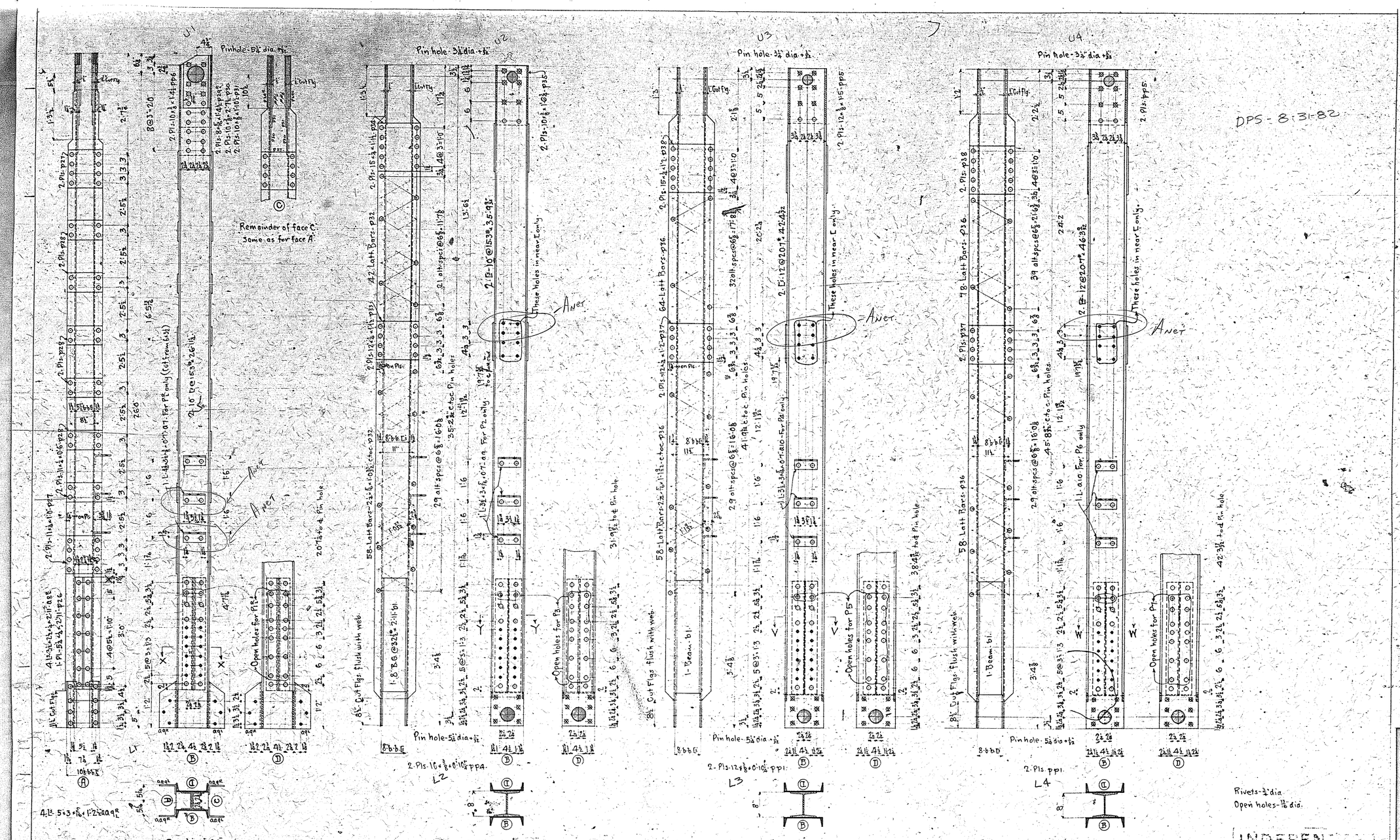
Reqd- 8 Bottom Laterals- as shown- Mark- BL1.

Reqd- 8- Bottom Laterals- as shown- Mark- BL2.

Reqd- 8- Bottom Laterals- as shown- Mark- BL3.

8- " " " " - BL4

5



DPS - 8-31-82

Rivets-¾" dia.
Open holes-$\frac{13}{16}$ dia.

Reqd-2-Hangers- as shown Mark P1
" 2- " as shown Reverse " P1
" 2- " as shown & noted " P1
" 2- " as shown & noted Reverse " P1

Reqd-4-Posts- as shown -Mark- P2.
" 4- " as shown and noted- " P3.

Reqd-4-Posts- as shown -Mark- P4.
" 4- " as shown & noted- " P5.

Reqd-4-Posts- as shown -Mark- P6.
" 4- " as shown & noted- " P7.

INDEPEN... BRIDGE ...

Verticals 268-11½ Spans

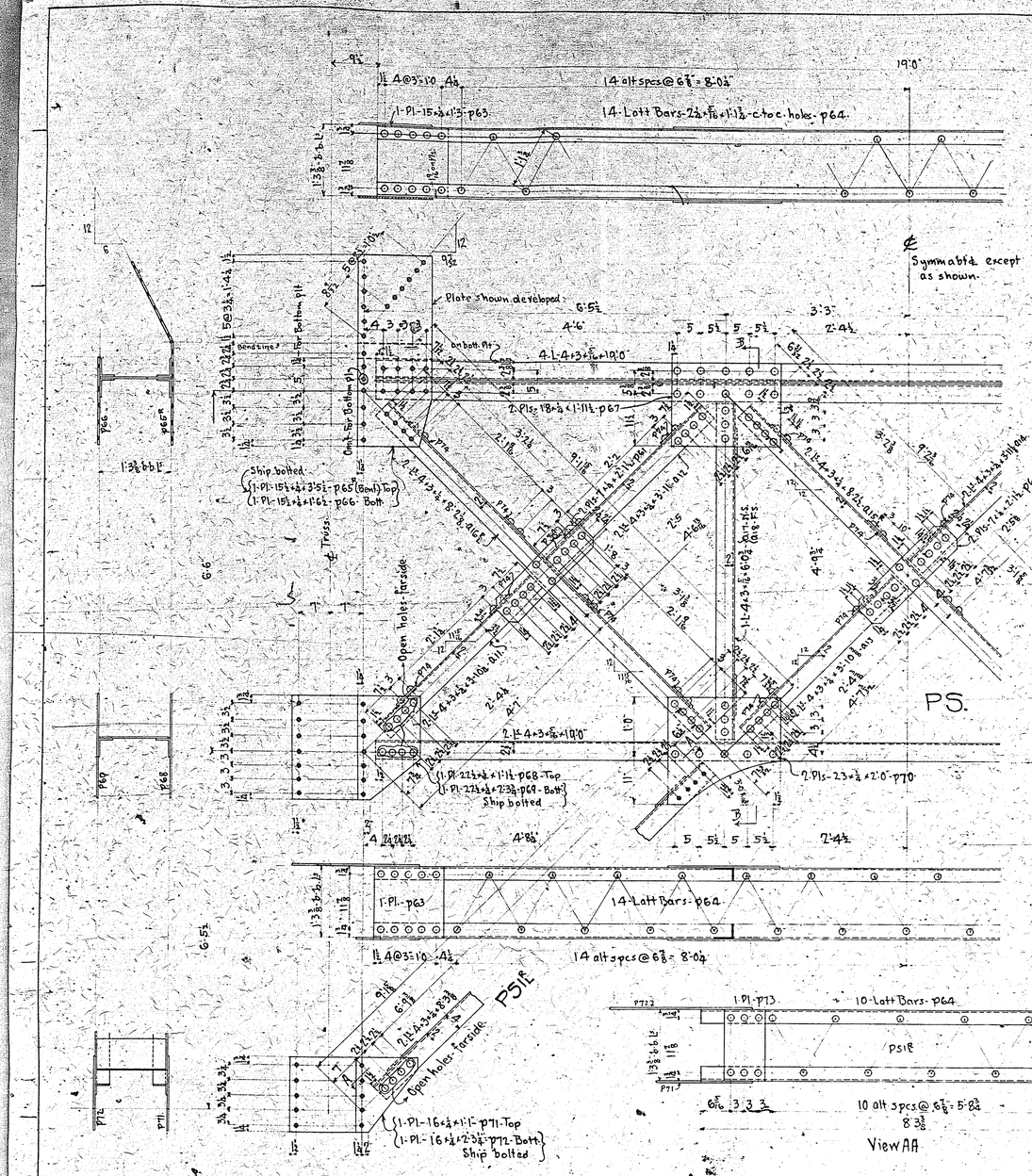
for
Bridge over Cheat River
Icet Ferry
Mogongalia Co.
W.Va.

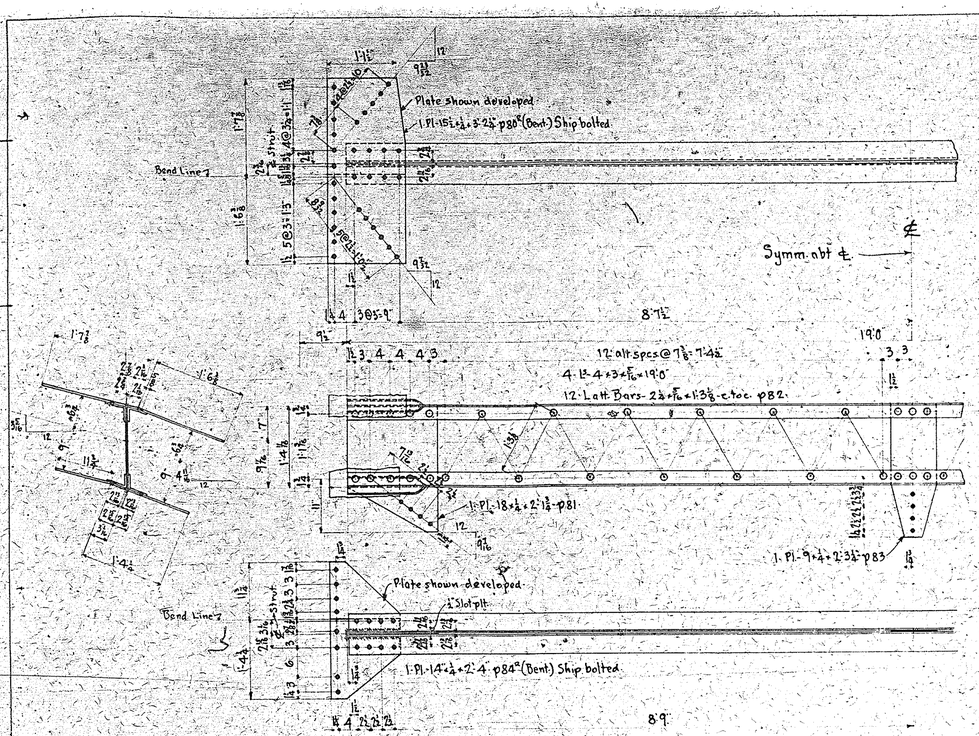
One Red Lead
1-18-82 1"=1'-0"
DOW 207.
7/24 2-27-82

207-A

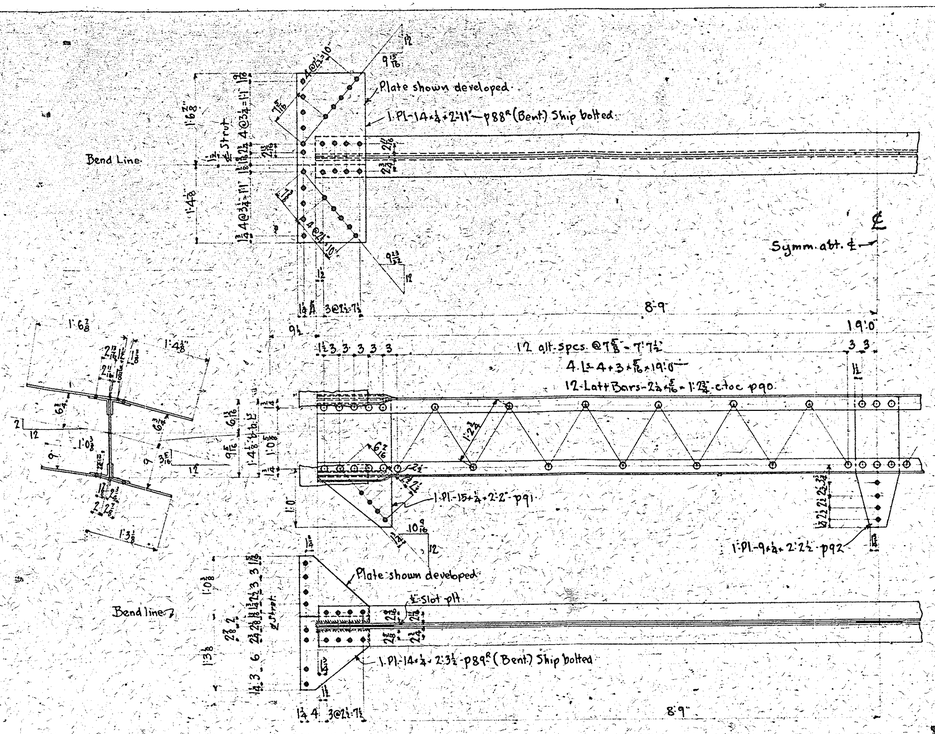
6

Shop Bills 1781

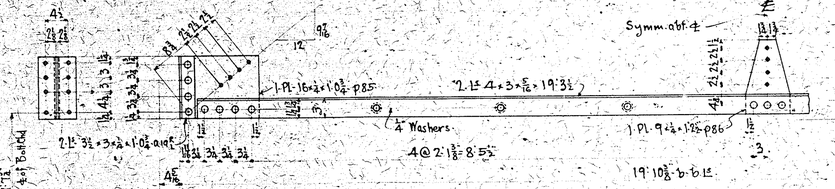

14 alt spcs @ 6 7/8" = 8'-0 1/2"
14-Latt Bars-2 1/2"x 5/16"x1'-1 1/2"-c to c holes-p64.
1-Pl-15 1/2"x1'3"-p63
Symmabt'd except as shown.
Plate shown developed
4-L-4+3+5/16"x19'0"
2-Pls-18"x1"-1'11"-p67
Ship bolted
{1-Pl-15 1/2"x1/2"x3'5 1/2"-p65 (Bott) Top
1-Pl-15 1/2"x1/2"x1'6"-p66-Bott
Open holes-Farside
{1-Pl-22 1/2"x1/2"x1'11"-p68-Top
1-Pl-22 1/2"x1/2"x2'3 1/2"-p69-Bott
Ship bolted
14-Latt Bars-p64
1-Pl-p63
14 alt spcs @ 6 7/8" = 8'-0 1/2"
PS1R
Open holes-Farside
{1-Pl-16"x1/2"x1'1"-p71-Top
1-Pl-16"x1/2"x2'3 1/2"-p72-Bott
Ship bolted
1-Pl-p73
10-Latt Bars-p64
10 alt spcs @ 6 7/8" = 5'-8 3/8"
View AA
Section through Portal diagonals.
Pl-6 1/2"x1'3"-p74
View BB
6 alt spcs @ 6 3/8" = 3'-5 1/2"
6-Latt Bars-p64
Reqd-4-Portal Struts-as shown, Mark-PS.
4-Knee Braces-" " " PS1R.
4-" " " Reverse-" PS1.
Reqd-4-Top Laterals-as shown-Mark-TL1.
4- " " TL2.
4- " " TL3.
Reqd-4-Top Laterals-as shown-Mark-TL4.
4- " " TL5.
4- " " TL6.
Reqd-4-Top Laterals-as shown-Mark-TL7.
4- " " TL8.
4- " " TL9.
Reqd-4-Top Laterals-as shown-Mark-TL10.
4- " " TL11.
4- " " TL12.
Reqd-2-Top Laterals-as shown-Mark-TL13.
2- " " TL14.
2- " " TL15.
Rivets-7/8" dia.
Open holes-13/16" dia.
INDEPEN
BRIDGE
Portal & Top Laterals 258'-11 1/2" Spans
for
Bridge over Cheat River
Ices Ferry
Monongalia Co., W. Va.
One Red Lead
1-21-22
207
TJG 2-7-22
Shop Bills "9-10-11-12.
207-A.
PS.



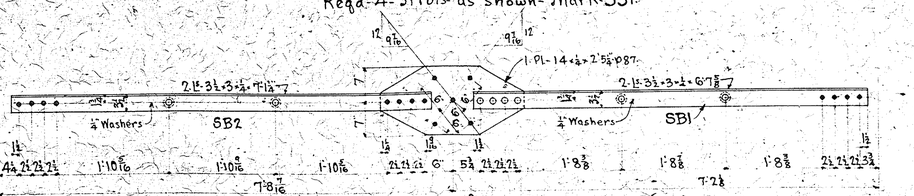
Read-4-Top Struts- as shown- Mark-T51.



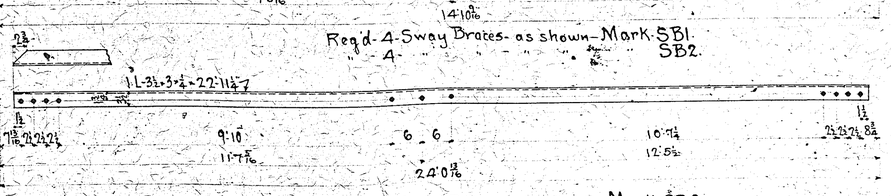
Read-4-Top Struts as shown - Mark T52.



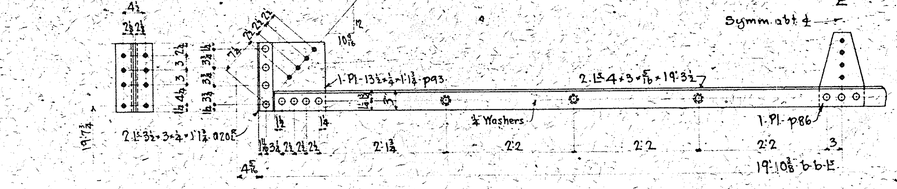
Read-4-Sway Braces- as shown- Mark-SB1.
" 4- " " " " - SB2.



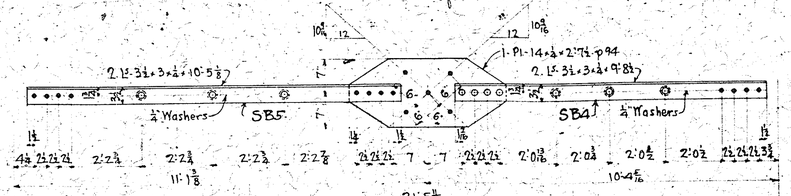
Read-4-Struts- as shown- Mark-SS1.



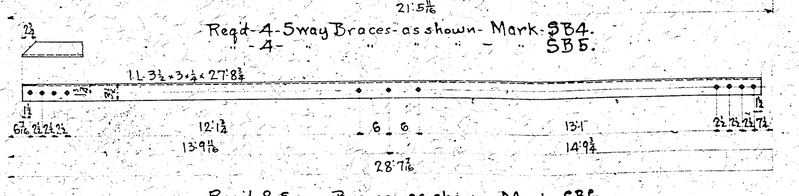
Read-8-Sway Braces- as shown- Mark-SB3.



Read-4-Sway Braces- as shown- Mark- SB4.
" 4- " " " " - SB5.



Read-4-Sway Braces- as shown- Mark- SB6.



Read-8-Sway Braces- as shown- Mark- SB6

Rivets-¾" dia.
Open holes-⅞" dia.

INDEPENDENT BRIDGE CO.

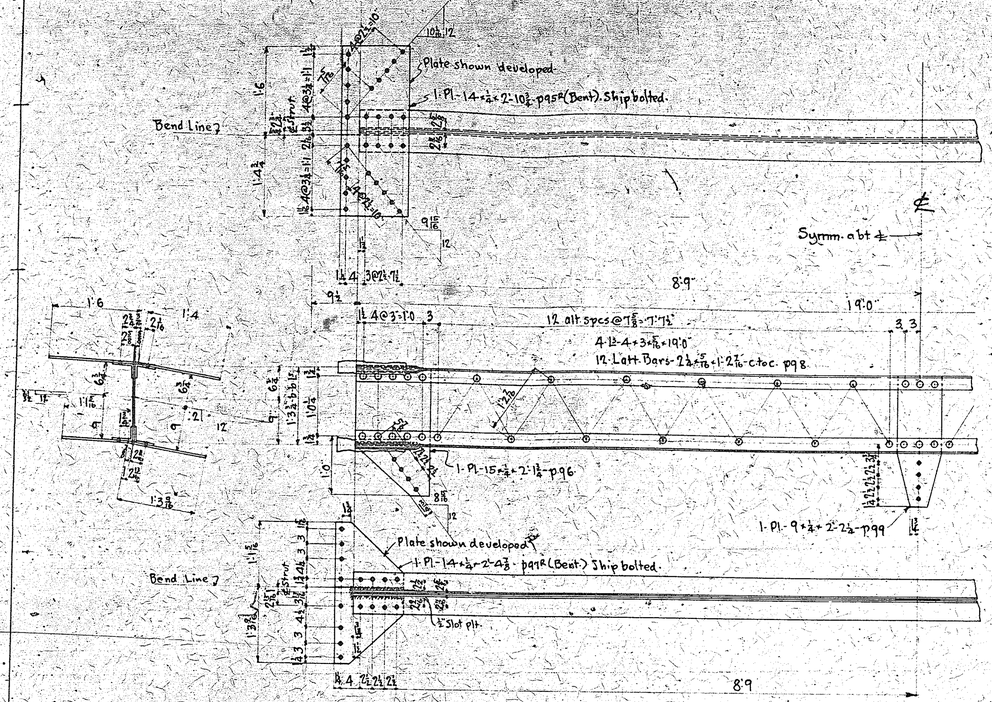
Sway Bracing for 256'-11½" Spans
Bridge over Cheat River
Iceg Ferry
Monongalia Co., W. Va.
One F
1-23-23
DRAW
Red Lead
1-12-
207

FAG. 2-28-22

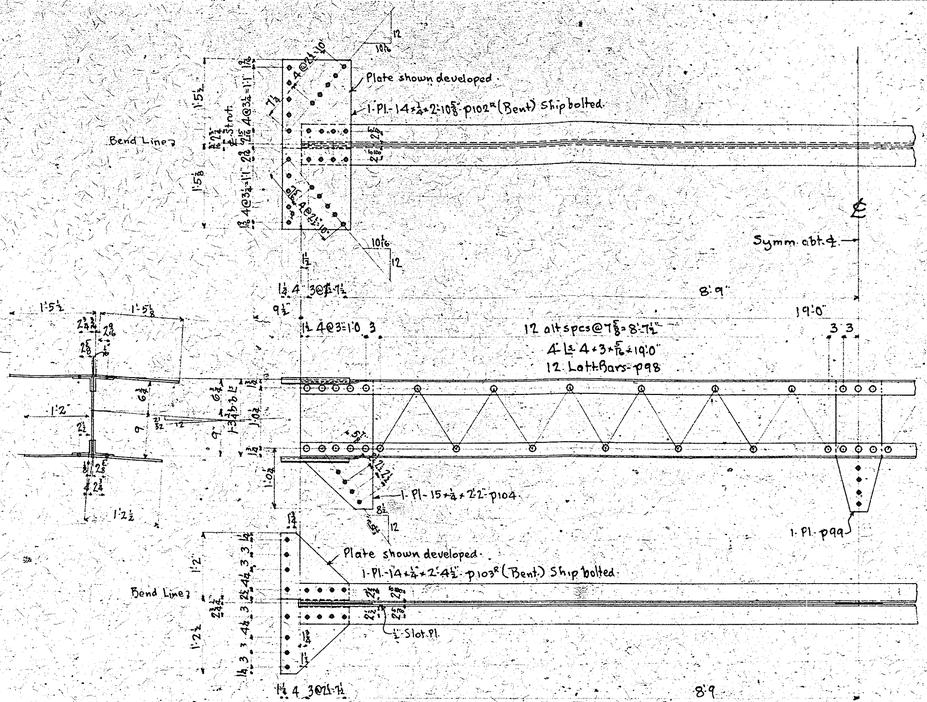
Ships Bills 12-18-22

207-A

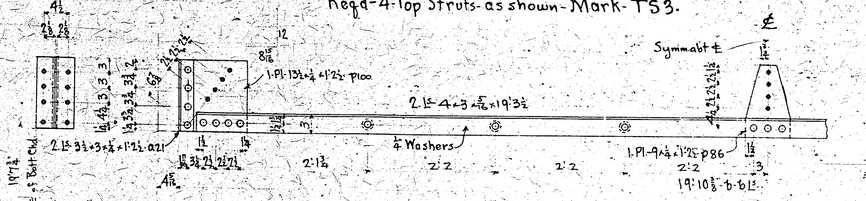
8



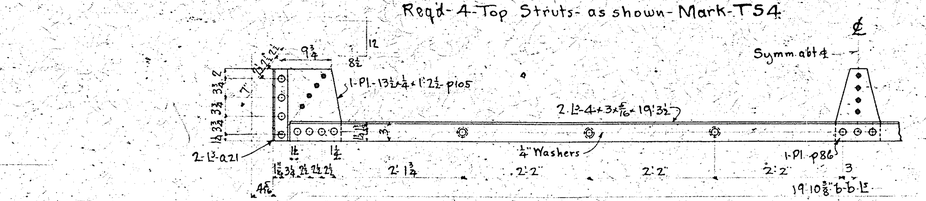
Reqd-4-Top Struts-as shown-Mark-TS3.



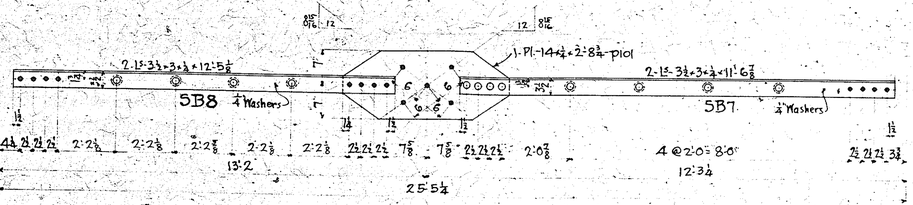
Reqd-4-Top Struts-as shown-Mark-TS4



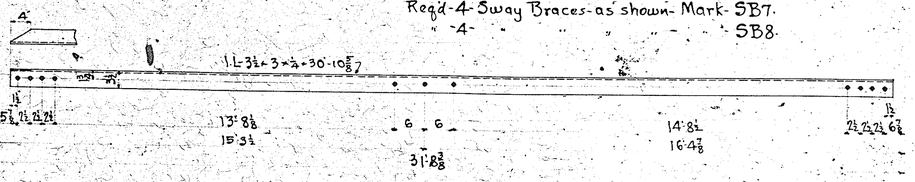
Reqd-4-Struts-as shown-Mark-SS3.



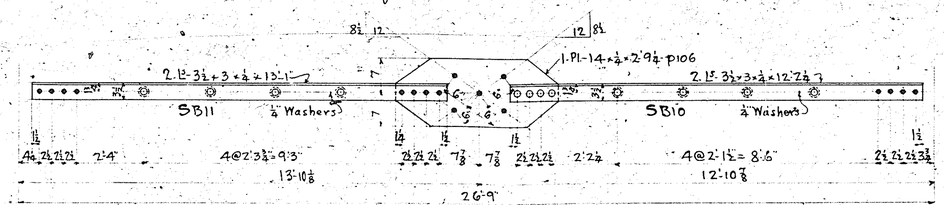
Reqd-4-Struts-as shown-Mark-SS4



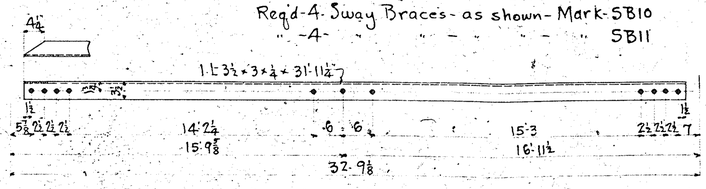
Reqd-4-Sway Braces-as shown-Mark-SB7.
" -4- " " - - " SB8.



Reqd-8-Sway Braces-as shown-Mark-SB9.



Reqd-4-Sway Braces-as shown-Mark-SB10
" -4- " " - - " SB11



Reqd-8-Sway Braces-as shown-Mark-SB12

Rivets-¾" dia.
Open holes-13/16" dia.

INDEPENDENCE

Sway Bracing for 258'-11½" Spans
Bridge over Cheat River
Ices Ferry
Monongalia Co. W. Va.

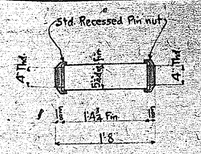
One Red Lead 1-24-22 AWW
TMB 3/1/22

1"=10" 207

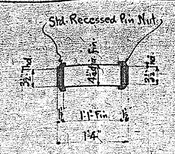
Sway Bldg * 12-15-21

207-A

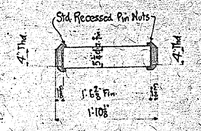
9



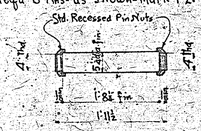
Reqd-8-Pins- as shown- Mark-P1.



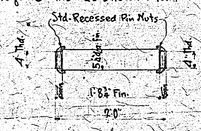
Reqd-4-Pins-as shown-Mark-P11.



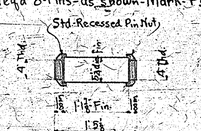
Reqd-8-Pins- as shown-Mark-P2.



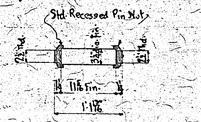
Reqd-8-Pins-as shown-Mark-P3. } Alike.
Reqd-8-Pins-as shown-Mark-P4. }



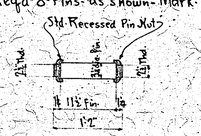
Reqd-8-Pins-as shown-Mark-P5.



Reqd-8-Pins- as shown-Mark-P6.

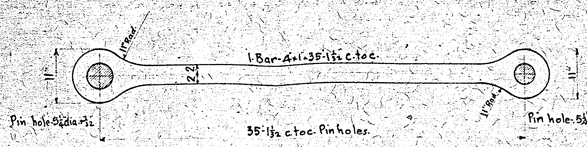


Reqd-8-Pins- as shown-Mark-P7.

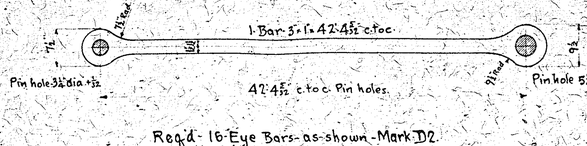


Reqd-8-Pins- as shown-Mark-P8. } Alike.
" 8- " " " " " P9. }
" 8- " " " " " P10. }

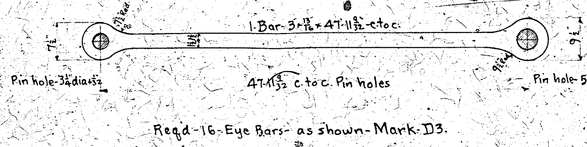
1- Pilot Nut and 1 Driving Nut for 5¼" Pin.
1- " " 1 " " " 3¼" "



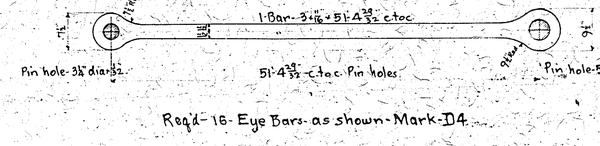
Reqd-16-Eye Bars-as shown-Mark-D1.



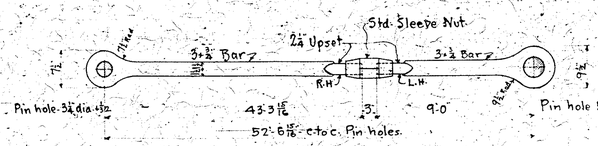
Reqd-16-Eye Bars-as shown-Mark-D2.



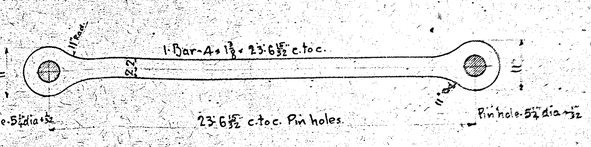
Reqd-16-Eye Bars- as shown-Mark-D3.



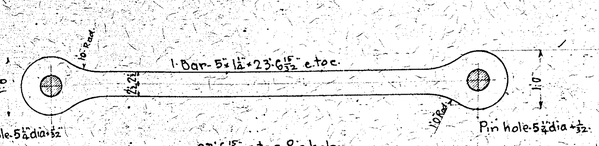
Reqd-16-Eye Bars-as shown-Mark-D4.



Reqd-16-Counters- as shown-Mark-D5.

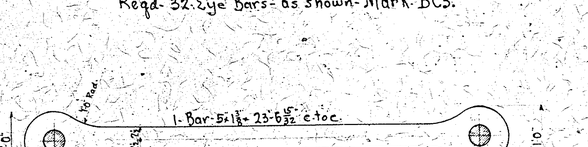


Reqd-32-Eye Bars-as shown-Mark-BC2.

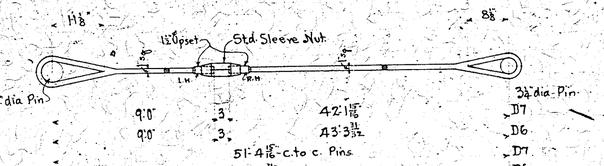


SPAN #1, U.S. & D.S. SIDES: I.S. & I.S.M. BAR = 5"x1⅜"

Reqd-32-Eye Bars- as shown-Mark-BC3.



Reqd-48-Eye Bars- as shown-Mark-BC4.



Reqd-8-Loop Rods-as shown-Mark-D7
" 8- " " " " " D6

Machine finished surfaces to be coated with White Lead-Tallow.

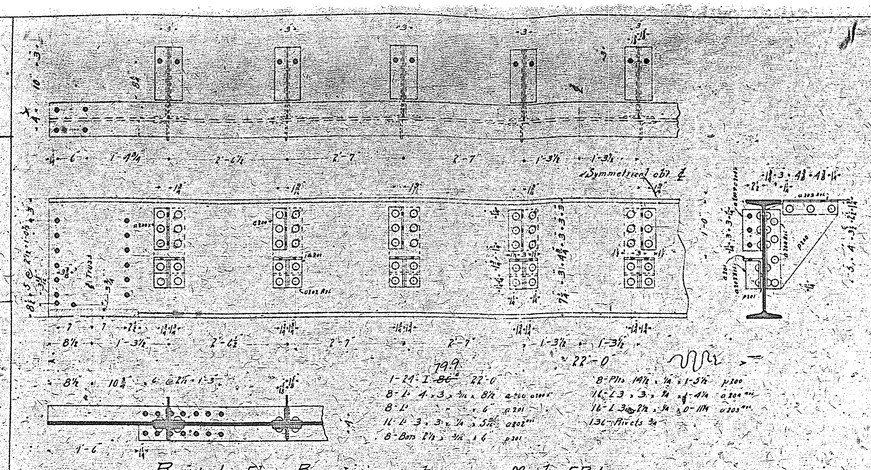
Pins and Eye Bars for Bridge over Cheat River at Ices Ferry Monongalia Co, W.Va.
One Reg. Lead.
1-25-22 DXW 1"=1'-0" 207
Tkd 2-1-22

207-E

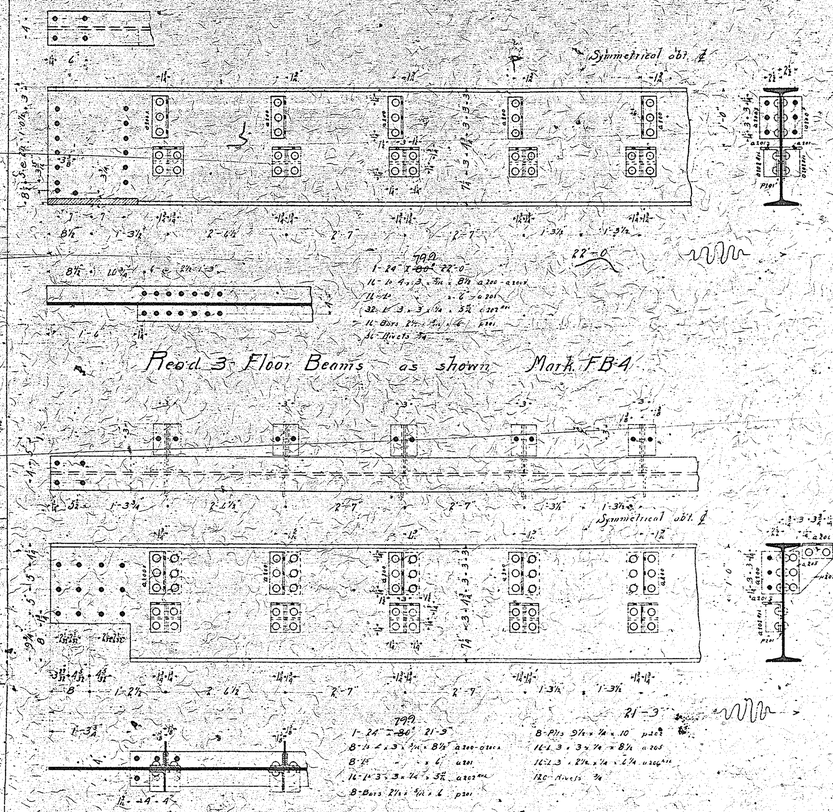
10

DPS - 8-30-82

DPS-8-26-82

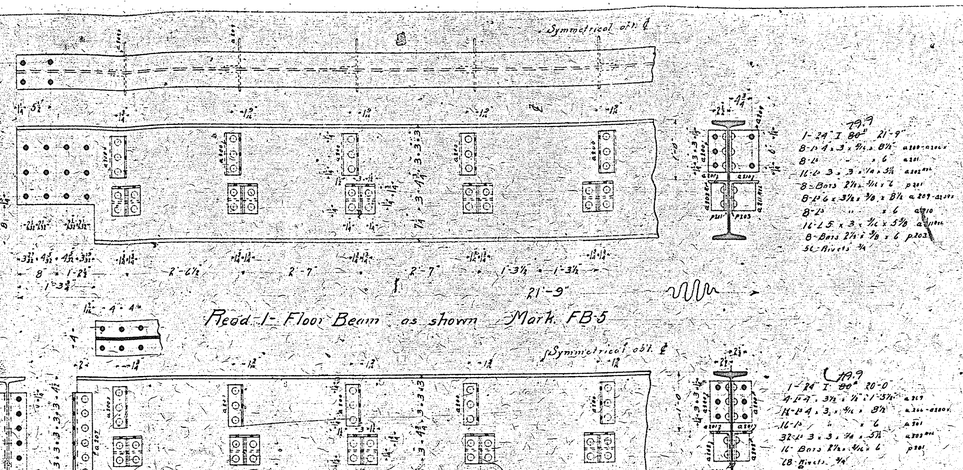


Req'd 1- Floor Beam as shown Mark FB-1

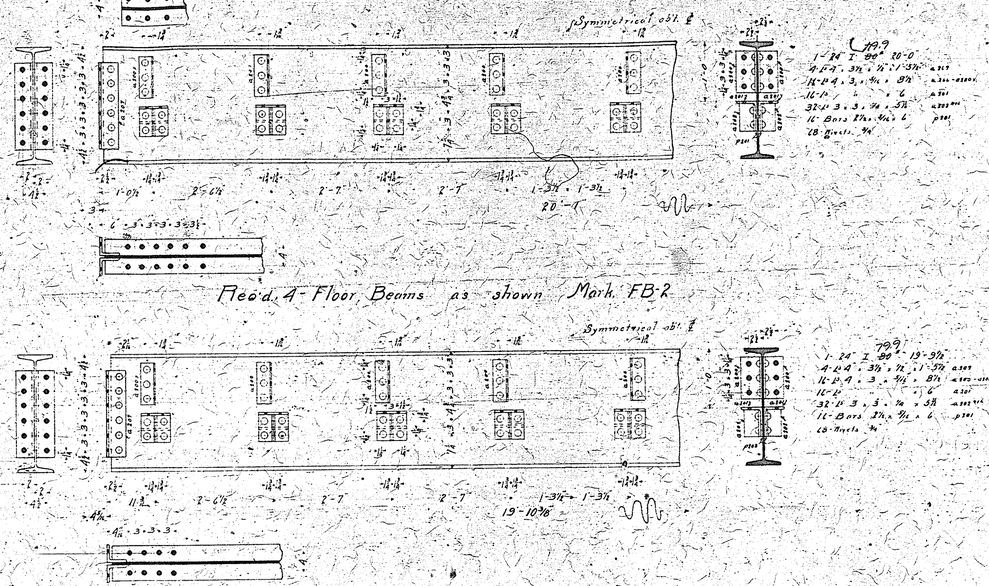


Req'd 3- Floor Beams as shown Mark FB-4

Req'd 1- Floor Beam as shown Mark FB-7

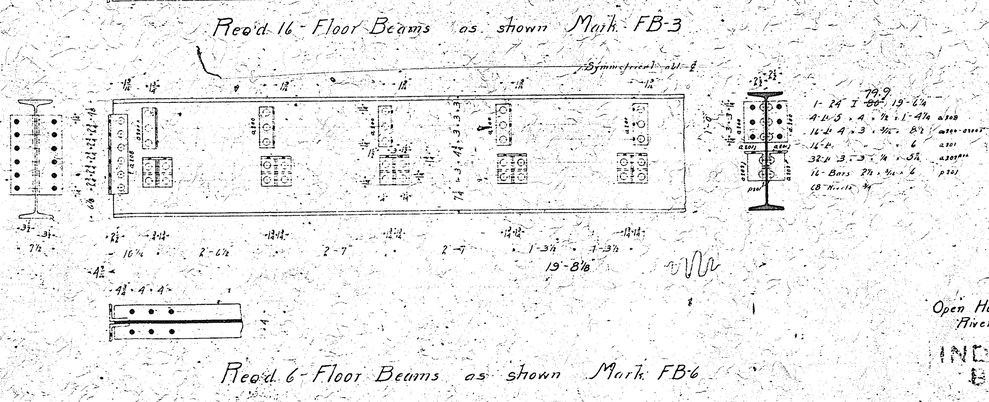


Req'd 1- Floor Beam as shown Mark FB-5



Req'd 4- Floor Beams as shown Mark FB-2

Req'd 16- Floor Beams as shown Mark FB-3



Req'd 6- Floor Beams as shown Mark FB-6

Open Holes 13/16 Unless noted
Rivets ¾" " "

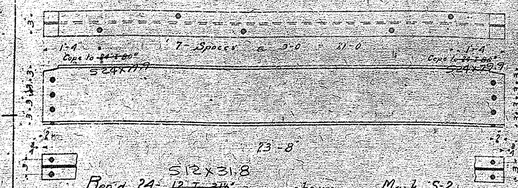
INDEPENDENT BRIDGE CO.

Floor Beams
for
Bridge over Cheat River
Ices Ferry, Monongalia Co. W.Va.
One Red Lead 1" = 1'-0
Jobs 336 207
7486 2-24-22 11

Sheets 3, 11A & 19-20-21

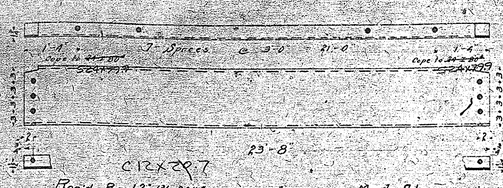
207-C

DPS- 8-27-82



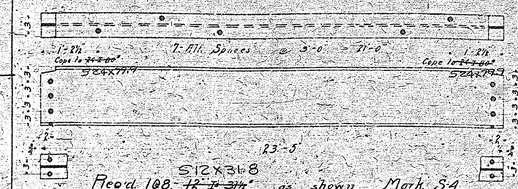
S12x31.8

Req'd. 24- ~~12" I 31¾#~~ as shown Mark. S-2



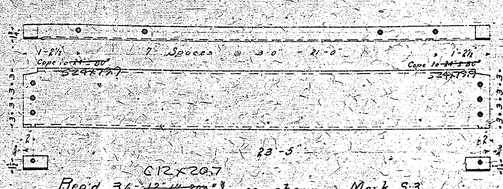
C12x20.7

Req'd. 8- ~~12" I 20½#~~ as shown Mark. S-1



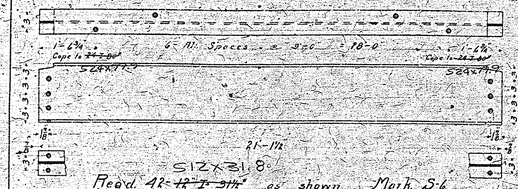
S12x31.8

Req'd. 108- ~~12" I 31¾#~~ as shown Mark. S-4



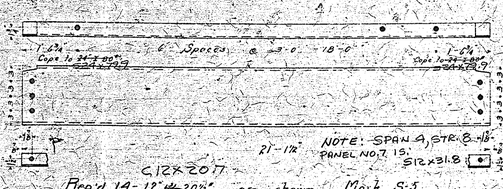
C12x20.7

Req'd. 36- ~~12" I 20½#~~ as shown Mark. S-3



S12x31.8

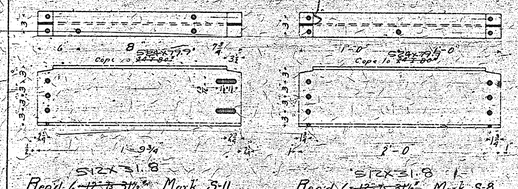
Req'd. 42- ~~12" I 31¾#~~ as shown Mark. S-6



C12x20.7

NOTE: SPAN 4, STR. 8 PANEL NO. 7, 15: S12x31.8

Req'd. 14- ~~12" I 20½#~~ as shown Mark. S-5

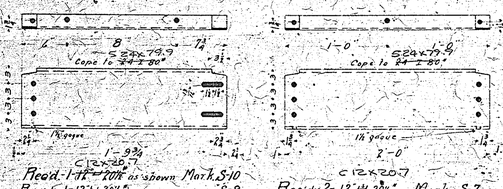


S12x31.8

Req'd. 6- ~~12" I 31¾#~~ Mark. S-11

S12x31.8

Req'd. 6- ~~12" I 31¾#~~ Mark. S-8



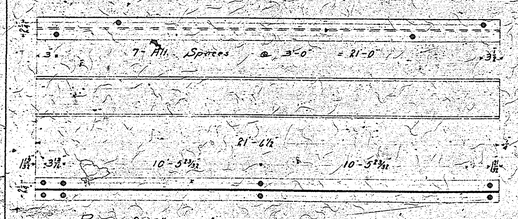
C12x20.7

Req'd. 1- ~~12" I 20½#~~ as shown Mark. S-10

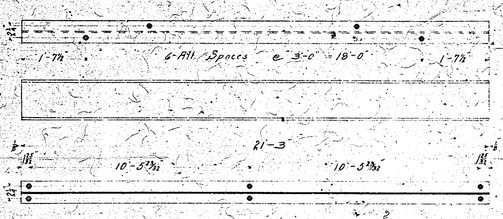
Req'd. 1- ~~12" I 20½#~~ reverse " S-9

C12x20.7

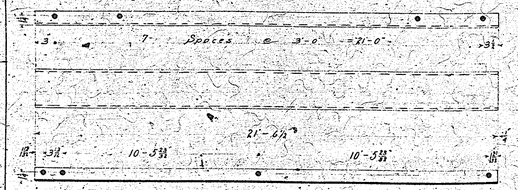
Req'd. 2- ~~12" I 20½#~~ Mark. S-7



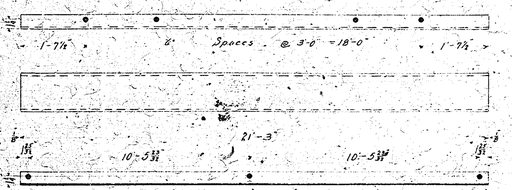
Req'd. 2-8" I 18" as shown Mark. SW-10



Req'd. 10-8" I 18" as shown Mark. SW-12

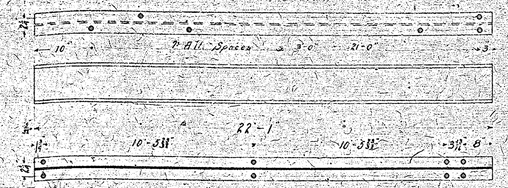


Req'd. 1-8" ⌓ 11¼" as shown Mark. SW-11

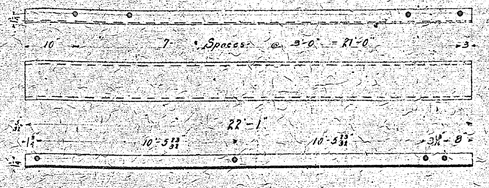


Req'd. 5-8" ⌓ 11¼" as shown Mark. SW-13.

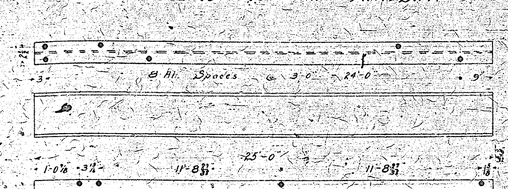
207-C



Req'd. 2-8" I 18" as shown Mark. SW-14

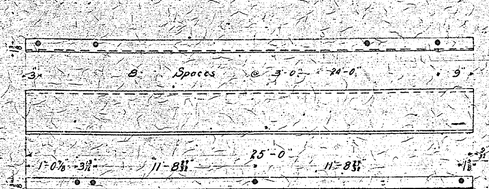


Req'd. 1-8" ⌓ 11¼" as shown Mark. SW-15

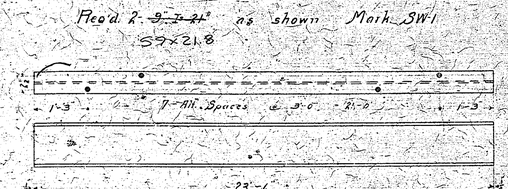


Req'd. 2- ~~9" I 21#~~ as shown Mark. SW-1

S9x21.8

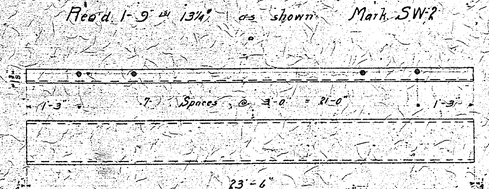


Req'd. 1-9" ⌓ 13¼" as shown Mark. SW-2

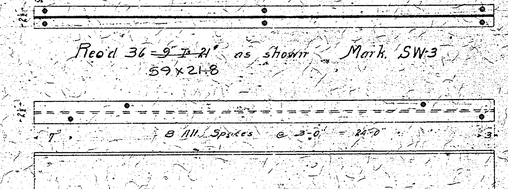


Req'd. 36- ~~9" I 21#~~ as shown Mark. SW-3

S9x21.8

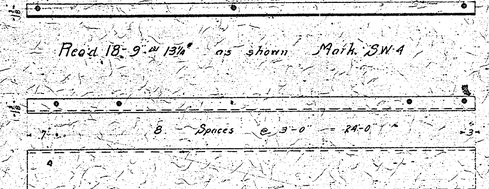


Req'd. 18- 9" ⌓ 13¼" as shown Mark. SW-4



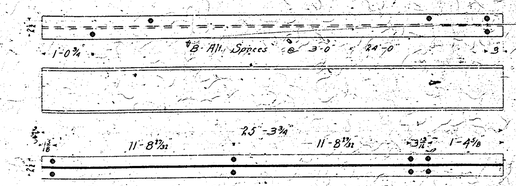
Req'd. 4- ~~9" I 21#~~ as shown Mark. SW-5

S9x21.8



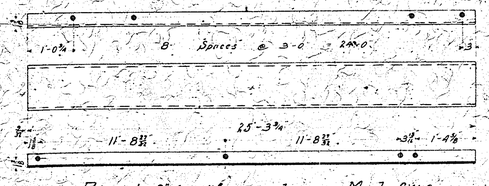
Req'd. 1-9" ⌓ 13¼" as shown Mark. SW-6

Req'd. 1-9" ⌓ 13¼" " reverse " SW-7

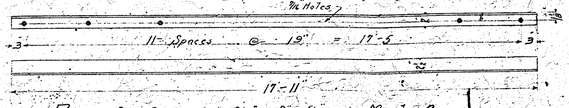


Req'd. 2- ~~9" I 21#~~ as shown Mark. SW-8

S9x21.8



Req'd. 1-9" ⌓ 13¼" as shown Mark. SW-9



Req'd. 20- Creepers 2½" × 2" × ¾" Mark. C.

Open Holes ¹³/₁₆ Unless noted.
Rivets, ¾ " " "

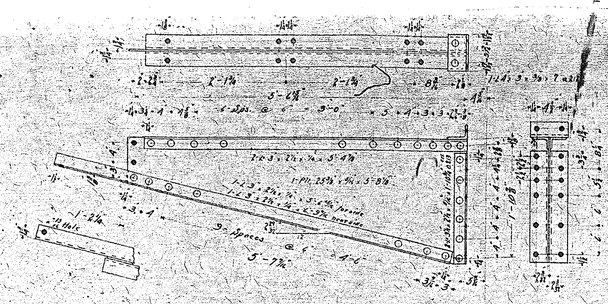
INDEPENDENT BRIDGE CO.

Roadway & Sidewalk Stringers for Bridge over Cheat River, Icea, Preston & Monongalia Co. W. Va.

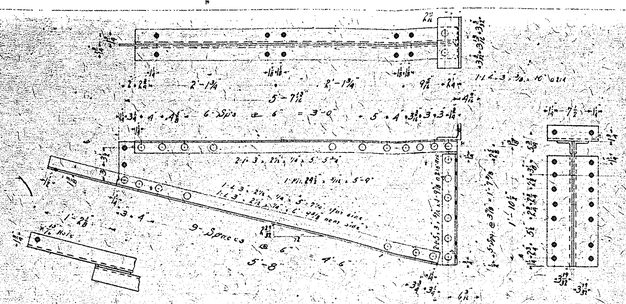
One ... Red Lead ... 1'-1-0 ... 207
Tues. 224.22. ... 12

Shop Bills "21.22

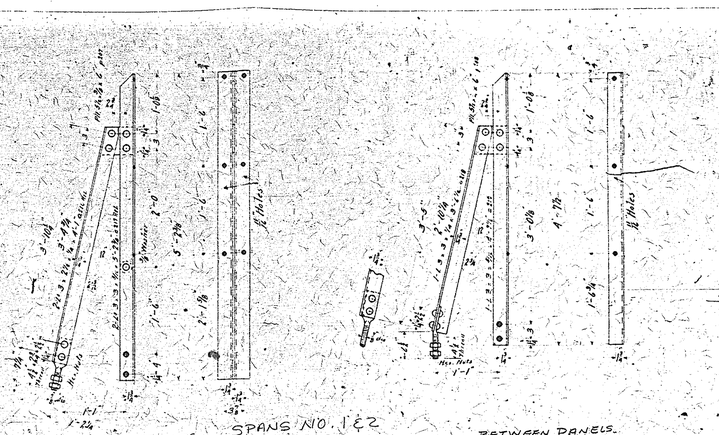
DPS-8-27-82



Req'd. 16- Side Walk Brackets as shown Mark. SB-4



Req'd. 6- Side Walk Brackets as shown Mark. SB-7



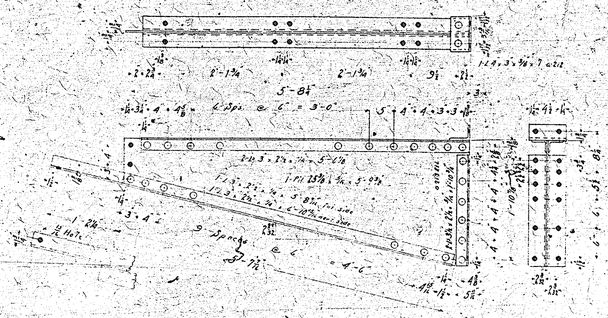
SPANS NO. 1 & 2

@ PANEL POINTS

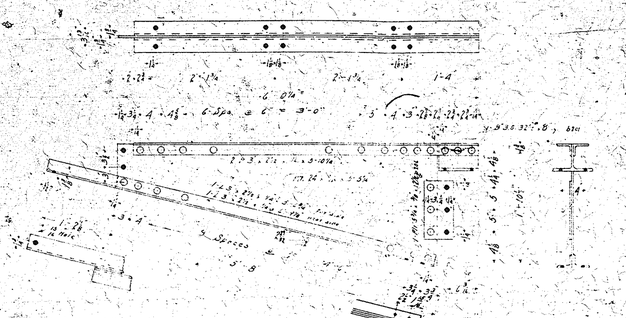
Req'd. 24- Railing Posts as shown Mark. RP

BETWEEN PANELS.

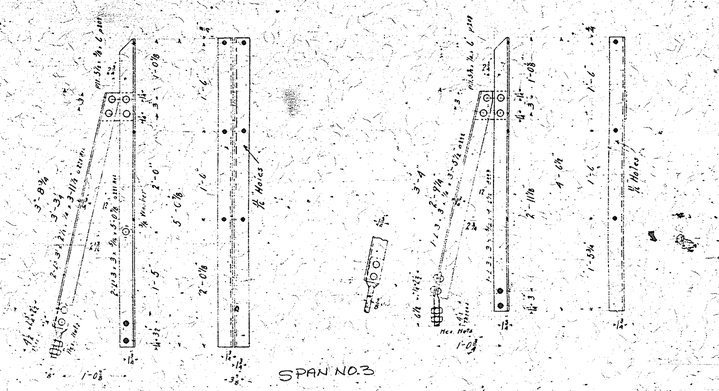
Req'd. 22- Railing Posts as shown Mark. RP-1



Req'd. 4- Side Walk Brackets as shown Mark. SB-3



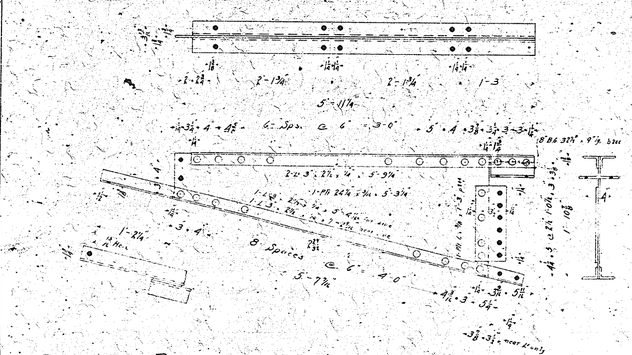
Req'd. 1- Side Walk Bracket as shown Mark. SB-5
Req'd. 1- " " " " " reverse " SB-6



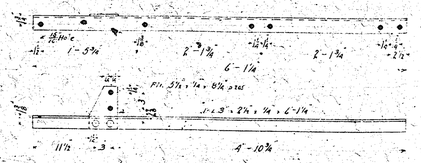
SPAN NO. 3

Req'd. 8- Railing Posts as shown Mark. RP-2

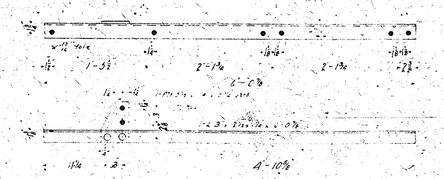
Req'd. 7- Railing Posts as shown Mark. RP-3



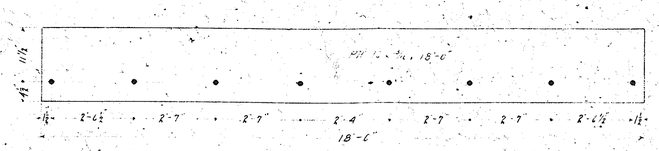
Req'd. 2- Side Walk Brackets as shown Mark. SB-1
Req'd. 2- " " " " reverse " SB-2



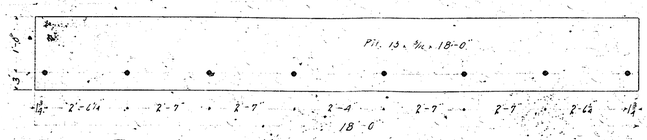
Req'd. 22- Railing Supports as shown Mark. RS-1



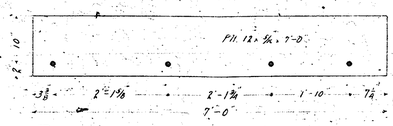
Req'd. 7- Railing Supports as shown Mark. RS-2



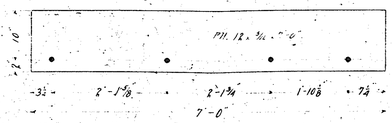
Req'd. 2- Expansion Plates as shown Mark. EP-1



Req'd. 1- Expansion Plate as shown Mark. EP-2



Req'd. 2- Expansion Plts. as shown Mark. EP-3



Req'd. 1- Expansion Plt. as shown Mark. EP-4

Open Holes 13/16 Unless noted
Rivets 3/4 " "

INDEPENDENCE BRIDGE CO.

Sidewalk Brackets & Railing Posts
for
Bridge over Cheat River
at
Iaeger Ferry
Monongalia Co.
&
W. Va.

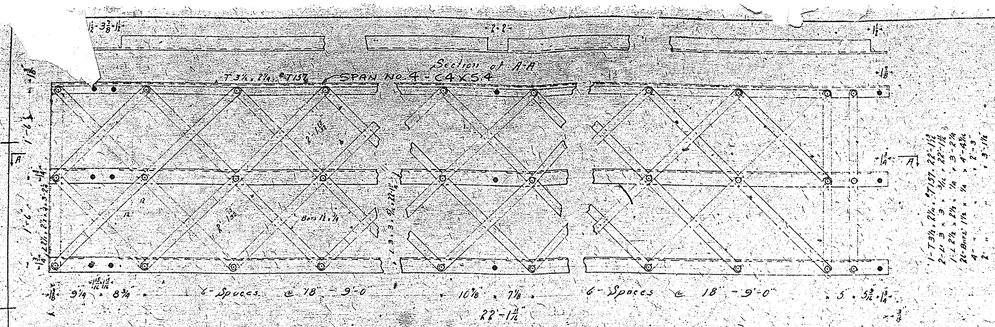
One Red Lead 1-24-22
JSO
TBG 2-24-22
207

13

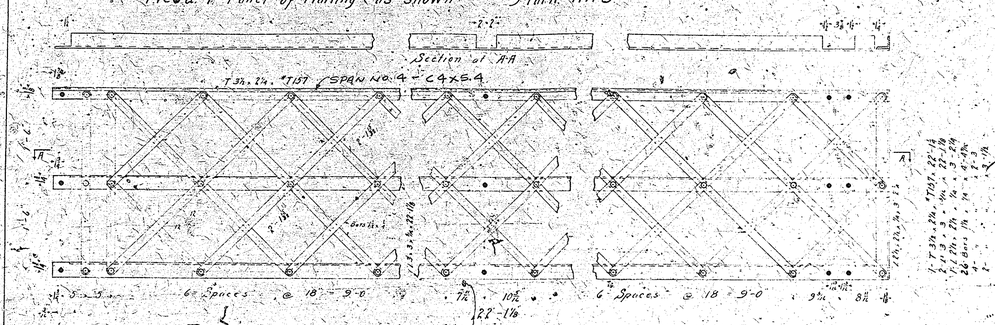
Shop Bills #23-24-25-26

207-E

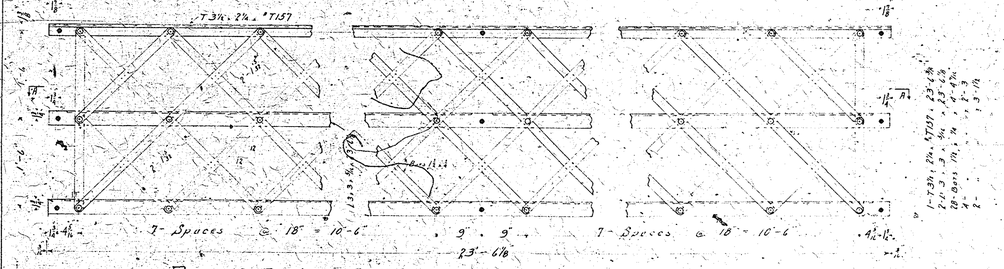
DPS-8-31-82



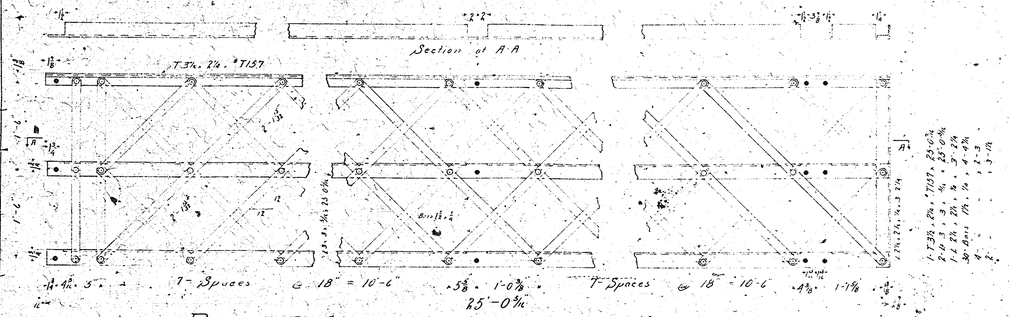
Req'd. 1- Panel of Railing as shown Mark. HR-8



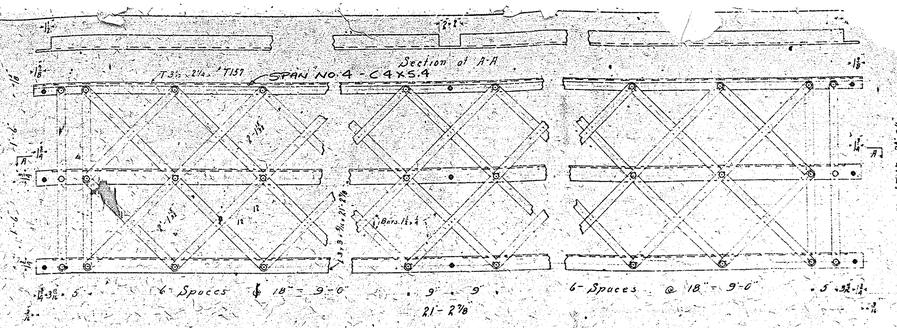
Req'd. 1- Panel of Railing as shown Mark. HR-6



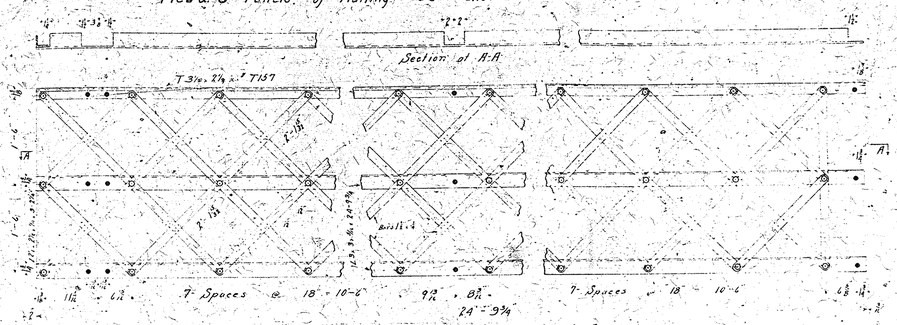
Req'd. 18- Panels of Railing as shown Mark. HR-2



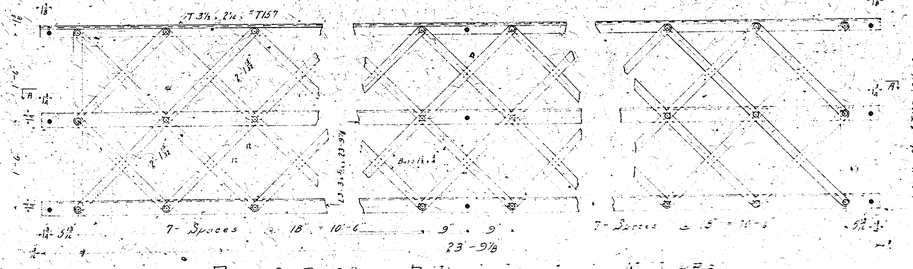
Req'd. 1- Panel of Railing as shown Mark. HR-1



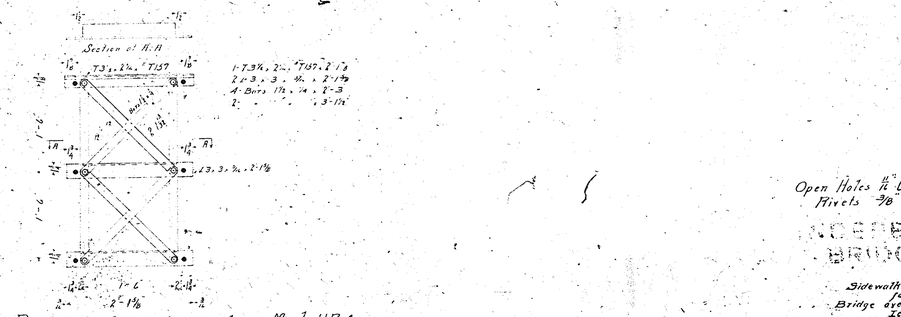
Req'd. 5- Panels of Railing as shown Mark. HR-7



Req'd. 1- Panel of Railing as shown Mark. HR-5



Req'd. 2- Panels of Railing as shown Mark. HR-3



Req'd. 1- Panel of Railing as shown Mark. HR-4

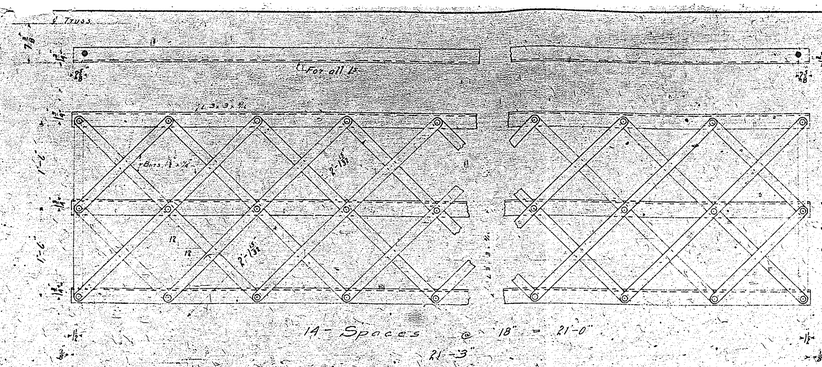
Open Holes 11/16" Unless noted
Rivets 7/8" " "

Sidewalk Railing
for
Bridge over Cheat River
Icoe Ferry
Monongalia Co.
W. Va.

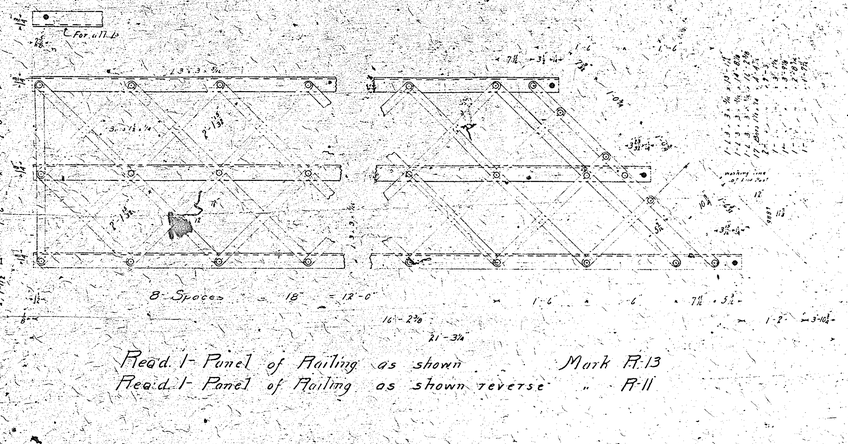
One Red Lead
1-23-22
S.S.U.
1"=1'-0"
207
TBB 224-22
14

Engrs Bills 2-7-2529

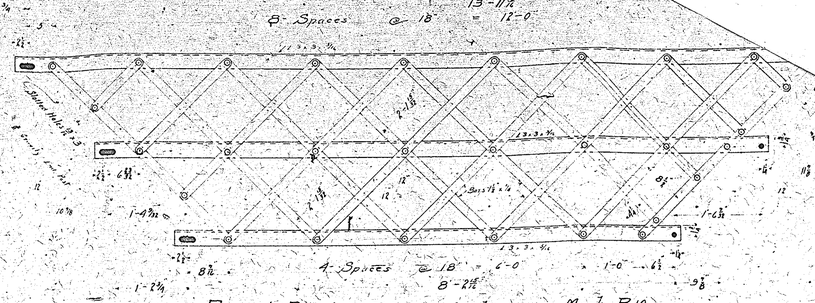
207-D



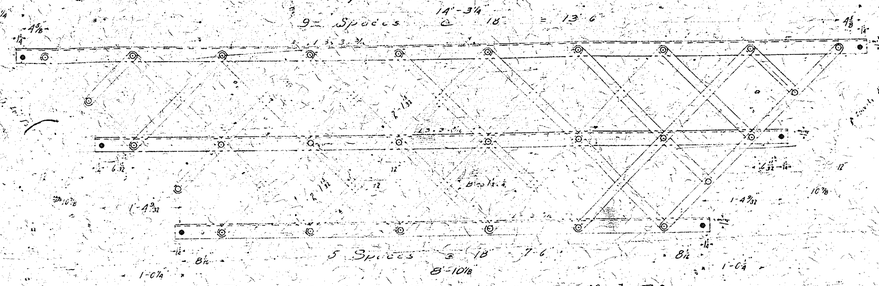
Req'd. 5 - Panels of Railing as shown Mark. R-12



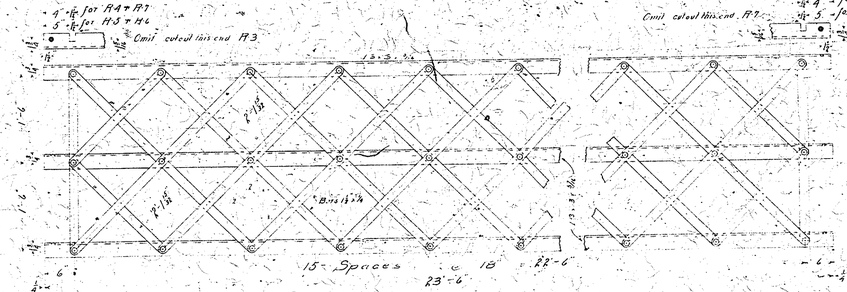
Req'd. 1 - Panel of Railing as shown Mark R-13
Req'd. 1 - Panel of Railing as shown reverse " R-11



Req'd. 1 - Panel of Railing as shown Mark. R-10

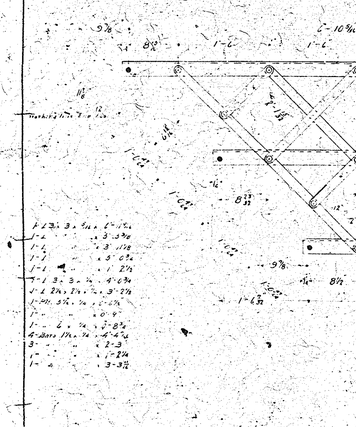


Req'd. 1 - Panel of Railing as shown Mark. R-9

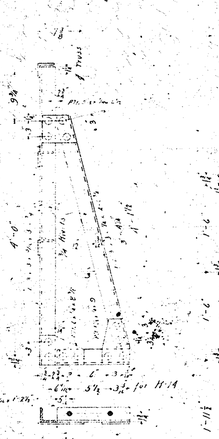


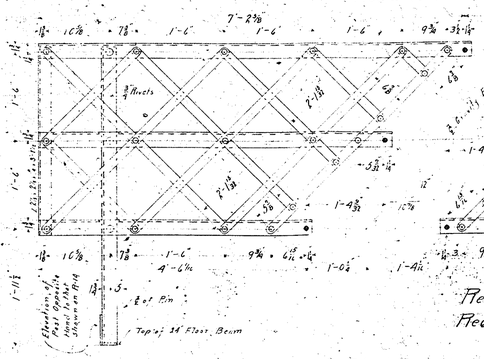
Req'd. 2 - Panels of Railing as shown & noted Mark. R-3
Req'd. 2 - Panels of Railing as shown & noted Mark. R-4
Req'd. 10 - Panels of Railing as shown & noted Mark. R-5

Req'd. 2 - Panels of Railing as shown & noted Mark. R-6
Req'd. 2 - Panels of Railing as shown & noted Mark. R-7

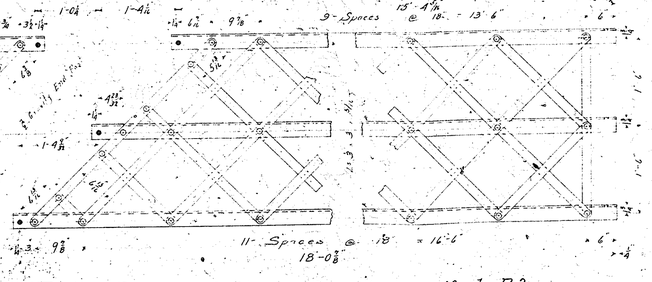


Req'd. 1 - Panel of Railing as shown Mark. R-14





Req'd. 1 - Panel of Railing as shown Mark. R-1



Req'd. 2 - Panels of Railing as shown. Mark. R-2
Req'd. 2 - Panels of Railing as shown reverse Mark. R-8.

Open Holes ¹³/₁₆ Unless noted
Rivets ⅞

Guard Railing
for
Bridge over Chest River
Yeoes Ferry
Monongalia Co.
W. Va.

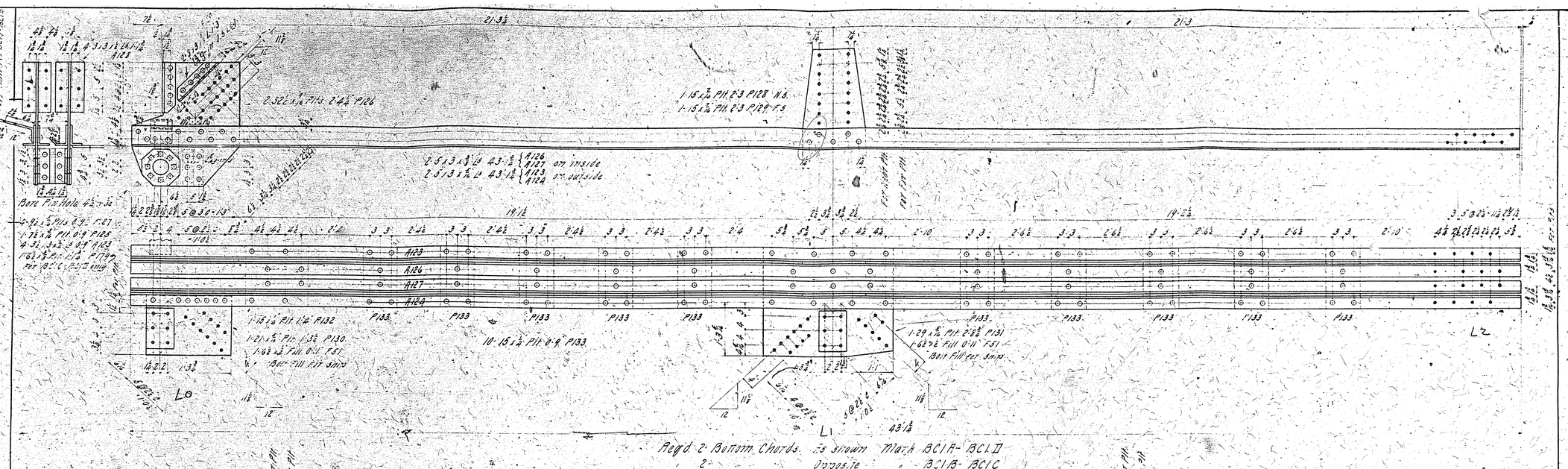
One Red Lead
1-13-33
3SQ
7/16 2-24-33

207

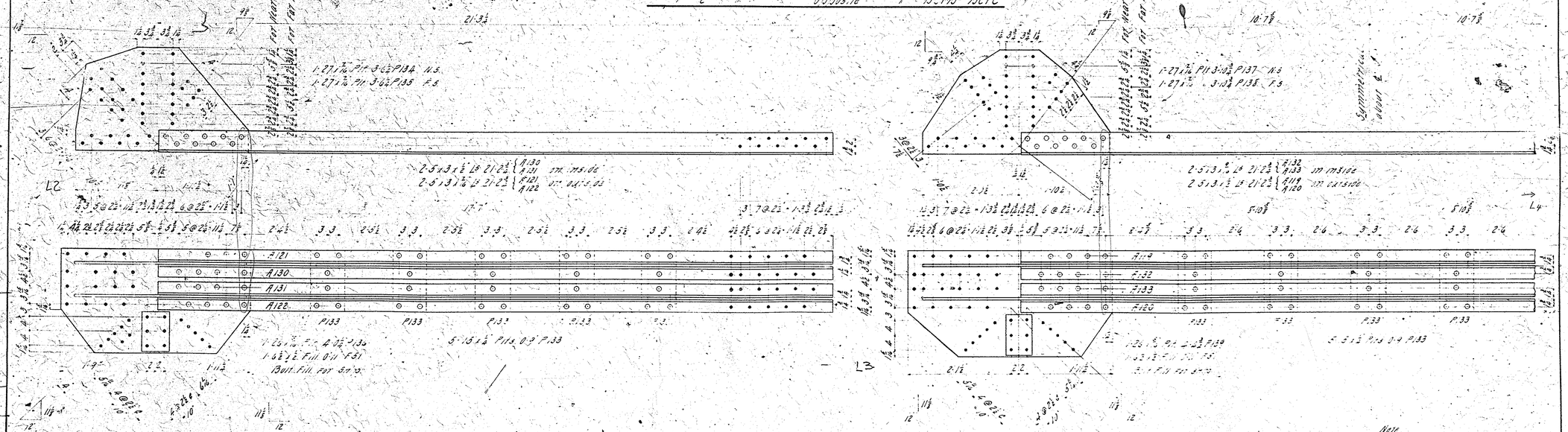
15

Bill Sheets 27-30-31-32-33

207-II



Reqd 2 Bottom Chords As shown Mark BC1A - BC1I
" 2 " Opposite " BC1B - BC1C



Reqd 2 Bottom Chords As shown Mark BC2A
" 2 " Opposite " BC2L

Reqd 2 Bottom Chords As shown Mark BC3

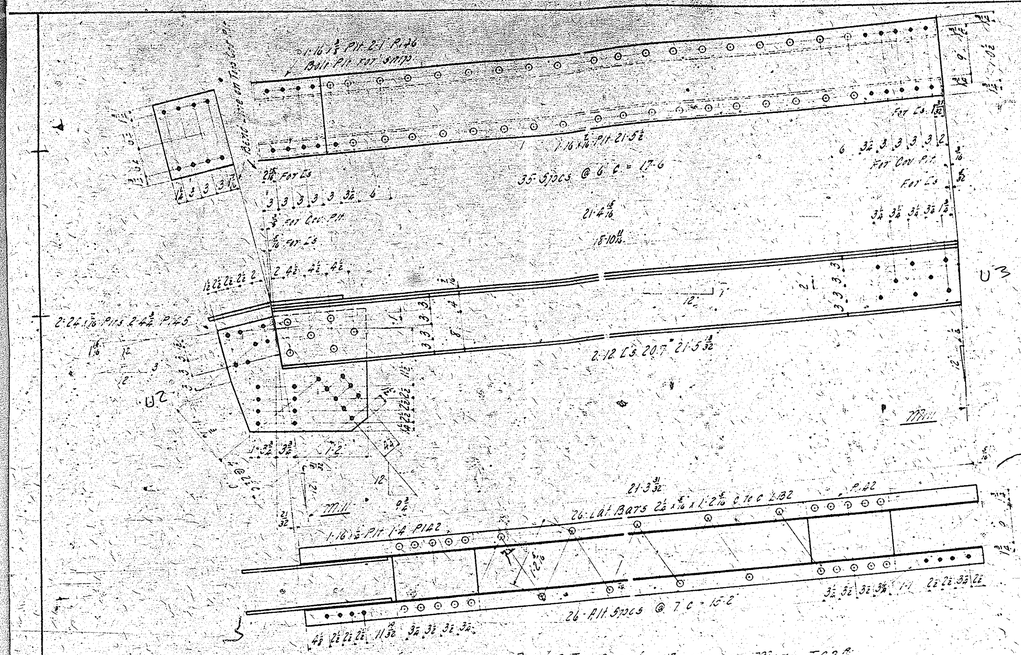
Note
Open Holes $\frac{7}{8}$ dia
Rivets $\frac{7}{8}$ dia

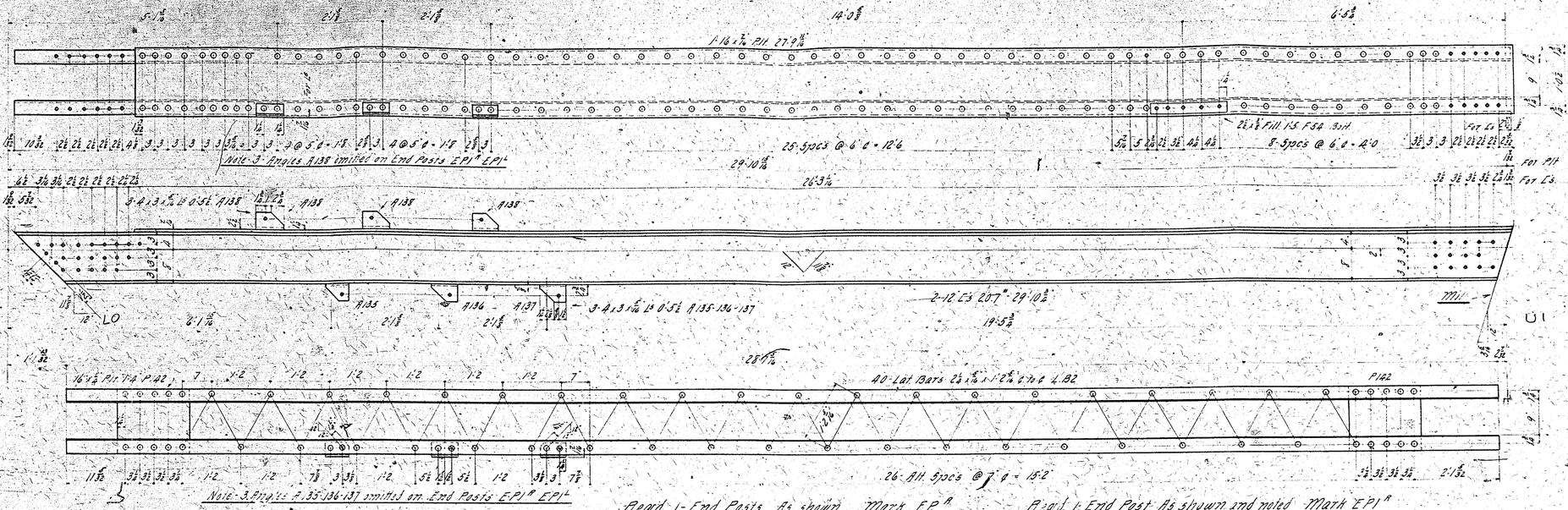
Bottom Chords
for 138'-0" Span
For Bridge over Chan. Pivot
at Ices Ferry
Monongalia Co. W. Va.
One - 1-20-22
Red Lead
WSW 2-2-22

207-B

207
16

Sheet Bills 34-35


1-16½" Plt 2'-2½" P146
Built Plt for Ships
1-16½" Cover Plt 21'-4½"
17 Spcs @ 6" c. 5'-6"
For Cover Plt
For Cov. Plt
For Cover Plt
For Cov. Plt
For Cover Plt
For Cov. Plt

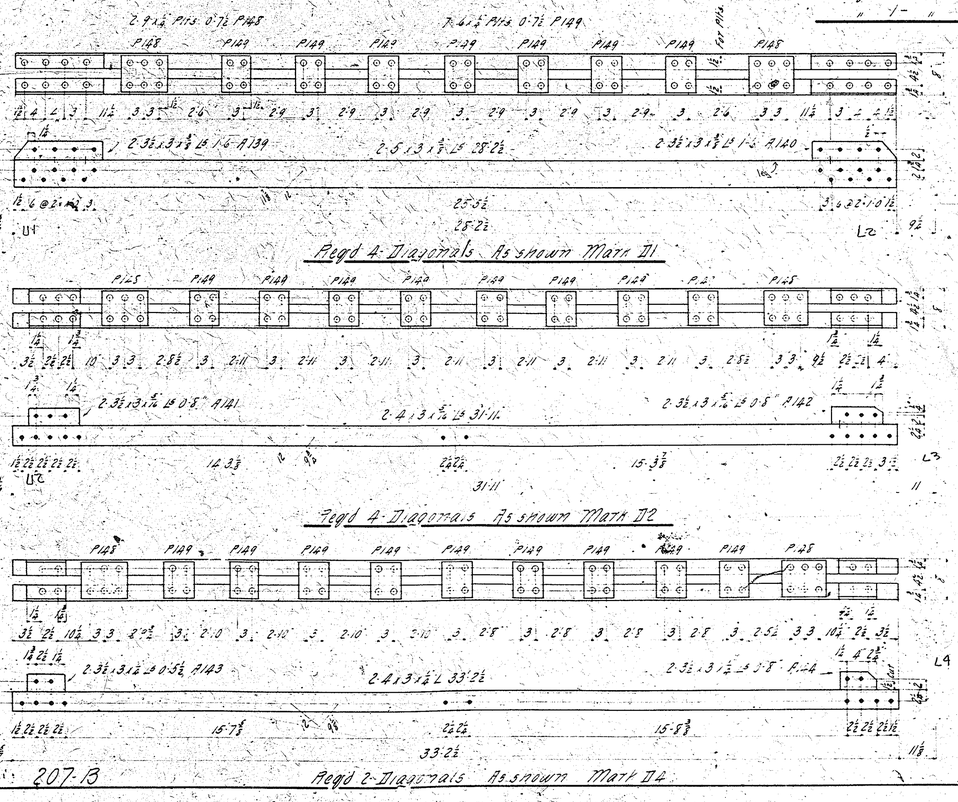


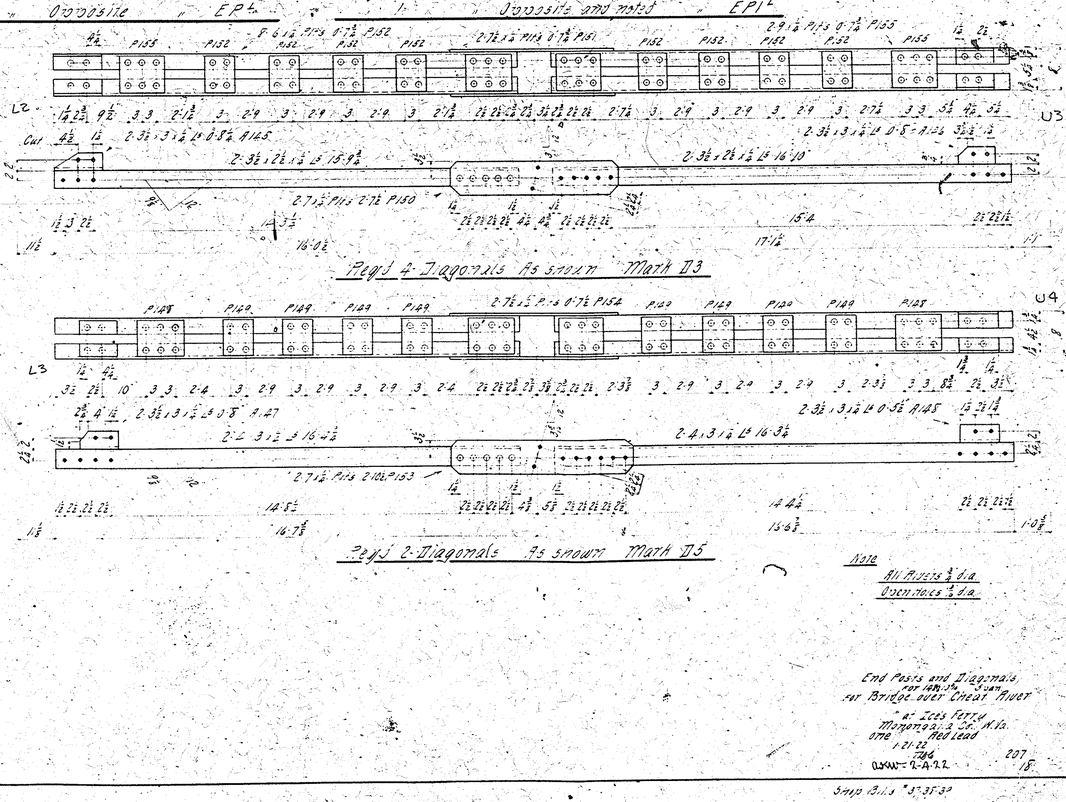
Reqd 1-End Posts As shown Mark EP1R

" 1- " " Opposite " EP1L

Reqd 1-End Post As shown and noted Mark EP1R

" 1- " Opposite and noted " EP1L





All Rivets ¾ d.a.
Countersunk ¾ d.a.

End Posts and Diagonals for Span No. 3 for Bridge over Cheat River

At Iron Fork Morgantown Div. W.Va.

One Red Lead 1-21-22

DRAWN 9-A-22

207

207-13

Ship Bills 3-35-32

DWG-8-27-82

Regd 4 Bottom Laterals As shown Mark BL1

Regd 4 Bottom Laterals As shown Mark BL2

Regd 4 Bottom Laterals As shown Mark BL3

Regd 2 Posts As shown Mark P2

Regd 2 Posts As shown Mark P1

Omit angles from end Lat Bars

Note

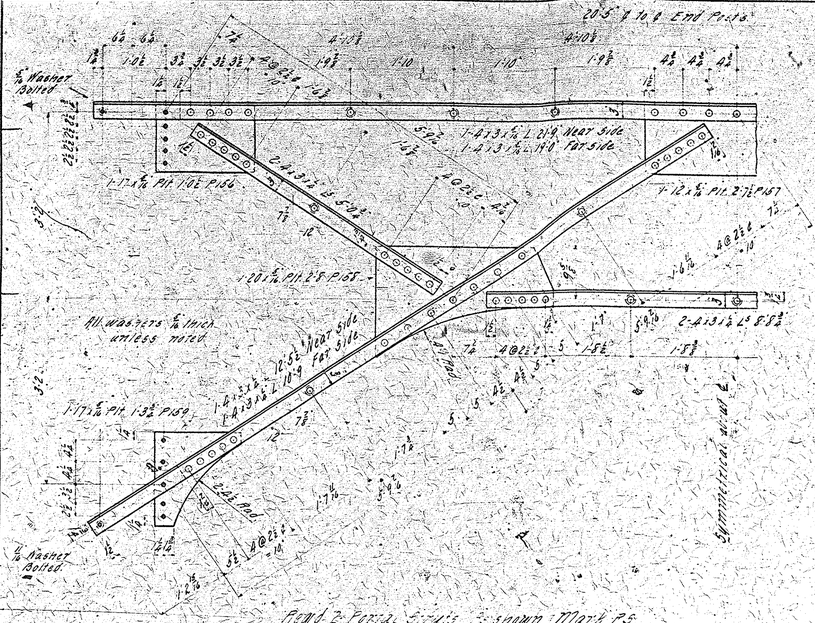
All Riders & Lib
Joint notes ?

Posts and Bottom Laterals
for Bridge over Coal River
Montgomery & Jct. W. Va.
One Red Lead.

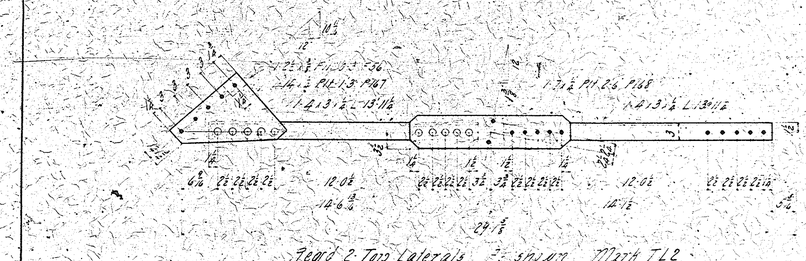
15-E
705
NSW 2-6-22
207
19

Spec Book 39 40 41

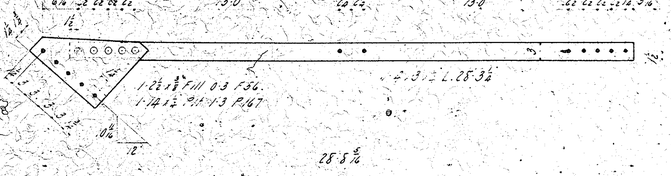
207.3



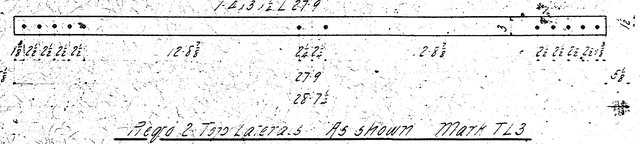
Regd 2 Panel Struts As shown Mark P5



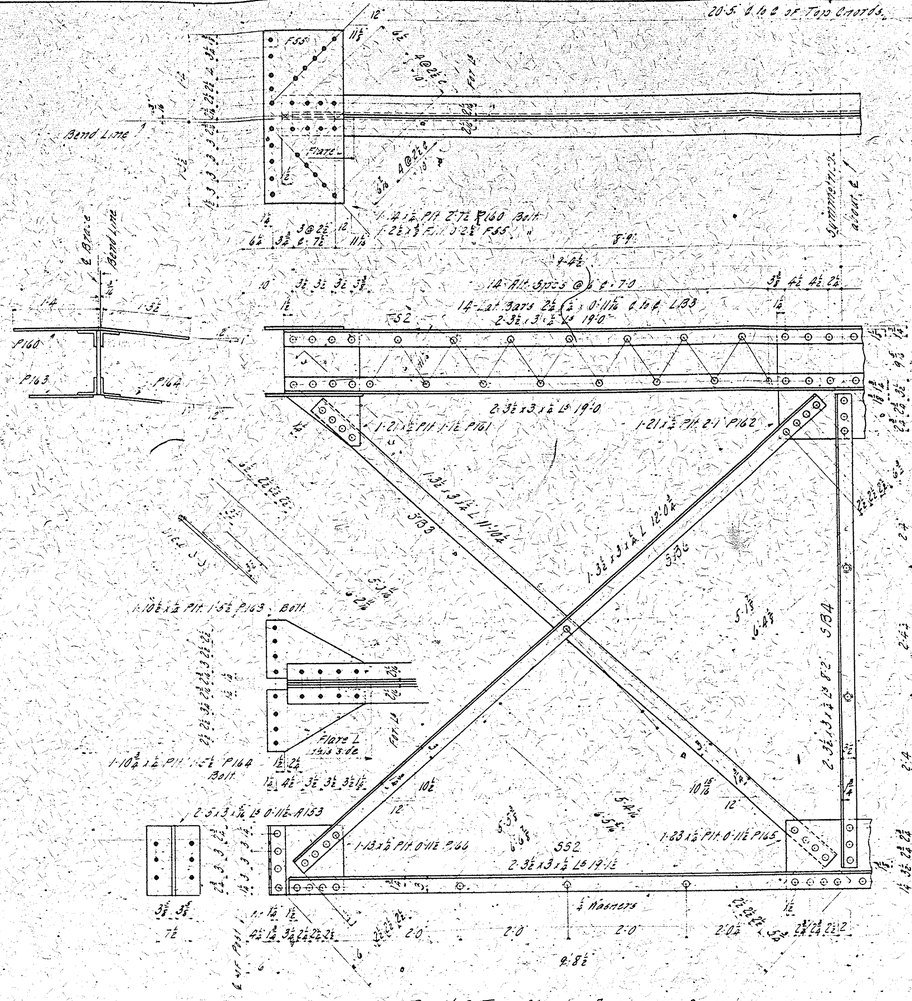
Regd 2 Top Laterals As shown Mark TL2



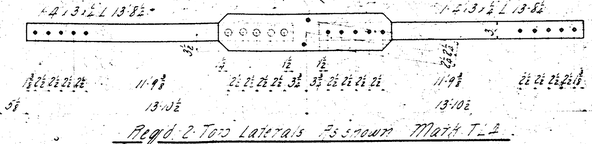
Regd 2 Top Laterals As shown Mark TL1



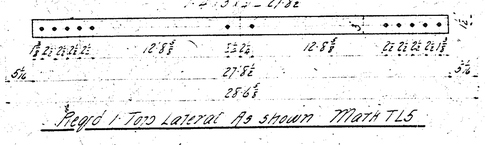
Regd 2 Top Laterals As shown Mark TL3



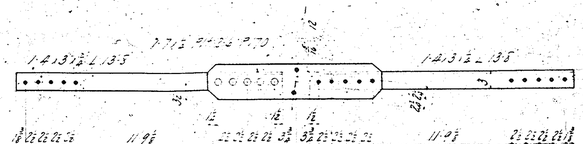
Regd 2 Top Struts As shown Complete



Regd 2 Top Laterals As shown Mark TL2



Regd 1 Top Lateral As shown Mark TL5



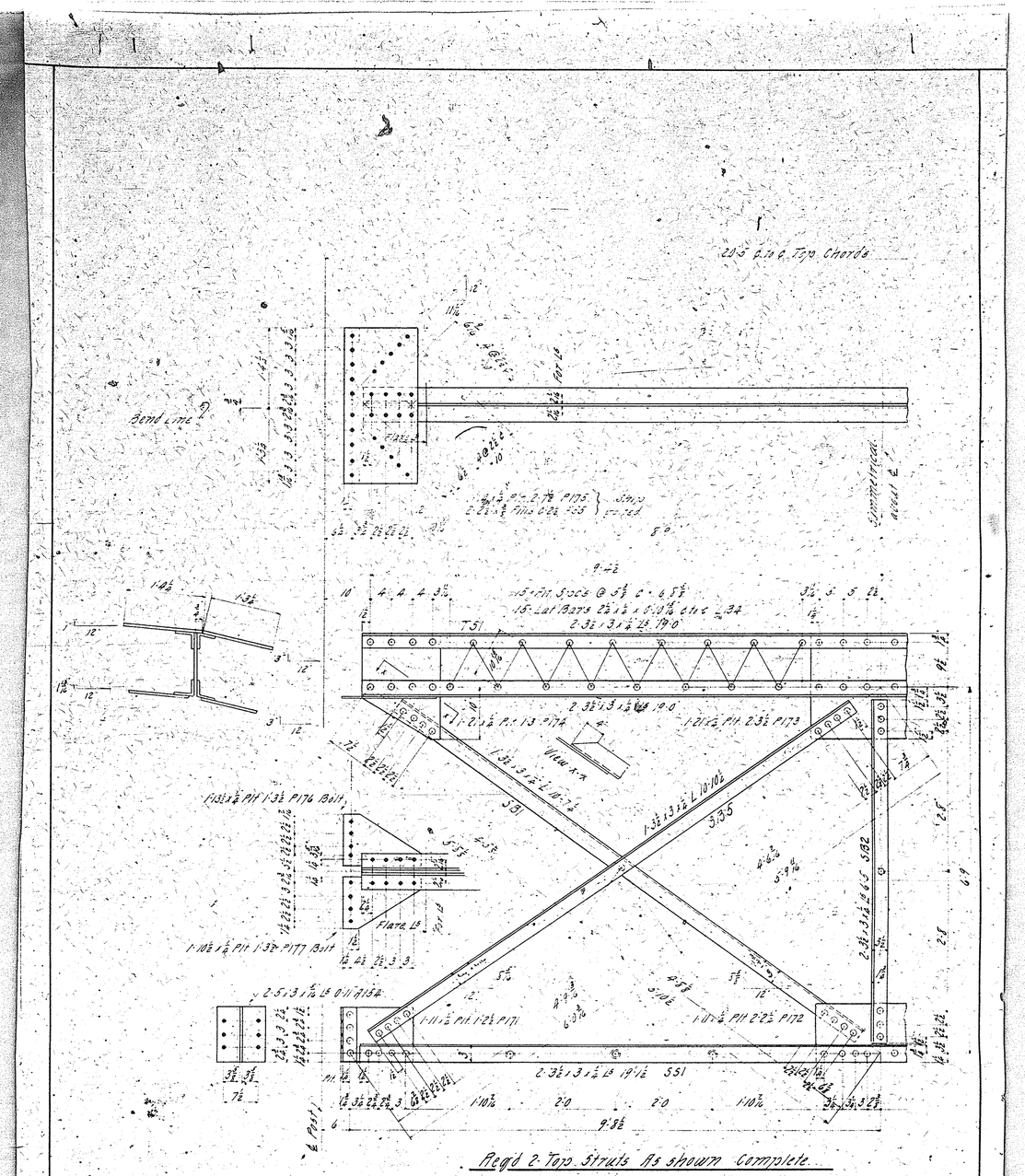
Regd 1 Top Laterals As shown Mark TL6

Note
All Rivets ¾" dia
Open Holes ⅞ dia

Top Chord Bracing
Upr. Lat. Sheet
Ice Breaker East Canal Point
at Jess Ferry
Memphis & Ark. Co. Ark
One Line Reg Lead
Dec. 14 22
Dwg. 76-22
207

207-B

Smith Bldg. & Eng. Co.



Regd 2 Top Struts As shown Complete

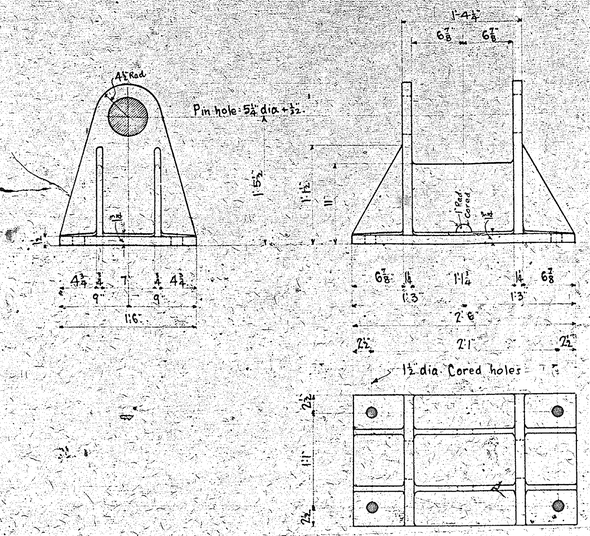
Note
All Rivets ⅞ dia
Open Holes ⅞ dia

Top Struts
for 148-10½ Span
For Bridge over Cheat River
at Ices Ferry
Monongalia Co. W. Va.
PRD 2220
DMC 1-30-22
TAB
DKW 2-7-22

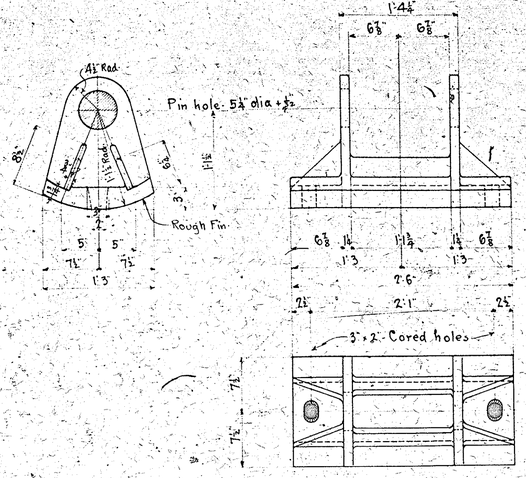
207
21

207-B

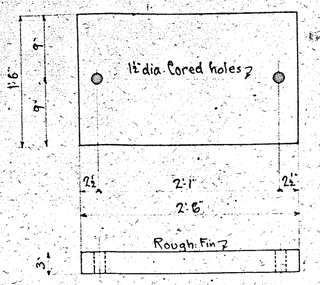
Shops Bill "AA"



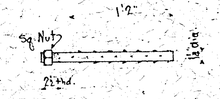
Reqd-4-Cast Steel Fixed Shoes-Mk-FS.



Reqd-4-Cast Steel Expansion Shoes-Mk-ES.

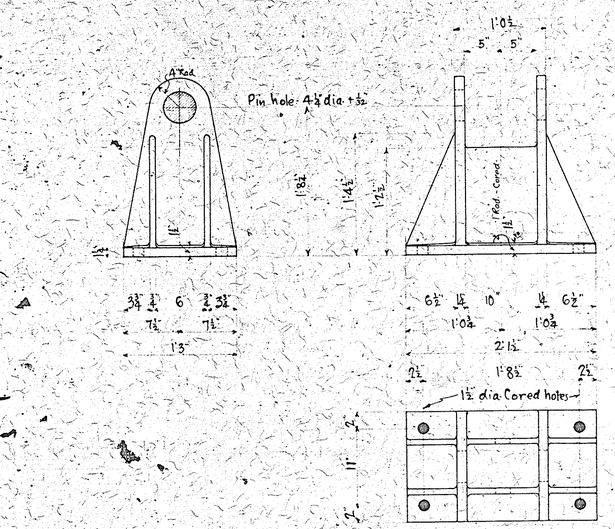


Reqd-4-Cast Steel Bed Plates-ES1.

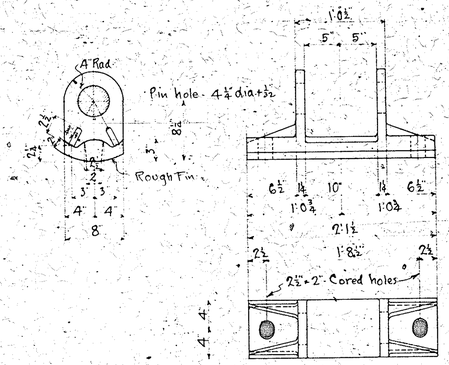


1'6" 4.31 } Reqd 24.
1'9" 4.82 } " 12.

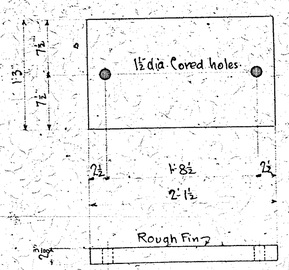
Anchor Bolts.



Reqd-2-Cast Steel Fixed Shoes-Mk-FS1.



Reqd-2-Cast Steel Expansion Shoes-Mk-ES2.



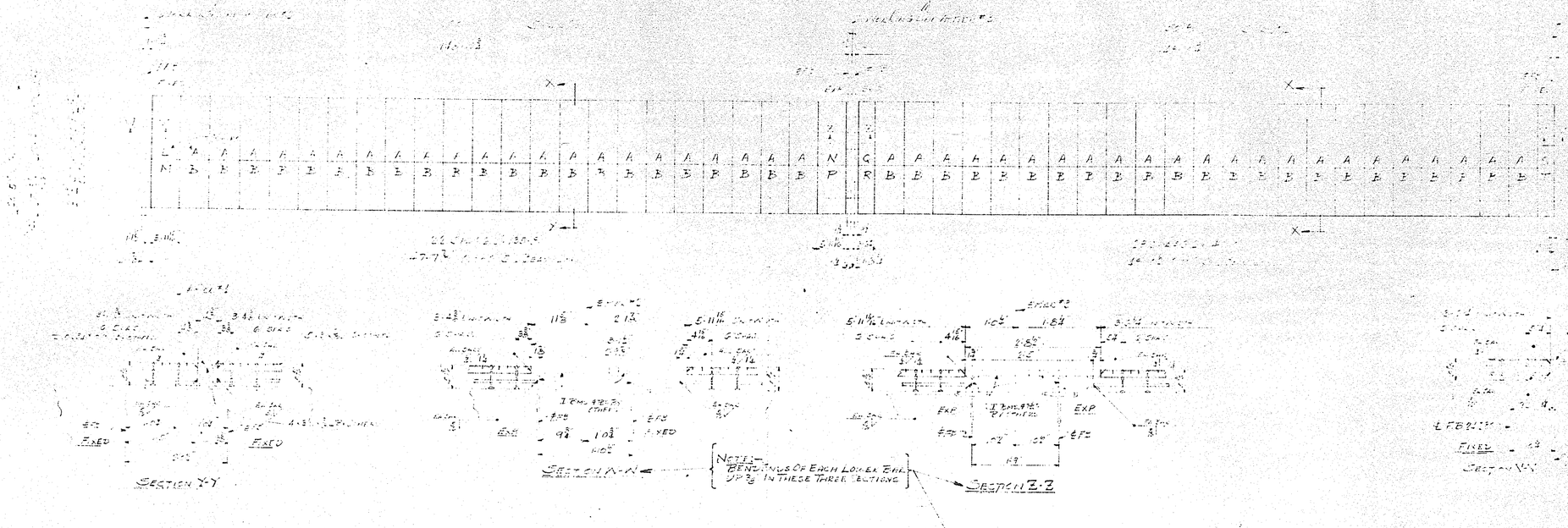
Reqd-2-Cast Steel Bed Plates-Mk-ES2.

Machine Finished surfaces to be coated with White Lead+Tallow.

Cast Steel Shoes
for
Bridge over Cheat River
Joes Ferry
Monongalia Co
W. Va.
One Red Lead
1-31-22
aaw

1½ = 1'0"
207
22

207-E



Section Y-Y

Section K-N

NOTE:— BEND RADIUS OF EACH LOWER END UP 3" IN THESE THREE SECTIONS

Section Z-Z

Section V-V

Section W-W

Section U-U

Detail "A" Showing Fabricated Shop Welding of End Posts

Section XX

NOTE: CONTRACTOR TO ERECT END PLATES AFTER T BEAM RAIL FENCING IS IN PLACE.

FOR SPECIFICATIONS SEE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY THE STATE ROAD COMMISSION OF MARYLAND

REVISED			

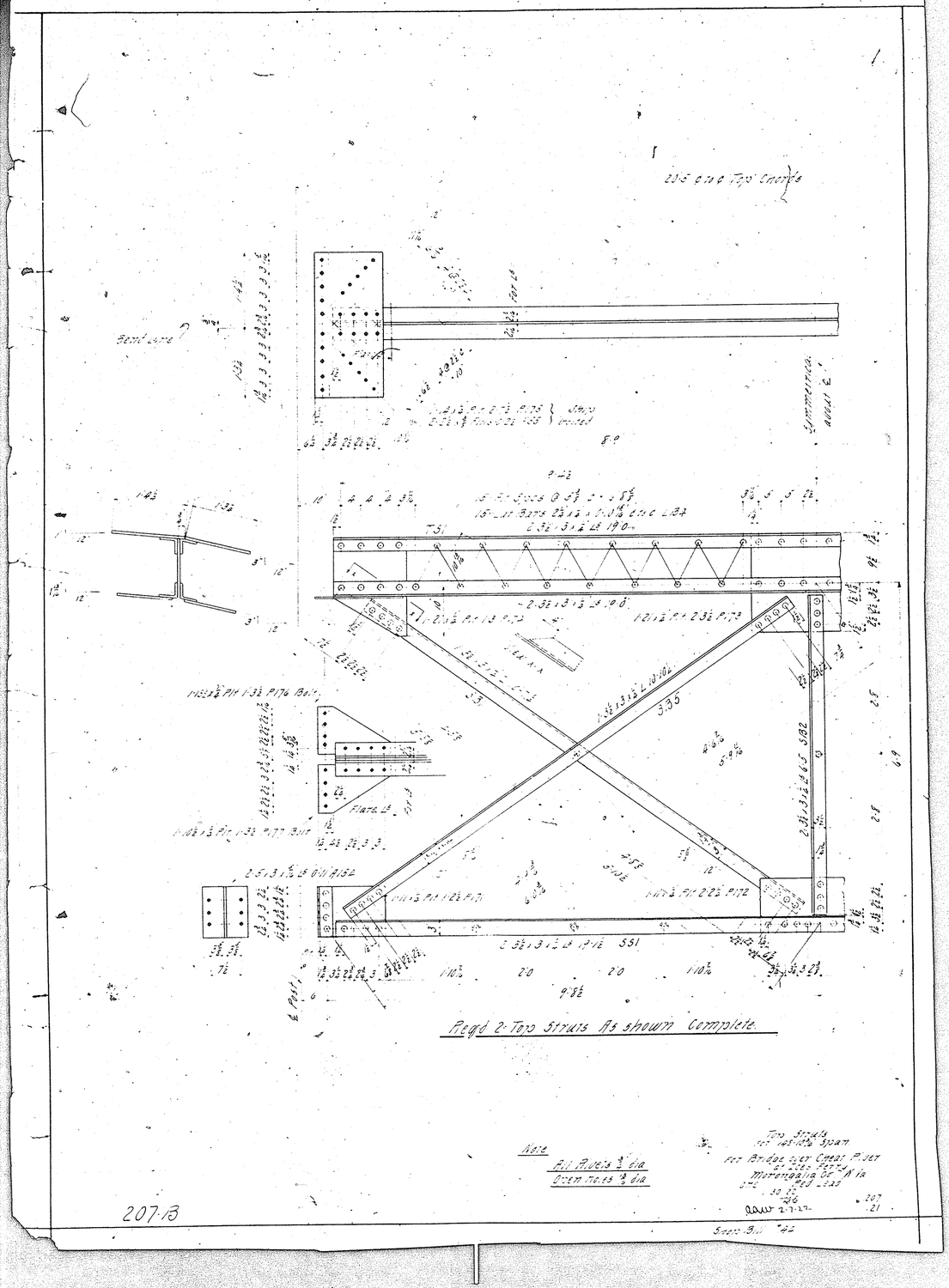
© 1950 BY U.S.S.

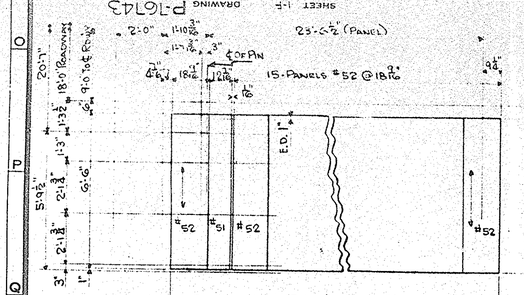
UNITED STATES STEEL CORP.
SPECIALTY PRODUCTS SALES
PITTSBURGH, PENNA.

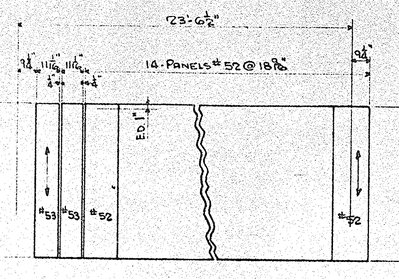
DRAWN BY W.J.S.	CHECKED BY:	DATE
SHEET 2 OF 11	DWG. No. F-5070	

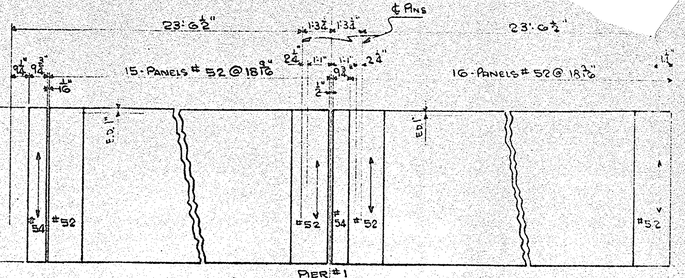
MILL NO. P-62082-GP

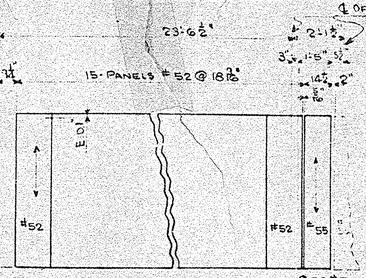
F-410

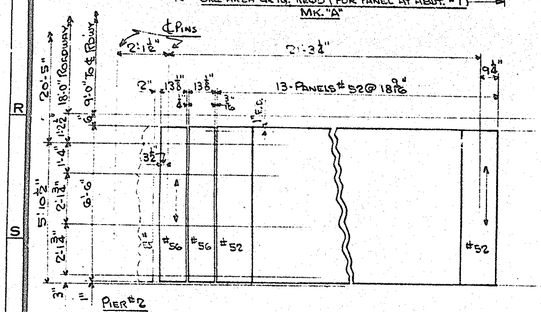

Bent Line
Flats
Flats
Flats

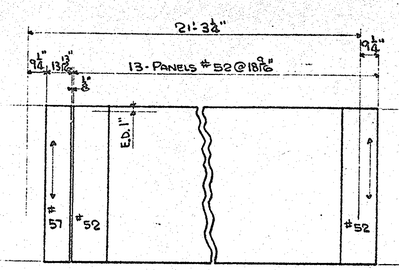


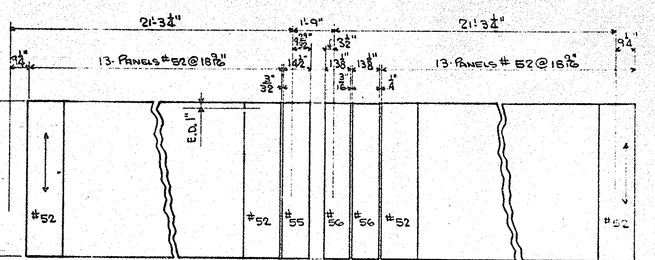


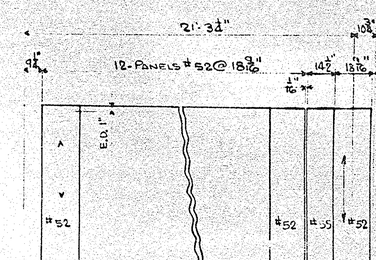


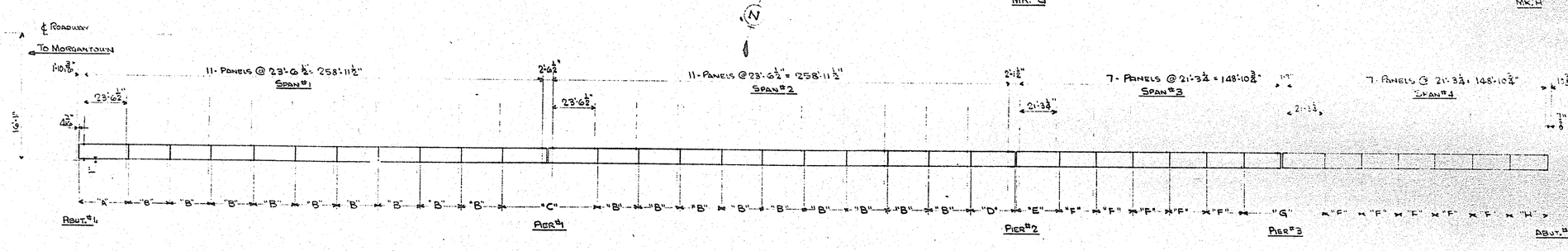












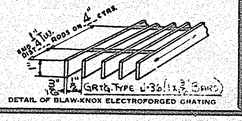
8-1-53
Approved
R. P. Dane

Key Plan (Not To Scale)
Sidewalk Grtg. For Great Lake Bridge Over Cheat River
Monongalia County, W. Va.

NOTES:
Grating Type U-36 (1" x ⅛" Bars) — Copper Bearing Steel
2 Tw. Rods to line up on 4" centers
← Indicates direction of bearing bars
Paint 1 Ct. Coat Red Lead-Burnt Tan
2nd. Coat Aluminum-Type Comm. of Va. Spec.

Cust. Dwgs. - Proj. 2284 Shts. 1 to 10
Cust. Order # (Letter)
B/M. Bill Sht. 1F

Note. All Grtg. Cut-Outs To Be Made In Field



Detail of Blaw-Knox Electroforged Grating

REVISIONS		
NO.	REVISED FROM	DATE

This drawing and the information it contains are the property of the Blaw-Knox Company. It is not to be traced or copied, nor is the information to be misused in any way

BLAW-KNOX DIVISION
OF BLAW-KNOX CO. PITTSBURGH, PA.

ELECTROFORGED GRATING
FOR
HATCHER BROTHERS, INC.
MINGO JUNCTION, OHIO

In charge of Harrick Made by ST Checked [illegible]-52
Approved
Date 7-15-53
Sheet No. 1-F

Contract No. DA-29857
Drawing No. P-16743

RIVETS ____ EXCEPT NOTED
OPEN HOLES ____ EXCEPT NOTED
DRAWN F.W.B.
CHECKED T.H.M
DATE 7-31-53

UNITED STATES STEEL CORP.

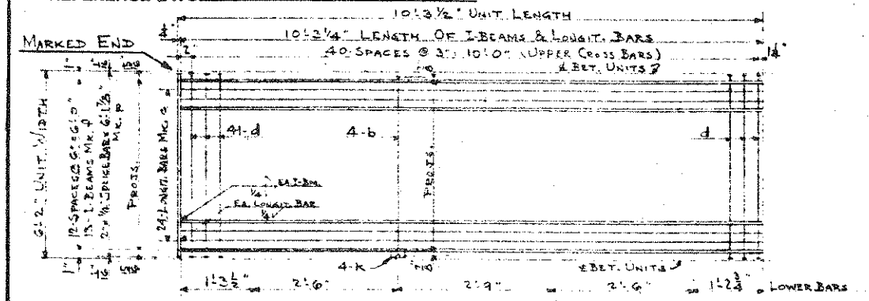
5" I-BEAM-LOK OPEN (GR-TYPE) DETAILS

REFLOORING CHEAT LAKE BRIDGE - W.VA STATE RD. COMM.

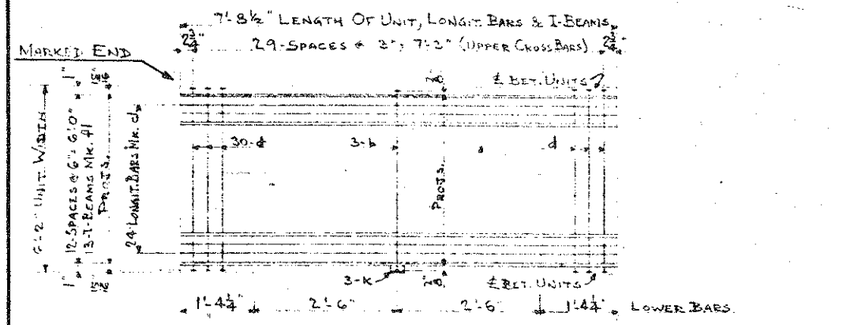
HATCHER BROS. INC. — CONTRACTOR

SHEET NO. 16-416
BILL NO. P-5208G-GP
REVISED
SHEET 3 OF 11

REFERENCE DWG. F-5089 & F-5090



5" I-BEAM-LOK UNIT MK. A, 127-REQ'D. UNIT AREA: 63.47-SQ.FT. UNIT WT.: 1703-LBS.



5" I-BEAM-LOK UNIT MK. B, 127 REQ'D. UNIT AREA = 47.53-SQ.FT. UNIT WT. = 894-LBS.

BILL OF MATERIAL

TOTAL REQ'D. 127 UNITS 254 UNITS	NUMBER REQUIRED ONE UNIT MK. B	ONE UNIT MK. B	127 UNITS MK. A	ONE UNIT MK. A	DESCRIPTION	MILL SECT. NO.	LENGTH	PCE MK.	WT. OF ONE PCE.	TOTAL WT. 127 UNITS MK. A	TOTAL WT. 127 UNITS MK. B
1651	—	—	1651	13	5" I-BEAM @ 5.28 #/'	M-4187	10'-3½"	e	54.23	89534	—
1651	1651	13	—	—	Do	Do	7'-8½"	f1	40.70	—	67196
3048	—	—	3048	24	UPPER LONGIT. BAR 13/16" x ¼"	M-3844	10'-3⅛"	c	6.57	20025	—
3048	3048	24	—	—	Do	Do	7'-8½"	c1	4.93	—	15027
9017	3810	30	5207	41	UPPER CROSS BAR 1⅞" x ½"	M-4217	6'-1⅛"	d	7.39	38480	28156
889	381	3	508	4	LOWER CROSS BAR ¾" ℄	¾" RD.	6'-1⅝"	b	9.23	4689	3517
889	381	3	508	4	BENT BAR 1⅝" x ⅜" (SPLICE)	T.M.	0'-4½"	k	0.78	396	297
127	—	—	127	1	SPLICE BAR 2" x ¼" @ 1.7 #/'	T.M.	6'-1⅞"	p	10.47	1330	—
					SHOP WELDING MATERIAL					3810	2718

II 410

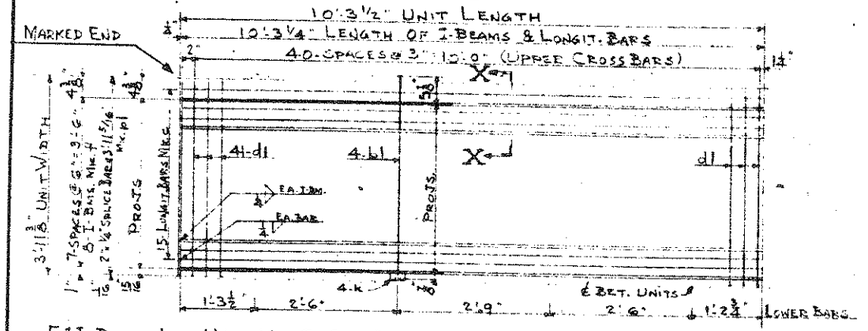
RIVETS _____ EXCEPT NOTED
OPEN HOLES _____ EXCEPT NOTED
DRAWN F.W.B.
CHECKED T.M.H.
DATE 8-7-53

UNITED STATES STEEL CORP.

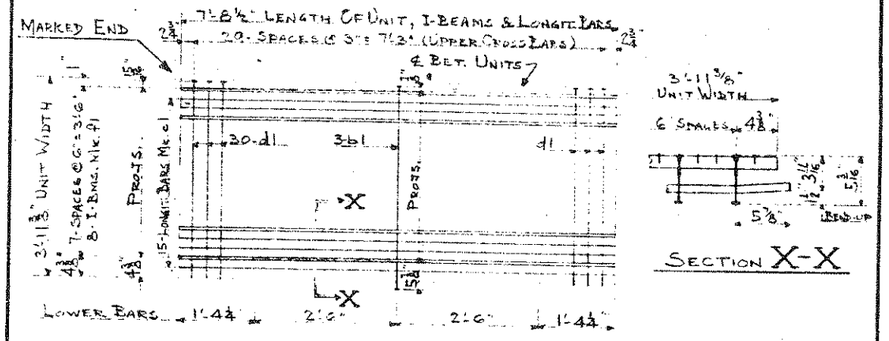
5" I BEAM-LOK OPEN (TR-TYPE) DETAILS
REFLOORING CHEAT LAKE BRIDGE - W.VA. STATE RD. COMM.
HATCHER BROS. INC. — CONTRACTOR

SHEET NO. 16-417
MILL NO. P-52086-GP
REVISED
SHEET 4 OF 11

REFERENCE DWG. F-5089 & F-5090



5" I-BEAM-LOK UNIT MK. C, ONE REQ'D. AREA: 40.6 SQ. FT. WT.: 770 LBS.



SECTION X-X

5" I-BEAM-LOK UNIT MK. D, ONE REQ'D. AREA: 30.4 SQ. FT. WT.: 569 LBS.

BILL OF MATERIAL

TOTAL REQ'D. 2 UNITS	NUMBER REQUIRED ONE UNIT MK. D	NUMBER REQUIRED ONE UNIT MK. C	DESCRIPTION	MILL SECT. NO.	LENGTH	PCE MK.	WT. OF ONE PCE.	TOTAL WT. ONE UNIT MK. C	TOTAL WT. ONE UNIT MK. D
8	—	8	5" I-BEAM @ 5.28#/'	M-4157	10'-3¼"	f	54.23	434	—
8	8	—	Do	Do	7'-8½"	f1	40.70	—	326
15	—	15	LONGIT. BAR 9/16" x ¼"	M-3846	10'-3¼"	c	6.57	99	—
15	15	—	Do	Do	7'-8½"	c1	4.93	—	74
71	30	41	UPPER CROSS BAR 13/16" x ¼"	M-4217	3'-11 5/16"	d1	4.74	194	142
7	3	4	LOWER CROSS BAR ¾" DIA.	¾" Rd.	4'-0¾"	b1	6.10	24	18
4	—	4	BENT BAR 1⅝" x ⅜" (SPLICE)	T.M.	0'-4½"	k	0.78	3	—
1	—	1	SPLICE BAR 2" x ¼" @ 17#/'	T.M.	3'-11 5/16"	p1	6.70	7	—
			SHOP WELDING MAT'L.					19	14

#410

RIVETS _____ EXCEPT NOTED
OPEN HOLES _____ EXCEPT NOTED
DRAWN E.W.P.
CHECKED T.H.H
DATE 8-7-53

UNITED STATES STEEL CORP.

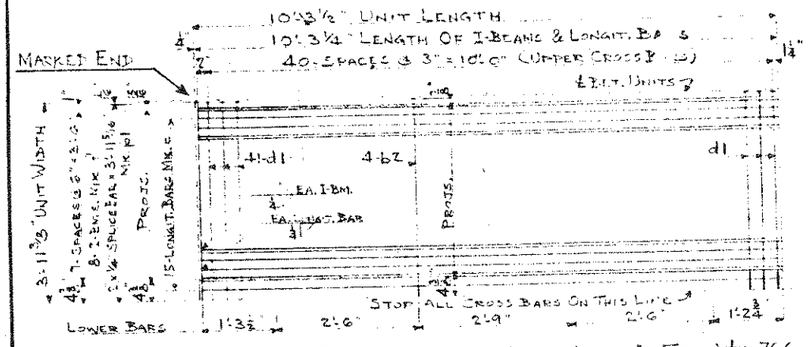
5 I-BEAM-LOK OPEN (IN-TYPE) DETAILS

REFLOORING CHEAT LAKE BRIDGE - W.VA. STATE ROAD COMM.

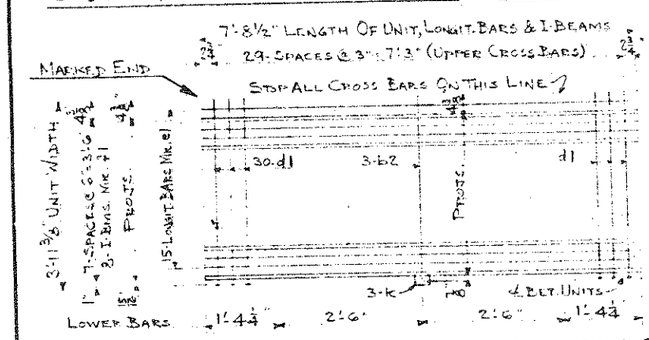
HATCHES BROS. INC. CONTRACTOR

SHEET NO. 16-418
MILL NO. P-52086-SP
REVISED
SHEET 5 OF 11

REFERENCE DWG. E-5089 & E-5090



5" I-BEAM-LOK UNIT MK. E, ONE-REQ'D. AREA: 40.6 - SQ. FT. WT.: 766 - LBS.



5" I-BEAM-LOK UNIT MK. F, ONE-REQ'D. AREA = 30.4 SQ. FT. WT. = 572 - LBS.

BILL OF MATERIAL

TOTAL REQ'D 2 UNITS	NUMBER REQUIRED ONE-UNIT MK. F	NUMBER REQUIRED ONE-UNIT MK. E	DESCRIPTION	MILL SECT. NO.	LENGTH	PER MK.	WT. OF ONE PCE.	TOTAL WT. ONE-UNIT MK. E	TOTAL WT. ONE-UNIT MK. E
8		8	5" I-BEAM @ 5.28#/'	M-4187	10'-3¼"	f	54.23	434	—
8	8		Do	Do	7'-8½"	f1	40.70		326
15		15	LONGIT. BAR 13/16" x ¼"	M-3842	10'-3¼"	c	6.57	99	—
15	15		Do	Do	7'-8½"	c1	4.93	—	74
71	30	41	UPPER CROSS BAR 7/16" x ¼"	M-4217	3'-11⅝"	d1	4.74	194	142
7	3	4	LOWER CROSS BAR ¾" DIA.	¾" Rd.	3'-11¼"	b2	5.92	24	18
3	3	—	BENT BAR 1⅜" x ⅜" (SPLICE)	T.M.	0'-4½"	k	0.78	—	2
1	—	1	SPLICE BAR 2" x ¼" @ 17#/'	T.M.	3'-11⅝"	p1	6.70	7	—
			SHOP WELDING MAT'L.					18	15
							#410		

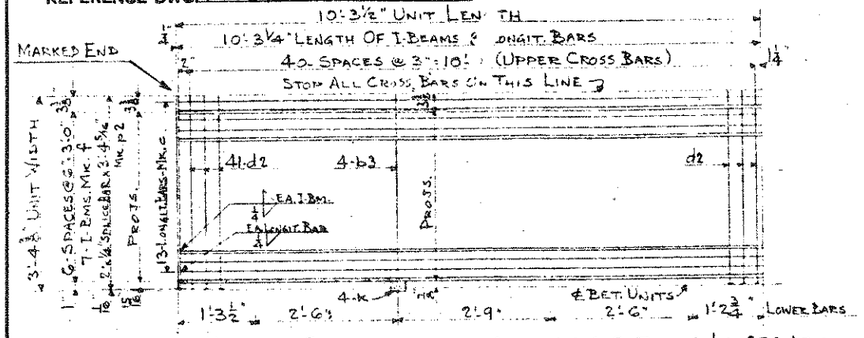
RIVETS ____ EXCEPT NOTED
OPEN HOLES ____ EXCEPT NOTED
DRAWN E.W.B.
CHECKED T.H.H
DATE 3-7-53

UNITED STATES STEEL CORP.

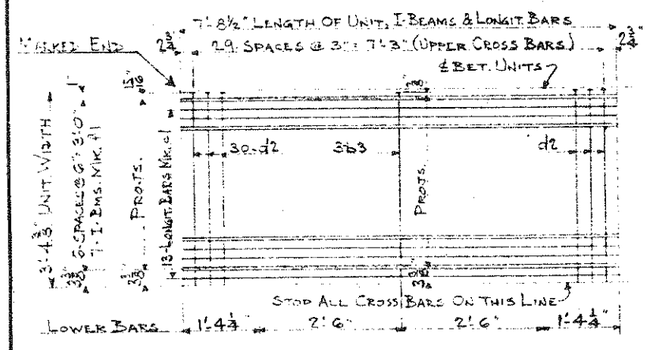
5" I-BEAM-LOK OPEN (TE-TYPE) DETAILS
REF. FLOORING CHEAT LAKE BRIDGE - W.VA. STATE RD. COMM.
HATCHER BROS. INC. — CONTRACTOR

SHEET NO. 16-419
MILL NO. P-52086-GP
REVISED ____
SHEET 6 OF 11

REFERENCE DWG. F-5089 & F-5090



5" I-BEAM-LOK UNIT MK. G, ONE-REQ'D. AREA = 34.6-SQ.FT. WT. = 656-LBS.



5" I-BEAM-LOK UNIT MK. H, ONE-REQ'D. AREA = 25.9-SQ.FT. WT. = 485-LBS.

BILL OF MATERIAL

TOTAL REQ'D. 2-UNITS	NUMBER ONE-UNIT MK. H	REQUIRED ONE-UNIT MK. G	DESCRIPTION	MILL SECT. NO.	LENGTH	PCE MK.	WT. OF ONE PCE.	TOTAL WT. ONE-UNIT MK. G	TOTAL WT. ONE-UNIT MK. H
7	—	7	5 I-BEAM @ 5.28#/'	M-4187	10'-3¼"	f	54.23	380	—
7	7	—	DO.	DO.	7'-8½"	f1	40.70	—	285
13	—	13	LONGIT. BAR 1⅜16" x ¼"	M-3846	10'-3¼"	c	6.57	85	—
13	13	—	DO.	DO.	7'-8½"	c1	4.93	—	64
41	30	41	UPPER CROSS BAR 1⅜16" x ¼"	M-4217	3'-45/16"	d2	4.04	166	121
7	3	4	LOWER CROSS BAR ¾" DIA.	¾" RD.	3'-4¼"	b3	5.04	20	15
4	0	4	BENT BAR 1⅝" x ⅜" (SPLICE)	T.M.	0'-4½"	k	0.78	3	—
1	—	1	SPLICE BAR 2" x ½" @ 1.7#/'	T.M.	3'-45/16"	p2	5.71	6	—
			SHOP WELDING MAT'L.					16	11

#410

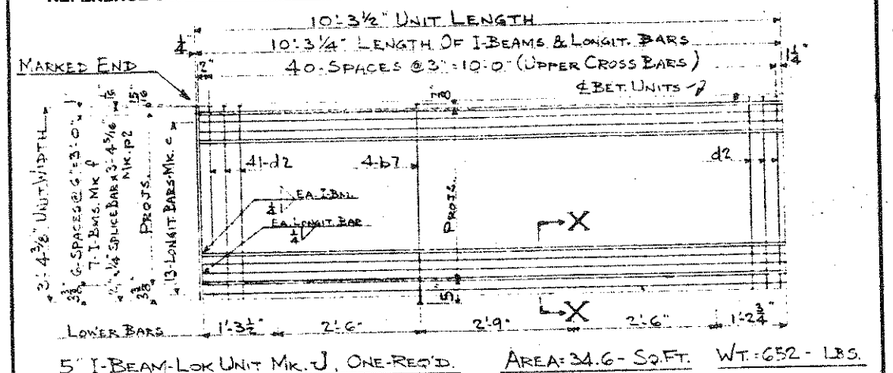
RIVETS ____ EXCEPT NOTED
OPEN HOLES ____ EXCEPT NOTED
DRAWN F.J.V.B.
CHECKED T.H.H.
DATE 8-7-53

UNITED STATES STEEL CORP.

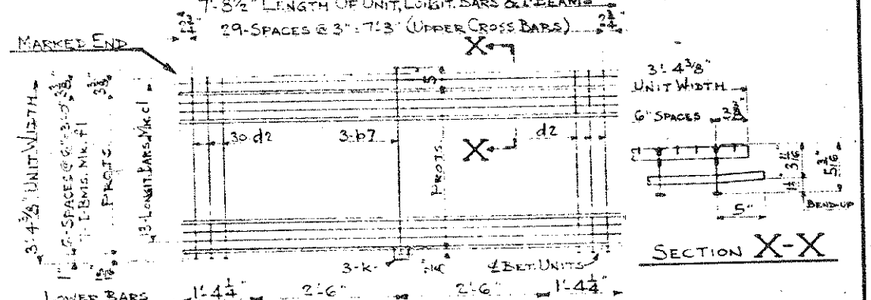
5" I-BEAM-LOK OPEN (STR. TYPE) DETAILS
REFLOORING CHEAT LAKE BRIDGE - W.VA STATE RD. COMM.
HATCHER BROS., INC. — CONTRACTOR

SHEET No. 16-420
MILL ORD. No. B-52086-GP
REVISED
SHEET 7 OF 11

REFERENCE DWG. F-5089 & F-5090



5" I-BEAM-LOK UNIT MK. J, ONE-REQ'D. AREA: 34.6 - SQ. FT. WT: 652 - LBS.



5" I-BEAM-LOK UNIT MK. K, ONE-REQ'D. AREA: 25.9-SQ. FT. WT: 488-LBS.

BILL OF MATERIAL

TOTAL REQ'D. 2 UNITS	NUMBER REQUIRED ONE-UNIT MK. K	NUMBER REQUIRED ONE-UNIT MK. J	DESCRIPTION	MILL SECT. No.	LENGTH	PCE. MK.	WT. OF ONE PCE.	TOTAL WT. ONE-UNIT MK. J	TOTAL WT. ONE-UNIT MK. K
7	—	7	5" I-BEAM @ 5.28#/	M-4167	10'-3¼"	f	54.23	380	—
7	7	—	Do	Do	7'-8½"	f1	40.70	—	285
13	—	13	LONGIT. BAR ⅜" x ¼"	M-3846	10'-3¼"	c	6.57	85	—
13	13	—	Do	Do	7'-8½"	c1	4.93	—	64
71	30	41	UPPER CROSS BAR ⅜" x ¼"	M-4217	3'-4⅝"	d2	4.04	166	121
7	—	7	LOWER CROSS BAR ¾" DIA.	¾" RD.	3'-5⅜"	b7	5.25	21	16
3	—	—	BENT BAR 1⅝" x ⅜" (SPLICE)	T.M.	0'-4¼"	k	0.78	—	2
1	—	1	SPLICE BAR 2" x ¼" @ 1.7#/	T.M.	3'-4⅝"	p2	5.71	6	—
			SHOP WELDING MAT'L.					15	12
							#410		

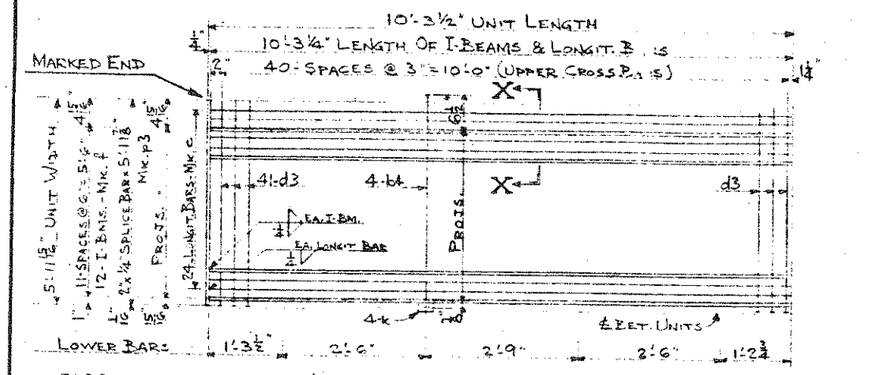
RIVETS ____ EXCEPT NOTED
OPEN HOLES ____ EXCEPT NOTED
DRAWN F.W.B.
CHECKED T.H.H
DATE 8-7-53

UNITED STATES STEEL CORP.

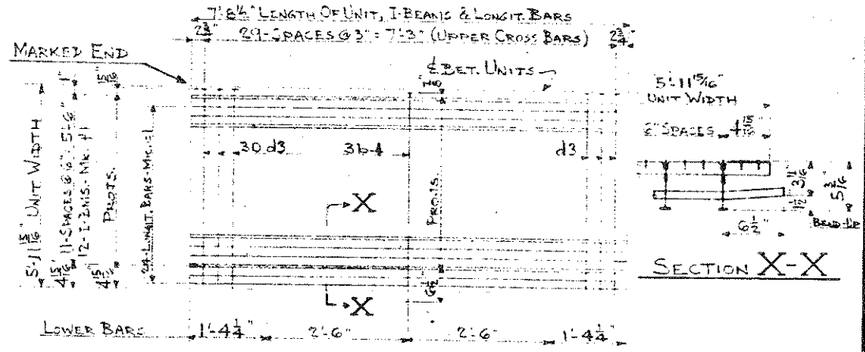
5" I-BEAM-LOK OPEN (TR. TYPE) DETAILS
REFLOORING CHEAT LAKE BRIDGE - W.VA. STATE RD. COMM.
HATCHER BROS., INC. — CONTRACTOR

SHEET No. 16-421
MILL No. P-52086-GP
REVISED
SHEET 8 OF 11

REFERENCE DWG. E-5089 & E-5090



5" I-BEAM-LOK UNIT-MK. L, ONE-REQ'D. AREA = 61.7-SQ.FT. WT. = 1169-LBS.



5" I-BEAM-LOK UNIT-MK. M, ONE-REQ'D. AREA = 46.2-SQ.FT. WT. = 866-LBS.

BILL OF MATERIAL

TOTAL REQ'D C-UNITS	NUMBER REQUIRED ONE-UNIT MK. M	NUMBER REQUIRED ONE-UNIT MK. L	DESCRIPTION	MILL SECT. NO.	LENGTH	PCE. MK.	WT. OF ONE PCE.	TOTAL WT. ONE-UNIT MK. L	TOTAL WT. ONE-UNIT MK. M
12	—	12	5" I-BEAMS 5.28#/ft	M-4187	10'-3¼"	f	54.23	651	—
12	12	—	Do	Do	7'-6½"	f1	40.70	—	488
24	—	24	LONGIT BAR 1⅞" x ¼"	M-3846	10'-3¼"	c	8.57	158	—
24	24	—	Do	Do	7'-8½"	c1	4.93	—	118
71	30	41	UPPER CROSS BAR 1⅞ x ¼"	M-4217	5'-11⅞"	d3	7.19	295	216
7	3	4	LOWER CROSS BAR ¾" DIA.	¾" R.D.	6'-1⅜"	b4	9.18	37	28
4	—	4	BENT BAR 1⅝" x ⅜" (SPLICE)	T.M.	0'-4½"	k	0.78	3	—
1	—	1	SPLICE BAR 2" x ¼" @ 17#/ft	T.M.	5'-11⅞"	p3	10.18	10	—
			SHOP WELDING MK. L.					29	21

#410

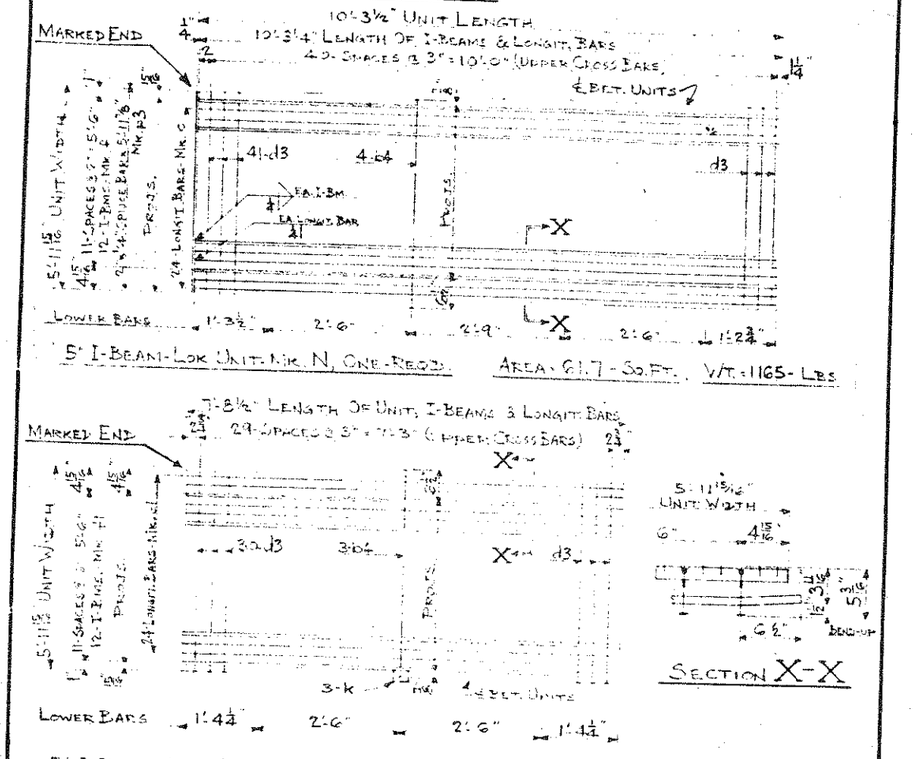
RIVETS ..... EXCEPT NOTED
OPEN HOLES ..... EXCEPT NOTED
DRAWN F.W.B.
CHECKED T.H.H
DATE 3-7-53

UNITED STATES STEEL CORP.

5" I-BEAM-LOK OPEN (TR-TYPE) DETAILS
REFLOORING CHEAT LAKE BRIDGE - W.VA STATE RD. COMM.
HATCHER BROS., INC. — CONTRACTOR

SHEET No. 16-422
MILL No. P-52086-GP
REVISED
SHEET 9 OF 11

REFERENCE DWG. F-5089 & F-5090



5" I-BEAM-LOK UNIT MK. P, ONE REQ'D. AREA 46.2 SQ. FT. WT. = 869 LBS.

BILL OF MATERIAL

TOTAL REQ'D. 2-UNITS	NUMBER REQUIRED ONE-UNIT MK. P	NUMBER REQUIRED ONE-UNIT MK. N	DESCRIPTION	MILL SECT. No.	LENGTH	PCE. MK.	WT. OF ONE PCE.	TOTAL WT. ONE-UNIT MK. N	TOTAL WT. ONE-UNIT MK. P
12	—	12	5" I-BEAM @ 5.28 #/'	M-4187	10'-3¼"	f	54.23	651	—
12	12	—	Do	Do	7'-8½"	f1	40.70	—	488
24	—	24	LONGIT. BAR 13/16" x ¼"	M-3846	10'-3¼"	c	6.57	158	—
24	24	—	Do	Do	7'-8½"	c1	4.93	—	118
71	30	41	UPPER CROSS BAR 1⅜" x ¼"	M-4217	5'-11⅞"	d3	7.19	295	216
7	2	4	LOWER CROSS BAR ¾" DIA.	¾" RD.	6'-1⅜"	b4	9.18	37	28
3	3	—	END BAR 1⅝" x ⅜" (SPLICE)	T.M.	0'-4½"	K	0.78	—	2
1	—	1	SPLICE BAR 2" x ⅛" @ 17#/'	T.M.	5'-11⅞"	p3	10.18	10	—
			SHOP WELDING MAT'L.					28	22

#410

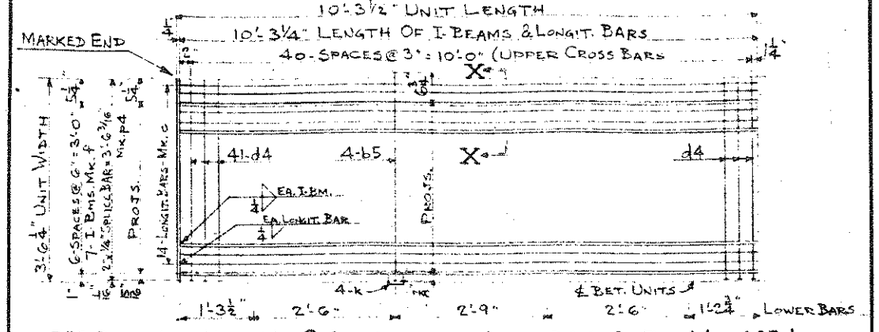
RIVETS ____ EXCEPT NOTED
OPEN HOLES ____ EXCEPT NOTED
DRAWN F.W.B.
CHECKED T.H.M.
DATE 8-7-53

UNITED STATES STEEL CORP.

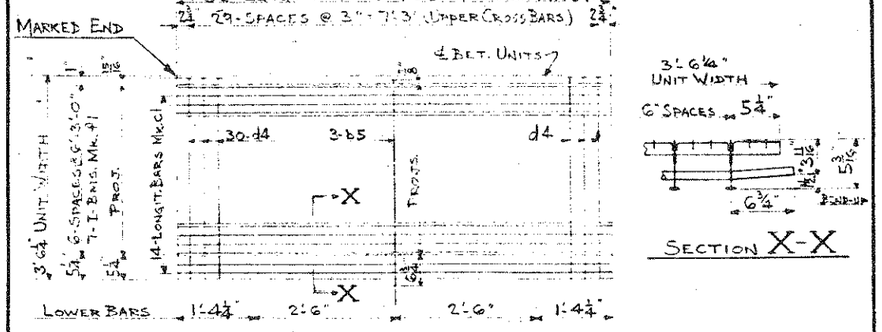
5" I-BEAM-LOK OPEN (TR-TYPE) DETAILS
REFLOORING CHEAT LAKE BRIDGE - W.VA. STATE RD. COMM.
HATCHER BROS., INC. — CONTRACTOR

SHEET No. 16-423
MILL No. P-52086-GP
REVISED
SHEET 10 OF 11

REFERENCE DWG. F-5089 & F-5090



5" I-BEAM-LOK UNIT-MK. Q, ONE-REQ'D. AREA = 36.2-SQ.FT. WT. = 687-LBS.



5" I-BEAM-LOK UNIT-MK. R, ONE-REQ'D. AREA = 27.1-SQ.FT. WT. = 508-LBS.

BILL OF MATERIAL

TOTAL REQ'D. 2-UNITS	NUMBER REQUIRED ONE-UNIT MK. R	NUMBER REQUIRED ONE-UNIT MK. Q	DESCRIPTION	MILL SPEC'T. NO.	LENGTH	PCE. MK.	WT. OF ONE PCE.	TOTAL WT. ONE-UNIT MK. Q	TOTAL WT. ONE-UNIT MK. R
7	—	7	5" I-BEAM x 5.28#/'	M-1187	10'-3¼"	f	54.23	380	—
7	7	—	Do.	Do.	7'-8½"	f1	40.10	—	285
14	—	14	LONGIT. BAR 13/16" x ¼"	M-3246	10'-3¼"	c	6.57	92	—
14	14	—	Do.	Do.	7'-8½"	c1	4.93	—	69
41	30	41	UPPER CROSS BAR 1¾" x ¼"	M-4217	3'-6¾"	d4	4.32	173	127
4	3	4	LOWER CROSS BAR ¾" DIA.	¾" RT.	3'-7⅝"	b5	5.46	22	16
4	—	4	SEAT BAR 1⅝" x ⅜" SPLICE	T.M.	0'-4½"	k	0.78	3	—
1	—	1	SPLICE BAR 2" x ¼" 3.17#/'	T.N.	3'-6¾"	p4	2.98	6	—
			SHOP WELDING MAT'L.					17	12
								#410	

RIVETS ____ EXCEPT NOTED
OPEN HOLES ____ EXCEPT NOTED
DRAWN B&P
CHECKED T.H.H.
DATE 8-7-53

UNITED STATES STEEL CORP.

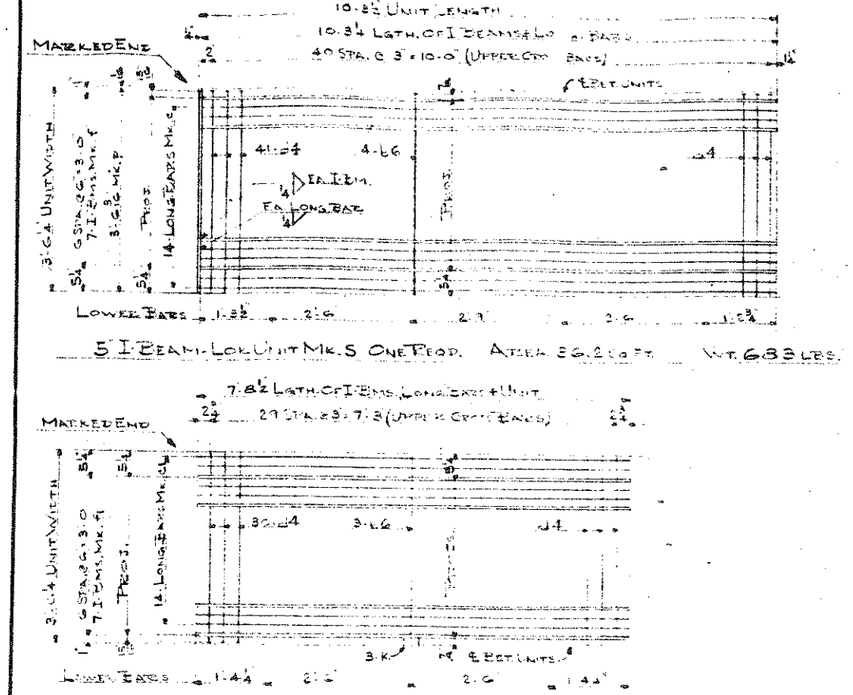
5'I BEAM-LOK OPEN (TE-TYPE) DETAILS

TEE-FLOORING GREAT LAKE STURGE-W. VA. STATE PORT COMM.

HATCHER ELEC. ENG'R - COUNTY

SHEET No. 16-424
BILL No. P-52086-GP
REVISED
SHEET 11 OF 11

REFERENCE DWG. F-50817 & F-50910



BILL OF MATERIAL

TOT REQ'D 2 UNITS	NOTES P. ONE UNIT MK. T	ONE UNIT MK. S	DESCRIPTION	MK. SECT. No.	LENGTH	TEE MK.	WT. OF ONE TEE.	I BEAM WT. ONE UNIT MK. S	I BEAM WT. ONE UNIT MK. T
7		7	5 I BEAM 25.28#	M 4187	10-3¼	f	54.23	380	
7	7		do	do	7-8½	f1	40.75		285
14		14	UPPER & LOWER EARS 1½"x¼"	M 3840	10-3¼	c	6.57	92	
14	14		do	do	7-8½	c1	4.73		69
71	50	41	UPPER & LOWER EAR 1½"x¼"	M 4117	3-6½	d1	4.22	173	127
7	5	4	LOWER CTR. TIE ROD ¾" DIA.	M 3751	3-6⅜	b2	5.28	21	16
3	3		BENT EAR 15"x⅜" (WT.)	M	0-4½	K	0.79		2
1		1	CTR. TIE ROD 3"x4 21.70#	M	3-6⅜	p4	5.98	6	
			SHOP & ERECTION MATL.					18	12

#410