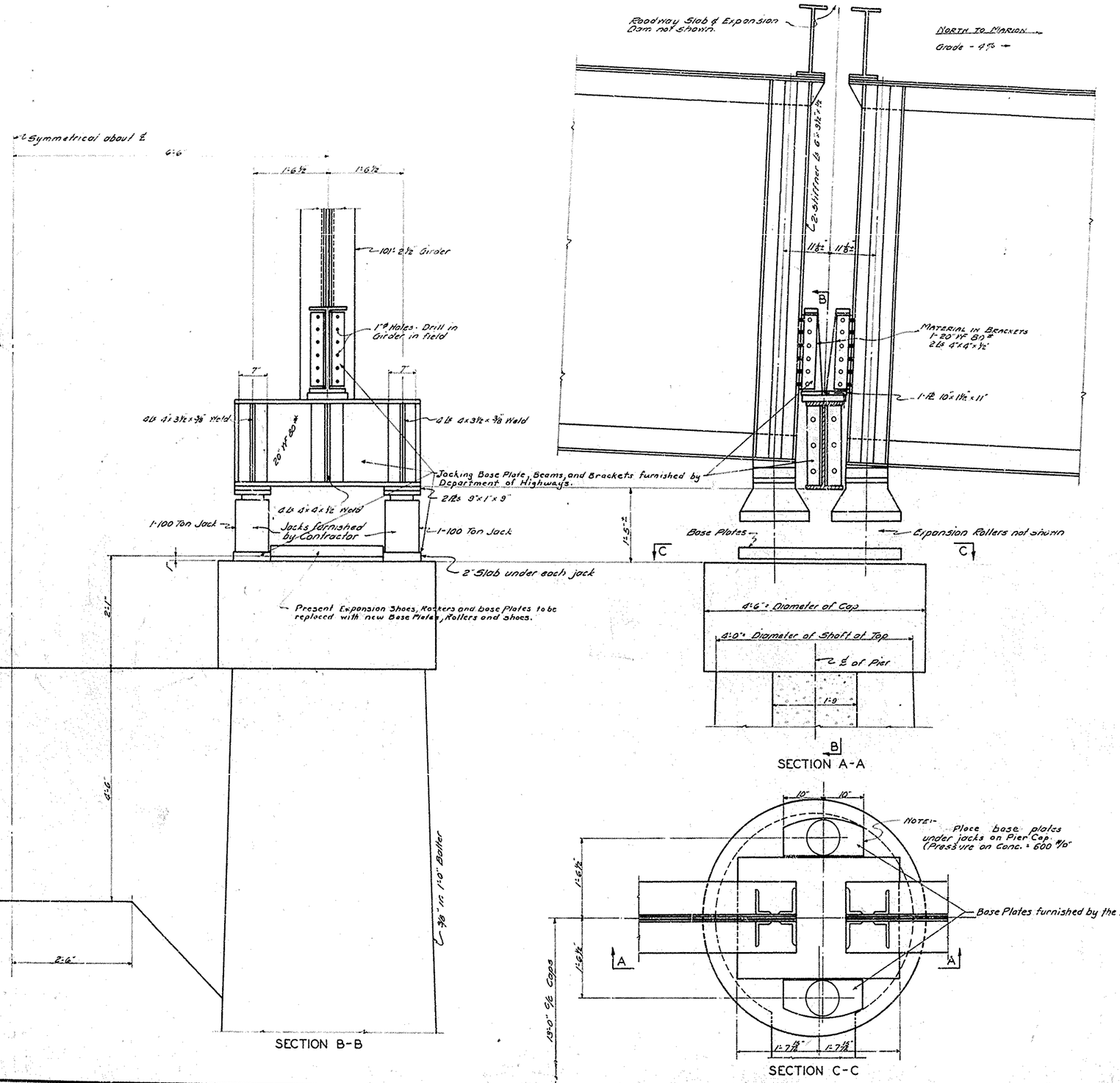
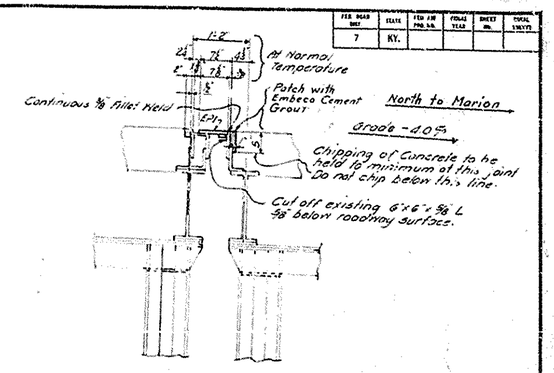
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				





DETAIL AT PIER NP1

- GENERAL NOTE -

Girders to be raised at Pier NP1 and old bearing plates, rollers & shoes replaced with new roller plates, rollers & shoes.

Bent Tower to be erected before jacking of Girders. The Expansion Joint in floor slab at NP1 is to be repaired after shoes, rollers, & stiffners are installed.

- ORDER of PROCEDURE -

1. Set 2" Base Plates & Jacks in place.
2. Set 20" WF Beam in Place.
3. Bolt Brackets in Place.
4. Lift girders at both ends of Pier at same time. Remove present Base Plates, Rollers & Shoes. Remove Pier Cap to Elevation shown & adjust Bent Tower to Elevation with Shims & set Roller Plate to Correct Elevation. Grout Pier Cap with Embeco cement under roller plate to maintain bearing on Pier NP1.
5. Set shoes & roller & stiffners as shown.
6. Repair Expansion Dam in slab over NP1.
7. Field Painting - All new steel in bridge & all abrasions on old steel caused by jacking operations to be thoroughly cleaned & given one coat of red lead & two coats white lead paint as per specifications in Field Structural Steel Jacking equipment not painted.
8. Jacking Load one end of Girder DL only = 50 tons.
9. Traffic may be regulated but not stopped during the progress of the work.
10. All Structural steel jacking equipment to be removed from Pier & placed in convenient place for removal by the Department of Highways upon completion of work.

PLANS:- The method of jacking span is shown. Jacking base plates, Jacking Beam & brackets shown are furnished by Department of Highways. The contractor shall assume all responsibility for safety of the bridge & shall complete the work in accordance with the plans & specifications. Any part of the present bridge not included in the proposed work that is moved, changed, or damaged during work is to be replaced at the contractors expense. The unit price bid for Structural Steel shall include all costs for complete acceptable work. Shop plans to be submitted to Department of Highways, Frankfort, Ky. Shop for approval before material is fabricated. Contractor shall make field check of shop plans & be responsible for proper fit of steel.

Sht. 1-4 Repair
Sht. 5-17 Design

Repairs at Pier NP1 — Design

Sheet 17 of 17

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
LIVINGSTON
REPAIRS
SMITHLAND TOLL BRIDGE
SMITHLAND-MARION ROAD

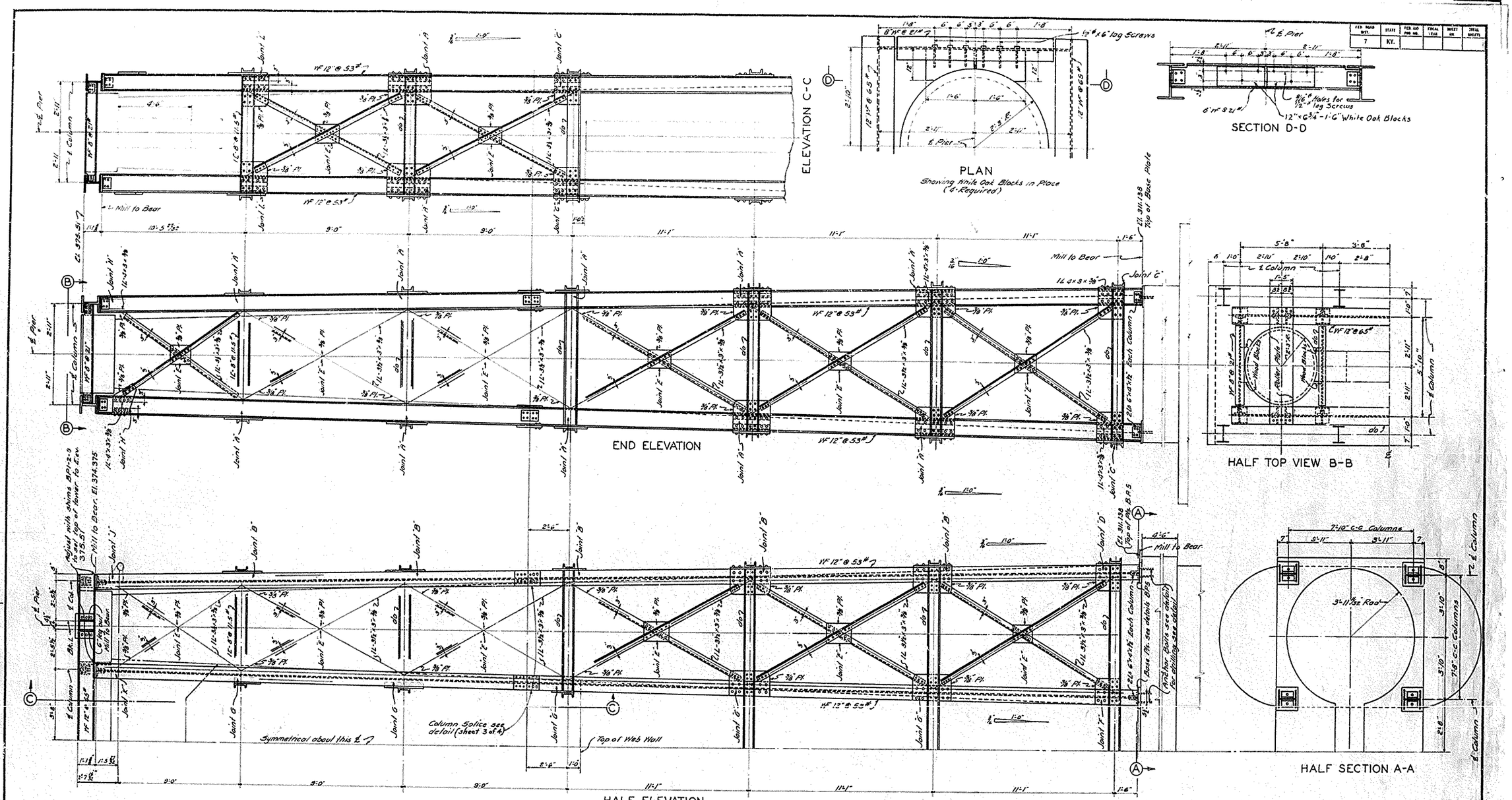
STATION — M PROJECT NO. 70-70 Tb-1

DRAWING NO. 7646 — BRANCH

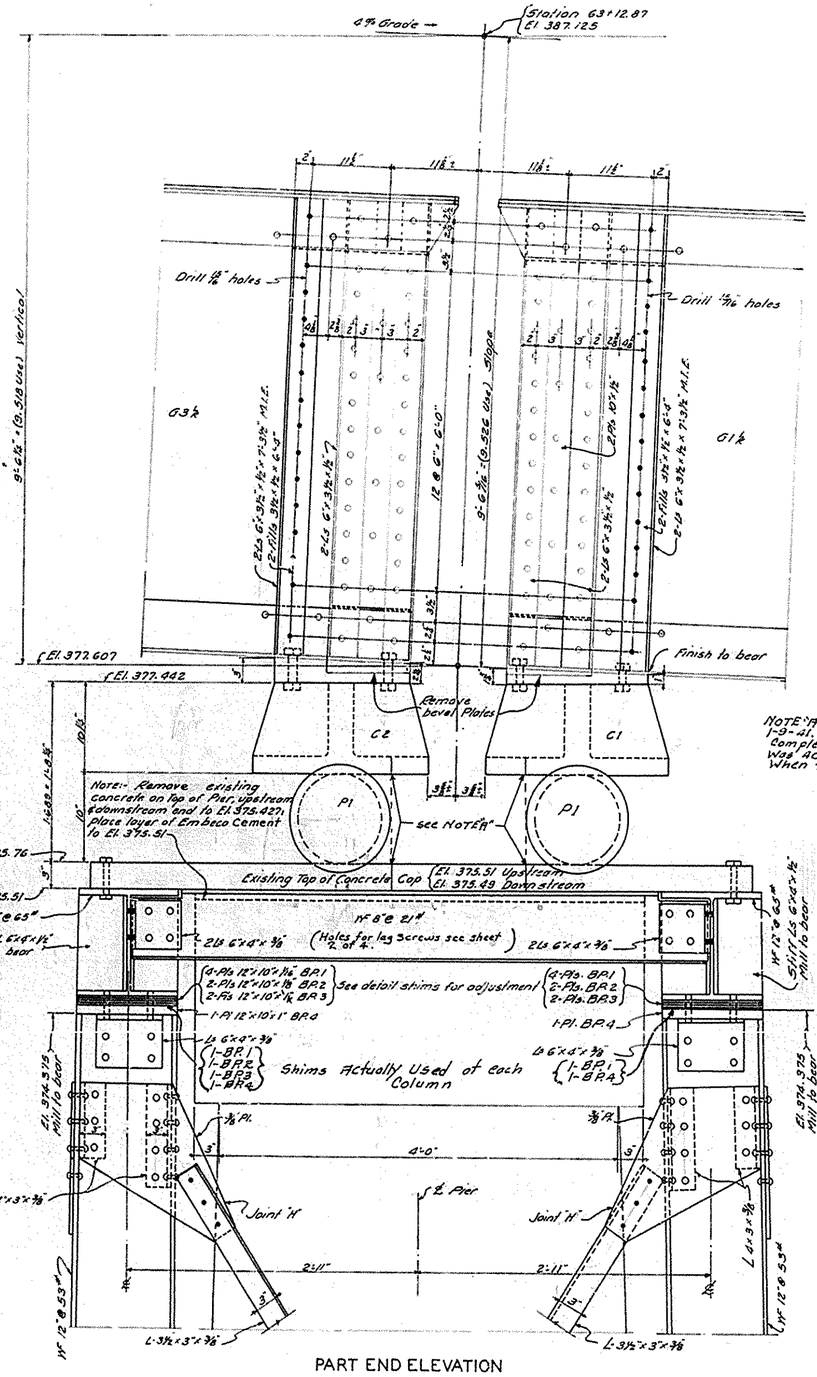
DESIGNED BY R.X. Lindard	DATE 3-40	REVISED	DATE
TRACED BY S. Moore	DATE 3-40	REVISED	DATE
CHECKED BY A. Griffith	DATE 5-41	REVISED	DATE

M-ST 1716-100-4-32

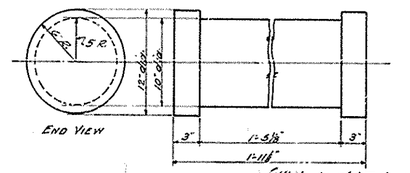
BRIDGE


ELEVATION C-C
PLAN
Showing White Oak Blocks in Place (4 Required)
SECTION D-D
END ELEVATION
HALF TOP VIEW B-B
HALF ELEVATION
HALF SECTION A-A
TOWER AT PIER NP1
Symmetrical about this ℄
Column Splice see detail (Sheet 3 of 4)
Top of Web Wall
Mill to Bear
Joint 'A'
Joint 'B'
Joint 'C'
Joint 'D'
Joint 'E'
Joint 'F'
Joint 'G'
Joint 'H'
Joint 'I'
Joint 'J'
Joint 'K'
Joint 'L'
Joint 'M'
Joint 'N'
Joint 'O'
Joint 'P'
Joint 'Q'
Joint 'R'
Joint 'S'
Joint 'T'
Joint 'U'
Joint 'V'
Joint 'W'
Joint 'X'
Joint 'Y'
Joint 'Z'
Joint 'A'
Joint 'B'
Joint 'C'
Joint 'D'
Joint 'E'
Joint 'F'
Joint 'G'
Joint 'H'
Joint 'I'
Joint 'J'
Joint 'K'
Joint 'L'
Joint 'M'
Joint 'N'
Joint 'O'
Joint 'P'
Joint 'Q'
Joint 'R'
Joint 'S'
Joint 'T'
Joint 'U'
Joint 'V'
Joint 'W'
Joint 'X'
Joint 'Y'
Joint 'Z'
Anchor Bolts see detail for anchorage see detail
Base Pls. See detail 8 PL5
Mud Blocks
Center Pitch
Mud Blocks
7'-10" c-c Columns
3'-11 5/32" Rad.
7'-8" c-c columns
℄ Pier
℄ Column
Elevation 311.138 Top of Base Plate
Elevation 311.138 (Top of Pls. 8 PL5)
Elevation 375.51
Elevation 374.375
Bear. El. 374.375
Adjust with shims 8 PL1-2-3 to set top of tower to Elev. 375.51
Mill to Bear
Mill to Bear
Mill to Bear

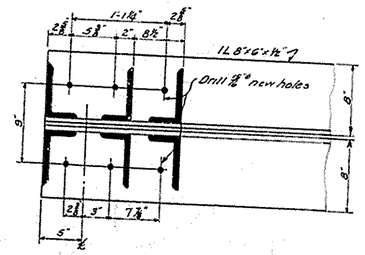
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	Ky.				



PART END ELEVATION

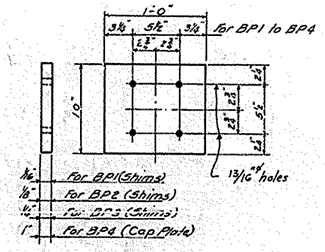


DETAIL OF PIN
4-Required (Finished)
White Lead & Tallow
A.S.T.M. A18-39T
Class F.A. Annealed

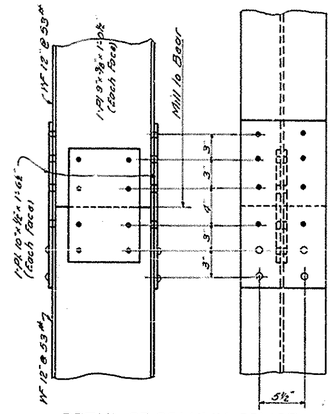


PLAN OF BOTTOM FLANGE
G1k - G3k

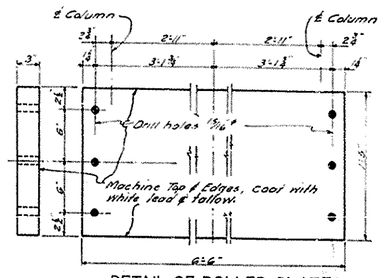
NOTE "A" These marks were made 1-3-41. All repair work had been completed. The temperature was 40 degrees Fahrenheit when the marks were made



ROLLED STEEL PLATE
BP1 - 32 Required
BP2 - 16 Required
BP3 - 16 Required
BP4 - 8 Required

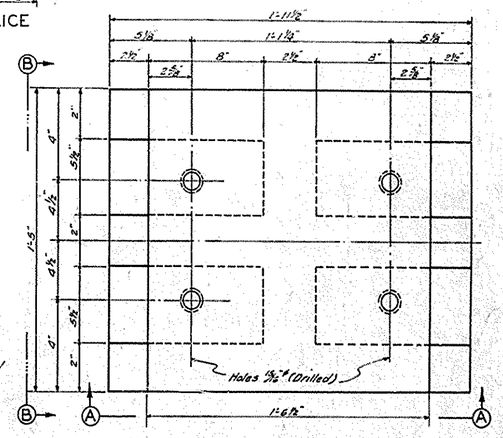


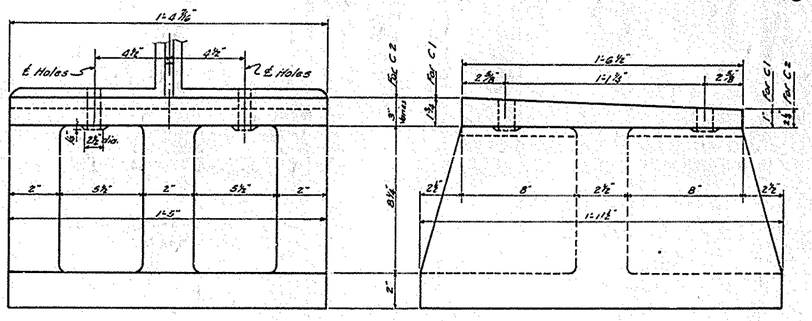
DETAIL OF COLUMN SPLICE



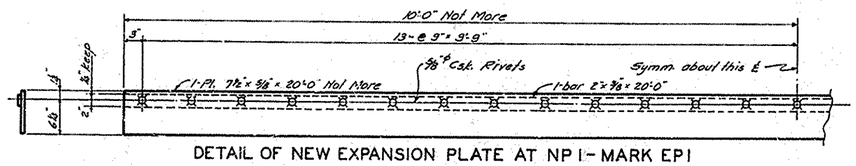
DETAIL OF ROLLER PLATE
(2-Required)
(Rolled Steel)

Note:- Cast two coupons on one piece from each heat, 1 1/2"x2"x6" to make tensile tests as per A.S.T.M. Specifications A27-39T, Grade B2. Stamp test coupon & all castings with proper heat numbers, using 3/8" steel stencils. Coupons to be located so as not to interfere with machining of casting. Coupons to be removed by Department's shop inspector & forwarded to the Department's laboratory for testing. Chip surface of casting smooth where coupon is detached.





DETAIL OF CASTING C1 & C2
Required - 2-C1 - 2-C2 (Cast Steel)



DETAIL OF NEW EXPANSION PLATE AT NP 1 - MARK EP1
One Required

Repairs at Pier NP1

Sheet 3 of 4

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
LIVINGSTON
REPAIRS
SMITHLAND TOLL BRIDGE
SMITHLAND-MARION ROAD

STATION | PROJECT NO.

DRAWING No. 7646

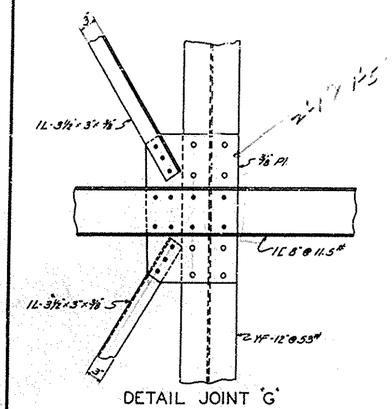
DESIGNED BY R.Y. Ireland DATE 3-40
TRACED BY C. Moore DATE 4-40
CHECKED BY A. Griffith DATE 5-41
REVISED DATE
REVISED DATE
REVISED DATE

BRIDGE

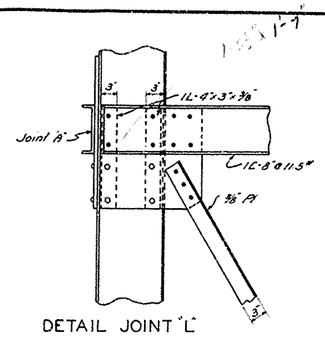
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

LIST OF BOLTS REQUIRED (Turned)

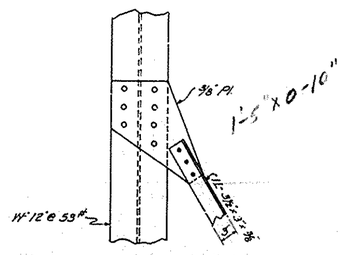
No.	Size	Grip	Kind	Location
336	3/4"	5/8"	Turned	Frame Joints
640	"	3/4"	"	" "
144	"	1"	"	" "
40	"	1 1/8"	"	" "
120	"	1 1/4"	"	" "
72	"	1 3/8"	"	" "
32	"	3/4"	"	Top Beam to Beam
32	See Spcl. Detail	2"	"	Top Base Plate BP1-2-3-4 (see detail)
4	7/8"	1 5/8"	"	C 1
4	"	2 1/8"	"	C 1
4	"	2 7/8"	"	C 2
4	"	3 3/8"	"	C 2
12	"	3 5/8"	"	Roller Plate
60	"	2 1/2"	"	Stiffners on Girder
192	3/4"	1 1/8"	"	Column Splices



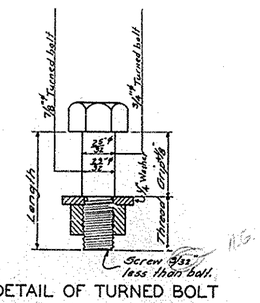
DETAIL JOINT "G"



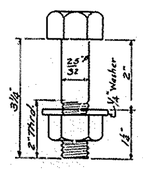
DETAIL JOINT "L"



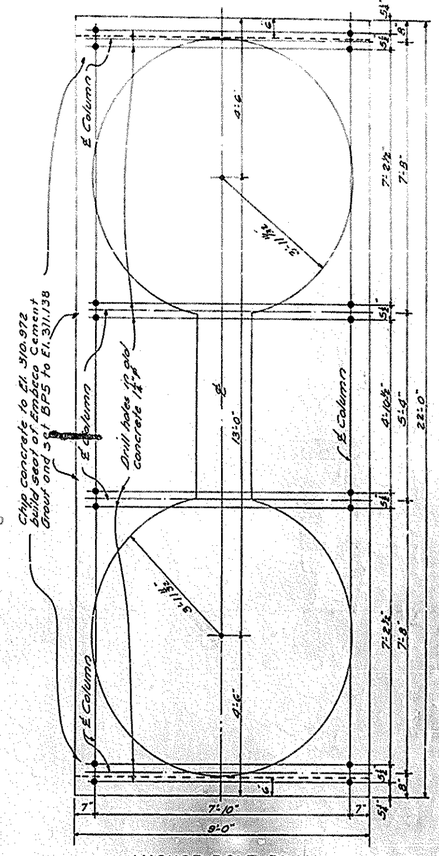
DETAIL OF JOINT "K"



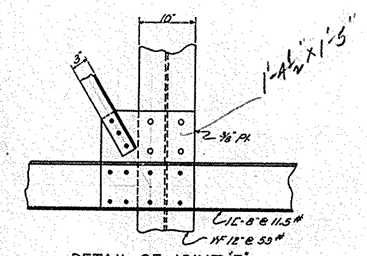
DETAIL OF TURNED BOLT



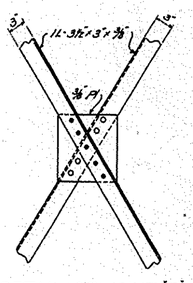
DETAIL OF TURNED BOLT
For Shims Plates BP1-2-3-4.



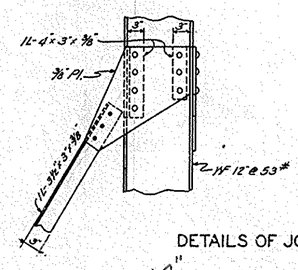
ANCHOR BOLT PLAN

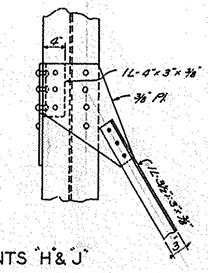


DETAIL OF JOINT "F"

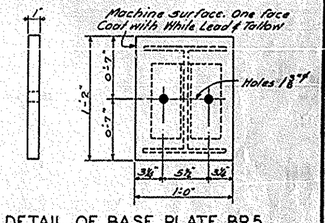


DETAIL OF JOINT "E"

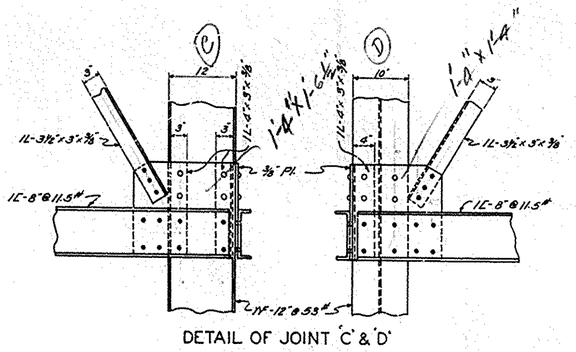




DETAILS OF JOINTS "H" & "J"

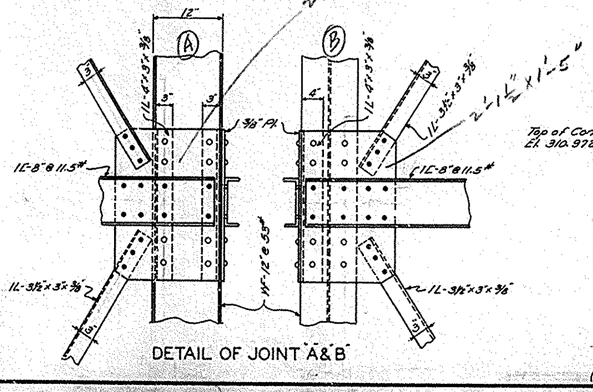


DETAIL OF BASE PLATE BP5
8 - Reqd.

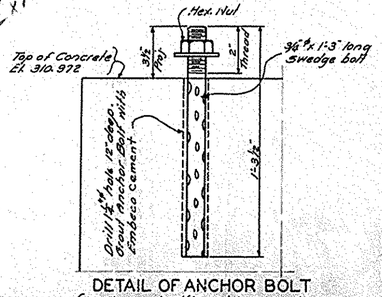


DETAIL OF JOINT "C" & "D"

1" Scale



DETAIL OF JOINT "A" & "B"



DETAIL OF ANCHOR BOLT
(16-Required-with nut & washer)

Repairs at Pier N.P.1

Sheet 4 of 4

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
LIVINGSTON
REPAIRS
SMITHLAND TOLL BRIDGE
SMITHLAND-MARION ROAD

STATION | PROJECT NO.

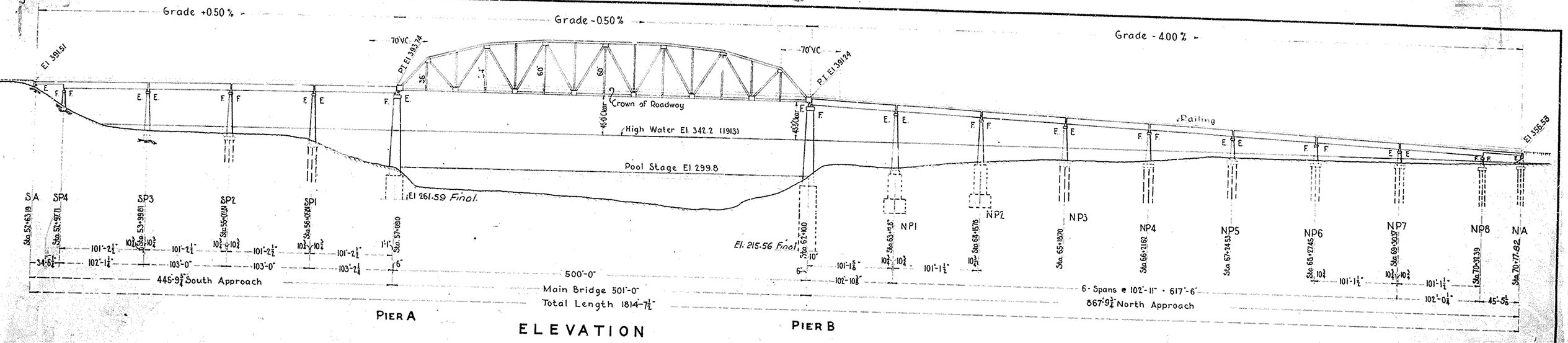
DRAWING No. 7646 | INDEX

DESIGNED BY R.X. Ireland DATE 3-38	REVISED — Vs. Turned Bolts		
TRACED BY C.J. Moore DATE 5-40	REVISED		
CHECKED BY A. Griffith DATE 5-40	REVISED		

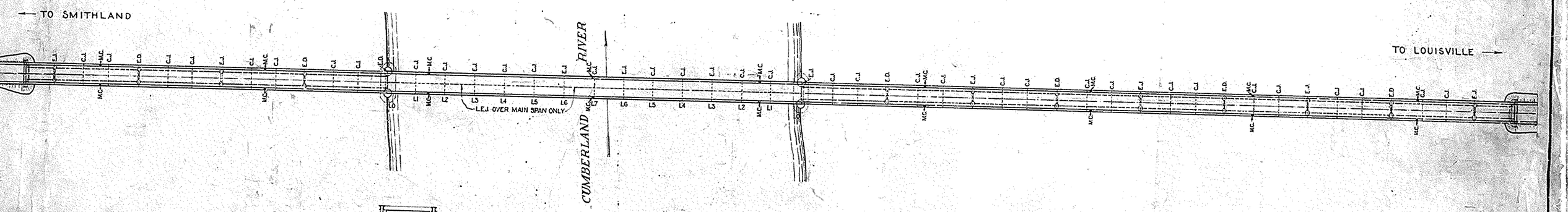
A.G. DATE 12-21-40
DATE
DATE

POST TT-1-100-6-38

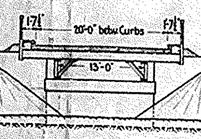
BRIDGE



ELEVATION

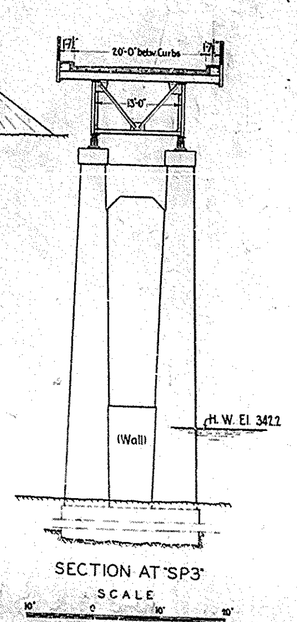


PLAN



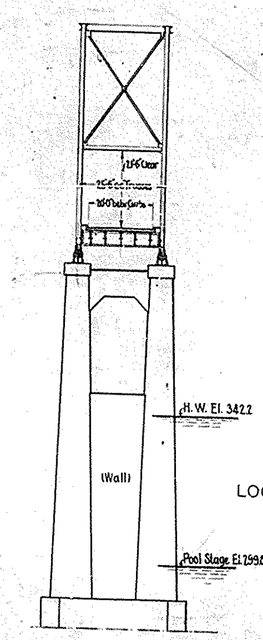
SECTION AT "SA"

SCALE



SECTION AT "SP3"

SCALE



SECTION AT CENTER OF SPAN LOOKING TOWARD PIER "A"

SCALE

SYMBOLS OF ROADWAY SLAB JOINTS

E.J. - EXPANSION JOINT - ½" PREMOULDED FILLER
C.J. - CONSTRUCTION JOINT
E.D. - EXPANSION DAMS
L.E.J. - LONGITUDINAL EXPANSION JOINT

M.C. - MANHOLE & COVER IN WALKWAY. SEE CONTRACT No. 2, DRAWING No. 7.

Submitted by ..... Modjeski & Masters, CONSULTING ENGINEERS

Recommended for Approval ..... BRIDGE ENGINEER.

Recommended for Approval ..... STATE HIGHWAY ENGINEER.

Approved ..... Kentucky State Highway Commission.

By ..... CHAIRMAN

Date ..... Book No. ..... Page .....

LIST OF DRAWINGS

CONTRACT No. 1
SUBSTRUCTURE

Sheet No.	Title
1	General Plan & Elevation
2	Masonry Plan
3	Substructure - Main Bridge
4	Substructure - Approaches

CONTRACT No. 2
SUPERSTRUCTURE

Sheet No.	Title
1	General Plan & Elevation
2	Masonry Plan
3	Stress Sheet
4	Typical Details 500' Span
5	Typical Details 500' Span
6	Typical Details Approach Steelwork
7	Details of Roadway
8	Navigation Lights

CONTRACT No. 1
SUPPLEMENTARY DRAWINGS

Sheet No.	Title
1	Contour Map and Foundation Data.
2	Foundation Data.
	River Hydrograph.
SK-31	River Bottom and Pier Location - May 1931.

APPROVED

F. M. Masters
CONSULTING ENGINEERS

Design Sht. #5
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE
AT SMITHLAND, KY.

GENERAL PLAN & ELEVATION

SCALE IN FEET

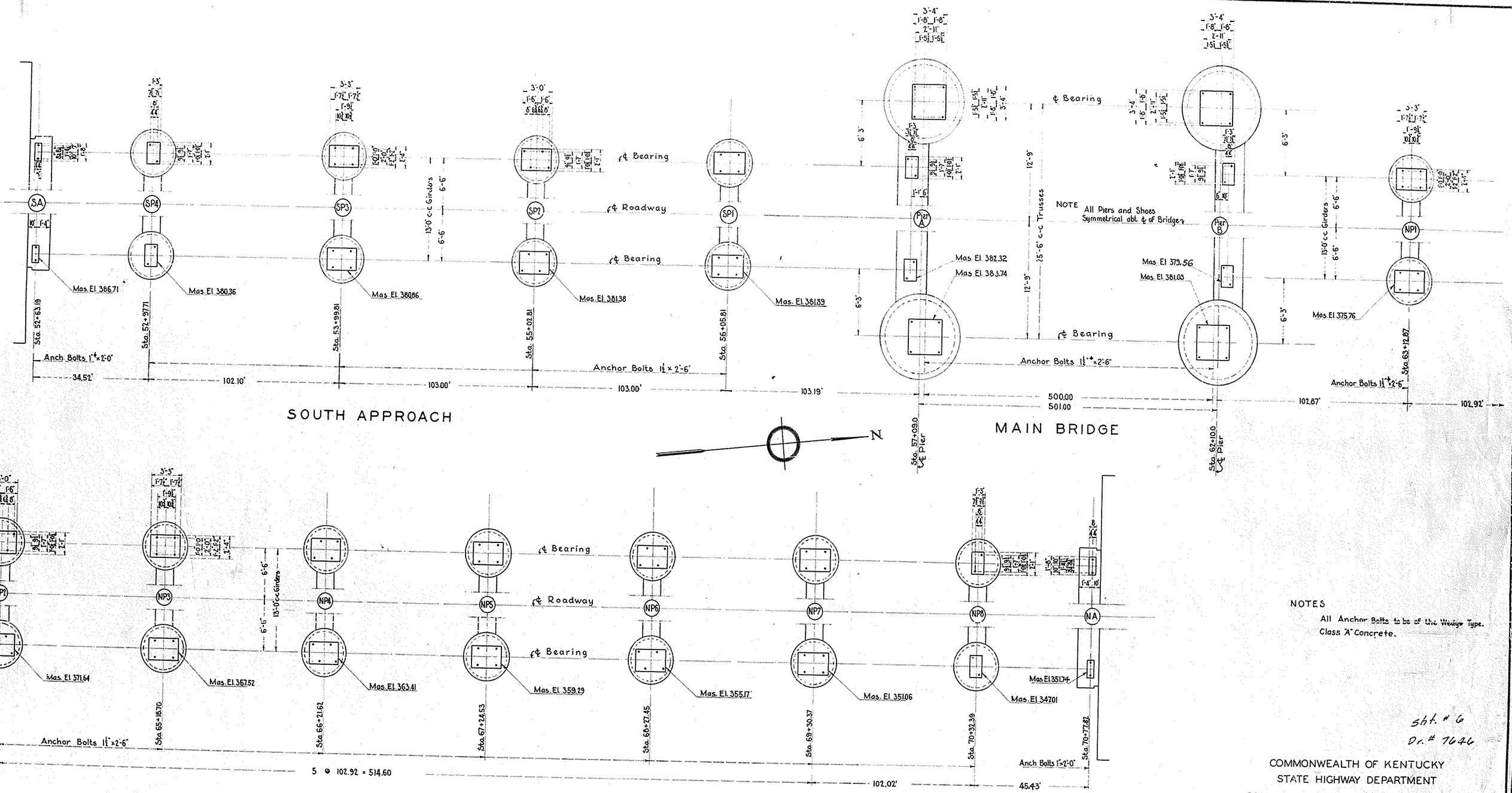
MAY 1929

DRAWING NO. 1
CONTRACT NO. 182

MODJESKI AND MASTERS
ENGINEERS

MP 70-70-1

Revised Jan. 15, 1930 - Crown of Roadway raised 4"



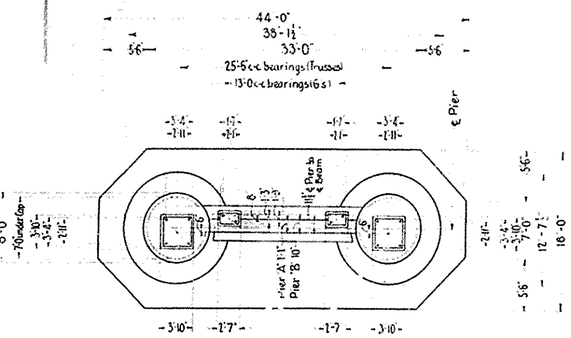
NOTE
All Piers and Shoes Symmetrical abt. ℄ of Bridge.

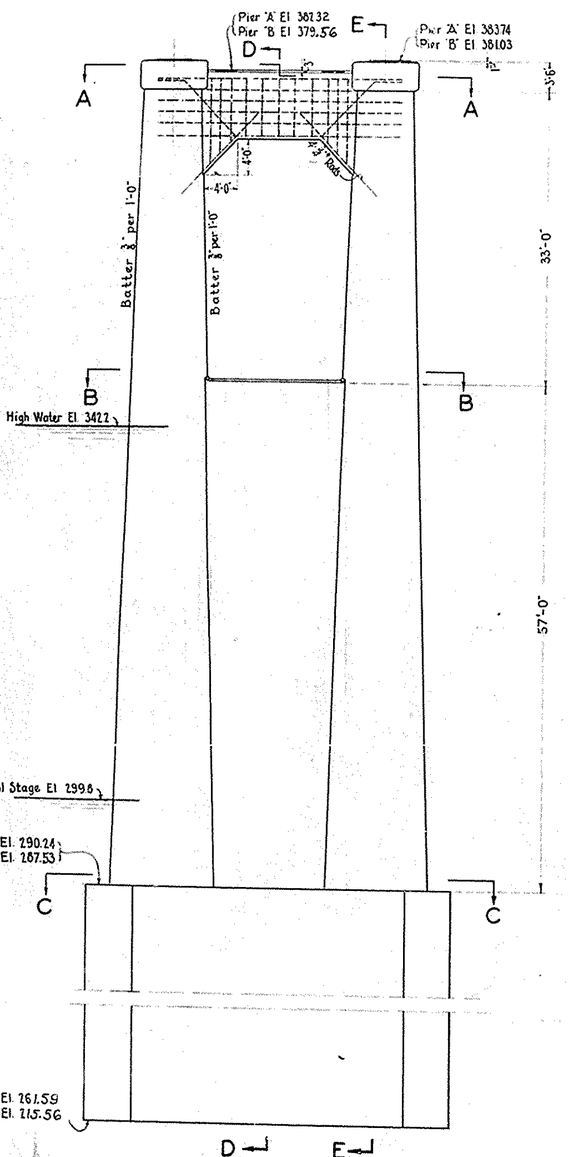
NOTES
All Anchor Bolts to be of the Wedge Type.
Class "A" Concrete.

Sht. # 6
Dr. # 7646

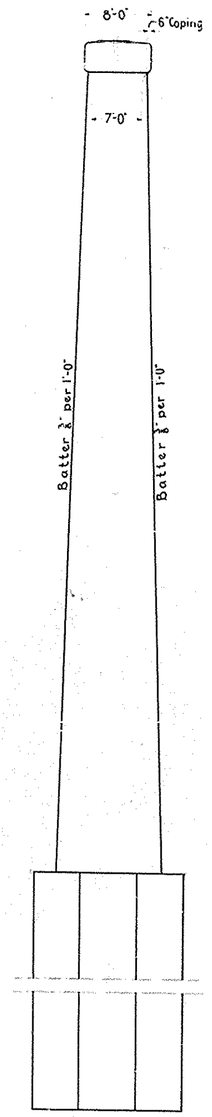
APPROVED
Ray L. Modjeski
F. M. Masters

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT
CUMBERLAND RIVER BRIDGE
AT SMITHLAND, KY.
MASONRY PLAN
SCALE IN FEET
2 1 0 2 4 6 8
MAY 1929
DRAWING NO 2
CONTRACT NO 1 & 2
MODJESKI AND MASTERS
ENGINEERS

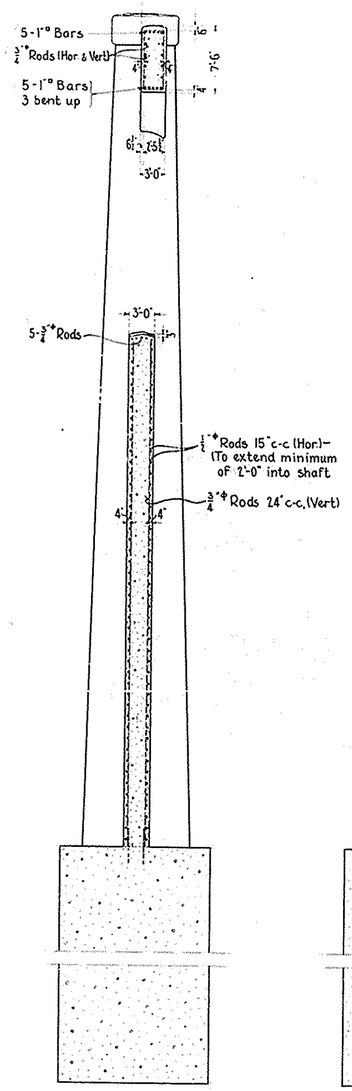




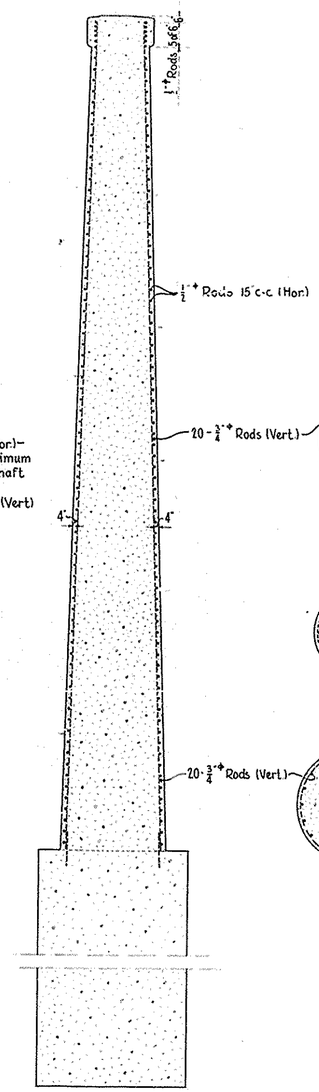
FRONT ELEVATION



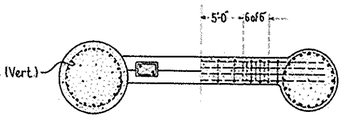
END ELEVATION



SECTION D-D

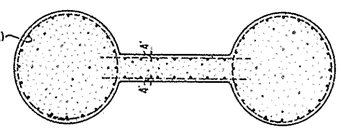


SECTION E-E



SECTION A-A

SECTION B-B



SECTION C-C

Class "A" Concrete.

Sht. # 7
Dr. # 7646

APPROVED
Ralph Modjeski
F. M. Masters

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

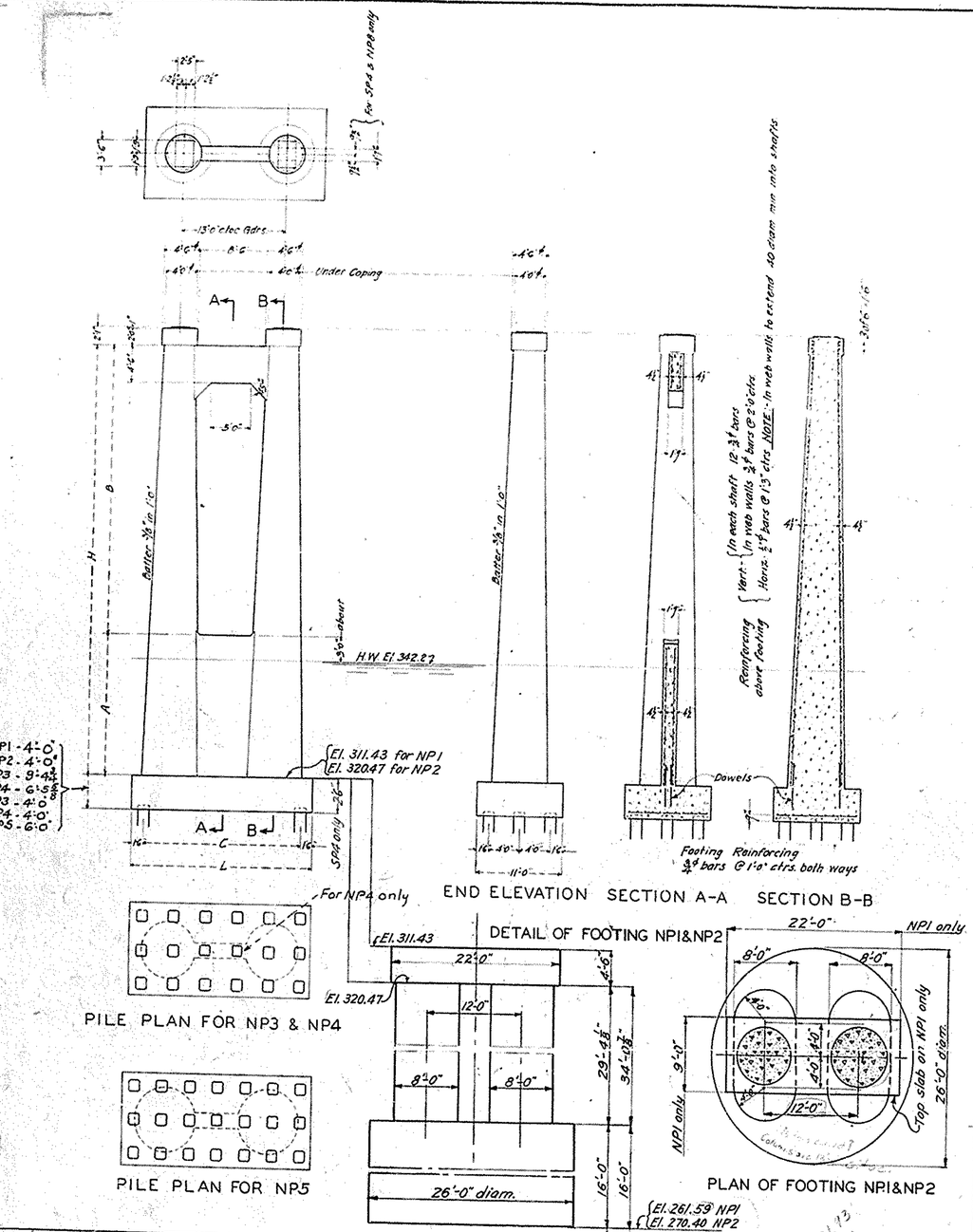
AT SMITHLAND, KY

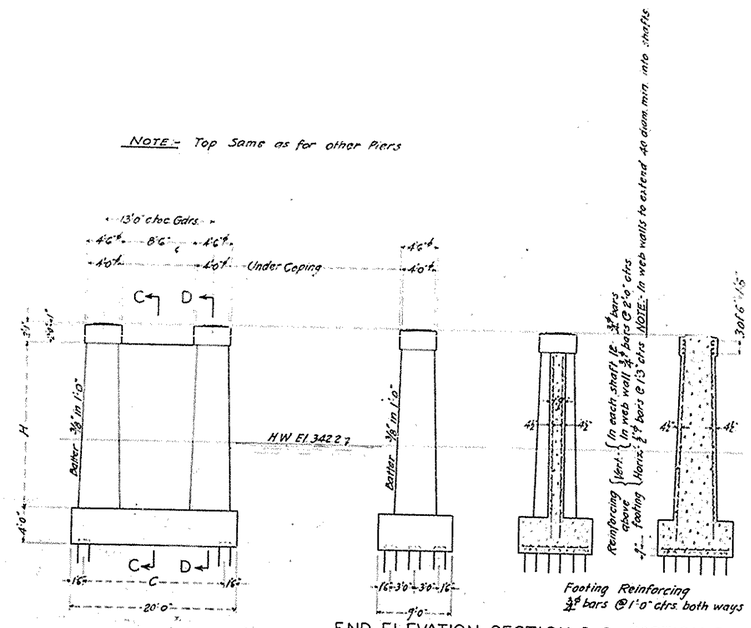
SUBSTRUCTURE-MAIN BRIDGE

SCALE IN FEET
1 0 1 2 3 4 5 6 7 8

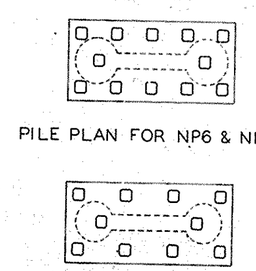
MAY 1929
DRAWING NO. 3
CONTRACT NO. 1

MODJESKI AND MASTERS
ENGINEERS



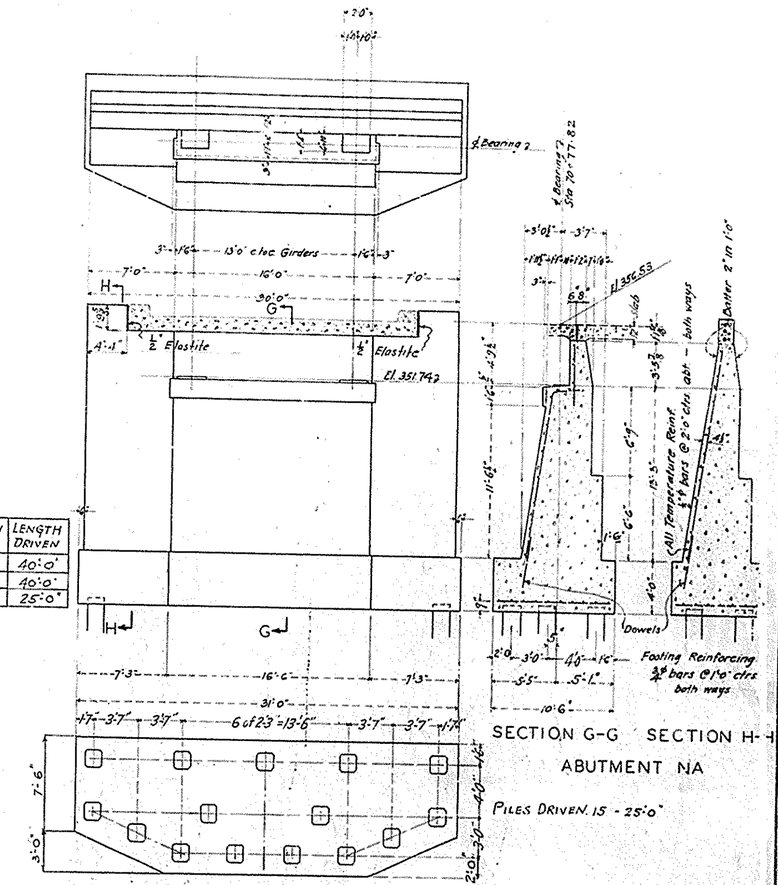


Pier No.	Elev. Top of Pier	H	Pile Spacing C	No. Piles in Footing	Min. Length of Piles	Length Driven
NP6	355.17	18'-7"	20@2'-1½", 20@4'-3", 20@2'-1½" = 17'-0"	12	25'	40'-0"
NP7	351.06	13'-6"	20@2'-1½", 20@4'-3", 20@2'-1½" = 17'-0"	12	25'	40'-0"
NP8	347.01	8'-11"	20@2'-10", 5@8', 20@2'-10" = 17'-0"	10	25'	25'-0"



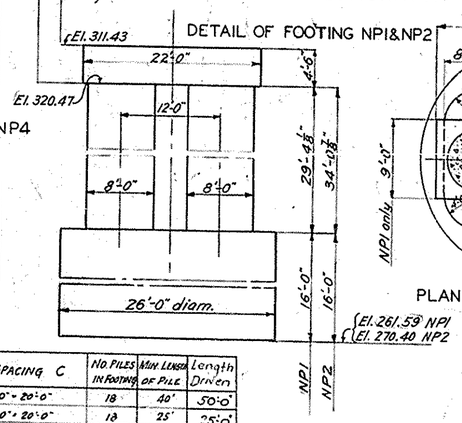
PILE PLAN FOR NP6 & NP7

PILE PLAN FOR NP8



PILE PLAN FOR NP3 & NP4

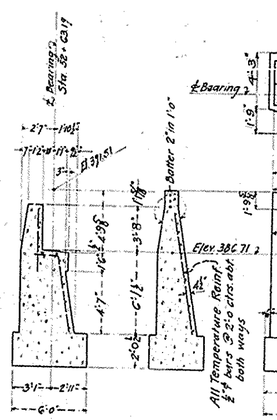
PILE PLAN FOR NP5

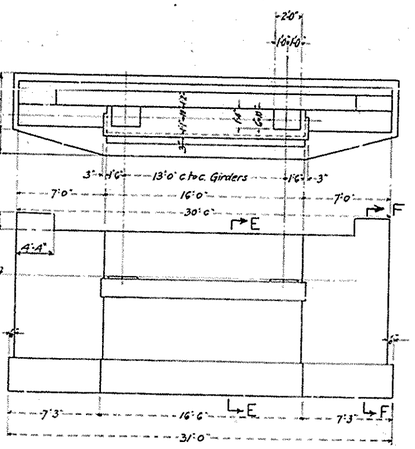


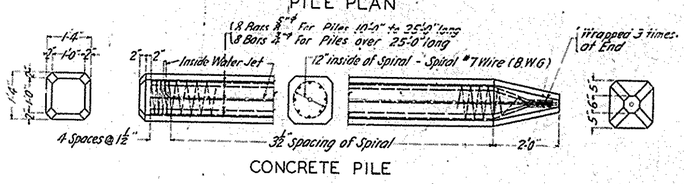
Pier No.	Elev. Top of Pier	A	B	H	L	Pile Spacing C	No. Piles in Footing	Min. Length of Pile	Length Driven
SP1 ①	381.89	18'-3"	34'-7"	52'-10"	23'-0"	5@4'-0" = 20'-0"	18	40'	50'-0"
SP2	381.38	13'-3"	34'-1"	47'-4"	23'-0"	5@4'-0" = 20'-0"	18	25'	25'-0"
SP3	380.85	14'-3"	33'-7"	47'-10"	21'-0" = 8'-0" wide (Bearing on Rock)		—	—	—
SP4	380.36	0'-0"	0'-0"	16'-10"	19'-6" x 6'-0" wide (Bearing on Rock)		—	—	—
NP1 ①	375.76	33'-9"	28'-6"	62'-3"	— — — — —		— —	— —	— —
NP2	371.64	24'-9"	24'-4"	49'-1"	— — — — —		— —	— —	— —
NP3 ①	367.52	19'-3"	20'-3"	39'-6"	23'-0"	5@4'-0" = 20'-0"	18	25'	50'-0"
NP4	363.41	17'-10"	16'-1"	33'-11"	23'-0"	5@4'-0" = 20'-0"	17	25'	50'-0"
NP5 ①	359.29	10'-9"	12'-0"	22'-9"	30'-0"	6@4'-6" = 27'-0"	21	25'	40'-0"

① Indicates that one pile shall be driven as a test pile.

Final Est. shows 261.73
See also Sheet 51-51







Sht. #8
Dr. # 7646

APPROVED
Russ Mizer
F. M. Masters

Class "D" concrete in piles
all other concrete Class "A"

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND, KY.

SUBSTRUCTURE – APPROACHES

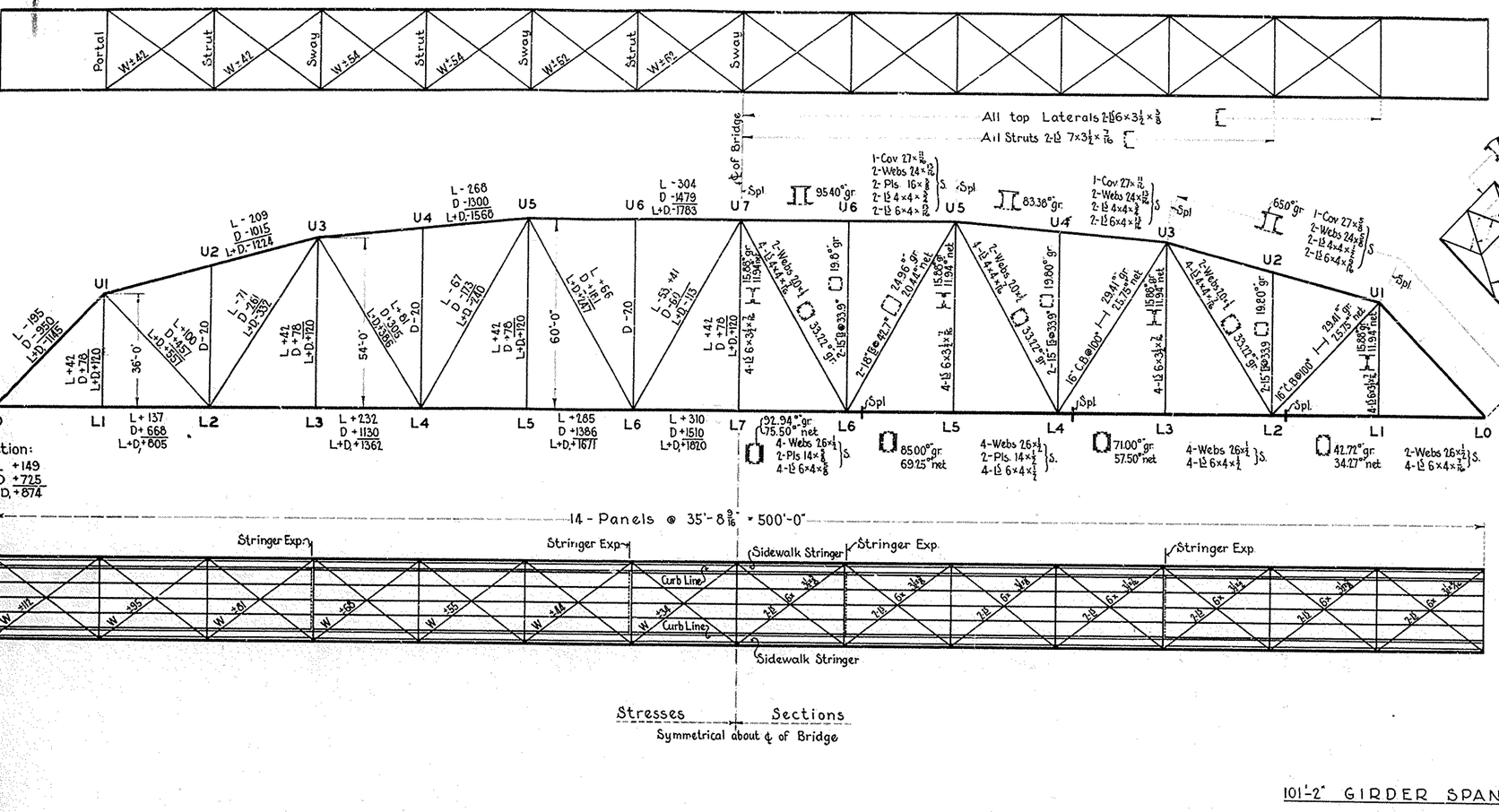
SCALE IN FEET

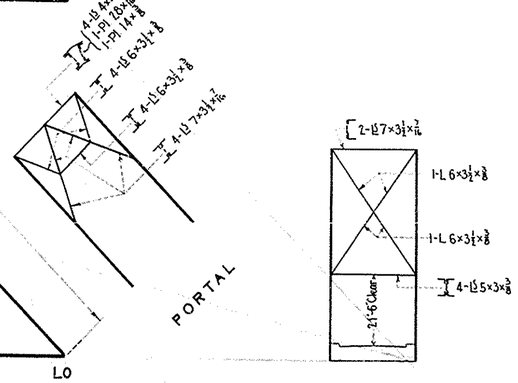
MAY 1929

DRAWING NO. 4
CONTRACT NO. 1

MODJESKI AND MASTERS
ENGINEERS

B.J.D.





SWAY BRACING

45'-11" GIRDERS

Dead Loads

Future Paving	300
Conc. R'd'y & Curbs	2350
Reinf. Steel	150
Railings, Posts & Curb ⌊⌊	110
Floor Steel	160
Girders	400
Total pr. lin. foot	3470

	Reaction	Moment
L	50	501
D	40	444
L+D	90	945

30" C.B. @ 200"

34'-6" GIRDERS

Dead Loads

Future Paving	300
Conc. R'd'y & Curbs	2350
Reinf. Steel	150
Railings, Posts & Curb ⌊⌊	110
Floor Steel	160
Girders	280
Total pr. lin. foot	3350

	Reaction	Moment
L	47	367
D	29	252
L+D	76	619

30" C.B @ 138"

101'-2" GIRDER SPANS

Dead Loads

Future Paving	300
Conc. R'd'y & Curbs	2350
Reinf. Steel	150
Railings, Posts & Curb ⌊⌊	110
Floor Steel	150
Girders	750
Cross Frames	40
Total pr. lin. foot	3850

	Reaction	Shear	Moment
L	58	54	1438
D	100	93	2462
L+D	158	147	3900

Web 88×7/16
4-⌊⌊ 8×6×½
2-Covs. 18×7/16 × — Full Length Top, 72' Bottom
2-Covs 18×7/16 × 52'

CROSS BEAMS, 6' CENTERS

Moments	at Girder	at center
L	49	73
D	14	3
L+D	63	76

16" C.B @ 43"

FLOORBEAMS

Shear	Moment
42	326
60	434
102	760

Web 54×⅜
4-⌊⌊ 5×3½×½

ROADWAY STRINGERS

Shear	Moment
20	161
11	101
31	262

24" C.B. @ 76"

SIDEWALK STRINGERS

6" [@ 10.5"

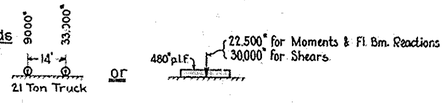
ASSUMED LOADINGS

D - Dead Loads - 500' Truss Span

Future Paving	300
Conc. R'd'y. & Curbs	2325
Reinf. Steel	150
Railings	100
Floor Steel	525
Bracing	330
Trusses	2,070
Total pr. lin. foot of Bridge	5800

L - Live Loads

Class B



Above loads are for one lane of traffic.

Floor beams and Trusses designed for 2.11 Lanes of Traffic evenly distributed between the two Trusses.

Impact:- included in Live Load Allowances.

Wind - 30# pr. sq. ft. on 1½ times projected elevation of Structure, plus 200# pr. lin. ft. of bridge.

In all cases where CB or other special sections are shown, the contractor may substitute, subject to the Engineers approval, sections of equal weight and strength.

NOTES:

Stresses in thousands of pounds.
Moments in thousands of footpounds.
+ denotes Tension.
- denotes Compression.
S - indicates Silicon Steel.
I - indicates Field Splice.
Material:- Medium Carbon Steel except as noted.

Revised January 15, 1930 { Weight per lin. ft. Concrete Roadway and Curbs
" " " " Future Paving.

APPROVED
Paul Morgan
F. M. Masters

Sht. # 9
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND, KY.

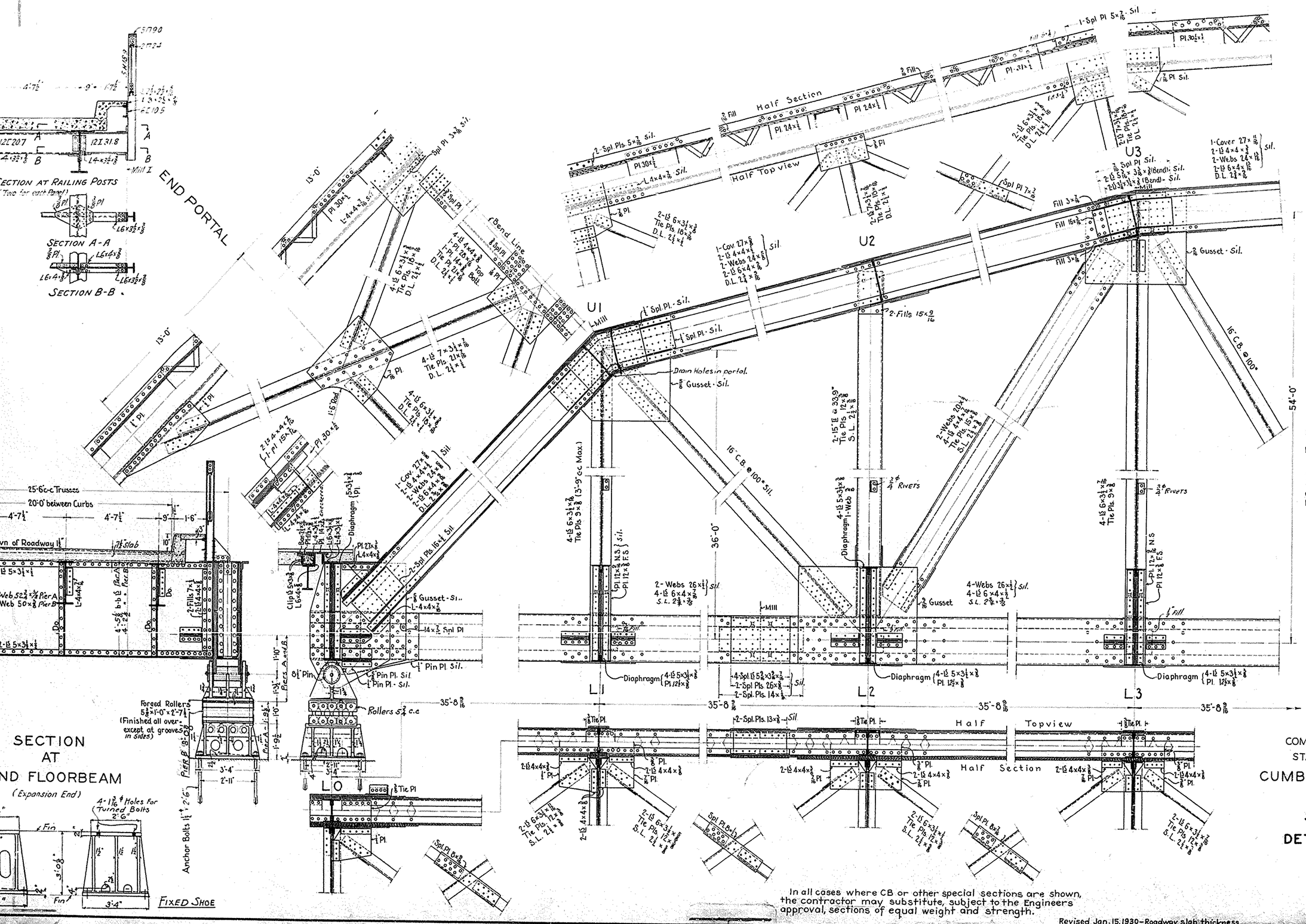
SUPERSTRUCTURE STRESS SHEET

SCALE IN FEET
10 0 10 20 30 40

MAY 1929
DRAWING NO. 3
CONTRACT NO. 2

MODJESKI AND MASTERS
ENGINEERS

T.K.



NOTES.

Material:- Medium Carbon Steel except Castings, Rollers & where noted Silicon Steel (Sil)
Rivets:- 1 1/4" ϕ in Trusses (Incl Floorbeam Connections)
3/4" ϕ in Floorbeams, Stringers Bracing and in Lacing for Web Members
Railing:- Similar to that of Approach Spans See Drawing No 6
Castings:- Cast Steel annealed
Rollers:- Forged Steel.

APPROVED
Paul Mugnier
F. M. Masters

In all cases where CB or other special sections are shown, the contractor may substitute, subject to the Engineers approval, sections of equal weight and strength.

Revised Jan. 15, 1930 - Roadway slab thickness

Sht. # 10
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND KY.

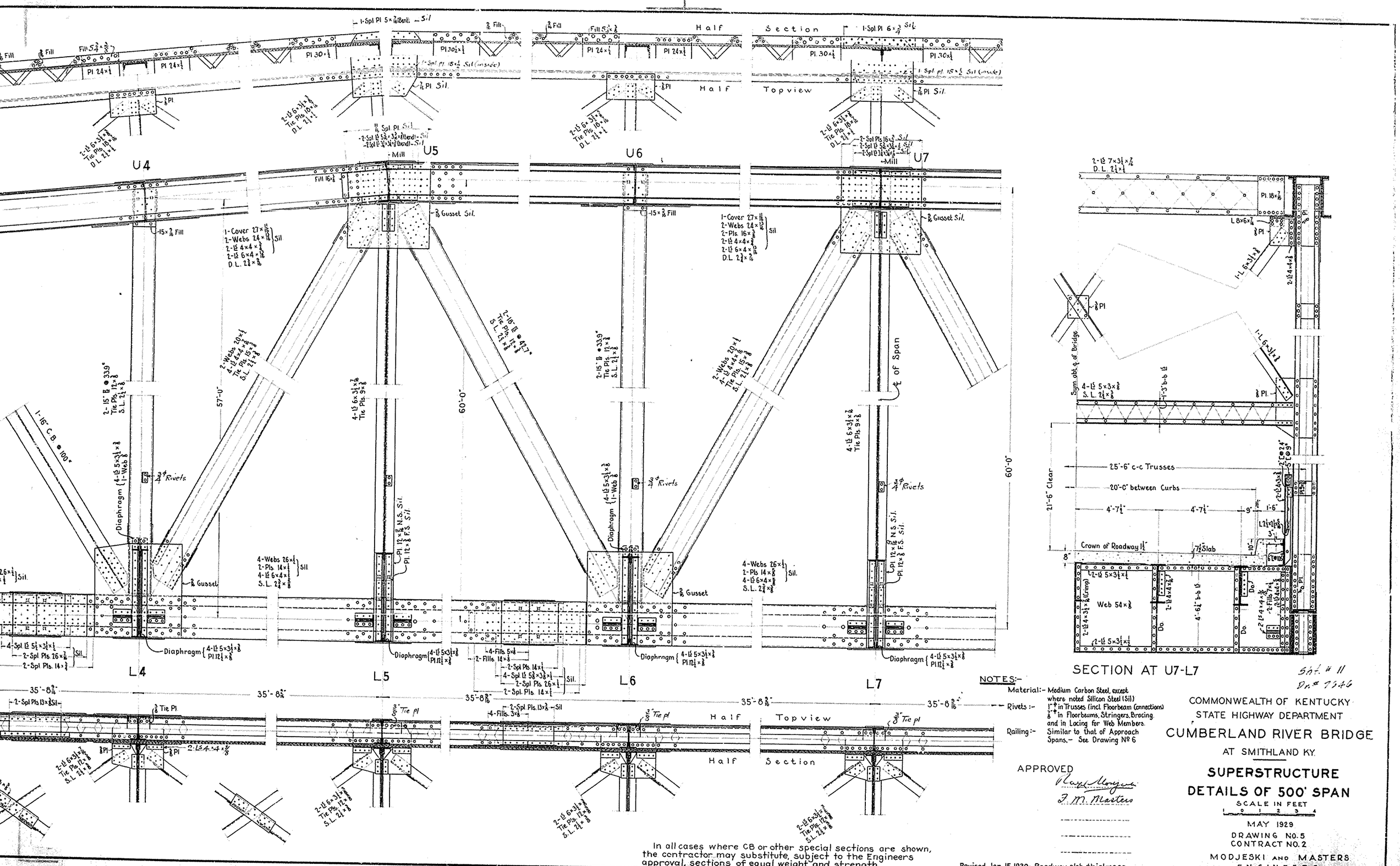
SUPERSTRUCTURE

DETAILS OF 500' SPAN

SCALE IN FEET
1 0 1 2 3 4

MAY 1929
DRAWING NO. 4
CONTRACT NO. 2

MODJESKI AND MASTERS
ENGINEERS



NOTES:-

Material:- Medium Carbon Steel, except where noted Silicon Steel (Sil)

Rivets:- 1 3/4" in Trusses (incl. Floorbeam connections) 3/4" in Floorbeams, Stringers, Bracing and in Lacing for Web Members.

Railing:- Similar to that of Approach Spans.- See Drawing № 6

APPROVED

Lloyd Morgan

F. M. Masters

Sht. # 11
Dr. # 7346

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND KY.

SUPERSTRUCTURE DETAILS OF 500' SPAN

SCALE IN FEET 1 0 1 2 3 4

MAY 1929

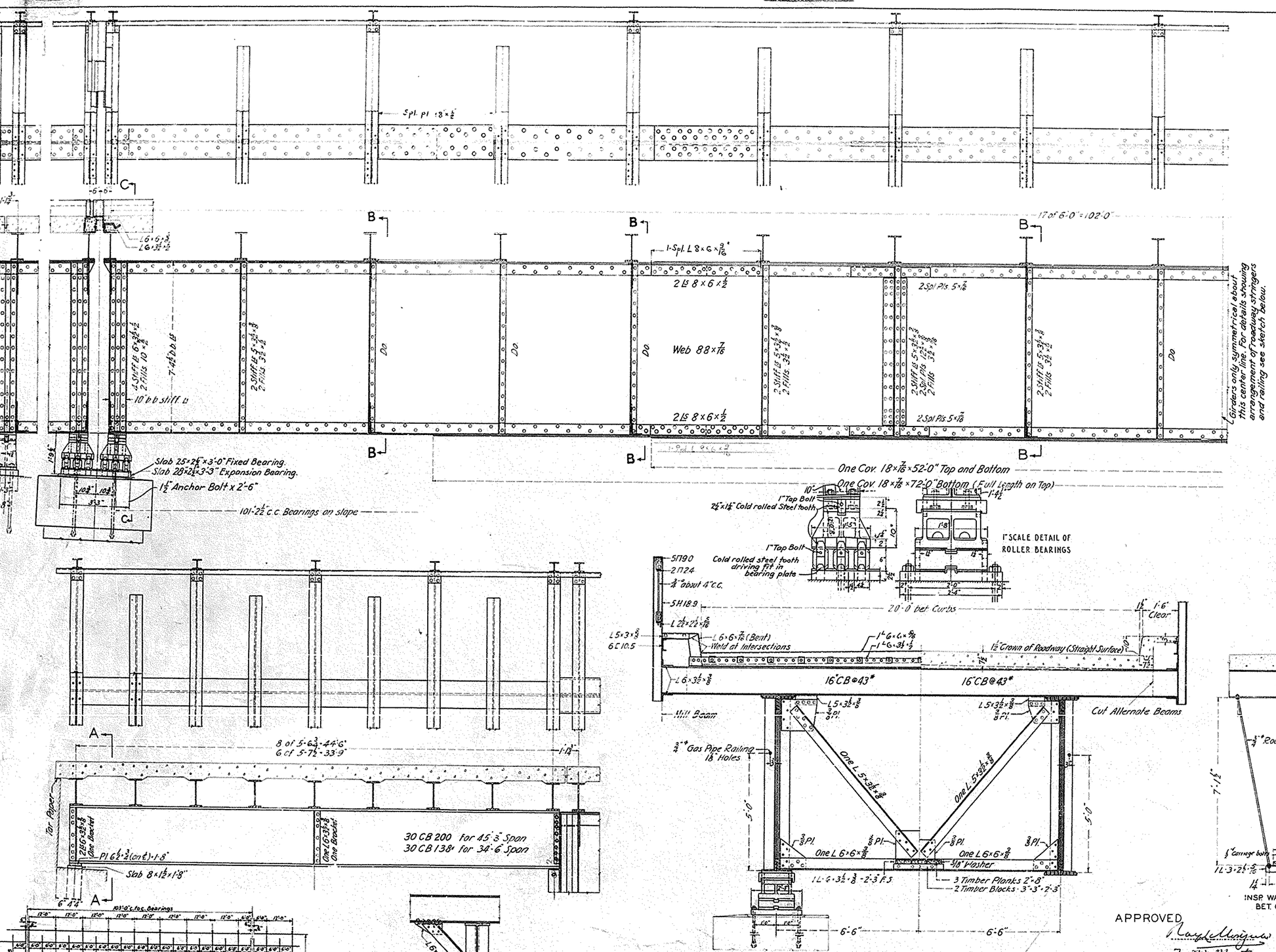
DRAWING NO. 5
CONTRACT NO. 2

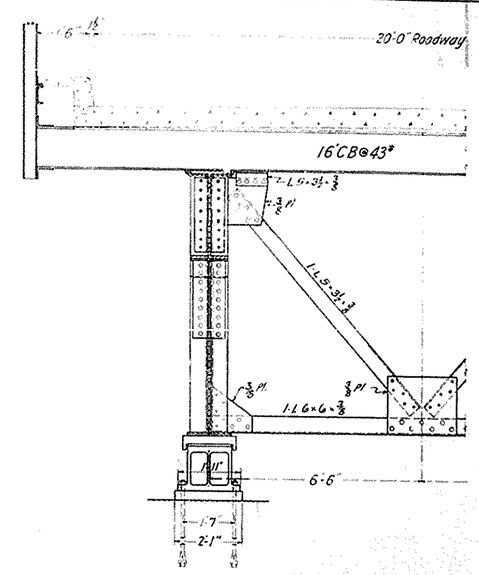
MODJESKI AND MASTERS ENGINEERS

In all cases where CB or other special sections are shown, the contractor may substitute, subject to the Engineers approval, sections of equal weight and strength.

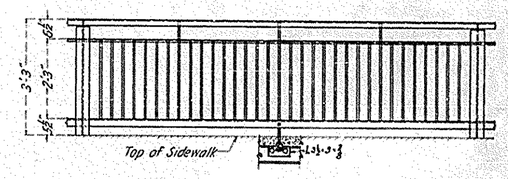
Revised Jan. 15, 1930 - Roadway slab thickness.

JRK



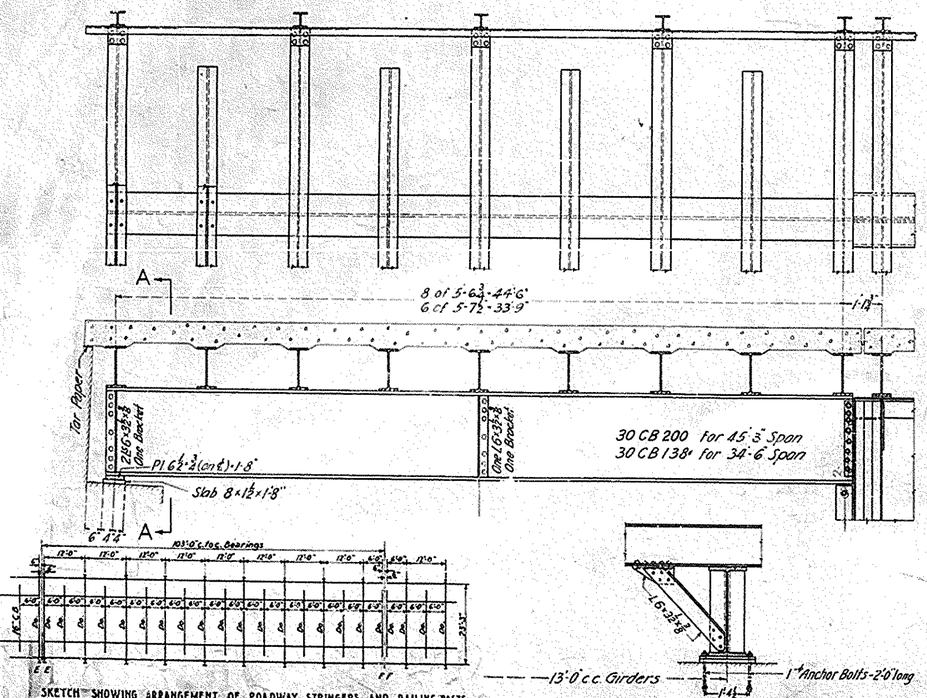


HALF SECTION D-D



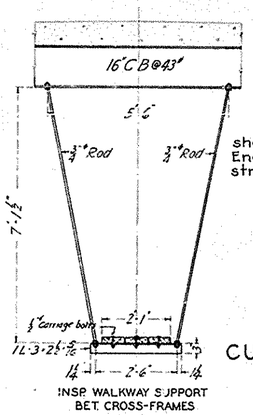
DETAIL OF RAILING

HALF SECTION C-C HALF SECTION B-B



SKETCH SHOWING ARRANGEMENT OF ROADWAY STRINGERS AND RAILING POSTS

SECTION A-A



INSP. WALKWAY SUPPORT BET. CROSS-FRAMES

NOTES -
Material - Medium Carbon Steel except Castings which are cast steel, annealed.
Shop and Field Rivets ⅞".

In all cases where CB or other special sections are shown, the contractor may substitute, subject to the Engineers approval, sections of equal weight and strength.

Sht. # 12
Dr. # 7646

APPROVED
Mark Morgan
F. M. Martin

Revised Jan. 15, 1930 - Roadway slab thickness

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

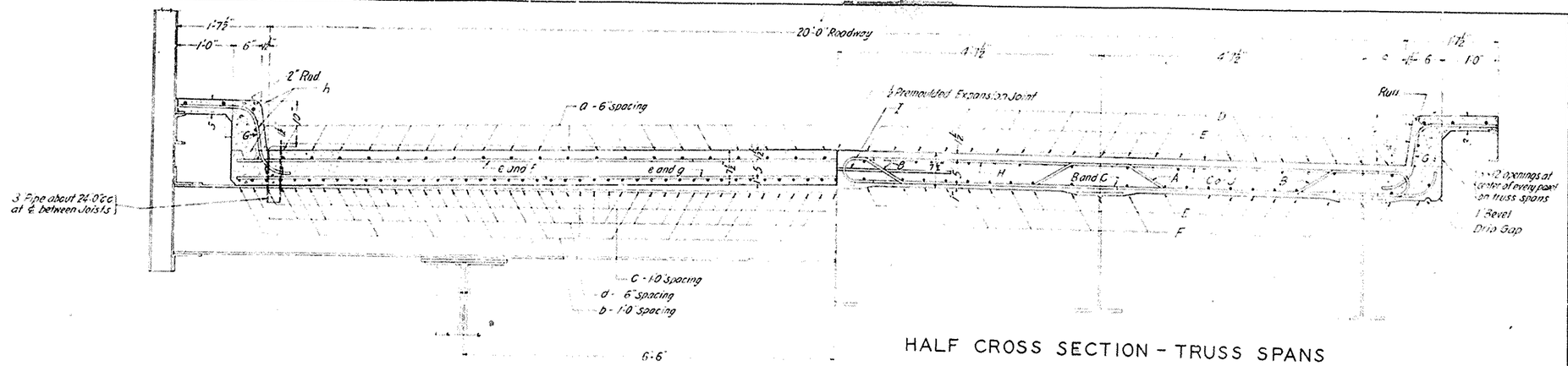
CUMBERLAND RIVER BRIDGE

AT SMITHLAND, KY.

SUPERSTRUCTURE
TYPICAL DETAILS - APPROACH STEELWORK

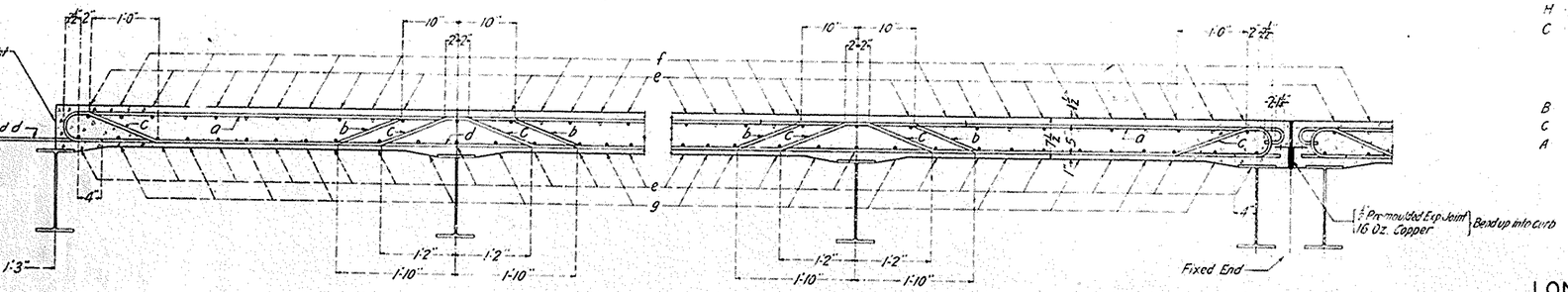
SCALE IN FEET
0 1 2 3 4

MAY 1929
DRAWING NO. 6
CONTRACT NO 2
MODJESKI AND MASTERS
ENGINEERS

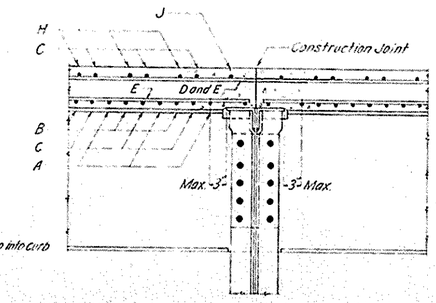


HALF CROSS SECTION - TRUSS SPANS

HALF CROSS SECTION - GIRDER SPANS



LONGITUDINAL SECTION - GIRDER SPANS

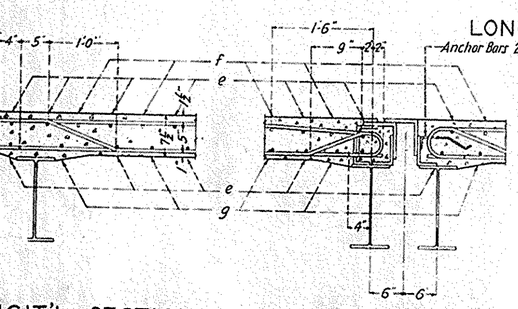


LONGITUDINAL SECTION ON TRUSS SPANS AT FLOOR BEAMS MIDWAY BETWEEN STRINGERS

TRUSS SPAN				
BAR	SIZE	LENGTH	SPACING	OUTSIDE DIMENSIONS
A	½"	11'-6¾"	9" c to c	
B	½"	11'-9½"	9" c to c	
C J	½" ½"	11'-4¾" 11'-3¾"	9" c to c (top & bott)	
D E F	½" ½" ½"	11'-0" 26'-0"	Spacing as shown top over floor beam except at expansion joints. Spacing as shown top & bott. Spacing as shown Bot at mid panel	D 11'-0" E Continuous between exp'n joints F 26'-0"
G	½"	2'-9"	1'-0" c to c.	
H	½"	8'-0"	9" c to c	8'-0"
I	¾"	4'-0"	1'-6" c c	4'-0"

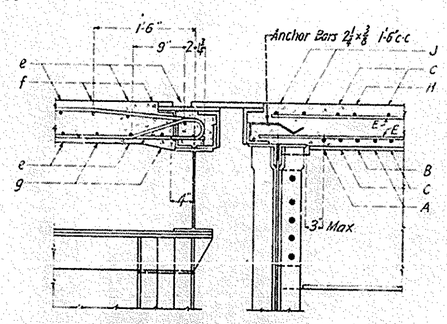
REINFORCING BARS USED IN APPROACH GIRDER SPANS

a ⅝" continuous between slab joints in top of slab. Hooked both ends.
b ⅝" continuous between slab joints. Bent up at joists as shown and projecting 1'-3" into adjacent slab at construction joint.
c ½" continuous between slab joints. Bent up at joists as shown.
d ½" continuous between slab joints and projecting 1'-3" into adjacent slab at construction joint. Bottom of slab Straight.
e ½" 21'-0" top and bottom. Spaced about 1'-0" c to c.
f ½" 8'-0" top over girders. Spaced about 1'-0" c to c.
g ½" 10'-0" bottom between girders. Spaced about 1'-0" c to c.
h ½" continuous between slab joints.
G ½" Same as "G" of Truss Spans.

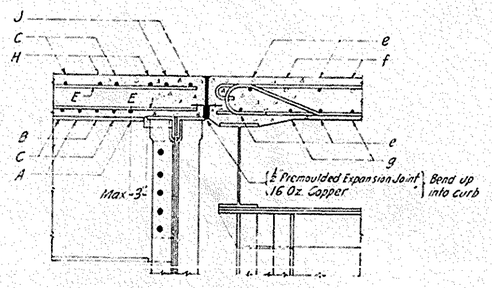


LONGIT'L. SECTION GIRDER SPANS AT ABUTMENTS

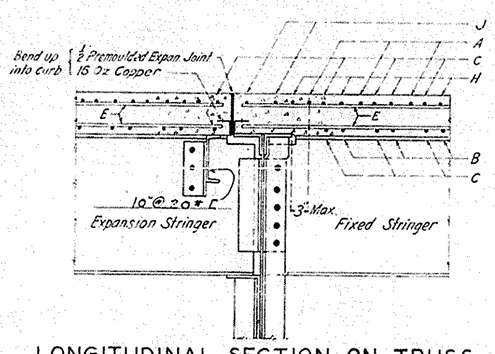
LONGIT'L. SECTION GIRDER SPANS AT EXPANSION END



LONGITUDINAL SECTION ON TRUSS AND GIRDER SPANS AT EXPANSION END

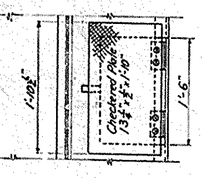


LONGITUDINAL SECTION ON TRUSS AND GIRDER SPANS AT FIXED END

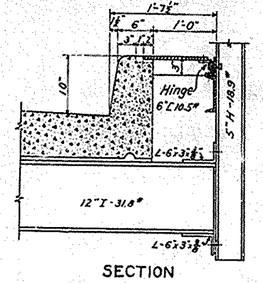


LONGITUDINAL SECTION ON TRUSS SPANS AT FLOOR BEAMS OVER EXPANSION AND FIXED STRINGERS

Notes:
Class "F" concrete



PLAN



SECTION

DETAILS OF MANHOLE

Provide opening and cover about every 200 ft. over entire length of Bridge.

Sht. # 13
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND, KY.

SUPERSTRUCTURE DETAILS OF ROADWAY

SCALE IN FEET

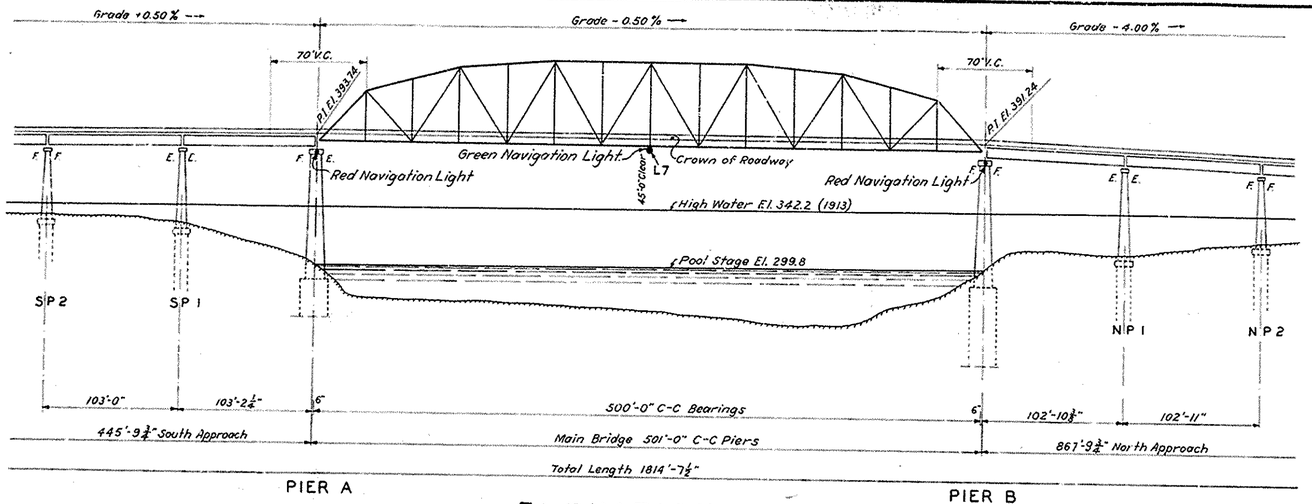
MAY 1929

DRAWING NO. 7
CONTRACT NO. 2

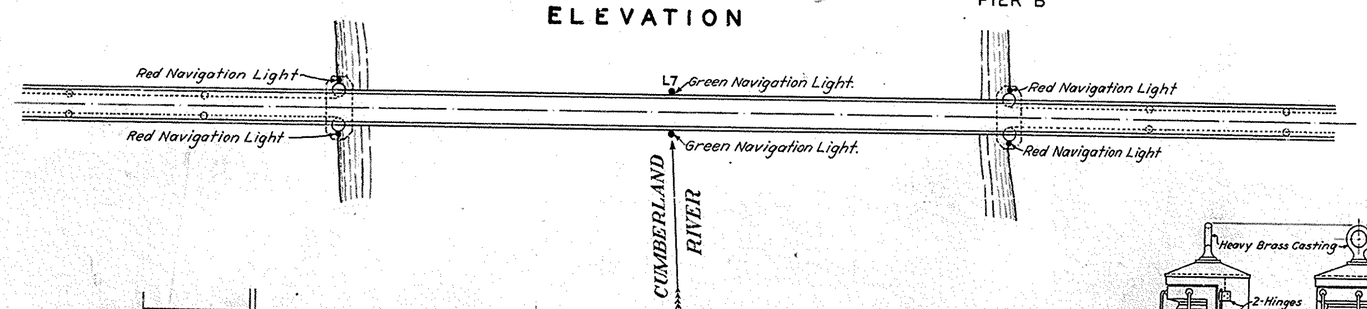
MODJESKI AND MASTERS
ENGINEERS

APPROVED
Rudolph Modjeski
F. M. Masters

Revised Jan. 15, 1930 - Roadway slab thickness

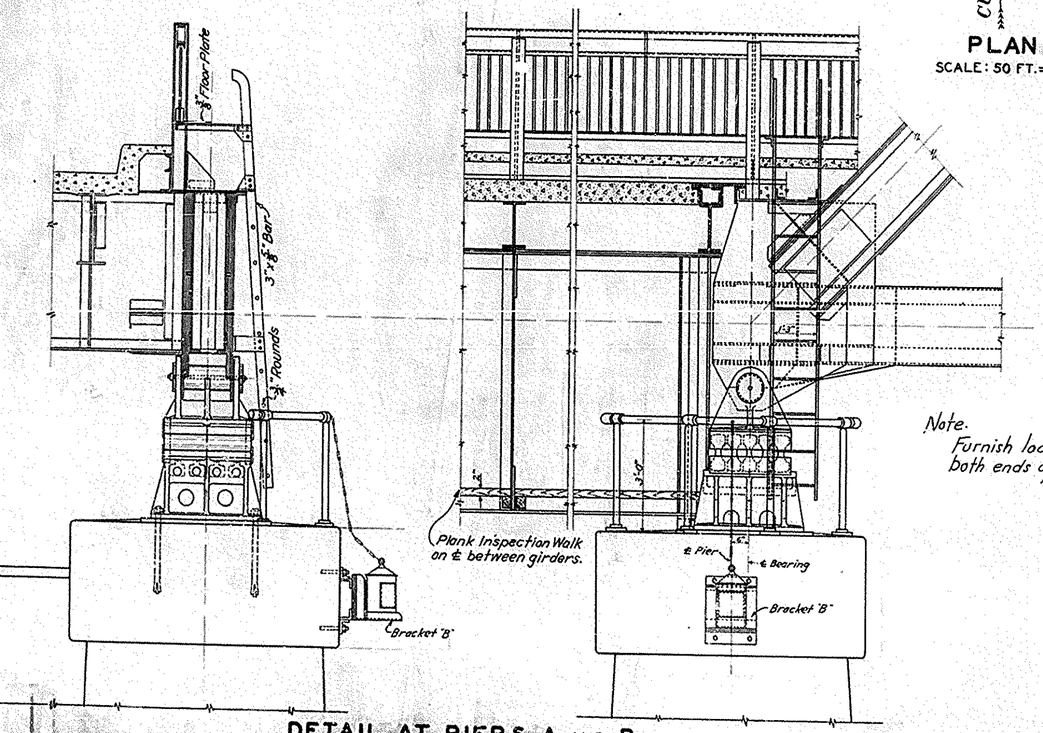


ELEVATION



PLAN

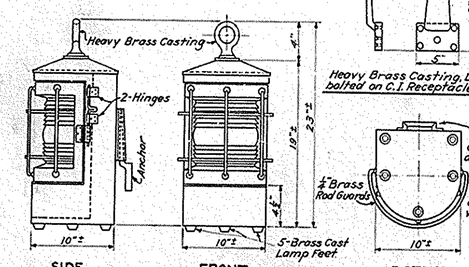
SCALE: 50 FT. = 1 IN.



DETAIL AT PIERS A AND B

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

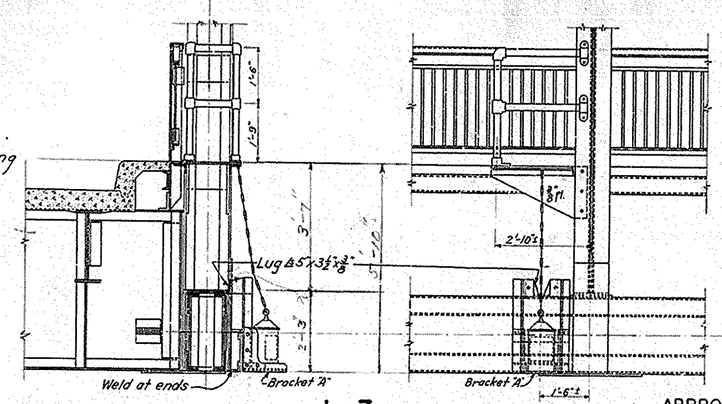
Note.
Furnish ladders and Pier Railing both ends of Piers A and B.



DETAIL OF NAVIGATION LIGHT

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

PLAN OF PLATFORM AND RAILING



L-7

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

REQUIREMENTS FOR NAVIGATION LIGHT FIXTURE

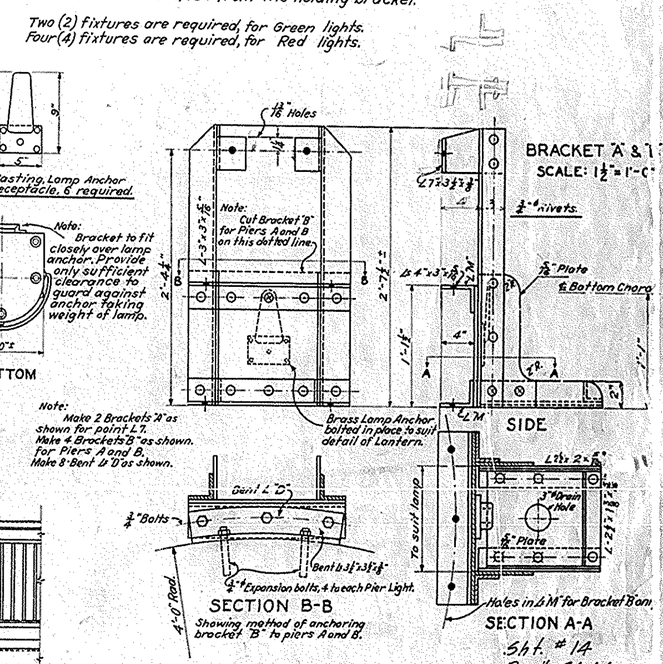
The fixture shall be made of heavy copper not less than Number 8, B.W.G. with hinged front door securely latched and fastened. The fixtures are to be water tight and dust proof. Fixtures to be of a type suitable for oil burning.

Eight inch half section fresnel type, or equal lenses are required to show 180° to the horizon. Lens to be green for the channel lights and ruby for the pier lights.

Reflectors are to be provided for all lamps.

A strong galvanized metal chain shall be firmly fastened to a heavy cast brass ring at top of fixture as shown, on the drawing, in order that fixture can be lifted from the holding bracket.

Two (2) fixtures are required, for Green lights.
Four (4) fixtures are required, for Red lights.



Sht. # 14
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND, KY.

NAVIGATION LIGHTS

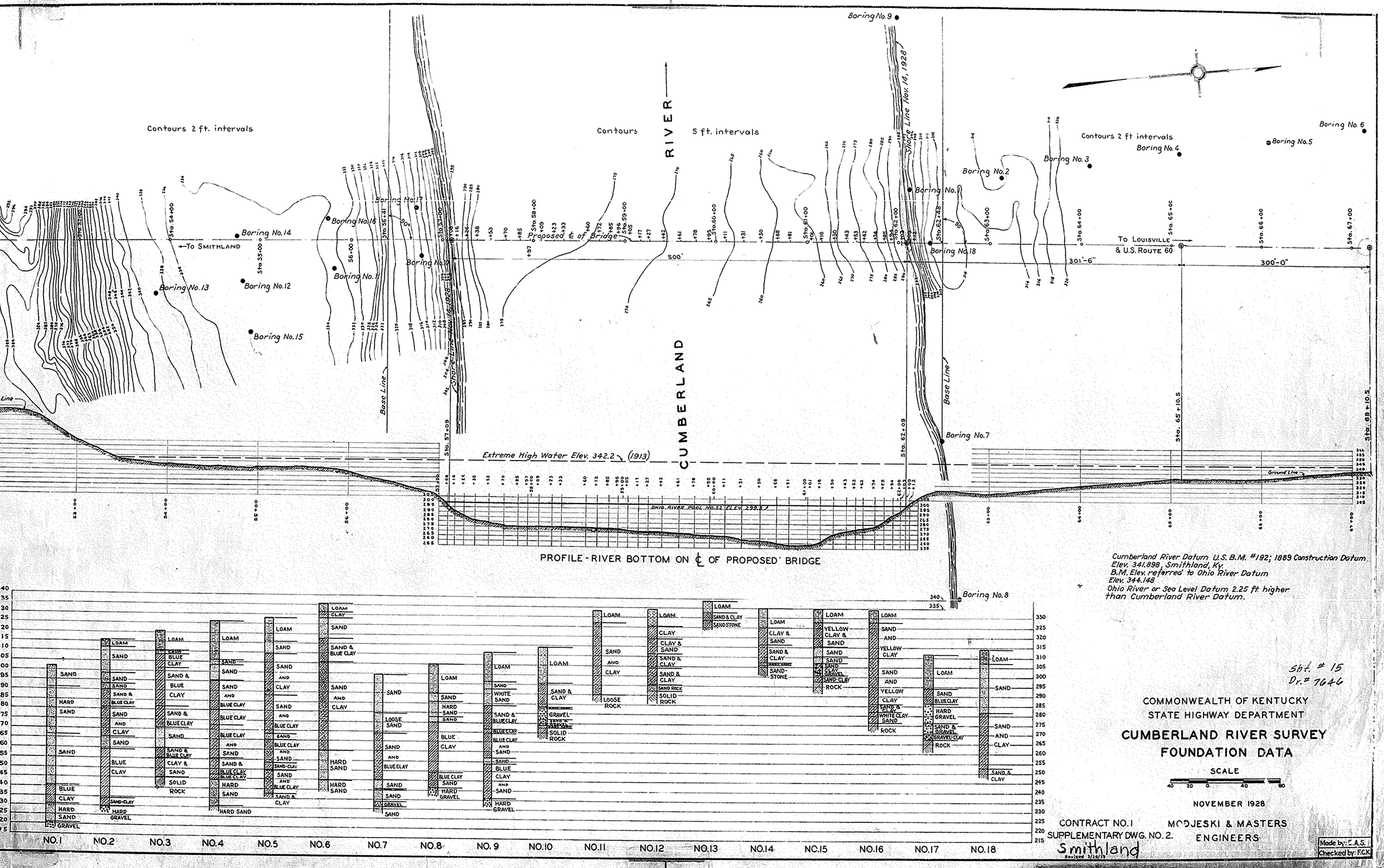
SCALE: AS NOTED

DECEMBER 1929
DRAWING NO. 8
CONTRACT NO. 2
MODJESKI AND MASTERS
ENGINEERS

APPROVED:
Raymond Moyer
F. M. Masters

Revised Jan. 15, 1930 - Crown of Roadway raised ¼"

Made by E.A.S.
Chkd. by F.M.G.



Cumberland River Datum U.S.B.M. #192; 1889 Construction Datum
Elev. 341.898, Smithland, Ky.
B.M. Elev. referred to Ohio River Datum
Elev. 344.148
Ohio River or Sea Level Datum 2.25 ft. higher than Cumberland River Datum.

Sht. # 15
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER SURVEY FOUNDATION DATA

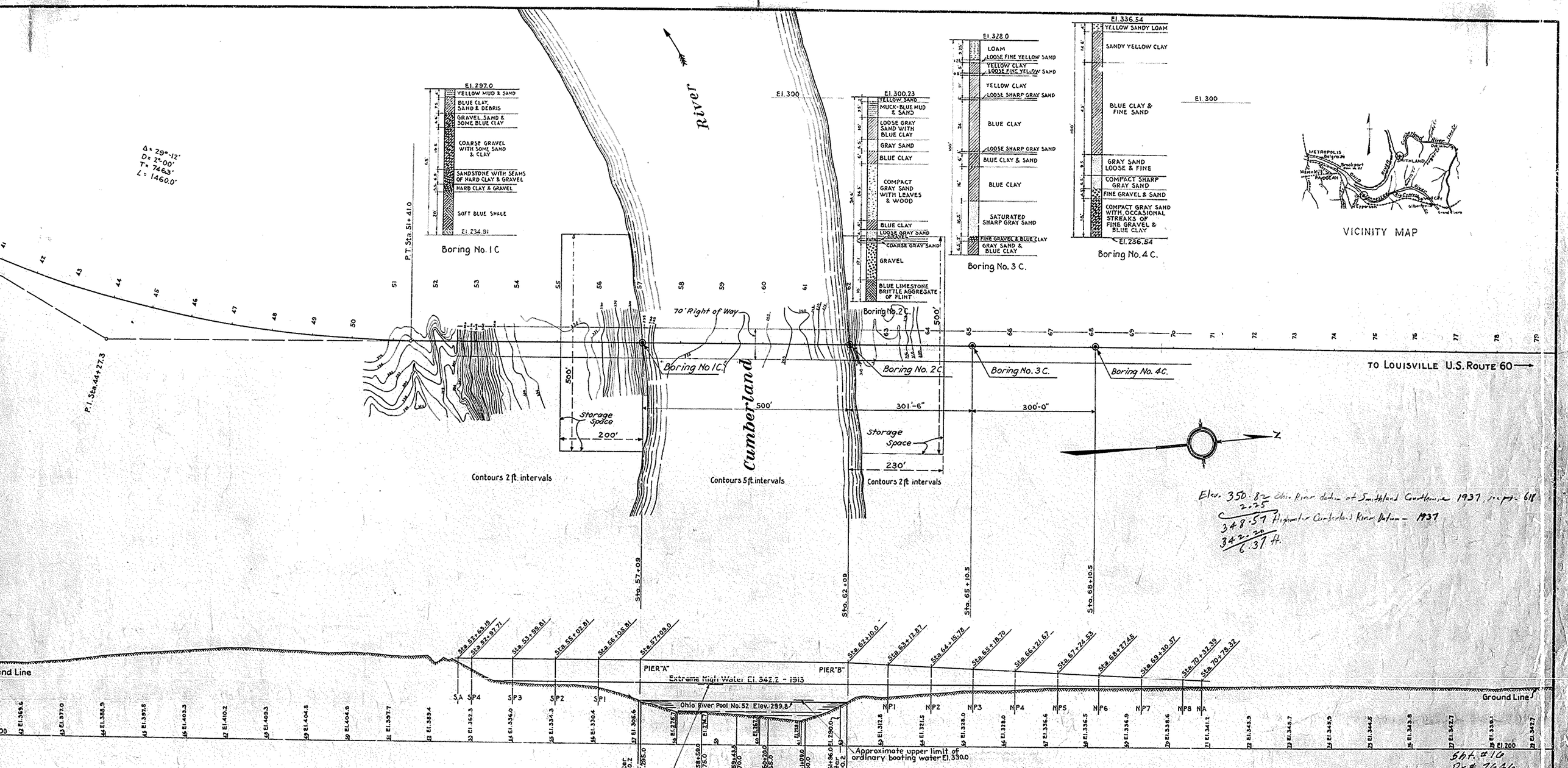
SCALE
40 20 0 40 80

NOVEMBER 1928

CONTRACT NO. 1
SUPPLEMENTARY DWG. NO. 2.
Smithland
Revised 3/26/29

MODJESKI & MASTERS
ENGINEERS

Made by: E.A.S.
Checked by: F.C.K.



Elevations shown are Cumberland River Datum U.S.B.M. No. 192-1889, Construction Datum El. 341.838, Smithland, Ky. B.M. elevation referred to Ohio River Datum, or M.S.L. El. 344.148.
To convert from Cumberland River Elevations to Ohio River Elevations or M.S.L. add 2.25 feet.

Sht. #10
Dr. # 7646

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER SURVEY CONTOUR MAP

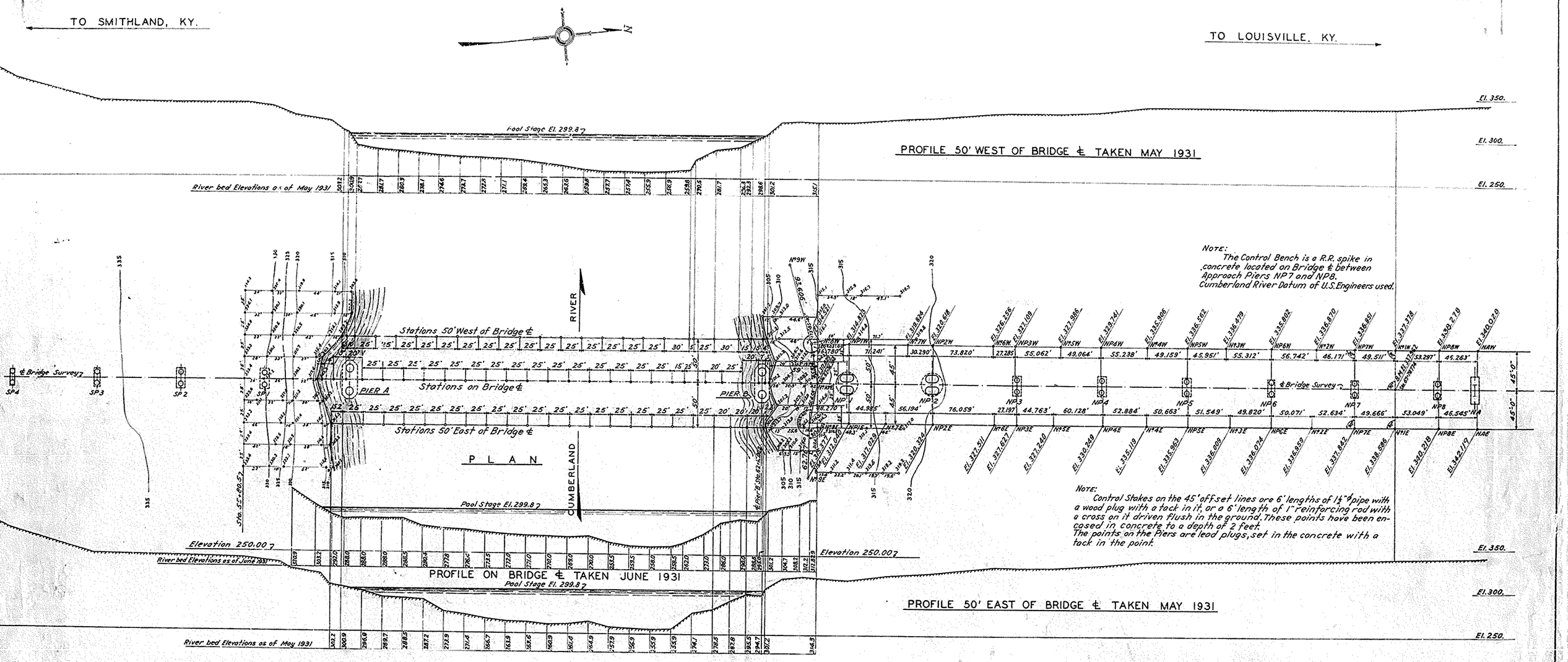
SCALE
100 0 100 200

NOVEMBER 1928

MODJESKI & MASTERS
ENGINEERS

CONTRACT NO. 1.
SUPPLEMENTARY DWG. NO. 1.
Smithland

Made by G.M.
Chk. by F.K.
Revised 3/26/29



Sht. #17
Dr. # 7646

SCHEDULE OF PILES AS DRIVEN			
	NO. OF PILES	LENGTH	ELEV. BOTTOM
NP 3	18	50'	272.7
NP 4	17	50'	274.0
NP 5	21	40'	289.0
NP 6	12	40'	291.1
NP 7	12	40'	292.1
NP 8	10	25'	307.6
NA	15	25'	310.1
SP 1	18	50'	273.4
SP 2	18	25'	303.4

LEGEND
- Profile on ℄ of Bridge (1928 Survey)
- Profile on ℄ of Bridge (1931 Survey)
- Profile 50' East of Bridge ℄ (1931 Survey)
- Profile 50' West of Bridge ℄ (1931 Survey)

BENCH-MARK REFERENCE DATA

All elevations are referenced to PBM-192 which is on the left bank of the Cumberland River at Smithland, Ky., B.M. is a nick in the center of a copper bolt leaded into C.B. Davis store at corner of Commet and Water Streets and on Commet St. side near end of building. Bolt is one foot from Southeast corner and 4.8 feet above ground. Elevation 341.898 (1889) datum. On this basis, the low water of Ohio River pool 52 is Elevation 299.8 the high water is Elevation 342.2 and steel clearance at center of 500' span is Elevation 387.2.

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT

CUMBERLAND RIVER BRIDGE

AT SMITHLAND, KY.

PLAN AND PROFILES SHOWING RIVER BOTTOM AND PIER LOCATION DATA AS OF MAY 1931

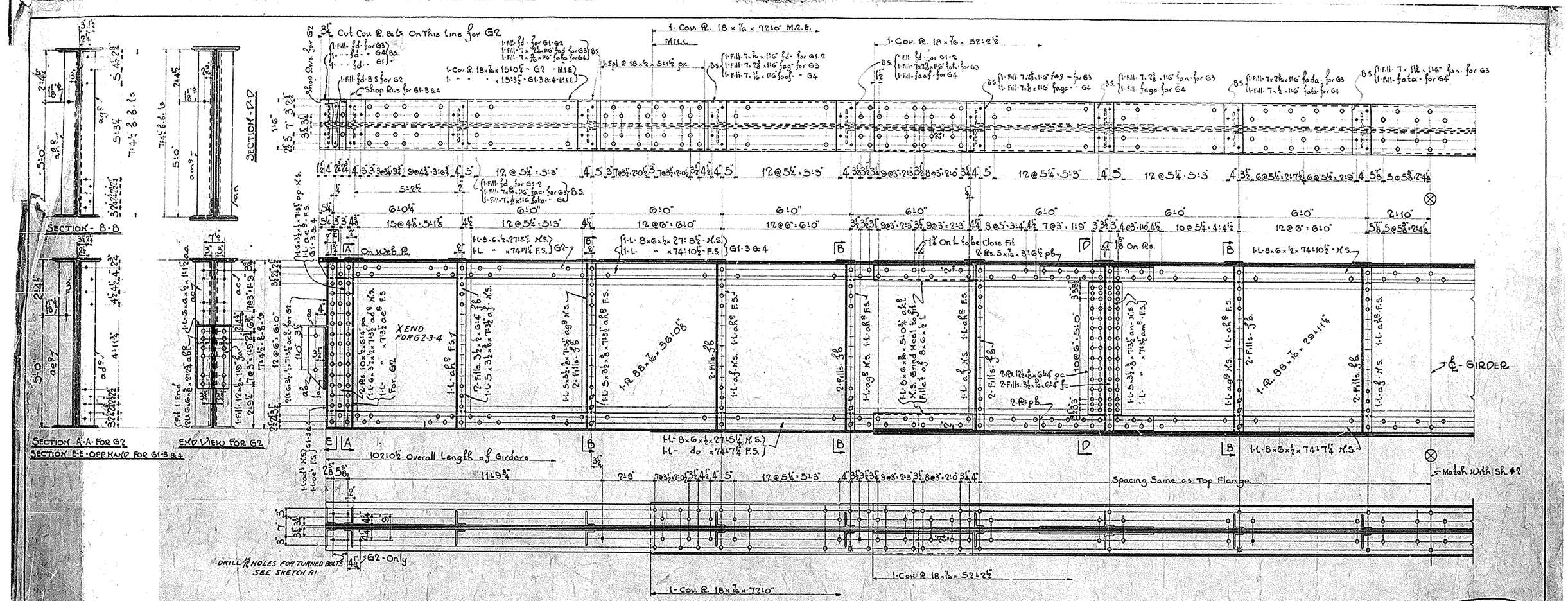
SCALE IN FEET
50 25 0 50 100 150

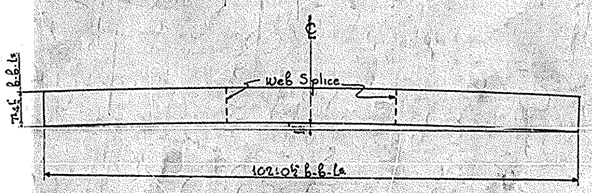
JUNE 1931

MODJESKI AND MASTERS
ENGINEERS

Revised July 27, 1931

SK-S1





NOTE TO SHOP:-
Camber Girders as shown above.
To be taken care of when reaming in shop

MAKE 8 GIRDERS	AS SHOWN	MARK	G1[illegible]
" 2	"	"	G2[illegible]
" 8	OPP. HAND	"	G1[illegible]
" 2	"	"	G2[illegible]
" ONE	AS SHOWN		G3[illegible]
" ONE	"	"	G4[illegible]
" ONE	OPP. HAND		G3[illegible]
" ONE	"	"	G4[illegible]

NOTE TO SHOP:-
All holes subpunched 15/16" and reamed to 15/16" after Girder is completely assembled in Shop. See Camber Diagram.

All Stiffeners to be Milled to Bear.
Loose fills or Top Flange over 1/8" may be Built up.

Cross Beam Connections in Top Flange of Girders to be reamed to a hardened steel Template not less than 1" in thickness, this Template to be sent to Nashville Plant for use in reaming holes in Cross Beams.

USE GREEN CARDS

SHOP PLANS

NOTE TO SHOP:-
Work with Sheet #2

SHOP PAINT:-
One coat of Red Lead as per Specifications.
Paint all Contact Surfaces. All parts inaccessible after erection to have two Shop Coats

Livingston Co.

Sheet 1 of 34

Drawing No 7646

APPROACH GIRDERS

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

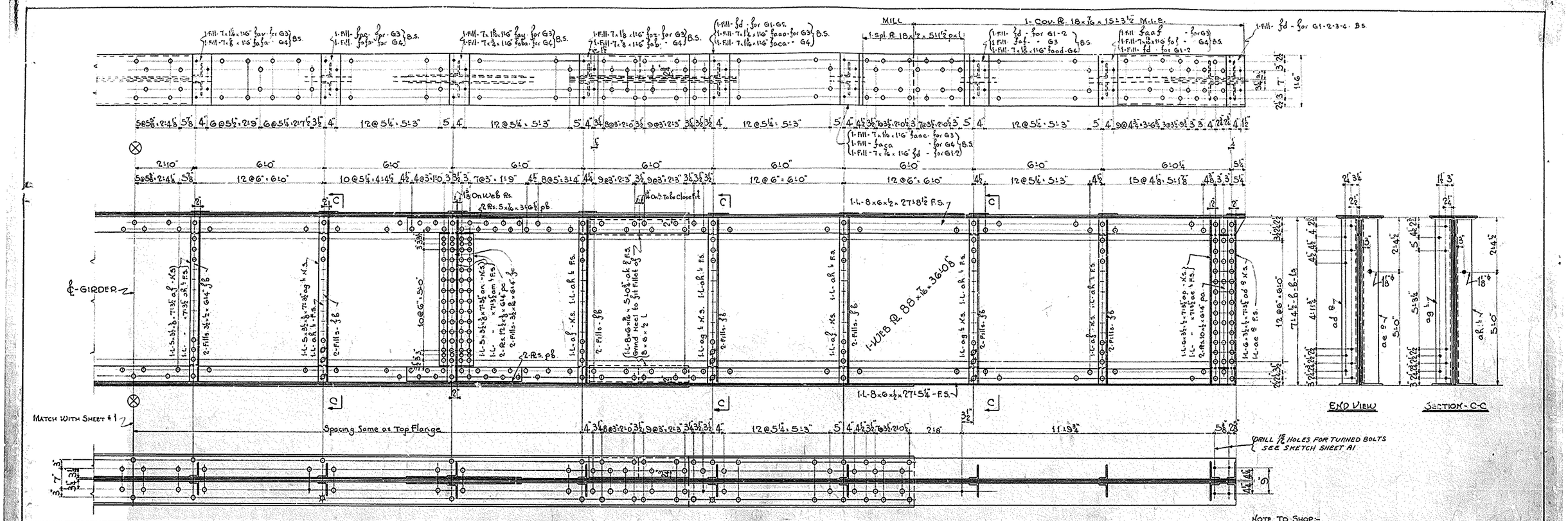
Rivets 7/8" or noted		Drawn by Goss	Date 10-22-30
Holes 15/16" or noted		Traced by do	Date 11-19-30
Field Conn. Riveted		Checked by	Date 12-12-30
Shop Paint See Note		Date Printed	
Field			

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer

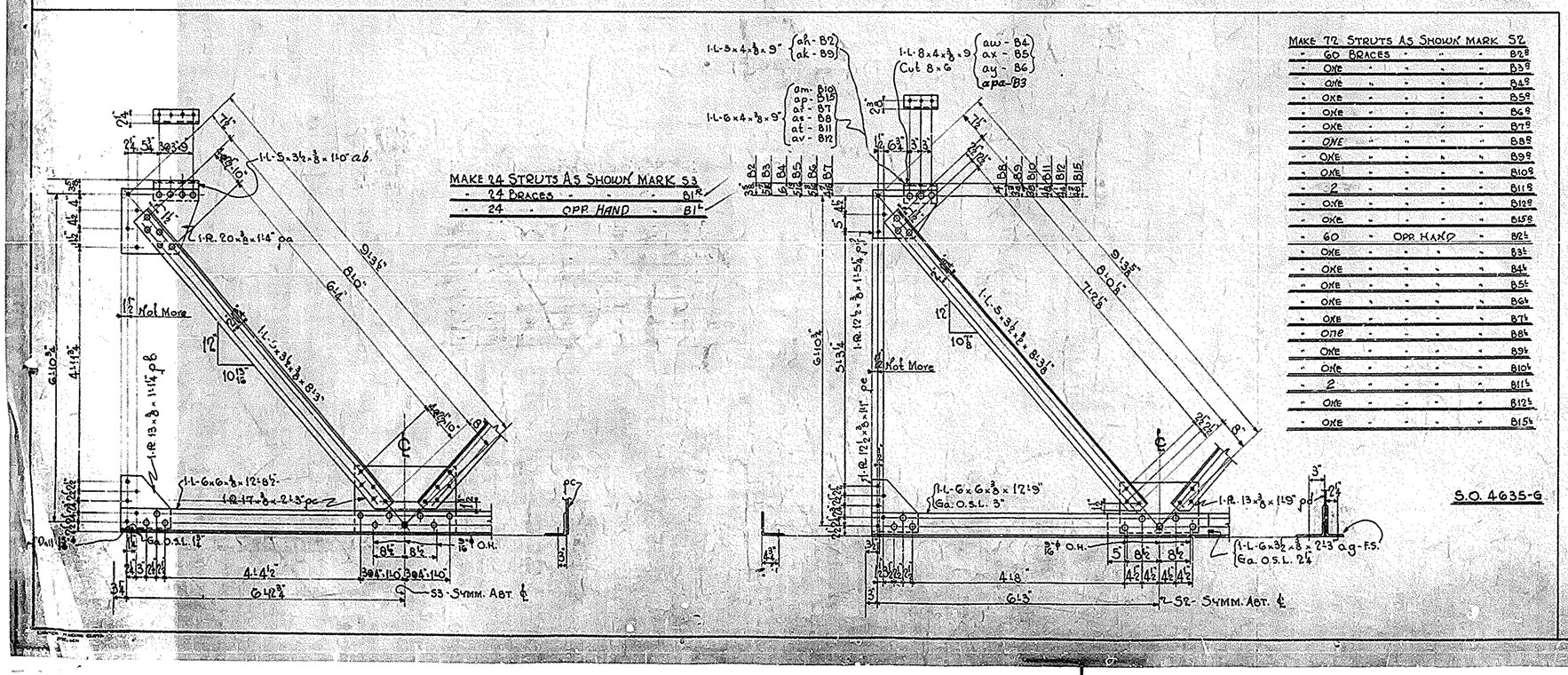
REVISION NOTES
2-11-31
4-2-31

Bills Material No. 1-2
CONT. 4633
S. 04634-G
Drawing 1

BRIDGE



NOTE TO SHOP:-
All Holes Subpunched 11/16" and reamed to 13/16" after Girder is completely assembled in Shop. See Camber Diagram Sheet #1.
No Reaming required for Bracing & Struts.
All Stiffeners to be Milled to bear.
Loose fills on Top Flange over 1/16" may be built up.



MAKE 72 STRUTS AS SHOWN MARK S2		
- 60 BRACES - - -	B2	
- ONE - - - -	B3	
- ONE - - - -	B4	
- ONE - - - -	B5	
- ONE - - - -	B6	
- ONE - - - -	B7	
- ONE - - - -	B8	
- ONE - - - -	B9	
- ONE - - - -	B10	
- 2 - - - -	B11	
- ONE - - - -	B12	
- ONE - - - -	B15	
- 60 - OPP HAND -	B2	
- ONE - - - -	B3	
- ONE - - - -	B4	
- ONE - - - -	B5	
- ONE - - - -	B6	
- ONE - - - -	B7	
- ONE - - - -	B8	
- ONE - - - -	B9	
- ONE - - - -	B10	
- 2 - - - -	B11	
- ONE - - - -	B12	
- ONE - - - -	B15	

NOTE TO SHOP:-
Work with Sheet #1

SHOP PAINT:-
One coat of Red Lead as per Specifications.
Paint all contact surfaces. All parts inaccessible after Erection to have two Shop Coats.

S.O. 4635-G

S.O. 4634-G

Drawing No. 7646

APPROACH GIRDERS

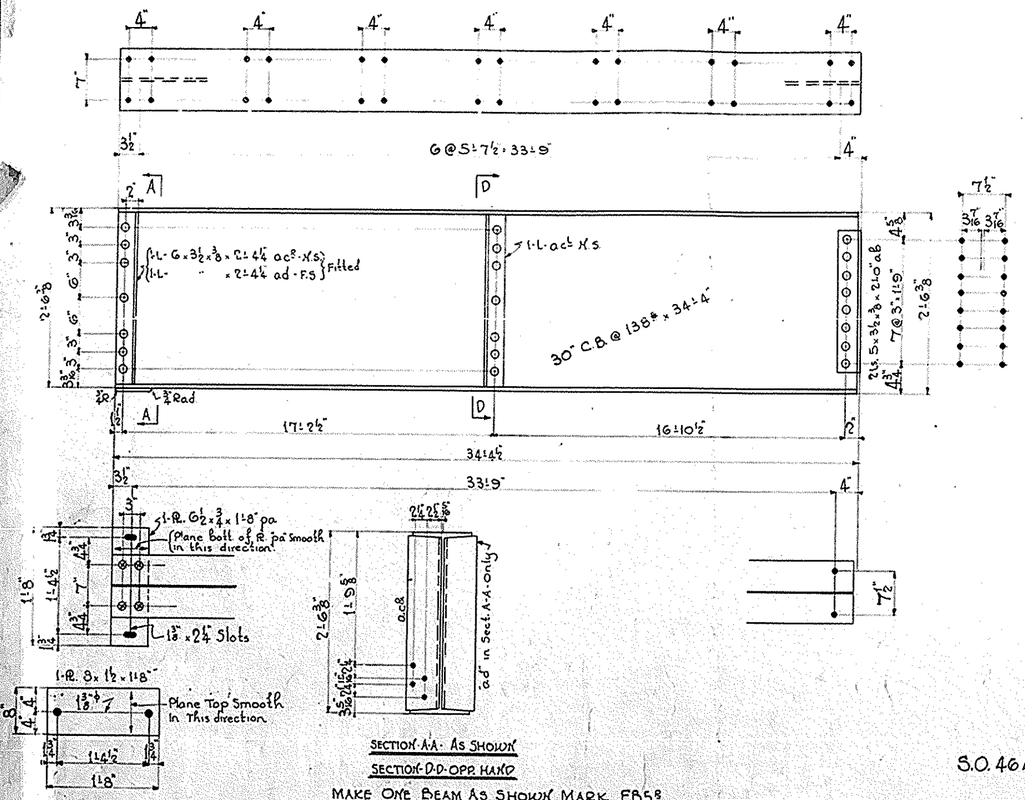
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER

REVISION NOTES
Hold Released for S.O. 4635-G 4-2-31

RIVETS 7/8" OR NOTED	DRAWN BY Goss	DATE 10-23-30	
HOLES 13/16" OR NOTED	TRACED BY do	DATE 17-10-30	
FIELD CONN. Riveted	CHECKED BY	DATE 12-12-30	
SHOP PAINT See Note	DATE PRINTED		
FIELD			
BILL MATERIAL NO. 3-4-5-6	CONT. 4633 S.O. 4634-G 4635-G	DRAWING NO. 2	

BRIDGE



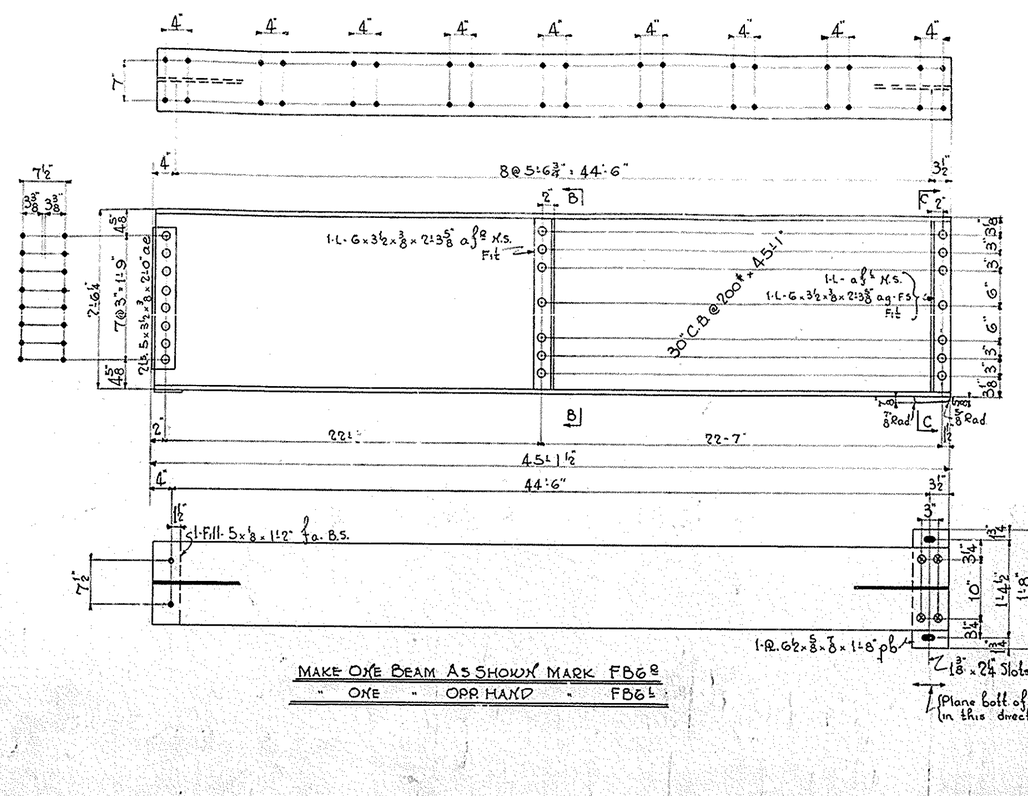
SECTION-A-A- AS SHOWN

SECTION-D-D-OPP. HAND

MAKE ONE BEAM AS SHOWN MARK FB5^R

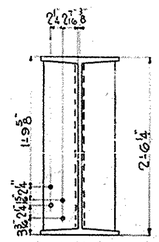
" ONE " OPP. HAND " FB5^L

MAKE 4 PLATES MARK P1



MAKE ONE BEAM AS SHOWN MARK FB6^R

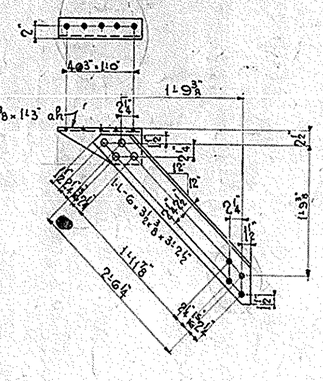
" ONE " OPP. HAND " FB6^L



SECTION-B-B-AS SHOWN

SECTION-CC- OPP. HAND

S.O. 4640-G



MAKE 4 KNEE BRACES AS SHOWN MARK KB1^R

" 4 " " OPP. HAND " KB1^L

S.O. 4642-G

SHOP PAINT:-

One Coat of Red Lead as per Specifications. Paint all contact surfaces. All parts inaccessible after Erection to have two shop coats.

7646

APPROACH SPAN'S

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.

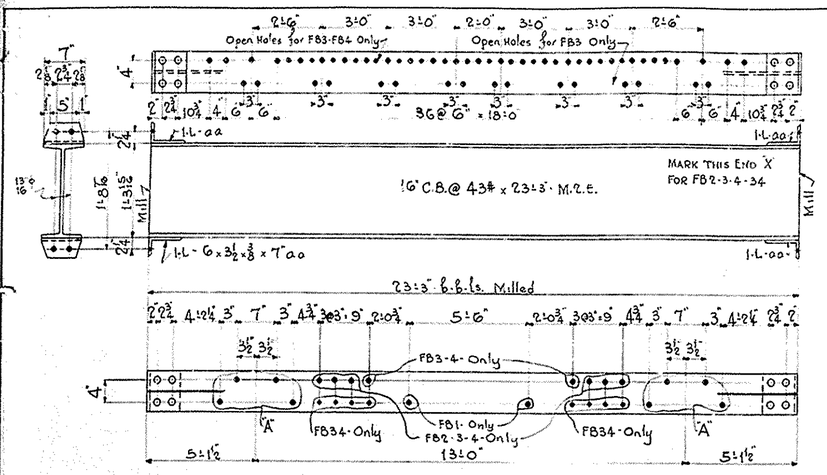
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

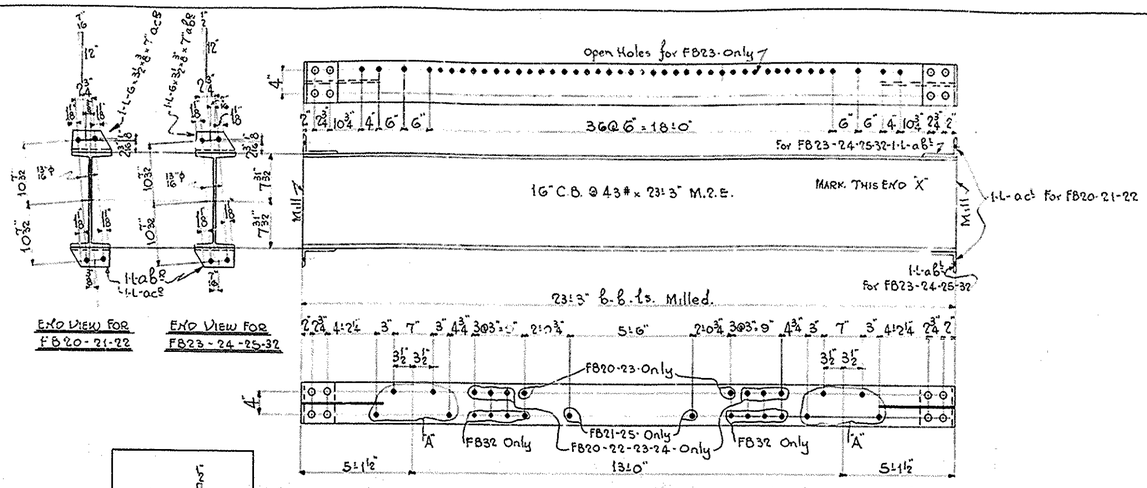
NASHVILLE PLANT
RIVETS 7/8" ϕ OR NOTED
HOLES 13/16" ϕ OR NOTED
FIELD CONN. Riveted
SHOP PAINT See Note
FIELD
DRAWN BY Goss DATE 10-27-30
TRACED BY do DATE 12-10-30
CHECKED BY CM DATE 12-10-30
DATE PRINTED

BILLS MATERIAL NO. 7-8
CONT. 4633
S.O. 4640-G 4642-G
DRAWING NO. 13

BRIDGE

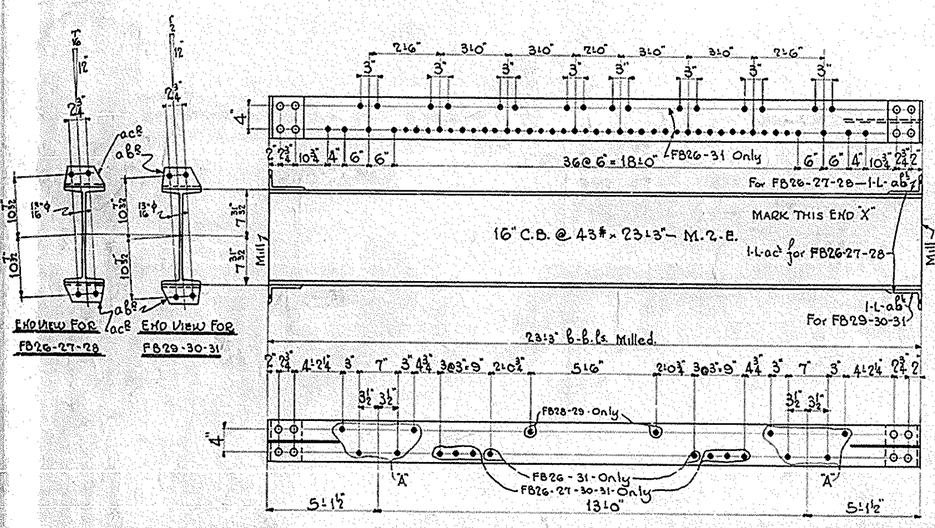


MAKE 20 FLOOR BEAMS AS SHOWN MARK FB1
" 12 " " " " " FB2
" 3 " " " " " FB3
" 2 " " " " " FB4
" ONE " " " " " FB34

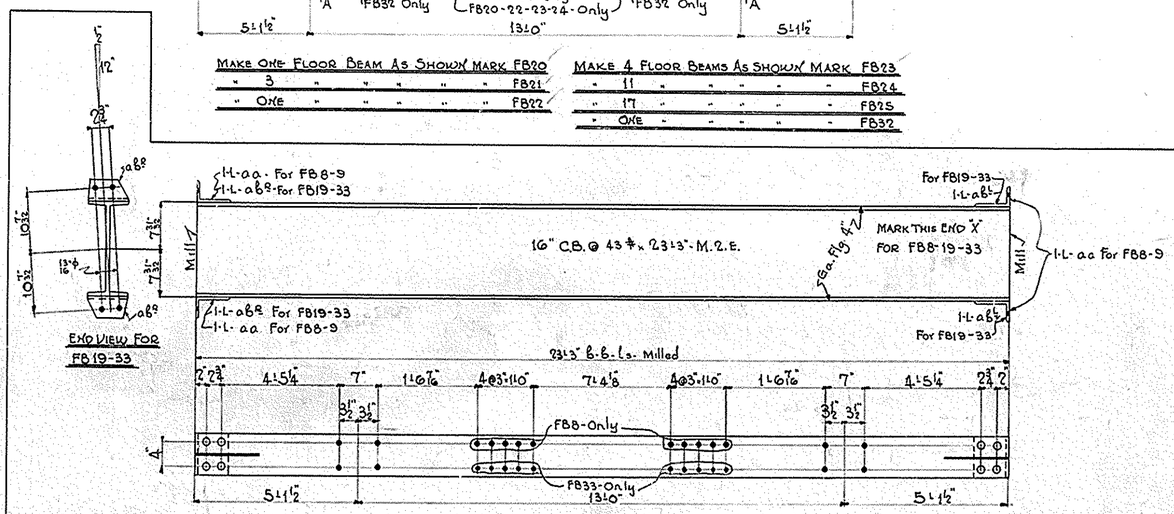


MAKE ONE FLOOR BEAM AS SHOWN MARK FB20
" 3 " " " " " FB21
" ONE " " " " " FB22

MAKE 4 FLOOR BEAMS AS SHOWN MARK FB23
" 11 " " " " " FB24
" 17 " " " " " FB25
" ONE " " " " " FB32



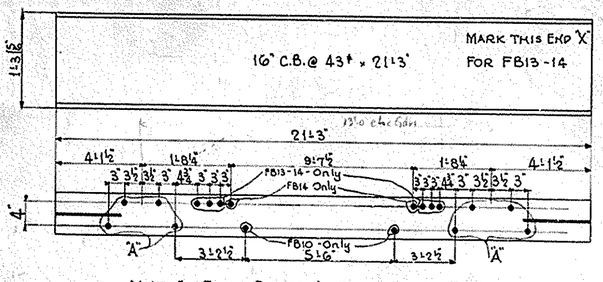
MAKE ONE FLOOR BEAM AS SHOWN MARK FB26
" 2 " " " " " FB27
" 2 " " " " " FB28
" 18 " " " " " FB29
" 10 " " " " " FB30
" 3 " " " " " FB31



MAKE 7 FLOOR BEAMS AS SHOWN MARK FB8
" 3 " " " " " FB9
" 5 " " " " " FB19
" ONE " " " " " FB33

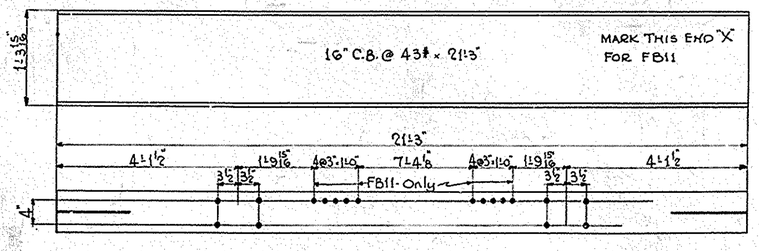
SHOP PAINT:-
One coat of Red Lead as per Specifications. Paint all Contact Surfaces. All parts inaccessible after Erection to have two Shop Coats.

NOTE TO SHOP:- ('A')
Cross Beam connections to Top Flange of Girders to be Subpunched 15/16" and reamed to 15/16" thru a hardened Steel Template, to be furnish'd by Bessemer Plant.



MAKE 60 FLOOR BEAMS AS SHOWN MARK FB10
" 36 " " " " " FB13
" 8 " " " " " FB14

S.O. 4636-G



MAKE 4 FLOOR BEAMS AS SHOWN MARK FB7
" ONE " " " " " FB11

S.O. 4641-G

7646

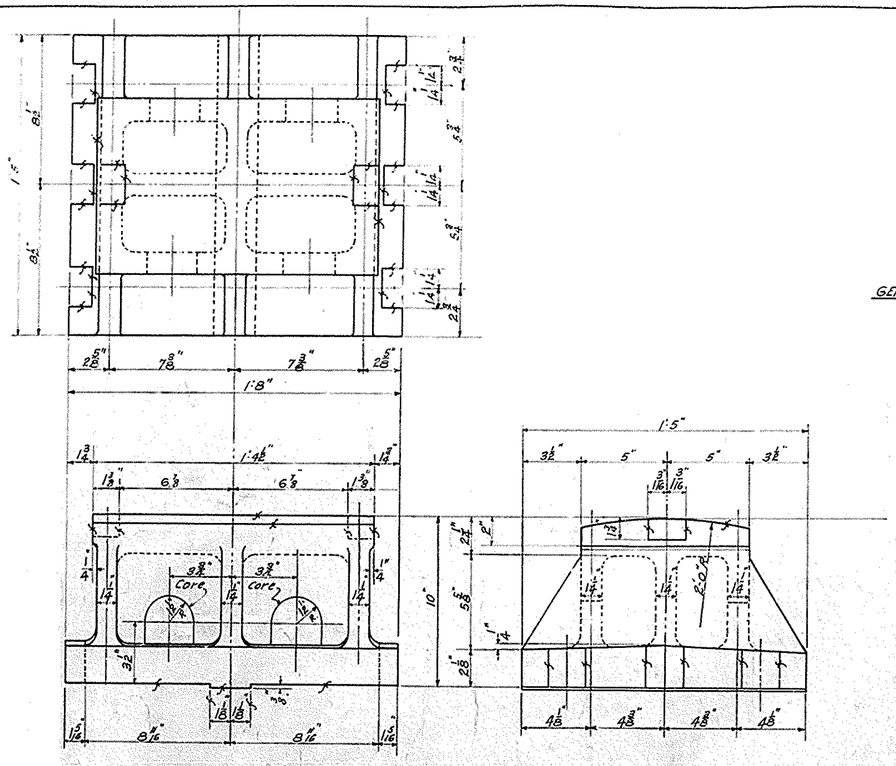
APPROACH SPANS

APPROVED FOR SHOP	
12-21-30	CHIEF DRAFTSMAN
	CHIEF ENGINEER
REVISION NOTES	

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT

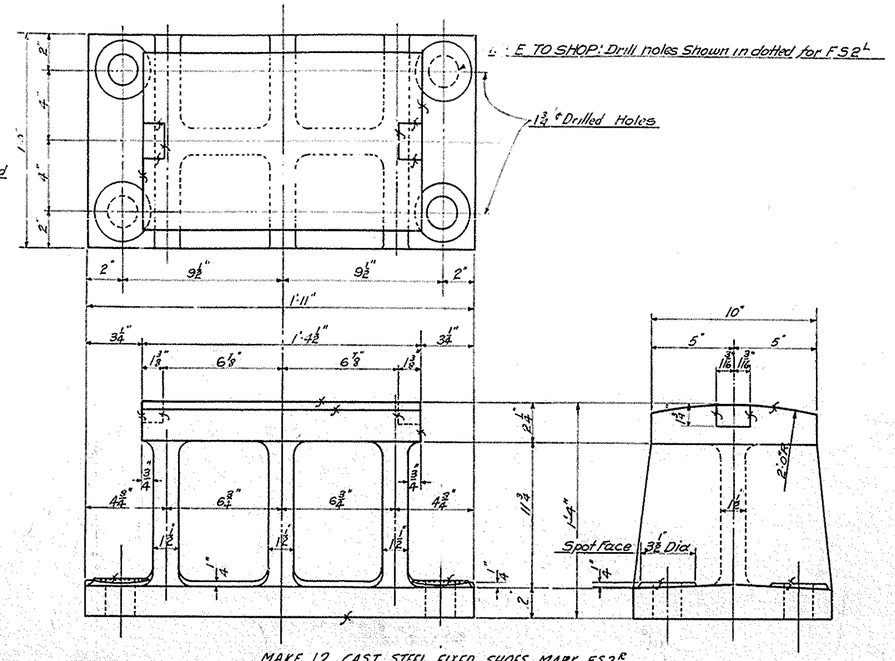
RIVETS 7/8" 15/16" OR NOTED	DRAWN BY Gross	DATE 10-27-30	
HOLES 15/16" OR NOTED	TRACED BY do	DATE 12-11-30	
FIELD CONN. Riveted	CHECKED BY OM	DATE 12-12-30	
SHOP PAINT See Note	DATE PRINTED		
FIELD			
BILL MATERIAL NO. 9-10	CONT. 4633 S.O. 4636-G 4641-G	DRAWING NO. 4	

BRIDGE

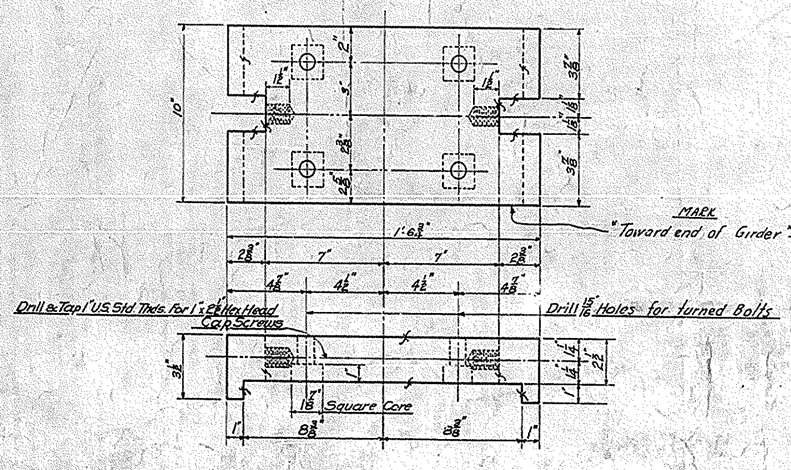


MAKE 24 CAST STEEL EXPANSION SHOES MARK ES2
Pattern No B866 Weight 465#

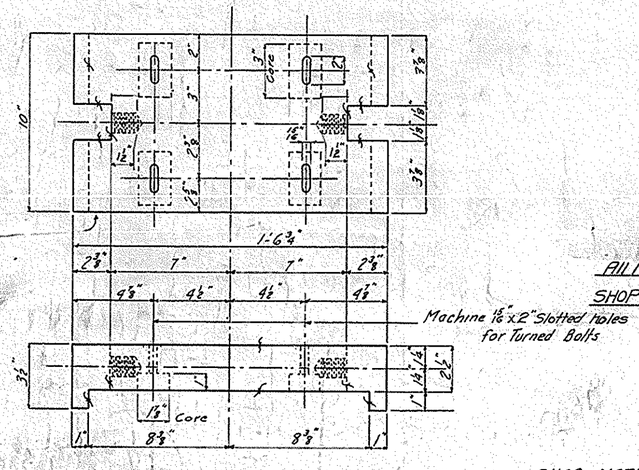
GENERAL NOTE: All Fillets ⅛" Unless Otherwise Noted



MAKE 12 CAST STEEL FIXED SHOES MARK FS2R
MAKE 12 CAST STEEL FIXED SHOES MARK FS2L
Pattern No B868 Weight 508#



MAKE 24 CAST STEEL SHOE CAPS MARK SC1
Pattern No B867 Weight 135#



MAKE 24 CAST STEEL SHOE CAPS MARK SC1A
Pattern No B867 (modified) Weight 134#

NOTE: All Steel Castings To Be Annealed
All Machined Surfaces Coated With White Lead & Tallow.
SHOP PAINT: One coat of Red Lead as per specifications

SHOP NOTE
Bearings to be assembled complete in shop to insure fit and smooth movement and match marked

7646

SHOE DETAILS APPROACH SPANS

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.

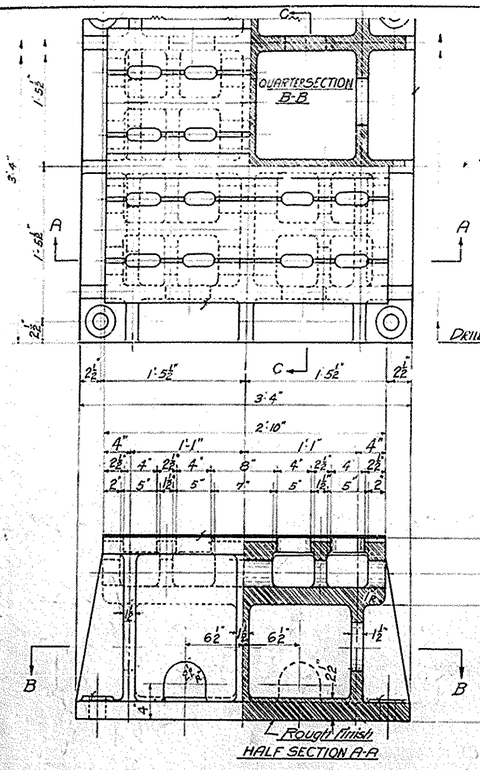
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT [redacted]

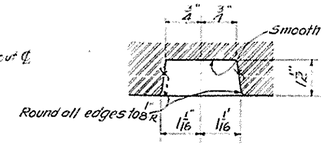
RIVETS ____ OR NOTED	DRAWN BY RMR	DATE 10-31-30
HOLES ____ OR NOTED	TRACED BY RMR	DATE 11-3-30
FIELD CONN. ____	CHECKED BY [illegible]	DATE 12-12-30
SHOP PAINT ____	DATE PRINTED	
FIELD ____	[redacted]	

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES
2-23-31

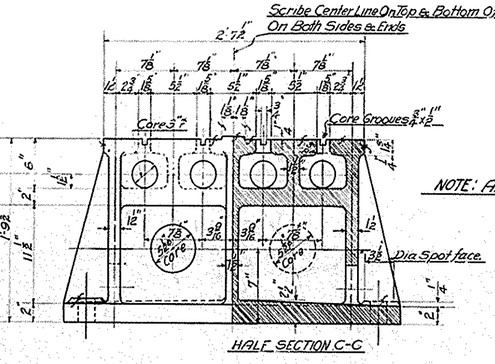
CILLS MATERIAL NO		DRAWING NO.
11	CONT. 4633	5
	S. O. 4638-6	

BRIDGE



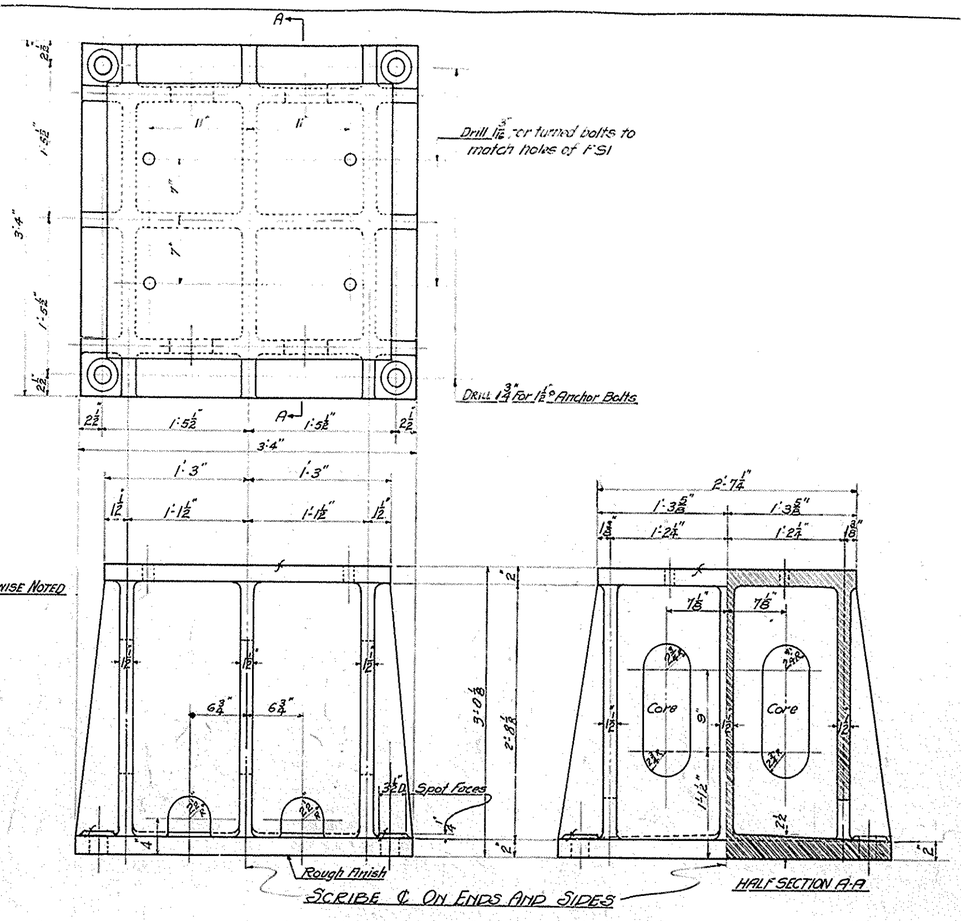


DETAIL OF NOTCH FOR TOOTH BAR IN EXPANSION SHOES ES1

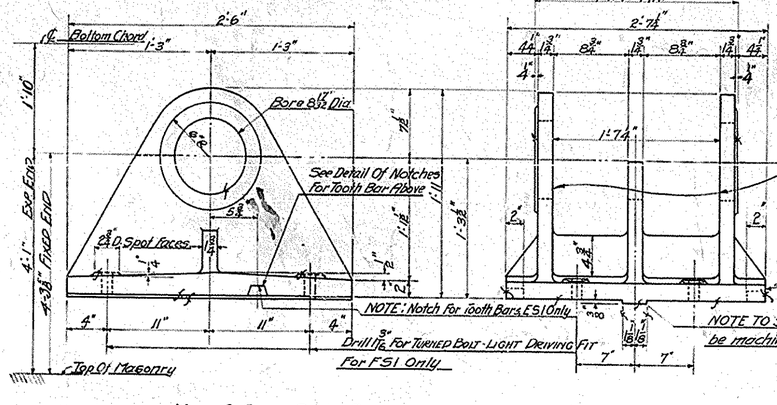


NOTE: ALL RADII ¾" UNLESS OTHERWISE NOTED

MAKE 2 CAST STEEL EXPANSION SHOE BASES MARK ES81
Pattern No 8863 Weight 3949#



MAKE 2-CAST STEEL FIXED SHOE BASES MARK FS81
Pattern No 8865 Weight 4265



RIBS MUST BE STRAIGHT & SMOOTH

MAKE 2 CAST STEEL EXPANSION SHOES MARK ES1
Pattern No 8864 Weight 1225
" 2 " " FIXED " MARK FS1
Pattern No 8864 Weight 1229

SHOP NOTES: All Steel Castings To Be Annealed.
All Machined Surfaces To Be Coated With White Lead & Tallow.

SHOP PAINT: One coat of Red Lead as per specifications.

SHOP NOTE:
BEARINGS TO BE ASSEMBLED IN SHOP TO INSURE FIT & SMOOTH MOVEMENT & MATCHMARKER

7646

SHOE DETAILS 500 Ft. SPAN

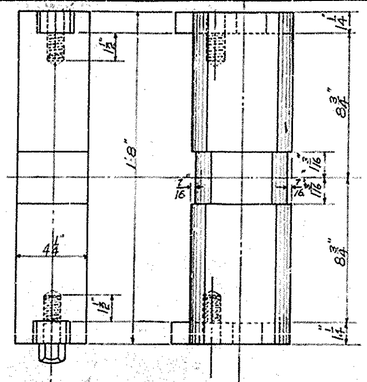
CUMBERLAND RIVER BRIDGE AT SMITHLAND KY. COMMONWEALTH OF KY. KENTUCKY STATE HWY. DEPT.

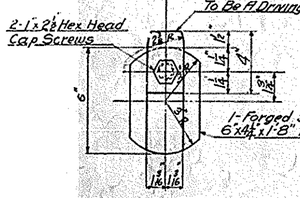
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT [redacted]

RIVETS ..... OR NOTED		DRAWN BY RMR	DATE 10-25-30
HOLES ..... OR NOTED		TRACED BY RMR	DATE 10-28-30
FIELD CONN.		CHECKED BY [illegible]	DATE 12-12-30
SHOP PAINT		DATE PRINTED	
FIELD	[redacted]		
BILL OF MATERIAL NO 12	CONT. 4633 S. O. 4629-G	DRAWING NO 6	

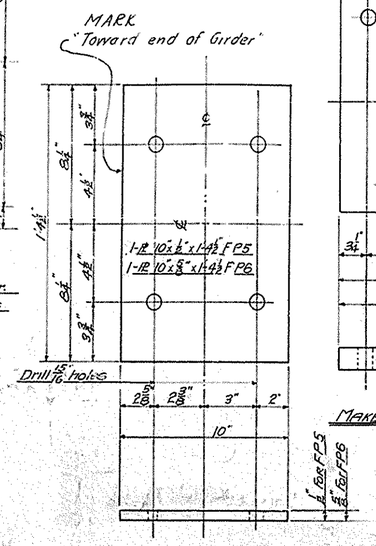
APPROVED FOR SHOP
[illegible] CHIEF DRAFTSMAN
[illegible] CHIEF ENGINEER
REVISION NOTES
3/2/31

BRIDGE

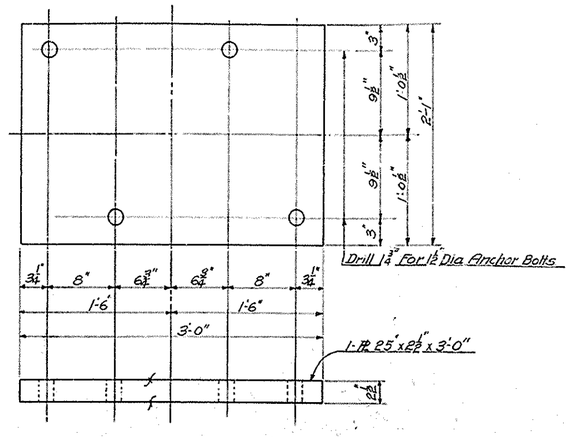




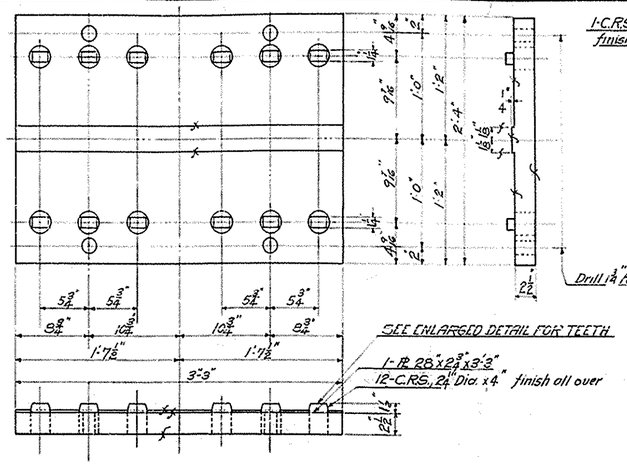
MAKE 72 FORGED STEEL ROLLERS MARK FSR1
Weight of roller 117#
" " 1-tooth 3#



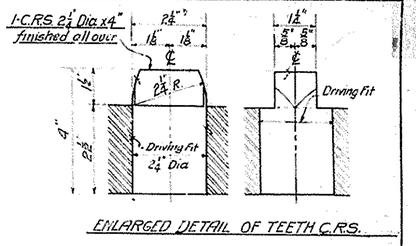
MAKE 10-GIRDER PLATES MARK FP5
Weight 23#
" 6 " " MARK FP6
Weight 29#



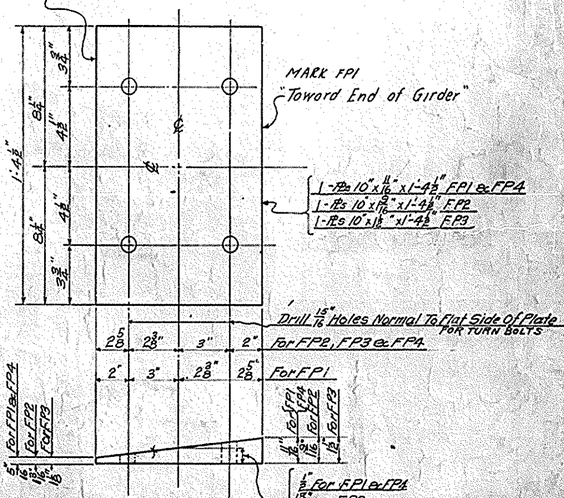
MAKE 8-FIXED SHOE BASE PLATES MARK BP1
Weight 637#



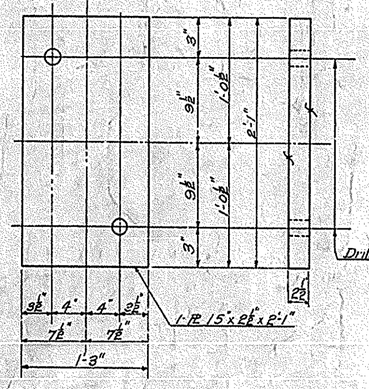
MAKE 12 EXPANSION SHOE BASE PLATES MARK BP2
Weight of finished plate 752#
" " each tooth 4#



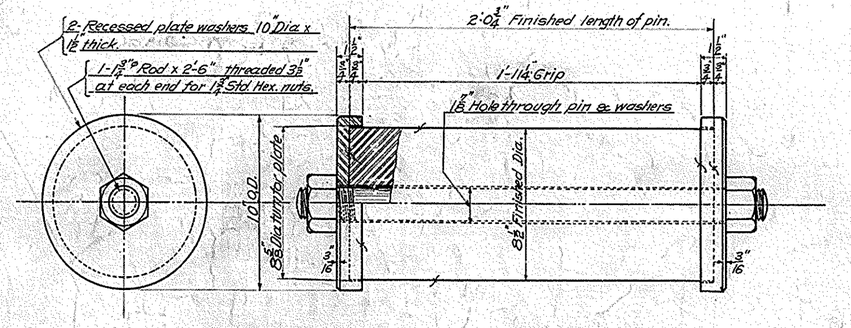
ENLARGED DETAIL OF TEETH C.R.S.



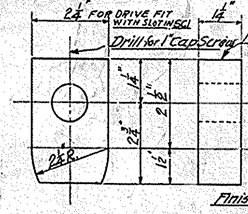
MAKE 16-FILL PLATES MARK FP1
Weight 23#
" 12 " " MARK FP2
Weight 64#
" 2 " " MARK FP3
Weight 61#
" 2 " " MARK FP4
Weight 23#



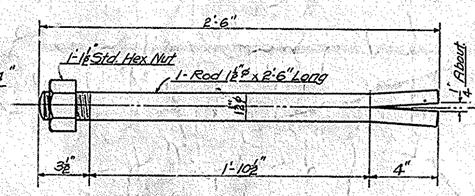
MAKE 8 FIXED SHOE BASE PLATES MARK BP3
Weight 266#



MAKE 4-FORGED STEEL BRIDGE PINS MARK P-1 S.O. 4629-G
Weight of forging 380#
" " washers 10# each
" " rod & nuts 22#



MAKE 96 TOOTH BARS MARK B1, Ship with SC1 & SC1-A
C.R.S. Weight 3#



MAKE 96 ANCHOR BOLTS MARK AB1 for Girders S.O. 4638-G
Weight of rod 15#
" 16 " " MARK AB1 — for Trusses S.O. 4629-G
Weight of rod 15#
No paint

SHOP NOTE
Bearings to be assembled complete in Shop to insure fit and smooth movement and match-marked

7646

NOTE: All machined surfaces to be coated with White Lead & tallow.

SHOP PAINT: One coat of Red Lead as per specifications

S.O. 4638G Except as noted.

DETAILS OF SHOE PLATES, ANCHOR BOLTS ETC.

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT

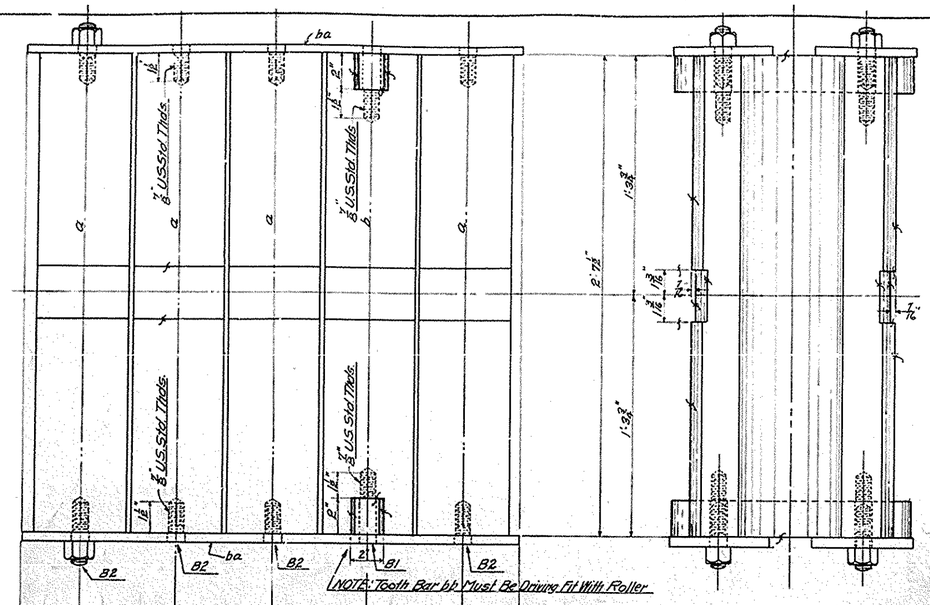
APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes
2-23-31
4-2-31

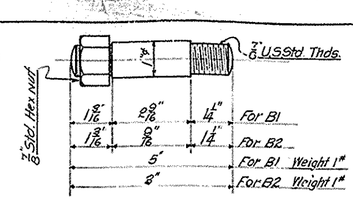
Rivets ____ or noted
Holes ____ or noted
Field Conn. ____
Shop Paint ____
Field ____

Drawn by RMR Date 11-1-30
Traced by RMR Date 11-6-30
Checked by Date 12-12-30
Date Printed

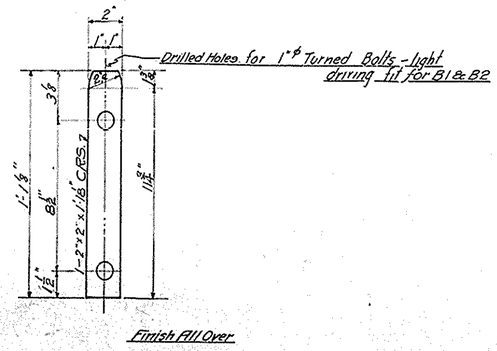
Bills Material No. 13-14-15
CONT. 4633
S.O. 4629-G 4638-G
Drawing 7

BRIDGE

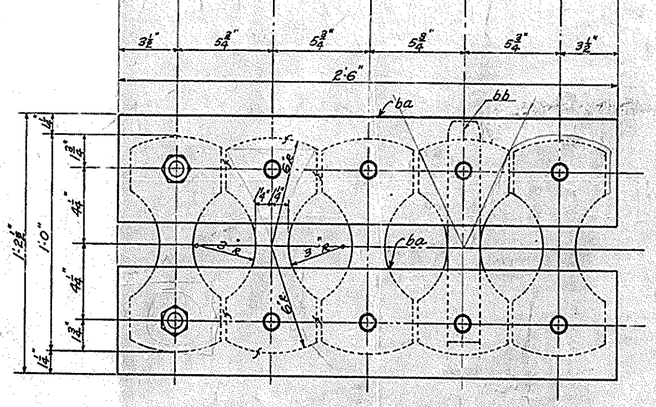




DETAIL OF STUD BOLTS B1 & B2

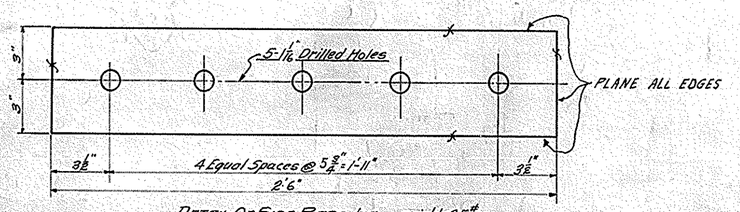


DETAIL OF TOOTH BAR bb



MAKE 2 — ROLLER NEST MARK RN1

Weight 2378# each nest.



DETAIL OF SIDE BARS ba weight 25#

BILL OF MATERIAL FOR ONE ROLLER NEST RN1; 2 NESTS REQD.

4-Segmental Rollers 12"x5 3/4"x2'-7 1/8"	a	Forged Steel — finish all over except side surface on 3" Rad
1- " " 12"x5 3/4"x2'-7 1/8"	b	
4- Bars 6"x1/2"x2'-6"	ba	
2-Tooth Bars 2"x2"x1'-1 1/8" C.R.S.	bb	Finish All Over
4-Stud Bolts 1" Dia. Shouldered To 7/8" Dia. x 5" Long - 1 Std 7/8" Hex Nut	B1	
16- " " 1" " " 7/8" x 3" " - 1 " 7/8" " "	B2	

7646

NOTE: All machined surfaces to be coated with White Lead & tallow.

SHOP PAINT: One coat of Red Lead as per specifications

SHOP NOTE
Bearings to be assembled complete in Shop to insure fit and smooth movement and match-marked

ROLLER NESTS, 500' SPAN.

CUMBERLAND RIVER BRIDGE
AT SMITHLAND, KY.
COMMONWEALTH OF KY. STATE HY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

NASHVILLE PLANT [redacted]

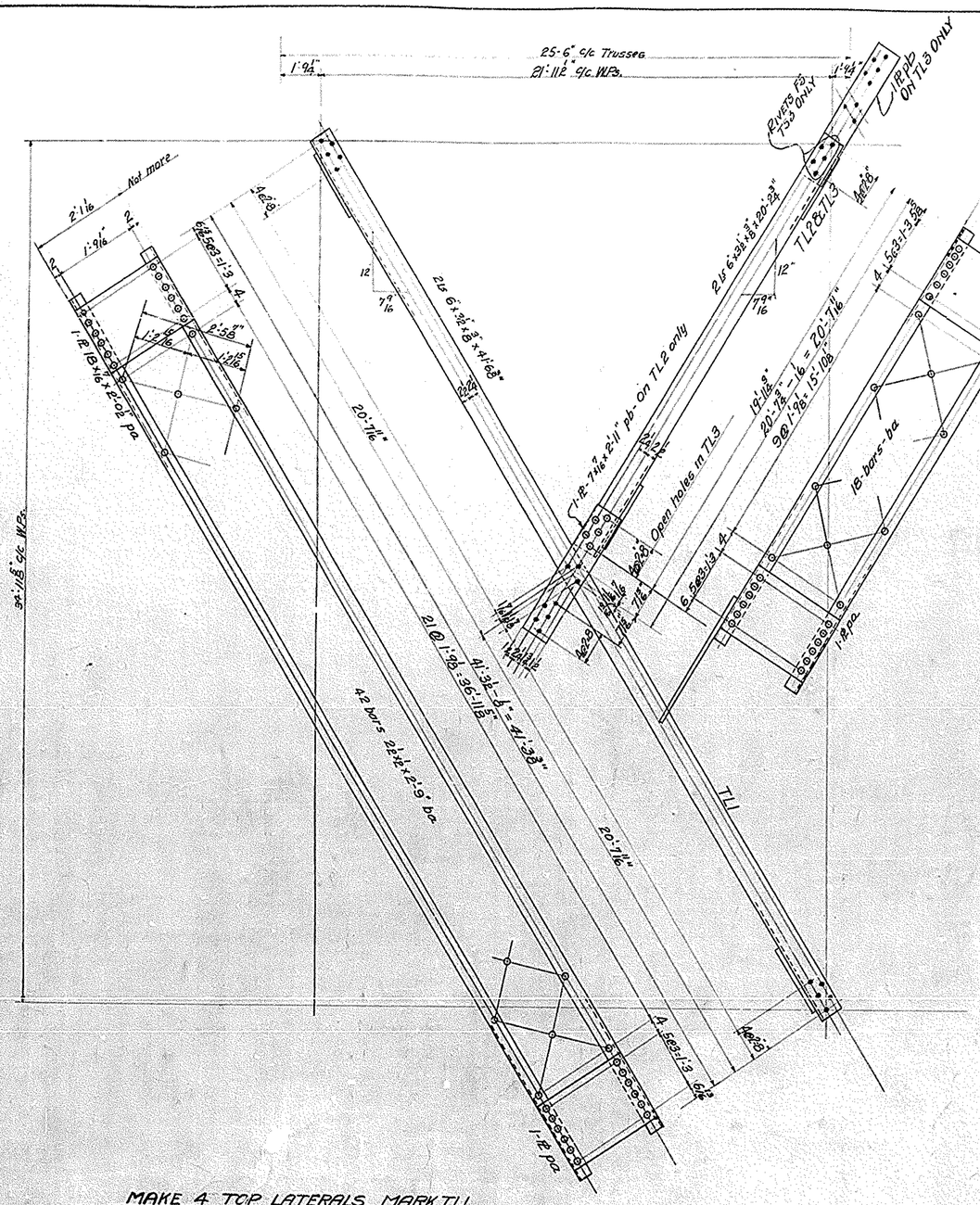
APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

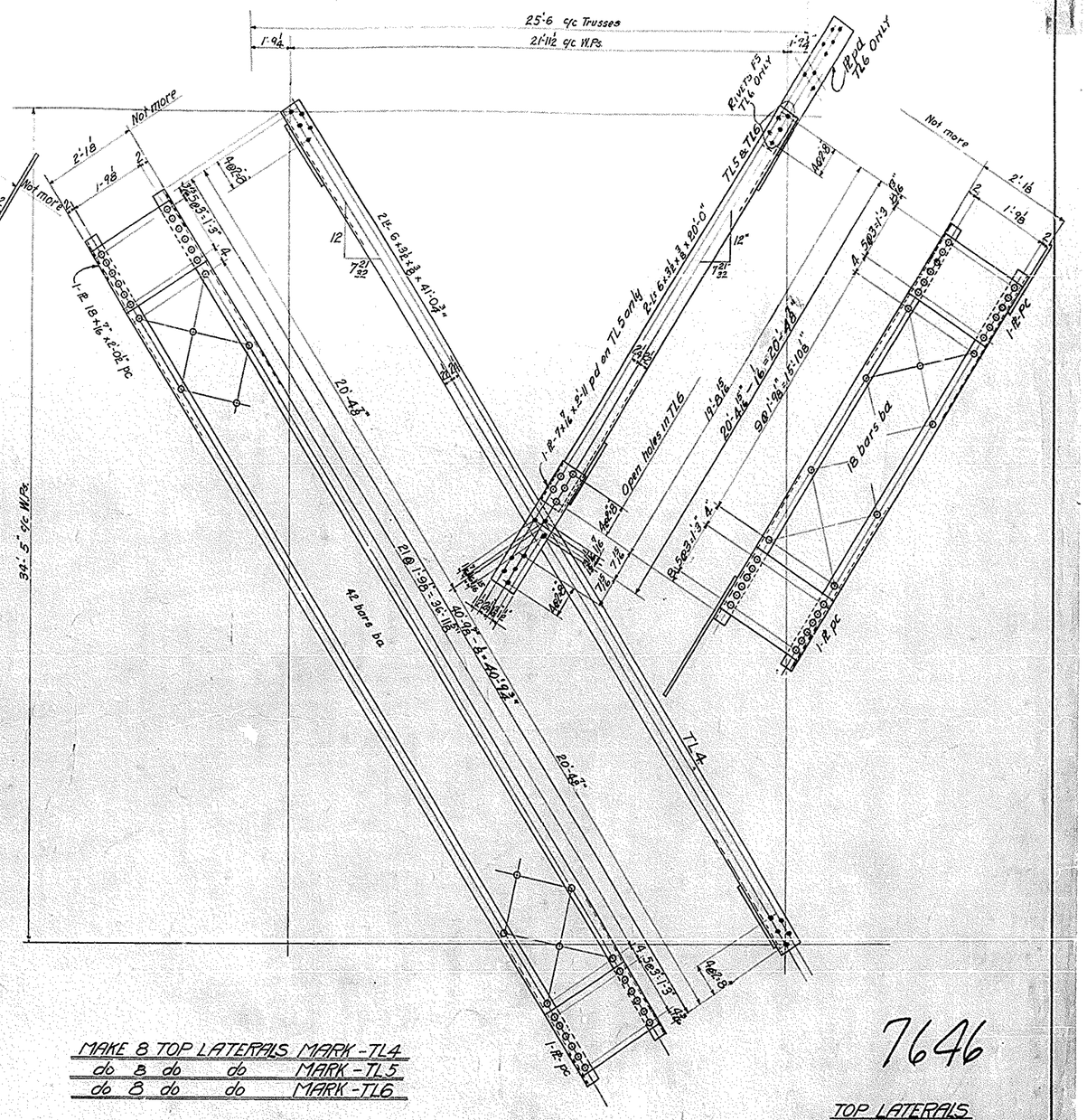
Rivets ____ or noted
Holes ____ or noted
Field Conn. ____
Shop Paint ____
Field ____

Drawn by RMR Date 11-4-30
Traced by — Date 11-4-30
Checked by [illegible] Date 12-12-30
Date Printed [redacted]

Bill of Material No. 16
Cont. 4633
S. O. 4629-6
Drawing No. 8

BRIDGE





MAKE	4	TOP	LATERALS	MARK TL1
do	4	do	do	MARK TL2
do	4	do	do	MARK TL3

MAKE	8	TOP	LATERALS	MARK - TL4
do	8	do	do	MARK - TL5
do	8	do	do	MARK - TL6

PAINT NOTE: One Coat of Red Lead as per specifications. Paint contact surfaces. All parts inaccessible after erection to have - 2 - coats.

7646

TOP LATERALS

CUMBERLAND RIVER BRIDGE AT SMITHLAND, KY.
COMMONWEALTH OF KY - STATE HWY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

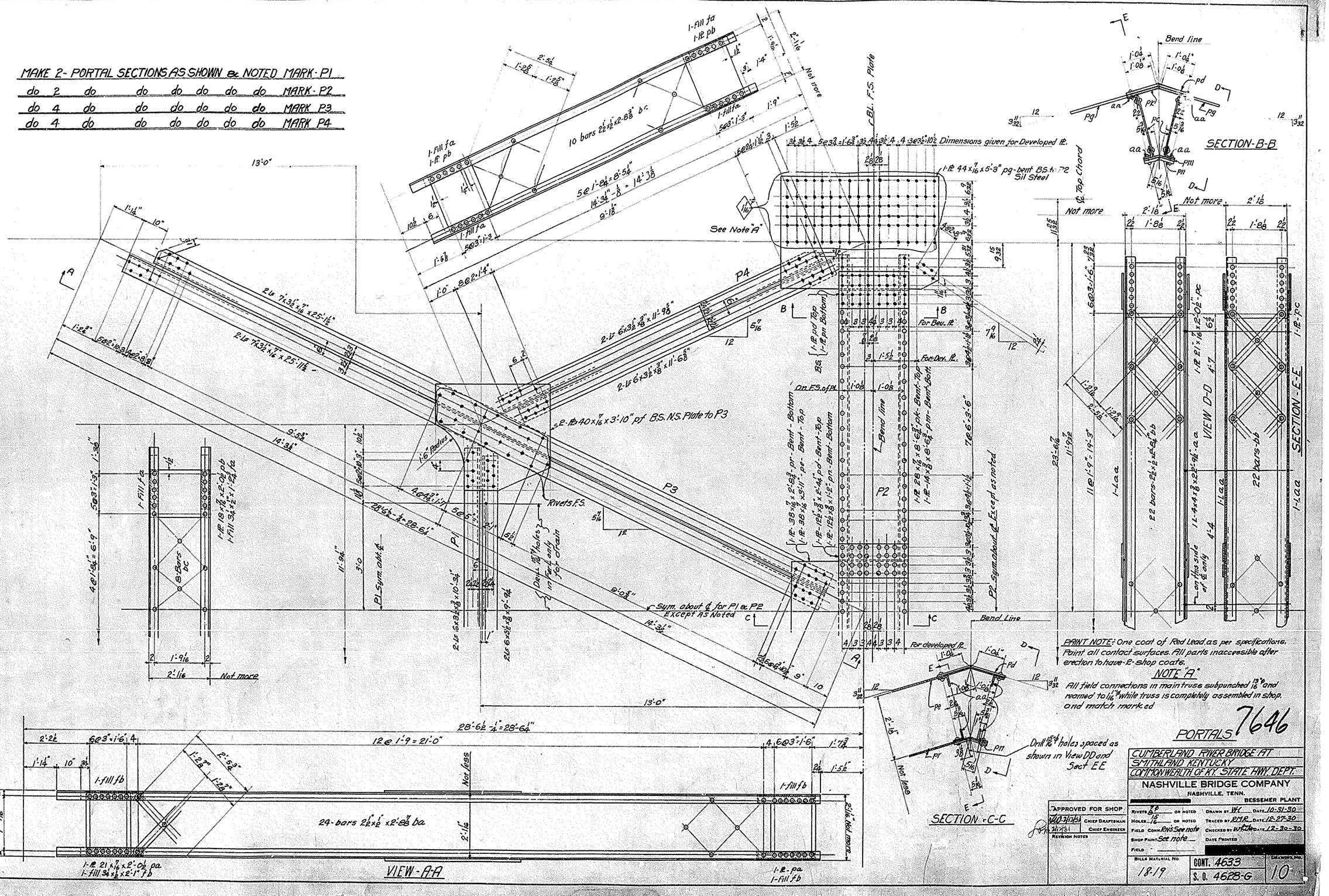
Rivets ⅞ or noted
Holes 16 or noted
Field Conn. RIVETED
Shop Paint SEE NOTE
Field

Drawn by W.H. Date 10-28-30
Traced by R.H.P. Date 12-24-30
Checked by H.L.B. Date 12-30-30
Date Printed [redacted]

Bills Material No. 17
CONT. 4633
S. O. 4628-G
Drawing No. 9

BRIDGE

MAKE 2- PORTAL SECTIONS AS SHOWN & NOTED MARK- P1
do 2 do do do do do do MARK- P2
do 4 do do do do do do MARK P3
do 4 do do do do do do MARK P4



PAINT NOTE: One coat of Red Lead as per specifications. Paint all contact surfaces. All parts inaccessible after erection to have 2 shop coats.

NOTE "A"

All field connections in main truss subpunched 13/16" and reamed to 15/16" while truss is completely assembled in shop, and match marked

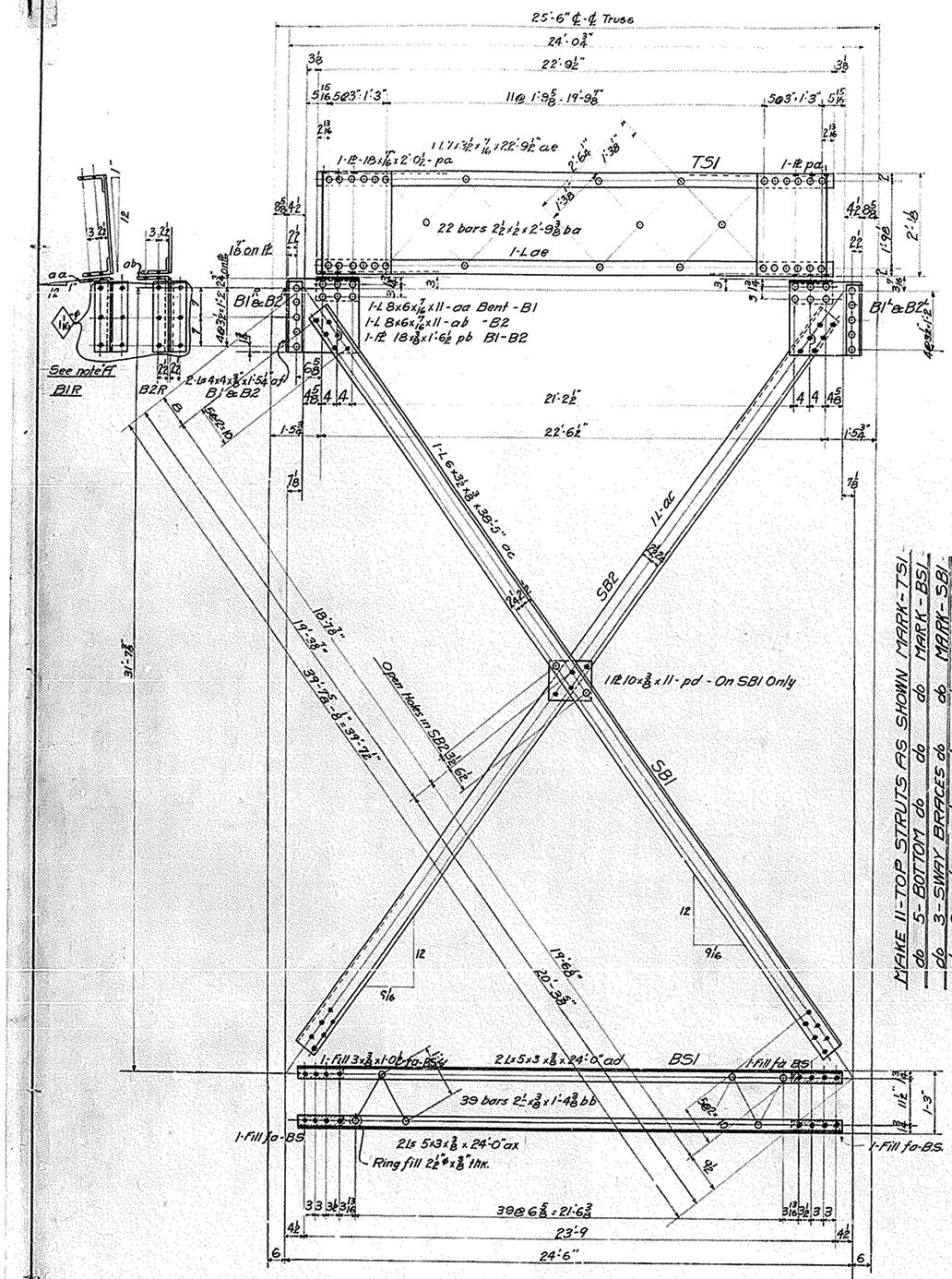
PORTALS 7646

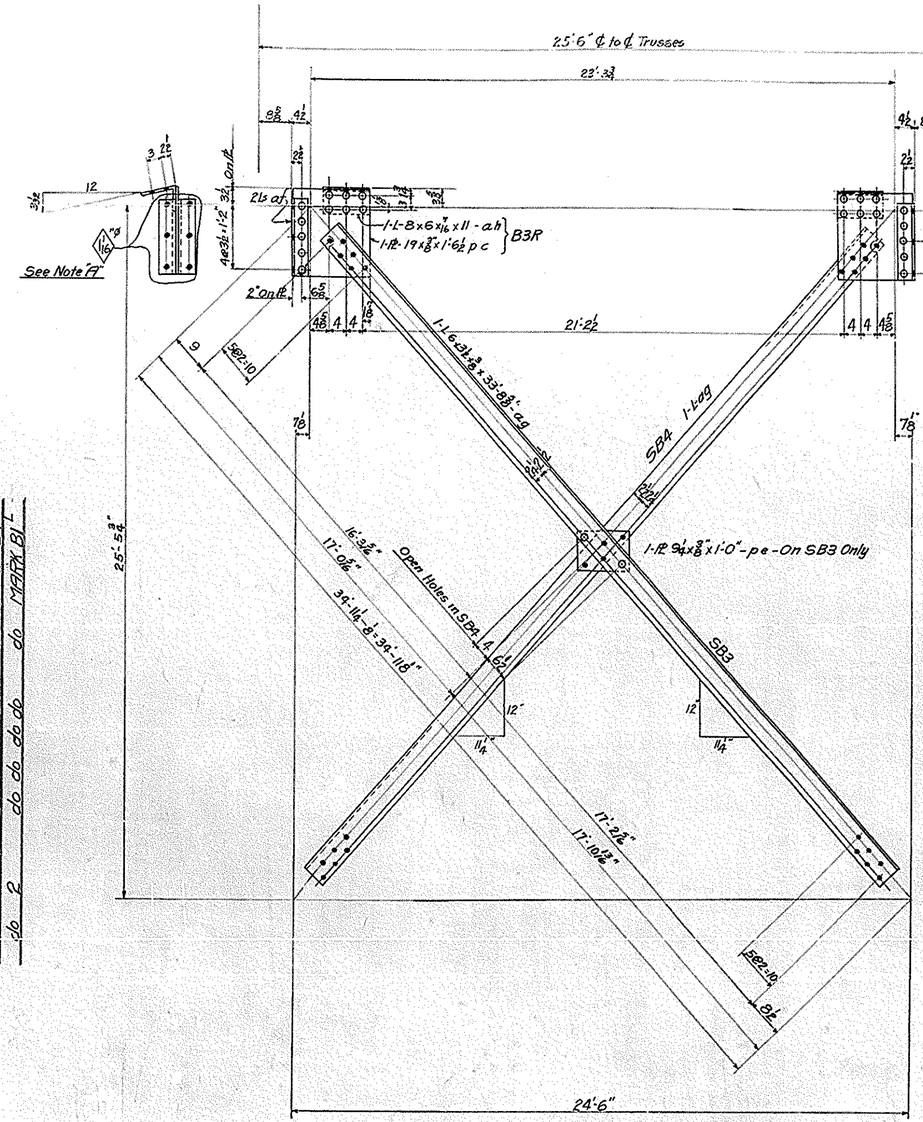
CUMBERLAND RIVER BRIDGE AT SMITHLAND KENTUCKY
COMMONWEALTH OF KY. STATE HWY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

APPROVED FOR SHOP	Rivets 13/16 or noted	Drawn by WH	Date 10-31-30
CHIEF DRAFTSMAN	Holes 15/16 or noted	Traced by RMR	Date 12-27-30
CHIEF ENGINEER	Field Conn. Rivs See note	Checked by WHK	Date 12-30-30
REVISION NOTES	Shop Paint See note	Date Printed	
	Field		
Bills Material No. 18-19	CONT. 4633 S. O. 4628-G	Drawings No. 10	

BRIDGE





MAKE 11-TOP STRUTS AS SHOWN MARK-TS1
do 5-BOTTOM do do MARK-BS1
do 3-SWAY BRACES do do MARK-SB1
do 3- do do do MARK-SB2
do ONE BRACKET do do MARK-B2R
do ONE do OPP HAND do do MARK-B2L
do 2 do do do MARK-B1R
do 2 do do do do MARK-B1L

MAKE 2 SWAY BRACES AS SHOWN MARK-SB3
do 2 do do do MARK-SB4
do 2 do BRACKETS do do MARK-B3R
do 2 do OPP HAND MARK-B3L

NOTE "A"

All field connections in main truss to be subpunched 13/16" and reamed to 1 1/16" while truss is completely assembled in shop. And match marked

PAINT NOTE: One coat of Red Lead as per specifications. Paint contact surfaces. All parts inaccessible after erection to have 2-Shop coats.

7646

SWAY BRACING

BRIDGE OVER CUMBERLAND RIVER
AT SMITHLAND KENTUCKY
COMMONWEALTH OF KY. STATE HWY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

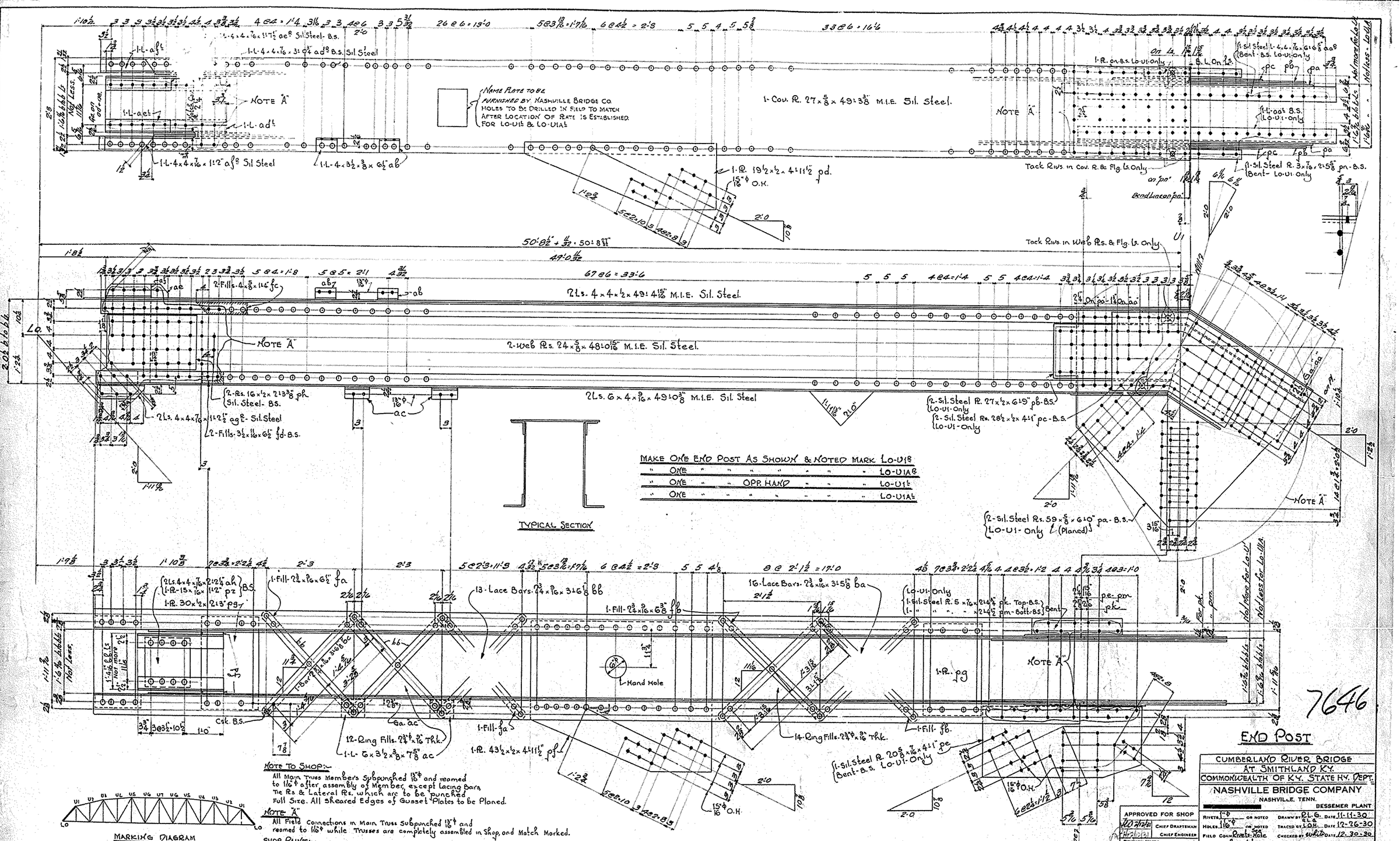
APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

Rivets 7/8" or noted
Holes 13/16" or noted
Field Conn. Rivet See Note
Shop Paint See note
Field

Drawn by W.H. Date
Traced by R.M.P. Date 12-31-30
Checked by W.C. Date 12-30-30
Date Printed

Bills Material No. 20
CONT. 4633
S. O. 4628-G
Drawing No. 11

BRIDGE



MAKE ONE END POST AS SHOWN & NOTED	MARK	L0-U1E
" ONE " " " " " "	"	L0-U1AE
" ONE " " OPP. HAND " "	"	L0-U1A½
" ONE " " " " " "	"	L0-U1½

NOTE TO SHOP:-
All Main Truss Members Subpunched 13/16" and reamed to 11/16" after assembly of Member, except Lacing Bars, the Rs & Lateral Rs. which are to be punched Full Size. All Sheared Edges of Gusset Plates to be Planed.

NOTE "A"
All Field Connections in Main Truss Subpunched 13/16" and reamed to 11/16" while Trusses are completely assembled in Shop, and Match Marked.

SHOP PAINT:-
One coat of Red Lead as per Spec. Paint Contact Surfaces. All parts inaccessible after Erection to have two Shop Coats.

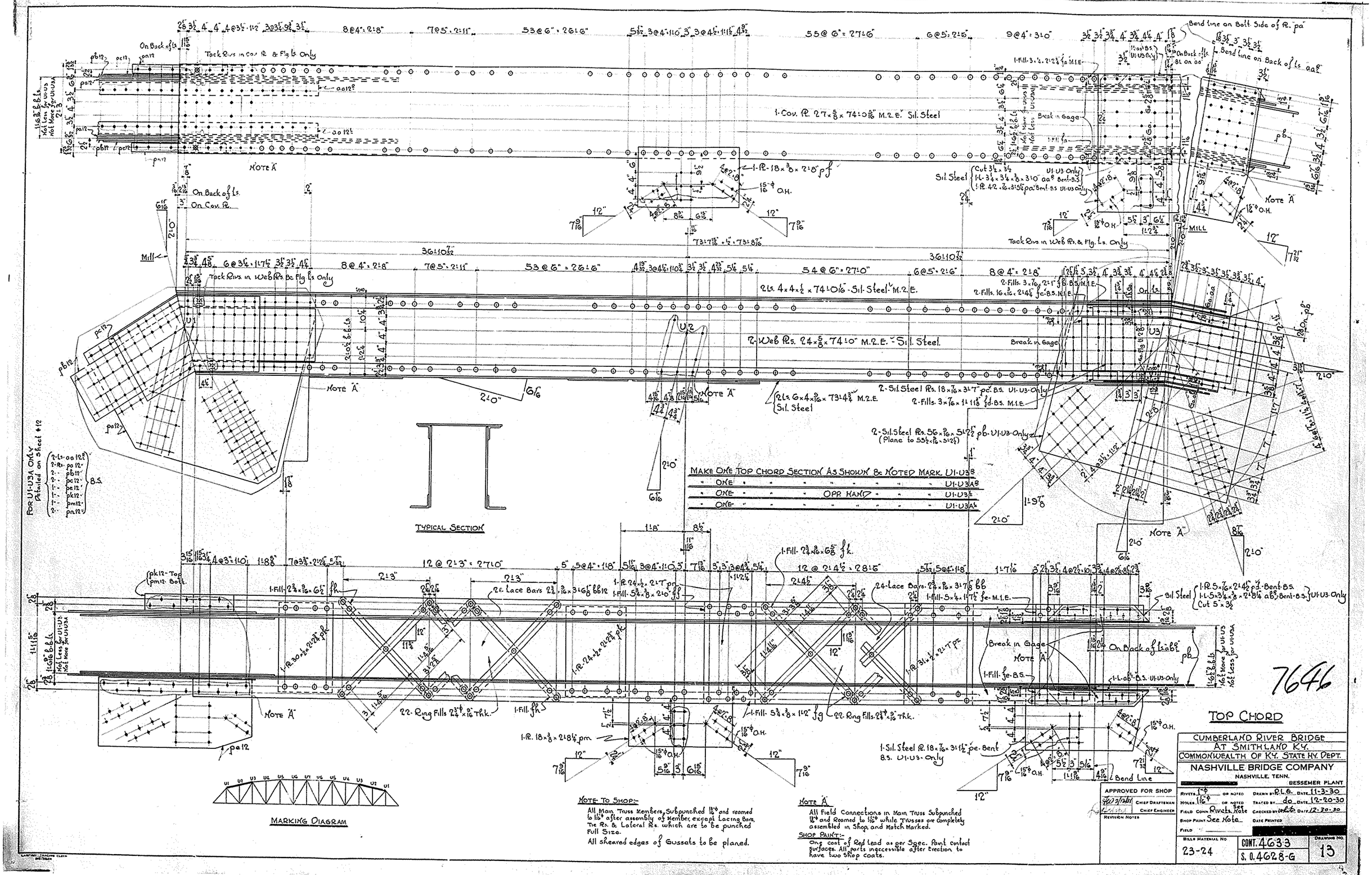
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes
Rev. 4-13-31
5-14-31

Rivets 11/16" or noted — Drawn by R.L.G. & E.L.A. Date 11-11-30
Holes 11/16" or noted — Traced by L.O.H. Date 12-26-30
Field Conn. Rivets-Note — Checked by Date 12-30-30
Shop Paint See Note — Date Printed
Field

Bills Material No. 21-22 — CONT. 4633 — S.D. 4628-G — Drawing No. 12

BRIDGE



TOP CHORD

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

BESSEMER PLANT

Note To Shop:-

All Main Truss Members, Subpunched 13/16" and reamed to 15/16" after assembly of member, except Lacing Bars. The Rs. & Lateral Rs. which are to be punched Full Size.

All sheared edges of Gussets to be planed.

Note "A"

All Field Connections in Main Truss Subpunched 13/16" and Reamed to 15/16" while Trusses are completely assembled in Shop and Match Marked.

Shop Paint:-

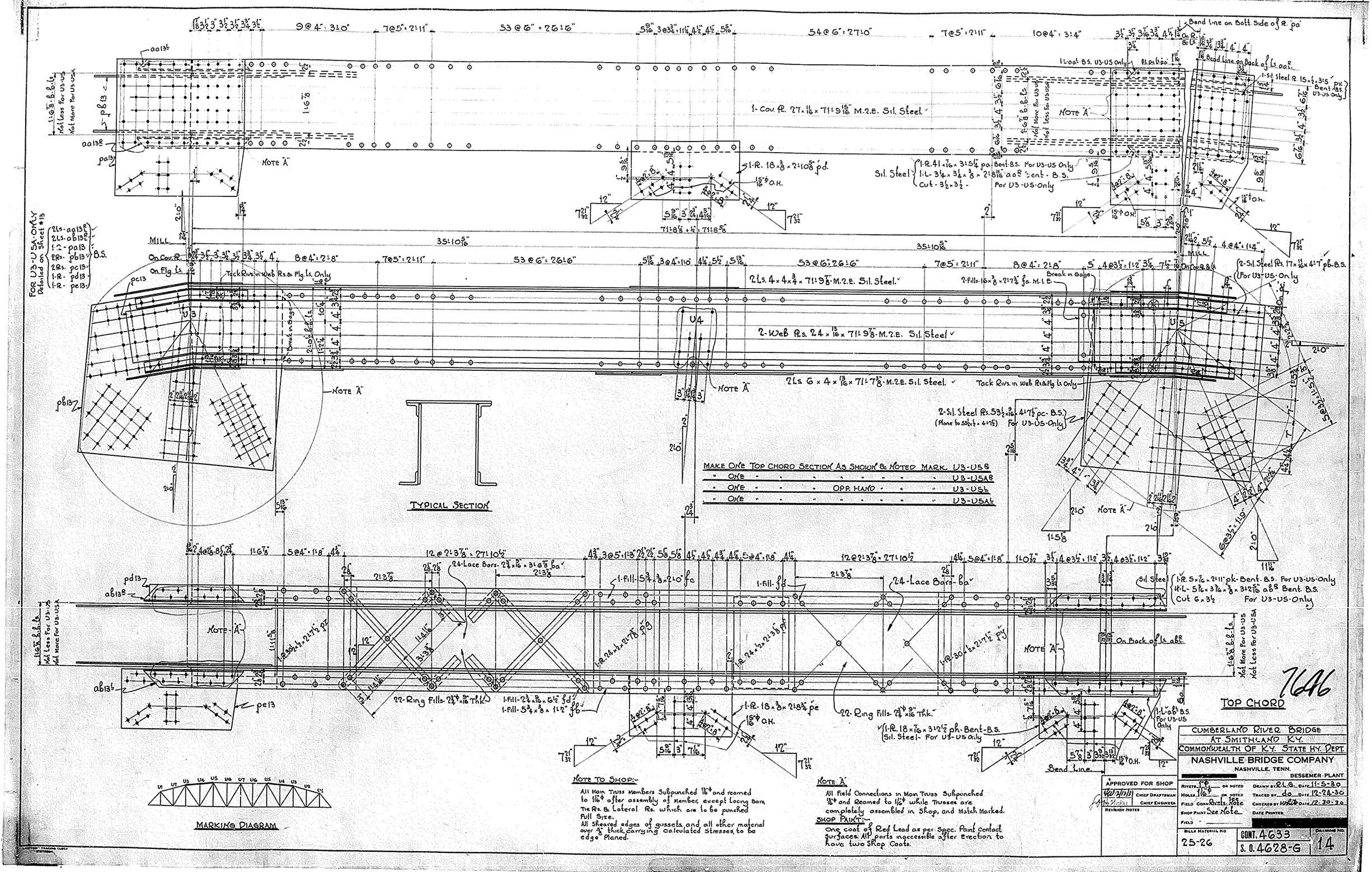
One coat of Red Lead as per Spec. Paint contact surfaces. All parts inaccessible after Erection to have two Shop coats.

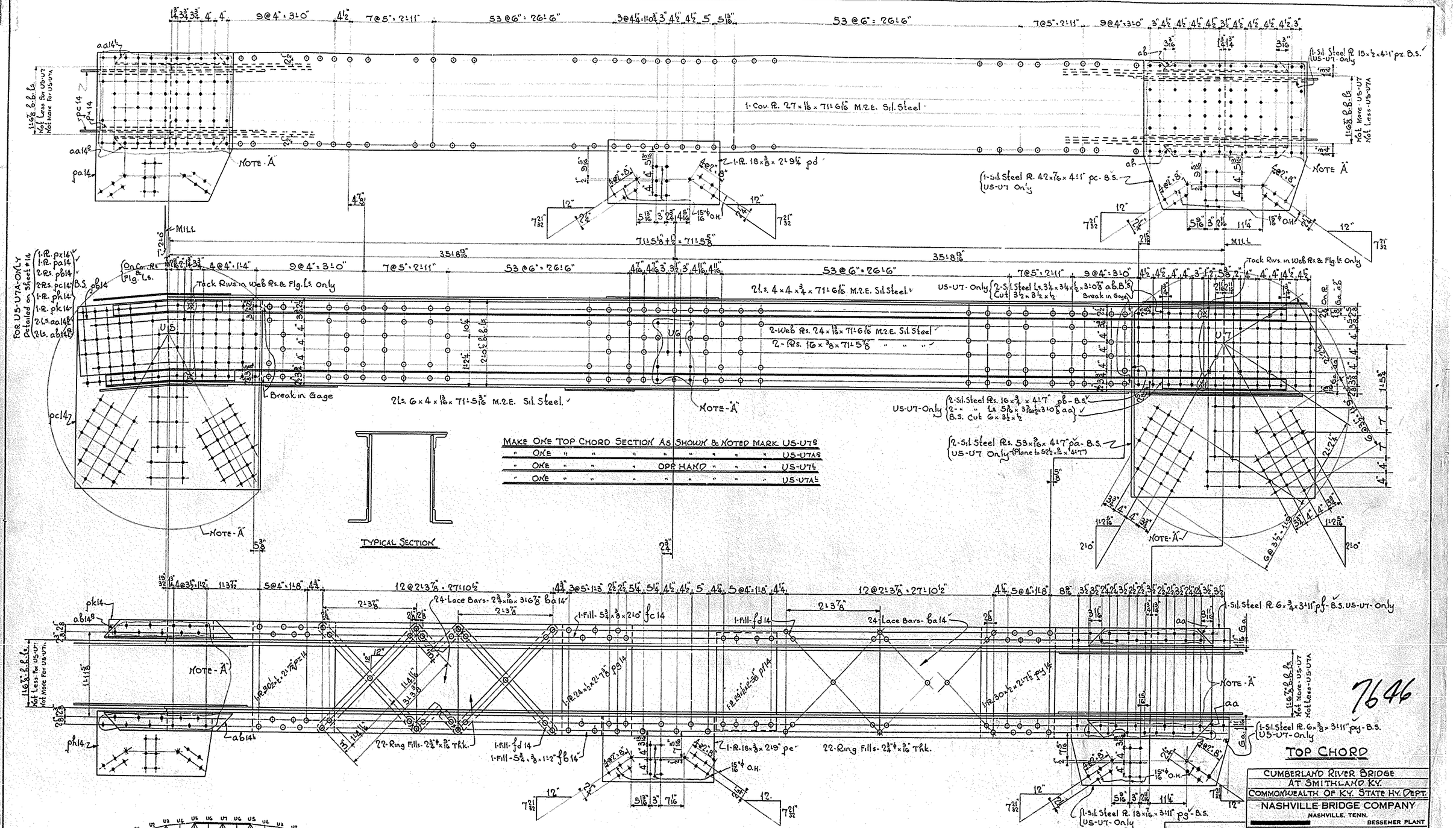
Rivets	15/16" or noted
Holes	15/16" or noted
Field Conn.	Rivets. See Note
Shop Paint	See Note
Field	
Drawn by	R.L.G. Date 11-3-30
Traced by	do Date 12-20-30
Checked by	W.L.G. Date 12-20-30
Date Printed	

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

Bills Material No	Cont.	Drawing No.
23-24	4633	13
	S. O. 4628-G	

BRIDGE


1-Cov. Pl. 27 × 1/16 × 71' 5 15/16" M.2.E. Sil. Steel
2Ls. 4 × 4 × 3/4 × 71' 9 7/8" M.2.E. Sil. Steel
2-Web Pls. 24 × 13/16 × 71' 9 7/8" M.2.E. Sil. Steel
2Ls. 6 × 4 × 13/16 × 71' 7 7/8" M.2.E. Sil. Steel
Sil. Steel
Tack Rivs. in Web Pls. & Flg. Ls. Only
Break in Gage
NOTE "A"
TYPICAL SECTION
MAKE ONE TOP CHORD SECTION AS SHOWN & NOTED MARK U3-U5B
" ONE " " " " " " U3-U5AB
" ONE " " " OPP. HAND " " " U3-U5L
" ONE " " " " " " U3-U5AL
24-Lace Bars
22-Ring Fills
TOP CHORD
7646
MARKING DIAGRAM
NOTE TO SHOP:-
All Main Truss Members Subpunched 13/16" and reamed to 1 1/16" after assembly of Members except Lacing Bars, Tie Pls. & Lateral Pls. which are to be punched Full Size.
All Sheared edges of gussets and all other material over 3/8 thick carrying calculated stresses, to be edge Planed.
NOTE "A"
All Field Connections in Main Truss Subpunched 13/16" and Reamed to 1 1/16" while Trusses are completely assembled in Shop, and Match Marked.
SHOP PAINT:-
One coat of Red Lead as per Spec. Paint contact surfaces. All parts inaccessible after Erection to have two Shop Coats.
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT
APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES
BILLS MATERIAL NO. 25-26
CONT. 4633
S.O. 4628-G
DRAWING NO. 14
BRIDGE



MAKE	ONE	TOP	CHORD	SECTION	AS	SHOWN	&	NOTED	MARK US-U7
"	ONE	"	"	"	"	"	"	"	US-U7A
"	ONE	"	"	"	OPP	HAND	"	"	US-U7L
"	ONE	"	"	"	"	"	"	"	US-U7AL

NOTE TO SHOP:-

All Main Truss Members Subpunched 13/16" ϕ and reamed to 11/16" ϕ after assembly of Member, except Lacing Bars, Tie Rs. & Lateral Rs. which are to be punched Full Size.
All Sheared edges of Gussets, and all other material over 5/8" Thick carrying calculated Stresses, to be Edge Planed.

NOTE "A"

All Field Connections in Main Truss Subpunched 13/16" ϕ and Reamed to 11/16" while Trusses are completely assembled in Shop, and Match Marked.

SHOP PAINT:-

One Coat of Red Lead as per Spec. Paint contact surfaces. All parts inaccessible after Erection to have two Shop Coats.

7646

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

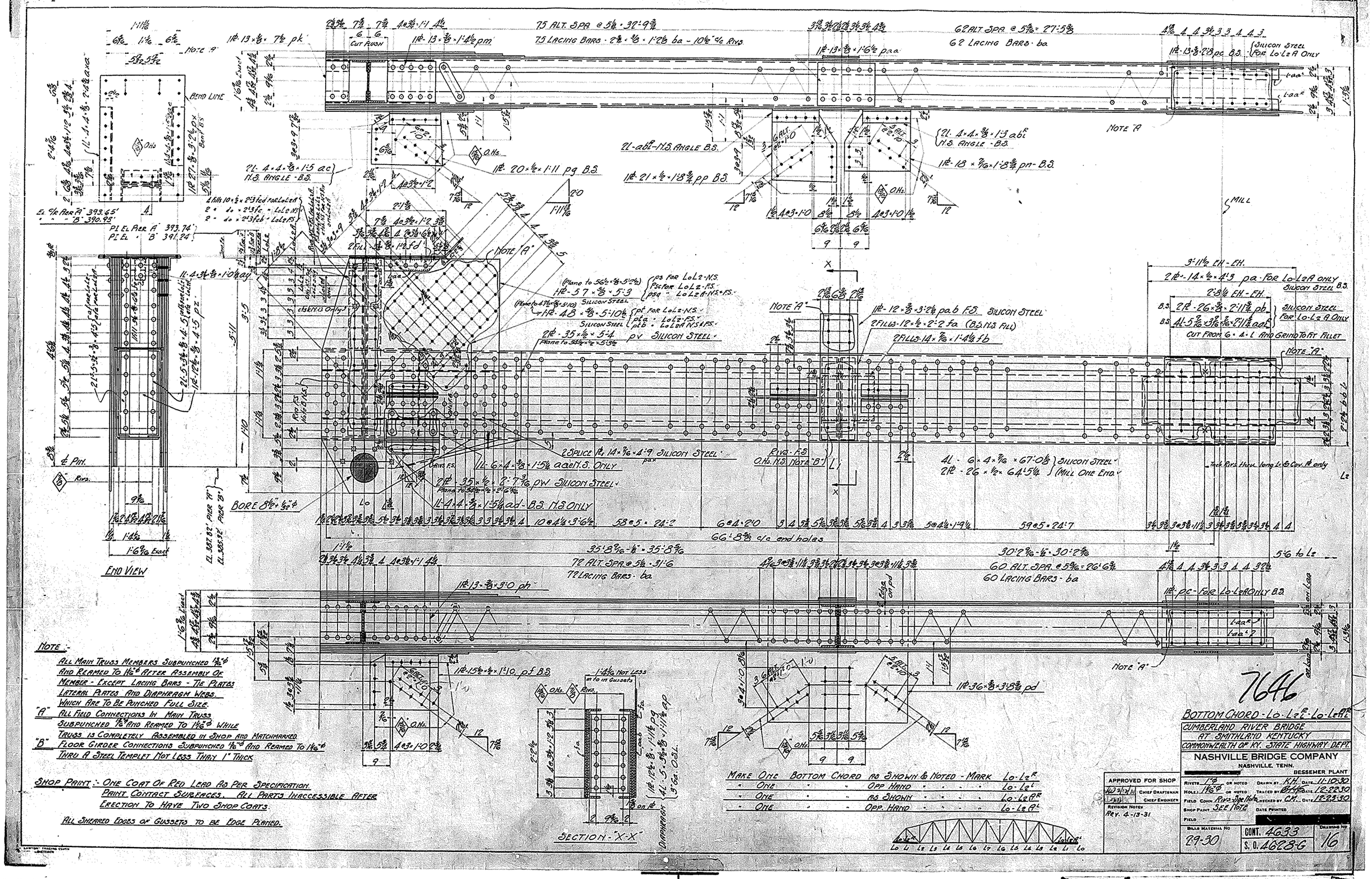
APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

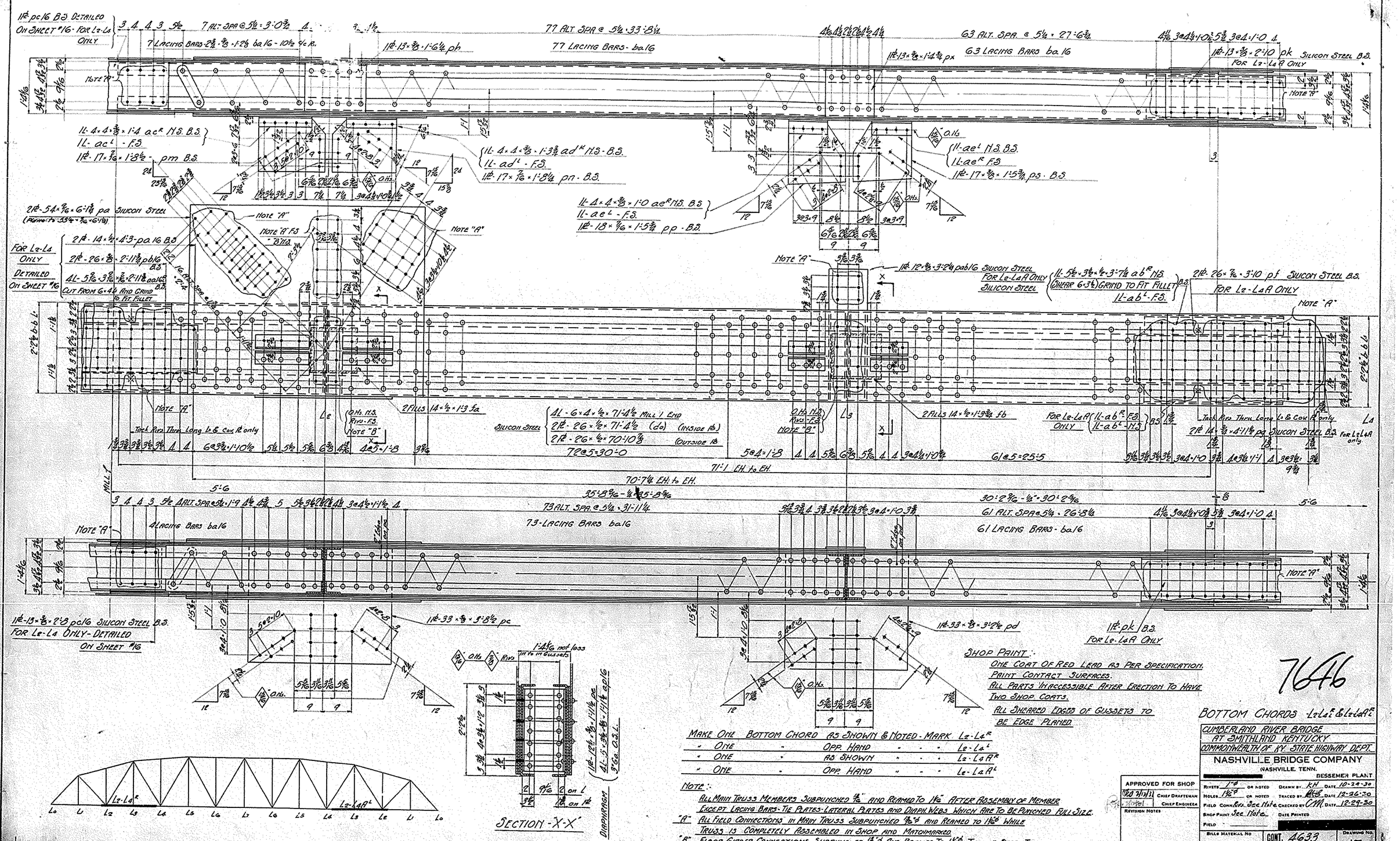
Rivets 1" ϕ or noted
Holes 11/16" ϕ or noted
Field Conn. Rivets, Note
Shop Paint See Note
Field

Drawn by R.L.G. Date 11-6-30
Traced by do Date 12-29-30
Checked by Date 12-30-30
Date Printed

Bills Material No. 27-28
CONT. 4633
S. O. 4628-G
Drawing No. 15

BRIDGE


75 ALT. SPA @ 5 1/4 = 32'-9 3/4
75 LACING BARS - 2 3/4 x 3/8 x 1'-2 1/8 ba - 10 1/4 c/c RIVS.
62 ALT. SPA @ 5 7/16 = 27'-5 3/8
62 LACING BARS - ba
1 PL - 13 x 3/8 x 7 1/2 pk
1 PL - 13 x 3/8 x 1'-4 1/2 pm
1 PL - 13 x 3/8 x 1'-6 1/2 paa
1 PL - 13 x 3/8 x 2'-3 pc B.S. (SILICON STEEL FOR Lo-L2 A ONLY)
NOTE "A"
BEND LINE
2 L - 4 x 4 x 3/8 x 1'-5 ac N.S. ANGLE - B.S.
2 L - 4 x 4 x 3/8 x 1'-5 abl N.S. ANGLE - B.S.
2 L - abl - N.S. ANGLE B.S.
1 PL - 20 x 1/2 x 1'-11 pg B.S.
1 PL - 21 x 1/2 x 1'-8 3/4 pp B.S.
1 PL - 18 x 7/16 x 1'-8 3/4 pm - B.S.
MILL
3'-11 1/2 EH - EH.
2 PL - 14 x 1/2 x 4'-3 pa - FOR Lo-L2 A ONLY SILICON STEEL B.S.
2'-8 1/4 EH - EH.
2 PL - 26 x 3/8 x 2'-11 3/4 pb
4 L - 5 7/16 x 3 7/16 x 7/16 x 2'-11 3/4 aa
SILICON STEEL FOR Lo-L2 A ONLY
CUT FROM 6 x 4 x L AND GRIND TO FIT FILLET
1 PL - 57 x 3/8 x 5'-3 ps FOR Lo-L2 - N.S.
1 PL - 48 x 3/8 x 5'-10 1/2 pt FOR Lo-L2 - N.S.
2 PL - 35 x 1/2 x 5'-4 pv SILICON STEEL
1 PL - 12 x 3/8 x 3'-2 1/2 pa b F.S. SILICON STEEL
2 FILLS - 12 x 1/2 x 2'-2 fa (B.S. N.S. FILL)
2 FILLS - 14 x 7/16 x 1'-4 1/2 fb
2 SPLICE PL - 14 x 3/16 x 4'-9 SILICON STEEL
11 L - 6 x 4 x 3/8 x 1'-5 1/2 aa e N.S. ONLY
2 PL - 35 x 1/2 x 2'-7 3/16 pw SILICON STEEL
L 4 x 4 x 3/8 x 1'-5 1/2 ad - B.S. N.S. ONLY
BORE 8 1/2" x 1/32" ϕ
4 L - 6 x 4 x 7/16 x 67'-0 1/2 SILICON STEEL
2 PL - 26 x 1/2 x 64'-5 1/4 (MILL ONE END)
Tack Rivs. thru long L's & Cov. PL only
58 @ 5 = 24'-2
6 @ 4'-2'0
59 @ 5 = 24'-7
66'-8 3/8 c/c end holes
35'-8 9/16 - 1/4" = 35'-8 5/16
72 ALT. SPA @ 5 1/4 = 31'-6
72 LACING BARS - ba
30'-2 9/16 - 1/4" = 30'-2 5/16
60 ALT. SPA @ 5 9/16 = 26'-6 3/4
60 LACING BARS - ba
5'-6 to L2
1 PL - 13 x 3/8 x 3'-0 ph
1 PL - pc - FOR Lo-L2 A ONLY B.S.
1 PL - 15 1/2 x 1/2 x 1'-10 pf B.S.
1 PL - 36 x 3/8 x 3'-8 3/4 pd
END VIEW
SECTION "X-X"
DIAPHRAGM
NOTE:-
ALL MAIN TRUSS MEMBERS SUBPUNCHED 1 3/16" ϕ AND REAMED TO 1 1/16" ϕ AFTER ASSEMBLY OF MEMBER - EXCEPT LACING BARS - TIE PLATES LATERAL PLATES AND DIAPHRAGM WEBS. WHICH ARE TO BE PUNCHED FULL SIZE.
"A" ALL FIELD CONNECTIONS IN MAIN TRUSS SUBPUNCHED 1 3/16" ϕ AND REAMED TO 1 1/16" ϕ WHILE TRUSS IS COMPLETELY ASSEMBLED IN SHOP AND MATCHMARKED.
"B" FLOOR GIRDER CONNECTIONS SUBPUNCHED 1 3/16" ϕ AND REAMED TO 1 1/16" ϕ THRU A STEEL TEMPLET NOT LESS THAN 1" THICK
SHOP PAINT:- ONE COAT OF RED LEAD AS PER SPECIFICATION. PAINT CONTACT SURFACES. ALL PARTS INACCESSIBLE AFTER ERECTION TO HAVE TWO SHOP COATS.
ALL SHEARED EDGES OF GUSSETS TO BE EDGE PLANED.
MAKE ONE BOTTOM CHORD AS SHOWN & NOTED - MARK Lo-L2R
" ONE " " OPP HAND " " " " Lo-L2L
" ONE " " AS SHOWN " " " Lo-L2AR
" ONE " " OPP. HAND " " " " Lo-L2AL
764
BOTTOM CHORD - Lo-L2L-Lo-L2R
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KENTUCKY
COMMONWEALTH OF KY. STATE HIGHWAY DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT
APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES
Rev. 4-13-31
RIVETS 1 1/16" ϕ OR NOTED
HOLES 1 1/16" ϕ OR NOTED
FIELD CONN. RIVS. - See Note
SHOP PAINT SEE NOTE
FIELD
DRAWN BY K.H. DATE 11-10-30
TRACED BY B.H.K. DATE 12-22-30
CHECKED BY C.H. DATE 12-23-30
DATE PRINTED
BILLS MATERIAL NO 29-30
CONT. 4633
S.O. 4628-G
DRAWING NO 16
BRIDGE



SHOP PAINT:-

ONE COAT OF RED LEAD AS PER SPECIFICATION.
PAINT CONTACT SURFACES.
ALL PARTS INACCESSIBLE AFTER ERECTION TO HAVE TWO SHOP COATS.
ALL SHEARED EDGES OF GUSSETS TO BE EDGE PLANED.

MAKE ONE	BOTTOM CHORD	AS SHOWN & NOTED - MARK	L2-L4R		
" ONE	"	OPP. HAND	"	- - -	L2-L4L
" ONE	"	AS SHOWN	"	- - -	L2-L4AR
" ONE	"	OPP. HAND	"	- - -	L2-L4AL

NOTE:

ALL MAIN TRUSS MEMBERS SUBPUNCHED 15/16" AND REAMED TO 1 1/16" AFTER ASSEMBLY OF MEMBER EXCEPT LACING BARS - TIE PLATES - LATERAL PLATES AND DIAPH. WEBS WHICH ARE TO BE PUNCHED FULL SIZE.

"A" ALL FIELD CONNECTIONS IN MAIN TRUSS SUBPUNCHED 15/16" AND REAMED TO 1 1/16" WHILE TRUSS IS COMPLETELY ASSEMBLED IN SHOP AND MATCHMARKED.

"B" FLOOR GIRDER CONNECTIONS SUBPUNCHED 15/16" AND REAMED TO 1 1/16" THRU A STEEL TEMPLET NOT LESS THAN 1" THICK.

7646

BOTTOM CHORDS L2L4L & L2L4AR

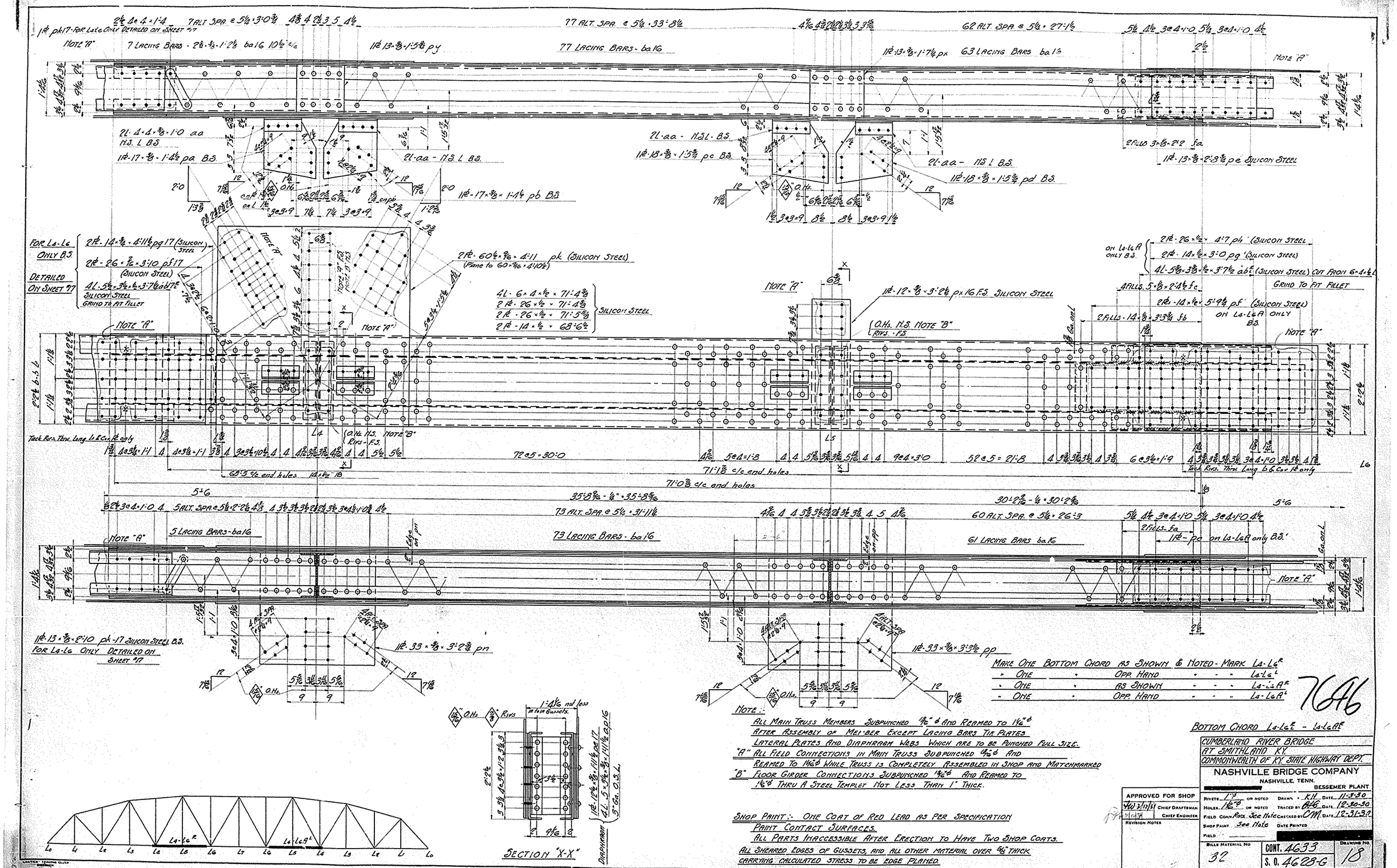
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KENTUCKY
COMMONWEALTH OF KY. STATE HIGHWAY DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
DESSEMER PLANT

RIVETS 7/8"	OR NOTED	DRAWN BY KH	DATE 10-24-30
HOLES 1 1/16"	OR NOTED	TRACED BY	DATE 12-26-30
FIELD CONN. BOLTS See Note		CHECKED BY CM	DATE 12-29-30
SHOP PAINT See Note		DATE PRINTED	
FIELD			
BILL MATERIAL NO 31		CONT. 4633 / S. O. 4628-G	DRAWING NO. 17

APPROVED FOR SHOP
7/1/31 CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

BRIDGE



MAKE ONE BOTTOM CHORD AS SHOWN & NOTED - MARK L0-L6R
" ONE " OPP. HAND " " " L0-L6L
" ONE " AS SHOWN " " " L0-L6AR
" ONE " OPP. HAND " " " L0-L6AL

7646

BOTTOM CHORD L0-L6R - L0-L6AR

NOTE:
ALL MAIN TRUSS MEMBERS SUBPUNCHED 15/16" ϕ AND REAMED TO 1 1/16" ϕ AFTER ASSEMBLY OF MEMBER EXCEPT LACING BARS TIE PLATES LATERAL PLATES AND DIAPHRAGM WEBS WHICH ARE TO BE PUNCHED FULL SIZE.
"A" ALL FIELD CONNECTIONS IN MAIN TRUSS SUBPUNCHED 15/16" ϕ AND REAMED TO 1 1/16" ϕ WHILE TRUSS IS COMPLETELY ASSEMBLED IN SHOP AND MATCHMARKED
"B" FLOOR GIRDER CONNECTIONS SUBPUNCHED 15/16" ϕ AND REAMED TO 1 1/16" ϕ THRU A STEEL TEMPLET NOT LESS THAN 1" THICK.

SHOP PAINT:- ONE COAT OF RED LEAD AS PER SPECIFICATION
PAINT CONTACT SURFACES.
ALL PARTS INACCESSIBLE AFTER ERECTION TO HAVE TWO SHOP COATS.
ALL SHEARED EDGES OF GUSSETS, AND ALL OTHER MATERIAL OVER 5/16" THICK CARRYING CALCULATED STRESS TO BE EDGE PLANED.

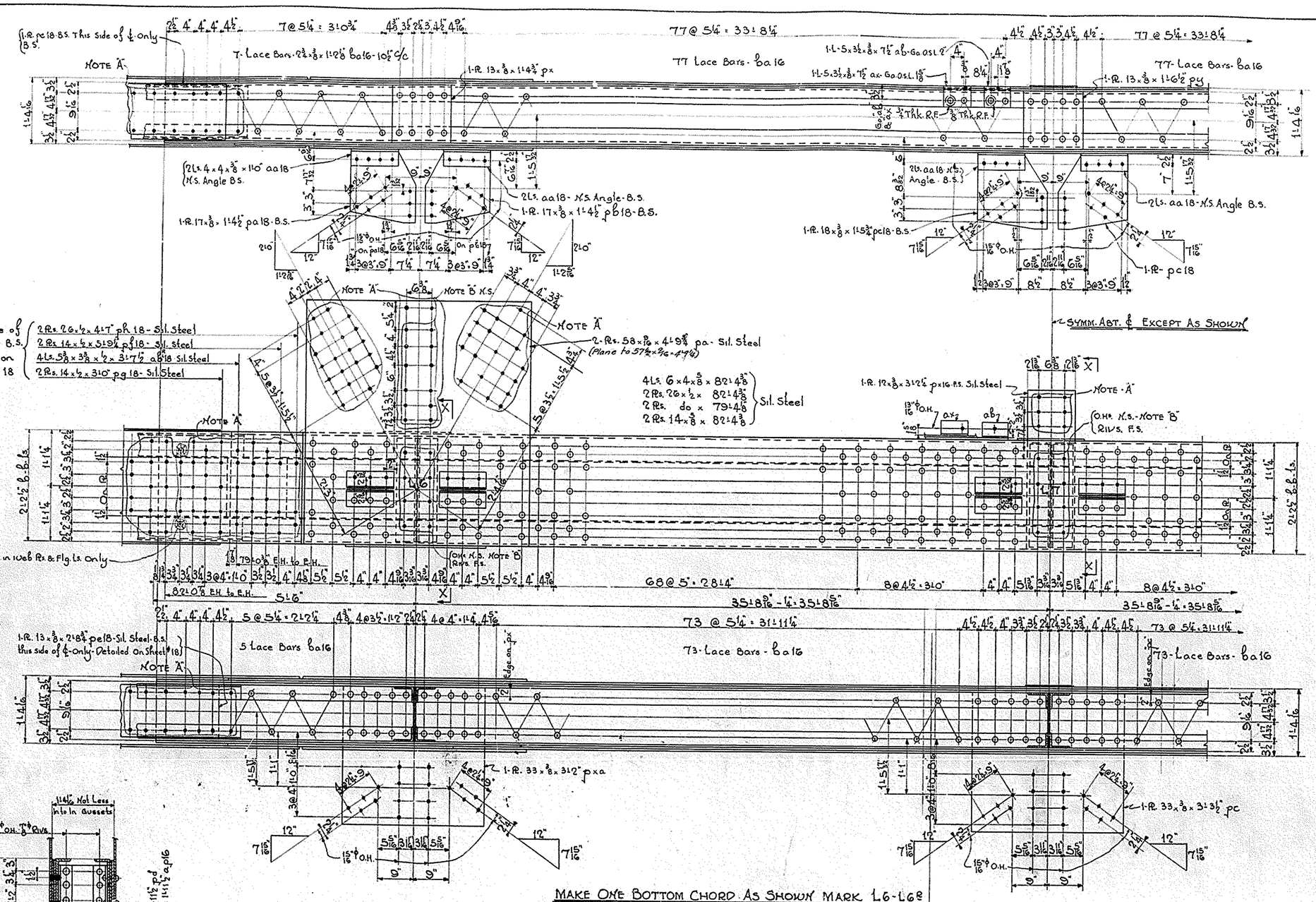
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HIGHWAY DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

Rivets 1 1/8" ϕ or noted	Drawn KH	Date 11-3-30	
Holes 1 1/16" ϕ or noted	Traced by DAG	Date 12-30-30	
Field Conn. Rivets See Note	Checked by CM	Date 12-31-30	
Shop Paint See Note	Date Printed		
Field			
Bills Material No. 32	CONT. 4633 S.O. 4628-G	Drawing No. 18	

APPROVED FOR SHOP
Feb 2/1931 Chief Draftsman
Chief Engineer
Revision Notes

BRIDGE



NOTE:-

All Main Truss Members Subpunched 13/16" and reamed to 1 1/16" after Assembly of Member - except Lacing Bars, Tie Pls, Lateral Pls and Diaphragm Webs which are to be punched Full Size.

NOTE "A"

All Field Connections in Main Truss Subpunched 13/16" and reamed to 1 1/16" while Truss is Completely Assembled in Shop and Held Ready.

NOTE "B"

Floor Girder Connections Subpunched 13/16" and reamed to 1 1/16" Thru a Steel Template not less than 1" Thick.

SHOP PAINT:-

One coat of Red Lead as per Specifications. Paint Contact Surfaces. All parts inaccessible after erection to have two Shop Coats.

All sheared edges of gussets to be edge planed.

7646

BOTTOM CHORD - L6-L6R

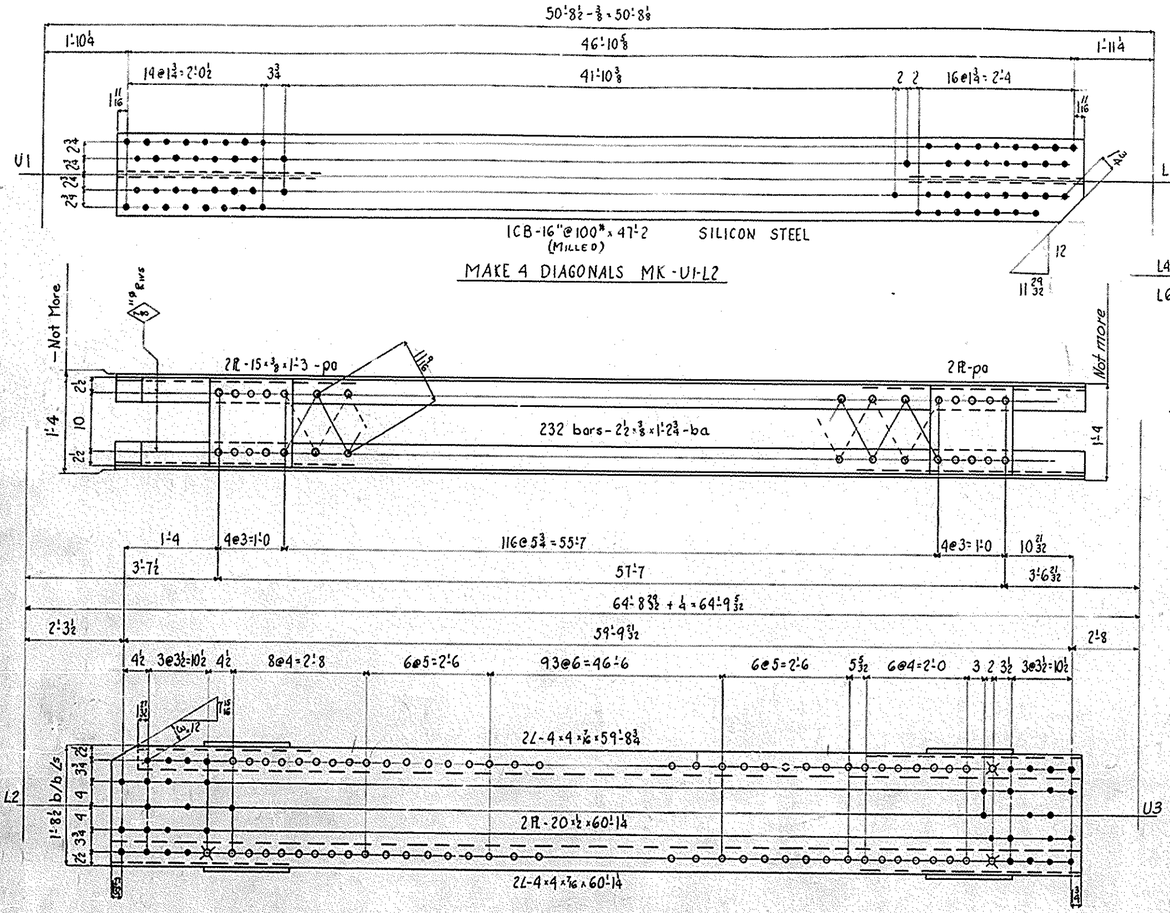
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

Rivets 13/16" or noted		Drawn by K.H.	Date 11-5-30
Holes 1 1/16" or noted		Traced by Goss	Date 12-31-30
Field Conn. Rivs. See Note		Checked by CM	Date 12-31-30
Shop Paint See Note		Date Printed	
Field			

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

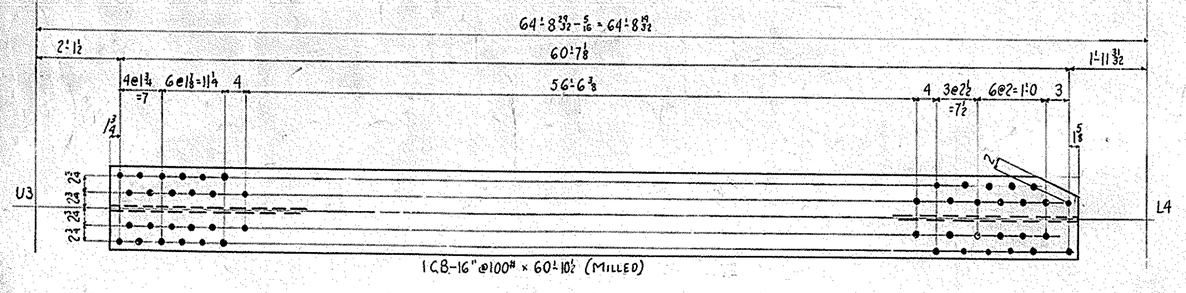
Bills Material No. 33
CONT. 4633
S. O. 4628-G
Drawing No. 19

BRIDGE

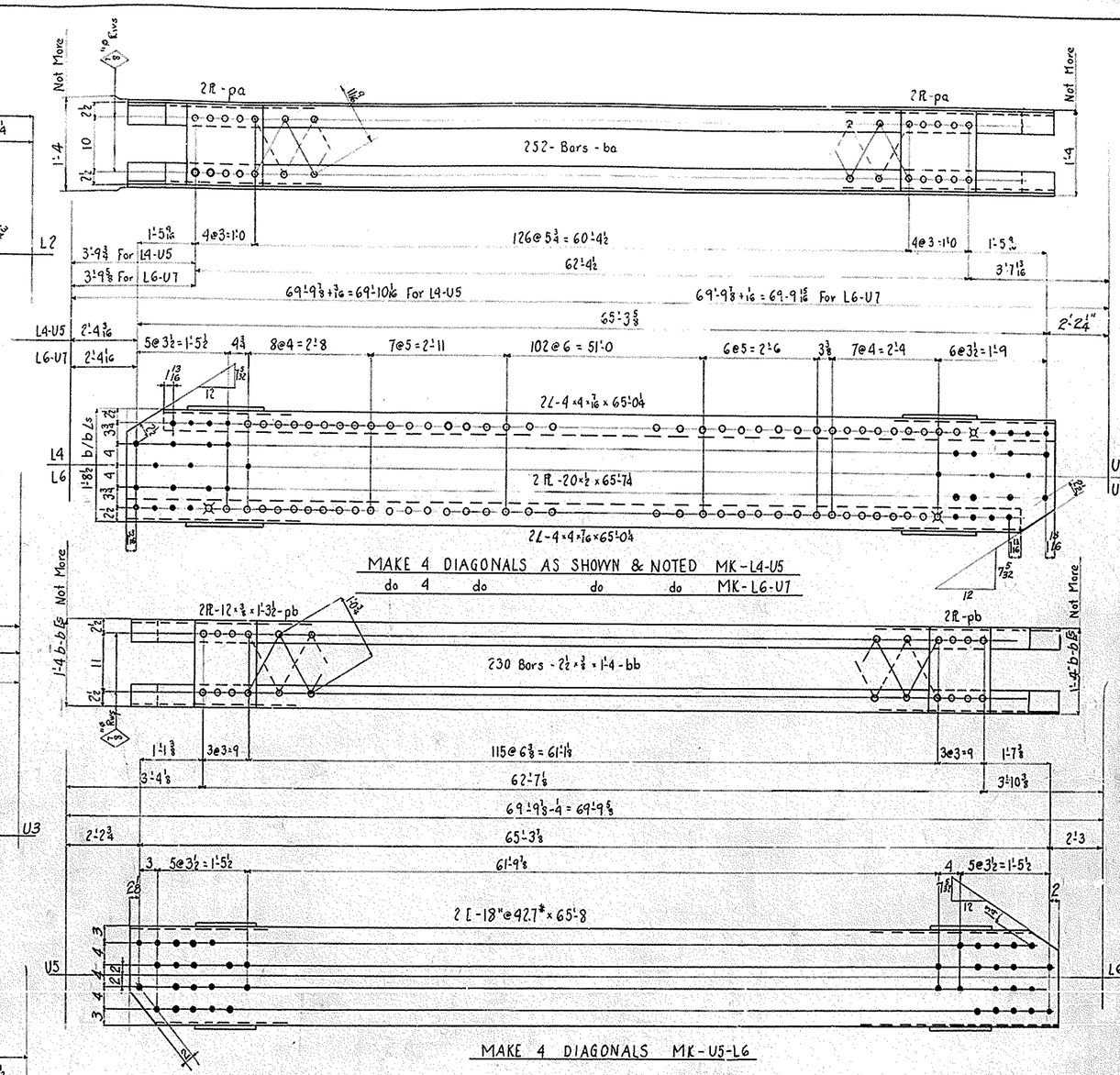


MAKE 4 DIAGONALS MK-U1-L2

MAKE 4 DIAGONALS MK-L2-U3

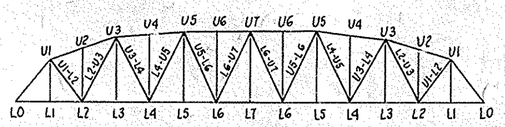


MAKE 4 DIAGONALS MK-U3-L4



MAKE 4 DIAGONALS AS SHOWN & NOTED MK-L4-U5
do 4 do do do MK-L6-U7

MAKE 4 DIAGONALS MK-U5-L6



MARKING DIAGRAM

N.I.E
All sheared edges of material over ⅝" thick to be milled

NOTE "A"
All field connections in main truss to be subpunched 1/16" ø and reamed to 1/16" ø while truss is completely assembled in shop and match marked

7646

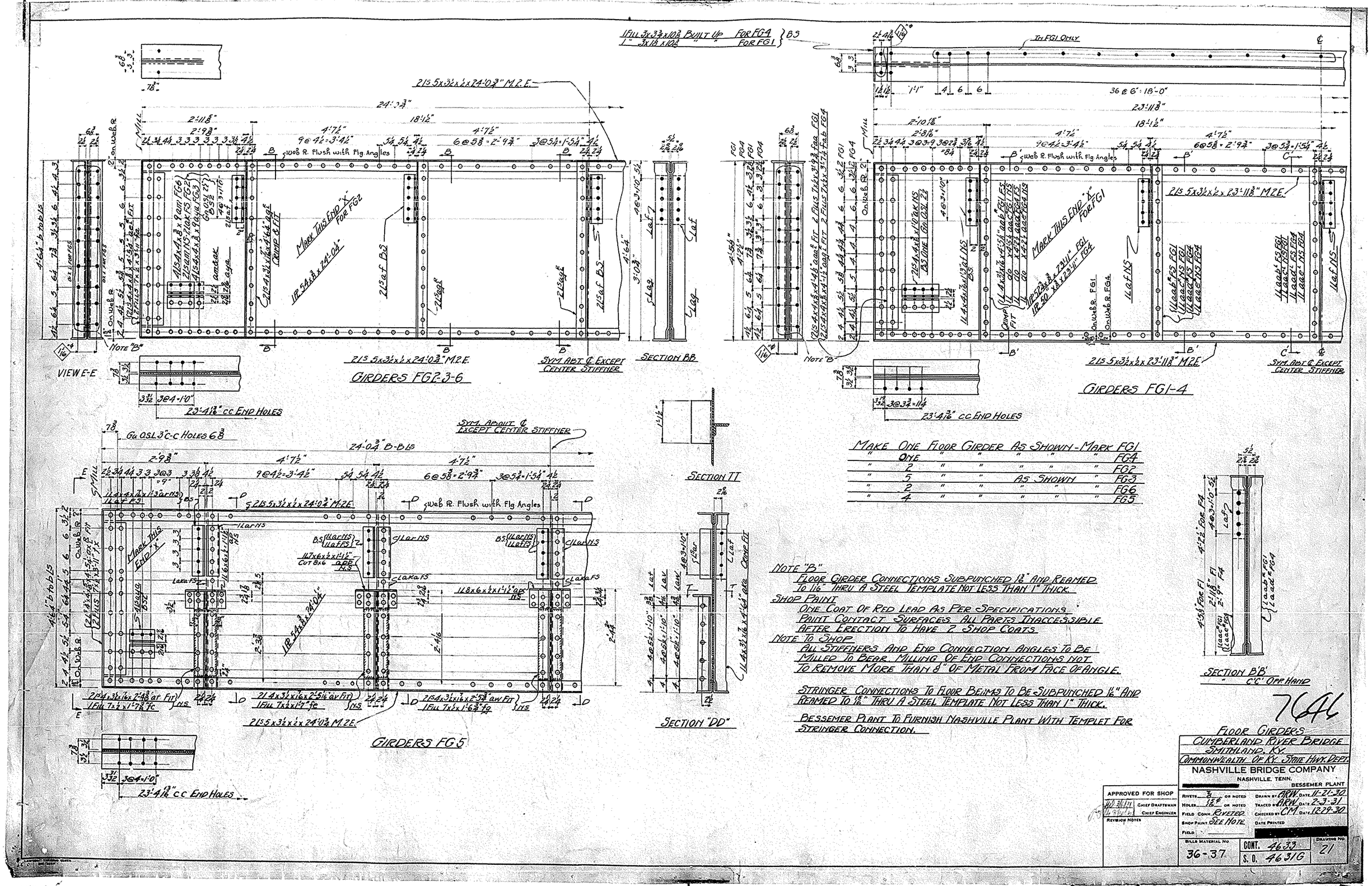
DIAGONALS

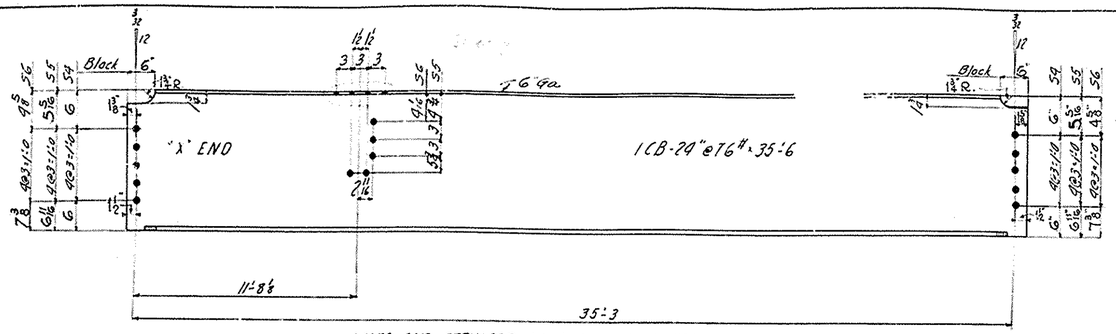
CUMBERLAND RIVER BRIDGE AT SMITHLAND KENTUCKY - COMMONWEALTH OF KY - STATE HWY DEPT -

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

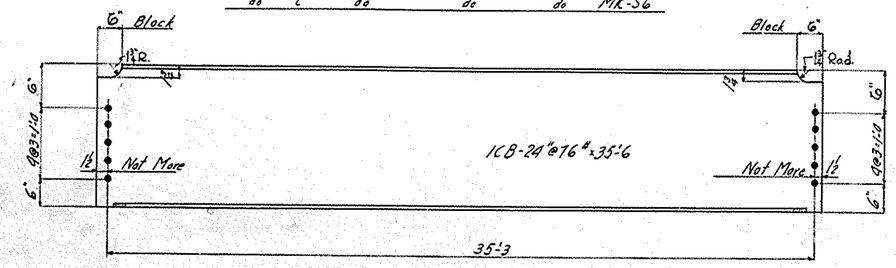
APPROVED FOR SHOP	
12/31/31 CHIEF DRAFTSMAN	
12/31/31 CHIEF ENGINEER	
REVISION NOTES	
RIVETS 1" ø OR NOTED	DRAWN BY WOH DATE 11-10-30
HOLES 1 1/16" ø OR NOTED	TRACED BY WOH DATE 12-12-30
FIELD CONN. Rivet Noted	CHECKED BY CM DATE 12-23-30
SHOP PAINT See Note	DATE PRINTED
FIELD	
BILLS MATERIAL NO. 34-35	CONT. 4633 S. O. 4628-G
DRAWING NO. 20	

BRIDGE

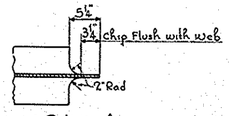

1 Fill 3x3½x10⅜ Built Up For FG4
1" 3x18x10⅜ " " For FG1 } BS
To FG1 Only
2 Ls 5x3½x½x24'-0¾" M.E.E.
2 Ls 5x3½x½x23'-11⅜" M.E.E.
Web R. Flush with Flg Angles
Mark This End "X" For FG2
Mark This End "X" For FG1
1 PL 54x⅜x24'-0¼"
1 PL 50x⅜x23'-11¼"
Note "B"
View E-E
Girders FG2-3-6
Sym. About ℄ Except Center Stiffner
Section BB
23'-4⅞" cc End Holes
Girders FG1-4
Make One Floor Girder As Shown - Mark FG1
" One " " " " " FG4
" 2 " " " " " FG2
" 5 " " As Shown " FG3
" 2 " " " " " FG6
" 4 " " " " " FG5
Section TT
Section "DD"
Section B'B'
" C'C' Opp Hand
Girders FG5
Sym. About ℄ Except Center Stiffner
Note "B"
Floor Girder Connections Subpunched ⅞" And Reamed To 1/16" Thru A Steel Template Not Less Than 1" Thick.
Shop Paint
One Coat Of Red Lead As Per Specifications.
Paint Contact Surfaces. All Parts Inaccessible After Erection To Have 2 Shop Coats.
Note To Shop
All Stiffners And End Connection Angles To Be Milled To Bear. Milling Of End Connections Not To Remove More Than ⅛" Of Metal From Face Of Angle.
Stringer Connections To Floor Beams To Be Subpunched 1/16" And Reamed To ⅞" Thru A Steel Template Not Less Than 1" Thick.
Bessemer Plant To Furnish Nashville Plant With Templet For Stringer Connection.
764
Floor Girders
Cumberland River Bridge
Smithland, Ky.
Commonwealth Of Ky. State Hwy. Dept.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT
Approved For Shop
Chief Draftsman
Chief Engineer
Revision Notes
Rivets ¾ or noted
Holes 15/16 or noted
Field Conn. Riveted
Shop Paint See Note
Field
Drawn by ARW Date 11-21-30
Traced by ARW Date 2-3-31
Checked by CM Date 12-29-30
Date Printed
Bill Material No. 36-37
Cont. 4633
S. O. 4631G
Drawing No. 21
BRIDGE



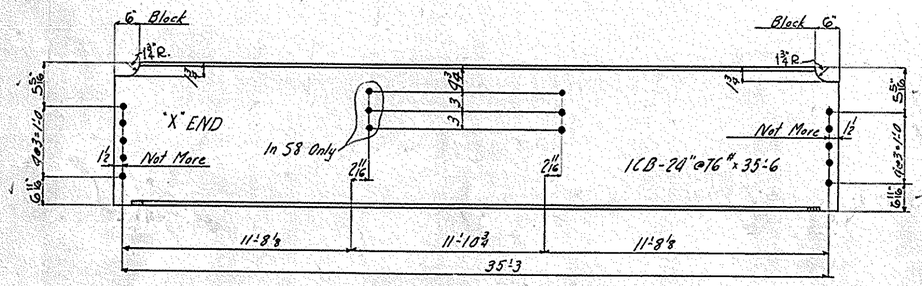
MAKE ONE STRINGER AS SHOWN & NOTED MK-54
do 2 do do do MK-55
do 2 do do do MK-56



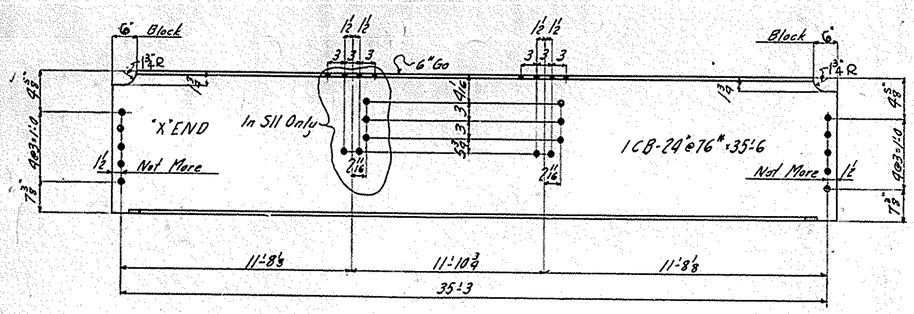
MAKE 9 STRINGERS AS SHOWN MK-57



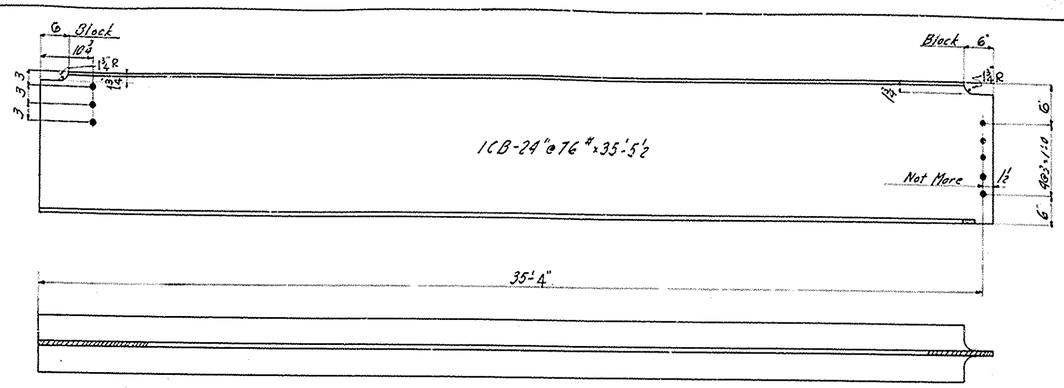
Typical Detail Showing Cuts in Bottom Flanges of all Stringers.



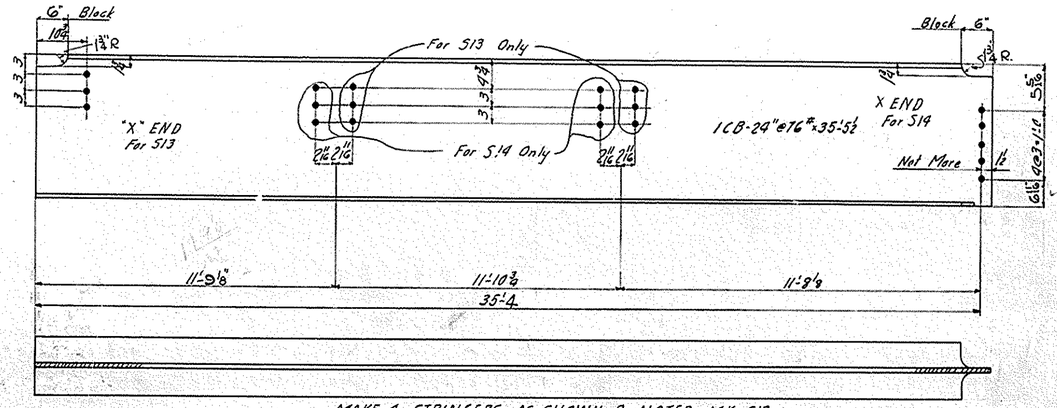
MAKE 16 STRINGERS AS SHOWN & NOTED MK-58
do 2 do do do MK-59



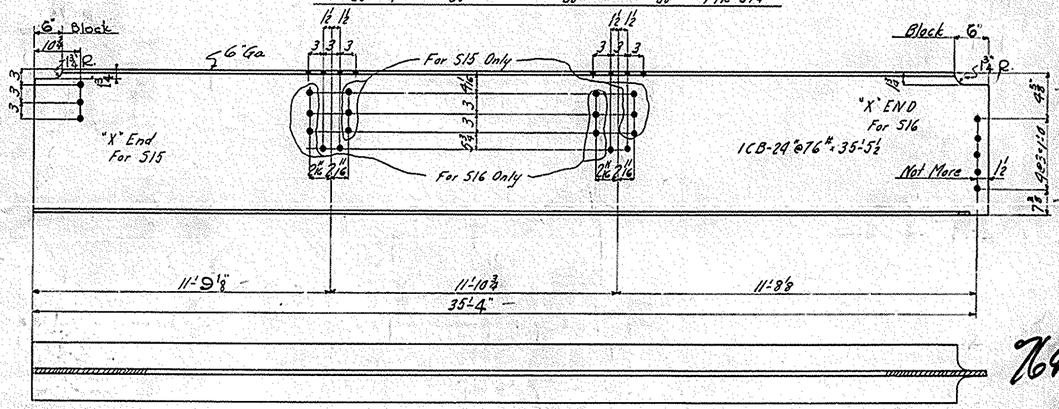
MAKE 2 STRINGERS AS SHOWN & NOTED MK-510
do 16 do do do MK-511



MAKE 4 STRINGERS - MK-512



MAKE 4 STRINGERS AS SHOWN & NOTED MK-513
do 4 do do do MK-514



MAKE 4 STRINGERS AS SHOWN & NOTED MK-515
do 4 do do do MK-516

NOTE TO SHOP
Stringer Connections to Floorbeams to be subpunched 1/16"ϕ and reamed to 1½"ϕ through a steel templet not less than 1 inch thick - Bessemer Plant to furnish Nashville Plant with templet for Stringer Conn -

SHOP PAINT
One coat of red lead as per specifications -
Paint all contact surfaces - All parts inaccessible after erection to have two shop coats -

APPROVED FOR SHOP
10-31-31 Chief Draftsman
Chief Engineer
Revision Notes

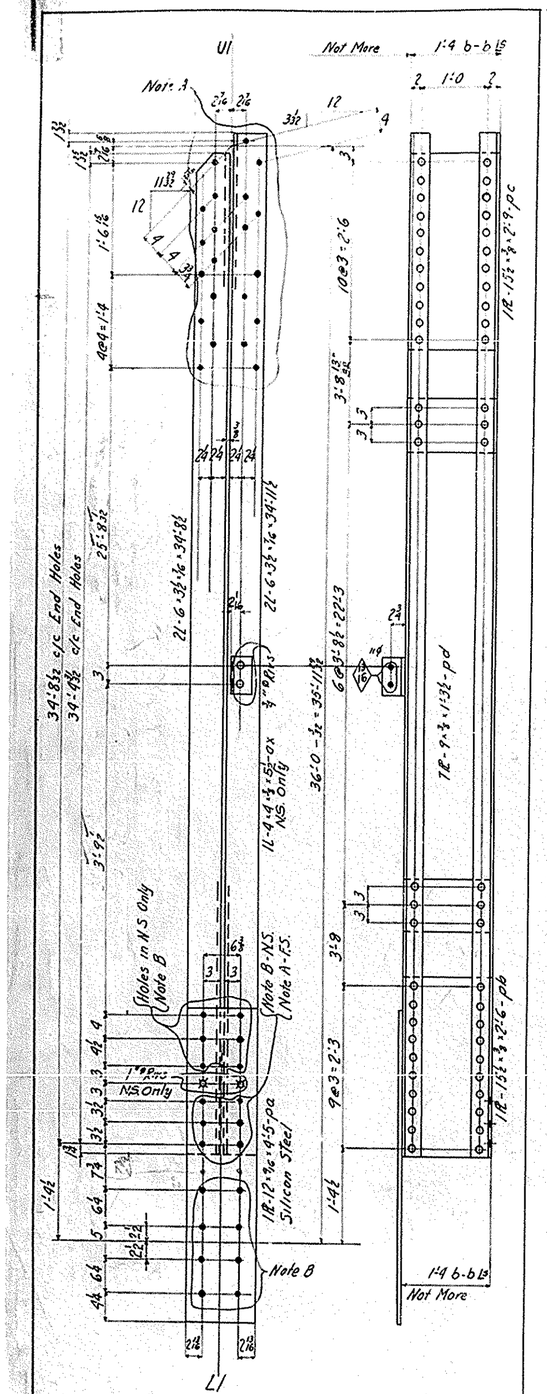
CUMBERLAND RIVER BRIDGE AT SMITHLAND KENTUCKY - COMMONWEALTH OF KY - STATE HWY DEPT

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

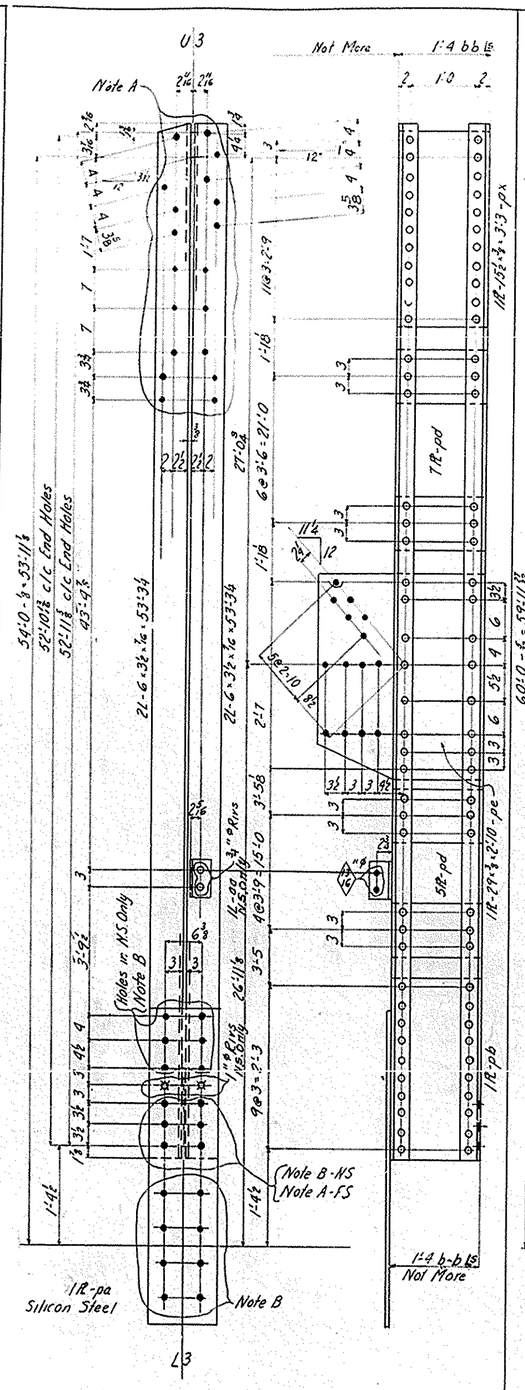
NASHVILLE PLANT
Rivets 7/8 or noted — Drawn by WOI — Date 11-19-30
Holes 15/16 or noted — Traced by WOI — Date 12-19-30
Field Conn. Rivs & Bolts — Checked by CM — Date 12-23-30
Shop Paint See Note — Date Printed
Field

Bill of Material No. 38
CONT. 4633
S. O. 4632-G
Drawing No. 22

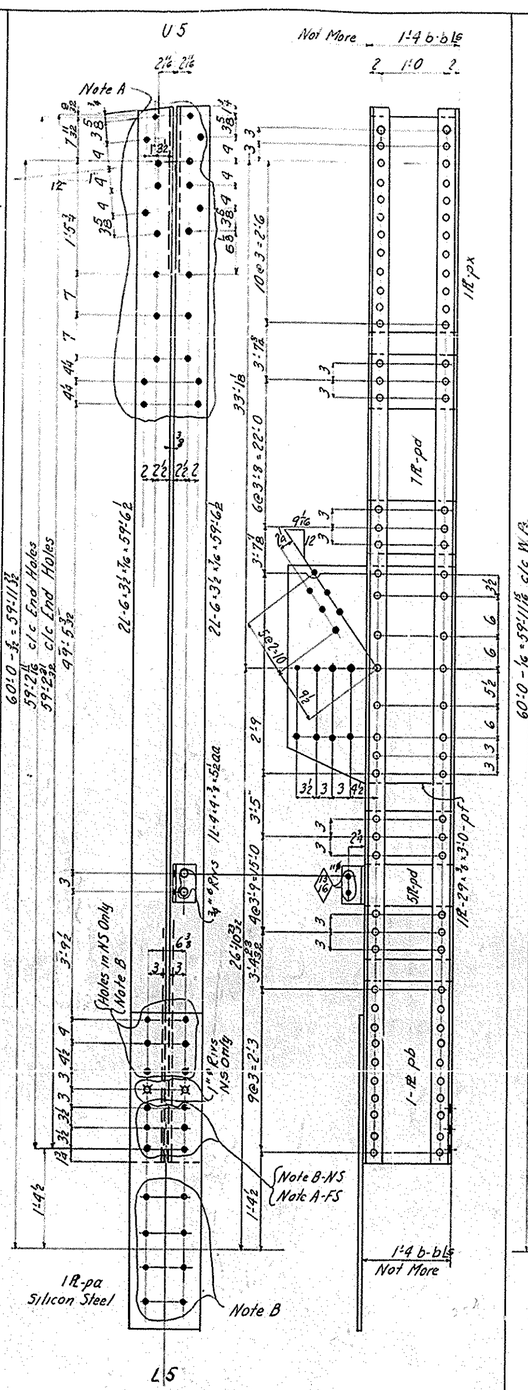
BRIDGE



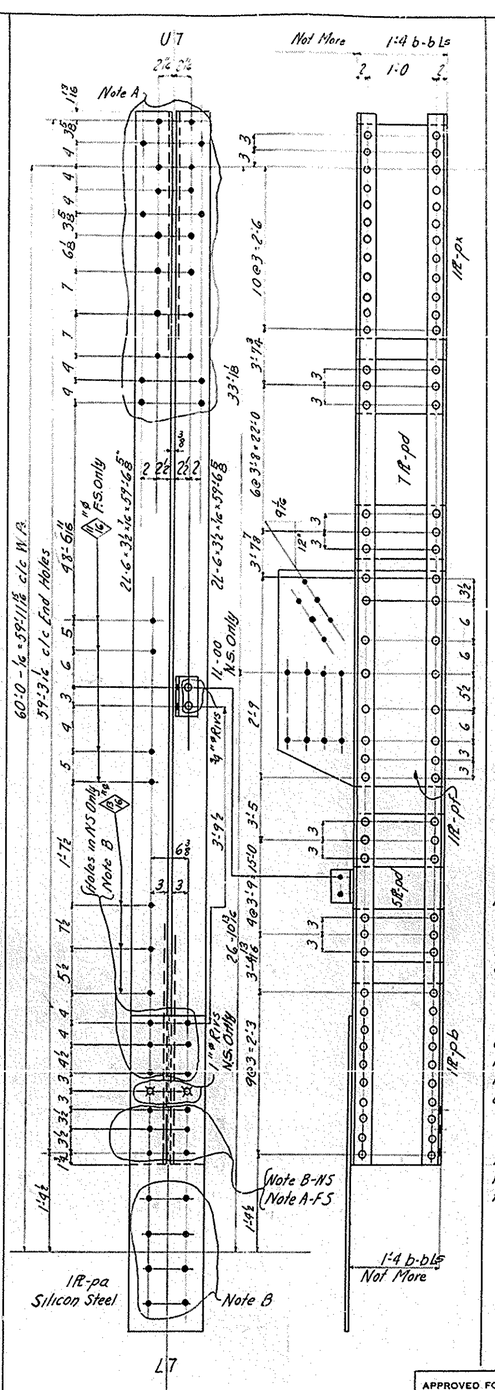
MAKE 2 POSTS AS SHOWN MK-U1-L1R
do 2 do OPP HAND MK-U1-L1L



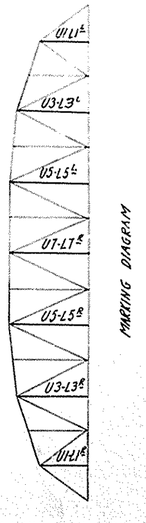
MAKE 2 POSTS AS SHOWN MK-U3-L3R
MAKE 2 do OPP HAND MK-U3-L3L



MAKE 2 POSTS AS SHOWN MK-U5-L5R
do 2 do OPP HAND MK-U5-L5L



MAKE ONE POST AS SHOWN MK-U7-L7R
do ONE do. OPP HAND MK-U7-L7L



MARKING DIAGRAM

NOTE A

All field connections in main truss subpunched 1 1/16" ø and reamed to 1 1/16" ø while truss is completely assembled in shop and match marked

NOTE B

Floor girder connections subpunched 1 1/16" ø and reamed to 1 1/16" ø through a steel templet not less than one inch thick

Paint Note

One coat of red lead as per specifications - Paint contact surfaces - All parts inaccessible after erection to have two shop coats

NOTE

All sheared edges of gussets, and of all other material over 5/8" thick, carrying calculated stress to be edge planed

7646

POSTS

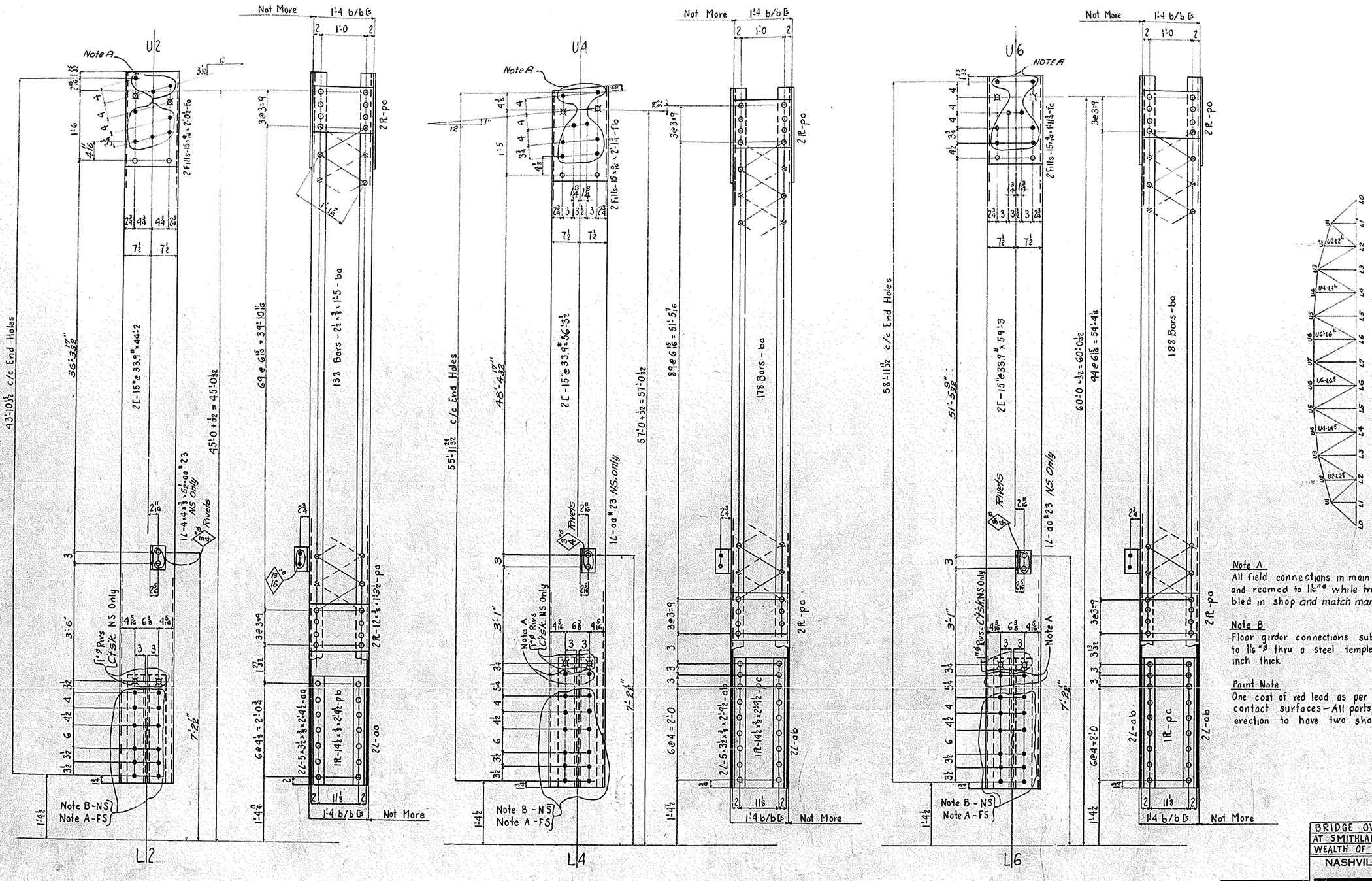
BRIDGE OVER CUMBERLAND RIVER AT SMITHLAND KENTUCKY - COMMONWEALTH OF KY - STATE HWY DEPT -

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

R VETS. 7/8" ø OR NOTED		DRAWN BY WH	DATE 11-6-30
HOLES 13/16" ø OR NOTED		TRACED BY WH	DATE 12-16-30
FIELD CONN. Bus See Note		CHECKED BY CM	DATE 12-23-30
SHOP PAINT See Note		DATE PRINTED	
FIELD			
BILLS MATERIAL No. 39-40	CONT. 4633 S.O. 4628-G	DRAWING No. 23	

BRIDGE



Note A
All field connections in main truss subpunched 13/16"ø and reamed to 1 1/16"ø while truss is completely assembled in shop and match marked

Note B
Floor girder connections subpunched 13/16"ø and reamed to 1 1/16"ø thru a steel templet not less than one inch thick

Paint Note
One coat of red lead as per specifications - Paint contact surfaces - All parts inaccessible after erection to have two shop coats

7646

MAKE - 2 - POST AS SHOWN MK-U2-L2R
do - 2 - do OPP HAND MK-U2-L2L

MAKE - 2 - POST AS SHOWN MK-U4-L4R
do - 2 - do OPP HAND MK-U4-L4L

MAKE - 2 - POST AS SHOWN MK-U6-L6R
do - 2 - do OPP HAND MK-U6-L6L

POSTS

BRIDGE OVER CUMBERLAND RIVER
AT SMITHLAND KENTUCKY - COMMON-
WEALTH OF KY - STATE HWY DEPT -

NASHVILLE BRIDGE COMPANY
NASHVILLE TENN.

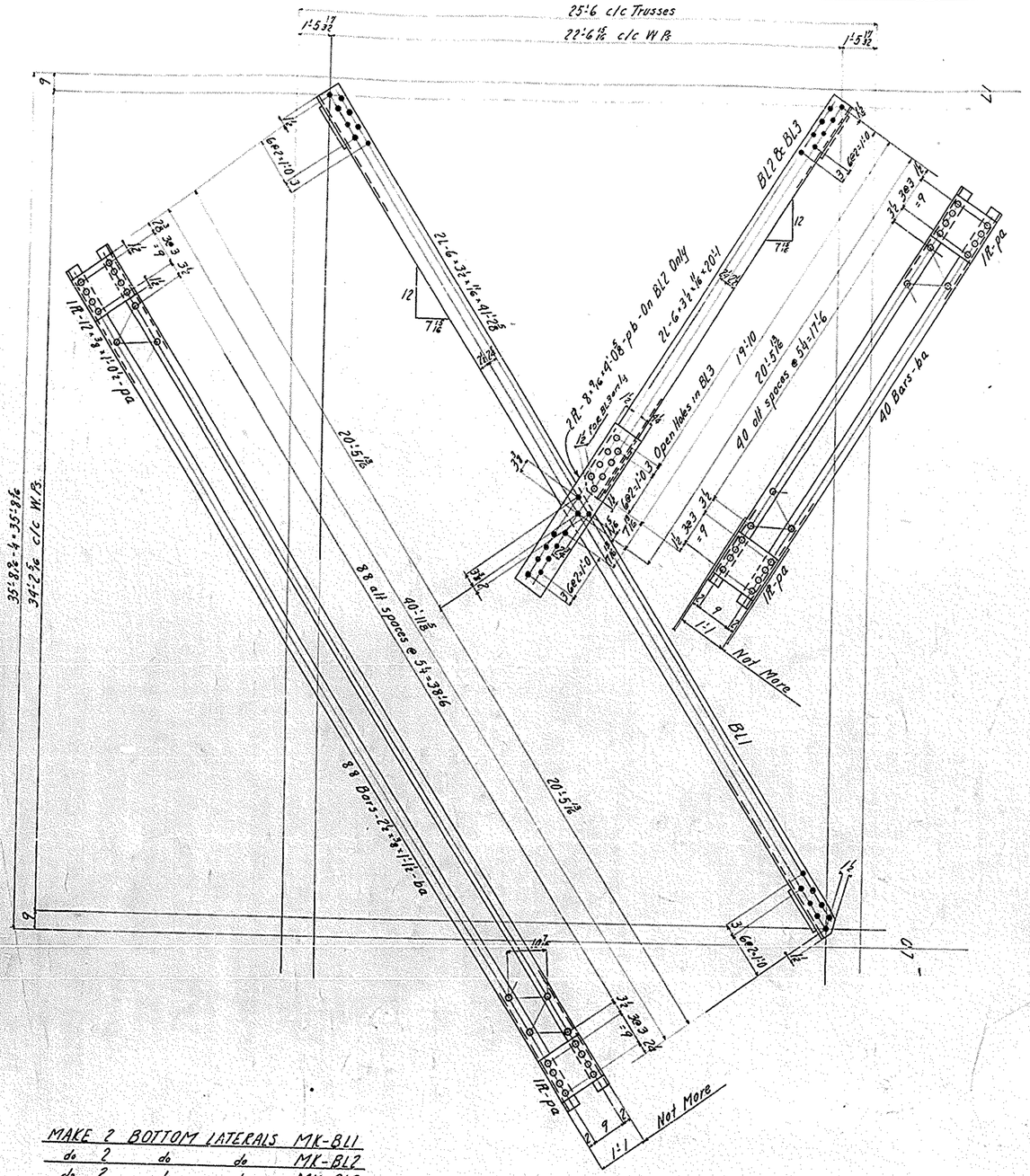
BESSEMER PLANT

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

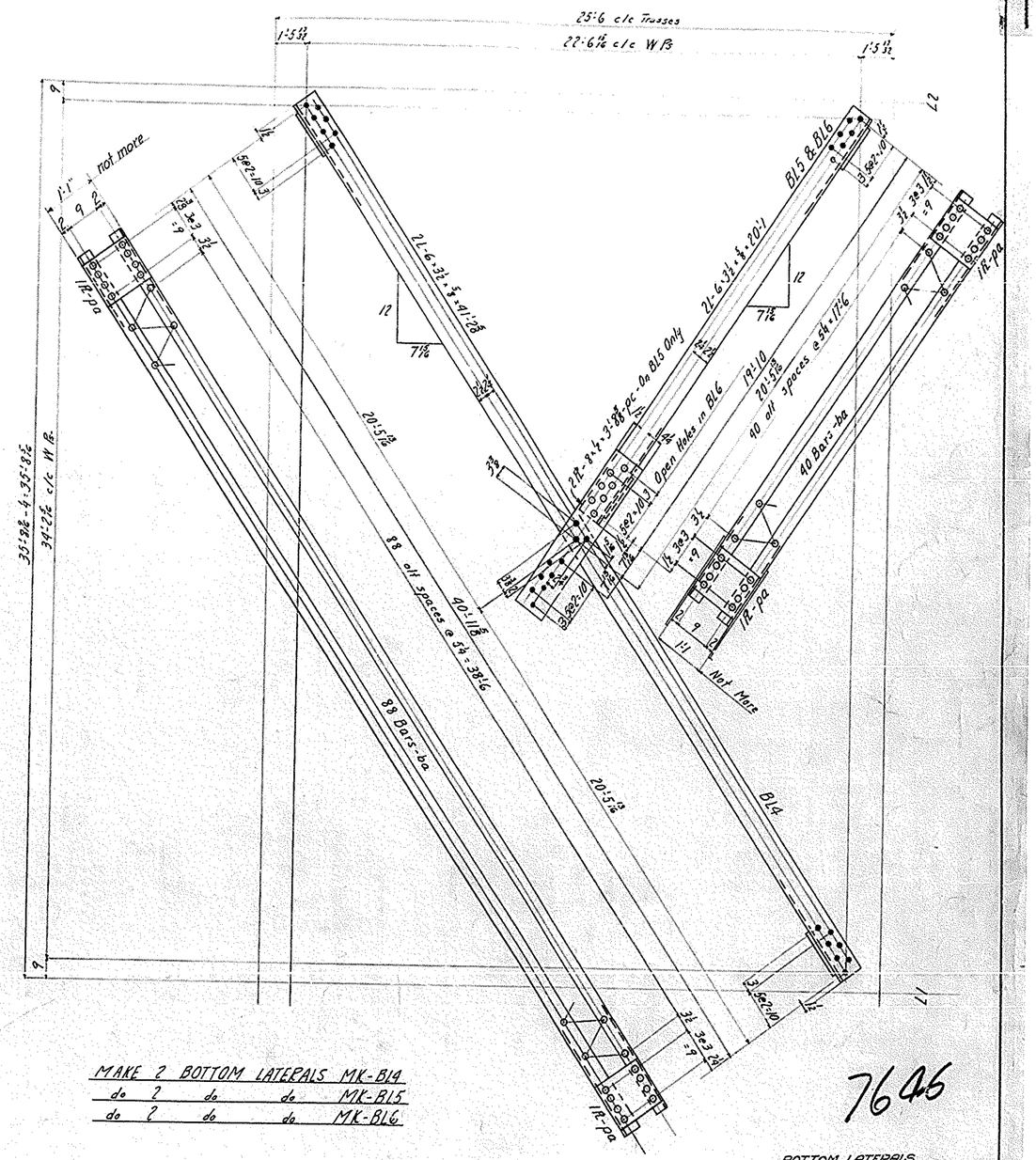
RIVETS 5/8 OR NOTED		DRAWN BY WDJ	DATE 11-7-30
HOLES 15/16 OR NOTED		TRACED BY WDJ	DATE 12-13-30
FIELD CONN. RW - See Note		CHECKED BY CM	DATE 12-23-30
SHOP PAINT See Note		DATE PRINTED	
FIELD			

BILL MATERIAL NO.	CONT.	DRAWING NO.
41-42	4633	24
	S. O. 4628-G	

BRIDGE



MAKE 2 BOTTOM LATERALS MK-BL1
do 2 do do MK-BL2
do 2 do do MK-BL3



MAKE 2 BOTTOM LATERALS MK-BL4
do 2 do do MK-BL5
do 2 do do MK-BL6

7646

SHOP PAINT:
One coat of red lead as per specifications - Paint contact surfaces - All parts inaccessible after erection to have two shop coats -

BOTTOM LATERALS

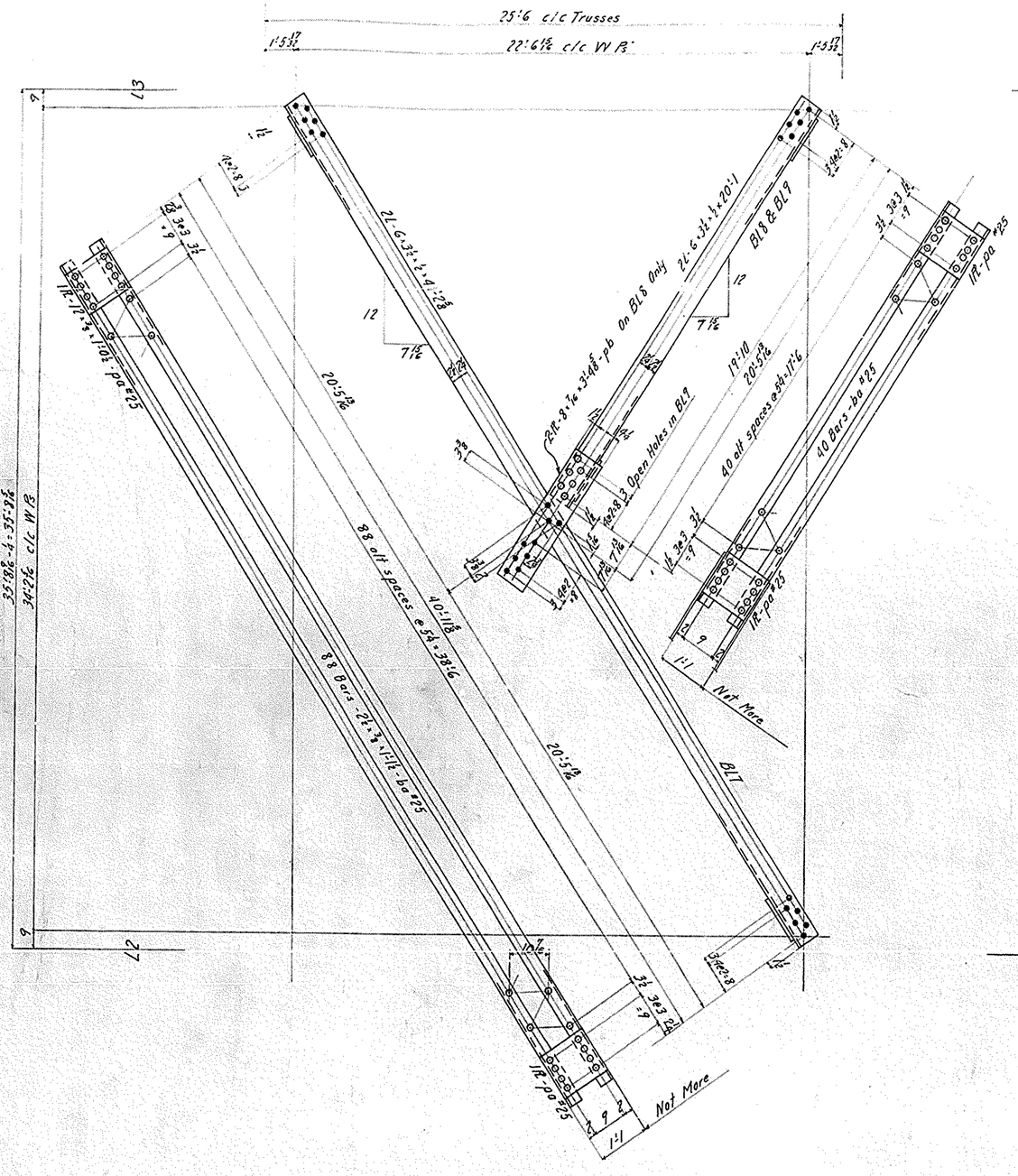
CUMBERLAND RIVER BRIDGE AT SMITHLAND KENTUCKY - COMMONWEALTH OF KY - STATE HWY DEPT -

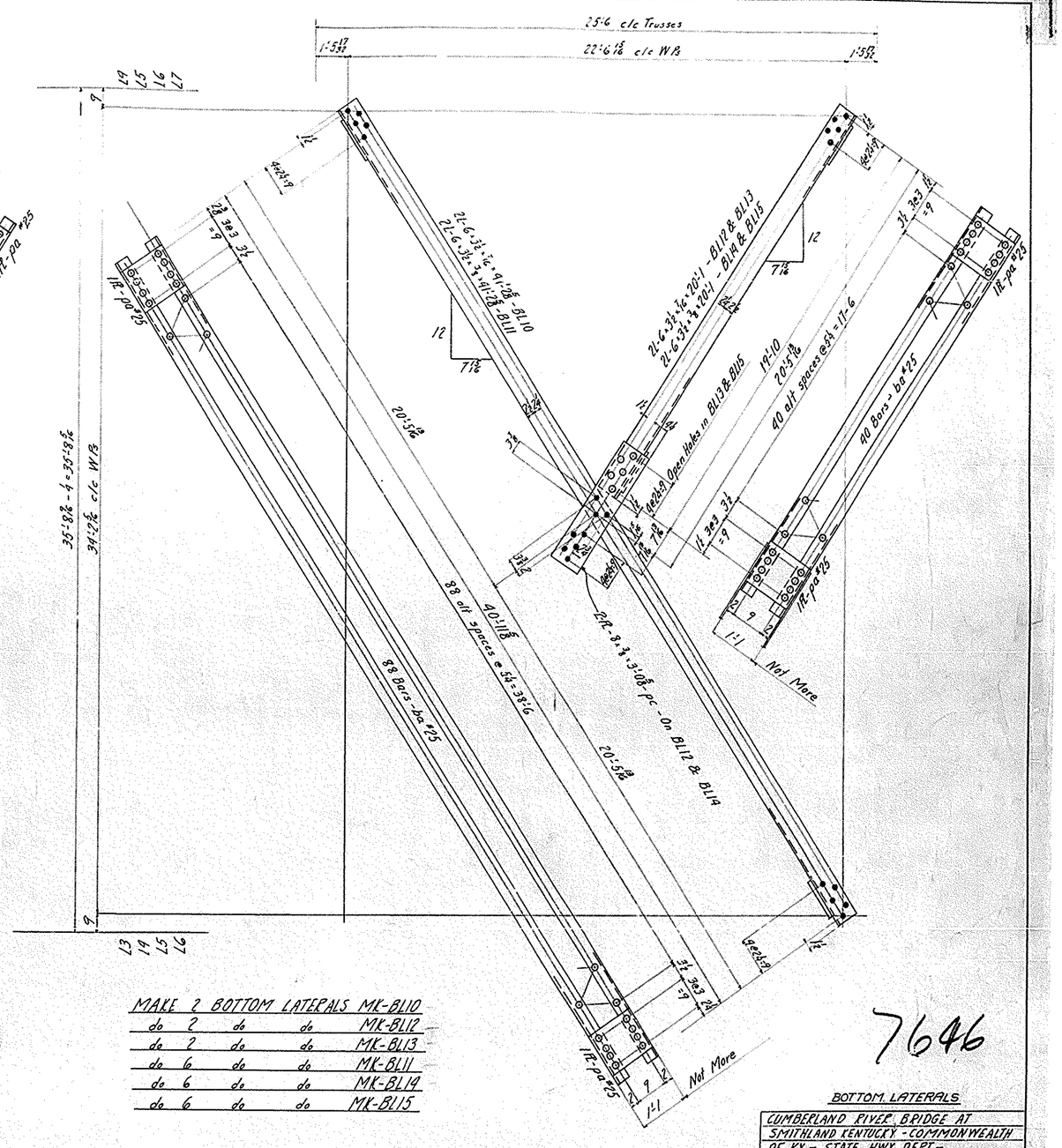
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

Rivets 7/8" or noted		Drawn by VOI	Date 10-22-30
Holes 15/16" or noted		Traced by VOI	Date 12-17-30
Field Conn. Riveted		Checked by CMM	Date 12-23-30
Shop Paint See Note		Date Printed	
Field			
Bills Material No. 43-44	Cont. 4633 / S. O. 4628-G	Drawing No. 25	

BRIDGE





MAKE 2 BOTTOM LATERALS MK-BL10
do 2 do do MK-BL12
do 2 do do MK-BL13
do 6 do do MK-BL11
do 6 do do MK-BL14
do 6 do do MK-BL15

MAKE 2 BOTTOM LATERALS MK-BL7
do 2 do do MK-BL8
do 2 do do MK-BL9

SHOP PAINT
One coat of red lead as per specifications - Paint contact surfaces - All parts inaccessible after erection to have two shop coats -

7646

BOTTOM LATERALS

CUMBERLAND RIVER BRIDGE AT SMITHLAND KENTUCKY - COMMONWEALTH OF KY - STATE HWY. DEPT -

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
BESSEMER PLANT

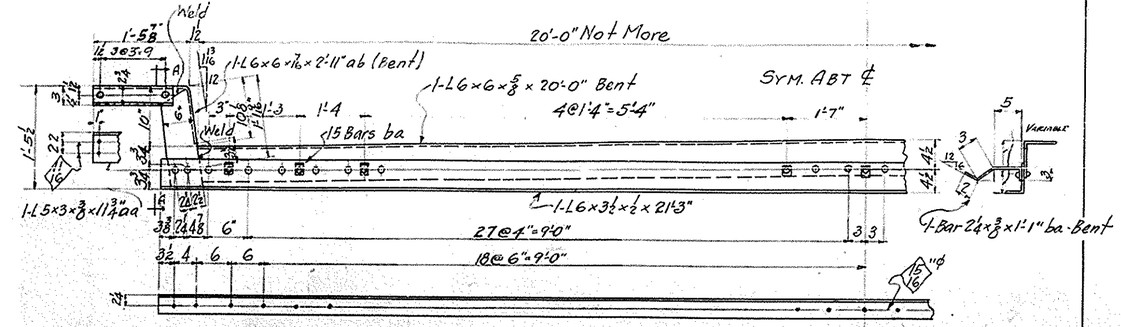
APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

RIVETS 7/8" OR NOTED
HOLES 15/16" OR NOTED
FIELD CONN. Riveted
SHOP PAINT See Note
FIELD

DRAWN BY WOI DATE 12-23-30
TRACED BY WOI DATE 12-17-30
CHECKED BY DM DATE 12-23-30
DATE PRINTED

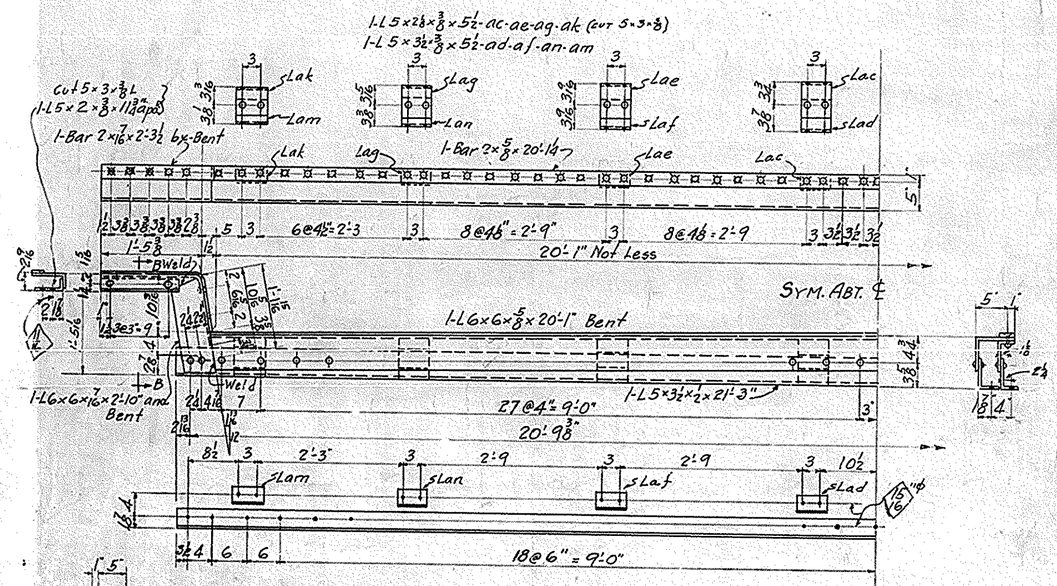
BILL MATERIAL NO 45-46
CONT. 4633
S. O. 4628-G
DRAWING NO. 26

BRIDGE

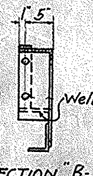


MAKE 6 EXPANSION ANGLES AS SHOWN-MARK EA1

SECTION "A-A"

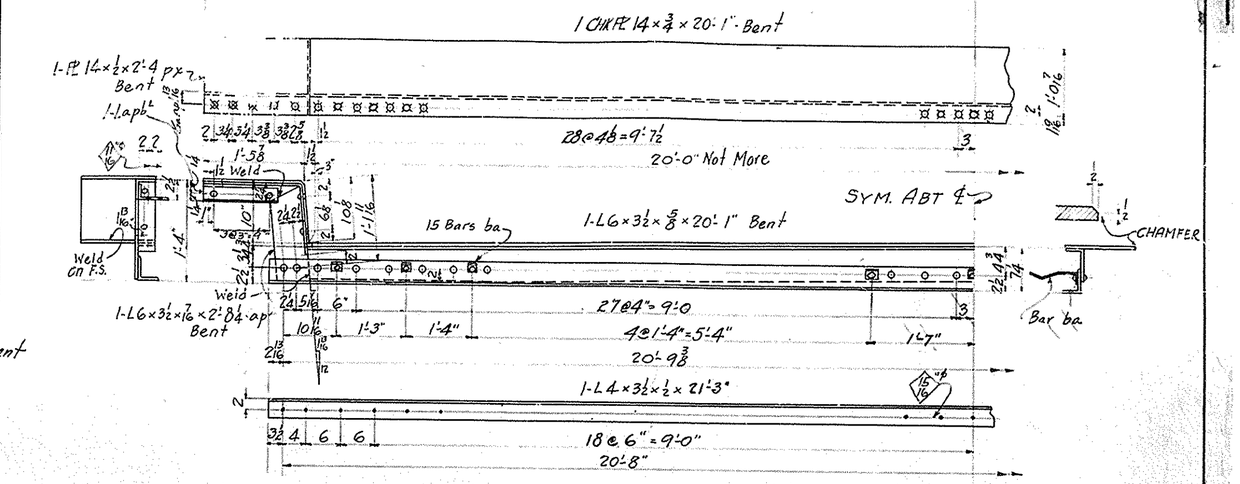


MAKE 6 EXPANSION ANGLES AS SHOWN-MARK EA2

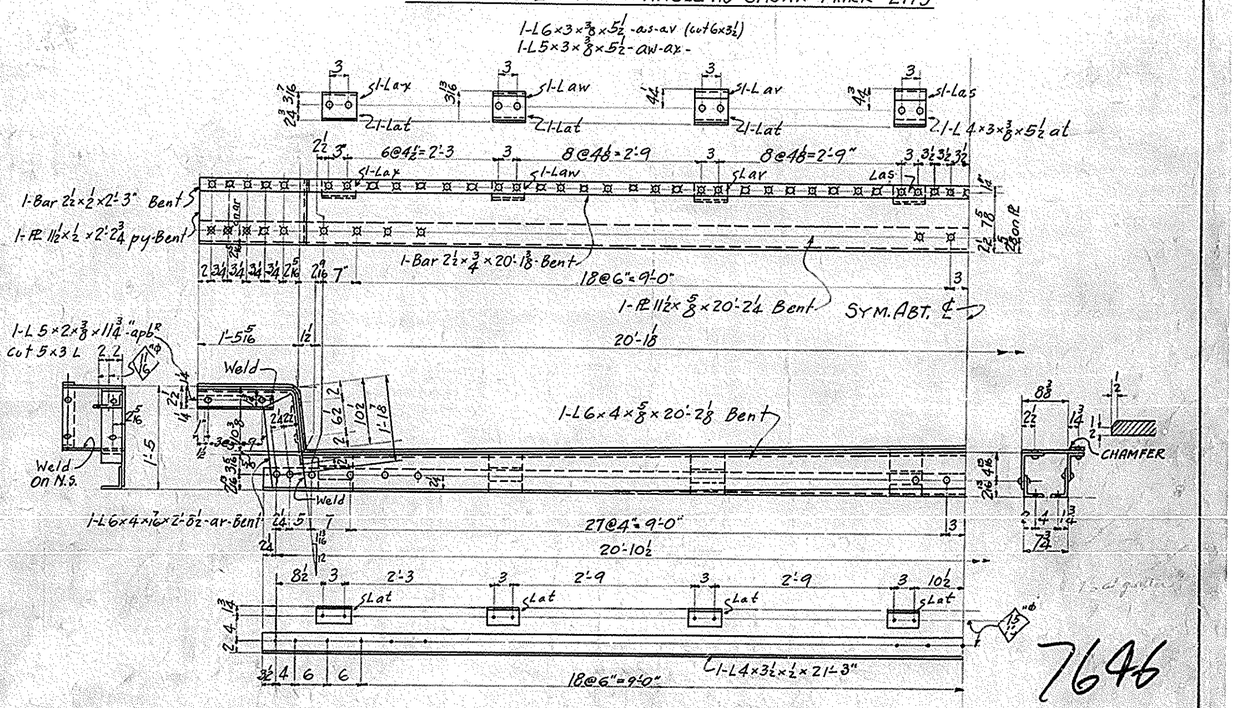


SECTION "B-B"

S.O. 4638G



MAKE ONE EXPANSION ANGLE AS SHOWN-MARK EA3



MAKE ONE EXPANSION ANGLE AS SHOWN-MARK EA4

7646

NOTE:
ALL EXPANSION DAMS TO BE SET UP IN SHOP TO INSURE THE PROPER FIT & SMOOTH MOVEMENT. DAMS EA1 & EA2 TO BE MATCHMARKED.

PAINT NOTE:-
One coat of red lead as per Specs.
Paint contact surfaces. All parts inaccessible after erection to have 2 shop coats

S.O. 4629G

APPROVED FOR SHOP	
12-6-30	CHIEF DRAFTSMAN
12-12-31	CHIEF ENGINEER
REVISION NOTES	

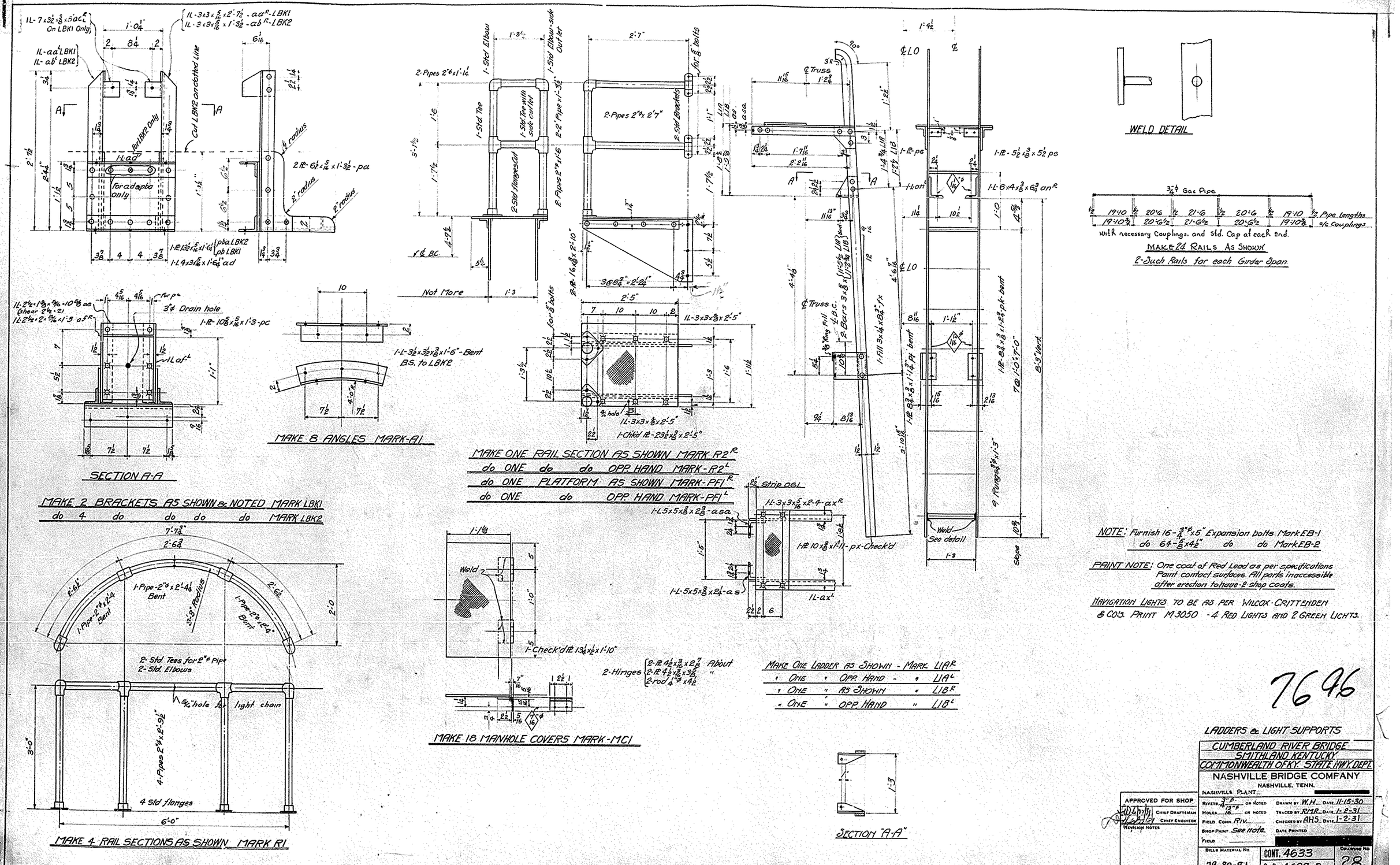
EXPANSION ANGLES
CUMBERLAND RIVER BRIDGE
SMITHLAND, KY.
COMMONWEALTH OF KENTUCKY-STATE HWY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

NASHVILLE PLANT [redacted]

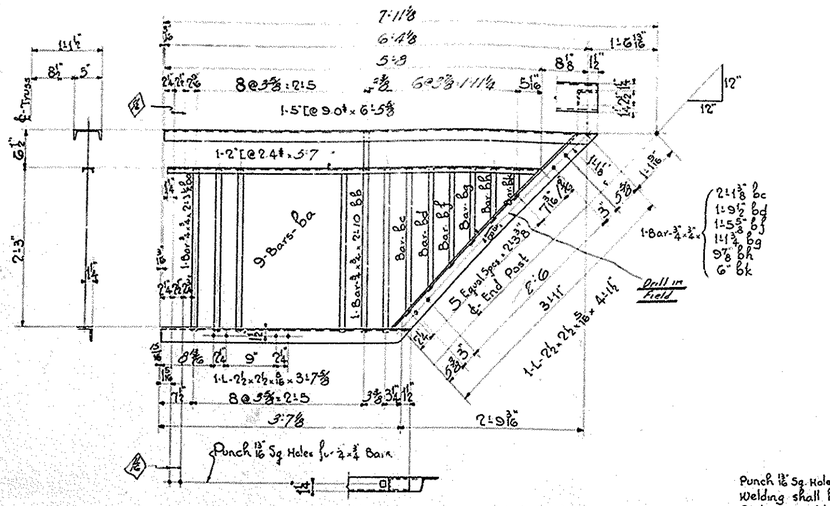
RIVETS 3/4 OR NOTED		DRAWN BY ARW	DATE 11-18-30
HOLES 13/16 OR NOTED		TRACED BY AHS	DATE 12-30-30
FIELD CONN. Riveted		CHECKED BY CM	DATE 1-2-31
SHOP PAINT See Note		DATE PRINTED	
FIELD			

BILLS MATERIAL NO.	CONT. 4633	DRAWING NO.
4748	S.O. 4629G 4638G	27

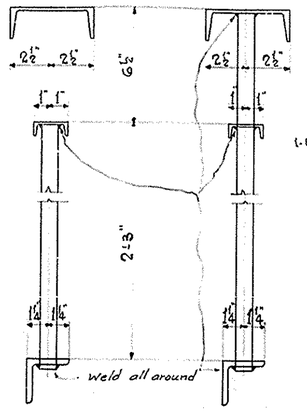
BRIDGE


MAKE 8 ANGLES MARK-A1
SECTION A-A
MAKE 2 BRACKETS AS SHOWN & NOTED MARK LBK1
do 4 do do do do MARK LBK2
MAKE 4 RAIL SECTIONS AS SHOWN MARK R1
MAKE 18 MANHOLE COVERS MARK-MC1
MAKE ONE RAIL SECTION AS SHOWN MARK R2R
do ONE do do OPP. HAND MARK-R2L
do ONE PLATFORM AS SHOWN MARK-PF1R
do ONE do OPP. HAND MARK-PF1L
MAKE ONE LADDER AS SHOWN - MARK L1AR
" ONE " OPP. HAND - " L1AL
" ONE " AS SHOWN " L1BR
" ONE " OPP. HAND " L1BL
SECTION "A-A"
WELD DETAIL
MAKE 24 RAILS AS SHOWN
2-Such Rails for each Girder Span
NOTE: Furnish 16-3/4"φ x 5" Expansion bolts Mark EB-1
do 64-5/8"φ x 4 1/2" do do Mark EB-2
PAINT NOTE: One coat of Red Lead as per specifications
Paint contact surfaces. All parts inaccessible after erection to have 2 shop coats.
NAVIGATION LIGHTS TO BE AS PER WILCOX-CRITTENDEN & CO'S. PRINT M-3050 - 4 RED LIGHTS AND 2 GREEN LIGHTS.
7646
LADDERS & LIGHT SUPPORTS
CUMBERLAND RIVER BRIDGE
SMITHLAND KENTUCKY
COMMONWEALTH OF KY. STATE HWY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT
APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES
DRAWN BY W.H. DATE 11-15-30
TRACED BY R.R. DATE 1-2-31
CHECKED BY AHS DATE 1-2-31
SHOP PAINT See note.
DATE PRINTED
BILL OF MATERIAL NO. 79-80-81
CONT. 4633
S. D. 4629-G
DRAWING NO. 28

BRIDGE

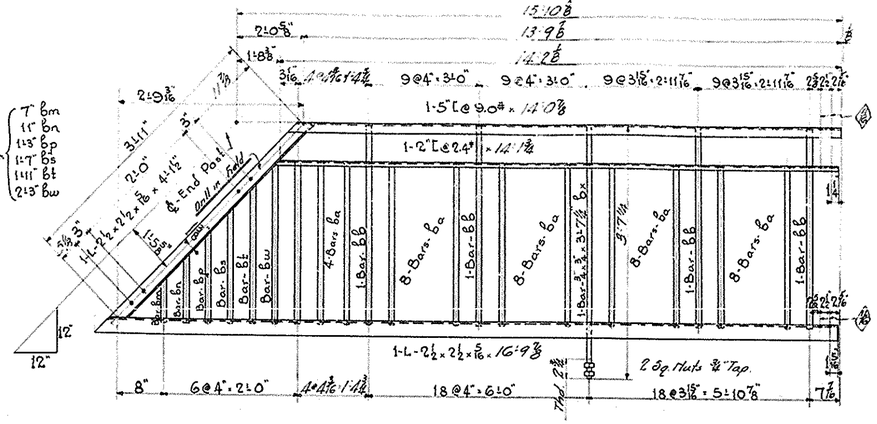


MAKE ONE HAND RAIL SECTION AS SHOWN MARK H1R
" ONE " " " OPP HAND " H1L

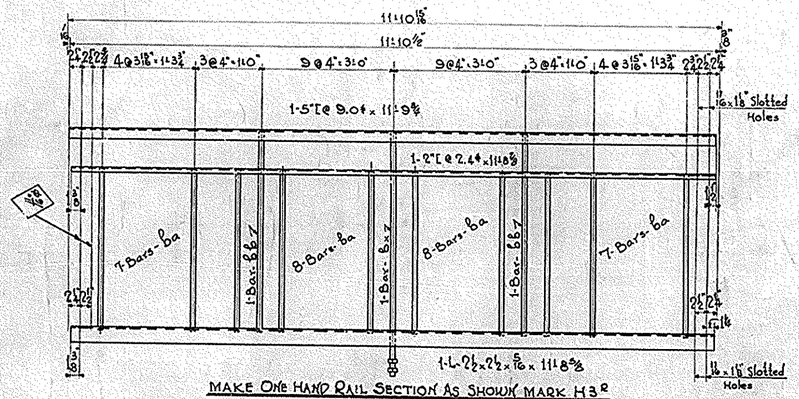


TYPICAL SECTIONS THRU HAND RAIL

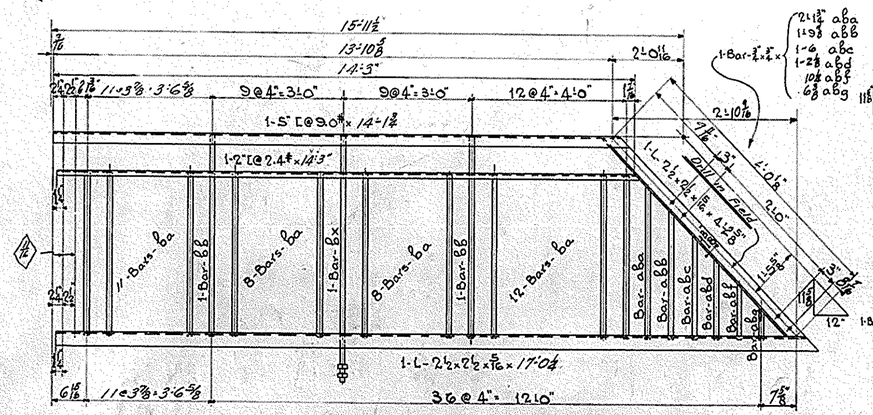
Punch 13/16" Sq. Holes where 3/4" x 3/4" Bars run thru angles or Channels.
Welding shall be located at the bottom of joints in all cases.
Railing Welded Complete as shown.



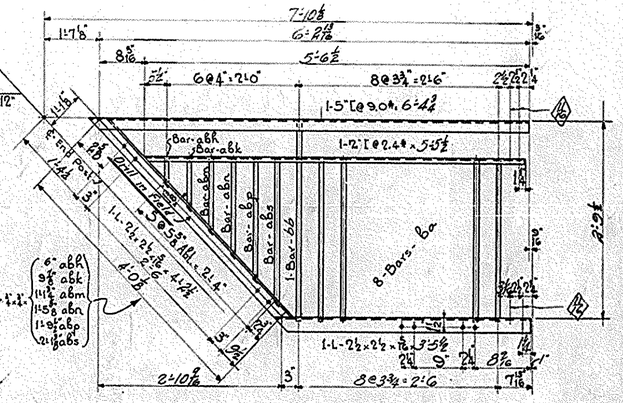
MAKE ONE HAND RAIL SECTION AS SHOWN MARK H2R
" ONE " " " OPP HAND " H2L



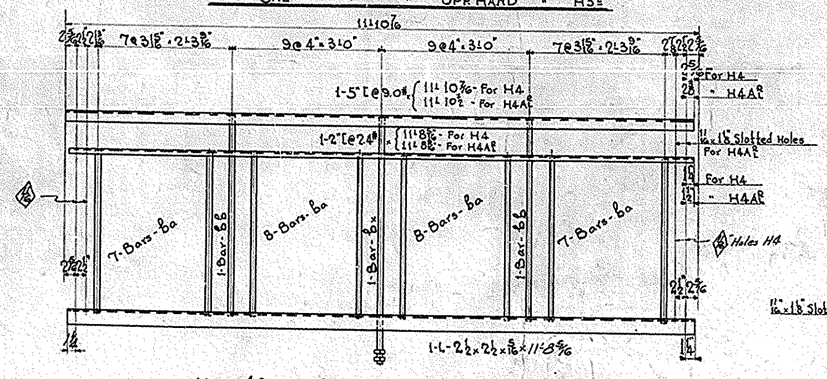
MAKE ONE HAND RAIL SECTION AS SHOWN MARK H3R
" ONE " " " OPP HAND " H3L



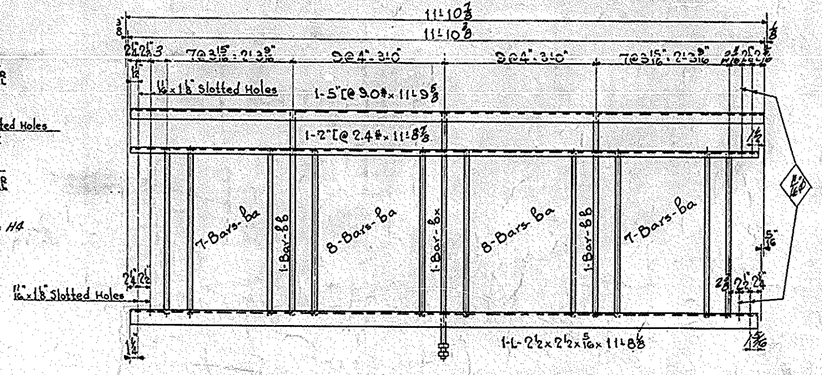
MAKE ONE HAND RAIL SECTION AS SHOWN MARK H6R
" ONE " " " OPP HAND " H6L



MAKE ONE HAND RAIL SECTION AS SHOWN MARK H7R
" ONE " " " OPP HAND " H7L



MAKE 48 HAND RAIL SECTIONS AS SHOWN MARK H4
" 12 " " " " " H4AR
" 12 " " " OPP HAND " H4AL



MAKE ONE HAND RAIL SECTION AS SHOWN MARK H5R
" ONE " " " OPP HAND " H5L

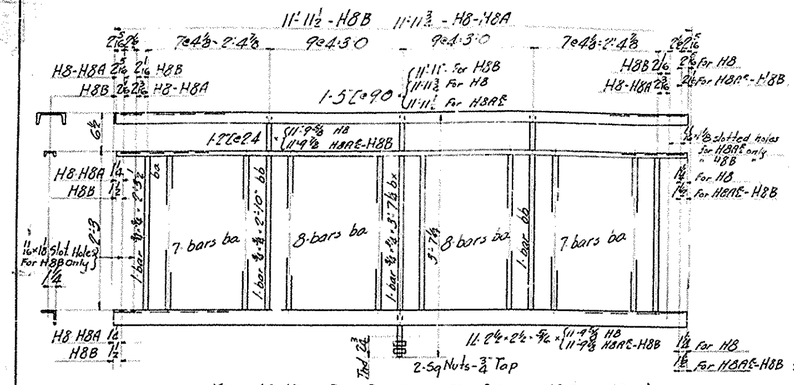
SHOP PAINT:-
One coat of Red Lead as per Spec. Paint Contact Surfaces.
All parts inaccessible after Erection to have two Shop Coats.

7696

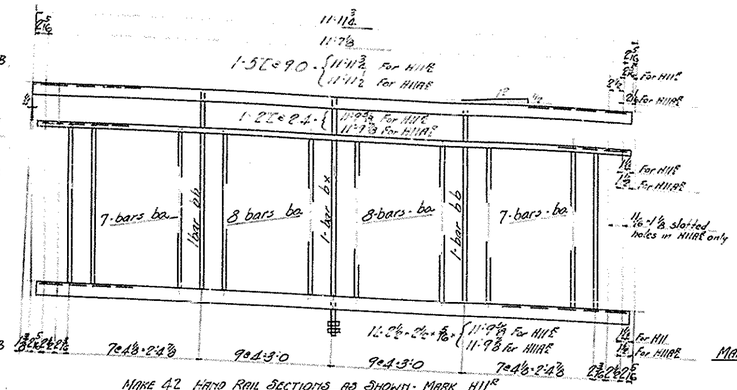
CUMBERLAND RIVER BRIDGE AT SMITHLAND KY.	
COMMONWEALTH OF KY. STATE HY. DEPT.	
NASHVILLE BRIDGE COMPANY NASHVILLE, TENN.	
NASHVILLE PLANT	
RIVETS 3/4 OTHERWISE NOTED	DRAWN BY B.H.C. DATE 11-12-30
HOLES 13/16 OR NOTED	TRACED BY R.L.G. DATE 1-6-31
FIELD CONN. Rivs. & Bolts	CHECKED BY C.E. HOATS DATE 1-6-31
SHOP PAINT See Note	DATE PRINTED
FIELD	
BILLS MATERIAL NO. 69-70-67-68	CONT. 4633 S.O. 4630-G DRAWING NO. 29

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

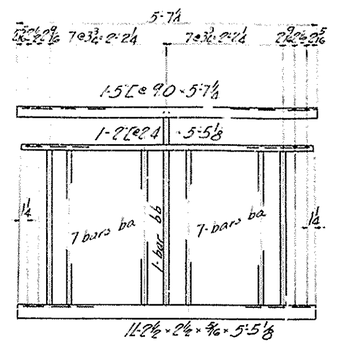
BRIDGE



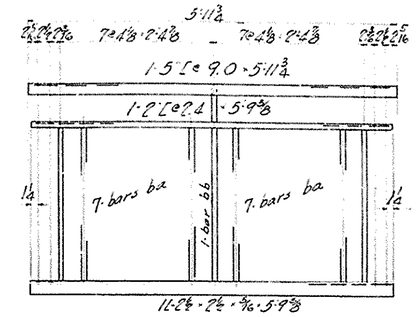
MAKE 44 HAND RAIL SECTIONS AS SHOWN - MARK H8
" 10 " " AS SHOWN - " H8A^R
" 10 " OPP. HAND - " H8A^L
" 2 " AS SHOWN H8B
S.O. 4637-G



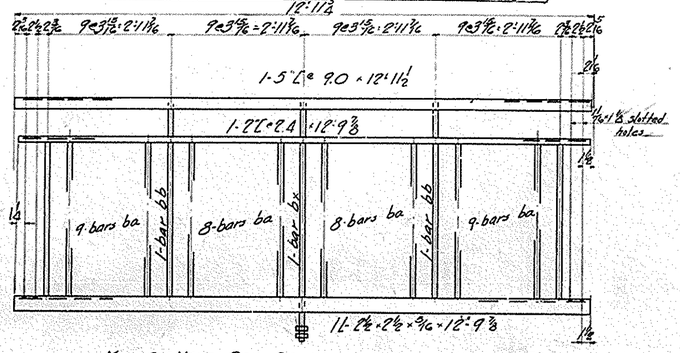
MAKE 42 HAND RAIL SECTIONS AS SHOWN - MARK H11^R
" 42 " OPP. HAND - " H11^L
" 19 " AS SHOWN - " H11A^R
" 19 " OPP. HAND - " H11A^L
S.O. 4637-G



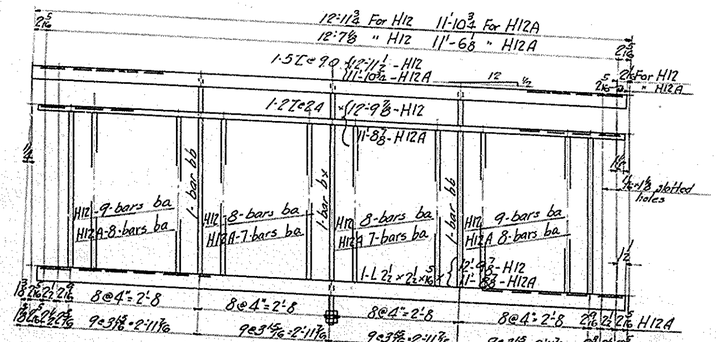
MAKE 2 HAND RAIL SECTIONS AS SHOWN - MARK H14
S.O. 4642-G



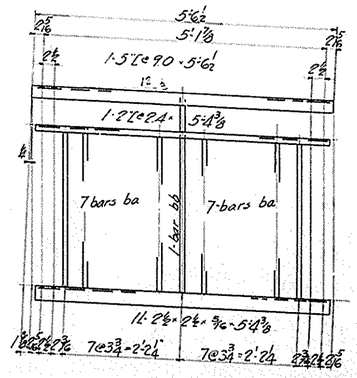
MAKE 2 HAND RAIL SECTION AS SHOWN - MARK H15
S.O. 4637-G



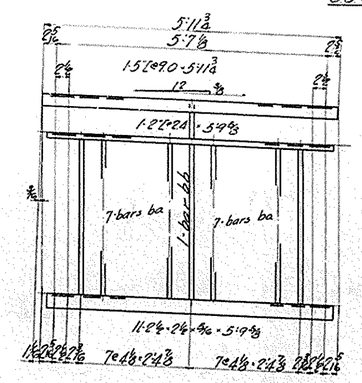
MAKE ONE HAND RAIL SECTION - AS SHOWN - MARK H9^R
" ONE " " OPP. HAND " H9^L
S.O. 4637-G



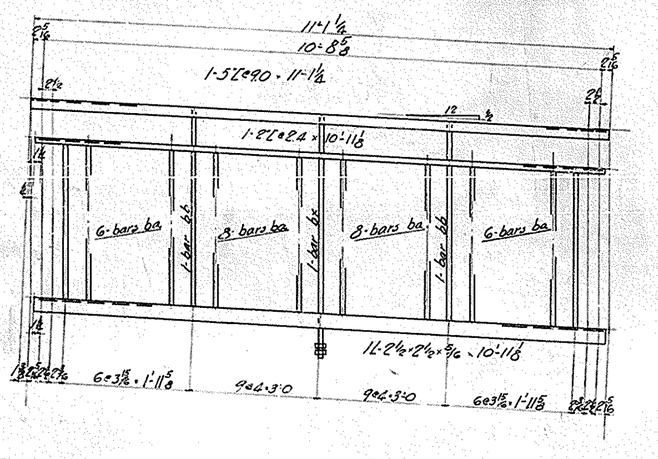
MAKE 3 HAND RAIL SECTIONS AS SHOWN - MARK H12^R
" 3 " OPP. HAND - " H12^L
" ONE " " AS SHOWN - " H12A^R
" ONE " " OPP. HAND - " H12A^L
S.O. 4637-G



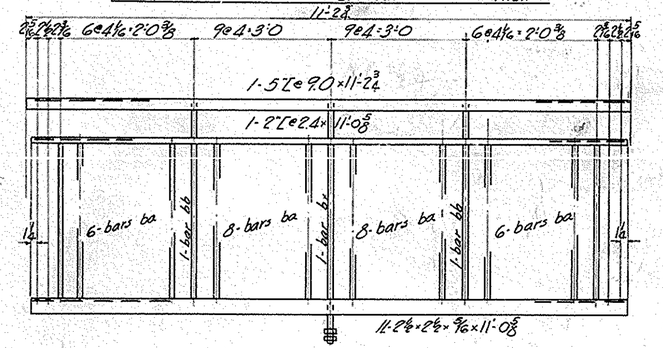
MAKE ONE HAND RAIL SECTION AS SHOWN - MARK H16^R
" ONE " " OPP. HAND - " H16^L
S.O. 4642-G



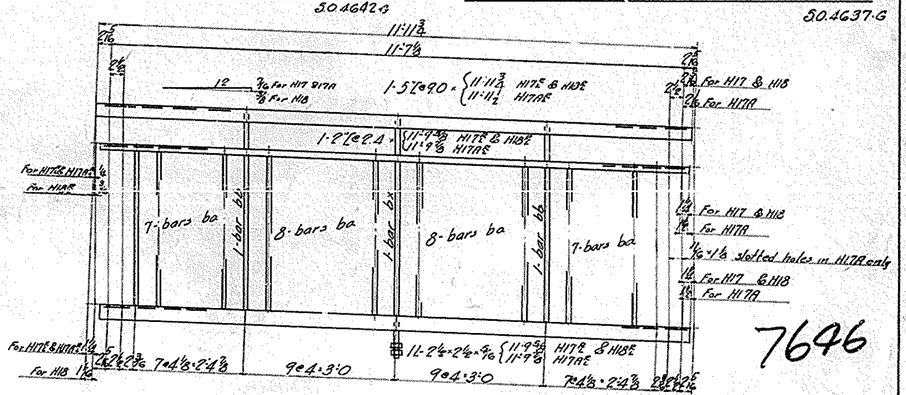
MAKE ONE HAND RAIL SECTION AS SHOWN - MARK H19^R
" ONE " " OPP. HAND - " H19^L
S.O. 4637-G



MAKE 3 HAND RAIL SECTIONS AS SHOWN - MARK H10^R
" 3 " OPP. HAND " H10^L
S.O. 4642-G



MAKE 4 HAND RAIL SECTIONS AS SHOWN - MARK H13
S.O. 4642-G



MAKE ONE HAND RAIL SECTION - AS SHOWN - MARK H17^R
" ONE " OPP. HAND " H17^L
" ONE " AS SHOWN " H17A^R
" ONE " OPP. HAND " H17A^L
" ONE " AS SHOWN " H18^R
" ONE " OPP. HAND " H18^L
S.O. 4637-G

7646

NOTE:
FOR TYPICAL SECTIONS
SEE DWG. #29
SHOP PAINT -
ONE COAT RED LEAD AS PER SPECIFICATIONS.
PAINT CONTACT SURFACES.
ALL PARTS INACCESSIBLE AFTER ERECTION
TO HAVE 2 SHOP COATS.

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

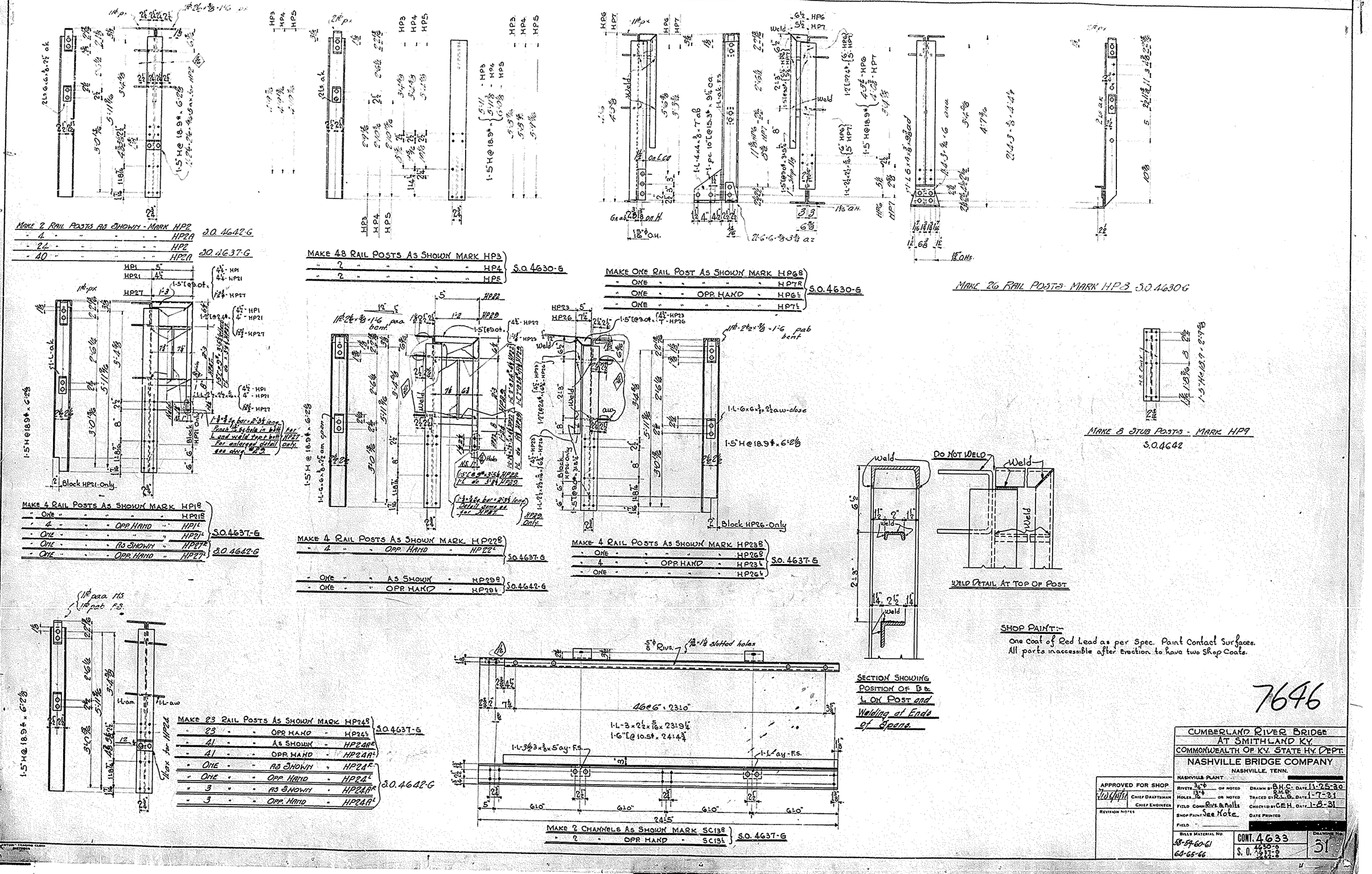
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HIGHWAY DEPT.

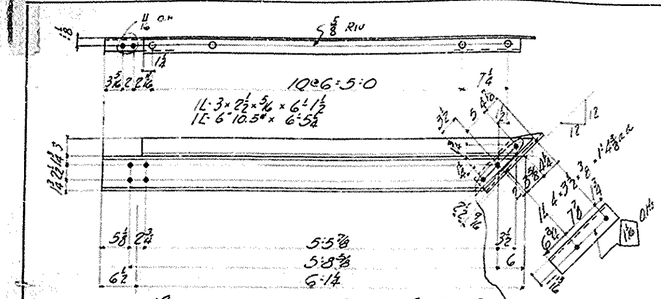
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT

RIVETS 11/16" OR NOTED
HOLES 11/16" OR NOTED
FIELD CONN. Bucked & Bolted
SHOP PAINT See NOTE
FIELD
SCALE
DRAWN BY
DATE 1-6-31
TRACED BY
DATE 1-8-31
CHECKED BY C.E.H.
DATE 1-8-31
DATE PRINTED

BILL OF MATERIAL NO. 53-54-55-56-57
CONT. 4633
S. O. 4637-G 4642-G
DRAWING NO. 30

BRIDGE


MAKE 2 RAIL POSTS AS SHOWN - MARK HP2
" 4 " " " " HP2A S.O. 4642-G
" 24 " " " " HP2 S.O. 4637-G
" 40 " " " " HP2A
MAKE 48 RAIL POSTS AS SHOWN MARK HP3
" 2 " " " " HP4 S.O. 4630-G
" 2 " " " " HP5
MAKE ONE RAIL POST AS SHOWN MARK HP6B
" ONE " " " " HP7R S.O. 4630-G
" ONE " " OPP. HAND " HP6L
" ONE " " " " HP7L
MAKE 26 RAIL POSTS MARK HP3 S.O. 4630-G
MAKE 8 STUB POSTS - MARK HP9
S.O. 4642
MAKE 4 RAIL POSTS AS SHOWN MARK HP18
" ONE " " " " HP21R
" 4 " " OPP. HAND " HP1L S.O. 4637-G
" ONE " " " " HP27L
" ONE " " AS SHOWN " HP27R S.O. 4642-G
" ONE " " OPP. HAND " HP27L
MAKE 4 RAIL POSTS AS SHOWN MARK HP22B
" 4 " " OPP. HAND " HP22L S.O. 4637-G
" ONE " " AS SHOWN " HP29B S.O. 4642-G
" ONE " " OPP. HAND " HP29L
MAKE 4 RAIL POSTS AS SHOWN MARK HP23B
" ONE " " " " HP26B
" 4 " " OPP. HAND " HP23L S.O. 4637-G
" ONE " " " " HP26L
MAKE 23 RAIL POSTS AS SHOWN MARK HP24B
" 23 " " OPP. HAND " HP24L S.O. 4637-G
" 41 " " AS SHOWN " HP24AR
" 41 " " OPP. HAND " HP24AL
" ONE " " AS SHOWN " HP24R S.O. 4642-G
" ONE " " OPP. HAND " HP24L
" 3 " " AS SHOWN " HP24AR
" 3 " " OPP. HAND " HP24AL
MAKE 2 CHANNELS AS SHOWN MARK SC13B
" 2 " OPP. HAND " SC13L S.O. 4637-G
SECTION SHOWING POSITION OF ⊐ & L ON POST AND WELDING AT ENDS OF SPANS.
WELD DETAIL AT TOP OF POST
DO NOT WELD
SHOP PAINT:-
One Coat of Red Lead as per Spec. Paint Contact Surfaces.
All parts inaccessible after erection to have two Shop Coats.
7646
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT
APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES
RIVETS 3/4" OR NOTED
HOLES 13/16" OR NOTED
FIELD CONN. RIVS. & BOLTS
SHOP PAINT See Note
FIELD
DRAWN BY B.H.C. DATE 11-25-30
CHECKED BY R.L.G.
TRACED BY R.L.G. DATE 1-7-31
CHECKED BY C.E.H. DATE 1-8-31
DATE PRINTED
BILLS MATERIAL NO.
58-59-60-61
64-65-66
CONT. 4633
S.O. 4630-G 4637-G 4642-G
DRAWING NO. 31
BRIDGE

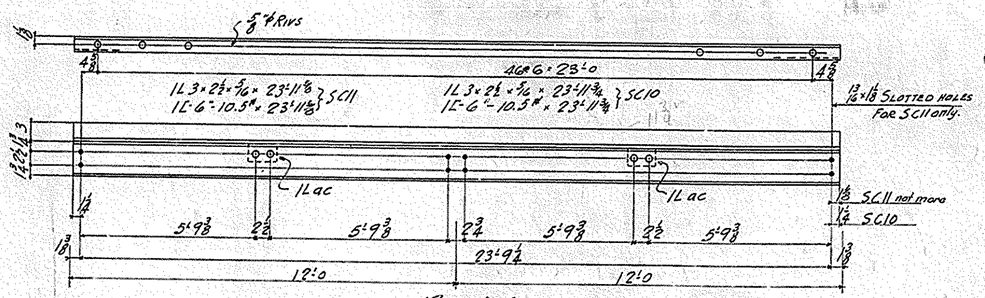


MAKE-ONE-CHANNEL AS SHOWN MK. SC1R
" -ONE- " OPP HAND " SC1L } S.O. 4630G

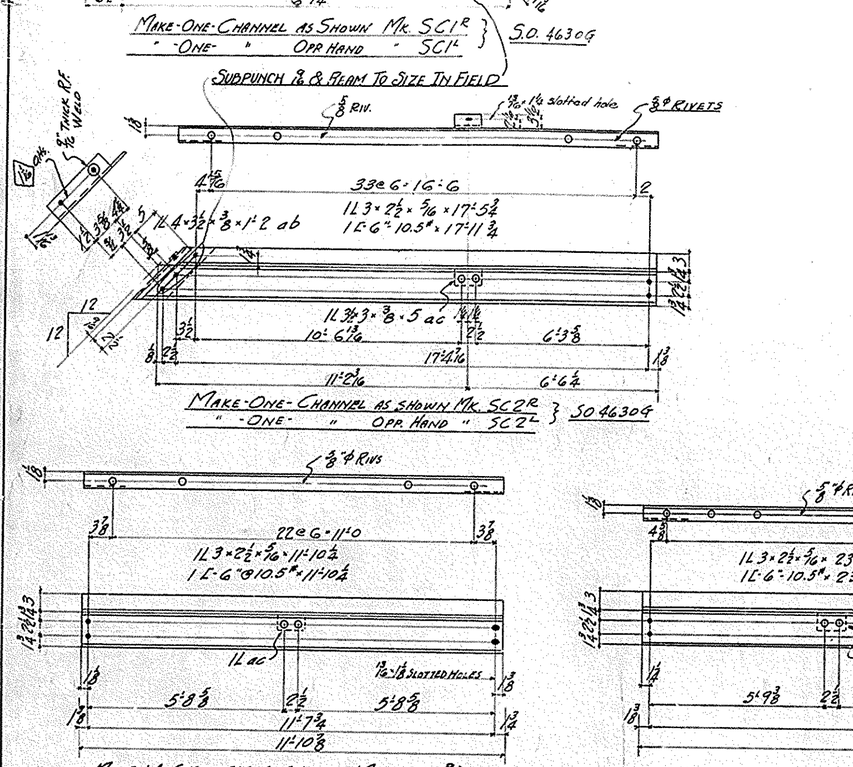
SUBPUNCH 9/16 & REAM TO SIZE IN FIELD

MAKE-ONE-CHANNEL AS SHOWN MK. SC2R
" -ONE- " OPP HAND " SC2L } S.O. 4630G

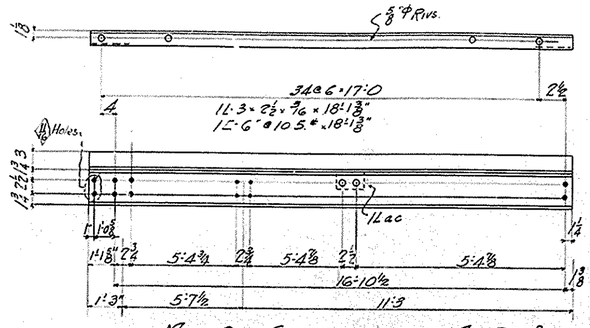
MAKE-14-CHANNELS AS SHOWN MK. SC3R
" -14- " OPP HAND " SC3L } S.O. 4630G



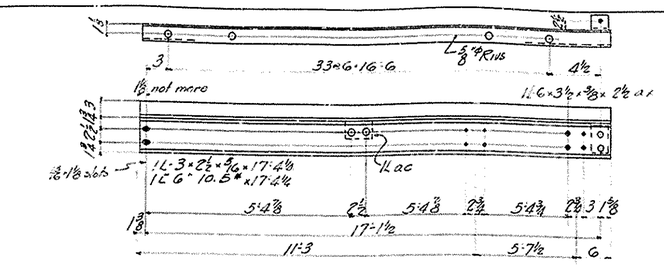
MAKE-8-CHANNELS AS SHOWN MK SC10
" -6- " " " " SC11R } S.O. 4637G
" -6- " OPP HAND " SC11L



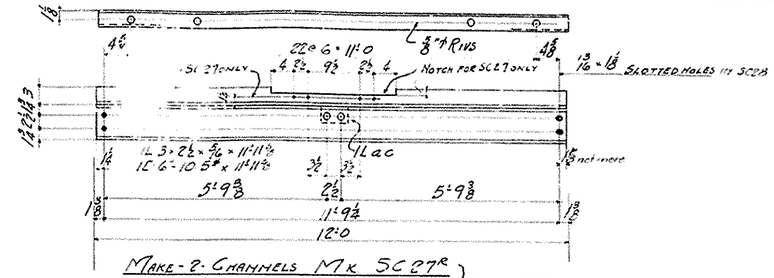
MAKE-9-CHANNELS AS SHOWN MK SC4R
" -3- " " " " " SC5R
MAKE-9-CHANNELS OPP HAND MK. SC4L
" 3 " " " " SC5L S.O. 4630G



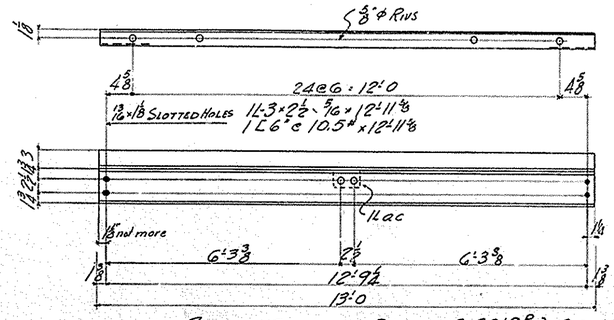
MAKE-ONE-CHANNEL AS SHOWN MK. SC7R
" -ONE- " OPP HAND " SC7L } S.O. 4642G



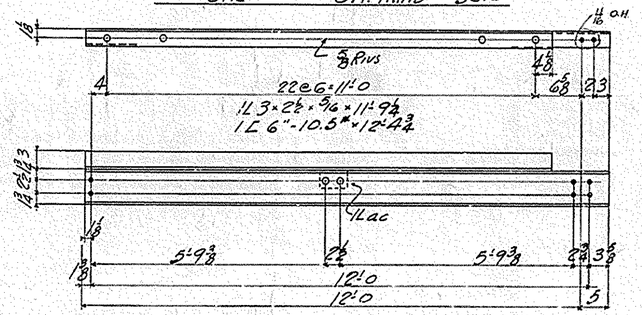
MAKE ONE CHANNELS MK SC8R } S.O. 4642G
do ONE " MK SC8L



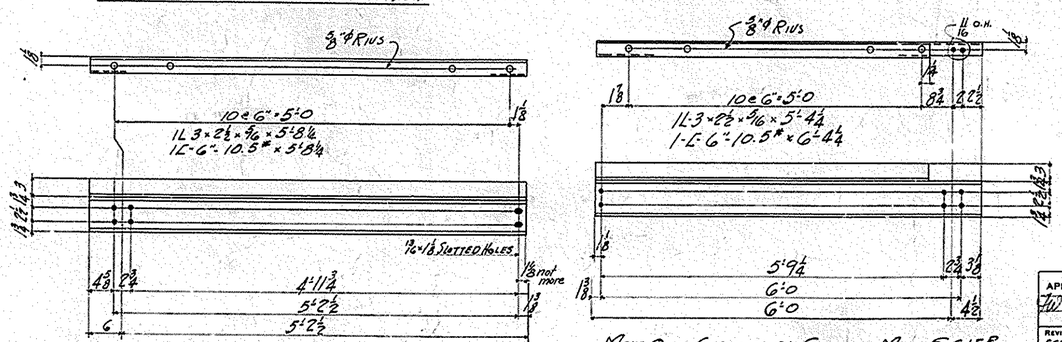
MAKE-2-CHANNELS MK SC27R
" -2- " " SC27L
" -4- " " SC28R } S.O. 4637G
" -4- " " SC28L



MAKE-ONE-CHANNEL AS SHOWN MK. SC12R
" -ONE- " OPP HAND " SC12L } S.O. 4637G



MAKE-2-CHANNELS AS SHOWN MK. SC14R
" -2- " OPP HAND " SC14L } S.O. 4637G



MAKE-ONE-CHANNEL AS SHOWN MK SC9R
" -ONE- OPP HAND " SC9L } S.O. 4637G

MAKE-ONE-CHANNEL AS SHOWN MK. SC15R
" -ONE- " OPP HAND " SC15L
S.O. 4637G

PAINT NOTE—
ONE COAT OF RED LEAD AS PER SPECIFICATIONS
PAINT CONTACT SURFACES
ALL PARTS INACCESSIBLE AFTER ERECTION TO HAVE TWO SHOP COATS.

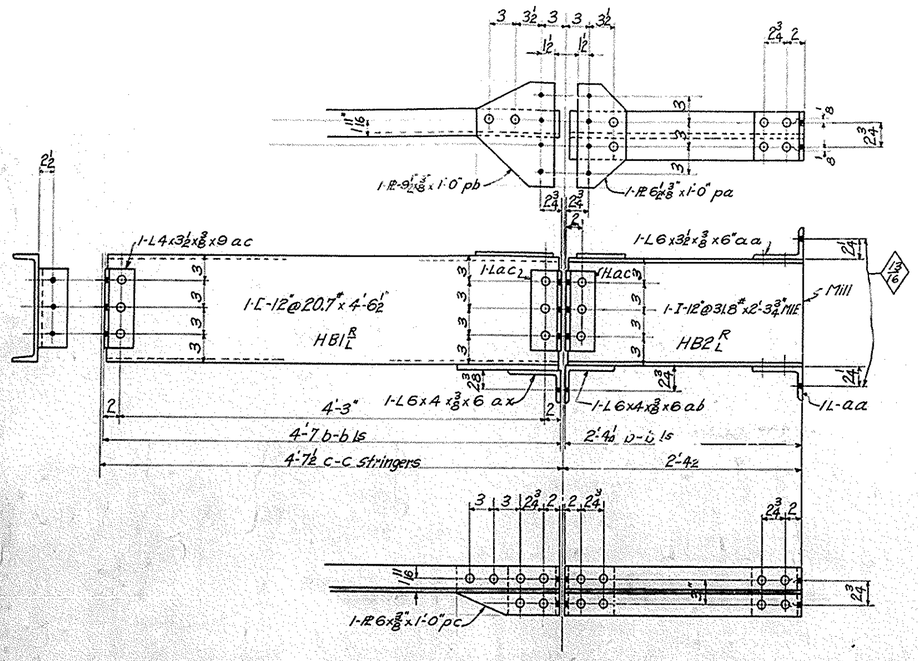
7646

GUMBERLAND RIVER BRIDGE
AT SMITHLAND, KY.
COMMONWEALTH OF KENTUCKY, STATE HIGHWAY DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT

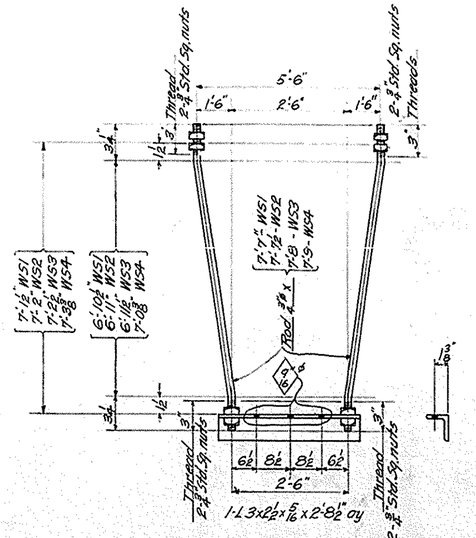
APPROVED FOR SHOP 7-10-31	CHIEF DRAFTSMAN / CHIEF ENGINEER	RIVETS 3/4 OR NOTED; HOLES 13/16 OR NOTED; FIELD CONN. RIVS + BOLTS; SHOP PAINT SEE NOTE; FIELD	DRAWN BY COX DATE 11-29-30; TRACED BY CPM DATE 1-8-31; CHECKED BY CEH DATE 1-9-31; DATE PRINTED
REVISION NOTES SC7 6-12-31 CRH		BILL OF MATERIAL NO. 69-70-71-72	CONT. 4633; S.O. 4630 & 4637G 4642G; DRAWING NO. 32

BRIDGE



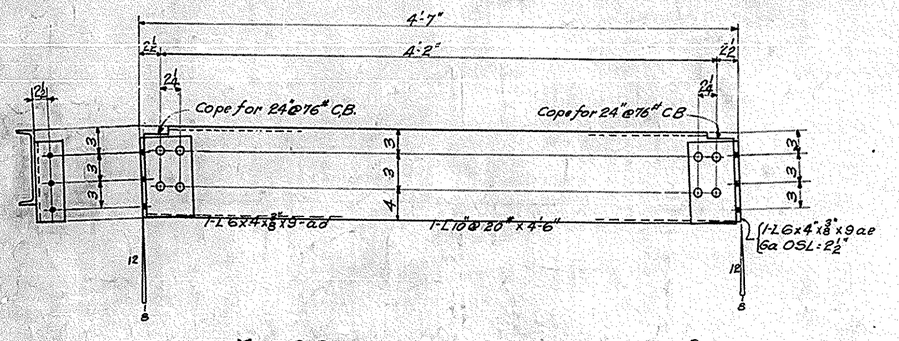
Make	26	Hand Rail	Beams As Shown			Mark HB1R
do	26	do	do	do	do	Mark HB2R
do	26	do	do	Opp Hand		Mark HB1L
do	26	do	do	do	do	Mark HB2L

S0.4629-G



Make	105	Walk Way Supports				Mark WS1
do	7	do	do	do	do	WS2
do	3	do	do	do	do	WS3
do	5	do	do	do	do	WS4

S0. 4638-G



Make	8	Expansion Beams As Shown		Mark-EB1R
do	8	do	do	Opp Hand Mark-EB1L

SHOP PAINT: One coat of Red Lead as per specifications. Paint contact surfaces. All parts inaccessible after erection to have two shop coats

7646

CUMBERLAND RIVER BRIDGE AT SMITHLAND KENTUCKY
COMMONWEALTH OF KY-STATE HWY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

NASHVILLE PLANT [redacted]

APPROVED FOR SHOP
Chief Draftsman
Chief Engineer
Revision Notes

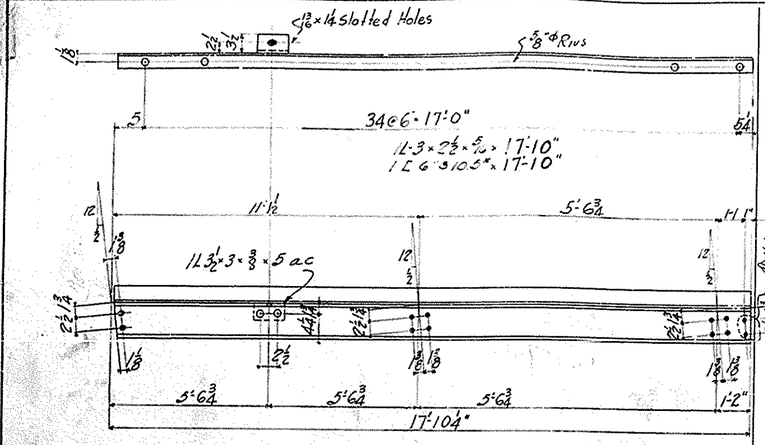
Rivets ⅞" or noted
Holes 15/16" or noted
Field Conn. Riveted
Shop Paint See Note
Field [redacted]

Drawn by WH Date 11-20-30
Traced by RTR Date 11-26-30
Checked by CM Date 12-29-30
Date Printed

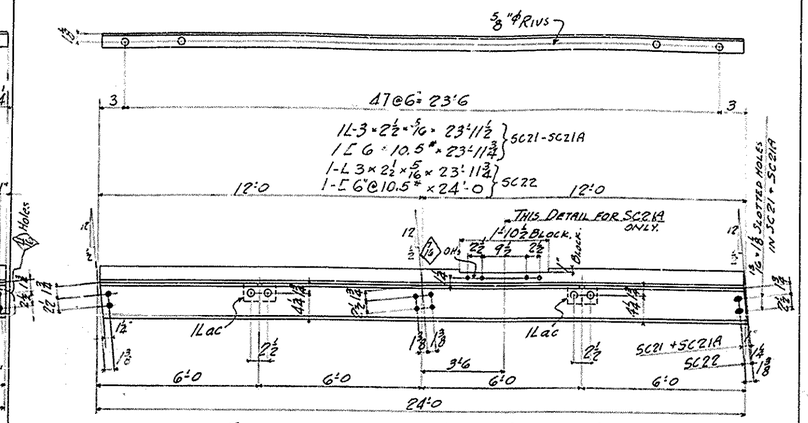
Bills Material No. 62-63
Cont. 4633
S.O. 4629-G 4638-G
Drawing No. 33

2

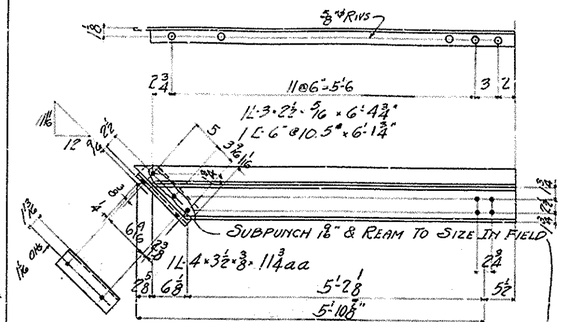
BRIDGE



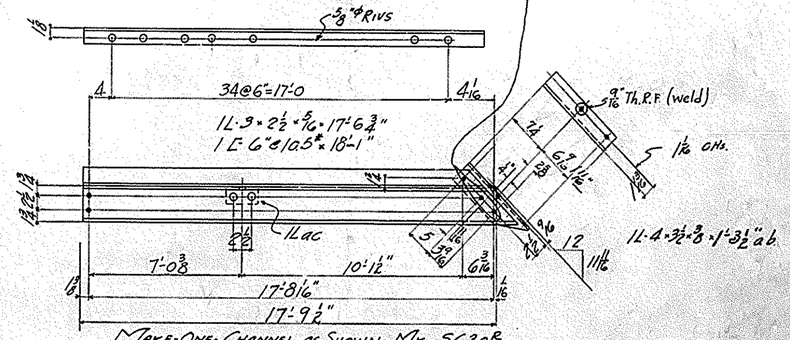
MAKE-ONE-CHANNEL AS SHOWN MK. SC17R
" ONE " OPP. HAND " SC17L



MAKE-16 CHANNELS AS SHOWN MK. SC21R
" -16- " OPP HAND " SC21L
" -4- " AS SHOWN " SC21AR
" -4- " OPP HAND " SC21AL
" -4- " AS SHOWN " SC22R
" -4- " OPP HAND " SC22L

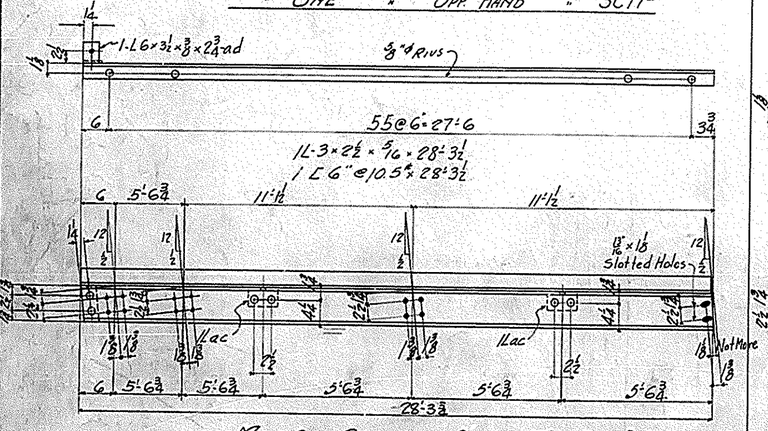


MAKE-ONE-CHANNEL AS SHOWN MK. SC29R.
" ONE " OPP. HAND " SC29L



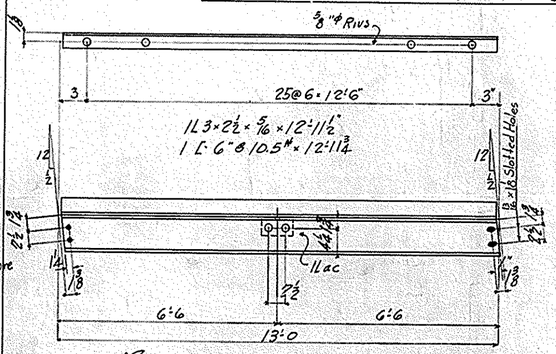
MAKE-ONE-CHANNEL AS SHOWN MK. SC30R
" ONE " OPP. HAND " SC30L

S.O. 4630-G



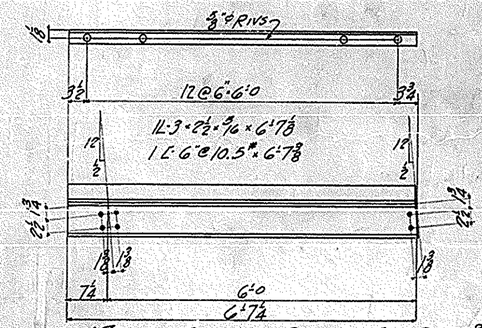
MAKE-ONE-CHANNEL AS SHOWN MK. SC18R
" -ONE- " OPP. HAND " SC18L

S.O. 4642-G



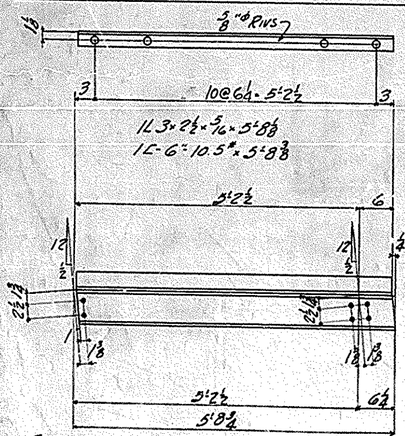
MAKE-3-CHANNELS AS SHOWN MK. SC23R
" -3- " OPP. HAND " SC23L

S.O. 4637-G

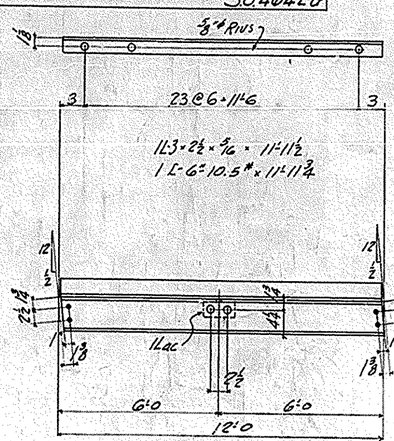


MAKE-ONE-CHANNEL AS SHOWN MK. SC26R
" -ONE- " OPP. HAND " SC26L

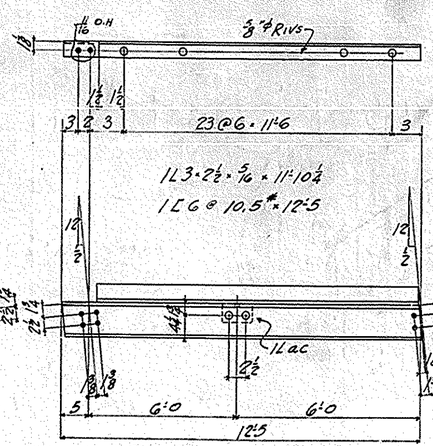
696



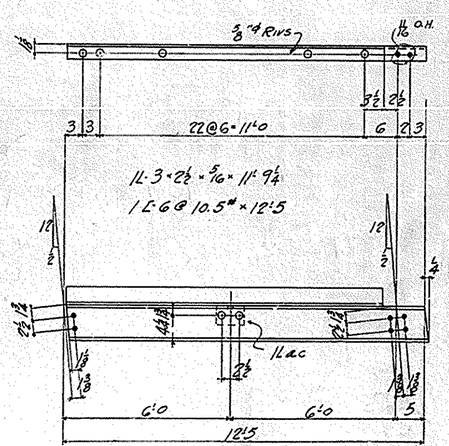
MAKE-ONE-CHANNEL AS SHOWN MK. SC19R
" -ONE- " OPP. HAND " SC19L



MAKE-8-CHANNELS AS SHOWN MK. SC20R.
" -8- " OPP. HAND " SC20L



MAKE-4-CHANNELS AS SHOWN MK. SC24R
" -4- " OPP. HAND " SC24L



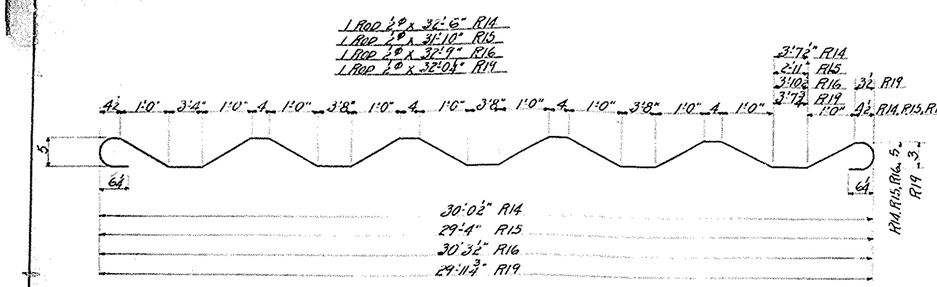
MAKE-4-CHANNELS AS SHOWN MK. SC25R
" 4 " OPP. HAND " SC25L

SHOP PAINT.-
ONE COAT RED LEAD AS PER SPECIFICATIONS.
PAINT CONTACT SURFACES.
ALL PARTS INACCESSIBLE AFTER ERECTION TO HAVE -2- SHOP COATS.

CUMBERLAND RIVER BRIDGE	
AT SMITHLAND, KY.	
COMMONWEALTH OF KY. STATE HIGHWAY DEPT.	
NASHVILLE BRIDGE COMPANY	
NASHVILLE, TENN.	
NASHVILLE PLANT	[redacted]
RIVETS 3/4 OR NOTED	DRAWN BY GAX DATE 1-8-31
HOLES 13/16 OR NOTED	TR'ED BY CM DATE 1-9-31
FIELD CONN. RIVS & BOLTS	CHECKED BY CEH DATE 1-9-31
SHOP PAINT SEE NOTE	DATE PRINTED
FIELD	[redacted]
BILLS MATERIAL NO. 73-74-75-76	CONT. 4633 S.O. 4630G 4642G 4637G
	DRAWING NO. 34

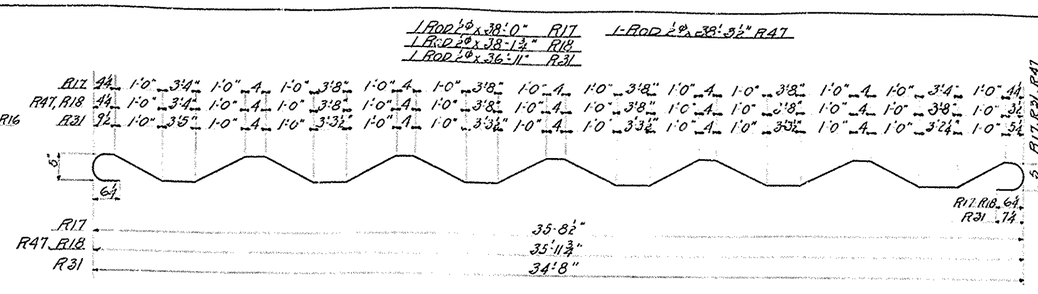
APPROVED FOR SHOP	
4/6/31	CHIEF DRAFTSMAN
	CHIEF ENGINEER
REVISION NOTES	
SC17 6-12-31 CEH	

BRIDGE



MAKE 168 RODS R14
" 42 " R15

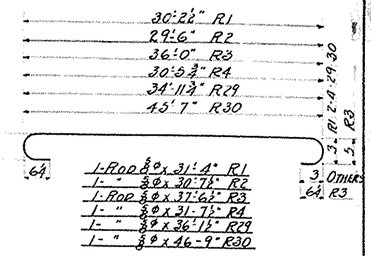
MAKE 21 RODS-R16
" 21 " R19



MAKE 252 RODS-R17

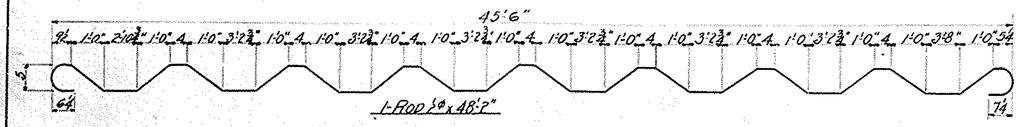
MAKE 126 RODS-R18
" 126 " -R47

MAKE 21 RODS-R31

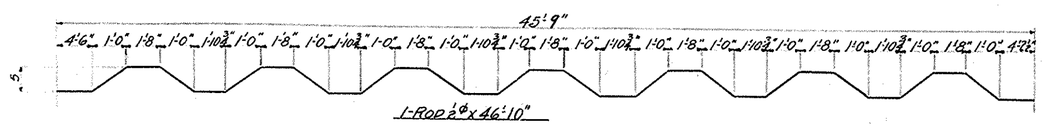


MAKE 336 RODS R1
" 84 " R2
" 252 " R3

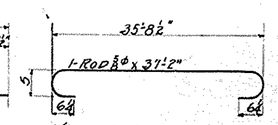
MAKE 42 RODS R4
" 42 " R29
" 42 " R30



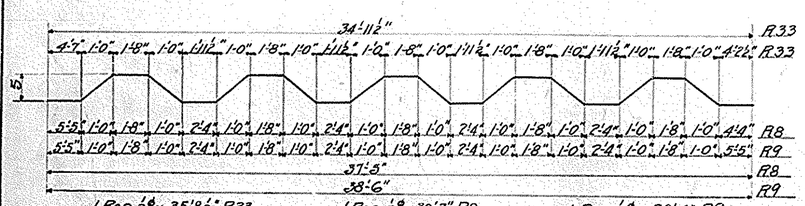
MAKE 21 RODS-R32



MAKE 22 RODS-R34



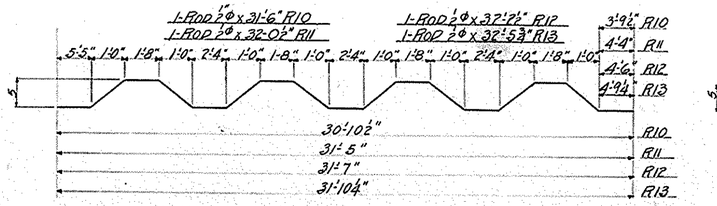
MAKE 504 RODS R7



MAKE 22 RODS-R33

MAKE 264 RODS-R8

MAKE 264 RODS-R9

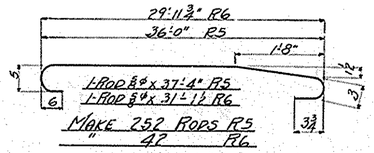


MAKE 44 RODS R10

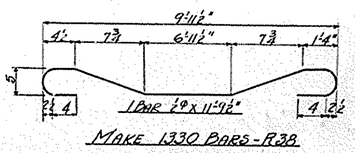
MAKE 22 RODS R11

MAKE 176 RODS R12

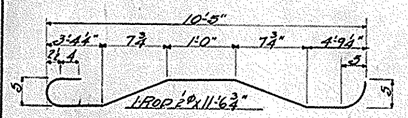
MAKE 22 RODS R13



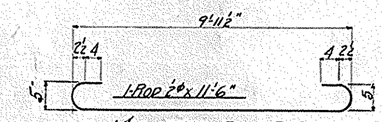
MAKE 252 RODS R5
" 42 R6



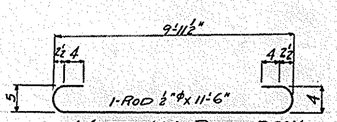
MAKE 1330 BARS-R38



MAKE 1330 BARS-R37



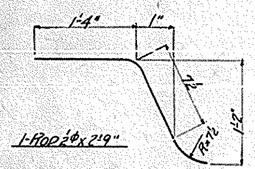
MAKE 2540 RODS-R39



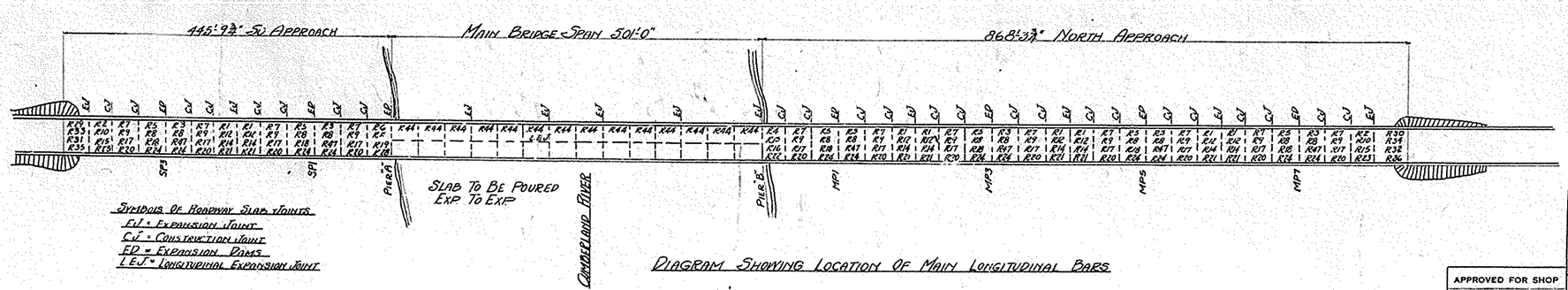
MAKE 104 RODS-R39X
(OVER FLOOR BEAMS)

MAKE 600 STRAIGHT RODS 1/2 Φ x 38'-6" -R20
" 400 " " 1/2 Φ x 31'-7" R21
" 50 " " 1/2 Φ x 31'-10 1/2" R22
" 100 " " 1/2 Φ x 30'-10" R23
" 600 " " 1/2 Φ x 37'-4 3/4" R24
" 2664 " " 1/2 Φ x 21'-0" R25
" 2180 " " 1/2 Φ x 8'-0" R26
" 1090 " " 1/2 Φ x 10'-0" R27
" 50 " " 1/2 Φ x 31'-5" R28
" 50 " " 1/2 Φ x 34'-11 3/4" R35
" 50 " " 1/2 Φ x 45'-7" R36
" 252 " " 1/2 Φ x 26'-0" R40
" 1330 " " 1/2 Φ x 6'-0" R41
" 728 " " 1/2 Φ x 36'-9" R44
" 180 " " 1/2 Φ x 11'-0" R48
" 336 " " 3/8 Φ x 4'-0" R42

NOTE:
ALL DIMENSIONS TAKEN ON OUTSIDE OF BARS



MAKE 3630 RODS R43



SYMBOLS OF ROADWAY SLAB JOINTS
EJ = EXPANSION JOINT
CJ = CONSTRUCTION JOINT
ED = EXPANSION DAMS
LEJ = LONGITUDINAL EXPANSION JOINT

DIAGRAM SHOWING LOCATION OF MAIN LONGITUDINAL BARS

7646

Sheet 34 A

CUMBERLAND RIVER BRIDGE
SMITHLAND, KENTUCKY
COMMONWEALTH OF KY.-STATE HWY. DEPT.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

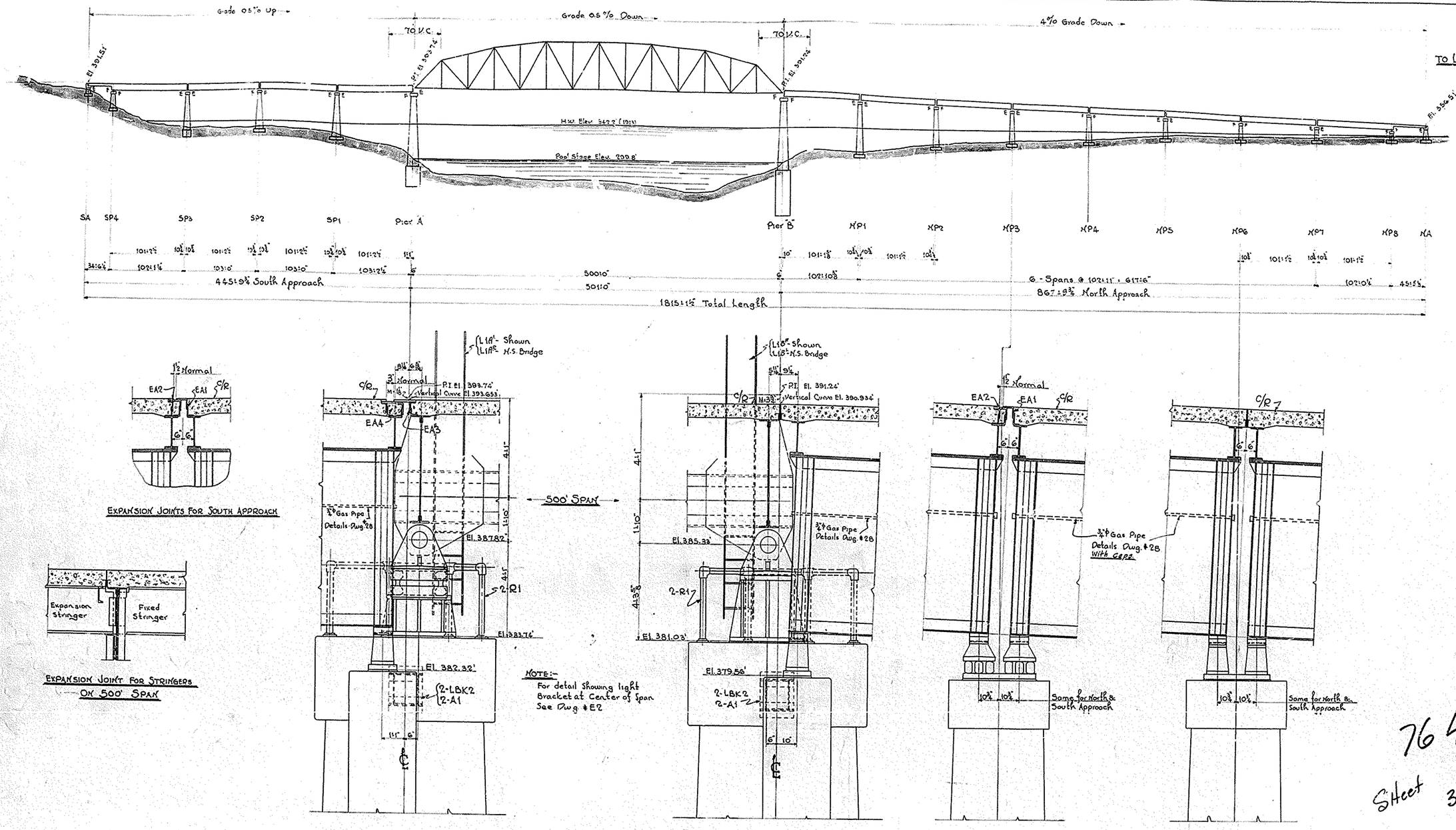
NASHVILLE PLANT — BESSEMER PLANT

RIVETS ____ OR NOTED	DRAWN BY AKW DATE 5-5-31
HOLES ____ OR NOTED	TRACED BY AKW DATE 6-9-31
FIELD CONN.	CHECKED BY WB DATE 6-10-31
SHOP PAINT	DATE PRINTED
FIELD	[redacted]

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

BILL OF MATERIAL NO.
CONT. 4633
S. O.
DRAWING NO. B1

BRIDGE



NOTE:-
For detail showing light bracket at center of span see Dwg. #E2

FIELD PAINT:-
First Coat- Red Lead as per Spec.
Second Coat- White Lead & Zinc as per Spec.

7646
Sheet 34 B

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.

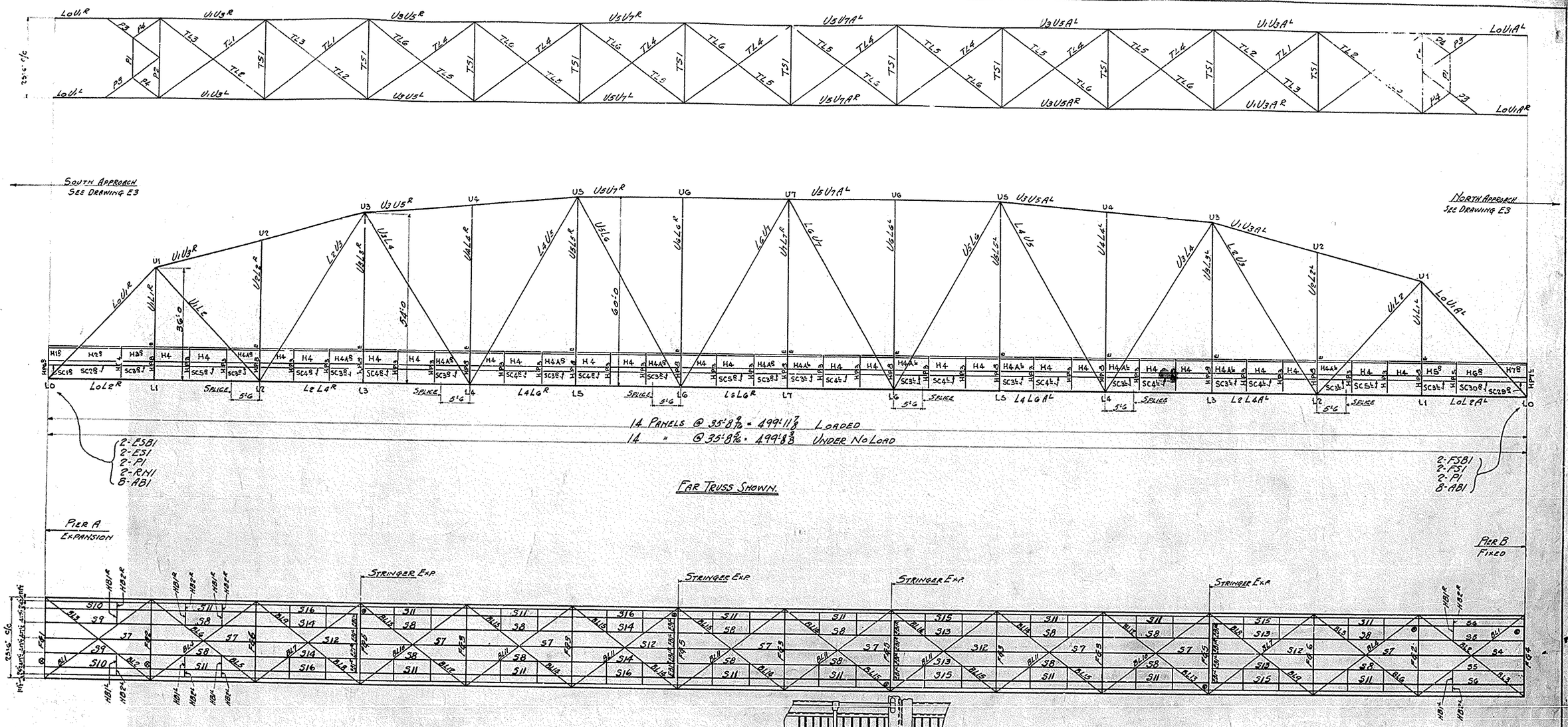
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
NASHVILLE PLANT — BESSEMER PLANT

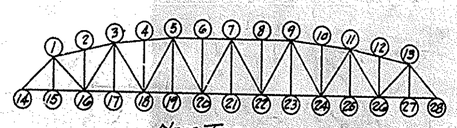
RIVETS ..... OR NOTED	DRAWN BY R.L.G. DATE 1-3-31
HOLES ..... OR NOTED	TRACED BY do DATE do
FIELD CONN.	CHECKED BY CM DATE 1-7-31
SHOP PAINT	DATE PRINTED
FIELD	[redacted]
BILL OF MATERIAL NO	CONT. 4633 S. O.

DRAWING NO. E1

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

BRIDGE

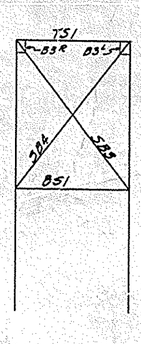




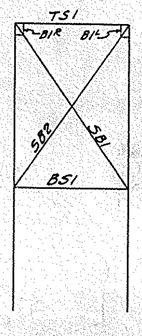
NEAR TRUSS

FAR TRUSS

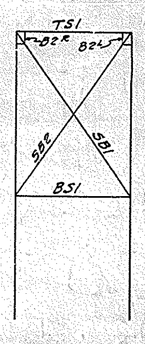
MATCH MARKING DIAGRAMS.



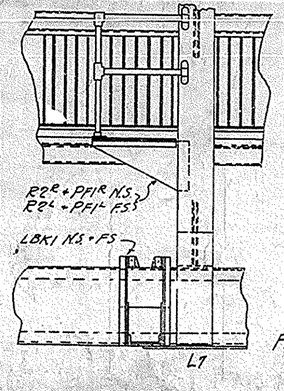
SECTION AT L3-U3



SECTION AT L5-U5

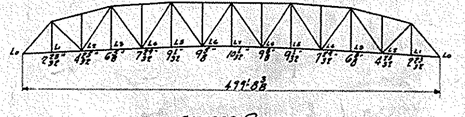


SECTION AT L7-U7



DETAIL SHOWING LIGHT BRKT. AND PLATFORM AT L7.

FIELD PAINT-
FIRST COAT - RED LEAD AS PER SPECIFICATIONS
SECOND COAT - WHITE LEAD AND ZINC AS PER SPECIFICATIONS.



CAMBER DIAGRAM

NOTE: ENDS OF STRINGERS MARKED X ARE TO BE PLACED TOWARD EXPANSION END OF SPAN - PIER A
HAND RAIL BEAMS HB1 + 2 ARE SAME FOR ALL PANELS EXCEPT AS SHOWN IN END PANELS.

7646

Sheet 34 C

ERECTION DIAGRAM FOR 1-500' SPAN

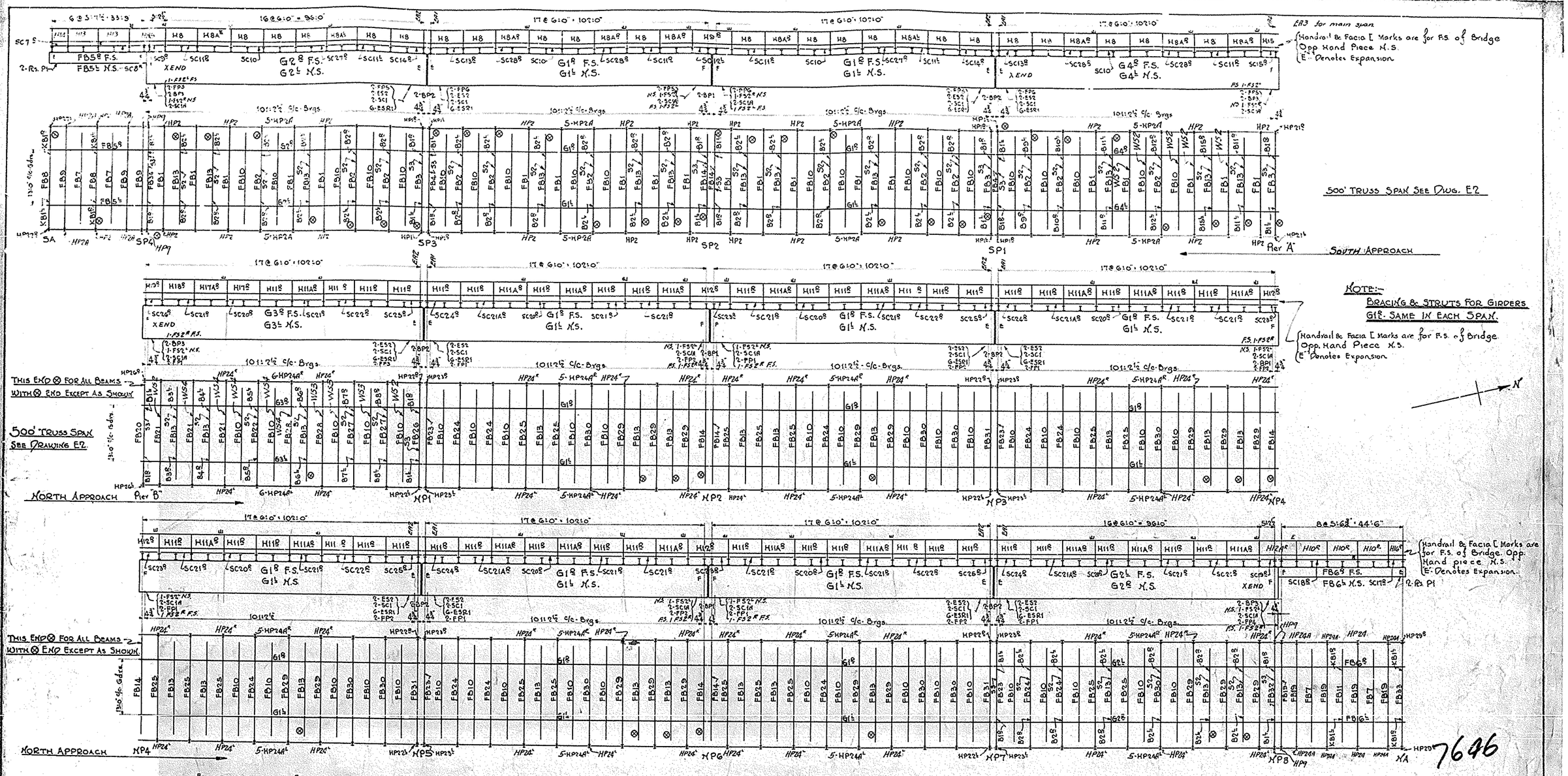
CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

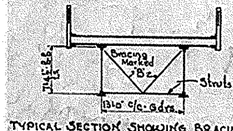
NASHVILLE PLANT	BESSEMER PLANT
RIVETS ____ OR NOTED	DRAWN BY R.L.G. DATE 10-16-30
HOLES ____ OR NOTED	TRACED BY do DATE do
FIELD CONN.	CHECKED BY CM DATE 12-31-30
SHOP PAINT	DATE PRINTED
FIELD	[redacted]
BILL MATERIAL NO.	CONT. 4633 S.O.

DRAWING NO. E2

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

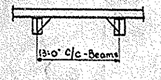
BRIDGE





TYPICAL SECTION SHOWING BRACING & STRUT ON APPROACH GIRDERS. FOR MARKS SEE PLAN

All bracing and struts frame on inside of a.s.L. of stiffener except at fixed end of S2 where they frame on back of L.



TYPICAL SECTION SHOWING BRACING ON BEAM SPANS. FOR MARKS SEE PLAN

WS1 AT ALL CROSS BEAMS WHERE THERE IS NO BRACING EXCEPT WHERE WS2-3+4 ARE SHOWN ON PLAN.

TYPICAL SECTION SHOWING INSP. WALKWAY SUPPORT

FIELD PAINT-
FIRST COAT- RED LEAD AS PER SPECIFICATIONS.
SECOND COAT- WHITE LEAD AND ZINC AS PER SPECIFICATIONS.

7646

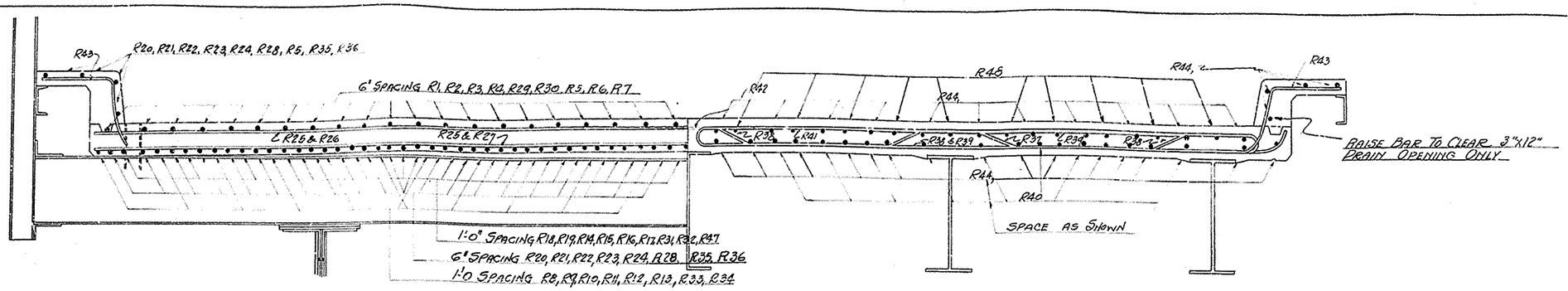
Sheet 34 D

NORTH & SOUTH APPROACH

CUMBERLAND RIVER BRIDGE AT SMITHLAND KY. COMMONWEALTH OF KY. STATE HY. DEPT.	
NASHVILLE BRIDGE COMPANY NASHVILLE, TENN.	
NASHVILLE PLANT	BESSEMER PLANT
RIVETS ___ OR NOTED	DRAWN BY R.L.G. DATE 11-17-30
HOLES ___ OR NOTED	TRACED BY do DATE do
FIELD CONN.	CHECKED BY M DATE 12-12-30
SHOP PAINT	DATE PRINTED
FIELD	
BILL MATERIAL NO.	CONT. 4633 S.O.
	DRAWING NO. E3

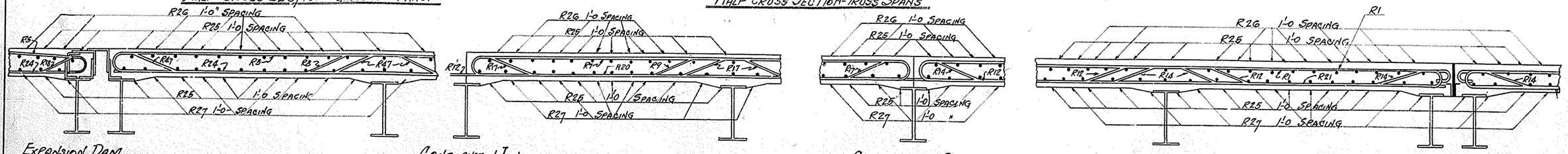
APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES
8-22-31

BRIDGE



HALF CROSS SECTION - GIRDER SPANS.

HALF CROSS SECTION - TRUSS SPANS.



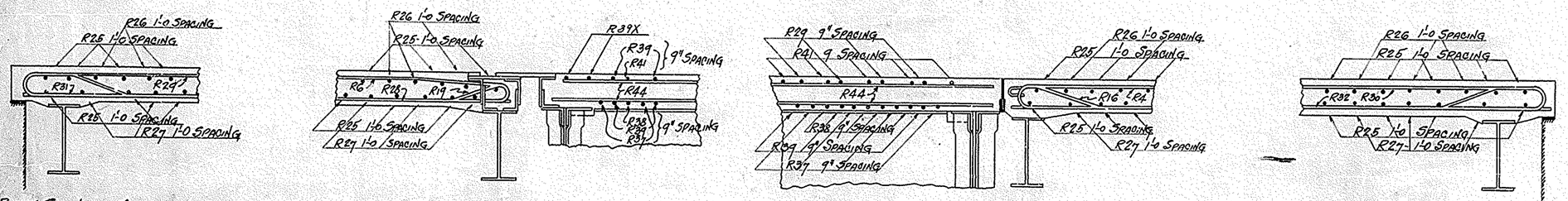
EXPANSION DAM

CONSTRUCTION JOINT

CONSTRUCTION JOINT

EXPANSION JOINT

LONGITUDINAL SECTIONS - GIRDER SPANS
TYPICAL REINFORCING FOR ONE GIRDER SPAN

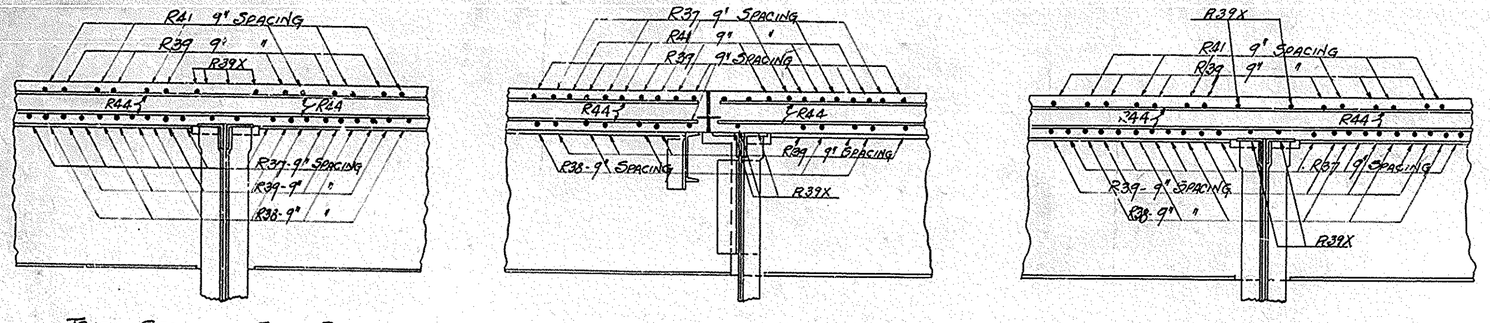


BEAM SPANS AT ABUTMENT
SOUTH APPROACH

TRUSS & GIRDER SPANS - EXPANSION END
SOUTH APPROACH

TRUSS & GIRDER SPANS - FIXED END
NORTH APPROACH

BEAM SPANS AT ABUTMENT
NORTH APPROACH



TRUSS SPANS AT FLOOR BEAMS.

TRUSS SPANS AT FLOOR BEAMS OVER EXPANSION & FIXED STRINGERS
EXPANSION JOINT

TRUSS SPANS AT FLOOR BEAMS

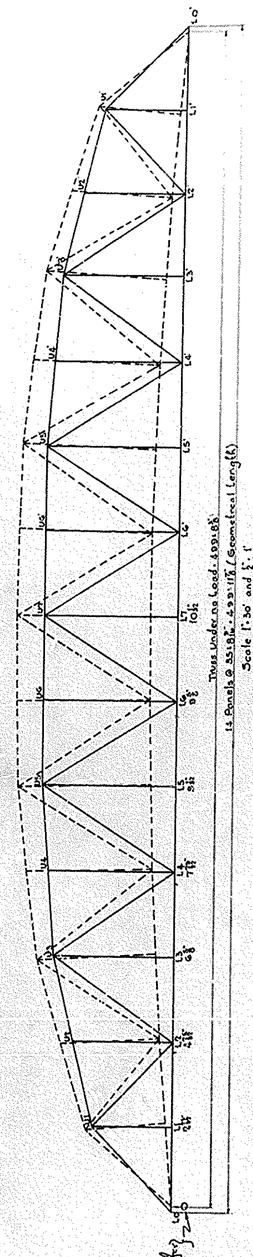
NOTE:-
CUT LONG. BARS IN FIELD TO FRAME ABOUT MANHOLES IN SIDEWALK.

7646
Sheet 34 E

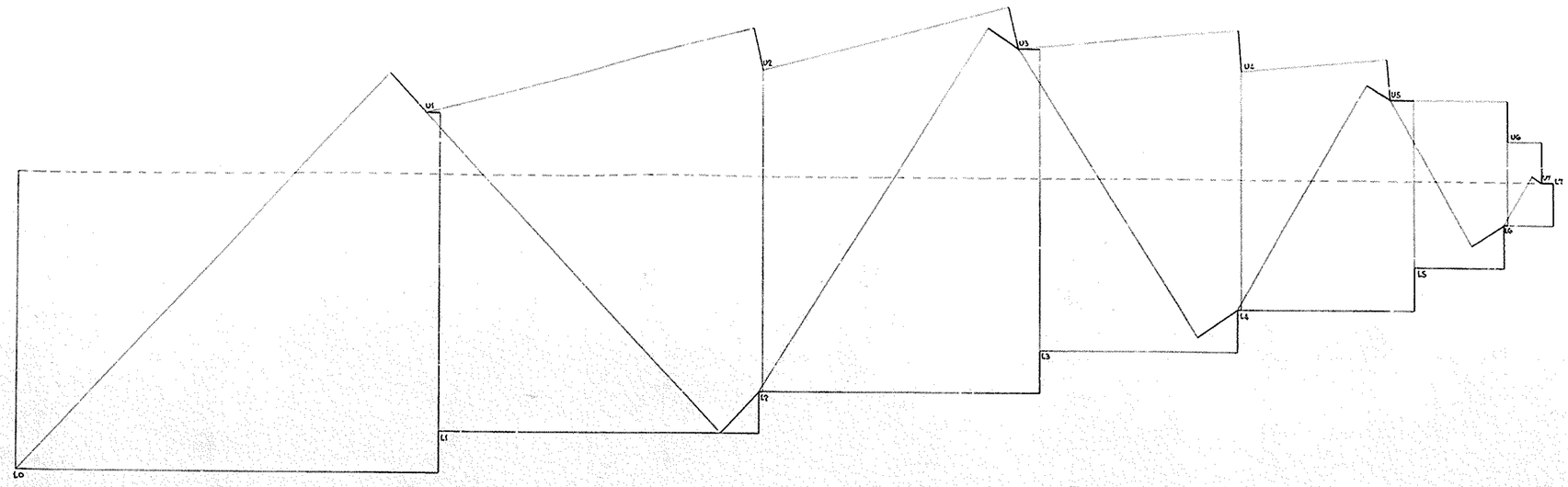
CUMBERLAND RIVER BRIDGE	
SMITHLAND, KY.	
COMMONWEALTH OF KY. STATE HWY. DEPT.	
NASHVILLE BRIDGE COMPANY	
NASHVILLE, TENN.	
NASHVILLE PLANT	BESSEMER PLANT
RIVETS ..... OR NOTED	DRAWN BY A.R.W. DATE 5-5-31
HOLES ..... OR NOTED	TRACED BY " DATE 6-9-31
FIELD CONN.	CHECKED BY JR DATE 6-10-31
SHOP PAINT	DATE PRINTED
FIELD	[redacted]
BILLS MATERIAL NO	CONT. 4633 S. O.
	DRAWING NO. EB1

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

BRIDGE



NOTE:- Full lines indicate Truss under Full Load
Dotted lines indicate Truss under no Load with Full Camber.



WILLIOT DIAGRAM
FOR
"No Stress" Position
Scale 2½"=1"

Member	Geometrical "l" Length in Inches	Gr. Area Sq. In. "A"	D.L. + ½ L.L. Stress in 1000# "S"	Distortion $E=29000000$ $\left(\frac{Sl}{EA}\right)$	Shop Length Figured in Inches	Shop Length Used	Stress due to 1# at L7 "U"	$\frac{Sul}{EA}$
L0-U1	608.50	65.00	- 1047.50	- 0.337	608.837	50'-8 23/32"	- 0.70	0.236
U1-U2	441.968	" "	- 1119.50	- 0.262	442.230	36'-10 7/32"	- 0.82	0.215
U2-U3	" "	" "	- 1119.50	- 0.262	442.230	36'-10 7/32"	- 0.82	0.215
U3-U4	430.062	83.38	- 1434.0	- 0.255	430.317	35'-10 5/16"	- 1.25	0.319
U4-U5	" "	" "	- 1434.0	- 0.255	430.317	35'-10 5/16"	- 1.25	0.319
U5-U6	428.582	95.40	- 1631.0	- 0.252	428.814	35'-8 13/16"	- 1.77	0.446
U6-U7	" "	" "	- 1631.0	- 0.252	428.814	35'-8 13/16"	- 1.77	0.446
L0-L1	" "	42.72	+ 736.5	+ 0.252	428.310	35'-8 5/16"	+ 0.49	0.123
L1-L2	" "	" "	+ 736.5	+ 0.252	428.310	35'-8 5/16"	+ 0.49	0.123
L2-L3	" "	71.00	+ 1246.0	+ 0.259	428.303	35'-8 5/16"	+ 0.98	0.254
L3-L4	" "	" "	+ 1246.0	+ 0.259	428.303	35'-8 5/16"	+ 0.98	0.254
L4-L5	" "	85.00	+ 1528.50	+ 0.265	428.297	35'-8 5/16"	+ 1.48	0.392
L5-L6	" "	" "	+ 1528.50	+ 0.265	428.297	35'-8 5/16"	+ 1.48	0.392
L6-L7	" "	97.94	+ 1665.0	+ 0.265	428.297	35'-8 5/16"	+ 2.08	0.551
U1-L2	608.50	29.41	+ 507.0	+ 0.360	608.140	50'-8 1/8"	+ 0.42	0.151
L2-U3	776.906	33.22	- 296.50	- 0.238	777.144	64'-9 3/32"	- 0.35	0.083
U3-L4	" "	29.41	+ 345.50	+ 0.314	776.592	64'-8 19/32"	+ 0.46	0.144
L4-U5	837.875	33.22	- 208.50	- 0.180	838.055	69'-10 1/16"	- 0.46	0.083
U5-L6	" "	24.96	+ 214.0	+ 0.248	837.627	69'-9 5/8"	+ 0.58	0.144
L6-U7	" "	33.22	- 86.50	- 0.075	837.950	69'-9 15/16"	- 0.58	0.044
U1-L1	432.00	15.88	+ 99.0	+ 0.093	431.907	35'-11 23/32"	0	0
U2-L2	540.00	19.80	- 20.0	- 0.019	540.019	45'-0 7/32"	0	0
U3-L3	648.00	15.88	+ 99.0	+ 0.139	647.861	53'-11 7/8"	0	0
U4-L4	684.00	19.80	- 20.0	- 0.024	684.024	57'-0 1/32"	0	0
U5-L5	720.00	15.88	+ 99.0	+ 0.155	719.845	59'-11 23/32"	0	0
U6-L6	" "	19.80	- 20.0	- 0.025	720.025	60'-0 1/32"	0	0
U7-L7	" "	15.88	+ 99.0	½(Sl/EA) + 0.077	719.923	59'-11 15/16"	+ 1.0	0.077

Deflection of Point L7 = $\Sigma \cdot \frac{Sul}{EA} = 5.011 \times 2 = 10.022 = 10\frac{1}{32}$"
½ Distortion at U7-L7 used.

+ Denotes Tension.
- " Compression.

7646
Sheet 34 F

SHOP LENGTHS AND "NO STRESS" DIAGRAM
500' SPAN

CUMBERLAND RIVER BRIDGE
AT SMITHLAND KY.
COMMONWEALTH OF KY. STATE HY. DEPT.
NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.

NASHVILLE PLANT — BESSEMER PLANT

RIVETS ____ OR NOTED	DRAWN BY C.M. DATE 12-5-30
KOLES ____ OR NOTED	TRACED BY SLOSS DATE 12-17-30
FIELD CONN. ____	CHECKED BY ____ DATE ____
SHOP PAINT ____	DATE PRINTED ____
FIELD ____	
BILL OF MATERIAL NO.	CONT. 4633 S.O. — DRAWING NO. W2

APPROVED FOR SHOP
CHIEF DRAFTSMAN
CHIEF ENGINEER
REVISION NOTES

BRIDGE