

SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

**THE STATE ROAD COMMISSION  
OF WEST VIRGINIA**

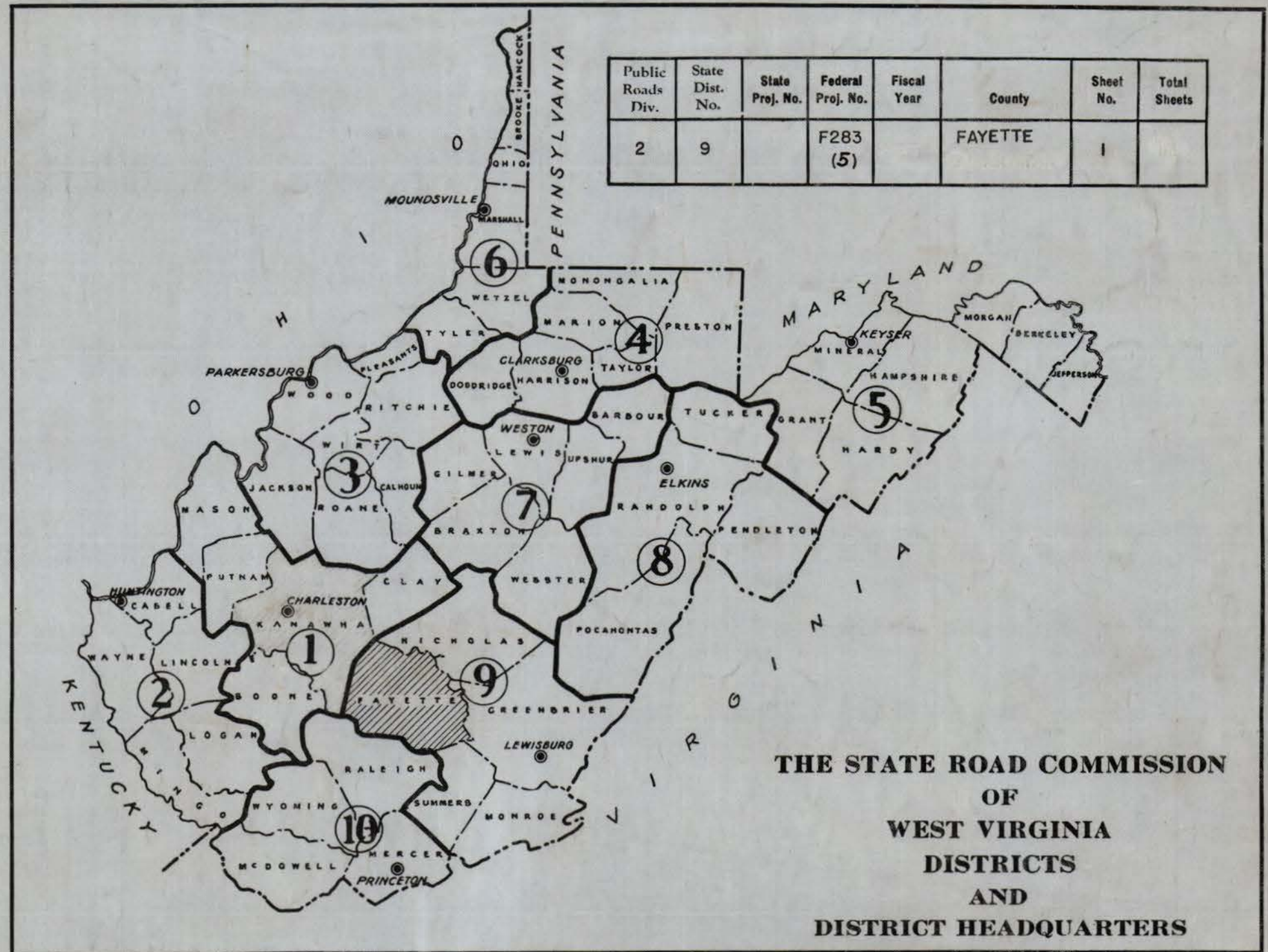
**PLAN AND PROFILE FOR CONSTRUCTION  
OF  
STATE ROAD  
PROJECT NO. F 283 (5)  
ROUTE NO. W. VA. 6**

**KANAWHA DISTRICT FAYETTE COUNTY  
MONTGOMERY BRIDGE # 1899**

(STAGE 2)  
Sta. 10+17.00 To Sta. 16+54.28  
Length = 0.121 Mi. 637.28 Ft.

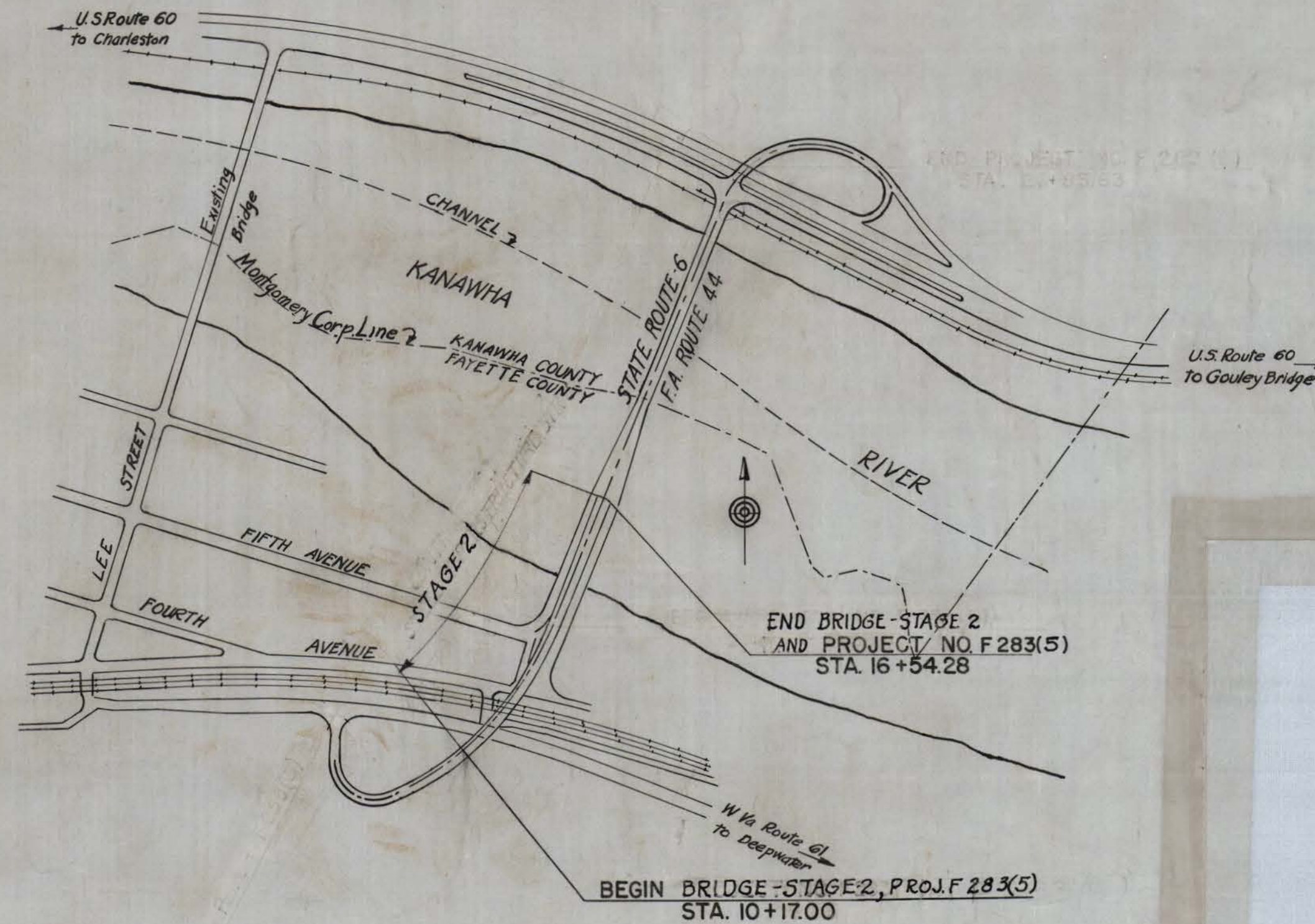
Plan 1 IN. =  
SCALES (AS SHOWN)  
PROFILE HOR. 1 IN. = VERT. 1 IN. =

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
2	9		F283 (5)		FAYETTE	1	



THE STATE ROAD COMMISSION  
OF  
WEST VIRGINIA  
DISTRICTS  
AND  
DISTRICT HEADQUARTERS

**TYPE OF CONSTRUCTION**



**LAYOUT  
SCALE 1 IN. = 300 FT.**

**CONVENTIONAL SIGNS**

- |                |                 |                      |                   |                       |                   |                |                |                   |                   |              |                      |                    |          |           |           |                |            |                     |              |                    |                  |                |          |                    |
|----------------|-----------------|----------------------|-------------------|-----------------------|-------------------|----------------|----------------|-------------------|-------------------|--------------|----------------------|--------------------|----------|-----------|-----------|----------------|------------|---------------------|--------------|--------------------|------------------|----------------|----------|--------------------|
| --- State Line | --- County Line | --- Corporation Line | --- District Line | --- Right of Way Line | --- Property Line | --- Fence Line | --- Guard Rail | --- Proposed Road | --- Traveled Road | --- Railroad | --- Electric Railway | --- Frame Dwelling | --- Wall | --- Marsh | --- Hedge | --- Drop Inlet | --- Bridge | --- Present Culvert | --- Proposed | --- Telegraph Pole | --- Trolley Pole | --- Power Pole | --- Tree | --- Brick Dwelling |
|----------------|-----------------|----------------------|-------------------|-----------------------|-------------------|----------------|----------------|-------------------|-------------------|--------------|----------------------|--------------------|----------|-----------|-----------|----------------|------------|---------------------|--------------|--------------------|------------------|----------------|----------|--------------------|

**ROUTE NO. W.VA. 6  
PROJECT NO. F 283 (5)**

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT F 283 (5)

SECRETARY

APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED \_\_\_\_\_ DAY OF \_\_\_\_\_ 19\_\_

SECRETARY

PREPARED AND RECOMMENDED BY  
**MODJESKI & MASTERS**  
CONSULTING ENGINEERS

*John R. ...*

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_

DIVISION ENGINEER DATE

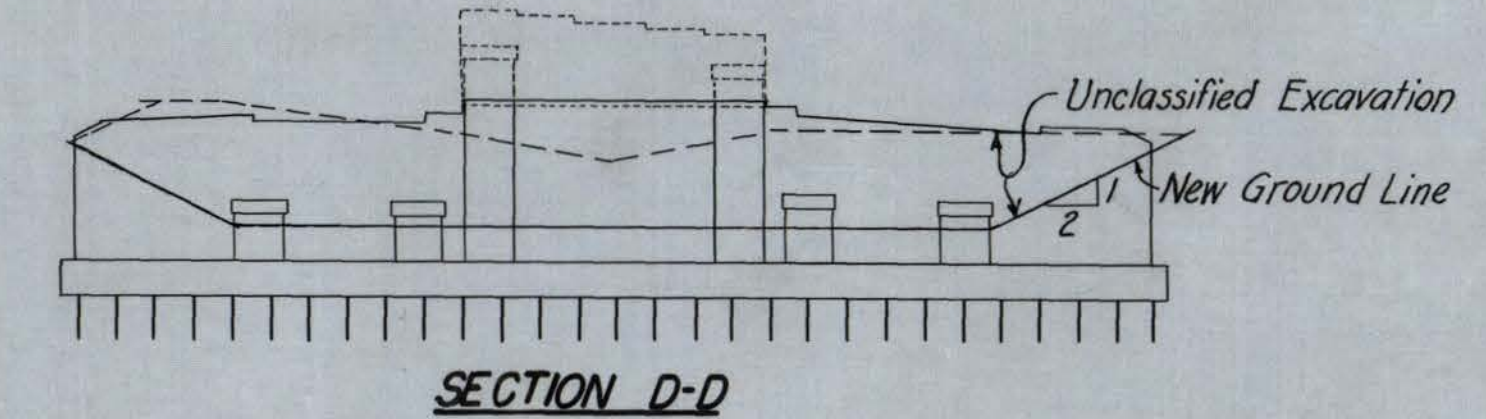
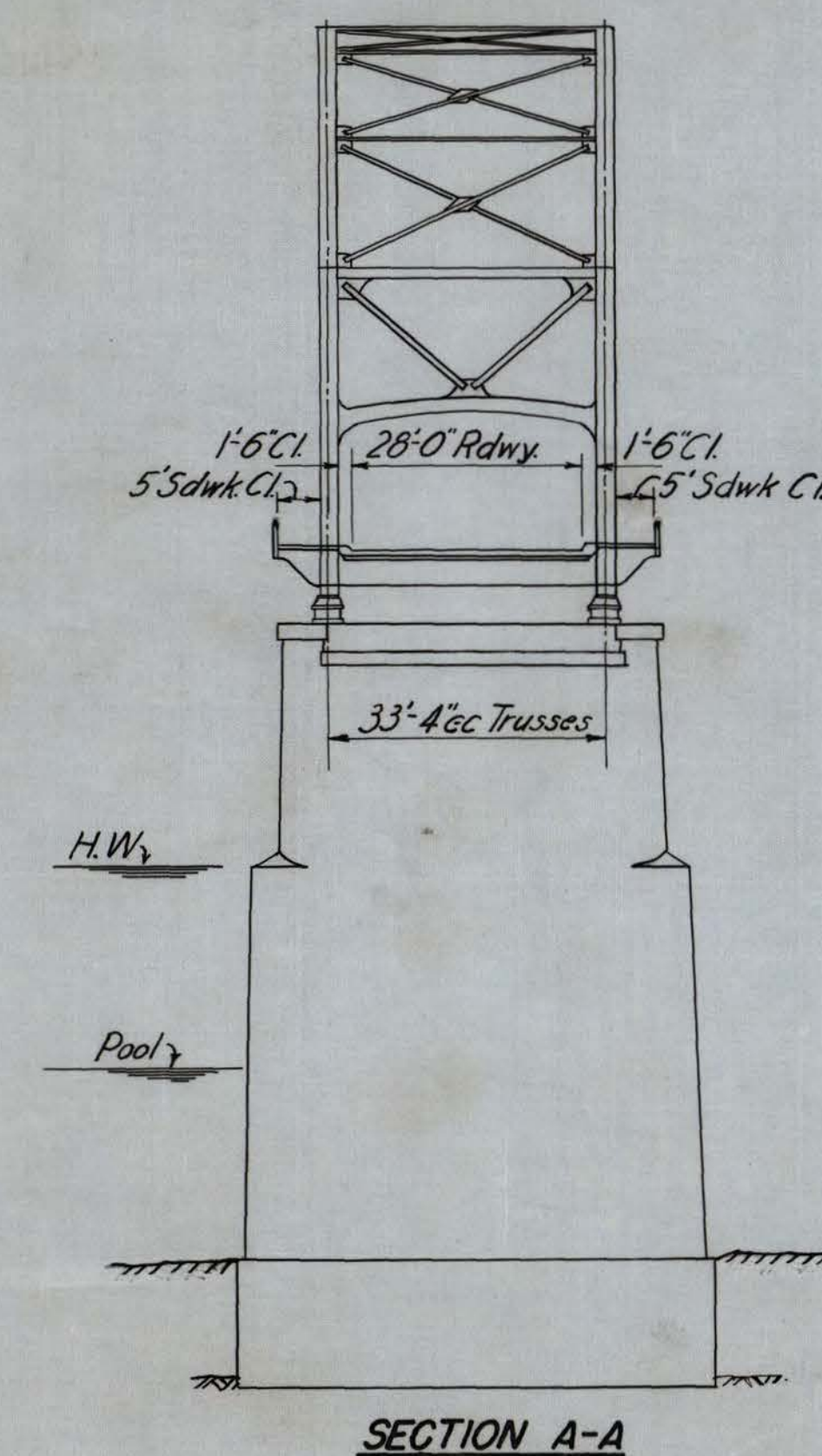
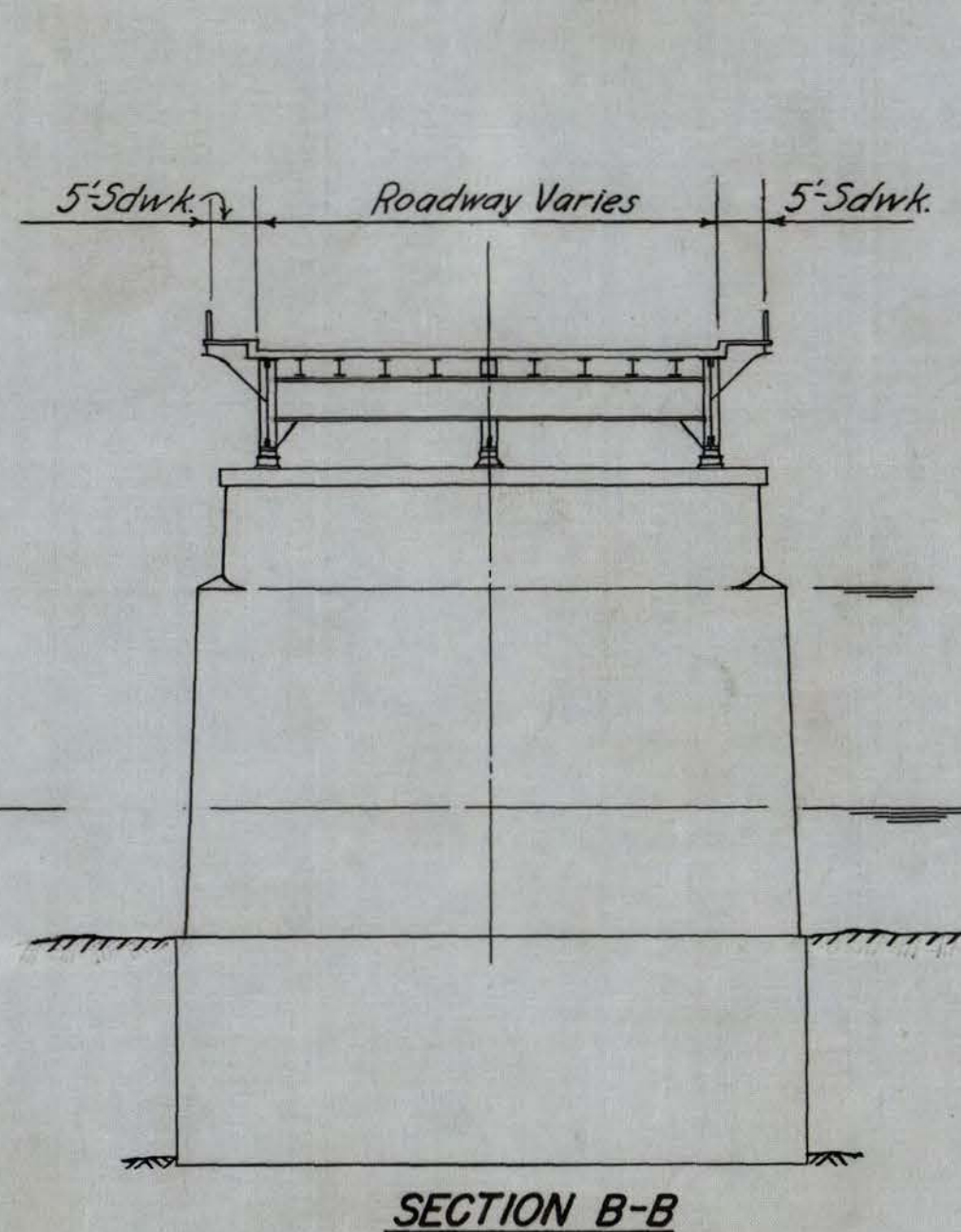
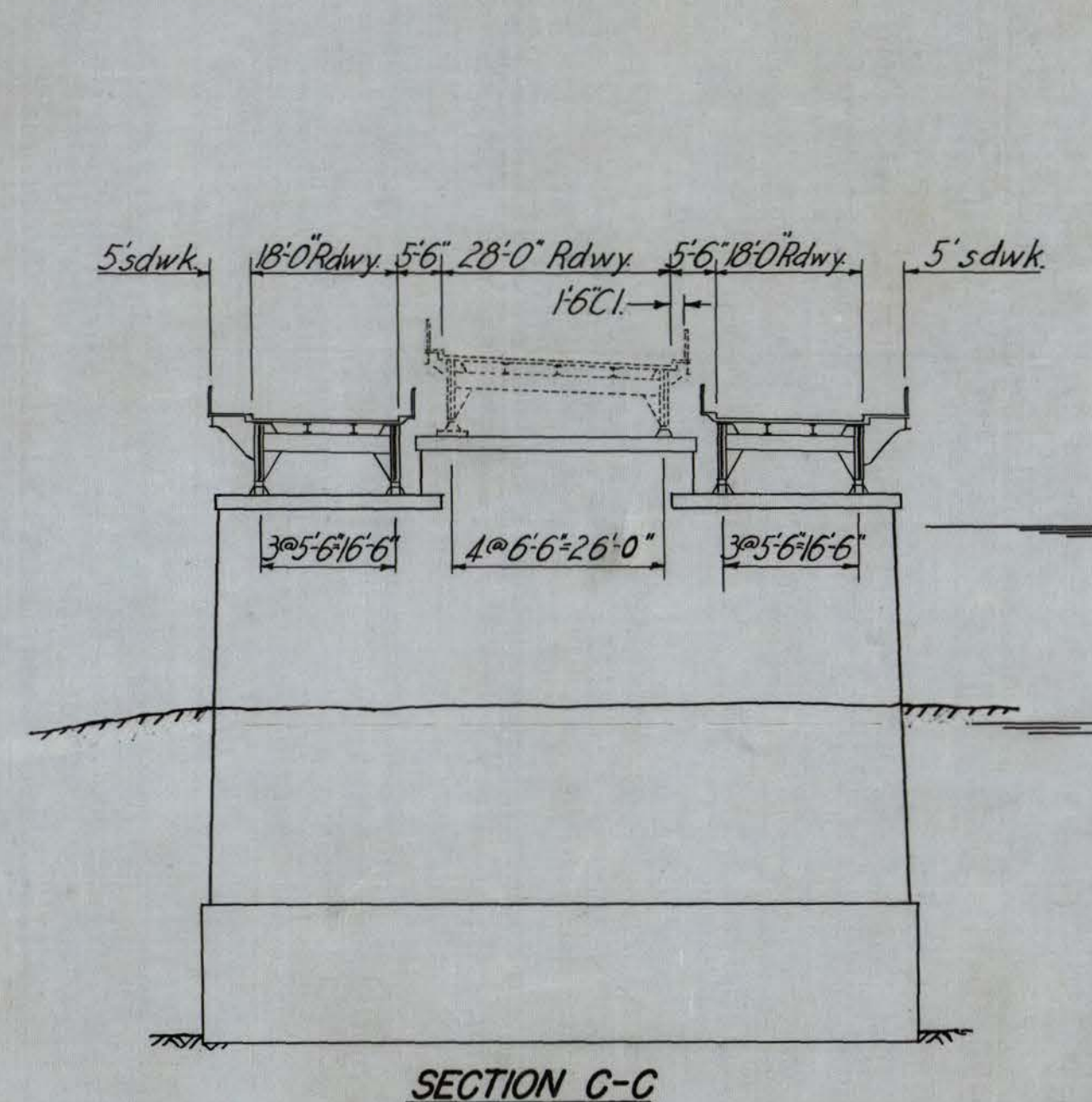
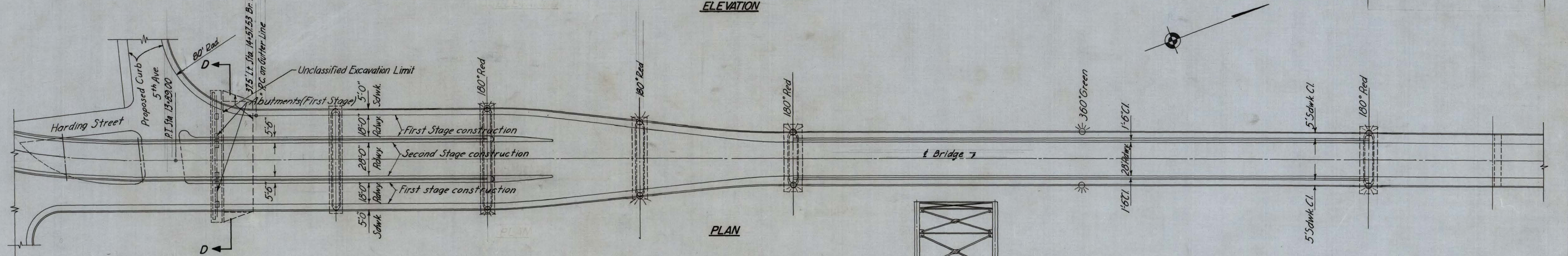
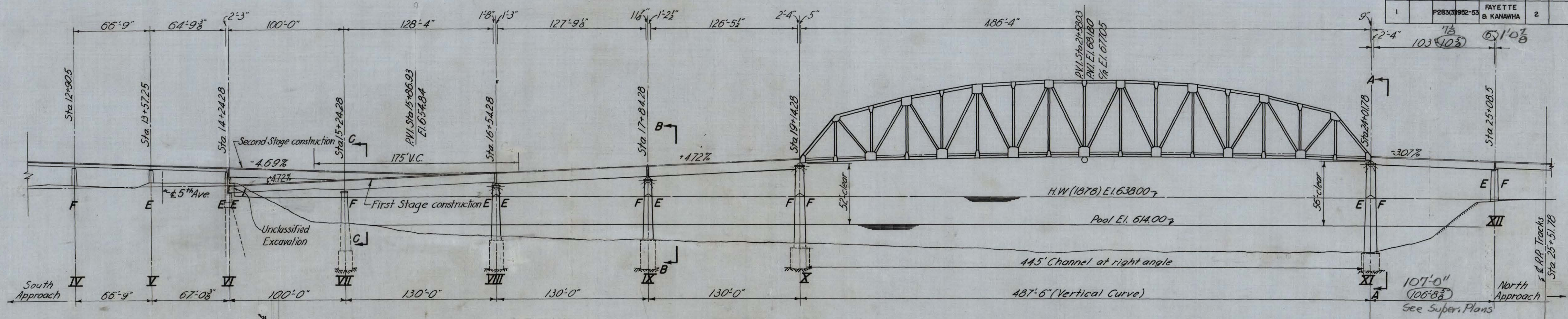
DWG. #1 #1899

PLANS COMPLETED MARCH 1955

Revised March 20, 1958  
" June 19, 1958  
" Oct. 3, 1958



DIST. NO.	STATE PROJ. NO.	FADAD PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283(3)952-53		FAYETTE & KANAWHA	2	



**NOTE:** Elevations refer to Sandy Hook Datum.  
(Corps of Engineers USA Datum)

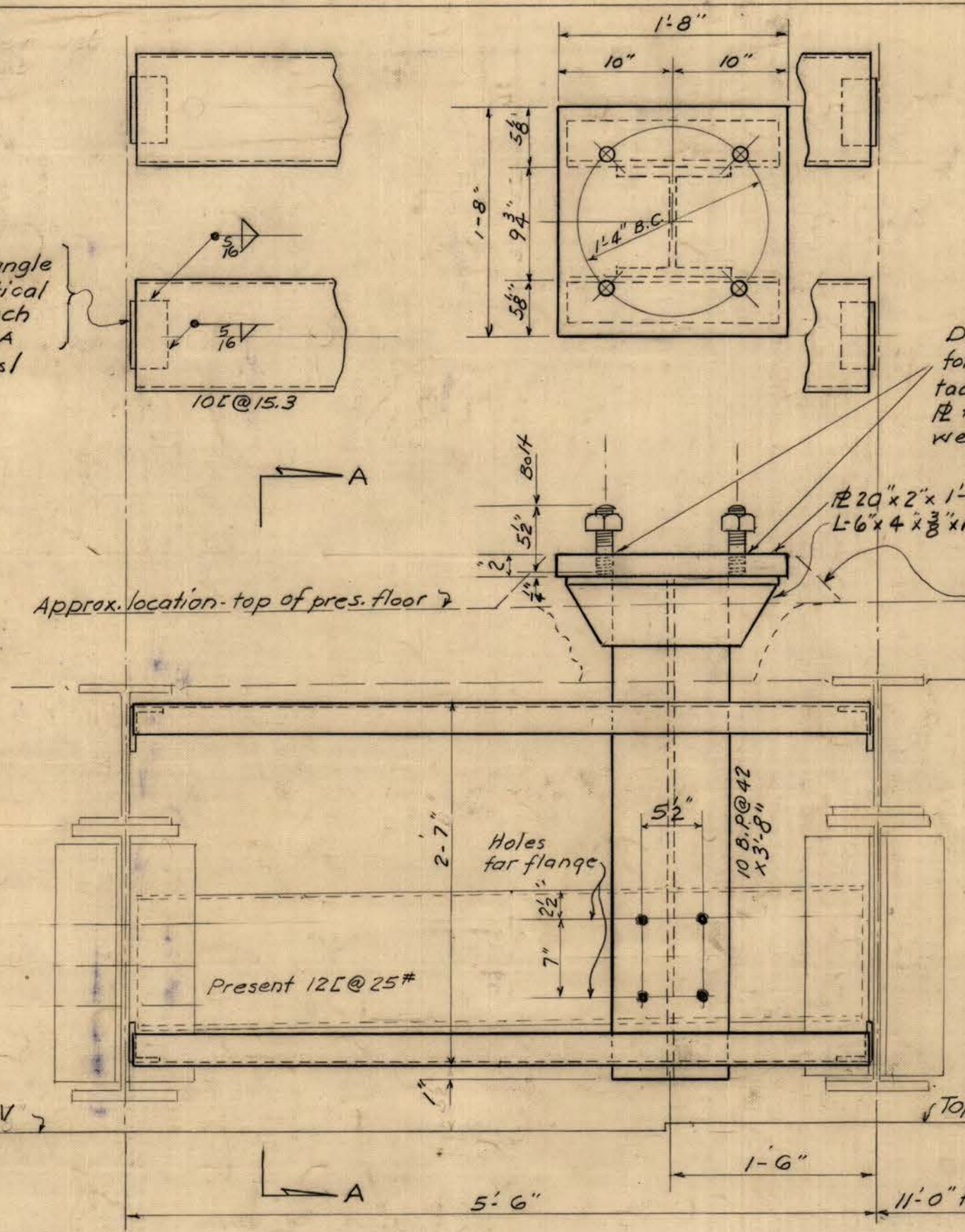
THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
GENERAL PLAN AND ELEVATION

SCALE IN FEET, UNLESS NOTED  
MODJESKI & MASTERS, ENGINEERS  
OCTOBER, 1952

CONTRACT NO. 1



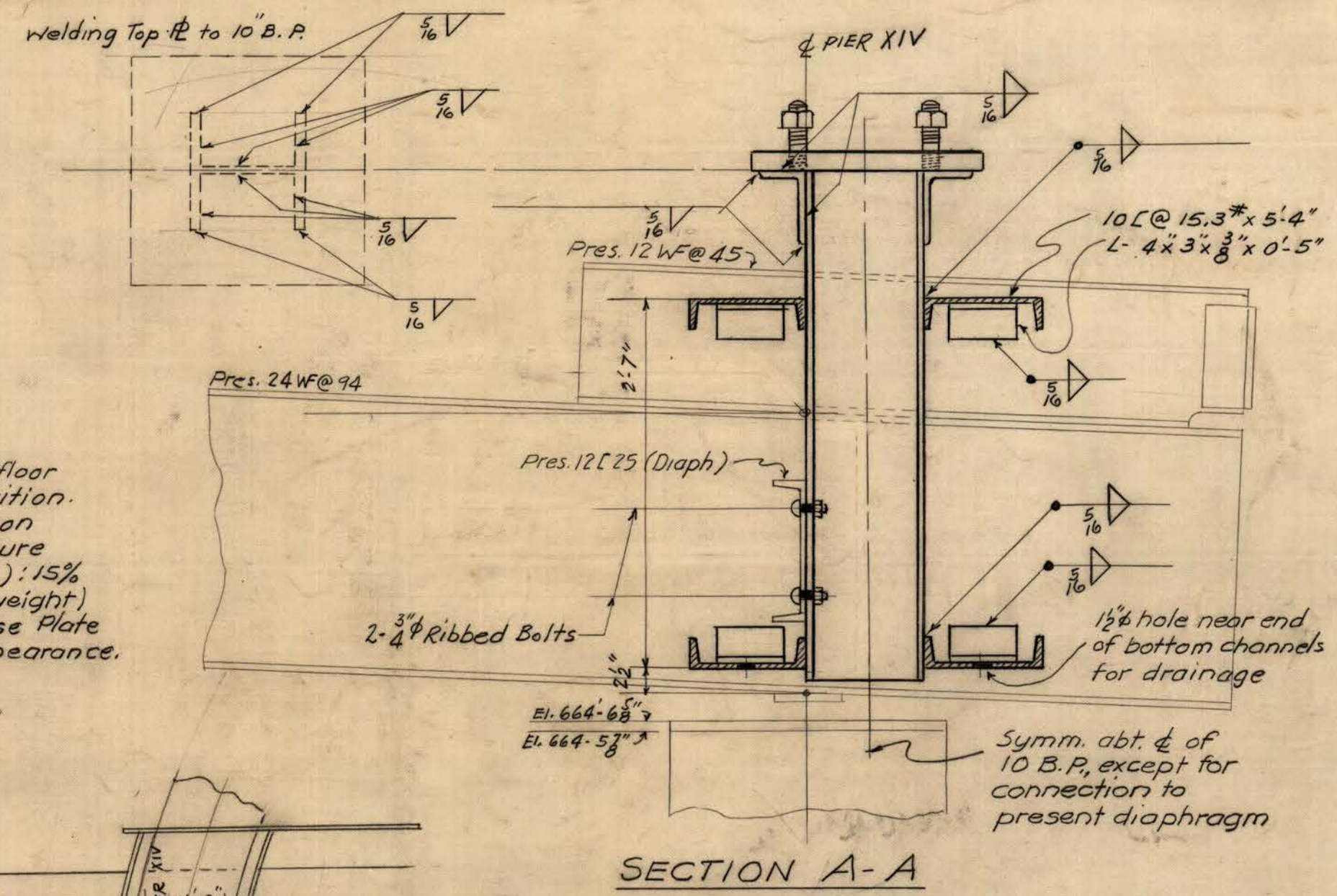
Welding of 4x3 angle to 24.WF@24 is identical at both ends of each 10 L - see SEC A-A for welding symbol



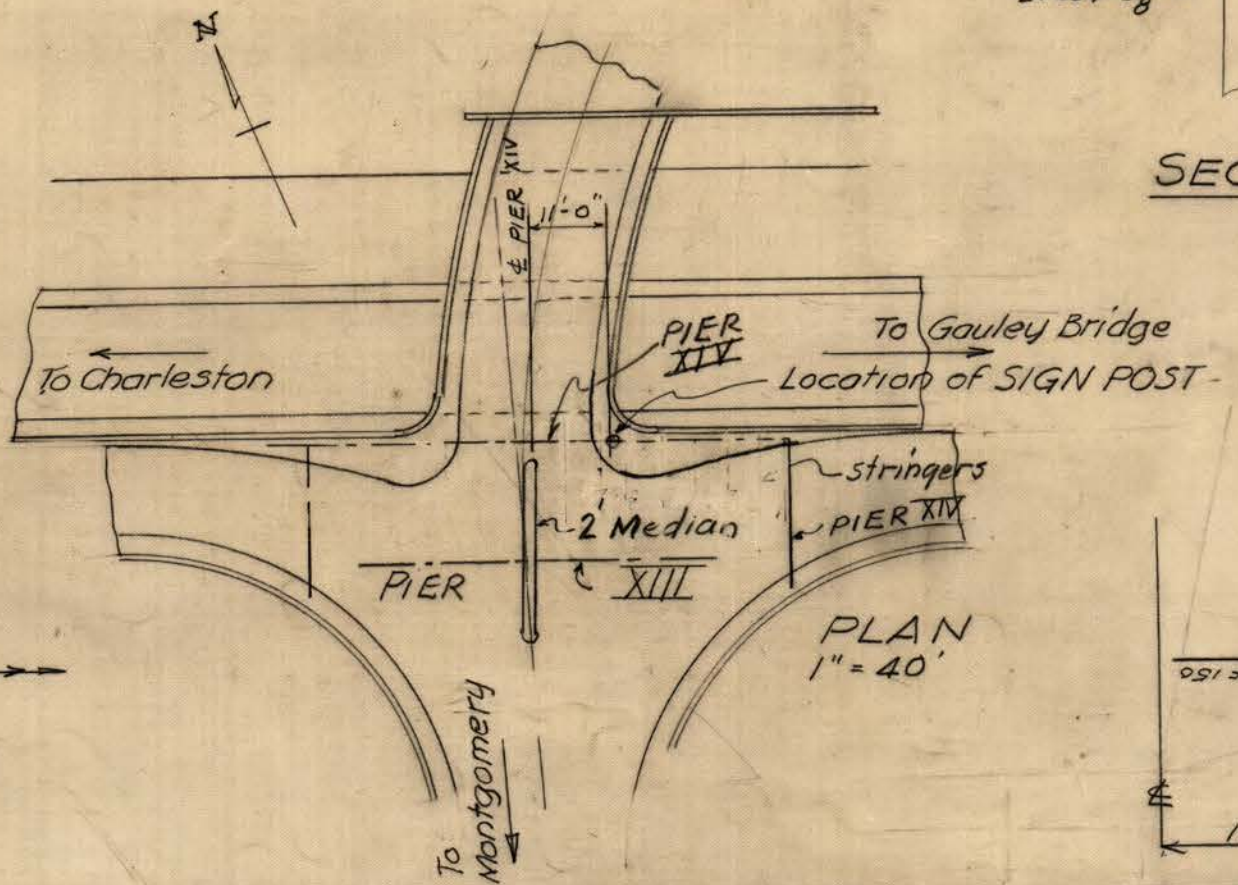
ELEVATION

Drill and Tap thru 2"  $\phi$  for 1 1/2"  $\phi$  x 0-5/2" stud bolts tack-weld stud at bottom of  $\phi$  to prevent turning - before welding  $\phi$  to Ls & 10 B.P.

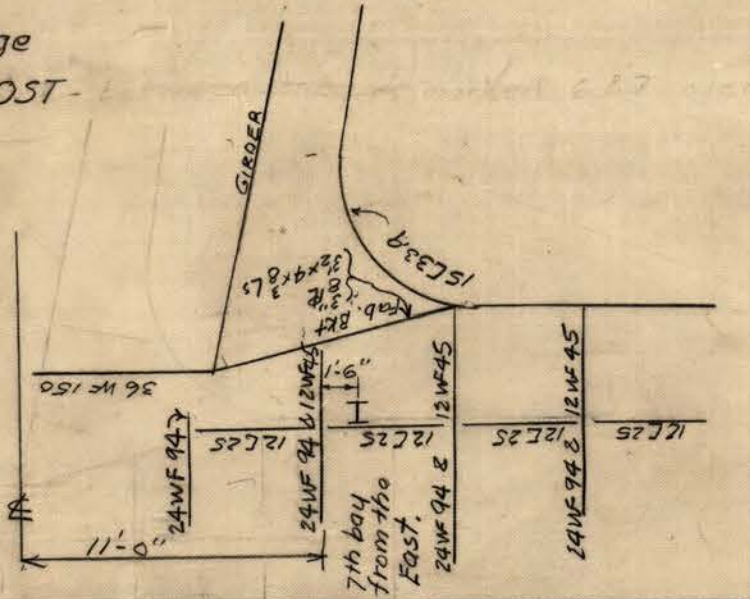
Cut hole in present floor to place 10" B.P. in position. Replace removed portion of concrete by a mixture of 1 : 1 : 1.5 of 4" gravel : 15% Embecco, or equal, (by weight) Slope away from Base Plate for drainage and appearance.



SECTION A-A



PLAN 1" = 40'



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

The purpose of this device is to present a ready level base, near to the elevation of the present concrete floor, upon which the sign post is to be placed and secured by bolts.

Through a hole to be cut in the present concrete floor, it is proposed to drop a section of 10" Bearing Pile @ 42#, which has been capped with a plate whose top surface is truly perpendicular to the vertical axis of the 10" B.P.

When the device is in position, it should then be bolted to the present 12" C 25 diaphragm by the 3/4"  $\phi$  Ribbed Bolts as shown.

When all parts are in correct position, and the 10 L braces are holding the 10 B.P. in vertical position, the 10 L braces can be welded to their clips, and finally the faying edges of the 10 B.P. and 10 L should be welded as indicated.

The Base Plate should be checked for "level" during the welding, to insure a plumb sign post.

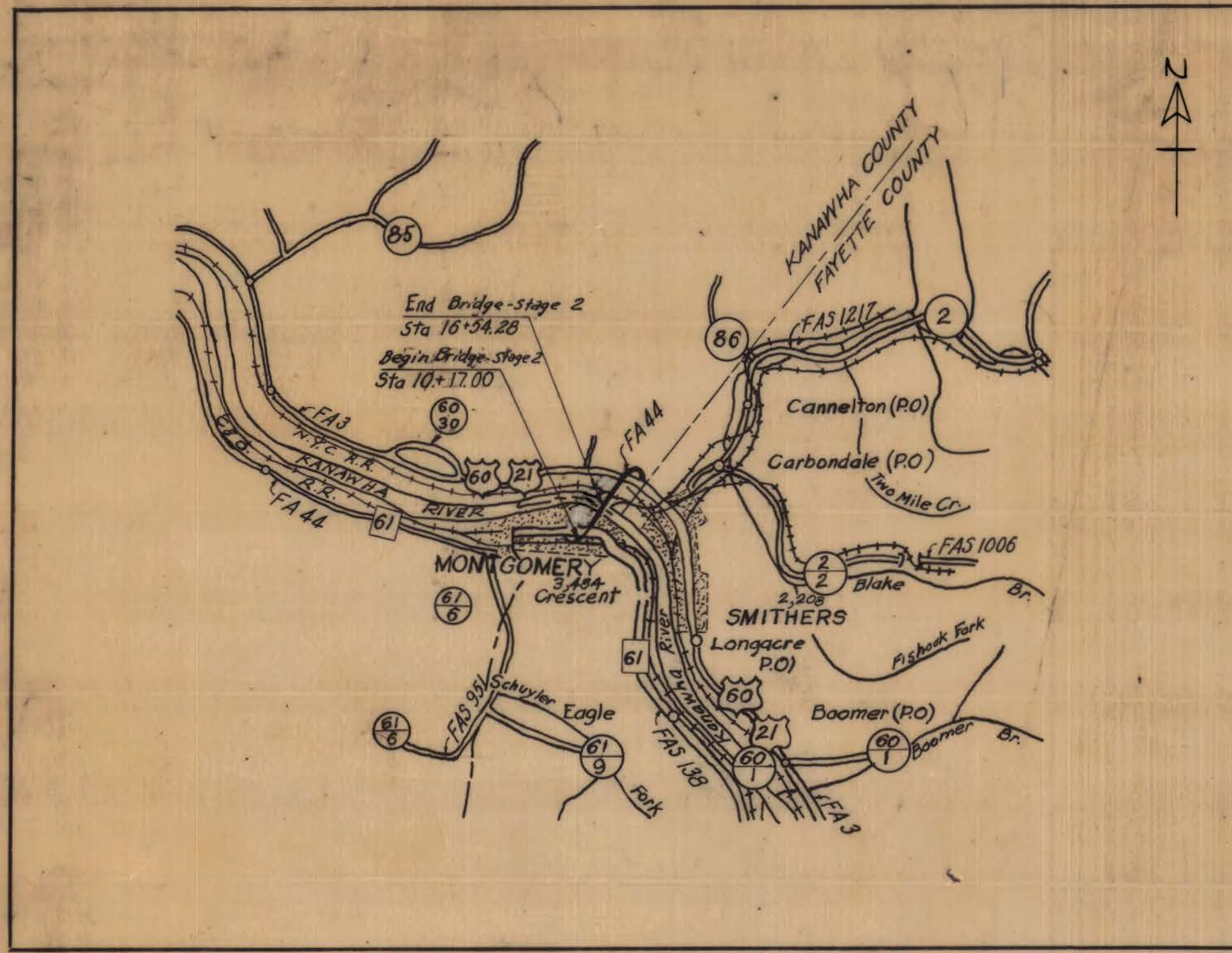
The portion of concrete removed may now be replaced by a mixture of : 1 part cement : 1 part sand : 1.5 parts 4" gravel : 15% Embecco, or equal, by weight. Slope away from the Base Plate for drainage and appearance.

BASE PLATE FOR SIGN POST  
ON  
NORTH END OF  
MONTGOMERY BRIDGE N° 1899

Scale 1" = 1'-0" For Steel  
Except as shown

Revised 8/27/57





SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

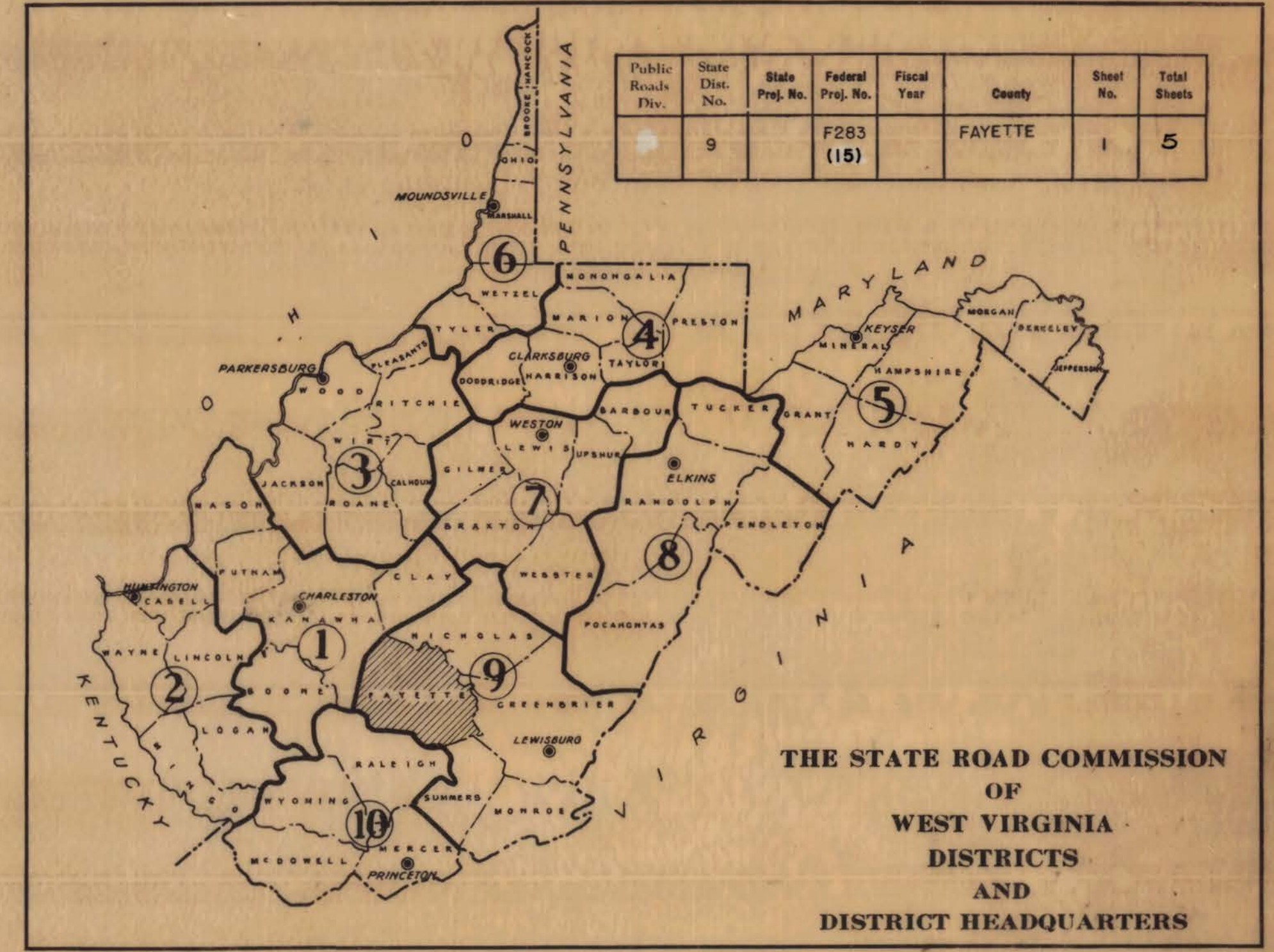
**THE STATE ROAD COMMISSION  
OF WEST VIRGINIA**

**PLAN AND PROFILE FOR CONSTRUCTION  
OF  
STATE ROAD  
PROJECT NO. F 283 (15)  
ROUTE NO. W. VA. 6**

**KANAWHA DISTRICT FAYETTE COUNTY  
MONTGOMERY BRIDGE # 1899**

(STAGE 2)  
Sta. 10+17.00 To Sta. 16+54.28  
Length = 0.121 Mi. 637.28 Ft.

Plan 1 IN. =  
SCALES (AS SHOWN)  
PROFILE HOR. 1 IN. = VERT. 1 IN. =



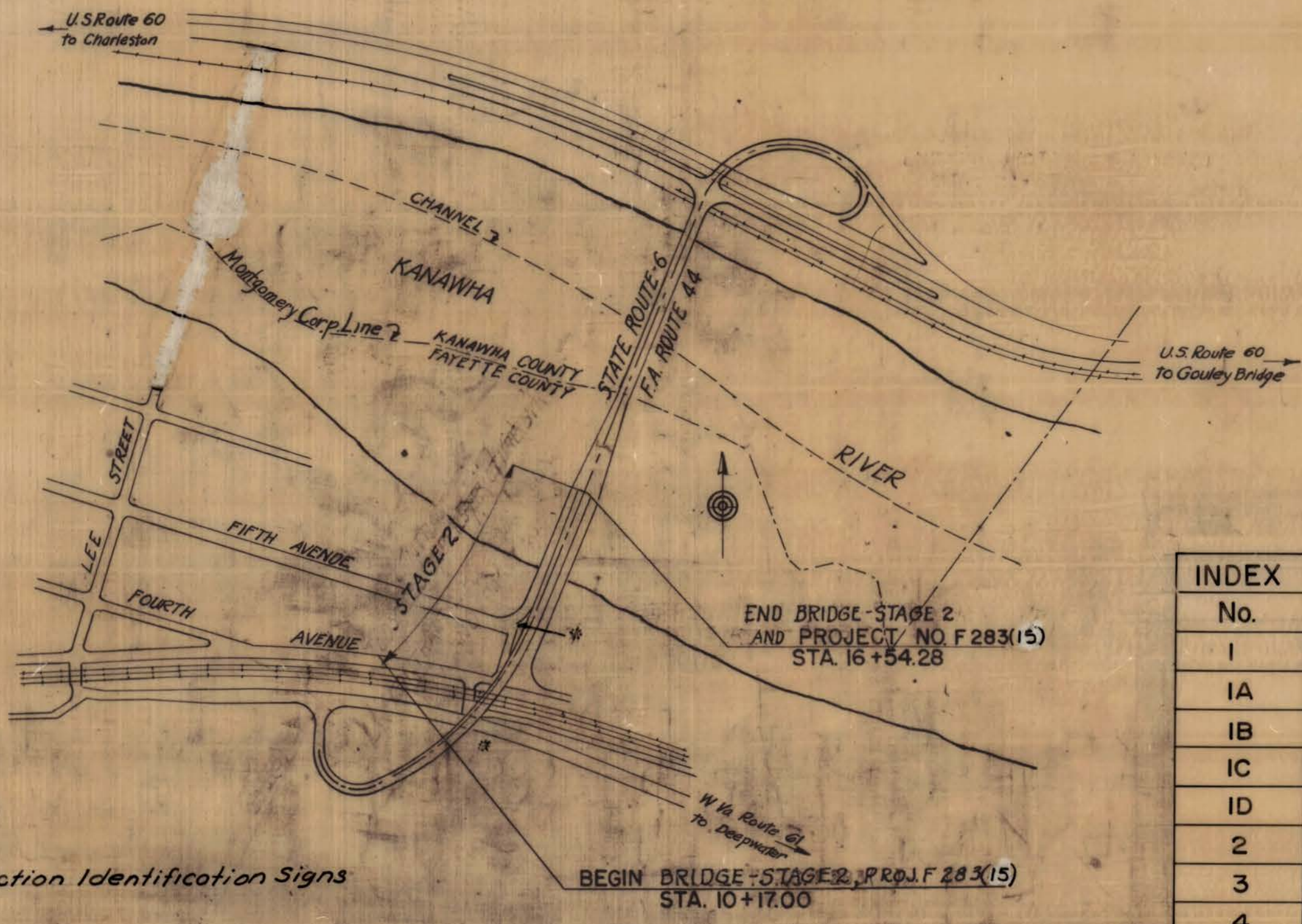
**TYPE OF CONSTRUCTION**

**STAGE 2**  
CONTRACT 1 - SUBSTRUCTURE  
CONTRACT 2 - SOUTH ABUTMENT & SUPERSTRUCTURE

**DESIGN DESIGNATION**

A.D.V. - 1962	3,000
A.D.V. - 1982	5,000
D.H.V.	450
D.	60%
T.	5%

The following Utilities are encountered on this project:  
1. Chesapeake and Ohio Railway Company  
2. Appalachian Power Company



C & O R.W.Y. BRIDGE DESIGNATION FH-4271

**INDEX TO SHEETS FOR STAGE 2 CONTRACT 1**

No.	DESCRIPTION
1	TITLE SHEET
1A	SITUATION PLAN
1B	BORING 1 TO 10 L
1C	GENERAL PLAN & EL. SOUTH APPROACH
1D	DRAINAGE DETAILS
2	GENERAL NOTES & ESTIMATED QUANTITIES
3	PIERS I - V
4	PIER VI EXTENSION
5	BAR SCHEDULE

PREPARED AND RECOMMENDED BY  
**MODJESKI & MASTERS**  
CONSULTING ENGINEERS

*John R. Gies*



**ROUTE NO. W.VA. 6**  
**PROJECT NO. F 283 (15)**

RECOMMENDED *William A. Hart*  
DIRECTOR, DESIGN DIVISION

REVIEWED *Joseph S. Jones*  
ASSISTANT CHIEF ENGINEER (Operations)

RECOMMENDED FOR APPROVAL *Ernest J. Phibbski*  
CHIEF ENGINEER (Operations)

APPROVED *Burl A. Dawson*  
STATE ROAD COMMISSION

MARCH 12, 1963

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT F 283 (15)

*Sam G. McEwen*  
SECRETARY

APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED 12 DAY OF MARCH 1963

*Sam G. McEwen*  
SECRETARY

**LAYOUT  
SCALE 1 IN. = 300 FT.**

**CONVENTIONAL SIGNS**

State Line	Wall
County Line	Marsh
Corporation Line	Hedge
District Line	Drop Inlet
Right of Way Line	Bridge
Property Line	Present Culvert
Fence Line	Proposed
Guard Rail	Telegraph Pole
Proposed Road	Trolley Pole
Travelled Road	Power Pole
Railroad	Tree
Electric Railway	Brick Dwelling
Frame Dwelling	

PLANS COMPLETED MARCH 1955

Revised March 20, 1958  
June 19, 1958  
OCT. 3, 1958

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_

DIVISION ENGINEER DATE

DWG. #1 #1899



**GOVERNING SPECIFICATIONS**

The State Road Commission of West Virginia Standard Specifications Roads and Bridges Adopted 1960 Approved by B.P.R. September 28, 1961 Special Provisions, Amendments, and Revisions to the State Standard Specifications are Attached to the Contractors Proposal.

**GENERAL NOTES**

**Design**

This Bridge is Designed for H-20-S-16-44 Live Loading.

**Grillage and Anchor Bolts**

The Contractor shall Assemble Complete in the Shop the Structural Grillages at Pier VI to be Embedded in Concrete with the Bearing Plates and Supporting Structural Shapes Accurately Fitted before Drilling or Reaming Rivet Holes to Final Size.

Centerlines of Bearings and Centerlines of Grillages shall be Scribed and Marked with Prick Punch Marks for use of the Contractor in Setting Grillages in the Field.

The Contractor shall furnish Copies of the Match Marking Diagrams to the Engineer for His use in the field in Checking the Accurate Placement of Metal Work.

The Top Surfaces of Steel Bearing Slabs shall be Planed in the Shop after Assembly of the Grillages.

The Contractor shall Accurately Set all Bearing Grillages and Anchor Bolts as Indicated on the Plans on Satisfactory Concrete or Metal Supports, at the Correct Elevation and Alignment, Securely Braced Against Displacement During the Pouring of the Embedding Concrete.

Metal Templates Showing the Spacing of Anchor Bolts shall be Delivered to the Superstructure Contractor as Directed by the Engineer.

The Contractor shall be Wholly Responsible for the Accurate Placement of Grillages and Anchor Bolts and any Variation from the Finished Position as Indicated on the Plans shall be Corrected by the Contractor at His Sole Expense and in a Manner Satisfactory to the Engineer. Leveling Nuts shall be Provided on the Anchor Bolts as Indicated on the Plans, for Accurate Adjustment of Steel Grillages to Level and Elevation Prior to Placing Concrete Encasement.

**Excavation**

No Excavation will be Classified as Rock Excavation, Item 6-3. Rock or Shale shall be Excavated and Paid for Under Item 6-1, Structure Excavation, to the Neat Line of the Footing.

The Contractor shall Backfill Around Structures as soon as Possible After Removal of Forms and Falsework.

**Class of Concrete**

All Concrete shall be Class "A" Air-entrained.

**Finish**

All Exposed Concrete Surfaces shall be Given a Rubbed Finish Conforming to Specifications. Curing of Concrete shall be by Burlap and Water in Accordance with the Specifications.

The Use of a Vapor Barrier Burlap will be Permitted.

**Reinforcing Bars**

Reinforcing Steel shall be Intermediate Grade Billet Steel and Conform to Section 3.9.1 of the Standard Specifications.

**Bar Splices and Clearances**

Unless Otherwise Shown on the Plans all Bars shall be Lapped 25 Diameters. Bars shall be 3" Clear from the Face of the Concrete.

ARTICLE 2.71-73.3 (N)(3) is modified by adding the following sentence to the last paragraph of the article: "Concrete so delivered shall be placed in forms within one hour after the cement has been added to the water or aggregates, unless otherwise authorized by the Engineer."

ARTICLE 2.71-73.3 (M), 'Cold Weather Concreting', shall be modified by deleting the third paragraph of the article.

Project Six of these Certified Copies shall be Submitted to the Registrar, Central State and Technical Institute, Charleston, West Virginia.

**Chamfers**

Chamfer All Exposed Edges of Concrete 1" Unless Otherwise Noted.

**PIER VI EXTENSION**

**Construction by Others**

All Construction Work at Pier VI was Completed to Elevation 648.88 Under Stage I. After Completion of the Work to this Elevation the Stage I Contractor was Required to Bend all Vertical Reinforcing Bars Protruding Above Elevation 648.88 Down, Paint Them with Grease and Embed Them in a 1 ft. Thick Temporary Concrete Cap. The Temporary Cap is Separated from the Final Work by a Tar Paper Joint.

The Stage I Superstructure Contractor was Required to Furnish and Erect a Temporary 4 Panel Aluminum Railing on Top of the Temporary Concrete Cap.

**Work to be Performed by This Contractor**

This Contractor shall carefully Remove the Temporary Aluminum Railing and Concrete Cap so as Not to Damage the Embedded Reinforcing Steel. Railing Materials shall be Stored as Directed by the Engineer. The Reinforcing Bars shall be Straightened and Cleaned Using Suitable Solvents and the Concrete Cleaned of all Foreign Matter to the Satisfaction of the Engineer, Before Any New Construction is Started. Price Included in Class "A" Concrete, Item 71-2.

**DRAINAGE STRUCTURE**

All Drainage Work Below the Tops of the Piers shall be Furnished and Installed Under this Contract. The Main shall be Standard Strength 18" Reinforced Concrete Pipe. The Pipe Beneath the C.&O. Railroad shall be 18" Corrugated Metal Pipe, Fully Coated, and Be Furnished and Installed By the Railroad Company Without Cost To the Contractor. Circular Reinforcing and have Bell and Spigot Ends. The Railway Pipe shall be Furnished by the Contractor and Installed by the Railroad Company without Cost to the Contractor.

All Down Drains at the Piers shall be 5" Wrought Iron Pipe and Fittings, with Welded Joints and with 5" C.I. B&S Pipe Laterals to the Main.

The Man Holes, Frames and Covers for the 18" Concrete Main shall be of Standard Design as shown on the Plans and Constructed in Accordance with Section 2.113 and 2.114 of the Standard Specifications.

Standard Cast Iron Culvert Pipe shall be Equal to Cast Iron Soil Pipe, A.S.T.M. A74(55).

**Piles**

Piling shall be 12" B.P. @ 53" with a Design Load of Forty-seven (47) Tons. Piles driven to Refusal into the foundation strata as indicated by the estimated pile lengths (or pile tip El.) Refusal is defined as the equivalent of 20 Blows for 1" or less of penetration with a 12,000 Ft. Lb. power hammer.

New Stock Material may be Used for Piles Provided that Each Piece can be Identified by Heat Number and Provided that Certified Mill Reports are Furnished to the State Shop Inspector for Each Heat Represented Indicating that the Material Conforms to the Specifications.

**Paint**

Shop Painting of all Exposed Drainage Pipes, Straps, Bolts, and Appurtenances shall be Red Lead Iron-Oxide Conforming to Supplemental Specifications Shop Painting, Dated June 12, 1961 (Approved by B.P.R. Aug. 10, 1961) except the Inside Surfaces of Pipe shall Receive Two Coats.

Field Painting shall Consist of Three (3) Coats in Addition to Touch-up Painting Required under Art. 2.90-93.3(G)(3). The First Coat and that for Touch-up Painting to be Red Lead Iron-Oxide Conforming to Art. 3.11.6 and 3.11.7 of the Standard Specifications. The Final Two Coats to be Aluminum Conforming to Art. 3.11.9 of the Standard Specifications.

The first Coat of Aluminum to be Tinted with Five (5) Ounces Prussian Blue Paste per Gallon of Paint.

Lamp Black Paste shall Conform to A.S.T.M. Specification D-209. Prussian Blue Paste shall Conform to A.A.S.H.O. Specification M-131.

When Samples are Submitted for all Red Lead Primers and Paint, the Contractor shall Submit to the Laboratory Seven (7) Certificates from the Manufacturer Stating that the Red Lead Primers and Paint Meet the Applicable Requirements of the Standard Specifications and Amendments thereto. The Certificates shall Properly Identify the Batch Number and the Project Number to which it Applies, and shall be Delivered with the Sample of Paint to be Tested.

These Certificates are in Addition to the Presently Required Paint Samples.

**Maintaining Traffic**

The Contractor shall construct and maintain a temporary access from Gains St. to W.Va. 61 when construction of Pier 2 interferes with traffic on present access, see sheet I-A.

Cost of this work including Flagging, Signs, Clean Up, and Aggregate shall be paid for under item 127-1.

**Building Demolition**

The Contractor shall remove and dispose of in accordance with the Special Provisions, Building IB- Tin Garage and Building IC - Brick Service Station shown on sheet I-A. Cost of this work to be paid for under Item 175 (IA) (IB).

\*delete

SUMMARY							
Pier No.	Reinforcing Steel-lbs.						Concrete Class A Cu.Yd.
	Bar Size						
	4	5	6	7	8	9	Total
Pier I	1386	1746	1478			1722	6332
Pier II	1413	2298	1462			3810	8983
Pier III	1404	2270	1462			3805	8941
Pier IV	1228	1219	896		492	164	3999
Pier V	1084	1052	896		527	164	3723
VI (ext)	317	1010					1327
Total	6832	9595	6194		1019	9665	33305

ESTIMATED QUANTITIES (SUBSTRUCTURE)				As Built
Item	Description	Quantity	Unit	Quantity
6-1	Structure Excavation	320	Cu.Yds.	373.4
41-1(5)	5" B&S Standard Cast Iron Culvert Pipe	35	Lin.Ft.	Deleted
53	5" W.I. Pipe	135	Lin.Ft.	Deleted
49-1(18)	18" Reinforced Concrete Culvert Pipe (Std. Str)	90	Lin.Ft.	*delete
63	Steel Bearing Piles	3996	Lin.Ft.	4320.5
71-2	Class A Concrete in Substructure	383.2	Cu.Yds.	382.81
78	Reinforcing Steel Bars	33305	Lbs.	33307.8
92*	Fabricated Structural Steel	L.S.	L.S.	100%
113-3	Manhole Frame and Cover Castings	1	Each	*Deleted
114-3	Manholes complete, except Casting	1	Each	Deleted
72	Class B Concrete	2.5	Cu.Yds.	2.80
113-2	Drop Inlet Castings	2	Each	2
127-1	Maintaining Traffic	Lump	Sum	100%
136	Engineer's Field Office	Lump	Sum	100%
175(1B) & (C)	Building Demolition (1(B)-Tin Garage (1(C) Brick Service Station	Lump	Sum	100%

\* Item 92 includes:  
Grillage (4-34) 870 Lbs.  
Grillage Anchor Bolts (4-34) 293 Lbs.  
Total 1163 Lbs.

The Unit Price Bid for 5" W.I. Pipe Item 53, shall Include the Cost of Eccentric Reducers, Cleanout Plugs and all Fittings and Hangers.

MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER  
AT MONTGOMERY W.VA.

**GENERAL NOTES AND ESTIMATED QUANTITIES SUBSTRUCTURE**

STAGE 2

DESIGNED BY

THE STATE ROAD COMMISSION  
CHARLESTON, W. VA.

Scale as shown  
Project F283(15)

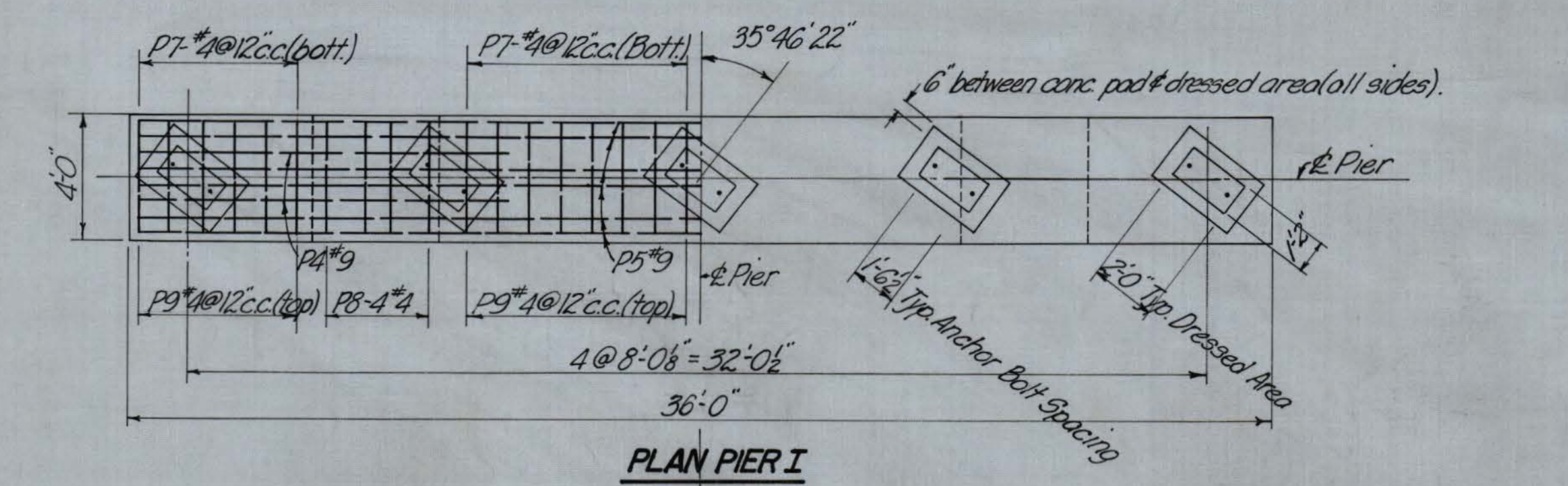
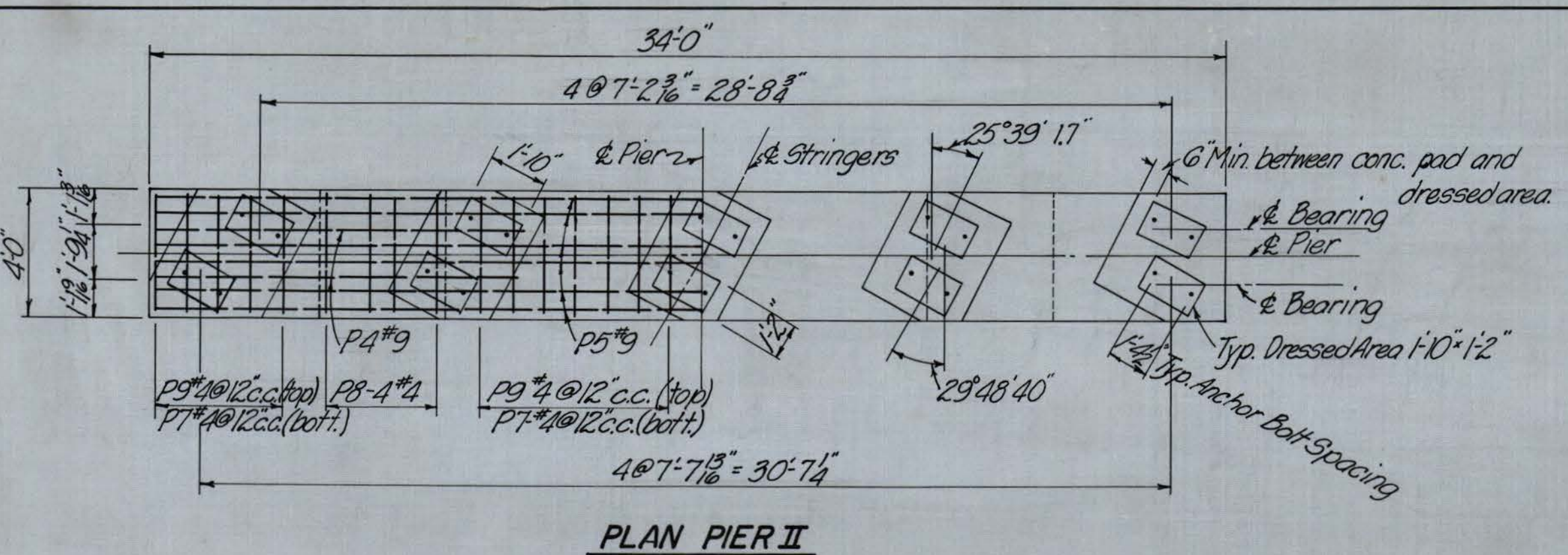
Date 3-5-63  
Sheet 2 of 5 Sheets

No. 1899

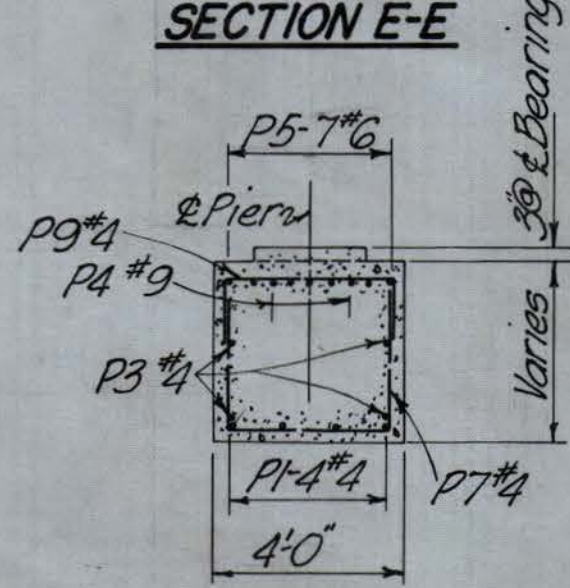
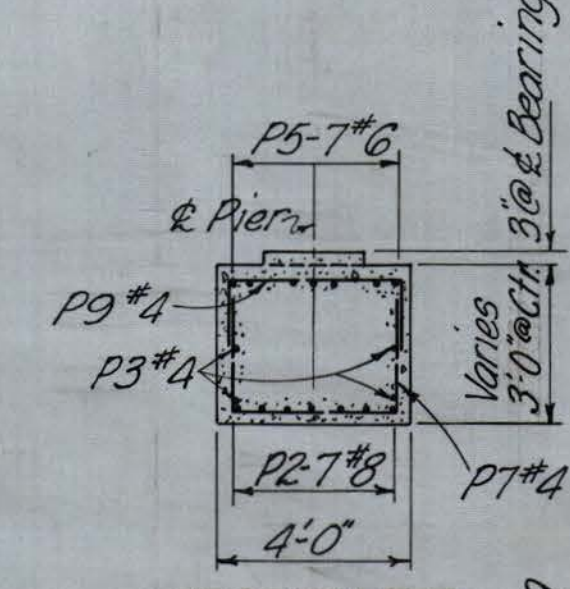
MADE BY L. Rollins DATE 3-5-63  
CHECKED BY CDJ DATE 3-6-63  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
2			7-7-63	
*		18" R.C.P. & M.H. deleted	7-14-64	

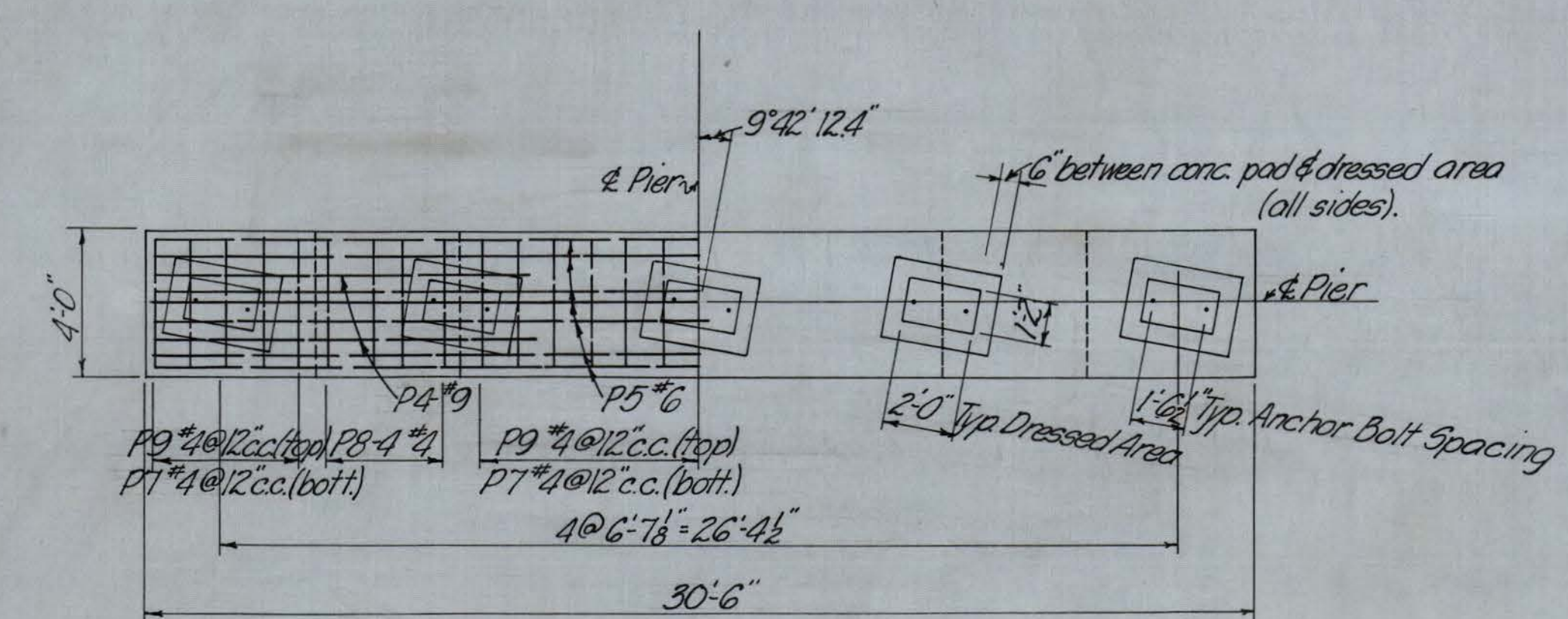
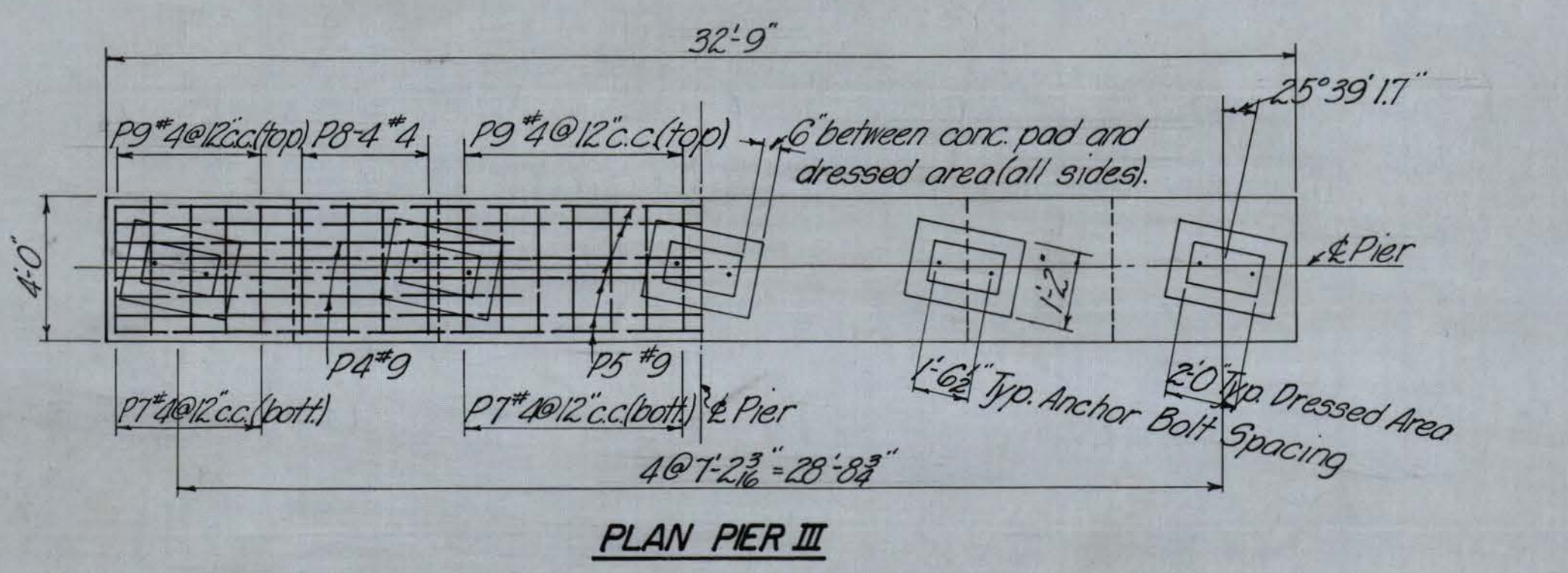




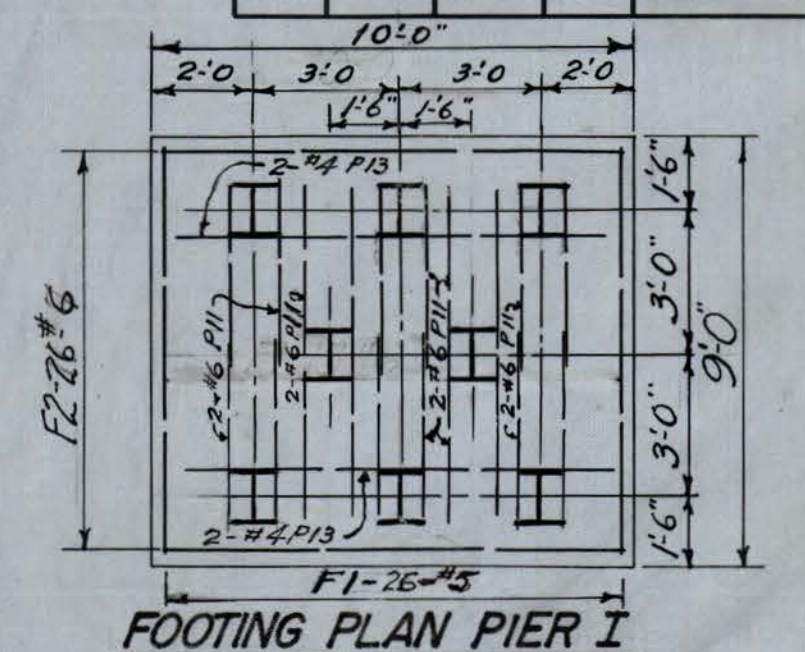
**HORIZONTAL SCORE DETAIL**



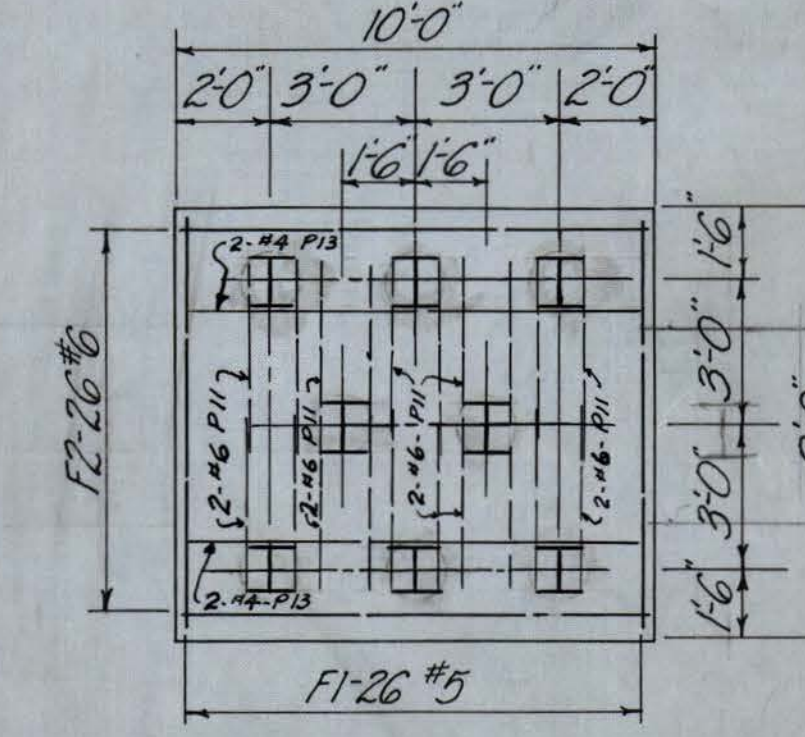
**SECTION D-D**



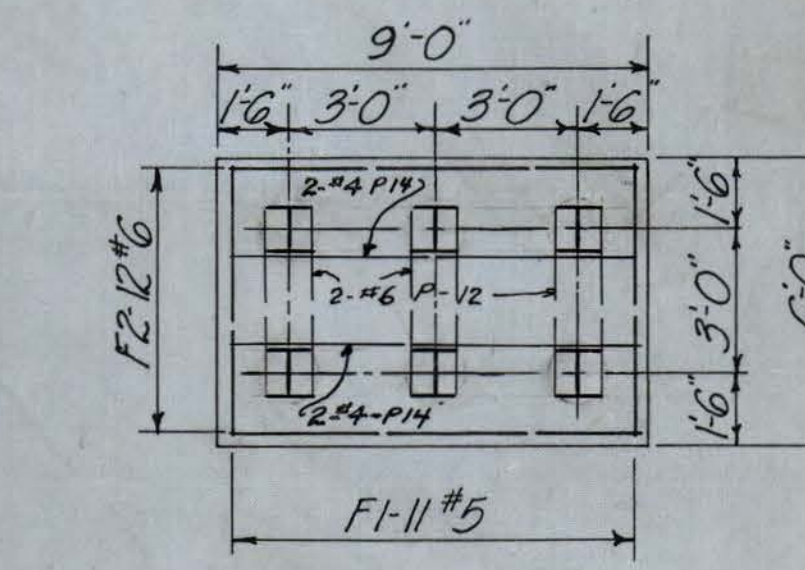
**PLAN PIERS IV & V**



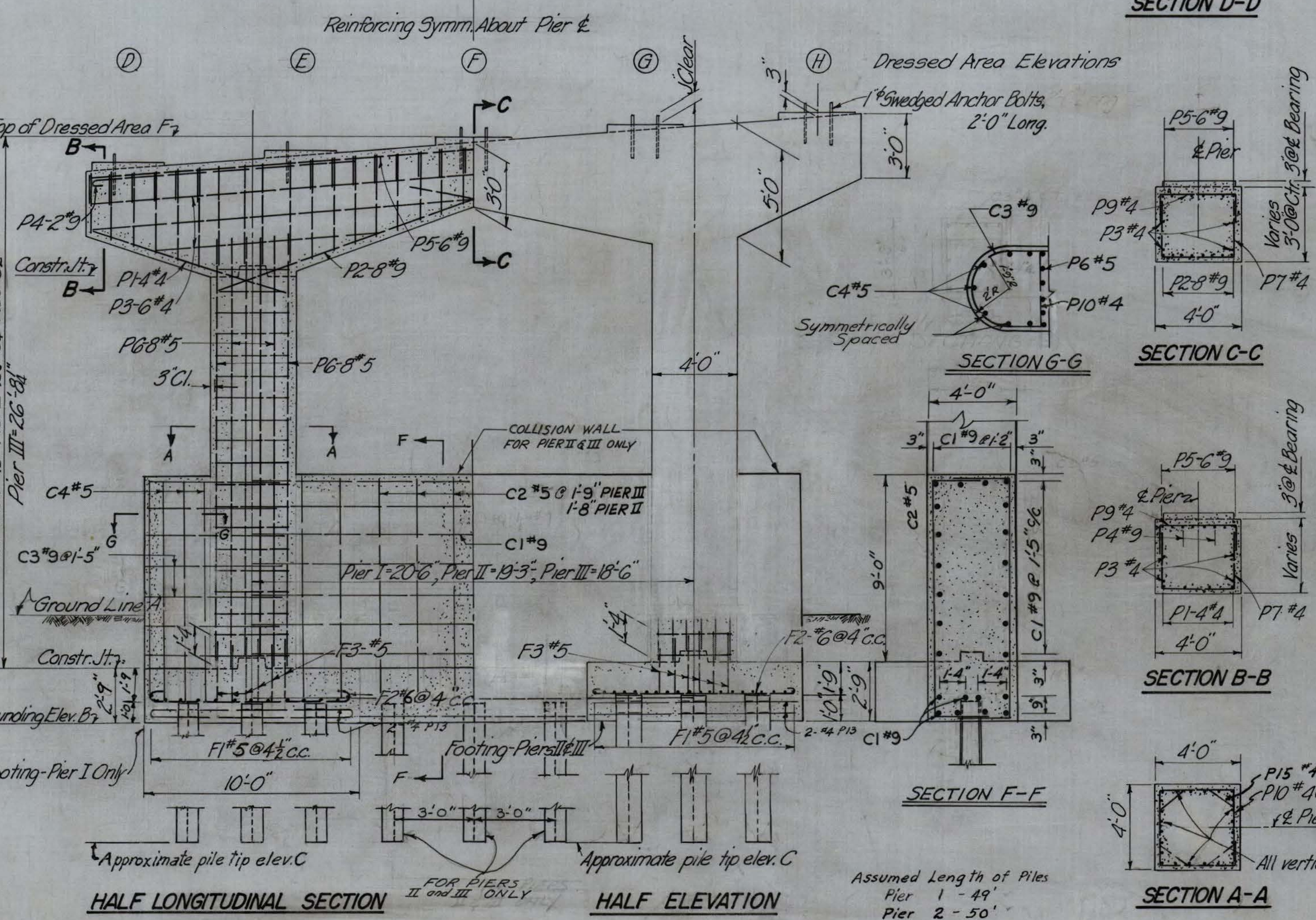
**FOOTING PLAN PIER I**



**FOOTING PLAN PIERS II & III**



**FOOTING PLAN PIERS IV & V**

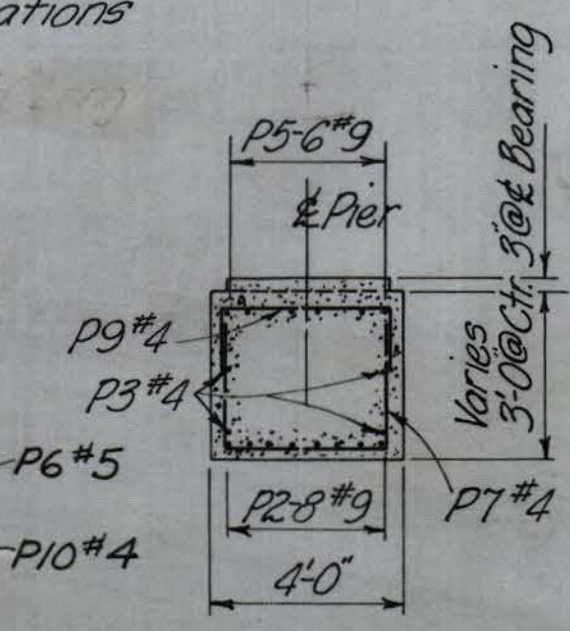


**HALF LONGITUDINAL SECTION**

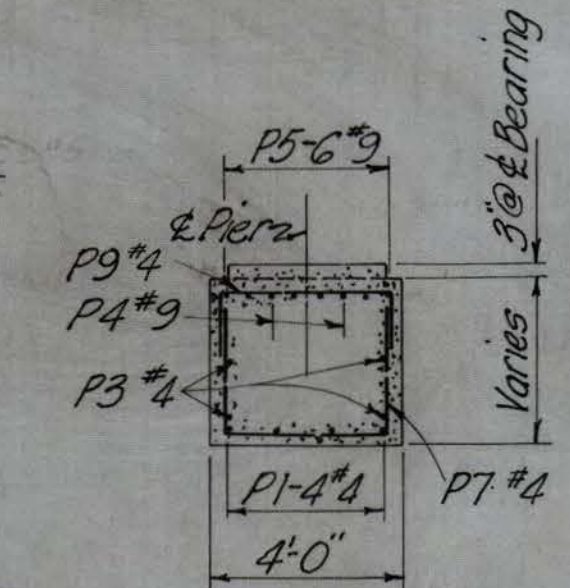
**HALF ELEVATION**

**PIERS I, II & III**  
(Pier I Shown)

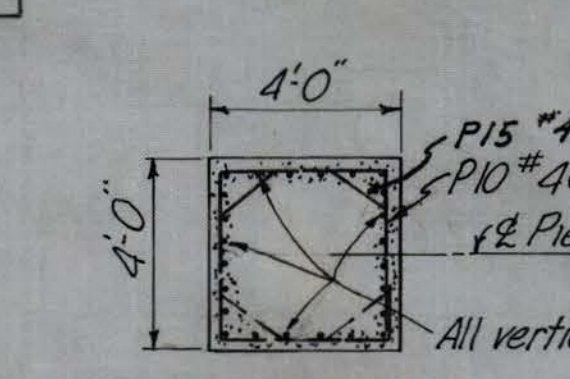
Assumed Length of Piles  
 Pier 1 - 49'  
 Pier 2 - 50'  
 Pier 3 - 48'  
 Pier 4 - 58'  
 Pier 5 - 57'



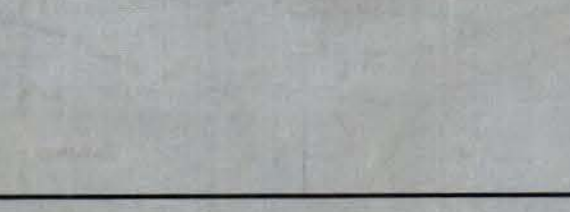
**SECTION G-G**



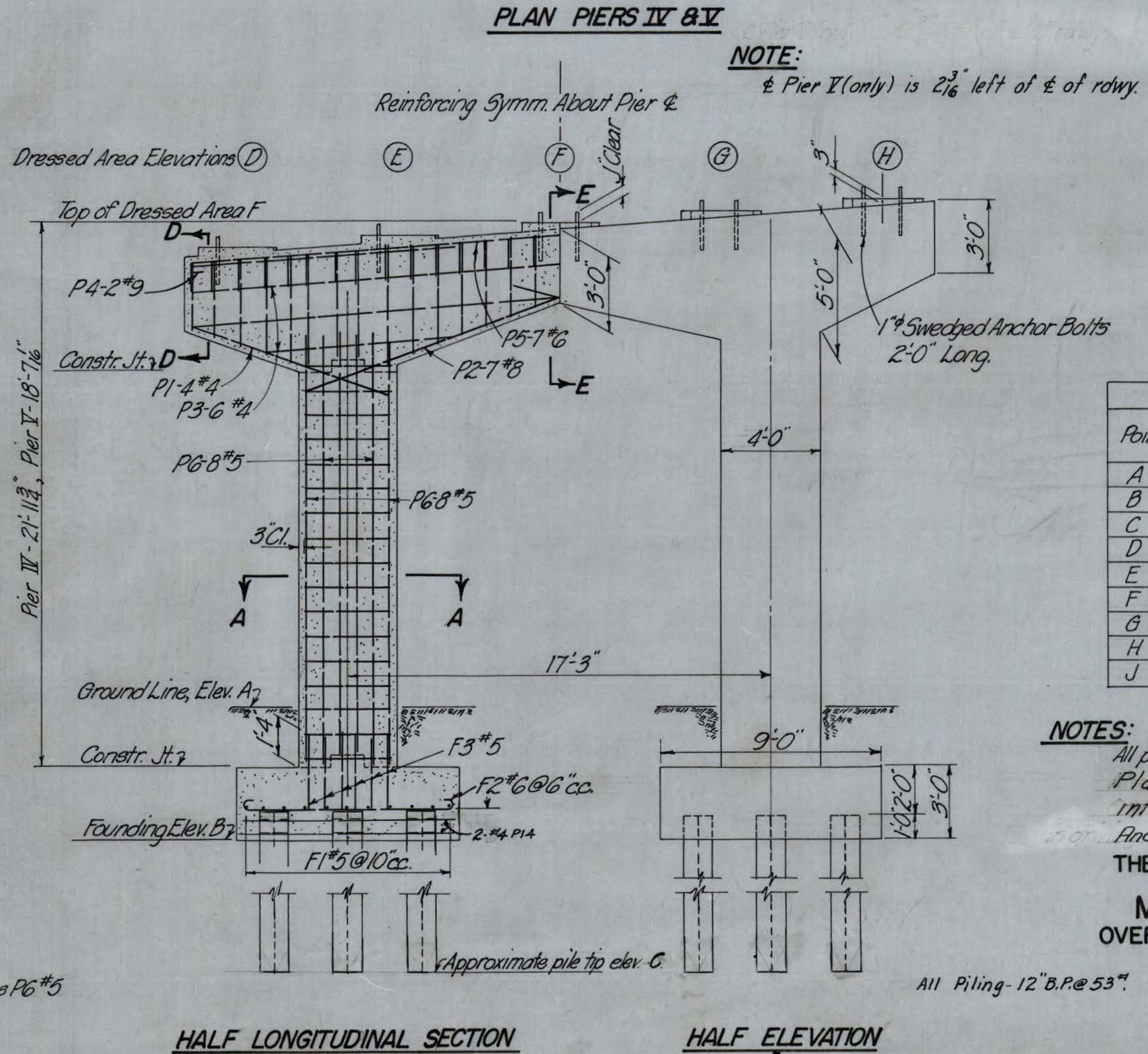
**SECTION C-C**



**SECTION B-B**



**SECTION A-A**



**HALF LONGITUDINAL SECTION**

**HALF ELEVATION**

**PIERS IV & V**  
(Pier IV Shown)

**NOTE:**  
 Pier I (only) is 2 1/8' left of center of row.

Point	Pier I	Pier II High Sta. Low Sta.	Pier III	Pier IV	Pier V
A	647.2	644.1	642.2	645.1	646.7
B	637.75	637.0	637.0	640.0	641.0
C	590.0	590.0±	590.0±	583.0±	585.0±
D	663.81	665.15	665.13	665.38	663.93
E	664.46	665.71	665.69	665.90	664.44
F	665.11	666.27	666.25	666.40	664.94
G	665.76	666.82	666.81	666.90	665.43
H	666.40	667.37	667.36	667.40	665.92
J	5	4 1/4	4 1/4	5	4 1/4

**NOTES:**  
 All plans and sections are shown looking from the low station to the high station.  
 Place reinforcing bars in bridge seats so as not to interfere with drilling of anchor bolt holes.  
 Anchor bolts to be furnished & placed under Cont. 2, Stage 2.

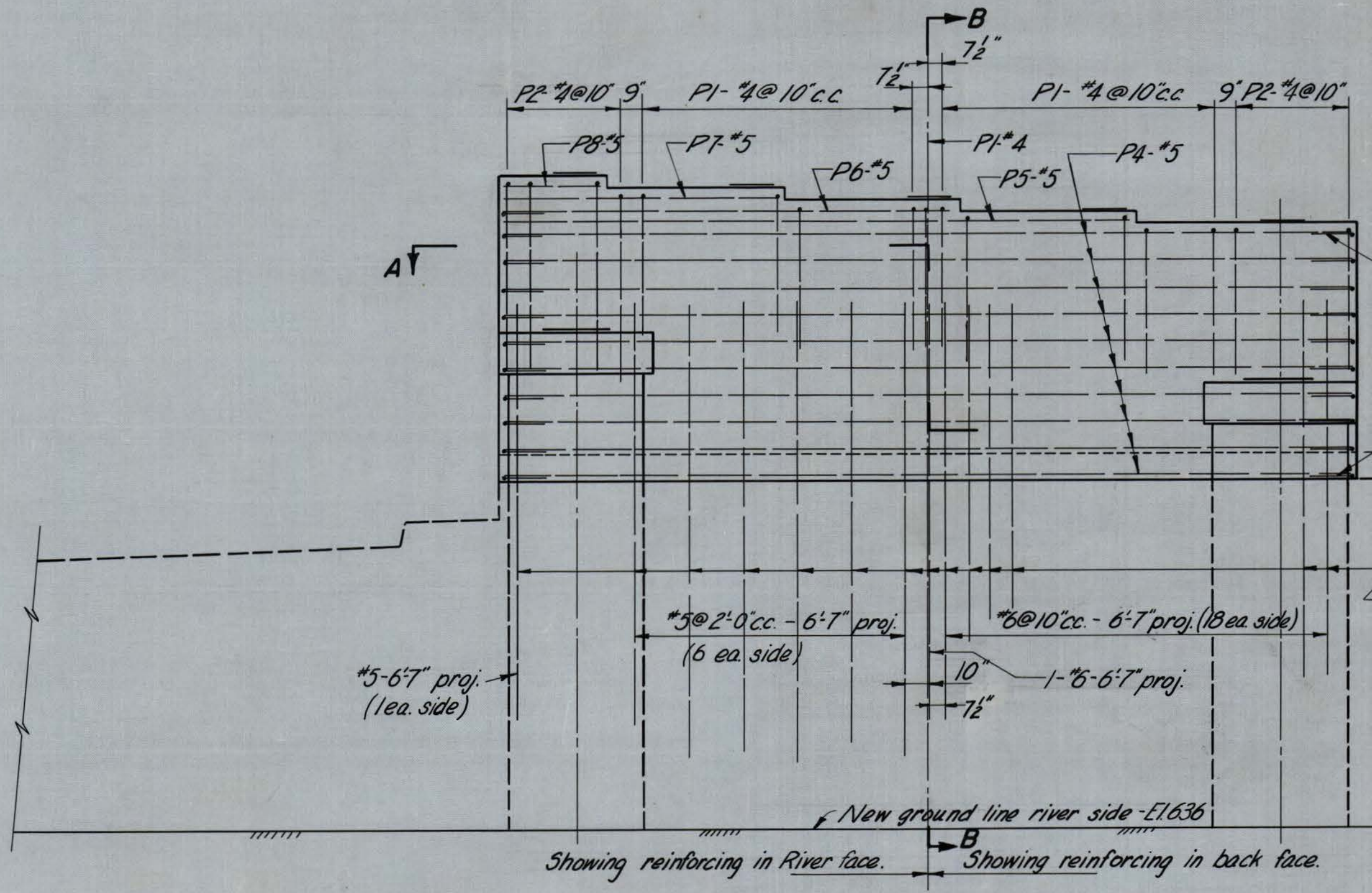
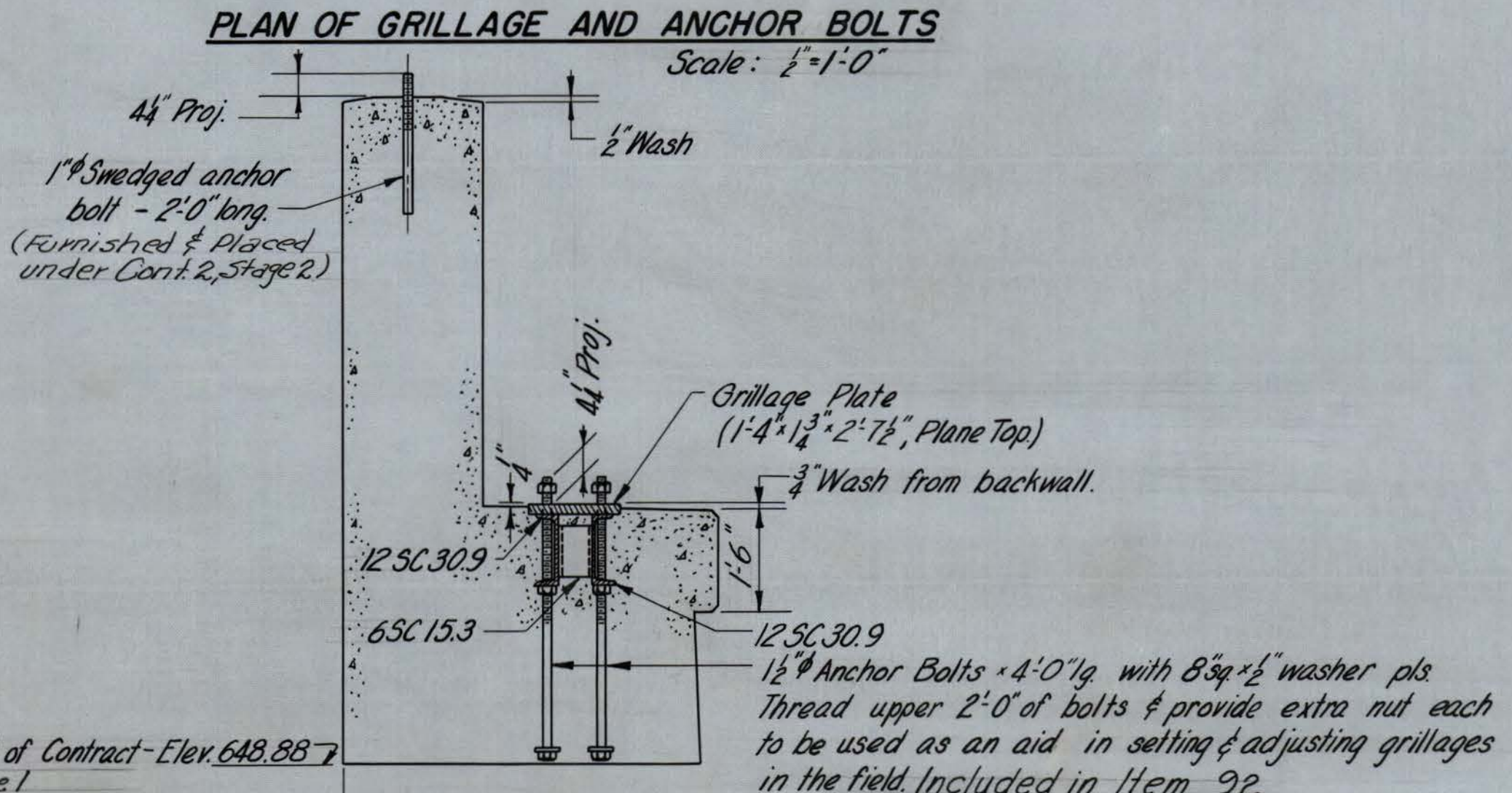
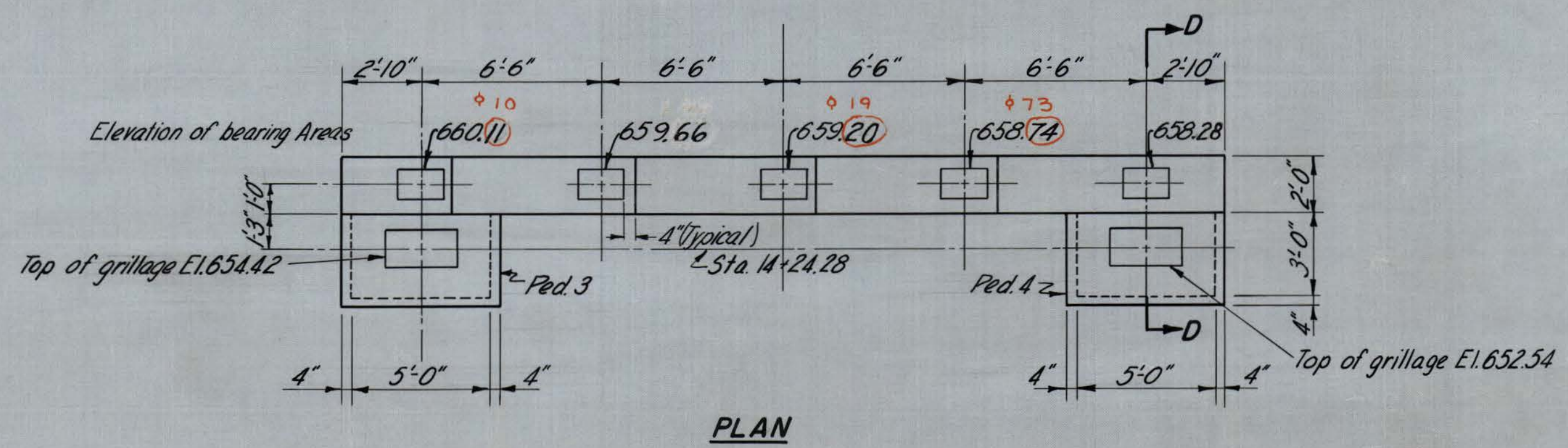
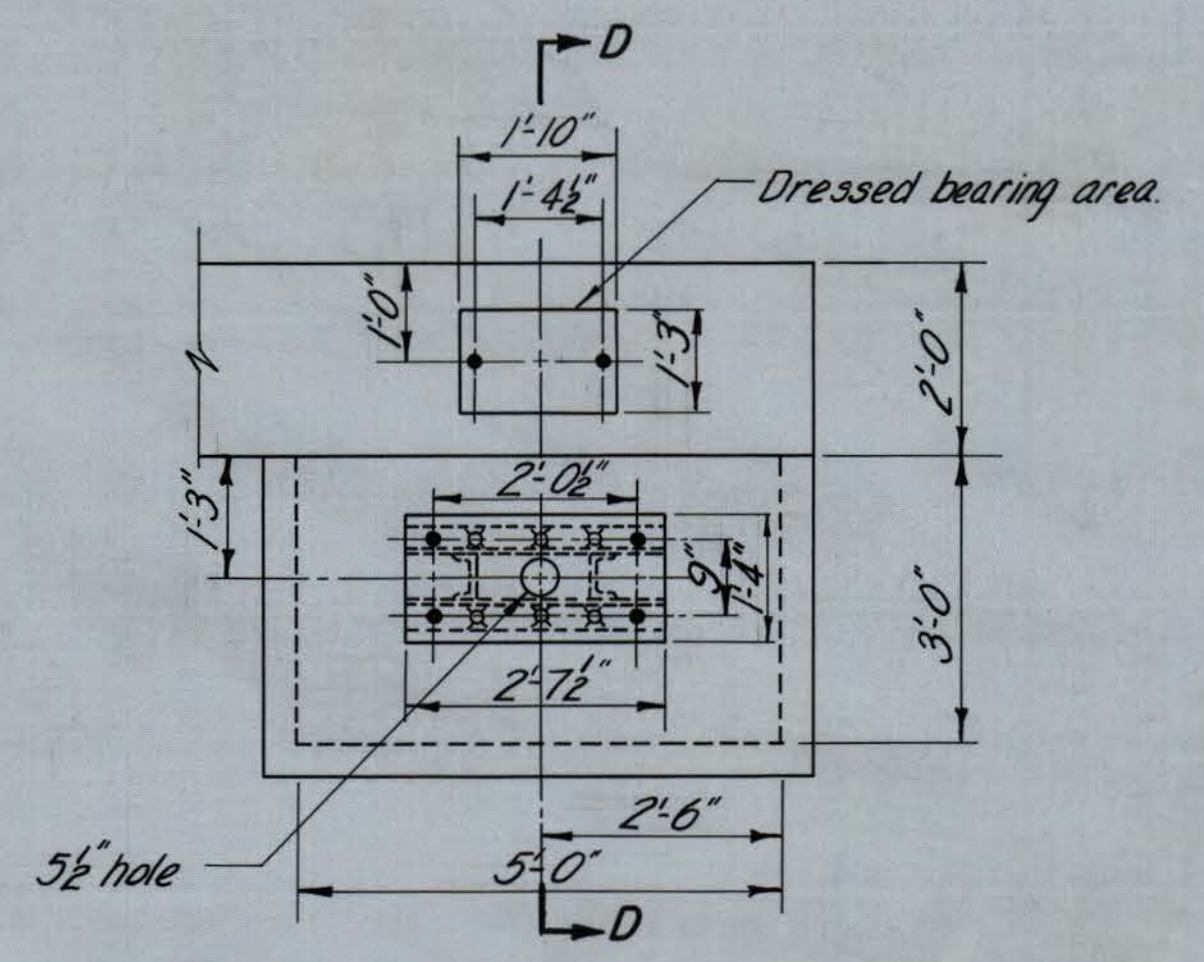
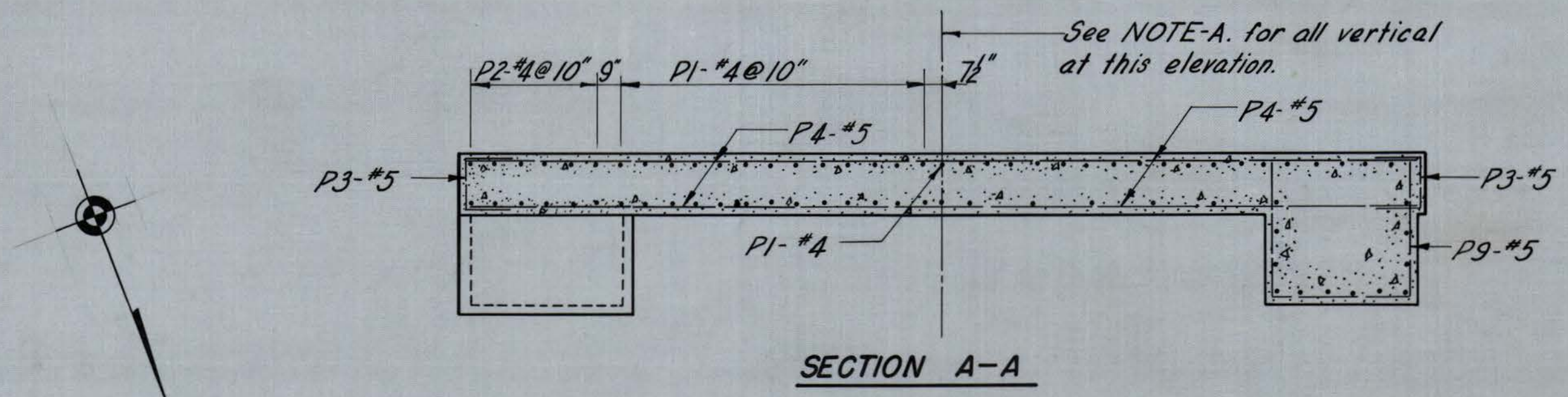
THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**PIERS I-V**

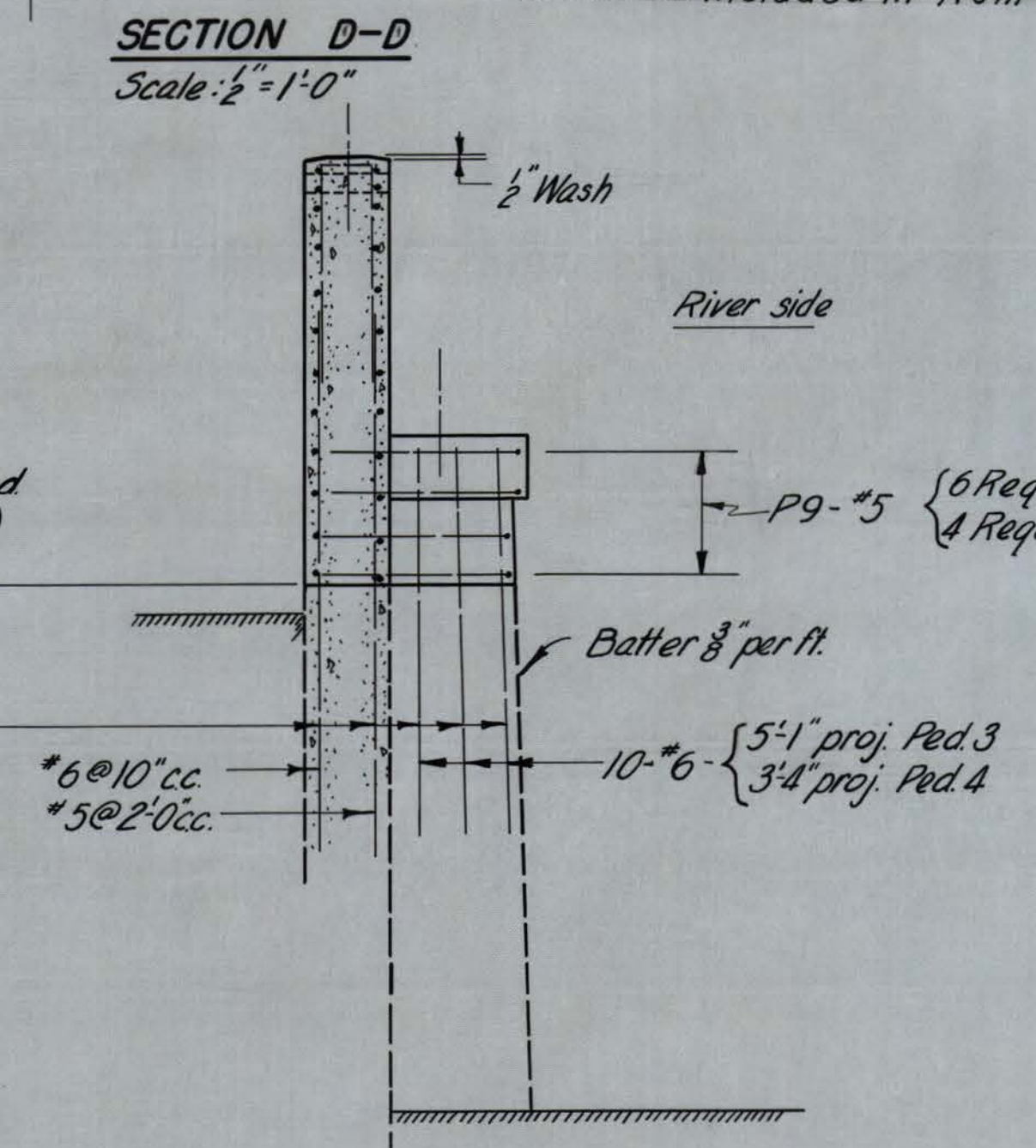
12' 0" 1' 2' 3' 4'  
 SCALE IN FEET



DIST. NO.	STATE PROJ. NO.	FED-AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9		F283 (15)		FAYETTE	4	5



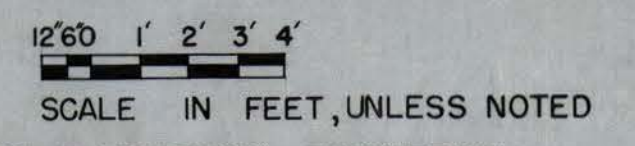
**NOTE-A:**  
These bars (by Stage I Contractor) have been bent down, painted with grease & embedded in a 1 ft thick temporary concrete cap. This Stage II Contractor shall remove the temporary concrete cap & straighten reinforcing as shown. Price included in Class 'A' Concrete, Item 71-2.



**NOTE:**  
4 Panels of temporary aluminum Railing, erected by others on temporary concrete cap (El. 649.88), are to be removed & stored by this Contractor as directed by the Engineer. Price included in Class 'A' Concrete, Item 71-2. Grillage to be included in Item 92. Place reinforcing steel bars in Bridge seats so as not to interfere with drilling of Anchor Bolt holes.  
Grillage and anchor bolts to be A-36 steel.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**PIER VI-EXTENSION**



STAGE 2.

MODJESKI & MASTERS, ENGINEERS DWG. #4

As Built 11-10-64

#1899



PIER I			
Mark	No.	Stock	Bend
F1	52	*5x9'-7"	Det. G, A=8'-6" and Det. H
F2	53	*6x10'-10"	Det. G, A=9'-6" and Det. H
F3	48	*5x3'-7"	Straight
P1	8	*4x9'-7"	do
P2	16	*9x15'-0"	do
P3	8	*4x23'-1" (avg.)	Straight 4@35'-7" & 4@10'-6"
P4	4	*9x13'-3"	Det. F, A=11'-11", B=0, R=0, and Det. K
P5	6	*9x35'-7"	Straight
P6	48	*5x20'-11" (avg.)	Straight 24@21'-9" & 24@20'-1"
P7	28	*4x9'-11" (avg.)	Det. B, D=0, B=3'-6", A=C, 16 where A varies from 2'-4" to 4'-0"; 2 ea. vary by 2"; 12A varies from 2'-4" to 4'-1" 2 ea. vary by 4 1/2".
P8	8	*4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9"
P9	28	*4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4"
P10	40	*4x15'-1"	Det. J
P11	40	*6x10'-3"	Det. L
P13	8	*4x9'-6"	Straight
P15	80	4x7'-3"	Det. M

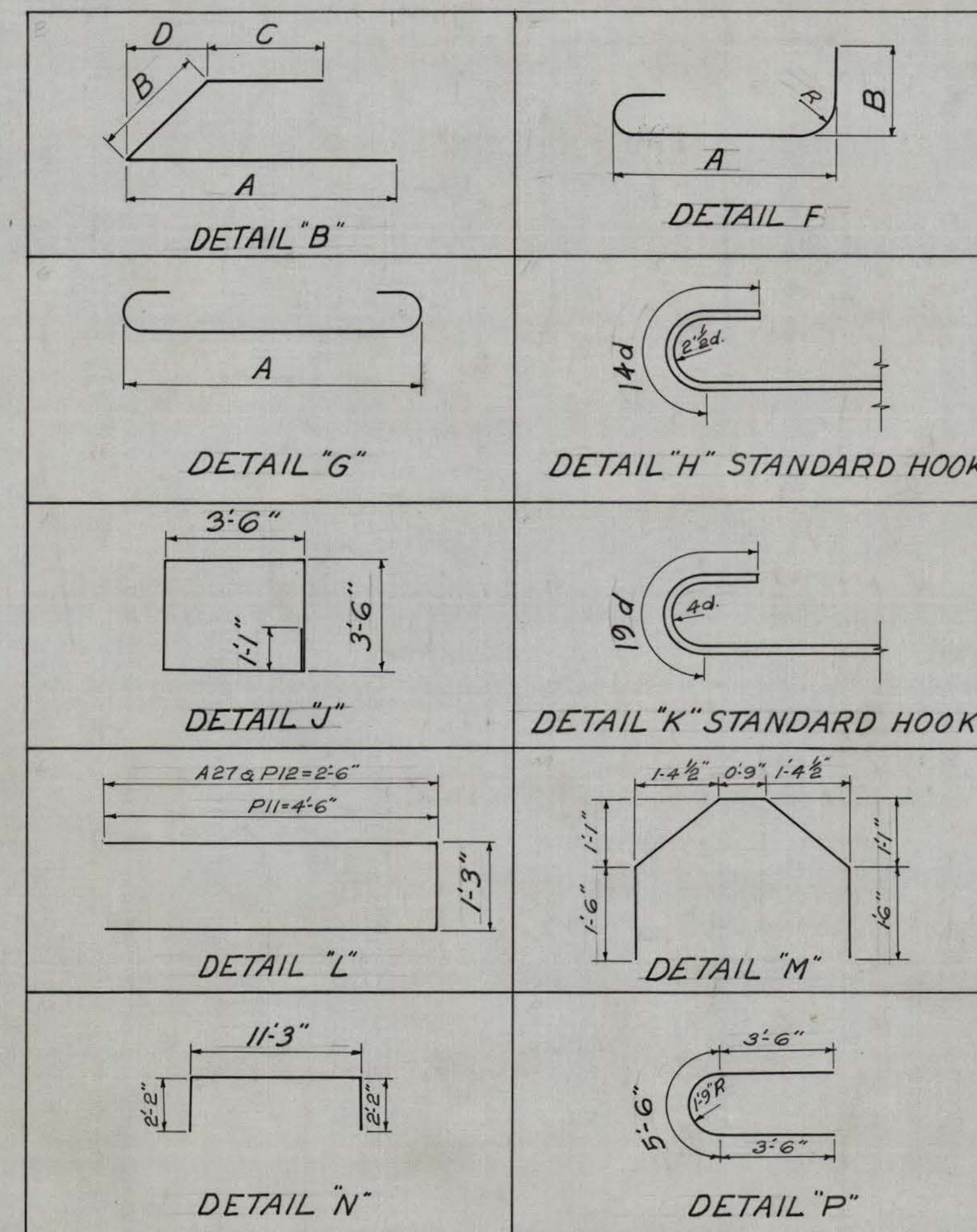
PIER II			
Mark	No.	Stock	Bend
F1	52	*5x9'-7"	Det. G, A=8'-6" and Det. H
F2	52	*6x10'-10"	Det. G, A=9'-6" and Det. H
F3	48	*5x2'-8"	Straight
P1	8	*4x9'-4"	do
P2	16	*9x14'-5"	do
P3	8	*4x21'-10" (avg.)	Straight 4@33'-7" and 4@10'-0"
P4	4	*9x12'-10"	Det. F, B=0, A=11'-6", R=0, and Det. K
P5	6	*9x33'-7"	Straight
P6	48	*5x23'-1" (avg.)	Straight 24@23'-9" and 24@22'-4"
P7	24	*4x9'-10" (avg.)	Det. B, D=0, B=3'-6", A=C, 14 where A varies from 2'-4" to 4'-0"; 2 ea. vary by 3 1/2"; 10 where A varies from 2'-4" to 3'-10"; 2 ea. vary by 4 1/2".
P8	8	*4x13'-0"	Det. B, B=3'-6", A=C=4'-9", D=0"
P9	24	*4x6'-2"	Det. B, B=3'-6", A=C=1'-4", D=0"
P10	44	*4x15'-1"	Det. J
P11	40	*6x10'-3"	Det. L
P13	8	*4x9'-6"	Straight
P15	88	*4x7'-3"	Det. M
C1	24	*9x19'-3"	Straight
C2	20	*5x15'-7"	Det. N
C3	14	*9x12'-6"	Det. P
C4	14	*5x11'-3"	Straight

PIER III			
Mark	No.	Stock	Bend
F1	52	*5x9'-7"	Det. G, A=8'-6" and Det. H
F2	52	*6x10'-10"	Det. G, A=9'-6" and Det. H
F3	48	*5x2'-8"	Straight
P1	8	*4x9'-1"	do
P2	17	*9x14'-0"	do
P3	8	4x21'-2" (avg.)	Straight 4@32'-4" & 4@10'-0"
P4	4	*9x12'-7"	Det. F, B=0, A=11'-3", R=0, and Det. K
P5	6	*9x32'-4"	Straight
P6	48	*5x23'-2" (avg.)	Straight 24@22'-6" and 24@23'-10"
P7	24	*4x9'-7" (avg.)	Det. B, D=0, B=3'-6", A=C, 14 where A varies from 2'-4" to 4'-0"; 2 ea. vary by 3 1/2"; 10 where A varies from 2'-4" to 3'-10"; 2 ea. vary by 4 1/2".
P8	8	*4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9"
P9	24	*4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4"
P10	44	*4x15'-1"	Det. J
P11	40	*6x10'-3"	Det. L
P13	8	*4x9'-6"	Straight
P15	88	*4x7'-3"	Det. M
C1	24	*9x19'-3"	Straight
C2	18	*5x15'-7"	Detail N
C3	14	*9x12'-6"	Detail P
C4	14	5x11'-3"	Straight

PIER IV			
Mark	No.	Stock	Bend
F1	22	*5x6'-7"	Det. G, A=5'-6" and Det. H
F2	24	*6x9'-10"	Det. G, A=8'-6" and Det. H
F3	48	*5x3'-1"	Straight
P1	9	*4x8'-8"	do
P2	14	*8x13'-2"	do
P3	8	*4x18'-11" (avg.)	Straight 4@30'-1" & 4@7'-9"
P4	4	*9x12'-1"	Det. F, A=10'-9", B=0, R=0, and Det. K
P5	7	*6x30'-1"	Straight
P6	48	*5x18'-3" (avg.)	Straight 24@18'-11" and 24@17'-7"
P7	23	*4x10'-0" (avg.)	Det. B, D=0, B=3'-6", A=C, 12 where A varies from 2'-6 1/2" to 4'-12"; 2 ea. vary by 3 1/2"; 10 where A varies from 2'-4" to 4'-1"; 2 ea. vary by 5 1/2".
P8	8	*4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9"
P9	23	*4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4"
P10	36	*4x15'-1"	Det. J
P12	24	*6x6'-3"	Det. L
P14	8	*4x8'-6"	Straight
P15	72	*4x7'-3"	Det. M

PIER V			
Mark	No.	Stock	Bend
F1	22	*5x6'-7"	Det. G, A=5'-6" and Det. H
F2	24	*6x9'-10"	Det. G, A=8'-6" and Det. H
F3	48	*5x3'-1"	Straight
P1	8	*4x8'-8"	do
P2	15	*8x13'-2"	do
P3	8	*4x18'-11" (avg.)	Straight 4@30'-1" and 4@7'-9"
P4	4	*9x12'-1"	Det. F, A=10'-9", B=0, R=0, and Det. K
P5	7	*6x30'-1"	Straight
P6	48	*5x14'-11" (avg.)	Straight 24@14'-3" and 24@15'-6"
P7	23	*4x10'-0" (avg.)	Det. B, D=0, B=3'-6", A=C, 12 where A varies from 2'-6 1/2" to 4'-12"; 2 ea. vary by 3 1/2"; 10 where A varies from 2'-4" to 4'-1"; 2 ea. vary by 5 1/2".
P8	8	*4x13'-0"	Det. B, B=3'-6", A=C=4'-9", D=0"
P9	23	*4x6'-2"	Det. B, B=3'-6", A=C=1'-4", D=0"
P10	29	*4x15'-1"	Det. J
P12	24	*6x6'-3"	Det. L
P14	8	*4x8'-6"	Straight
P15	58	*4x7'-3"	Det. M

PIER VI EXTENSION			
Mark	No.	Stock	Bend
P1	27	*4x11'-7"	Det. B, A=6'-5 1/2", B=1'-4 1/2", D=0"
P2	12	*4x13'-6"	Det. B, A=7'-0", B=1'-4 1/2", C=5'-11", D=0"
P3	21	*5x4'-6"	Det. B, A=B=C=1'-6", D=0"
P4	20	*5x3'-2"	Straight
P5	2	*5x23'-0"	do
P6	2	*5x16'-6"	do
P7	3	*5x10'-0"	do
P8	2	*5x3'-6"	do
P9	10	*5x13'-6"	Det. B, A=B=C=4'-6", D=0"



NOTE  
All dimensions are out to out, radii are inside

Details A, C, D, and E are not used.  
Det.=Detail

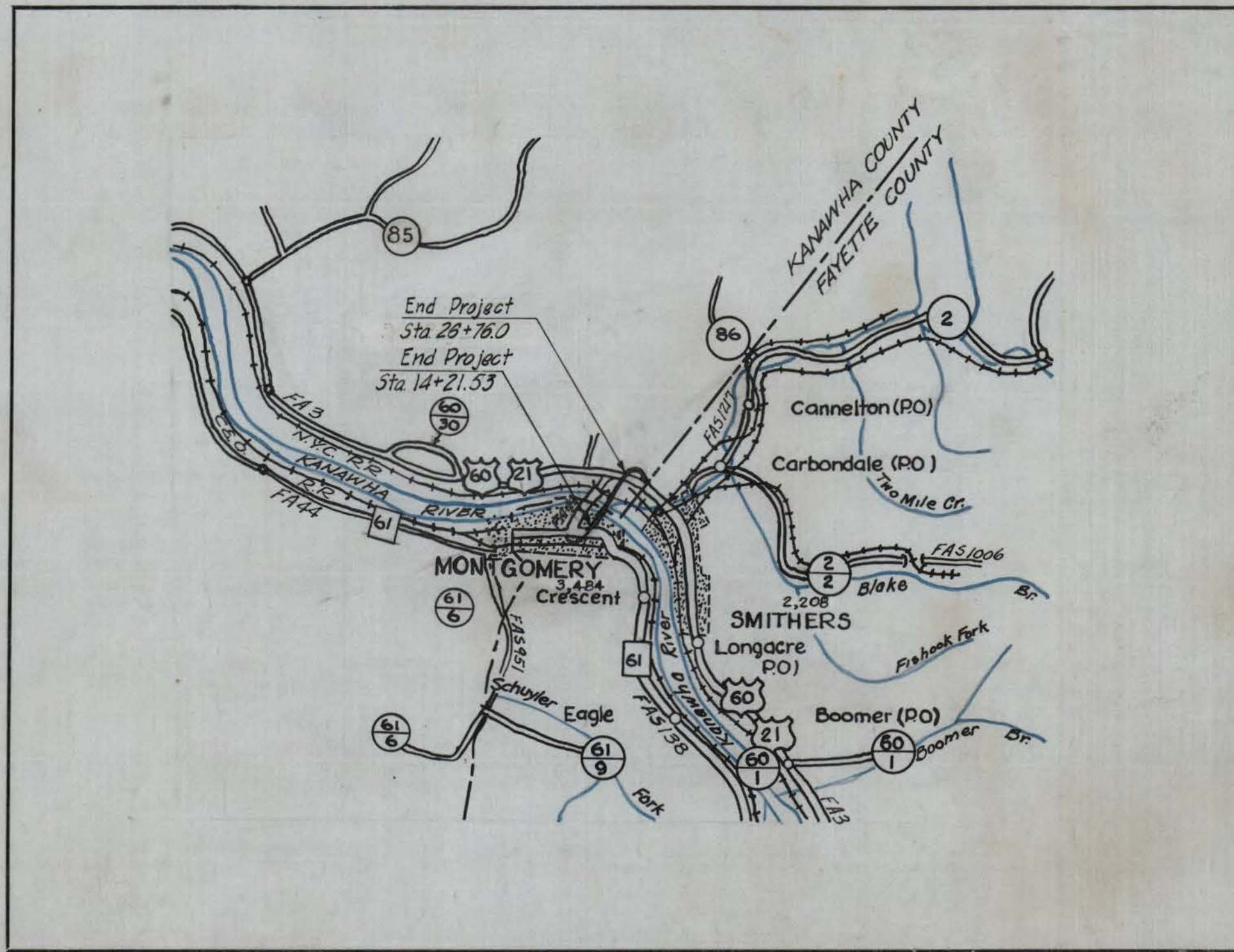
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA  
BAR SCHEDULES  
STAGE 2

MADE BY A. Rollins DATE 2-6-63  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY  
THE STATE ROAD COMMISSION  
CHARLESTON, W. VA.  
Scale as shown Date 2-6-63  
Project F283 (15) Sheet 5 of 5 Sheets  
No. 1899





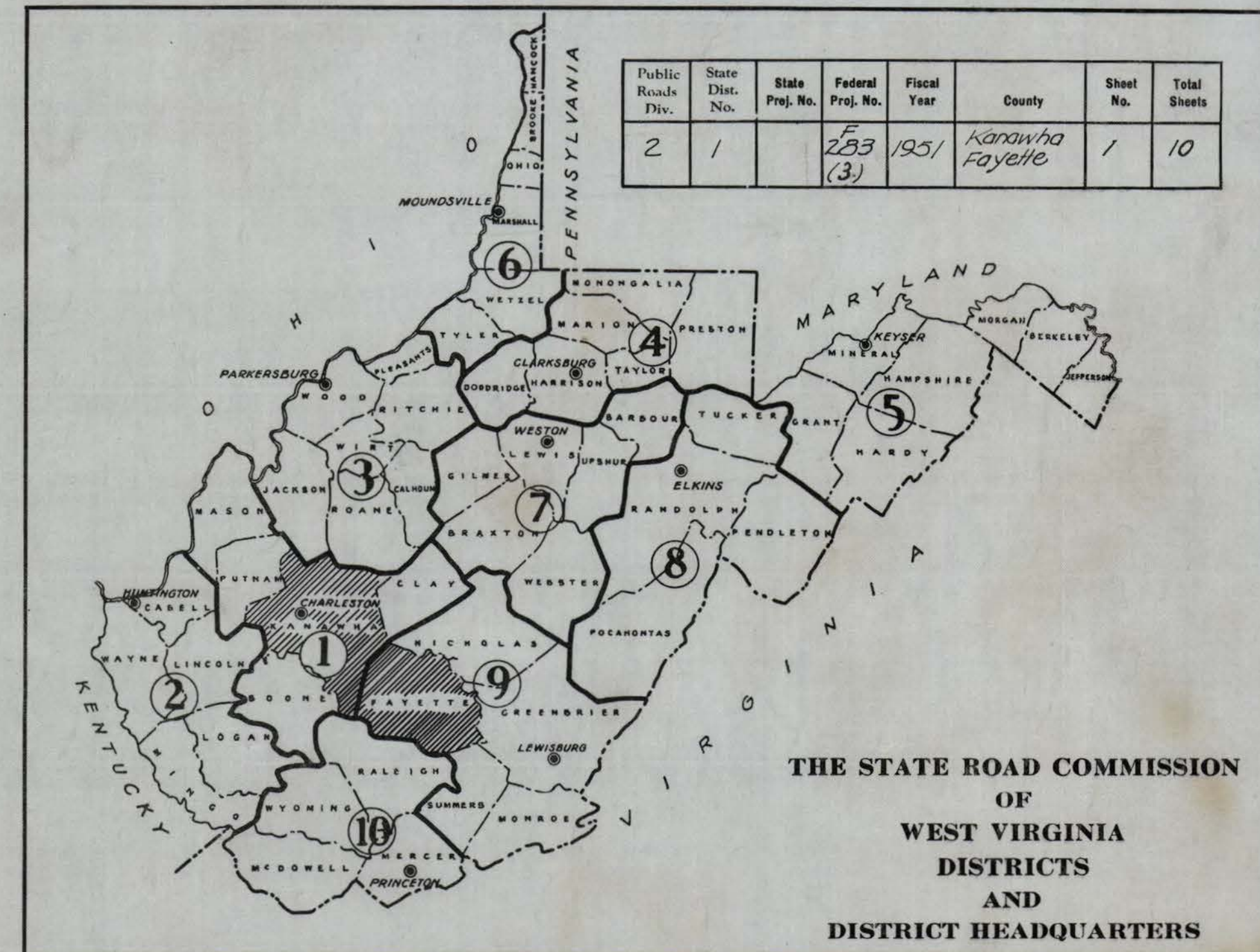
SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

THE STATE ROAD COMMISSION  
OF WEST VIRGINIA

PLAN AND PROFILE FOR CONSTRUCTION  
OF  
**STATE ROAD**  
PROJECT NO. F 283 (3)  
ROUTE NO. W. VA. 6  
CABIN CREEK DISTRICT KANAWHA COUNTY  
KANAWHA DISTRICT FAYETTE COUNTY  
**MONTGOMERY BRIDGE**

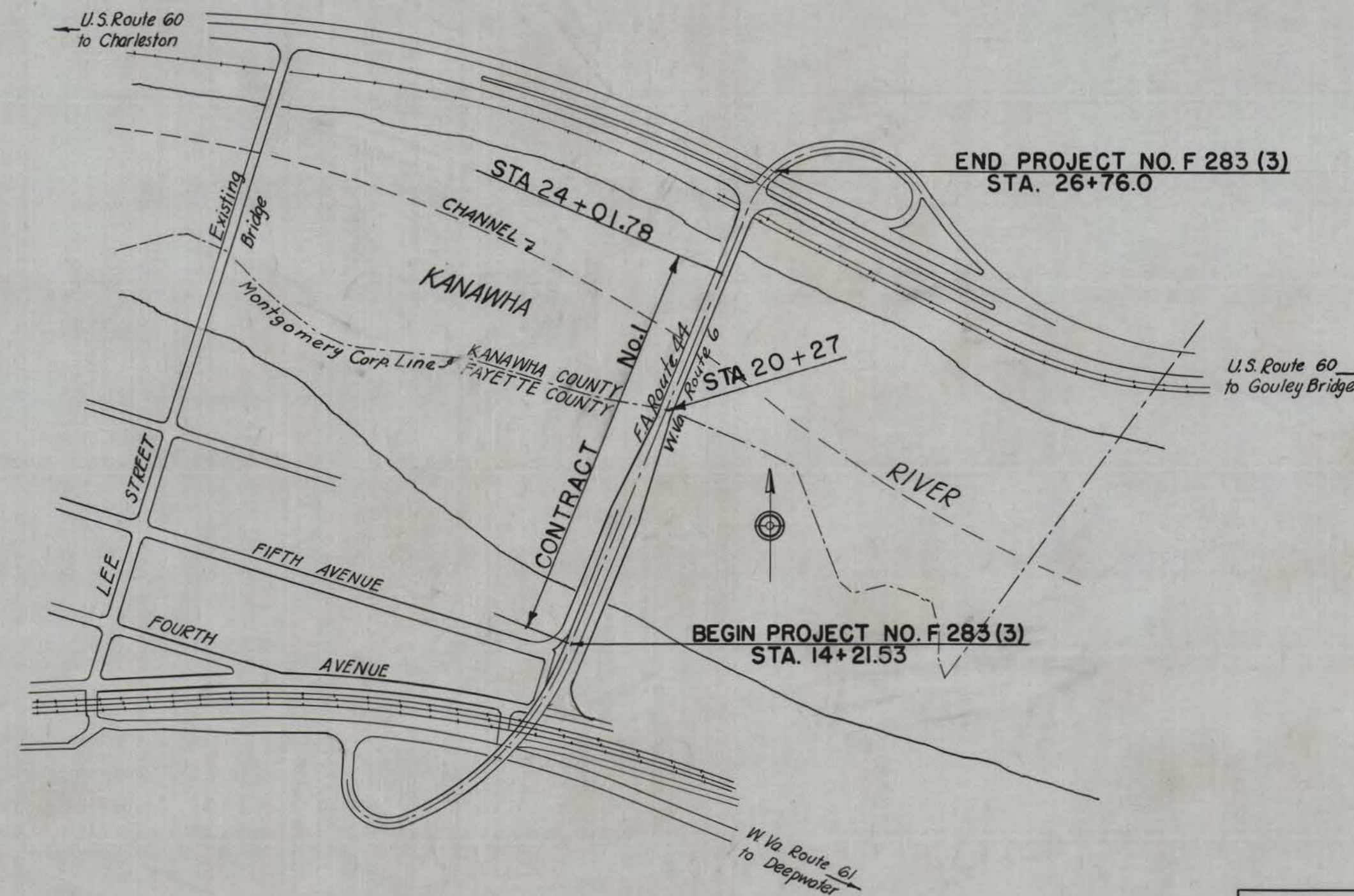
Sta. 14+21.53 To Sta. 26+76.0  
Length = 0.238 Mi. = 1254.47 Ft.

Plan 1 IN. =  
SCALES (AS SHOWN)  
PROFILE HOR. 1 IN. = VERT. 1 IN. =



THE STATE ROAD COMMISSION  
OF  
WEST VIRGINIA  
DISTRICTS  
AND  
DISTRICT HEADQUARTERS

TYPE OF CONSTRUCTION  
BRIDGE SUBSTRUCTURE CONTRACT NO. 1  
PIERS VI TO XI



LAYOUT  
SCALE 1 IN. = 300 FT.

CONVENTIONAL SIGNS

- State Line
- County Line
- Corporation Line
- District Line
- Right of Way Line
- Property Line
- Fence Line
- Guard Rail
- Proposed Road
- Traveled Road
- Railroad
- Electric Railway
- Frame Dwelling
- Stone Concrete Wall
- Marsh Hedge
- Drop Inlet
- Bridge
- Present Culvert
- Proposed
- Telegraph Pole
- Trolley Pole
- Power Pole
- Tree
- Brick Dwelling

INDEX TO SHEETS

No.	Description
1	Title and Layout
1A	Situation Plan
1B	Soundings
1C	Borings 1-10L
1D	Borings 11R to 21
2	General Plan and Elevation
3	General Notes and Estimated Quantities
4	Pier VI
5	Pier VII
6	Pier VIII
7	Pier IX
8	Pier X
9	Pier XI
10	Reinforcement Schedule & Concrete Piles

PLANS COMPLETED 19

PREPARED AND RECOMMENDED BY  
MODJESKI & MASTERS  
CONSULTING ENGINEERS

*J. R. G. Line* 7/26/52

ROUTE NO. W.VA. 6  
PROJECT NO. F 283 (3)

PREPARED & RECOMMENDED  
BRIDGE ENGINEER - STATE ROAD COMMISSION  
REVIEWED  
STATE CONSTRUCTION ENGINEER - STATE ROAD COMMISSION  
APPROVED  
STATE ROAD COMMISSIONER

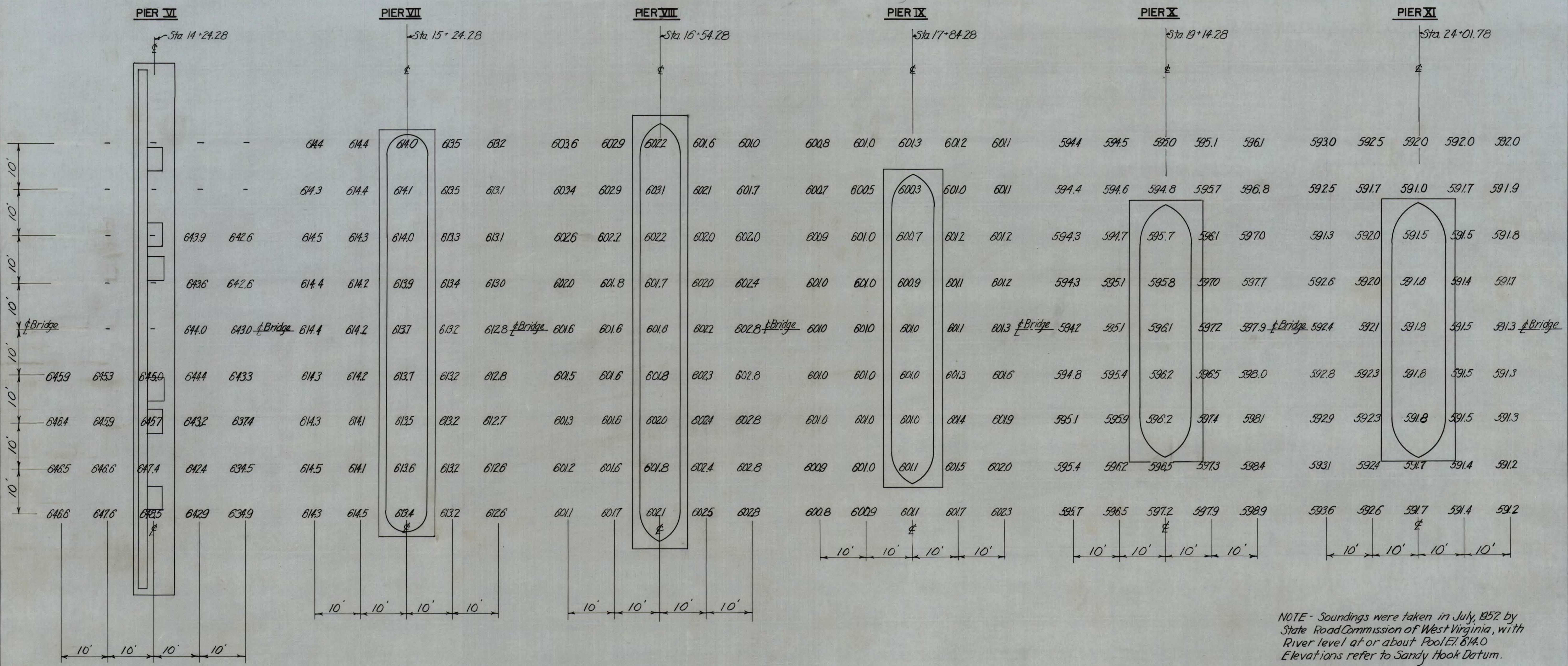
Sep. 20 1952  
I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE  
PLANS OF PROJECT F.283 (3)  
SECRETARY  
APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION  
OF WEST VIRGINIA, ENTERED 30th DAY OF Sept. 1952  
SECRETARY

F-283-3 Contr #1

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS  
RECOMMENDED FOR APPROVAL  
APPROVED  
DISTRICT ENGINEER DATE  
APPROVED  
DIVISION ENGINEER DATE

Sub. cont. #1 #1899





NOTE - Soundings were taken in July, 1952 by State Road Commission of West Virginia, with River level at or about Pool El. 614.0 Elevations refer to Sandy Hook Datum.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

SOUNDINGS



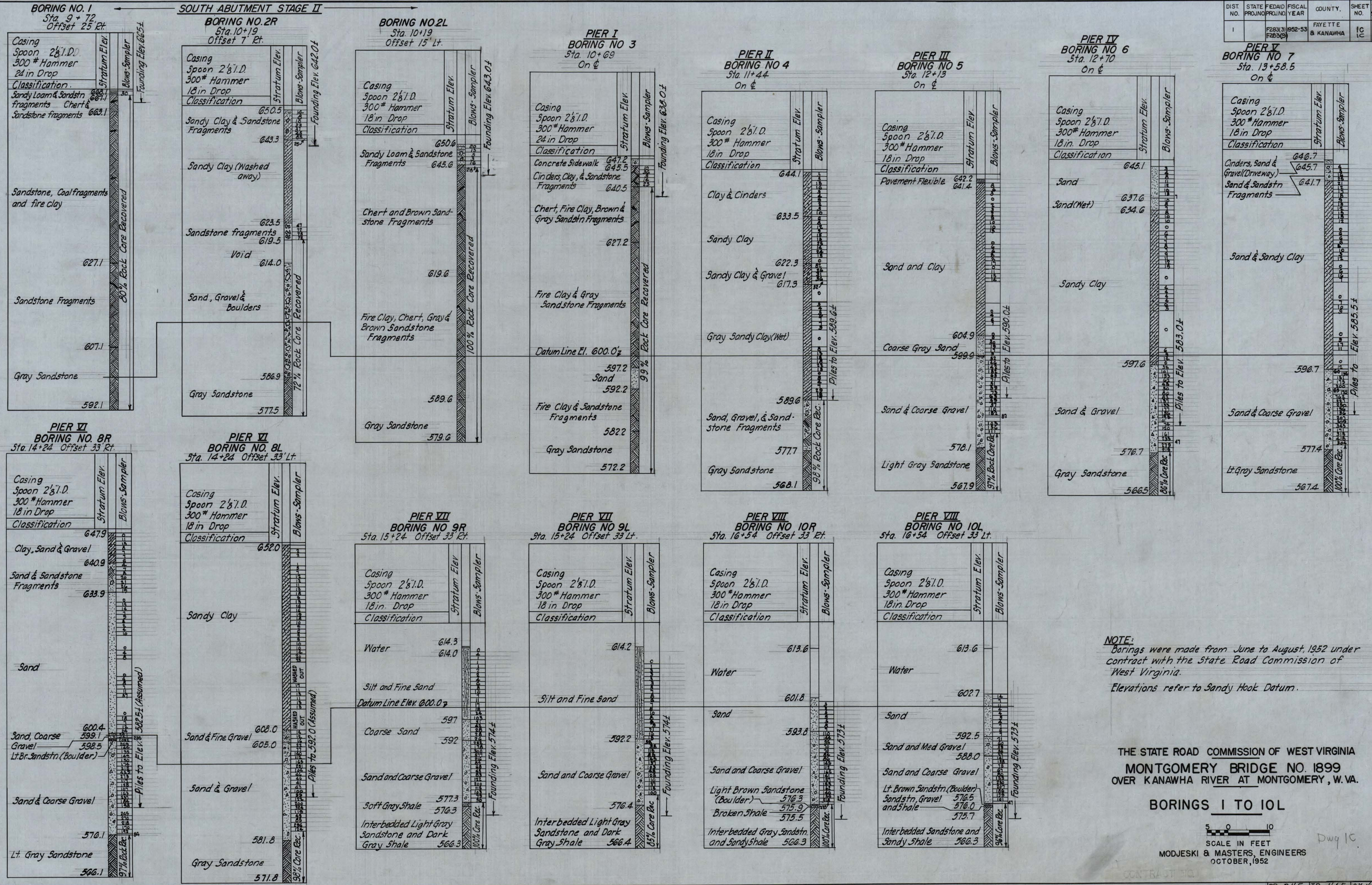
MODJESKI & MASTERS, ENGINEERS

CONTRACT NO. |

DR. H. S. L. TR. P. K. OK. H. J. E.



DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1	F283(3)	F283(3)	1952-53	FAYETTE & KANAWHA	10	27



**NOTE:**  
Borings were made from June to August, 1952 under contract with the State Road Commission of West Virginia.  
Elevations refer to Sandy Hook Datum.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**BORINGS I TO 10L**



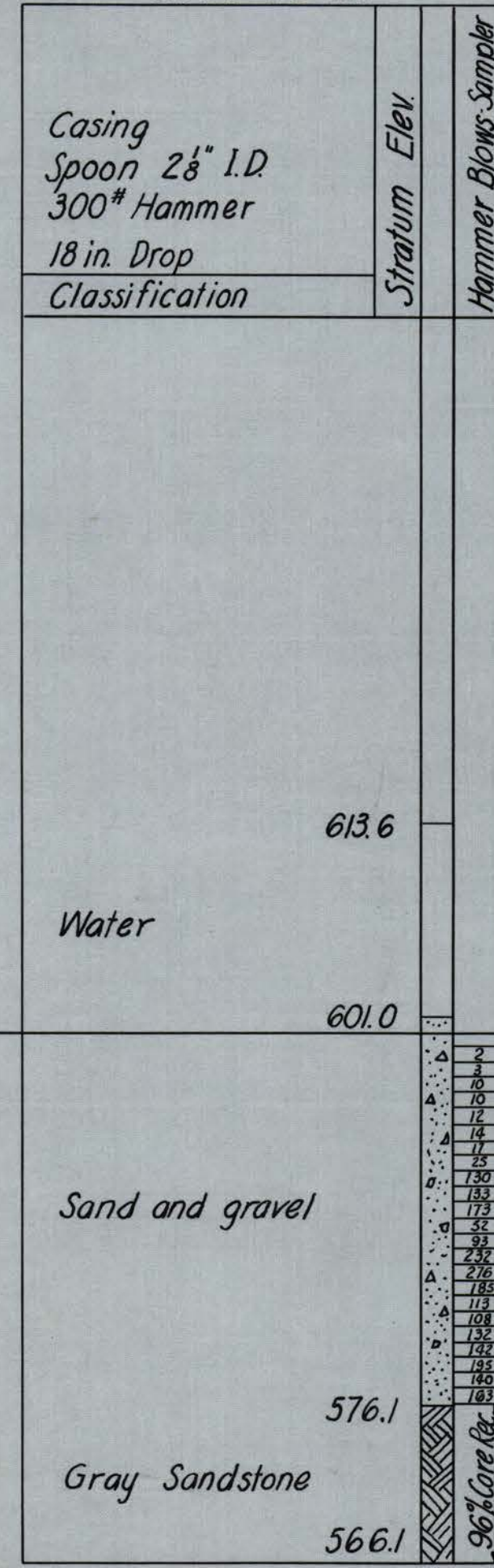
SCALE IN FEET  
MODJESKI & MASTERS, ENGINEERS  
OCTOBER, 1952

Dwg 10

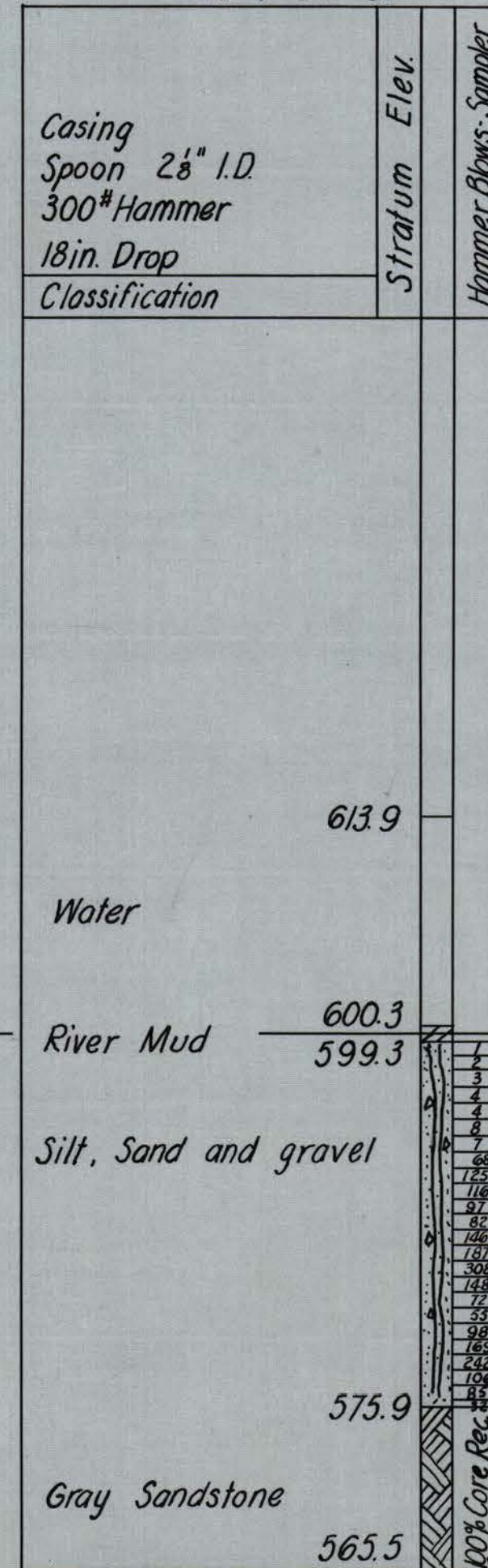


DIST. NO.	STATE	FED. AID FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1	W. VA.	1952-53	FAYETTE & KANAWHA	1-D	10

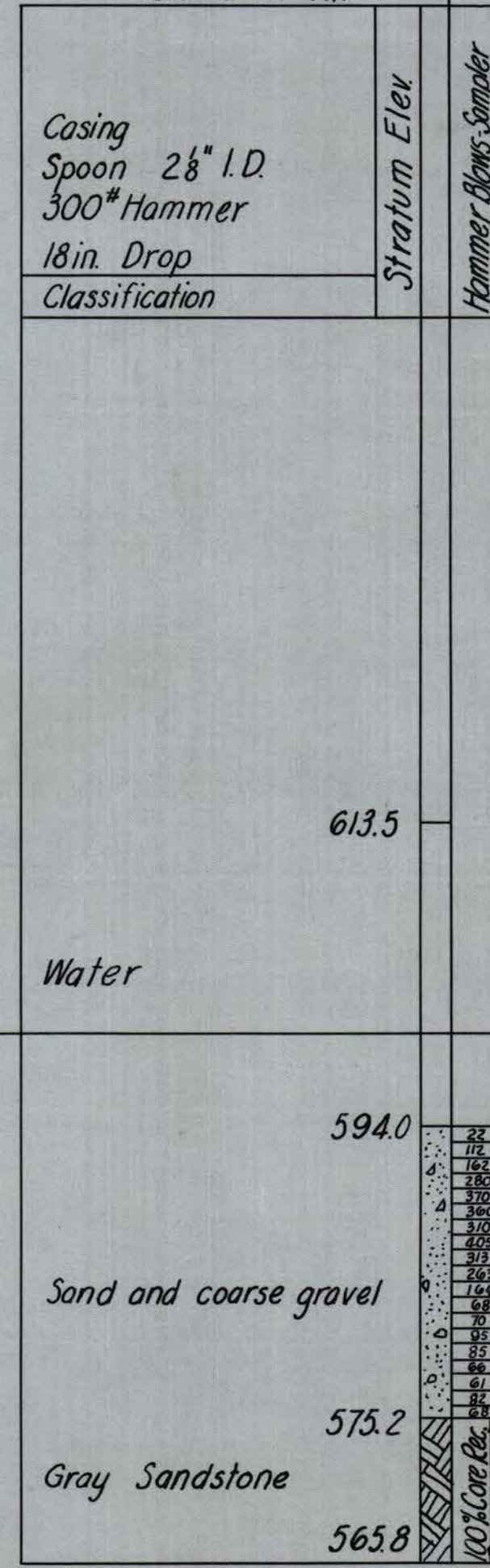
**PIER IX**  
BORING NO. 11R  
Sta. 17+84  
Offset 26' Rt.



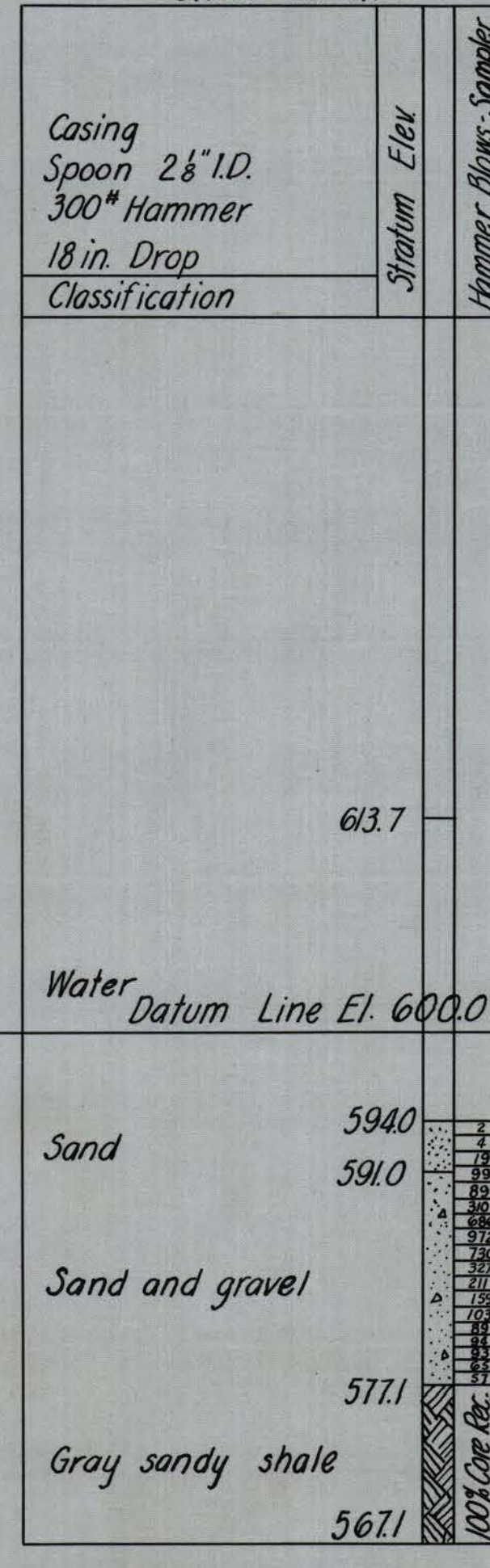
**PIER IX**  
BORING NO. 11L  
Sta. 17+84  
Offset 26' Lt.



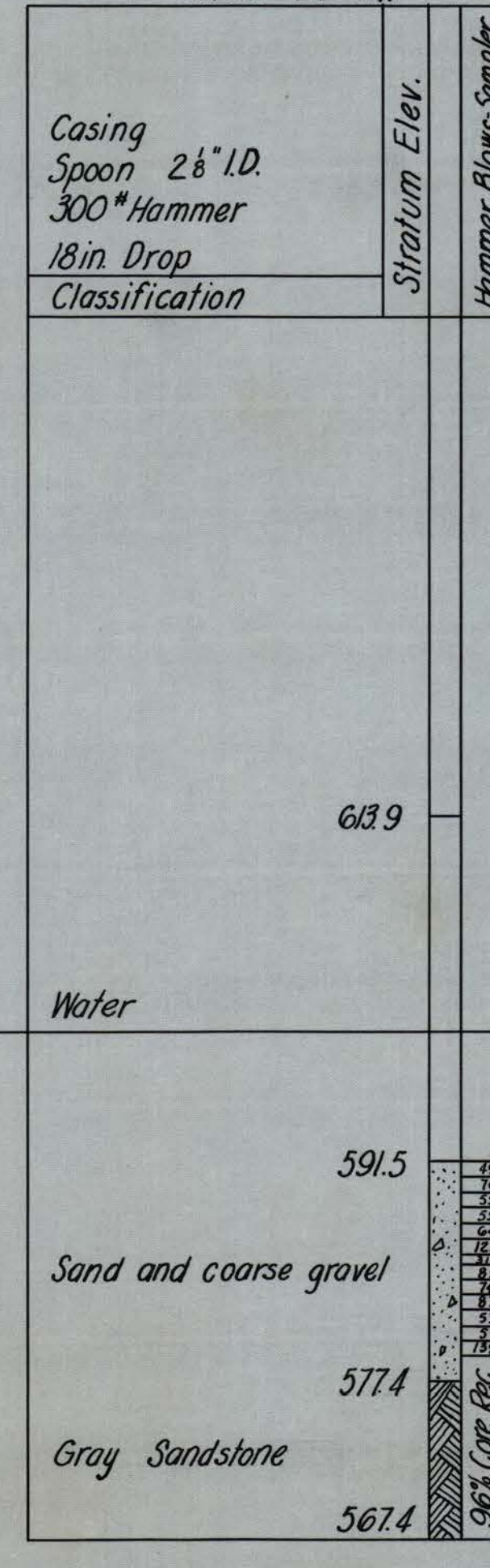
**CHANNEL PIER X**  
BORING NO. 12R  
Sta. 19+14  
Offset 22' Rt.



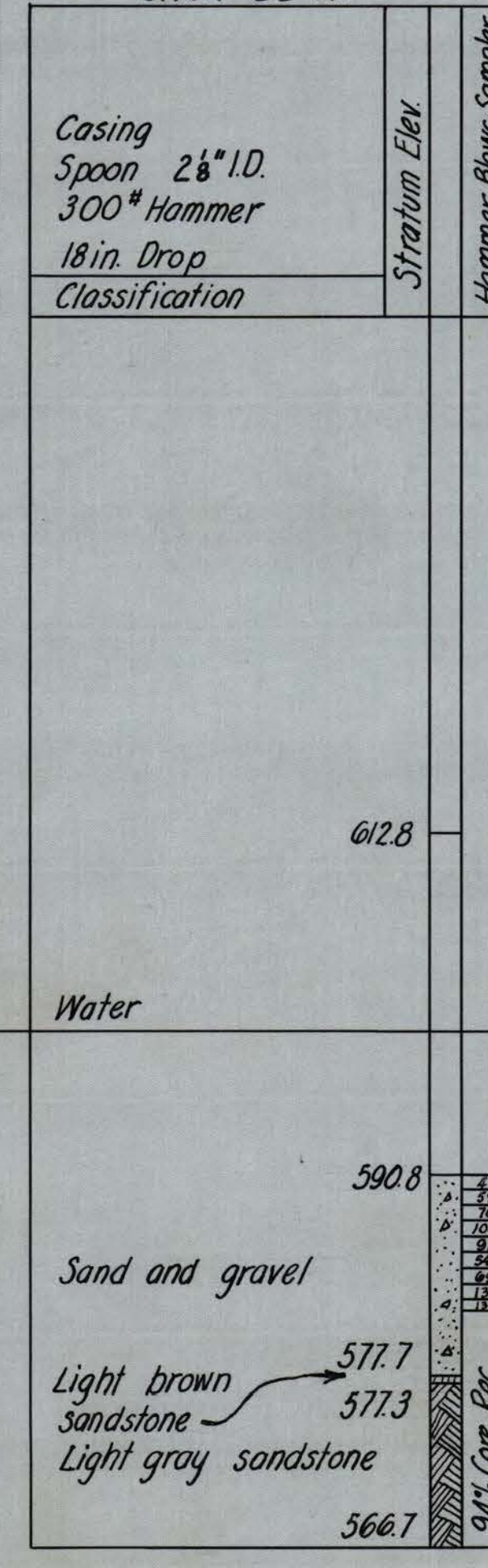
**CHANNEL PIER X**  
BORING NO. 12L  
Sta. 19+14  
Offset 22' Lt.



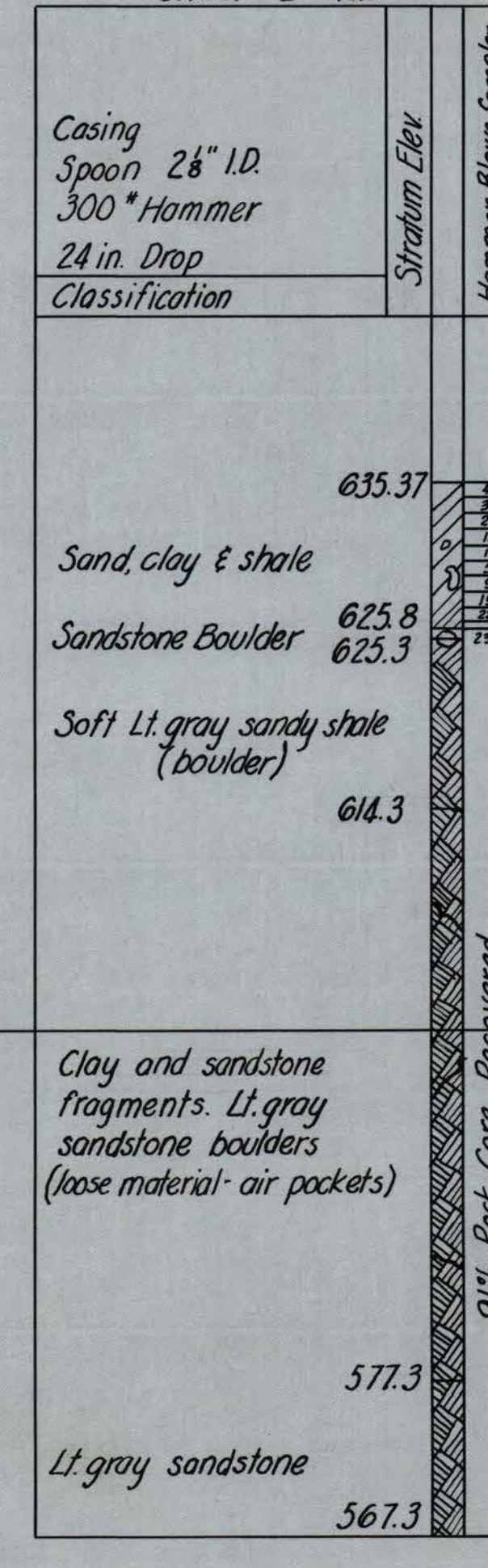
**CHANNEL PIER XI**  
BORING NO. 13R  
Sta. 24+01.5  
Offset 22' Rt.



**CHANNEL PIER XI**  
BORING NO. 13L  
Sta. 24+01.5  
Offset 22' Lt.



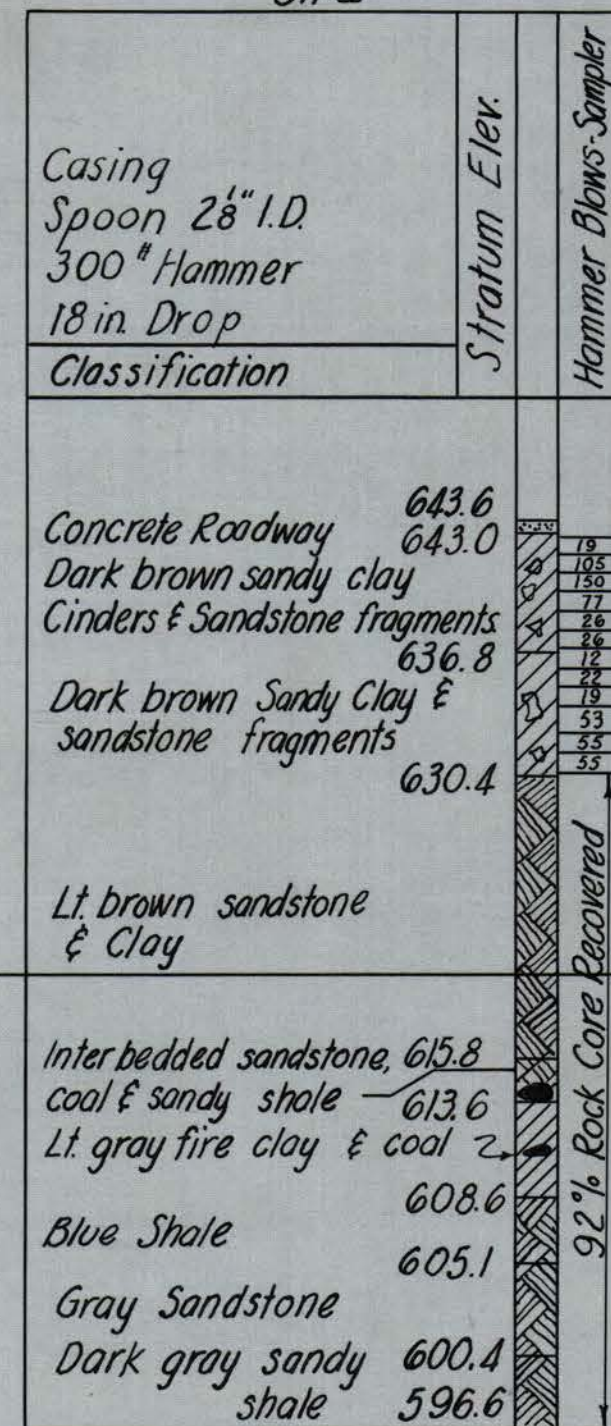
**PIER XII**  
BORING NO. 14  
Sta. 25+08.5  
Offset 2' Rt.



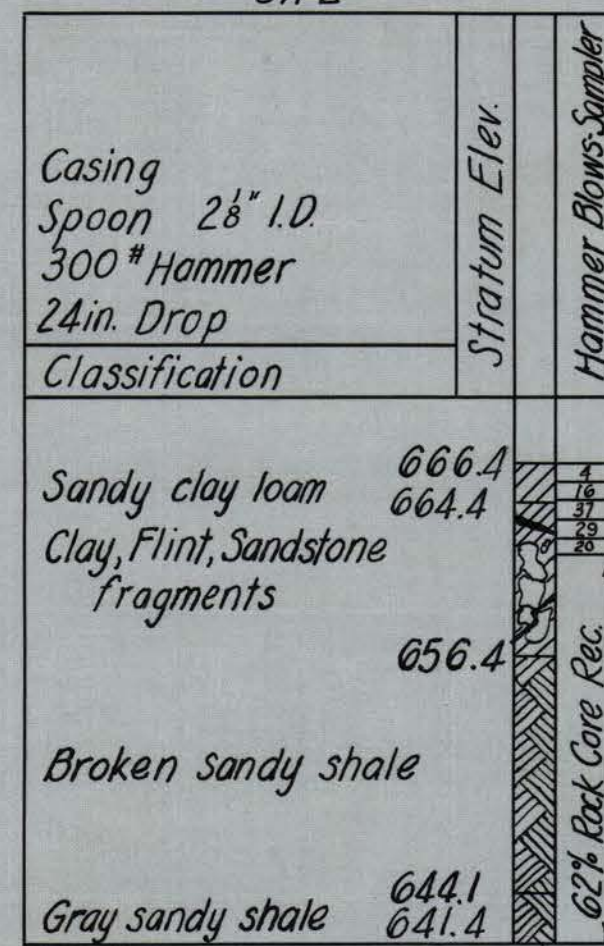
Classification	Stratum Elev.	Hammer Blows Sampler
Casing Spoon 2 1/2" I.D. 300# Hammer 18 in. Drop		
Dark bn. sand (loose)	6440	
Lt. gray shale (moist)	6382	
Cinders and Clay	634.7	
Cinders & sandstone	631.2	
Lt. br. sandstone & gray shale (2" & 3" layers)	623.7	
Med. br. Clay (wet)	621.4	
Lt. br. sandstone	621.0	
Med. br. Clay (wet)	619.6	
Lt. br. sandstone & Med. br. clay	613.8	
Gravel	611.4	
Lt. br. sandstone	609.9	
Sandstone & clay (gravel)	607.7	
Soft Lt. br. Sandstone (Sand)	602.6	
Sandstone Fragments	600.7	
Shaley Sandstone	599.6	
Sandy Shale	597.8	
Shaley Sandstone	596.2	
Dark Gray Shale	591.9	
Fire Clay	591.0	

**PIER XIII**  
BORING NO. 15  
Sta. 25+80.5  
On E

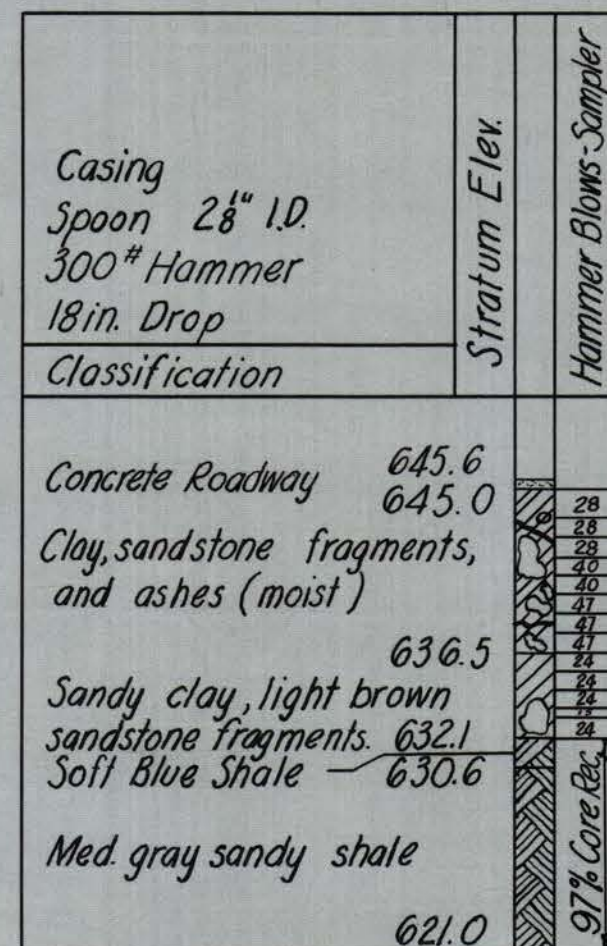
**PIER XIV**  
BORING NO. 16  
Sta. 26+00.10  
On E



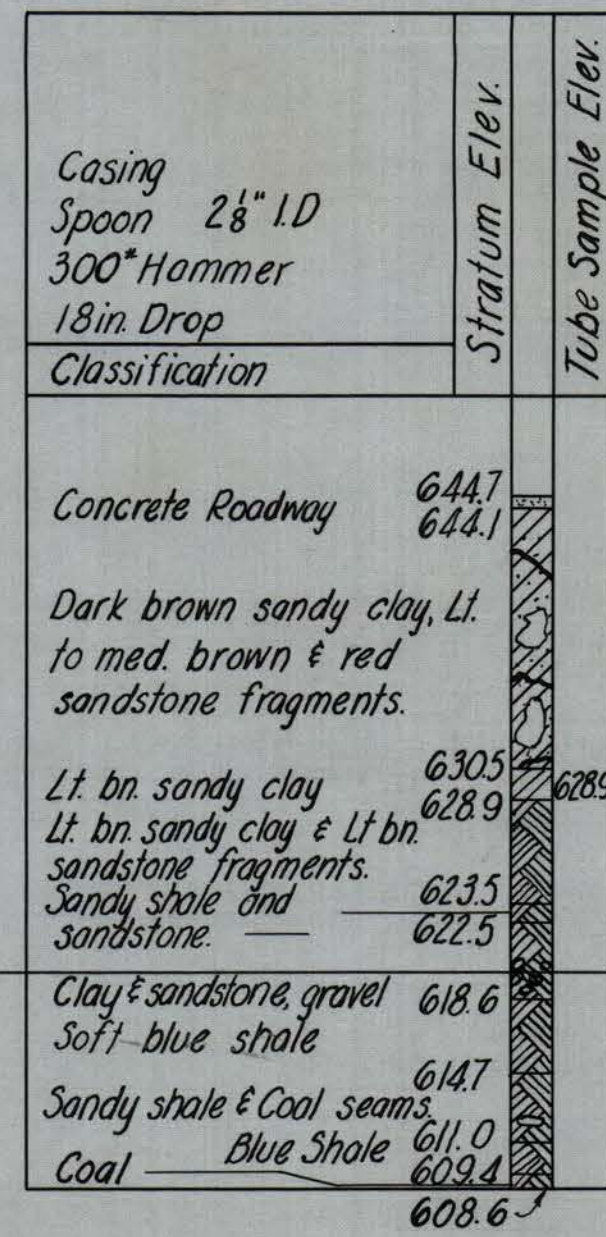
**NORTH ABUTMENT**  
BORING NO. 17  
Sta. 26+73.5  
On E



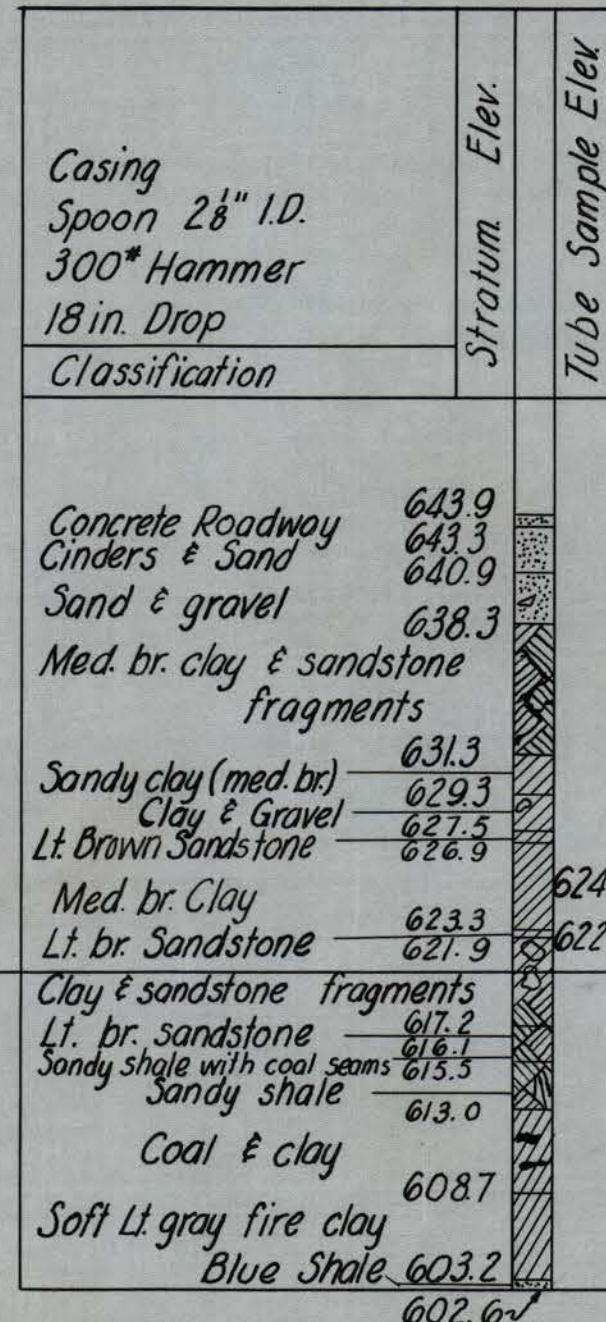
**WEST RAMP**  
BORING NO. 18



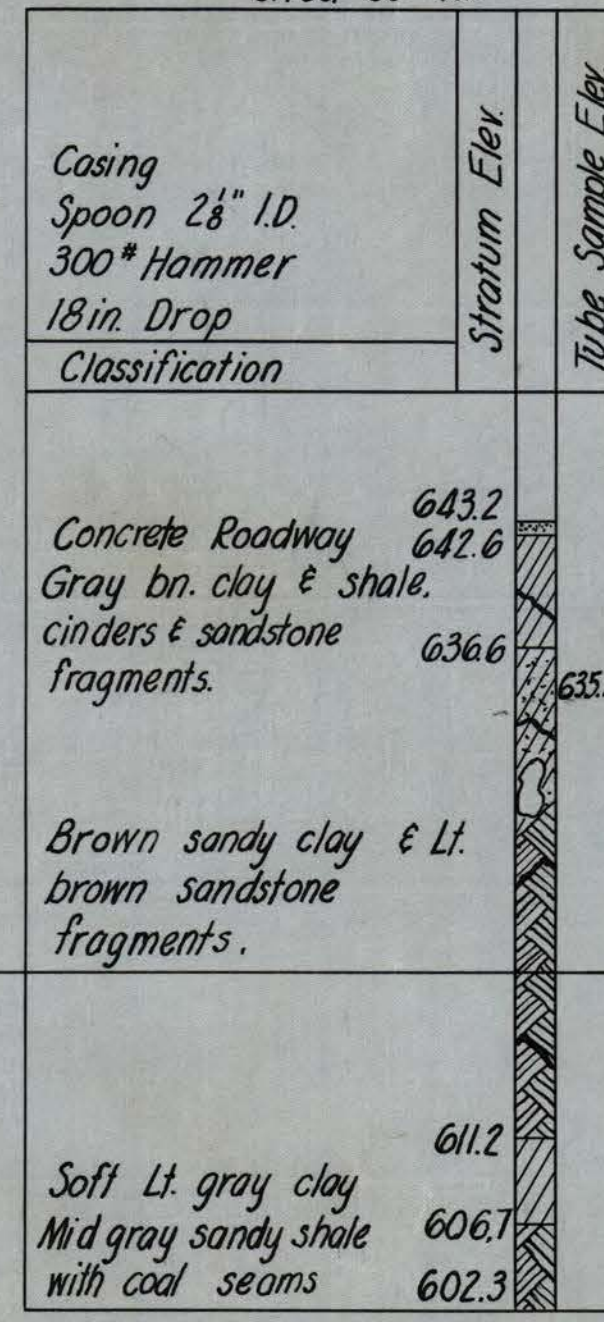
**WEST RAMP**  
BORING NO. 19



**EAST RAMP**  
BORING NO. 20



**EAST RAMP**  
BORING NO. 21  
Offset 53' Rt.



THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

BORINGS IIR TO 21

5 0 10  
SCALE IN FEET

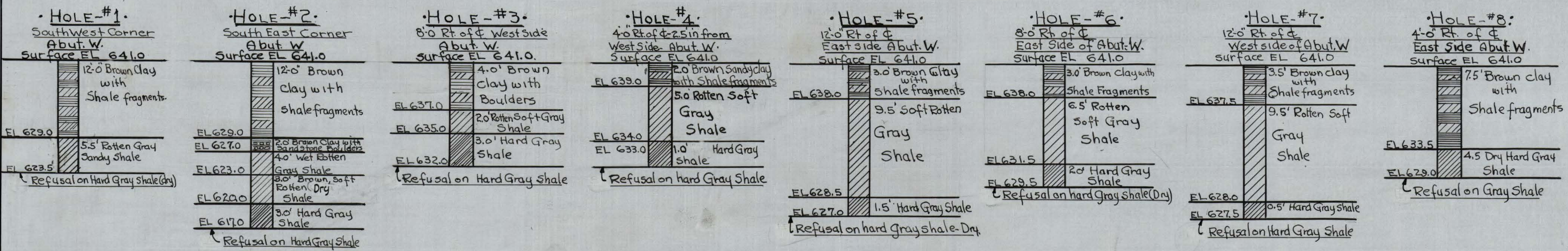
MODJESKI & MASTERS, ENGINEERS  
OCTOBER, 1952

Draw 1-D

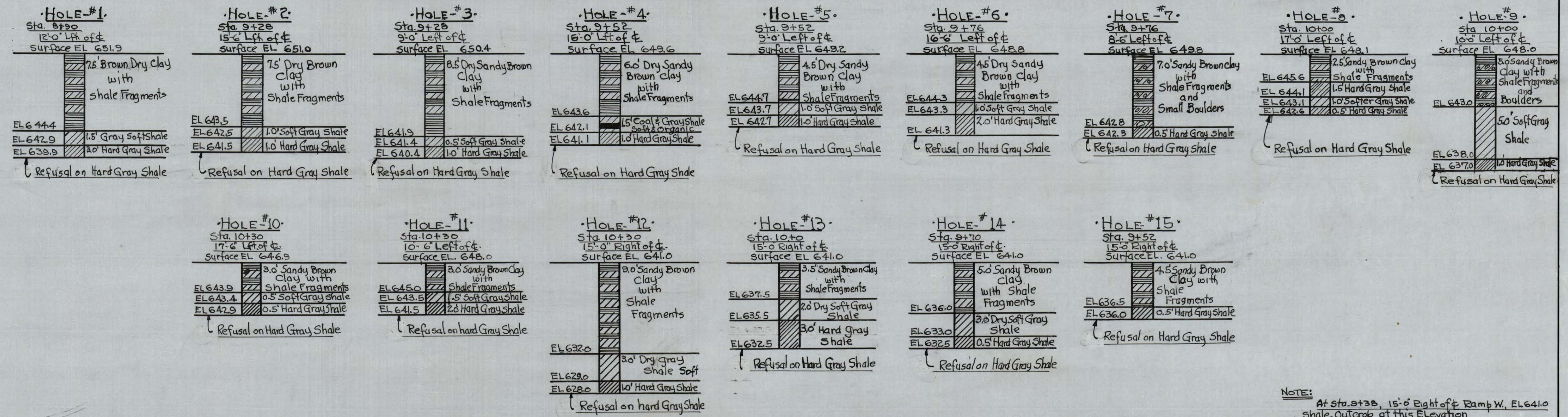


Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
1		F 283 (3)		Kanawha	1-E	

• AUGER HOLES at ABUTMENT W. •



• AUGER HOLES at RAMP W. •



NOTE: At Sta. 9+38, 15'-0" Right of & Ramp W., EL 641.0 shale outcrop at this Elevation

*This sheet is for information only and is not a part of any contract.*

**LOG OF AUGER HOLES  
 Abutment W & Ramp W  
 MONTGOMERY BRIDGE  
 Montgomery W. Va.**



**GOVERNING SPECIFICATIONS**

Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia, 1952, except as noted and except that the design is to be in accordance with American Association of the State Highway Officials Specifications of 1949 except as noted.

Designed for H20-S16-44 Live Load.

Required Contract Provision for projects financed with Federal Funds, dated July 28, 1948 approved by Bureau of Public Roads October 22, 1948.

3% Transportation Tax

Labor rates for Fayette & Kanawha Counties for Proj. 283(3)

See SUPPLEMENT SPECIFICATIONS for Permits and Licenses; for Surveys, Soundings, and Borings; and for Cofferdams.

**GENERAL NOTES**

**Pier Foundations**

Piers VII to XI inclusive shall be carried 1'-6" min into Rock. Rock Excavation shall be to neat lines. Pour concrete to excavated line in Rock Holes Drilled in Rock

When the foundation rock has been excavated, one 2" diam. hole, 10 ft deep, shall be drilled at each end of Piers VII thru XI inclusive to verify the rock. See Item 6E.

**Piles**

All piles shall be as shown on Sheet No 10.

All piles shall be driven to firm bearing in gravel, to a minimum capacity of 40 tons per pile. Piling shall be driven with a steam or air hammer developing an energy per blow of not less than 12,000 ft.-lbs.

Price bid for piles shall include shell tip, reinforcing and concrete for pile driven complete in place.

No payment will be made for pile cut-offs as stipulated in Section 2.60-64.4.

**Waterproofing**

The rear face of Abutment Wall shall have Membrane Waterproofing without Protection Course, from the bottom of the wall to within one foot of the finished ground elevation.

Tops of rear footings shall have Membrane Waterproofing without Protection Course.

**Expansion Joints**

The preformed expansion joint filler called for on the plans shall be in accordance with section 3.8.2.

**Grillages and Anchor Bolts**

The Contractor shall assemble complete in the shop all structural grillages to be embedded in concrete with the bearing plates and supporting structural shapes accurately fitted before drilling or reaming rivet holes to final size.

Centerlines of bearings and centerlines of grillages shall be scribed and marked with prick punch marks for use of the Contractor in setting grillages in the field.

The Contractor shall furnish copies of the match marking diagrams to the Engineer for his use in the field in checking the accurate placement of metalwork.

The top surfaces of steel bearing slabs shall be planed in the shop after assembly of the grillages.

The Contractor shall accurately set all bearing grillages and anchor bolts as indicated on the plans on satisfactory concrete or metal supports, at the correct elevation and alignment, securely braced against displacement during the pouring of the embedding concrete.

Metal templates showing the spacing of anchor bolts shall be delivered to the superstructure Contractor as directed by the Engineer.

The Contractor shall be wholly responsible for the accurate placement of grillages and anchor bolts and any variation from the finished position as indicated on the plans shall be corrected by the Contractor at his sole expense and in a manner satisfactory to the Engineer. Leveling nuts shall be provided on the anchor bolts as indicated on the plans, for accurate adjustment of steel grillages to level and elevation prior to placing concrete encasement.

**Payment For Excavation**

Wet excavation is earth excavation and where ground line is below pool Elev 614, wet excavation will be measured below this ground line, except for rock. All excavation above pool Elev 614 is structure excavation, except for rock excavation, and except for unclassified excavation in front of Pier VI. Unclassified excavation will be measured outside the limits of Structure Excavation.

**Cofferdam Struts**

If steel cofferdam struts are used, they may remain embedded in footing concrete at the Contractor's option, but no payment will be made to the Contractor on account of Structural Steel thus remaining in the completed work. No deduction will be made for the volume of concrete replaced by steel.

**GENERAL NOTES FOR CONCRETE AND REINFORCING**

**Classes of Concrete**

All concrete in Pier VI and all concrete above tops of footings in Piers VII to XI inclusive shall be Class A. All concrete in footings of Piers VII to XI inclusive shall be Class B. All concrete shall be placed in the dry.

**Cement**

Cement shall be Type 1 or Type 2 AASHTO-M85-49

**Finish**

All exposed concrete surfaces shall be given a rubbed finish conforming to specifications.

**Construction Joints**

Construction joints other than those shown shall be made only as directed or approved by the Engineer. Suitable and adequate keys shall be used at construction joints. See section 2.71-733.

**Reinforcing Bars**

Reinforcing steel may be structural or intermediate grade billet steel and shall conform to section 3.91 of the Standard Specifications except the manufacture of the billet steel may be in accordance with A.S.T.M. Specifications A-15-50T.

Deformations of reinforcing steel shall be in accordance with A.S.T.M. A305-50T.

**Bar Splices and Clearances**

Unless otherwise shown on the plans all bars shall be lapped 25 diameters. Bars shall be 3 inches clear from the face of concrete.

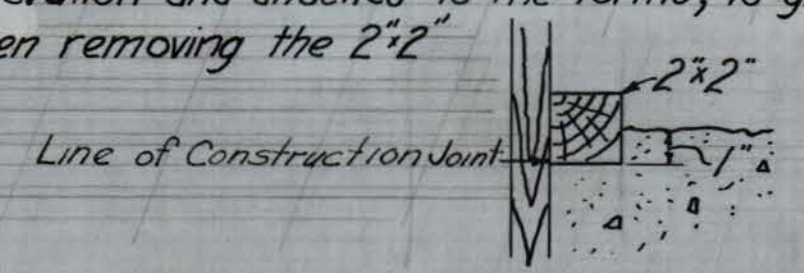
**Tests**

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

**Chamfers**

A 3/4" Chamfer strip shall be used on all exposed edges of concrete except for pier copings and except where other size chamfer strips are specified. See Section 2.71-733. Unless otherwise approved the edges of all vertical construction or expansion joints shall be chamfered 3/4". Edges of horizontal joints shall not be chamfered.

Horizontal construction joints shall be made by placing and vibrating concrete to 1" above straight bottom edge of a 2"x2" timber set carefully to elevation and attached to the forms, to give a straight joint line, and then removing the 2"x2" before the next pour.



Pier No	Dead+ Live Pile Load Tons/pile	Dead Load Reaction Superstructure Kips	Gross Bouyant Dead Load Superstructure Kips	Area of Footings Sq. Ft.	Gross Bouyant Dead Load Pressure Tons/Sq. Ft.	Pressure of Existing Earth Tons/Sq. Ft.	Net Additional Dead Load Pressure Tons/Sq. Ft.	Live Load Reaction Superstructure Kips	Live Load Pressure Tons/Sq. Ft.	Net Additional Dead+ Live Pressure Tons/Sq. Ft.
VI (Abutment)	35	506	2367	44 Piles	—	—	—	285	—	—
VII		1457	6766	1056	3.21	0.99	2.22	435	0.21	2.43
VIII		1409	7729	1104	3.50	0.91	2.59	397	0.18	2.77
IX		1269	6401	897	3.57	0.85	2.72	397	0.22	2.94
X		2626	8024	912	4.40	0.63	3.77	570	0.31	4.08
XI		2558	8060	912	4.43	0.50	3.93	550	0.30	4.23

Note: Buoyancy is taken up to Pool El. 614  
No buoyancy in Pier VI since footing is above Pool El. 614.

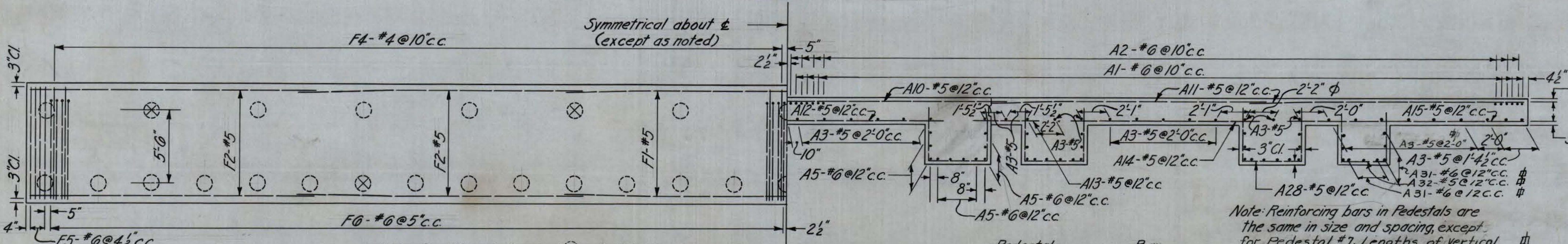
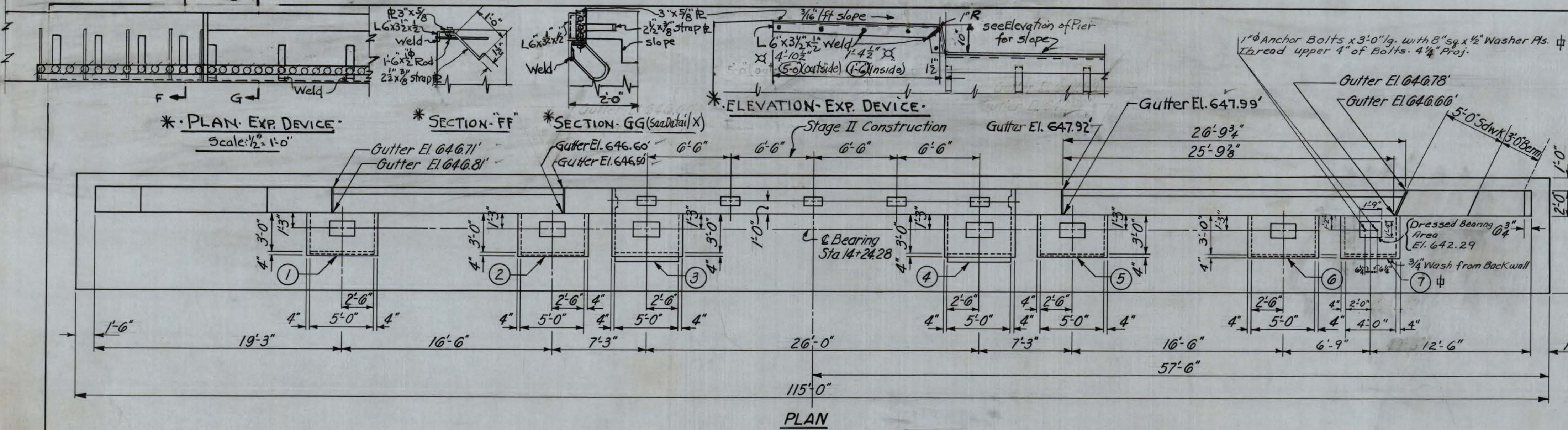
SUMMARY									
Pier No	Reinforcing Steel - lbs.			Total	Concrete C.Y.		Assumed Pile Lengths Lin. Ft.		
	4	5	6		Class A	Class B	Number	Average Length	Total Length
VI (Abut)	1493	5668	11246	18407	300	—	44	44	1936
VII	—	10152	19905	30057	1109	705	—	—	—
VIII	—	8779	19917	28696	1072	1103	—	—	—
IX	—	7689	14740	22429	880	863	—	—	—
X	—	8195	15360	23555	1100	676	—	—	—
XI	—	9176	16630	25806	1240	540	—	—	—
Grand Total	1493	49659	97798	148950	5701	3887	44	44	1936

ESTIMATED QUANTITIES				
Item	Description	Quantity	Units	As Built
2	Unclassified Excavation (North of Pier VI)	340	Cu. Yds.	911.4
6A	Structure Excavation	892	Cu. Yds.	900.22
6B	Rock Excavation	453	Cu. Yds.	420.14
6C	Wet Excavation	5649	Cu. Yds.	5651.76
6D	Cofferdams for Piers VII thru XI		Lump Sum	L.S.
6E	Holes drilled in rock, Piers VII thru XI	100	Lin. Ft.	100
62	Concrete Piles	1936	Lin. Ft.	1547.04
71-B	Class A Concrete in Substructure	5701	Cu. Yds.	5695.48
72	Class B Concrete	3887	Cu. Yds.	3763.73
78	Reinforcing Steel Bars	148950	lbs.	148570.6
87	Membrane Waterproofing without Protection Course	193	Sq. Yds.	145.17
92	Fabricated Structural Steel			
	Anchor Bolts	3682		L.S.
	Grillage	27275		
	Expansion Dam Pier VI	2320		
		33,277		Lump Sum
107	Crushed Stone, Crushed Gravel, or Sand 1/4" Under-drains (South of Pier VI)	42	Cu. Yds.	415.7

As Built Completed 2-1-54.

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GENERAL NOTES AND ESTIMATED QUANTITIES





Additional Reinforcement for Pedestal #7

Mark	No	Stock	Bend	Weight
F3	9	#5x3'6"	Straight	33
A31	9	#6x9'6"	Straight	129
A32	10	#5x12'0"		125
				<b>Total 287#</b>

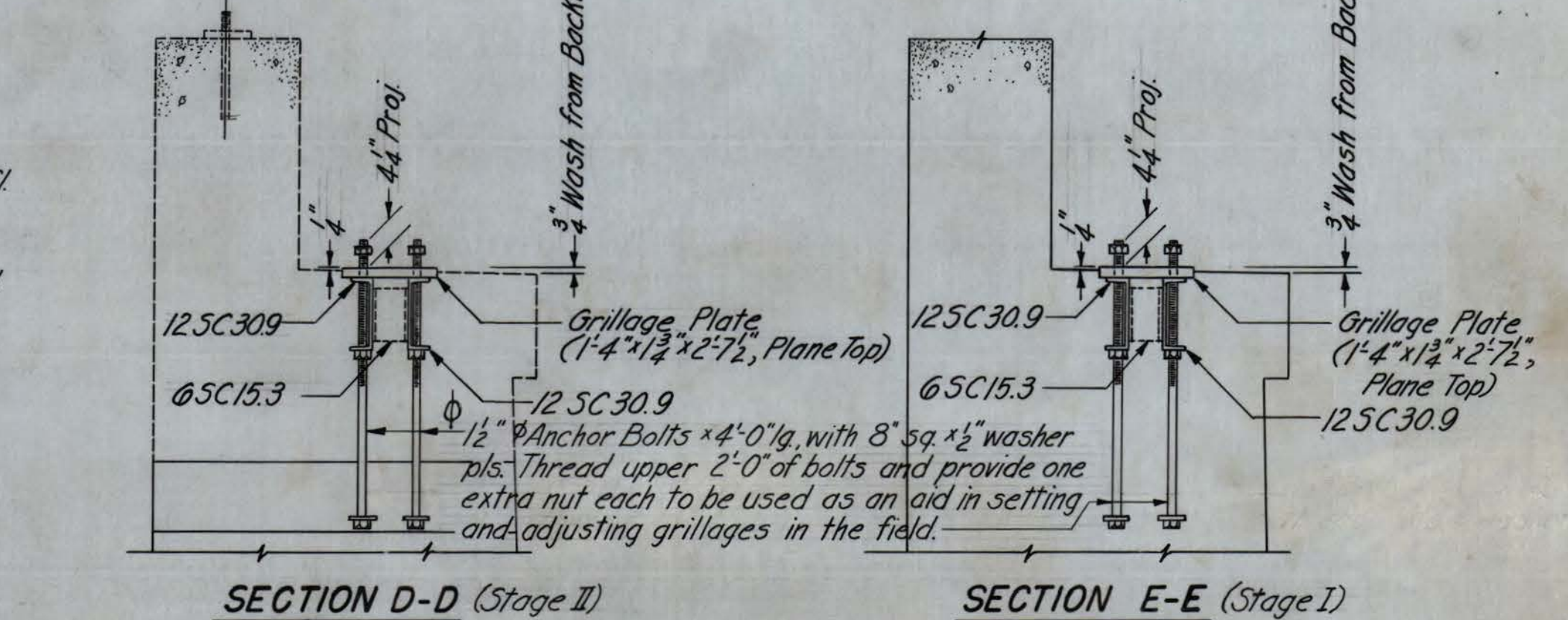
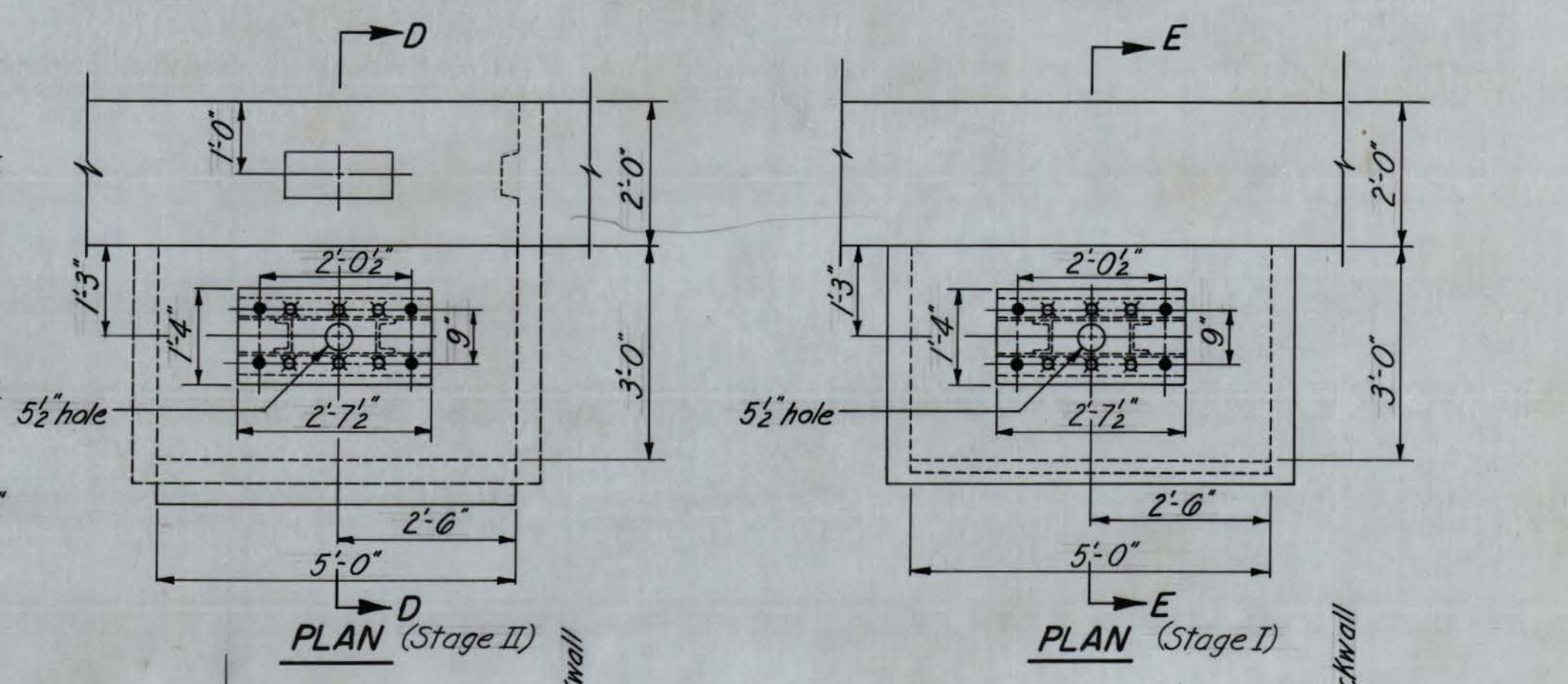
Note: Six Piles designated shall have careful record of blows per ft. in driving to permit determination of reqd pile lengths in advance.

Additional Concrete for Pedestal #7 - 4.5C.Y.

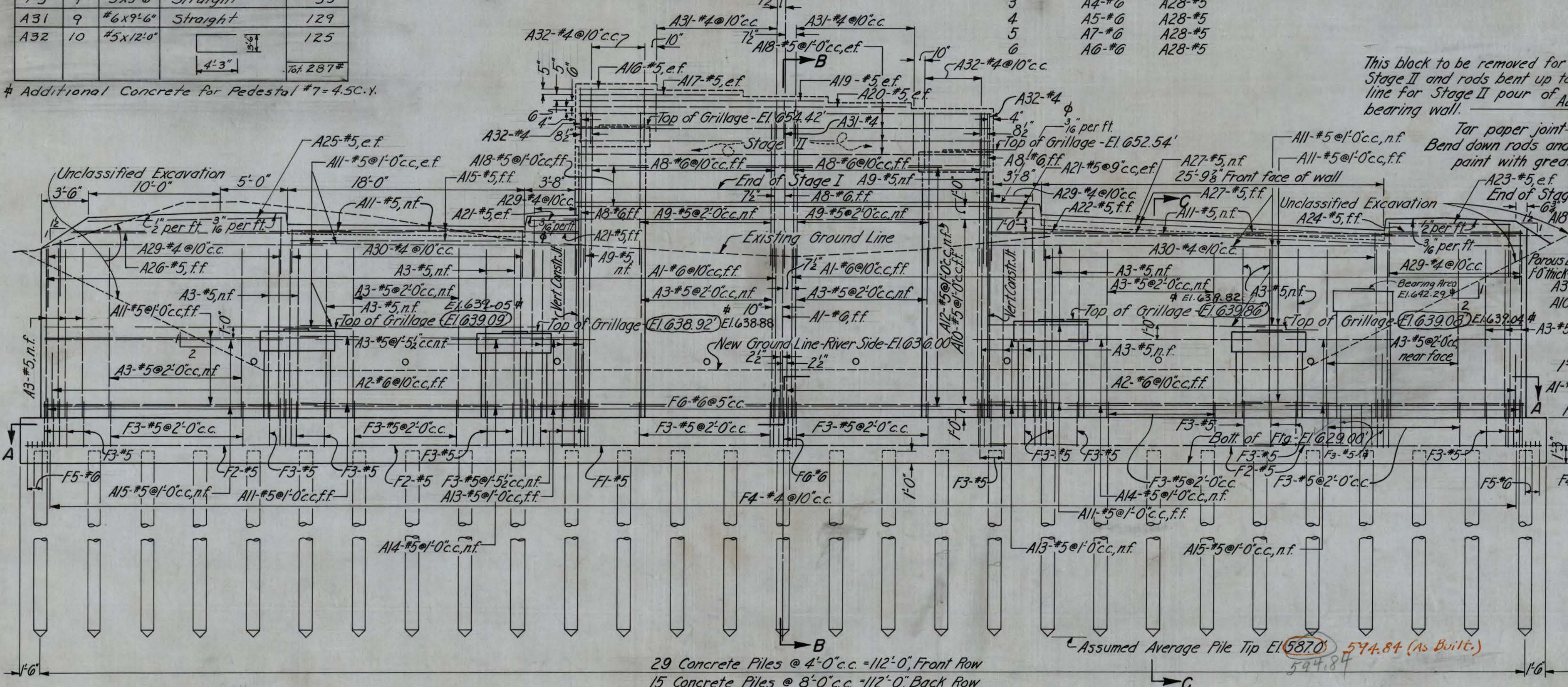
Pedestal Bar

No.	Straight	Bent
1	A6-#6	A28-#5
2	A6-#6	A28-#5
3	A4-#6	A28-#5
4	A5-#6	A28-#5
5	A7-#6	A28-#5
6	A6-#6	A28-#5

Note: Reinforcing bars in Pedestals are the same in size and spacing, except for Pedestal #7. Lengths of vertical bars and reqd number of horizontal bars are different.



**GRILLAGE DETAILS**  
Scale: 1/2" = 1'-0"

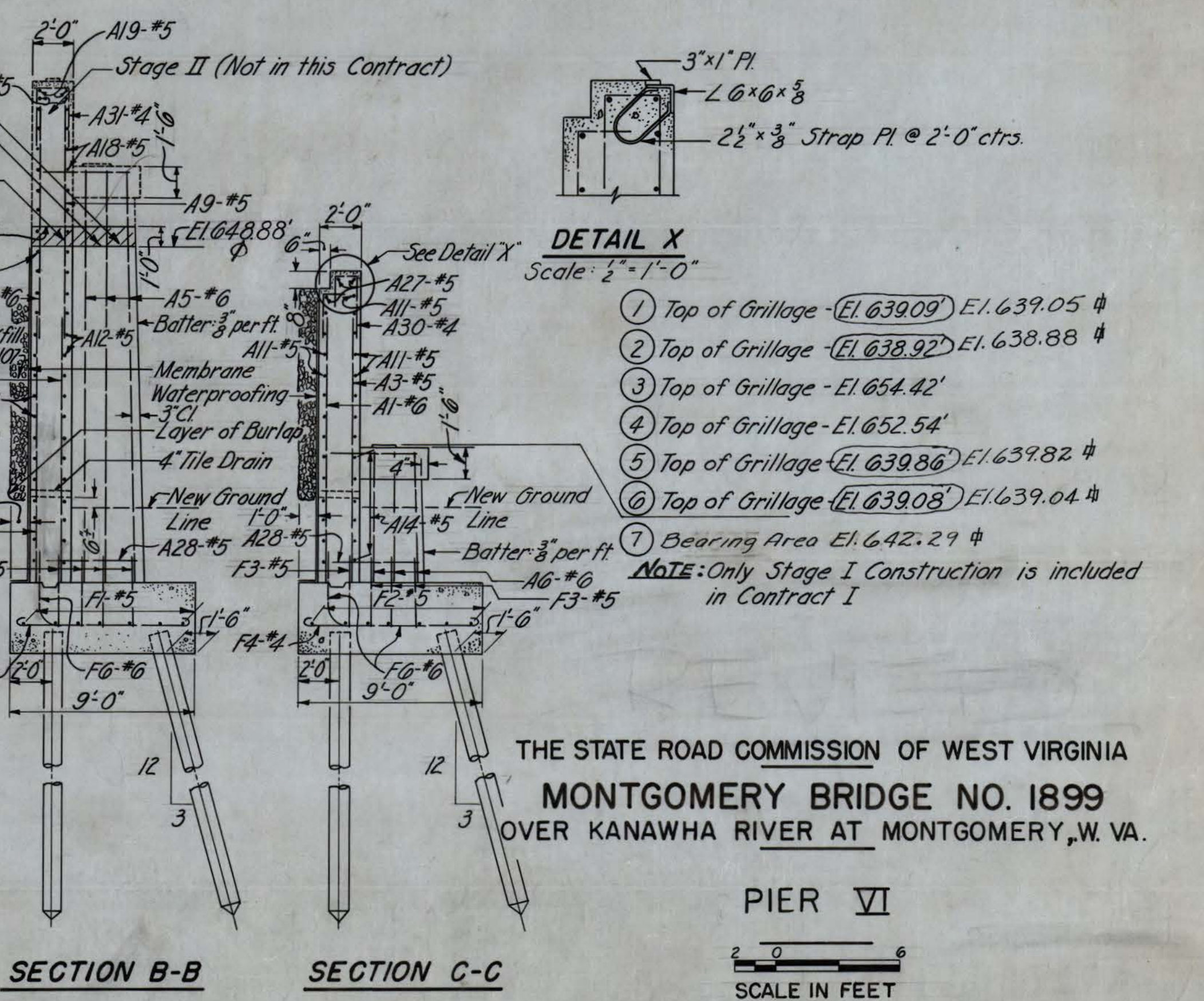


This block to be removed for Stage II and rods bent up to line for Stage II pour of A20-#5 bearing wall.

**DETAIL X**  
Scale: 1/2" = 1'-0"

- Top of Grillage - (El. 639.09) El. 639.05 #
- Top of Grillage - (El. 638.92) El. 638.88 #
- Top of Grillage - El. 654.42'
- Top of Grillage - El. 652.54'
- Top of Grillage - (El. 639.86) El. 639.82 #
- Top of Grillage - (El. 639.08) El. 639.04 #
- Bearing Area El. 642.29 #

NOTE: Only Stage I Construction is included in Contract I



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**PIER VI**

SCALE IN FEET  
MODJESKI & MASTERS, ENGINEERS  
OCTOBER, 1952

Revised Feb. 17, 1953  
Revised Jan. 8, 1953

CONTRACT NO. I

#1899



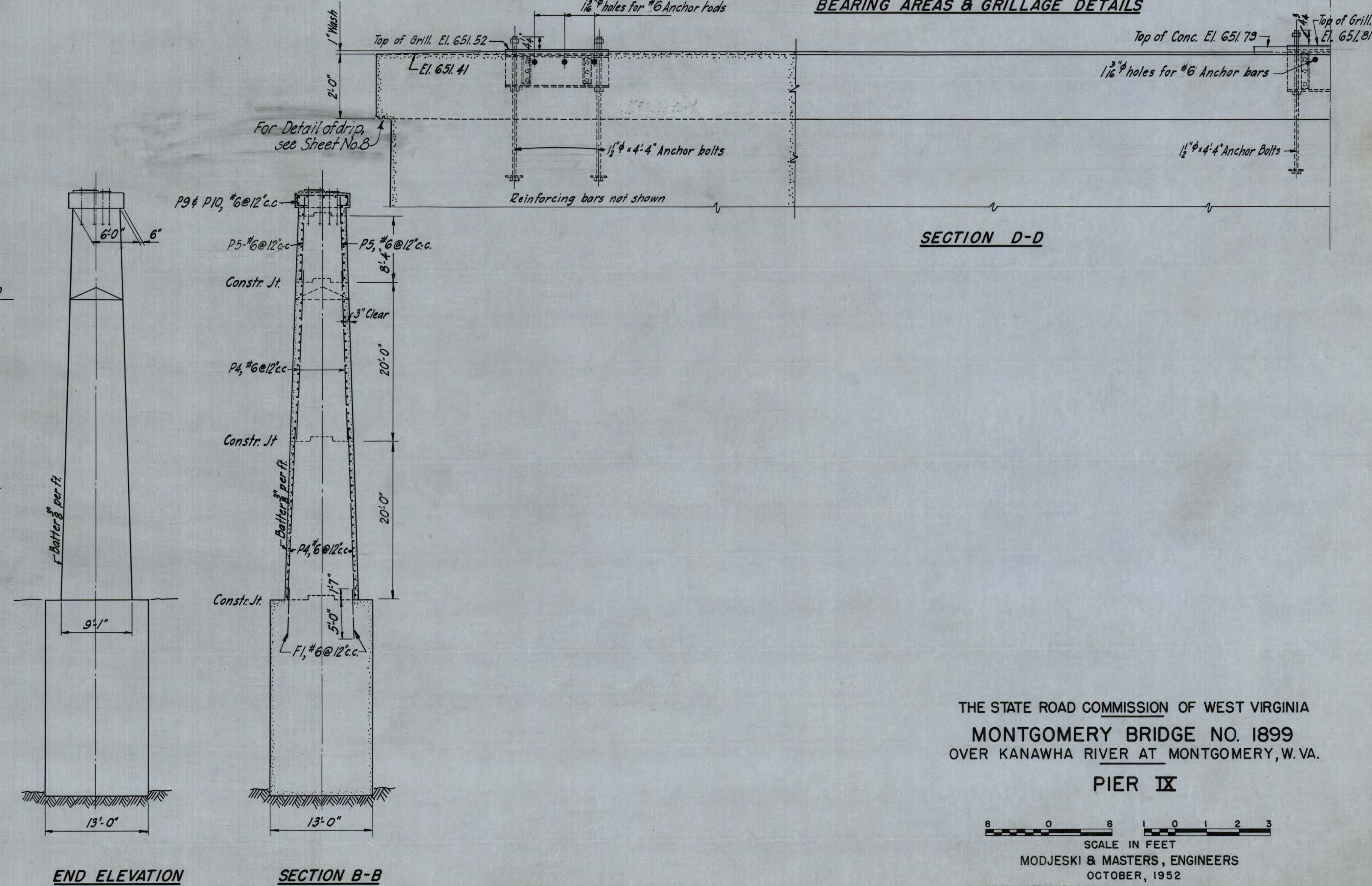
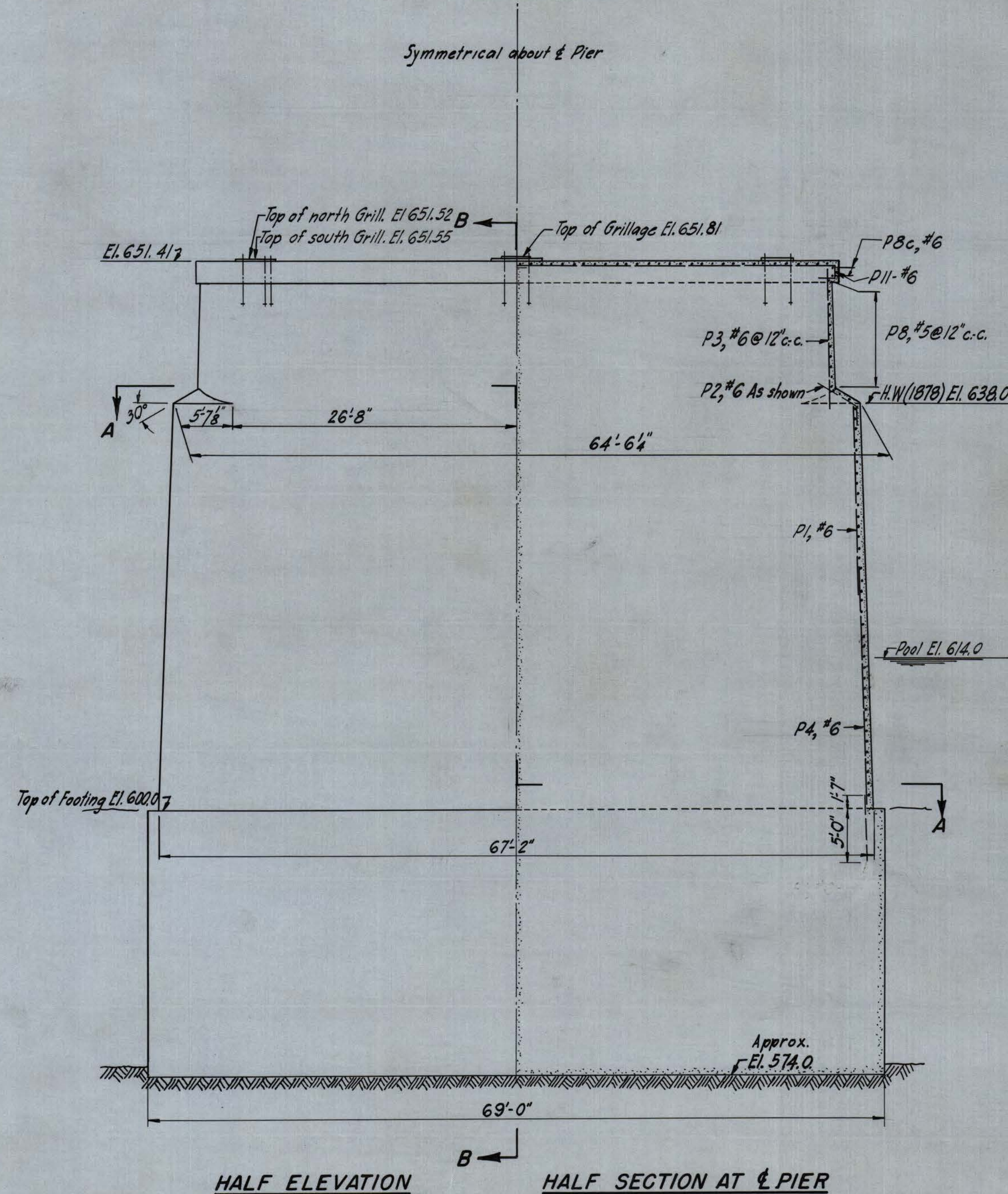
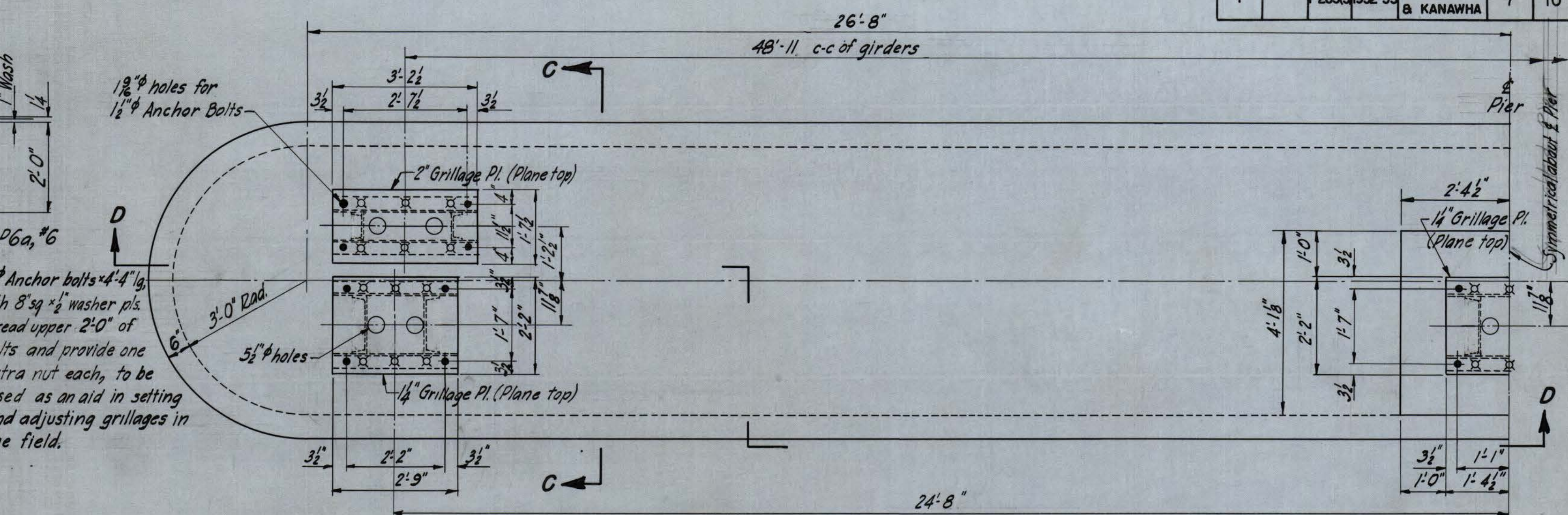
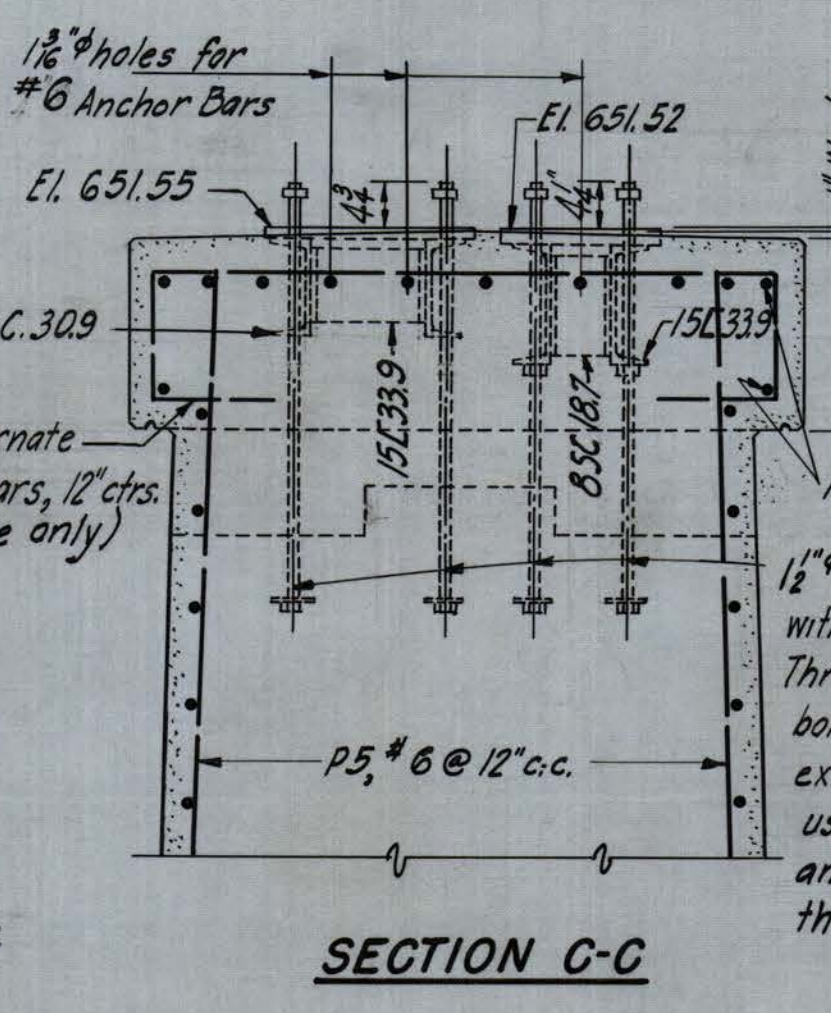
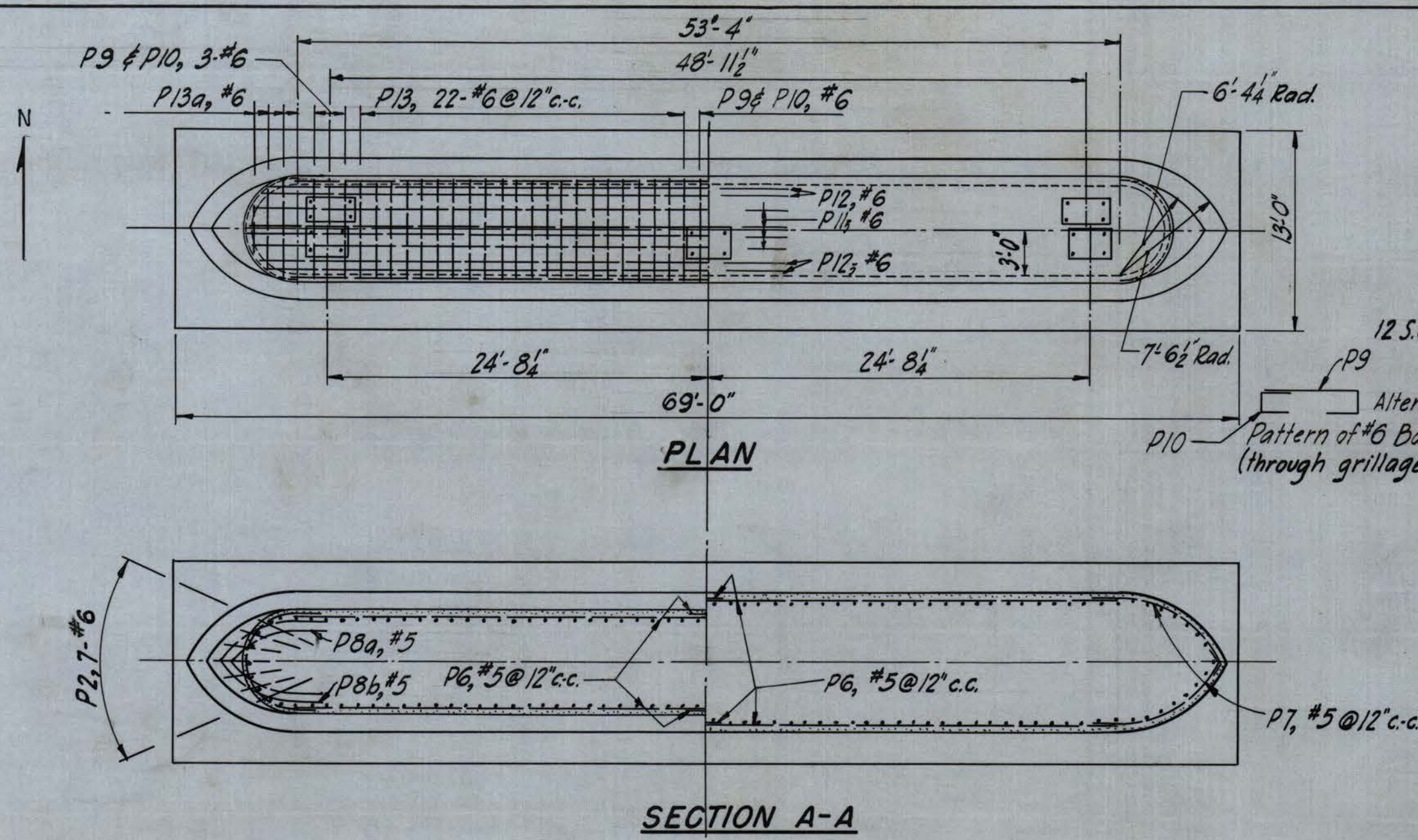








DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F-283	1952-53	FAYETTE & KANAWHA	7	10



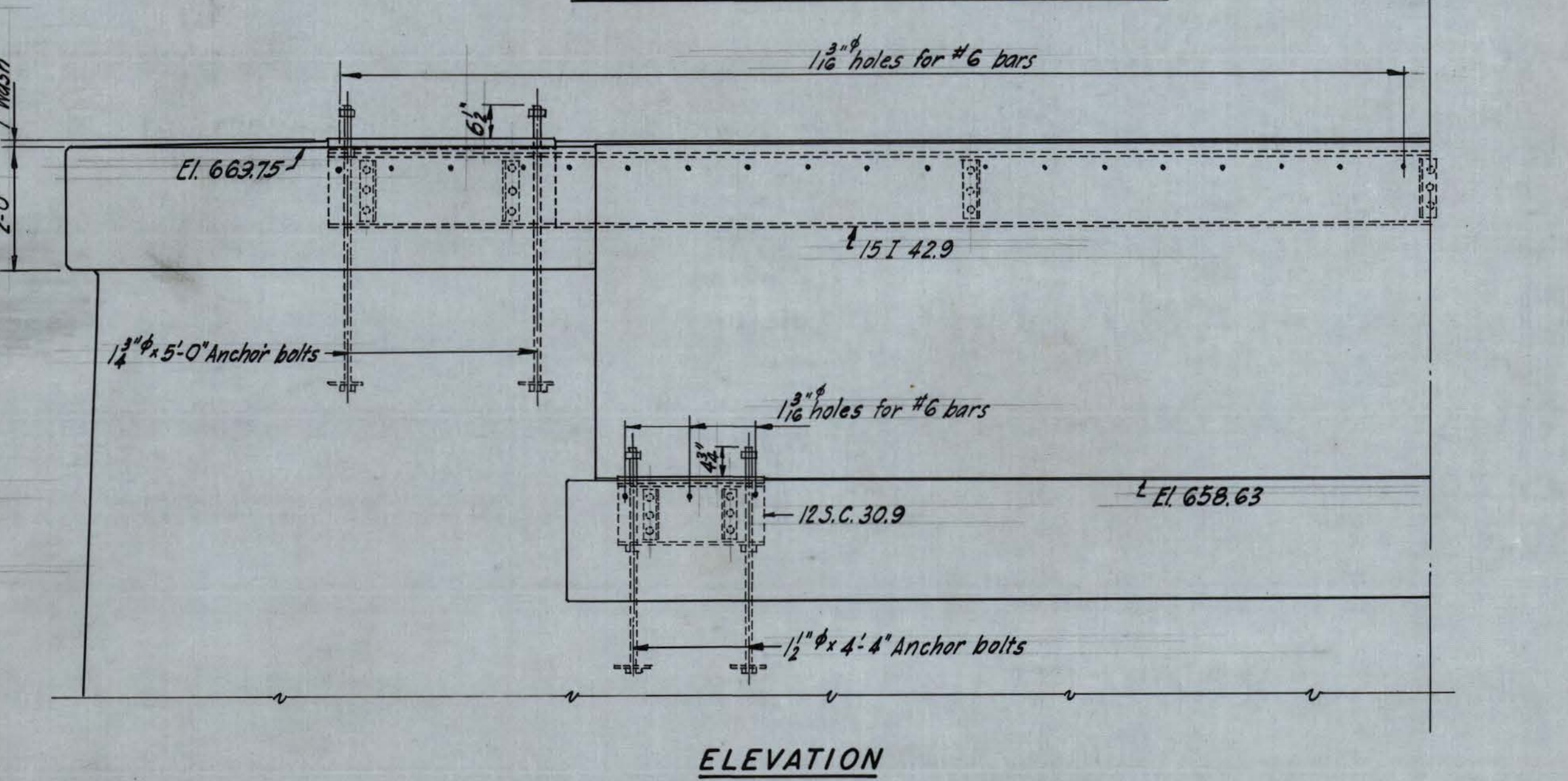
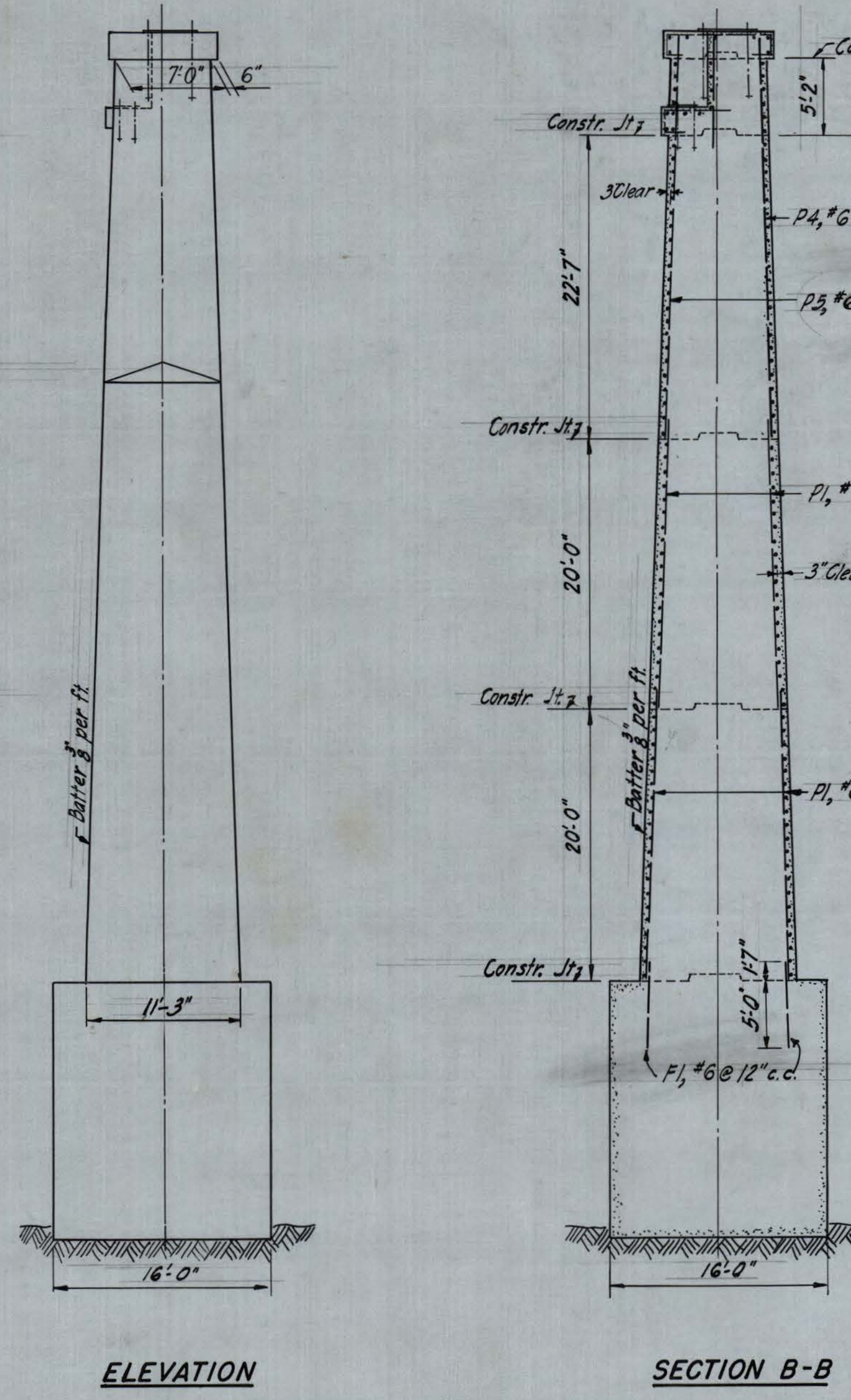
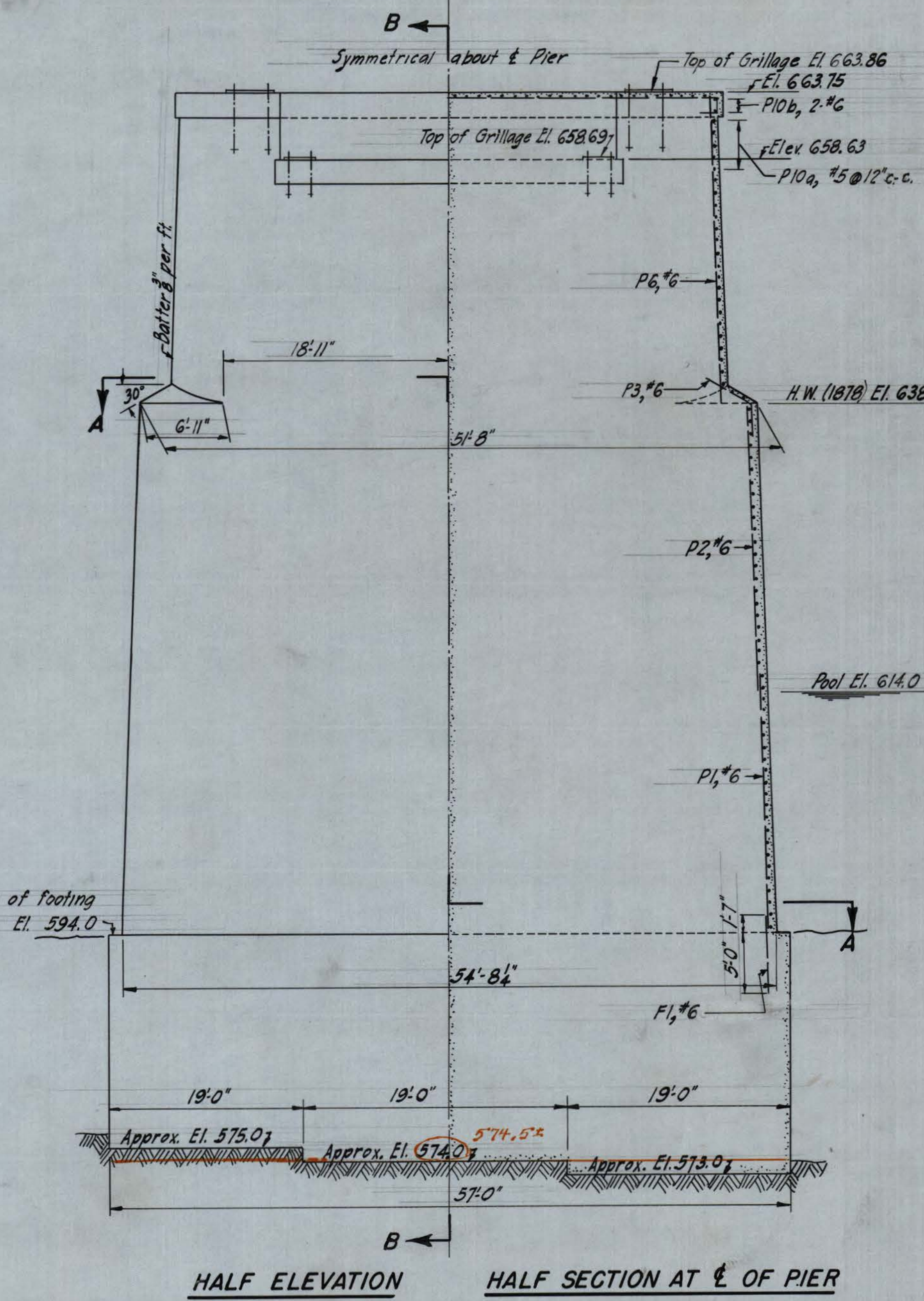
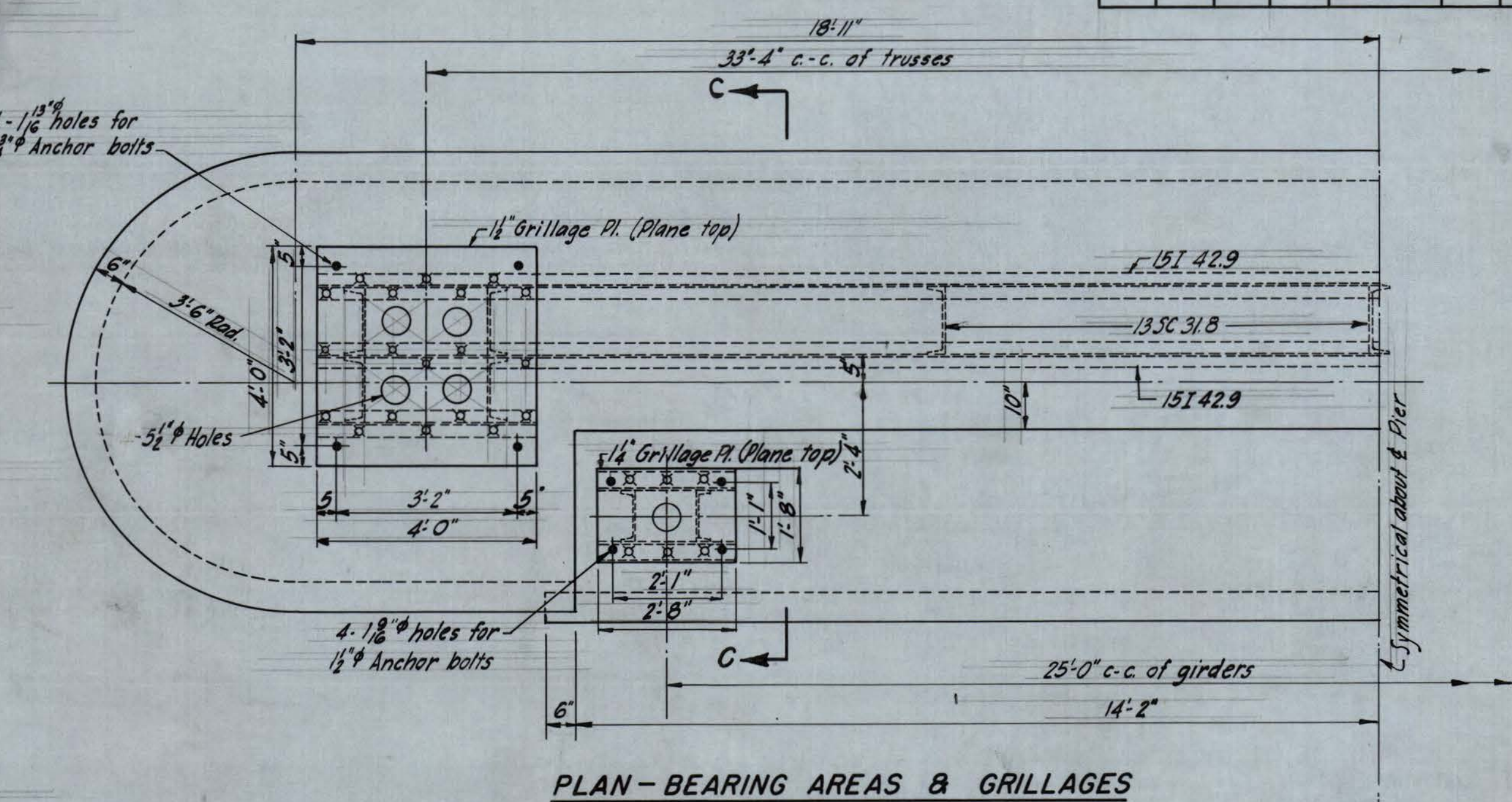
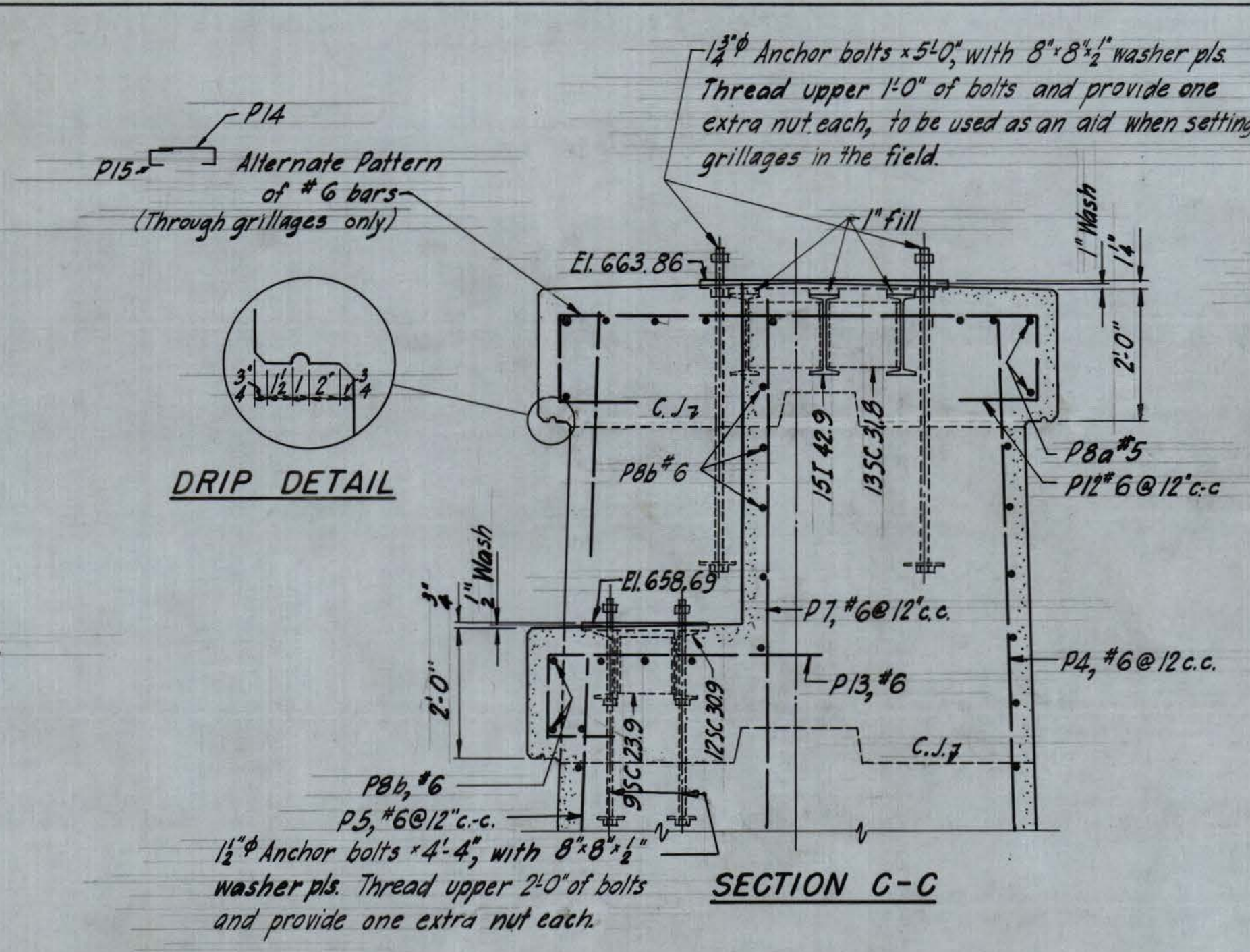
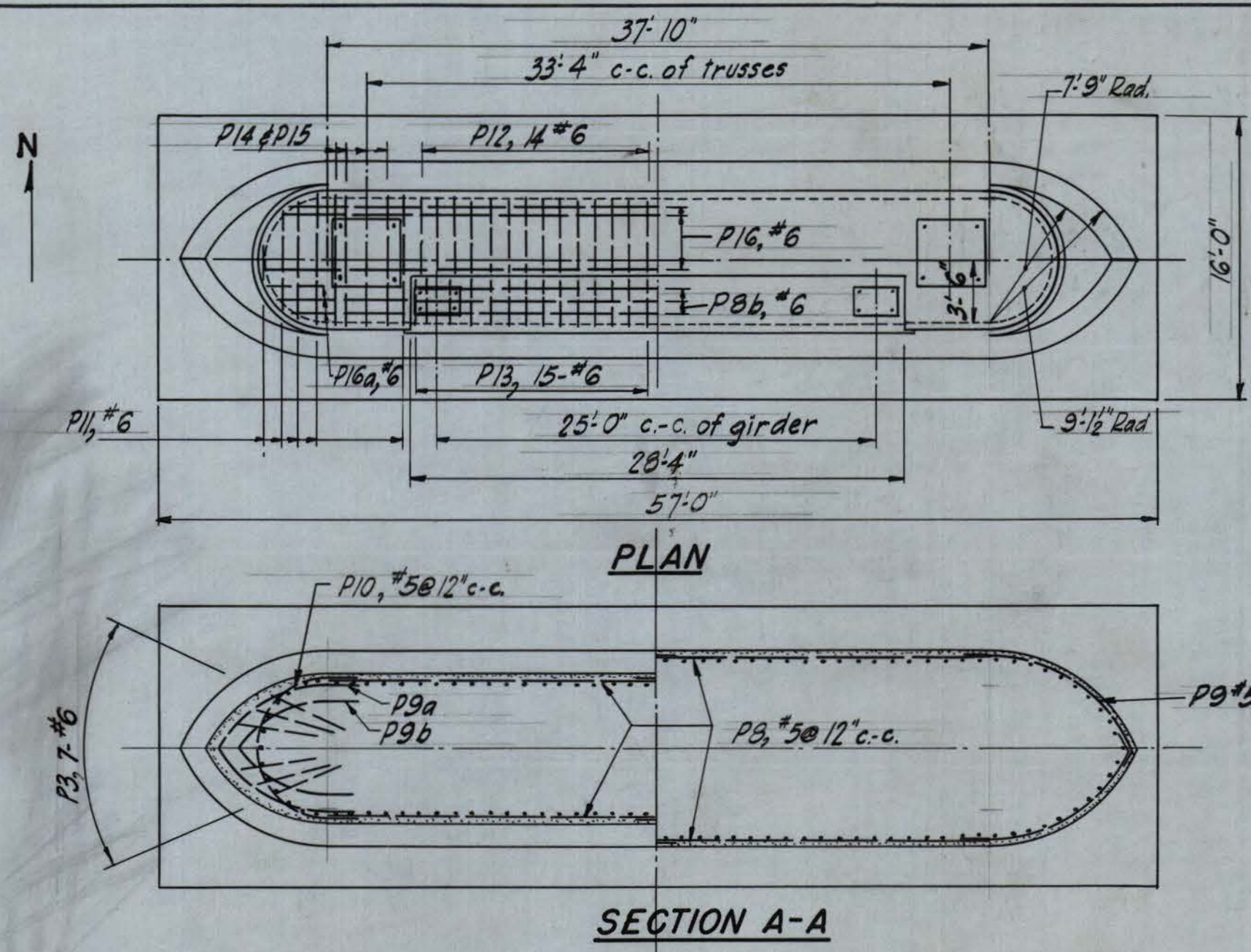
THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**PIER IX**

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 SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS  
 OCTOBER, 1952  
 CONTRACT NO. 1

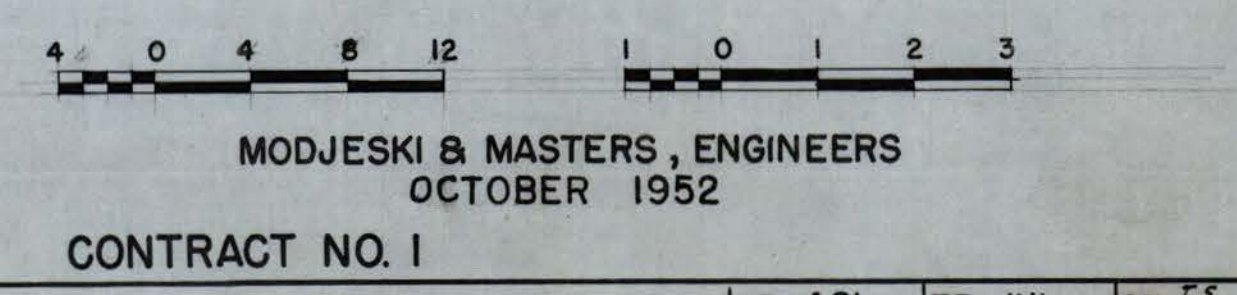
DR. A.B.L. TR. J.H.L. CK. 23.0



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		P-2830	1953-54	FAYETTE & KANAWHA	8	10

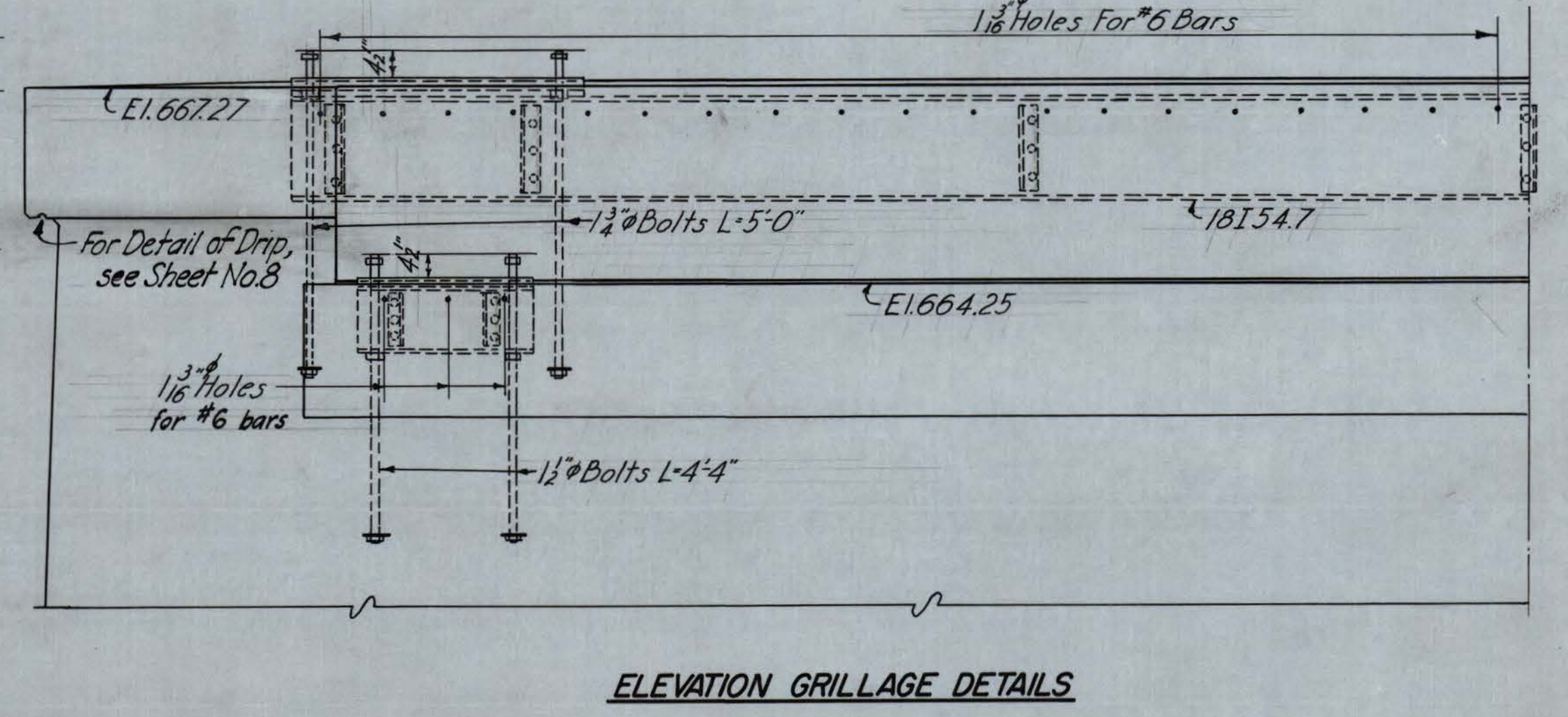
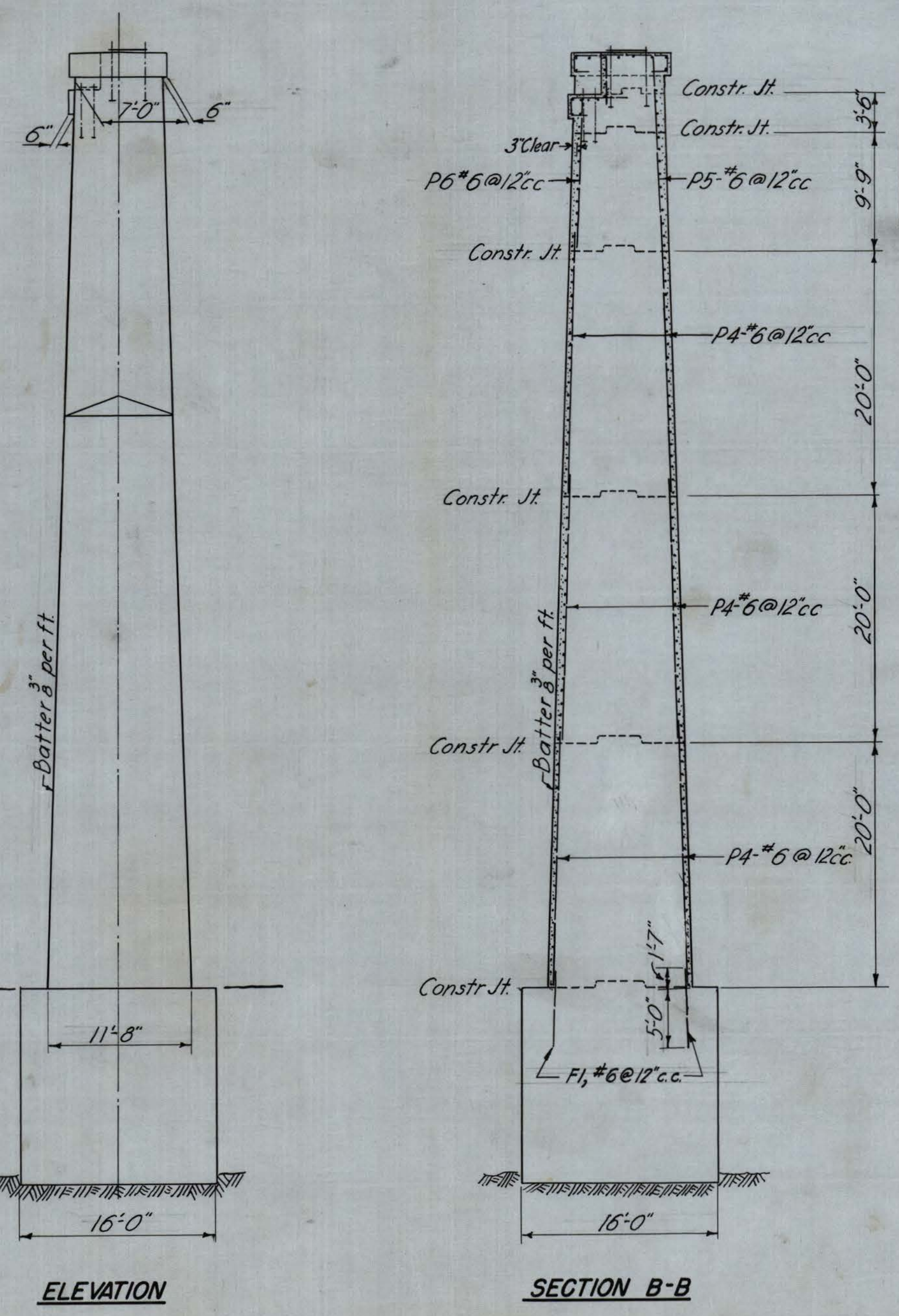
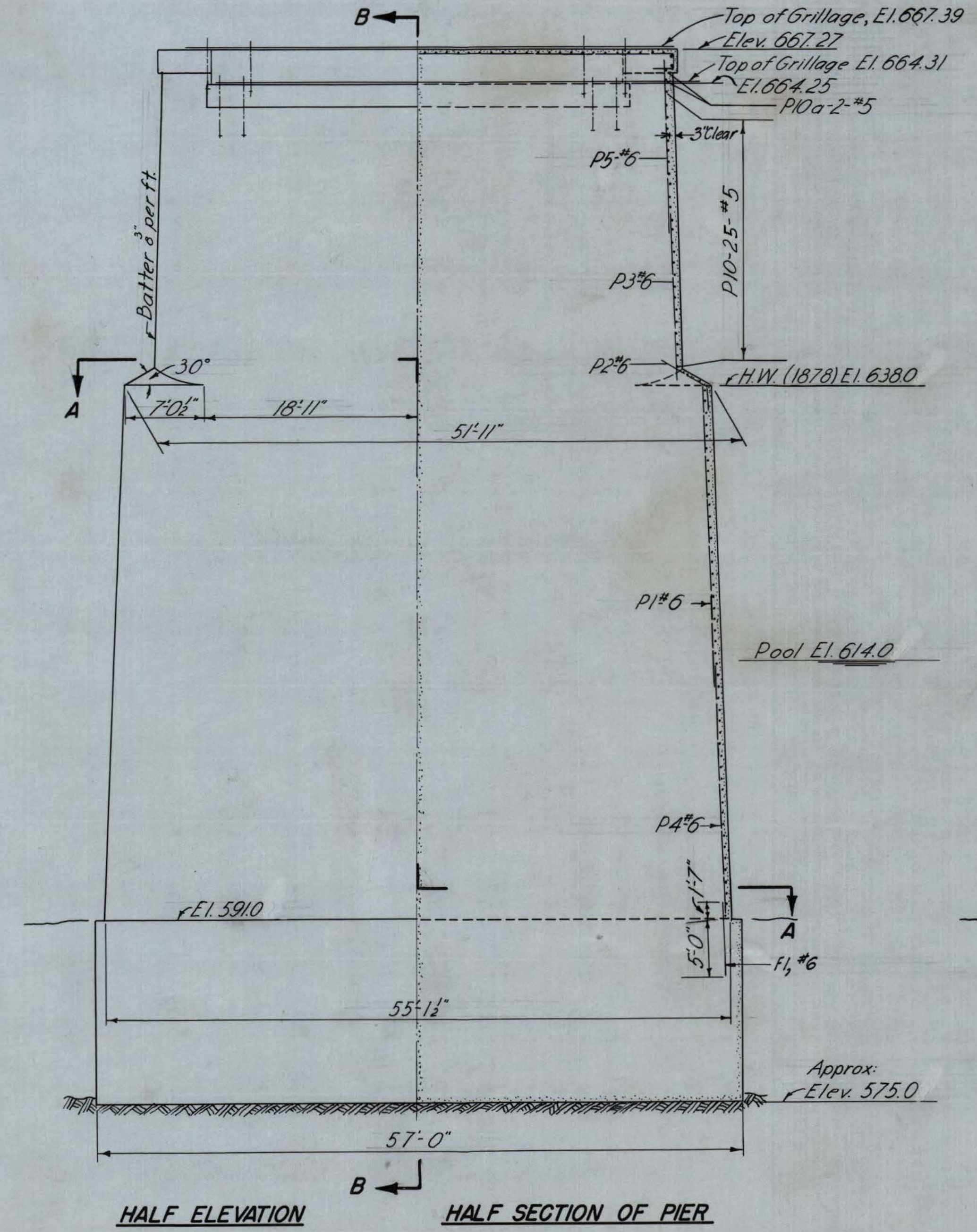
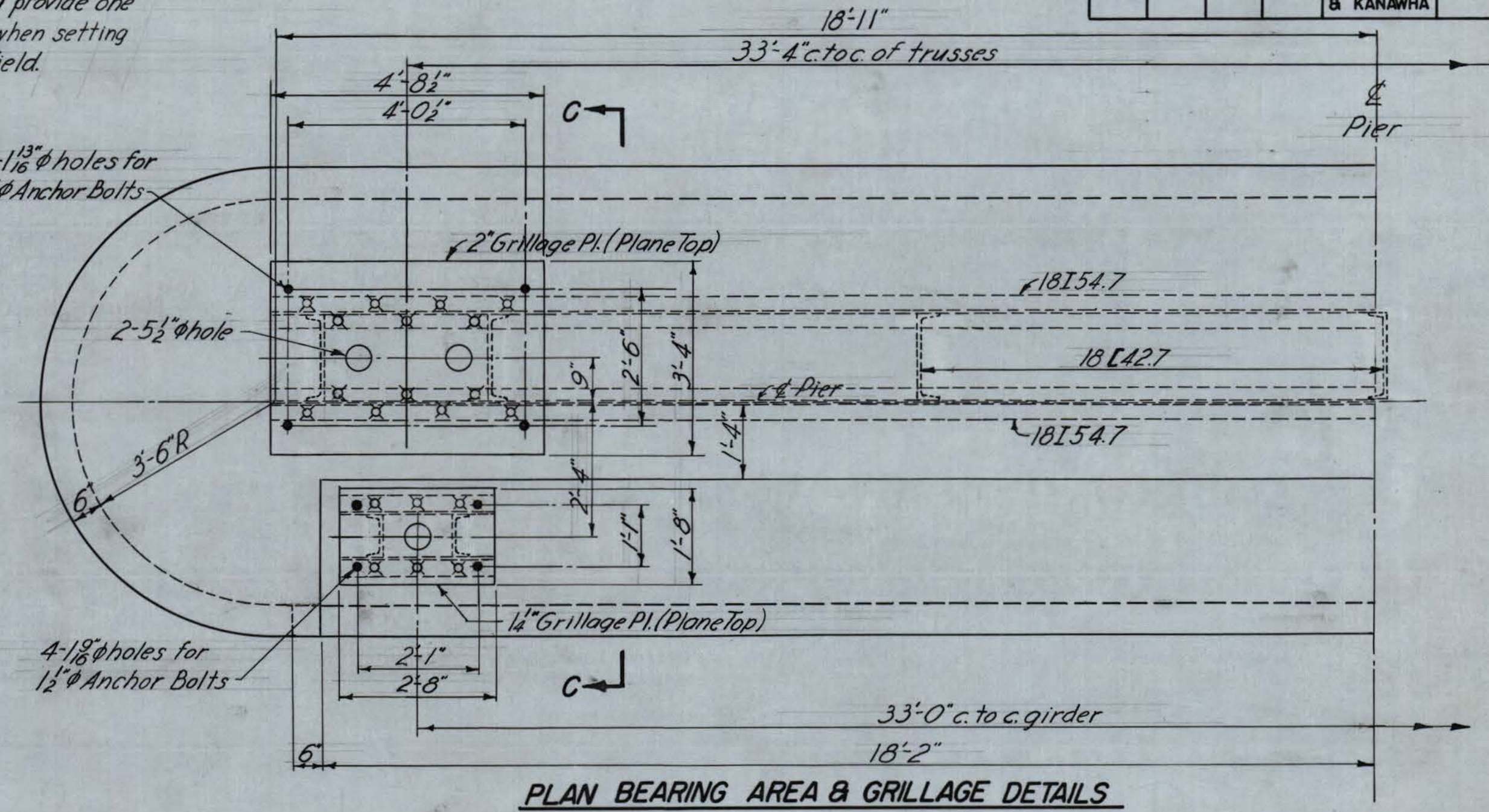
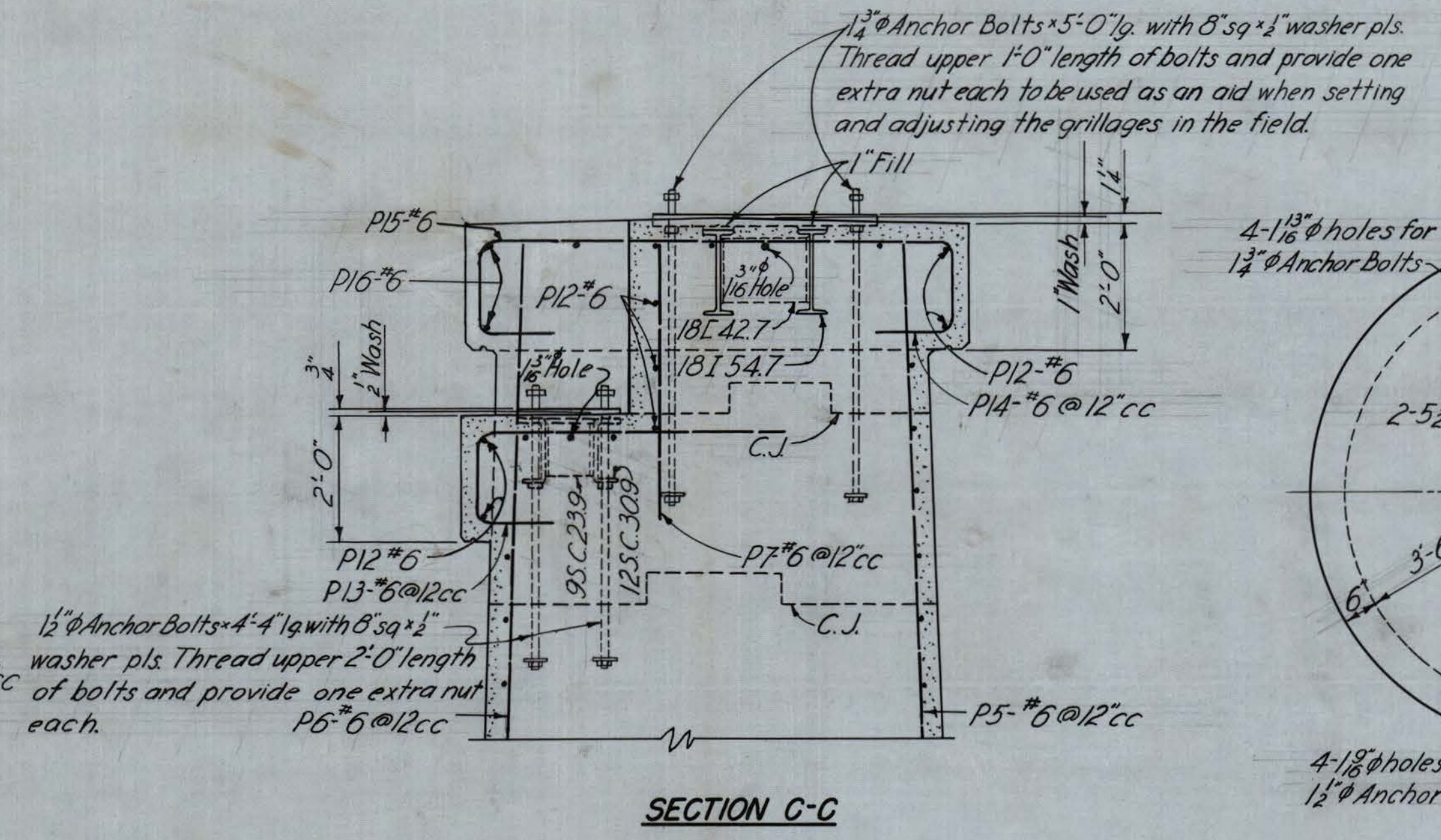
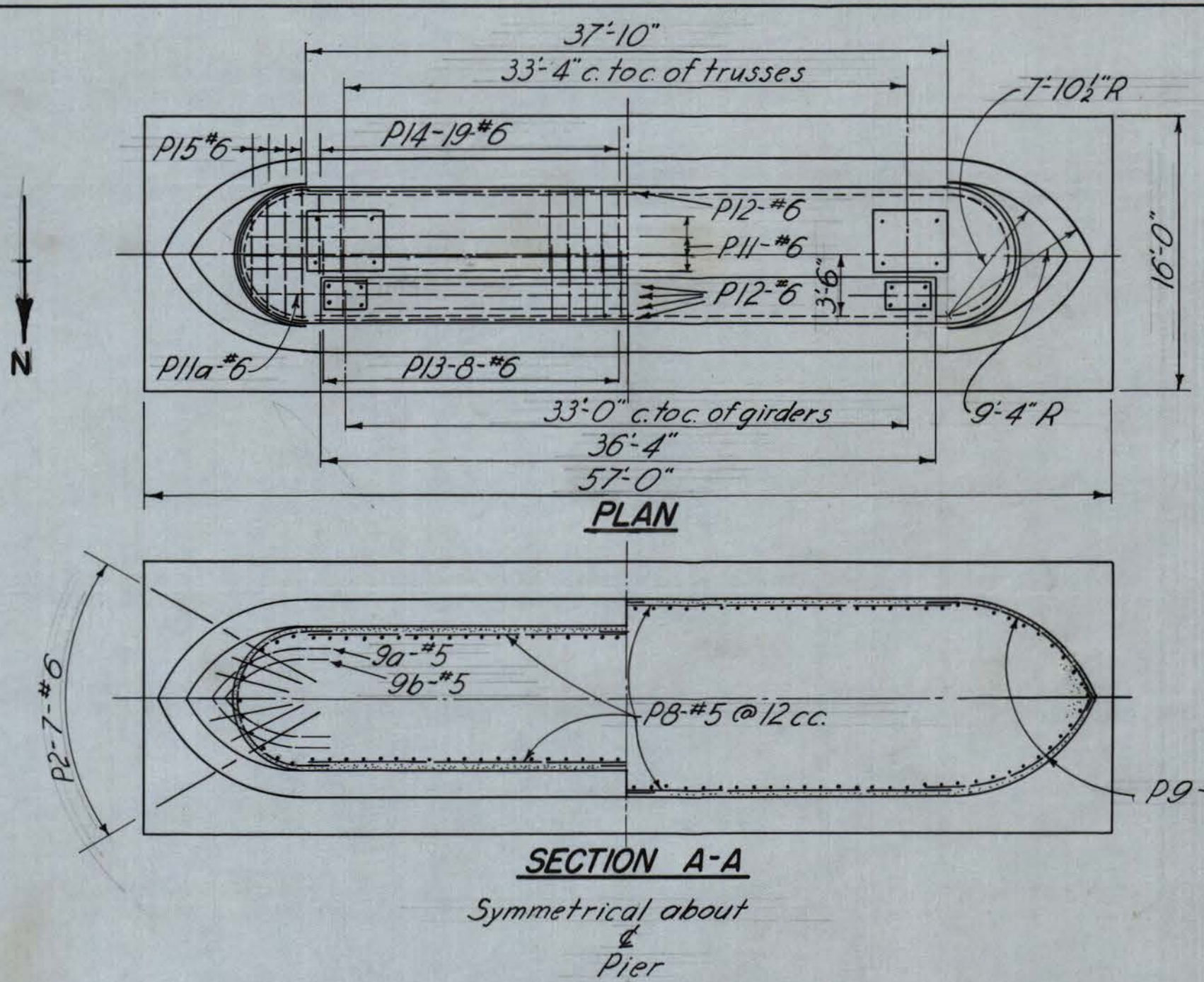


THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**PIER X**



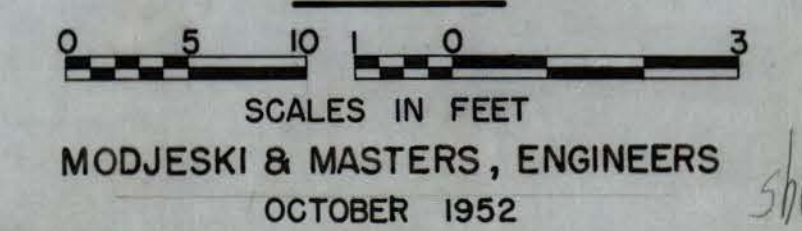


DIST NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F26313	1952-53	FAYETTE & KANAWHA	9	10



THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

PIER XI



CONTRACT NO. 1

sheet 9 of 10



REINFORCING BAR SCHEDULE-PIER VI			
Mark	No	Stock	Bend
F1	7	#5x3'-6"	Straight
F2	28	#5x2'-6"	do
F3	116	#5x3'-6"	do
F4	135	#4x9'-6"	See Detail L; S=8'-6"
F5	8	#6x10'-0"	See Detail L; S=8'-6"
F6	269	#6x11'-10"	See Detail K; W=7'-6"; Q=4'-0"
A1	135	#6x12'-9"	Straight
A2	134	#6x5'-0"	do
A3	56	#5x12'-9"	do
A4	10	#6x2'-6"	do
A5	10	#6x19'-9"	do
A6	30	#6x6'-0"	do
A7	10	#6x7'-0"	do
A8	37	#5x11'-9"	do
A9	14	#5x1'-6"	do
A10	15	#5x3'-6"	do
A11	84	#5x20'-9"	do
A12	116	#5x23'-5"	do
A13	12	#5x4'-9"	do
A14	12	#5x14'-0"	do
A15	14	#5x17'-9"	do
A18	1	#5x3'-0"	do
A21	7	#5x3'-6"	do
A22	1	#5x9'-9"	do
A23	2	#5x9'-0"	do
A24	1	#5x10'-0"	do
A25	2	#5x14'-9"	do
A26	1	#5x16'-0"	do
A27	3	#5x27'-0"	do
A28	57	#6x13'-0"	See Detail G; J=4'-3"; H=4'-6"; T=4'-3"
A29	45	#4x10'-0"	See Detail G; J=4'-3"; H=1'-6"; T=4'-3"
A30	53	#4x9'-6"	See Detail M.

REINFORCING BAR SCHEDULE-PIER VII			
Mark	No	Stock	Bend
F1	178	#6x6'-7"	Straight
P1	356	#6x2'-7"	do
P2	118	#6x10'-3"	do
P3	60	#6x16'-3"	do
P4	14	#6x7'-0"	do
P5	196	#5x20'-2"	do
P6	196	#5x21'-0"	do
P7	10	#5x29'-9"	do
P7a	4	#6x29'-9"	do
P8	8	#6x23'-8"	do
P9	98	#5x12'-10" Avg	See Detail B; A=1'-6"; R varies 2'-5" to 3'-98" 6 ea vary by 1/8"; 2 @ R=3'-11"
P9a	4	#6x11'-11 1/2"	See Detail B; A=1'-6"; R=2'-10 1/2"
P10	8	#5x10'-3 1/2" Avg	See Detail B; A=1'-6"; 4 @ R=2'-3 1/2"; 4 @ R=2'-4 1/2"
P10a	4	#6x11'-5 1/2"	See Detail B; A=1'-6"; R=2'-8 1/4"
P11	30	#6x11'-0"	See Detail E; D=5'-6"; E=1'-6"
P11a	4	#6x10'-4 1/2" Avg	See Detail E; E=1'-6"; 2 @ D=5'-3"; 2 @ D=4'-6"
P11b	4	#6x7'-11"	See Detail G; J=2'-4"; H=3'-3"; T=2'-4"
P12	4	#6x6'-10"	See Detail H; K=4'-6"; L=2'-4"
P12a	1	#6x5'-7"	See Detail H; K=3'-3"; L=2'-4"
P13	4	#6x3'-11"	See Detail H; K=1'-7"; L=2'-4"
P13a	1	#6x3'-0"	See Detail H; K=8"; L=2'-4"
P14	4	#6x8'-3"	See Detail F; F=5'-6"; G=1'-6"
P15	4	#6x4'-4"	See Detail F; F=1'-7"; G=1'-6"
P16	8	#6x2'-1"	See Detail F; F=18'-4"; G=1'-6"
P17	4	#6x20'-5"	See Detail F; F=17'-8"; G=1'-6"
P18	30	#6x11'-4"	See Detail E; D=5'-10"; E=1'-6"
P18a	6	#6x10'-10" Avg	See Detail E; E=1'-6"; 2 @ D=5'-10 1/2"; 2 @ D=5'-7"; 2 @ D=4'-7"
P19	12	#6x8'-7"	See Detail F; F=5'-10"; G=1'-6"
P20	12	#6x4'-4"	See Detail F; F=1'-7"; G=1'-6"
P21	14	#6x27'-3"	See Detail F; F=24'-6"; G=1'-6"
P22	7	#6x3'-6"	Straight
P23	2	#6x4'-10"	do

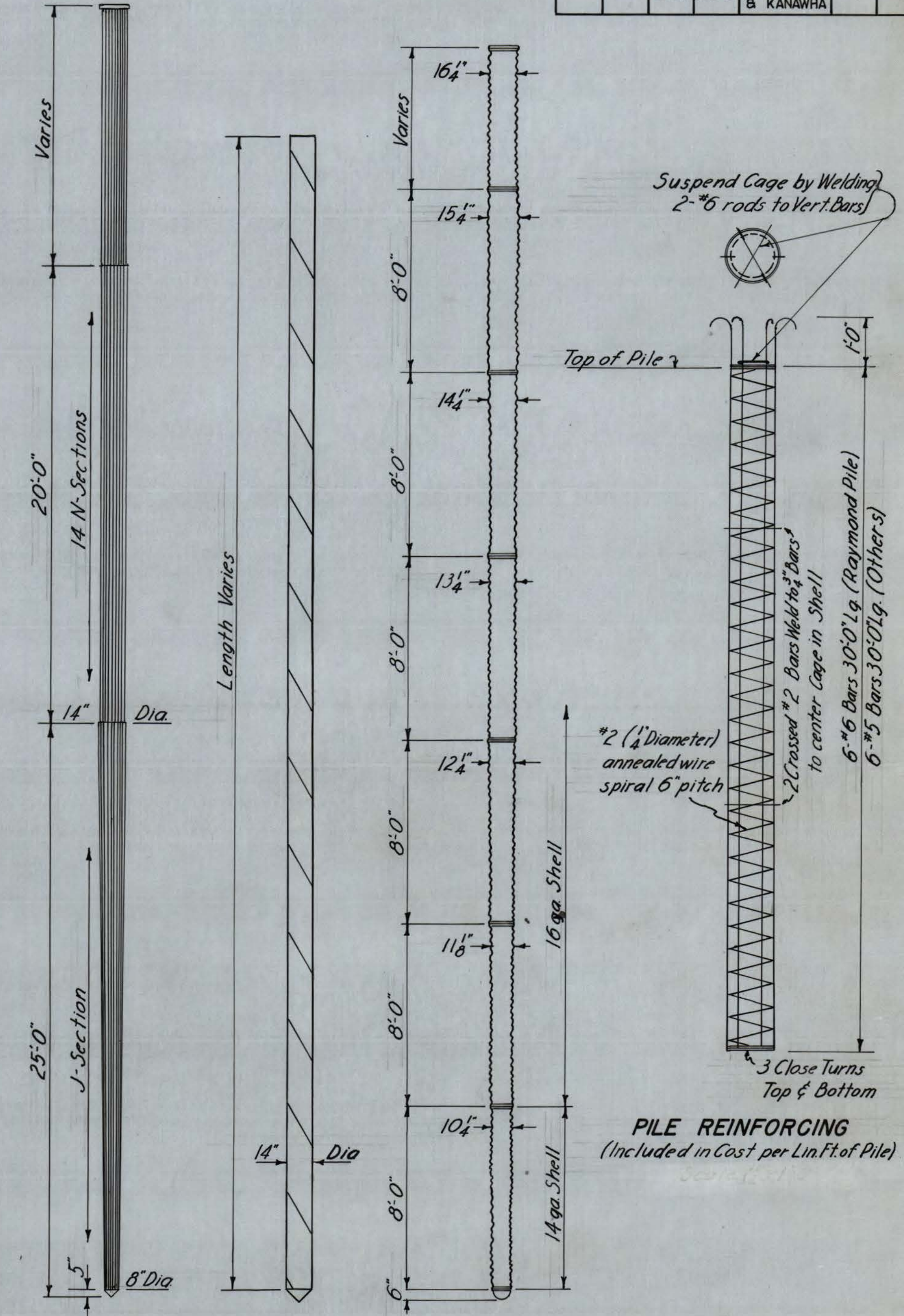
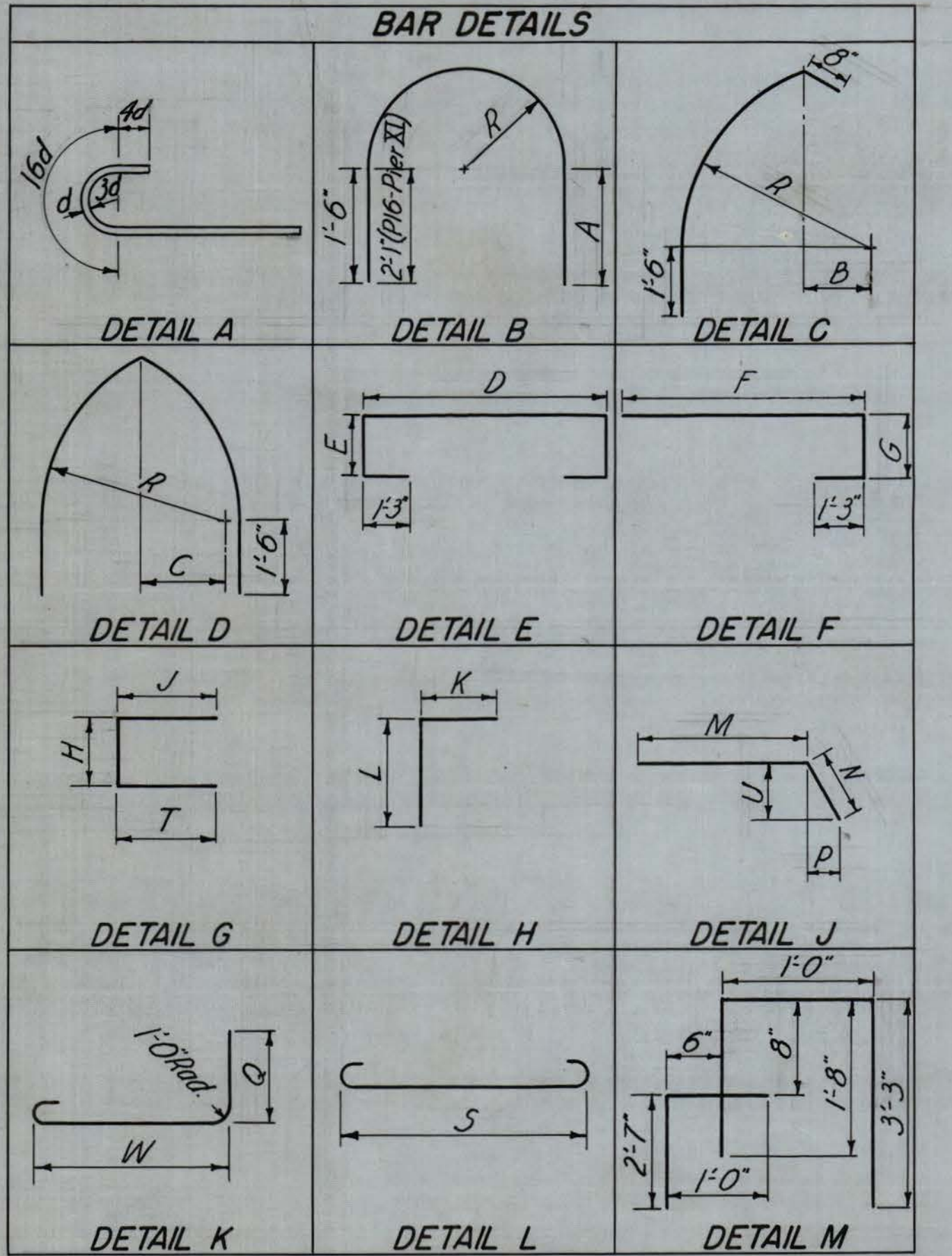
REINFORCING BAR SCHEDULE-PIER VIII			
Mark	No	Stock	Bend
F1	186	#6x6'-7"	Straight
P1	186	#6x2'-7"	do
P2	68	#6x28'-0"	See Detail H; K=27'-4"; L=8"
P2a	10	#6x28'-4"	See Detail H; K=27'-8"; L=8"
P3	78	#6x25'-0"	Straight
P4	30	#6x18'-0"	do
P5	16	#6x7'-6"	do
P6	86	#5x36'-4"	do
P6a	4	#6x36'-4"	do
P7	172	#5x22'-1"	do
P7a	8	#6x22'-1"	do
P8	116	#6x6'-7"	See Detail J; M=5'-0"; N=1'-7"; P=9 1/2"; U=1'-4 1/2"
P9	152	#5x9'-2 1/2" Avg	See Detail G; B=3'-0"; R varies 5'-11" to 6'-11 1/2" 12 ea vary by 1/8"; 8 @ R=7'-0 1/2"
P9a	2	#6x14'-6"	See Detail D; R=5'-8"; C=3'-0"
P9b	2	#6x12'-8 1/2"	See Detail D; R=5'-2"; C=3'-0"
P10	8	#5x11'-9" Avg	See Detail B; A=1'-6"; 4 @ R=2'-9 1/4"; 4 @ R=2'-9 3/4"
P10a	4	#6x13'-3 3/4"	See Detail B; A=1'-6"; R=3'-3"
P11	68	#6x5'-10"	See Detail H; K=3'-9"; L=2'-1"
P11a	10	#6x6'-3"	See Detail H; K=4'-2"; L=2'-1"
P12	68	#6x12'-0"	See Detail E; E=1'-6"; D=6'-6"
P12a	6	#6x10'-5" Avg	See Detail E; E=1'-6"; 2 @ D=6'-3"; 2 @ D=5'-4"; 2 @ D=5'-4"
P12b	10	#6x9'-3"	See Detail F; F=6'-6"; G=1'-6"
P12c	10	#6x4'-4"	See Detail F; F=1'-7"; G=1'-6"
P13	14	#6x27'-8" Avg	See Detail F; G=1'-6"; 6 @ F=25'-4"; 2 @ F=25'-7"; 2 @ F=24'-9"; 4 @ F=24'-3"
P14	7	#6x36'-4"	Straight
P15	14	#6x22'-6"	do
P15a	7	#6x36'-4"	do
P16	3	#6x4'-2"	do

REINFORCING BAR SCHEDULE-PIER IX			
Mark	No	Stock	Bend
F1	138	#6x6'-7"	Straight
P1	30	#6x17'-10"	do
P2	14	#6x5'-10 1/2" Avg	See Detail J; A @ M=3'-0"; N=1'-7"; U=1'-4 1/2"; P=9 1/2" 10 @ M=4'-10"
P3	18	#6x14'-9"	Straight
P4	246	#6x2'-7"	do
P5	108	#6x11'-1 1/2"	do
P6	200	#5x28'-0"	do
P6a	8	#6x28'-0"	do
P7	152	#5x9'-7 1/2" Avg	See Detail C; B=3'-0"; R=6'-1 1/2" to 7'-2 1/2" 12 ea vary by 1/8"; 8 @ R=7'-3 1/2"
P8	22	#5x11'-11 1/4" Avg	See Detail B; R=2'-9 1/2" to 2'-11 1/2"; 6 ea vary by 1/8"; 4 @ R=3'-0 1/2"; A=1'-6"
P8a	2	#5x12'-0"	See Detail D; R=4'-7"; C=3'-0"
P8b	2	#5x13'-4"	See Detail D; R=5'-3"; C=3'-0"
P8c	4	#6x13'-0"	See Detail B; R=3'-2 1/4"; A=1'-6"
P9	8	#6x9'-2 1/2"	See Detail F; F=6'-6"; G=1'-5 1/2"
P10	8	#6x4'-1 1/2"	See Detail F; F=1'-3"; G=1'-5 1/2"
P11	8	#6x33'-4"	See Detail F; F=30'-8"; G=1'-5"
P12	8	#6x32'-6"	See Detail F; F=29'-10"; G=1'-5"
P13	44	#6x11'-11"	See Detail E; D=6'-6"; E=1'-5 1/2"
P13a	8	#6x10'-4 1/2" Avg	See Detail E; E=1'-5 1/2"; 2 @ D=6'-5"; 2 @ D=6'-1" 2 @ D=5'-0"; 2 @ D=2'-4"

REINFORCING BAR SCHEDULE-PIER X			
Mark	No	Stock	Bend
F1	118	#6x6'-7"	Straight
P1	198	#6x2'-7"	do
P2	38	#6x24'-0"	do
P3	14	#6x4'-3 1/2" (Avg)	See detail J; N=1'-7"; P=9 1/2"; U=1'-4 1/2" 10 @ M=4'-10"; 4 @ M=3'-0"
P4	52	#6x29'-5"	Straight
P5	28	#6x24'-4"	do
P6	22	#6x25'-4"	do
P7	28	#6x6'-10"	do
P8	262	#5x19'-7"	do
P8a	4	#6x19'-9"	do
P8b	20	#6x15'-3"	do
P9	176	#5x11'-3 1/2" (Avg)	See Detail C; B=3'-6"; R=7'-6" to 8'-8 1/2"; 12 ea vary by 1/8"; 8 @ R=8'-9 3/4"
P9a	2	#5x15'-2 1/2" (Avg)	See Detail D; R=6'-3"; C=3'-6"
P9b	2	#5x12'-5 1/4"	See Detail D; R=5'-5"; C=3'-6"
P10	36	#5x14'-6" Avg	See Detail B; R=3'-5" to 3'-10 3/8" 6 ea vary by 1/8"; A=1'-6"

REINFORCING BAR SCHEDULE-PIER XI (CONT'D)			
Mark	No	Stock	Bend
P10a	10	#5x16'-8 1/2" Avg	See Detail B; 6 @ R=3'-3"; 4 @ R=3'-4 1/2"; A=4'-10"
P10b	4	#6x18'-1 1/2"	See Detail B; R=3'-9"; A=4'-10"
P11	10	#6x6'-0 1/2" Avg	See Detail E; 2 @ D=7'-6"; 2 @ D=7'-5"; 2 @ D=6'-10"; 2 @ D=5'-6 1/2"; 2 @ D=3'-0"; E=1'-5"
P12	28	#6x7'-0"	See Detail F; F=4'-4"; G=1'-5"
P13	30	#6x7'-0"	See Detail F; F=4'-3"; G=1'-6"
P14	8	#6x10'-2"	See Detail F; F=7'-6"; G=1'-5"
P15	8	#6x4'-3"	See Detail G; J=17'-5"; T=1'-3"
P16	6	#6x25'-3" (Avg)	See Detail F; 2 @ F=23'-6"; 2 @ F=22'-6"; 2 @ F=21'-9"; G=1'-5"
P16a	6	#6x10'-3 1/2" (Avg)	See Detail F; 2 @ F=8'-3"; 2 @ F=7'-9"; 2 @ F=6'-11"; G=1'-5"

REINFORCING BAR SCHEDULE-PIER XII			
Mark	No	Stock	Bend
F1	120	#6x6'-7"	Straight
P1	42	#6x26'-9"	do
P2	14	#6x6'-7"	See Detail J; M=5'-0"; N=1'-7"; U=1'-4 1/2"; P=9 1/2"
P3	22	#6x13'-2"	Straight
P4	270	#6x2'-7"	do
P5	62	#6x15'-10"	do
P6	36	#6x13'-0"	do
P7	36	#6x5'-3"	See Detail H; K=1'-0"; L=4'-3"
P8	292	#5x19'-8 1/2"	Straight
P9	188	#5x11'-9" (Avg)	See Detail C; R=7'-8" to 8'-11 1/2"; 12 ea vary by 1/8" 8 @ R=9'-0 1/2"; B=3'-6"
P9a	2	#5x15'-10"	See Detail D; R=6'-6"; C=3'-6"
P9b	2	#5x13'-2"	See Detail D; R=5'-8"; C=3'-6"
P10	50	#5x14'-6 1/2" (Avg)	See Detail B; R=3'-4" to 3'-11 1/2"; 6 ea vary by 1/8"; 2 @ R=4'-0 1/2"; A=1'-6"
P10a	4	#5x12'-3"	See Detail B; R=3'-3"; A=6"
P11	8	#6x25'-10 1/2" Avg	See Detail E; 6 @ F=23'-5 1/2"; 2 @ 22'-9"; G=1'-4"
P11a	2	#6x6'-1"	See Detail F; F=3'-6"; G=1'-4"
P12	20	#6x19'-2 1/2"	Straight
P13	36	#6x7'-8"	See Detail F; F=5'-0"; G=1'-5"
P14	38	#6x7'-6"	See Detail F; F=4'-10"; G=1'-5"
P15	8	#5x10'-1 1/2" (Avg)	See Detail E; 2 @ D=2'-9"; 2 @ D=5'-6"; 2 @ D=6'-10"; 2 @ D=7'-5"; E=1'-5"
P16	4	#6x14'-1"	See Detail B; R=3'-8 1/2"; A=6"



TYPES OF CAST IN PLACE CONCRETE PILES

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**REINFORCING SCHEDULE & CONCRETE PILES**

SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS  
 OCTOBER, 1952

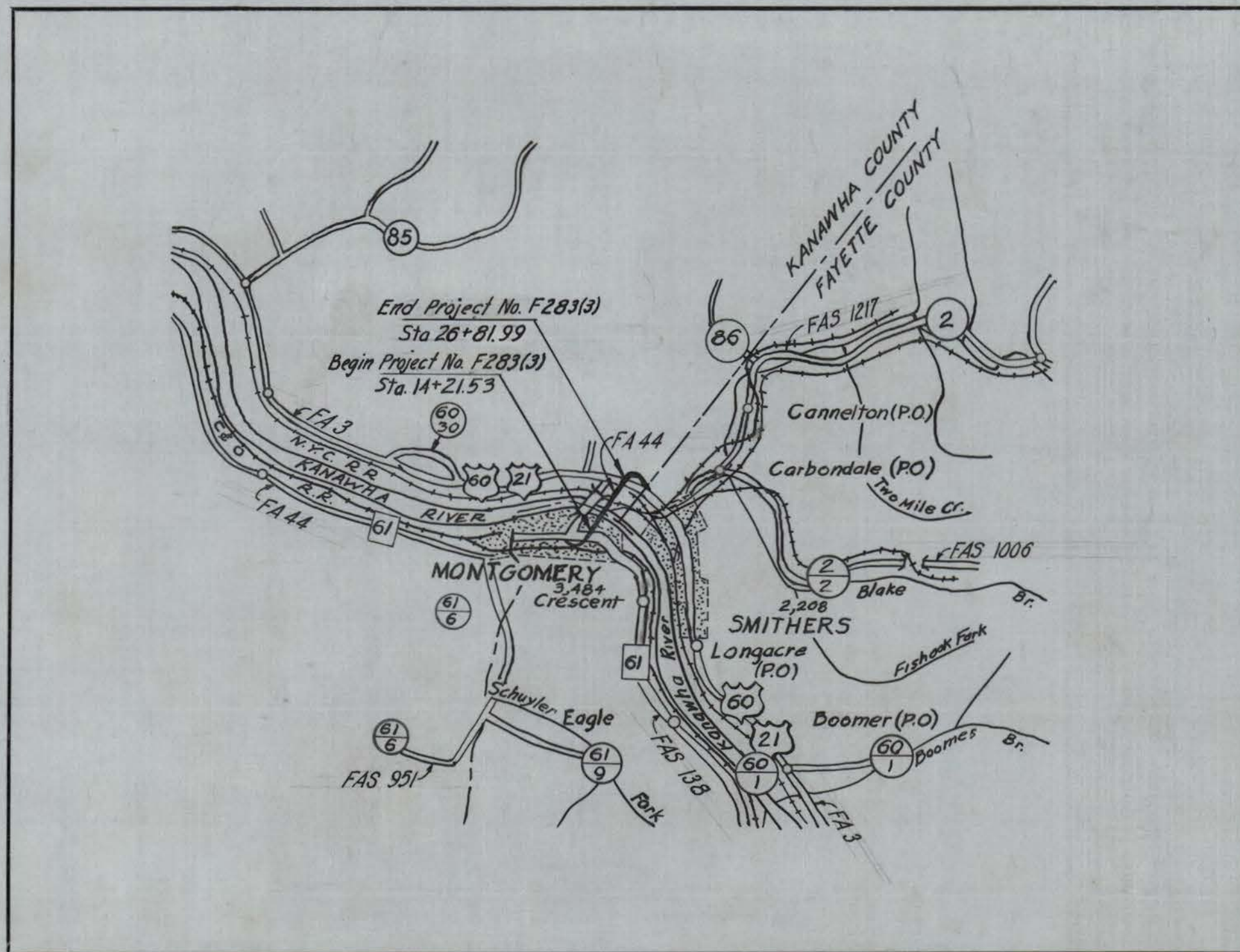
Revised Oct. 27, 1952

CONTRACT NO. 1

Sheet 10 of 10

1899





SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

**THE STATE ROAD COMMISSION  
OF WEST VIRGINIA**

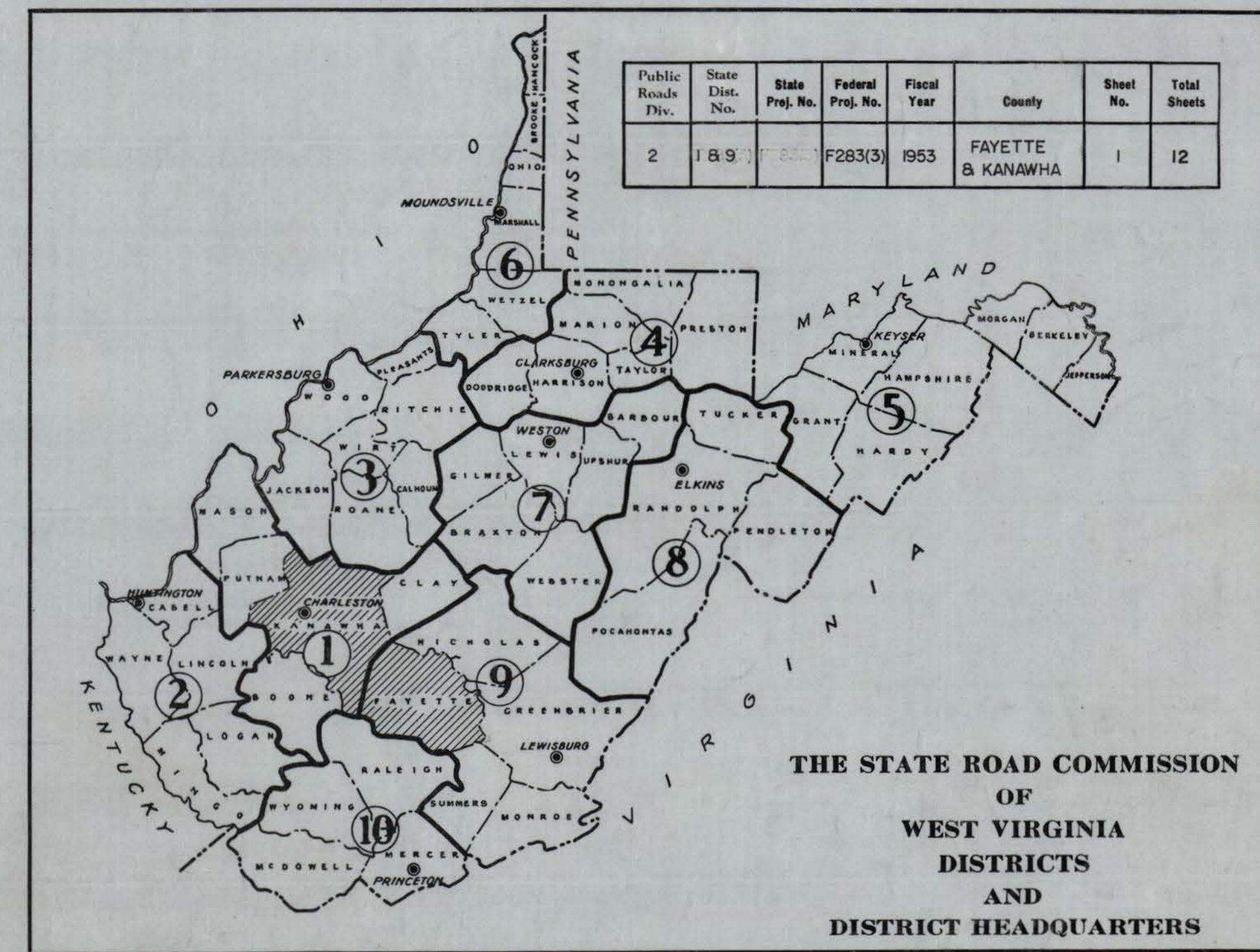
**PLAN AND PROFILE FOR CONSTRUCTION  
OF**

**STATE ROAD  
PROJECT NO. F 283 (3)  
ROUTE NO. W. VA. 6**

**CABIN CREEK DISTRICT KANAWHA COUNTY  
KANAWHA FAYETTE  
MONTGOMERY BRIDGE #1899**

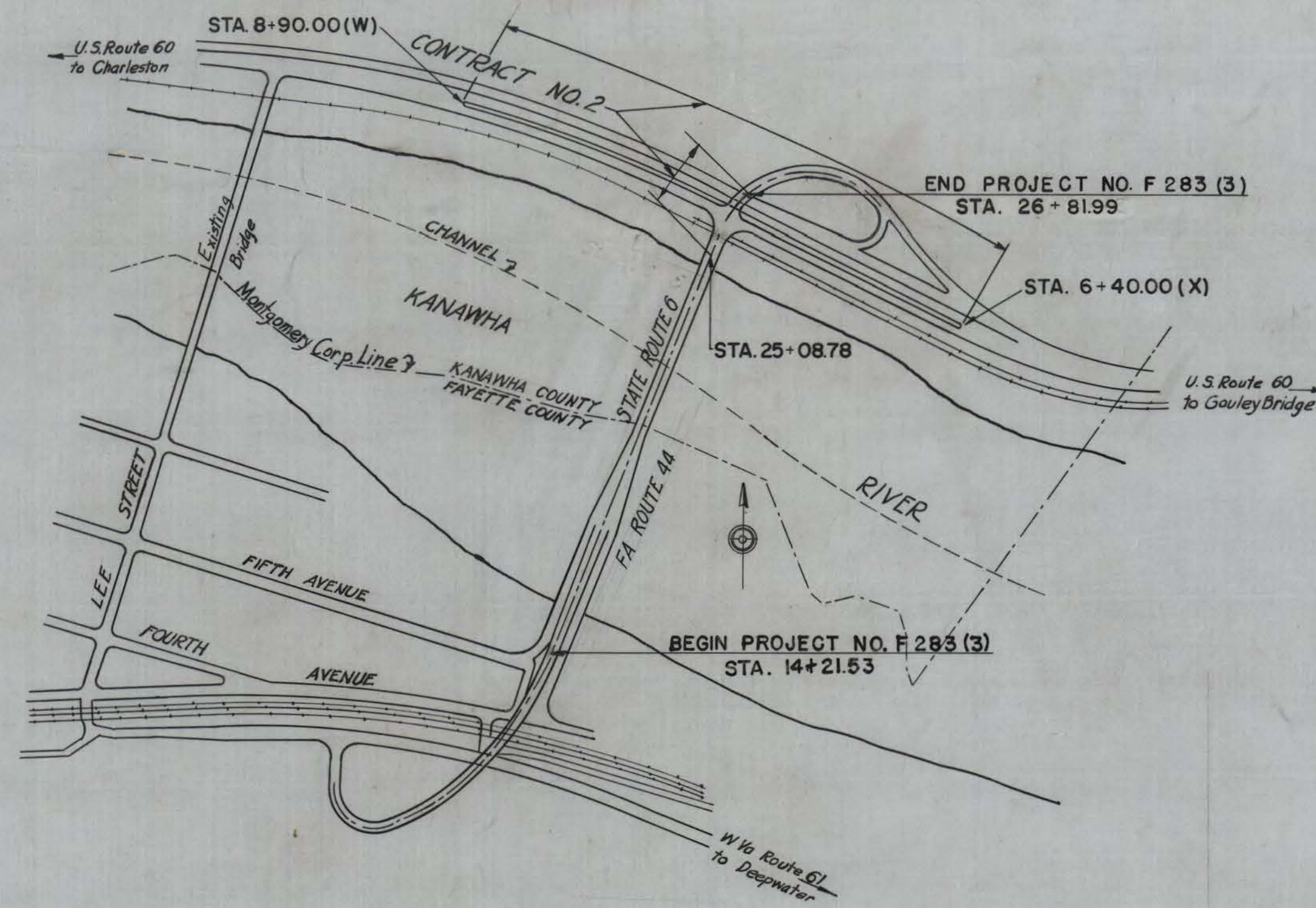
Sta. 14+21.53 To Sta. 26+81.99  
Length = 0.239 Mi. = 1260.46 Ft.

Plan 1 IN. =  
(AS SHOWN)  
PROFILE HOR. 1 IN. = VERT. 1 IN. =  
CONTRACT NO. 1 STA. 14+21.53 TO STA. 24+01.78  
CONTRACT NO. 2 STA. 25+08.78 TO STA. 26+81.99



**TYPE OF CONSTRUCTION  
BRIDGE SUBSTRUCTURE CONTRACT NO. 2**

APPROACH PIERS - STAGE 1



**LAYOUT  
SCALE 1 IN. = 300 FT.**

**CONVENTIONAL SIGNS**

- State Line
- County Line
- Corporation Line
- District Line
- Right of Way Line
- Property Line
- Fence Line
- Guard Rail
- Proposed Road
- Traveled Road
- Railroad
- Electric Railway
- Frame Dwelling
- Wall
- Marsh
- Hedge
- Drop Inlet
- Bridge
- Present Culvert
- Proposed
- Telegraph Pole
- Trolley Pole
- Power Pole
- Tree
- Brick Dwelling

NO.	DESCRIPTION
1	Title & Layout
1A	Situation Plan
1B	Borings 14 to 24
2	General Plan & Elevations
3	General Notes & Estimated Quantities
4	Pier XII
5	Pier XIII
6	Pier XIV
7	North Abutment
8	Ramp Piers
9	Ramp Abutments
10	Pier Bar Schedules
11	Retaining Walls (Use a/sa for Floor & Walling, Proj F 283(10), Cont #1)
12	Retaining Wall Bar Schedules

PLANS COMPLETED DECEMBER 1953

**ROUTE NO. W.VA. 6  
PROJECT NO. F 283 (3)**

PREPARED & RECOMMENDED  
*James J. Demison*  
BRIDGE ENGINEER - STATE ROAD COMMISSION

REVIEWED  
*Benjamin D. Jones*  
STATE CONSTRUCTION ENGINEER - STATE ROAD COMMISSION

APPROVED  
*H. H. Griffith*  
STATE ROAD COMMISSIONER

Paul H. 1954  
I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT F 283 (3)

APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED 20th DAY OF June 19 54

PREPARED AND RECOMMENDED BY  
**MODJESKI & MASTERS**  
CONSULTING ENGINEERS

*John R. Jones*

RECOMMENDED FOR THE PROJECT  
F-283 (3) Cont #2

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

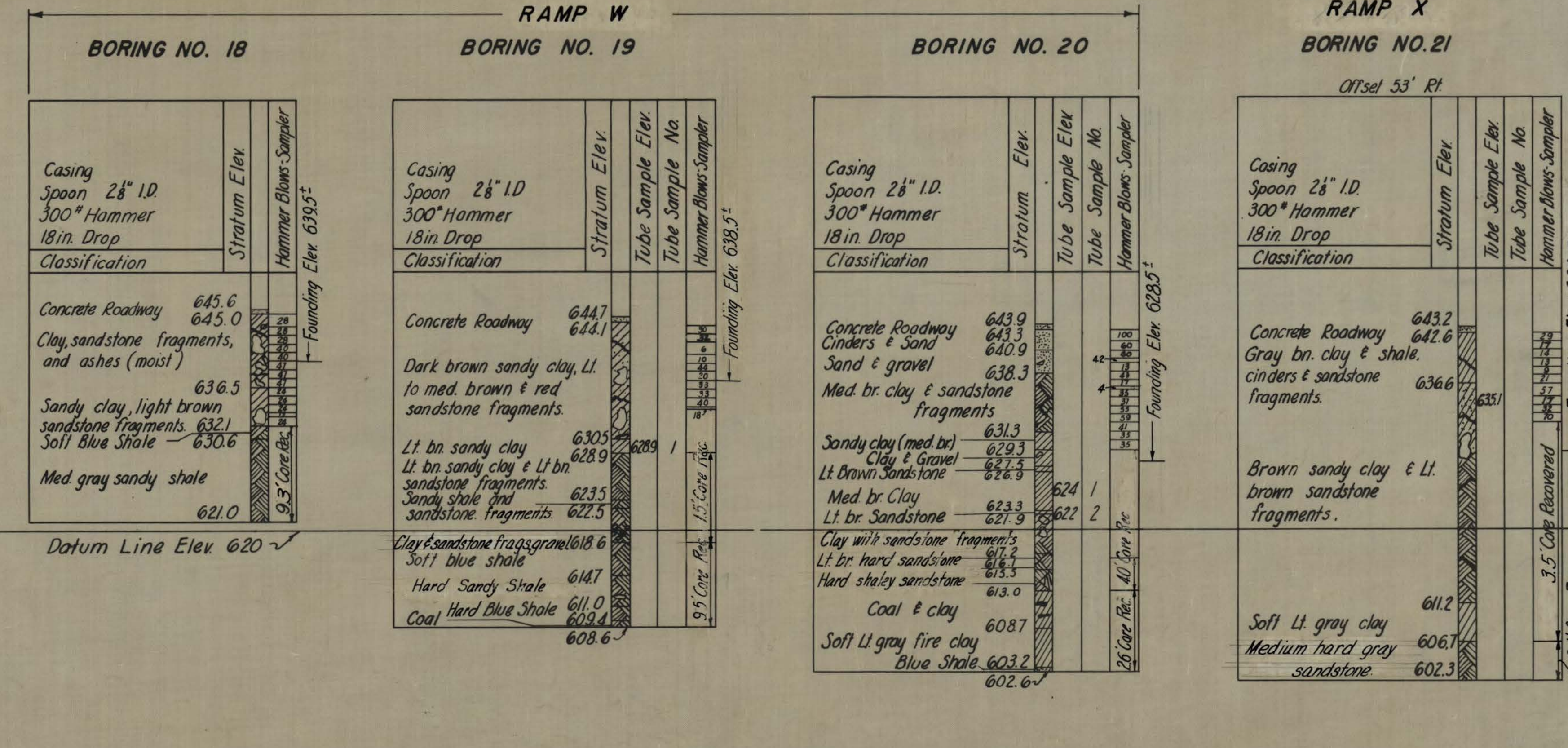
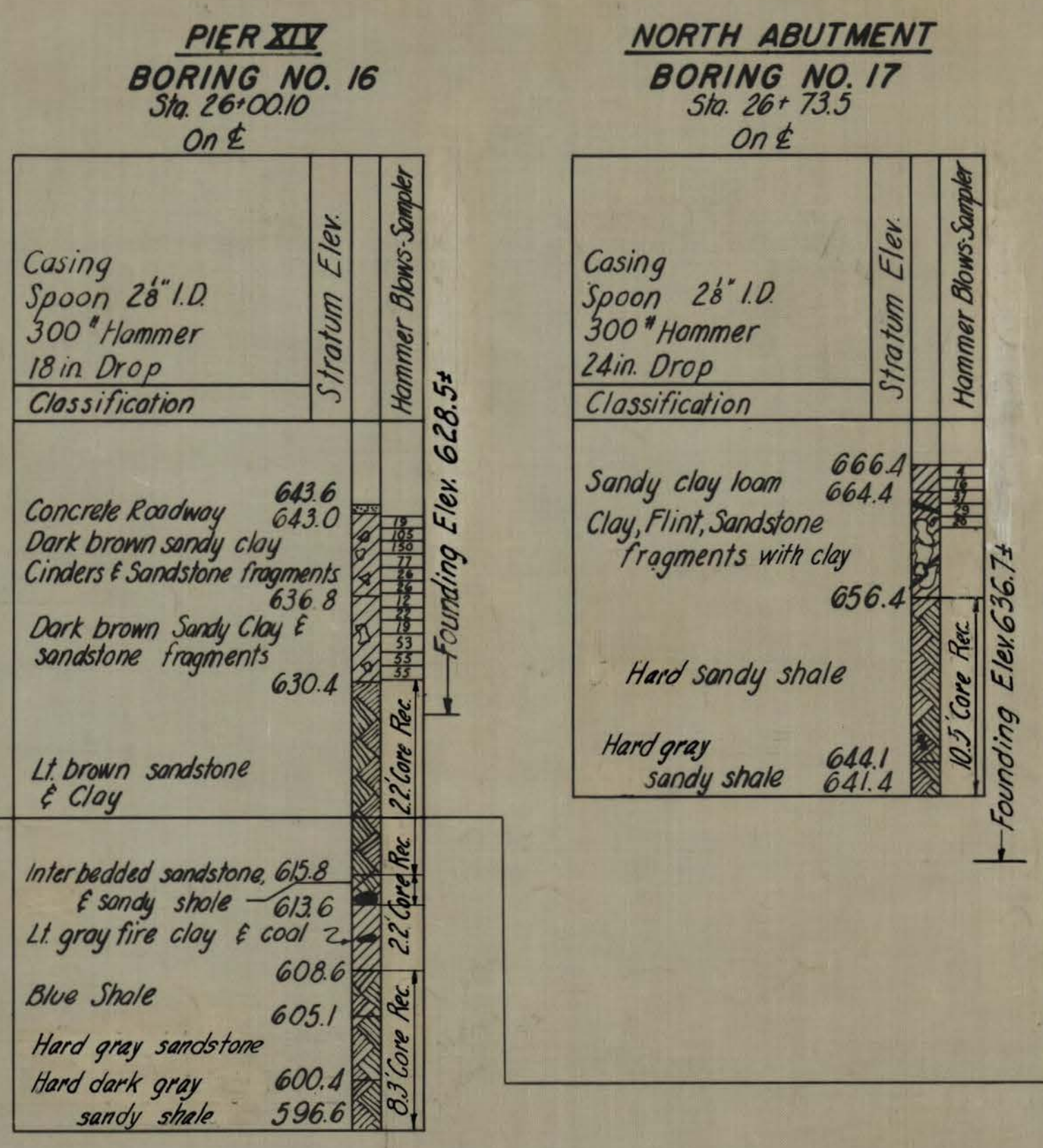
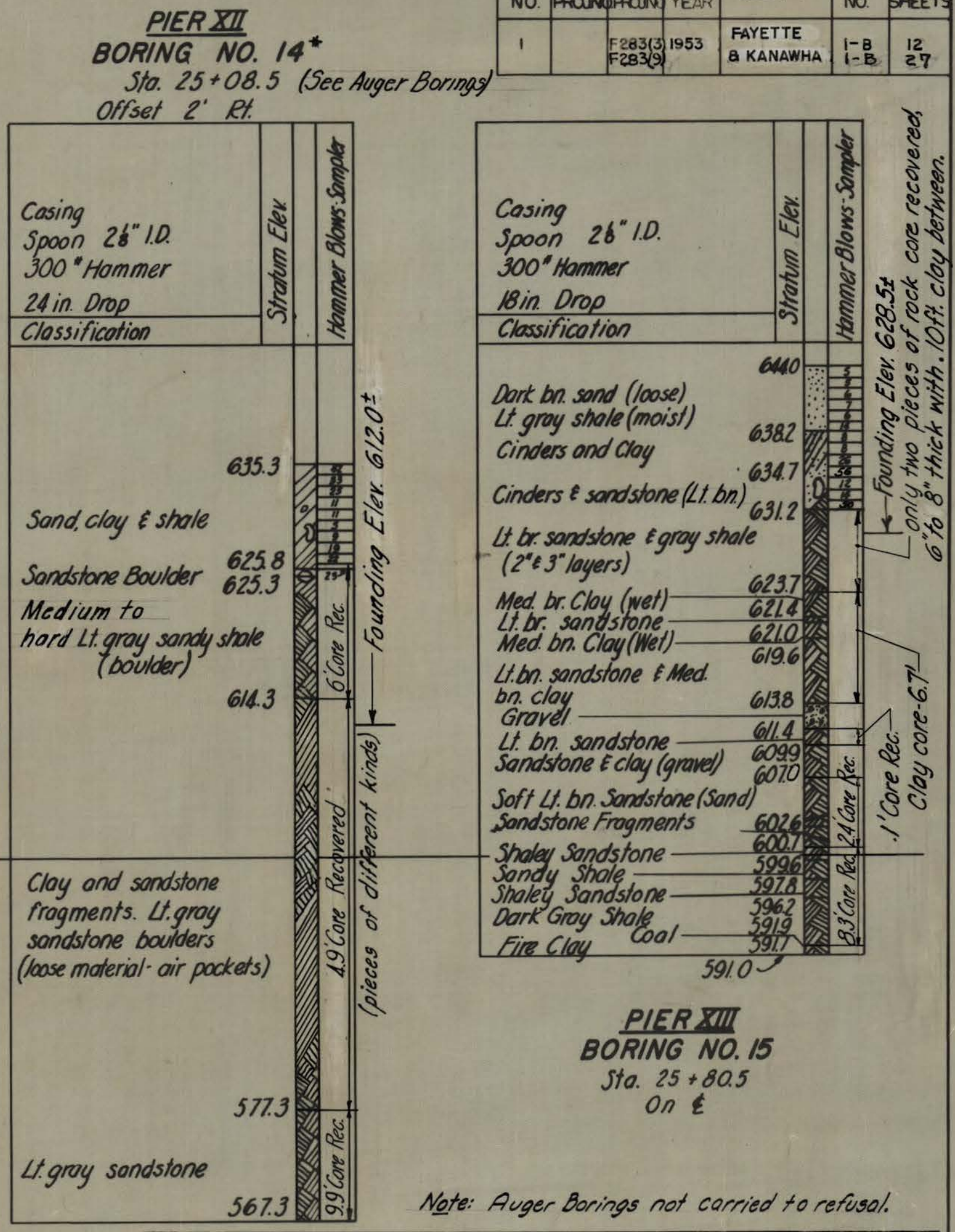
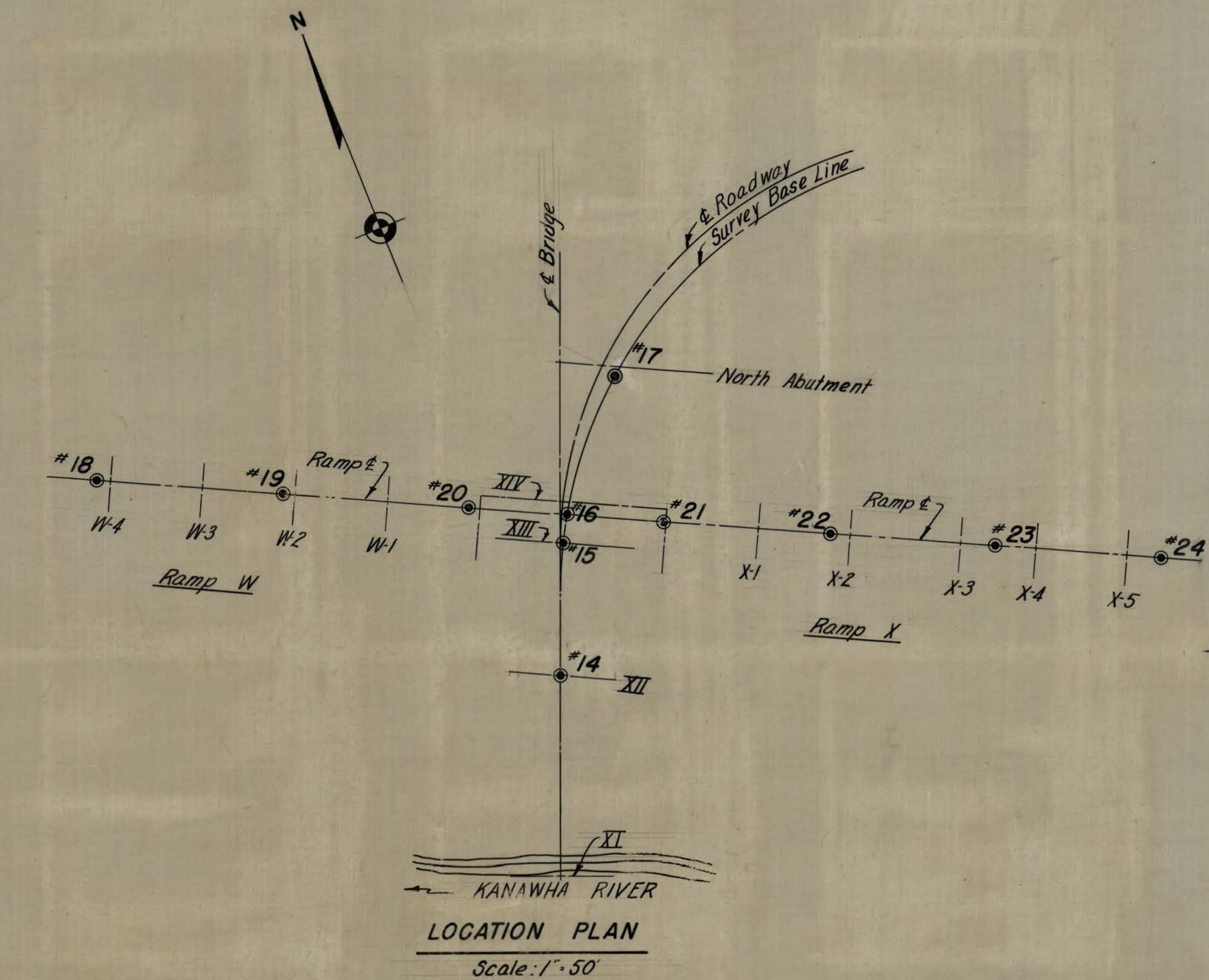
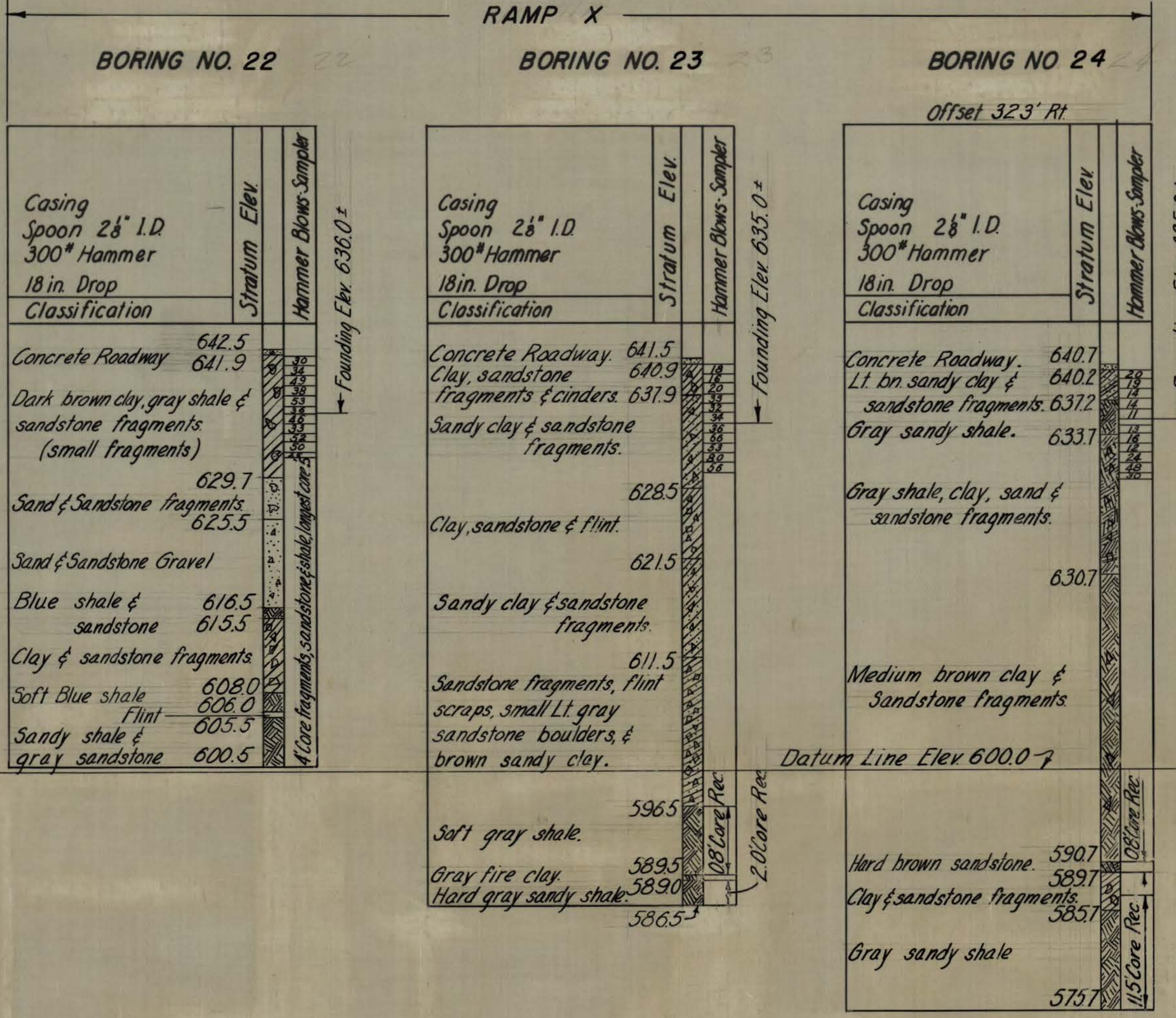
DISTRICT ENGINEER  
BUREAU OF PUBLIC ROADS  
DEPARTMENT OF COMMERCE

F-283 (3)

DWG. #1

#1899





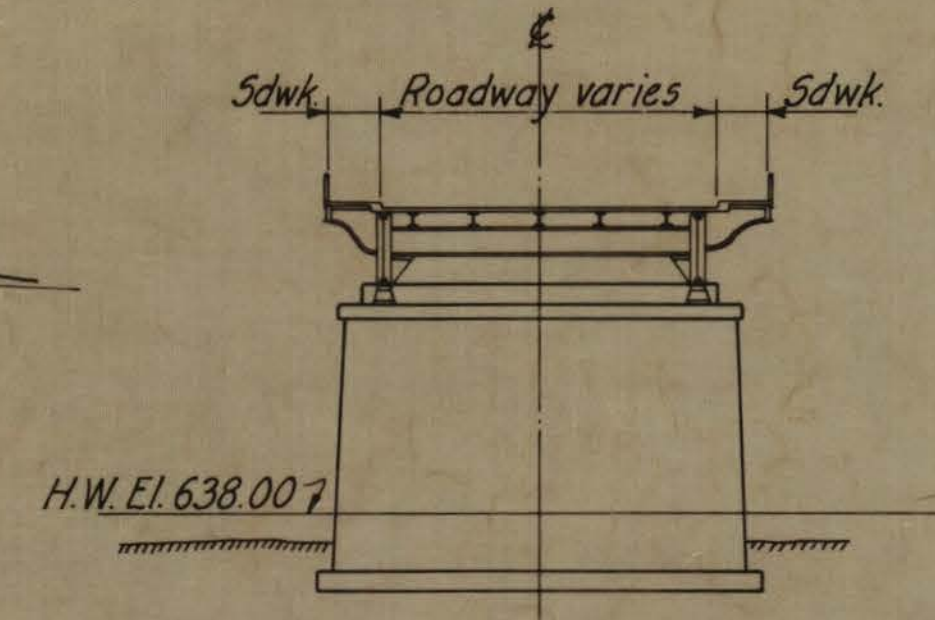
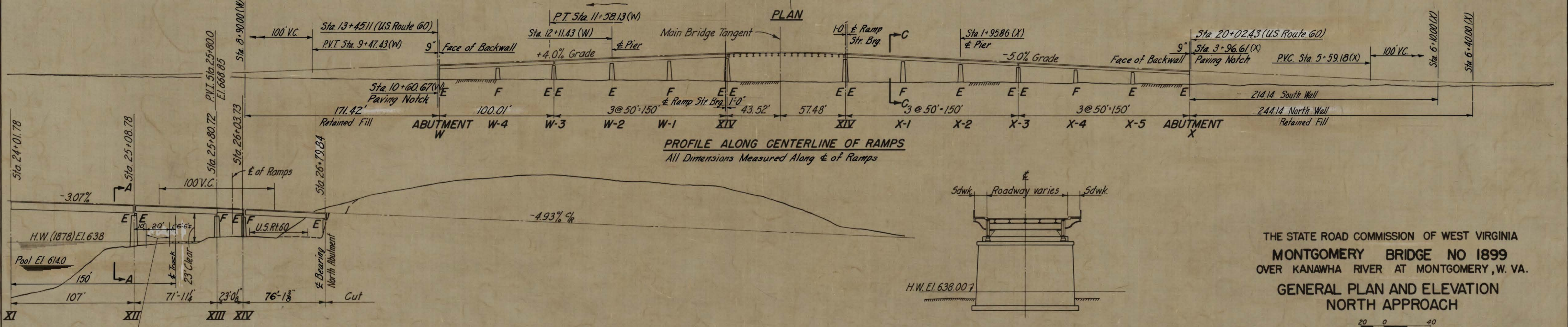
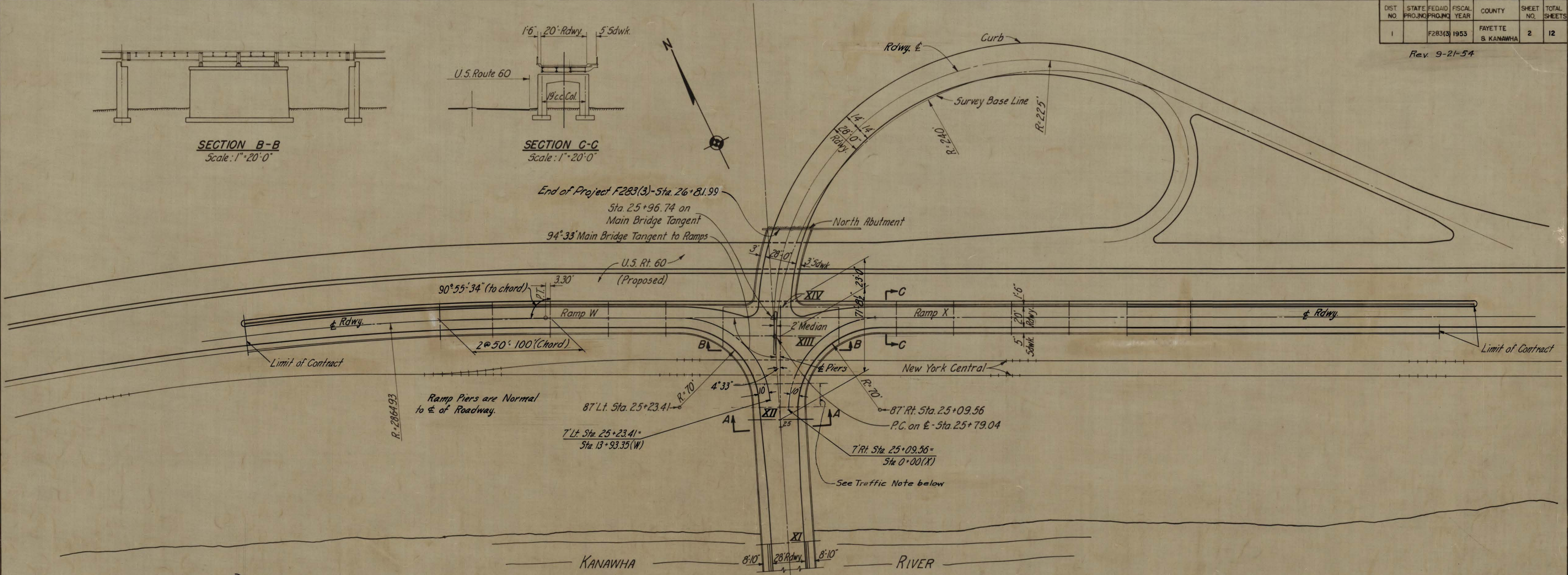
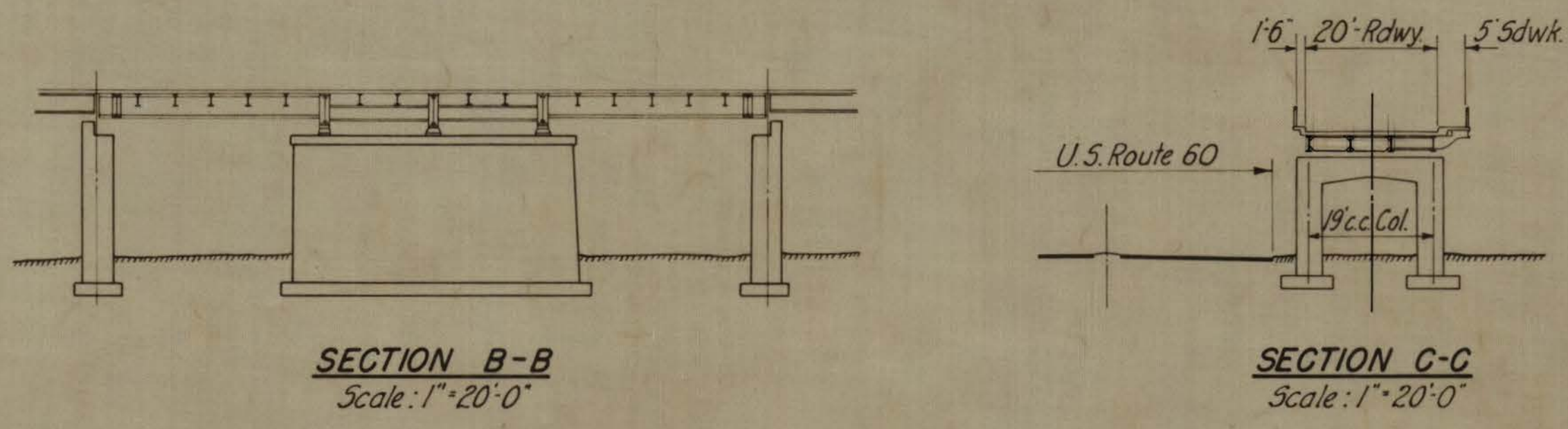
**\* ADDITIONAL AUGER BORINGS AT PIER XII**

Elevations	Description of Material
Station 25+07 on centerline	
635.3 to 645.3	Rock fill - not solid - has voids - very loose - no recovery
645.3 to 600.3	Soil with very few boulders - Lost augers in hole.
Station 25+31 on centerline	
638.5 to 621.5	Brown clay with a few boulders - soft - damp only
621.5 to 618.5	Gray clay - very soft - beyond PL.
618.5 to 613.5	Brown clay beyond PL. - growing firmer and dryer - orig. land
613.5 to 606.5	Brown clay - near PL. - soft yet but firmer
606.5 to 604.0	Sandstone - may be boulder - broke Kelly Bar.
Station 25+15 17' left of centerline	
637.0 to 632.0	Small boulders - shale fragments
632.0 to 627.0	Brown clay - soft - no boulders
627.0 to 617.5	Dark brown clay - soft - 3 small boulders
617.5 to 612.0	Light brown clay loam with few rock fragments - no boulders - clay is soft - beyond PL. - may be original ground
612.0 to 607.0	Light brown clay - soft - PL. - no rock
Station 25+08 10' left of centerline	
635.3 to 625.8	Rock fill - small shale boulders - some dark brown clay.
625.8 to 623.8	One boulder - largest encountered in these holes.
623.8 to 619.3	Small boulders of shale
619.3 to 605.3	No recovery due to loose fill above - no rock - soft cutting clay
Station 25+15 16' right of centerline	
637.0 to 626.0	Brown clay with small boulders - dry - loosely packed.
626.0 to 618.0	Brown clay - very little rock - soft - near PL. - Dark.
618.0 to 612.0	Dark brown clay - soft - beyond PL.
612.0 to 607.0	Light brown clay loam - firm - damp - probably original ground.

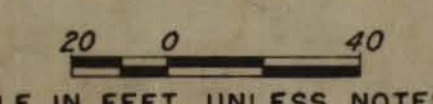


DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1	F283(3)	1953	FAYETTE	B. KANAWHA	2	12

Rev 9-21-54



THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
GENERAL PLAN AND ELEVATION  
NORTH APPROACH



Note: Traffic is to be maintained in this space, by others. This Contractor is not to interfere with the maintenance of this traffic.

Sub

CONTRACT NO. 2

DWG. #2

\*1899



**GOVERNING SPECIFICATION**

Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia, 1952 (Approved by B.P.R. - January 2, 1953) except as noted and except that the design is to be in accordance with American Association of the State Highway Officials Specifications of 1949 except as noted.

Designed for H 20-S16-44 Live Load.  
Required Contract Provision for projects financed with Federal Funds, dated July 28, 1948 approved by Bureau of Public Roads October 22, 1948.

3% Transportation Tax  
Labor rates for Kanawha County for Proj. F283(3)

**GENERAL NOTES**

**Waterproofing**

The tops of the rear footings and the rear faces of the North Abutment wall, both Ramp Abutment walls and the Retaining Walls for the Ramps shall have Membrane Waterproofing without Protection Course. Membrane Waterproofing shall extend to within one foot of the finished ground elevation.

**Expansion Joints**

The preformed expansion joint filler called for on the plans shall be in accordance with section 38.2.

**Grillages and Anchor Bolts**

The Contractor shall assemble complete in the shop all structural grillages to be embedded in concrete with the bearing plates and supporting structural shapes accurately fitted before drilling or reaming rivet holes to final size.

Center lines of bearings and centerlines of grillages shall be scribed and marked with prick punch marks for use of the Contractor in setting grillages in the field.

The Contractor shall furnish copies of the match marking diagrams to the Engineer for his use in the field in checking the accurate placement of metalwork.

The top surfaces of steel bearing slabs shall be planed in the shop after assembly of the grillages.

The Contractor shall accurately set all bearing grillages and anchor bolts as indicated on the plans on satisfactory concrete or metal supports, at the correct elevation and alignment, securely braced against displacement during the pouring of the embedding concrete.

Metal templates showing the spacing of anchor bolts shall be delivered to the superstructure Contractor as directed by the Engineer.

The Contractor shall be wholly responsible for the accurate placement of grillages and anchor bolts and any variation from the finished position as indicated on the plans shall be corrected by the Contractor at his sole expense and in a manner satisfactory to the Engineer. Leveling nuts shall be provided on the Anchor bolts as indicated on the plans, for accurate adjustment of steel grillages to level and elevation prior to placing concrete encasement.

**Payment For Excavation**

All excavation is "Structure Excavation," "Wet Excavation" or "Rock Excavation," except for excavation in the vicinity of the North Abutment to the lines and slopes indicated on the plans as "Roadway Excavation" required for the relocation of U.S. Route #60. Roadway Excavation will be included and paid for under another Contract.

**GENERAL NOTES FOR CONCRETE AND REINFORCING**

**Classes of Concrete**

All concrete shall be Class "A," except in footings of Pier XIV and all concrete in Piers XII and XIII, which shall be Class "B." All concrete shall be placed in the dry.

**Cement**

Cement shall be Type 1 or Type 2 AASHO-M85-49 or Type 1S AASHO M151-51.

**Construction Joints**

Construction joints other than those shown shall be made only as directed or approved by the Engineer. Suitable and adequate keys shall be used at construction joints. See section 2.71-733.

**Reinforcing Bars**

Reinforcing steel may be structural or intermediate grade billet steel and shall conform to section 391 of the Standard Specifications, or rail steel bars in accordance with Art. 392 of the Standard Specifications.

The length of bars shown in the bill of steel are based on the lengths for billet steel and the amount paid for will be based on these lengths. Where additional lengths of bars are required on account of larger bends, for rail steel, the additional lengths are to be furnished by the contractor without extra cost to the State.

**Bar Splices and Clearances**

Unless otherwise shown on the plans all bars shall be lapped 25 diameters. Bars shall be 3 inches clear from the face of concrete.

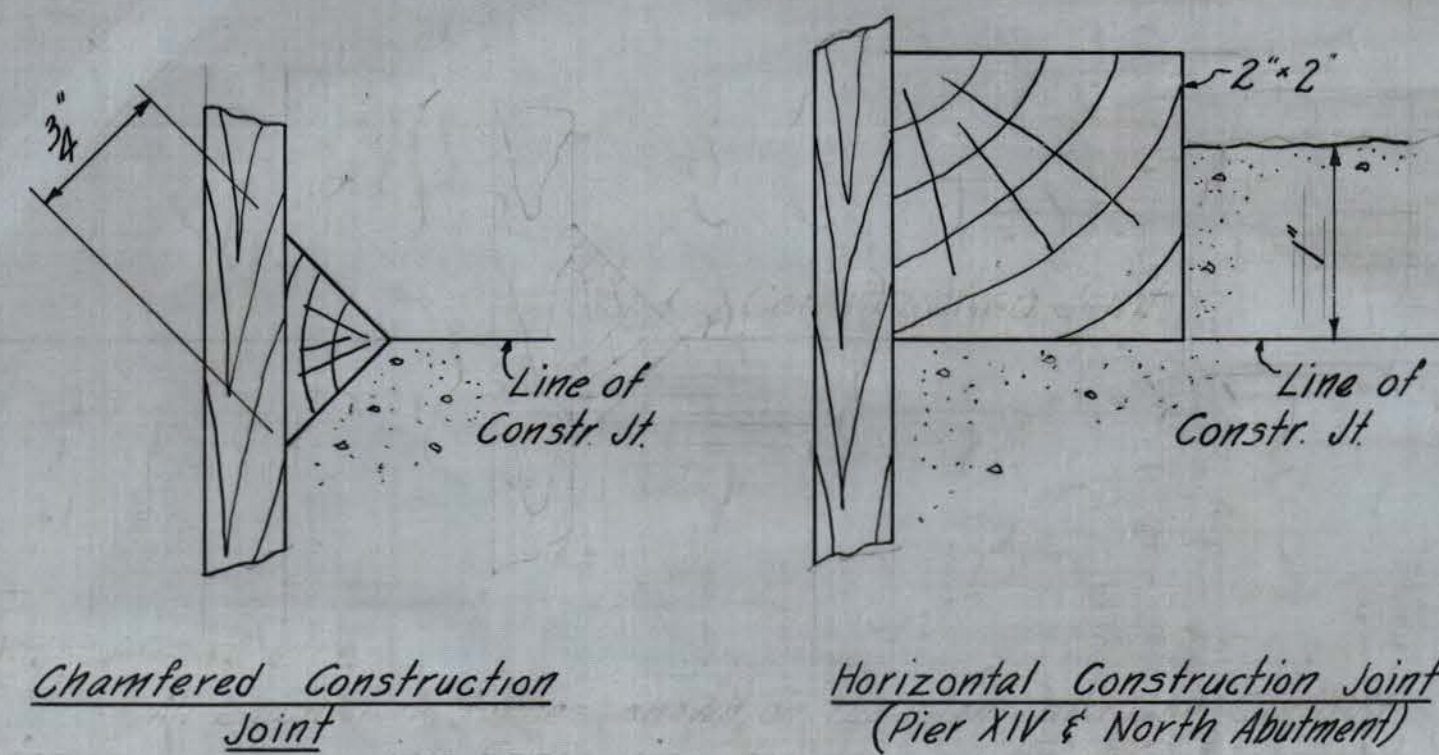
**Tests**

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

**Chamfer**

A 3/4" Chamfer strip shall be used on all exposed edges of concrete except where other size chamfer strips are specified. See Section 2.71-733. Unless otherwise approved the edges of all vertical construction or expansion joints shall be chamfered. Edges of horizontal joints shall not be chamfered on Pier XIV and the North Abutment.

All construction joints shall conform to the following details:



Joint shall be made by placing and vibrating concrete to 1" above straight bottom edge of a 2"x2" timber set carefully to elevation and attached to the forms to give a straight joint line, and then removing the 2"x2" before the next pour.

**Shop Drawings**

Shop drawings to be in ink on tracing cloth or in pencil on special prepared cloth laquered after completion.

**Excavation**

Elevation @14.0 will be considered as low water for classification of excavation. Excavation for Pier XII has been figured and included in the item for "Structure Excavation" and "Wet Excavation." Boulders encountered will be paid for in accordance with the "Standard Specifications."

**Construction Schedule**

Begin construction of Pier XII promptly upon award of contract and carry this pier to completion as rapidly as possible.

Construction of remaining sub-structure shall be coordinated with the grading contractor for Proj. FI 263 (15)

**Traffic**

For traffic see sheet 2

Construction of Pier XII shall be the first operation for this Contract

DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (3)	1953	FAYETTE & KANAWHA	3	12

Rev. 9-21-54  
Rev. 10-21-54  
Rev. 5-16-56

Pier No.	Max. Gross. Dead Load Pressure Tons/Sq. Ft.	Pressure of Existing Earth Tons/Sq. Ft.	Net Additional Dead Load Pressure Tons/Sq. Ft.	Live Load Pressure Tons/Sq. Ft.	Net Additional Dead + Live Pressure Tons/Sq. Ft.
XII	2.81	1.11	1.70	0.13	1.83
XIII	2.29	0.75	1.54	0.30	1.84
XIV	2.23	0.73	1.50	0.40	1.90
North Abutment	2.21	0.25	1.96	0.23	2.19
Ramp Abutments	1.64	0.20	1.38	0.23	1.61
Ramp Piers	1.46	0.25	1.21	0.85	2.06

At Pedestal  
Abutment X  
Pier X-1

**SUMMARY**

Pier No.	Reinforcing Steel - lbs.										Concrete - C.Y.	
	4	5	6	7	8	9	10	11	Total	Class A	Class B	
XII		4418	10086						14504		572	
XIII		2806	6069						8875		262	
XIV		12580	25559						38139	524	118	
N. Abutment		8683	4703	1062		2500	2144	15966	35058	239		
Abutment X		2688	616	1720					5024	74		
Abutment W		2698	616	1703					5017	75		
X-1	318	970	1110	416	481	1163			4458	46		
X-2	314	909	986	402	481	1163			4255	44		
X-3	314	817	850	385	481	1163			4010	39		
X-4	314	787	788	377	481	1163			3910	41		
X-5	314	695	664	362	481	1163			3679	37		
W-1	314	940	1040	408	481	1163			4346	45		
W-2	314	879	940	396	481	1163			4173	43		
W-3	314	787	790	378	481	1163			3913	39		
W-4	314	726	693	365	494	1163			3755	37		
X Ret. Walls		34471		16054					50525	490		
W Ret. Walls		26575		12005					38580	376		
Total	2830	102429	55510	36033	4342	12,967	2144	15,966	232,221	2149	952	

**ESTIMATED QUANTITIES**

Item	Description	Quantities	Unit	As Built
6A	Structure Excavation	4404	Cu. Yds.	4,146.40
6B	Rock Excavation	672	Cu. Yds.	1,149.58
6C	Wet Excavation	70	Cu. Yds.	70.37
71-B	Class A Concrete in Substructure	2149	Cu. Yds.	2,321.46
72	Class B Concrete	952	Cu. Yds.	964.30
78	Reinforcing Steel Bars	235,052	Lbs.	235,966.20
87	Membrane Waterproofing without Protection Course	1335	Sq. Yds.	1,011.00
92	Fabricated Structural Steel			
	Anchor Bolts	2762	Lbs.	
	Grillages	6285	Lbs.	
	Expansion Dams	3843	Lbs.	
		12,890	Lbs.	
			Lump Sum	100%

Force account #1, unstable footing in abutment W, necessitated piling being driven in south side of footer, (9 piles drove, length of piles varies 15'-2" max. 7'-0" min.)  
Force account #2, grinding bearing surfaces on ramp piers, to correct elevation and setting shims at low elevation, to correct error in setting grades, or in forms.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**GENERAL NOTES AND ESTIMATED QUANTITIES**

MODJESKI & MASTERS, ENGINEERS DWG. # 3

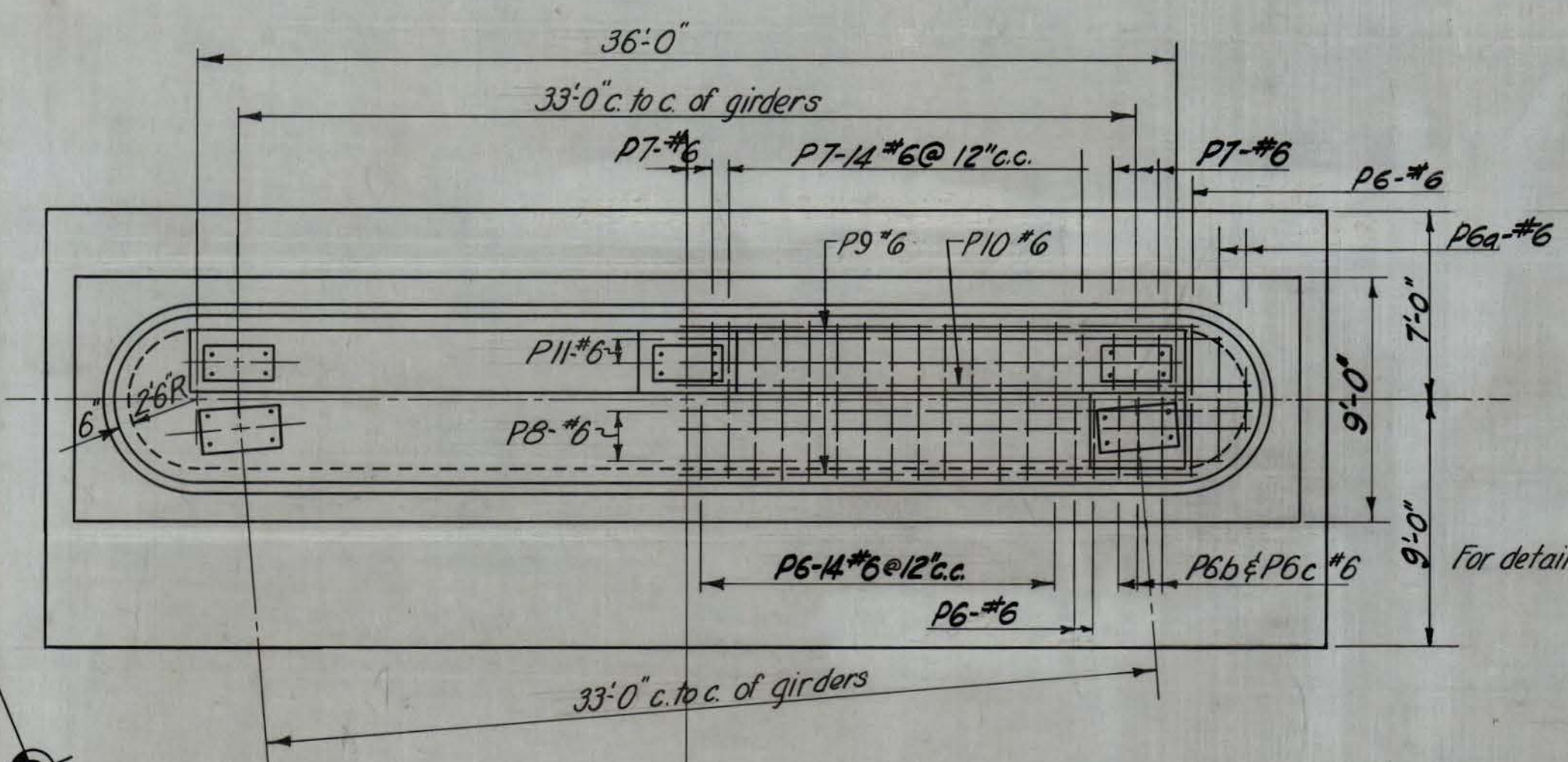
CONTRACT NO. 2

#1899

As Built

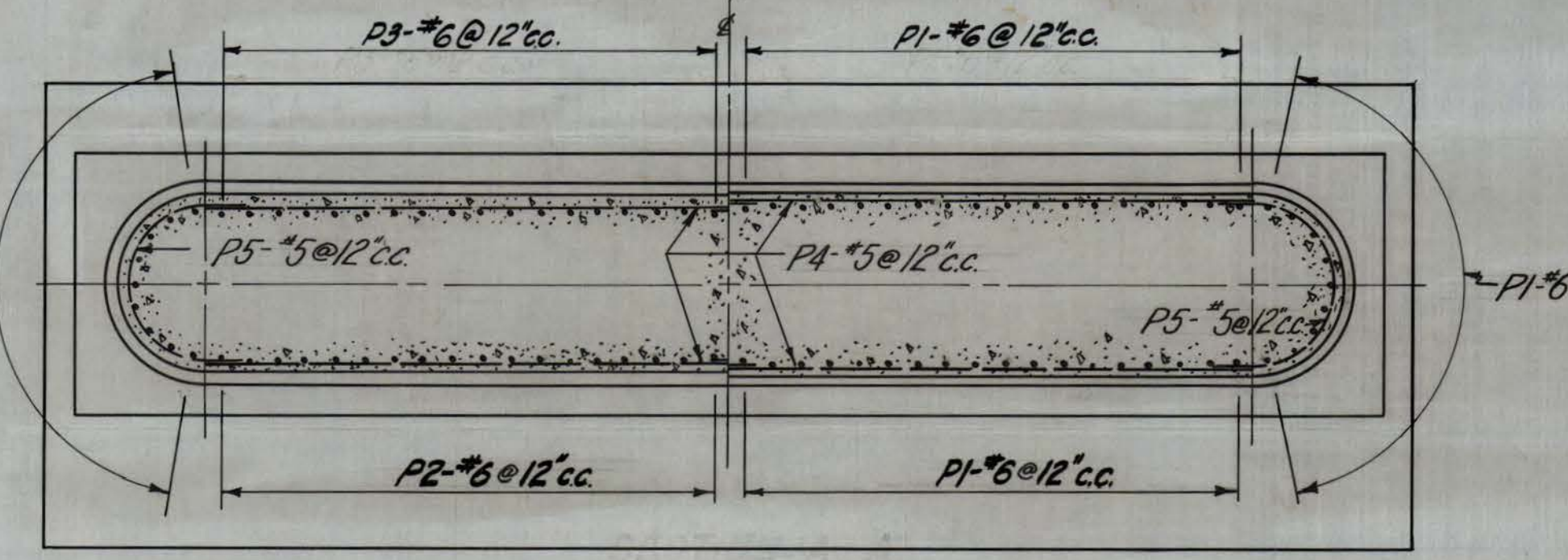


DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (3)	1953	FAYETTE & KANAWHA	4	12

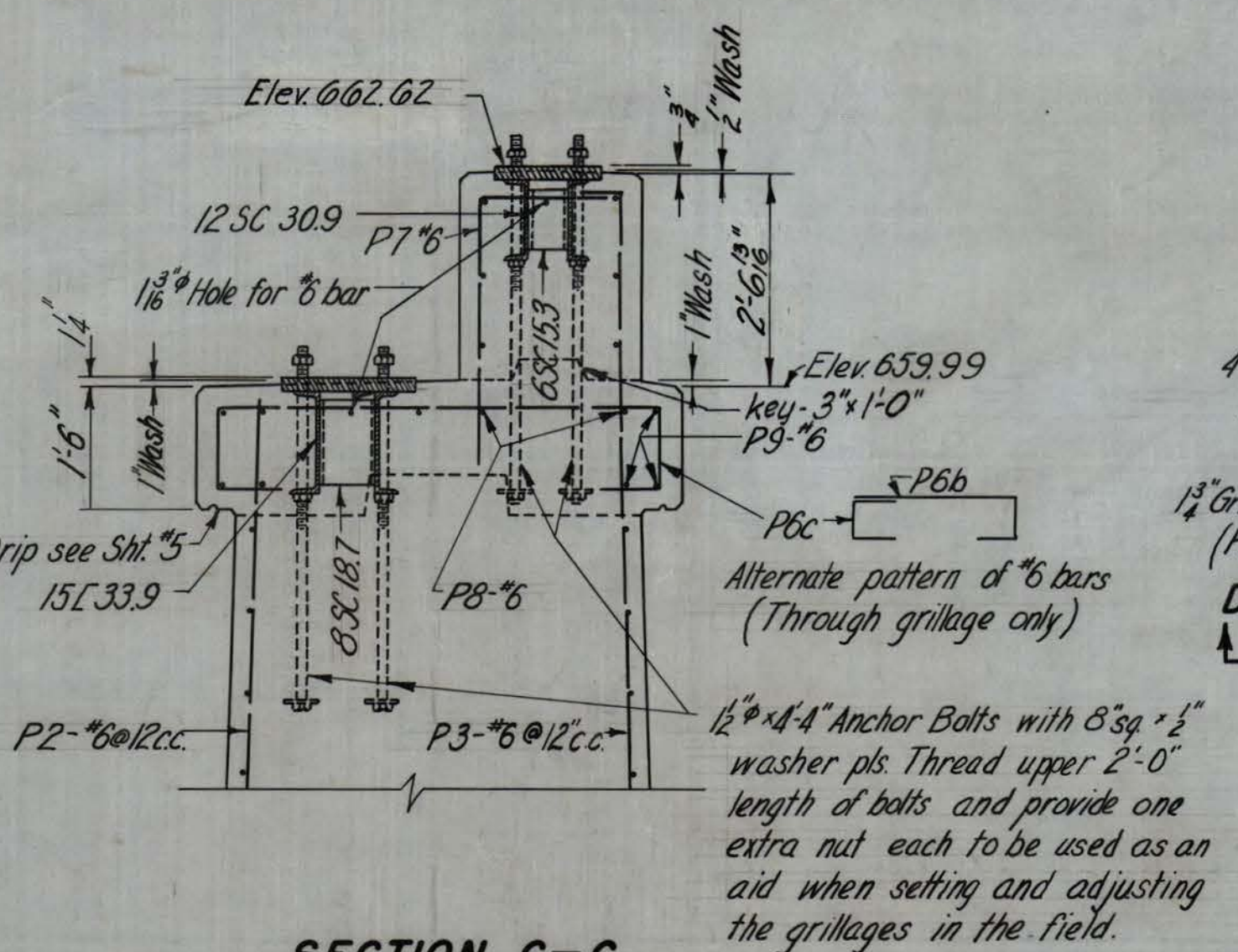


**PLAN**

Reinforcing Steel symmetrical about  $\pm$  Pier

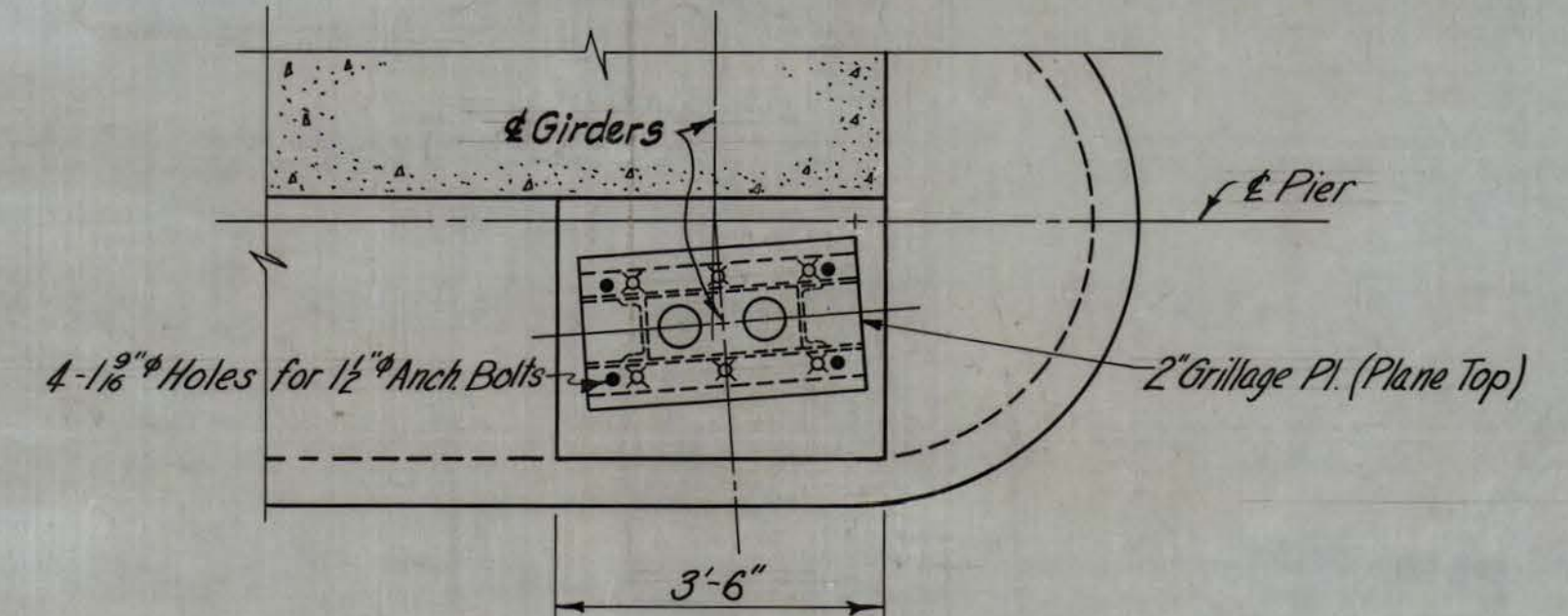


**SECTION A-A**



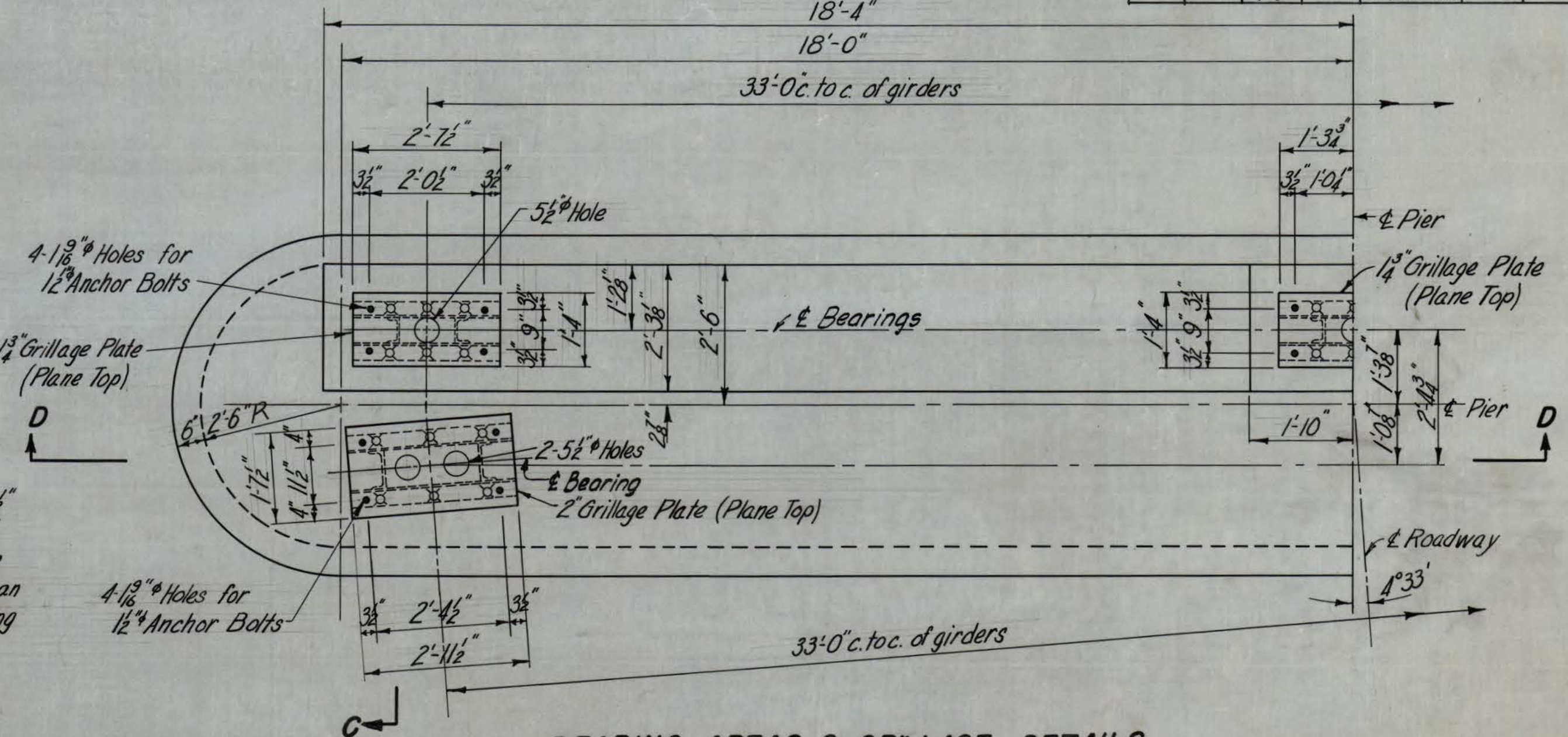
**SECTION C-C**

Scale:  $\frac{1}{2}$ "-1'-0"



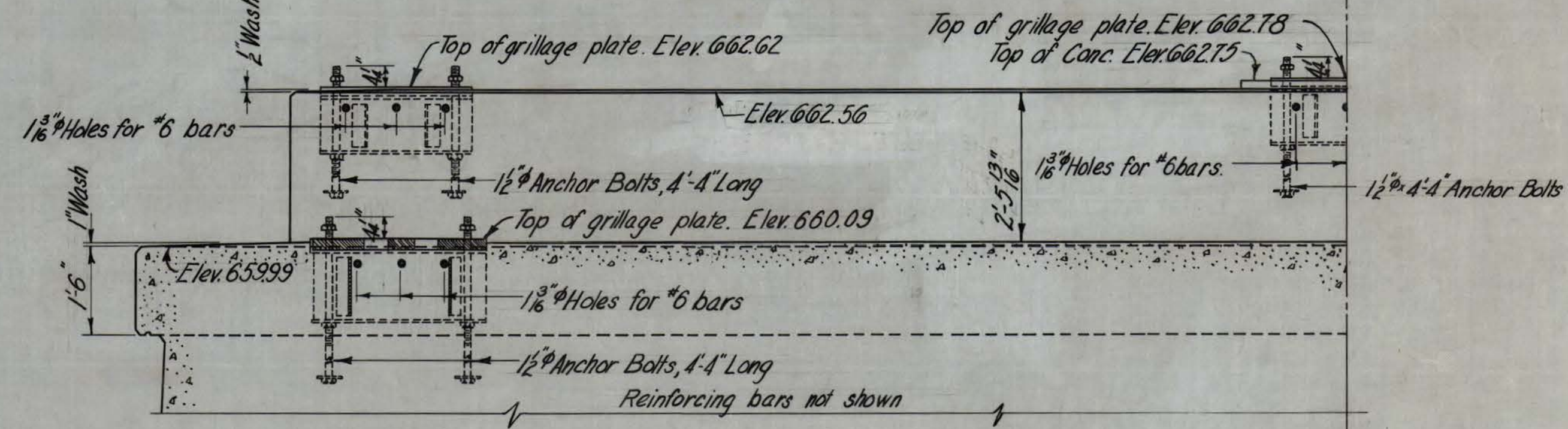
**SECTION E-E**

Scale:  $\frac{1}{2}$ "-1'-0"



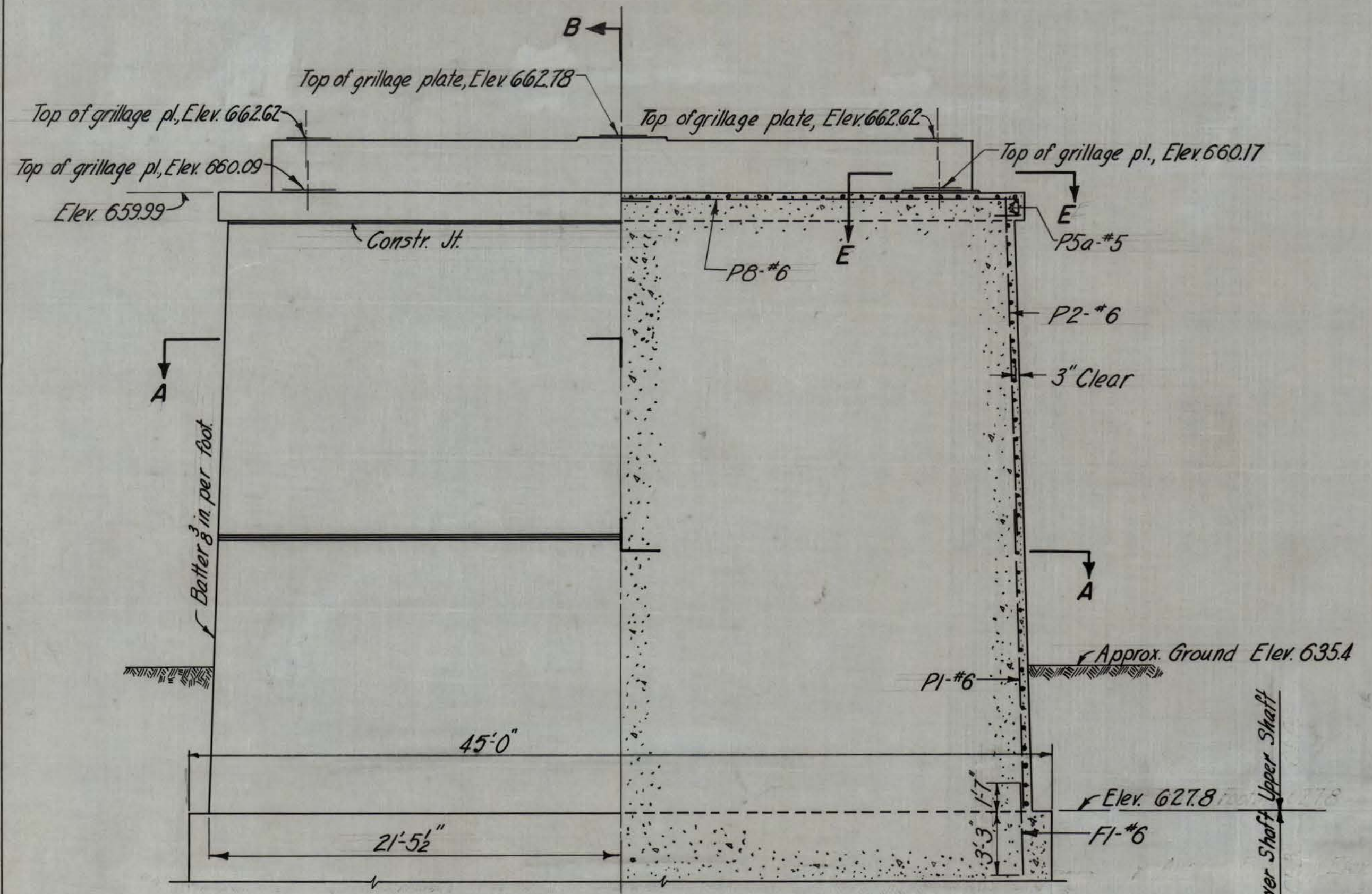
**BEARING AREAS & GRILLAGE DETAILS**

Scale:  $\frac{1}{2}$ "-1'-0"



**SECTION D-D**

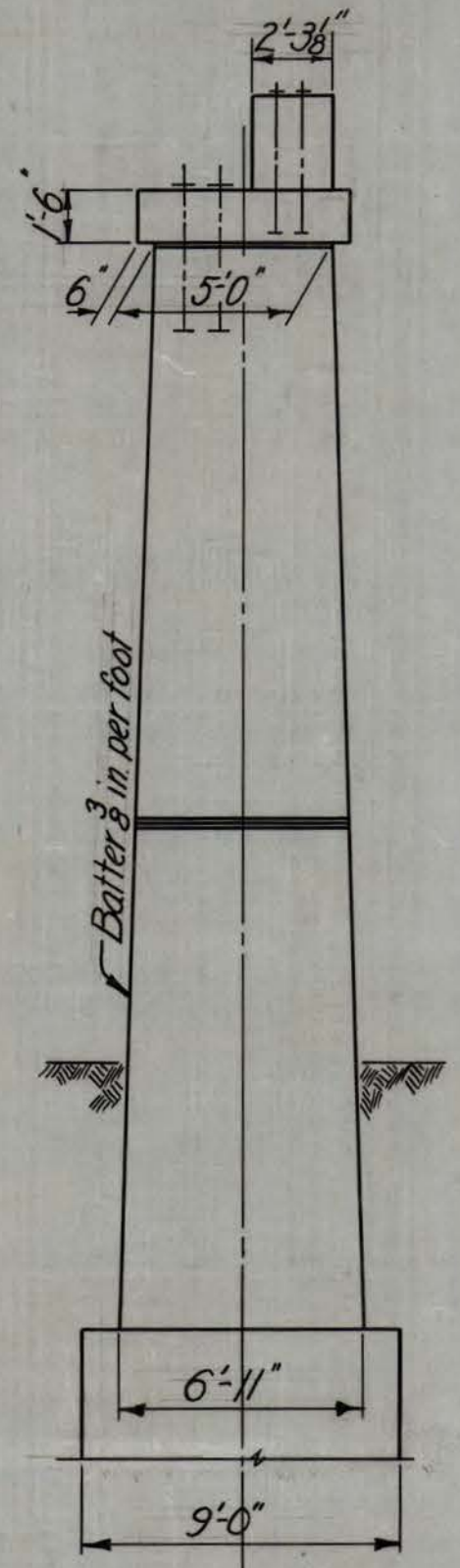
Scale:  $\frac{1}{2}$ "-1'-0"



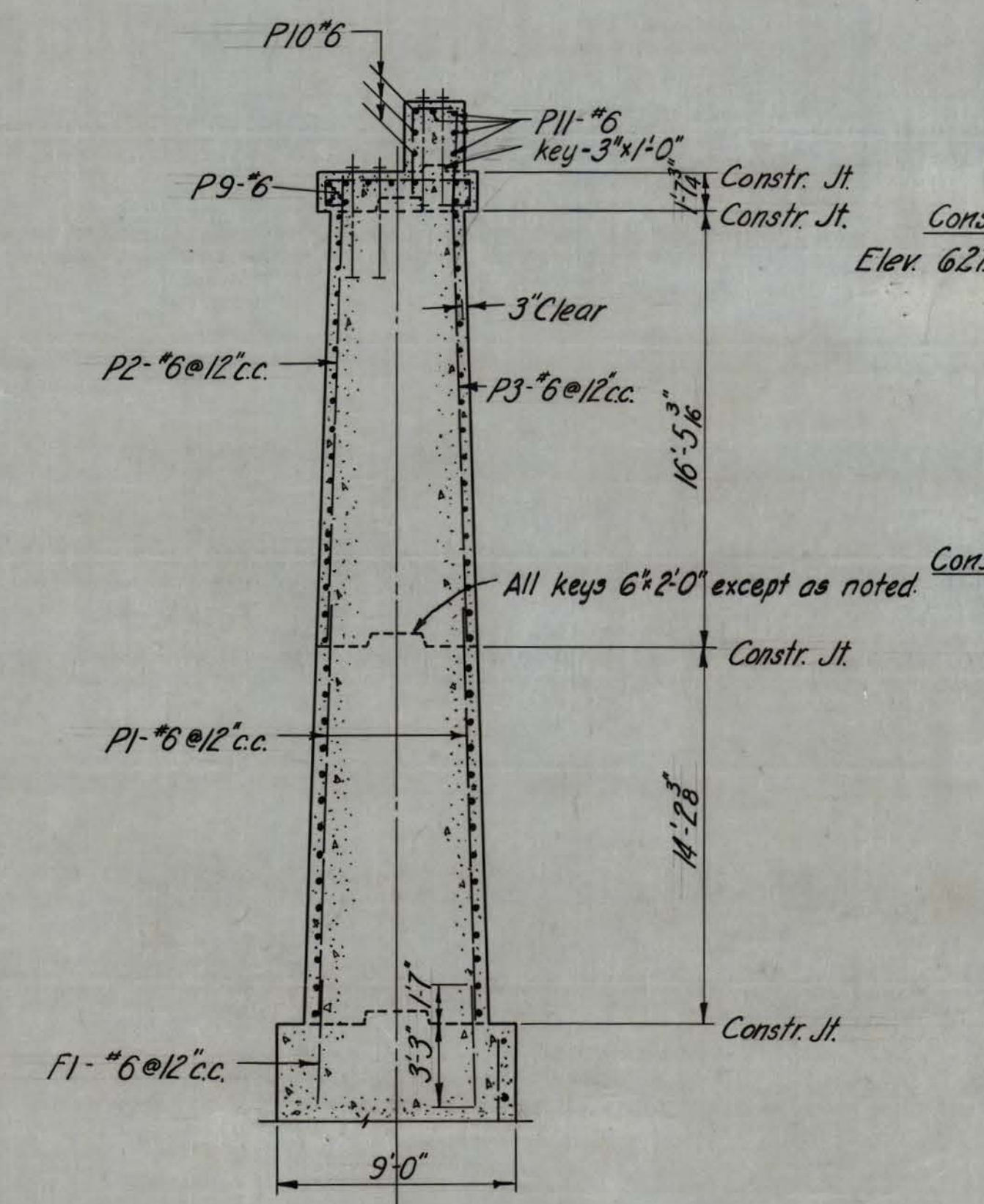
**UPPER SHAFT**

HALF ELEVATION

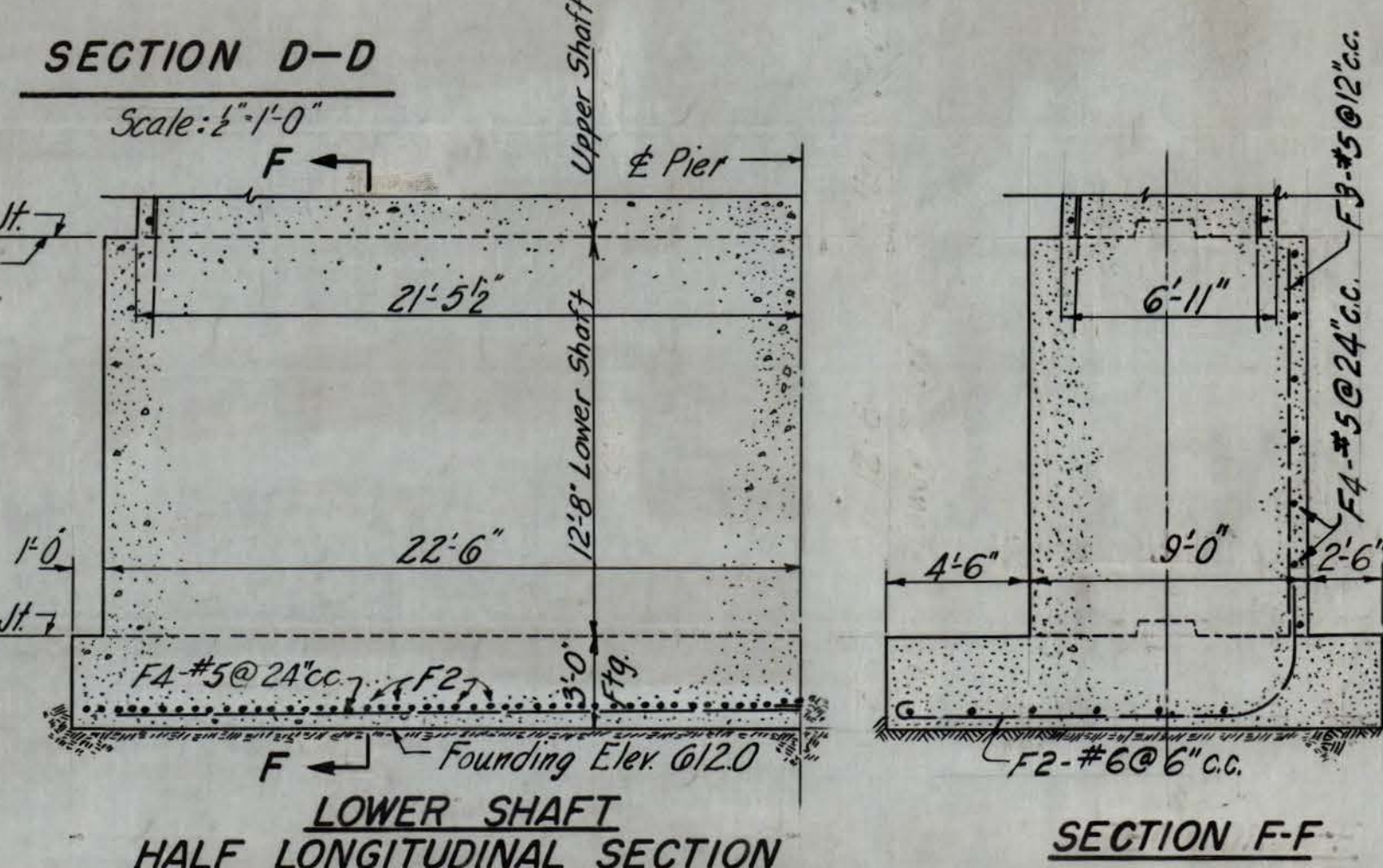
HALF LONGITUDINAL SECTION



**END ELEVATION**



**SECTION B-B**

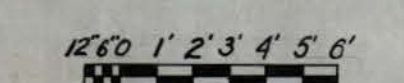


**LOWER SHAFT HALF LONGITUDINAL SECTION**

**SECTION F-F**

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**PIER XII**



SCALE IN FEET, UNLESS NOTED

MODJESKI & MASTERS, ENGINEERS

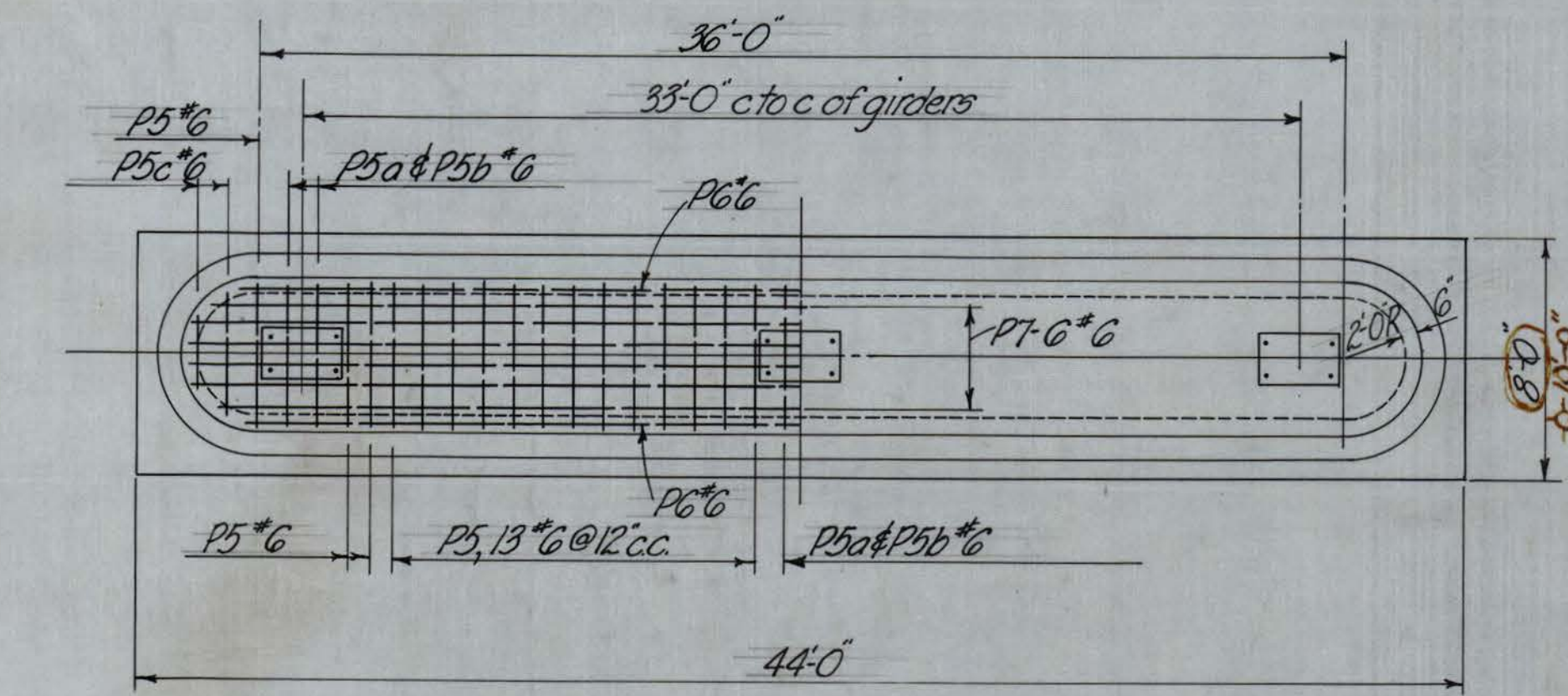
DWG. #4

CONTRACT NO. 2

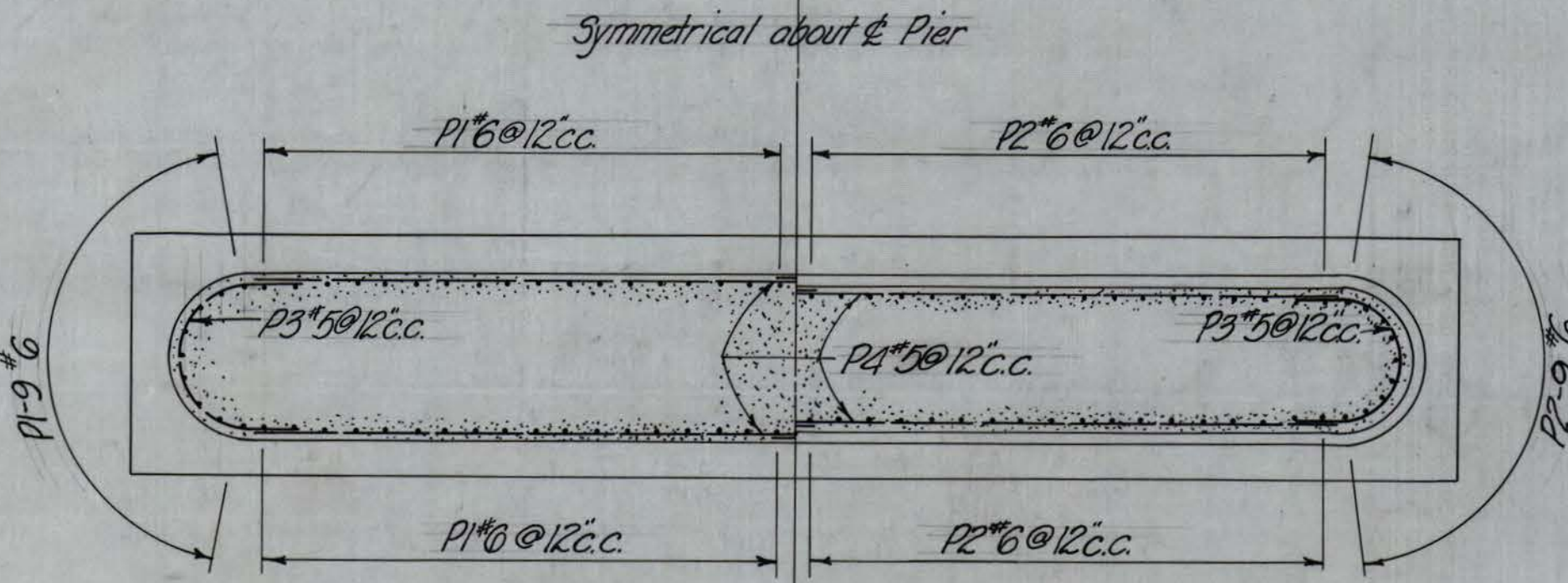
#1899



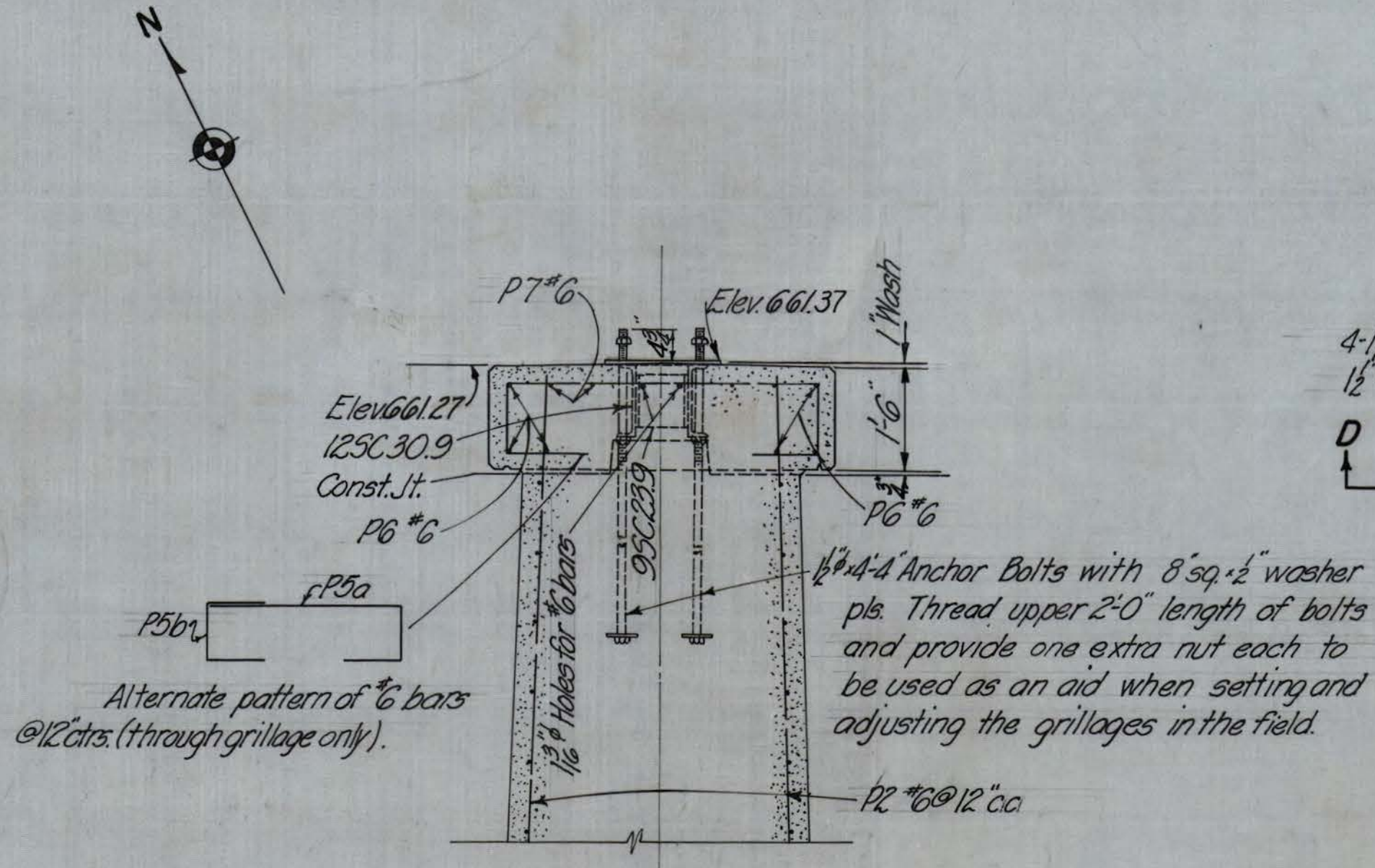
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (3)	1953	FAYETTE & KANAWHA	5	12



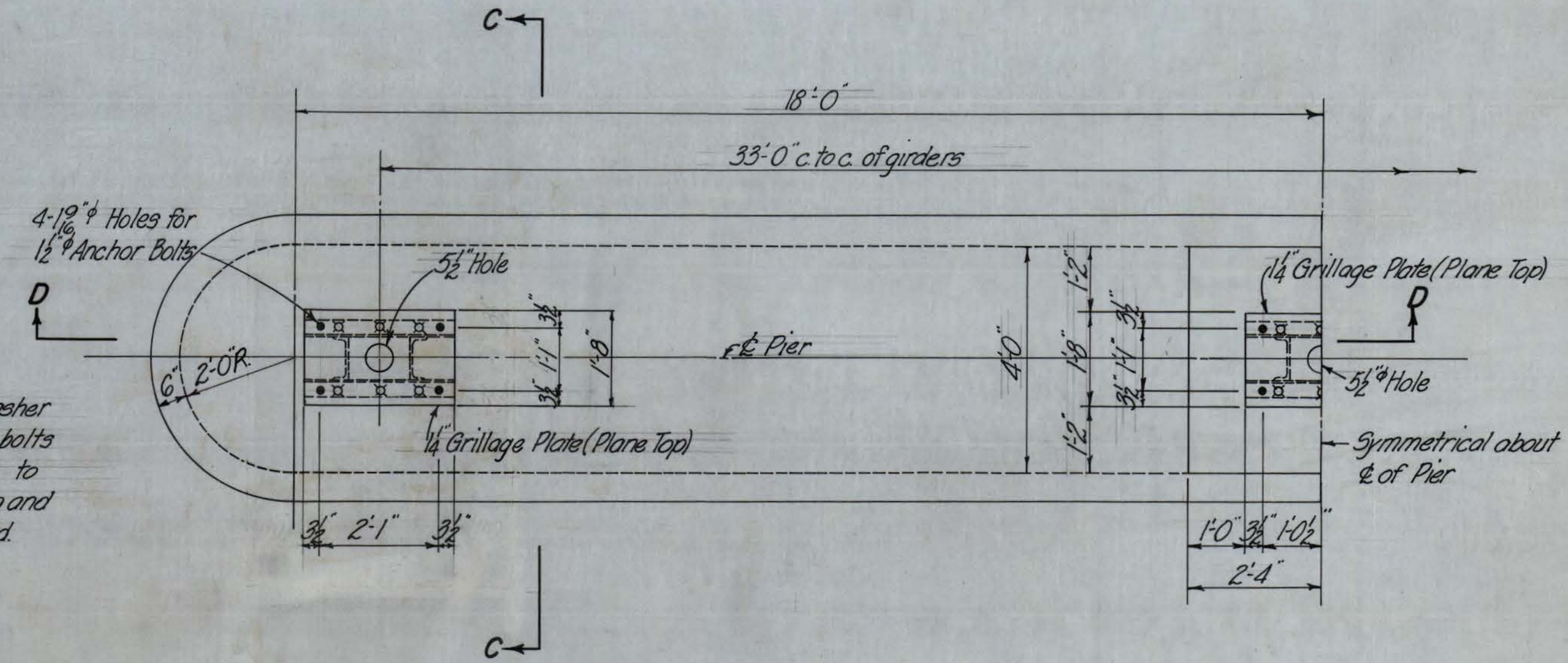
**PLAN**



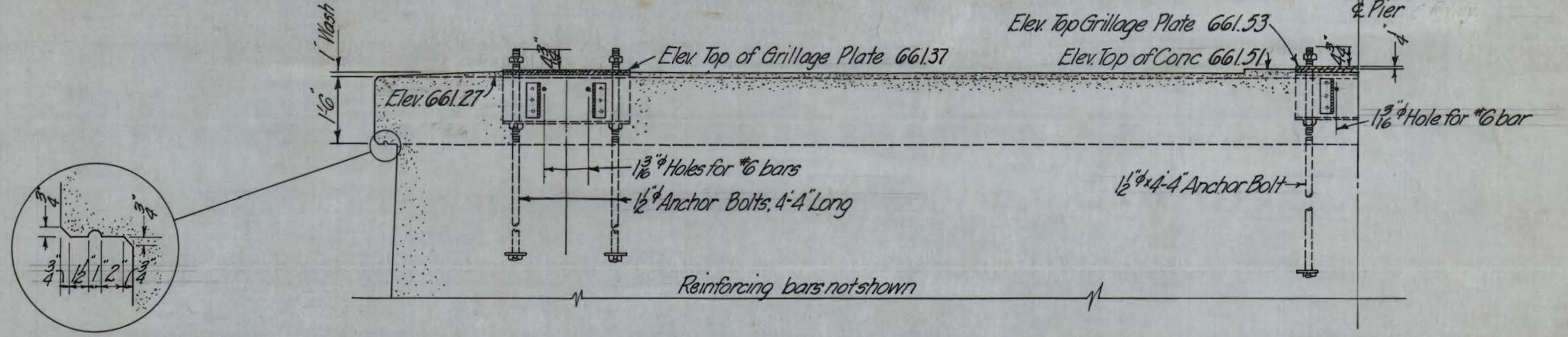
**SECTION A-A**



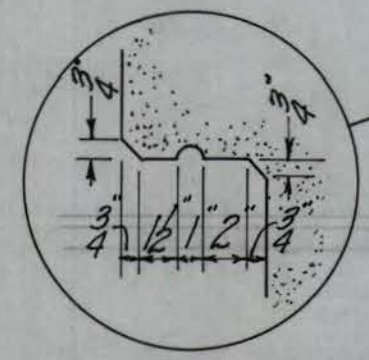
**SECTION C-C**  
Scale: 1/2" = 1'-0"



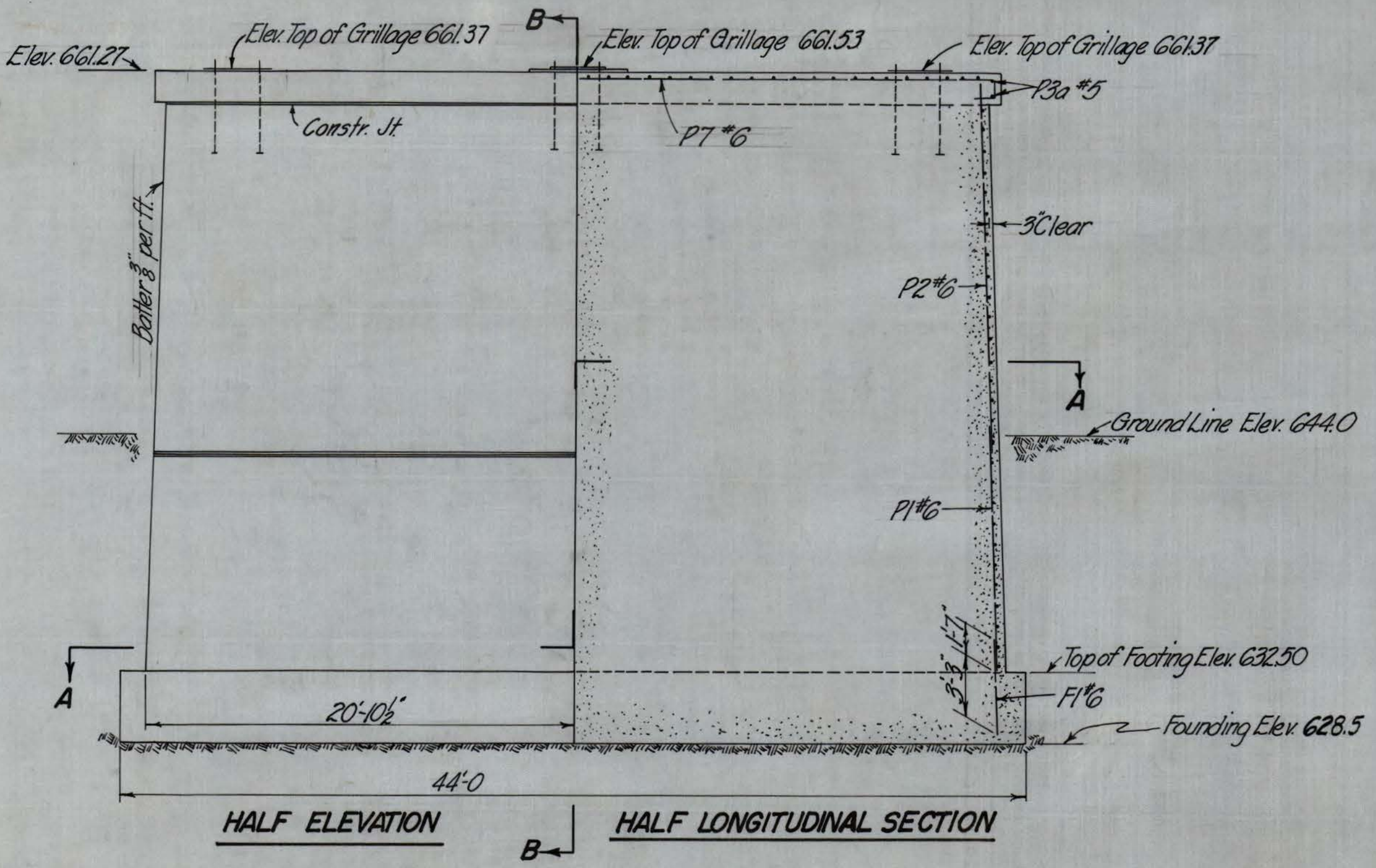
**BEARING AREAS & GRILLAGE DETAILS**  
Scale: 1/2" = 1'-0"



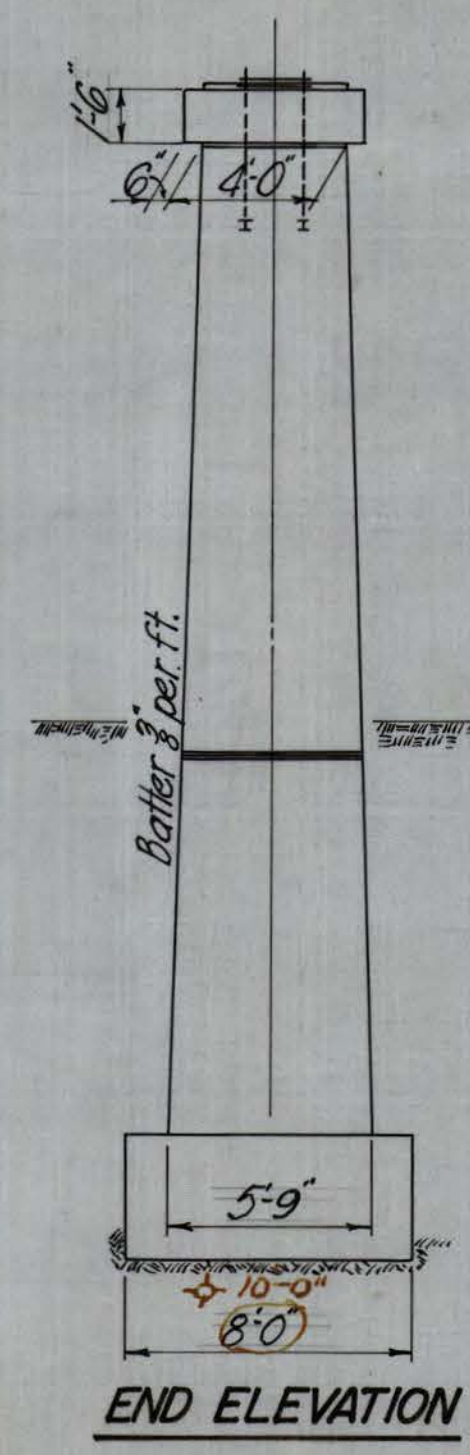
**SECTION D-D**  
Scale: 1/2" = 1'-0"



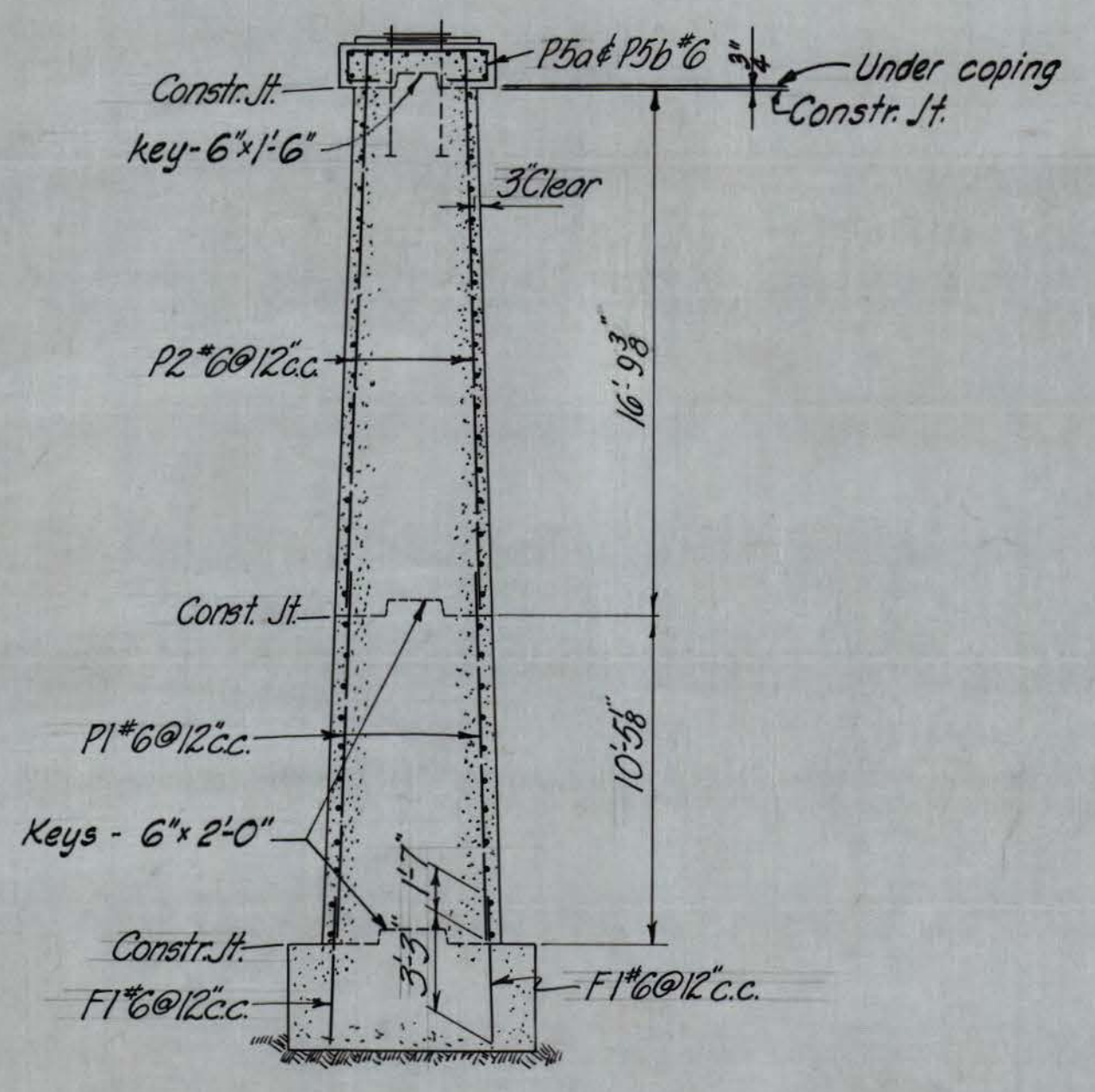
**DRIP DETAIL**



**HALF ELEVATION**      **HALF LONGITUDINAL SECTION**



**END ELEVATION**



**SECTION B-B**

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**PIER XIII**

1 2 3 4 5 6

SCALE IN FEET, EXCEPT AS NOTED  
MODJESKI & MASTERS, ENGINEERS

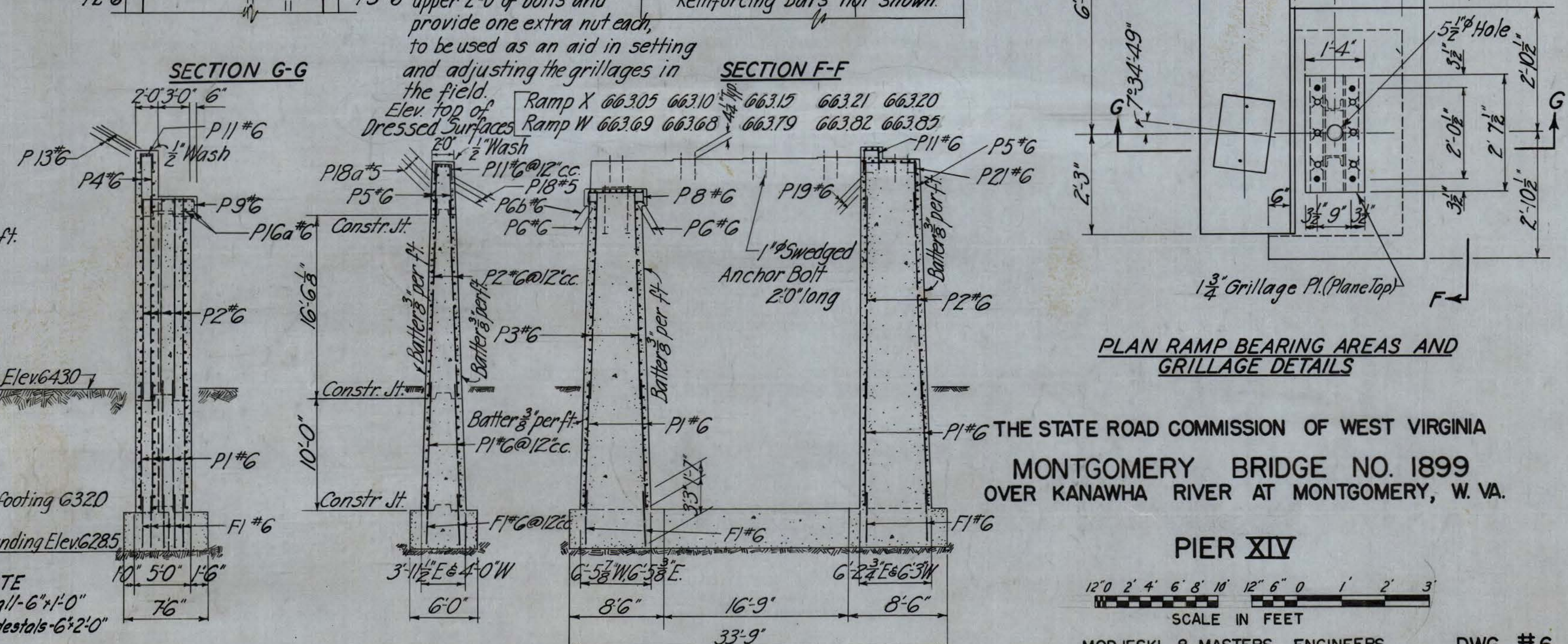
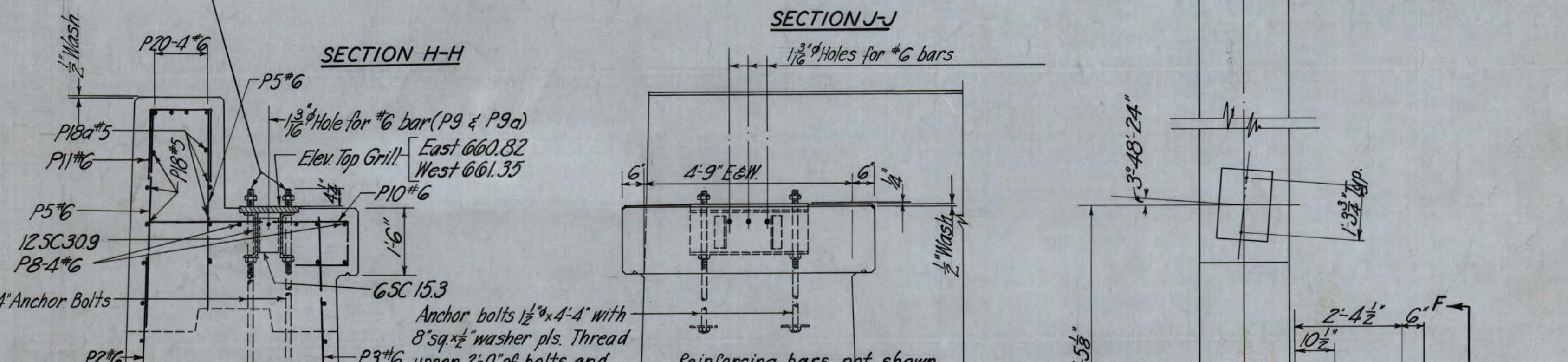
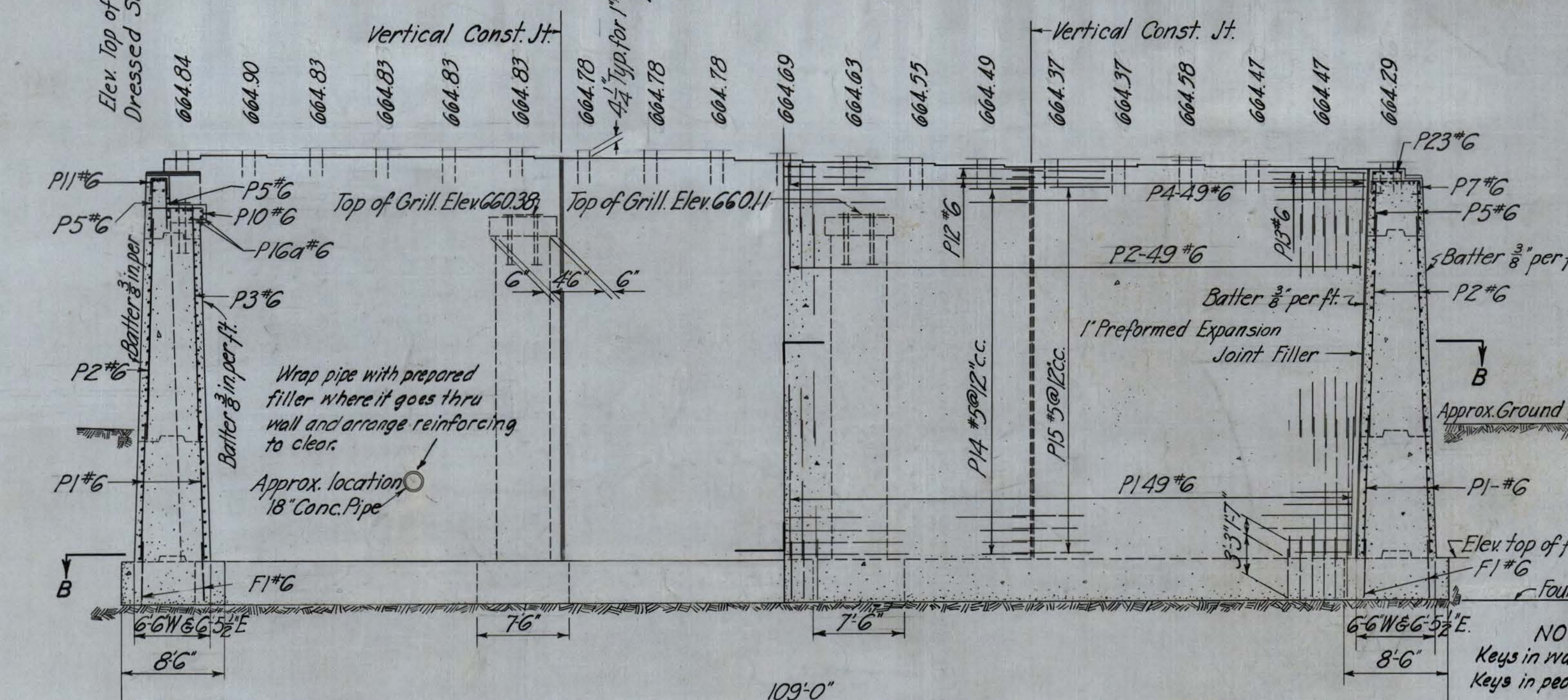
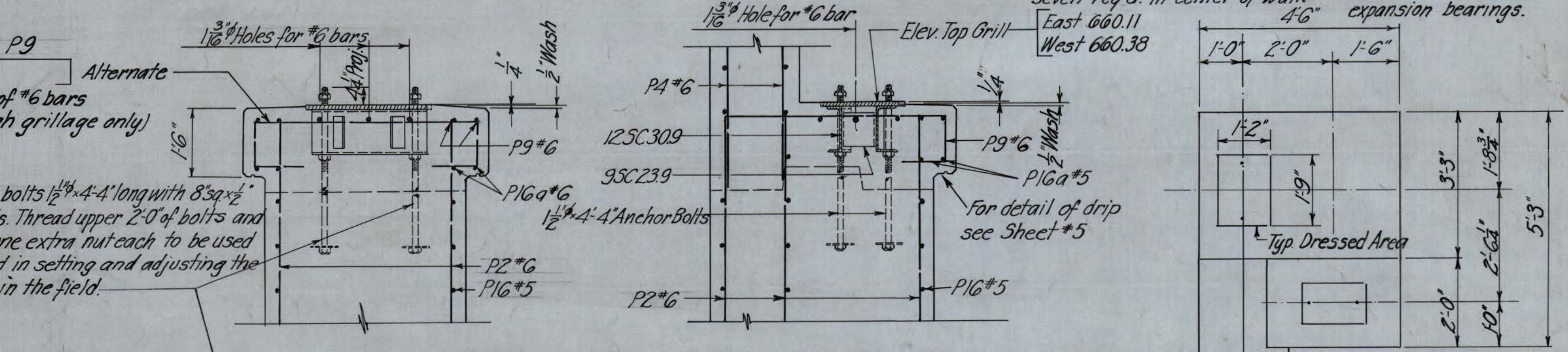
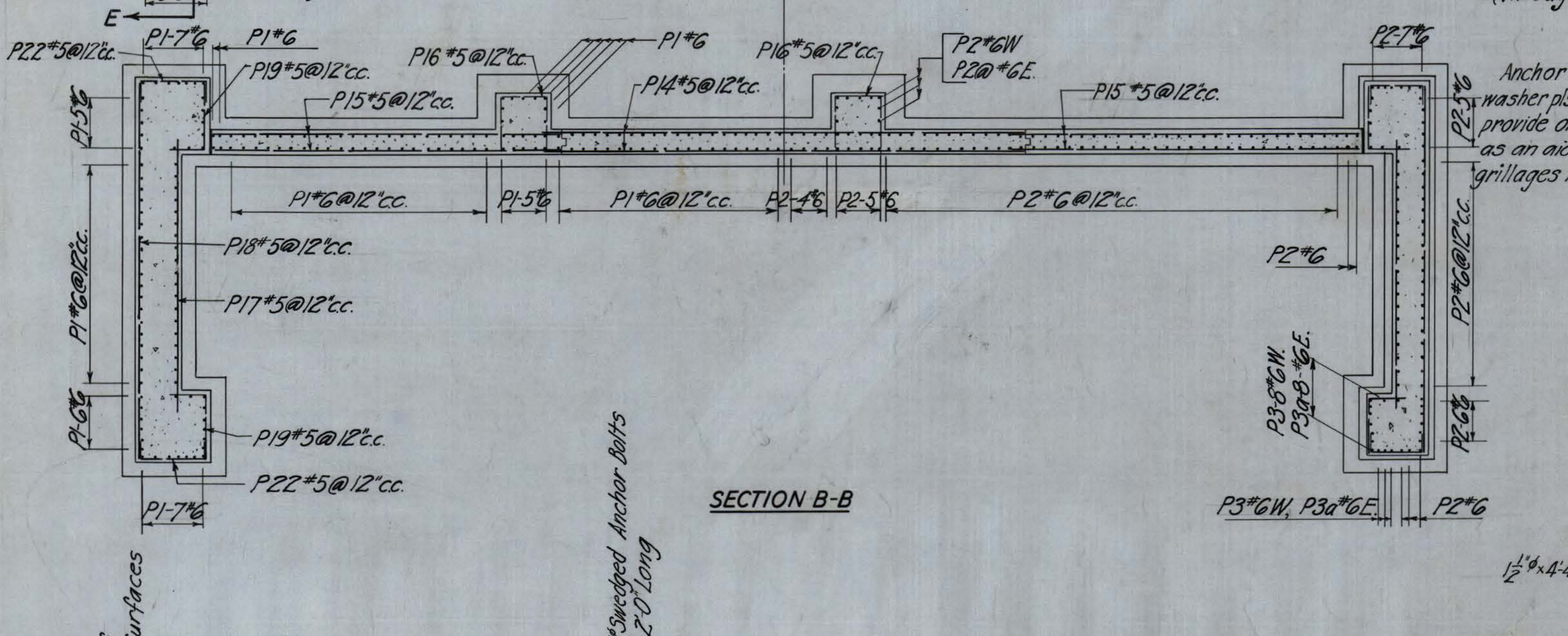
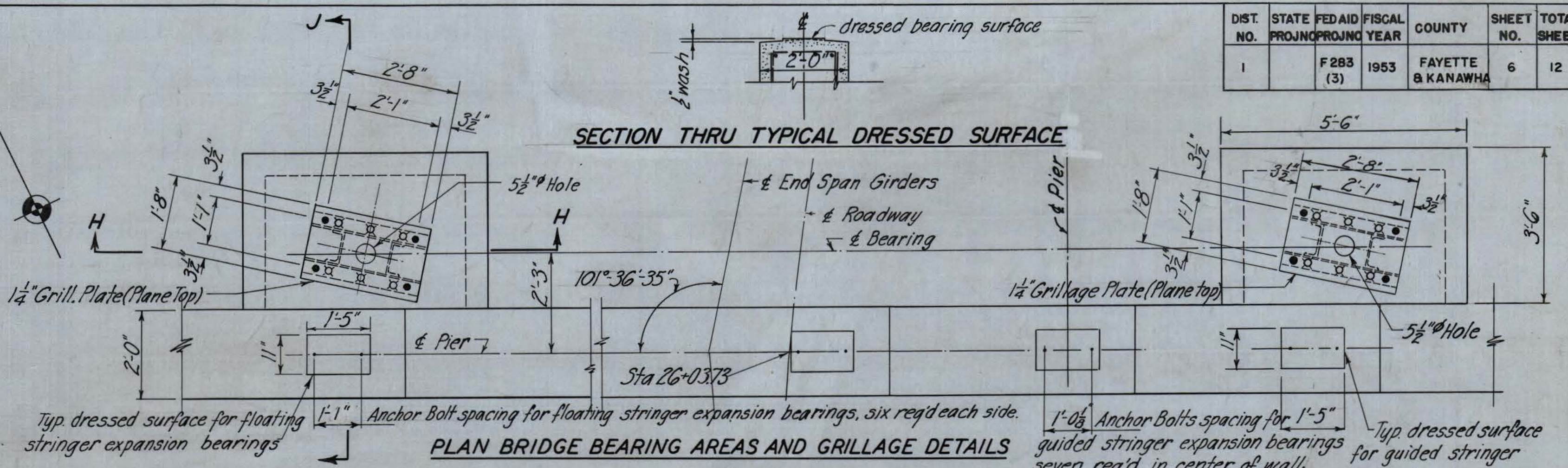
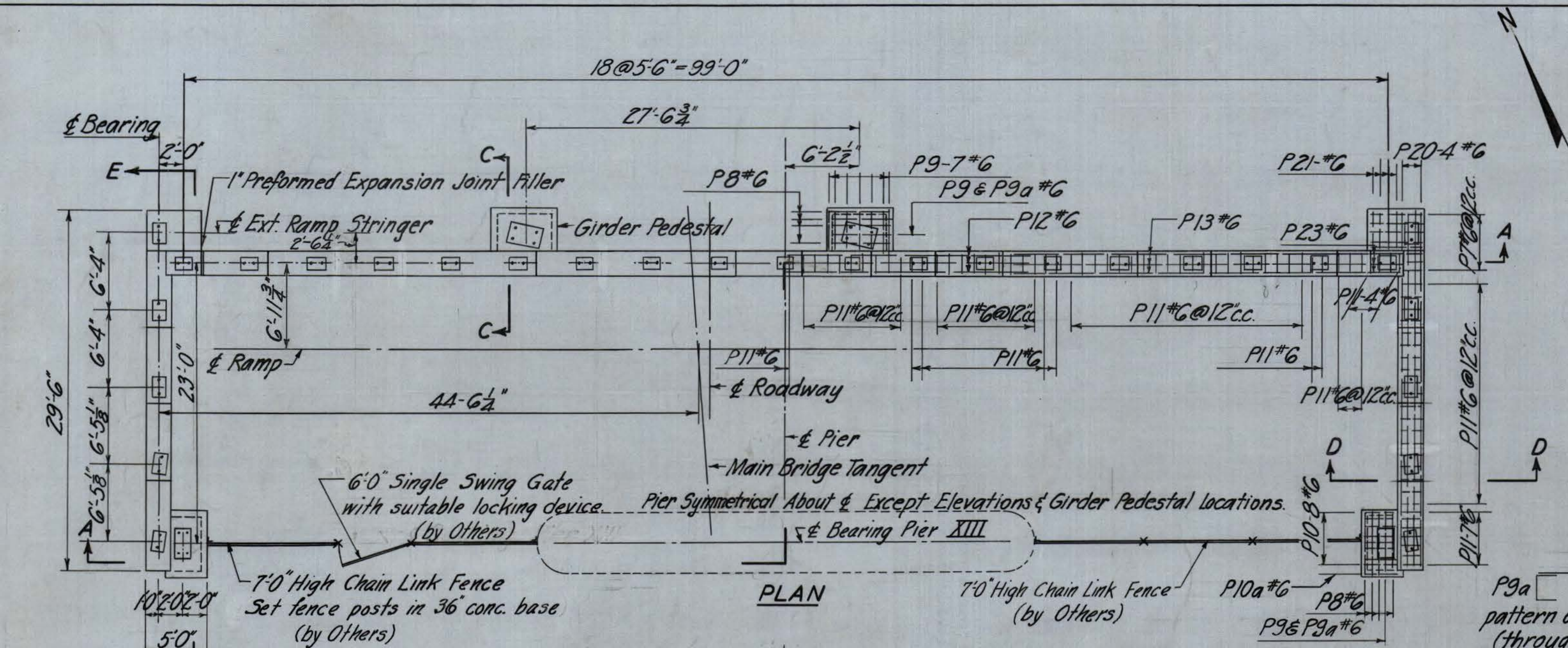
DWG. # 5

CONTRACT NO. 2

#1899



DIST. NO.	STATE PROJ. NO.	FED. AID YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1	F283	(3)	1953	FAYETTE & KANAWHA	6	12



NOTE: 18" concrete pipe to be accurately located in the field and all necessary precautions taken to prevent damage to pipe.

NOTE: All anchor bolts shall be furnished and set under Item 92 of this Contract #2.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

PIER XIV

SCALE IN FEET

MODJESKI & MASTERS, ENGINEERS

DWG. #6

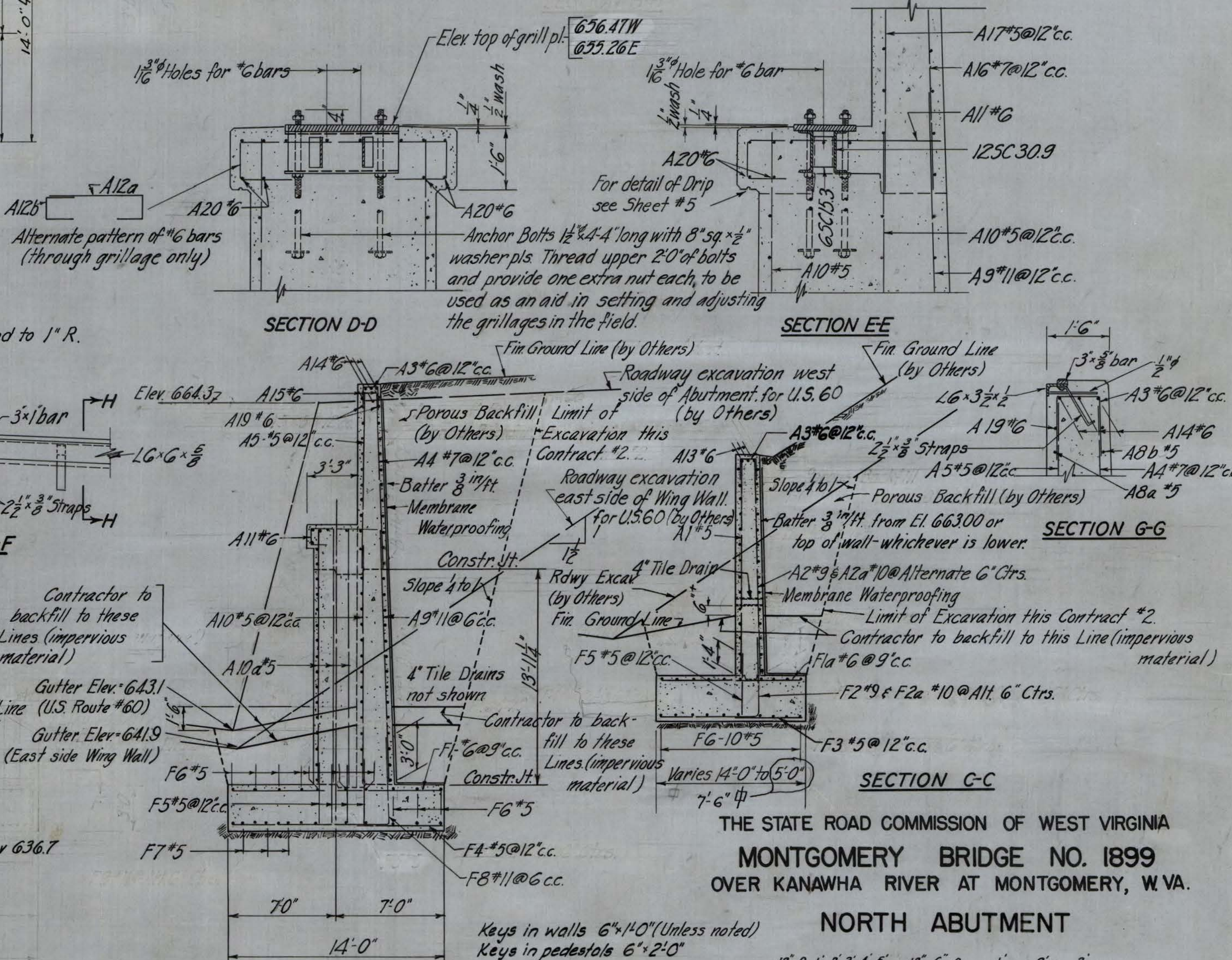
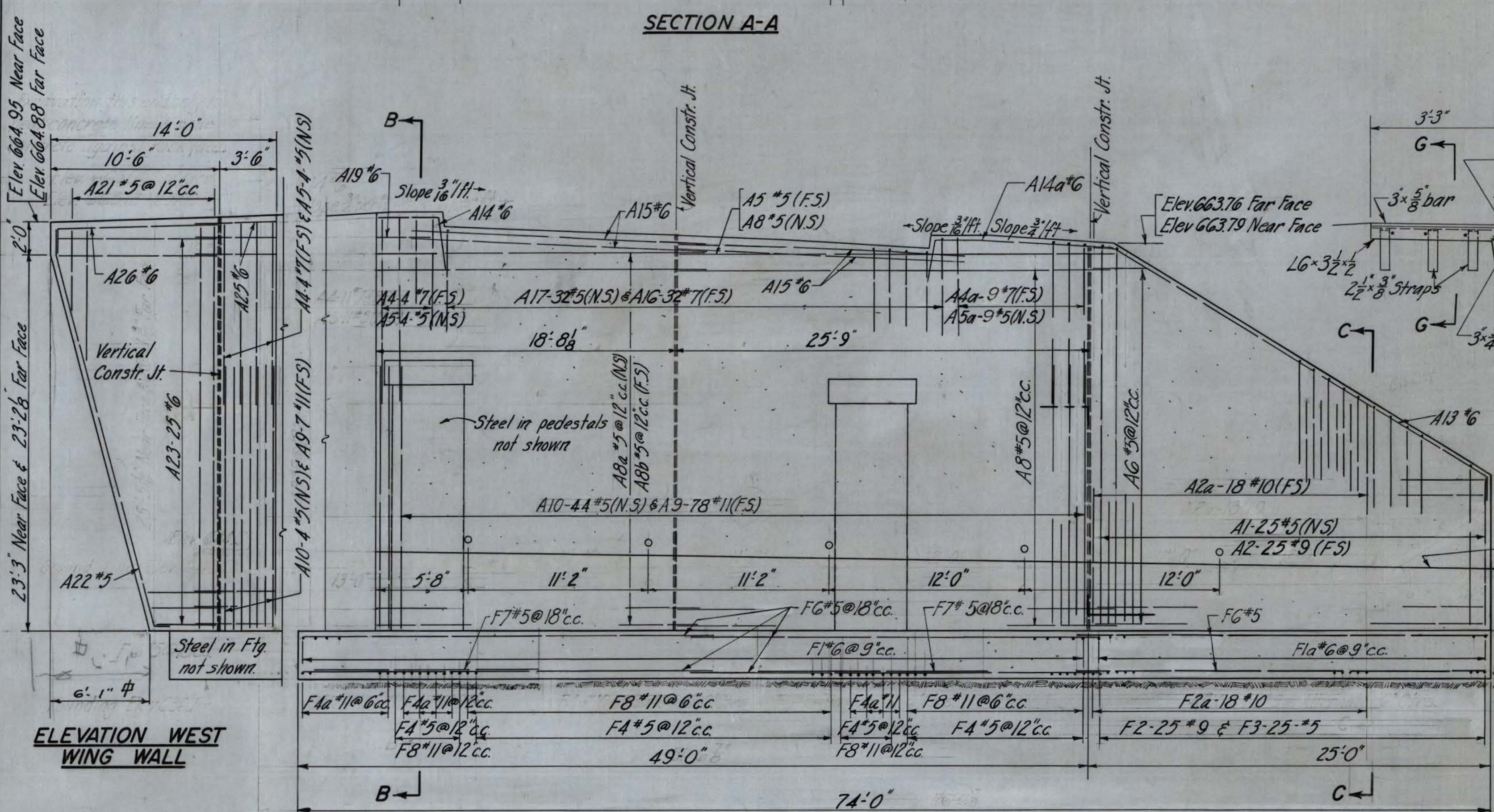
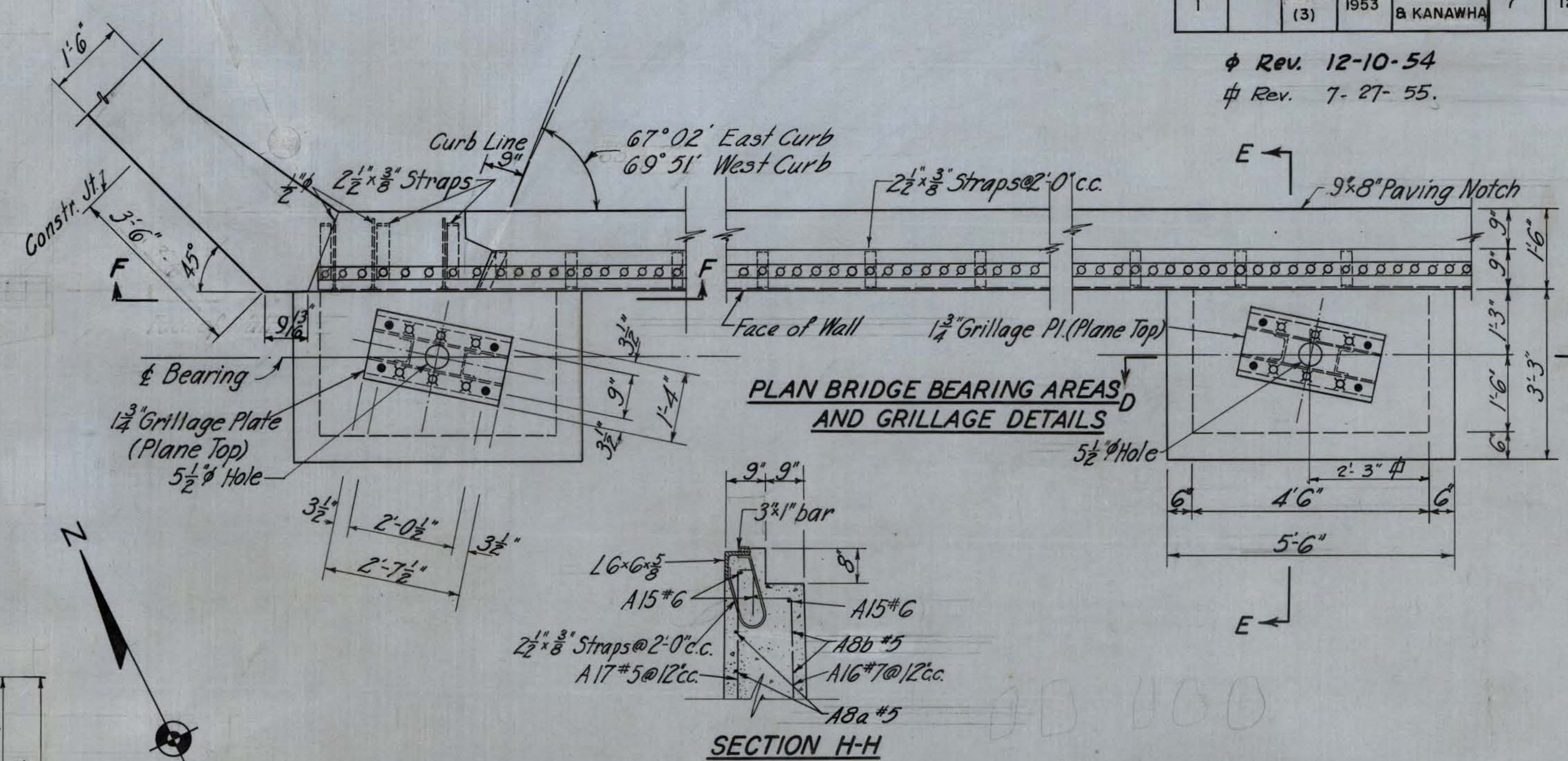
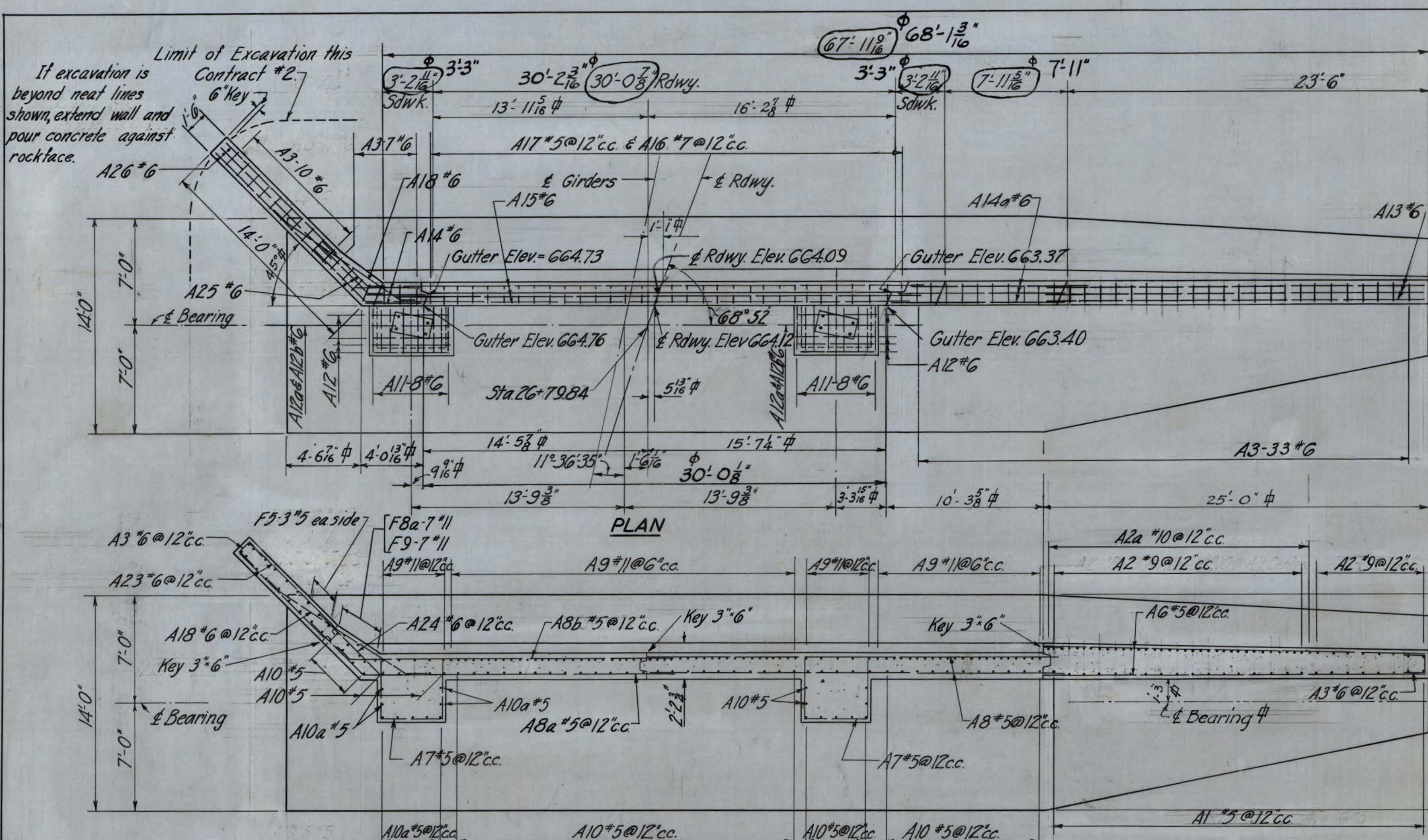
CONTRACT NO. 2

#1899



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1	F283 (3)	1953		FAYETTE & KANAWHA	7	12

Rev. 12-10-54  
 Rev. 7-27-55.

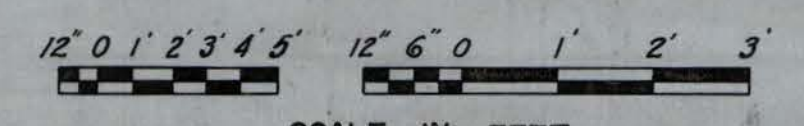


**NOTE:**

Excavation for the North Abutment will be to the neat lines shown. Footings will be poured against rock without forming. Excavation beyond neat lines and footing concrete beyond neat lines required to pour footings against rock will be at the Contractor's expense.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W.VA.

**NORTH ABUTMENT**



SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS

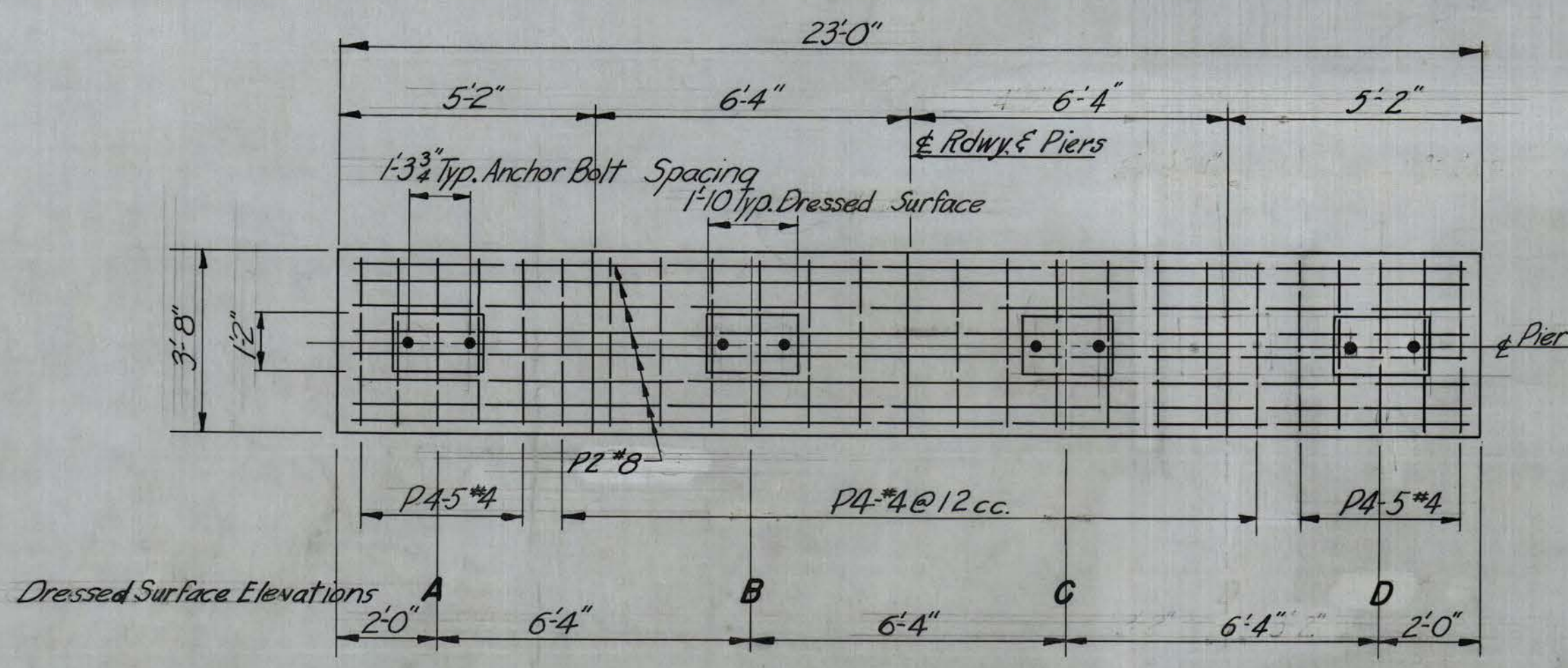
DWG. #7

CONTRACT NO. 2

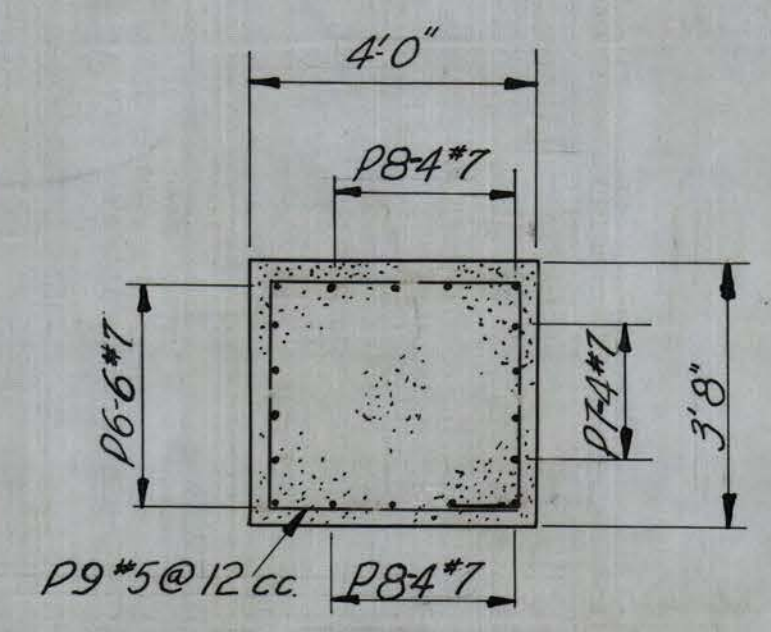
#1899

AS Built

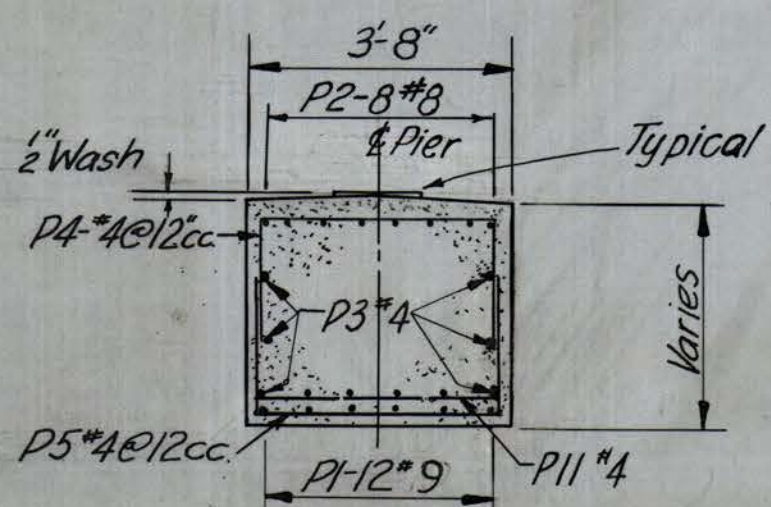




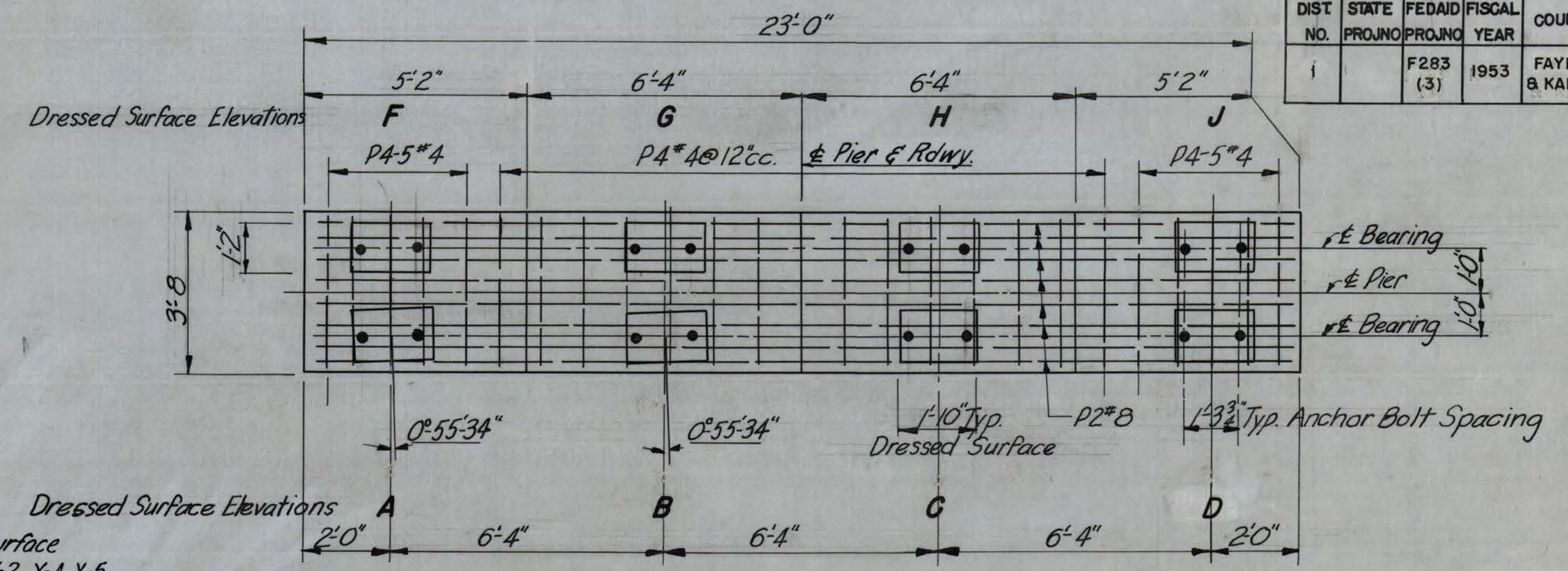
PLAN PIERS W-1, X-1, W-2, X-2, X-4 & X-5



SECTION A-A

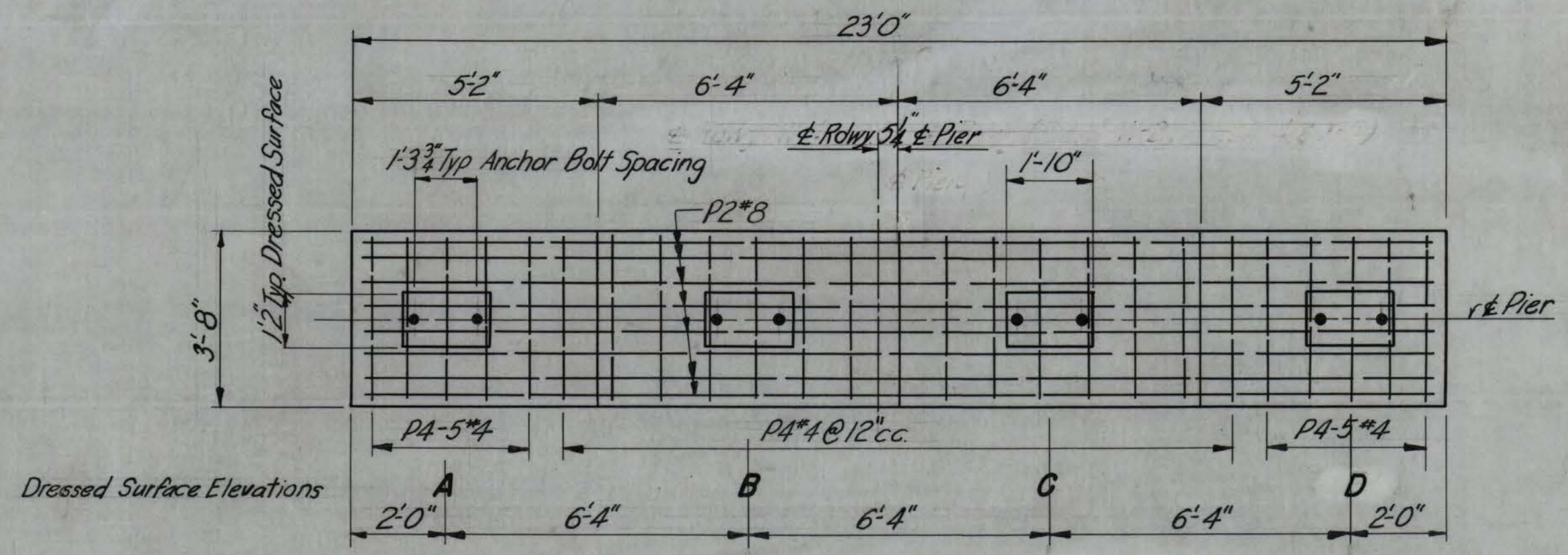


SECTION B-B

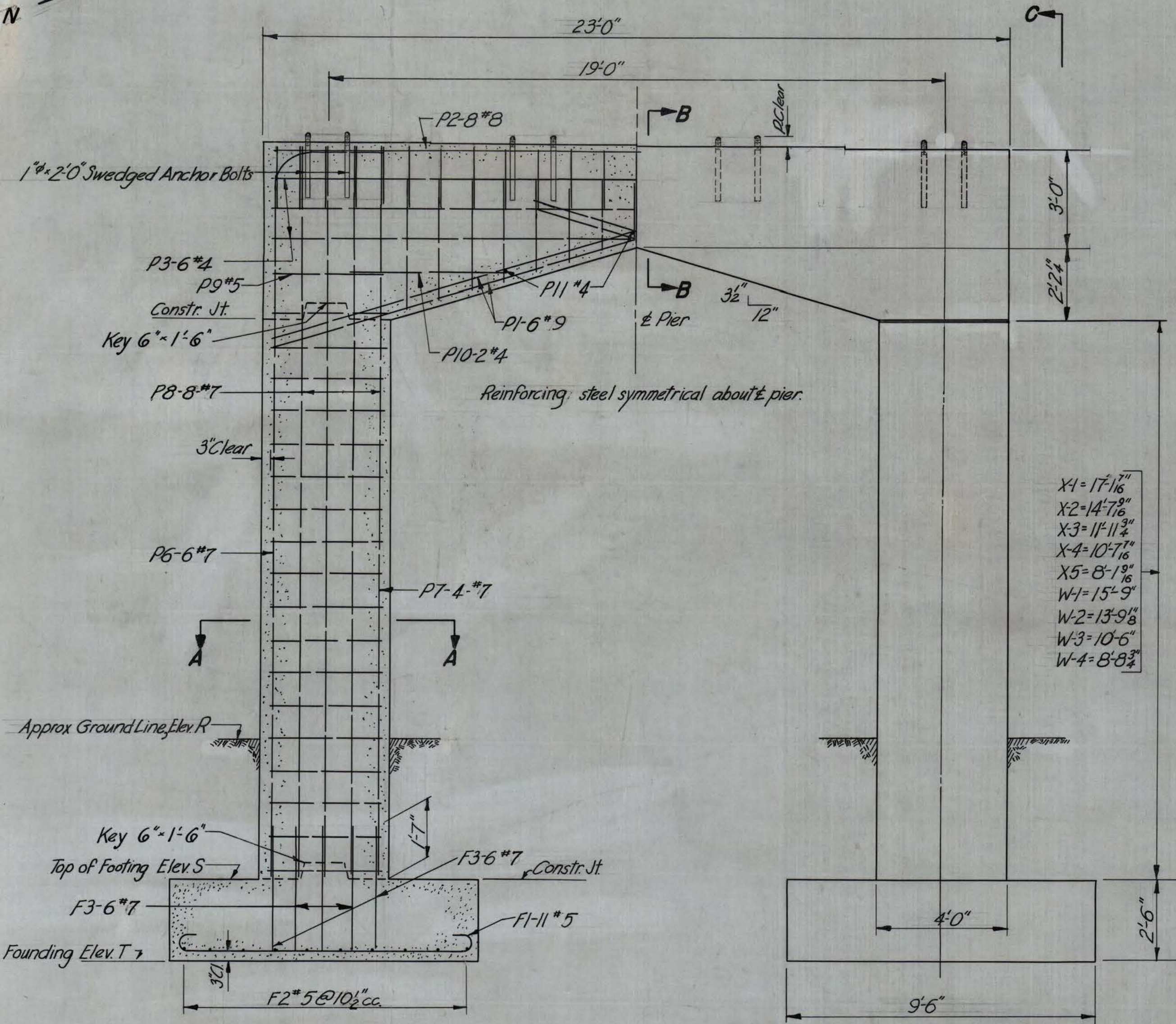


HALF PLAN PIER W-3

HALF PLAN PIER X-3



PLAN PIER W-4



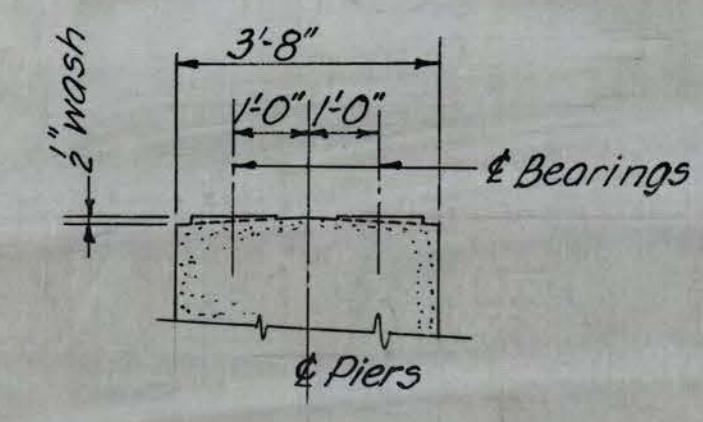
HALF LONGITUDINAL SECTION

HALF ELEVATION

SECTION CC

TYPICAL RAMP PIER PIER X1 SHOWN

- X1 = 17'-11 1/2"
- X2 = 14'-7 1/8"
- X3 = 11'-11 3/8"
- X4 = 10'-7 1/8"
- X5 = 8'-1 9/16"
- W1 = 15'-9"
- W2 = 13'-9 1/8"
- W3 = 10'-6"
- W4 = 8'-8 3/4"



SECTION THRU TYPICAL DRESSED SURFACES PIERS X-3 & W-3

Point	TABLE OF ELEVATIONS & PROJECTIONS								
	X-1	X-2	X-3	X-4	X-5	W-1	W-2	W-3	W-4
A	660.98	628.74	622.95	623.79	621.10	662.12	660.18	628.00	626.22
B	95	47	84	48	650.99	.06	10	657.89	.11
C	88	39	75	38	89	.01	02	79	.01
D	71	27	63	26	77	661.84	629.90	64	655.87
F	-	-	625.86	-	-	-	-	628.08	-
G	-	-	.75	-	-	-	-	657.97	-
H	-	-	.65	-	-	-	-	.87	-
J	-	-	.93	-	-	-	-	.75	-
P	5"	4 1/4"	4 1/4"	5"	4 1/4"	5"	4 1/4"	4 1/4"	5"
R	642.8	642.5	642.0	641.5	641.1	644.3	644.7	645.2	645.6
S	638.50	638.50	638.50	637.50	637.50	641.00	641.00	642.00	642.00
T	636.00	636.00	636.00	635.00	635.00	638.30	638.30	639.50	639.50

NOTES: All plans and sections are shown looking from the low to the high station.  
 All Anchor Bolts shall be furnished and set under Item 92 of this Contract #2  
 All Piers are normal to & Roadway.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

RAMP PIERS



MODJESKI & MASTERS, ENGINEERS

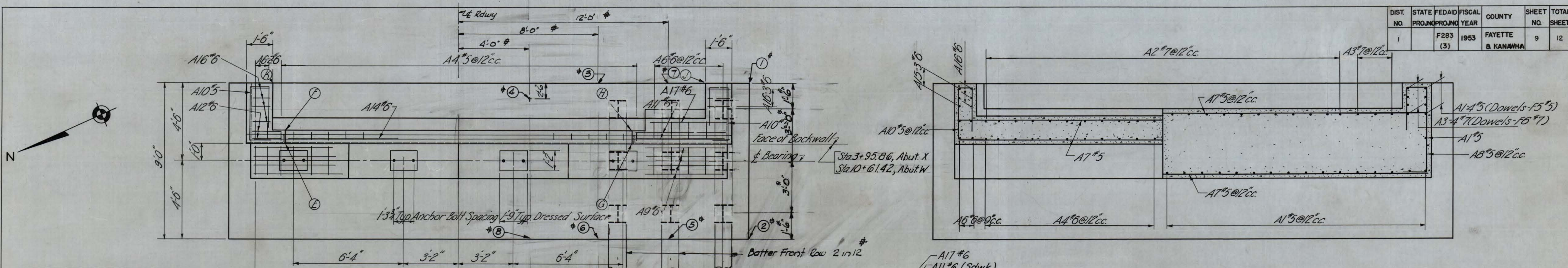
DWG. # 8

CONTRACT NO.2

# 1899

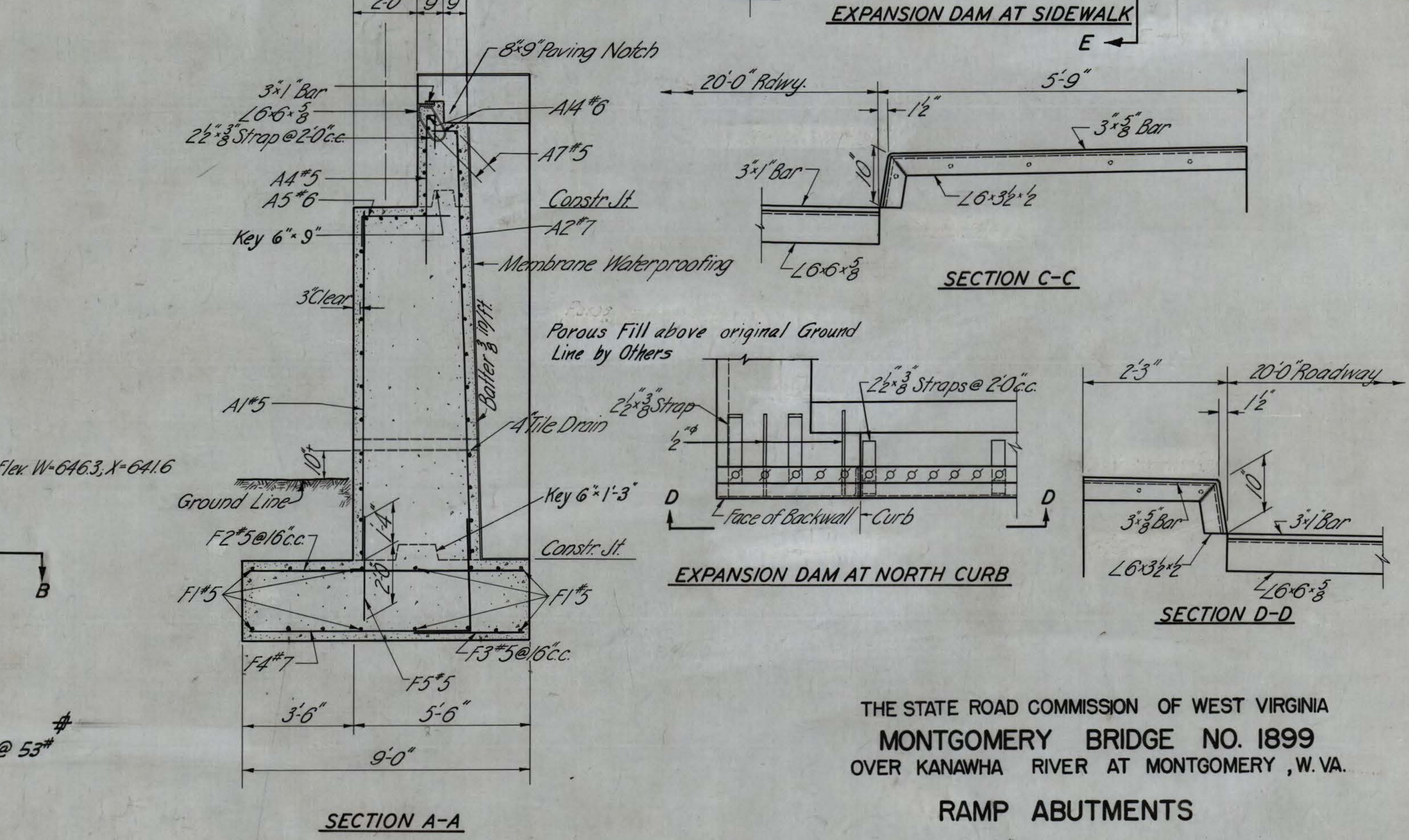
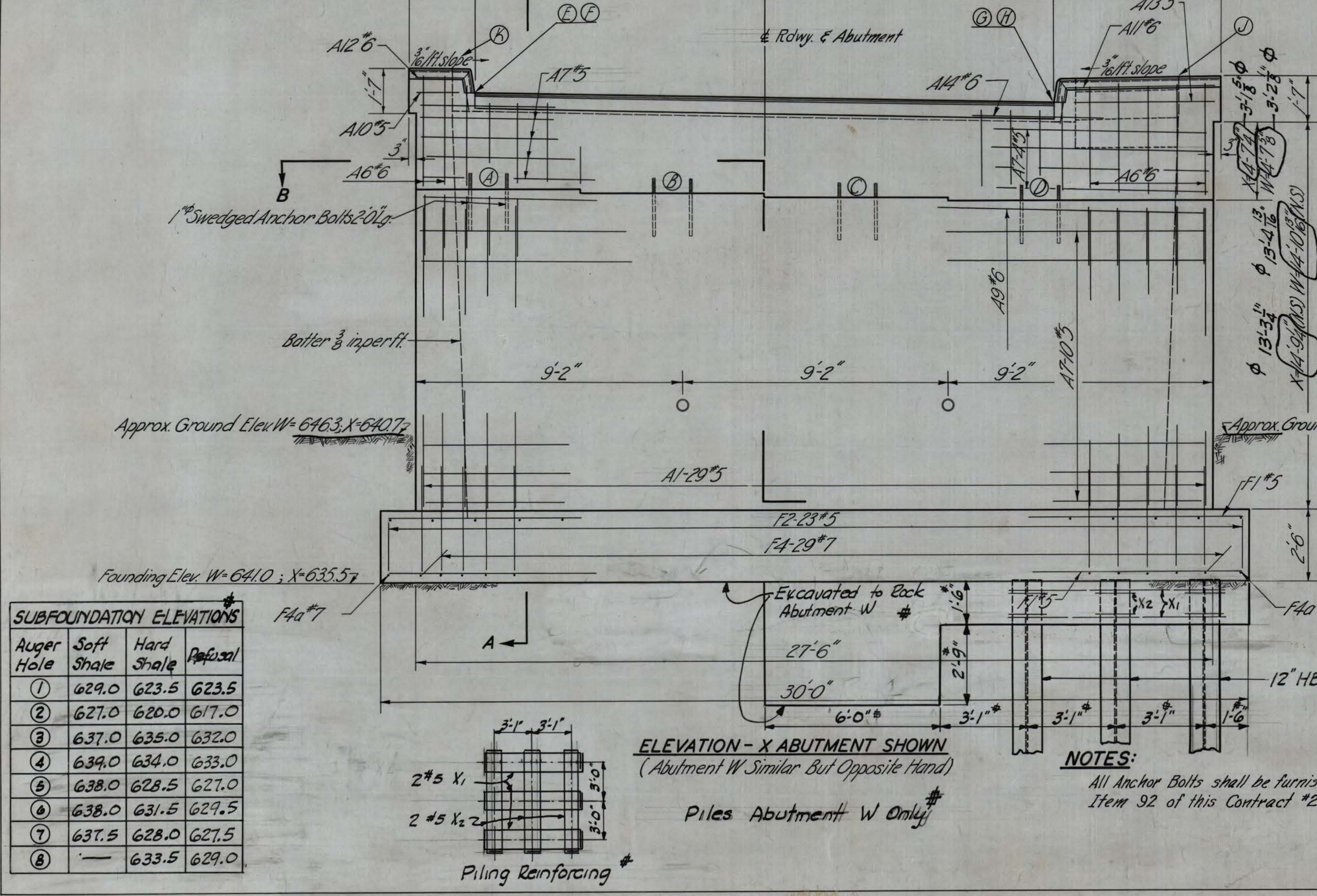
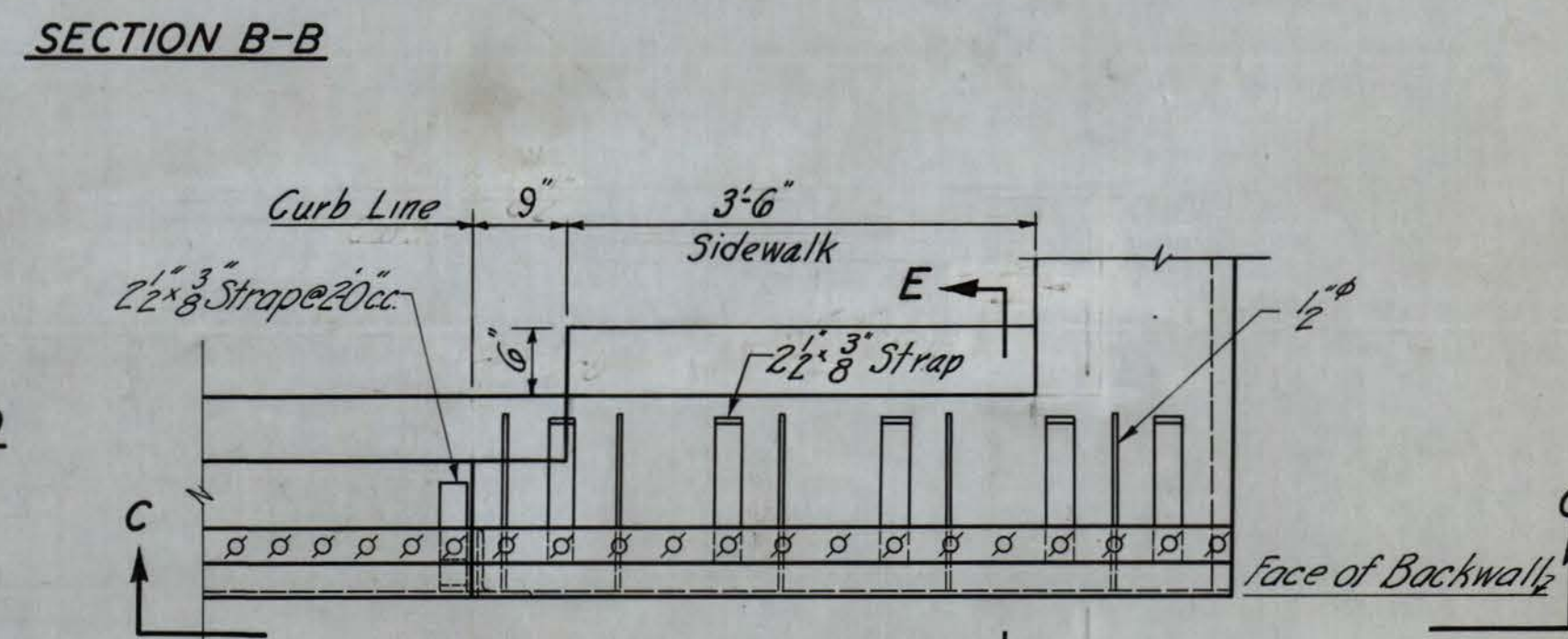
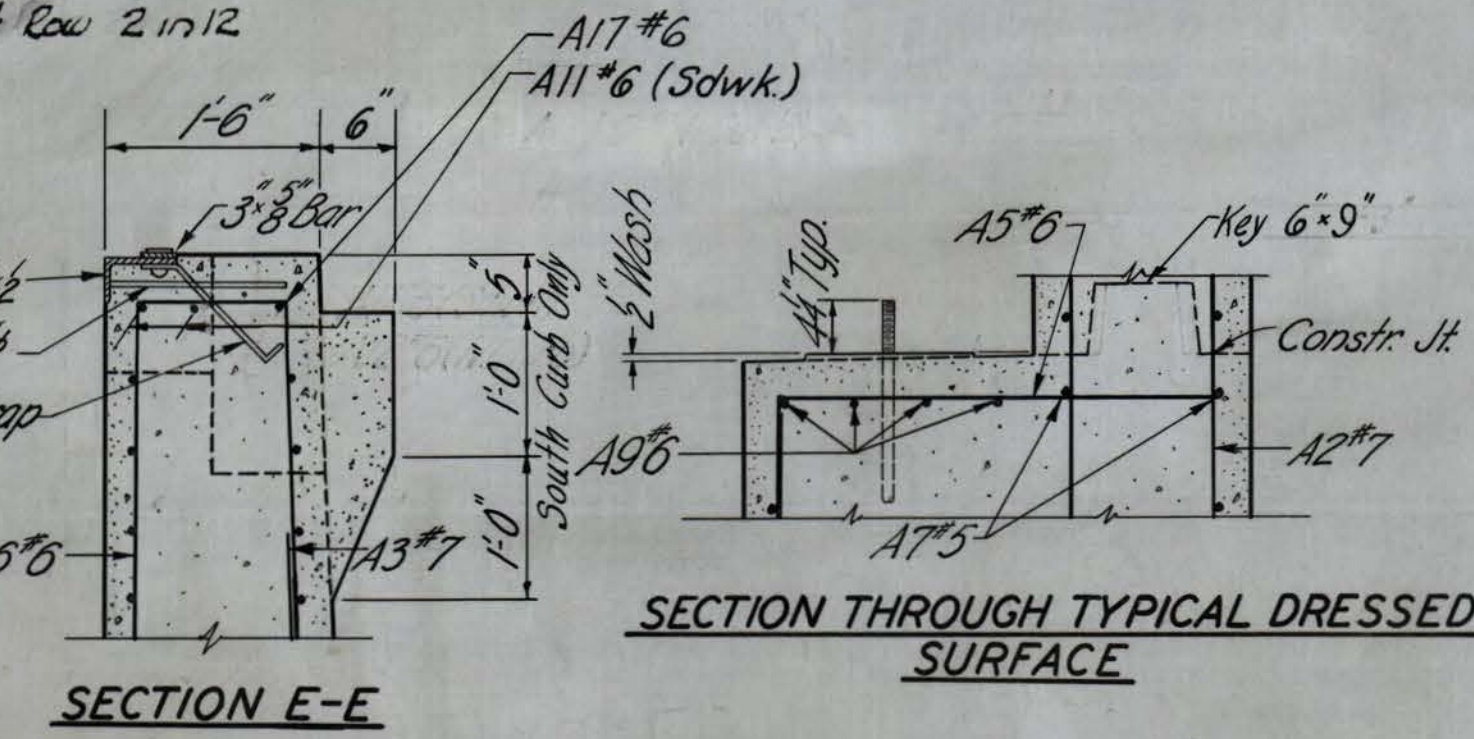
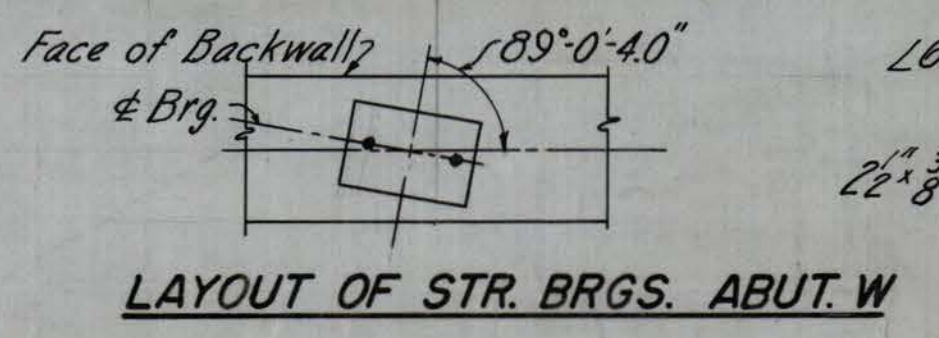
As Built



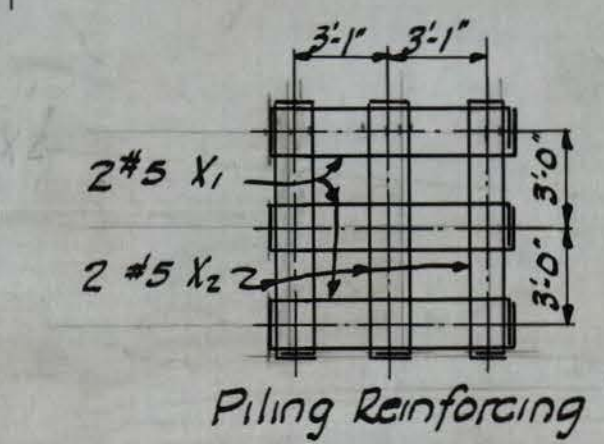


ELEVATIONS		
Point	Abutment X	W
A	648.46	654.08
B	648.35	653.97
C	648.25	653.87
D	648.13	653.72
E	652.27	657.90
F	652.23	657.87
G	651.93	657.56
H	651.89	657.53
J	652.65	658.32
K	652.94	658.61

**PLAN**  
Abutment X Shown  
Abutment W Similar But  
Opposite Hand (Skew Str. Brg. As Shown)



SUBFOUNDATION ELEVATIONS			
Auger Hole	Soft Shale	Hard Shale	Refusal
1	629.0	623.5	623.5
2	627.0	620.0	617.0
3	637.0	635.0	632.0
4	639.0	634.0	633.0
5	638.0	628.5	627.0
6	638.0	631.5	629.5
7	637.5	628.0	627.5
8	—	633.5	629.0

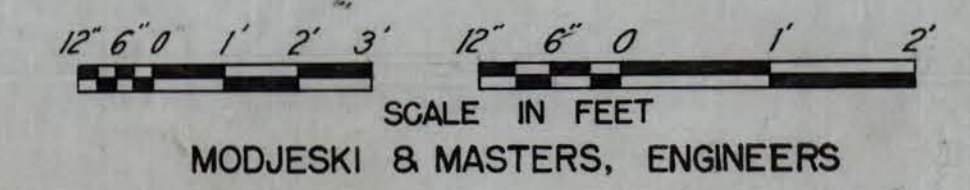


**ELEVATION - X ABUTMENT SHOWN**  
(Abutment W Similar But Opposite Hand)  
Piles Abutment W Only

**NOTES:**  
All Anchor Bolts shall be furnished and set under Item 92 of this Contract #2.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W.VA.

**RAMP ABUTMENTS**



Revised 5-11-55  
Revised 6-24-55 (Abut. W Only)  
CONTRACT NO. 2



REINFORCING BAR SCHEDULE - PIER XII			
Mark	No	Stock	Bend
F1	90	*6-4'-10"	Straight
P1	90	*6-15'-9"	do
P2	54	*6-17'-8"	do
P3	36	*6-20'-10"	See Detail A; A=20'-3" B=7"
P4	124	*5-18'-8"	Straight
P5	62	*5-11'-7 1/8 (Avg)	See Detail B; R=2'-3" to 3' 1/8. ea vary by 1/8; 10 R=3'-2 1/2
P5a	4	*5-11'-9 3/8"	See Detail B; R=2'-9"
P6	34	*6-10'-0"	See Detail C; C=5'-6"
P6a	4	*6-8'-0 1/2 (Avg)	See Detail C; C=2'-4 1/2, 2@C=4'-8 1/2
P6b	6	*6-7'-9"	See Detail D; D=5'-6", E=1'-3", F=1'-0"
P6c	6	*6-3'-6"	See Detail D; D=E=1'-3" F=1'-0"
P7	37	*6-5'-2"	See Detail A; A=3'-5", B=1'-9"
P8	10	*6-23'-6 1/2 (Avg)	See Detail D; F=1'-0", E=1'-7", 4@D=20'-3", 6@D=21'-5"
P9	6	*6-36'-0"	Straight
P10	6	*6-21'-9"	See Detail D; D=18'-9", E=1'-3", F=1'-9"
P11	8	*6-18'-9"	Straight
F2	93	*6-19'-1 1/2"	See Detail O & Detail K.
F3	45	*5-12'-4"	Straight
F4	26	*5-23'-0"	do

REINFORCING BAR SCHEDULE - PIER XIII			
Mark	No	Stock	Bend
F1	90	*6-4'-10"	Straight
P1	91	*6-12'-0"	do
P2	90	*6-18'-3"	do
P3	56	*5-9'-11 1/8 (Avg)	See Detail B; R=1'-9" to 2'-7". ea vary by 1/4
P3a	4	*5-10'-2 1/8"	See Detail B; R=2'-3"
P4	112	*5-18'-8"	Straight
P5	32	*6-9'-0"	See Detail C; C=4'-6"
P5a	6	*6-6'-9"	See Detail D; D=4'-6", E=1'-3", F=1'-0"
P5b	6	*6-3'-6"	See Detail D; D=E=1'-3", F=1'-0"
P5c	4	*6-7'-6" (Avg)	See Detail C; 2@C=4'-0", 2@C=2'-0"
P6	6	*6-36'-3"	Straight
P7	12	*6-22'-10 1/4 (Avg)	See Detail D; F=1'-0", E=1'-3", 4@D=20'-4", 4@D=20'-9", 4@D=20'-10"

REINFORCING BAR SCHEDULE - PIER XIV			
Mark	No	Stock	Bend
F1	370	*6-4'-10"	Straight
P1	370	*6-11'-7"	do
P2	339	*6-18'-1"	do
P2a	9	*6-17'-11"	do
P3	11	*6-19'-1"	do
P3a	11	*6-18'-7"	do
P4	197	*6-5'-7"	do
P5	144	*6-4'-4"	do
P6	6	*6-4'-6"	do
P6a	2	*6-3'-0"	do
P7	16	*6-8'-6"	See Detail C; C=4'-0"
P8	16	*6-9'-6"	See Detail C; C=5'-0"
P9	18	*6-7'-3"	See Detail D; D=5'-0", E=1'-3", F=1'-0"
P9a	4	*6-3'-6"	See Detail D; D=E=1'-3", F=1'-0"
P10	16	*6-6'-9"	See Detail D; D=4'-6", E=1'-3", F=1'-0"
P10a	2	*6-7'-3"	See Detail F.
P11	158	*6-6'-2"	See Detail D; D=E=2'-4", F=1'-6"
P12	5	*6-40'-0"	Straight
P13	10	*6-29'-4"	do
P14	62	*5-40'-0"	do
P15	124	*5-28'-6 1/8 (Avg)	Straight vary from 28'-1" to 29'-0 1/4" 31 each vary by 3/8"
P16	54	*5-13'-0"	See Detail D; D=E=4'-6", F=4'-0"
P16a	16	*6-5'-0"	Straight
P17	56	*5-22'-0" (Avg)	Straight vary from 22'-7" to 21'-11" 18 ea vary by 6"; 4@23'-0"
P18	64	*5-30'-0" (Avg)	Straight vary from 29'-0" to 31'-0" 16 ea vary by 8"
P18a	8	*5-25'-6"	Straight
P19	120	*5-9'-2 3/4 (Avg)	See Detail A; 36@A=4'-0", B=3'-9", 28@A=4'-7", B=4'-1", 28@A=5'-2", B=4'-5", 28@A=5'-9", B=4'-9"
P20	8	*6-33'-6"	See Detail C; C=29'-0"
P21	8	*6-9'-3"	See Detail C; C=4'-9"
P22	120	*5-7'-3 1/2 (Avg)	See Detail D; D=E=1'-3", F=4'-7" to 5'-9" 28 ea vary by 7", 36@F=4'-0"
P23	6	*6-6'-6"	See Detail D; D=E=2'-0", F=2'-6"

REINFORCING BAR SCHEDULE - NORTH ABUTMENT			
Mark	No	Stock	Bend
F1	66	*6-13'-6"	Straight
F1a	33	*6-10'-2"	Straight; vary from 7'-0" to 13'-4" ea vary by 2 3/8"
F2	26	*9-12'-4 1/8 (Avg)	See Detail H; M=5'-2", L=2", R=6", N varies 4'-10 1/2" to 9'-10 1/2", ea vary by 2 1/2"
F2a	18	*10-13'-5 1/8"	See Detail H; M=5'-5", L=2", R=6", N varies 6'-5 1/2" to 10'-0" ea vary by 2 1/2"
F3	25	*5-4'-6" (Avg)	Straight; vary from 5'-0" to 4'-0" 5 ea vary by 3"
F4	45	*5-5'-0"	Straight
F4a	21	*11-13'-6"	do
F5	97	*5-4'-1"	do
F6	60	*5-25'-5"	do
F7	6	*5-14'-0"	do
F8	78	*11-15'-7 3/8"	See Detail H; M=5'-9", L=2", R=6", N=10'-0"
F8a	7	*11-8'-6 1/8"	See Detail H; M=5'-9", L=2", R=6", N=3'-0"
A1	25	*5-16'-7" (Avg)	Straight; vary from 9'-4" to 23'-10" ea vary by 1 1/2"
A2	25	*9-16'-7" (Avg)	do
A2a	19	*10-13'-6"	Straight
A3	86	*6-5'-0"	See Detail D; D=E=2'-0", F=1'-0"
A4	8	*7-11'-8"	Straight
A4a	9	*7-10'-4"	do
A5	9	*5-11'-8"	do
A5a	9	*5-10'-4"	do
A6	46	*5-18'-3" (Avg)	Straight; 20@24'-9", 26 vary from 3'-6" to 23'-0", 2 ea vary by 1'-7 1/2"
A7	29	*5-12'-0"	See Detail D; D=E=4'-0"
A8	47	*5-27'-1"	Straight
A8a	24	*5-24'-10"	See Detail G; K=0, J=19'-10", H=6'-3'-6 1/8"
A8b	24	*5-21'-11"	See Detail G; K=0, J=20'-7", H=6'-11 1/8"
A9	85	*11-17'-0"	Straight
A10	57	*5-15'-3"	do
A10a	9	*5-16'-6"	do
A11	16	*6-6'-9"	See Detail D; D=4'-6", E=1'-3", F=1'-0"
A12	8	*6-9'-6"	See Detail C; C=5'-0"
A12a	2	*6-7'-3"	See Detail D; D=5'-0", E=1'-3", F=1'-0"
A12b	2	*6-3'-9"	See Detail D; D=1'-6", E=1'-3", F=1'-0"
A13	3	*6-30'-5 1/8"	See Detail E.
A14	3	*6-6'-9"	See Detail G; H=2'-5 1/2", G=4", J=3'-7", K=0
A14a	3	*6-13'-6"	See Detail G; H=2'-5 1/2", G=4", J=11'-0", K=5"
A15	6	*6-17'-6"	Straight 7
A16	32	*7-10'-4 1/8 (Avg)	See Detail A; B=1'-0", 6@A=10'-1", 25 where A varies from 8'-9" to 9'-9", 5 ea vary by 3"
A17	32	*5-12'-3 1/8 (Avg)	See Detail D; F=3", E=2'-0", 6@D=10'-9" 25 where D varies 9'-5" to 10'-5" 5 ea vary by 3"
A18	26	*6-12'-6 1/8 (Avg)	See Detail M; 20@R=8'-3", 5-5-2 1/2", 6@R=7'-0", 5-4-4 1/2", 1@J=4'-6", H=J=11 1/8"
A19	2	*6-7'-3" (Avg)	See Detail G; K=0, J=3'-8", H=6'-3'-4 1/2", 1@J=4'-6", H=J=11 1/8"
A20	12	*6-4'-3"	Straight
A21	20	*5-18'-9 1/8 (Avg)	Straight; 8@25'-3", 2@24'-0", 2@20'-3", 2@16'-3", 2@12'-6", 2@8'-9", 2@5'-0"
A22	2	*6-26'-8 1/8"	See Detail M; R=6'-1", 5-22'-9"
A23	50	*6-7'-2 1/4" (Avg)	Straight; 4@10'-3", 4 ea vary from 4'-0" to 9'-1 1/2", 2 ea vary by 3/4"
A24	25	*6-6'-0"	Straight
A25	3	*6-6'-7 1/8"	See Detail G; G=1'-7", H=0", J=3'-7"
A26	3	*6-11'-10 1/8"	See Detail G; K=7 1/4", J=10'-3", G=0", H=1'-7"

REINFORCING BAR SCHEDULE - PIER X-1			
Mark	No	Stock	Bend
F1	22	*5-9'-10"	See Detail J; P=9'-0" & Detail K
F2	20	*5-7'-10"	See Detail J; P=7'-0" & Detail K
F3	36	*7-3'-10"	Straight
P1	24	*9-14'-3"	do
P2	8	*8-22'-6"	do
P3	6	*4-22'-6"	do
P4	25	*4-6'-8"	See Detail D; D=E=1'-9", F=3'-2"
P5	15	*4-9'-4" (Avg)	See Detail D; F=3'-2", 1@D=E=2'-0", 14@D=E=2'-2" to 4'-2", 2 ea vary by 4"
P6	12	*7-25'-1 1/8"	See Detail H; N=22'-1", M=3'-6", L=0", R=F=0"
P7	8	*7-18'-8"	Straight
P8	16	*7-22'-1"	do
P9	38	*5-14'-8"	See Detail L;
P10	5	*4-5'-0"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - RAMP X ABUT.			
Mark	No	Stock	Bend
F1	16	*5-29'-6"	Straight
F2	23	*5-8'-6"	do
F3	23	*5-3'-0"	do
F4	29	*7-11'-14"	See Detail H; R=5", N=7'-0", M=4'-1", L=1 1/2"
F4a	3	*7-8'-6"	Straight
F5	35	*5-3'-4"	do
F6	6	*7-4'-1"	do
A1	37	*5-9'-11"	do
A2	22	*7-14'-0"	See Detail A; A=13'-0", B=1'-0"
A3	13	*7-12'-5"	Straight
A4	22	*5-7'-1"	See Detail D; D=4'-9", E=1'-11", F=3"
A5	29	*6-5'-0"	See Detail A; A=3'-0", B=2'-0"
A6	7	*5-10'-10"	See Detail D; D=5'-7", E=4'-3", F=1'-0"
A7	30	*5-27'-0"	Straight
A8	20	*5-10'-4" (Avg)	See Detail N; W=5'-0", T=1'-4", V=2'-6", U varies from 1'-4" to 1'-8", 4 ea vary by 1"
A9	4	*6-27'-0"	Straight
A10	13	*5-7'-8 1/2 (Avg)	See Detail N; W=3'-0", T=1'-4", V=2'-6", 8@U=9", 8@U=1'-0"

REINFORCING BAR SCHEDULE - RAMP X ABUT. (CONTD)			
Mark	No	Stock	Bend
A11	2	*6-7'-5"	See Detail G; H=2'-2 1/2", G=4", J=5'-2", K=1"
A12	2	*6-3'-11"	See Detail G; H=2'-2 1/2", G=4", J=1'-8", K=0
A13	2	*5-5'-3"	Straight
A14	2	*6-23'-2"	do
A15	6	*6-5'-3"	do
A16	7	*6-7'-1"	See Detail N; W=1'-0", U=1'-1", V=9", T=4'-3"
A17	1	*6-6'-8"	See Detail G; H=2'-2 1/2", G=0", J=4'-5", K=1"

REINFORCING BAR SCHEDULE - PIER X-2			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-22'-7 1/8"	See Detail H; N=19'-7", M=3'-6", L=0", R=1'-0"
P7	8	*7-16'-3"	Straight
P8	16	*7-19'-7"	do
P9	34	*5-14'-8"	See Detail L
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - PIER X-3			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-19'-10 1/8"	See Detail H; N=16'-10", M=3'-6", L=0", R=F=0"
P7	8	*7-13'-5"	Straight
P8	16	*7-16'-10"	do
P9	28	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - PIER X-4			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-18'-7 1/8"	See Detail H; N=15'-7", M=3'-6", L=0", R=F=0"
P7	8	*7-12'-3"	Straight
P8	16	*7-15'-7"	do
P9	26	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - PIER X-5			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-16'-1 1/8"	See Detail H; N=13'-1", M=3'-6", L=0", R=F=0"
P7	8	*7-9'-8"	Straight
P8	16	*7-13'-1"	do
P9	20	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - PIER W-1			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-23'-8 1/8"	See Detail H; N=20'-8", M=3'-6", L=0", R=F=0"
P7	8	*7-17'-4"	Straight
P8	16	*7-20'-8"	do
P9	36	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

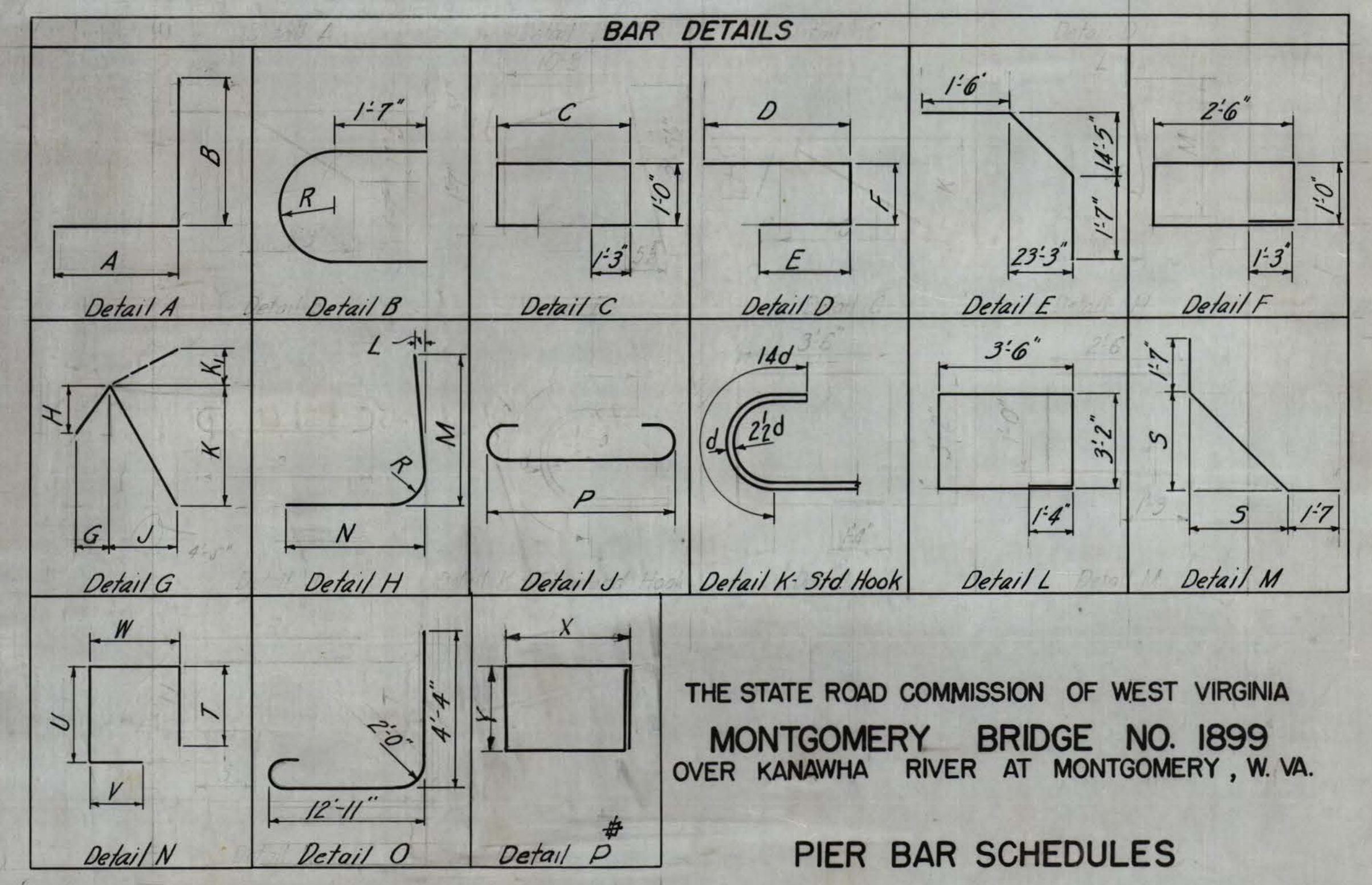
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Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-21'-8 1/8"	See Detail H; N=18'-8", M=3'-6", L=0", R=F=0"
P7	8	*7-15'-4"	Straight
P8	16	*7-18'-8"	do
P9	32	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - PIER W-3			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-18'-5 1/8"	See Detail H; N=15'-5", M=3'-6", L=0", R=F=0"
P7	8	*7-13'-0"	Straight
P8	16	*7-15'-5"	do
P9	26	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do

REINFORCING BAR SCHEDULE - PIER W-4			
Mark	No	Stock	Bend
F1 to P5 inclusive,		same as Pier X-1	
P6	12	*7-16'-8 1/8"	See Detail H; N=13'-8", M=3'-6", L=0", R=F=0"
P7	8	*7-10'-4"	Straight
P8	16	*7-13'-8"	do
P9	22	*5-14'-8"	See Detail L.
P10	4	*4-4'-10"	Straight
P11	3	*4-3'-2"	do
P12	1	*8-5'-0"	do

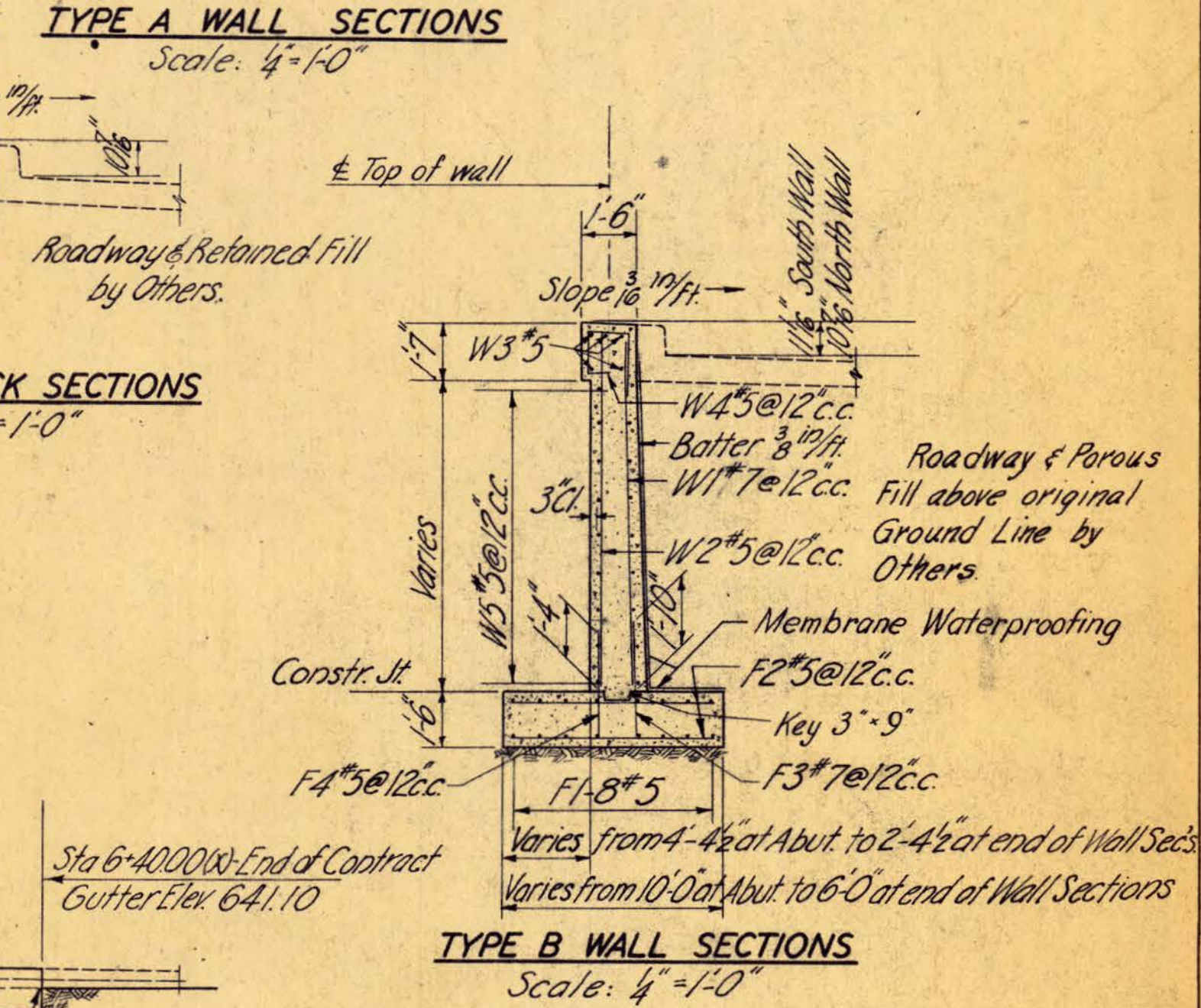
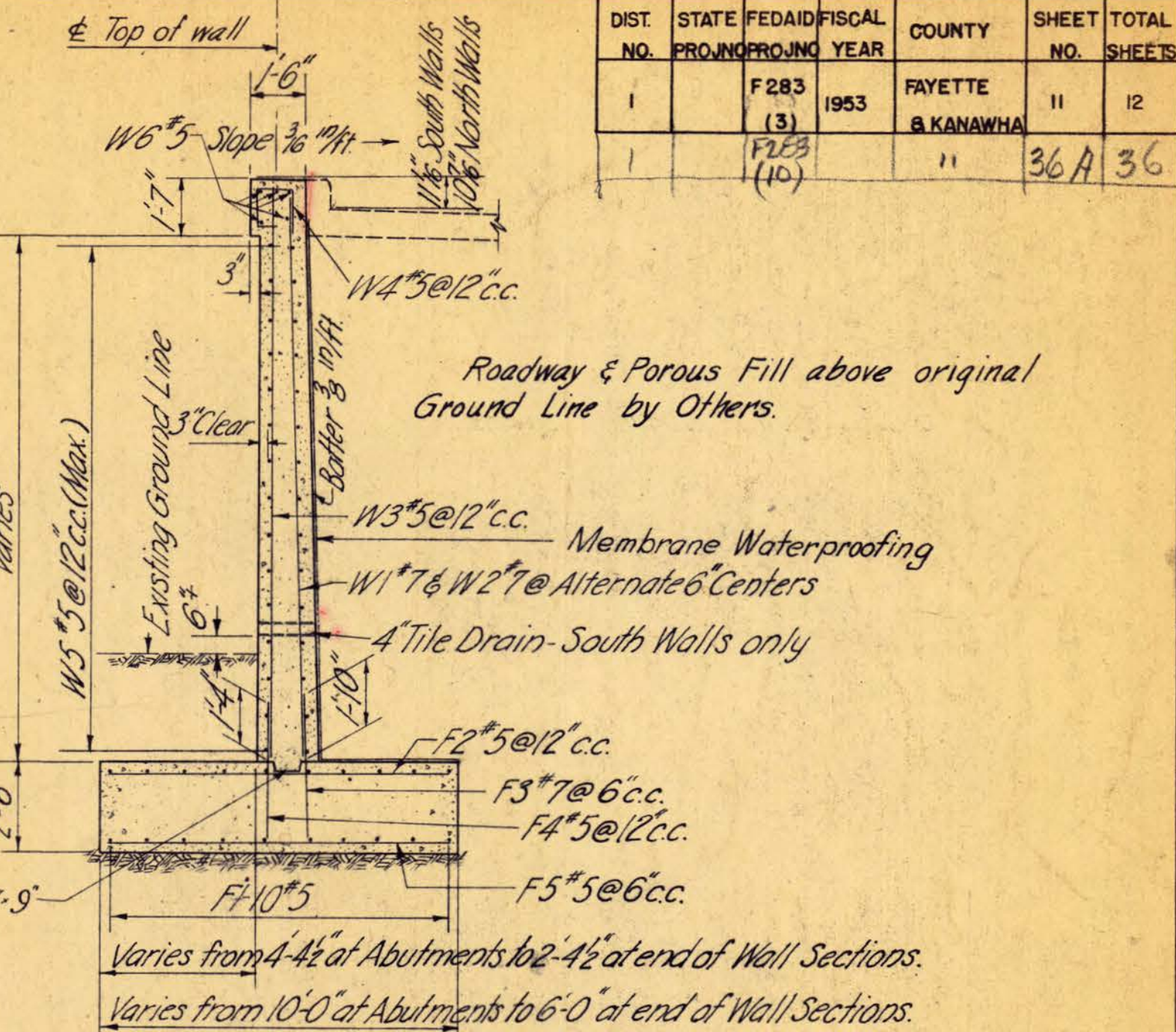
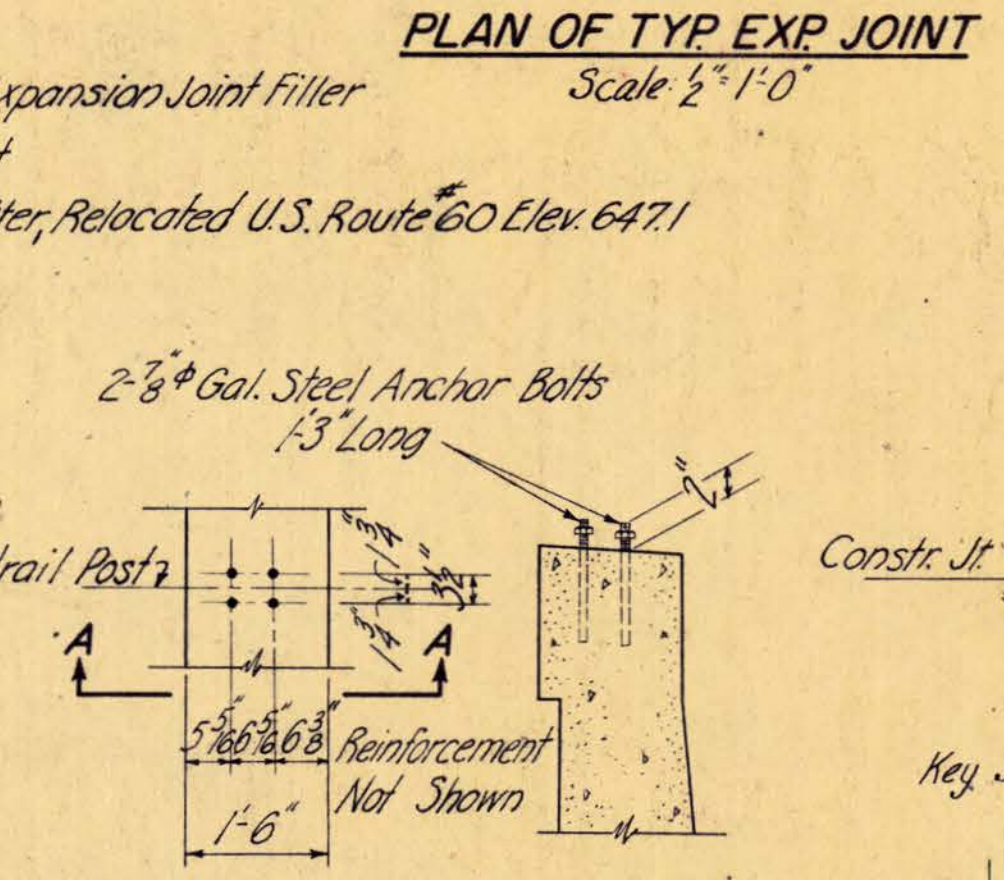
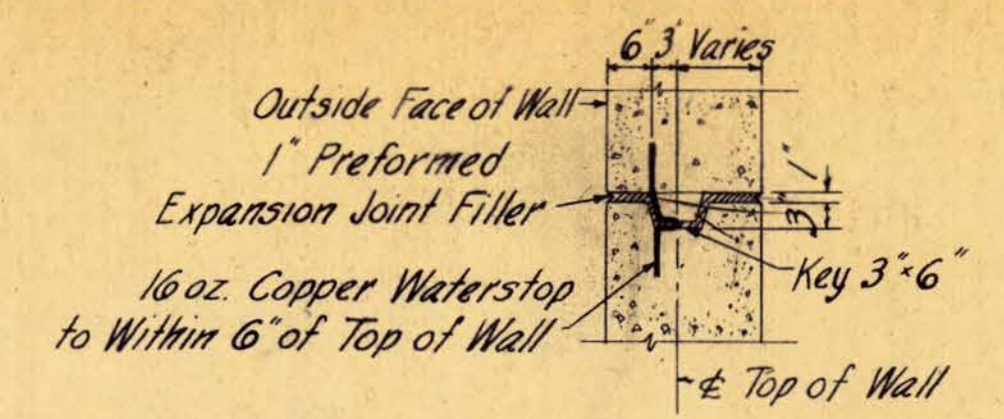
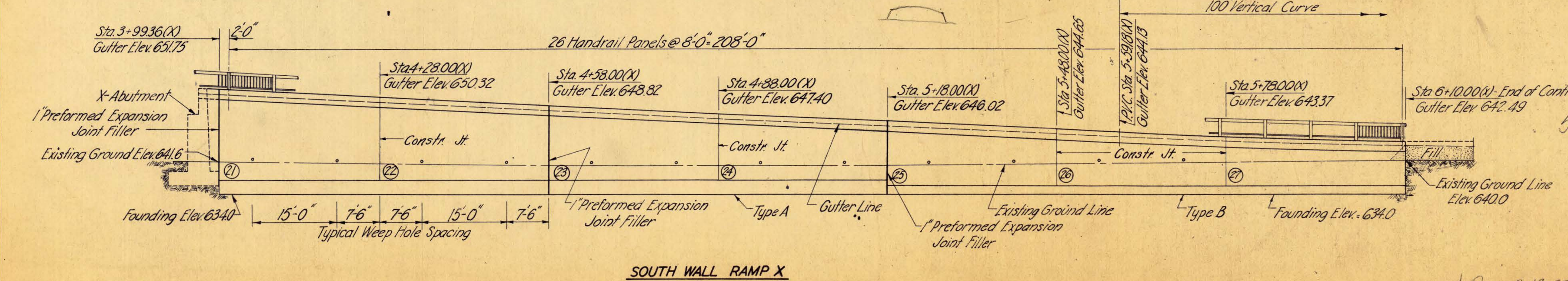
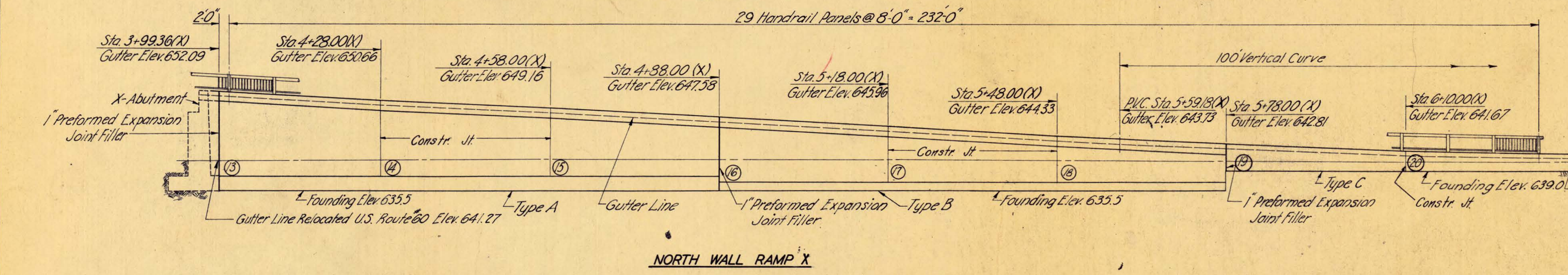
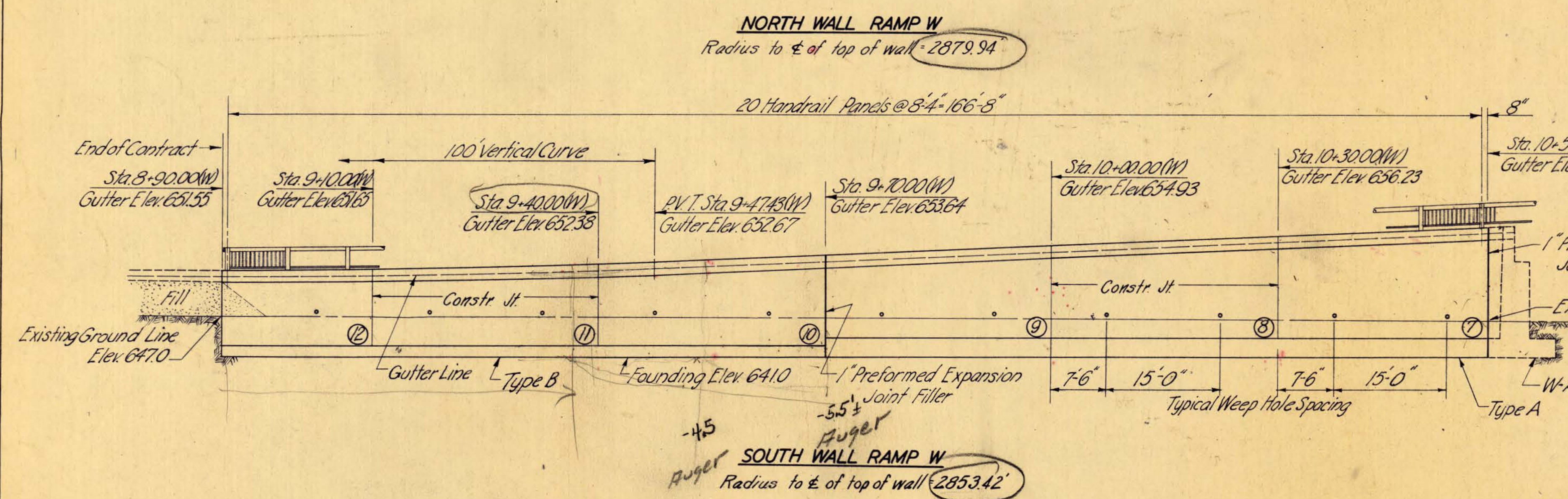
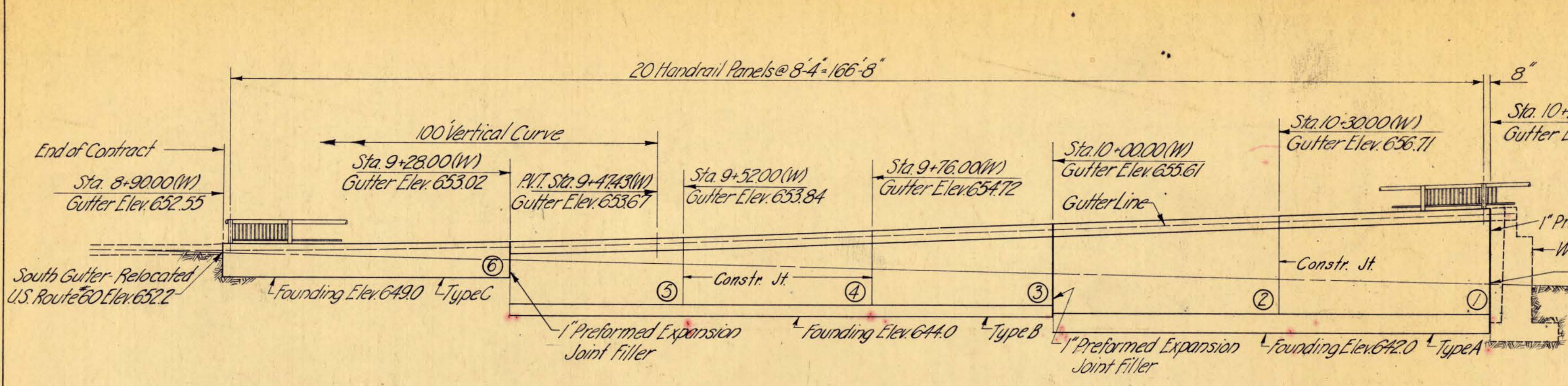
REINFORCING BAR SCHEDULE - RAMP W ABUT.			
Mark	No	Stock	Bend
F1 to F4 inclusive,		same as Ramp X Abutment	
F4a	2	*7-8'-6"	Straight
F5 & F6		same as Ramp X Abutment	
A1	37	*5-10'-0"	Straight
A2 to A5 inclusive,		same as Ramp X Abutment	
A6	7	*5-11'-0"	See Detail D; D=5'-8", E=4'-4", F=1'-0"
A7 to A12 inclusive,		same as Ramp X Abutment	
A13	3	*5-5'-3"	Straight
A14 to A17 inclusive,		same as Ramp X Abutment	
X1	6	*5-18'-2"	See Detail P X=7'-4" Y=1'-2" #
X2	6	*5-17'-10"	See Detail P X=7'-2" Y=1'-2" #

**NOTES:**  
 All dimensions are out to out.  
 All bars are to be bent around pins, the minimum sizes of which are as follows:  
 Billet Steel Bars                      Rail Steel Bars  
 Stirrups and Ties 3d                      Stirrups and Ties 5d  
 Size "8 and smaller 5d                      All other bars 8d  
 Sizes over "8 8d  
 d = nominal diameter of bar.





DIST.	STATE	FED.AID	FISCAL	COUNTY	SHEET	TOTAL
NO.	PROJ.	PROJ.	YEAR		NO.	SHEETS
1		F283	1953	FAYETTE	11	12
		(3)		& KANAWHA		
		F283			36A	36
		(10)				



**NOTES:**

All dimensions and stations of Ramp W are measured along the arc of the curve.

For detail of Vertical Construction Joints see Sheet #8.

All W5 bars in Wall Sections are parallel to the footings.

All 81 bars in Block Sections are parallel to the base except top bars.

Handrail to be furnished under Floor, Railing & Field Painting Contract.

Handrail anchor bolts to be furnished and set under Item 92 of (this) Contract #2, Proj. F283(3).

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**RETAINING WALLS**

SCALE IN FEET, EXCEPT AS NOTED

MODJESKI & MASTERS, ENGINEERS

DWG. # 11

CONTRACT NO. 2

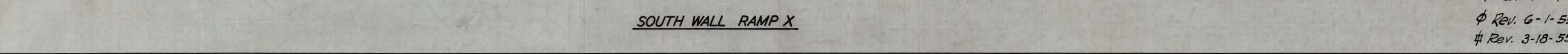
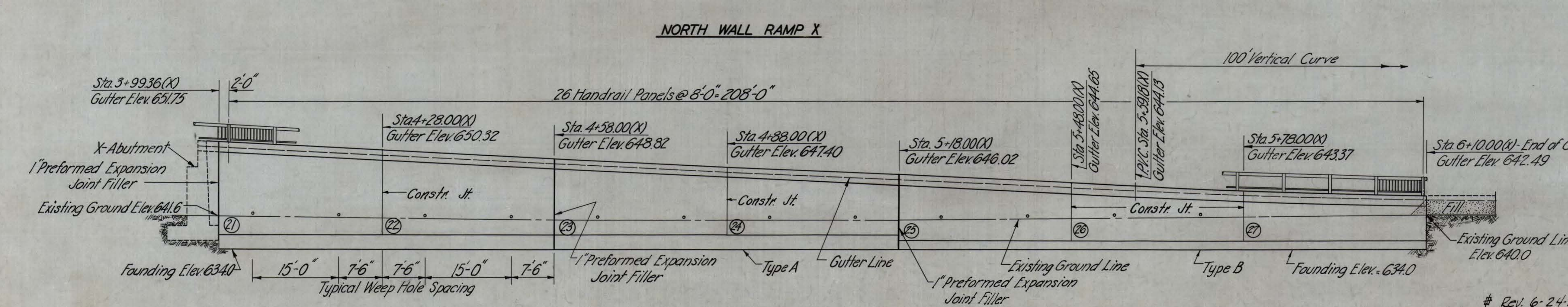
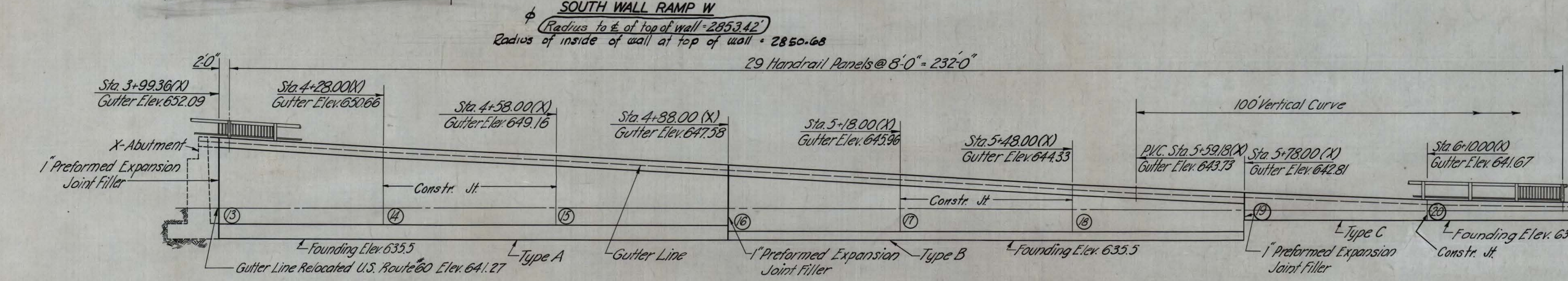
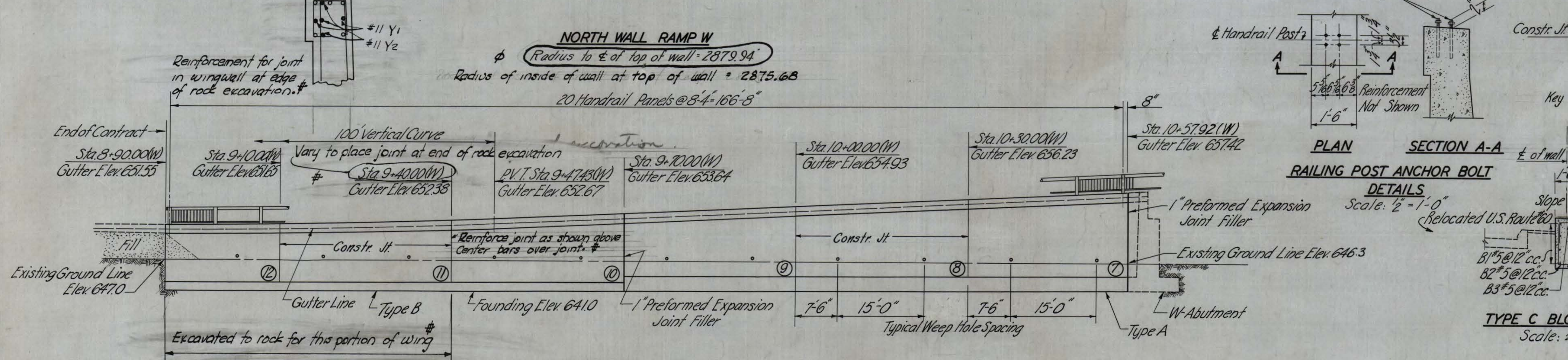
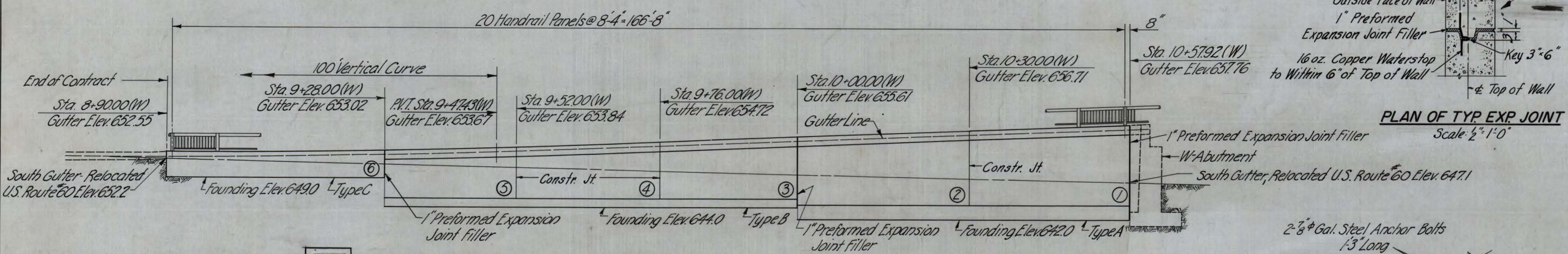
See Floor Railing

# Rev 3-18-55

Do Not Remove until Traffic Returned



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (3)	1953	FAYETTE & KANAWHA	11	12
1		F283 (10)		"	36-A	36



**NOTES:**  
All dimensions and stations of Ramp W are measured along the arc of the curve.  
For detail of Vertical Construction Joints see Sheet #3.  
All W5 bars in Wall Sections are parallel to the footings.  
All B1 bars in Block Sections are parallel to the base except top bars.  
Handrail to be furnished under Floor, Railing & Field Painting Contract.  
Handrail anchor bolts to be furnished and set under Item 92 of this Contract #2, Proj F-283 (3) #  
THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.



SECTION 1			
Mark	No.	Stock	Bend
F1	21	*5.29'-0"	Straight.
F2	28	*5.8'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-vary from 9'-3" to 8'-9", 6 ea. vary by 2", 4 @ 8'-7".
F3	55	*7.4'-1"	Straight.
F4	28	*5.3'-7"	do.
F5	55	*5.8'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-48 vary from 8'-9" to 9'-3", 12 ea. vary by 2", 7 @ 8'-7".
W1	28	*7.13'-2 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-vary from 12'-9" to 13'-8", 7 ea. vary by 3".
W2	27	*7.7'-0"	Straight.
W3	28	*5.13'-2 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-vary 12'-9" to 13'-8", 7 ea. vary by 3".
W4	28	*5.5'-1"	See Detail A.
W5	26	*5.27'-4 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-24 @ 29'-0" & 2 @ 8'-0"
W6	5	*5.29'-1"	Straight.

SECTION 2			
Mark	No.	Stock	Bend
F1	20	*5.29'-9"	Straight.
F2	30	*5.8'-1" (Avg)	Straight-vary from 8'-5" to 7'-9", 6 ea. vary by 2".
F3	60	*7.4'-1"	Straight.
F4	30	*5.3'-7"	do.
F5	60	*5.8'-1" (Avg)	Straight-vary from 8'-5" to 7'-9", 12 ea. vary by 2".
W1	30	*7.12'-0" (Avg)	Straight-vary from 11'-8" to 12'-4", 10 ea. vary by 4".
W2	31	*7.6'-6"	Straight.
W3	30	*5.12'-0" (Avg)	Straight-vary from 11'-8" to 12'-4", 10 ea. vary by 4".
W4	30	*5.5'-1"	See Detail A.
W5	24	*5.27'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-22 @ 29'-9" & 2 @ 8'-0"
W6	5	*5.29'-10"	Straight.

SECTION 3			
Mark	No.	Stock	Bend
F1	16	*5.25'-1"	Straight.
F2	48	*5.7'-2" (Avg)	Straight-vary from 6'-11" to 7'-5", 12 ea. vary by 2".
F3	24	*7.3'-1"	Straight.
F4	24	*5.2'-7"	do.
W1	24	*7.10'-0" (Avg)	Straight-vary from 9'-8" to 10'-4", 8 ea. vary by 4".
W2	24	*5.10'-0" (Avg)	do.
W3	5	*5.25'-2"	Straight.
W4	24	*5.5'-1"	See Detail A.
W5	20	*5.23'-4 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-18 @ 25'-1" & 2 @ 8'-0"

SECTION 4			
Mark	No.	Stock	Bend
F1	16	*5.24'-0"	Straight.
F2	48	*5.6'-6" (Avg)	Straight-vary from 6'-9" to 6'-3", 12 ea. vary by 2".
F3	24	*7.3'-1"	Straight.
F4	24	*5.2'-7"	do.
W1	24	*7.9'-1" (Avg)	Straight-vary from 8'-9" to 9'-5", 8 ea. vary by 4".
W2	24	*5.9'-1" (Avg)	do.
W3	5	*5.24'-1"	Straight.
W4	24	*5.5'-1"	See Detail A.
W5	18	*5.22'-5 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-16 @ 24'-0" & 2 @ 10'-0"

SECTION 5			
Mark	No.	Stock	Bend
F1	16	*5.25'-1"	Straight.
F2	48	*5.5'-9" (Avg)	Straight-vary from 6'-0" to 5'-6", 16 ea. vary by 3".
F3	24	*7.3'-1"	Straight.
F4	24	*5.2'-7"	do.
W1	24	*7.8'-4" (Avg)	Straight-vary from 8'-0" to 8'-8", 8 ea. vary by 4".
W2	24	*5.8'-4" (Avg)	do.
W3	5	*5.25'-2"	Straight.
W4	24	*5.5'-1"	See Detail A.
W5	16	*5.23'-3 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-14 @ 25'-1" & 2 @ 11'-0"

SECTION 6			
Mark	No.	Stock	Bend
B1	10	*5.37'-6"	Straight.
B2	38	*5.5'-0"	See Detail B-A-2'-0"
B3	38	*5.7'-5" (Avg)	See Detail B-19 @ A-3'-1" & 19 @ A-3'-4"

SECTION 7			
Mark	No.	Stock	Bend
F1	21	*5.29'-0"	Straight.
F2	28	*5.9'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-vary from 9'-4" to 8'-11 <sup>1</sup> / <sub>2</sub> ", 6 ea. vary by 1 <sup>1</sup> / <sub>2</sub> "; 4 @ 8'-10".
F3	55	*7.4'-1"	Straight.
F4	28	*5.3'-7"	do.
F5	55	*5.9'-4" (Avg)	Straight-48 vary from 9'-4" to 8'-11 <sup>1</sup> / <sub>2</sub> ", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> "; 7 @ 8'-10".
W1	28	*7.13'-7 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-vary from 13'-3" to 14'-0", 7 ea. vary by 3".
W2	27	*7.7'-0"	Straight.
W3	28	*5.13'-7 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-vary from 14'-0" to 13'-3", 7 ea. vary by 3".
W4	28	*5.5'-1"	See Detail A.
W5	26	*5.27'-4 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-24 @ 29'-0" & 2 @ 8'-0"
W6	5	*5.29'-1"	Straight.

SECTION 8			
Mark	No.	Stock	Bend
F1	20	*5.30'-0"	Straight.
F2	30	*5.8'-5" (Avg)	Straight-vary from 8'-8" to 8'-2", 6 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	60	*7.4'-1"	Straight.
F4	30	*5.3'-7"	do.
F5	60	*5.8'-5" (Avg)	Straight-vary from 8'-8" to 8'-2", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
W1	30	*7.12'-7" (Avg)	Straight-vary from 13'-2" to 12'-0", 6 ea. vary by 3 <sup>1</sup> / <sub>2</sub> ".
W2	31	*7.6'-0"	Straight.
W3	30	*5.12'-7" (Avg)	Straight-vary from 13'-2" to 12'-0", 6 ea. vary by 3 <sup>1</sup> / <sub>2</sub> ".
W4	30	*5.5'-1"	See Detail A.
W5	24	*5.29'-3" (Avg)	Straight-22 @ 30'-0" & 2 @ 21'-0"
W6	5	*5.30'-1"	Straight.

SECTION 9			
Mark	No.	Stock	Bend
F1	20	*5.31'-1"	Straight.
F2	30	*5.7'-7 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-vary from 7'-11 <sup>1</sup> / <sub>2</sub> " to 7'-3 <sup>1</sup> / <sub>2</sub> ", 6 ea. vary by 2".
F3	60	*7.4'-1"	Straight.
F4	30	*5.3'-7"	do.
F5	60	*5.7'-7 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-vary from 7'-11 <sup>1</sup> / <sub>2</sub> " to 7'-3 <sup>1</sup> / <sub>2</sub> ", 12 ea. vary by 2".
W1	30	*7.11'-3" (Avg)	Straight-vary from 11'-9" to 10'-9", 6 ea. vary by 3".
W2	30	*7.5'-0"	Straight.
W3	30	*5.11'-3" (Avg)	Straight-vary from 11'-9" to 10'-9", 6 ea. vary by 3".
W4	30	*5.5'-1"	See Detail A.
W5	22	*5.29'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-20 @ 31'-1" & 2 @ 19'-0"
W6	5	*5.31'-2"	Straight.

SECTION 10			
Mark	No.	Stock	Bend
F1	16	*5.29'-9"	Straight.
F2	60	*5.6'-11" (Avg)	Straight-vary from 7'-3" to 6'-7", 12 ea. vary by 2".
F3	30	*7.3'-1"	Straight.
F4	30	*5.2'-7"	do.
W1	30	*7.10'-11" (Avg)	Straight-vary from 11'-4" to 10'-6", 6 ea. vary by 2 <sup>1</sup> / <sub>2</sub> ".
W2	30	*5.10'-11" (Avg)	do.
W3	5	*5.29'-10"	Straight.
W4	30	*5.5'-1"	See Detail A.
W5	20	*5.28'-6 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-18 @ 29'-9" & 2 @ 18'-0"

SECTION 11			
Mark	No.	Stock	Bend
F1	16	*5.32'-8"	Straight.
F2	60	*5.6'-3 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-vary from 6'-6" to 6'-0", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	30	*7.3'-1"	Straight.
F4	30	*5.2'-7"	do.
W1	30	*7.10'-0" (Avg)	Straight-vary from 10'-4" to 9'-8", 6 ea. vary by 2".
W2	30	*5.10'-0" (Avg)	do.
W3	5	*5.32'-9"	Straight.
W4	30	*5.5'-1"	See Detail A.
W5	18	*5.32'-8"	Straight.
Y1	2	*11 x 20'-0"	Straight #
Y2	3	*11 x 30'-0"	Straight #

SECTION 12			
Mark	No.	Stock	Bend
F1	16	*5.19'-9"	Straight.
F2	40	*5.5'-7 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-vary from 5'-9" to 5'-6", 10 ea. vary by 1".
F3	20	*7.3'-1"	Straight.
F4	20	*5.2'-7"	do.
W1	20	*7.9'-8"	do.
W2	20	*5.9'-8"	do.
W3	5	*5.19'-10"	do.
W4	20	*5.5'-1"	See Detail A.
W5	18	*5.19'-9"	Straight.

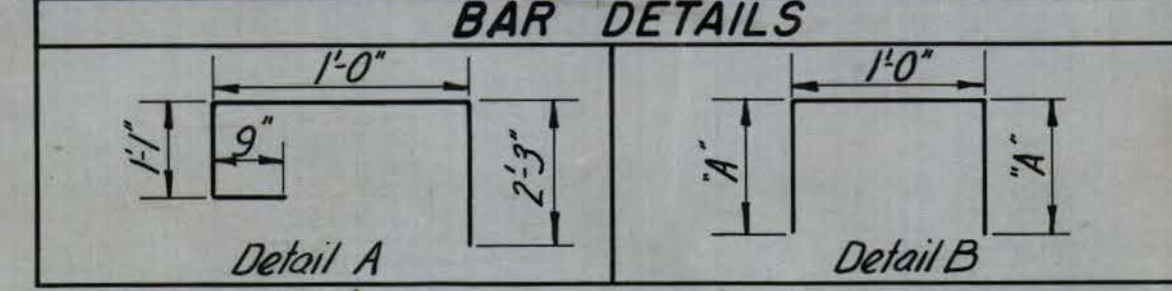
SECTION 13			
Mark	No.	Stock	Bend
F1	21	*5.29'-9"	Straight.
F2	29	*5.9'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-vary from 9'-4 <sup>1</sup> / <sub>2</sub> " to 8'-10 <sup>1</sup> / <sub>2</sub> ", 6 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	57	*7.4'-1"	Straight.
F4	29	*5.3'-7"	do.
F5	57	*5.9'-11 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-vary from 9'-4 <sup>1</sup> / <sub>2</sub> " to 8'-10 <sup>1</sup> / <sub>2</sub> ", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
W1	29	*7.13'-9 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-24 vary from 14'-2" to 13'-2", 6 ea. vary by 4"; 5 @ 14'-5".
W2	28	*7.7'-0"	Straight.
W3	29	*5.13'-9 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-24 vary from 13'-2" to 14'-2", 6 ea. vary by 4"; 5 @ 14'-5".
W4	29	*5.5'-1"	See Detail A.
W5	26	*5.28'-6 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-24 @ 29'-9" & 2 @ 15'-9"
W6	5	*5.29'-10"	Straight.

SECTION 14			
Mark	No.	Stock	Bend
F1	20	*5.30'-0"	Straight.
F2	30	*5.8'-5" (Avg)	Straight-vary from 8'-8" to 8'-2", 6 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	60	*7.4'-1"	Straight.
F4	30	*5.3'-7"	do.
F5	60	*5.8'-5" (Avg)	Straight-vary from 8'-8" to 8'-2", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
W1	30	*7.12'-3" (Avg)	Straight-vary from 12'-11" to 11'-7", 6 ea. vary by 4".
W2	30	*7.6'-0"	Straight.
W3	30	*5.12'-3" (Avg)	Straight-vary from 12'-11" to 11'-7", 6 ea. vary by 4".
W4	30	*5.5'-1"	See Detail A.
W5	24	*5.28'-11" (Avg)	Straight-22 @ 30'-0" & 2 @ 17'-0"
W6	5	*5.30'-1"	Straight.

SECTION 15			
Mark	No.	Stock	Bend
F1	20	*5.31'-1"	Straight.
F2	30	*5.7'-9" (Avg)	Straight-vary from 8'-0" to 7'-6", 6 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	60	*7.4'-1"	Straight.
F4	30	*5.3'-7"	do.
F5	60	*5.7'-9" (Avg)	Straight-vary from 8'-0" to 7'-6", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
W1	30	*7.10'-9" (Avg)	Straight-vary from 11'-5" to 10'-1", 6 ea. vary by 4".
W2	30	*7.6'-0"	Straight.
W3	30	*5.10'-9" (Avg)	Straight-vary from 11'-5" to 10'-1", 6 ea. vary by 4".
W4	30	*5.5'-1"	See Detail A.
W5	20	*5.29'-8 <sup>1</sup> / <sub>2</sub> " (Avg)	Straight-18 @ 31'-1" & 2 @ 17'-4"
W6	5	*5.31'-2"	Straight.

SECTION 16			
Mark	No.	Stock	Bend
F1	16	*5.29'-9"	Straight.
F2	60	*5.7'-1" (Avg)	Straight-vary from 7'-4" to 6'-10", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	30	*7.3'-1"	Straight.
F4	30	*5.2'-7"	do.
W1	30	*7.10'-2" (Avg)	Straight-vary from 10'-10" to 9'-6", 6 ea. vary by 4".
W2	30	*5.10'-2" (Avg)	do.
W3	5	*5.29'-10"	Straight.
W4	30	*5.5'-1"	See Detail A.
W5	20	*5.26'-6 <sup>3</sup> / <sub>8</sub> " (Avg)	Straight-20 @ 5'-0"; 2 @ 24'-0" & 16 @ 29'-9"

NOTES:  
All dimensions are out to out.  
All bars to be bent around pins, the minimum sizes of which are as follows:  
Billet Steel Bars  
Stirrups & Ties 3d  
Size #8 & smaller 5d  
Sizes over #8 8d  
Rail Steel Bars  
Stirrups & Ties 5d  
All other bars 8d  
d-nominal diameter of bar.

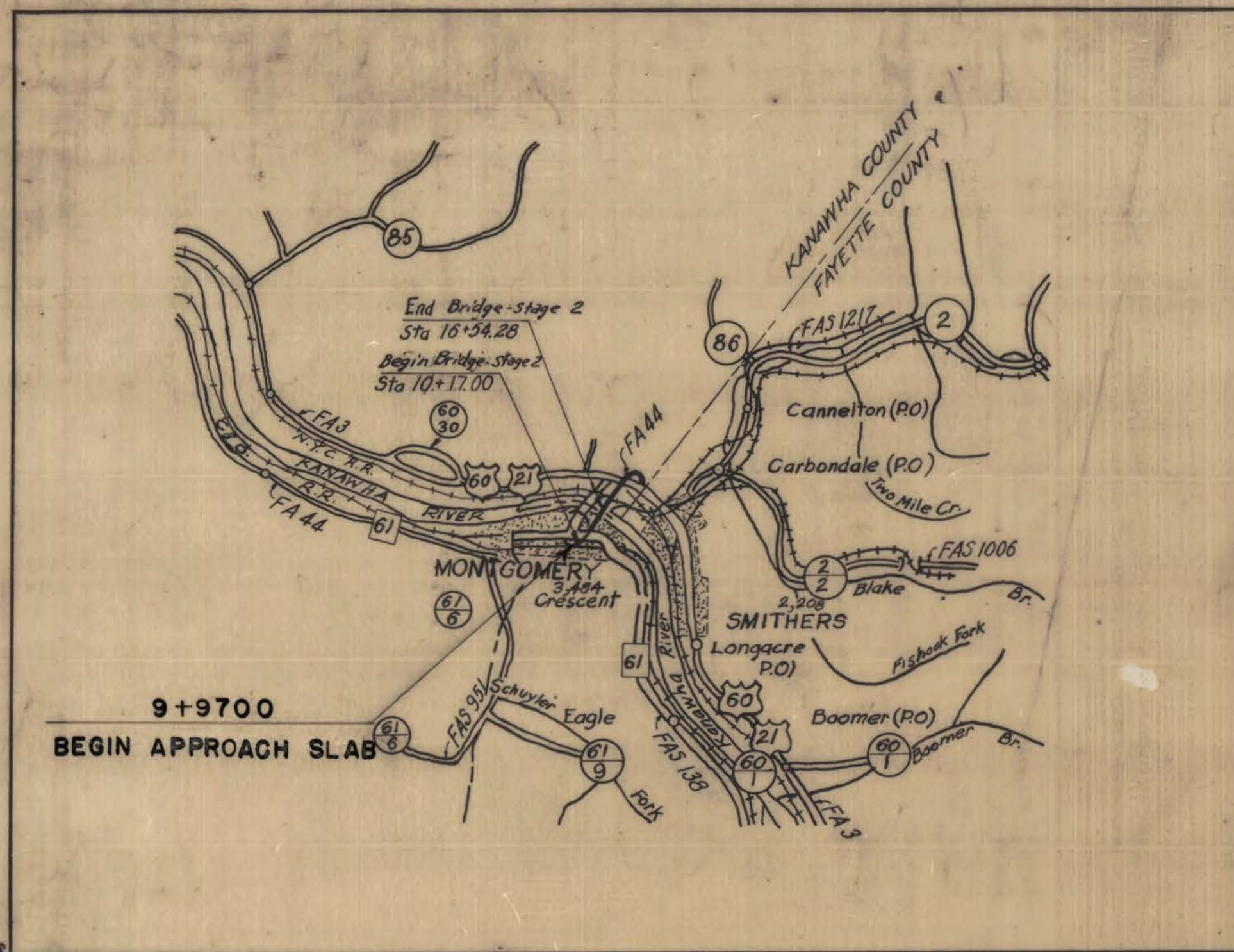


SECTION 17			
Mark	No.	Stock	Bend
F1	16	*5.32'-8"	Straight.
F2	60	*5.6'-5" (Avg)	Straight-vary from 6'-8" to 6'-2", 12 ea. vary by 2".
F3	30	*7.3'-1"	Straight.
F4	30	*5.2'-7"	do.
W1	30	*7.8'-6" (Avg)	Straight-vary from 9'-2" to 7'-10", 6 ea. vary by 2".
W2	30	*5.8'-6" (Avg)	do.
W3	5	*5.32'-9"	Straight.
W4	30	*5.5'-1"	See Detail A.
W5	16	*5.30'-6" (Avg)	Straight-14 @ 32'-8" & 2 @ 15'-4"

SECTION 18			
Mark	No.	Stock	Bend
F1	16	*5.29'-9"	Straight.
F2	60	*5.5'-9" (Avg)	Straight-vary from 6'-0" to 5'-6", 12 ea. vary by 1 <sup>1</sup> / <sub>2</sub> ".
F3	30	*7.3'-1"	Straight.
F4	30	*5.2'-7"	do.
W1	30	*7.6'-11" (Avg)	Straight-vary from 7'-7" to 6'-3", 6 ea. vary by 4".
W2	30	*5.8'-11" (Avg)	do.
W3	5	*5.29'-10"	Straight.
W4	30	*5.5'-1"	See Detail A.
W5	14	*5.24'-10 <sup>1</sup> / <sub>8</sub> " (Avg)	Straight-2 @ 4'-0"; 2 @ 21'-6" & 10 @ 29'-9"

SECTION 19			
Mark	No.	Stock	Bend
B1	10	*5.33'-1"	Straight.
B2	32	*5.5'-0"	See Detail B-A-2'-0"
B3	32	*5.6'-8" (Avg)	See Detail B-A-varies from 3'-4" to 2'-4", 8 ea. vary by 4".





SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

DESIGN DESIGNATION

A D T	1963	2 000
D	1983	000
H W		260
D		50 40
V		30 MPH

# THE STATE ROAD COMMISSION OF WEST VIRGINIA

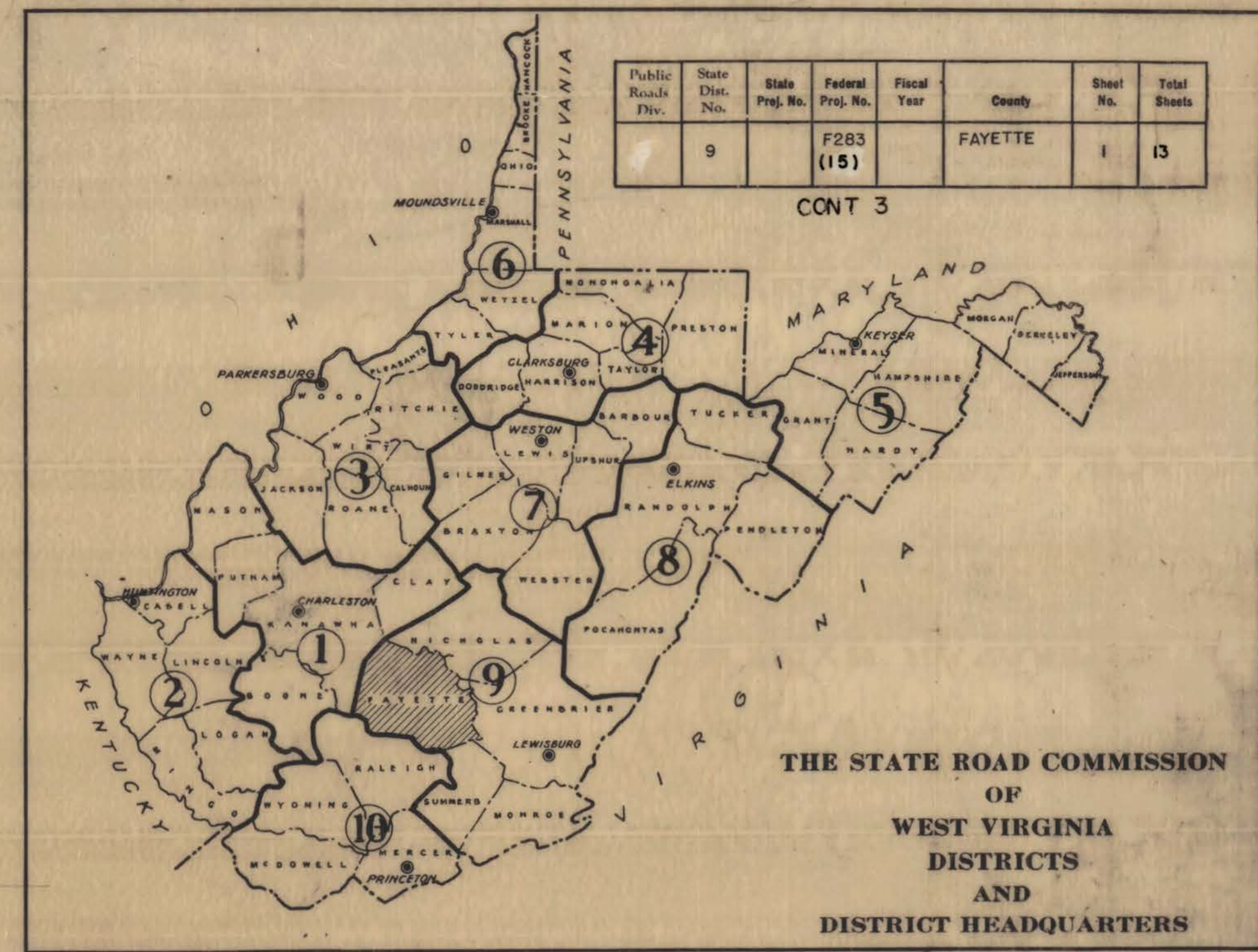
## PLAN AND PROFILE FOR CONSTRUCTION OF STATE ROAD

### PROJECT NO. F 283(15) CONTRACT 3 ROUTE NO. W. VA. 6

#### KANAWHA DISTRICT FAYETTE COUNTY MONTGOMERY BRIDGE # 1899

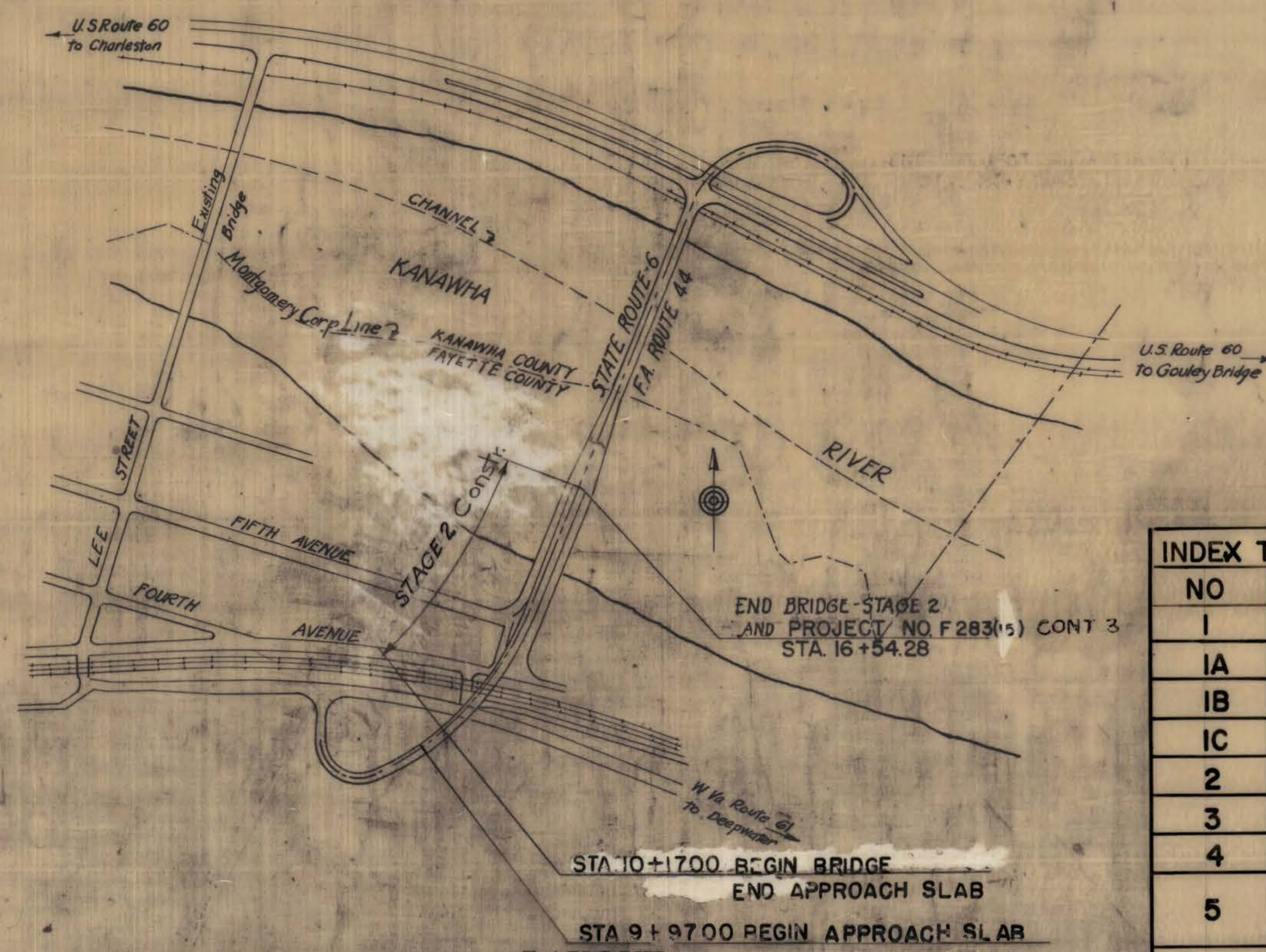
(STAGE 2) LENGTH  
 APPROACH SLAB STA 9+9700 TO STA 10+17.00 20.0' FT.=0.004 MI.  
 BRIDGE NO 1899 STA 10+17.00 TO STA 16+54.28 637.28 FT.=0.121 MI.  
 657.28 FT.=0.125 MI. TOTAL

Plan 1 IN.=  
 SCALES (AS SHOWN) PROFILE HOR. 1 IN.= VERT. 1 IN.=



### TYPE OF CONSTRUCTION

STAGE 2  
 CONTRACT 1 - SUBSTRUCTURE  
 CONTRACT 2 - APPROACHES  
 CONTRACT 3 - SOUTH ABUTMENT & SUPERSTRUCTURE



LAYOUT  
SCALE 1 IN. = 300 FT.

INDEX TO SHEETS FOR STAGE 2 CONTRACT 3	
NO	DESCRIPTION
1	TITLE SHEET
1A	SITUATION PLAN
1B	BORING 1 TO IOL
1C	GENERAL PLAN & EL SOUTH APPROA
2	DRAINAGE DETAIL
3	GENERAL NOTES & ESTIMATED QTY'S
4	STRESS SHEET
5	GIRDER DETAILS & SECTIONS SOUTH APPROACH - STAGE 2
6	STRINGER DETAILS & SECTIONS
7	BEARINGS
8	ROADWAY REINFORCING DETAIL
8-A	ROADWAY ELEVATIONS
9	RAILING DETAILS
10	TEMPORARY CURBS & RAILINGS
11	HANDRAIL DETAIL (AT FUTURE LAMP STANDARDS)
12	SOUTH ABUTMENT
13	BAR SCHEDULE (SOUTH ABUTMENT)
13A	APPROACH SLAB
13B	INFORMATION SHEET

PLANS COMPLETED MARCH 1955  
 Revised March 20, 1958  
 " JUNE 13, 1958  
 " OCT. 3, 1958

**ROUTE NO. W.VA. 6**  
**PROJECT NO. F 283(15) CONTRACT 3**

RECOMMENDED *William A. Harty*  
 DIRECTOR, DESIGN DIVISION

REVIEWED *W. Daniel*  
 CHIEF ENGINEER (DEVELOPMENT)

RECOMMENDED FOR APPROVAL *George J. ...*  
 STATE HIGHWAY ENGINEER

APPROVED *Paul ...*  
 STATE ROAD COMMISSIONER

October 23, 1966

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT F 283 (15) CONTRACT 3

APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED 28 DAY OF October 1966

SECRETARY

#### CONVENTIONAL SIGNS

State Line	Wall
County Line	Marsh
Corporation Line	Hedge
District Line	Drop Inlet
Right of Way Line	Bridge
Property Line	Present Culvert
Fence Line	Proposed Road
Guard Rail	Telegraph Pole
Proposed Road	Trolley Pole
Traveled Road	Power Pole
Railroad	Tree
Electric Railway	Brick Dwelling
Frame Dwelling	

PREPARED AND RECOMMENDED BY  
**MODJESKI & MASTERS**  
 CONSULTING ENGINEERS

*John R. ...*

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_

DIVISION ENGINEER DATE  
 DWG. #1 #1899



**GOVERNING SPECIFICATIONS**

The State Road Commission of West Virginia Standard Specifications, Roads and Bridges, adopted 1960 as amended by the Special Provisions of The State Road Commission of West Virginia, adopted October 19, 1965, the Contract documents and Contract plans. The following Special Provisions contained in the contract documents are applied specifically to this project.

1. Supplemental Specifications For Aluminum Railing, dated Aug. 17, 1965, Revised MARCH 18, 1966.
2. Special Railroad Provisions, dated Aug. 26, 1965.

**DESIGN**

The bridge is designed for an HS20-44 live loading. The design provides for an additional wearing surface of 15 lbs. per square foot of roadway. The additional wearing surface is not included in this contract. The design is in accordance with the 1961 A.A.S.H.O. Specifications for Highway Bridges and the 1961, 1962, 1963 Interim Specifications, except as hereinafter stated.

**Design Unit Stresses**

Axial tension - Net section = 18,000 #/in<sup>2</sup>  
 Axial compression - Gross section = 15,000 - 0.25(1/2)2#/in<sup>2</sup>  
 Stress in extreme fiber of Pins = 27,000 #/in<sup>2</sup>  
 Shear in Plate Girders Webs - Gross section = 11,000 #/in<sup>2</sup>  
 Shear in power driven Rivets & Pins = 12,000 #/in<sup>2</sup>  
 Bearing on Milled Stiffeners & other steel parts in contact = 27,000 #/in<sup>2</sup>  
 Bearing on concrete = 600 #/in<sup>2</sup>  
 Bearing on Rollers & Rockers = 600 P #/in<sup>2</sup>  
 Bearing in Power Driven Rivets & Pins = 24,000 #/in<sup>2</sup>  
 Erection stresses shall not exceed 1.15 times basis allowable stresses or 1.30 times when combined with erection wind.  
 Provision has been made for jacking the girder spans for maintenance & adjustment after completion. The resulting jacking stresses shown on the drawings are 2/3 the actual values thus indicating an allowable 50% increase in basic unit stress.

All reinforcing steel bars shall be intermediate grade billet steel in accordance with Article 3.9.1 of the Standard Specifications.

The clear distance between reinforcing steel and the face of concrete shall be as follows, unless otherwise shown on the drawings:

Tops of Slabs	1 1/2"
Bottom of Slabs	1"
Footings	3"
All other Locations	2"

Chamfer all exposed edges of concrete, on superstructure, 3/4" unless otherwise noted, and 1" on substructure, unless otherwise noted.

Reinforcement under shoes shall be so placed as to avoid interference with drilling of anchor bolt holes.

Concrete in the deck, curb and parapets shall be Class "A" air-entrained. Concrete in substructures including wings, parapets and end posts shall be Class "A" air-entrained.

Concrete shall be cured by burlap and water. The use of vapor barrier burlap will be permitted.

A water-reducing retarding admixture in accordance with the Special Provisions shall be used in all super-structure concrete. Payment shall be included in Item 71-1. Retarder will not be required below 50°F. The Contractor's attention is called to the test requirements for the retarder admixture.

**METAL FORMS FOR SUBSTRUCTURE**

Article 2.71-73.3(F) shall be modified to permit the use of metal or other approved type of forms for exposed surfaces in the substructure.

**PILING**

All 12BP53 piling shall have a design load of 70 tons and shall be driven to refusal into the foundation strata as indicated by the estimated pile lengths (or pile tip elevations). Refusal is defined as the equivalent of 20 blows for 1-inch or less of penetration with a power hammer developing a minimum capacity of 12,000 foot pounds per blow. If a larger hammer is used the number of blows in the last inch of penetration may be reduced in direct proportion to the energy rating of the hammer, but to no less than 12.

Before pile driving is started, the Contractor shall provide a written certification to the Engineer that the pile hammers, air compressors and air valves have been inspected and found to be in good working condition.

New stock material may be used for steel bearing piles provided that each piece can be identified by heat number and provided that certified mill reports are furnished to the State's Shop Inspector for each heat represented, indicating that the material conforms to the Specifications.

Fill anchor bolt holes with non-shrink grout after anchor bolts are set. The non-shrink grout shall be in proportion of one (1) part non-shrink admixture, one (1) part sand and one (1) part regular portland cement by weight.

Bridge seats on abutments and piers upon which shoes will be set shall be finished 1/4" high and shall be brought to true elevations and planes by bush hammering and grinding.

**MAINTAINING TRAFFIC**

This Item includes all costs incurred for flagging and maintenance of traffic by bridge erection over and adjacent to W. Va. 61 and City streets. This Item does not include flagmen over the railroad right-of-way which will be done by railroad forces.

**STRUCTURAL STEEL**

The Lump Sum Bid for Item 90, Steel Superstructure, shall include all structural steel complete in place including bearing shoes, preformed fabric pads, expansion devices, floor drains, downspouts and anchor bolts, but excluding floor.

**BRONZE PLATES & FABRIC PADS**

The fabric pads and bronze plates shall be sampled and/or approved at their source of supply by The State Road Commission of West Virginia, Materials Control, Soil and Testing Division, 312 Michigan Avenue, Charleston, West Virginia.

**PAINTING**

Field Painting shall consist of three (3) coats in addition to touch-up painting required under Article 2.90-93(G)(3). The first coat and that for the touch-up painting shall be red lead iron oxide conforming to Article 3.11.7 as amended by the Special Provisions. The final two (2) coats shall be aluminum paint conforming to Article 3.11.9 as amended by the Special Provisions.

All metal in the roadway drainage system shall be painted as for structural steel, except the inside surface of drain pipe shall receive two (2) coats of red lead.

The last sentence of the first paragraph of Article 2.90-93.3(D)(9) shall not apply where the contact surfaces are joints to be connected with high-strength bolts.

**JOINT FILLER**

Preformed joint filler for vertical joints in superstructure shall be sponge rubber, Type I conforming to Article 3.8.2 of the Specifications. The cost of the filler shall be included in Item 71-1, Class "A" Concrete in Superstructure.

All joint filler for vertical joints in substructures shall be Type III conforming to Article 3.8.2 of the Specifications.

**BACKFILL**

The Contractor shall backfill around the substructure as soon as possible after removal of forms and false-work, and slope surfaces to drain.

**SHOP DRAWINGS**

Shop drawings shall be submitted to the Bridge Department of The State Road Commission of West Virginia, 218 California Ave., Charleston, West Virginia for checking and approval.

**METAL WORK**

Camber: Girders & stringers in spans 1 thru 6 shall be cambered for dead load. Camber dimensions shall be shown on the shop drawings.  
 Materials: All structural steel shall be A.S.T.M. A-36.  
 Wrought Iron shall be A.S.T.M. A42-60T  
 Bronze Expansion Plates shall be bronze castings A.S.T.M. B22-61 Alloy B; or Rolled Copper Alloy A.S.T.M. B100-61 Alloy I.  
 Wrought Iron Pipe shall conform to A.A.S.H.O. Specifications M-101-54  
 Corrosion Resisting Alloy Metal Rollers shall conform to A.S.T.M. A296-60T Grade CA15 Type 12 Chromium heat treated.  
 Top & Bottom Roller Plates shall be Corrosion Resisting Alloy Steel Clad Plate, A.S.T.M. A263-63 medium carbon steel base Grade A Type 410 modified with single clad of 1/8 in. finished thickness on side in contact with rollers.  
 Corrosion Resisting Alloy metal teeth for Bearing Shoes shall conform to A.S.T.M. A276-63, Type 410 fully annealed.  
 Cast Steel Bearing shoes shall conform to A.S.T.M. A27-62 Grade 65-35, fully annealed.  
 Forged Steel Pins shall conform to A.S.T.M. A235-63T Class E annealed.

**GRILLAGE AND ANCHOR BOLTS**

The substructure plans provide for the installation of grillages and anchor bolts in the tops of piers VI, VII & VIII, all accurately scribed with centerlines of bearings & grillages. The contractor shall verify the location & elevation of all embedded material prior to the erection of any steel work and shall adjust the heights of shoes & details to correct for variations in the elevations & locations of the substructure work as constructed.

All bearings shall be assembled completely in the shop and match-marked. Rollers shall be checked for full bearing and contact inside locking ribs.

The cost of any alterations to the steel work found to be necessary in order to make the steel work fit the substructure as built, shall be included in the lump sum price bid for Item 90.

The space around anchor bolt holes shall be filled with molten zinc after the shoes & roller plates are set in final position.

Where no grillages are provided the design requires preformed fabric pad, in accordance with Art. 2.10.3(K) of A.A.S.H.O. Specifications, between the dressed concrete surfaces & bearing plates. The cost of the pads shall be included in the price bid for steel superstructure, Item 90.

**EXPANSION DAMS**

Expansion Dams shall be carefully assembled in the shop to correct roadway crown, clearances carefully checked & match-marked. Holes for connections shall be subpunched & reamed to size in field. Shims as required for adjustment shall be provided.

**MATCH MARKING**

All members assembled in shop shall be carefully match-marked with paint & steel stencil & the Engineer furnished with copies of the match marking diagrams.

**ESTIMATED QUANTITIES**

Item	Description	Unit	Quantity
44(15)	Standard C.I. Culvert Pipe	L.F.	75.0
6-1	Structure Excavation	C.Y.	12
6-3	Steel Bearing Piles - Driven 12BP53	L.F.	781.0
6-5	Select Material for Backfilling	C.Y.	70.0
71-1	Class A Conc. in Superstructure	C.Y.	481.0
71-2	Class A Conc. in Substructure	C.Y.	61.0
75-4	Aluminum Railing	L.F.	127.5
78	Reinforcing Steel Bars	Lbs.	129,697
*90	Steel Superstructure	L.S.	Lump Sum
128-A	Removal of Temporary Curb & Railing	L.S.	Lump Sum
361(12)	Portland Cement Concrete Approach Slabs	S.Y.	73.0
8	Shoulder Base Course	C.Y.	12.0
71-3	Laboratory	L.S.	Lump Sum
136-2	Small Field Office & Storage Building	L.S.	Lump Sum
136-3	Building Equipment	L.S.	Lump Sum
127-1	Maintaining Traffic	L.S.	Lump Sum

\*ITEM 90 Steel Superstructure Includes:  
 804420 lb. A36 Steel  
 8000 lb. Castings and Forgings  
 5360 lb. Drainage System (including inlets and W.I. downspouts.)  
 2720 lb. Corrosion Resistant Alloy Metal.  
 820,500 Total Item 90

Assumed Pile length 71.0'

REINFORCING STEEL BARS				
Location	4	5	6	Totals
So. Abut.	886	1860	675	3421
Super Struct.	44442	81763	-	126205
R.E. Bars	15	43	13	71
Totals	45343	83666	688	129697

Section 1.5.6 of the Specifications shall be modified as follows. The second sentence of the first paragraph shall be deleted and the following substituted: For bridges, the Engineer will furnish the centerline and stakes determining the centerline and angles of all piers, pedestals & abutments and establish one benchmark.

MONTGOMERY BRIDGE NO 1899  
 OVER KANAWHA RIVER  
 AT MONTGOMERY, W. VA.  
 GENERAL NOTES  
 AND ESTIMATED QUANTITIES  
 (SUPERSTRUCTURE & SOUTH ABUTMENT)  
 STAGE 2

THE STATE ROAD COMMISSION  
 CHARLESTON, W. VA.

Scale as shown Date DEC. 65  
 Project F 283(15) Con: 3 Sheet 3 of 13 Sheets  
 No. 1899

MADE BY D.E.S. DATE 12-9-65  
 CHECKED BY CON DATE 12-10-65  
 CHECKED BY DATE

1 3 Teeth Specification Change 7-13-67 JES  
 REVISION NUMBER SHEET NUMBER REVISIONS DATE BY

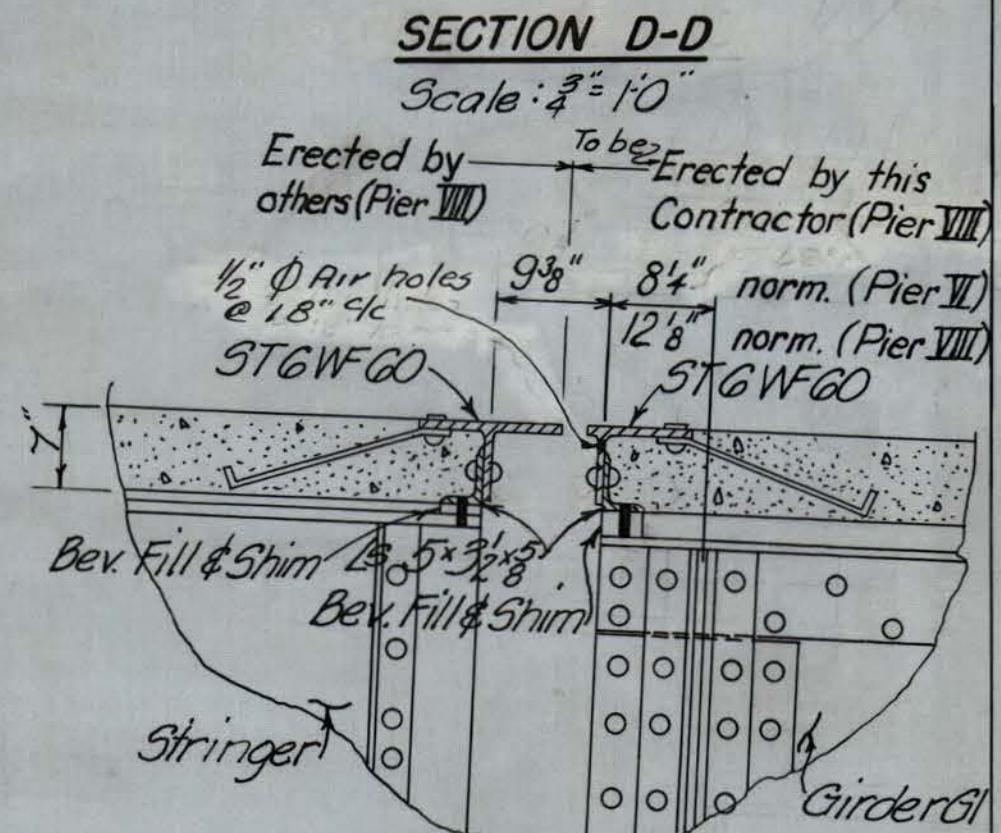
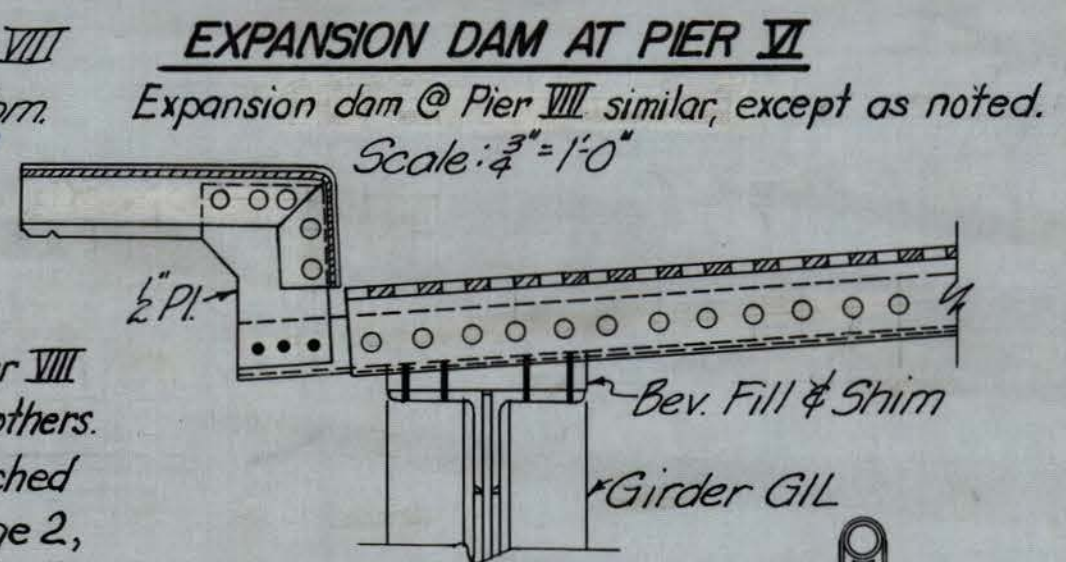
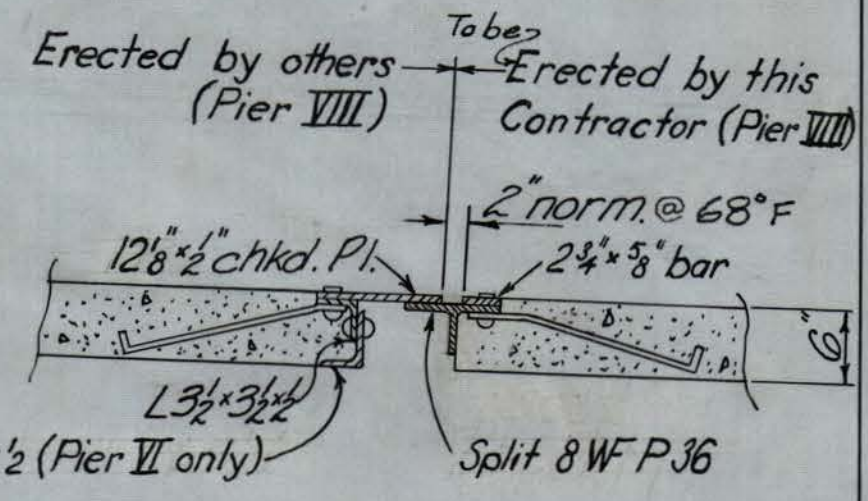
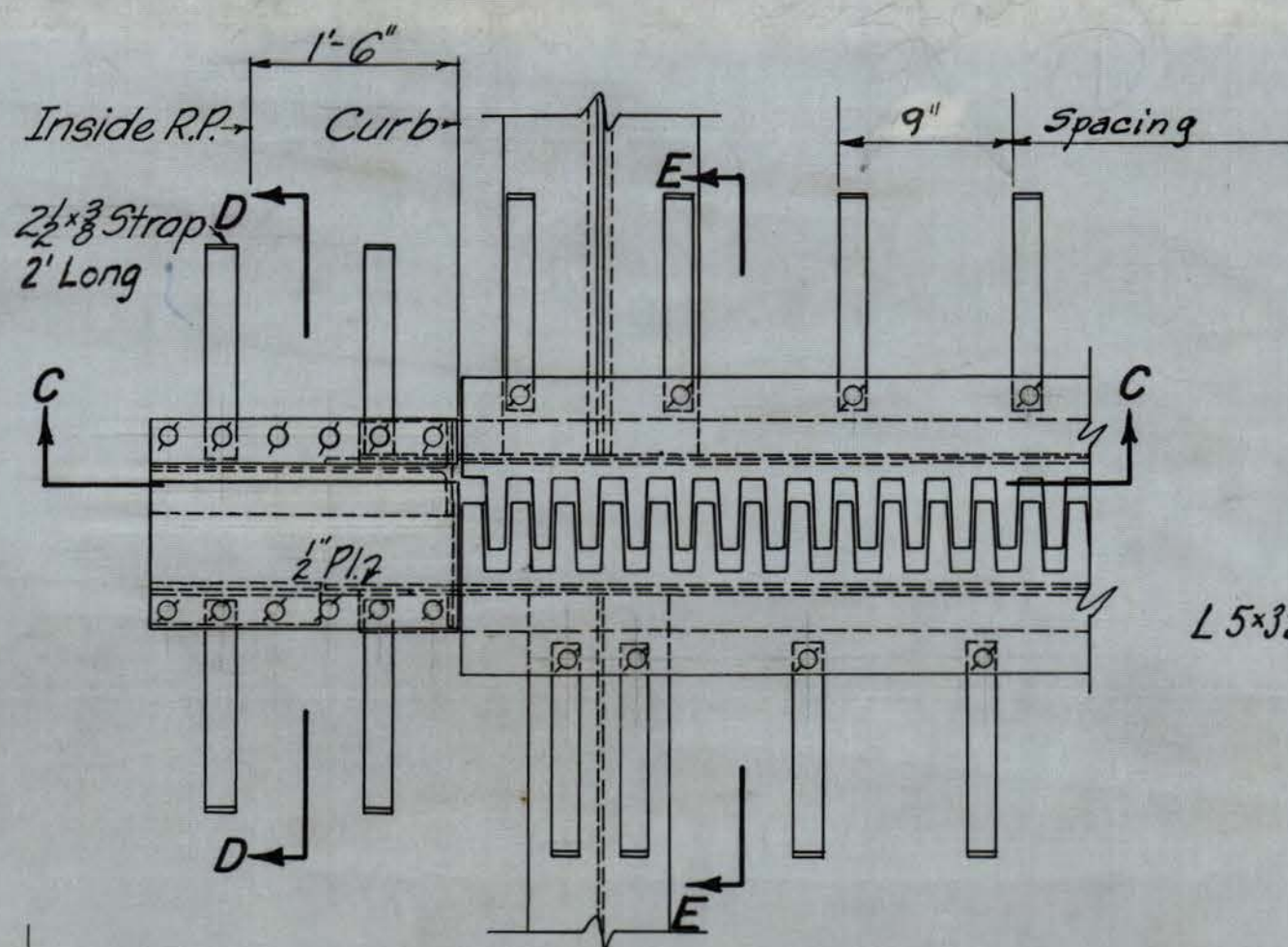
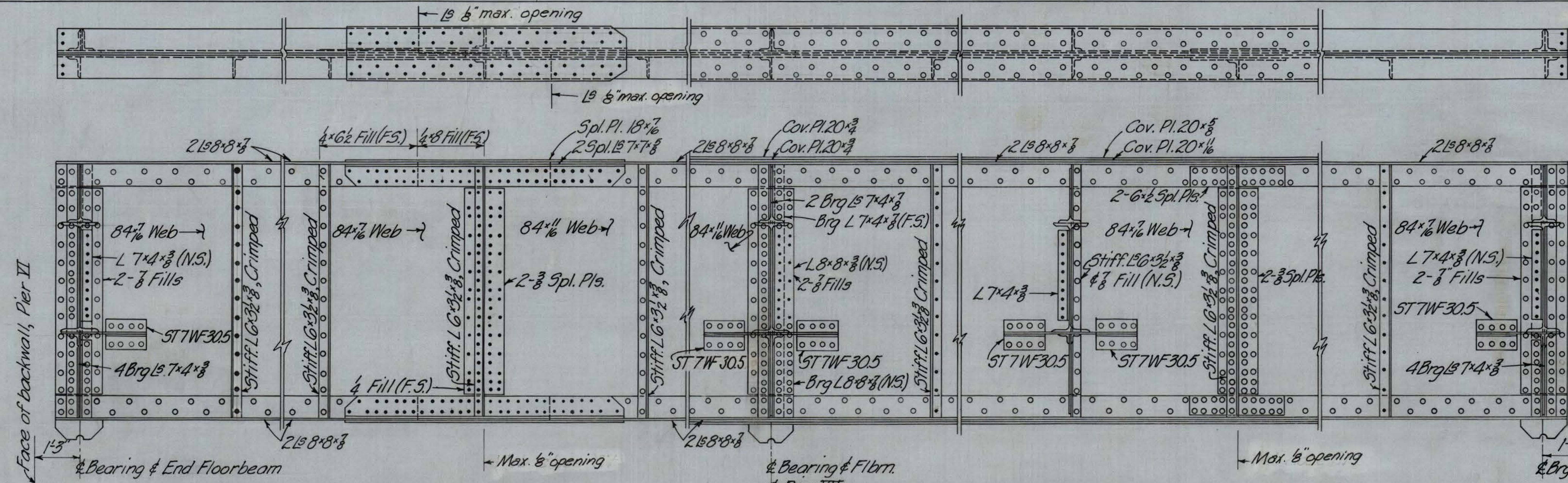




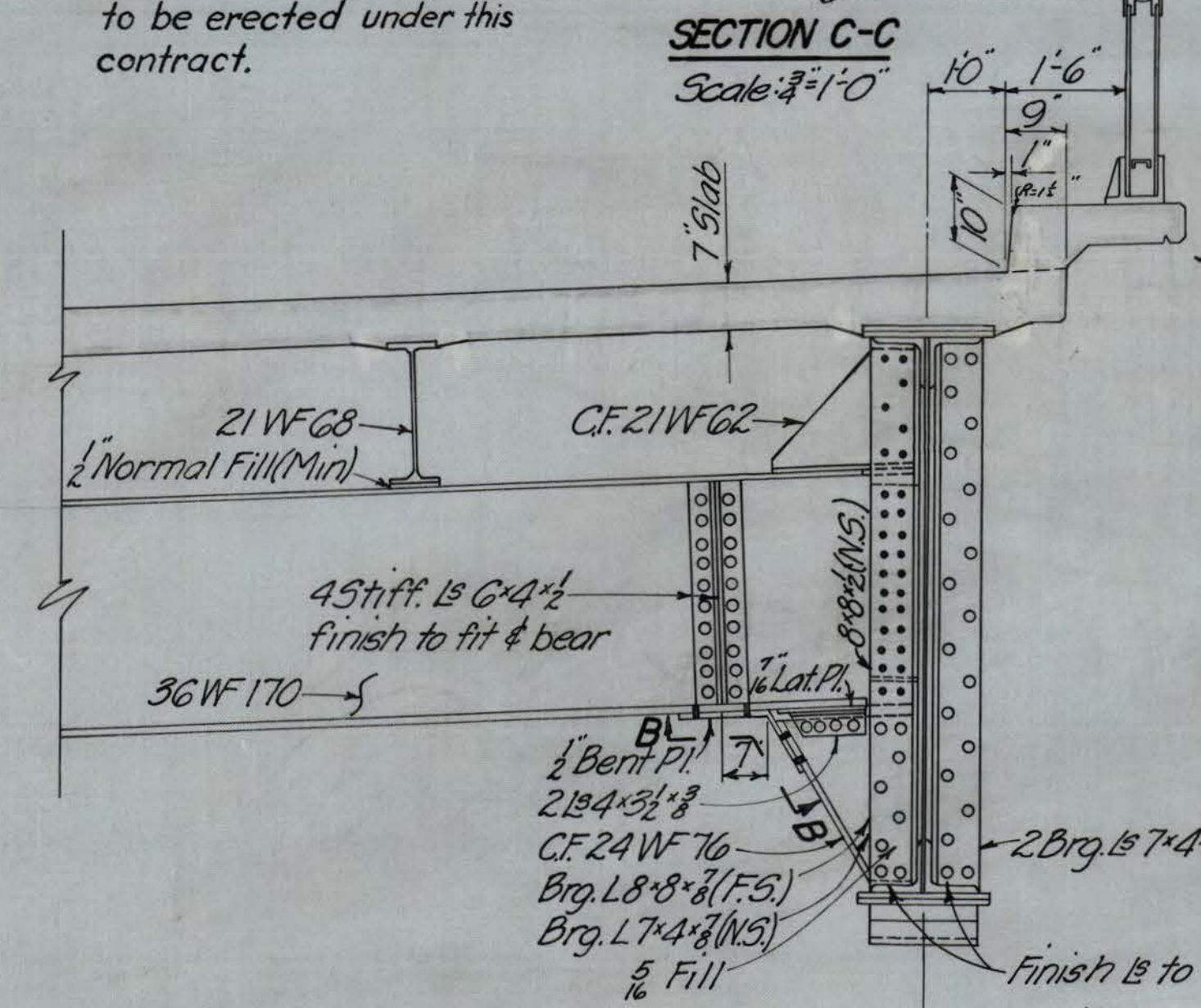
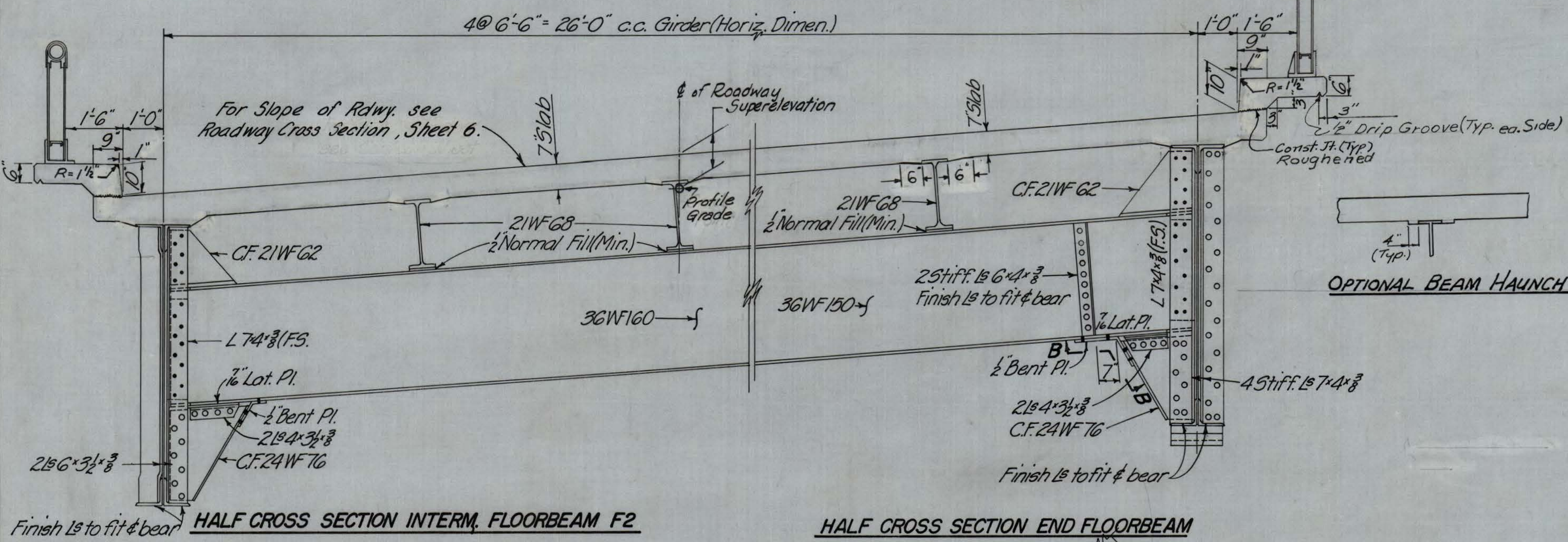


DIST. NO.	STATE PROJ. NO.	FED. PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9	F 283 (15)			RAYETTE	5	13

CONT. 3

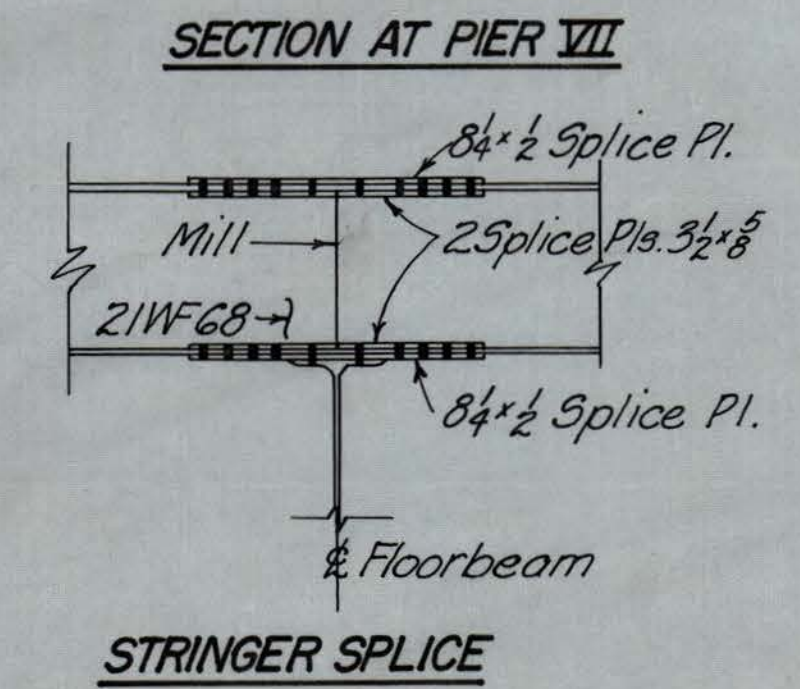
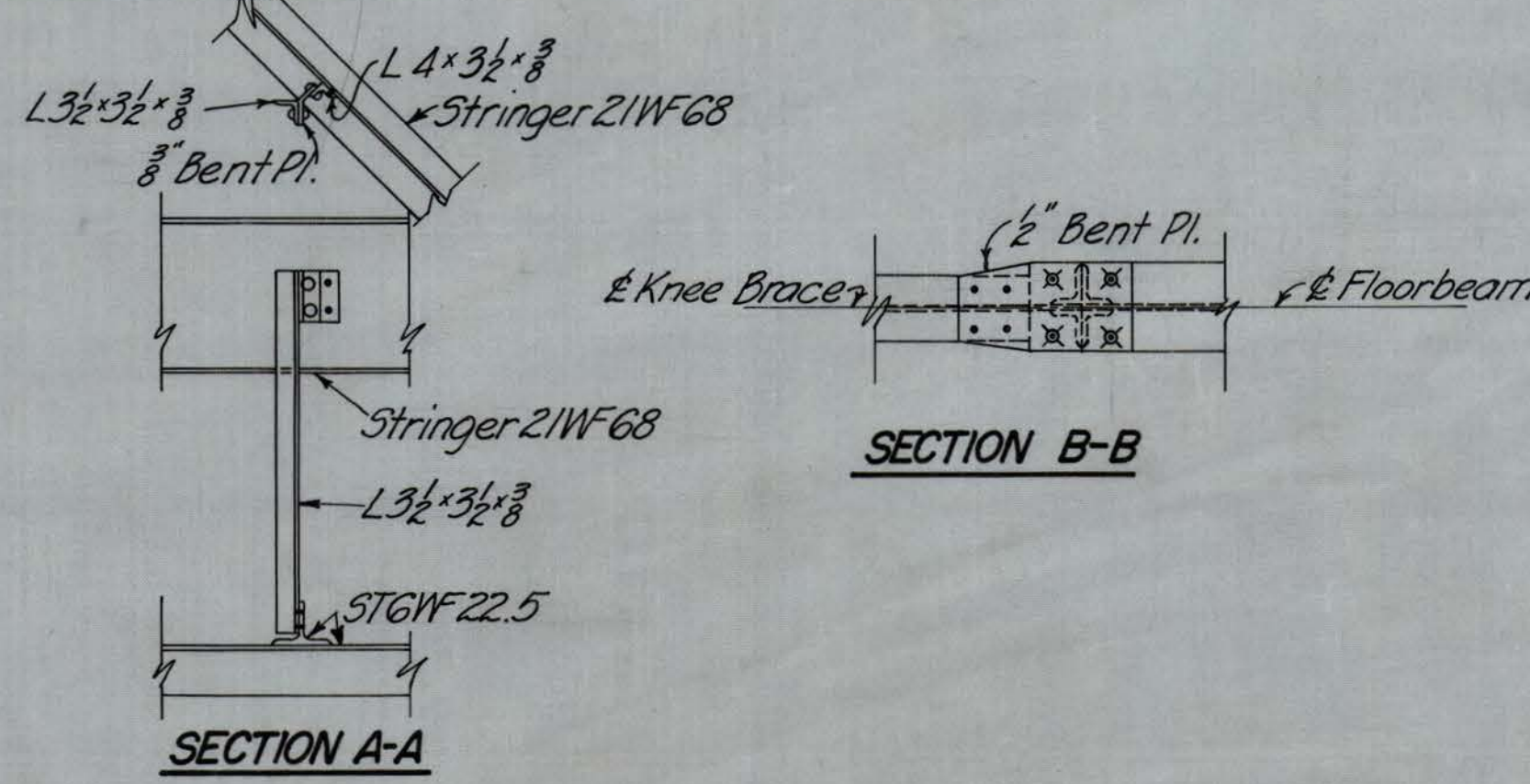
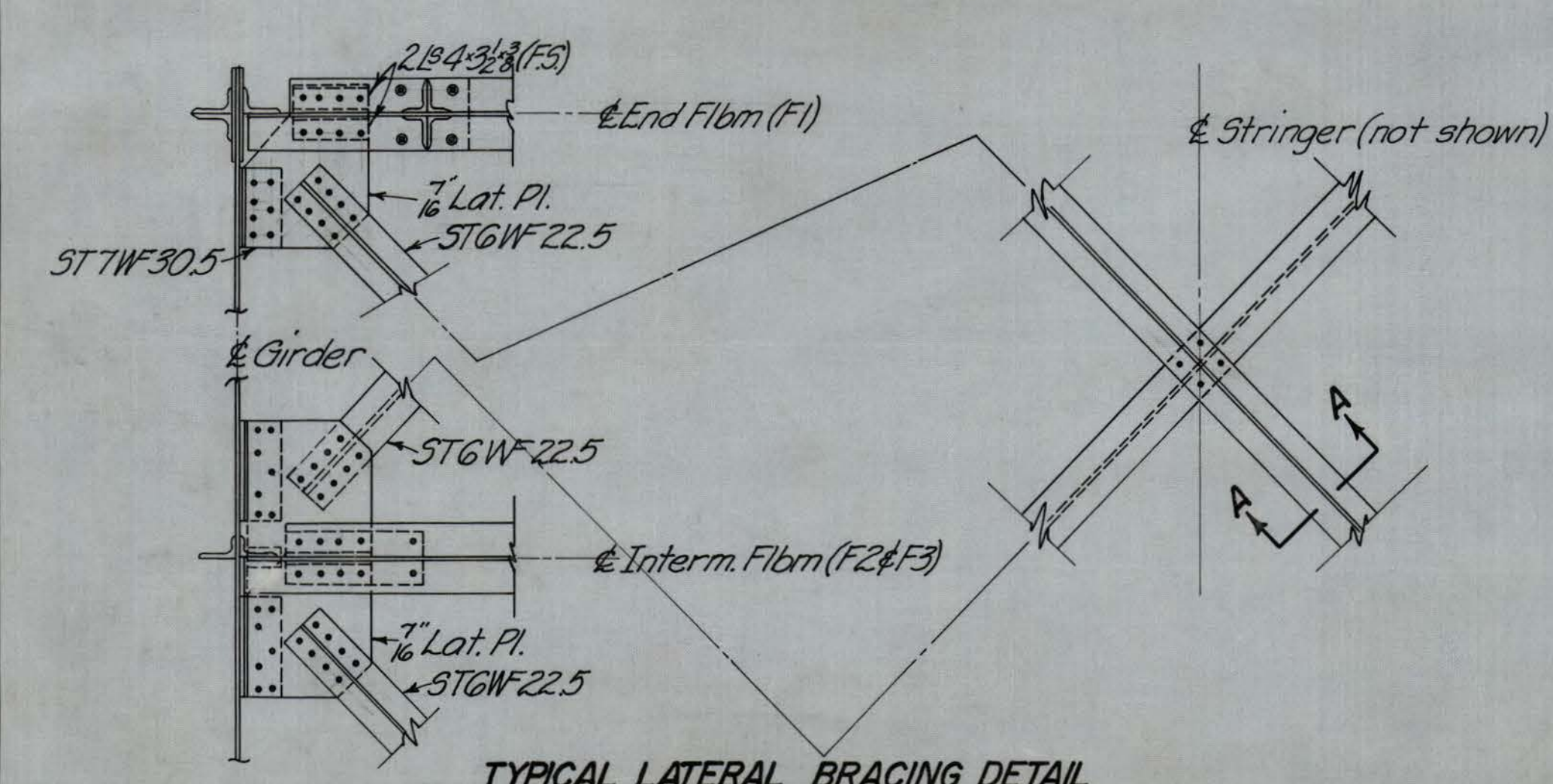


Note:  
Expansion Dam @ Pier VIII to be furnished by others. Portion of Dam attached to Span VII-VIII, Stage 2, to be erected under this contract.



**TOOTH DETAILS**

NOTE:  
The expansion dam materials at Pier VIII are to be furnished under Stage I. The contractor shall erect and adjust the portion of the dam, which attaches to the stage II Metal Work, and is stored at the site.



THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**GIRDER DETAILS & SECTIONS**  
SOUTH APPROACH-STAGE 2

SCALE IN FEET, UNLESS NOTED  
MODJESKI & MASTERS ENGINEERS

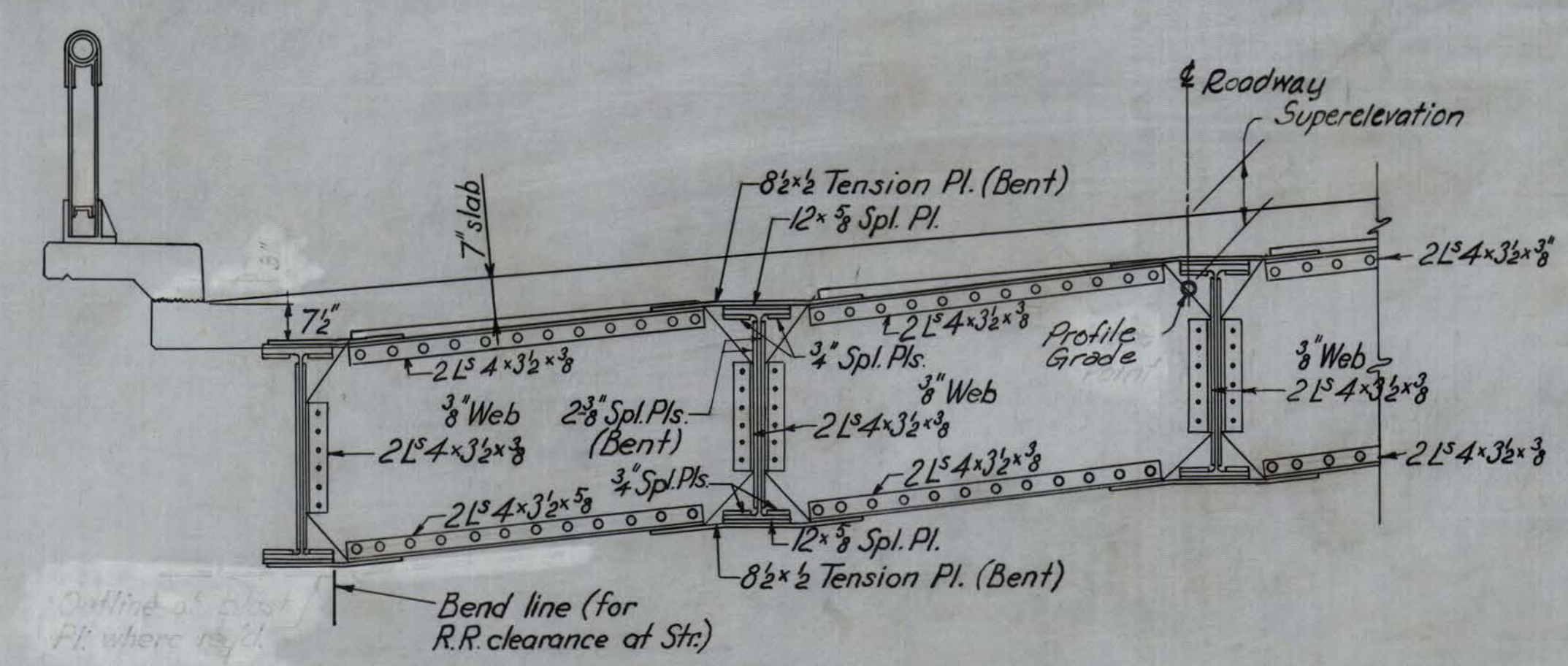
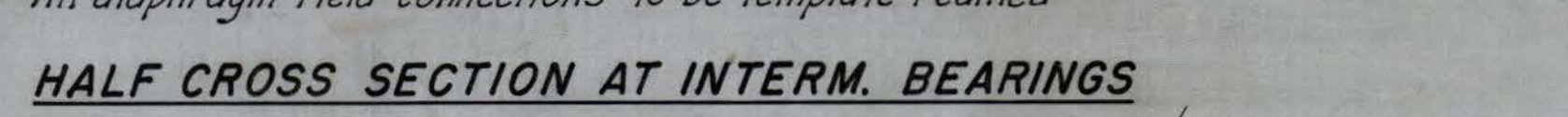
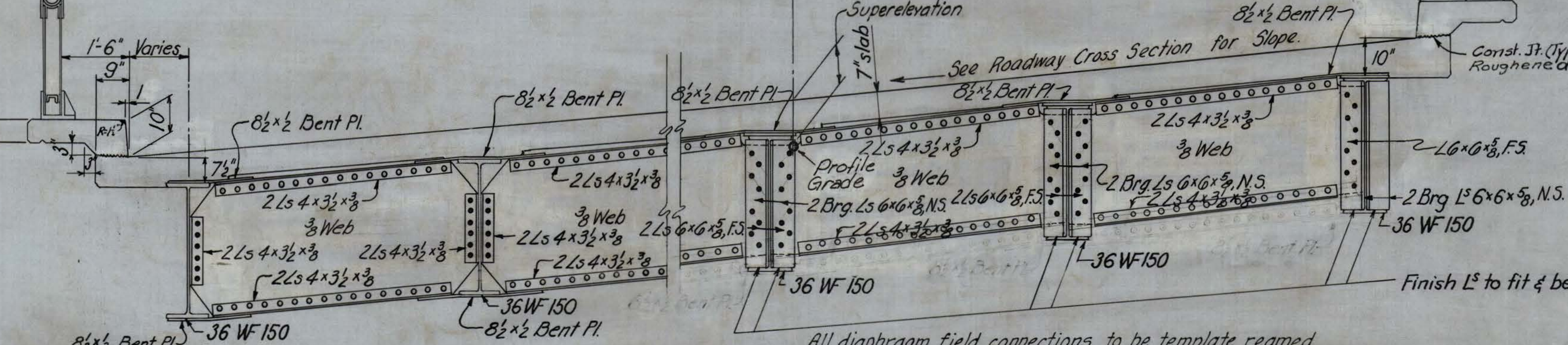
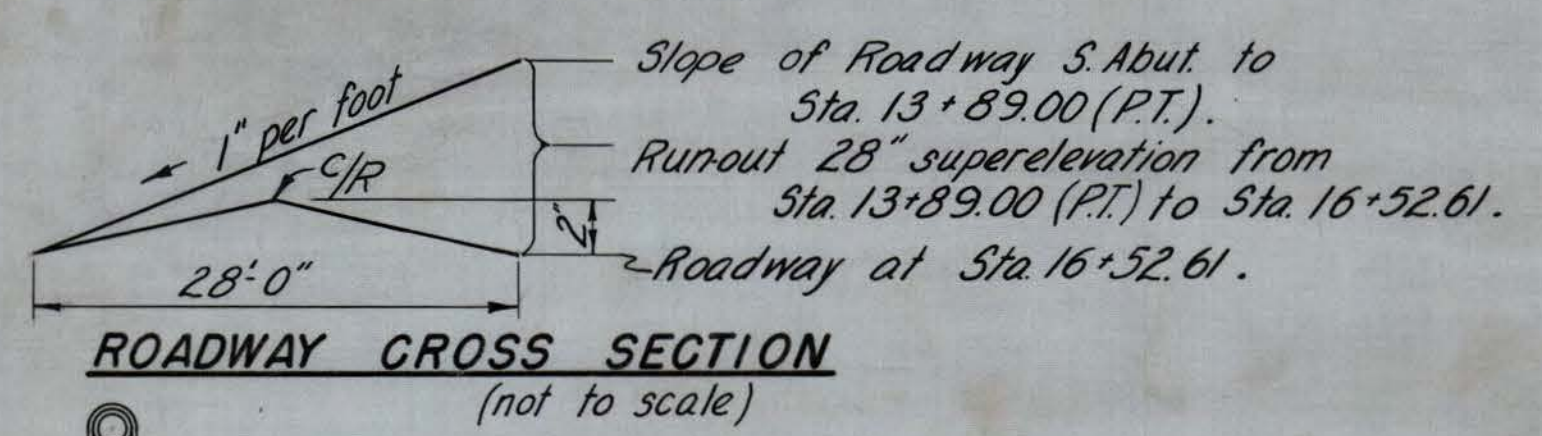
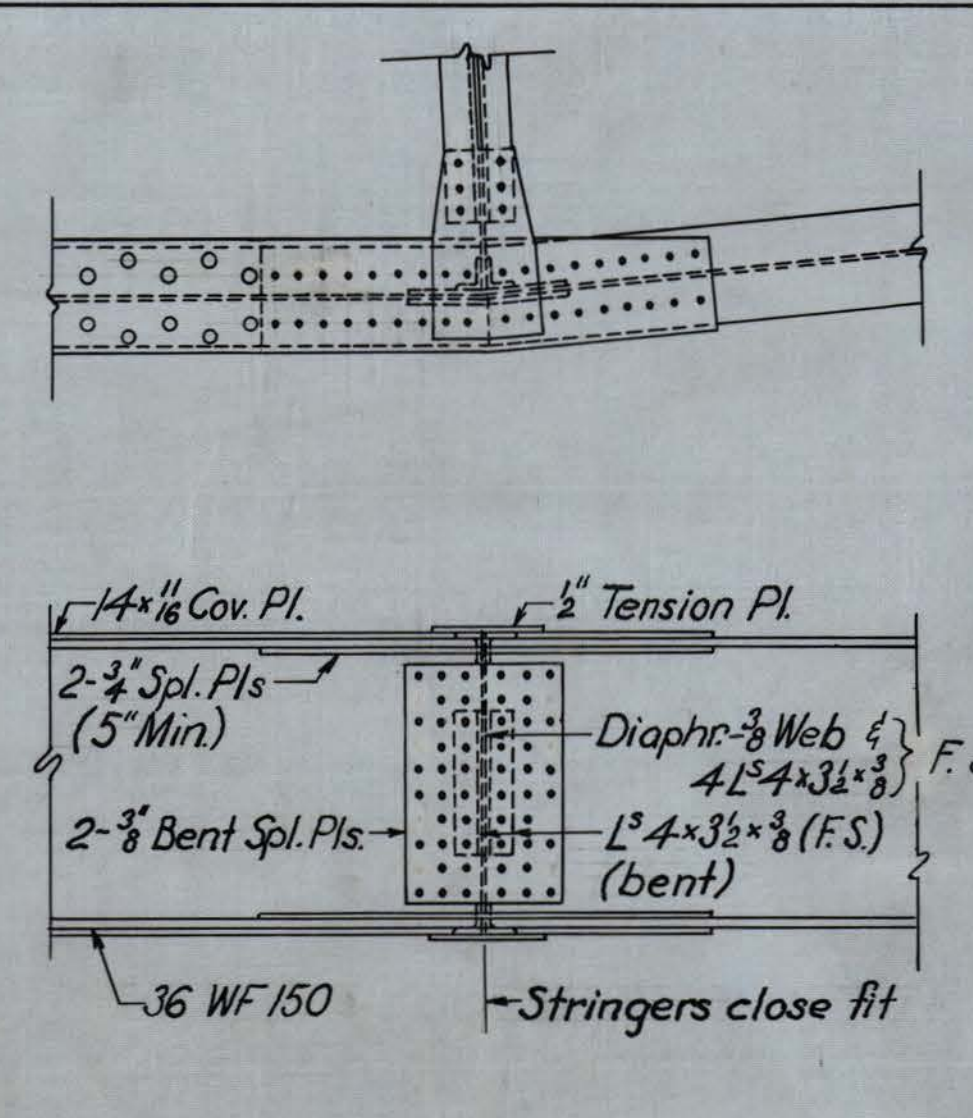
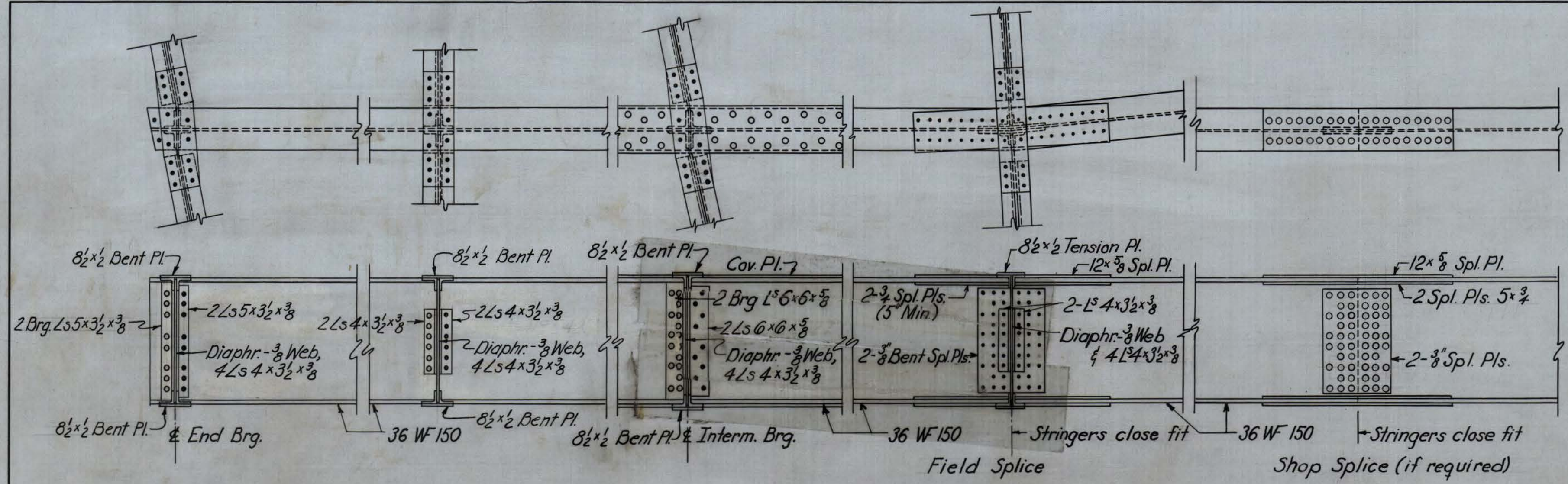
DWG. #5

Rev. 3-20-58

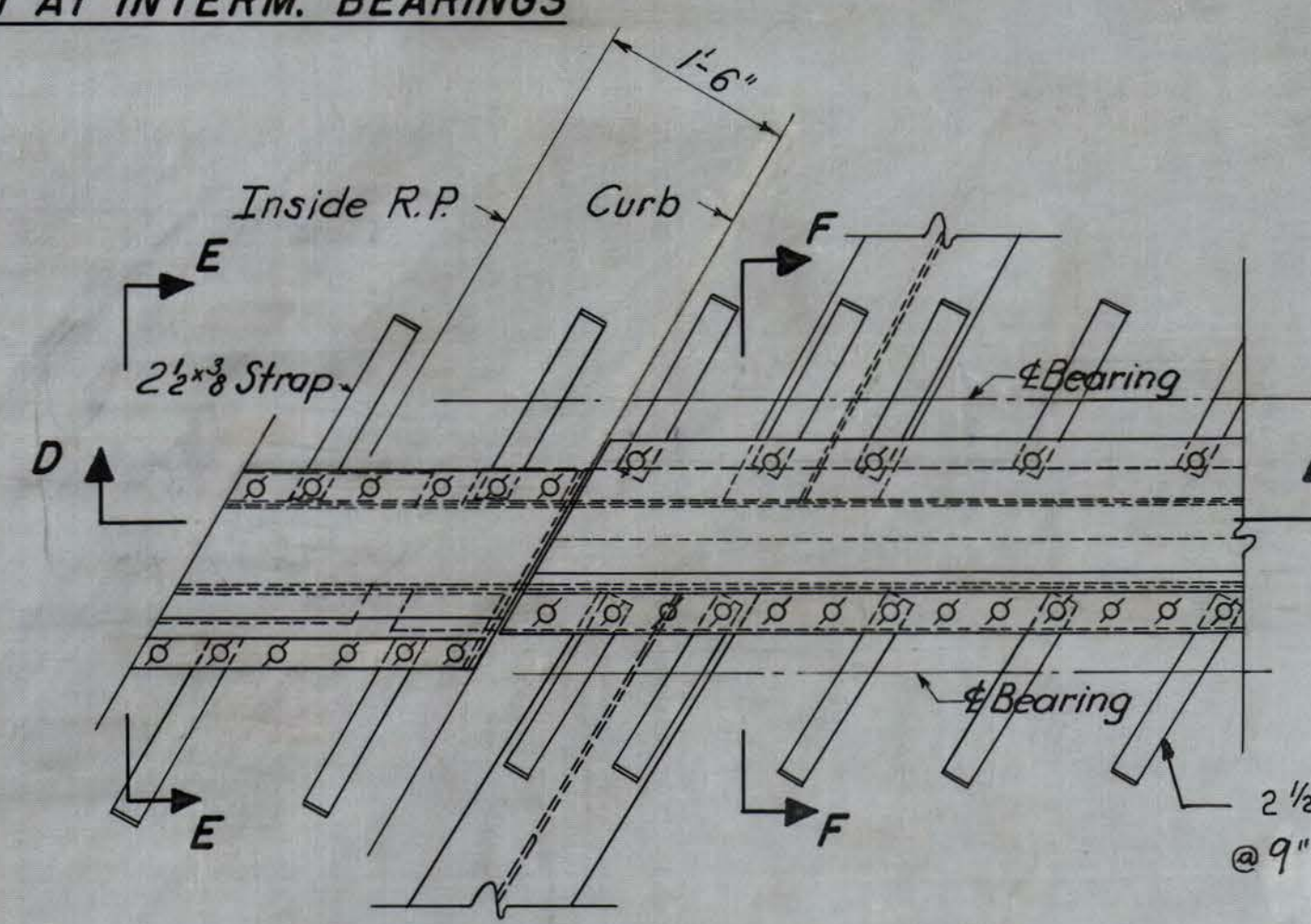
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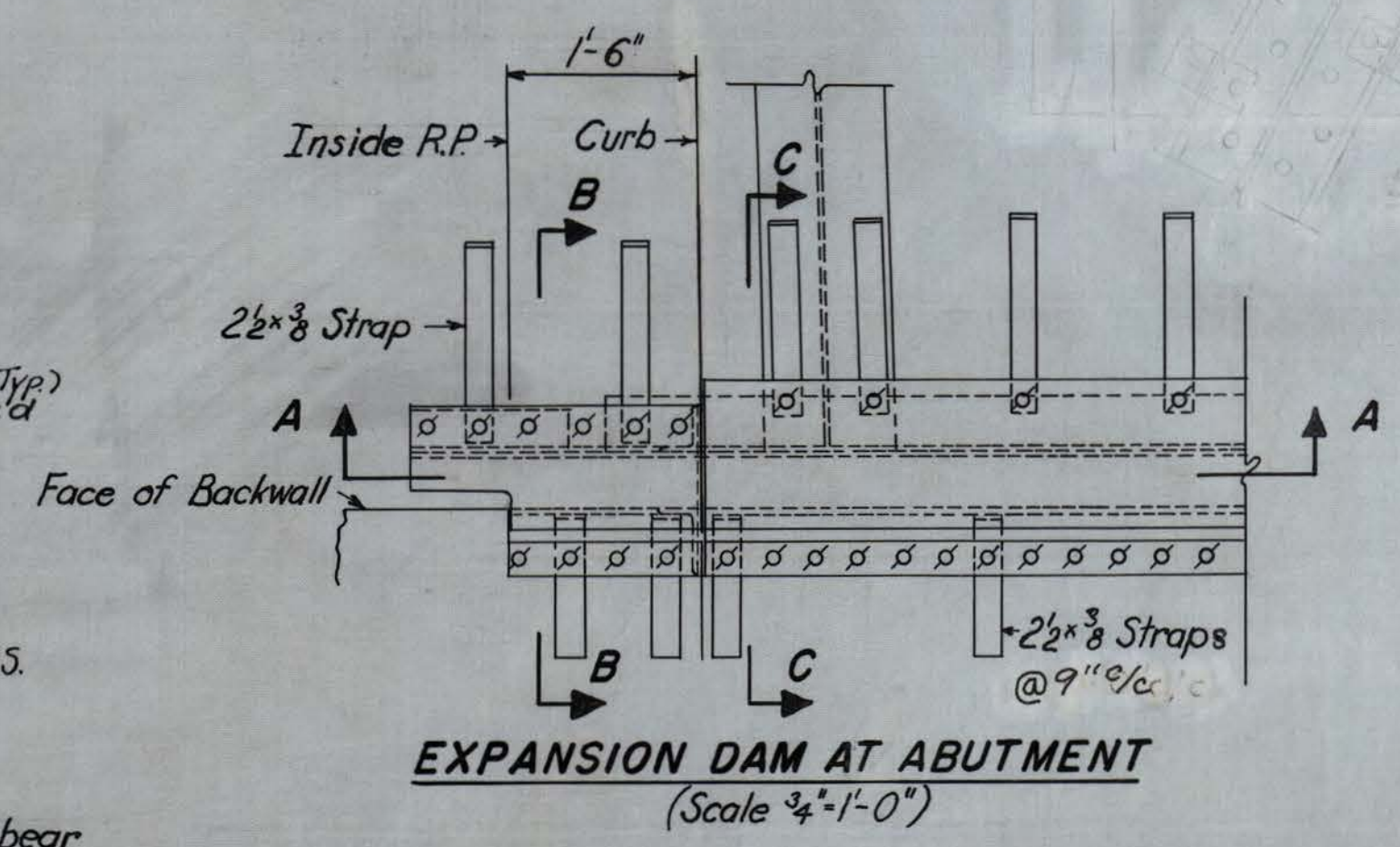
DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9		F283 (15)		FAYETTE	6	13



**HALF CROSS SECTION - DIAPHRAGMS AT BEND POINTS**  
All diaphragm field connections to be template reamed



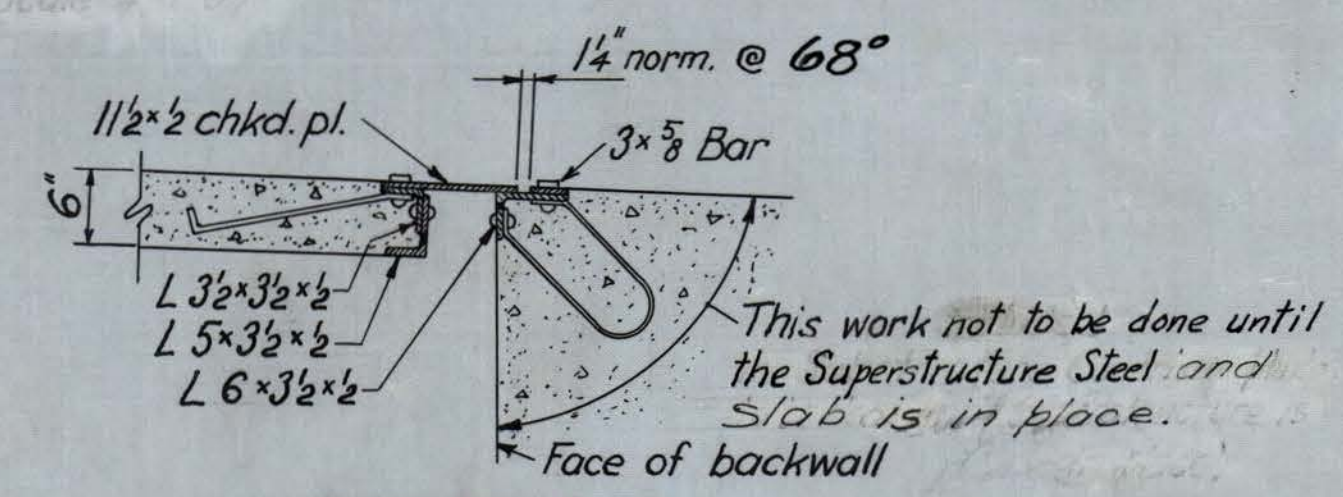
**SECTION D-D**  
(Scale 3/4"=1'-0")



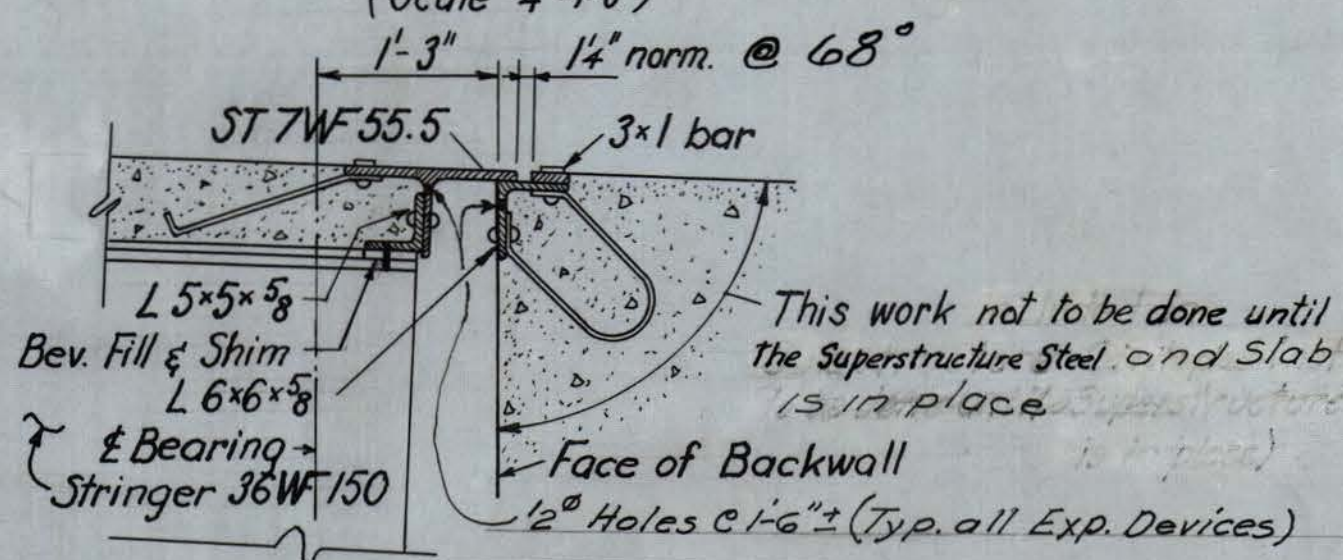
**SECTION A-A**  
(Scale 3/4"=1'-0") 1 3/8" norm. @ 68°

**ELEVATION E-E**  
(Scale 3/4"=1'-0") 1 3/8" norm. @ 68°

**SECTION F-F**  
(Scale 3/4"=1'-0")



**SECTION B-B**  
(Scale 3/4"=1'-0")



**SECTION C-C**  
(Scale 3/4"=1'-0")



**SECTION A-A**  
(Scale 3/4"=1'-0") 1 3/8" norm. @ 68°

**ELEVATION E-E**  
(Scale 3/4"=1'-0") 1 3/8" norm. @ 68°

**SECTION F-F**  
(Scale 3/4"=1'-0")

STAGE 2

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

STRINGER DETAILS AND SECTIONS



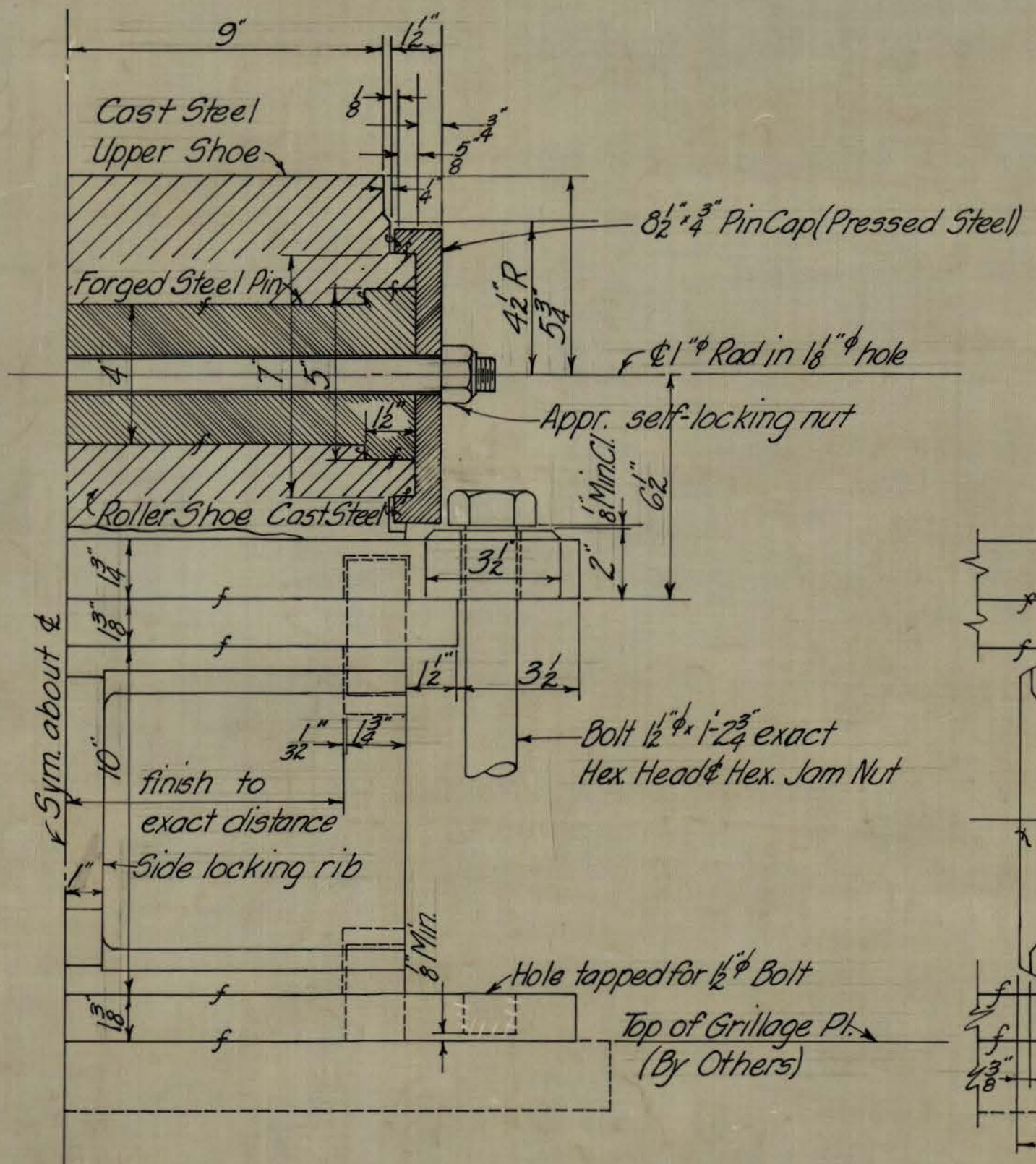
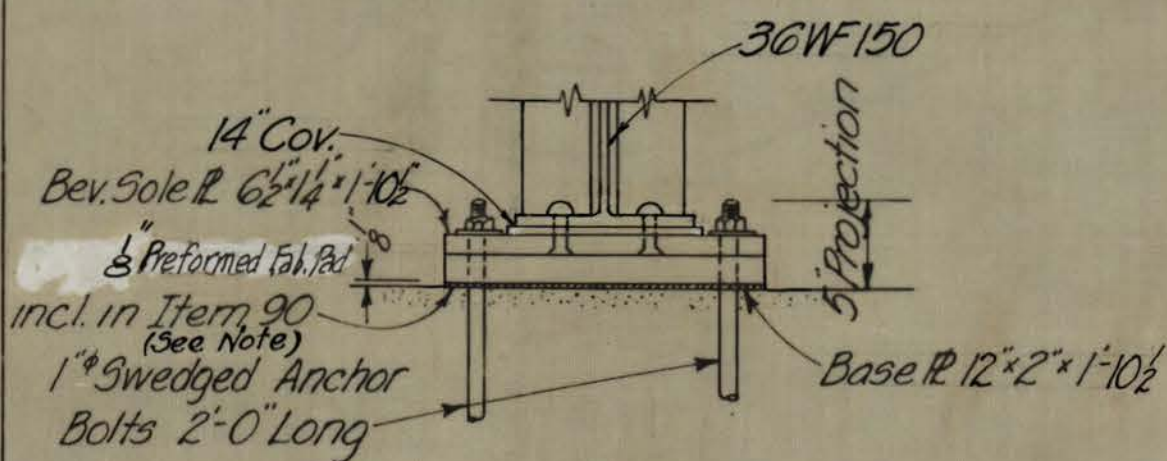
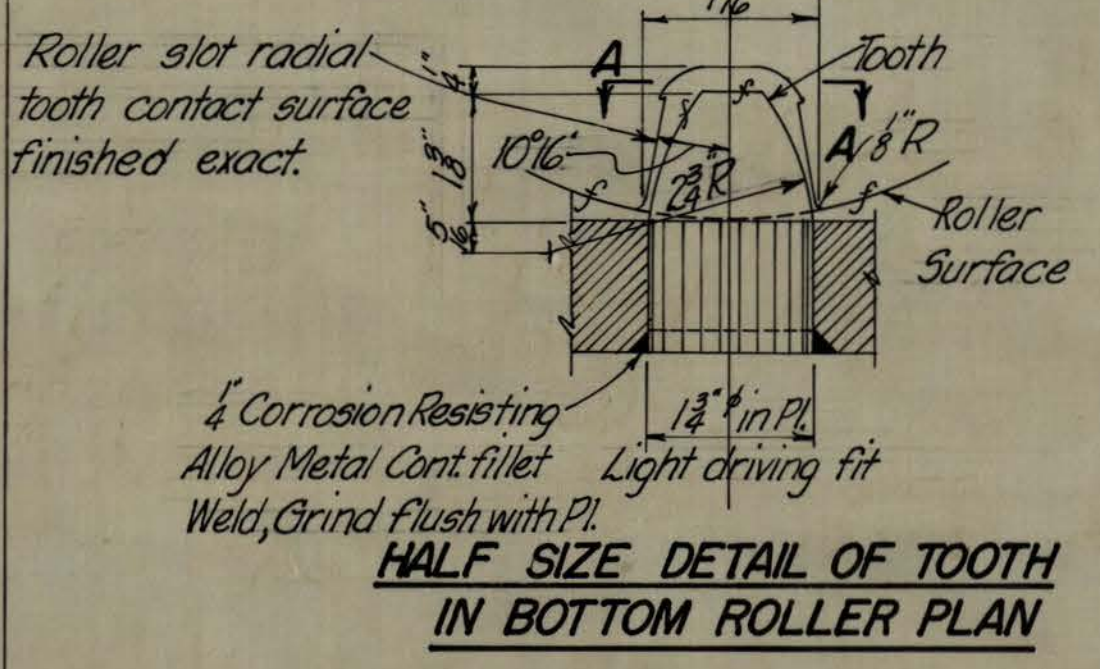
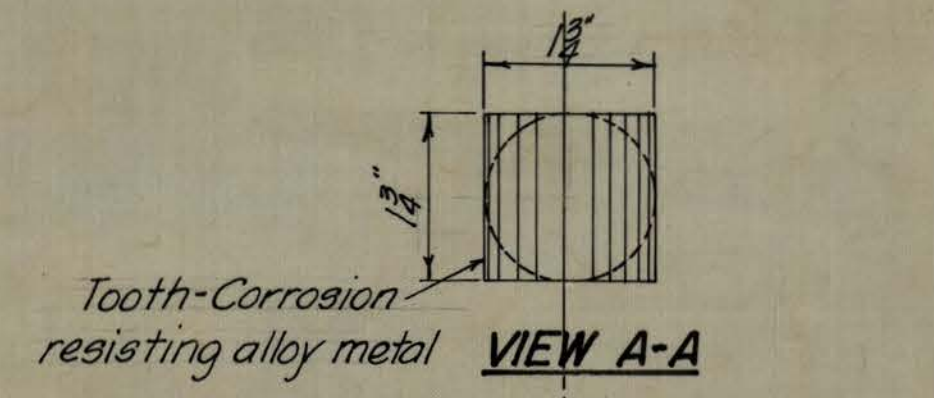
MODJESKI & MASTERS ENGINEERS DWG. #6

Rev. 3-20-58

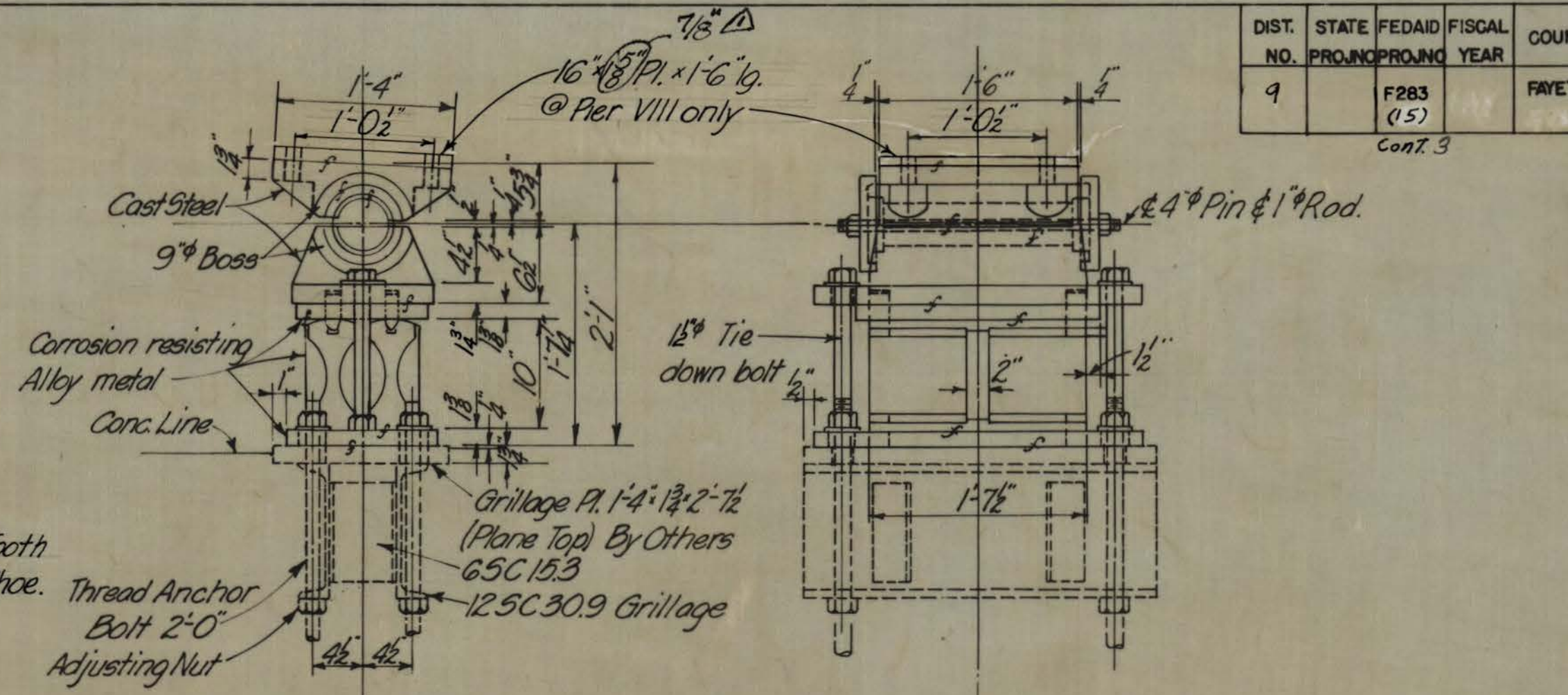
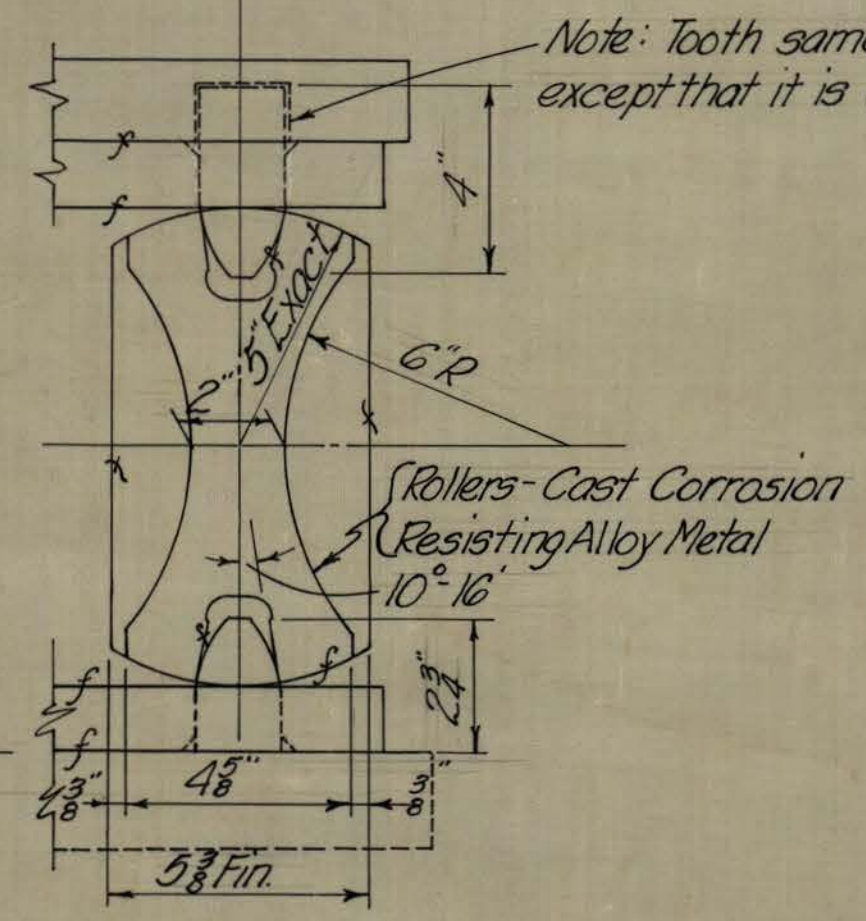
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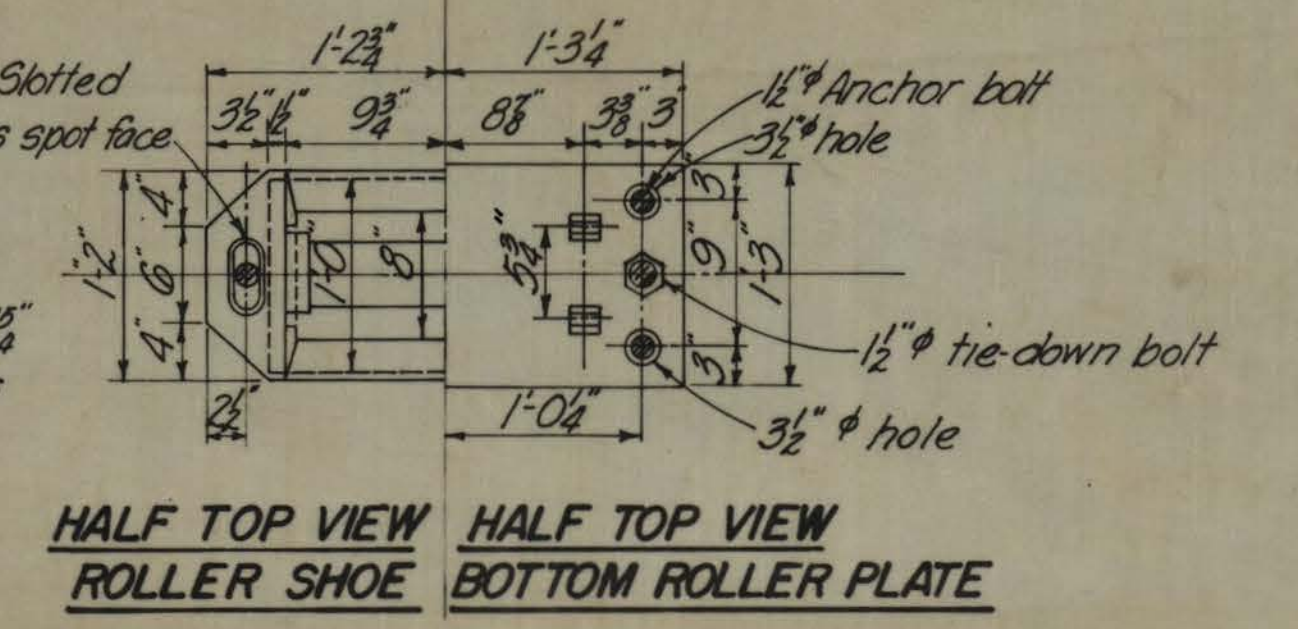
DIST.	STATE	FEDAD	FISCAL	COUNTY	SHEET	TOTAL
9				FAVETTE	7	13
NO. PROJ. PROJ. NO.		YEAR				
F283		15		CONT. 3		



**DETAIL OF ROLLER SHOE ASSEMBLY**  
Scale: 3"=1'-0"

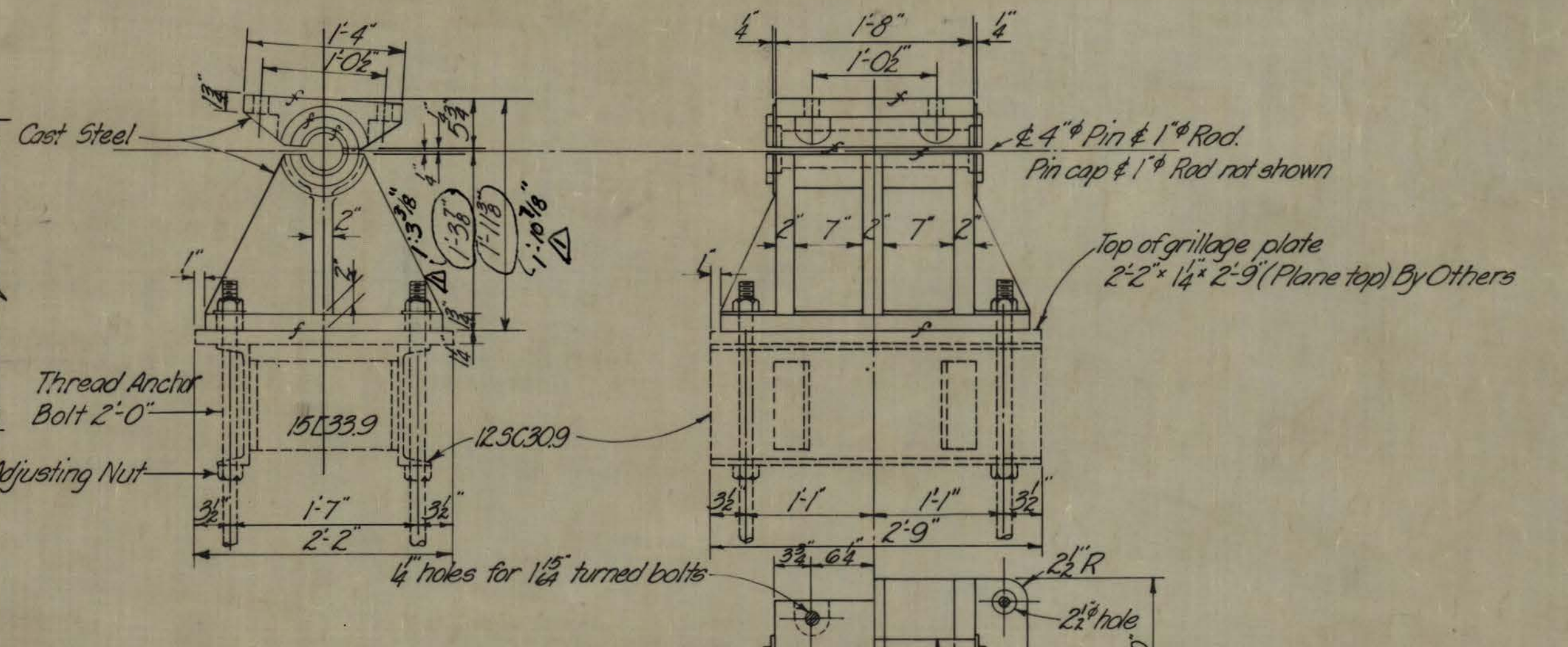


**TYPICAL UPPER SHOE**



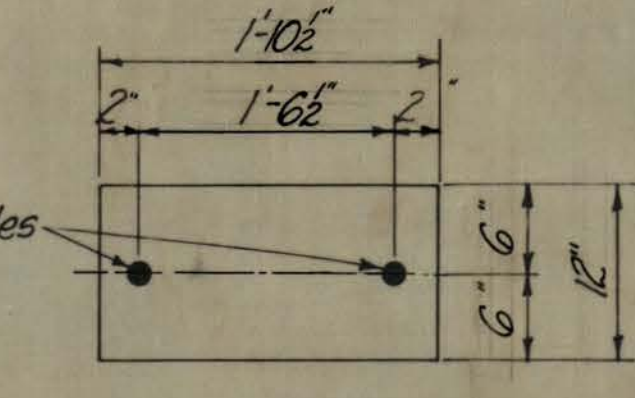
**HALF TOP VIEW ROLLER SHOE**  
**HALF TOP VIEW BOTTOM ROLLER PLATE**

**GIRDER EXPANSION BEARINGS AT PIERS VI & VIII**  
4 REQ'D.

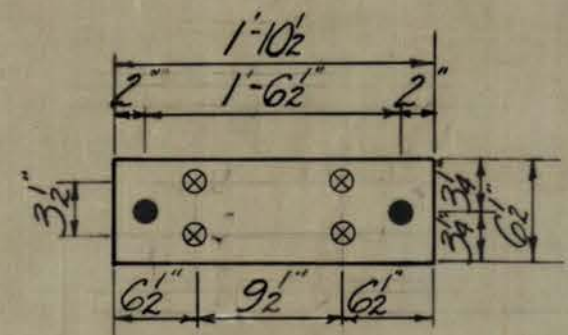


**HALF TOP VIEW UPPER SHOE**  
**HALF TOP VIEW LOWER SHOE**

**GIRDER FIXED BEARINGS AT PIER VII**  
2 REQ'D.



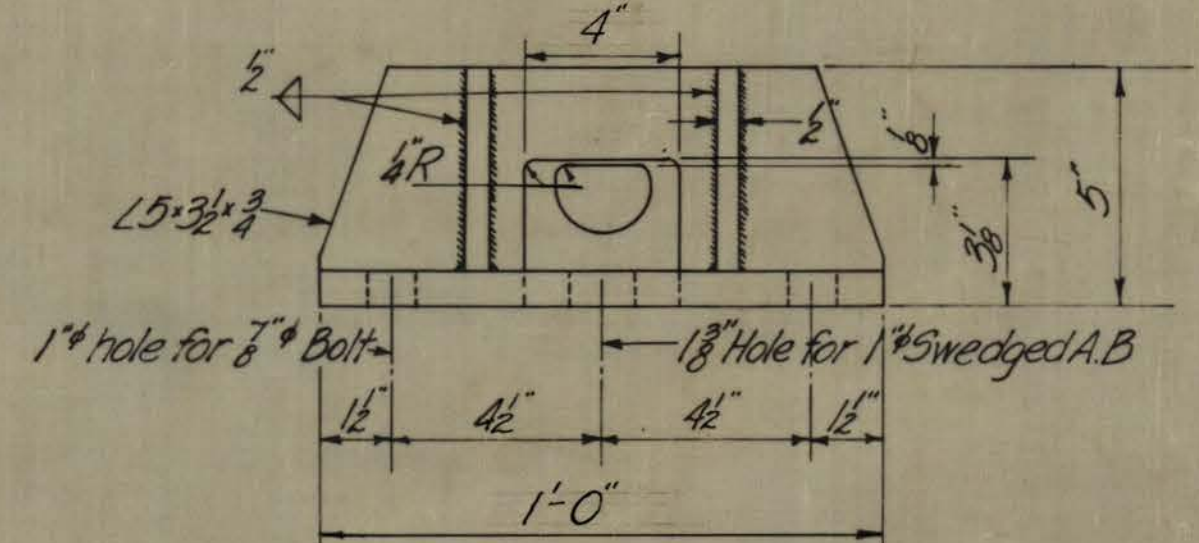
**PLAN OF BASE PLATE**



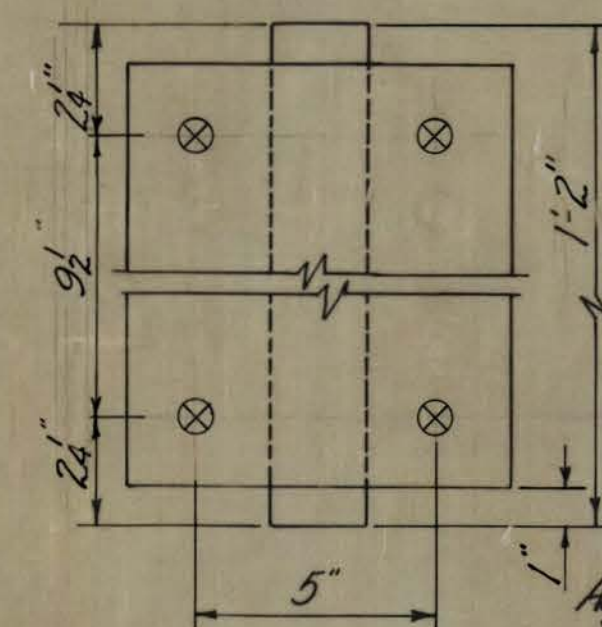
**PLAN OF SOLE PLATE**

**STRINGER FIXED BEARING DETAILS**

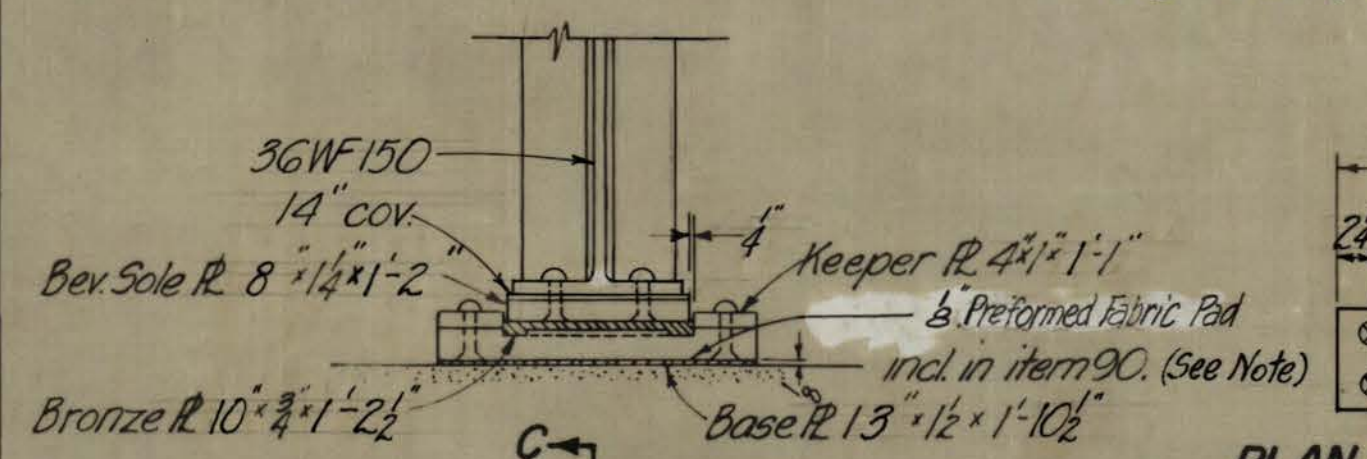
**PIERS I & IV**  
10 REQ'D.



**DETAIL A**  
Scale: 3"=1'-0"

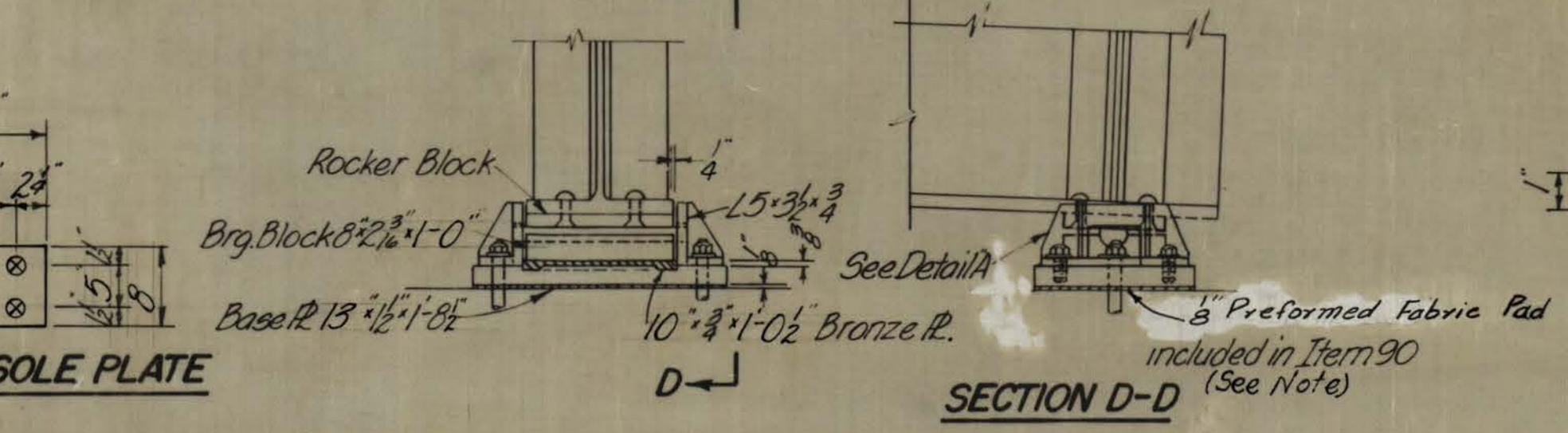


**ROCKER BLOCK DETAIL**  
Scale: 3"=1'-0"



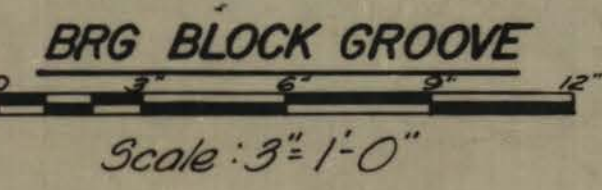
**SECTION C-C**

**STRINGER EXPANSION BEARING- PIERS III & V**  
10 REQ'D.



**SECTION D-D**

**STRINGER EXPANSION BEARING- ABUTMENT & PIERS II & VI**  
15 REQ'D.



**BRG BLOCK GROOVE**  
Scale: 3"=1'-0"

**NOTES:**

Roller Plates shall be Corrosion Resisting Chromium Steel Clad Plate.  
All materials below top of Grillage Plates (shown dotted) by others.  
Finish all surfaces in the direction of movement.  
Pads beneath stringer bearings shall be preformed bearing pads conforming to AASHTO Spec. Art. 2.10.3(k). Payment to be included in Item 90.

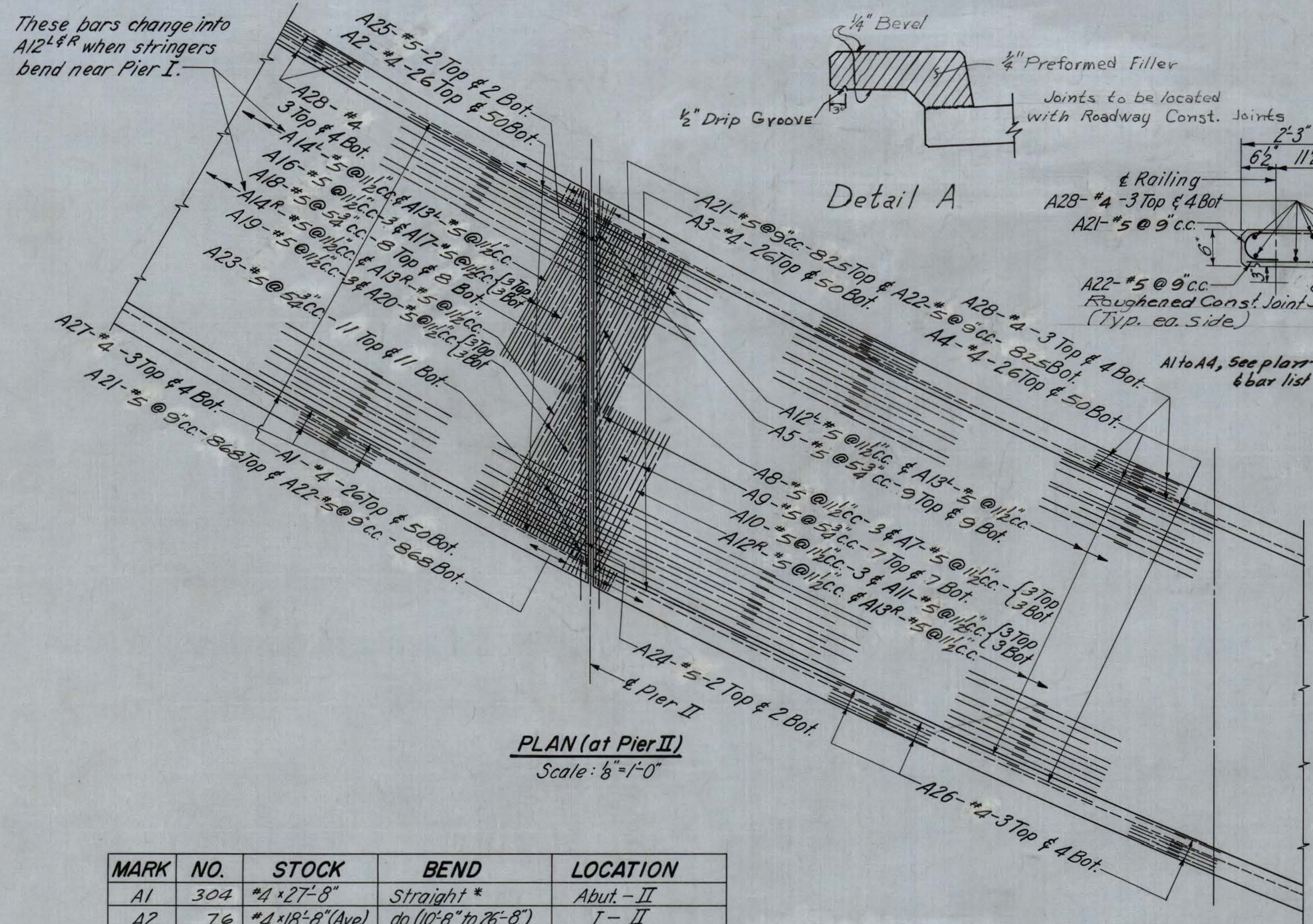
THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**BEARINGS**

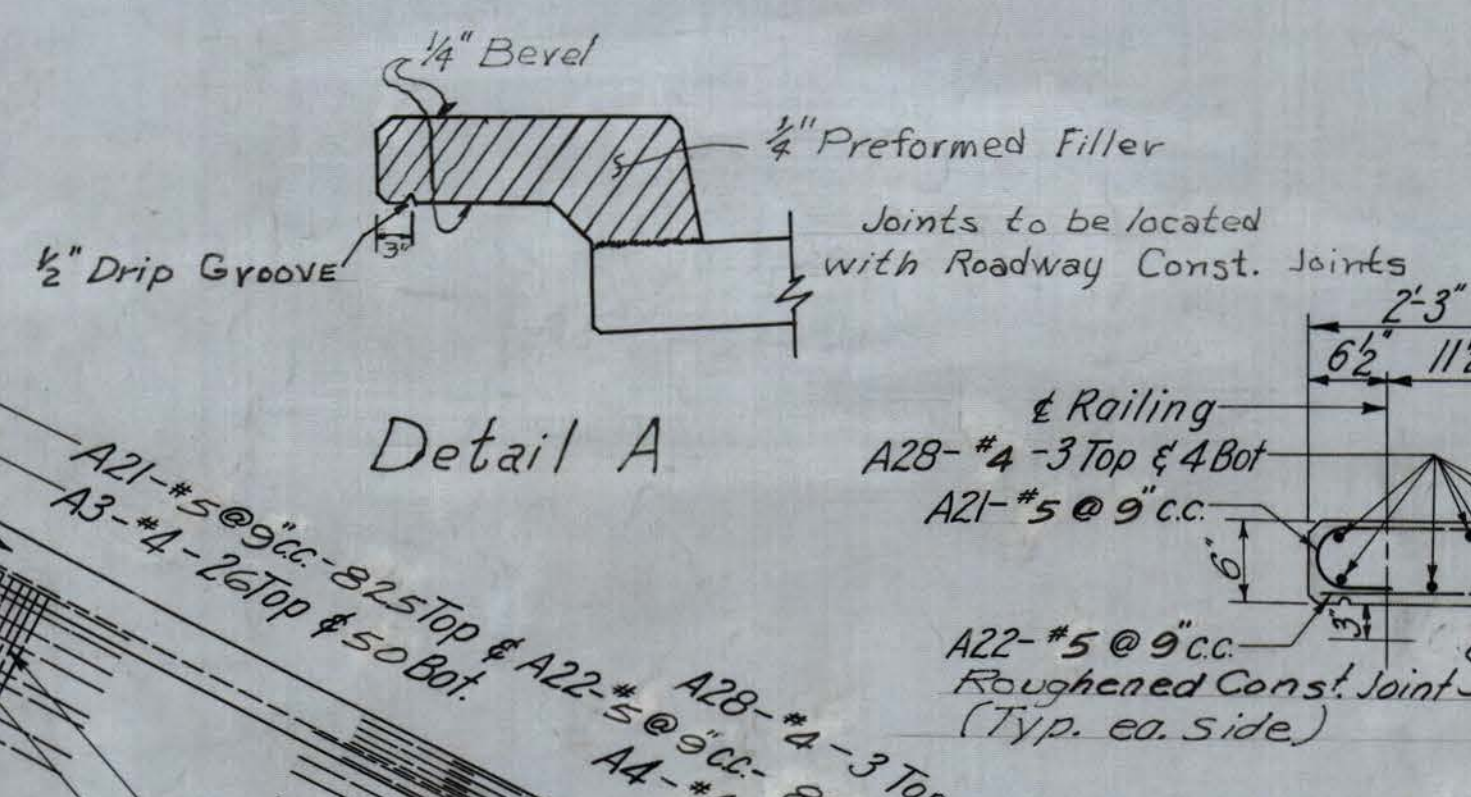
347-67 W.V.C.  
Scale in feet unless noted  
MODJESKI & MASTERS ENGINEERS  
Rev. 5-19-59  
STAGE 2  
Rev. 3-20-56



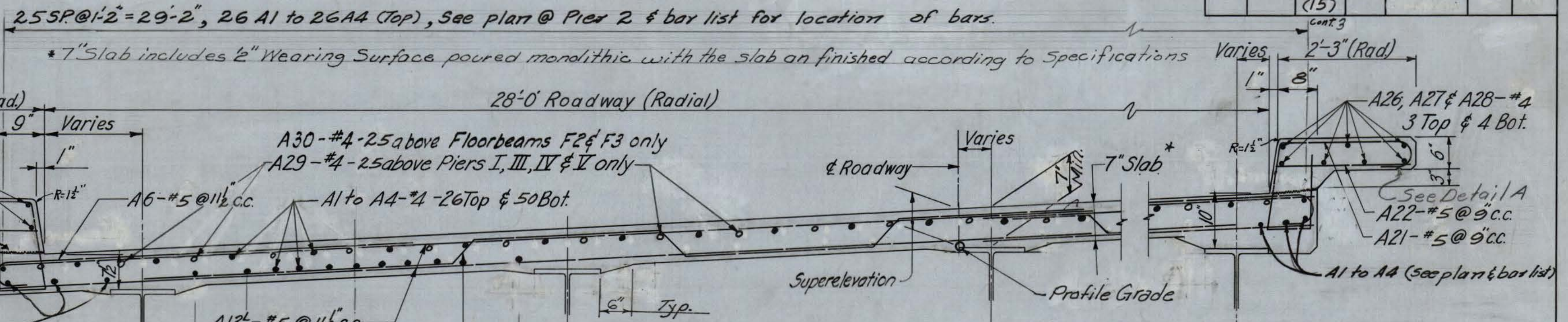
These bars change into A12<sup>L</sup> & R when stringers bend near Pier I.



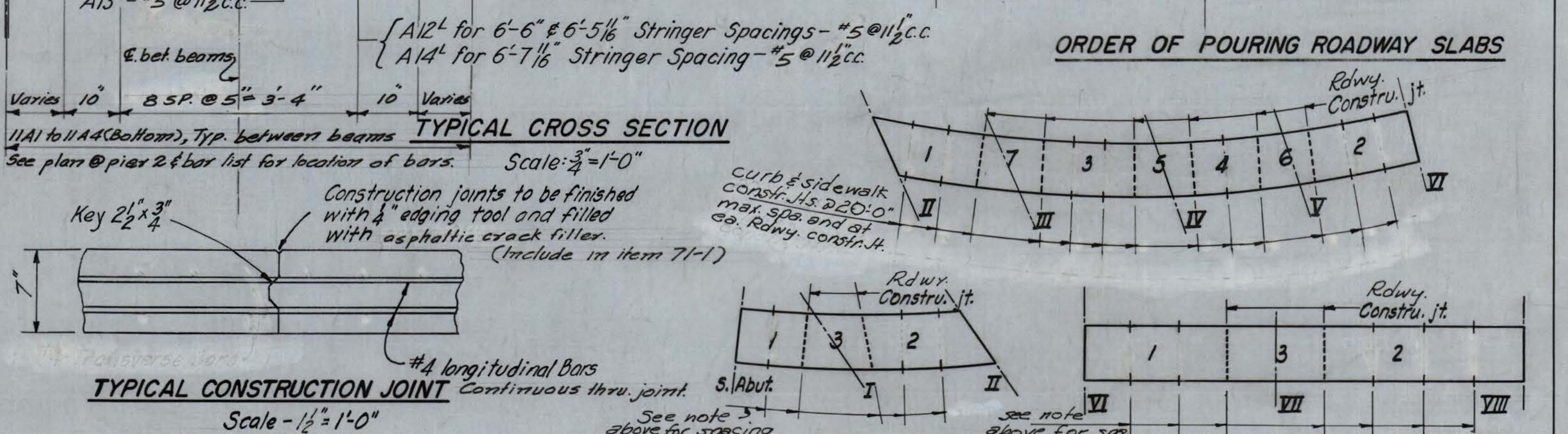
PLAN (at Pier II)  
Scale: 1/8" = 1'-0"



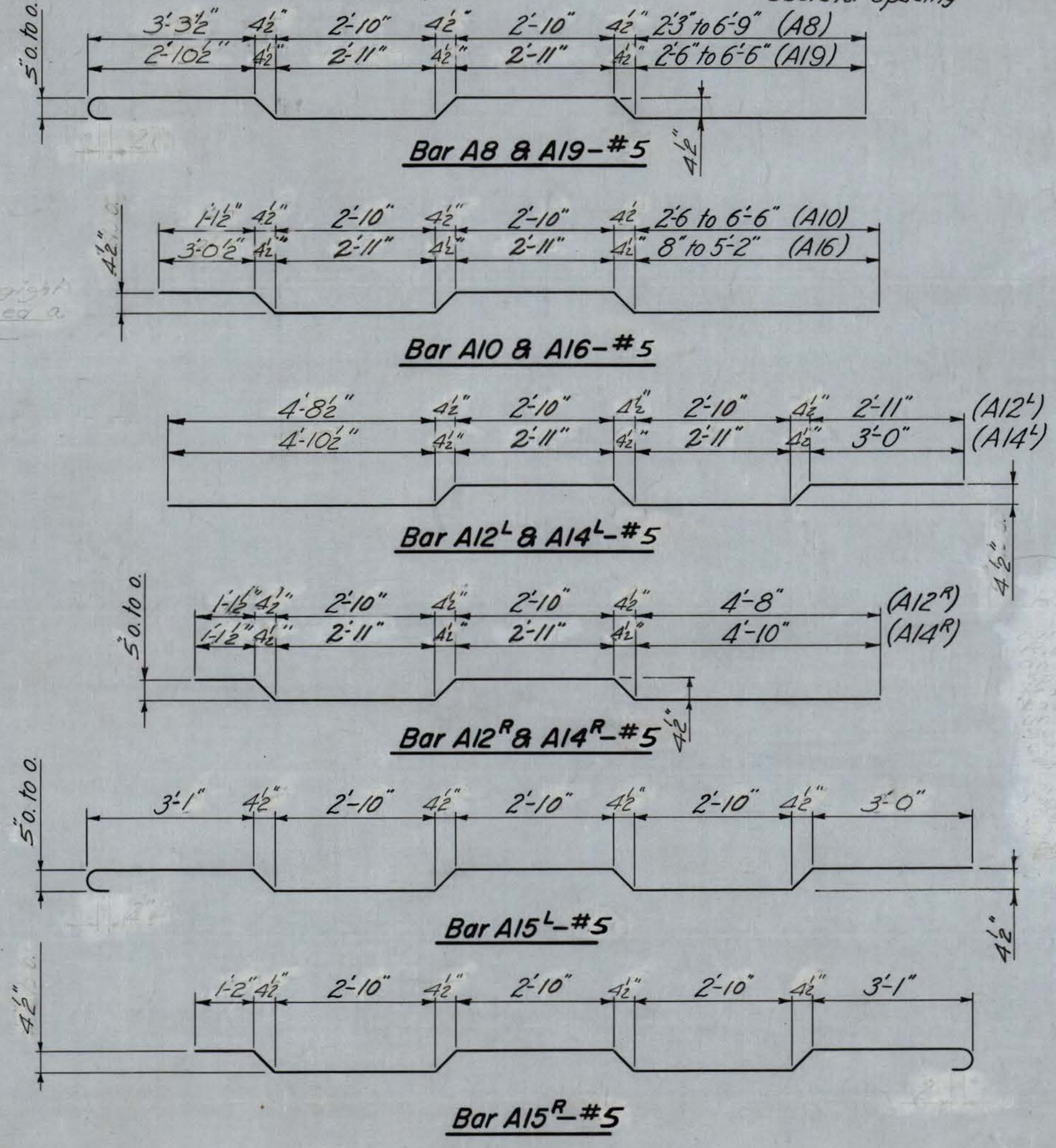
Detail A



TYPICAL CROSS SECTION  
Scale: 3/4" = 1'-0"



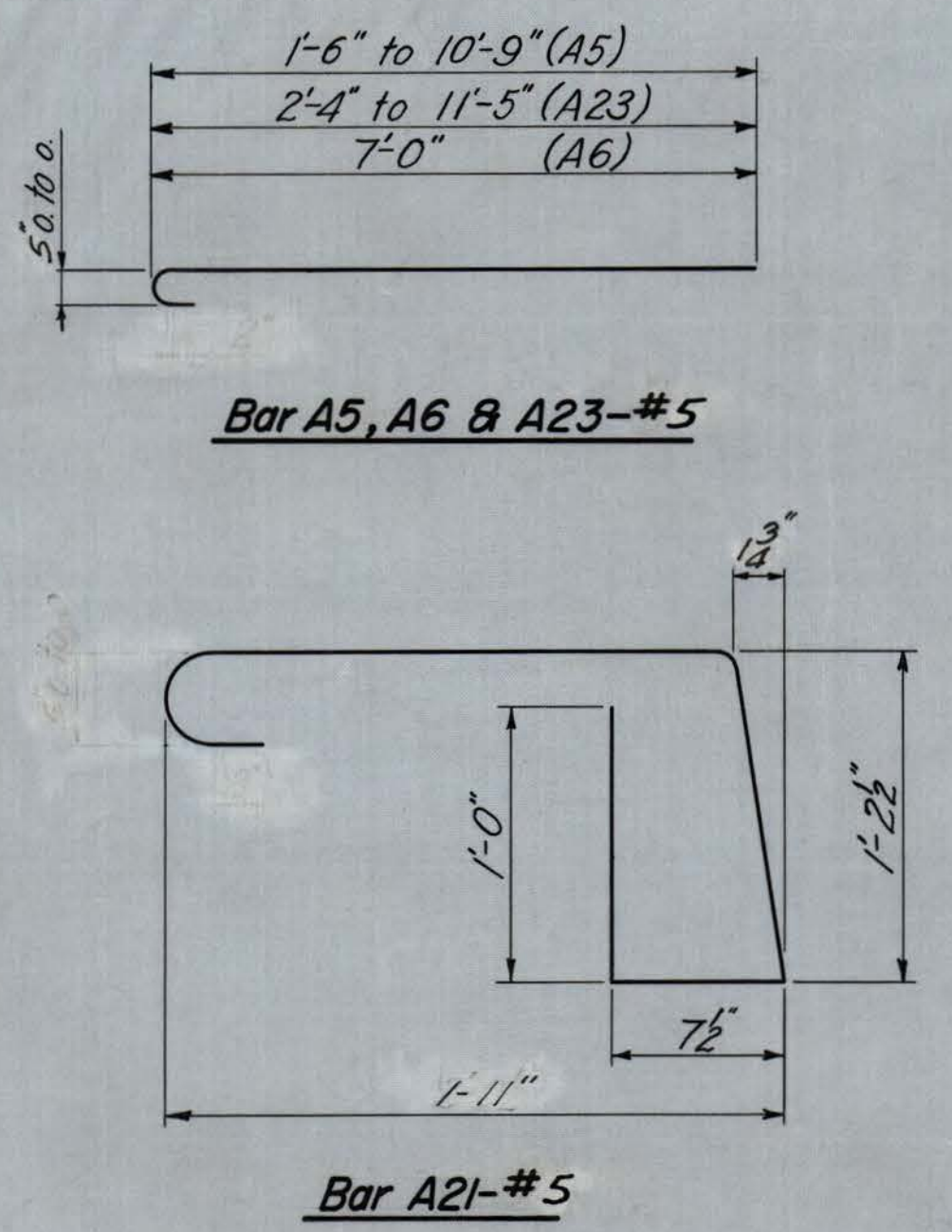
TYPICAL CONSTRUCTION JOINT  
Scale: 1/2" = 1'-0"



MARK	NO.	STOCK	BEND	LOCATION
A1	304	#4 x 27'-8"	Straight*	Abut. - II
A2	76	#4 x 18'-8" (Ave)	do (10'-8" to 26'-8")	I - II
A3	76	#4 x 23'-0" (Ave)	do (16'-0" to 30'-0")	II - III
A4	1292	#4 x 29'-8"	do*	II - VIII
A5	18	#5 x 6'-8" (Ave)	See Detail	II - III
A6	754	#5 x 7'-7"	See Detail	Abut. - Sta. 13+89
A7	6	#5 x 13'-9" (Ave)	Straight (11'-6" to 16'-0")	II - III
A8	3	#5 x 15'-7" (Ave)	See Detail	II - III
A9	14	#5 x 4'-9" (Ave)	Straight (2'-0" to 7'-6")	II - III
A10	3	#5 x 12'-11" (Ave)	See Detail	II - III
A11	6	#5 x 10'-8" (Ave)	Straight (8'-0" to 13'-4")	II - III
A12 <sup>L</sup>	322	#5 x 14'-11"	See Detail	Abut. - Sta. 13+89
A12 <sup>R</sup>	318	#5 x 13'-1"	do.	Abut. - Sta. 13+89
A13 <sup>L</sup>	1304	#5 x 16'-9"	Straight	Abut. - VIII
A13 <sup>R</sup>	1312	#5 x 13'-7"	do.	Abut. - VIII
A14 <sup>L</sup>	53	#5 x 15'-4"	See Detail	I - II
A14 <sup>R</sup>	61	#5 x 13'-5"	do.	I - II
A15 <sup>L</sup>	277	#5 x 17'-5"	See Detail**	Sta. 13+89 - VIII
A15 <sup>R</sup>	277	#5 x 15'-5"	do**	Sta. 13+89 - VIII
A16	3	#5 x 13'-5" (Ave)	See Detail	I - II
A17	6	#5 x 12'-11" (Ave)	Straight (10'-8" to 15'-2")	I - II
A18	16	#5 x 7'-0" (Ave)	do (10'-0" to 4'-0")	I - II
A19	3	#5 x 15'-4" (Ave)	See Detail	I - II
A20	4	#5 x 14'-4" (Ave)	Straight (12'-4" to 16'-4")	I - II
A21	1693	#5 x 5'-4"	See Detail	Abut. - VIII
A22	1693	#5 x 1'-11"	Straight	Abut. - VIII
A23	22	#5 x 7'-5" (Ave)	See Detail	I - II
A24	4	#5 x 16'-3"	Straight	II
A25	4	#5 x 18'-2"	do	II
A26	63	#4 x 31'-6"	do	II - VI
A27	36	#4 x 27'-10"	do	Abut. - II
A28	210	#4 x 29'-8"	do	Abut. - VIII
A29***	100	#4 x 34'-0"	do	Abut. - VI
A30***	203	#4 x 20'-0"	do	VI - VIII

\* Bend bars A1 & A4 in field to follow stringers.  
\*\* Replace bars 6, 12, & 14 in typical cross section.  
\*\*\* Stagger ends ±1'

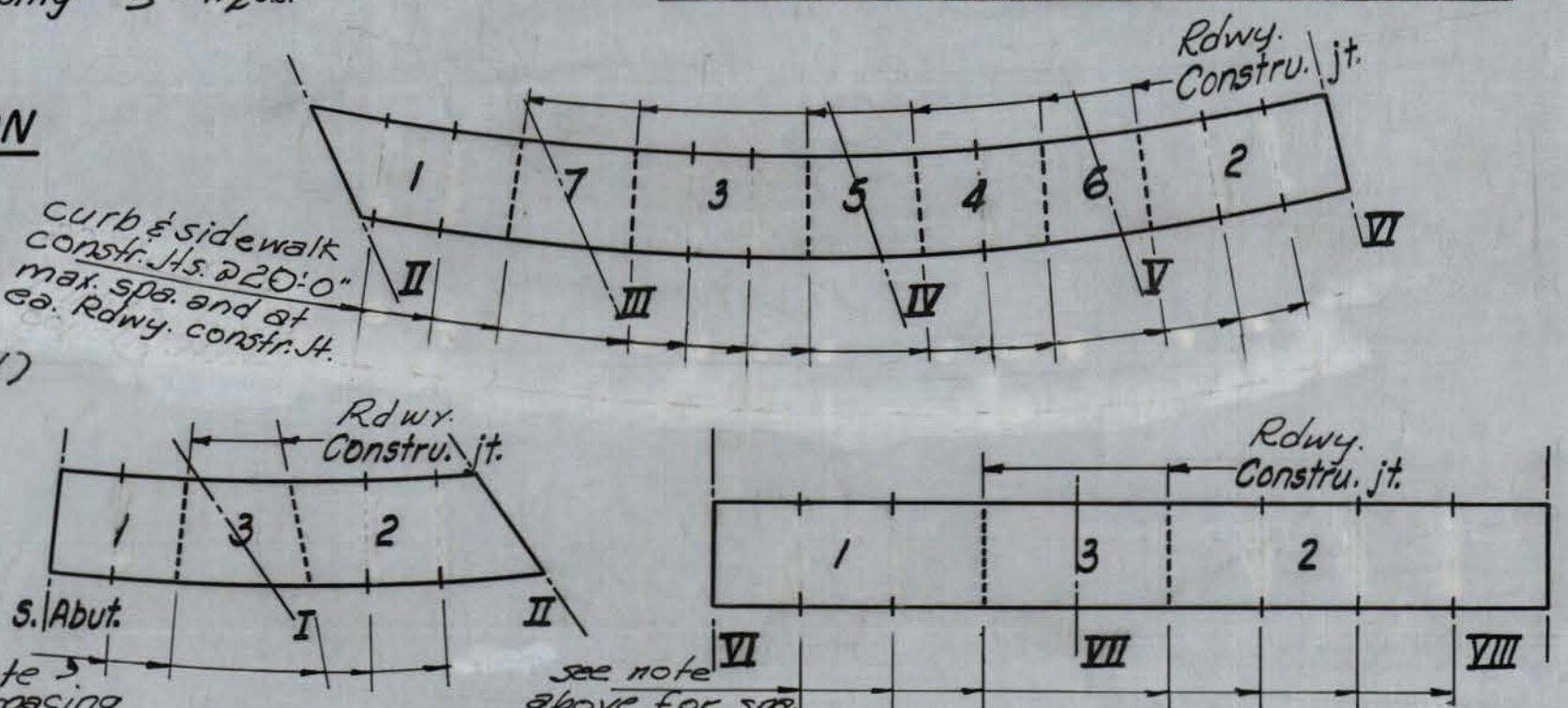
Preformed joint filler for vertical joints in the Superstructure shall be sponge rubber, Type I, conforming to Art. 3.8.2 of the Specifications. Cost to be included in Item 71-1.



Bar A5, A6 & A23 - #5

Bar A21 - #5

ORDER OF POURING ROADWAY SLABS



NOTES:

All chamfers are 3/4".  
All bar dimensions are out to out, and all radii are inside.  
All reinforcement shall be intermediate grade billet steel in accordance with Art. 3.9.1.  
Concrete shall be Class A, Air-Entrained.  
Vary haunch as required to make 7 roadway slab conform to grades and roadway cross-sections shown on the Plans. The thicknesses of concrete above the steel supports for the roadway are to be determined by deducting the actual elevation of the steel supports as constructed from the computed roadway elevations adding thereto the dead load deflection for concrete roadway, sidewalk and railing given on the Stress Sheet.  
Roadway construction joints may be eliminated between successive pours if pouring is continuous and if the Contractor's procedure is approved by the Bridge Department.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

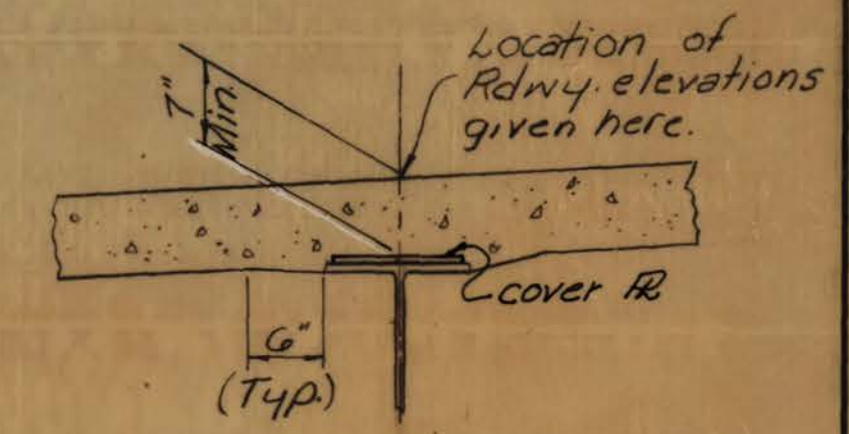
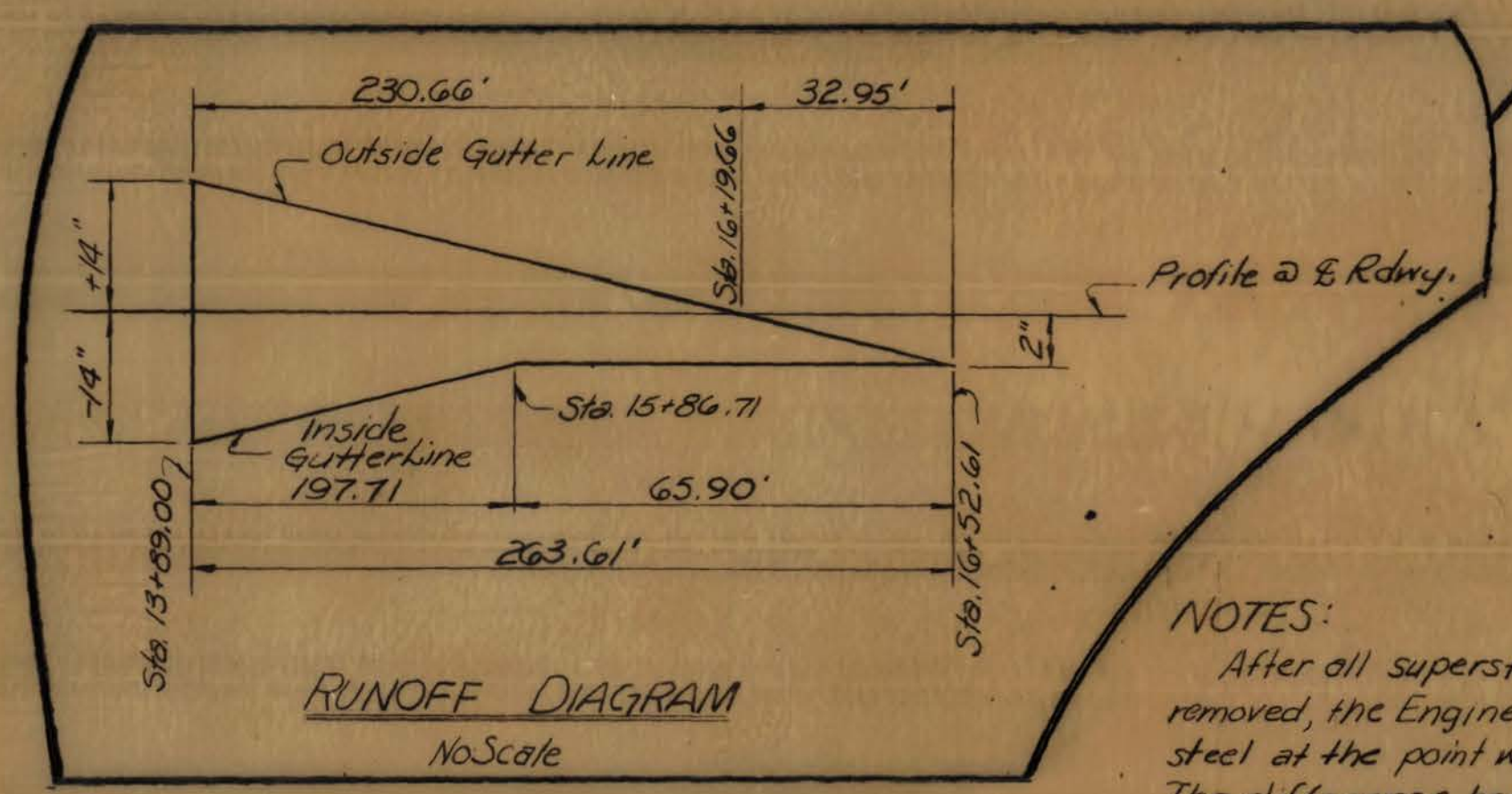
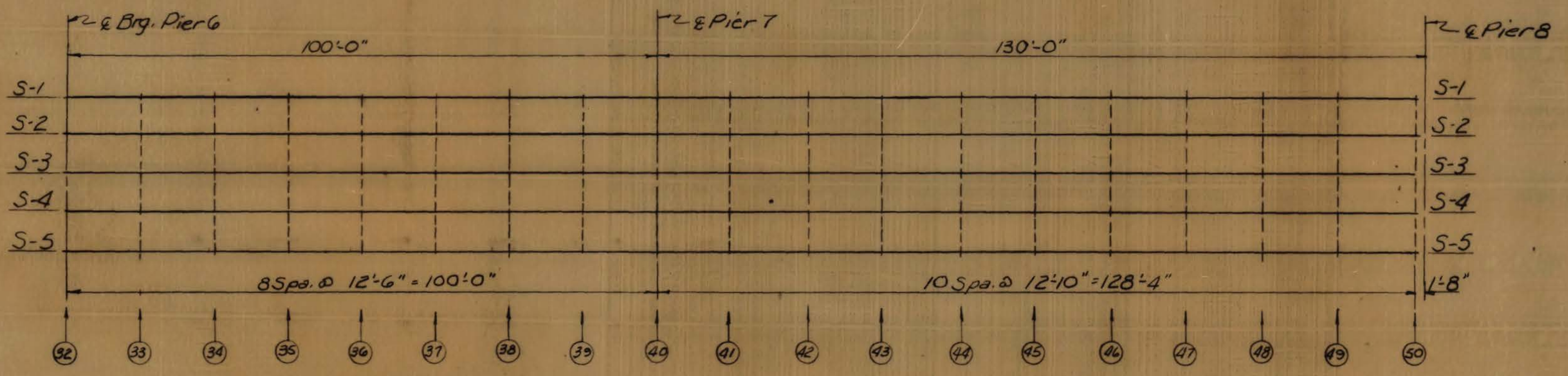
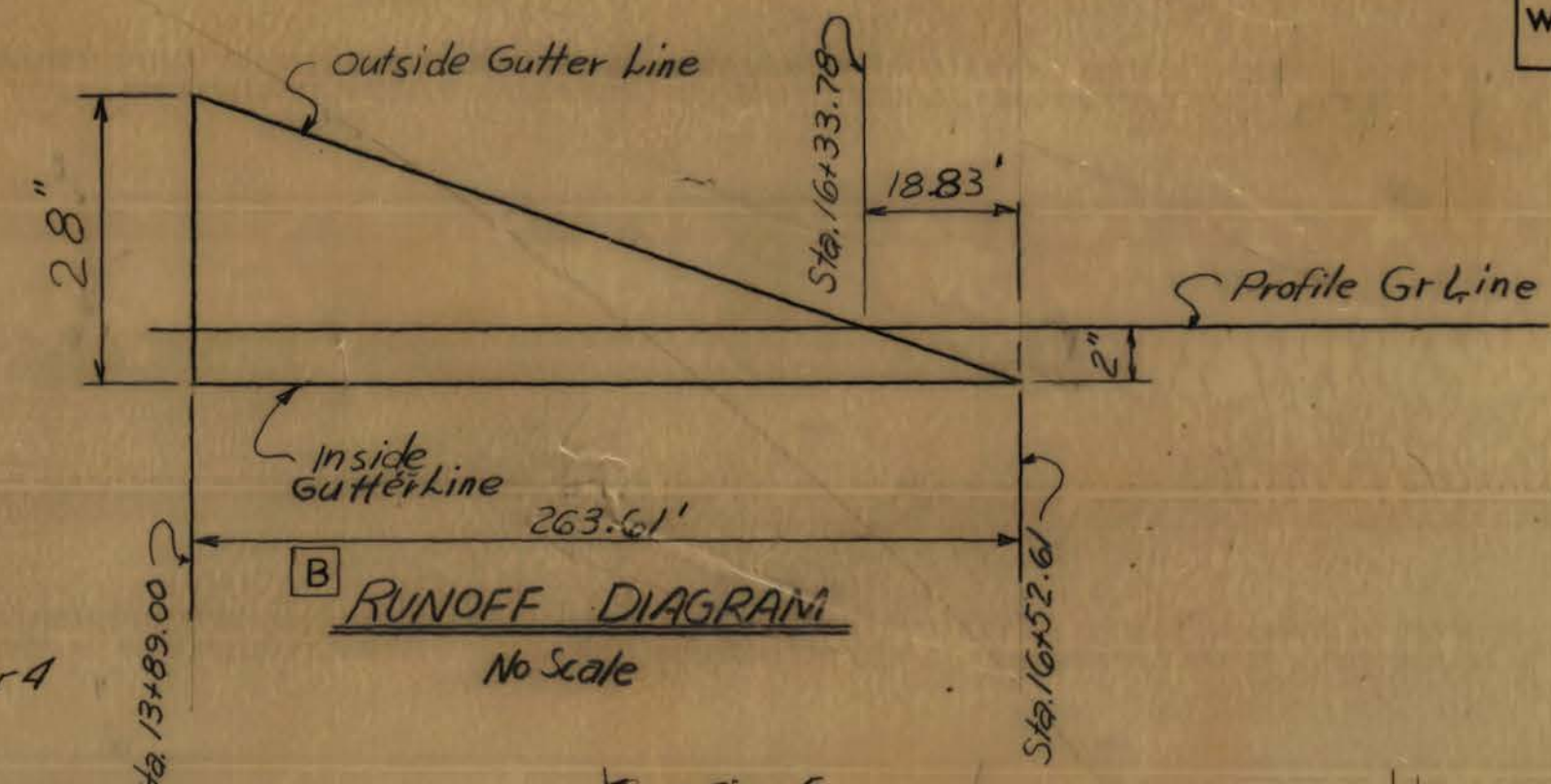
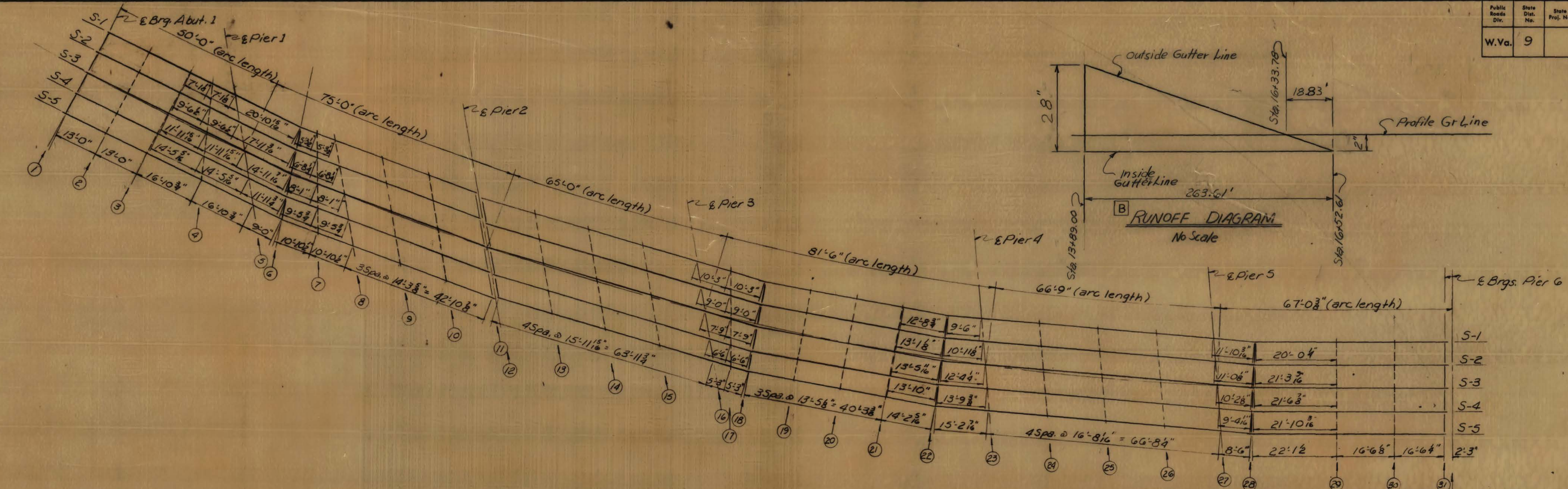
ROADWAY REINFORCING DETAILS



SCALE IN FEET  
MODJESKI & MASTERS ENGINEERS



Cont. 3



NOTES:  
 After all superstructure steel has been erected and falsework removed, the Engineer shall take elevations along the tops of steel at the point where the top of slab elevations are shown. The difference between these elevations and the top of slab elevations given, plus the amount of deflection shown at each point due to dead load of concrete, shall be the thickness of slab over the steel. The minimum slab thickness over the steel shall not be less than 7" at the centerline of the web of the stringers. If stringers have excessive camber and this minimum cannot be obtained, the grade line shall be adjusted to obtain the minimum slab thickness.  
 See sheet 4 of 13 for dead load deflections.

TABLE OF ELEVATIONS (ft.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
S-1	666.50	666.96	667.40	667.63	667.85	668.07	668.27	668.46	668.60	668.90	669.11	669.29	669.38	669.45	669.48	669.47	669.43	669.39	669.33	669.11	668.87	668.60	668.33	668.03	667.47	666.88
S-2	667.04	667.50	667.93	668.24	668.53	668.95	669.17	669.29	669.51	669.72	669.89	669.94	670.00	670.02	670.01	669.96	669.92	669.87	669.65	669.41	669.15	668.86	668.52	667.97	667.38	
S-3	667.58	668.04	668.47	668.85	669.21	669.62	669.77	669.91	670.12	670.32	670.48	670.50	670.55	670.56	670.54	670.49	670.45	670.40	670.19	669.95	669.69	669.40	669.02	668.47	667.88	
S-4	668.12	668.57	669.00	669.45	669.88	670.20	670.37	670.52	670.73	670.91	671.07	671.05	671.09	671.10	671.07	671.02	670.98	670.94	670.73	670.50	670.24	669.94	669.52	668.97	668.38	
S-5	668.67	669.11	669.54	670.06	670.54	670.78	670.97	670.14	671.34	671.51	671.66	671.60	671.63	671.64	671.61	671.54	671.51	671.48	671.27	671.04	670.78	670.48	670.01	669.47	668.88	

TABLE OF ELEVATIONS (ft.)

	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
S-1	666.25	665.58	665.08	664.05	663.34	662.65	662.55	662.03	661.50	660.97	660.45	659.92	659.39	658.90	658.50	658.17	657.94	657.80	657.73	657.75	657.81	657.95	658.19	658.50	658.92
S-2	666.75	666.08	665.62	664.59	663.85	663.12	663.01	662.46	661.90	661.34	660.79	660.23	659.68	659.16	658.73	658.37	658.11	657.93	657.84	657.82	657.88	658.02	658.26	658.57	658.99
S-3	667.25	666.59	666.17	665.13	664.35	663.58	663.47	662.89	662.30	661.71	661.13	660.54	659.96	659.41	658.95	658.56	658.27	658.06	657.94	657.90	657.96	658.10	658.39	658.65	659.07
S-4	667.76	667.10	666.71	665.67	664.85	664.04	663.93	663.32	662.70	662.08	661.47	660.85	660.24	659.66	659.17	658.75	658.43	658.19	658.04	657.97	658.00	658.11	658.33	658.61	658.99
S-5	668.26	667.61	667.26	666.21	665.36	664.51	664.39	663.75	663.10	662.45	661.81	661.16	660.53	659.92	659.40	658.95	658.60	658.32	658.15	658.05	658.05	658.13	658.31	658.54	658.92

ROADWAY ELEVATIONS

MONTGOMERY BRIDGE

DESIGNED BY  
**THE STATE ROAD COMMISSION**  
 CHARLESTON, W. VA.

Scale as shown  
 Project F-283(15)  
 Cont. 3

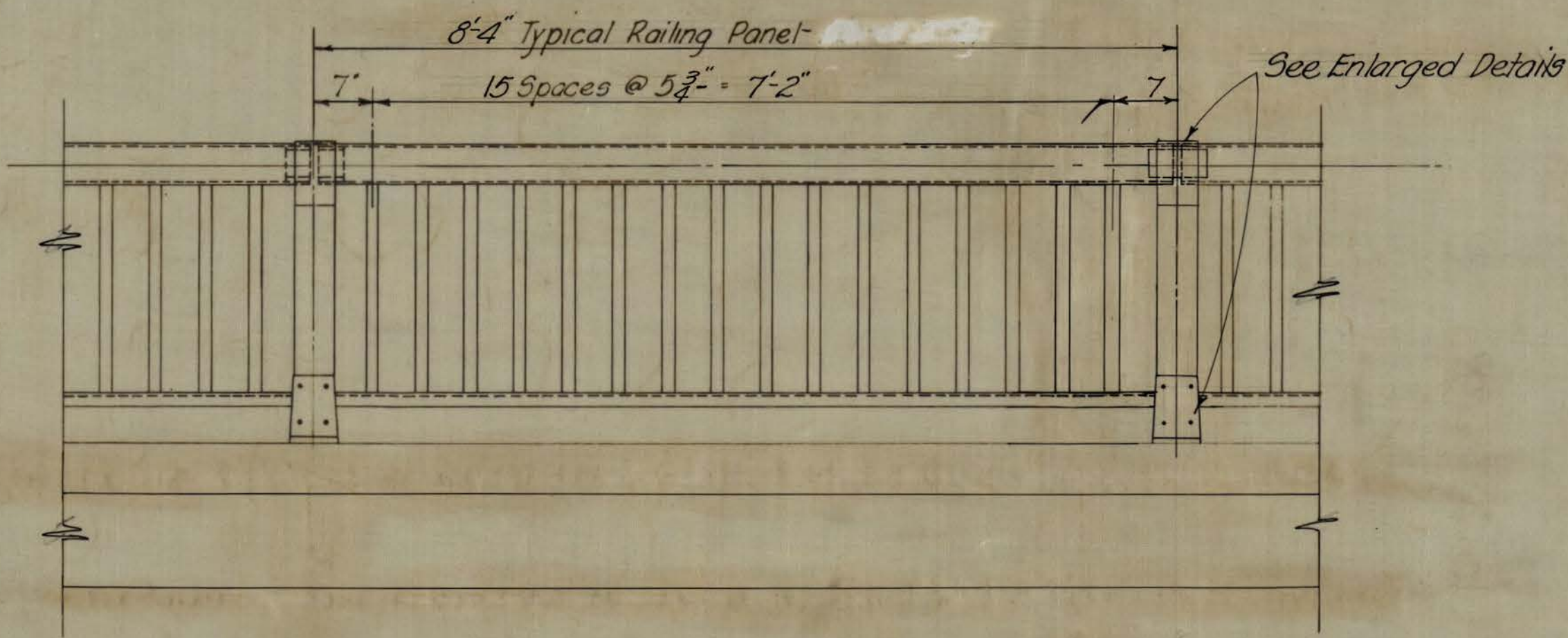
Date April, 1966  
 Sheet 8A of 13 Sheets  
 No. 1899

MADE BY: NIL DATE: 4-19-66  
 TRACED BY: WDD DATE: 4-19-66  
 CHECKED BY: WDD DATE: 4-19-66  
 CHECKED BY: CDN DATE: 4-19-66

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
B	8 A	Runoff Diagram	3-7-67	Eble
A	8 A	Table of Elev. Point 29 to 50 incl.	3-7-67	Eble

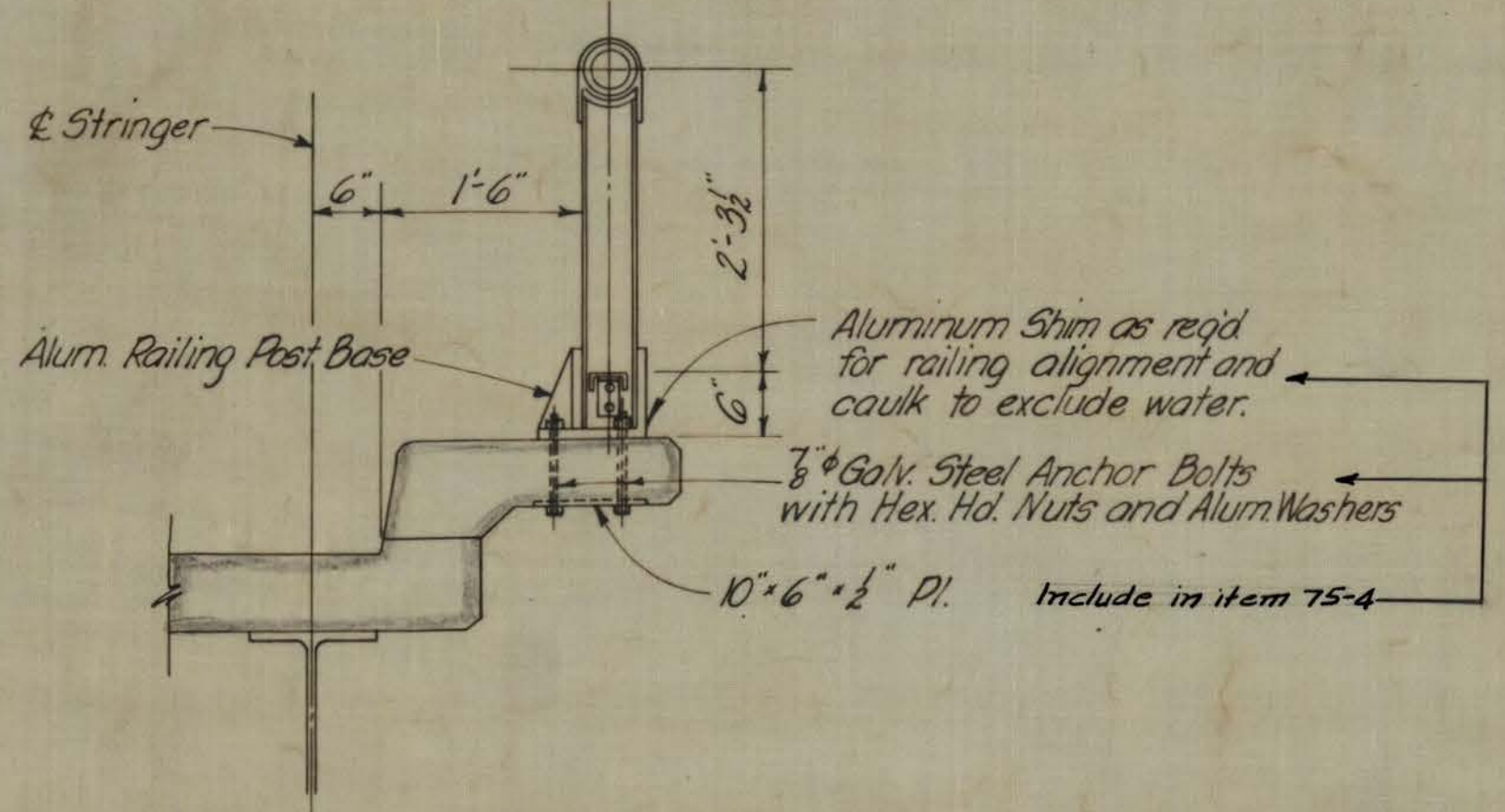
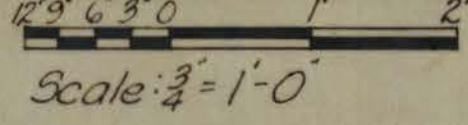


DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9	F283 (15)			FAYETTE	9	13

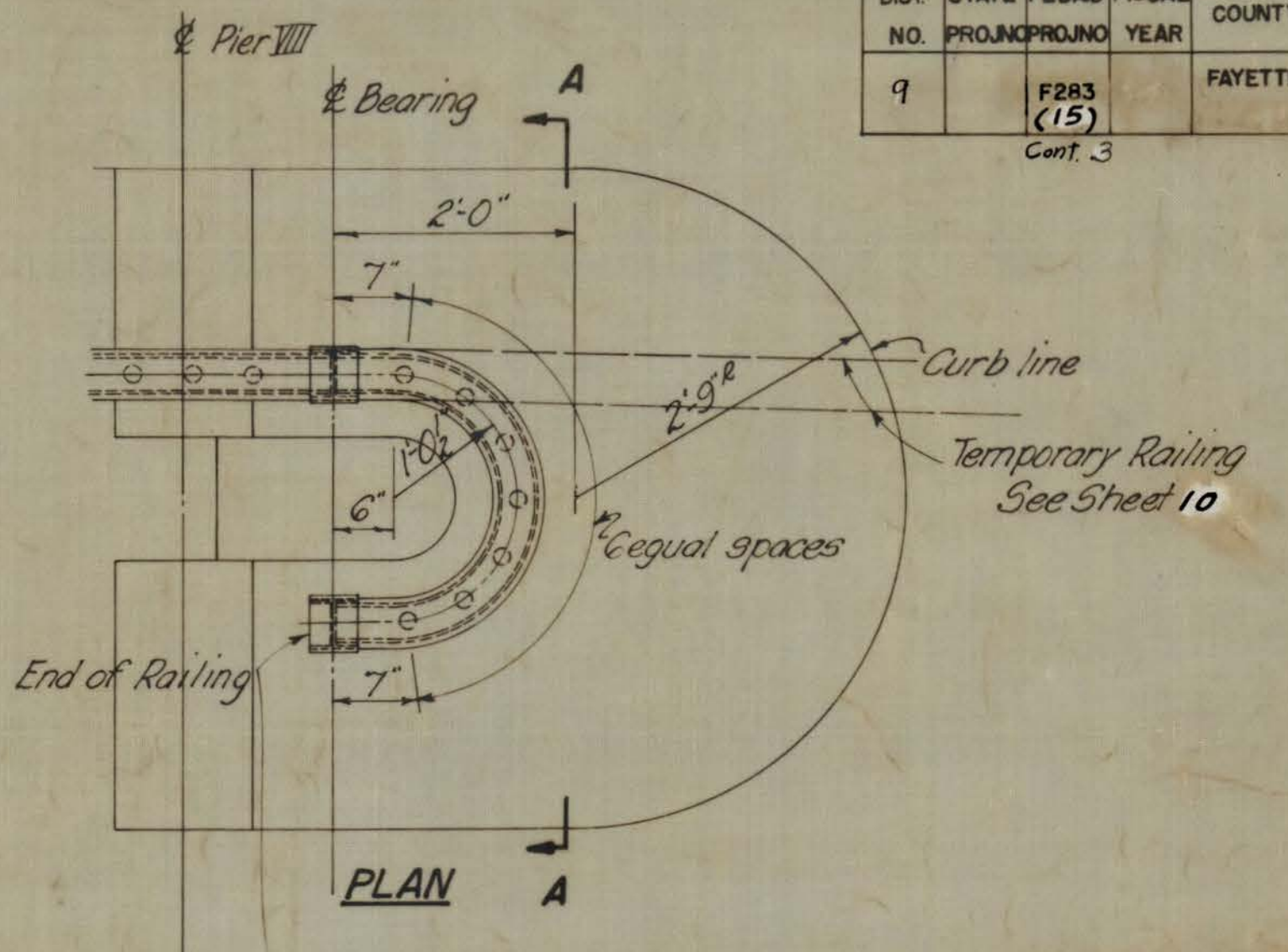
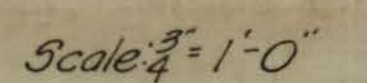


NOTE: Railing Posts and Balusters to be set vertical

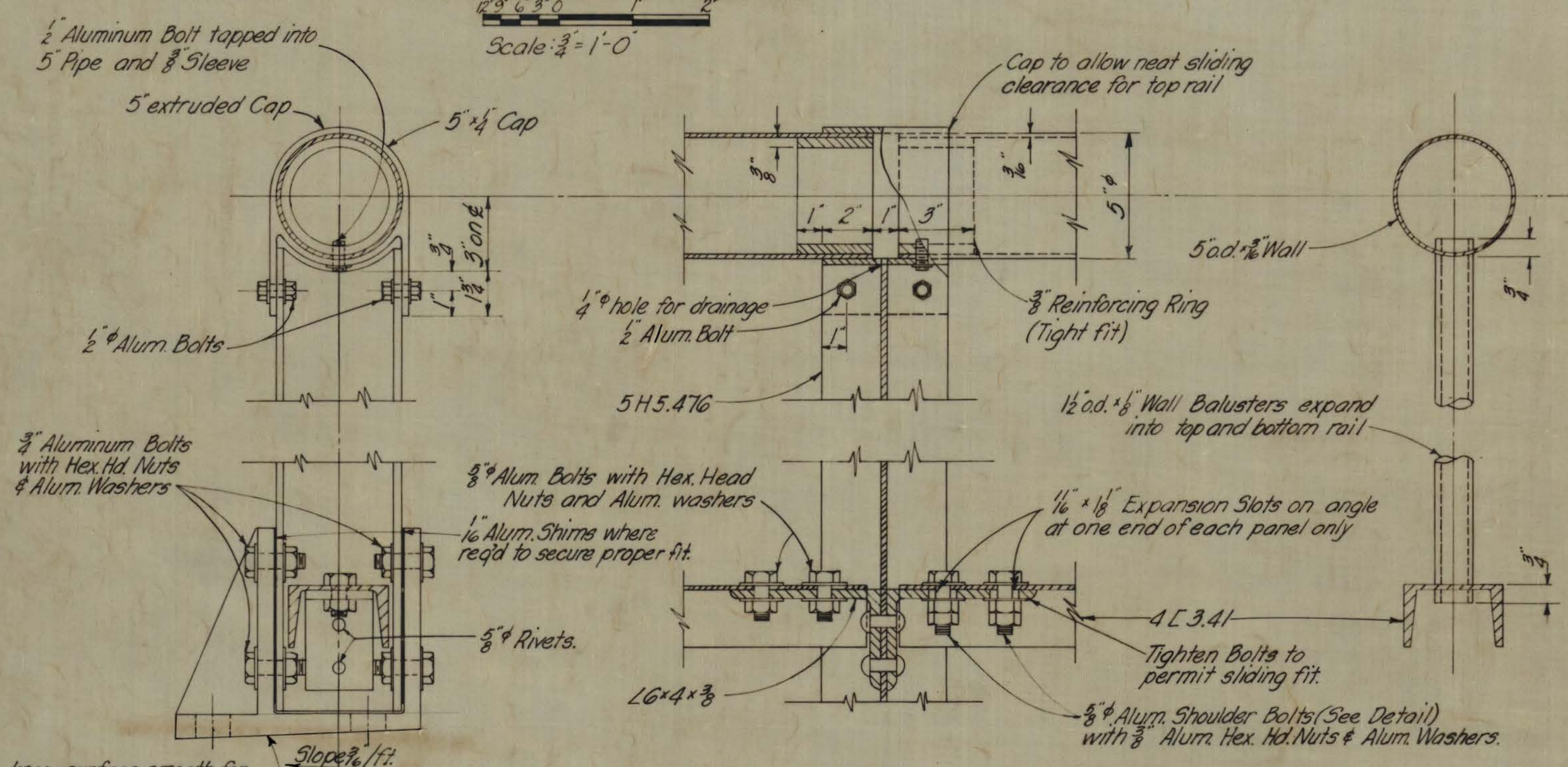
TYPICAL ELEVATION OF RAILING



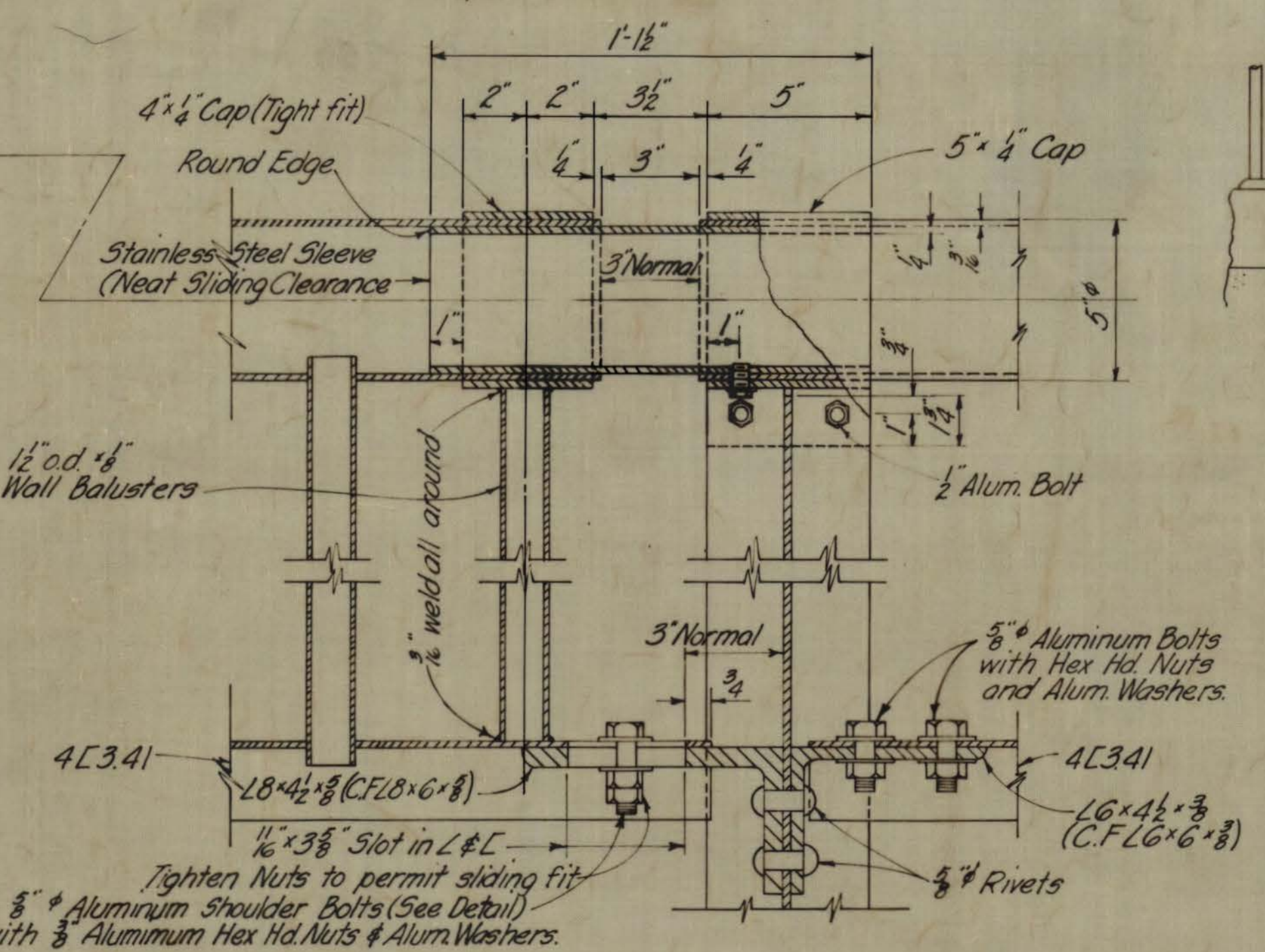
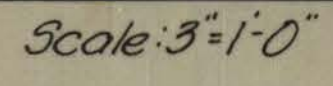
TYPICAL RAILING POST AND SUPPORT



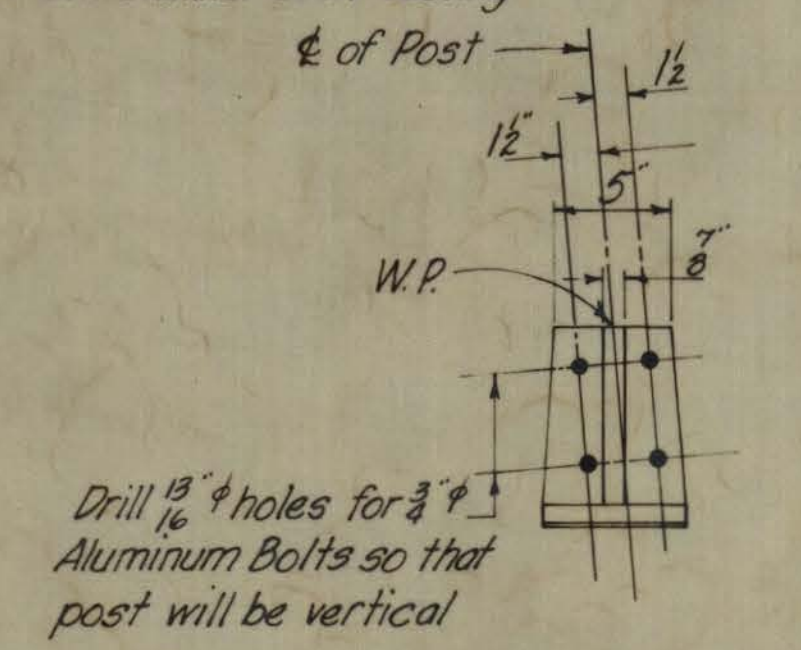
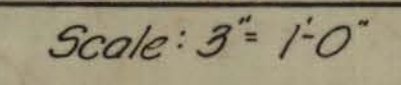
PLAN A



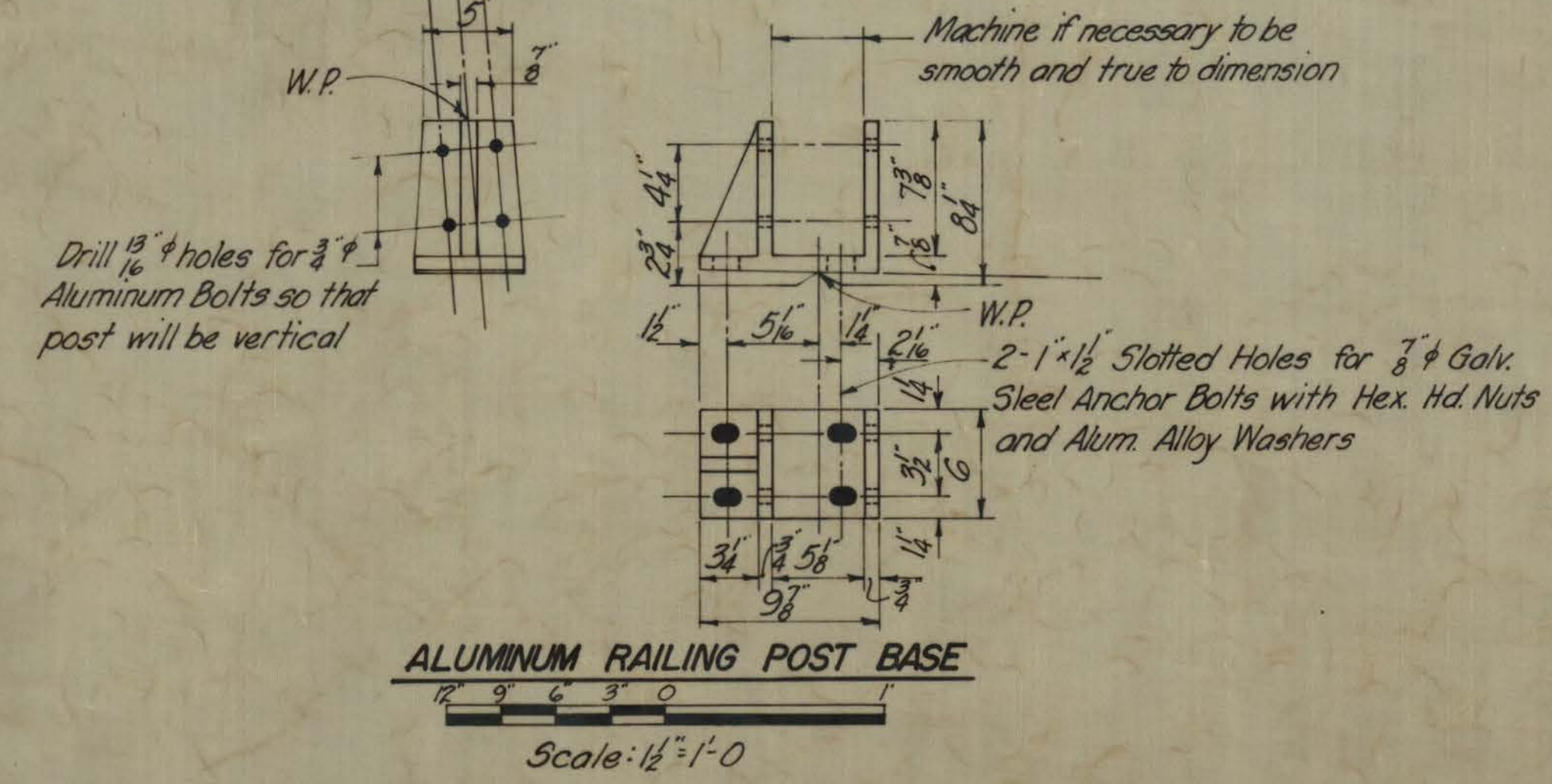
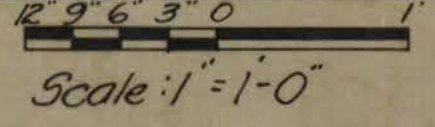
TYPICAL RAILING DETAILS



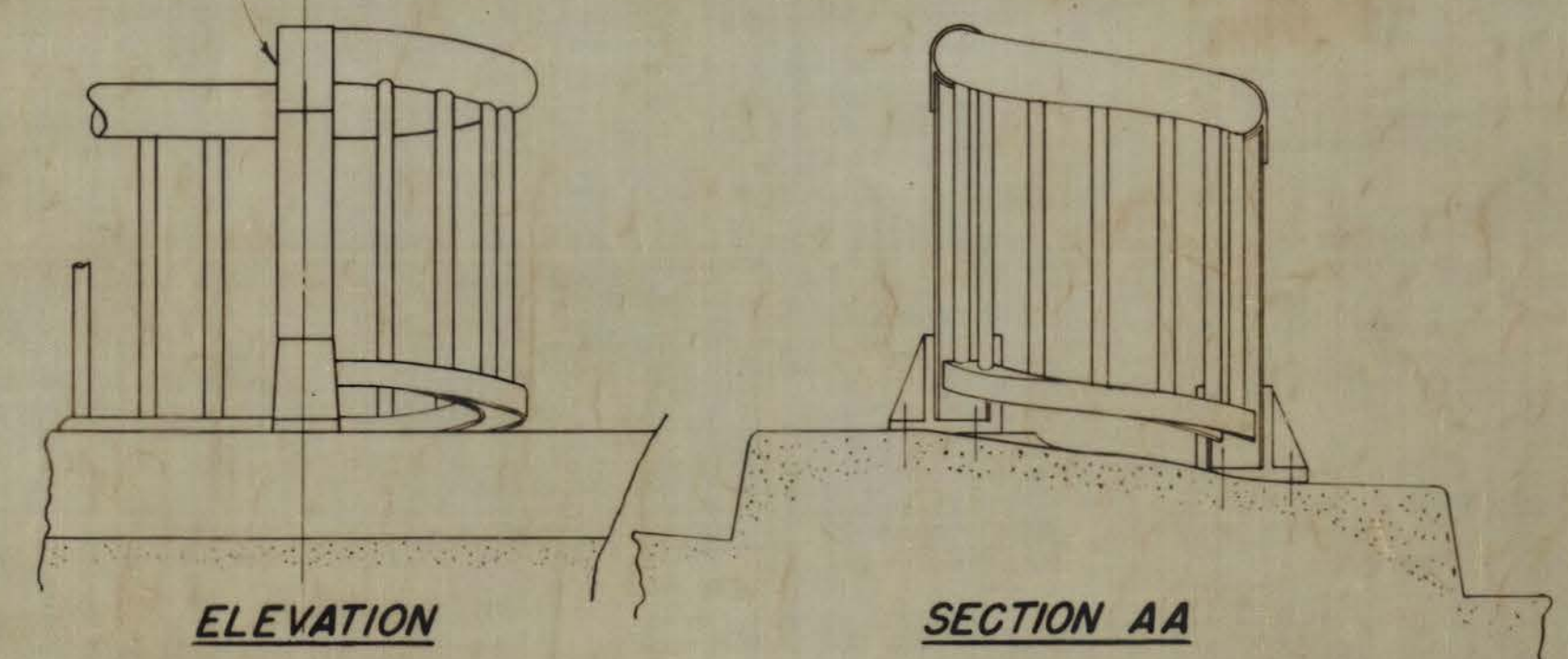
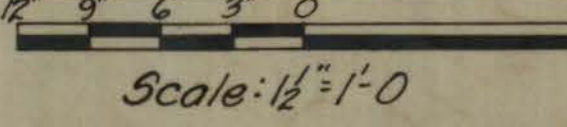
TYPICAL EXPANSION POST DETAIL



DETAIL OF SHOULDER BOLT FOR SLOTTED HOLES



ALUMINUM RAILING POST BASE

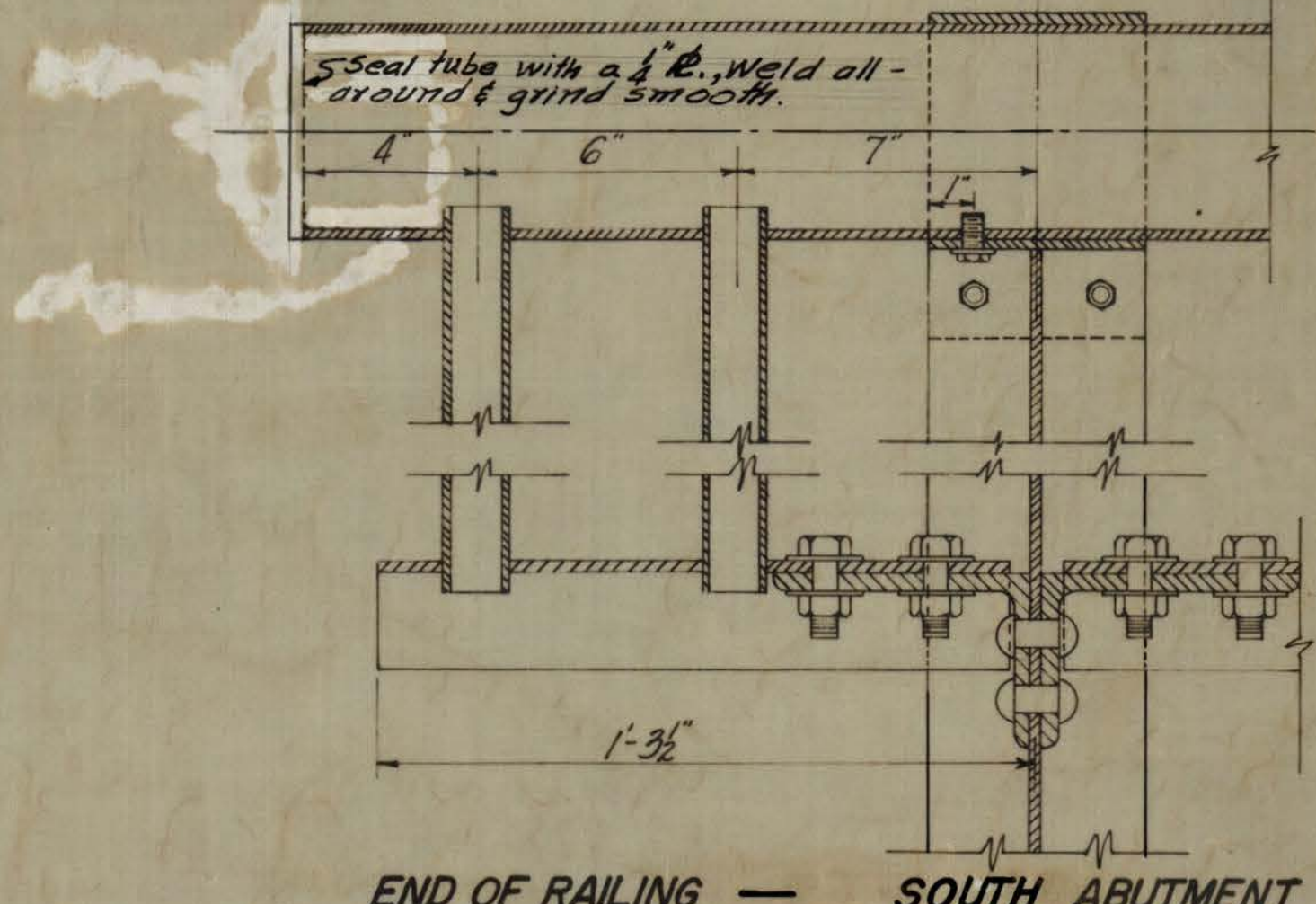
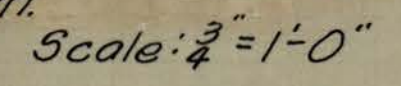


ELEVATION

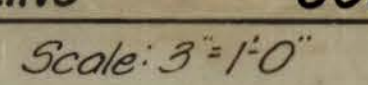
SECTION AA

DETAILS OF SPECIAL RAILING PANELS AT PIER VIII

2 Panels are to be furnished and stored at site by Others. This Contractor shall remove temporary railing and install these panels as shown.



END OF RAILING — SOUTH ABUTMENT



NOTE: See Supplemental Specifications for Aluminum Railing for setting requirements for Aluminum in contact with other materials.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

RAILING DETAILS

SCALE AS NOTED  
MODJESKI & MASTERS ENGINEERS

DWG. #9

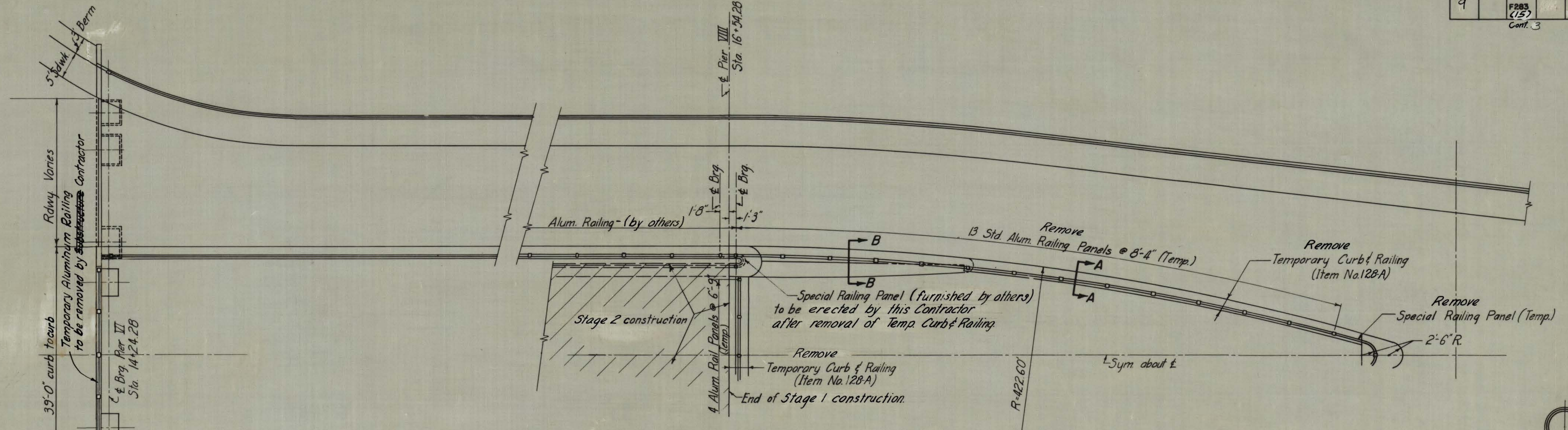
#1899

STAGE 2.

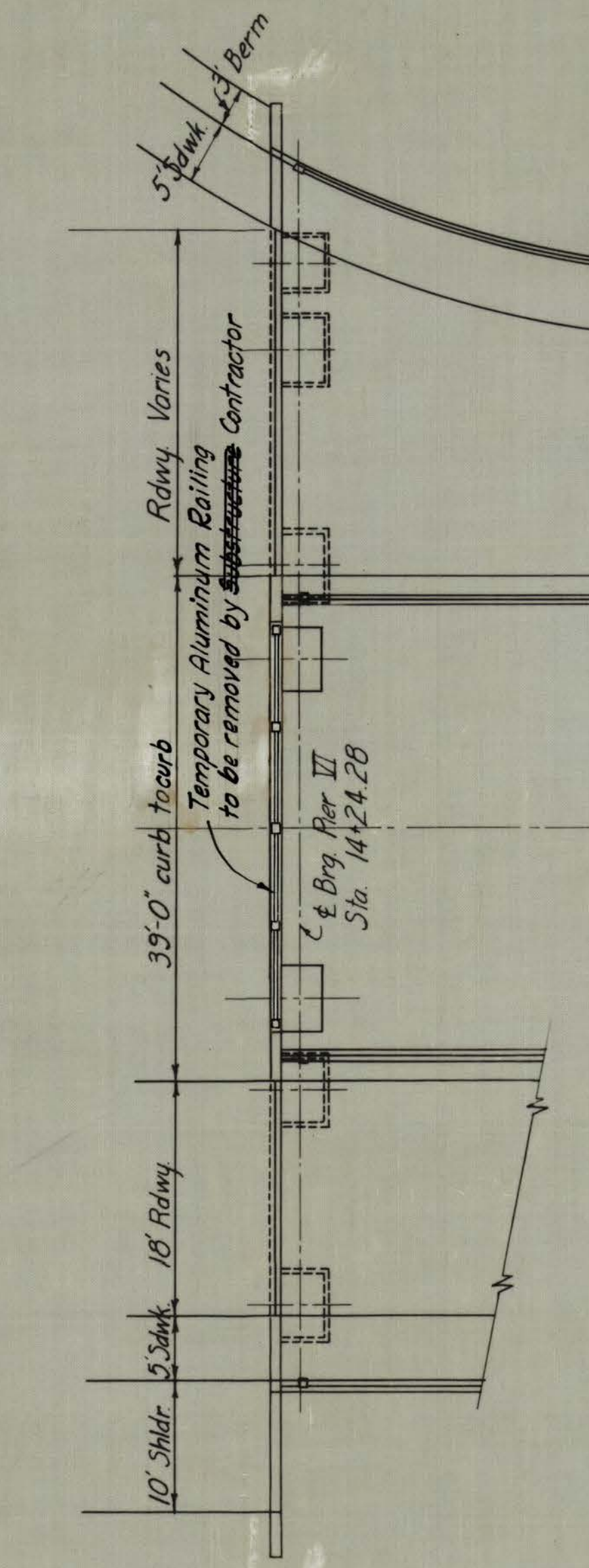


DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9	F283 (15)			FAYETTE	10	13

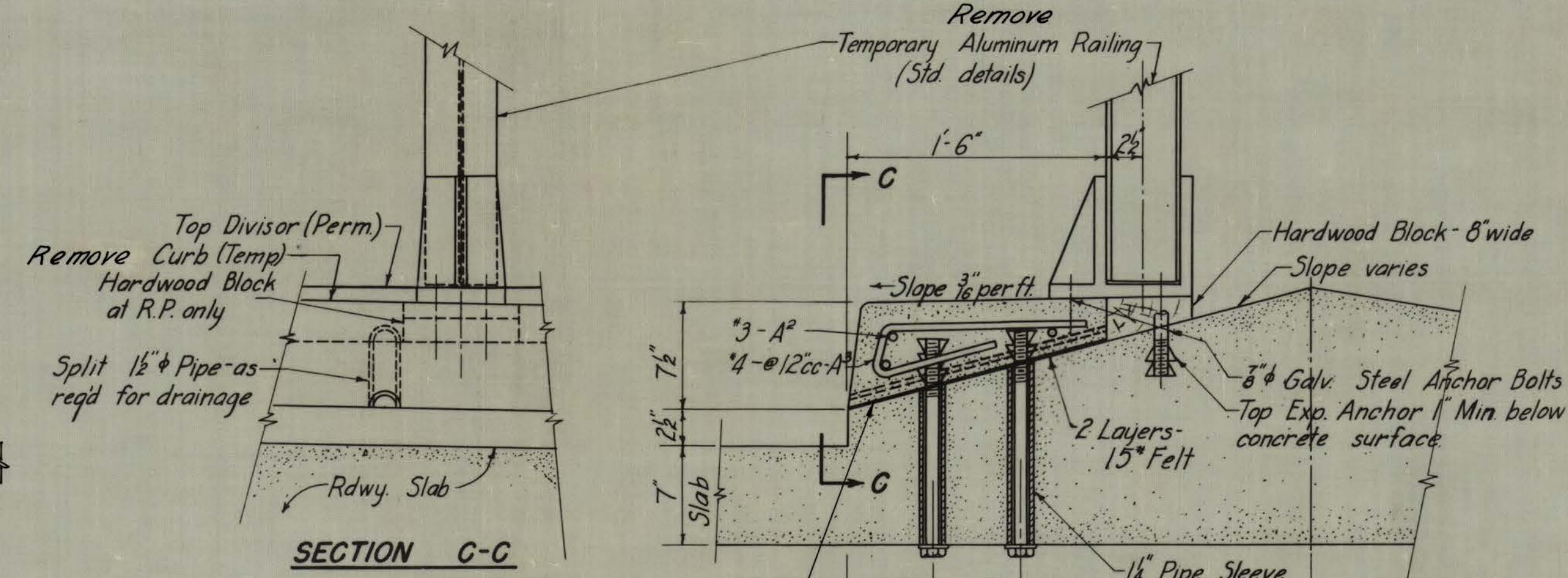
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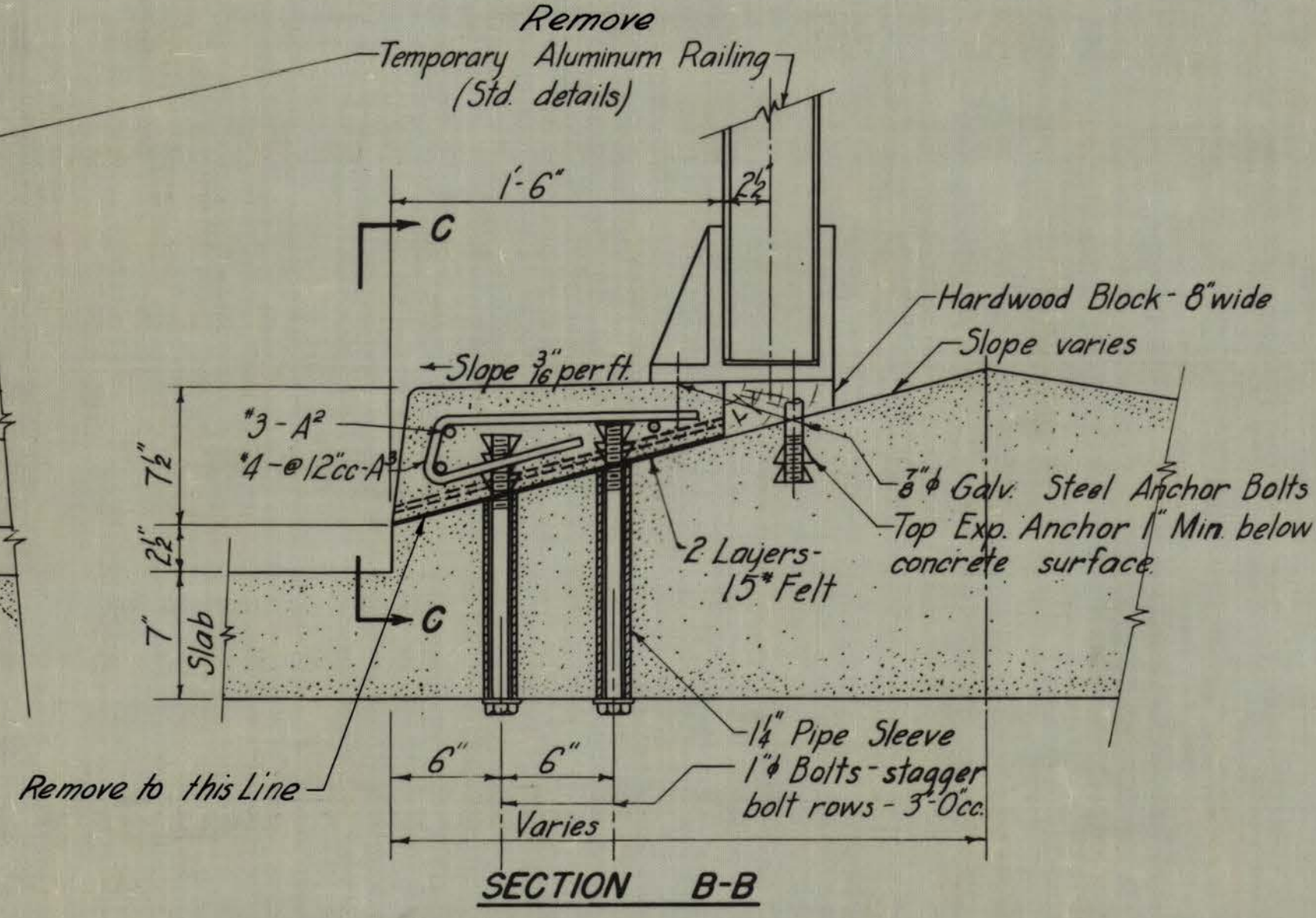
HALF PLAN AT PIER VIII



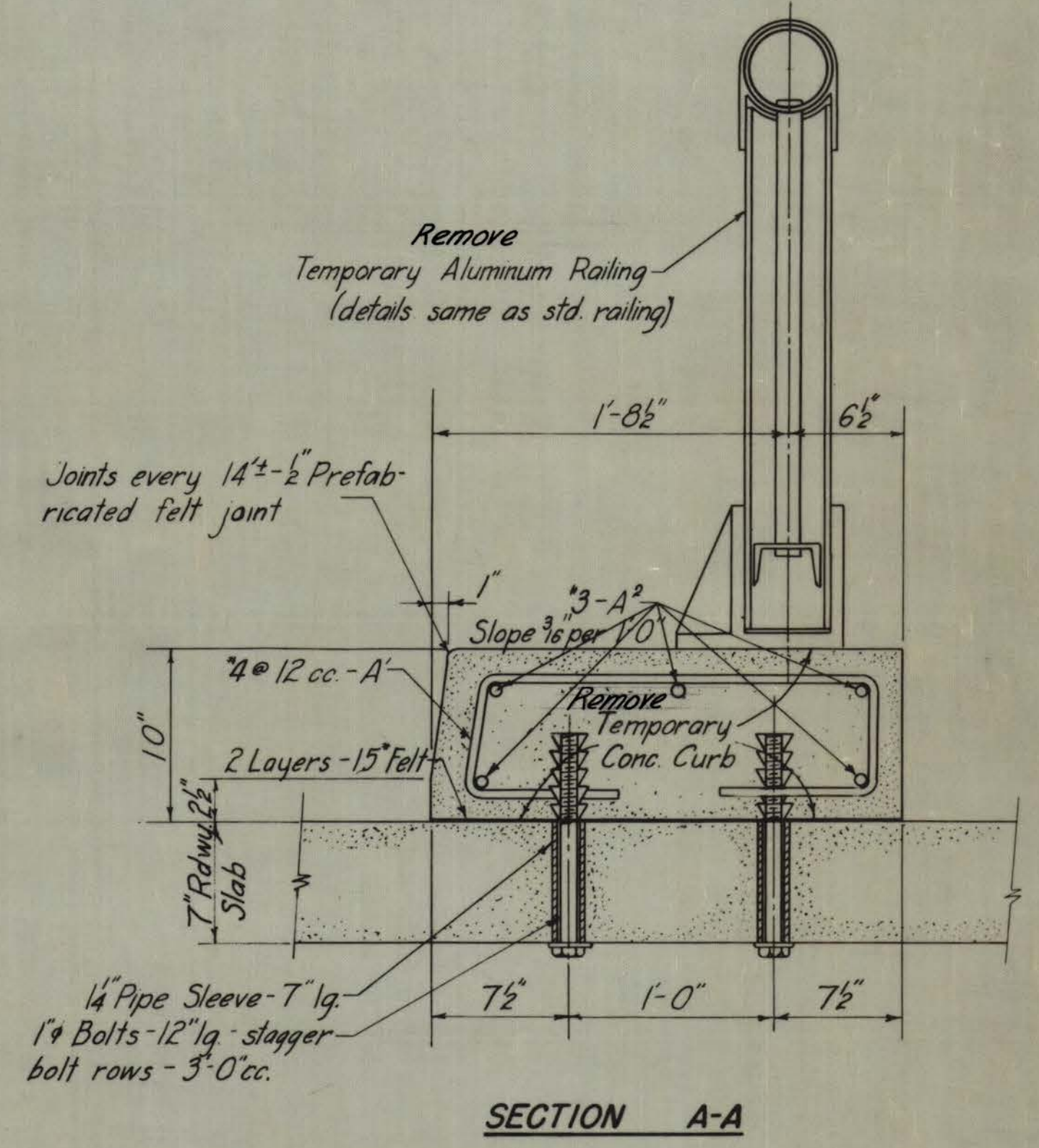
PLAN AT PIER VI



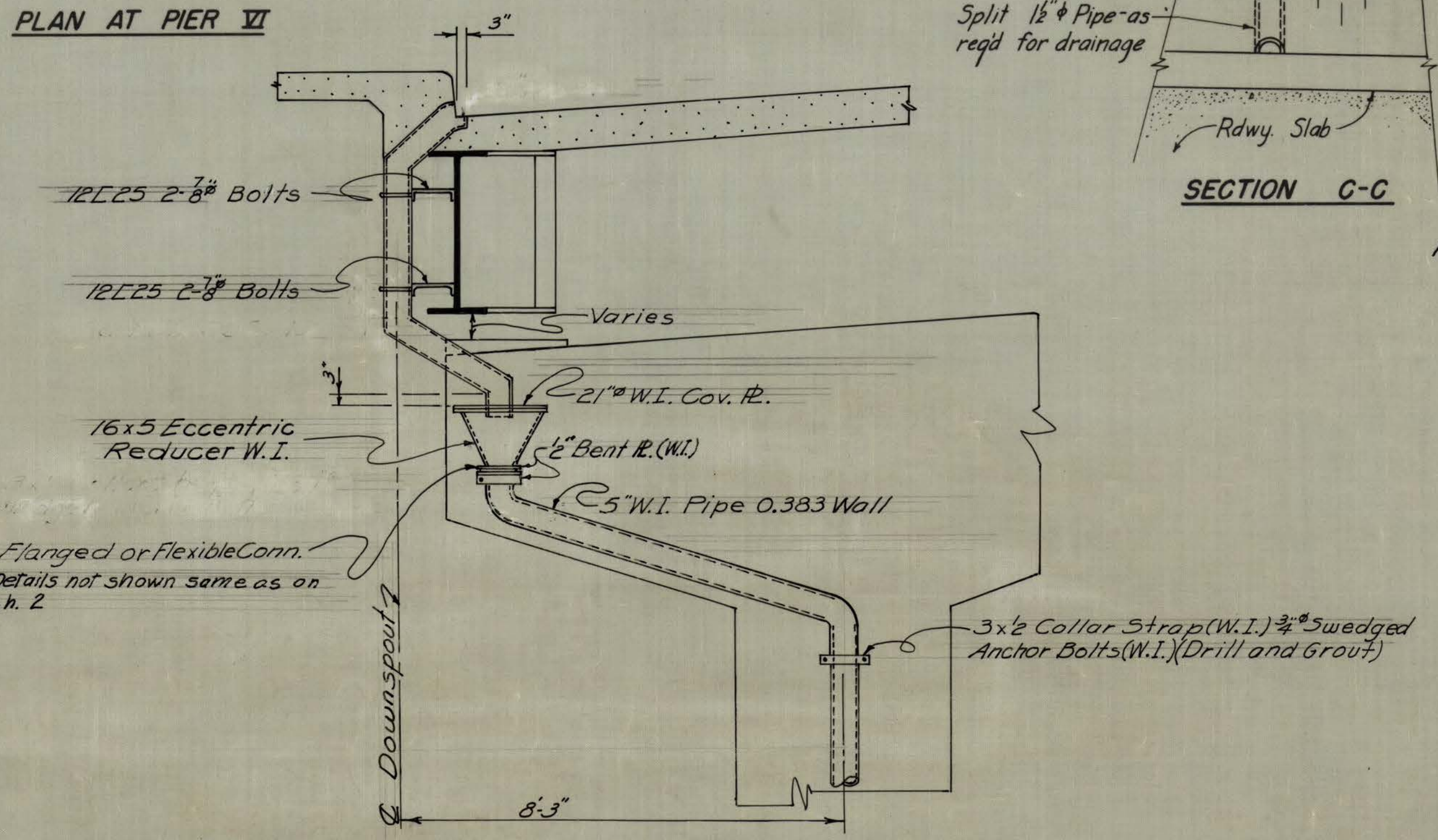
SECTION C-C



SECTION B-B



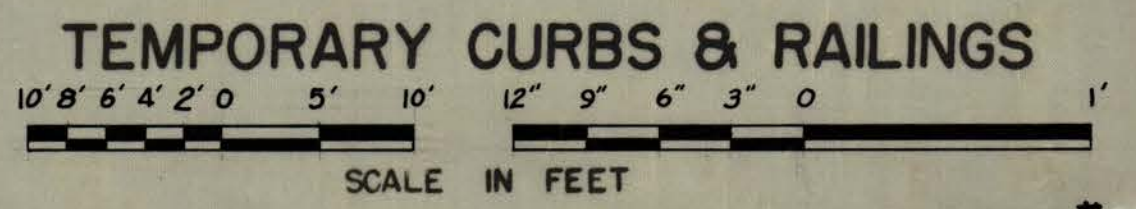
SECTION A-A



DRAINAGE DETAIL PIER II

**NOTES:**  
 Temporary Aluminum Railing & Temporary Curb furnished & constructed by others is to be removed by this Contractor after completion of Stage 2.  
 Temporary Aluminum Railing removed by this Contractor is the property of the State Road Commission & will be stored as directed by the Engineer.  
 All Anchor Bolt Holes to be filled with grout after removal of temporary Curb. Grout shall be in proportion of one part non-shrink aggregate, one part sand, and one part regular Portland Cement by weight. Include cost in Item 128-A.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.



MODJESKI & MASTERS ENGINEERS DWG. #10  
 #1899

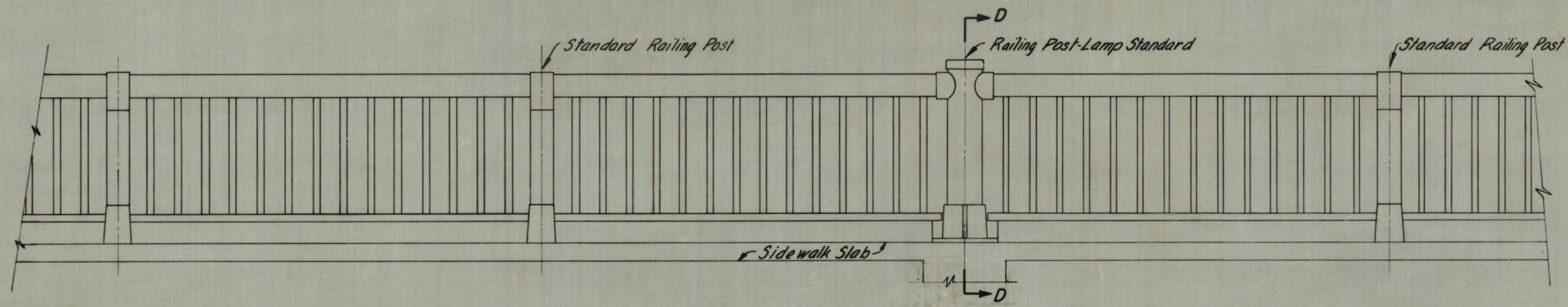
Rev. 3-20-58

STAGE 2

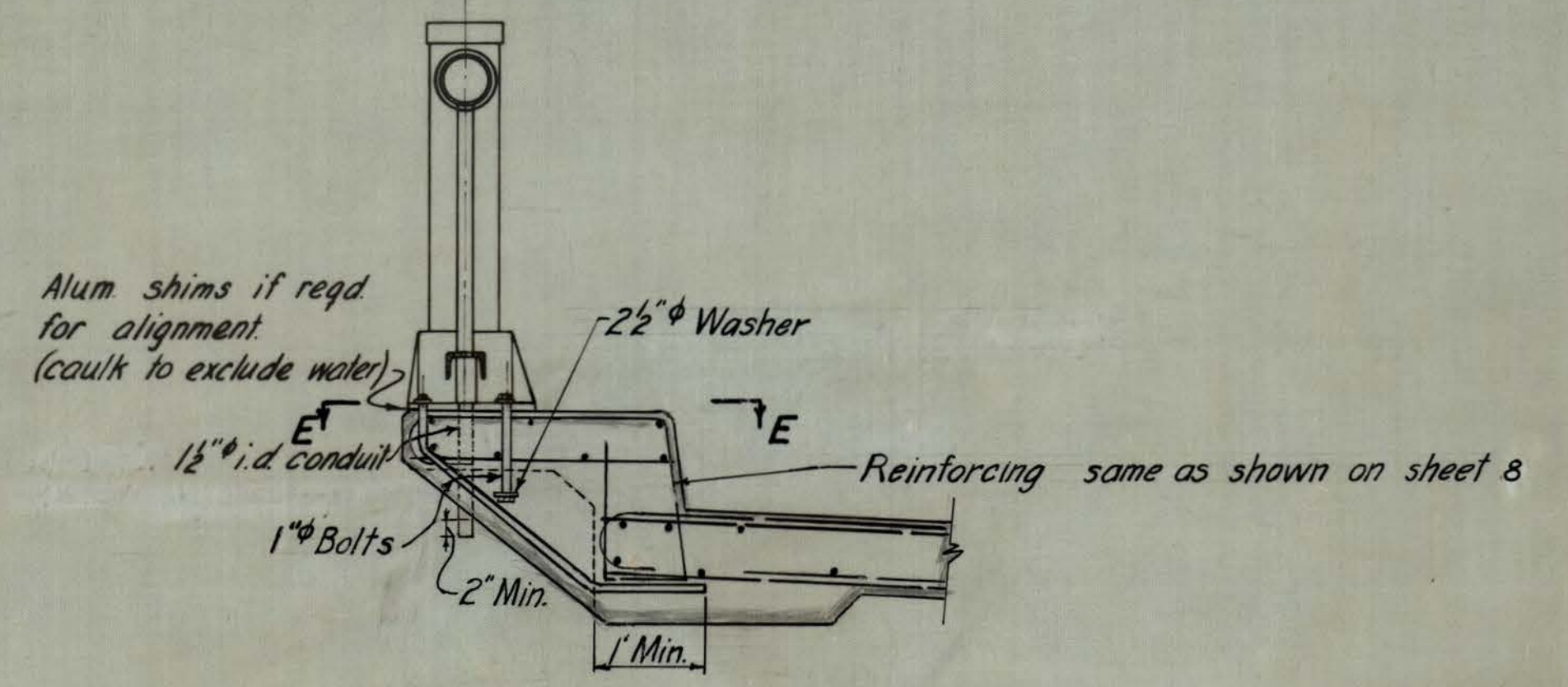


DIST. NO.	STATE PROJ. NO.	FED-AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9		F 283 (15)		FAYETTE	11	13

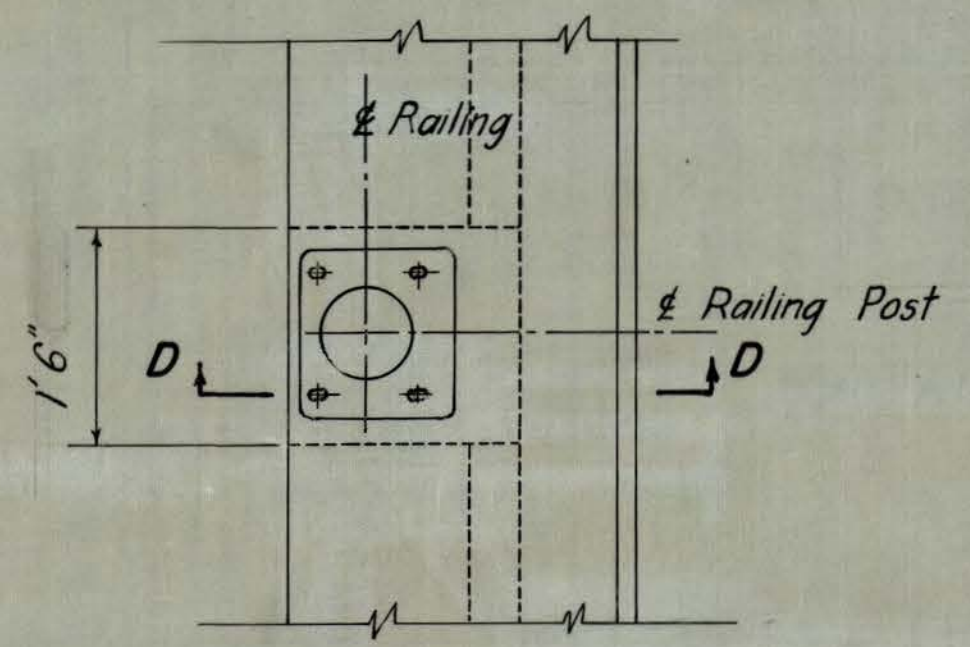
Cont. 3



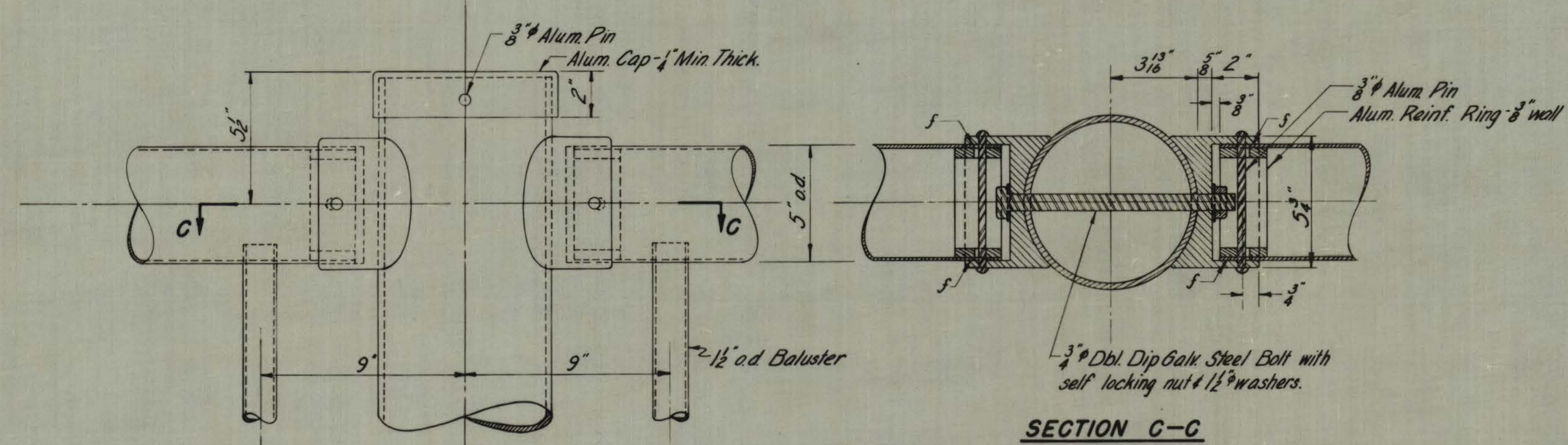
TYPICAL ELEVATION OF RAILING



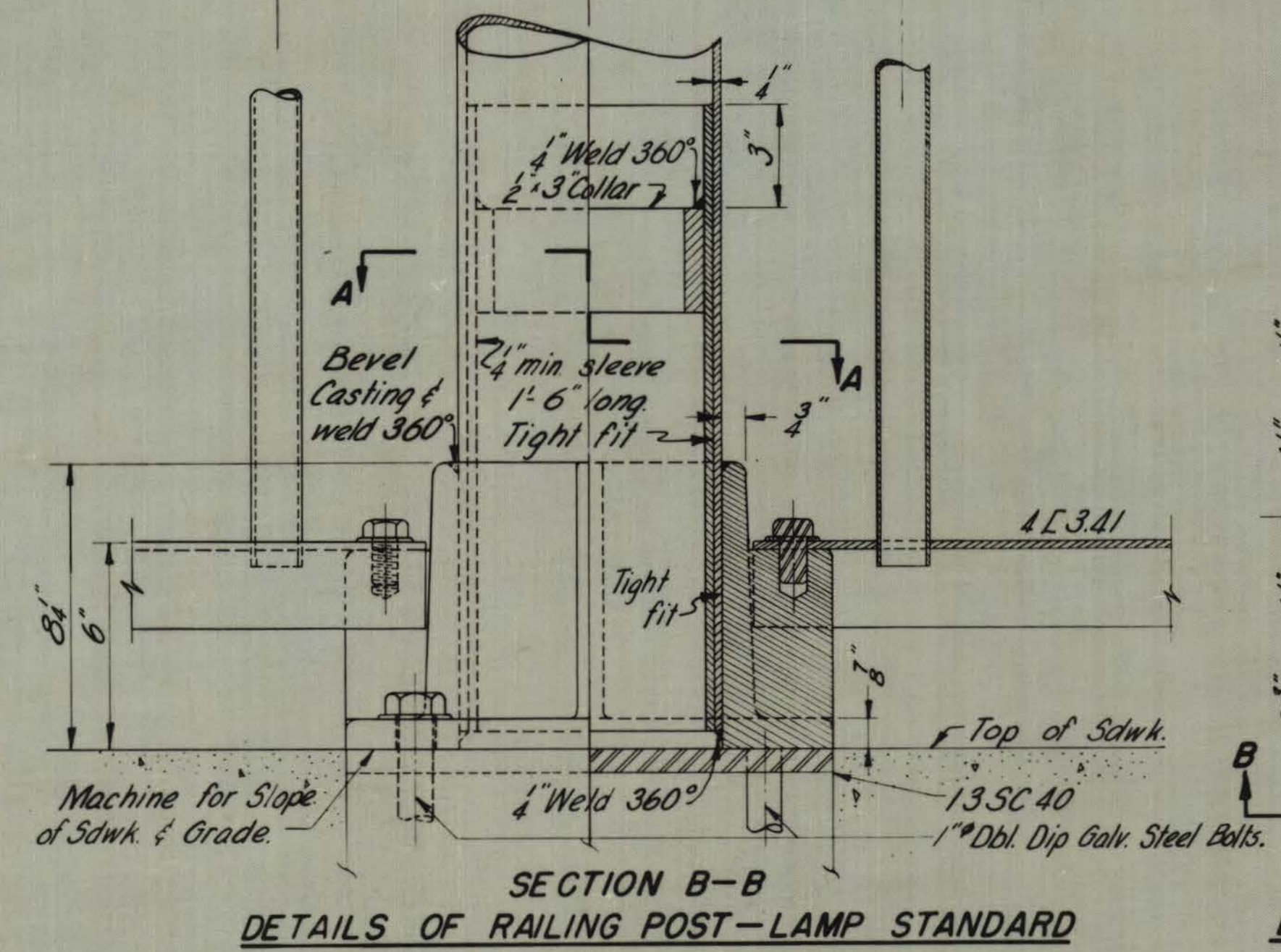
SECTION D-D



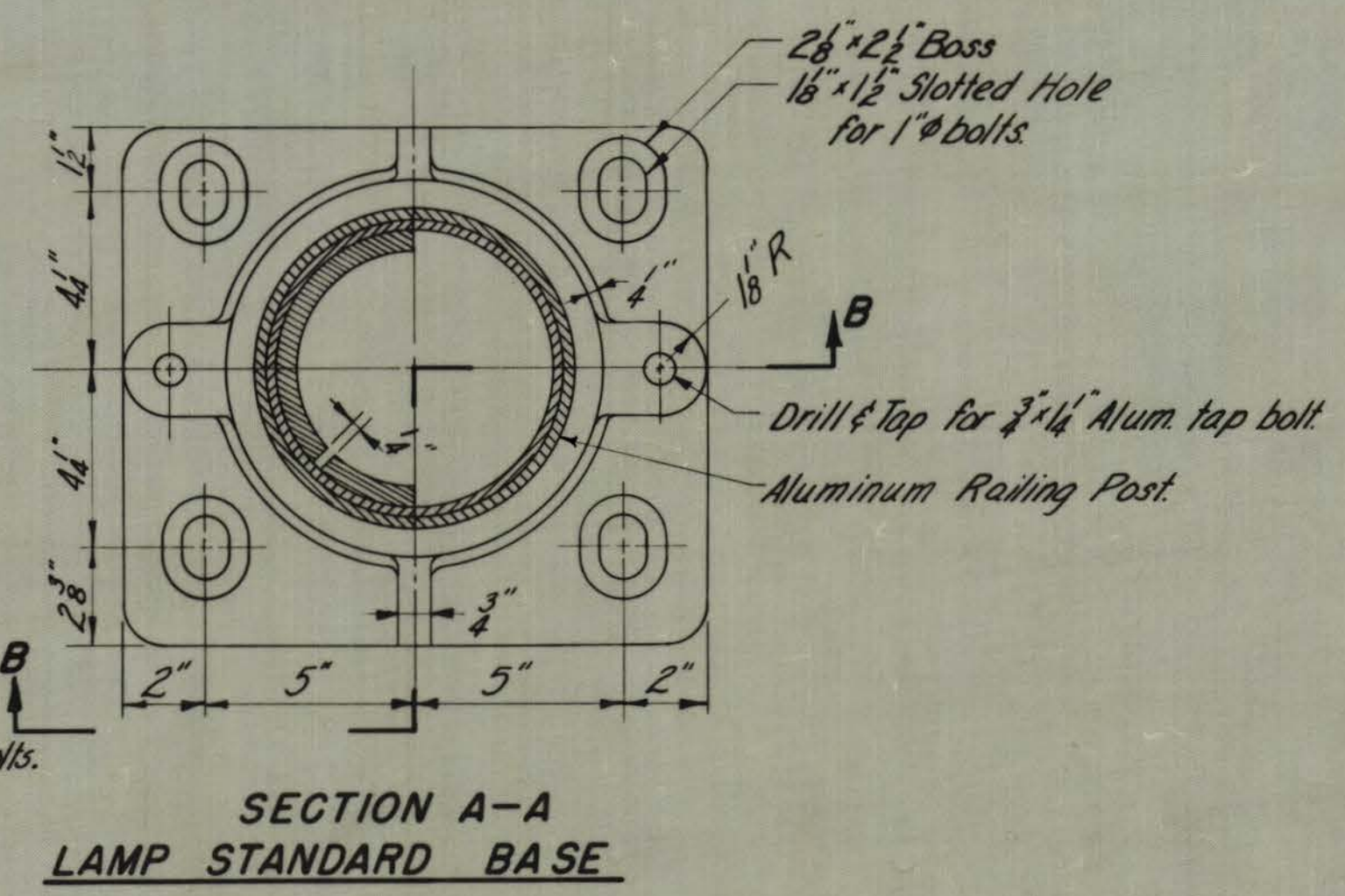
SECTION E-E



SECTION C-C

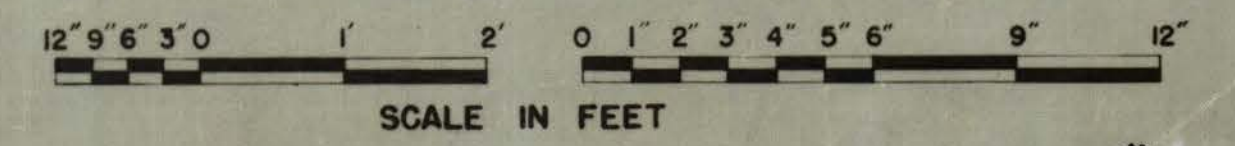


SECTION B-B  
DETAILS OF RAILING POST-LAMP STANDARD



SECTION A-A  
LAMP STANDARD BASE

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
HANDRAIL DETAIL  
AT FUTURE LAMP STANDARDS



MODJESKI & MASTERS ENGINEERS

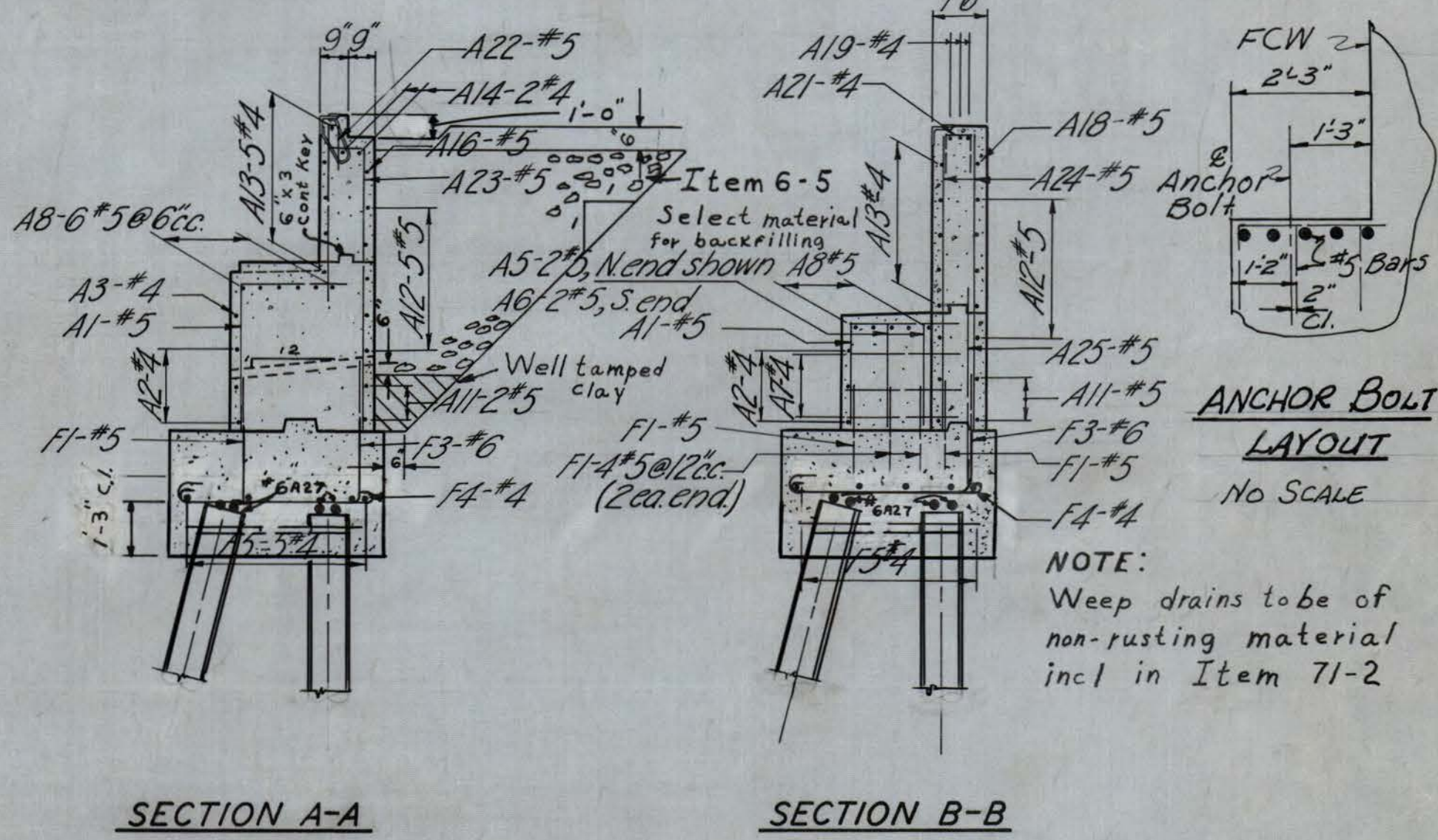
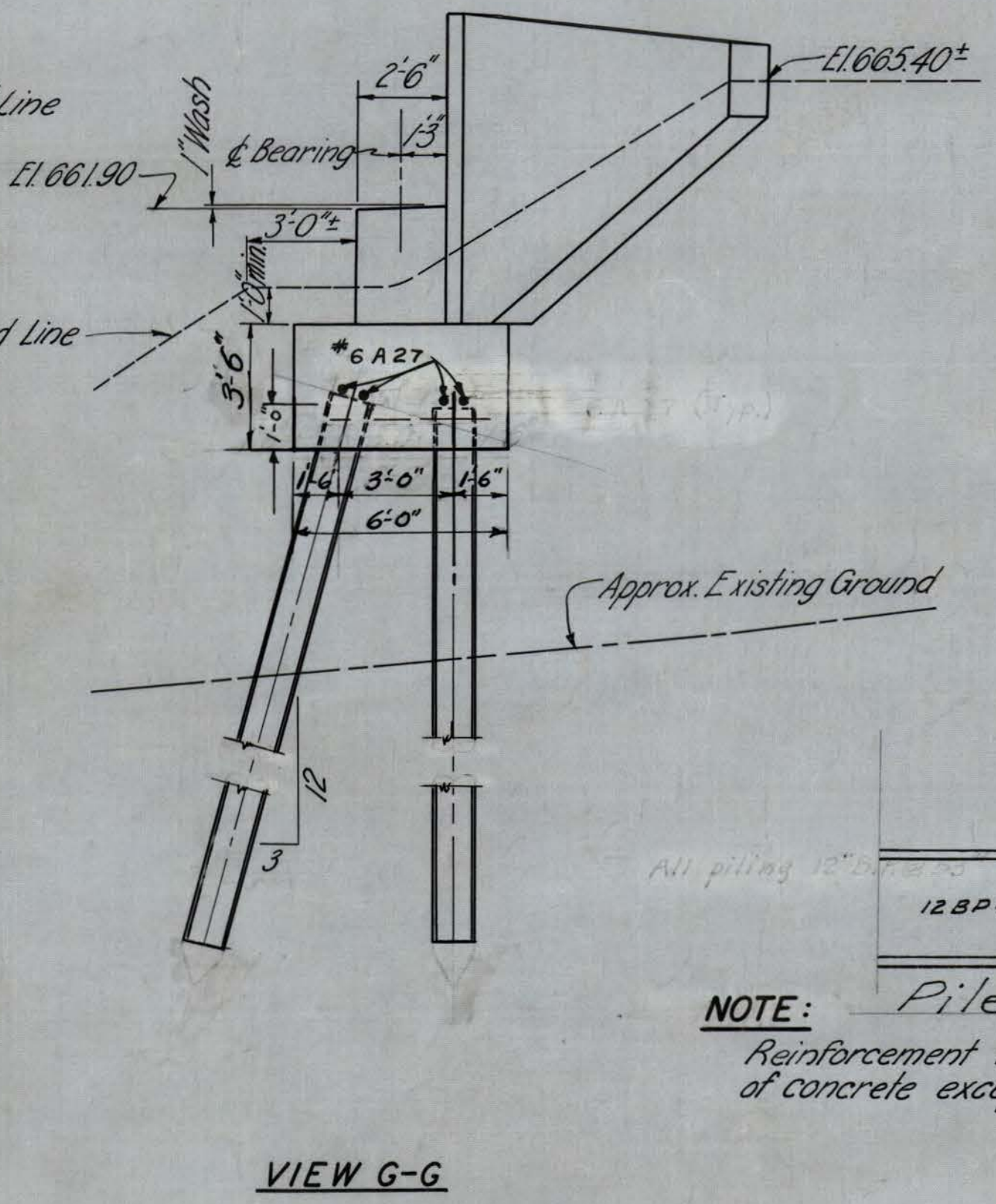
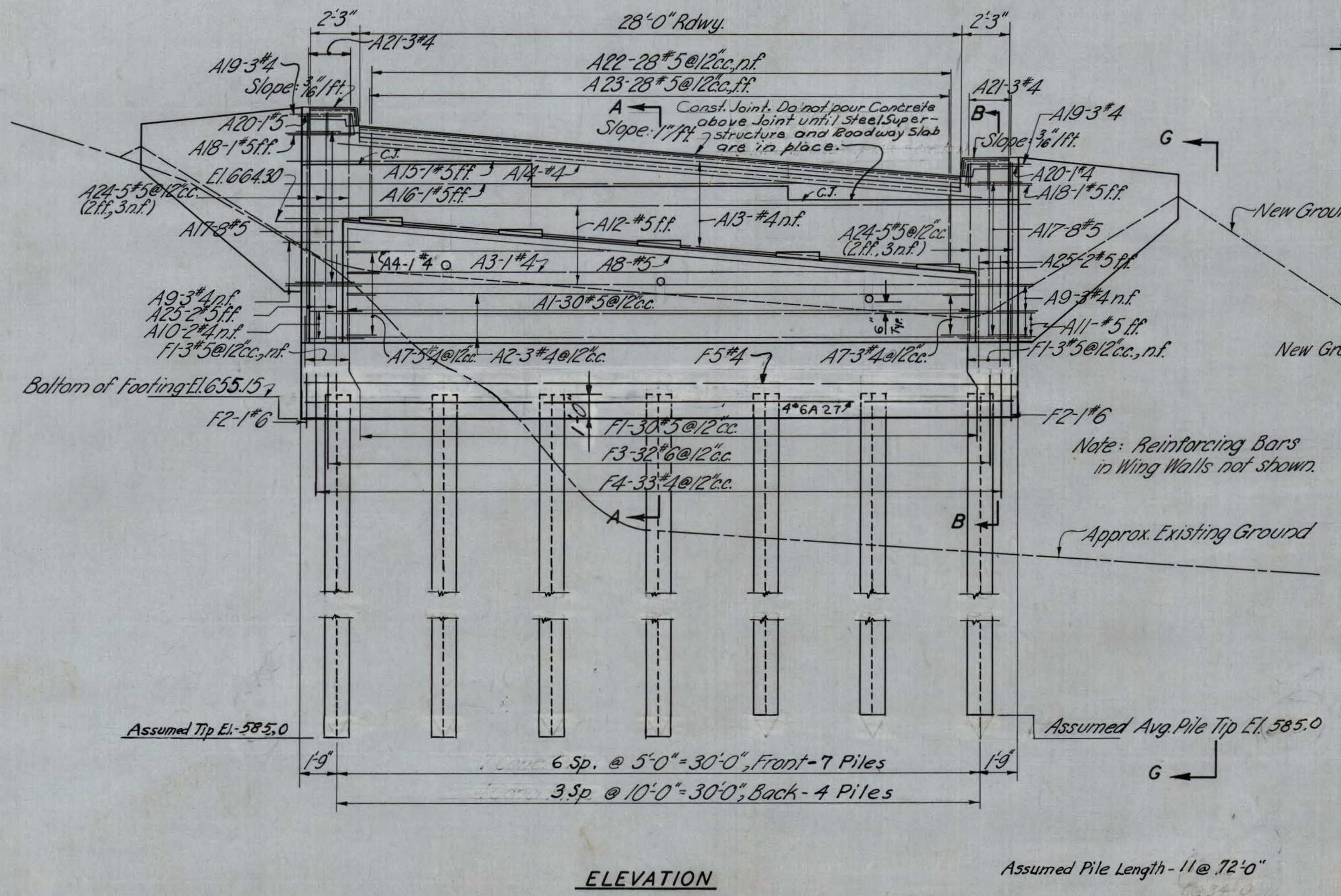
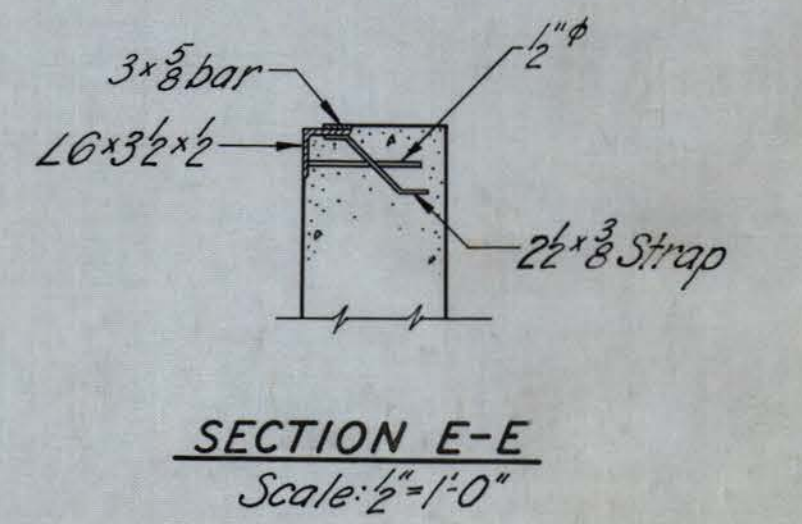
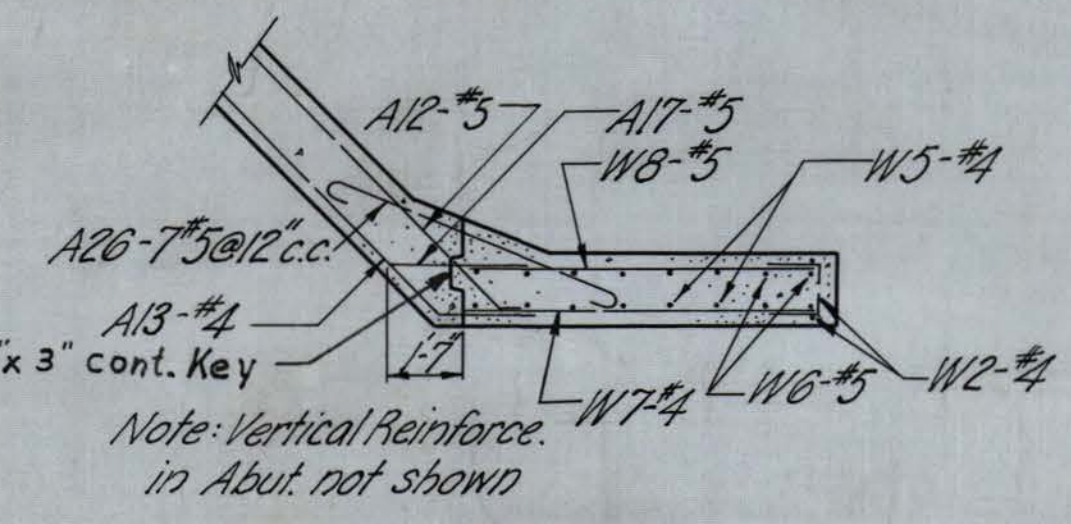
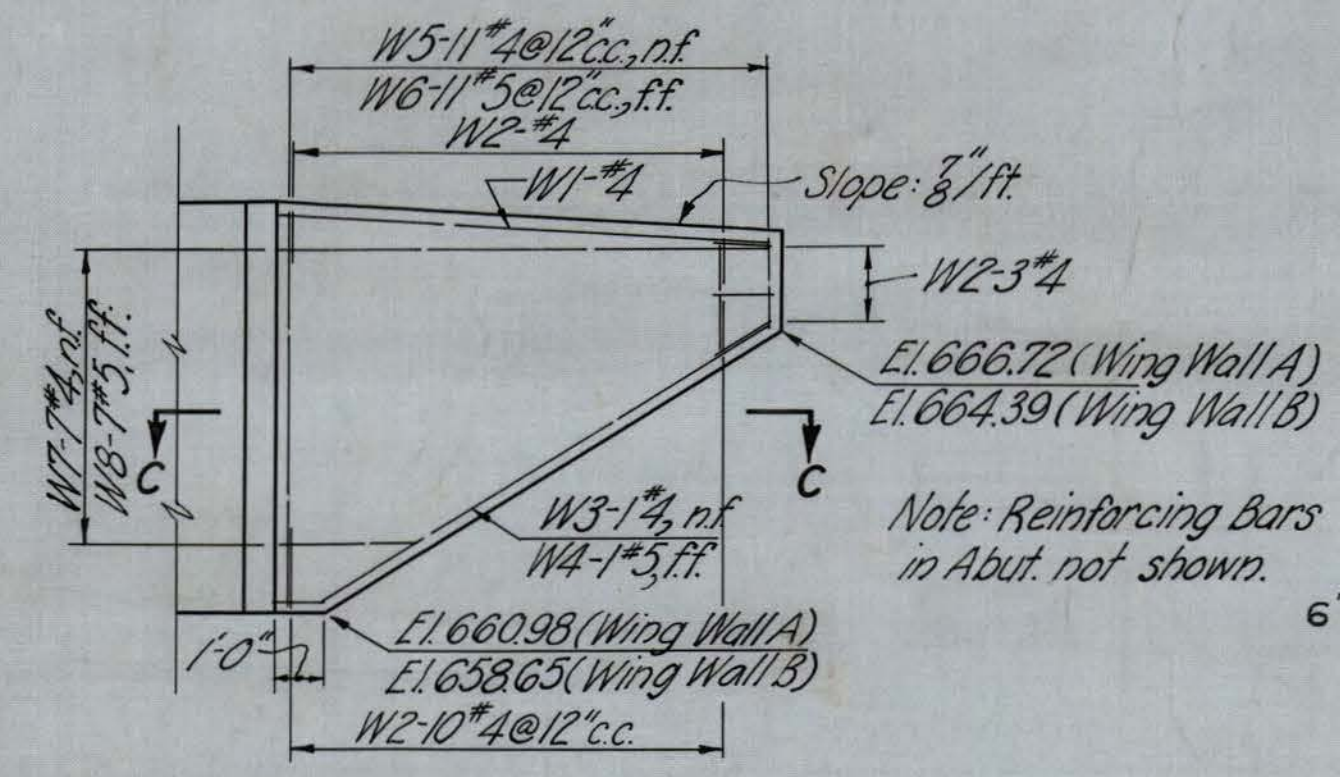
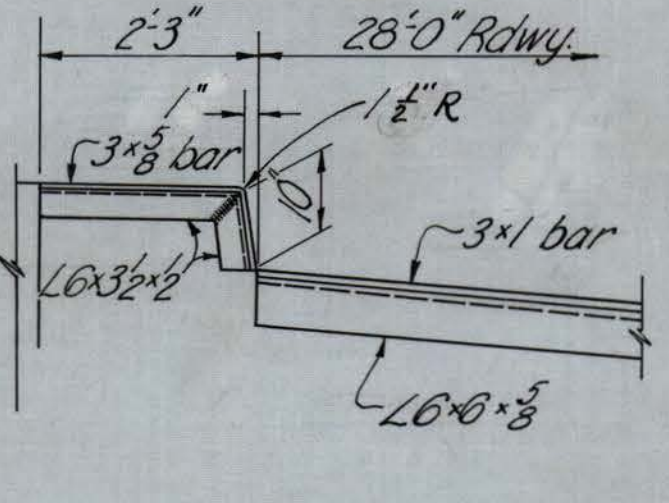
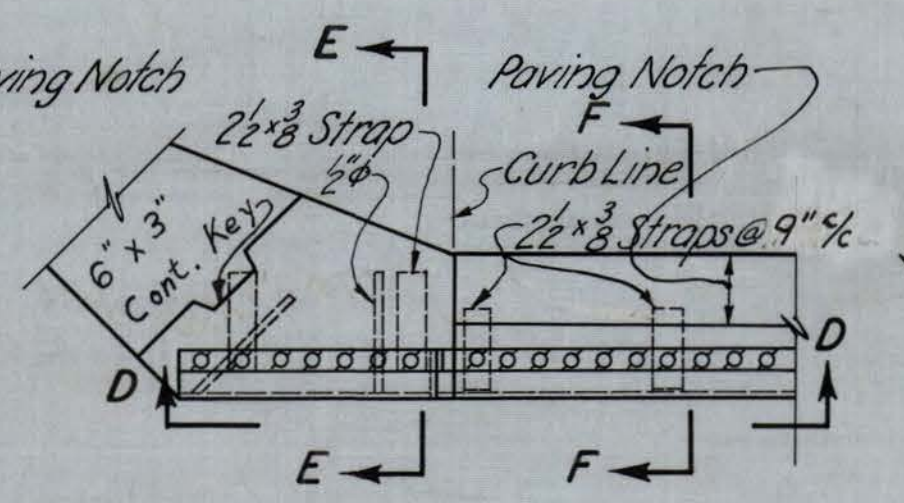
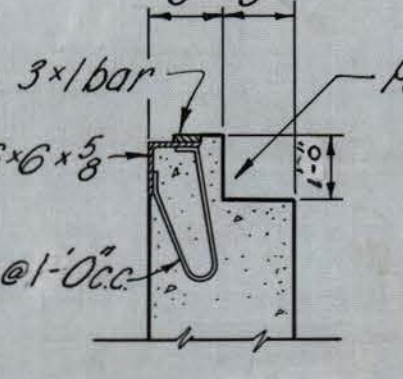
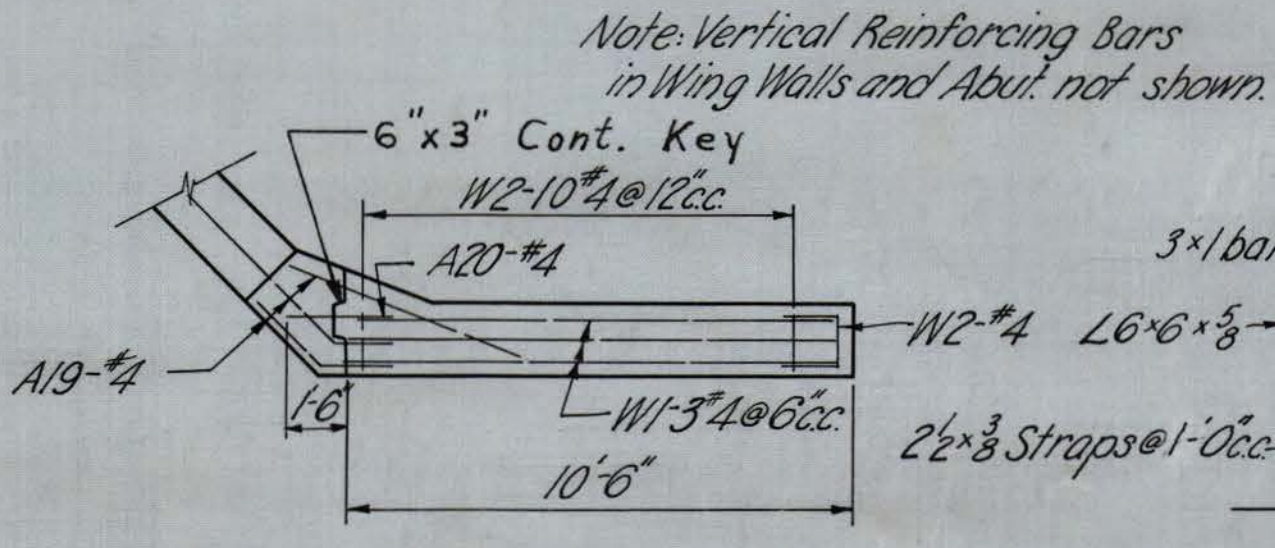
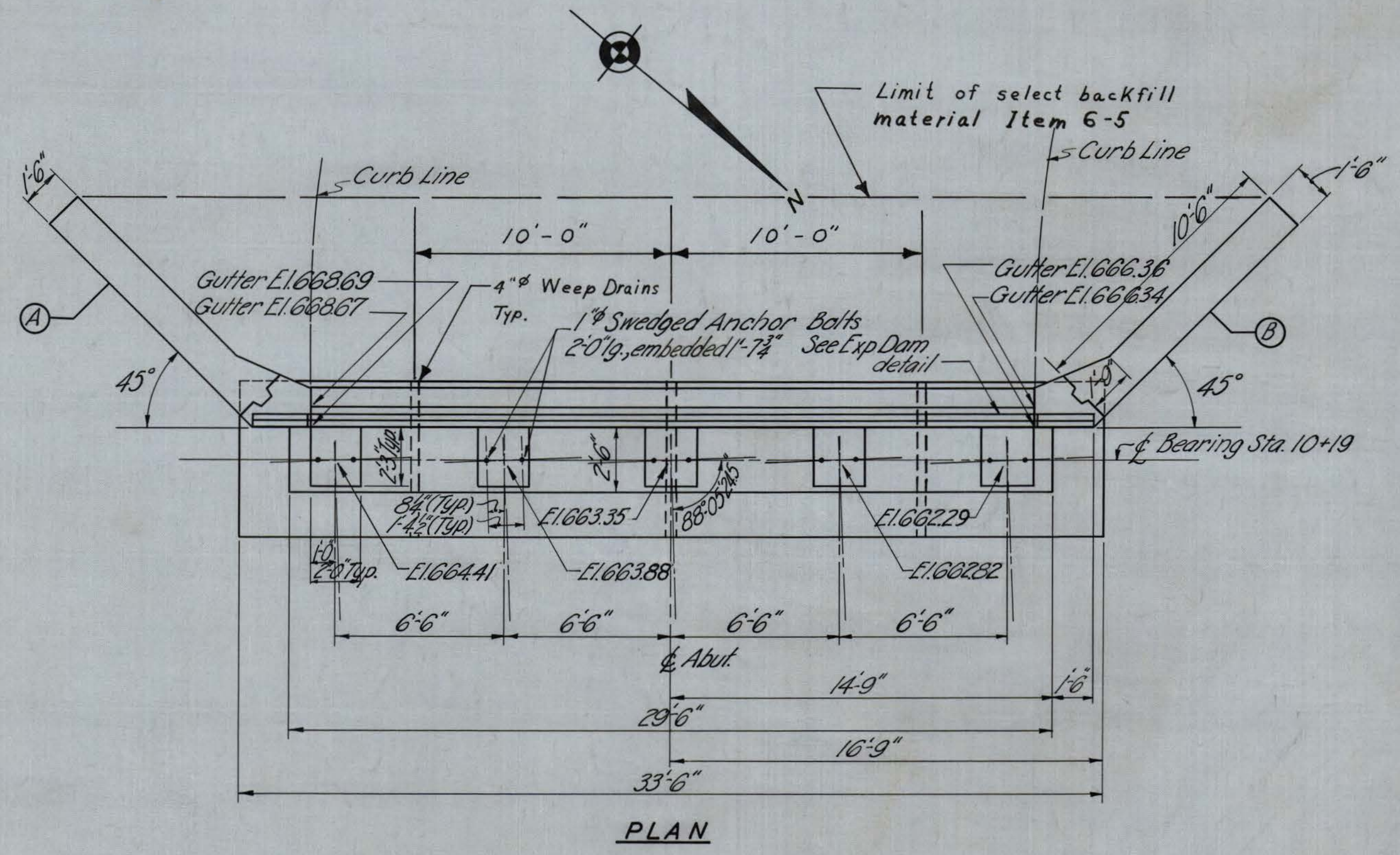
DWG. #11  
#1899

STAGE 2.



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9	F283 (15)			FAYETTE	12	13

Cont. 3



**NOTE:** Pile Splice Detail  
Reinforcement to be 3" Cl from face of concrete except as noted.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**SOUTH ABUTMENT**



SCALE IN FEET EXCEPT AS NOTED  
MODJESKI & MASTERS ENGINEERS DWG. #12

STAGE 2

Rev. 3-20-58

#1899



Cont. 3

SOUTH ABUTMENT		Stock	Bend
Mark	No		
F1	40	5x3'-8"	Straight
F2	2	6x6'-10"	Det. D, A=5'-6" and Det. H
F3	32	6x9'-6"	Det. E, A=5'-3", B=4'-0", R=1'-0" and Det. H
F4	33	4x6'-4 1/2"	Det. D, A=5'-6" and Detail H
F5	5	4x33'-0"	Straight
A1	30	5x7'-9 1/2" (Avg)	Det. A, A varies from 3'-0" to 5'-5", 30 ea. Vary by 1"
A2	3	4x29'-0"	Straight B=3'-7", C=0"
A3	1	4x25'-3"	Straight
A4	1	4x13'-3"	Straight
A5	2	5x4'-4"	Det. A, A=3'-0", B=1'-4", C=1'-3/4"
A6	2	5x6'-9"	Det. A, A=5'-5", B=1'-4", C=1'-3/4"
A7	8	4x4'-11"	Det. A, A=3'-7", B=1'-4", C=0"
A8	6	5x29'-3"	Straight
A9	6	4x3'-5"	Det. A, A=1'-10", B=1'-7", C=1'-1 1/2"
A10	2	4x4'-4"	Det. B, A=1'-10", B=1'-5", C=1'-1", D=1'-0"
A11	2	5x32'-8"	Straight
A12	5	5x34'-2"	Straight
A13	5	4x36'-1"	Det. F, A=1'-10", B=2'-2", C=28'-1", D=2'-2", E=1'-10", F=2'-4"
A14	2	4x30'-2"	Straight
A15	1	5x12'-0"	do
A16	1	5x24'-9"	do
A17	16	5x2'-11"	do
A18	2	5x3'-0"	do
A19	6	4x4'-8 1/2" (Avg)	Det. C, 2 @ A=4'-9", B=0", C=1'-1", D=1/2"; 2 @ A=1'-7", B=1'-2", C=1'-1", D=1/2"; 2 @ A=1'-9", B=1'-7", C=1'-1", D=1/2"
A20	2	4x2'-7"	Straight
A21	6	4x3'-4"	Det. B, A=1'-2", B=1'-0", C=1'-2", D=0"
A22	28	5x7'-0"	Det. B, A=5'-3", B=3", C=1'-6", D=0"
A23	28	5x7'-11" (Avg)	Det. A, A varies from 6'-9 1/2" to 9'-0 1/2", 28 ea. vary by 1", B=1'-0", C=0"
A24	10	5x9'-4" (Avg)	Straight, 5 @ 8'-1", 5 @ 10'-7"
A25	4	5x5'-6"	Straight
A26	14	5x7'-7"	Det. D, A=6'-6" and Det. H
A27	4	6x33'-0"	Straight
W1	6	4x10'-3"	Straight
W2	46	4x3'-6"	Det. B, A=1'-3", B=1'-0", C=1'-3", D=0"
W3	2	4x11'-10 1/2"	Det. A, A=11", B=10'-11 1/2", C=5'-9"
W4	2	5x11'-10 1/2"	Det. A, A=11", B=10'-11 1/2", C=5'-9"
W5	22	4x5'-0 1/2" (Avg)	Straight, 20 vary from 1'-9" to 7'-9", ea. vary by 8", 2 @ 8'-2"
W6	22	5x5'-0 1/2" (Avg)	Straight, 20 vary from 1'-9" to 7'-9", ea. vary by 8", 2 @ 8'-2"
W7	14	4x7'-6 1/2" (Avg)	Str, 10 vary from 3'-0" to 9'-10", ea. vary by 1'-8 1/2", 4 @ 10'-4"
W8	14	5x7'-6 1/2" (Avg)	Straight, 10 vary from 3'-0" to 9'-10", ea. vary by 1'-8 1/2", 4 @ 10'-4"
RE 4	3	7-6	Straight
RE 5	5	8-2	Straight
RE 6	1	8-9	Straight

**PAINT:** The shop coat of paint shall be red-lead iron-oxide conforming to supplemental Spec. shop painting, dated July 2, 1964.

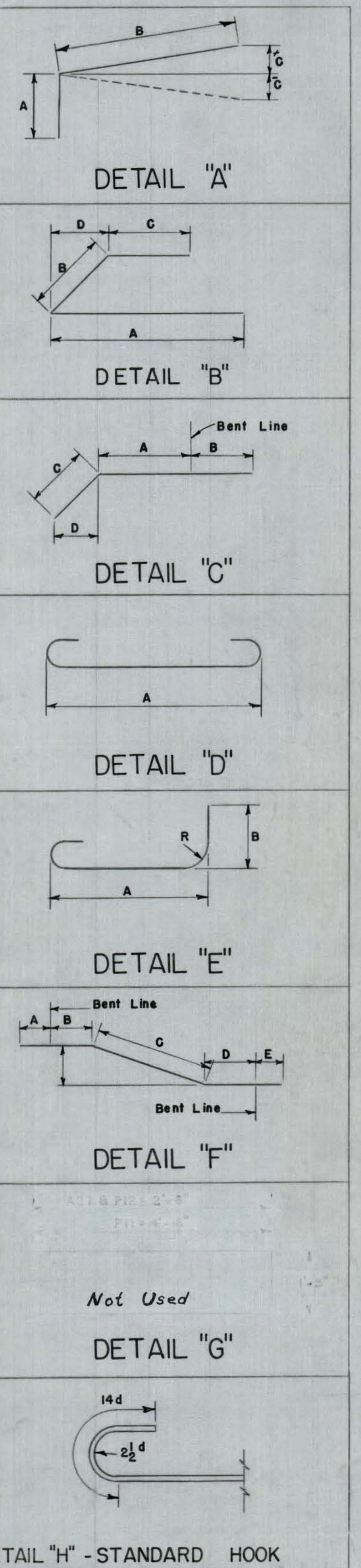
Field painting shall consist of three (3) coats, in addition to touch-up painting required under Art. 2.90-93.3(A)(6)(3). The first coat shall be red-lead iron-oxide conforming to Supplemental Specifications July 2, 1964. The final two coats to be aluminum conforming to Art. 3.11.2 of the Standard Specifications. The first coat of aluminum to be tinted with five (5) ounces of Prussian Blue paste per gallon of paint.

Lampblack paste shall conform to ASTM specification D-209. Prussian blue paste shall conform to ASTM specification M-131. The first field coat shall include 4oz. of lampblack paste per gallon of paint.

When samples are submitted for all red lead primers and paint, the contractor shall submit to the laboratory, seven (7) certificates from the manufacturer stating that the red lead primers & paint meet the applicable requirements of the standard specifications & amendments thereto. The certificates shall properly identify the batch & the project number to which it applies and shall be delivered with the sample of paint to be tested. These certificates are in addition to the presently req'd paint sample.

**REMOVAL OF TEMPORARY CURBS AND RAILINGS:** Temporary concrete curbs & railings were installed in the vicinity of Pier VIII to direct traffic, under another contract. These temporary curbs are poured independently of the roadway slab and are anchored thereto with 1" dia bolts thru pipe sleeves in the roadway slab. After completion of the work under this contract, ready for traffic, the contractor shall remove & dispose of these temporary curbs & remove and store, as directed, all temporary railing materials.

Removal of these temporary curbs & railings will be included & paid for under Item 128A "Removal of Temporary Curbs & Railings" for which payment will be made on a lump sum basis.



**PREPARATION OF RIVET HOLES:** All holes for shop & field rivets in carbon steel shall be prepared in accordance with the requirements of Art. 2.90-93.3(A)(6) of the standard spec. except as follows:

(1) General reaming is req'd for all holes in main members including holes for stitch rivets. (2) Connections of floor system to girders shall be reamed thru steel template.

FOR DELETIONS - SEE SPECIAL PROVISIONS DATED OCT. 19, 1965

Notes cont'd from sht. 3 of 13

For this purpose the contractor shall furnish & use an accurate scraping type straight-edge, with a minimum length of 10.0 ft. & swung from a handle three feet longer than one-half the width of the slab.

The straight-edge shall be held in successive positions parallel to the road centerline & in contact with the roadway surface & operated from side to side until the surface is within the permissible tolerance provided herein. Advance along the roadway shall be in successive stages of not more than one-half the length of the straight-edge. Any depressions found shall be immediately filled with freshly mixed concrete, struck-off, consolidated & re-floated. High areas shall be cut down and re-floated. The straight-edge testing & re-floating shall continue until the entire surface is found to be free from observable departures from the straight-edge & the slab has the req'd grade contour. Upon completion of the above operations the surface shall be smoothed with a lute or smoothing float, length from 4.0 - 6.0 ft. after which the surface shall be tested with an accurate checking straight-edge. This checking straight-edge shall be 10.0 ft long and shall be held in a position parallel to the centerline of the roadway. The advance of this straight edge along the slab shall be in successive stages of not more than one-half of its length. When tested with this straight-edge the finished surface shall be free from observable departures from the straight-edge.

(d) FINAL FINISH Upon completion of the above operations the surface shall be given a final burlap drag finish. The burlap shall be at least 3.0 ft. wide, and 4.0 ft. longer than the width of the slab under construction, & shall be kept saturated while in use, and kept clean & free from hardened concrete which might tear or otherwise mar the surface. The burlap shall be laid on the surface of the slab & dragged forward in the direction of the centerline of the roadway, or dragged transversely across the roadway from curb to curb. This surface thus finished shall be free from porous spots, irregularities, depressions & small pockets or rough spots such as may be caused by accidental disturbing particles of coarse aggregate embedded near the surface.

An alternate method of finishing if approved by the Engineer, will consist of light brooming or brushing. Brooms or brushes shall meet the approval of the Engineer. Heavy bristled street brooms or brushes or similar industrial types shall not be used. Strokes shall be square across the slab, from edge to edge, with adjacent strokes slightly overlapped & shall be made by drawing the broom or brush without tearing the concrete, but so as to produce regular corrugations not over one-sixteenth of an inch in depth. Brooms or brushes shall be operated from footbridges. Surface as thus finished shall be free from porous spots, irregularities, depressions & small pockets or rough spots such as may be caused by accidental disturbing, during the final brooming or brushing of particles of coarse aggregate embedded near the surface.

Upon the final finish as specified above, and as soon as the concrete has hardened sufficiently, the surface shall be given a further test for trueness with a checking straight-edge as outlined under (c) above. Areas showing high spots of more than one-eighth inch shall be marked and immediately ground down with an approved grinding tool, utilizing carborundum stones or industrial diamond wheels, to an elevation where the area or spot will not show surface deviations in excess of one-eighth inch when tested with the 10 foot straight-edge.

A water reducing retarder admixture in accordance with the supplemental specifications will be used in all class "A" concrete superstructure. Retarder will not be req'd for temperatures below 50°F.

The contractor's attention is called to the test requirements for the retarder's admixtures.

**PROTECTIVE SURFACE TREATMENT NOTE**

After the concrete is at least fourteen (14) days old, a protective surface treatment of two coats shall be applied to the entire top surface of the bridge deck & approach slabs, when the same are included in the contract; top & curb face of sidewalks or safety walks & top and inside vertical face of parapet.

**RE Bars:**

The inspector shall pick random bars from the reinforcing bar list for test bars. He shall cut 5.0' from the bars chosen; RE bars in the list shall be spliced to the bars so listed, and the RE bars have been detailed to allow a 30 diameter splice at each end. One RE bar for each 10 ton or fraction thereof, of each size and for sub and superstructure, have been included in the bill of steel and will be paid for under Item 78. In the event all bars of any one size are not sent in one shipment; the supplier shall furnish at his expense, one for each 10 ton or fraction thereof for each extra shipment.

In the event that any shipment of material has been protested and has been identified in accordance with Materials Control, Soil and Testing Division's Informational Memorandum #17 (IM-17) the shipment may be accepted without further testing subject to record sampling procedures.

**PAYMENT FOR METALWORK**

All metal parts such as structural carbon steel, shoes, rockers, rollers, bearing plates, pins, drainage castings, corrosion resisting alloy metal & bronze plates shall be included under Item 90 "Steel Superstructure", as per plan, complete in place, excluding concrete floor. Payment will be made under Item 90 on a Lump Sum basis for all metal work req'd. under this contract, complete in place, excluding concrete floors and railing and with one shop coat and 3 field coats of paint as specified.

Materials req'd. for the shipping, storing and erection of metalwork will be included in lump sum bid for Item 90.

**CHAMFERS:** A 3/8" chamfer strip shall be used on all exposed edges of concrete except where other size chamfer strips are specified. See section 2.71-73.3.

**EXCAVATION:** No excavation will be classified as rock excavation, item 6-3. Rock shale shall be excavated & paid for, as item 6-1, structure excavation, to the neat line of the footing.

Section 15.6 of the standard spec. shall be modified as follows:

The second sentence of the first paragraph shall be deleted & the following substituted:

"For bridges, the Engineer will furnish the centerline and stakes determining the centerline and angle of south Abt. & establish one bench mark."

**DRAINAGE SYSTEM:** The contractor shall furnish & install under item 90, all drainage inlets & pipe as shown on sheets 2 & 10.

The contractor shall backfill around the substructure as soon as possible after removal of forms & slope surface to drain.

**FALSE WORK:** The contractor shall keep all staging & falsework in a safe condition, & provide such temporary stairways, gangways, stagings, railings, or other means of access, as the Engineer may direct for a thorough inspection of the work during construction & previous to the final acceptance of the structure.

**MONTGOMERY BRIDGE NO. 1899**  
OVER KANAWHA RIVER  
AT MONTGOMERY W. VA.

**BAR SCHEDULES**  
(SOUTH ABUTMENT)

**STAGE 2**

DESIGNED BY  
**THE STATE ROAD COMMISSION**  
CHARLESTON, W. VA.

Scale as shown Date October, 1963  
Project F 283 (15) Cont. 3 Sheet 13 of Sheets 13

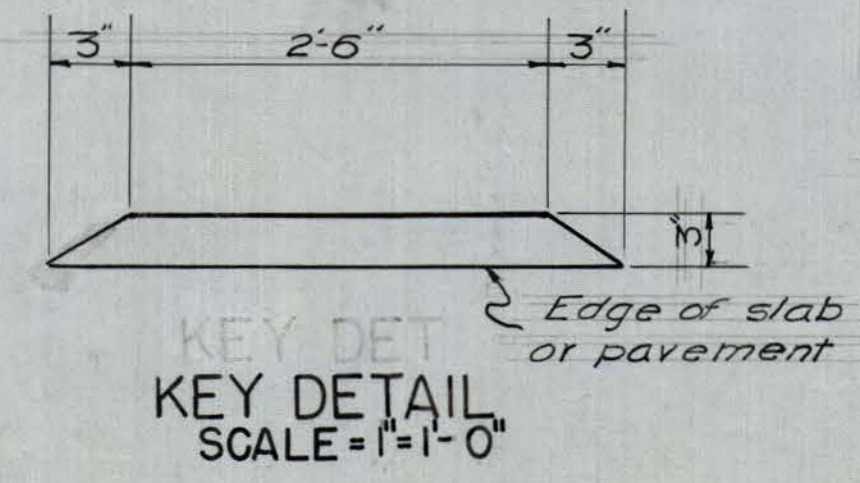
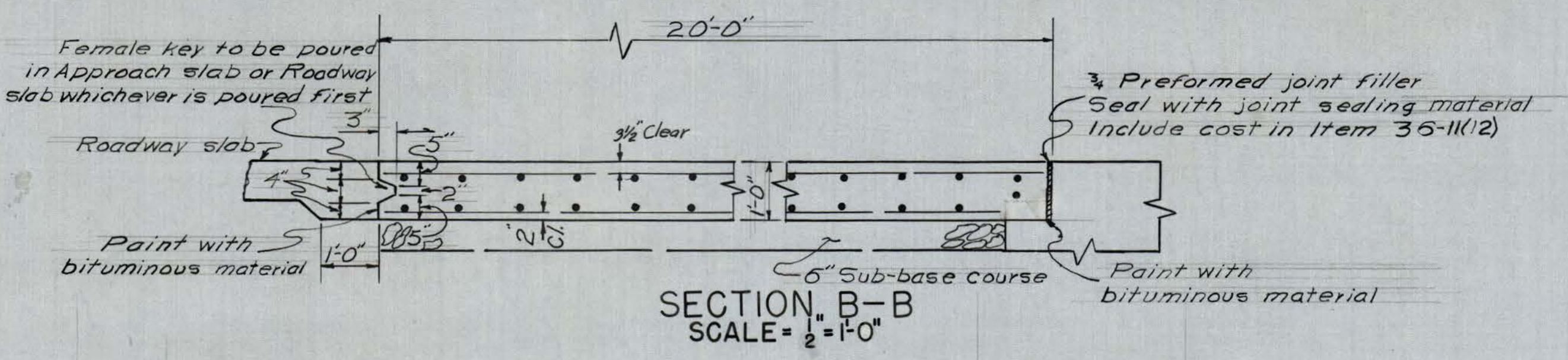
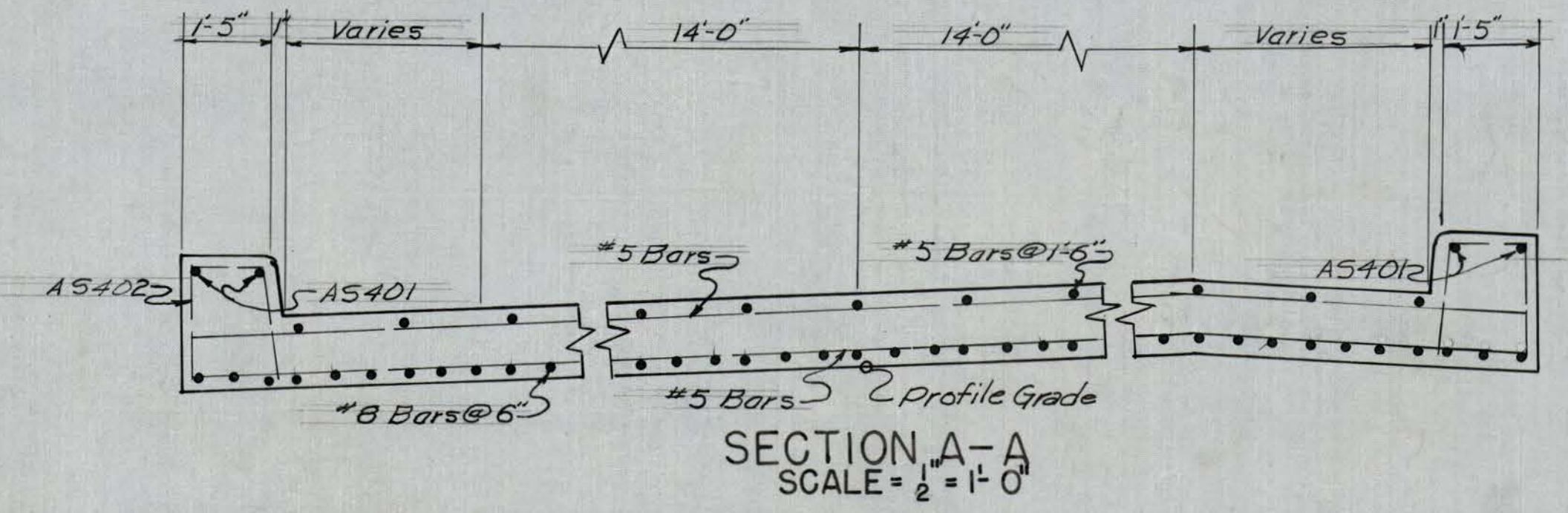
**No. 1899**

MADE BY S.S.C.	DATE 10-17-63
CHECKED BY C.D.N.	DATE 8-16-65
CHECKED BY	DATE

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY



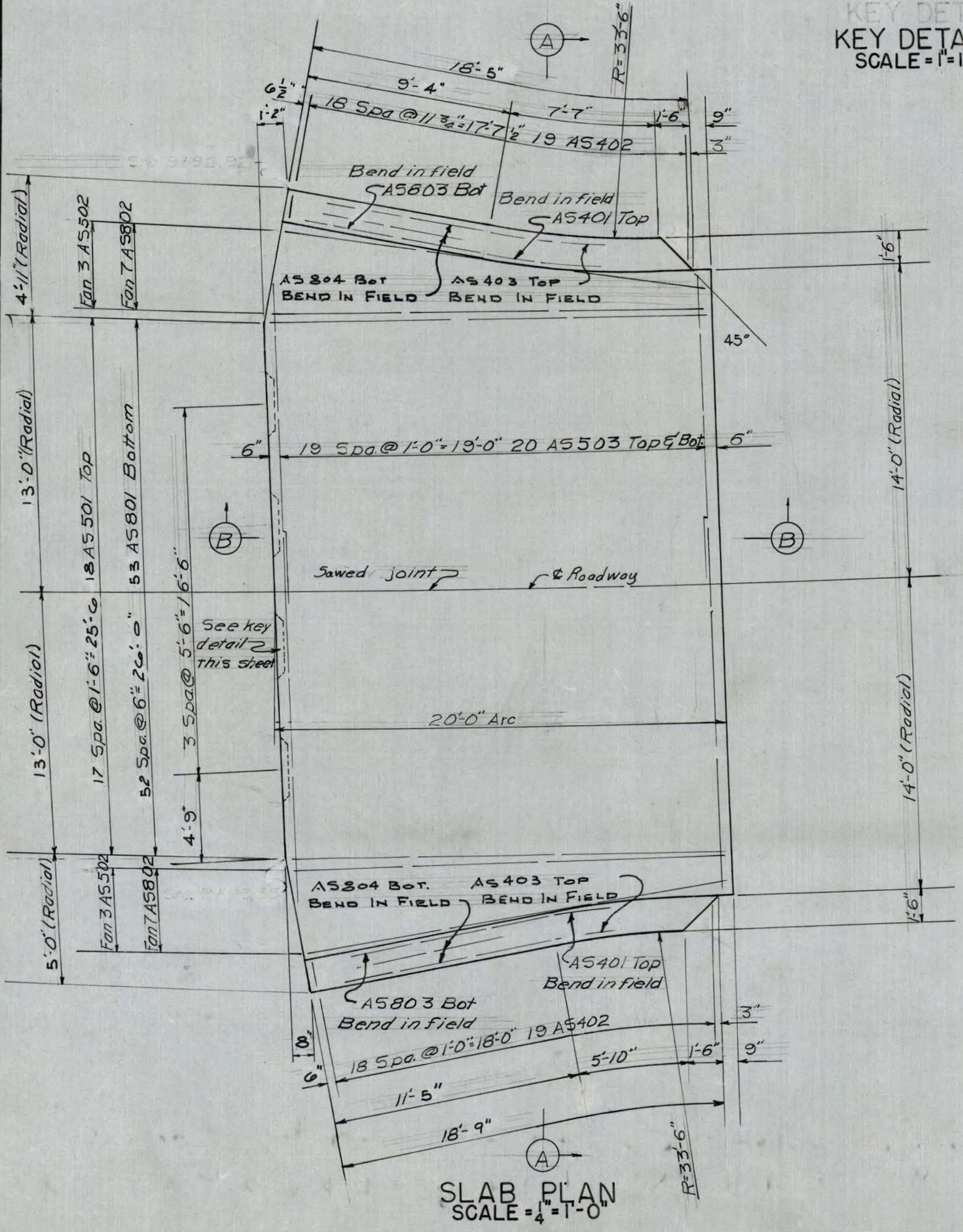
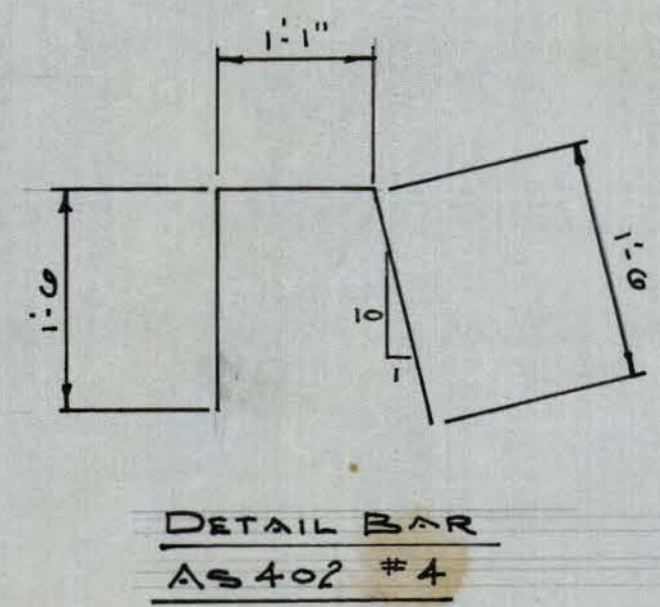
Cont. 3



The approach slab shall be included in this contract.  
 The approach slab shall be in accordance with Art. 2.36 of the standard specifications, except as noted.  
 The approach slab shall be paid for as Portland Cement Concrete approach slab, Item 36-11(12) which shall include the cost of curbs.  
 The 6" base course shall be provided under the Approach Slab and shall be paid for under Item B per C.P. and shall be placed in accordance with the specifications.  
 The approach slab reinforcing shall be Intermediate Grade Billet Steel in accordance with Art. 3.9.1 of the specifications. Payment include in Item 36-11(12).  
 All joint filler for vertical joints shall be Type III, conforming to Art. 3.8.2 of the specifications.  
 Curing of the approach slab shall be by burlap and water in accordance with the specifications. The use of a vapor barrier burlap will be permitted.  
 Method of measurement and basis of payment shall be in accordance with Articles 2.36.4 and 2.36.5 of the specifications.  
 Fine aggregate for the approach slab concrete shall be Silica Sand.  
 Approach slab shall have a sawed longitudinal joint along the centerline of the roadway. The sawed joint shall be cut to a depth of 3" and to a width of 4" with a tolerance in width 1/2" and shall be filled with joint sealing material. Cost to be included in Item 36-11(12). When bridge is awarded with roadway work, use Item B, Shoulder Base Course and add the following paragraph:  
 "Contractor may substitute roadway base course for Item B, Shoulder Base Course. Payment will be made for roadway base course if such substitution is made."

ITEM	DESCRIPTION	UNIT	SLAB
36-11(12)	Portland Cement Concrete Approach Slab	S.Y.	73
	Reinforcing Steel Bars	Lb.	5930
B	Shoulder Base Course	C.Y.	12

MARK	SIZE	No REQD	LOTH	TYPE
AS401	#4	2	18'-0"	STR.
AS402	#4	38	4'-2"	BENT
AS403	#4	2	16'-6"	STR.
AS501	#5	18	19'-3"	STR.
AS502	#5	6	19'-0"	STR.
AS503	#5	80	18'-3"	STR.
AS301	#3	53	19'-8"	STR.
AS302	#3	14	19'-0"	STR.
AS303	#3	2	18'-0"	STR.
AS304	#3	4	16'-9"	STR.



MADE BY RED DATE 2-3-61  
 CHECKED BY [Signature] DATE 2-23-61  
 CHECKED BY DATE

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

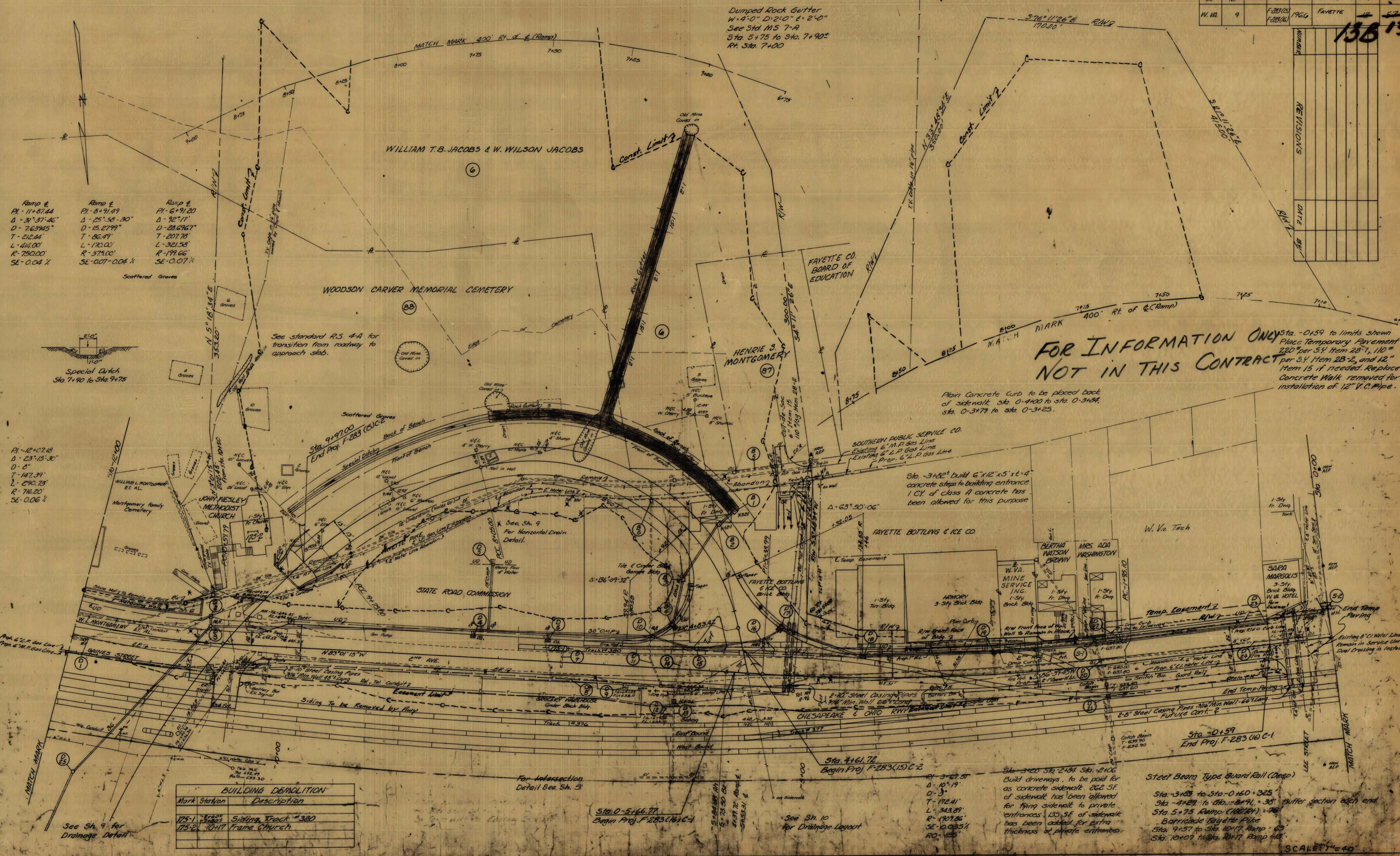
**MONTGOMERY BRIDGE No. 1899**  
 OVER KANAWHA RIVER  
 AT MONTGOMERY, W. VA.  
 APPROACH SLAB  
 STAGE 2  
 DESIGNED BY  
**THE STATE ROAD COMMISSION**  
 CHARLESTON, W. VA.  
 Scale as shown  
 Project F223 (15) Cont. 2  
 Date  
 Sheet 13A of 13 Sheets  
**No. 1899**



Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	9	F-283(15)	F-283(16)	1966	FAYETTE	12	57

13813

NUMBER	REVISIONS	DATE	BY



Ramp &	PI	Δ	D	T	L	R	SE
11+07.44	8+91.49	25°58'30"	15.2799'	86.49'	170.00'	375.00'	0.07 1/2
31°37'46"	15°27'17"	28°26'67"	207.78'	321.58'	199.66'	0.07 1/2	



PI	Δ	D	T	L	R	SE
12+07.18	23°15'30"	8'	147.39'	270.13'	716.20'	0.06 1/2

Mark Station	Description
175-1	Siding Track #380
175-2	10417 Frame Church

FOR INFORMATION ONLY  
NOT IN THIS CONTRACT

Plain Concrete Curb to be placed back of sidewalk sta. 0+400 to sta. 0+384, sta. 0+377 to sta. 0+3+25.

Sta. 3+82<sup>2</sup> build 6"x12"x5'x6'4" concrete steps to building entrance 1 CK of class A concrete has been allowed for this purpose

Steel Beam Type Guard Rail (Deep)  
Sta. 3+125 to Sta. 0+160 = 325  
Sta. 4+29 to Sta. 2+91 = 35 Buffer section each end  
Sta. 5+75 Ramp (100ft) = 75  
Barricade Fayette Pike  
Sta. 9+57 to Sta. 10+17 Ramp = 60  
Sta. 10+07 to Sta. 10+17 Ramp = 10

SCALE 1"=40'



THE STATE ROAD COMMISSION  
OF WEST VIRGINIA

PLAN AND PROFILE FOR CONSTRUCTION  
OF

STATE ROAD

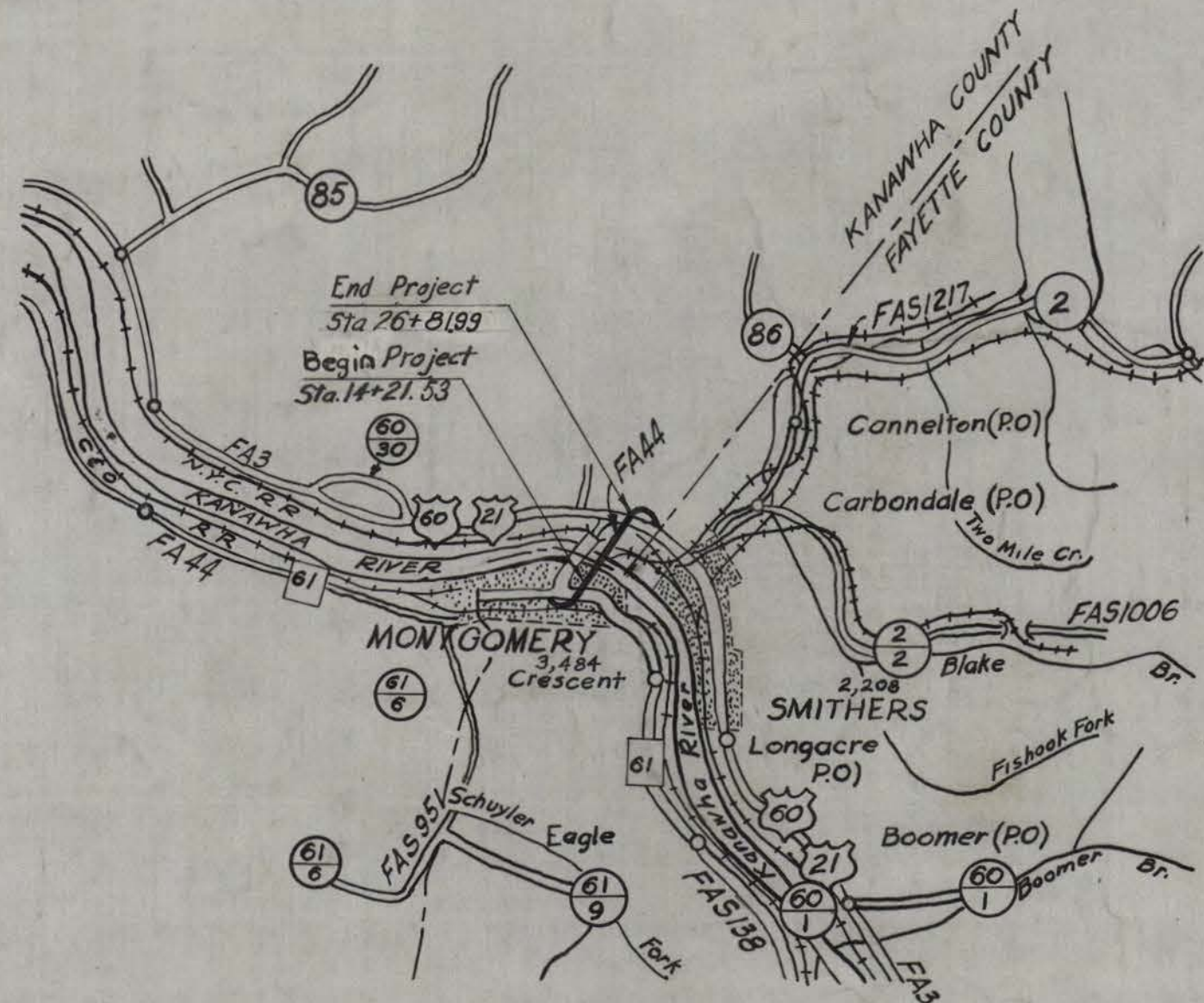
PROJECT NO. F 283 (9)  
ROUTE NO. W. VA. 6

CABIN CREEK DISTRICT KANAWHA COUNTY  
KANAWHA DISTRICT KANAWHA COUNTY  
MONTGOMERY BRIDGE #1899

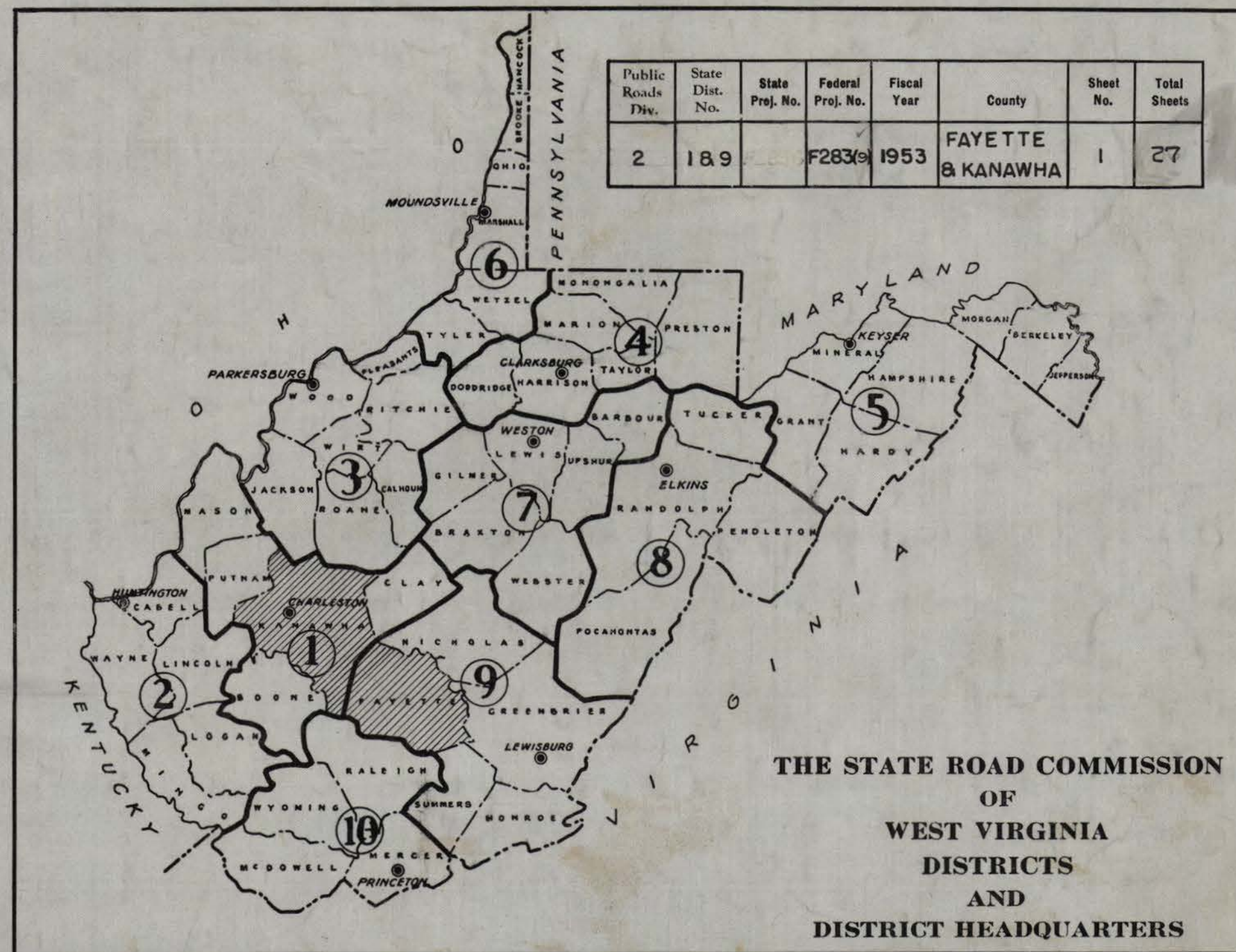
Sta. 14+21.53 To Sta. 26+81.99

Length = 0.239 Mi. = 1260.46 Ft.

Plan 1 IN. =  
SCALES (AS SHOWN)  
PROFILE HOR. 1 IN. = VERT. 1 IN. =



SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

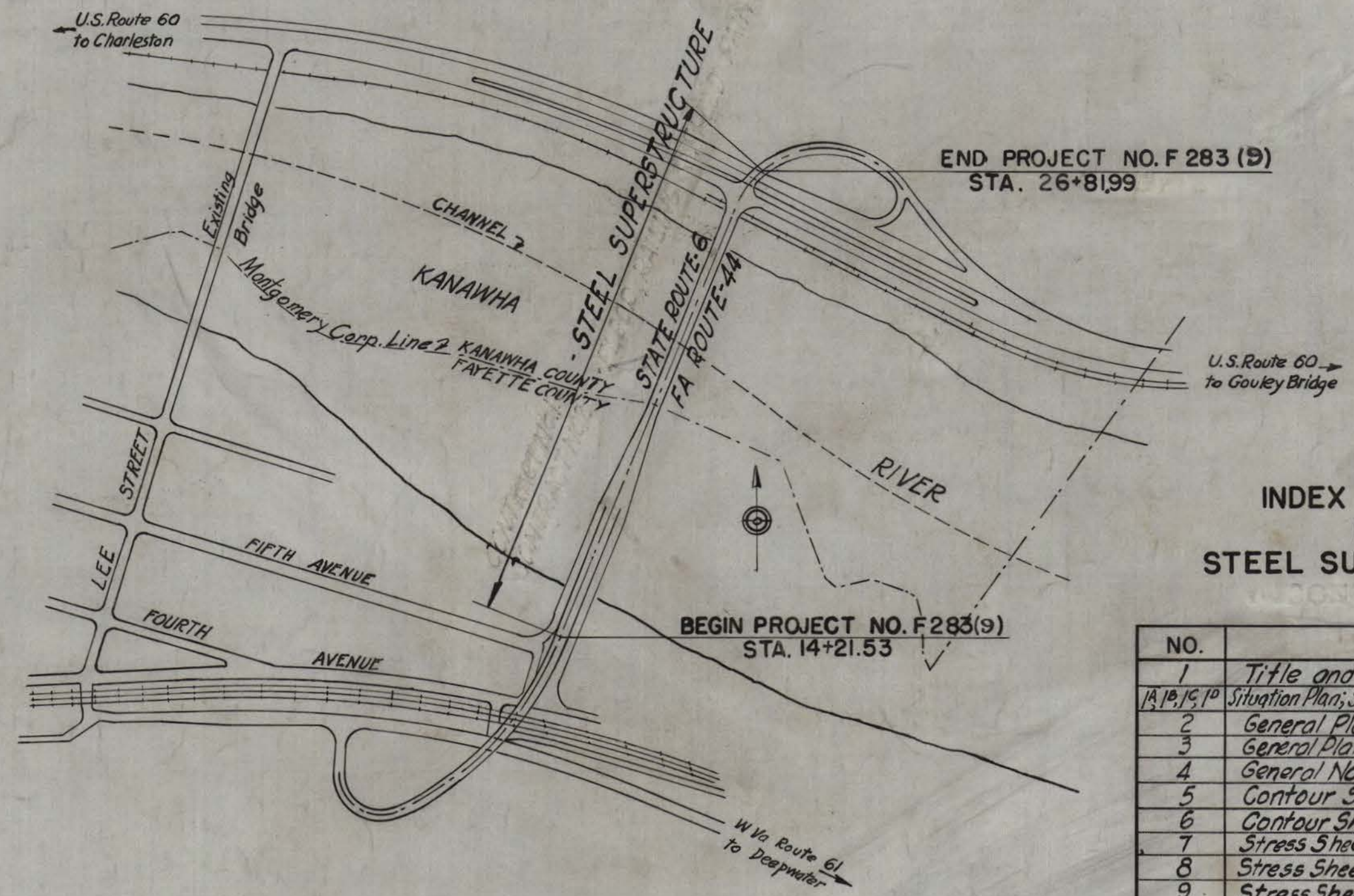


Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
2	18.9	F283(9)	1953		FAYETTE & KANAWHA	1	27

THE STATE ROAD COMMISSION  
OF  
WEST VIRGINIA  
DISTRICTS  
AND  
DISTRICT HEADQUARTERS

TYPE OF CONSTRUCTION

BRIDGE SUPERSTRUCTURE  
STEEL SUPERSTRUCTURE



INDEX TO SHEETS  
FOR  
STEEL SUPERSTRUCTURE

NO.	DESCRIPTION
1	Title and Layout
1A, 1B, 1C, 1D	Situation Plan, Soundings, Borings - 10; Borings 11 & 12
2	General Plan & Elevation - Pier VII to Pier XII
3	General Plan & Elevation - North Approach
4	General Notes & Estimated Quantity
5	Contour Sheet - Montgomery Approach
6	Contour Sheet - North Approach
7	Stress Sheet - South Approach - Stage 1
8	Stress Sheet - Floor beams
9	Stress Sheet - Main Bridge - Truss Span
10	Stress Sheet - North Approach
11	Girder Details - South Approach - Stage 1
12	Girder Cross Sections - South Approach
13	Girder Cross Sections - South Approach
14	Truss Details - P.R.1 to P.R.3
15	Truss Details - P.R.4 to P.R.8
16	Main Bridge Cross Sections
17	Girder Details - North Approach
18	Cross Sections - North Approach
19	Cross Sections & Details - Piers XII-XIV
20	Cross Sections & Details - N. Approach Ramps
21	Bearings (1)
22	Bearings (2)
23	Expansion Dams - Abutments and Pier VIII
24	Expansion Dams - Piers IX, XII and XIV
25	Main Truss Expansion Dams - Piers X and XI
26	Drainage Details (Use also for Floor Contract, Proj F 283(10) CONT #1)
27	Navigation Lighting

LAYOUT  
SCALE 1 IN. = 300 FT.

CONVENTIONAL SIGNS

- State Line
- County Line
- Corporation Line
- District Line
- Right of Way Line
- Property Line
- Fence Line
- Guard Rail
- Proposed Road
- Traveled Road
- Railroad
- Electric Railway
- Frame Dwelling
- Wall
- Marsh
- Hedge
- Drop Inlet
- Bridge
- Present Culvert
- Proposed
- Telegraph Pole
- Trolley Pole
- Power Pole
- Tree
- Brick Dwelling

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT F.283 (9)  
APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED 12th DAY OF March, 1954.

ROUTE NO. W.VA. 6  
PROJECT NO. F 283 (9)

PREPARED & RECOMMENDED BY  
REVIEWED  
RECOMMENDED FOR APPROVAL  
APPROVED

PREPARED AND RECOMMENDED BY  
MODJESKI & MASTERS  
CONSULTING ENGINEERS

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DISTRICT ENGINEER  
BUREAU OF PUBLIC ROADS  
DEPARTMENT OF COMMERCE

PLANS COMPLETED March, 1954

F-283 (9) DWG. #1 #1899



**GOVERNING SPECIFICATIONS**

Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia, 1952 (approved by B.P.R. January 2, 1953) except as noted and except that the design is to be in accordance with American Association of State Highway Officials Specifications of 1949 except as noted.

Required Contract Provisions for Projects financed with Federal Funds, dated July 28, 1948 approved by Bureau of Public Roads October 22, 1948.

3% Transportation Tax.

Labor rates for Fayette and Kanawha Counties.

See Supplemental Specifications for Permits and Licenses, Navigation Lighting, Shop Paint and Special Steel. Special Railroad Provisions.

**LOADS AND UNIT STRESSES**

Loads

D=Dead Load - For future paving, a load of 15 lbs. per. sq. ft. of roadway, shall be added to the Dead Loads set forth in the AASHO Standard Specifications for Highway Bridges.

L=Live Load - H20-S16, applied in accordance with 1949 AASHO Standard Specifications for Highway Bridges.

Unit Stresses

	<u>Carbon</u>	<u>Special</u>
Axial Tension - Net Section	18,000#/in <sup>2</sup>	24,000#/in <sup>2</sup>
Axial Compression - Gross Section	15,000-0.25%#/in <sup>2</sup>	20,000-0.46%#/in <sup>2</sup>
Stress in extreme Fiber of Pins	27,000#/in <sup>2</sup>	
Shear in Plate Girder Webs - Gross Section	14,000#/in <sup>2</sup>	14,000#/in <sup>2</sup>
Shear in Power Driven Rivets and pins	12,000#/in <sup>2</sup>	
Bearing in Power Driven Rivets and pins	24,000#/in <sup>2</sup>	
Bearing on Milled Stiffeners & Other Steel Parts in contact	27,000#/in <sup>2</sup>	
Bearing on Concrete	600#/in <sup>2</sup>	
Bearing on Rollers and Rockers	600D#/in <sup>2</sup>	
Erection Stresses shall not exceed 1.15 times basic allowable stresses or 1.30 times when combined with erection wind.		

Provision has been made for jacking the truss and girder spans between Piers VI and XII, after completion, for adjustment and maintenance. The resulting jacking stresses shown on the drawings are 3/4 the actual values, thus indicating an allowable 50% increase in basic unit stress.

**GENERAL NOTES**

Camber

Trusses and girders shall be cambered for dead load. No cambering of rolled beams is required. If beams are not straight they shall be fabricated so that mill sweep is in the direction of camber. Camber dimensions shall be shown on the shop drawings for the girders.

Materials

All steel work not otherwise shown shall be structural carbon steel. Structural carbon steel shall be ASTM. A7-53T

Special steel (designated by 'S') shall conform to the Supplemental Specifications.

All parts of special steel shall be identified by paint marks and stampings at the Mill and these identification marks shall be retained throughout the work of the fabricator, so that there will be no mistakes in the use of the special parts where required.

Bronze expansion plates shall be Bronze Casting ASTM. B22-52 Alloy Bar C. or Rolled Copper Alloy B100-52 Alloy #1.

Corrosion Resisting Alloy Metal Rollers shall conform to ASTM. A296-49T Grade CA15 Type 12 Chromium Heat Treated.

Top and bottom roller plates shall be Corrosion Resisting Alloy Steel Clad Plate, ASTM. A263-44T medium Carbon steel base; Grade A, Type 410 Modified, with single clad of 1/8" min. finished

thickness on side in contact with rollers.

Corrosion Resisting Alloy Metal Teeth shall conform to ASTM. A276-49T, Type 410 fully annealed.

Cast Steel Bearing shoes shall conform to ASTM. A27-52T Grade 65-35 fully annealed.

Forged Steel Pins shall conform to ASTM. A235-52T Class E annealed.

Grillage and Anchor Bolts

The substructure plans provide for the installation in the pier tops of grillages and anchor bolts, all accurately scribed with centerlines of bearings and grillages. The Contractor shall verify the location and elevation of all embedded material prior to the erection of any steelwork and shall adjust the heights of shoes and details to correct for variations in the elevations and locations of the substructure work as constructed.

Metal templates showing the spacing of the anchor bolts will be supplied by the substructure contractor which shall be used for the accurate location of anchor bolt holes in bearing plates and shoes.

The cost of any alterations to the steelwork, found to be necessary in order to make the steel work fit the sub-structure as built, shall be included in the lump sum price bid for item 90.

Bearings

All bearings shall be assembled completely in the shop and match-marked. Rollers shall be checked for full bearing and contact of side locking ribs.

The contact surfaces between plates and rollers shall be finished with a fine machine finish in the direction of movement. Corrosion Resisting Alloy Metal shall not be painted.

The space around anchor bolts within the holes shall be filled with babbitt after the shoes and roller plates are set in final position.

Where no grillages are provided the design requires a 14 ply, 1/4" Fabreeka Pad as manufactured by Fabreeka Products Co., Boston, Mass. or approved equal between the dressed concrete surfaces and the bearing plates. The cost of these pads shall be included in the price bid for steel superstructure, Item 90.

Expansion Dams

Expansion Dams shall be carefully assembled in the shop to correct roadway crown, clearances carefully checked and match marked. Holes for connections shall be sub-punched and reamed to size in field. Shims as required for adjustment shall be provided.

Expansion materials to be embedded on the abutment side of the dam at Pier VI and the North Abutment and North Ramp Abutments are to be furnished and set under the Substructure Contracts as noted on the plans.

The expansion dam materials at Pier VIII to be attached to the Stage II Metalwork shall be furnished under this Contract and stored at the site as directed by the Engineer.

Match Marking

All members assembled in the shop shall be carefully match-marked with paint and steel stencil and the Engineer furnished with copies of the match marking diagrams.

Shop Drawings

Shop drawings are to be in ink on tracing cloth or in pencil on special prepared cloth, lacquered after completion.

Rivets

All rivets shall be 7/8", except in the main truss members. Rivets thru the webs of the top and bottom chords, diagonals and posts of the trusses and thru the flanges of all truss hangers shall be 1"; all other rivets in the trusses shall be 5/8".

Preparation of Rivet Holes

A-All holes for shop and field rivets in carbon steel shall be prepared in accordance with the requirements of par. 290-93.3(A) of the Standard Specifications except as

follows:

1- General reaming is required for all holes in main members including holes for stitch rivets.

2- Connection of floor system to girders or hangers, and portals to trusses shall be reamed through steel template.

B-All holes for shop and field rivets in Special steel shall be prepared in accordance with the requirements of par. 290-93.3(A) of the Standard Specifications as modified in par. (A) above and as further modified as follows:

1-Holes in Special steel thicker than 5/8" shall be sub-drilled 1/4" less in diameter than that of the finished holes and shall be reamed to size with the parts assembled; or may be drilled full size with the parts assembled.

2-Holes in Special steel 5/8" and thinner shall be sub-punched or sub-drilled and shall be reamed to size with the parts assembled; or may be drilled full size with the parts assembled.

North Approach Ramps

The steel superstructure for Ramps X and W on the North Approach are to be included in this Contract.

Paving and Railing

Concrete roadway, curbs and sidewalks and aluminum hand railing will be included under separate contract. The contractor shall furnish holes in the fascia, sidewalk brackets and railing post struts for attachment at the railing posts, as shown on the drawings. Include in Item 90.

Navigation Lighting

This Contractor will be required to furnish and install complete all materials and equipment for the Navigation Lights as indicated on the plans. The source of power will be 120/240 V. at the Appalachian Electric Power Co. pole No. 360ATD in Montgomery near Harding St and 5th Ave. The Contractor shall run the primary circuits as shown on the plans from the source, underground to Pier VII, thru the metering equipment (by A.E.P. Co.) and control equipment to be mounted thereon, thence to the bridge structure and along the structure from Pier VII to Pier XI. Branch circuits will be run to red navigation markers on both the upstream and downstream facia at Piers VIII, IX, X, and XI and to upstream and downstream green centerline navigation markers at panel point 8 on the main truss.

Prior to the completion of the navigation lighting circuits the contractor shall install and maintain such temporary navigation lights as may be required by the Second Coast Guard District, St. Louis, Missouri for the adequate marking of piers, structures and temporary obstructions to navigation.

Painting

All metalwork except Corrosion Resisting Alloy Metal shall be given a shop coat of paint. Shop paint shall be in accordance with Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia or may be Red Lead-Iron Oxide Paint conforming to the Supplemental Specifications. Shop painting shall be in accordance with Article 290-93.3.D of the Standard Specifications for Roads and Bridges.

All field connections and any paint surface damaged during erection shall be spot painted with one coat of the paint specified. No other field painting will be required under this contract.

Falswork

The contractor shall keep all staging and falswork in a safe condition, and provide such temporary stairways, gangways, staging, railings or other means of access, as the Engineer may direct for a thorough inspection of the work during construction and previous to the final acceptance of the structure.

Payment for Metalwork

All metal parts such as structural carbon and Special structural steels, shoes, rockers, rollers, bearing plates, pins, drainage castings, corrosion resisting alloy metals and bronze plates shall be included under Item 90. "Steel Superstructure" as per plan, complete in place, excluding concrete floor. Payment will be made under Item 90 on a lump sum basis for all metalwork required under this Contract

DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (9)	1953	FAYETTE & KANAWHA	4	27

complete in place, excluding concrete floor and railing, and without complete coat of the paint specified.

No metalwork items required for the navigation lights and circuits, such as conduit, control cabinets, cable clamps, lamp hangers etc. will be included under Item 90 "Steel Superstructure," for which payment is to be made on a lump sum basis.

Materials required for the shipping, storing and erection of Metalwork will be included in the lump sum price bid for Item 90.

Payment for Navigation Lighting

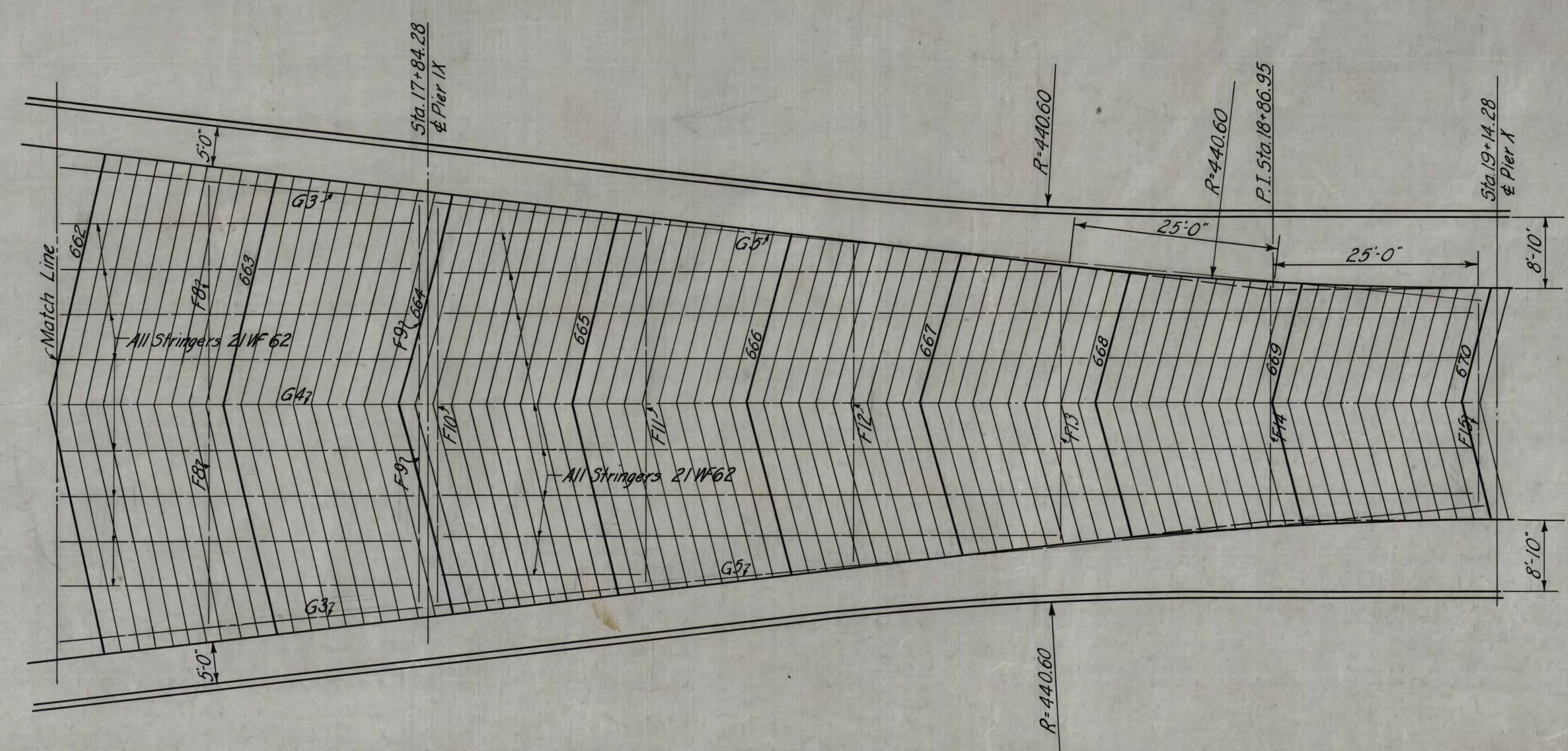
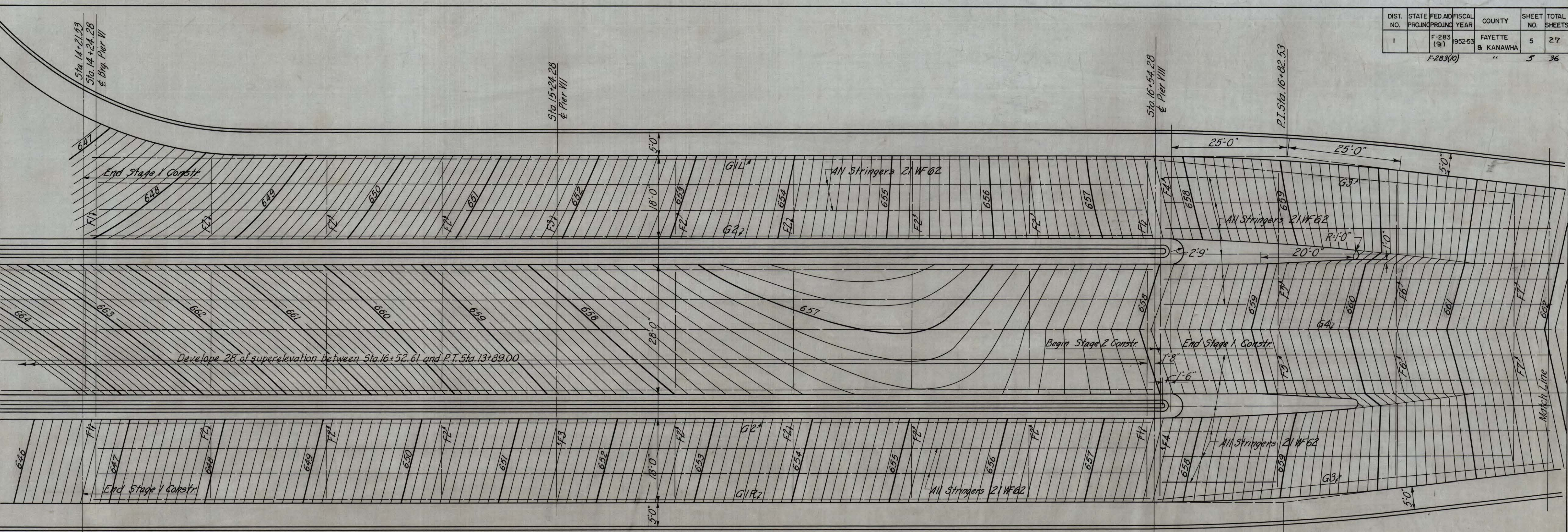
Payment for this item will be made at the lump sum price bid which shall include the costs of furnishing all materials, erecting and installing complete, testing and putting into operation the navigation light system as shown on the plans and as required by the "Special Provisions."

ESTIMATED QUANTITIES			
Item	Description	Quantity	Units
90	"Steel Superstructure"		
	Structural Carbon Steel	3,441,000 lbs.	
	Special Steel	1,436,200 lbs.	
	Castings and Forgings	55,900 lbs.	
	Drainage System (includes inlets)	47,800 lbs.	
	Corrosion-resisting Alloy Metals	26,900 lbs.	
	Totals	5,007,800 lbs.	Lump Sum
131	Navigation Lighting		Lump Sum

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA  
GENERAL NOTES AND ESTIMATED QUANTITIES



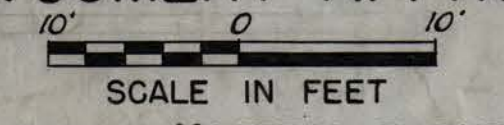
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F-283 (9)	1952-53	FAYETTE & KANAWHA	5	27
					F-283(0)	5 36



**NOTES:**  
 Final Roadway surface to conform to contours shown. Vary haunches above stringers, floorbeams, and girders as required to bottom of 7" roadway slab. Stringers, floorbeams, and girders shown.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VIRGINIA

CONTOUR SHEET  
 MONTGOMERY APPROACH



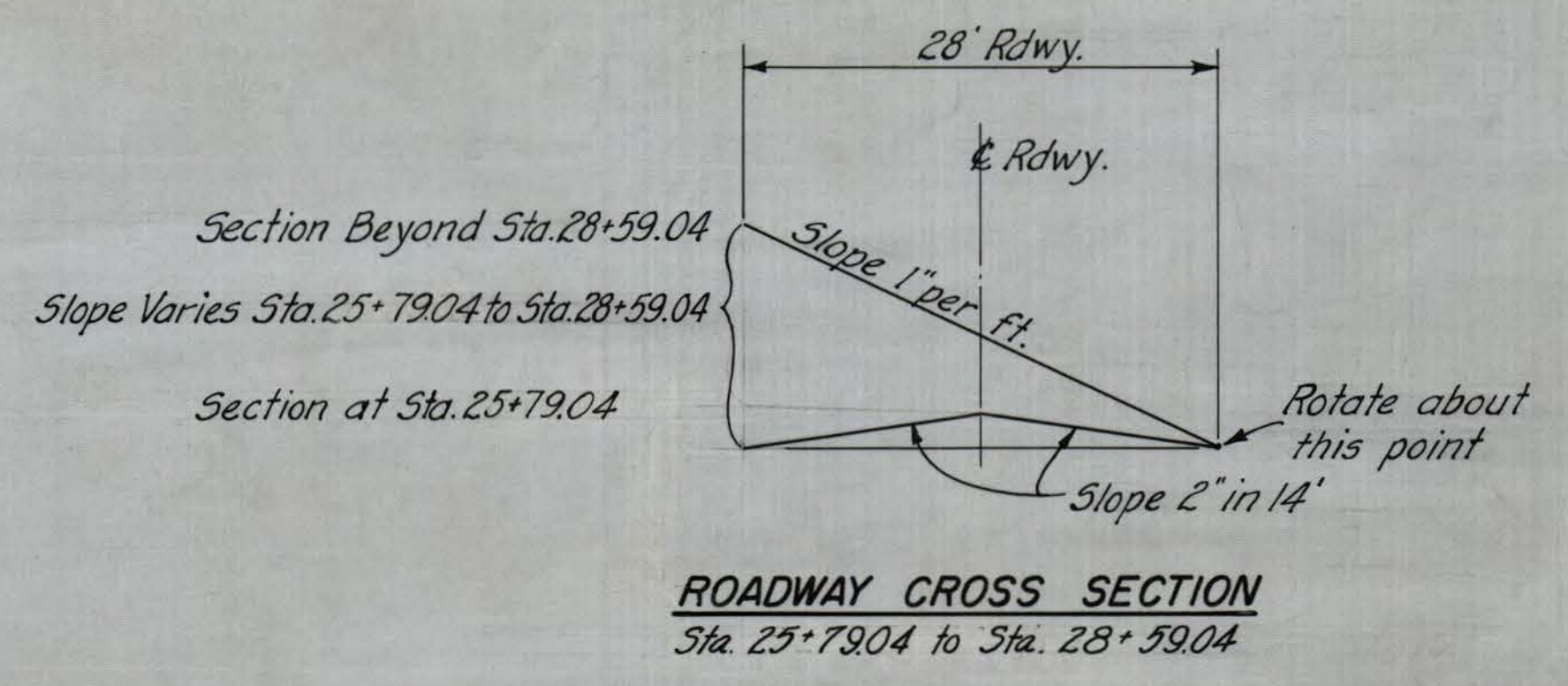
SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS

DWG. #5  
 #1899

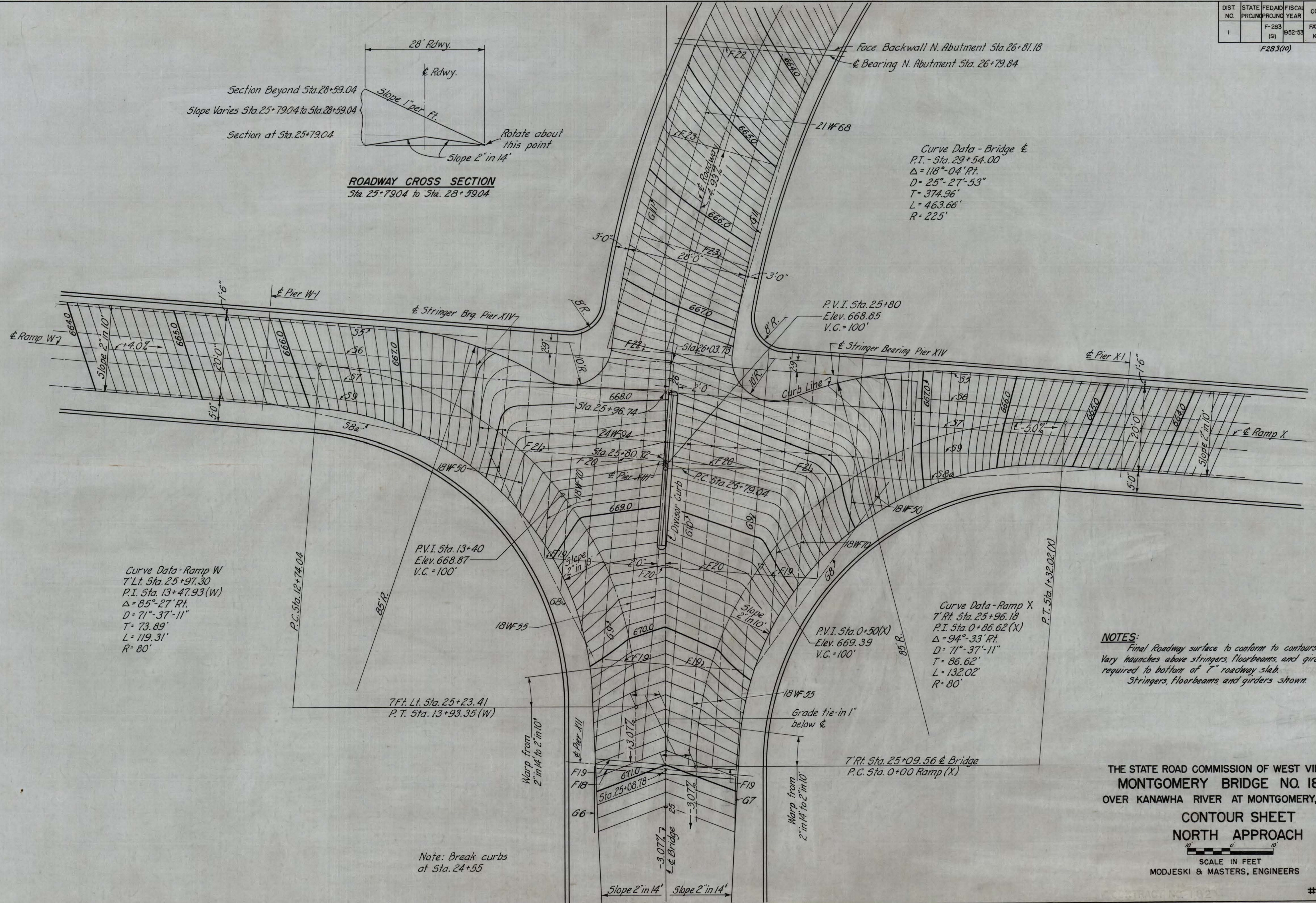
DR. TR. DRICK



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEET
1		F-283 (9)	1952-53	FAYETTE & KANAWHA	6	27
					F283(10)	6 36



Curve Data - Bridge ±  
P.I. - Sta. 29+54.00  
Δ = 118°-04' Rt.  
D = 25°-27'-53"  
T = 374.96'  
L = 463.66'  
R = 225'



Curve Data - Ramp W  
T.Lt. Sta. 25+97.30  
P.I. Sta. 13+47.93(W)  
Δ = 85°-27' Rt.  
D = 71°-37'-11"  
T = 73.89'  
L = 119.31'  
R = 80'

P.V.I. Sta. 13+40  
Elev. 668.87  
V.C. = 100'

P.V.I. Sta. 0+50(X)  
Elev. 669.39  
V.C. = 100'

Curve Data - Ramp X  
T.Rt. Sta. 25+96.18  
P.I. Sta. 0+86.62(X)  
Δ = 94°-33' Rt.  
D = 71°-37'-11"  
T = 86.62'  
L = 132.02'  
R = 80'

**NOTES:**  
Final Roadway surface to conform to contours shown  
Vary haunches above stringers, floorbeams, and girders as required to bottom of 7" roadway slab.  
Stringers, floorbeams and girders shown.

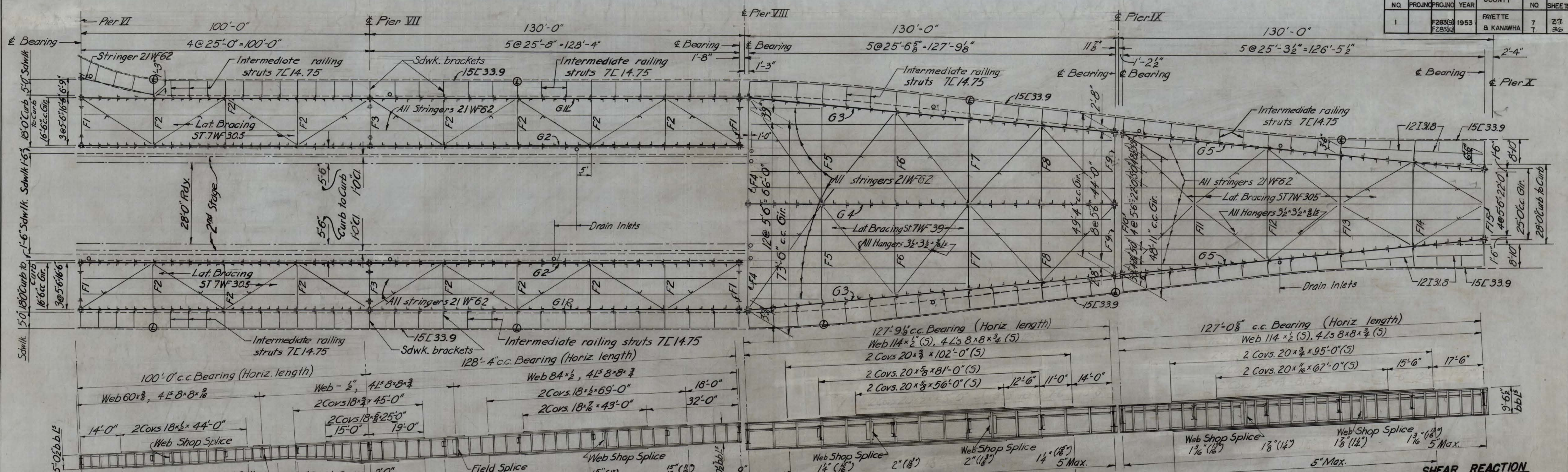
Note: Break curbs at Sta. 24+55

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**CONTOUR SHEET**  
**NORTH APPROACH**

SCALE IN FEET  
MODJESKI & MASTERS, ENGINEERS DWG. #6

#1899





	REACTION	SHEAR	MOM.
D.L.	61	36	884
L.L.	47	29	716
SWK.	15	10	246
I	10	7	159
<b>TOTAL</b>	<b>133<sup>K</sup></b>	<b>82<sup>K</sup></b>	<b>2005<sup>K</sup></b>

	REACTION	SHEAR	MOM.	SHEAR
	106	283	3481	128
	47	84	1190	51
	16	36	450	18
	10	18	248	11
	<b>179<sup>K</sup></b>	<b>421<sup>K</sup></b>	<b>5369<sup>K</sup></b>	<b>208<sup>K</sup></b>

**INSIDE ELEVATION — GIRDER G1**  
**INSIDE ELEVATION — GIRDER G2 (SIMILAR)**

	REACTION	SHEAR	MOM.	SHEAR
	74	101	308	251
	39	49	114	92
	13	18	495	18
	8	10	23	18
	<b>134<sup>K</sup></b>	<b>178<sup>K</sup></b>	<b>445<sup>K</sup></b>	<b>361<sup>K</sup></b>

**INSIDE ELEVATION — GIRDER G4**

	REACTION	SHEAR	MOM.	SHEAR
	226	192	6555	183
	76	67	2577	62
	20	20	680	20
	15	13	510	12
	<b>337<sup>K</sup></b>	<b>292<sup>K</sup></b>	<b>10322<sup>K</sup></b>	<b>277<sup>K</sup></b>

**INSIDE ELEVATION — GIRDER G3**

	MOM.	SHEAR	MOM.	SHEAR	MOM.	SHEAR
D.L.	41	8	15	3	21	3
L.L.	93	23	14	3	30	5
I	28	7	-	-	-	-
<b>TOTAL</b>	<b>162<sup>K</sup></b>	<b>38<sup>K</sup></b>	<b>29<sup>K</sup></b>	<b>6<sup>K</sup></b>	<b>51<sup>K</sup></b>	<b>8<sup>K</sup></b>
S.M. REQ'D	108		19.3		34	
SECTION USED	21W62 (Str.)		15L33.9 (Facia)		12I318 (Swlk. Str.)	

**MOMENTS AND SHEARS FOR STRINGERS AND FACIA**

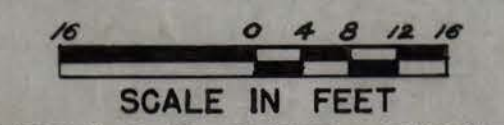
	REACTION	SHEAR	REACTION	SHEAR
	236	270	246	208
	87	102	107	88
	17	20	18	19
	17	20	21	17
	<b>340<sup>K</sup></b>	<b>392<sup>K</sup></b>	<b>392<sup>K</sup></b>	<b>332<sup>K</sup></b>

	REACTION	SHEAR	REACTION	SHEAR
	7034	192	214	DL.
	2836	59	70	L.L.
	598	23	23	SWK.
	563	12	14	I
	<b>11031<sup>K</sup></b>	<b>286<sup>K</sup></b>	<b>321<sup>K</sup></b>	<b>TOTAL</b>

**INSIDE ELEVATION — GIRDER G5**

**NOTE:**  
 All intermediate stiffeners on girders G1 & G2 are 6" x 3/2" x 3/8" L<sup>s</sup> (Crimped)  
 All intermediate stiffeners on girders G3, G4 & G5 are 7" x 4" x 1/2" L<sup>s</sup> (Crimped)  
 All rivets are 3/8" φ, except in Girders G3, G4 & G5 which are 1" φ.  
 See Sheet 8 - Stress Sheet - Floorbeams - Montgomery and North Approaches for floorbeam sections.  
 All materials are carbon steel unless marked (S) for special steel.  
 ○ - Indicates location of drainage inlets.  
 Cambers shown thus (1/2") are for concrete roadway, sidewalk and railing only. Other cambers are for total Dead Load.  
 ⊙ - Special Handrail post at future lamp standard locations.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**STRESS SHEET**  
**SOUTH APPROACH STAGE I**

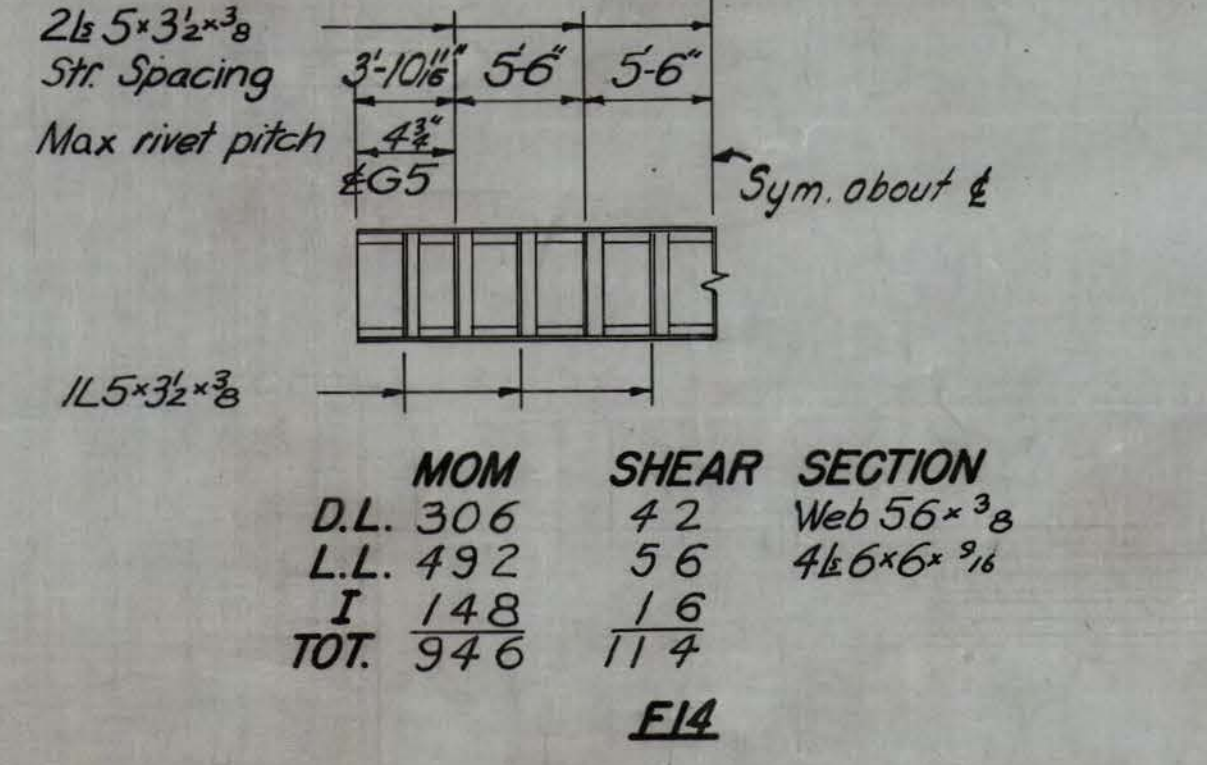
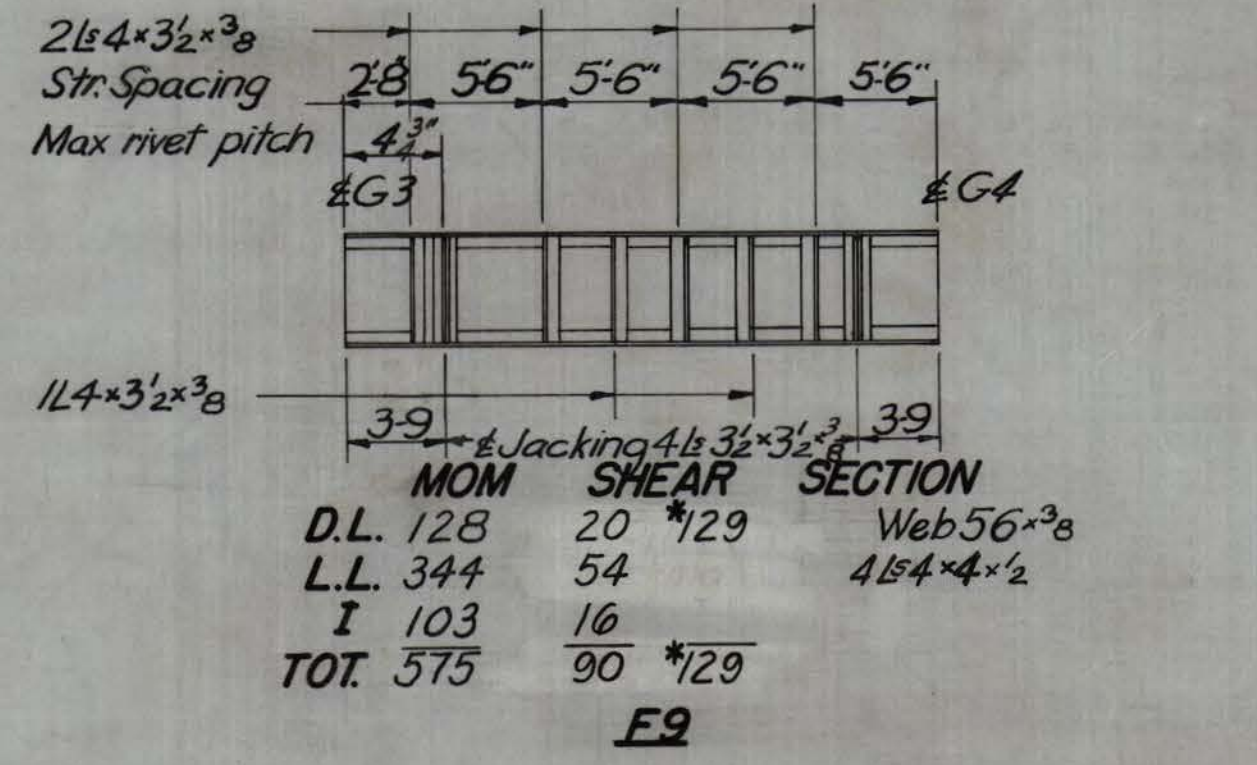
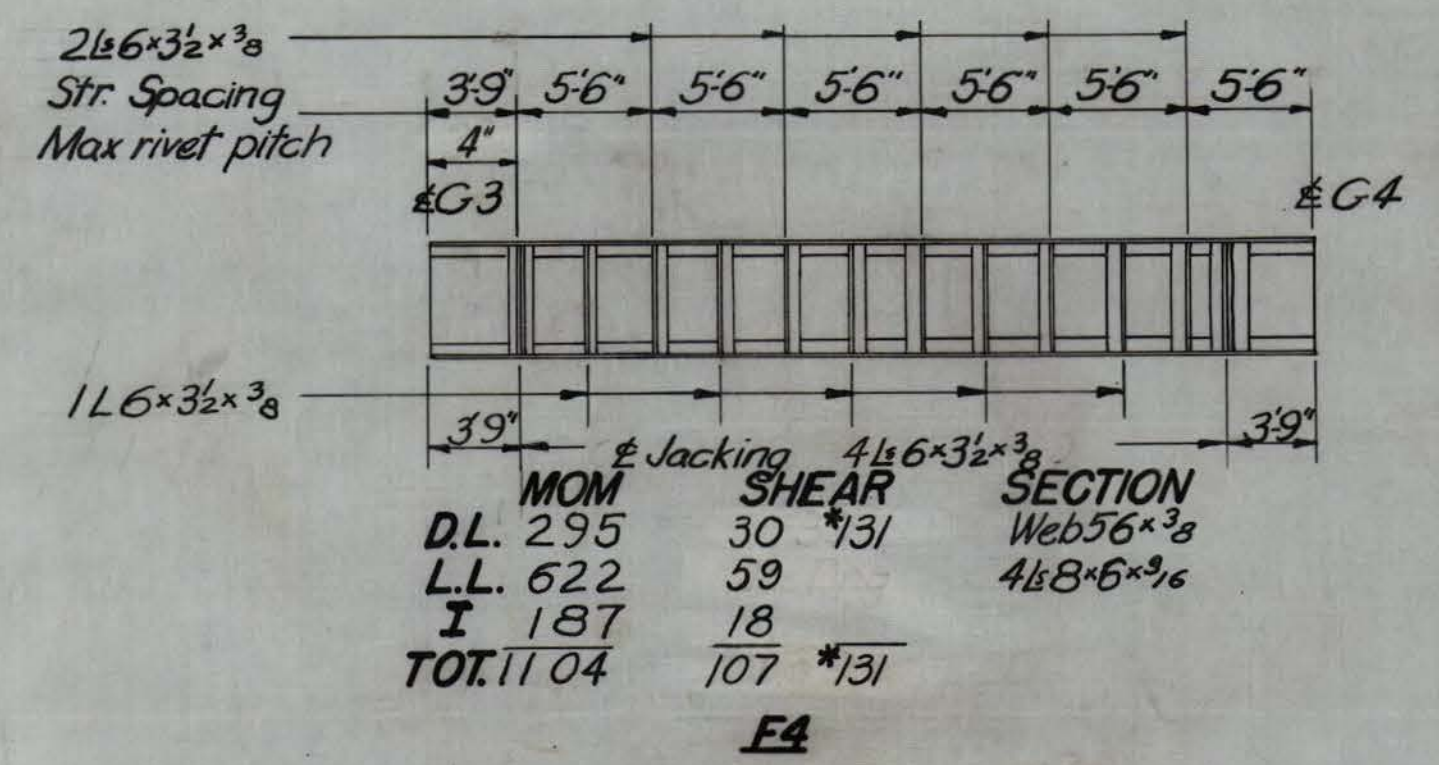
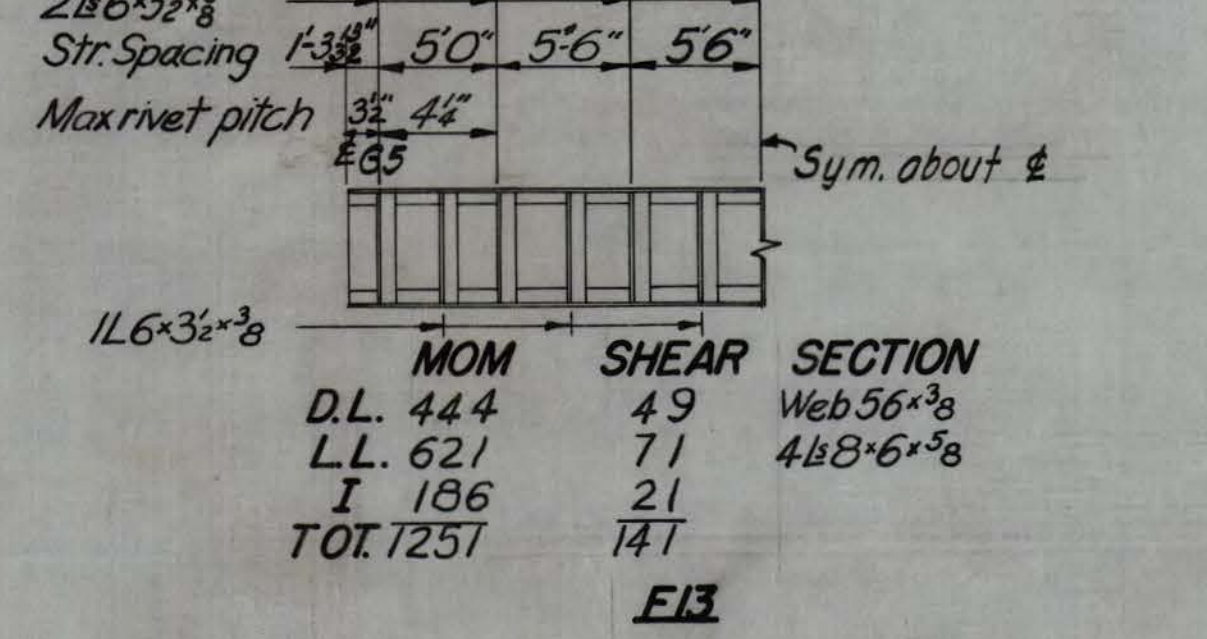
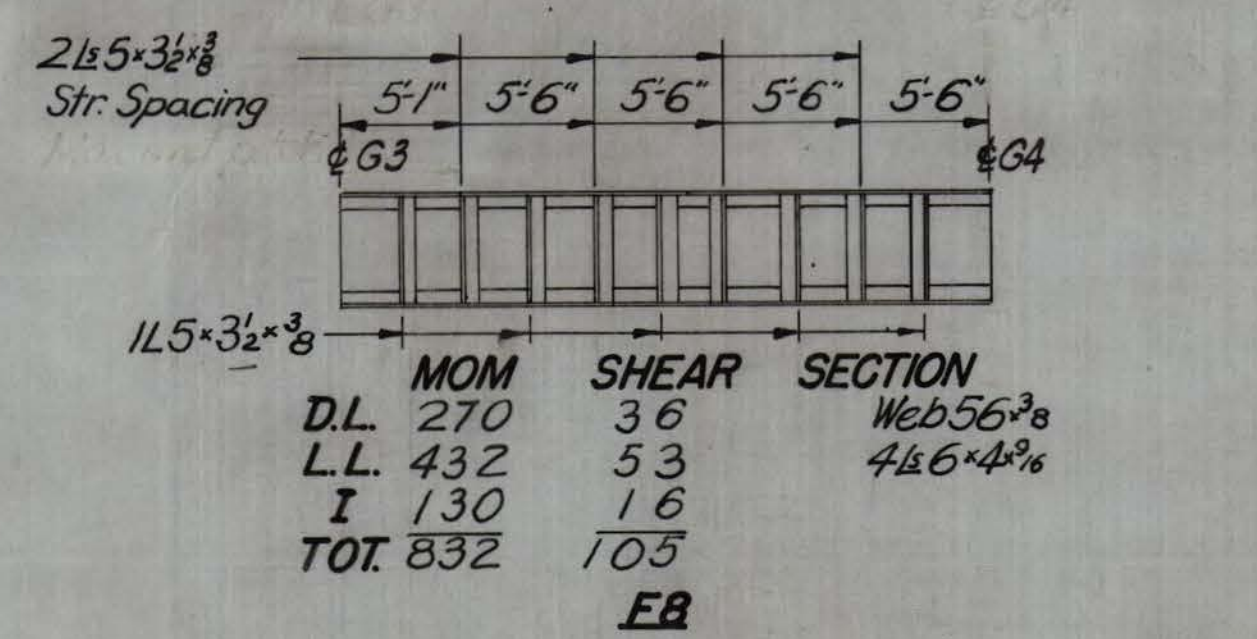
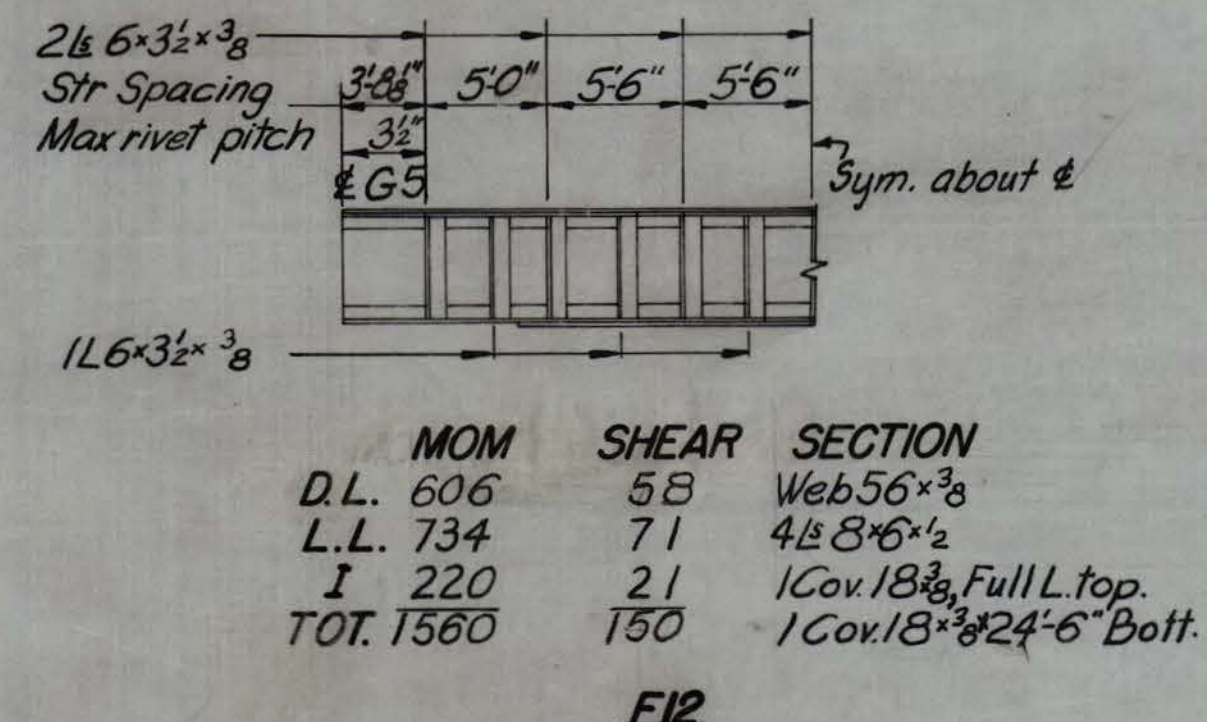
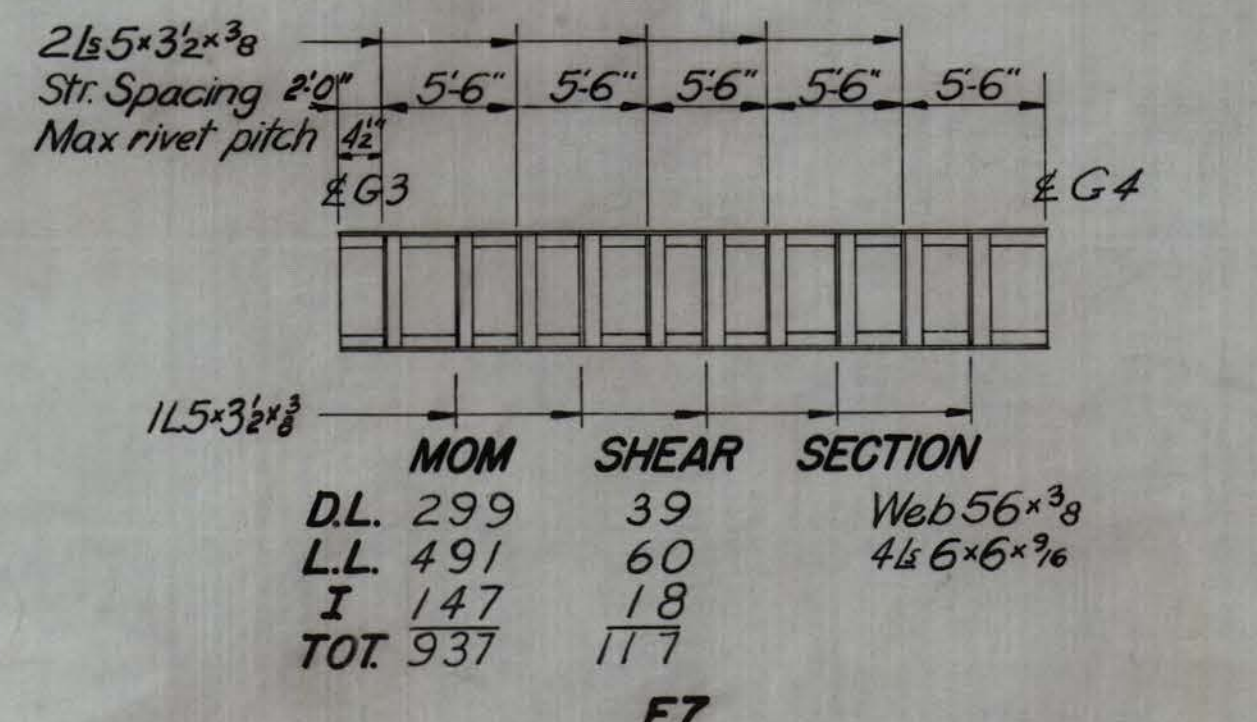
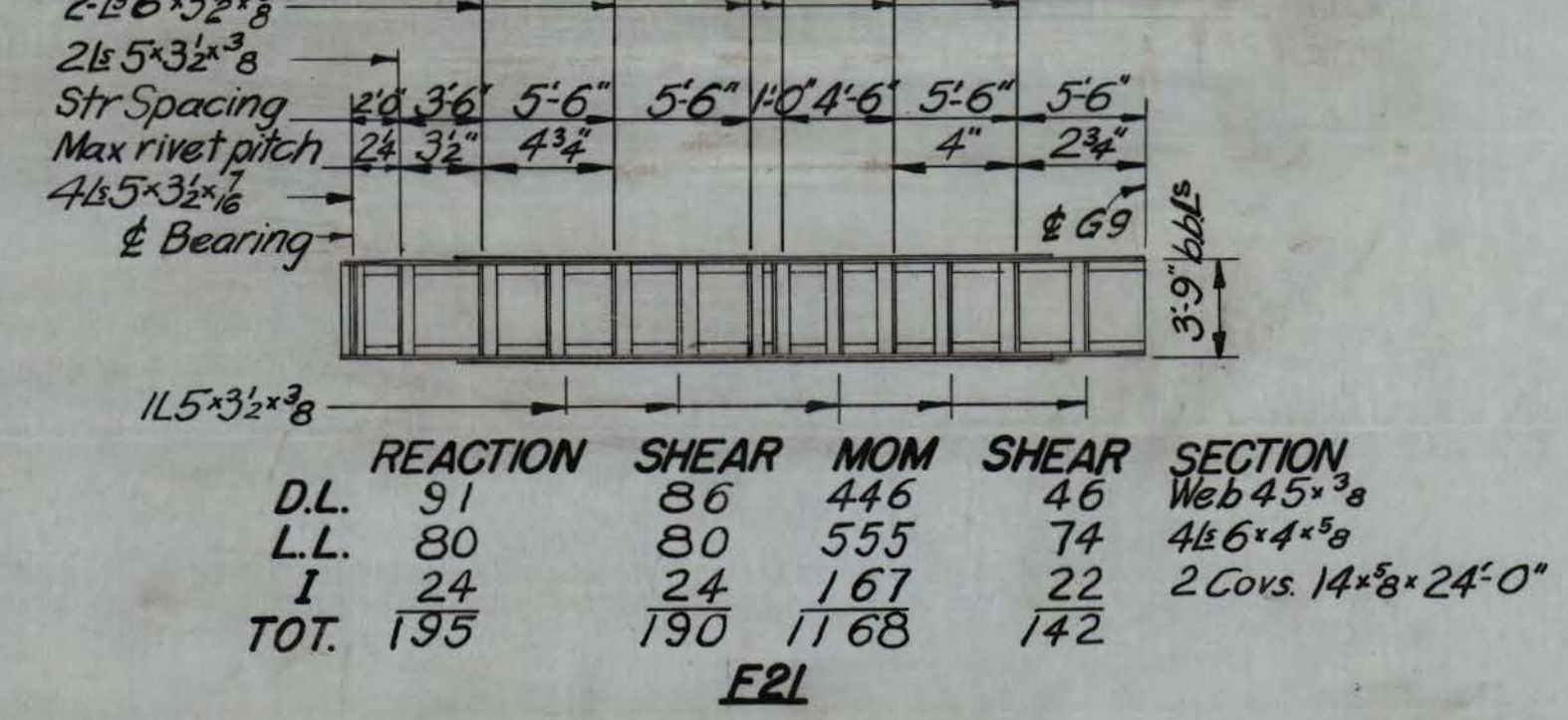
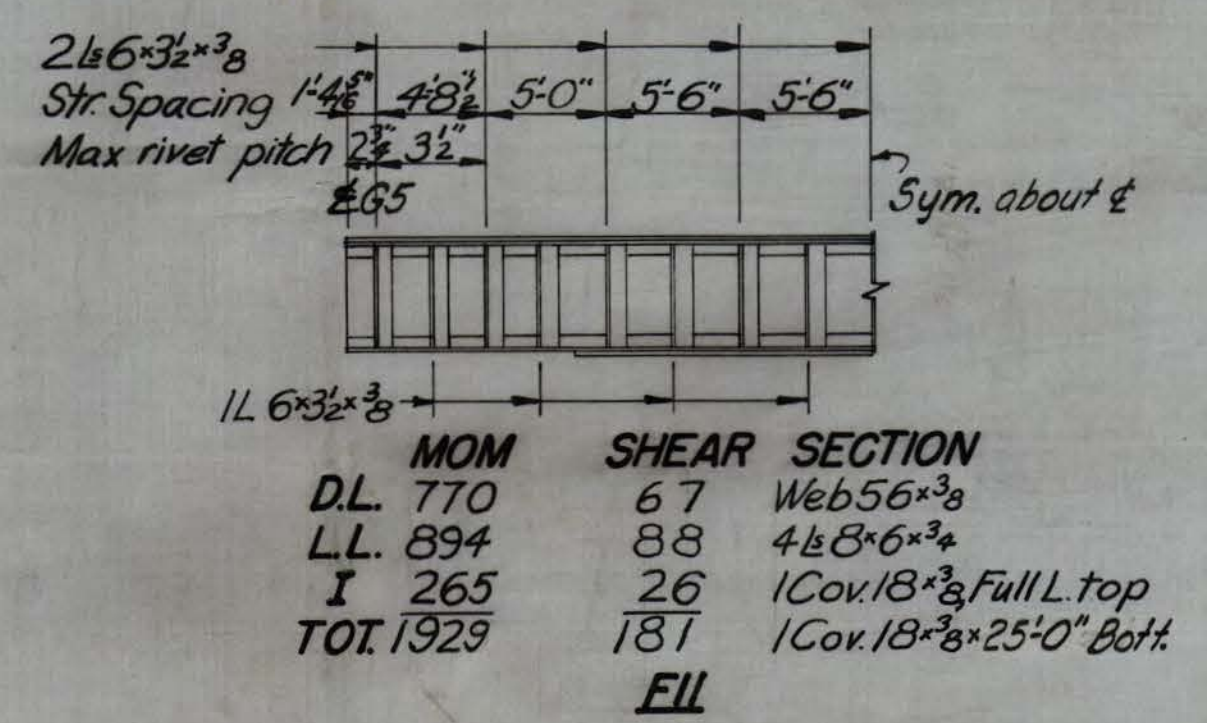
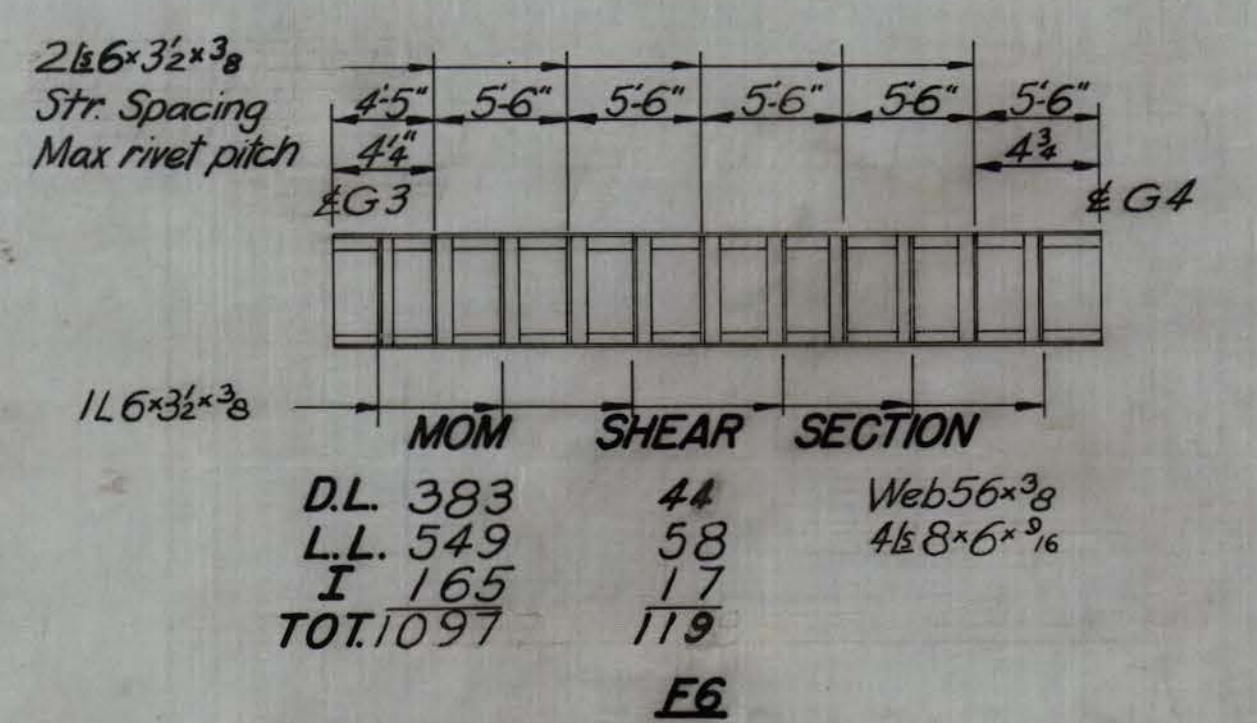
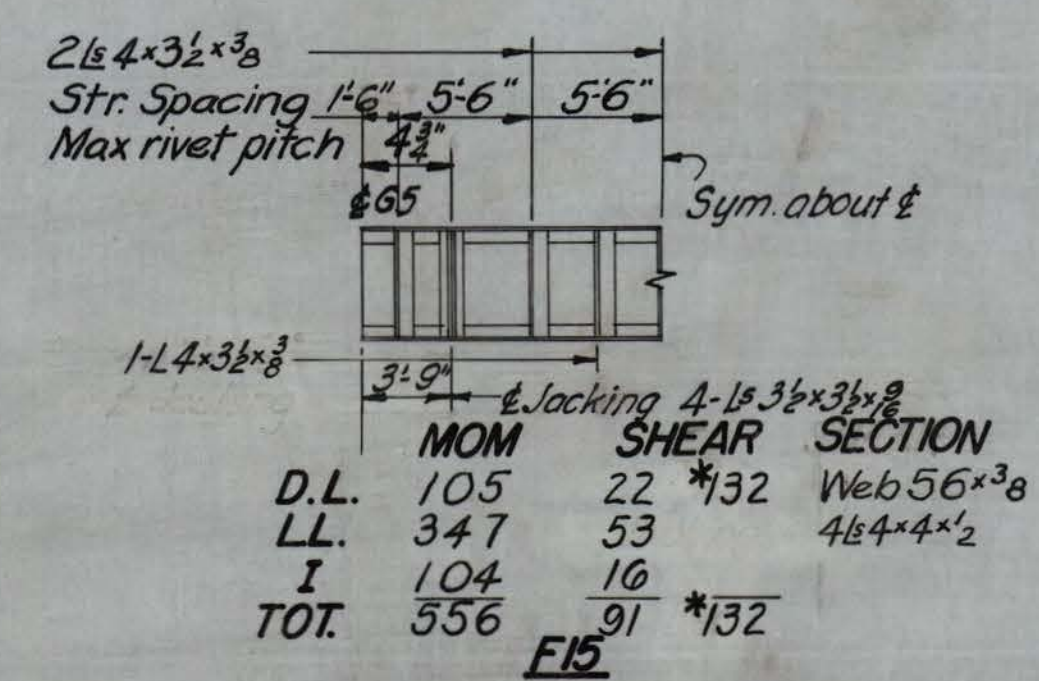
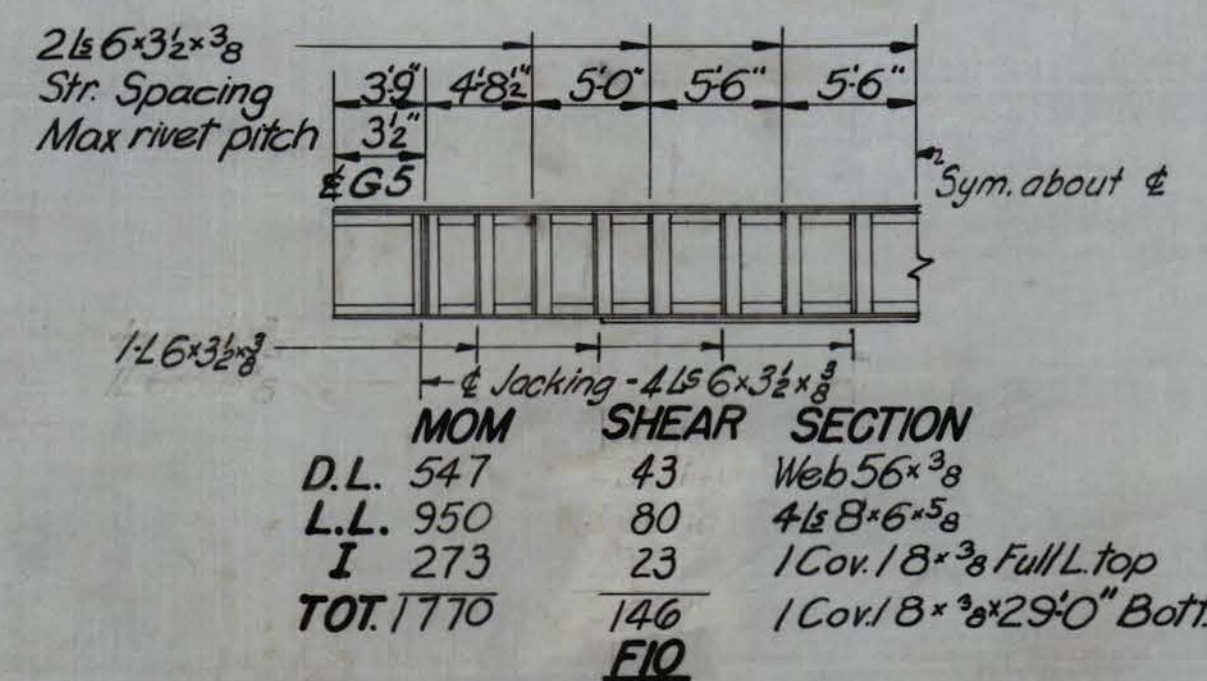
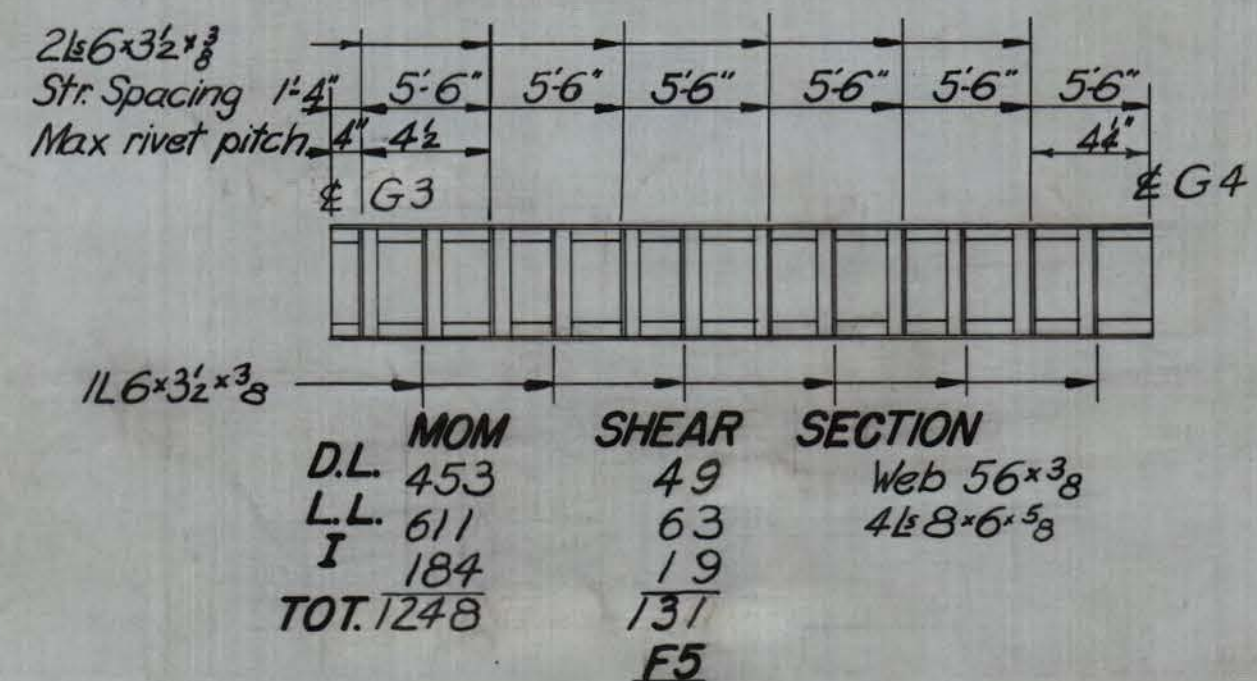


SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS  
 DWG. #7



FLOORBEAM	LOAD	MOM	SHEAR	SECTION	REMARKS
F1	DL	53	10	24WF76	2L6x4x $\frac{3}{8}$ Brg Stiff 3'-0" from ea. end
	LL	128	23		
	I	39	7		
	T	220	40		
F2	DL	93	17	24WF84	
	LL	138	25		
	I	41	8		
	T	272	50		
F3	DL	96*	18	36WF170	4L6x4x $\frac{5}{8}$ Brg Stiff 3'-0" from ea. end
	LL	138	25		
	I	41	8		
	T	275*	51		
F16	DL	183	24	36WF170	2L6x4x $\frac{5}{8}$ Brg Stiff 3'-0" from ea. end
	LL	490	48		
	I	147	14		
	T	820	86		
F17	DL	354	48	36WF230	
	LL	520	51		
	I	156	15		
	T	1030	114		
F18	DL	183	24	36WF170	2L6x4x $\frac{5}{8}$ Brg Stiff 3'-0" from ea. end
	LL	490	48		
	I	147	14		
	T	820	86		
F19	DL	44	25	24WF76	
	LL	153	34		
	I	46	10		
	T	243	69		
F20	DL	83	15	24WF94	
	LL	168	34		
	I	50	10		
	T	301	59		
F22	DL	148	18	36WF150	2L6x4x $\frac{3}{8}$ Brg Stiff 3'-0" from ea. end.
	LL	394	41		
	I	118	12		
	T	660	71		
F23	DL	259	31	36WF182	
	LL	417	45		
	I	125	13		
	T	801	89		
F24	DL	25	8	Web 37x $\frac{11}{16}$ 4L4x3x $\frac{3}{8}$	
	LL	44	14		
	I	13	4		
	T	82	26		

\*Note.- Shears and Moments preceded by an asterisk (\*) are due to Jacking Loads.



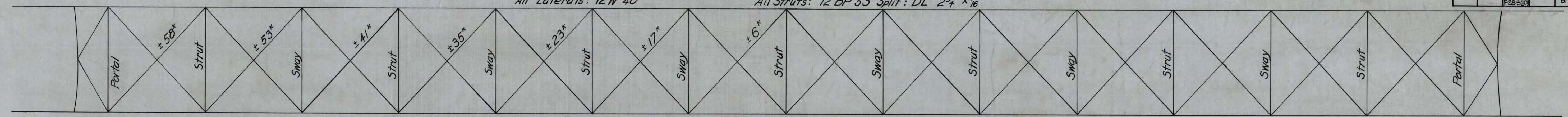
NOTE All rivet pitches 5" Max. unless noted. All dimensions are horizontal. All Reactions and Shears are in Kips. All Moments are in Foot-Kips.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
 STRESS SHEET FLOOR BEAMS  
 MONTGOMERY & NORTH APPROACH

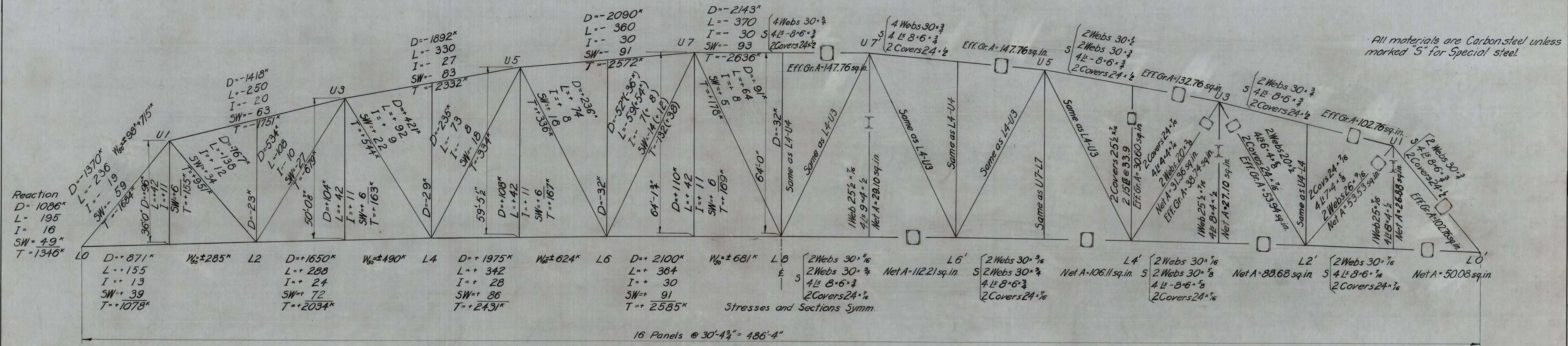
SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS  
 DWG. #8  
 #1899



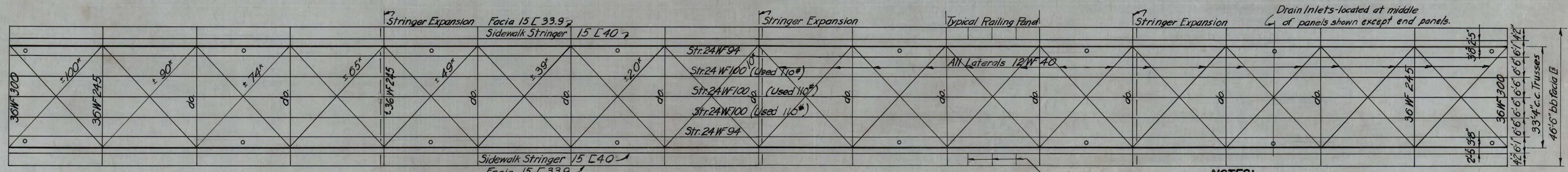
All Laterals: 12 WF 40 All Struts: 12 BP 53 Split: DL 2 3/4" x 7/8"



**TOP LATERALS**



**MAIN TRUSS SPAN**



**FLOOR SYSTEM**

END FLOORBEAMS		INTERMEDIATE FLOORBEAMS		STRINGERS (INT.)		STRINGERS (EXT.)	
SHEAR	MOM.	SHEAR	MOM.	SHEAR	MOM.	SHEAR	MOM.
D = 37	352	D = 61	551	D = 12	89	D = 12	88
L = 47	584	L = 57	626	L = 33	188	L = 25	144
I = 8	115	I = 17	188	I = 10	56	I = 8	43
92	352	70% SW DL = 48	1317	55	333	2	11
SM Req'd = 857 in <sup>3</sup>		SM Req'd = 222 in <sup>3</sup>		47	286		
SM 36 WF 300 = 1105 in <sup>3</sup>		SM 24 WF 100 = 249 in <sup>3</sup>					
		SM 24 WF 94 = 221 in <sup>3</sup>					

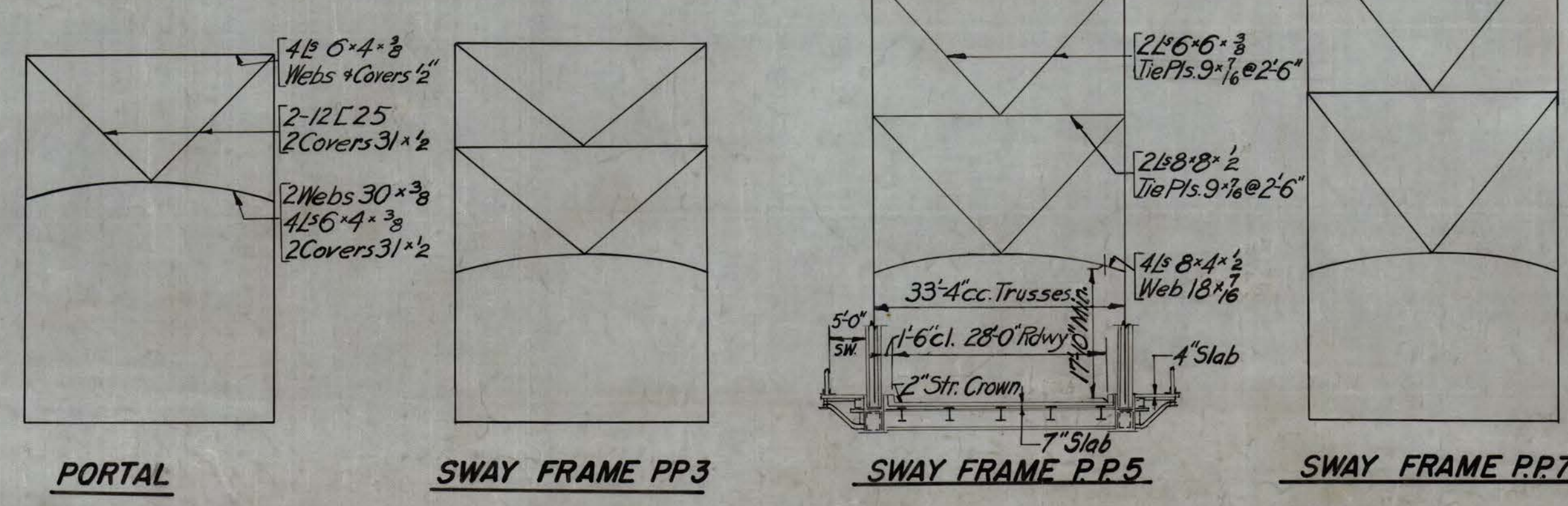
**INT. SIDEWALK STRINGERS**

D	SHEAR	MOM.
4.1	30.7	
SW 4.1	31.2	
	8.2	61.9
		SM Req'd = 41.3 in <sup>3</sup>
		SM 15 L 40 = 46.2 in <sup>3</sup>

**FACIA STRINGERS**

D	SHEAR	MOM.
2.7	20.8	
SW 2.2	16.6	
	4.9	37.4
		SM Req'd = 24.9 in <sup>3</sup>
		SM 15 L 33.9 = 41.7 in <sup>3</sup>

**BOTTOM LATERALS & FLOOR SYSTEM**



**NOTES:**  
Bottom covers of all chords and top covers of bottom chords shall have 12" x 18" Manholes @ 3'-6" centers (except as noted) and in diagonals, and at 3'-4" centers in boxed verticals. 1" φ rivets in webs of all Main Truss Members, 3/8" φ rivets in covers.  
For other loads, unit stresses and materials see General Notes - Sheet No. 4.  
○ - Indicates location of drainage inlets.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**STRESS SHEET MAIN BRIDGE TRUSS SPAN**

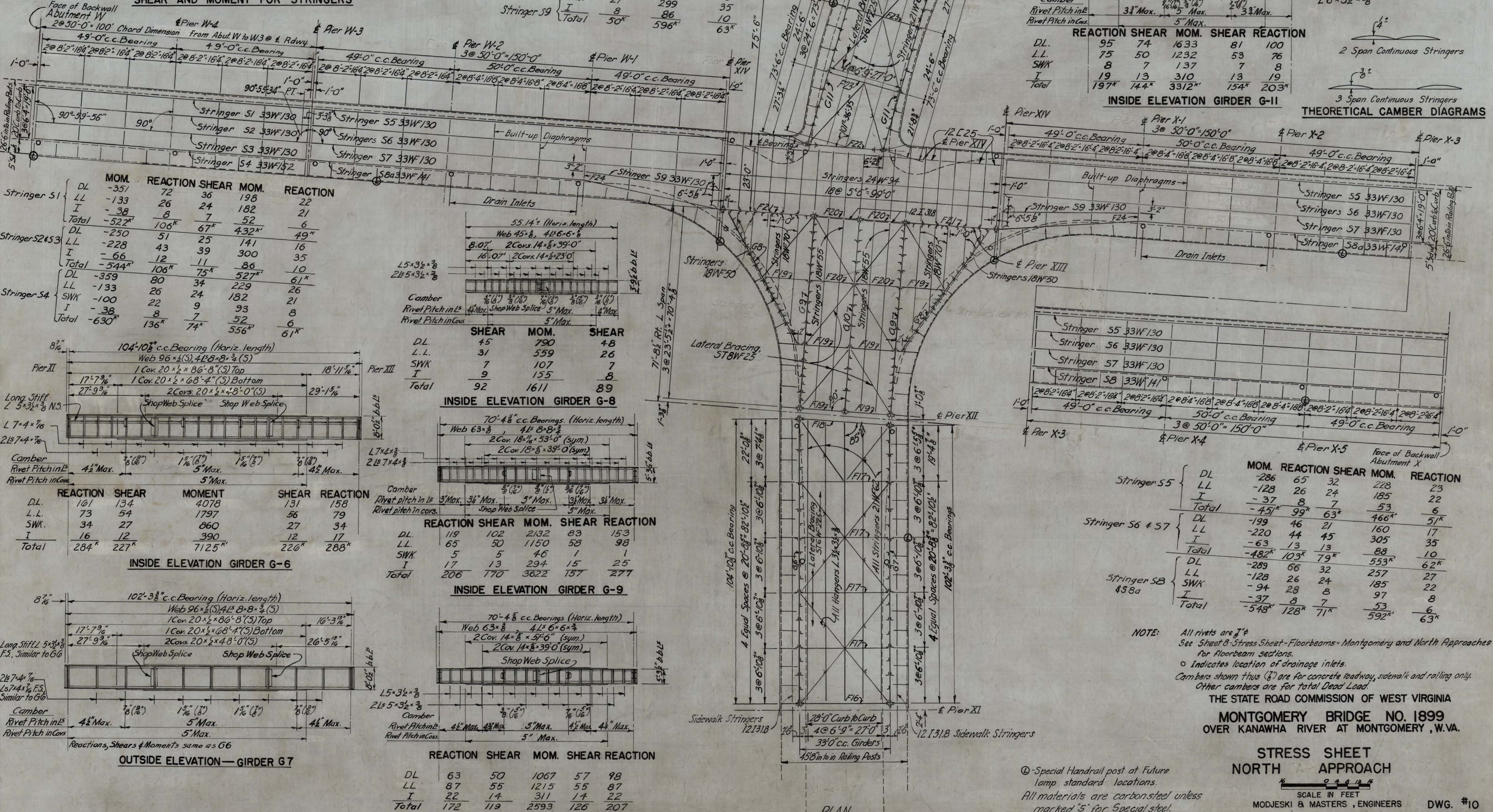


SCALE IN FEET  
MODJESKI & MASTERS, ENGINEERS DWG. #9

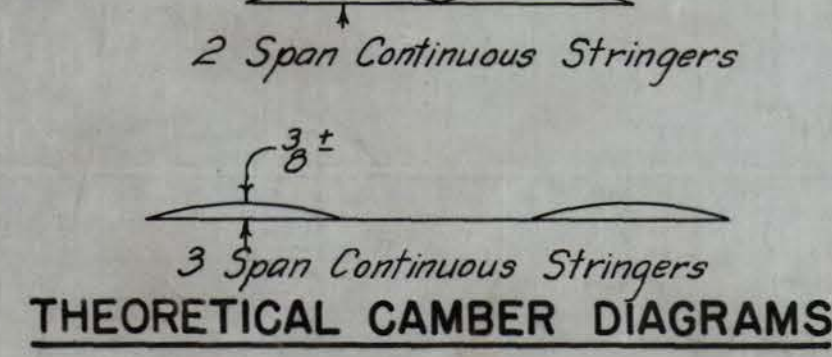


	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.	SHEAR MOM.
DL	5	25	7	35	8	33	8	44	10	51
LL	22	79	22	83	29	91	25	104	28	119
I	7	24	7	25	9	28	8	31	9	36
Total	34	128	36	143	46	152	41	179	47	206
3M	85.3	96	101	119	137	152	179	206	237	271
Section	18W50	18W55	21W62	18W70	21W68	24W94	12I318			

	SHEAR	MOMENT	SHEAR
DL	15	211	18
L.L.	27	299	35
I	8	86	10
Total	50 <sup>K</sup>	596 <sup>K</sup>	63 <sup>K</sup>



	REACTION	SHEAR	MOM.	SHEAR	REACTION
DL	95	74	1633	81	100
L.L.	75	50	1232	53	76
SWK	8	7	137	7	8
I	19	13	310	13	19
Total	197 <sup>K</sup>	144 <sup>K</sup>	3312 <sup>K</sup>	154 <sup>K</sup>	203 <sup>K</sup>



	MOM.	REACTION	SHEAR	MOM.	REACTION
DL	-351	72	36	198	22
LL	-133	26	24	182	21
I	-38	8	7	52	6
Total	-522 <sup>K</sup>	106 <sup>K</sup>	67 <sup>K</sup>	432 <sup>K</sup>	49 <sup>K</sup>
DL	-250	51	25	141	16
LL	-228	43	39	300	35
I	-66	12	11	86	10
Total	-544 <sup>K</sup>	106 <sup>K</sup>	75 <sup>K</sup>	527 <sup>K</sup>	61 <sup>K</sup>
DL	-359	80	34	229	26
LL	-133	26	24	182	21
SWK	-100	22	9	93	8
I	-38	8	7	52	6
Total	-630 <sup>K</sup>	136 <sup>K</sup>	74 <sup>K</sup>	556 <sup>K</sup>	61 <sup>K</sup>

	SHEAR	MOM.	SHEAR
DL	45	790	48
L.L.	31	559	26
SWK	7	107	7
I	9	155	8
Total	92	1611	89

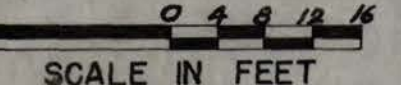
	REACTION	SHEAR	MOM.	SHEAR	REACTION
DL	119	102	2132	83	153
L.L.	65	50	1150	58	98
SWK	5	5	46	1	1
I	17	13	294	15	25
Total	206	170	3622	157	277

	MOM.	REACTION	SHEAR	MOM.	REACTION
DL	-286	65	32	228	23
LL	-128	26	24	185	22
I	-37	8	7	53	6
Total	-451 <sup>K</sup>	99 <sup>K</sup>	63 <sup>K</sup>	466 <sup>K</sup>	51 <sup>K</sup>
DL	-199	46	21	160	17
LL	-220	44	45	305	35
I	-63	13	13	88	10
Total	-482 <sup>K</sup>	103 <sup>K</sup>	79 <sup>K</sup>	553 <sup>K</sup>	62 <sup>K</sup>
DL	-289	66	32	257	27
LL	-128	26	24	185	22
SWK	-94	28	8	97	8
I	-37	8	7	53	6
Total	-548 <sup>K</sup>	128 <sup>K</sup>	71 <sup>K</sup>	592 <sup>K</sup>	63 <sup>K</sup>

NOTE: All rivets are 3/4"  
See Sheet 8 - Stress Sheet - Floorbeams - Montgomery and North Approaches for floorbeam sections.  
o Indicates location of drainage inlets.  
Camber shown thus (8") are for concrete roadway, sidewalk and railing only. Other cambers are for total Dead Load.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W.VA.

STRESS SHEET  
NORTH APPROACH



MODJESKI & MASTERS, ENGINEERS

DWG. #10

Special Handrail post at Future lamp standard locations.  
All materials are carbon steel unless marked "S" for Special steel.

CONTRACT NO. 1899

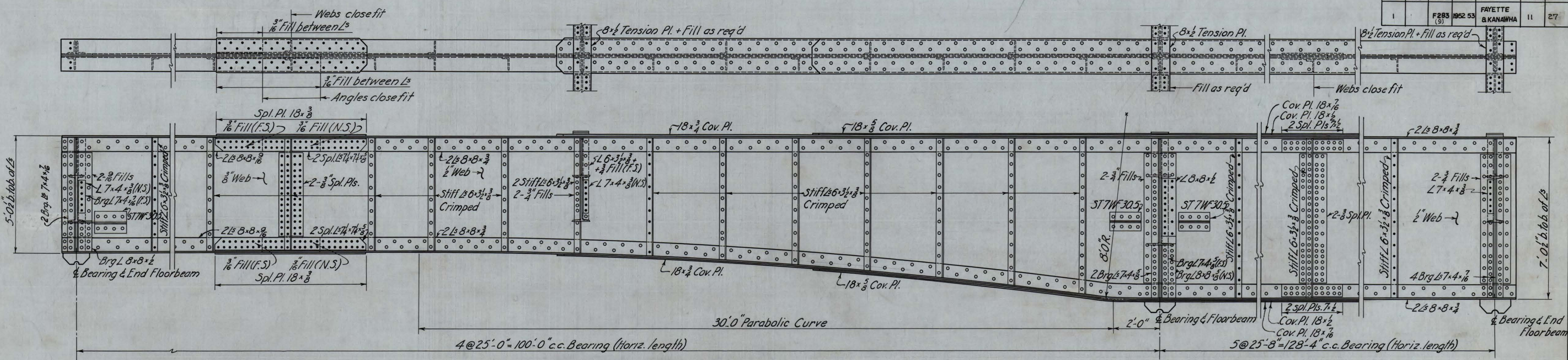
PLAN  
Scale: 1/16"=1'-0"

	REACTION	SHEAR	MOM.	SHEAR	REACTION
DL	63	50	1067	57	98
LL	87	55	1215	55	87
I	22	14	311	14	22
Total	172	119	2593	126	207

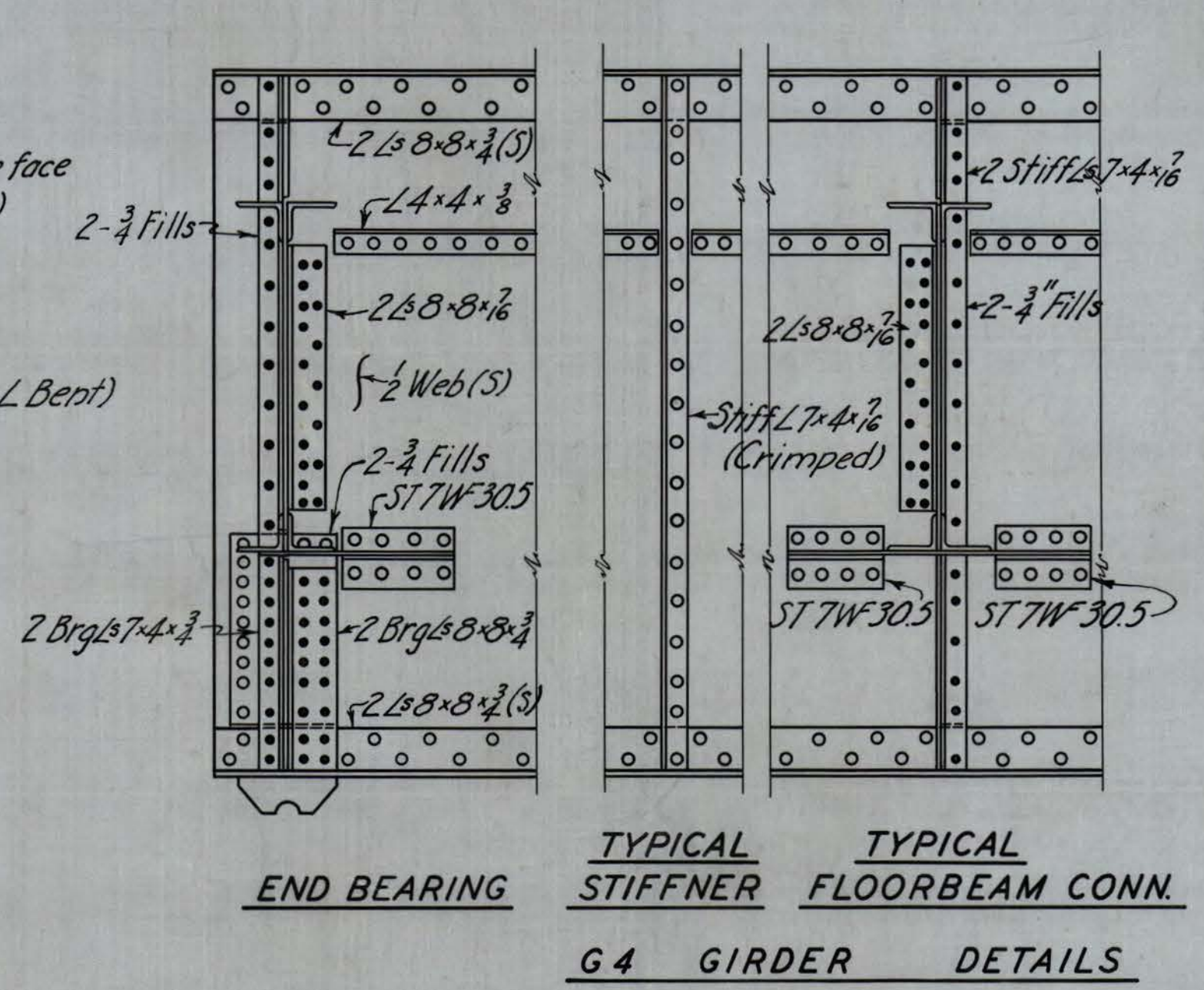
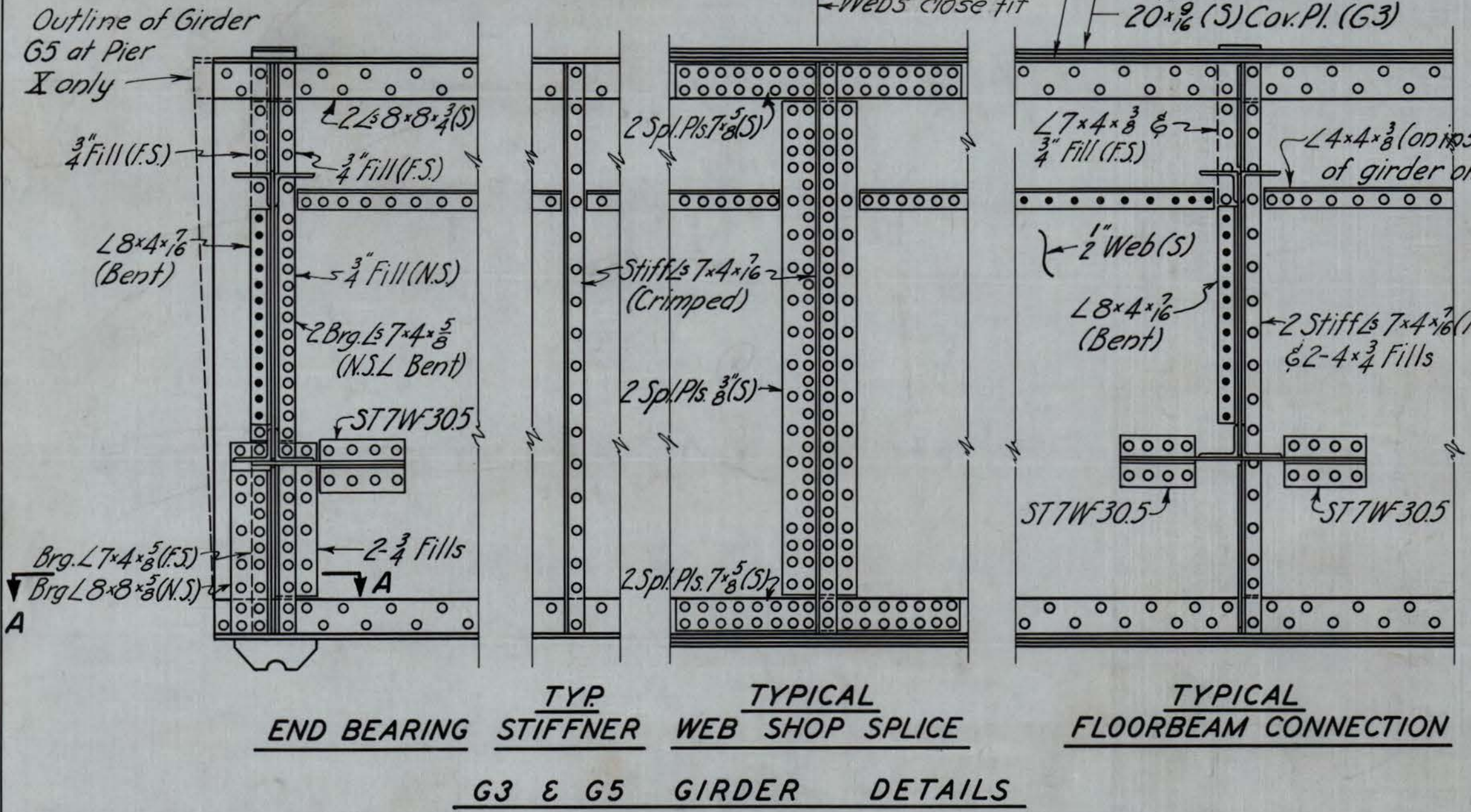
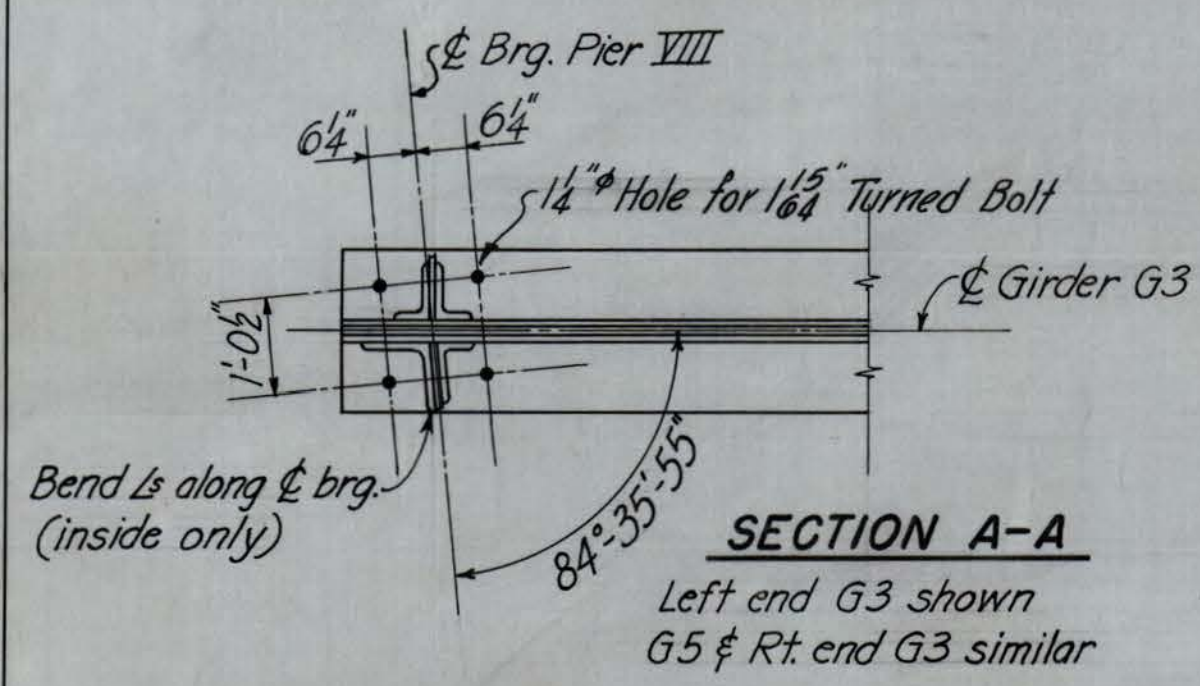
ELEVATION GIRDER G-10



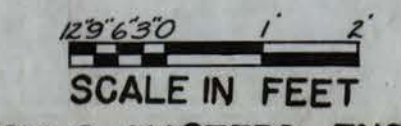
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (S)	1952-53	FAYETTE & KANAWHA	11	27



INSIDE ELEVATION GIRDER G1  
INSIDE ELEVATION GIRDER G1 & G2 (SIMILAR)

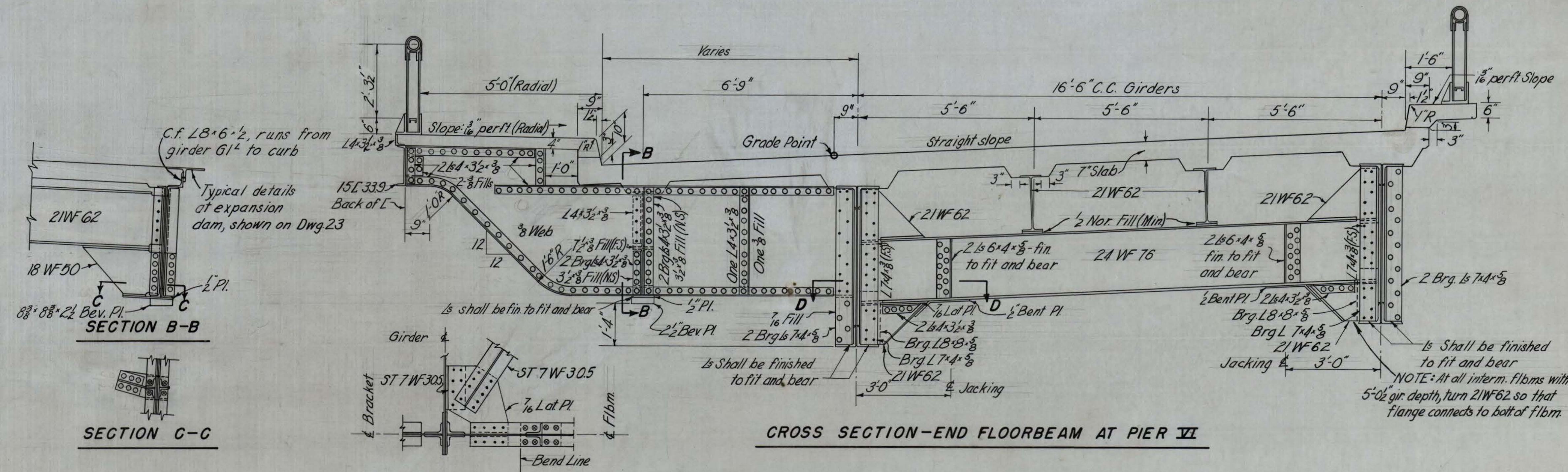


THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
GIRDER DETAILS  
SOUTH APPROACH

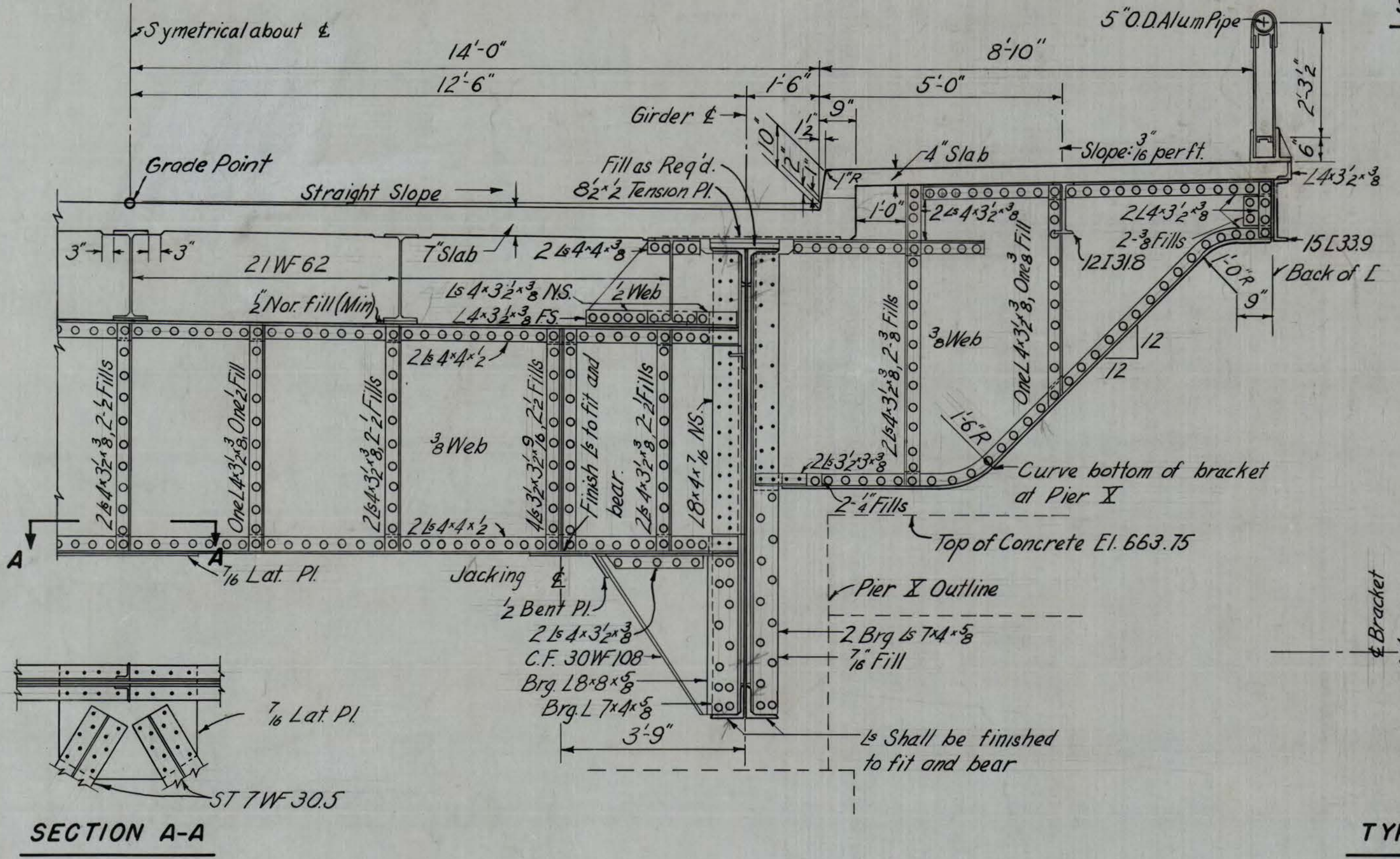




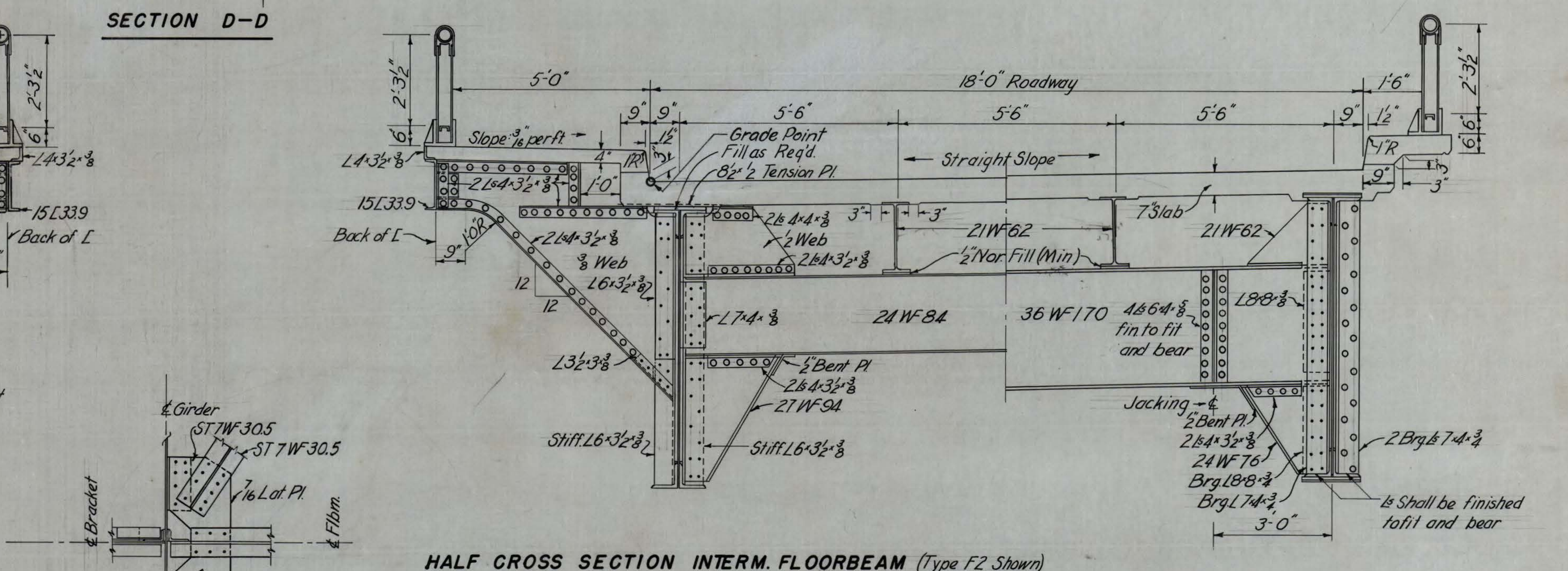
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEETS	TOTAL
1	F283 (9)	1953		FAYETTE & KANAWHA	12	27



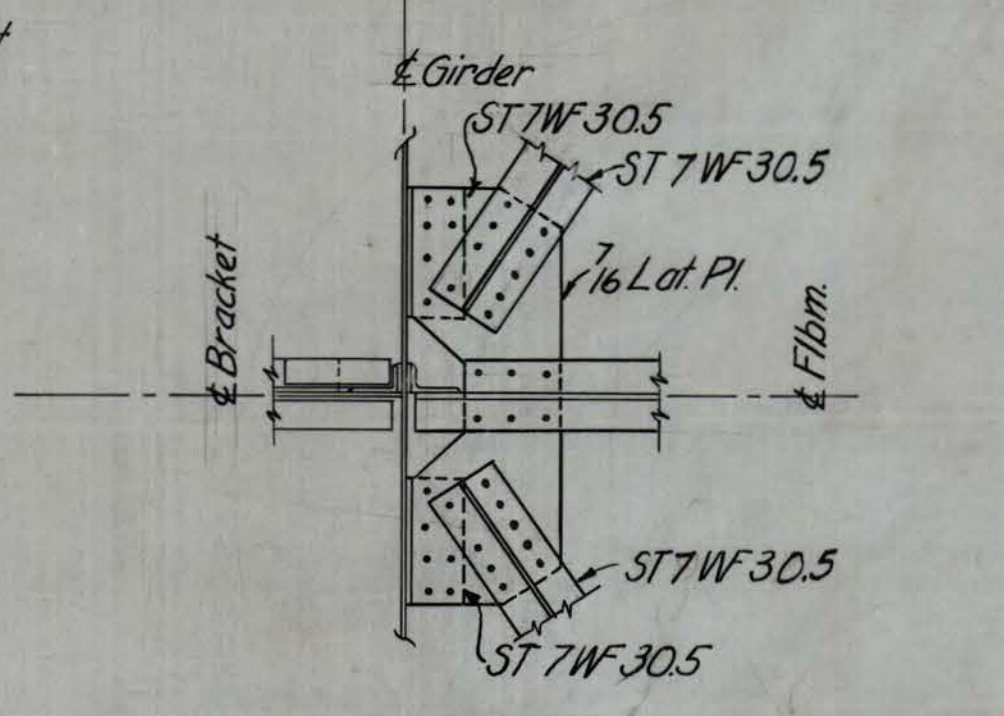
CROSS SECTION-END FLOORBEAM AT PIER VI



HALF CROSS SECTION-END FLOORBEAM (F15 Shown)



HALF CROSS SECTION INTERM. FLOORBEAM (Type F2 Shown)

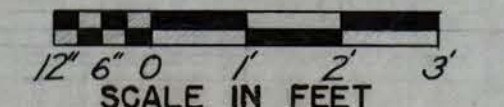


TYPICAL LATERAL CONNECTION  
For South Approach Ramps

**NOTE:**  
Slab and Railing not included in this contract.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W.VA.

GIRDER CROSS SECTIONS  
SOUTH APPROACH



MODJESKI & MASTERS, ENGINEERS

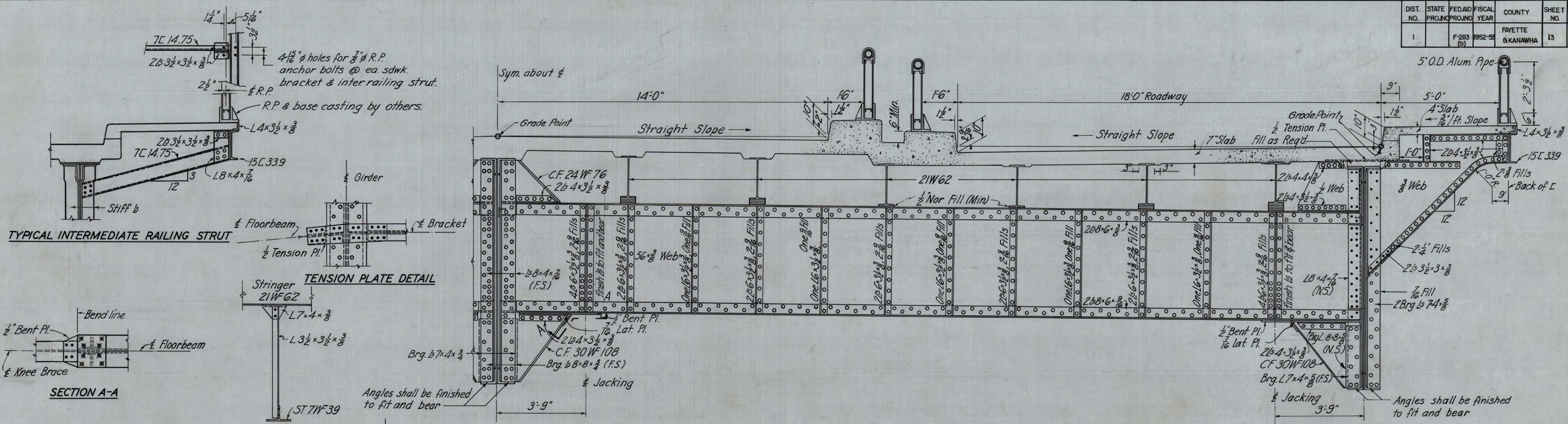
DWG. #12

CONTRACT NO. 1

#1899



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F-283 (S)	1952-53	FAYETTE & KANAWHA	13	27





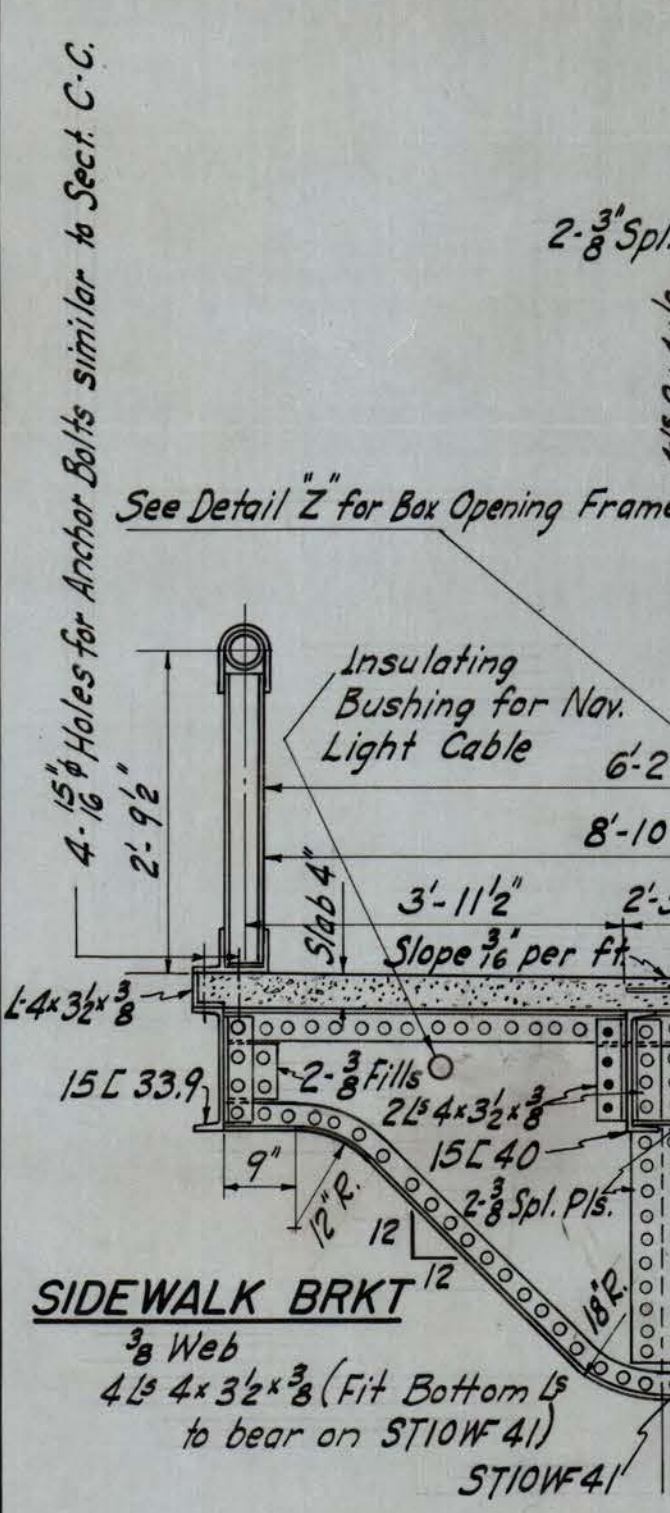
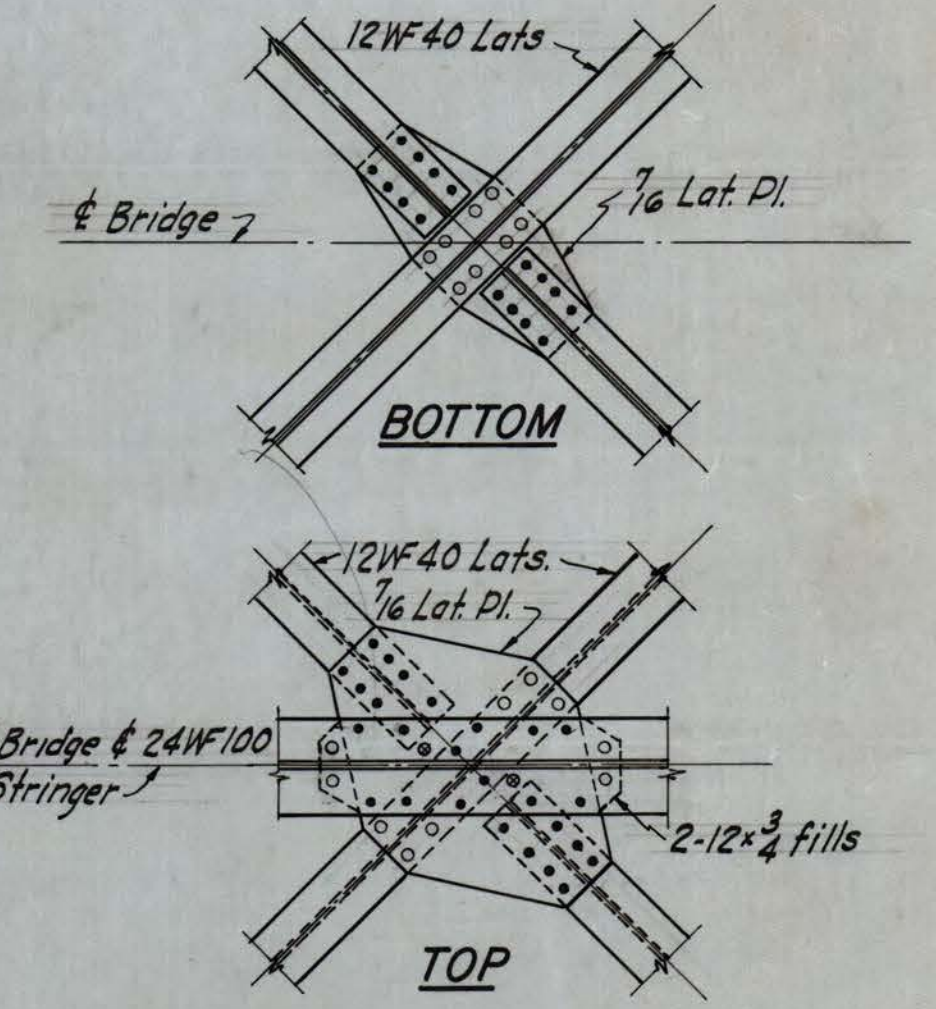
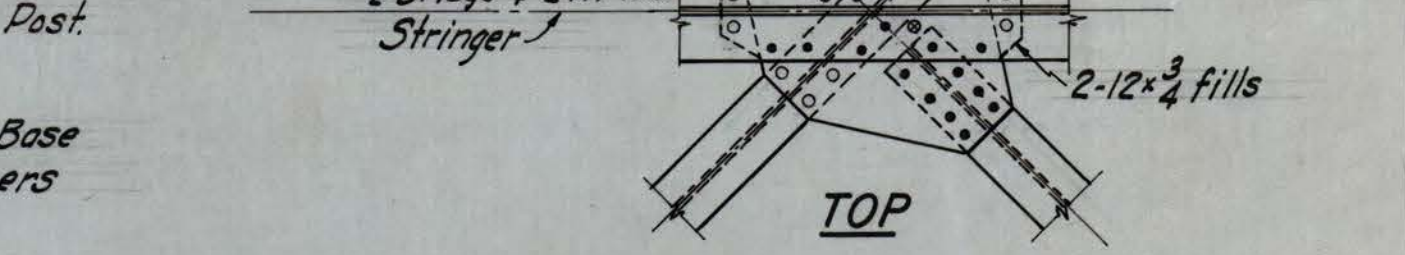
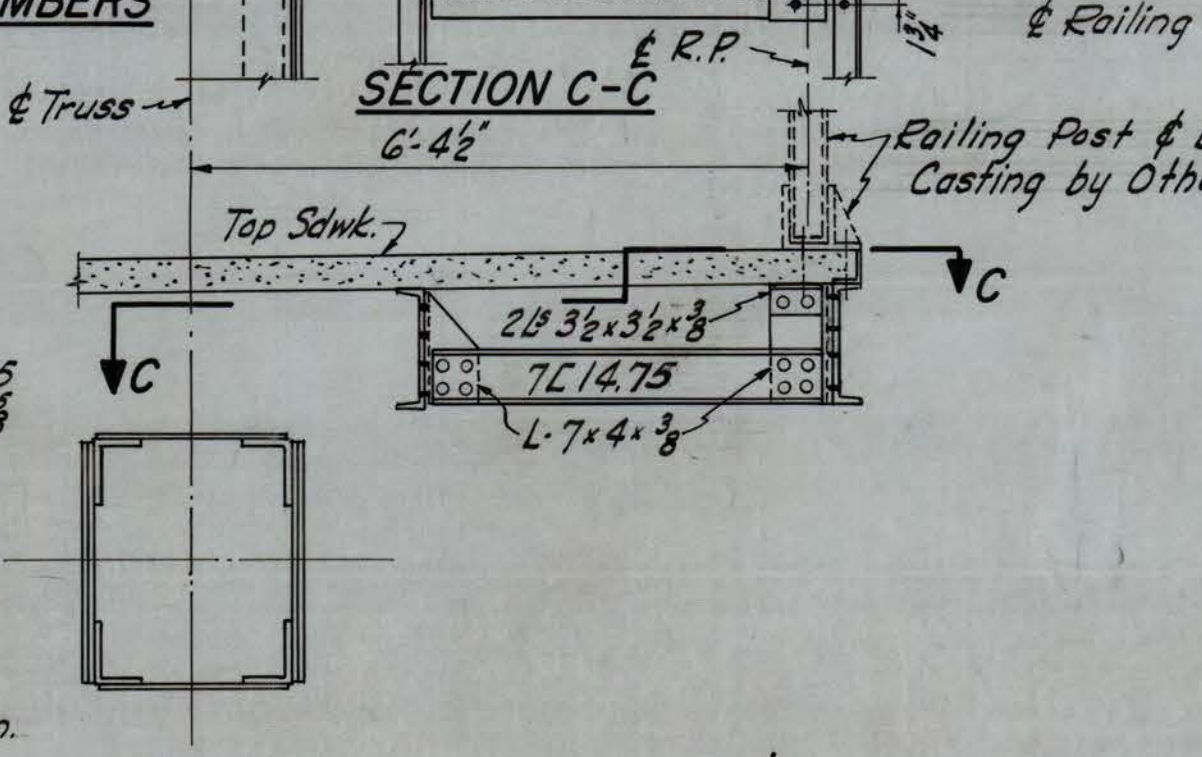
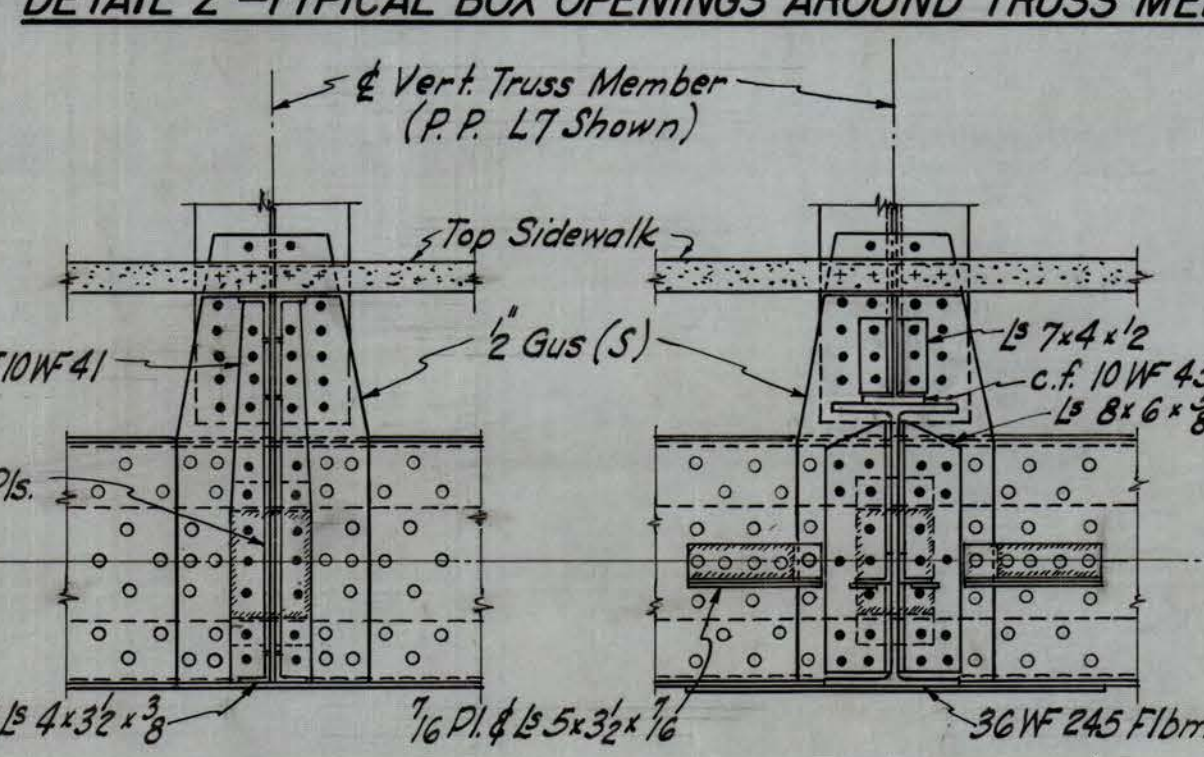
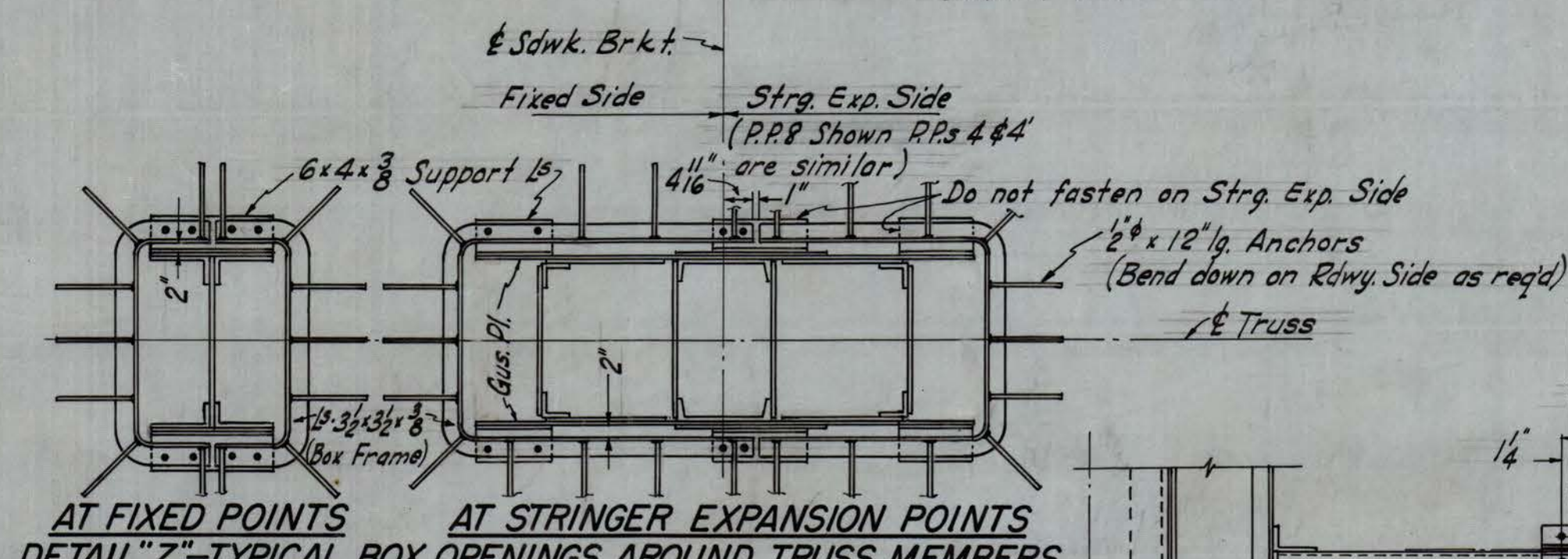
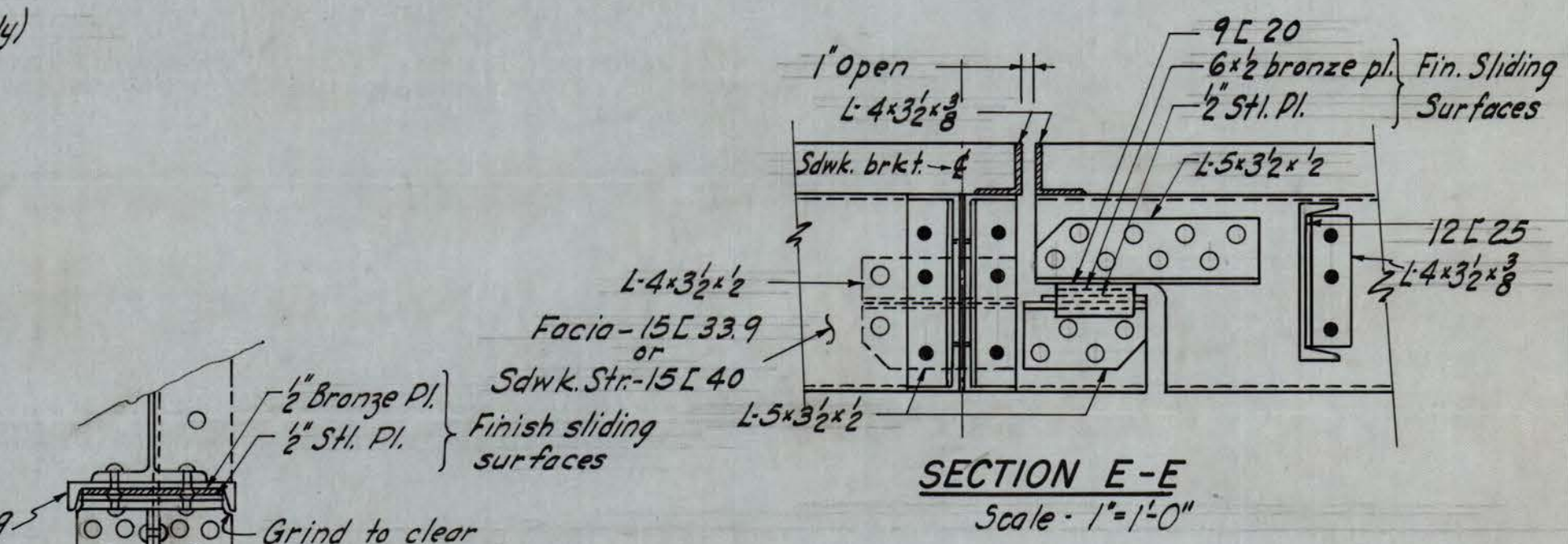
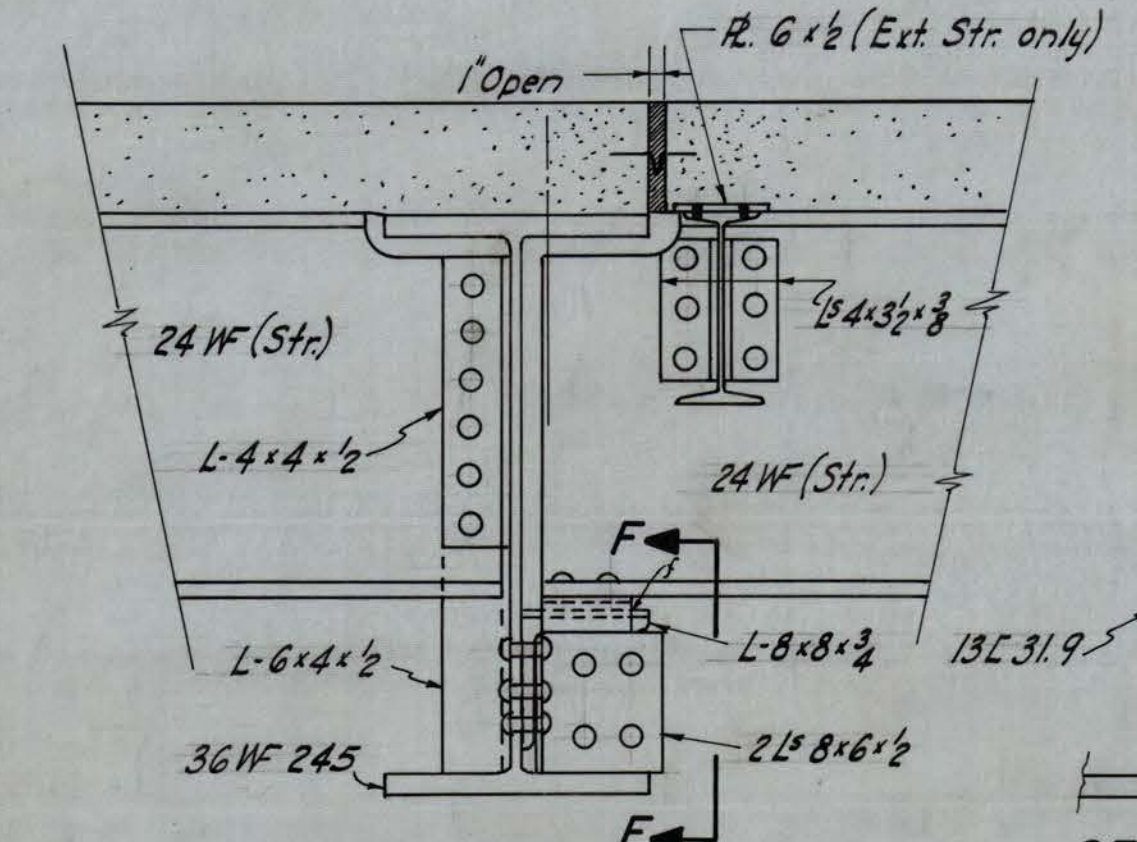
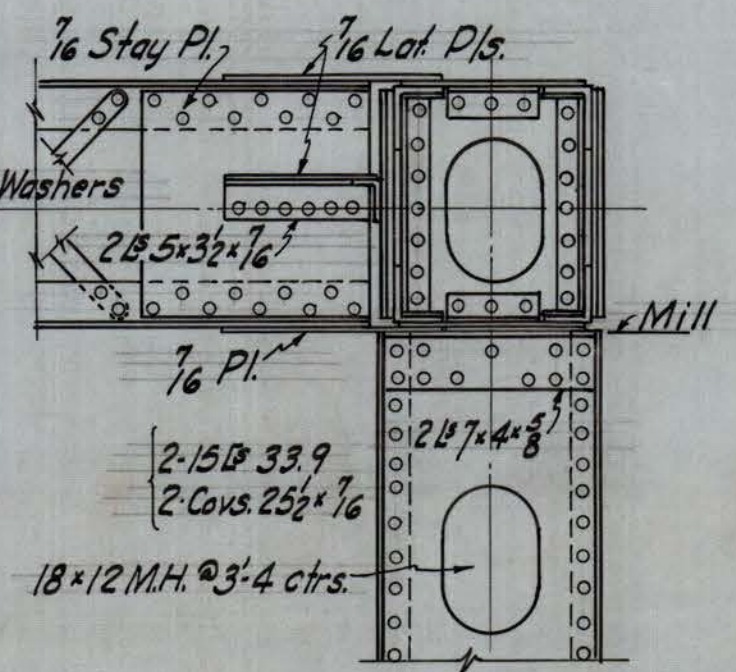
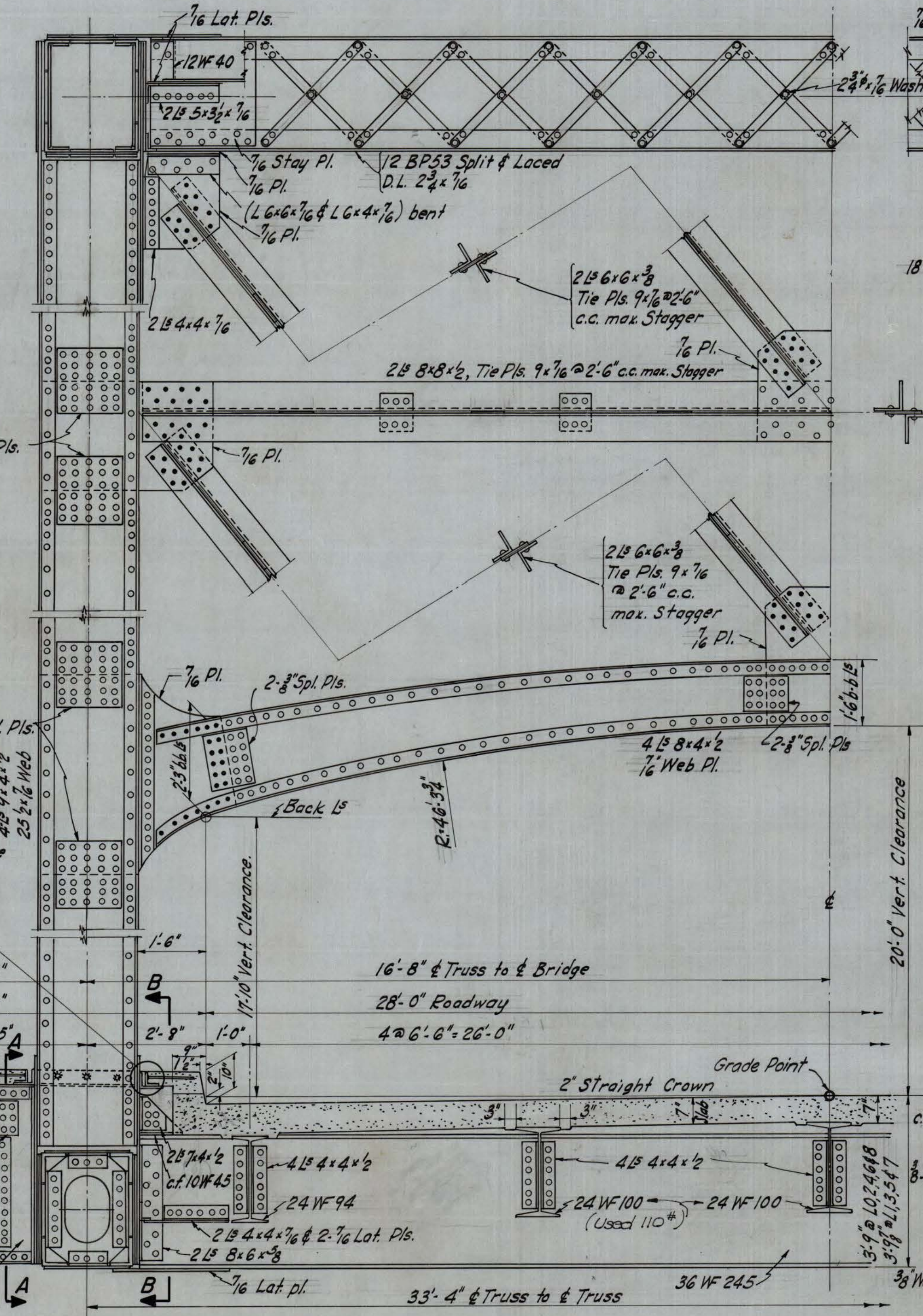
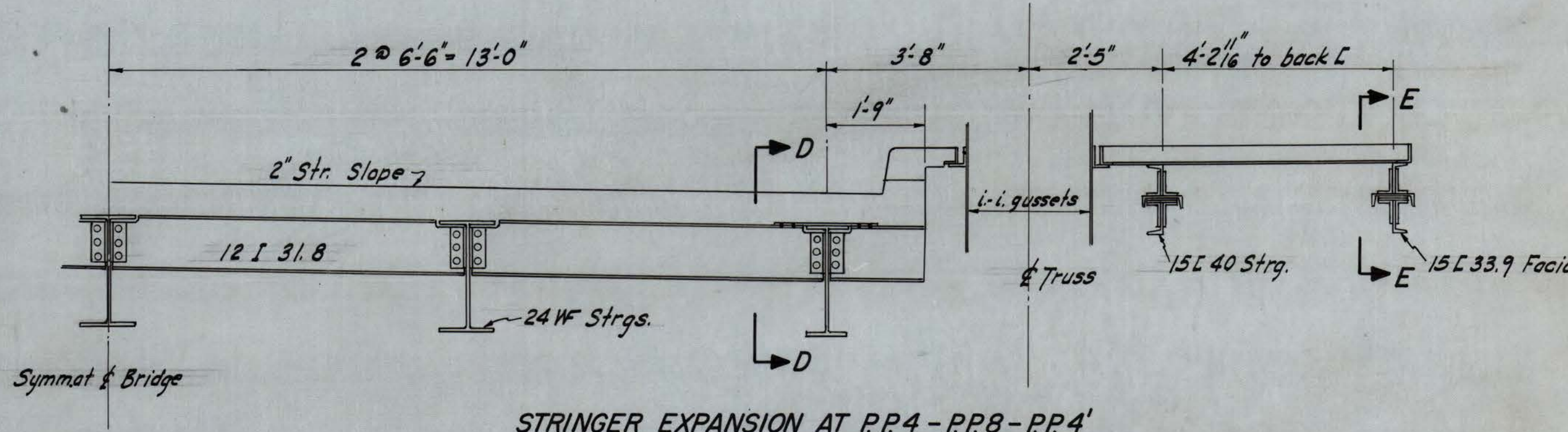
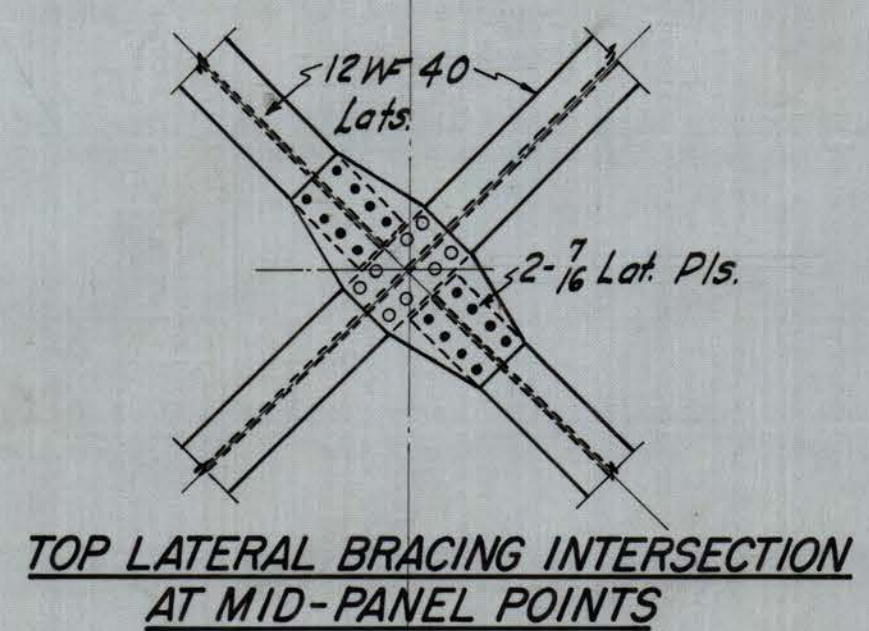








DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEETS TOTAL NO.	TOTAL SHEETS
1		F283	1953	FAYETTE & KANAWHA	16	27



Note: Slab and Railing not included in this Contract.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY W. VA.

MAIN BRIDGE CROSS SECTIONS

SCALE IN FEET  
MODJESKI & MASTERS, ENGINEERS  
DWG. #16

CONTRACT NO. 1 #1899



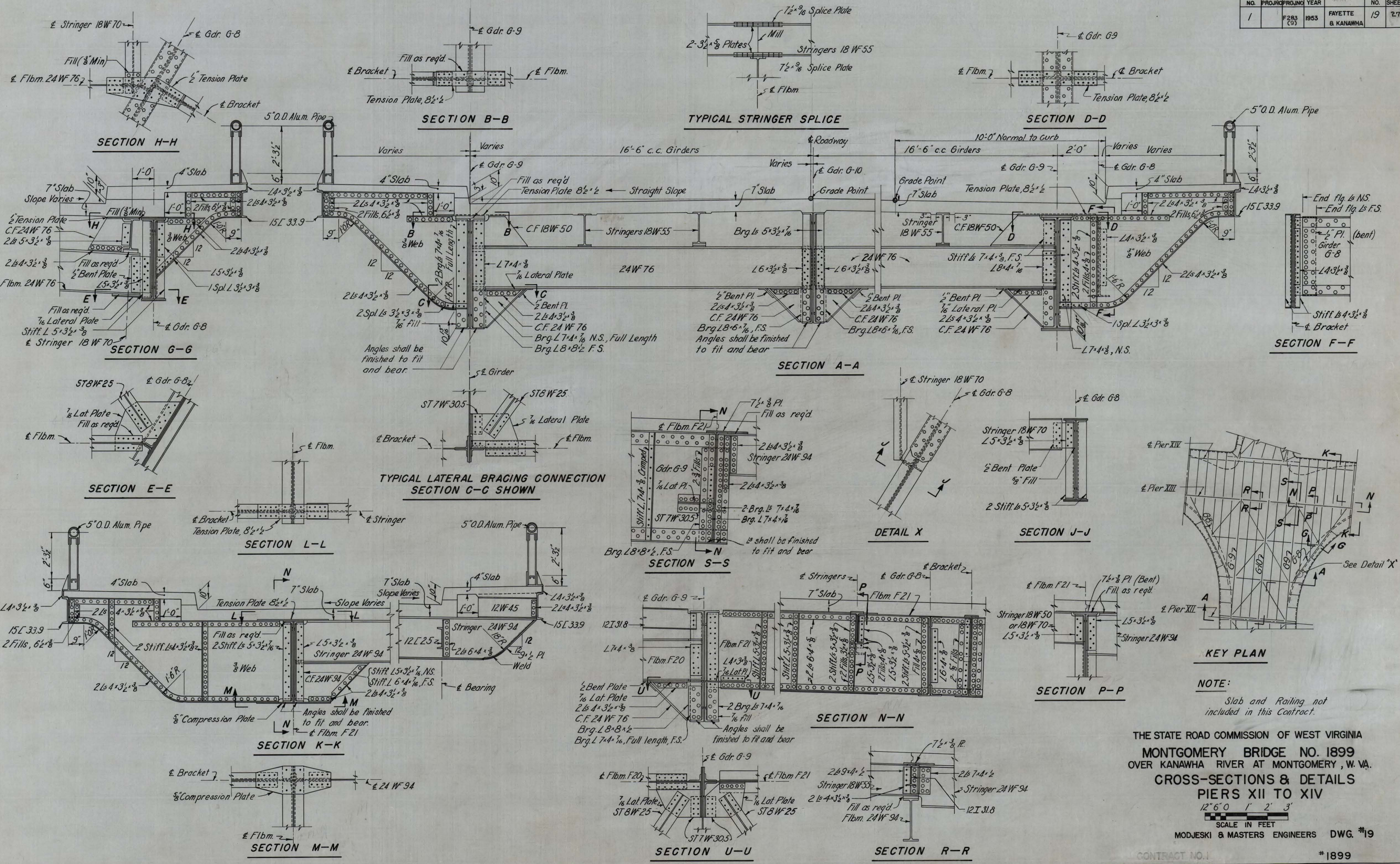






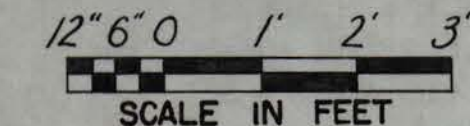


DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (3)	1953	FAYETTE & KANAWHA	19	27



**NOTE:**  
Slab and Railing not included in this Contract.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**CROSS-SECTIONS & DETAILS**  
PIERS XII TO XIV

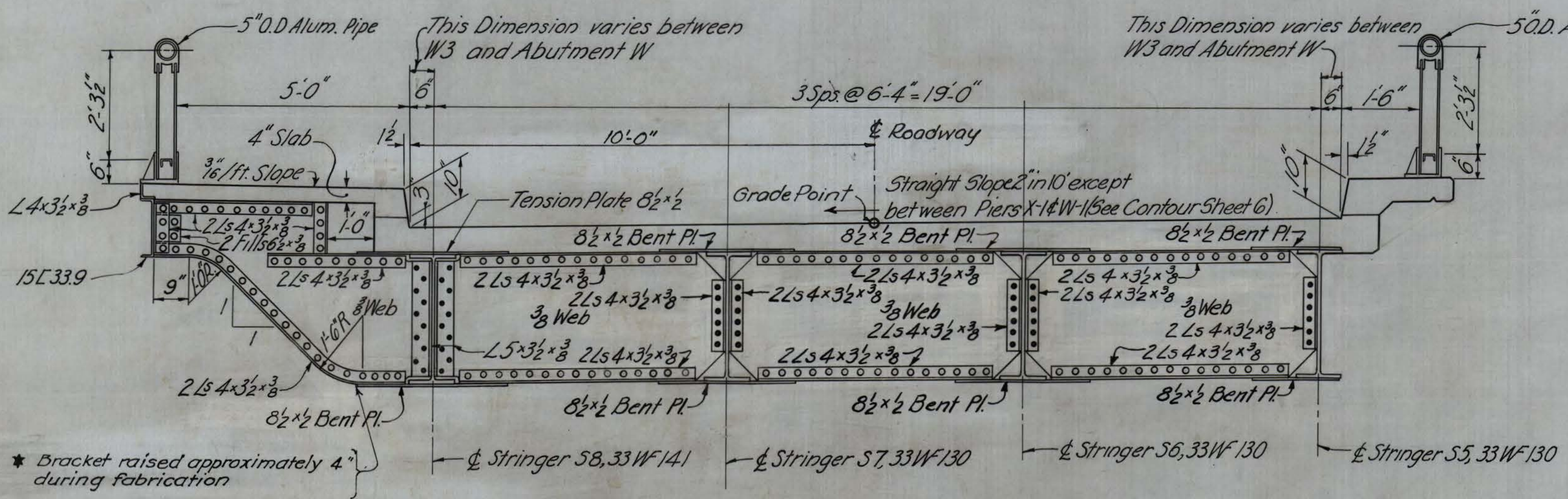


MODJESKI & MASTERS ENGINEERS DWG. #19

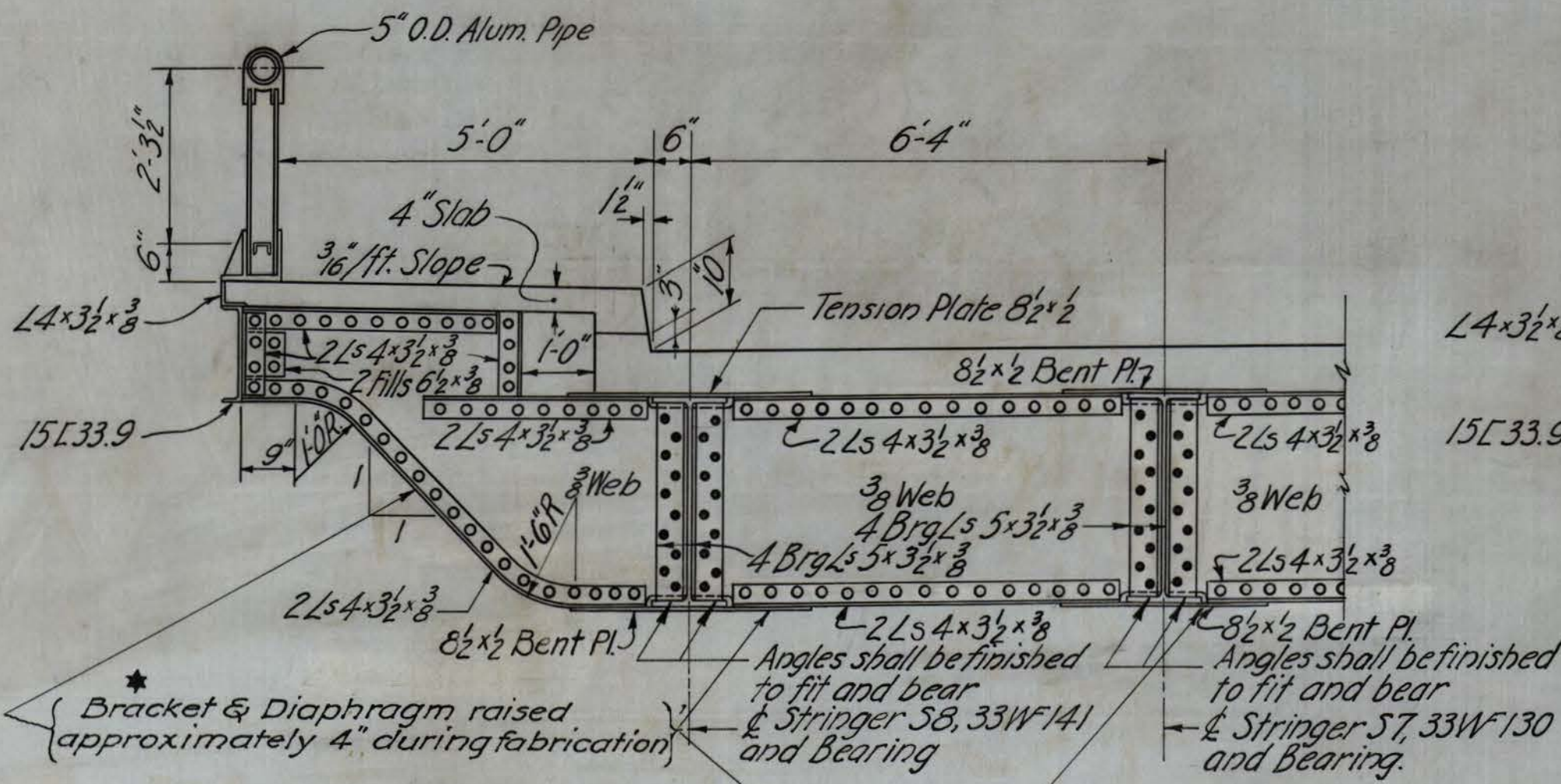
CONTRACT NO. 1899



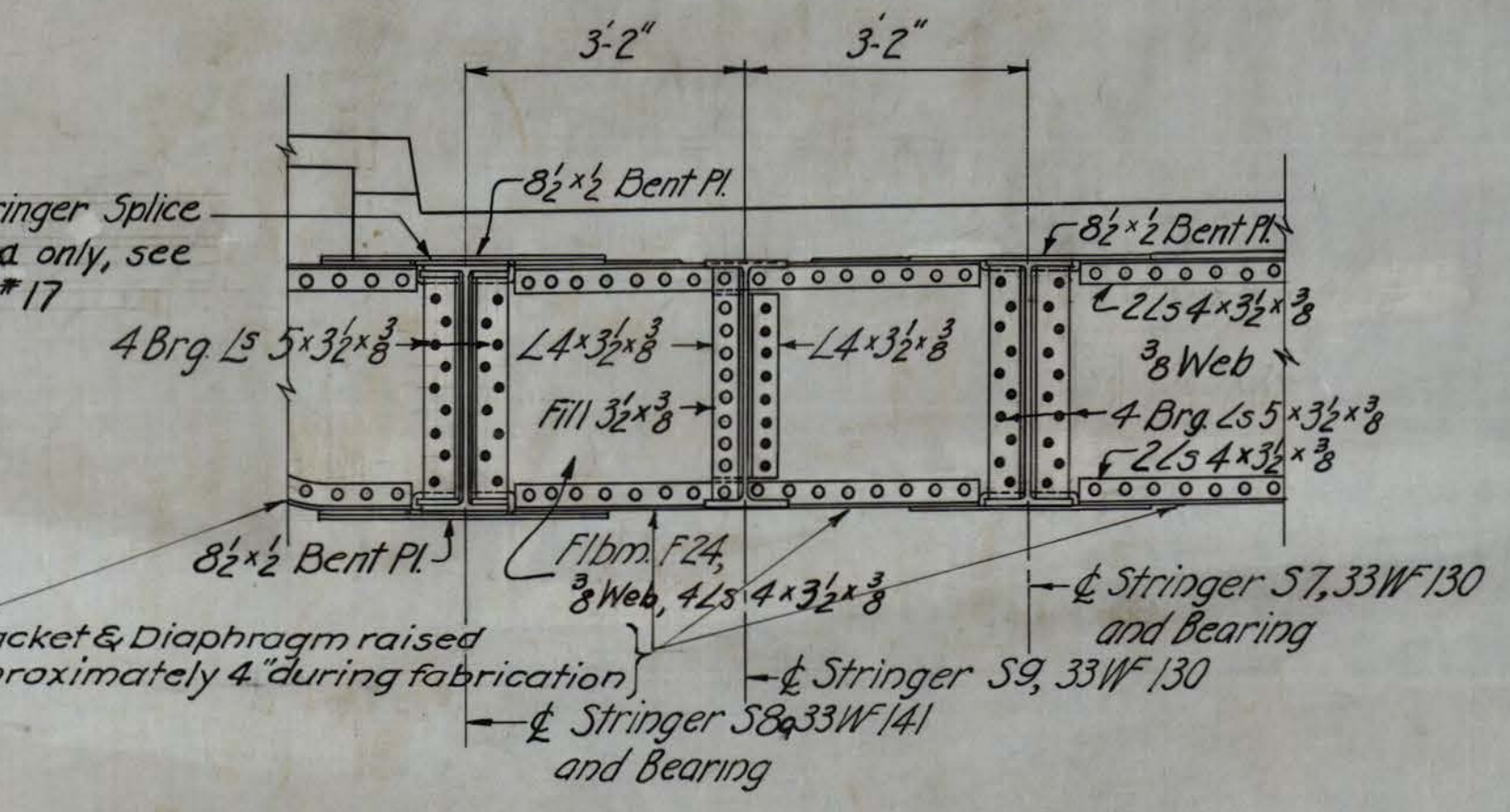
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F 283 (S)	1952-53	FAYETTE KANAWHA	20	27



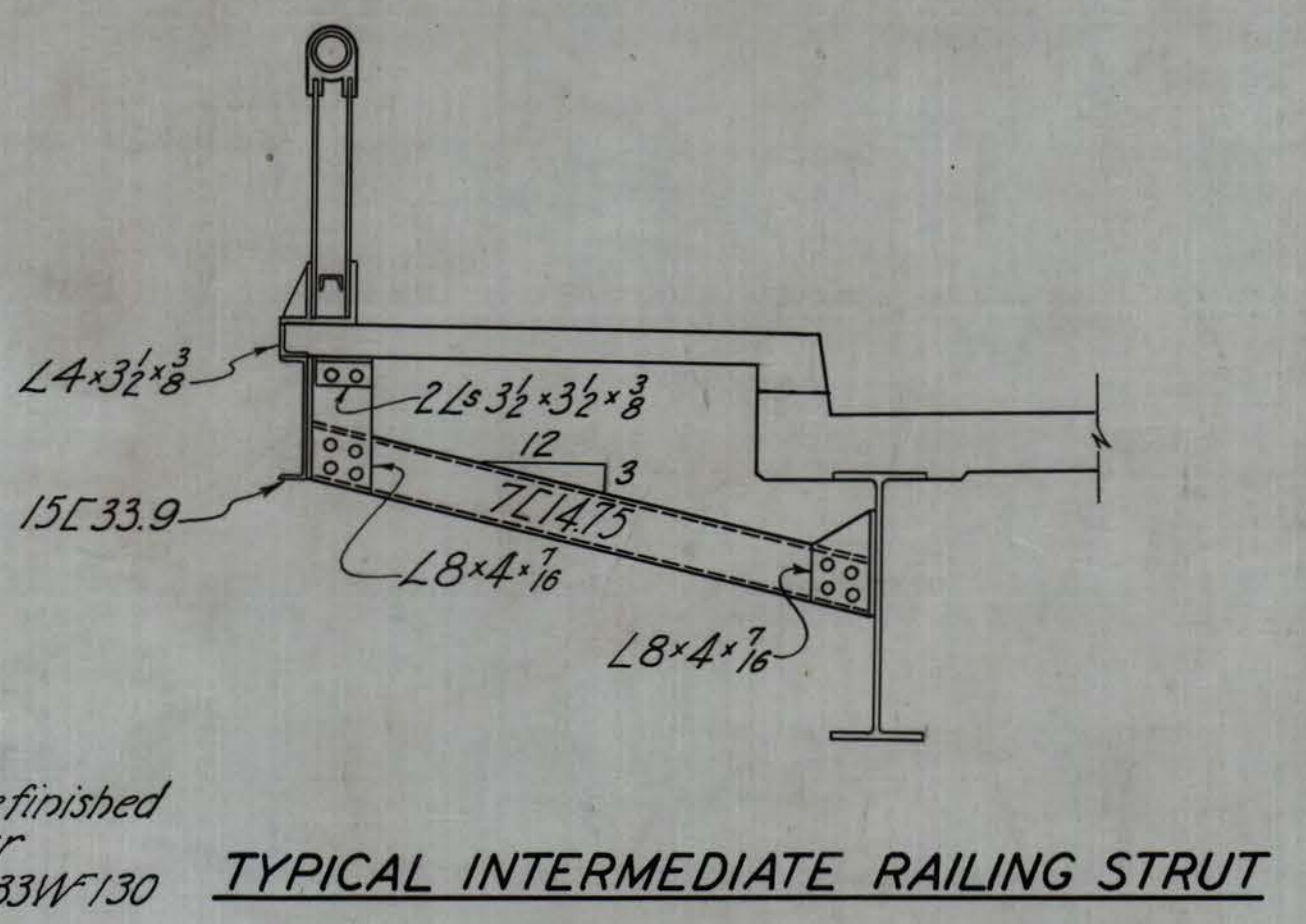
**TYPICAL CROSS SECTION NORTH APPROACH RAMP  
MIDWAY BETWEEN PIERS (RAMP W SHOWN)**



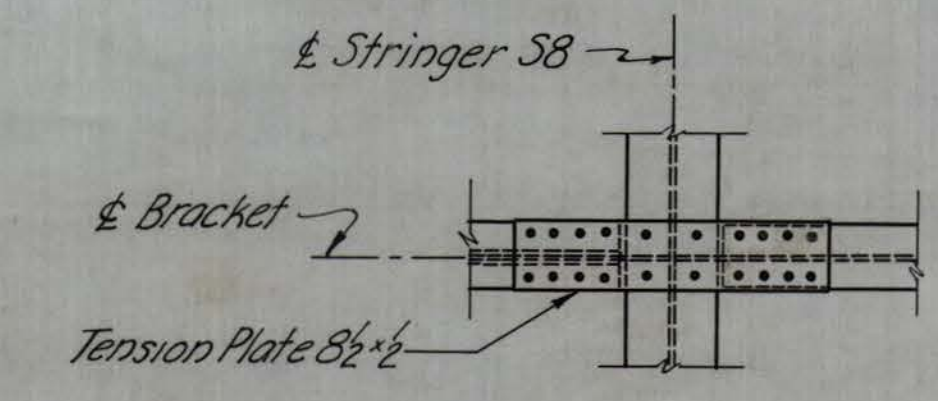
**TYPICAL CROSS SECTION NORTH APPROACH RAMP  
AT PIERS (RAMP W SHOWN)**



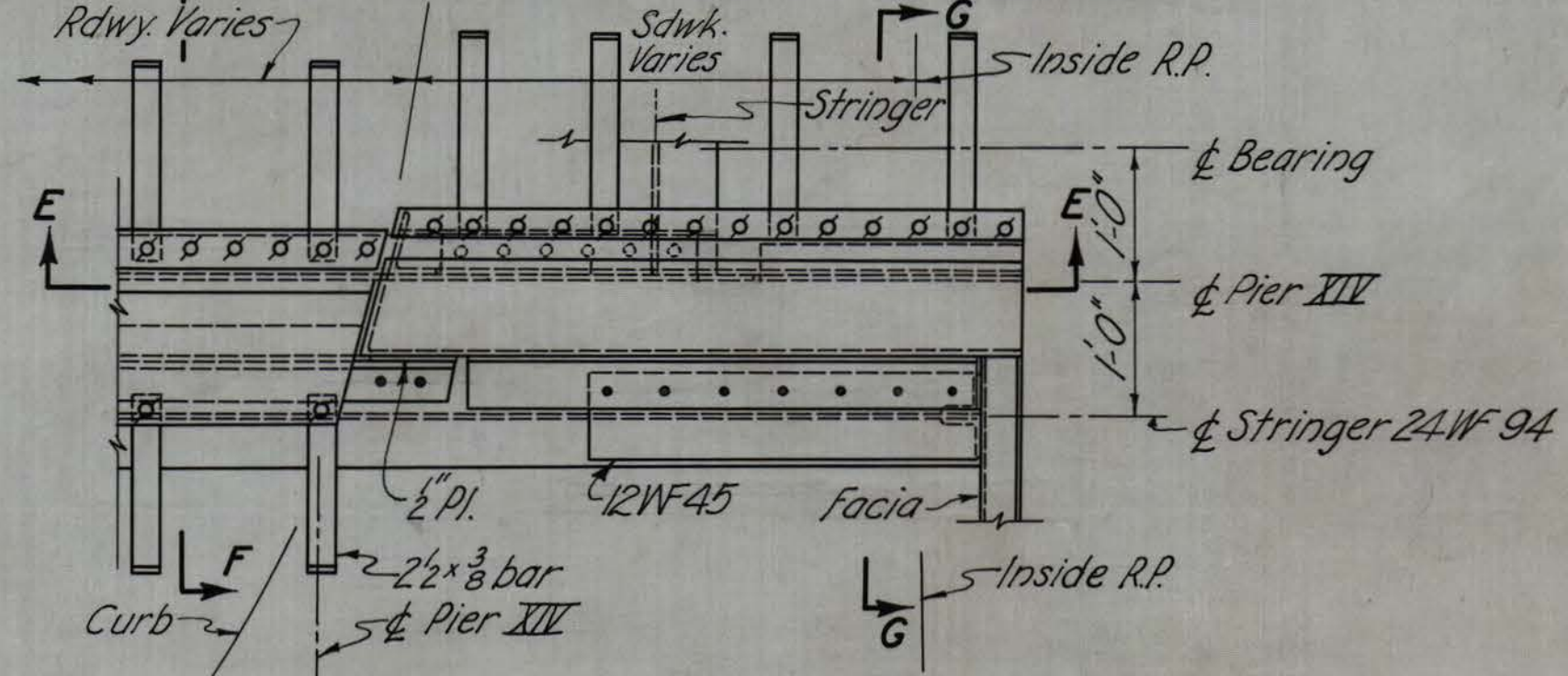
**CROSS SECTION AT PIERS W-1 & X-1**



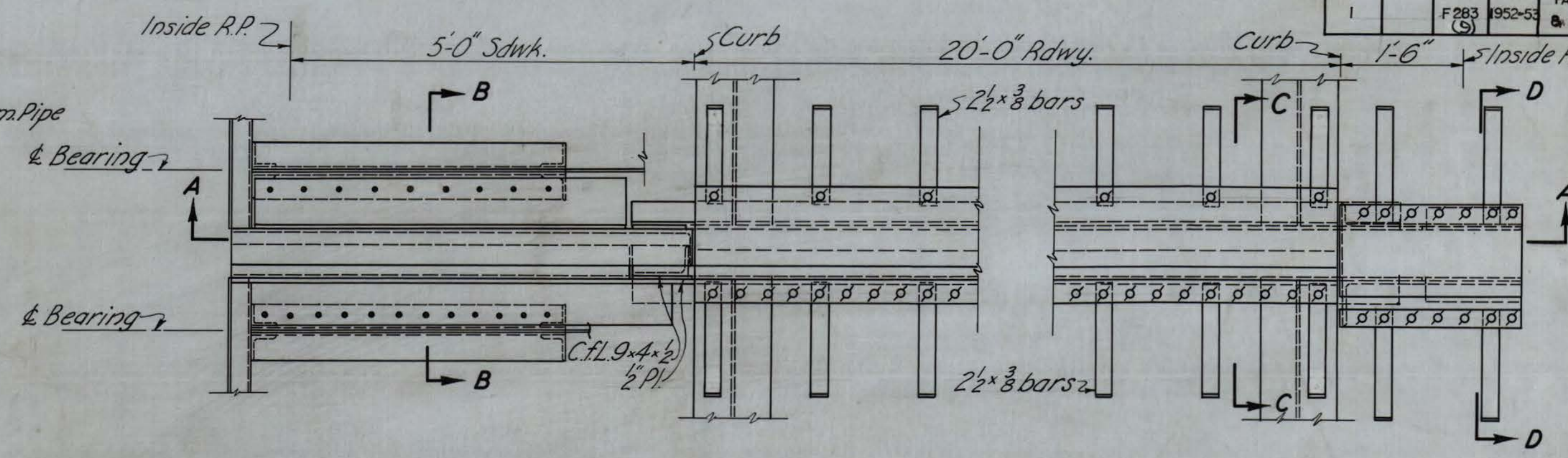
**TYPICAL INTERMEDIATE RAILING STRUT**



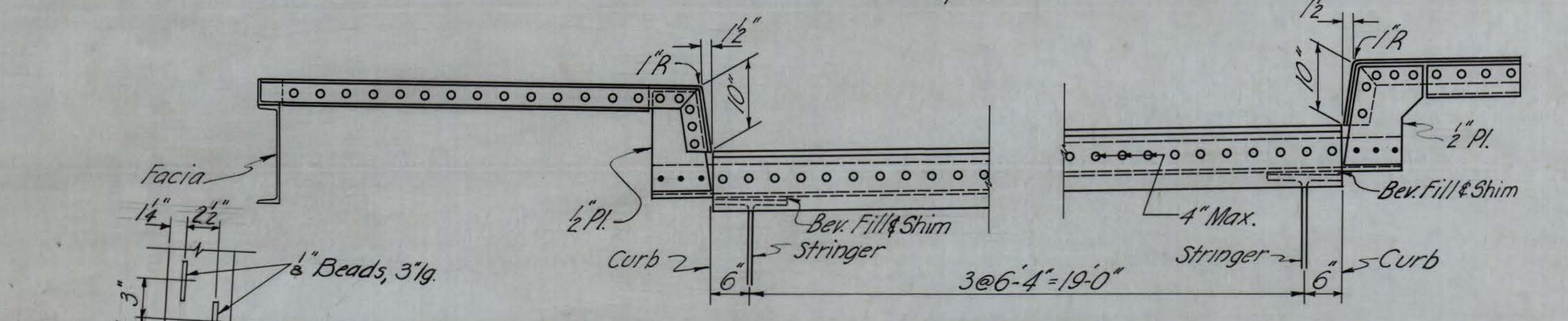
**TYPICAL TENSION PLATE DETAIL**



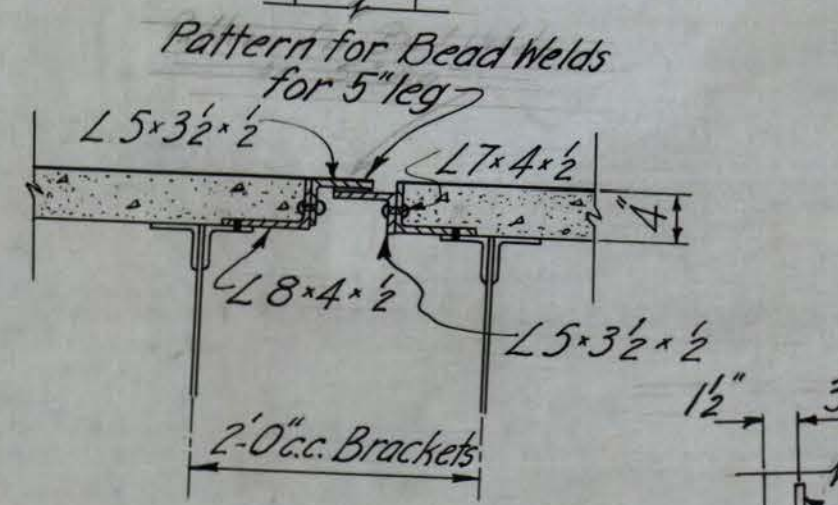
**EXPANSION DAMS FOR RAMP W&X PIER XIV**  
Scale: 3/4"=1'-0"



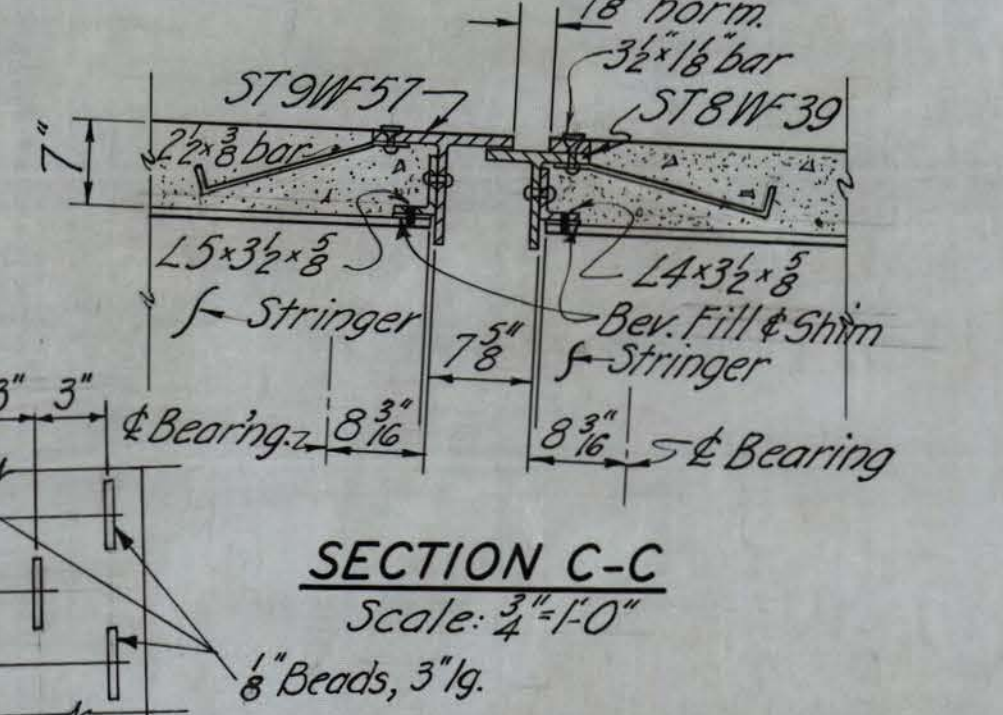
**TYPICAL EXPANSION DAM NORTH APPROACH RAMP**  
Scale: 3/4"=1'-0"



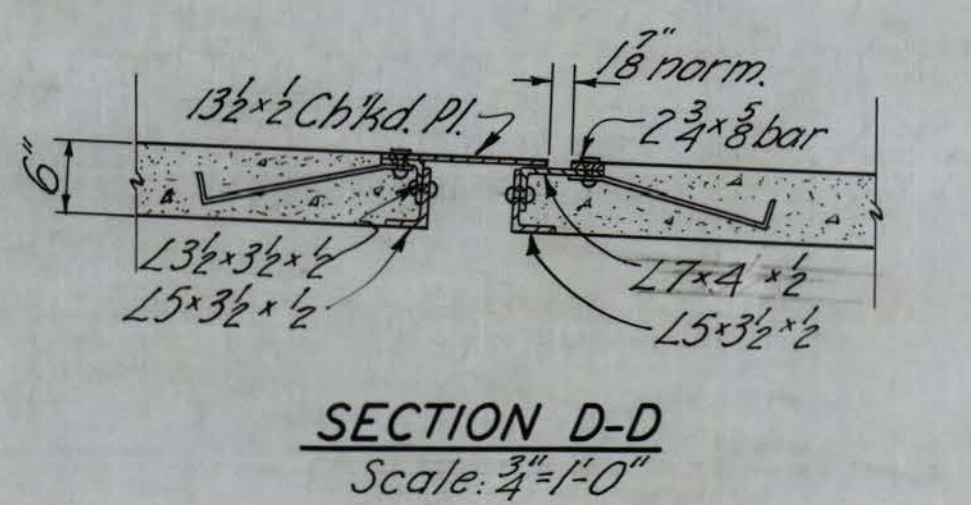
**SECTION A-A**  
Scale: 3/4"=1'-0"



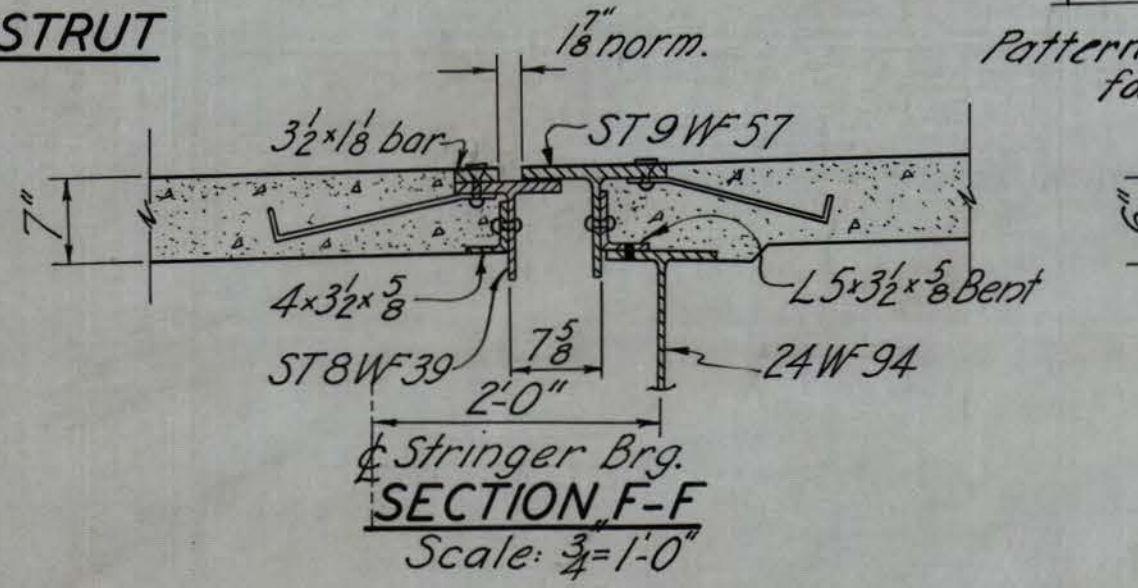
**SECTION B-B**  
Scale: 3/4"=1'-0"



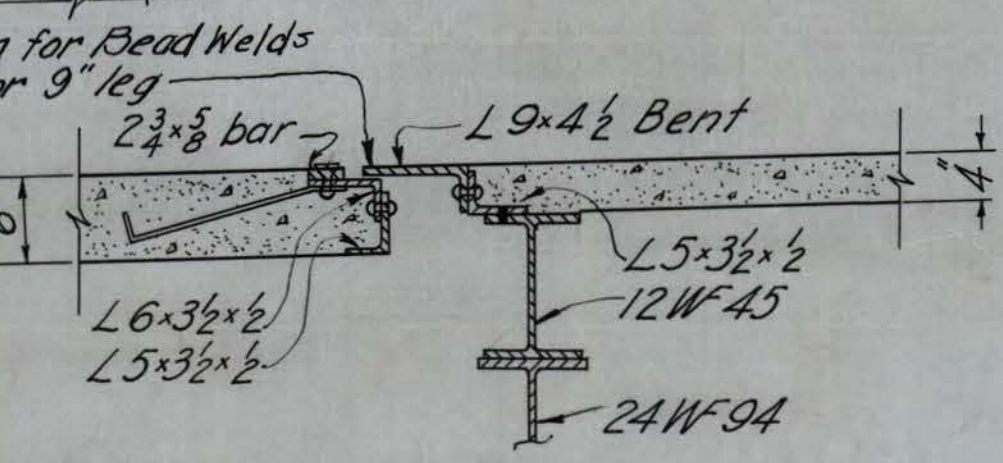
**SECTION C-C**  
Scale: 3/4"=1'-0"



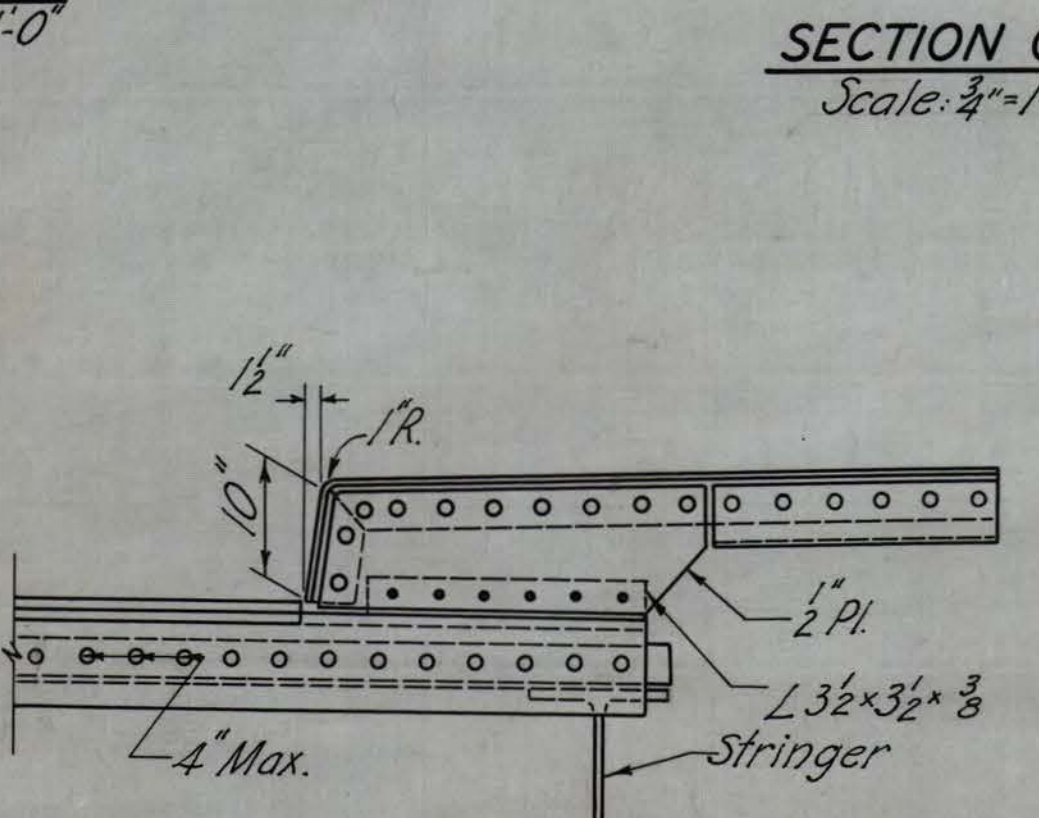
**SECTION D-D**  
Scale: 3/4"=1'-0"



**SECTION F-F**  
Scale: 3/4"=1'-0"



**SECTION G-G**  
Scale: 3/4"=1'-0"



**SECTION E-E**  
Scale: 3/4"=1'-0"

NOTE- Slabs and Railings not included in this Contract.  
Expansion Devices to be included in Item 90.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**CROSS SECTIONS AND DETAILS  
NORTH APPROACH RAMP**



SCALE IN FEET  
MODJESKI & MASTERS, ENGINEERS DWG.#20

★ Revised Apr. 12 1955

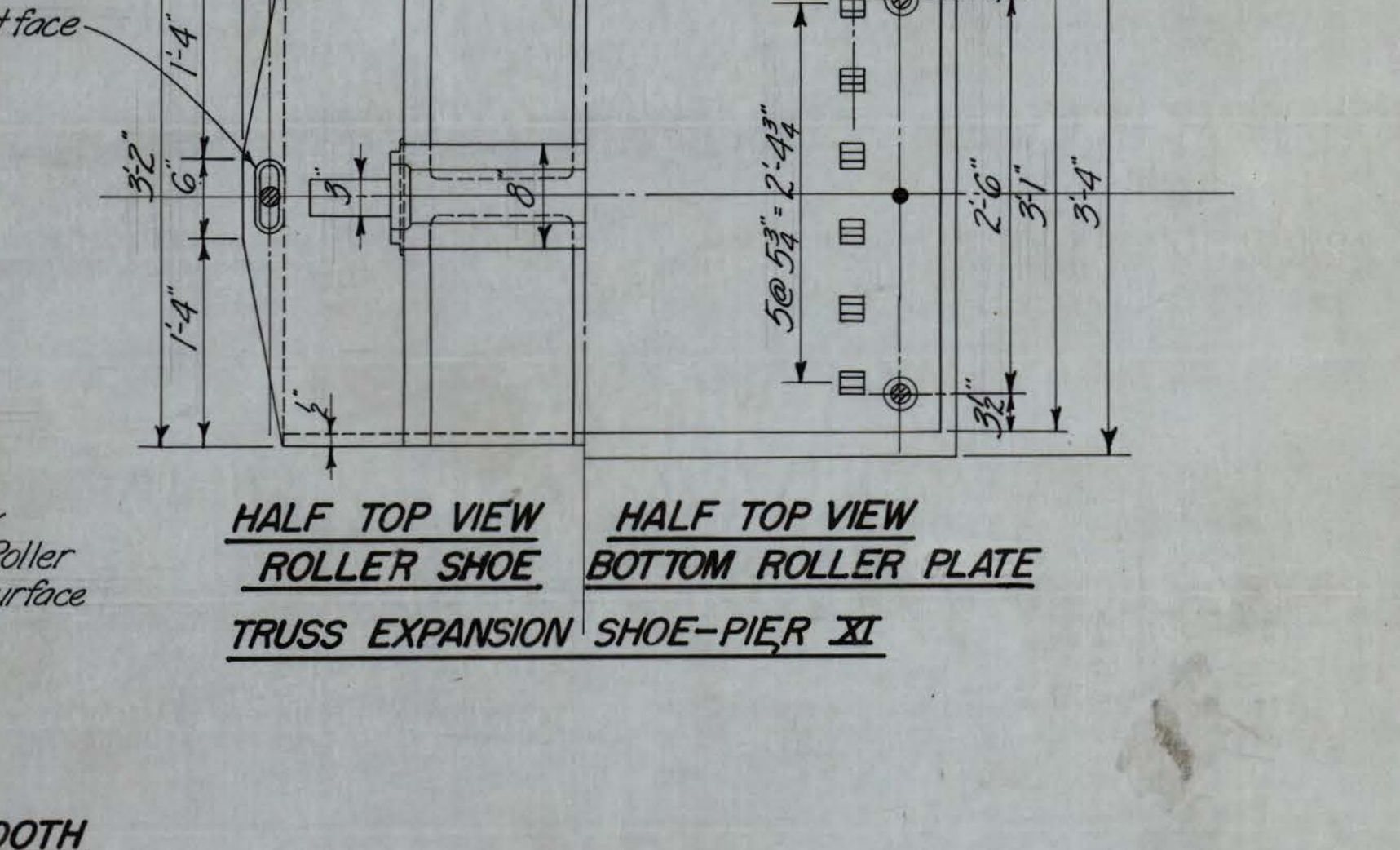
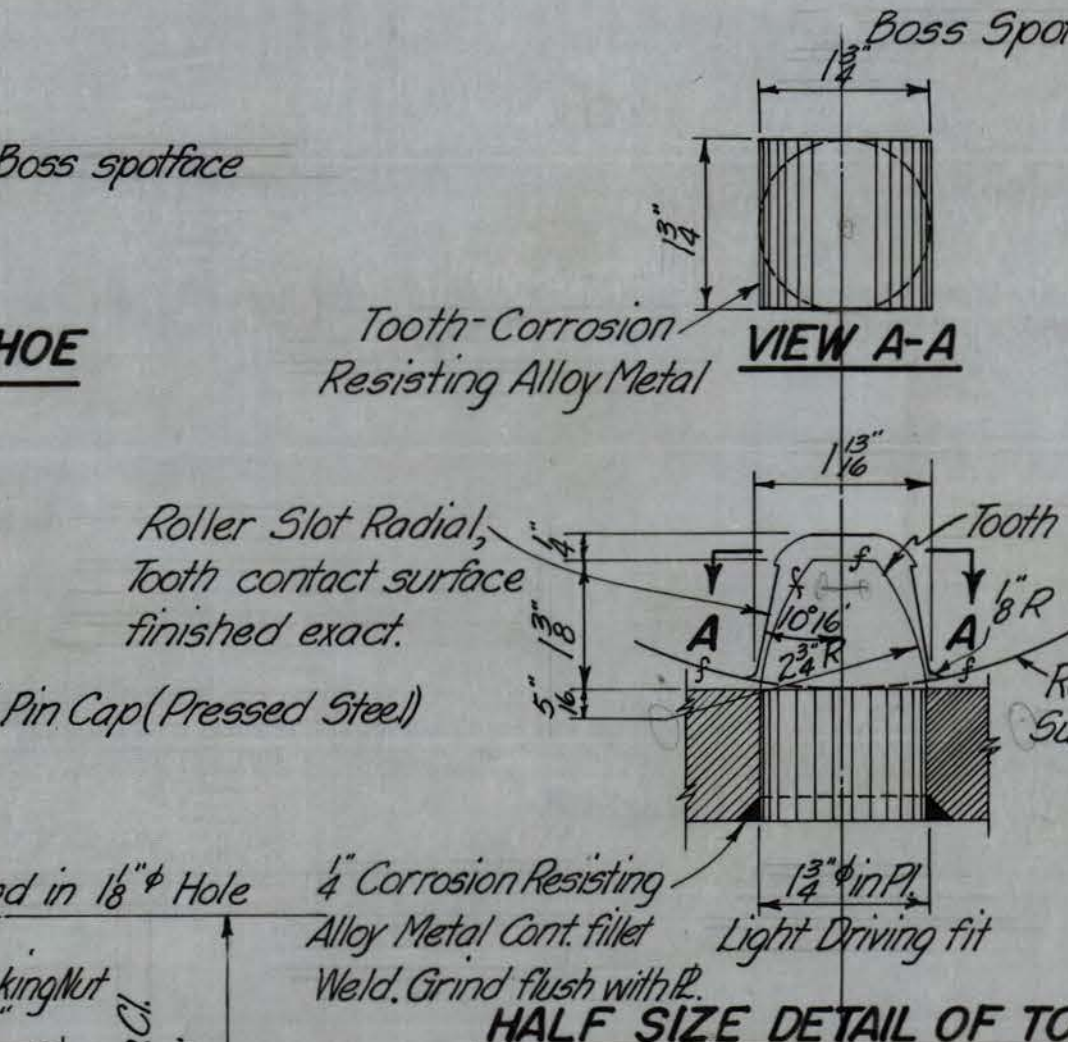
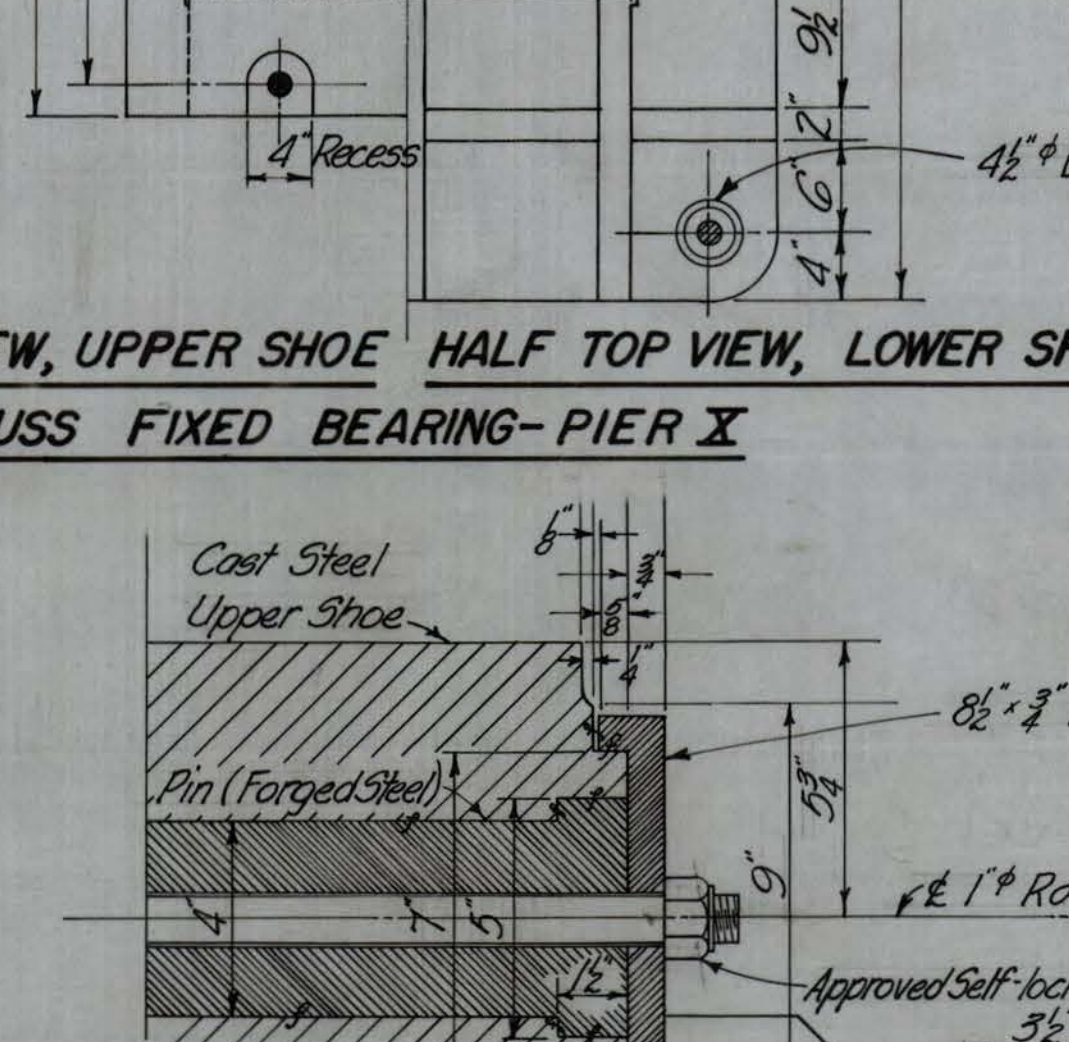
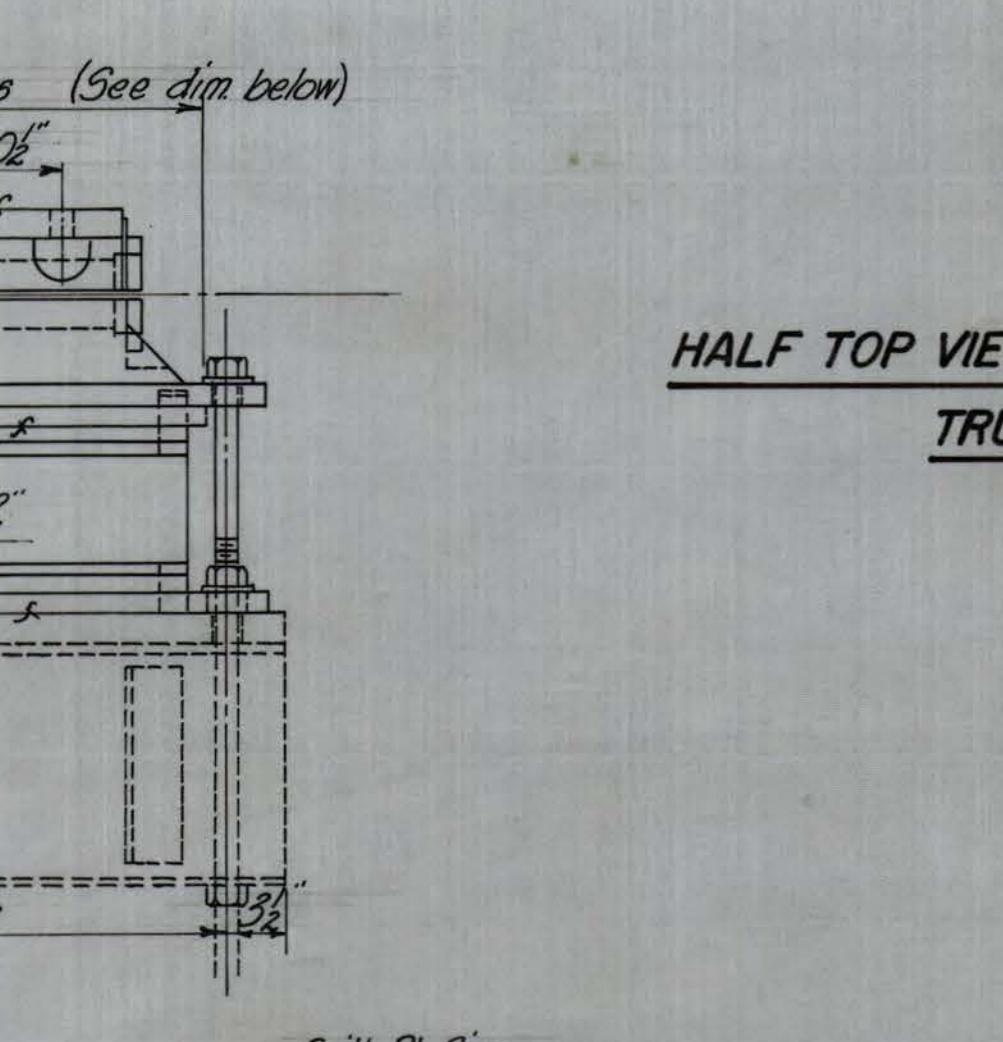
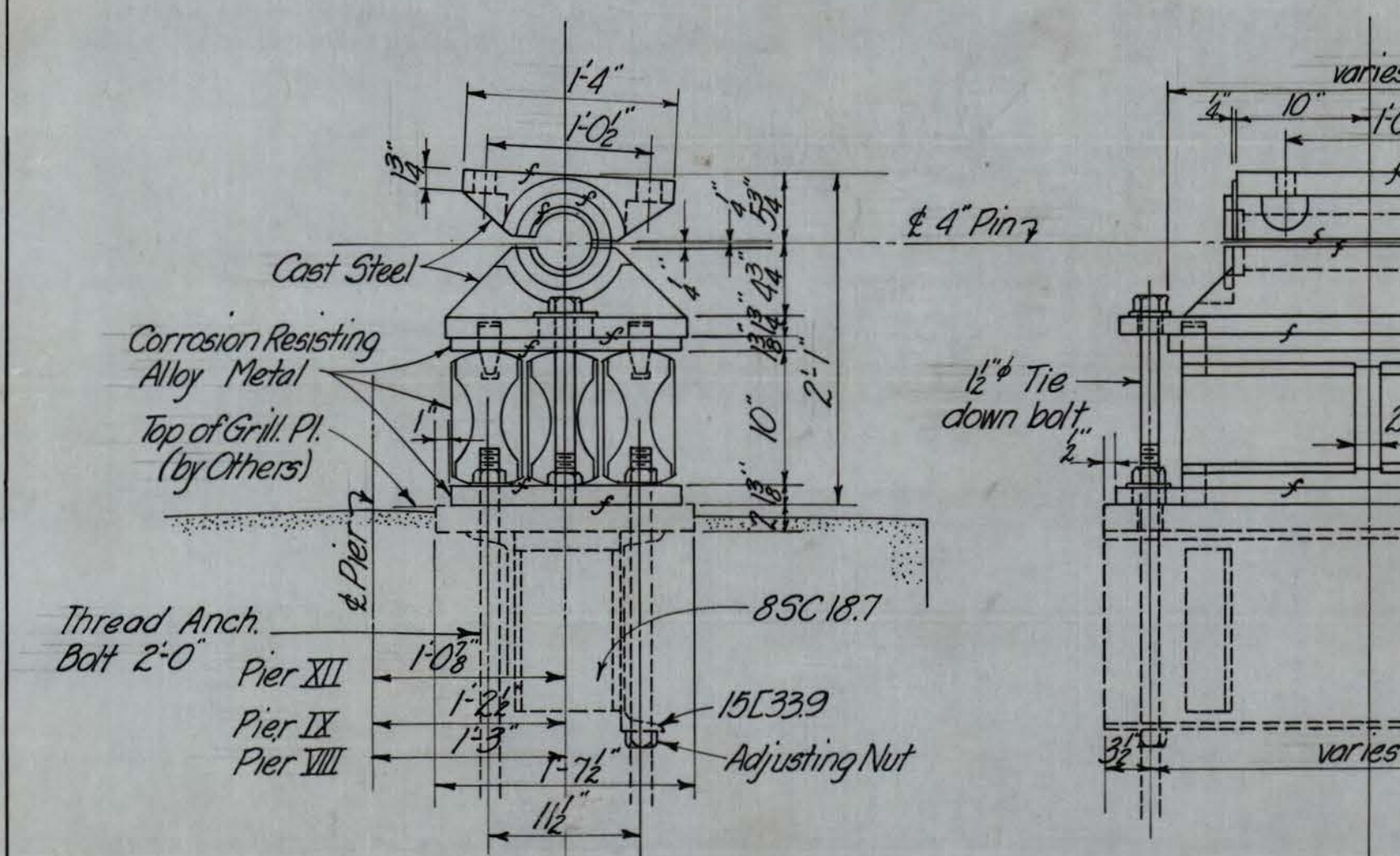
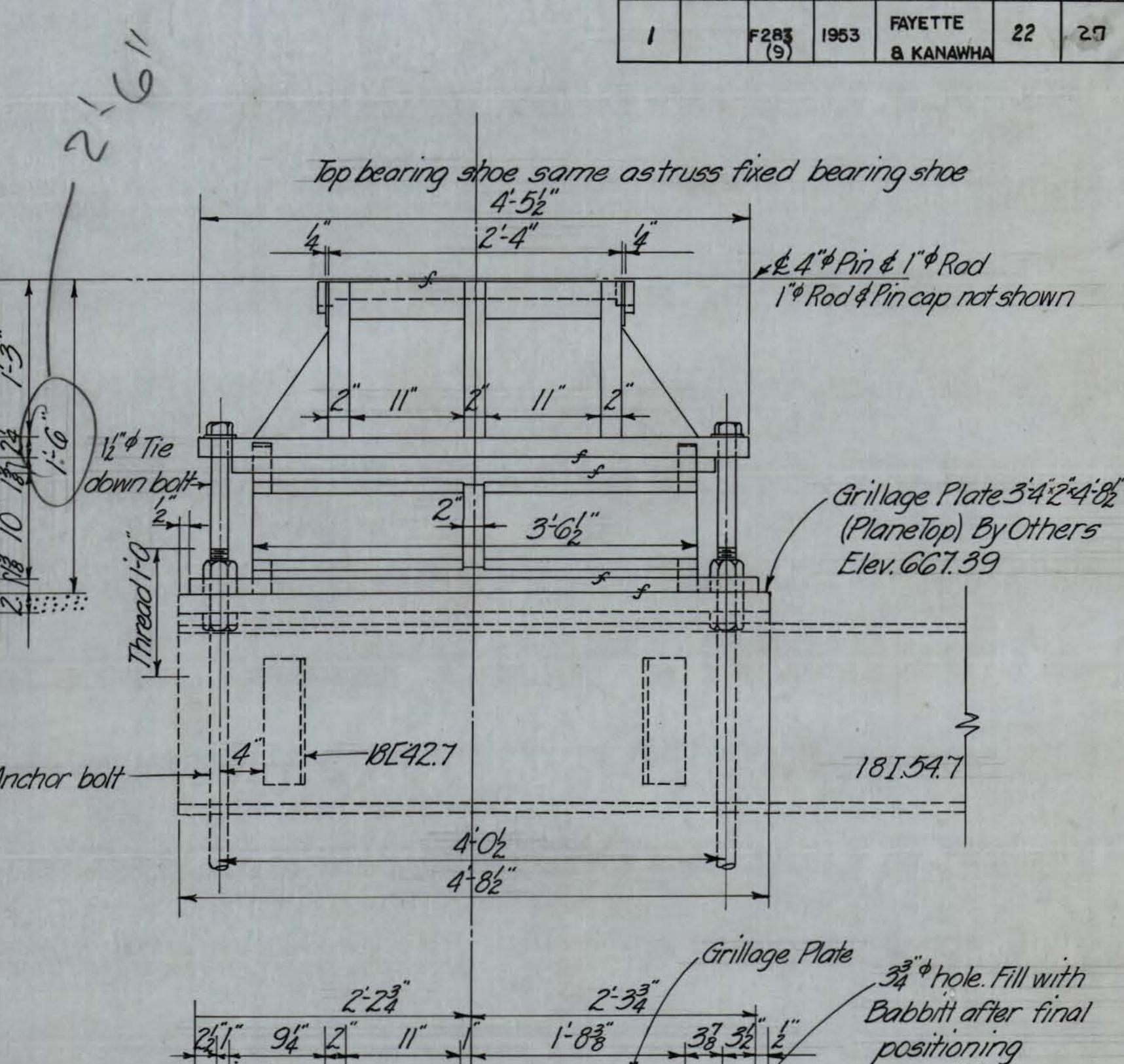
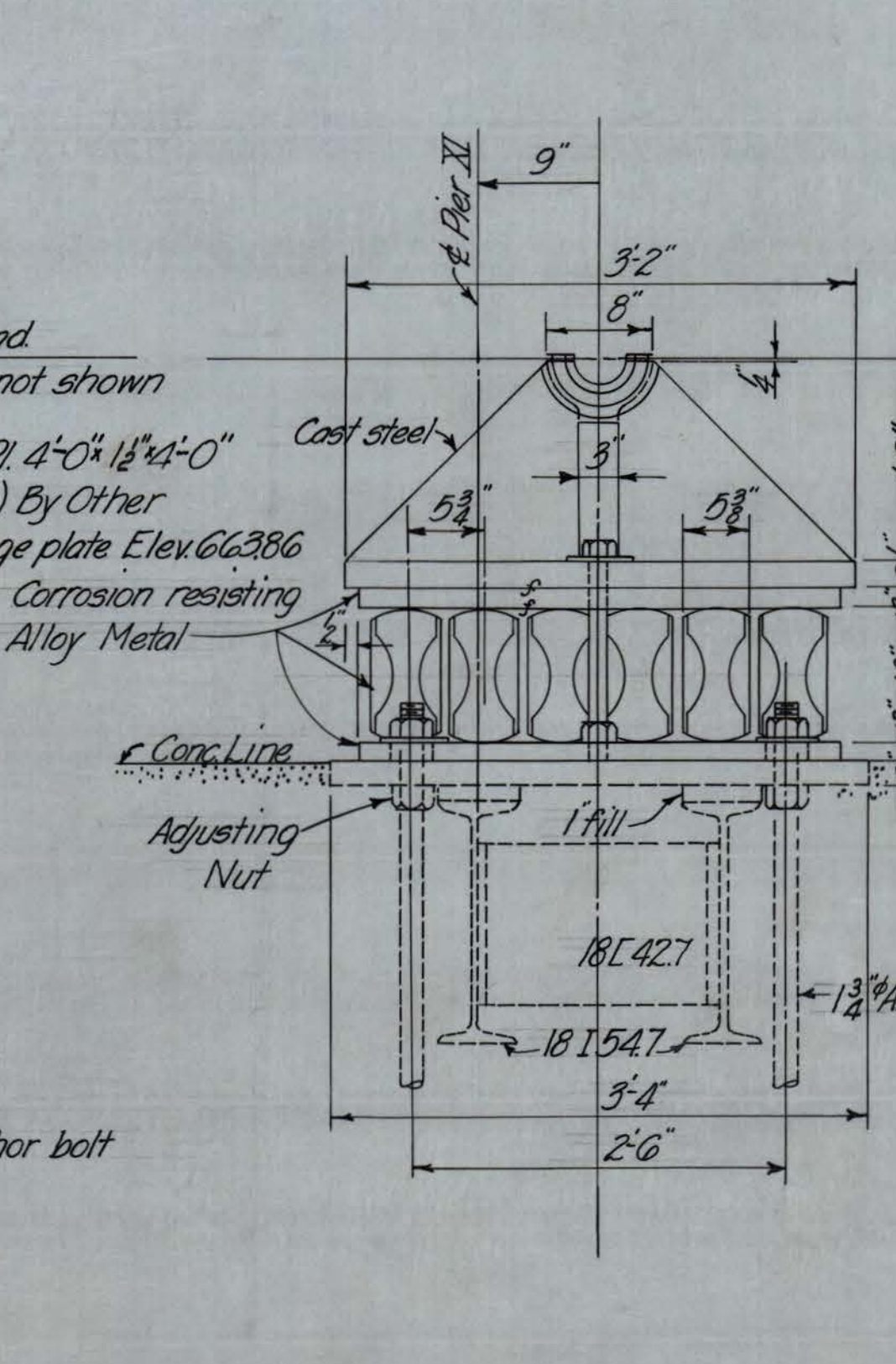
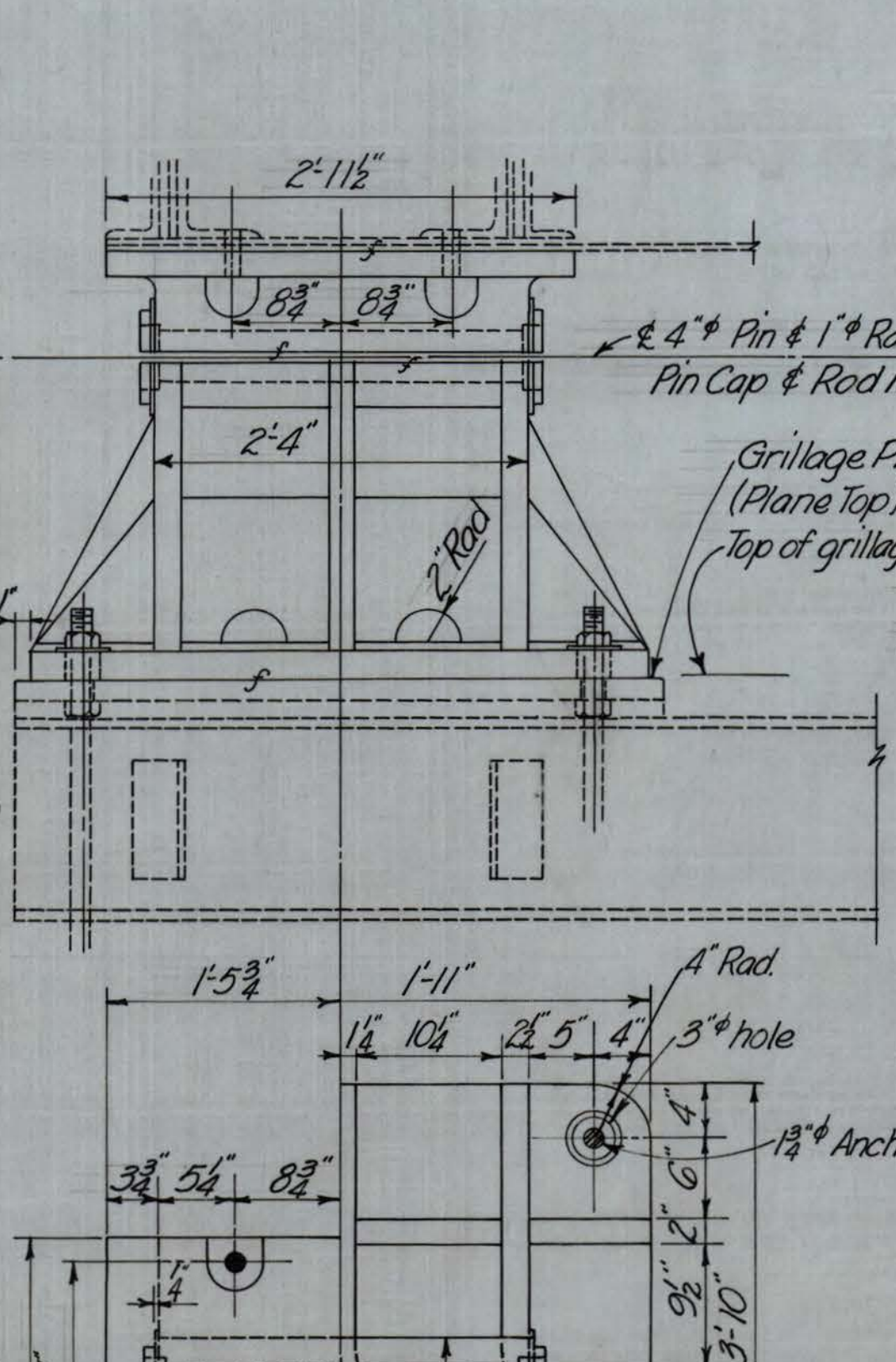
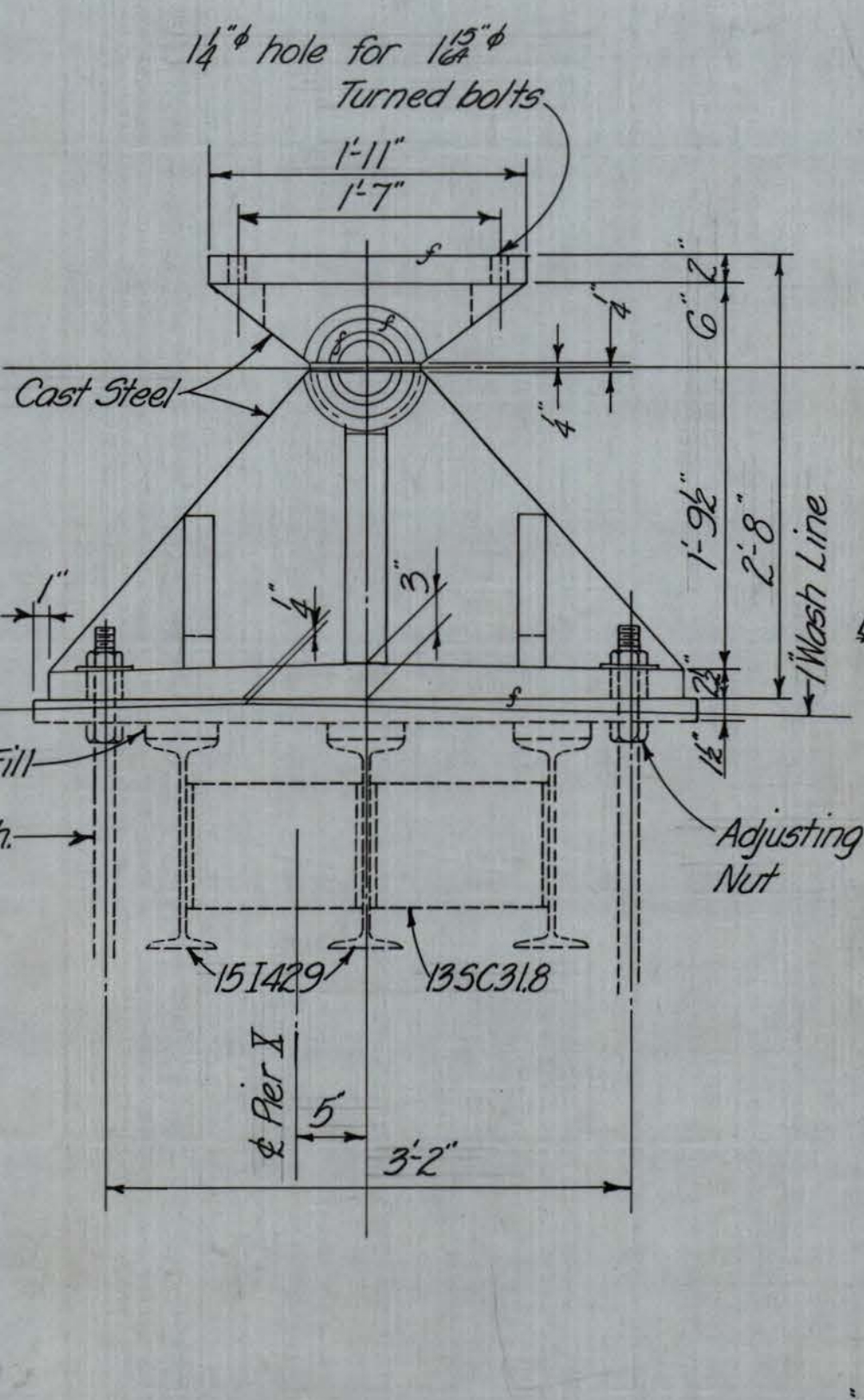
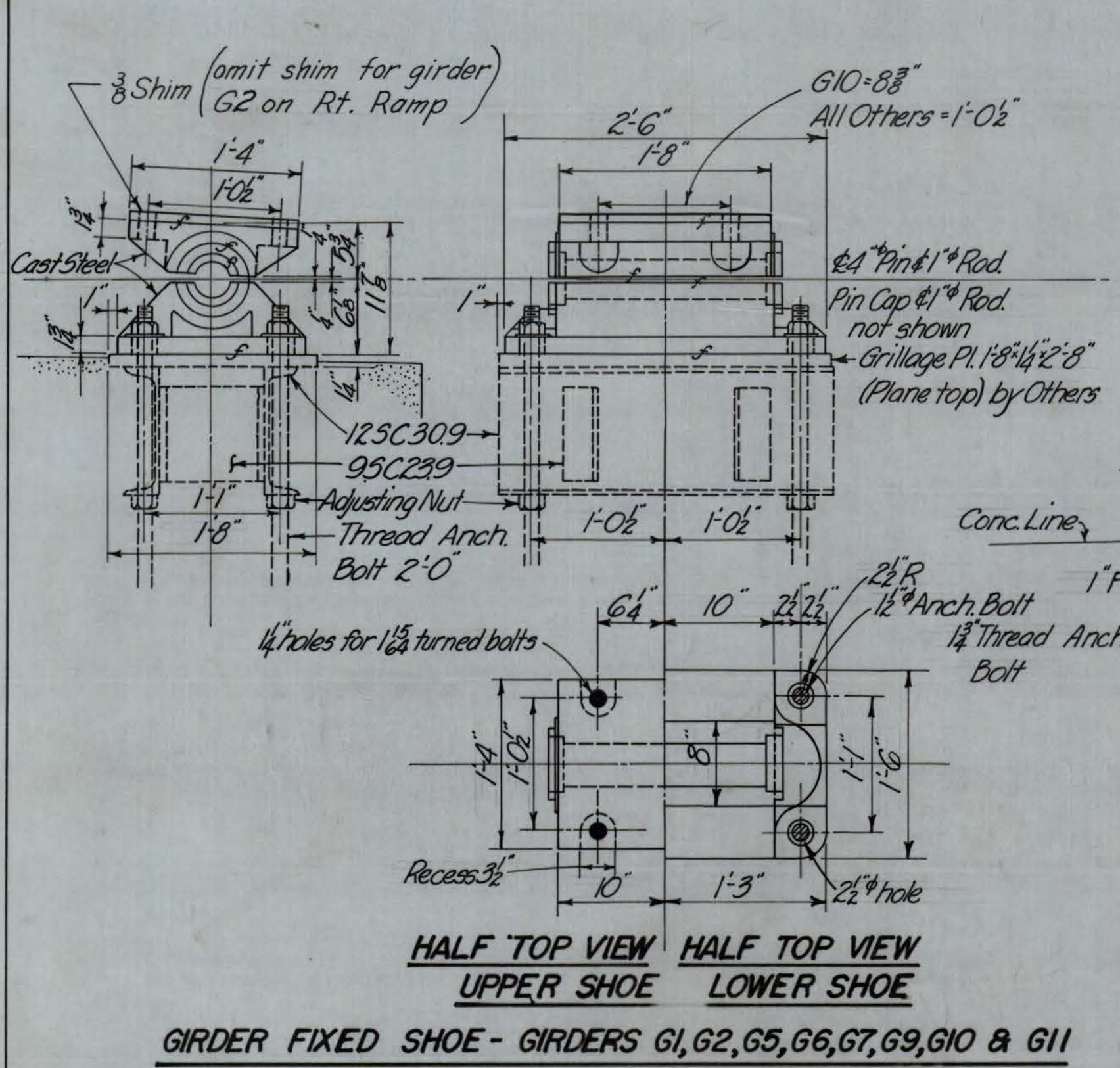
CONTRACT NO. 1

#1899



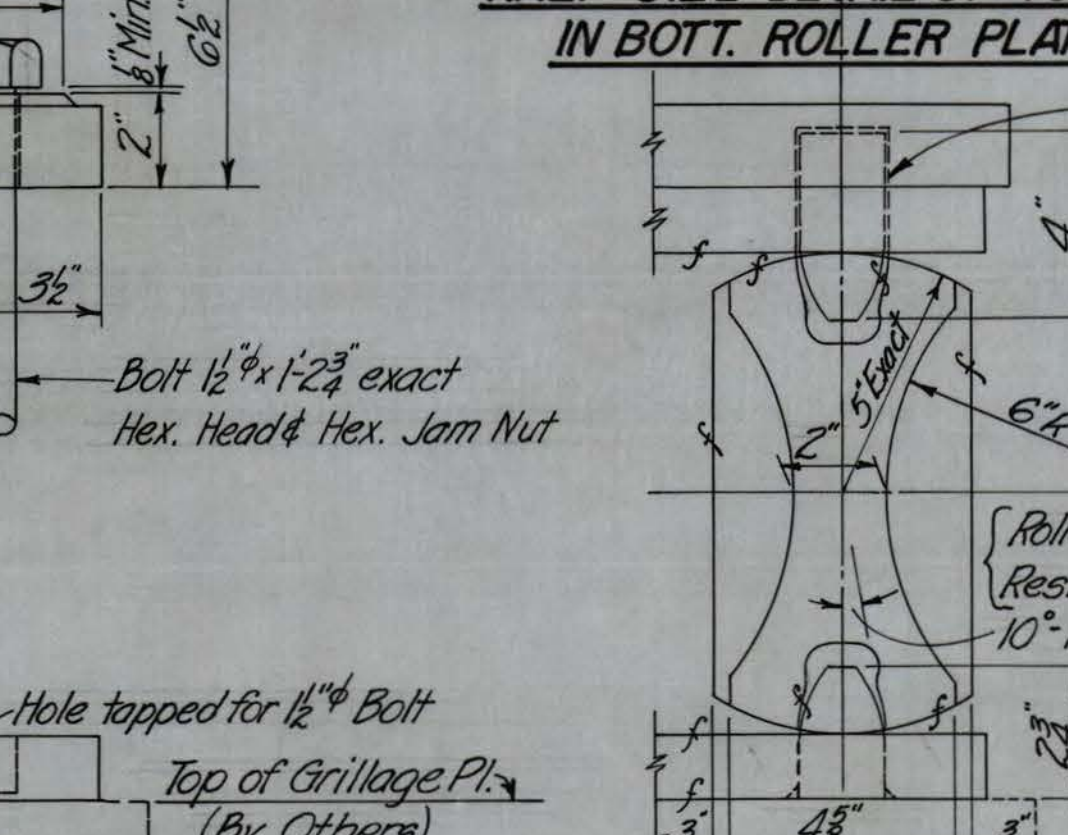
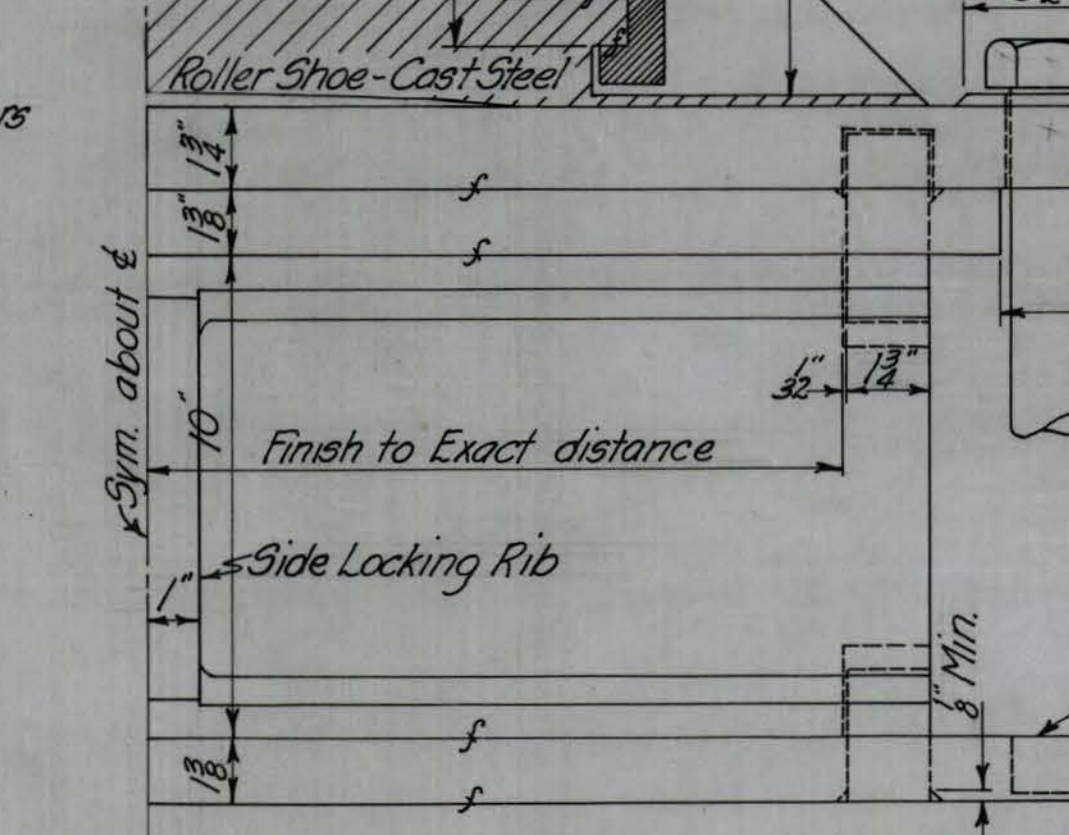
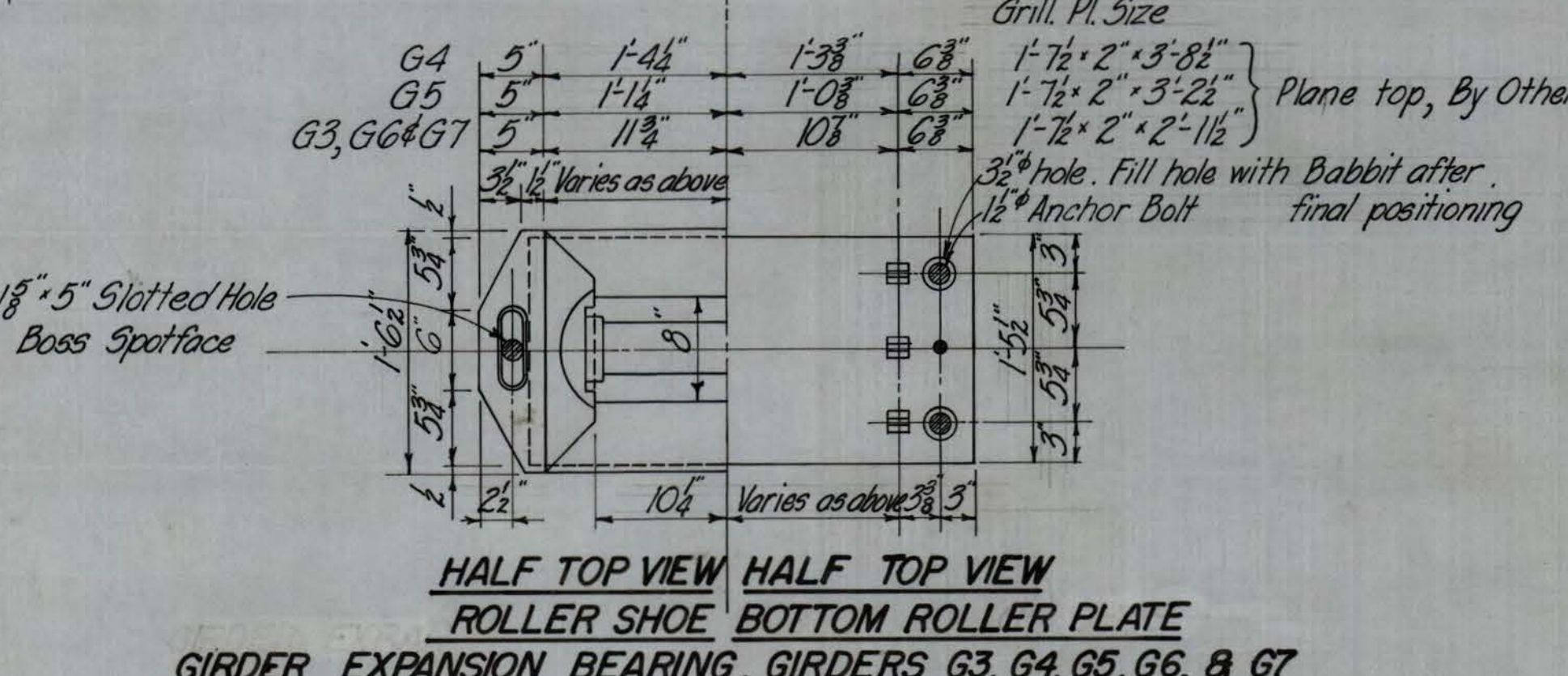






**BEARING ELEV. S. APPROACH**

Pier	Member	Elevation	
		Lt. Ramp	Rt. Ramp
VI	Stringer	642.29	
	G1	639.04	639.05
VII	G2	639.82	638.89
	G1	642.71	642.72
VIII	G2	643.07	642.55
	G1	647.82	647.82
IX	G2	647.65	647.65
	G3	645.39	
X	G4	645.65	
	G5	651.52	
	G6	651.81	
	G7	651.52	
	Truss	658.69	
		663.86	



**NOTE:**  
 All materials below top of Grillage Plates (shown dotted) by others.  
 Roller Plates shall be Corrosion-Resisting Alloy Steel Clad Plate.  
 Finish bearings in direction of movement.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**BEARINGS (2)**

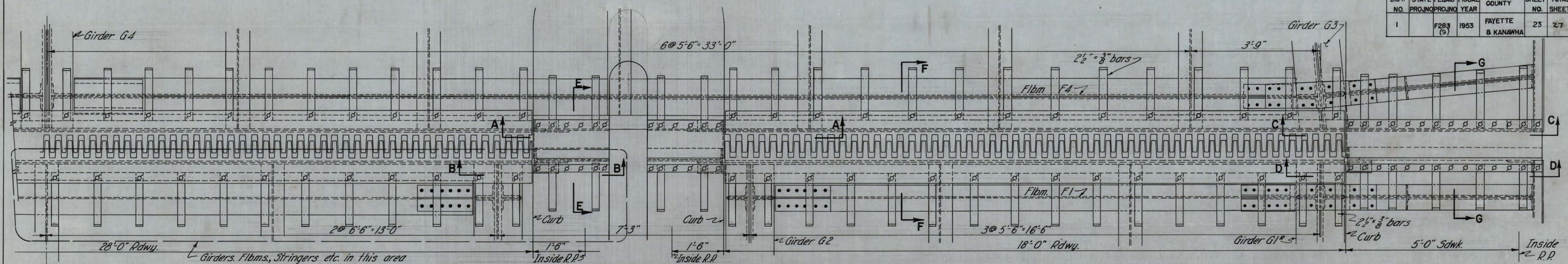
See Sheet #21 for Bearing Elevations N. Approach

**DETAIL OF GIRDER ROLLER SHOE ASSEMBLY**  
**TRUSS ROLLER SHOE ASSEMBLY SIMILAR**  
 Scale: 3"=1'-0"

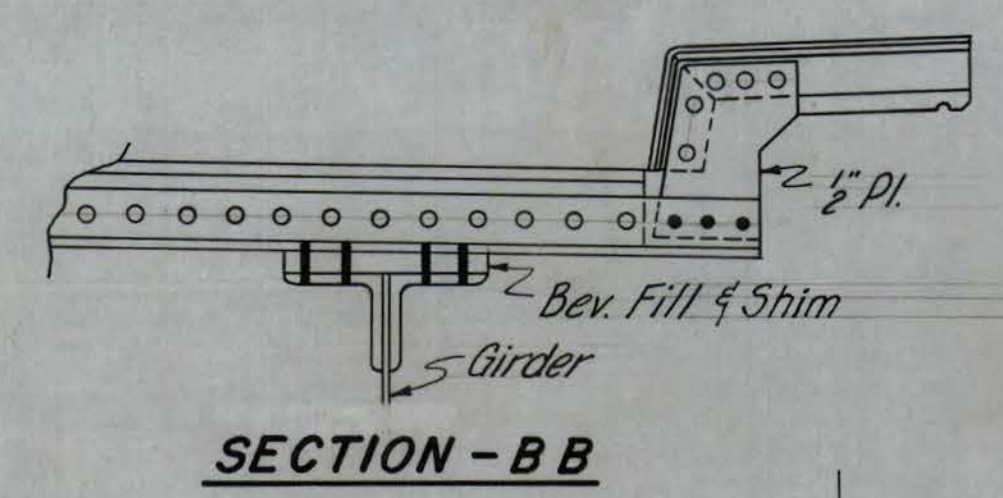
SCALE IN FEET UNLESS NOTED  
 MODJESKI & MASTERS ENGINEERS  
 DWG. #22  
 #1899



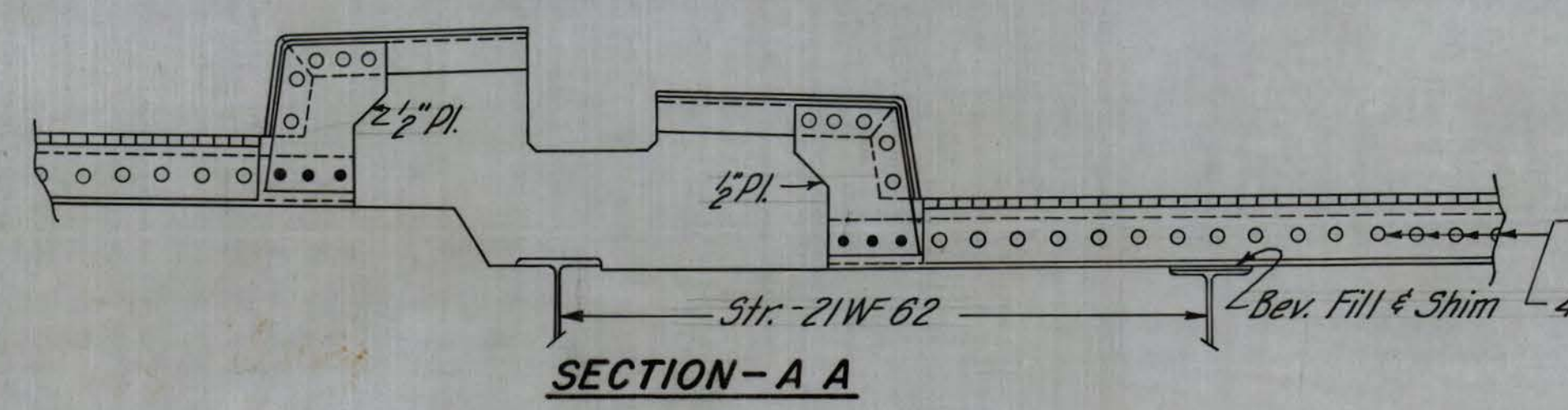
DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (9)	1953	FAYETTE & KANAWHA	23	27



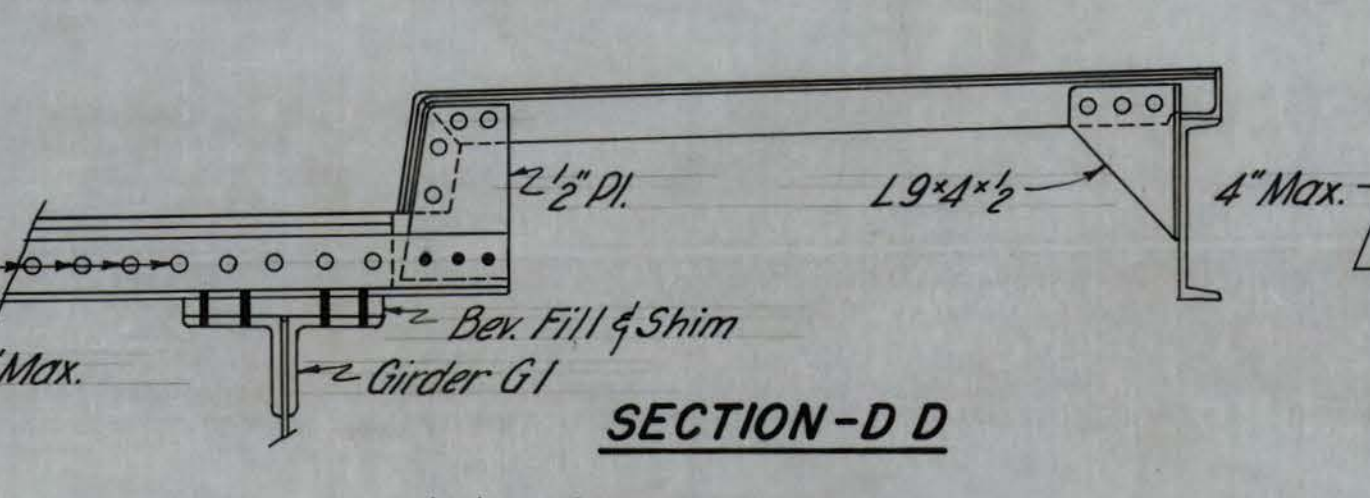
**HALF PLAN - EXPANSION DAM AT PIER VIII**



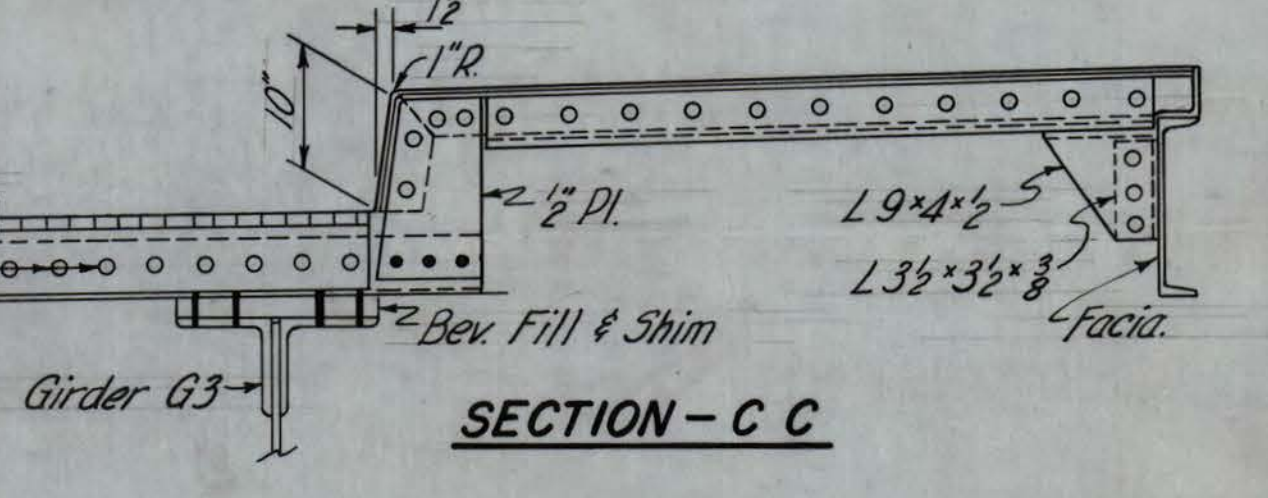
**SECTION - B B**



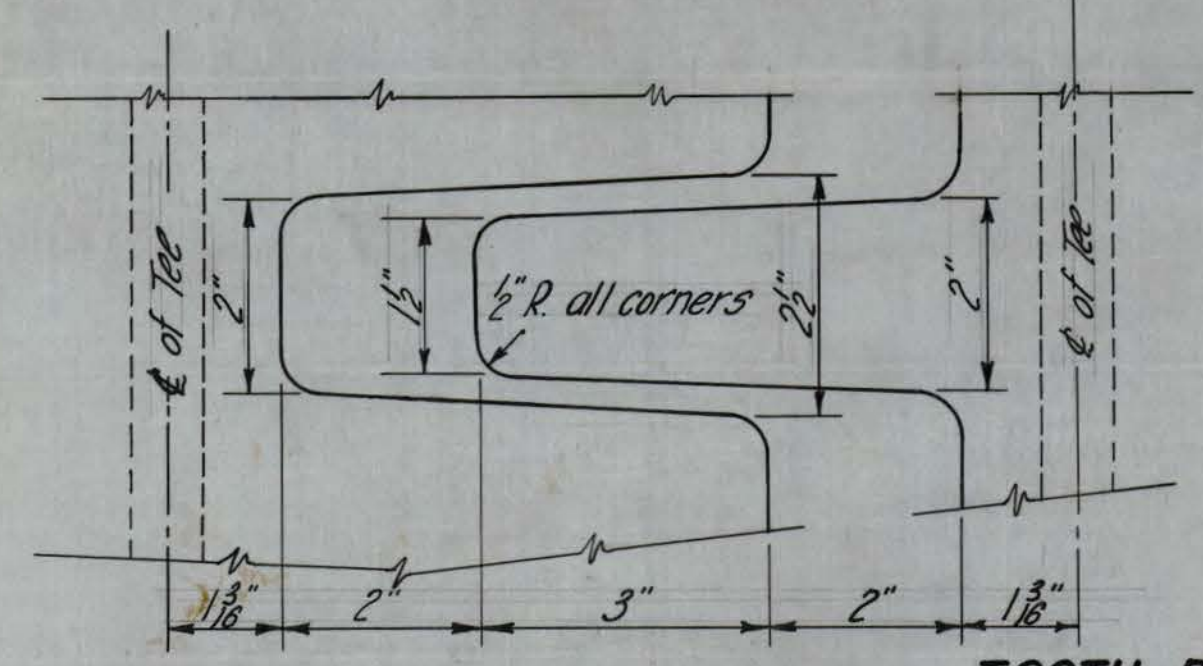
**SECTION - A A**



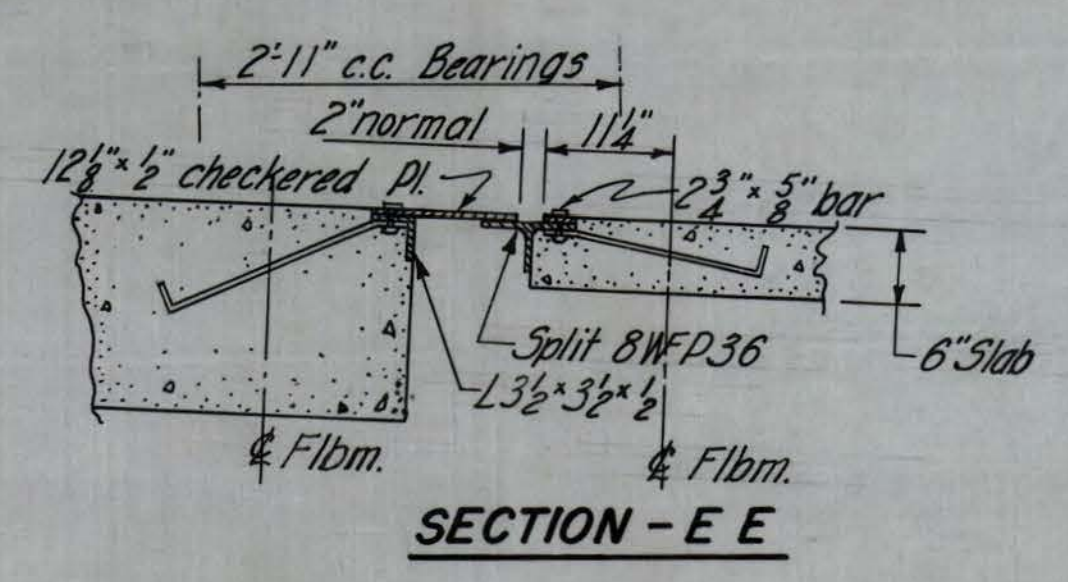
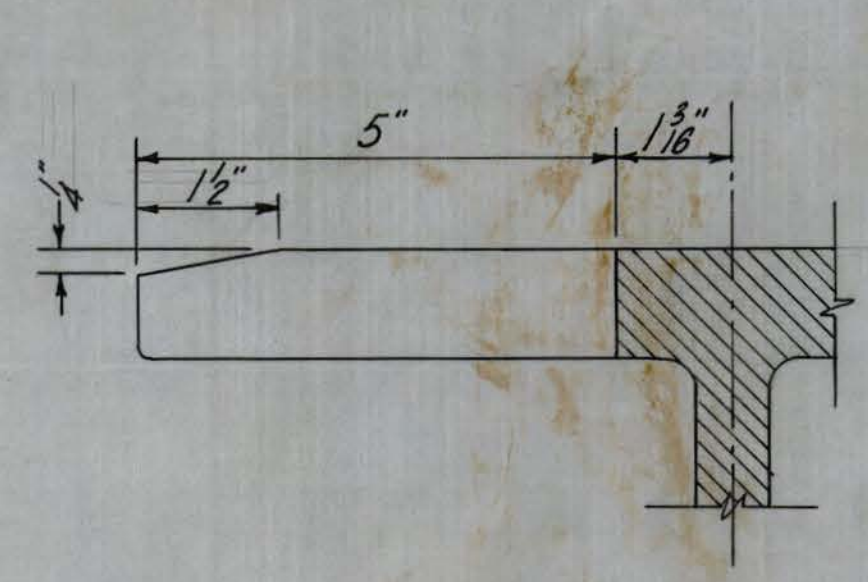
**SECTION - D D**



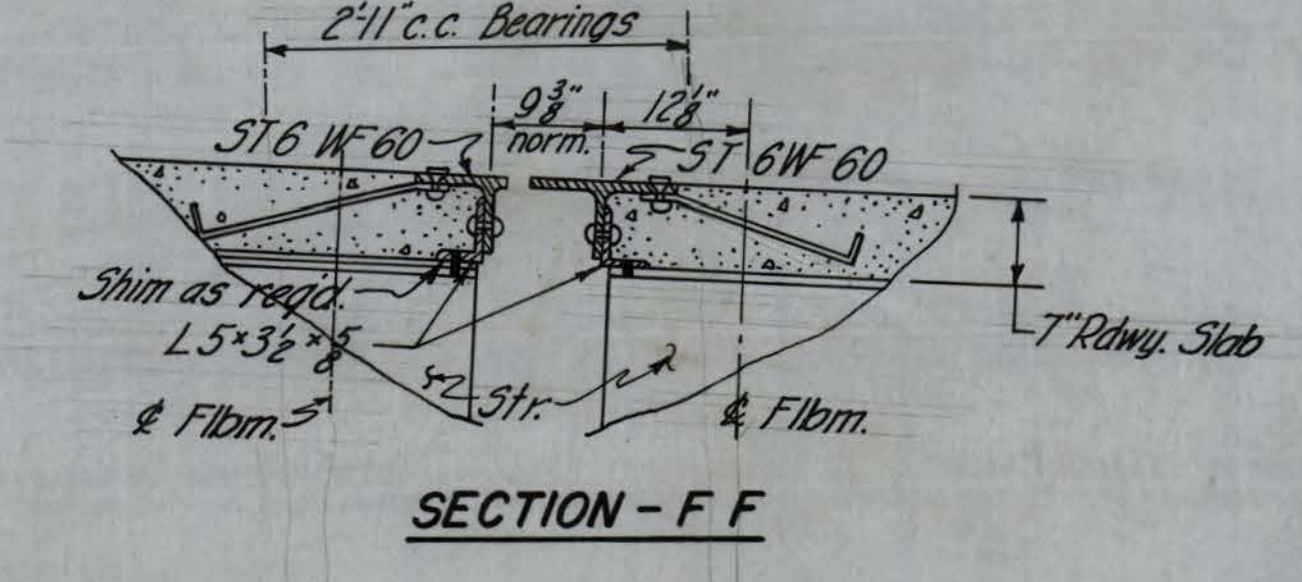
**SECTION - C C**



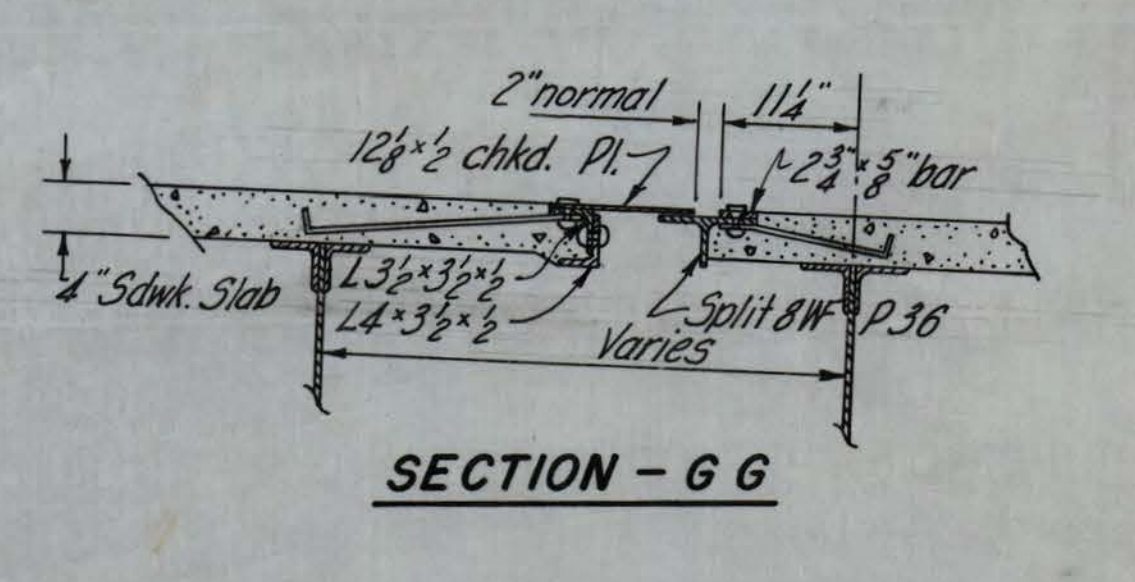
**TOOTH DETAILS**  
Half Size



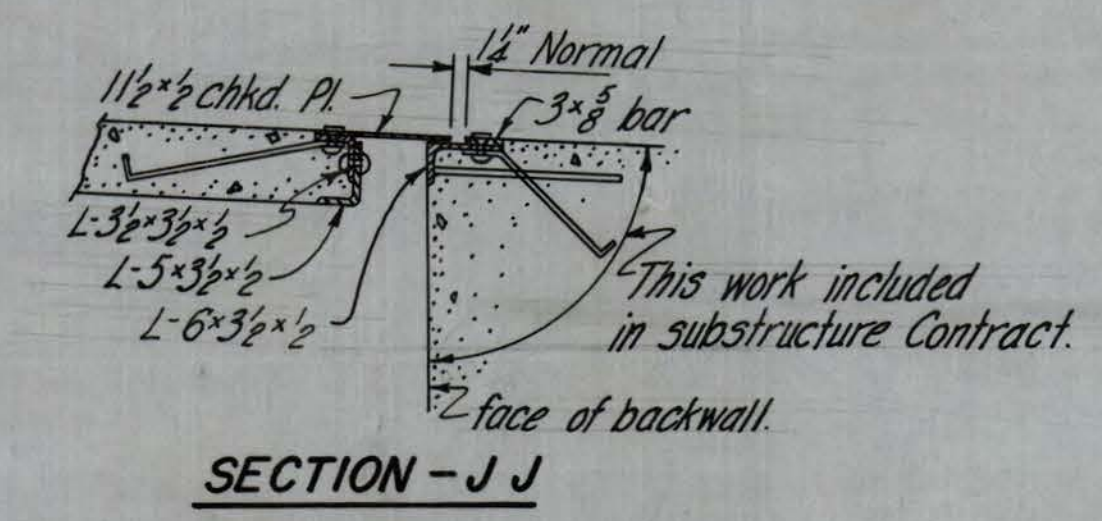
**SECTION - E E**



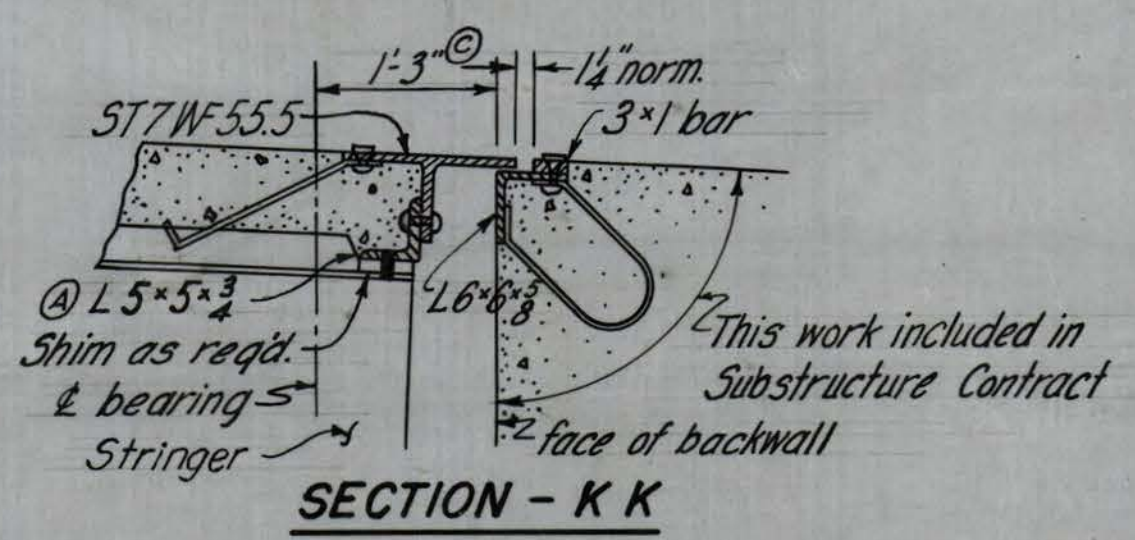
**SECTION - F F**



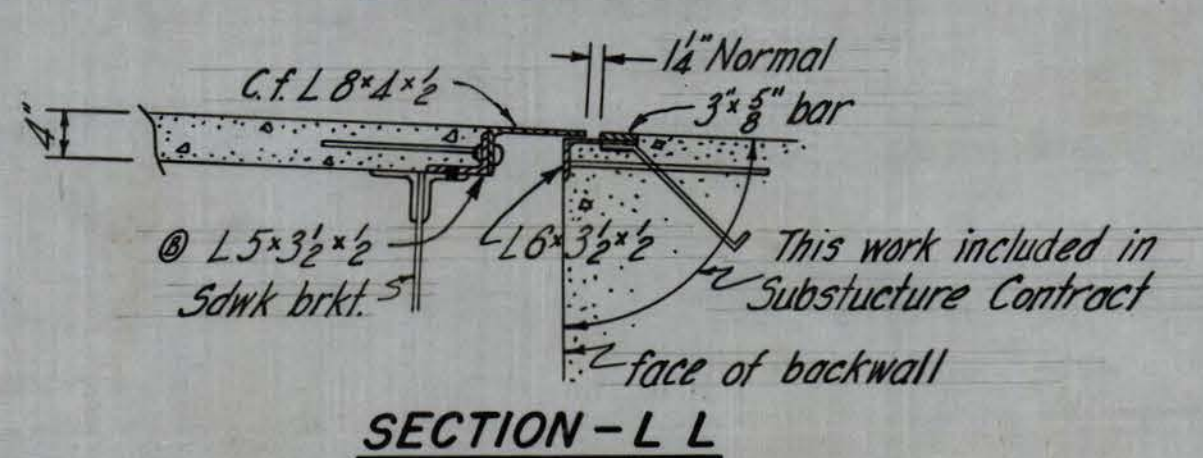
**SECTION - G G**



**SECTION - J J**

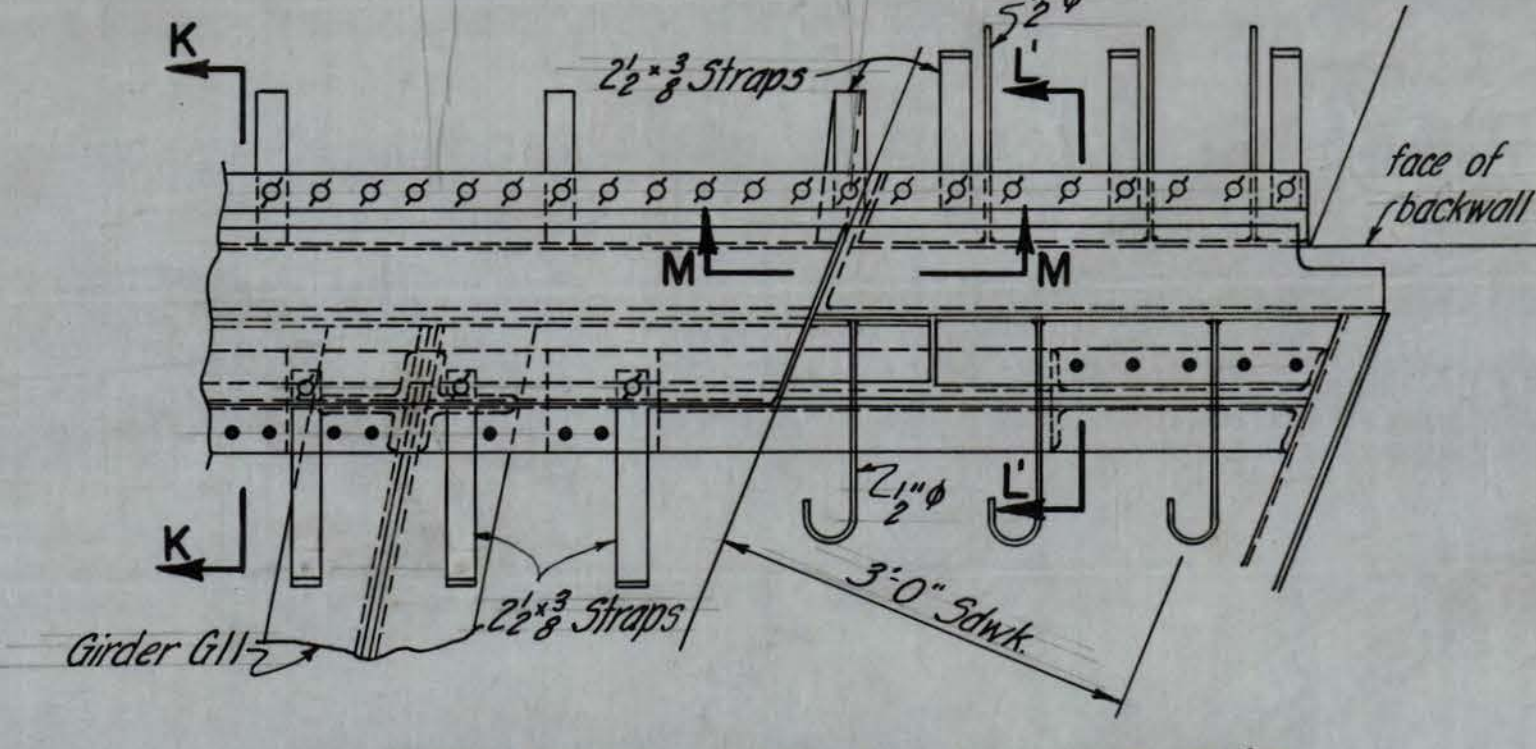


**SECTION - K K**



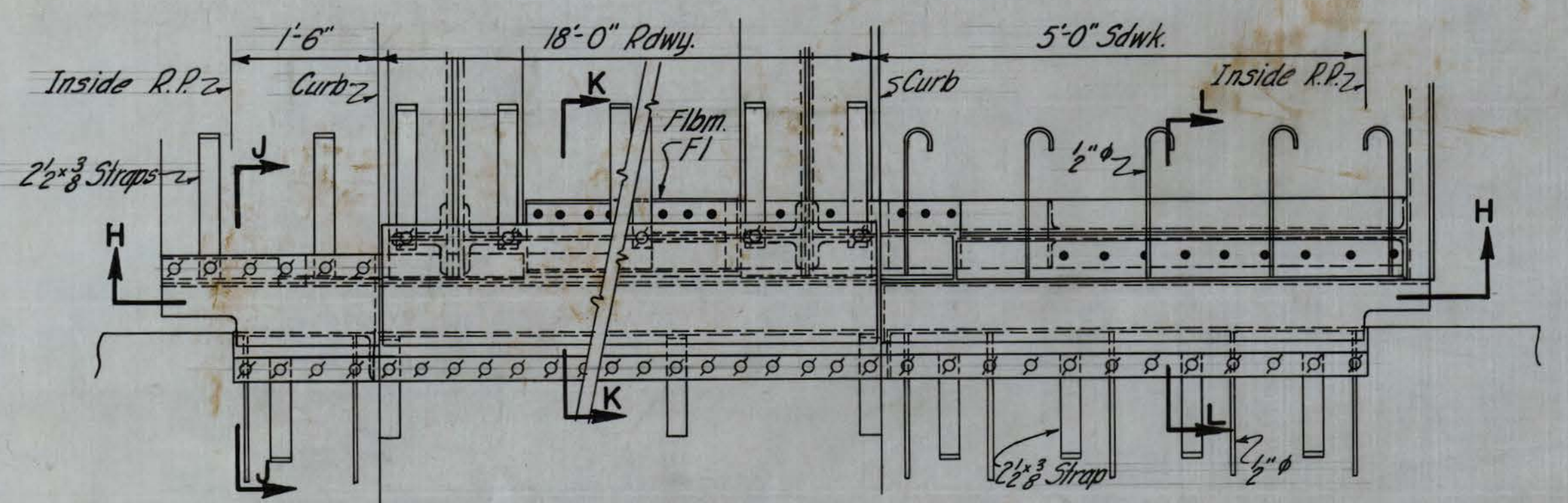
**SECTION - L L**

SECTION - L L' same as L-L except L @ is 6 x 3 1/2 x 1/2

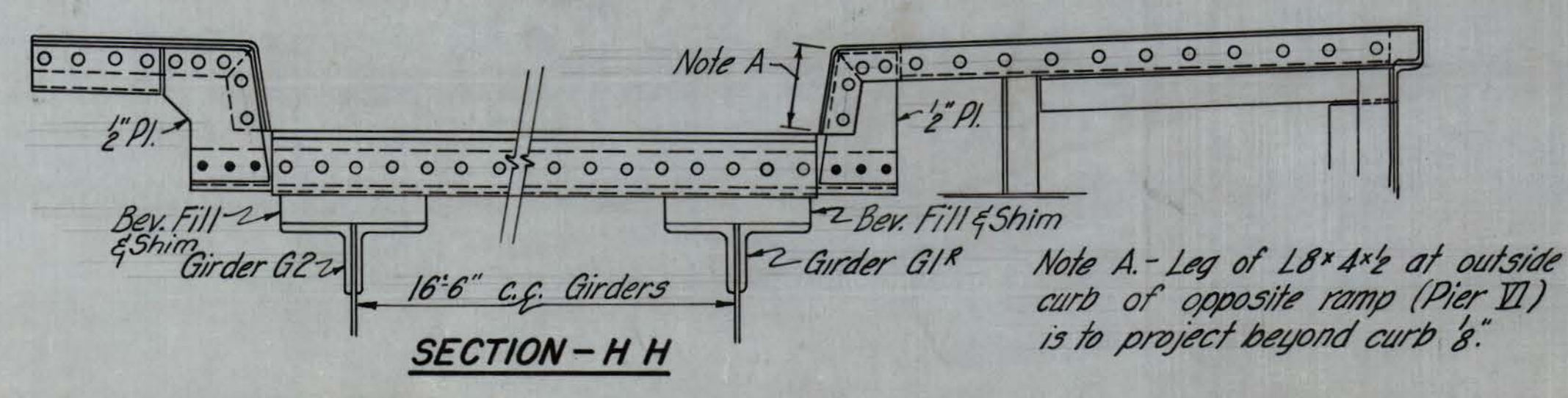


**EXPANSION DAM AT N. ABUTMENT**

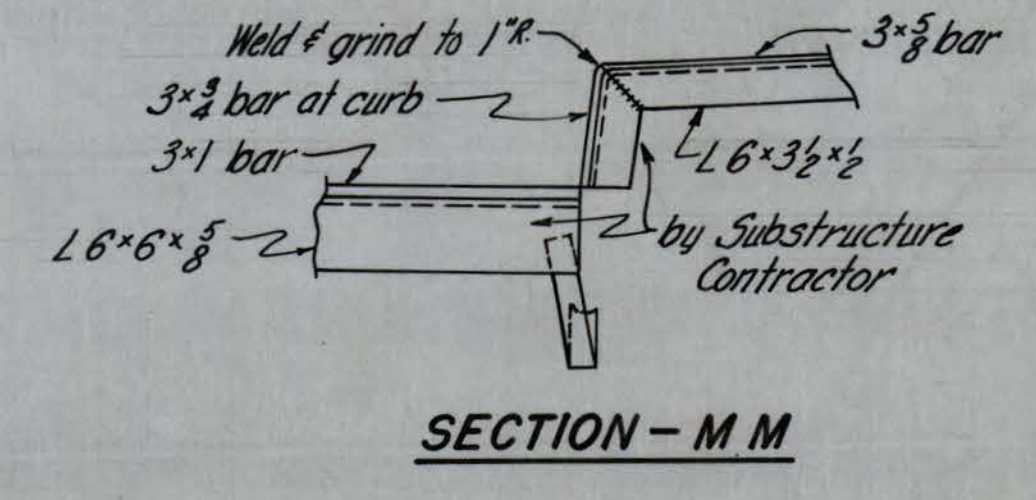
**NOTE:**  
Expansion Dams at Abutments of N. Approach Ramps are similar to Pier VI except:  
L @ is 5 x 3 1/2 x 1/2  
L @ is 4 x 3 1/2 x 1/2  
dim. @ is 1'-0"  
Portions of expansion dams embedded in abutments are furnished and erected by Substructure Contractors.  
Expansion devices to be included in Item 90.



**EXPANSION DAM AT PIER VI RAMPS**



**SECTION - H H**



**SECTION - M M**

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**EXPANSION DAMS**  
**ABUTMENTS & PIER VIII**

SCALE IN FEET

MODJESKI & MASTERS ENGINEERS

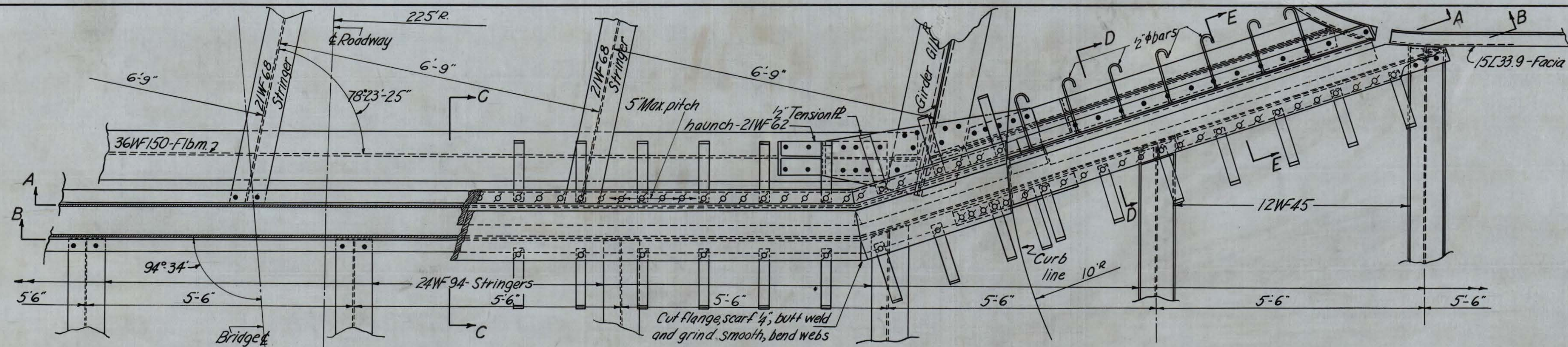
DWG. #23

CONTRACT NO. 1

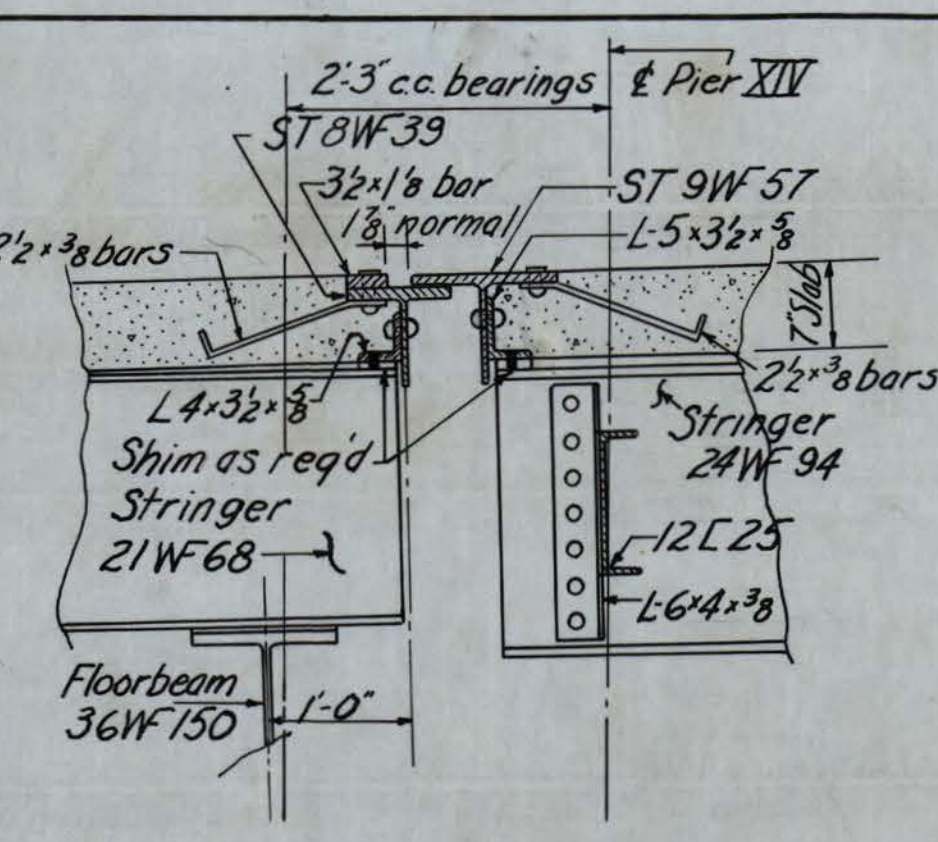
# 1899



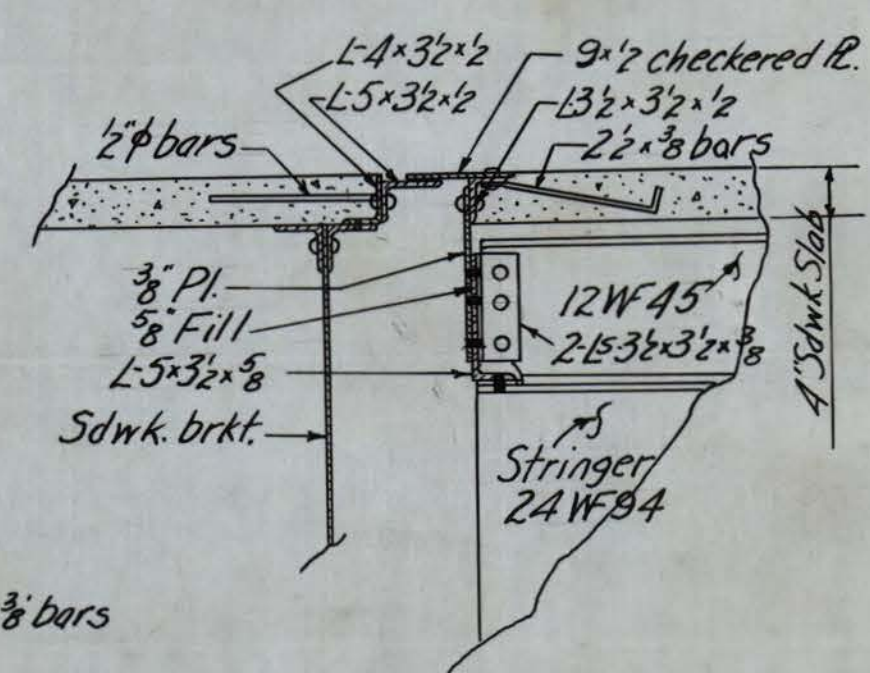
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F28319	1952-53	FRYETTE & KANAWHA	24	27



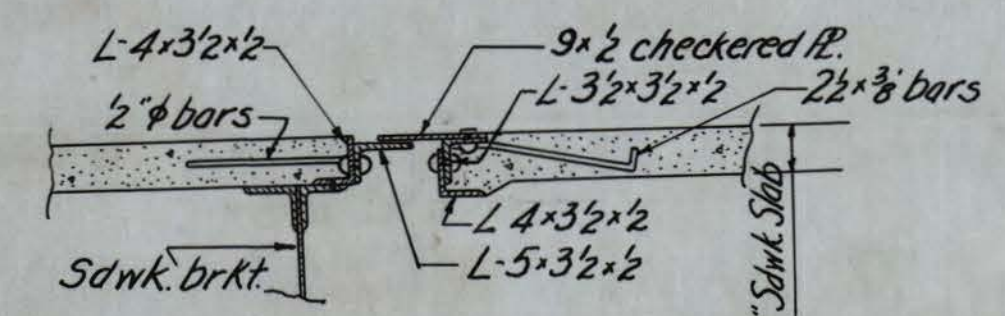
HALF PLAN OF EXPANSION DAM PIER XIV



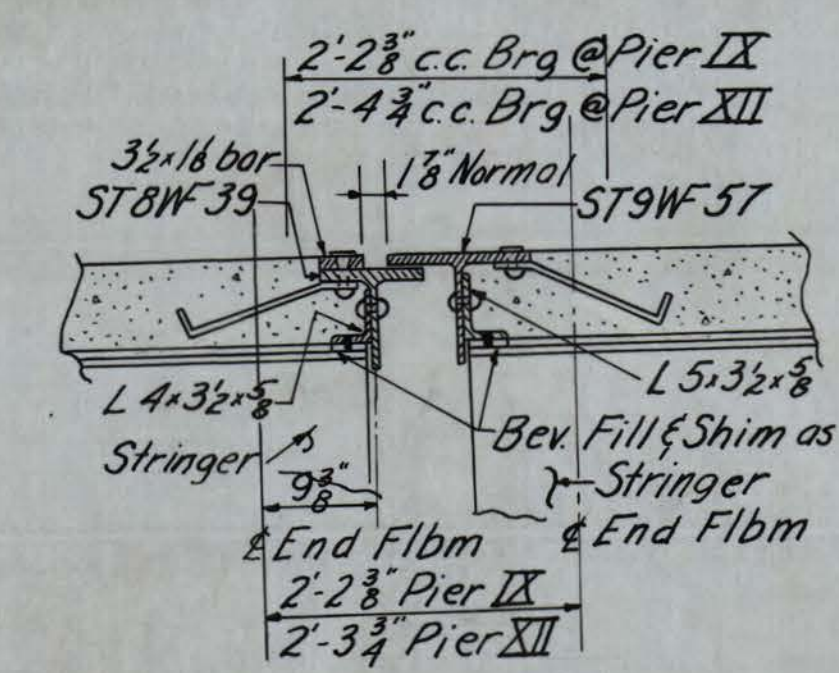
SECTION - CC



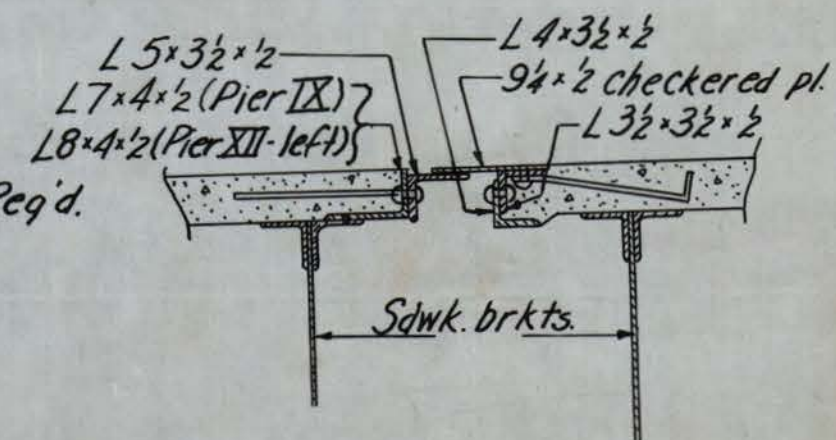
SECTION - DD



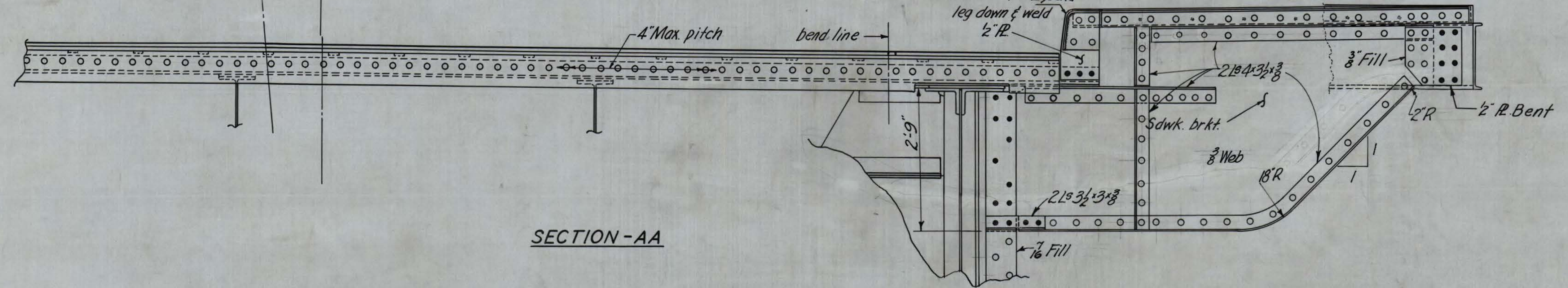
SECTION - EE



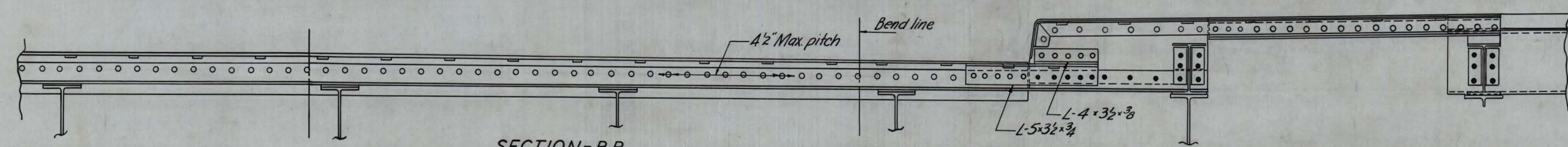
SECTION - GG



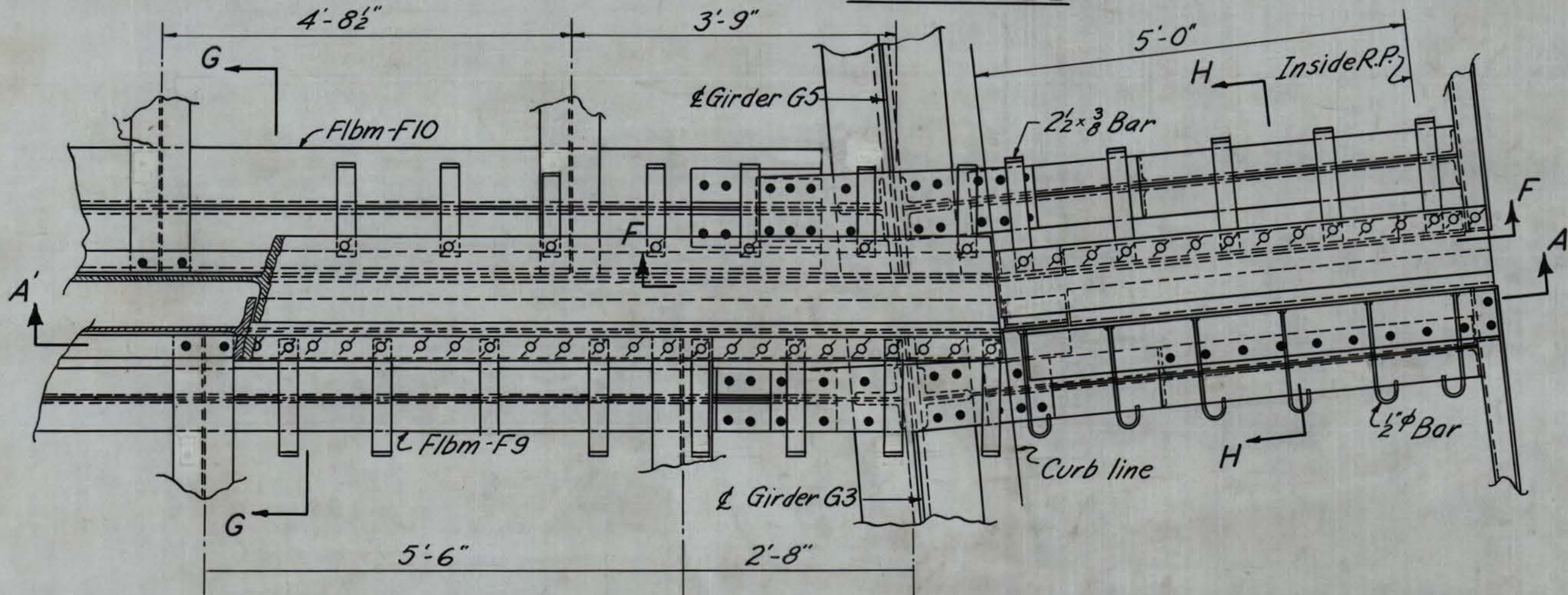
SECTION - HH



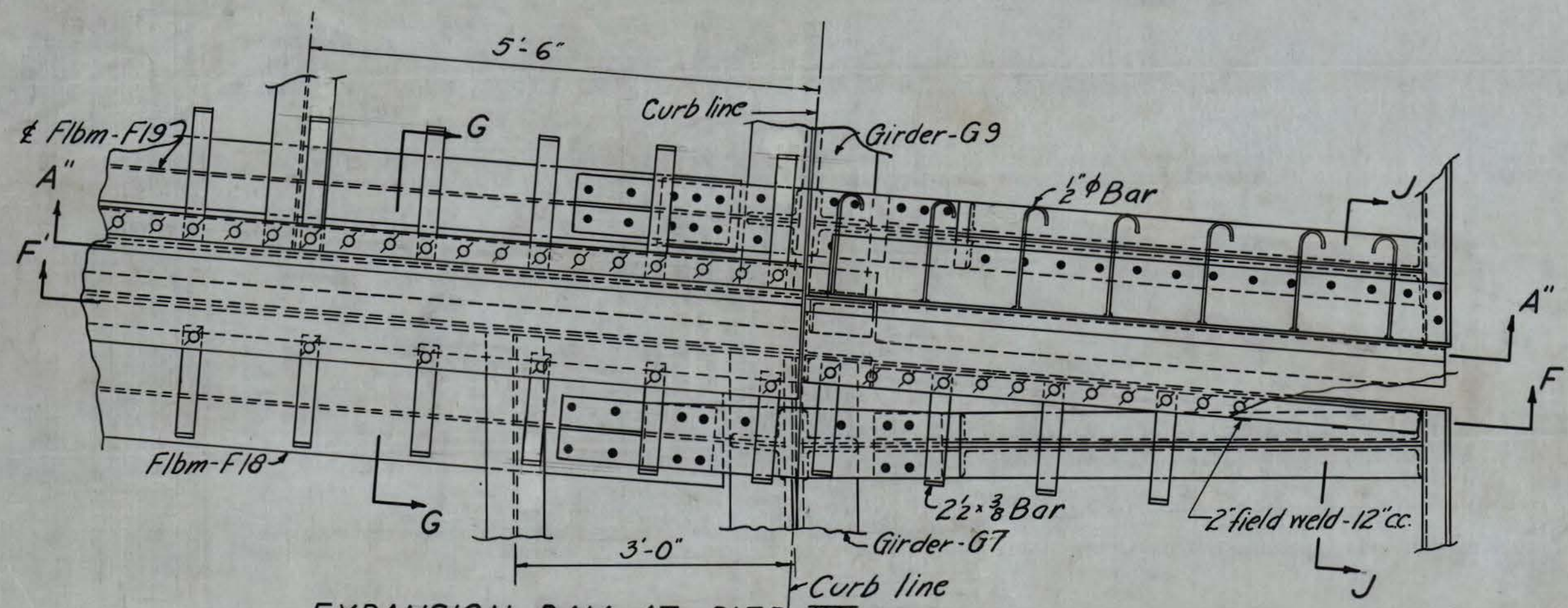
SECTION - AA



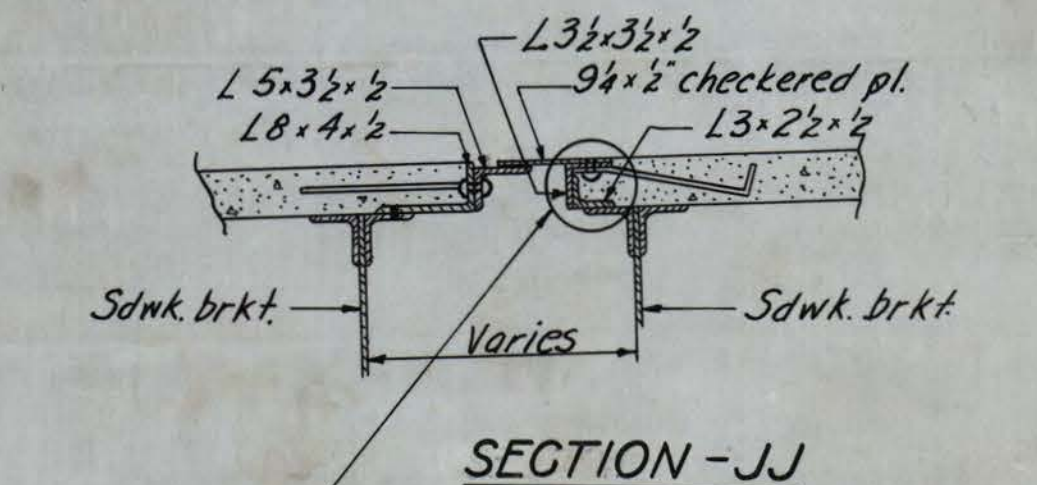
SECTION - BB



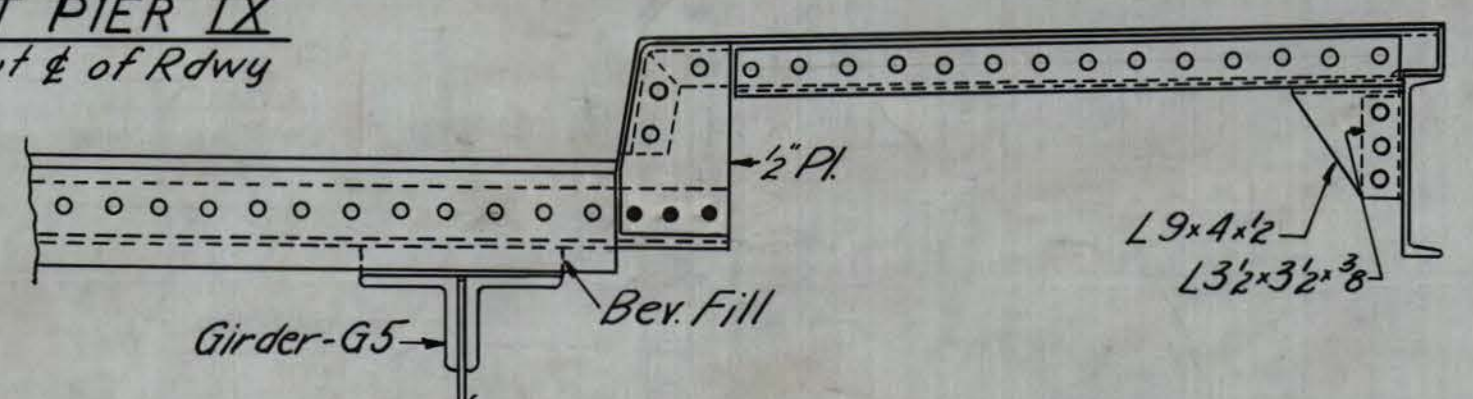
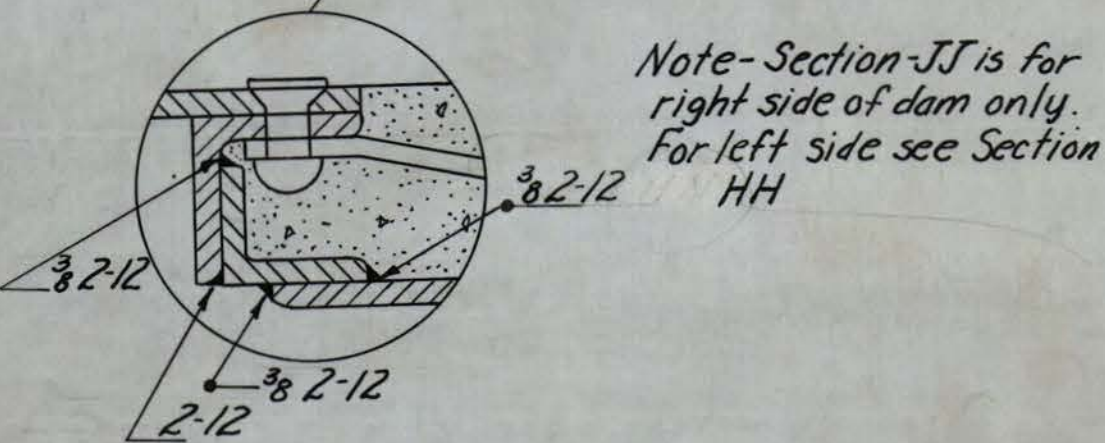
EXPANSION DAM AT PIER IX  
Sym. about  $\frac{1}{2}$  of Rdwy



EXPANSION DAM AT PIER XII  
Opposite side similar



SECTION - JJ



SECTION - FF

SECTION - AA' Similar to AA

SECTION - AA' Similar to AA

SECTION - FF' Similar to FF

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
EXPANSION DAMS  
PIERS IX, XII & XIV

SCALE IN FEET

MODJESKI & MASTERS, ENGINEERS

DWG. #24

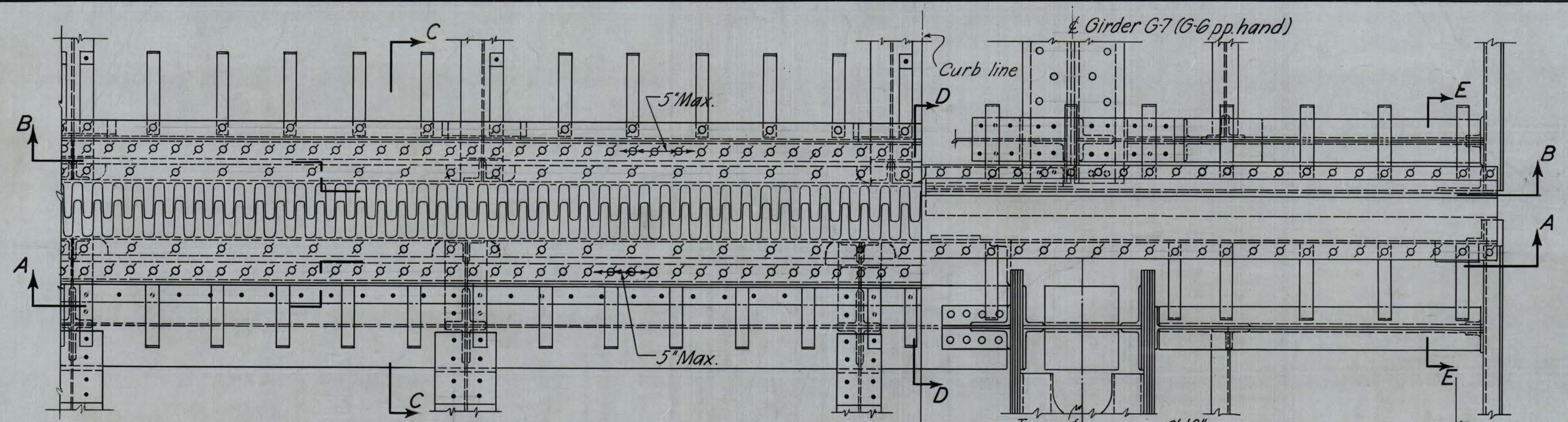
CONTRACT NO. 1

#1899

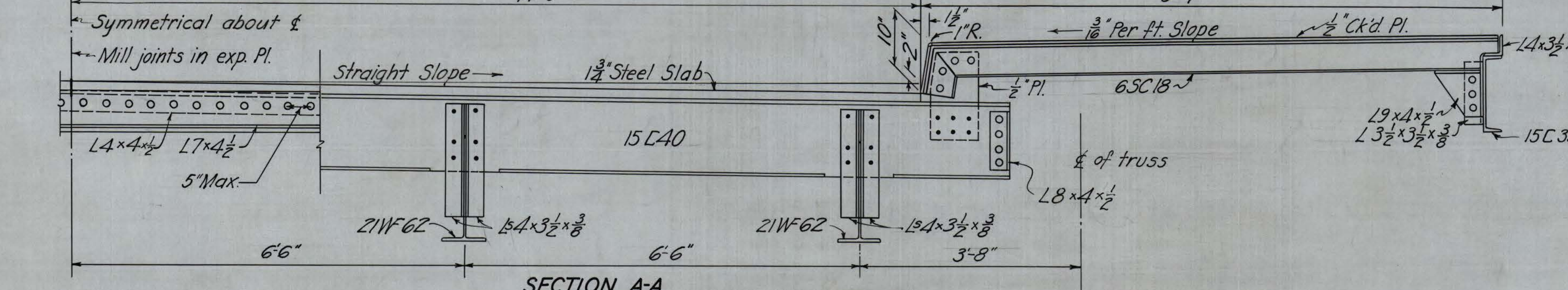


DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F-283 (9)	1952-53	FAYETTE & KANAWHA	25	27

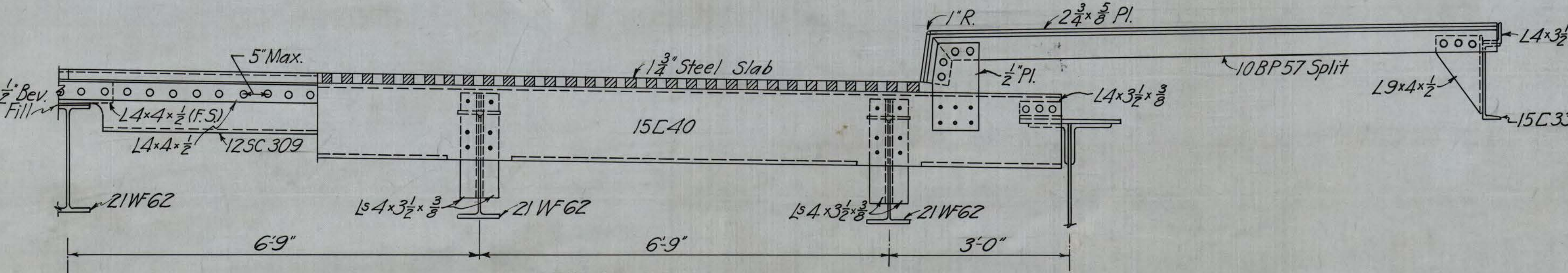
NOTE - Expansion Devices to be included in Item 90.



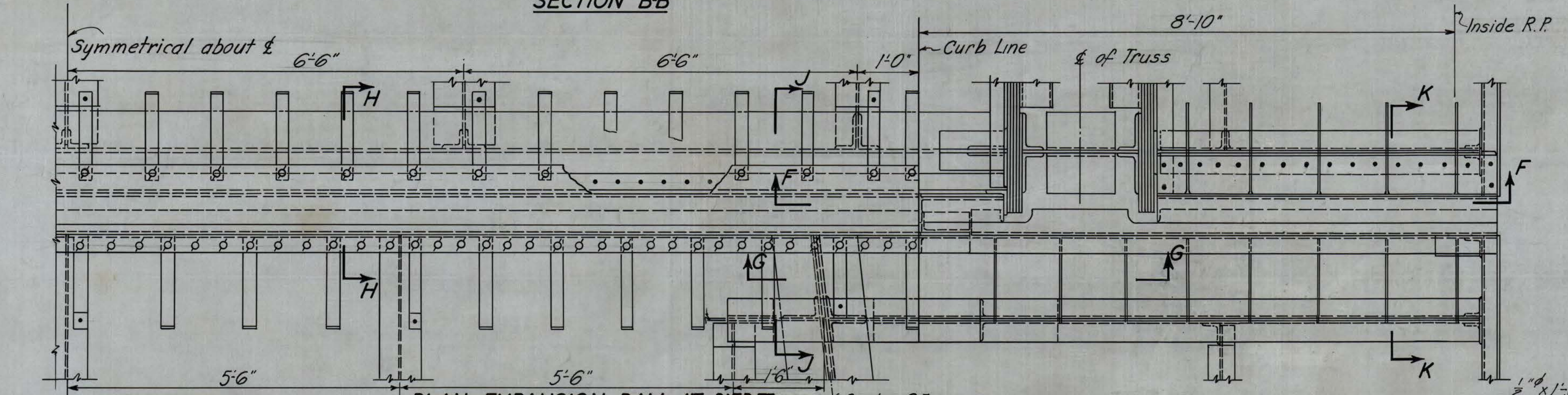
PLAN-EXPANSION DAM AT PIER XI



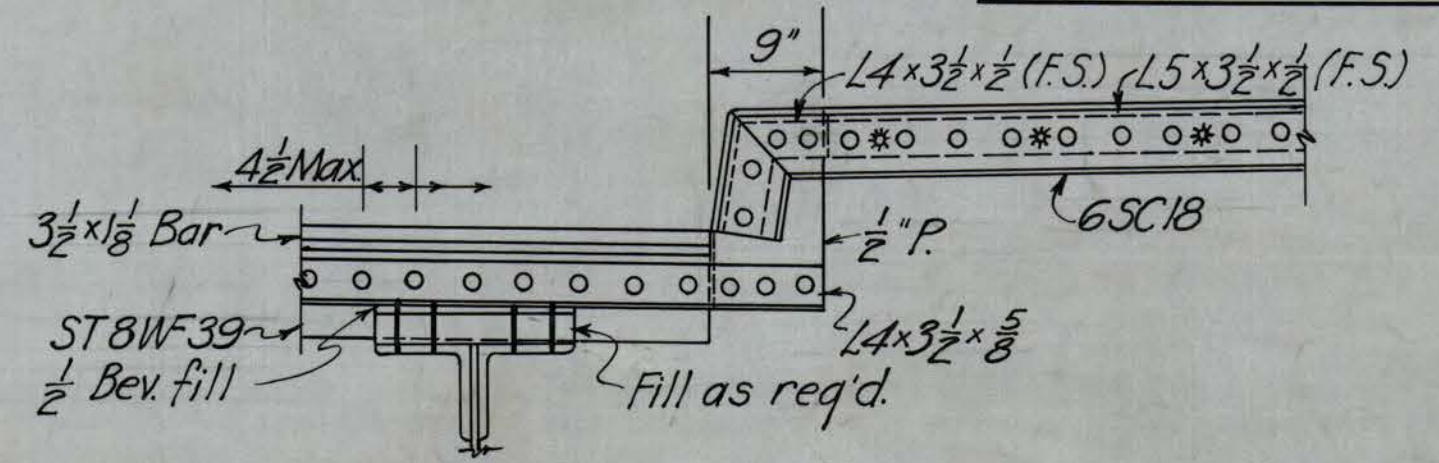
SECTION A-A



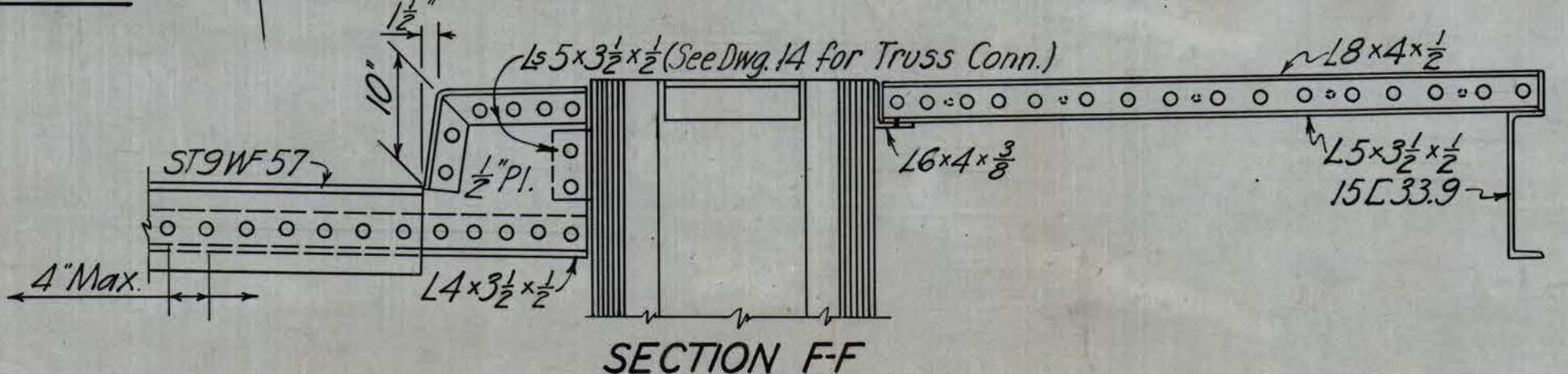
SECTION BB



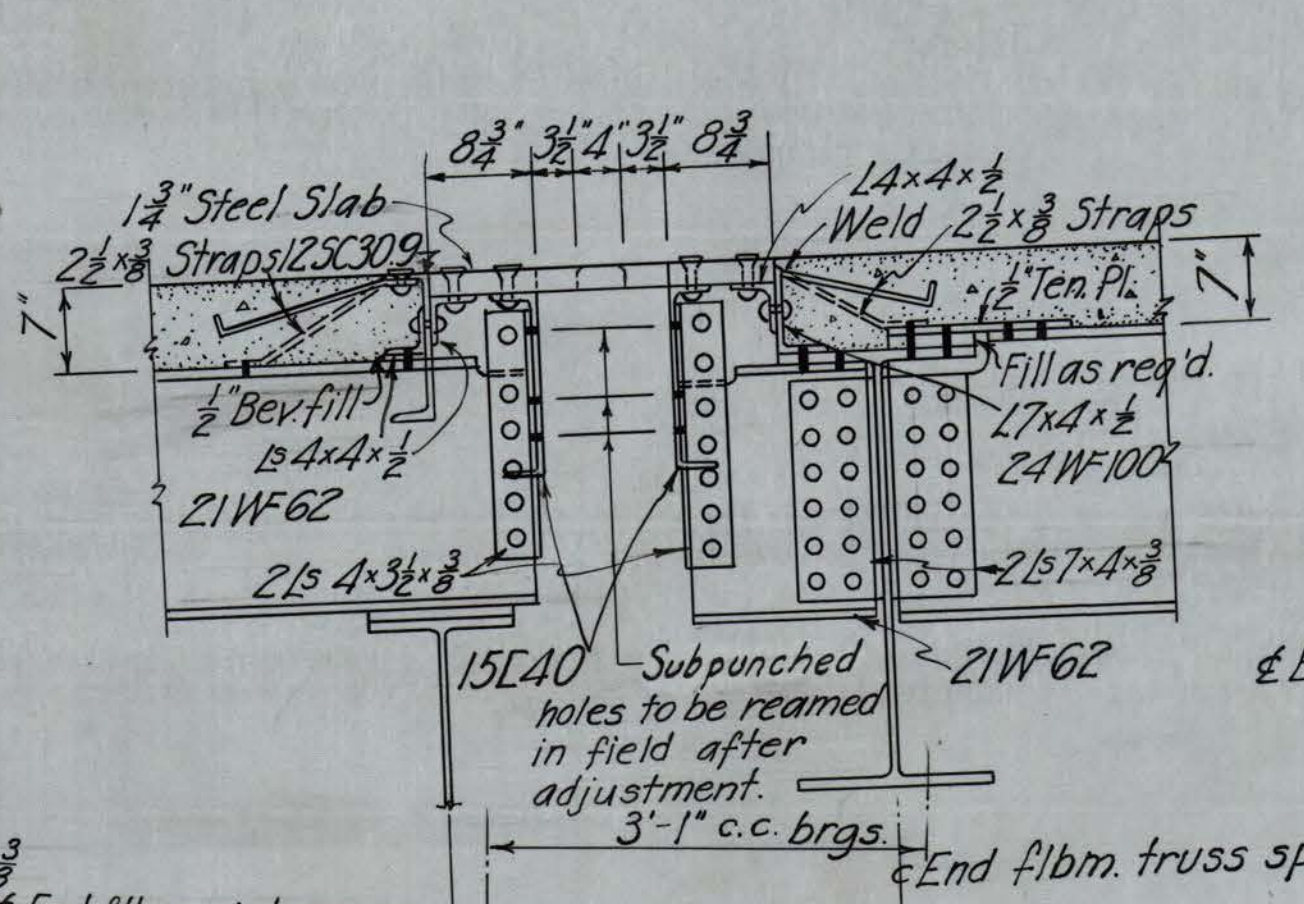
PLAN-EXPANSION DAM AT PIER X



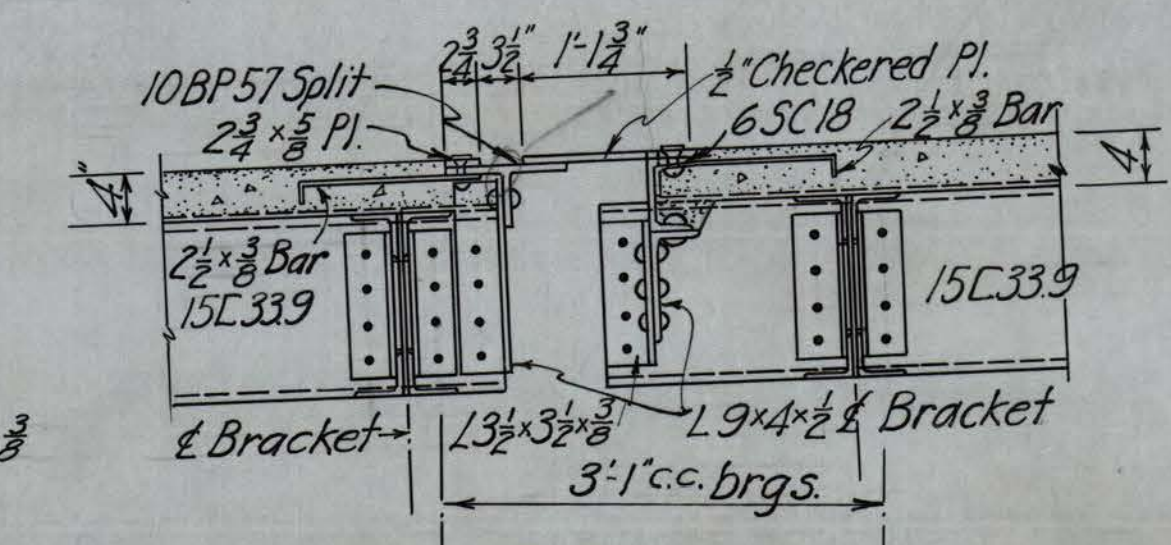
SECTION GG



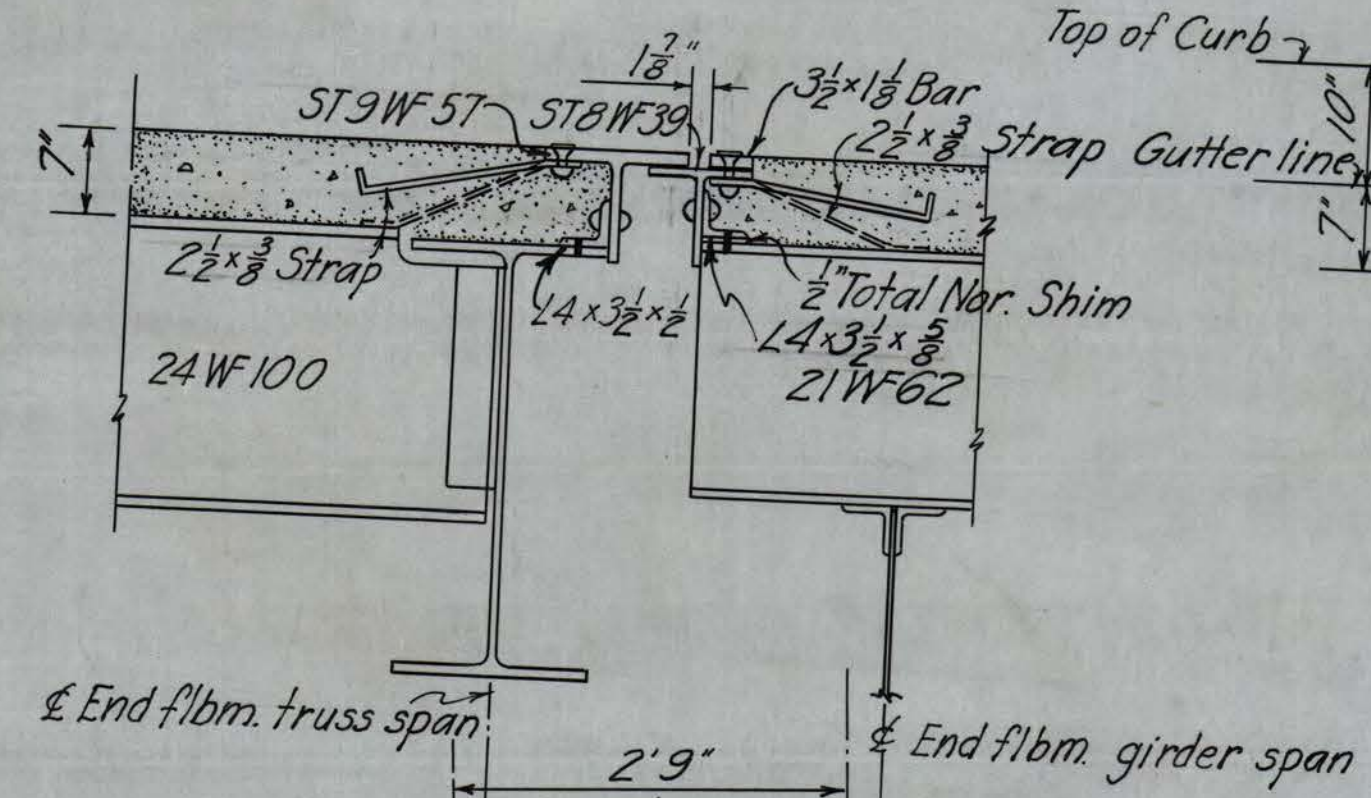
SECTION FF



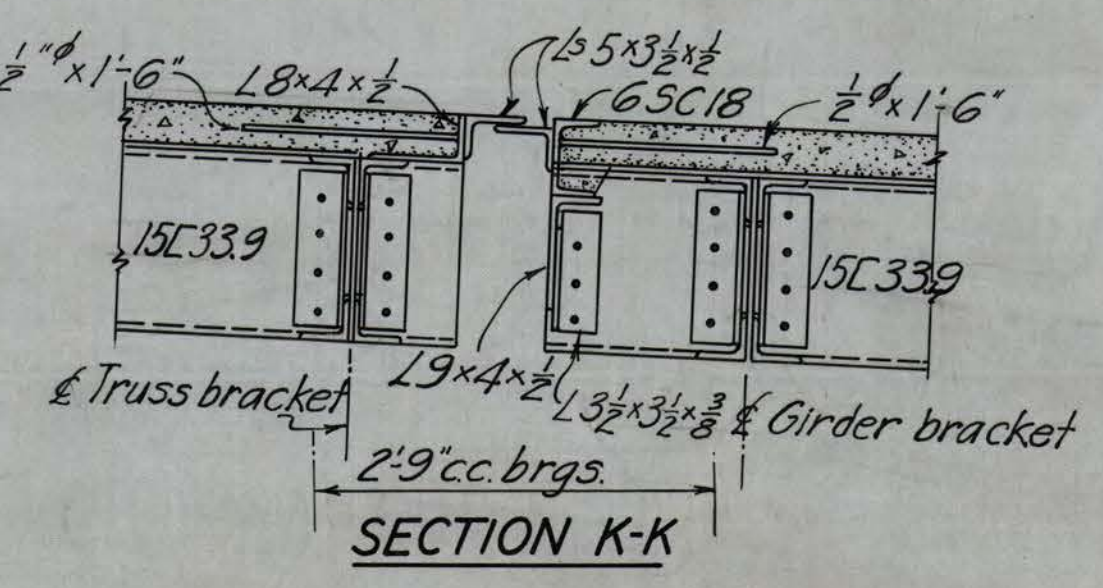
SECTION C-C



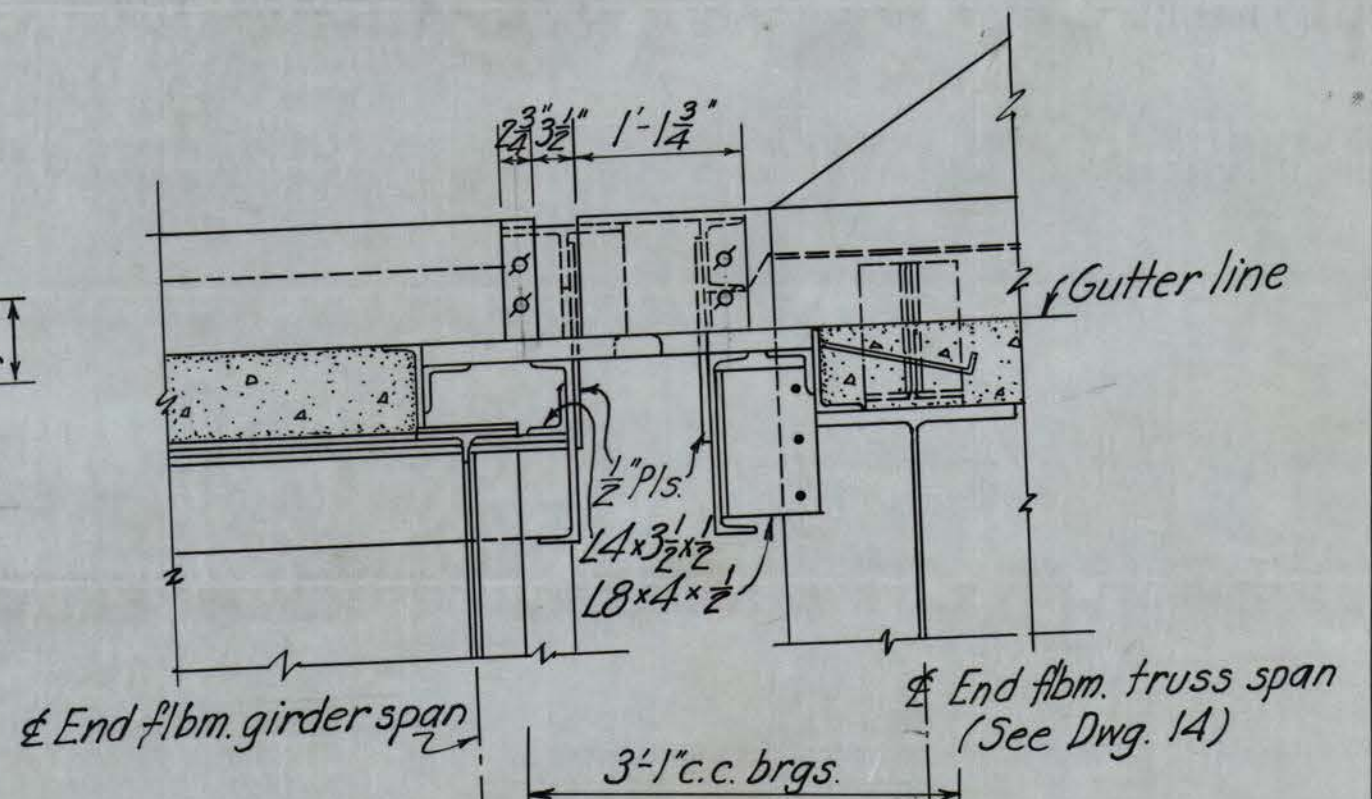
SECTION E-E



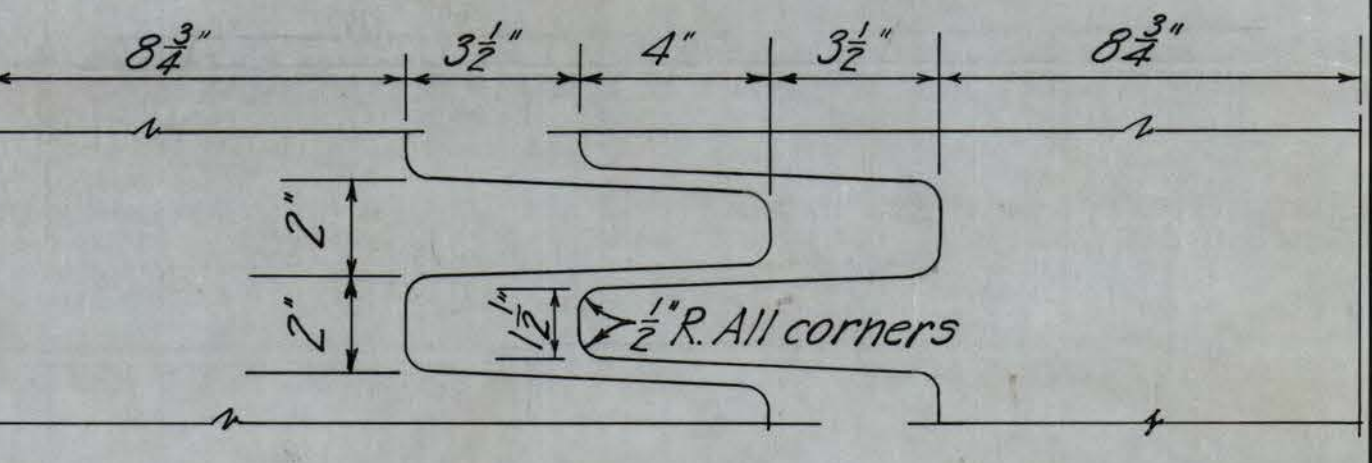
SECTION H-H



SECTION K-K

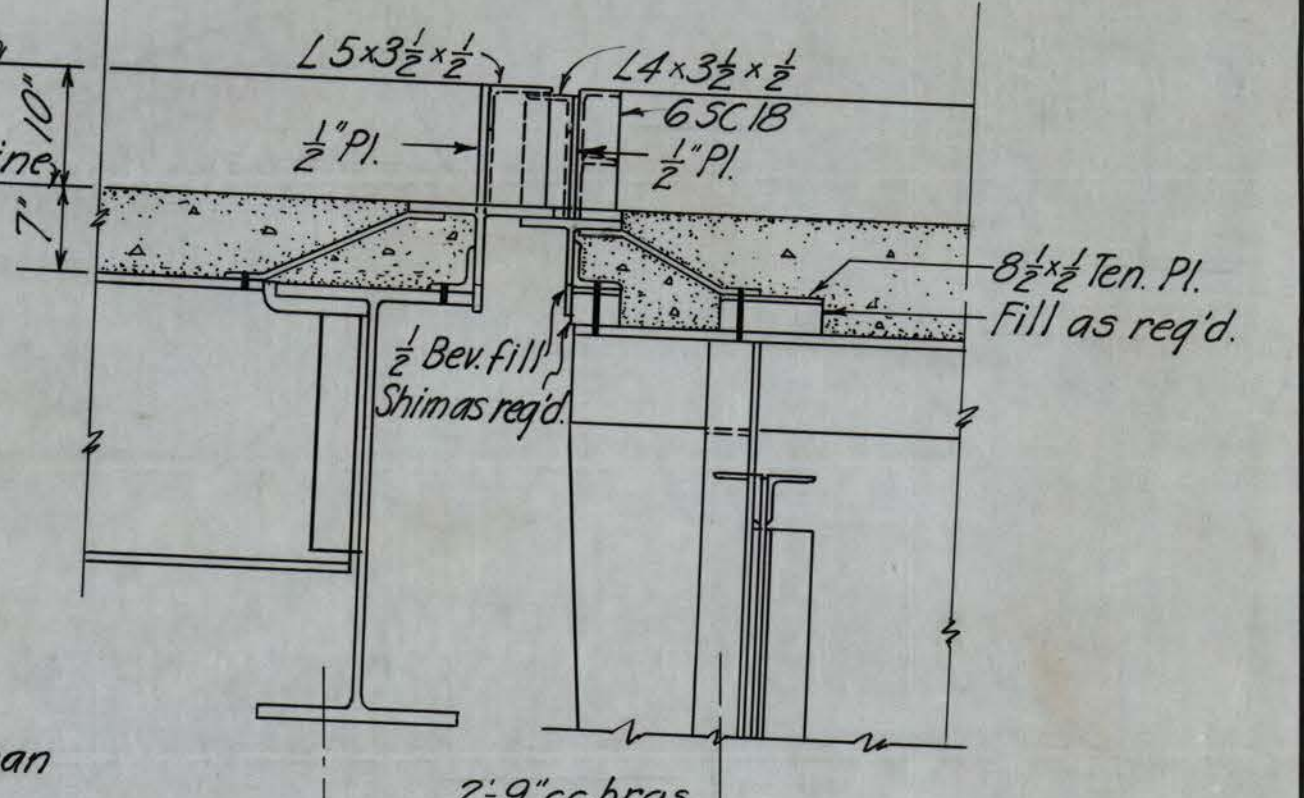


SECTION D-D



TOOTH DETAILS

Scale 3"=1'-0"  
Tooth plate to be cut from 25 1/4" x 1 1/2" plate. The surface of the cut shall be perpendicular to the surface of the plate.



SECTION J-J

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
MAIN TRUSS EXPANSION DAMS  
PIER X AND PIER XI



MODJESKI & MASTERS, ENGINEERS DWG. #25

CONTRACT NO.

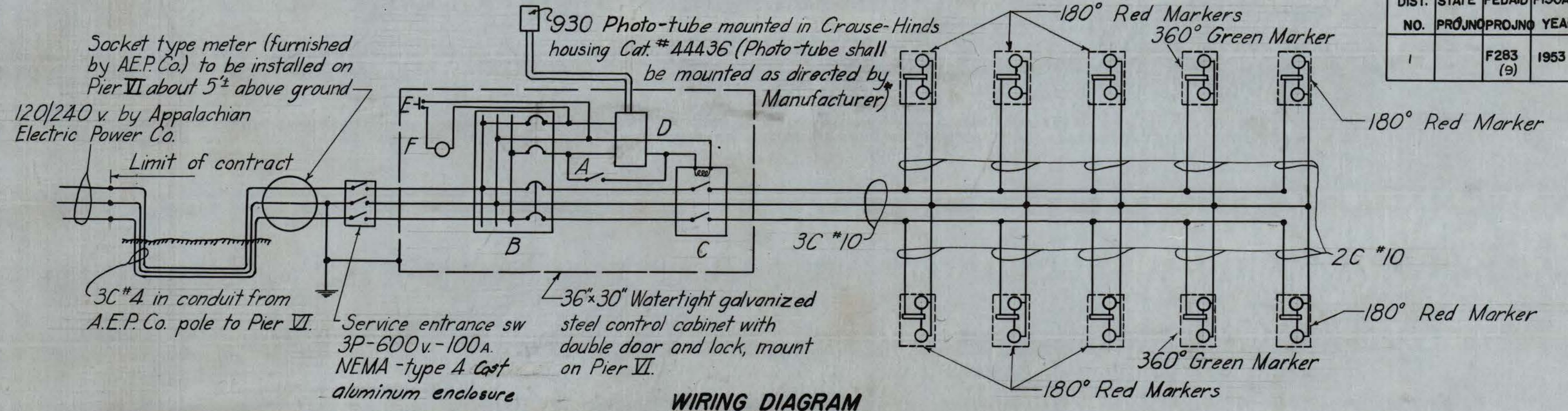
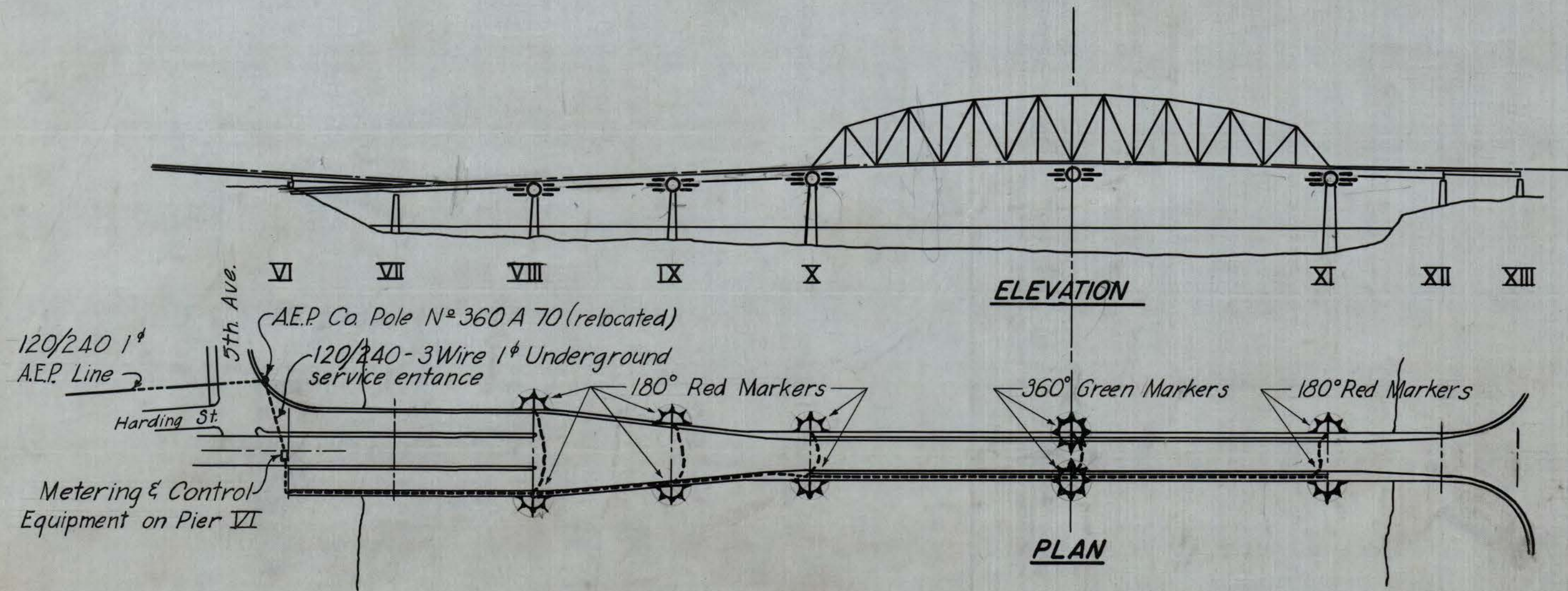
#1899







DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (9)	1953	FAYETTE & KANAWHA	27	27



**EQUIPMENT INCLUDED IN CONTROL CABINET**

- (All equipment shall be grounded in accordance with the N.E.C.)
- A-SPST Keyed By-Pass Switch - outdoor type
- B-Load Center - Trumbull Multi-Brkr. Type MB #R35021S with 4-15 amp. branches (or appr. equal)
- C-Load Contactor: 2P-25 amp. Crouse-Hinds #44413 (or equal.)
- D-Photo-electric Amplifier: Crouse-Hinds #44331 (or appr. equal), photo tube to be mounted separately.\*
- E-Pressure Switch turning 60w. bulb on when door is open.
- F-Socket & Reflector for 60w. bulb of control cabinet.

**WIRING DIAGRAM**

All circuits between Control Panel and Nav. light units shall be wired with approved neoprene jacketed multiconductor Bridge Class Cable and supported every 8"-6" max. All other circuits shall be wired in conformity with the N.E.C.

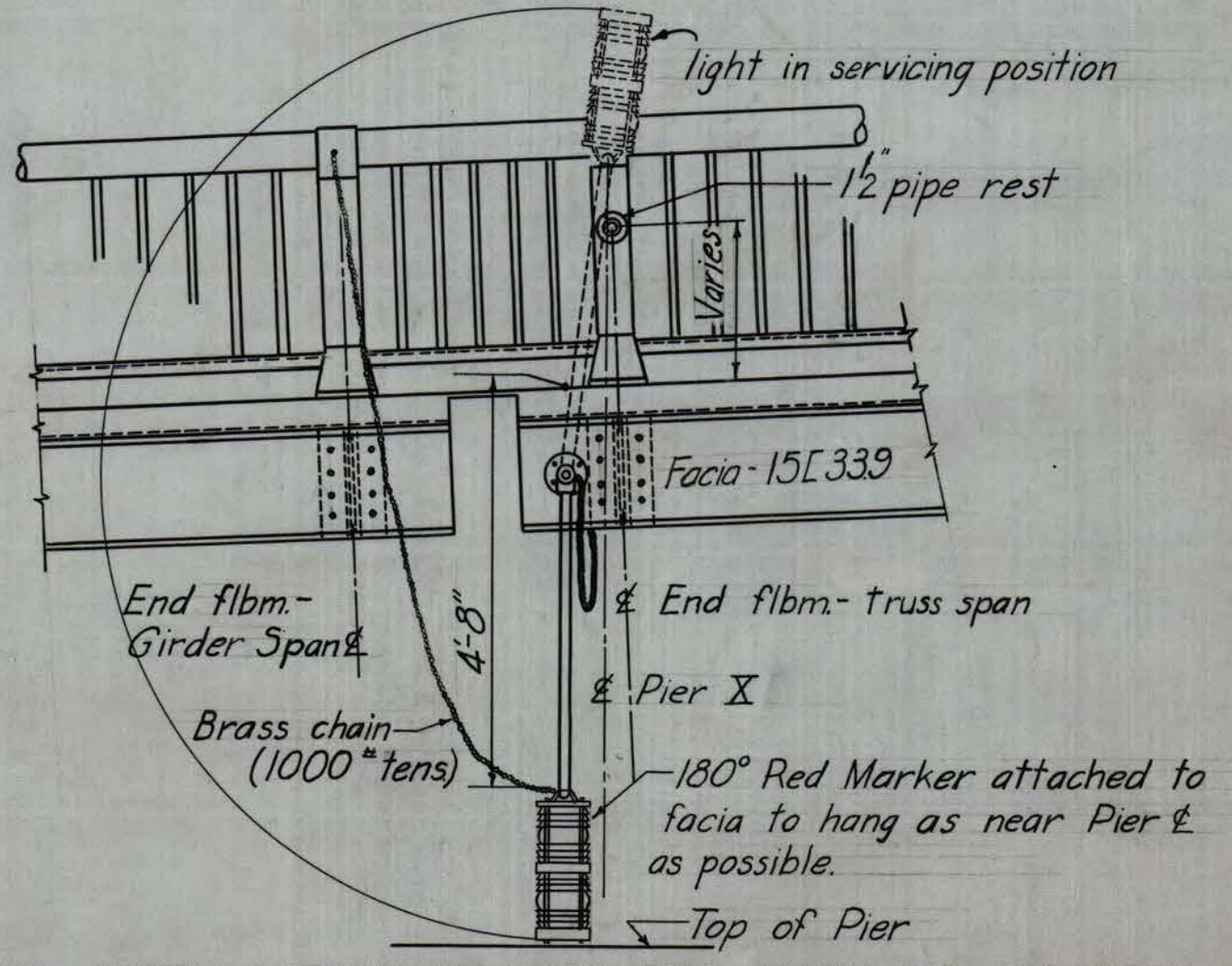
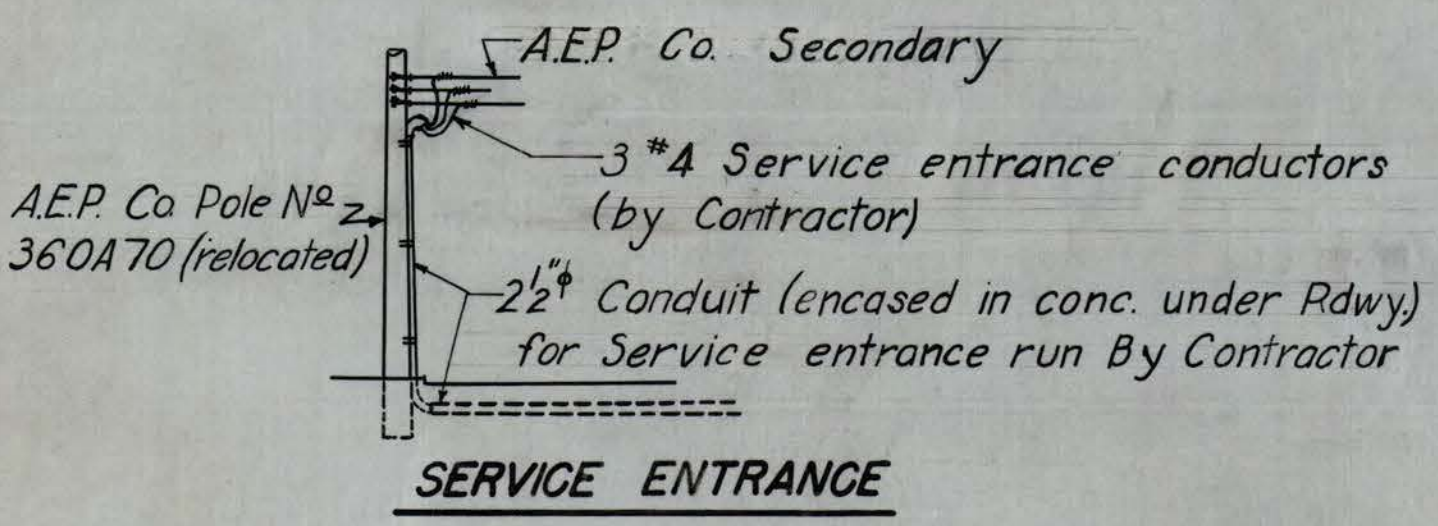
**MARKERS**

**180° Red Markers:** - Channel Boundary Red Nav. light units shall be Adams & Westlake Co. (Chi. Ill.) Type No. 1331, Bulletin B102 cast aluminum with 180° 8" red Fresnel Lens, mounting 1-100w working lamp and 1-100w. emergency lamp, with built in change over relay (or approved equal)

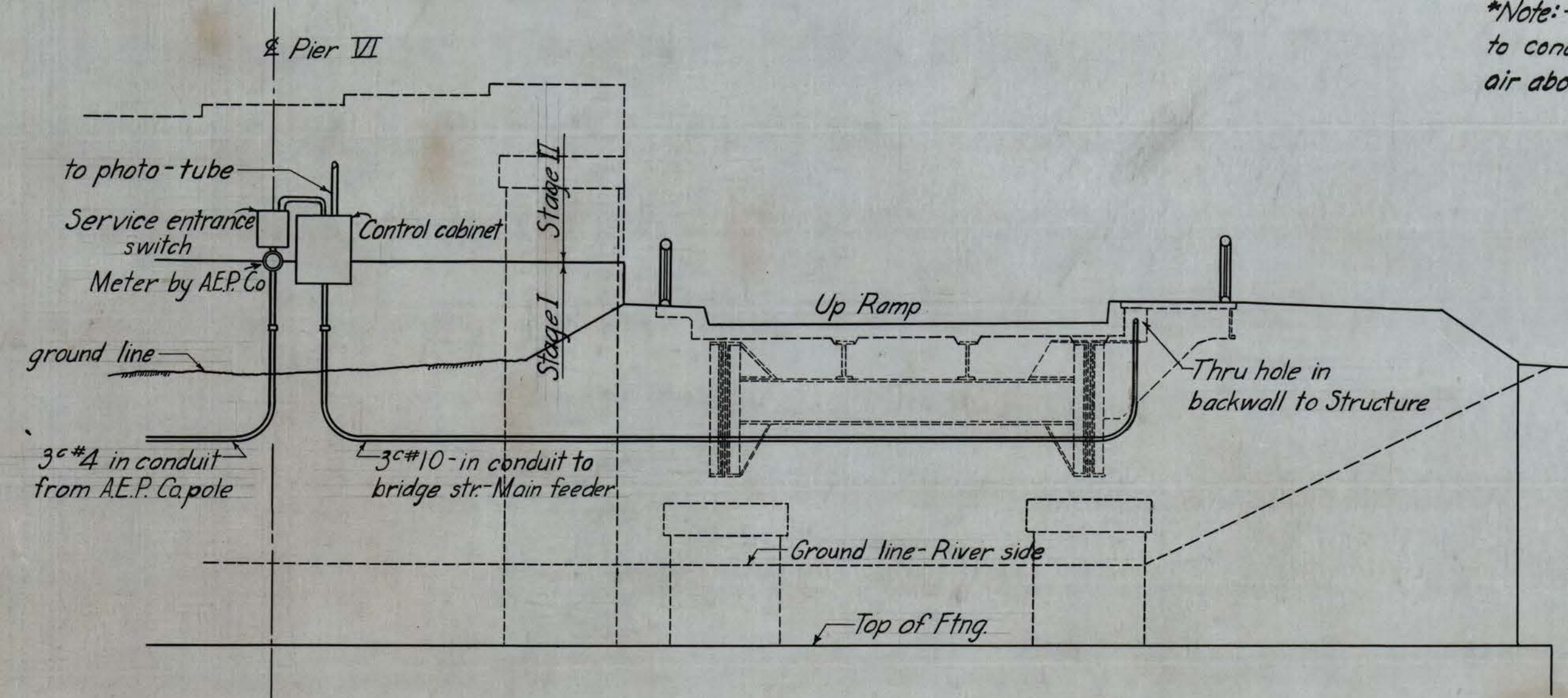
**360° Green Markers:** - Channel Green Nav. light units same as above except for 360°-8" Green Fresnel Lens.

All markers to be equipped with standard pivot & Locking arrangement.

\*Note:- Photo-tube location must be such as to respond to conditions in the navigable span, not in the clear air above.

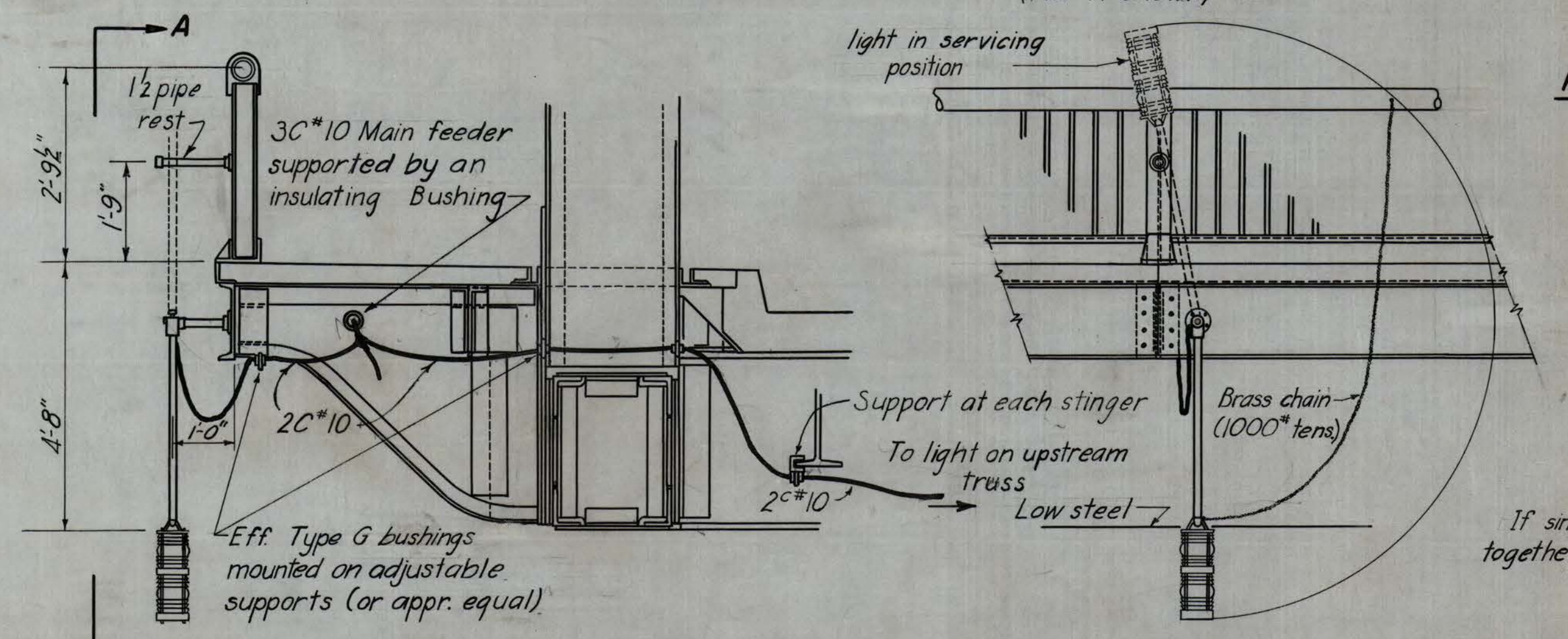
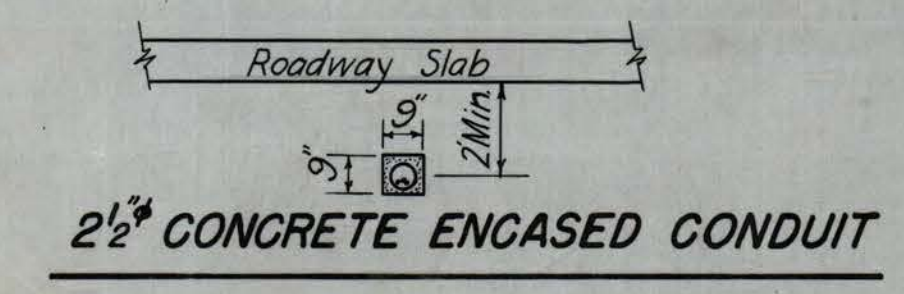


**TYPICAL INSTALLATION OF 180° RED MARKERS AT PIERS**  
(Pier X Shown)

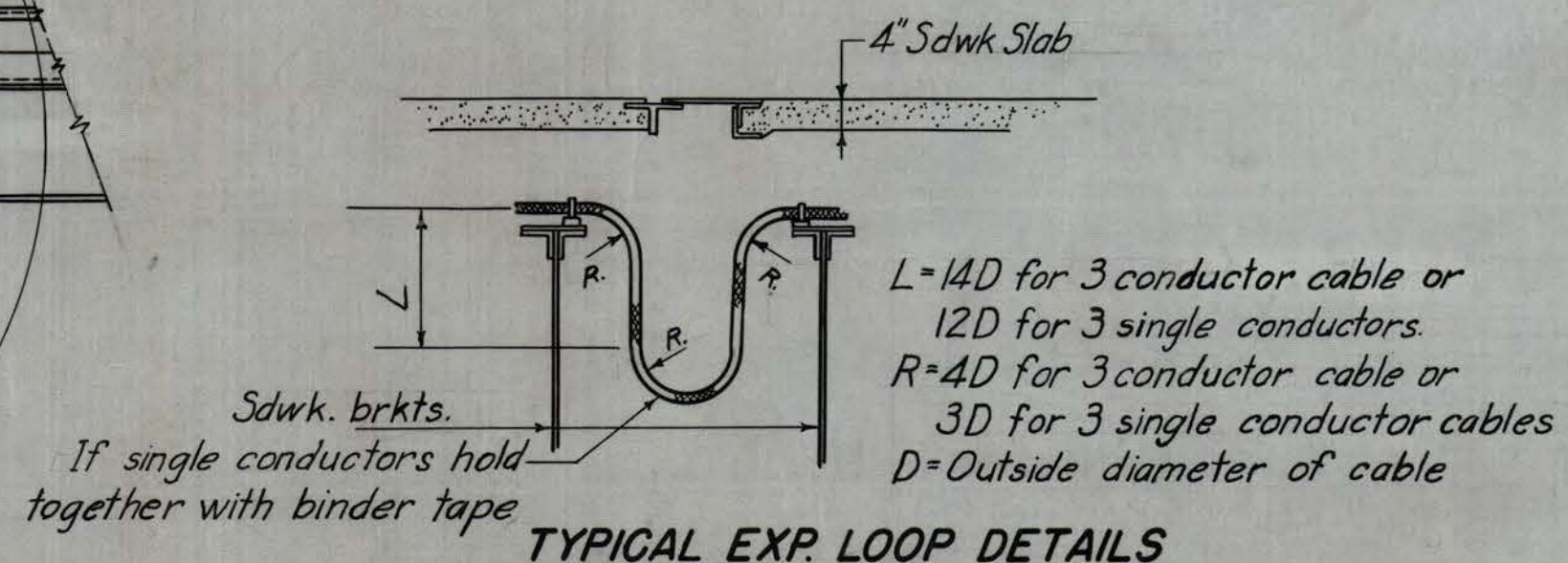


**FINAL LAYOUT OF CONTROL AND METERING EQUIPMENT - PIER VI**

NOTE: Equipment to be mounted temporarily on short poles near final location until completion of Pier VI stage II.



**360° GREEN MARKER AT P.P. 8 ON MAIN TRUSS**



**TYPICAL EXP. LOOP DETAILS**

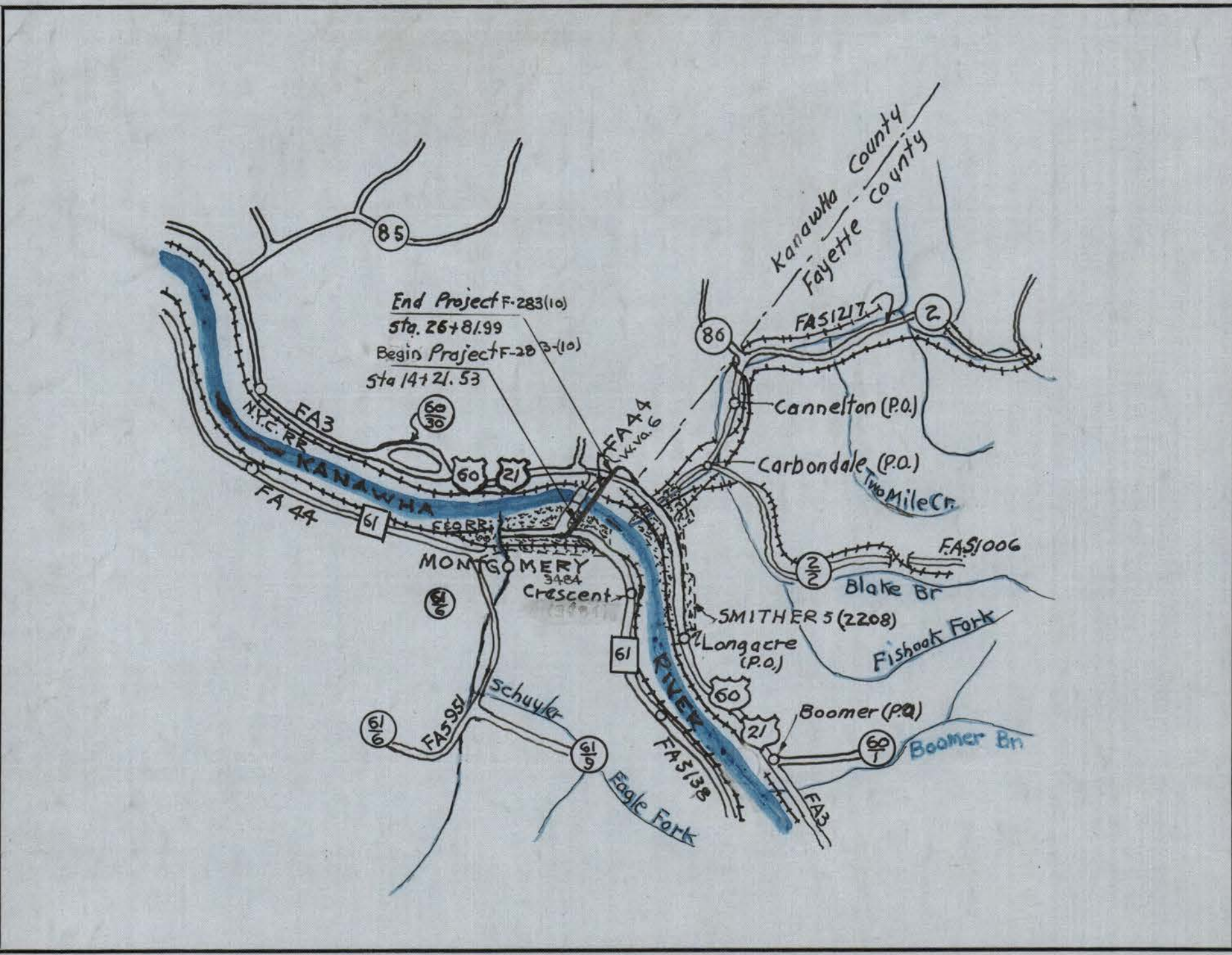
Pier VIII shown  
Exp loops req'd at Piers VI, VIII, IX & X

NOTE: All metalwork items required for the Navigation lights and circuits such as conduits, control cabinets, cable clamps, lamp hangers etc. will be paid for under Item 131.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**NAVIGATION LIGHTING**





SCALE: 1 INCH = 1 MILE - TRACED FROM COUNTY MAP

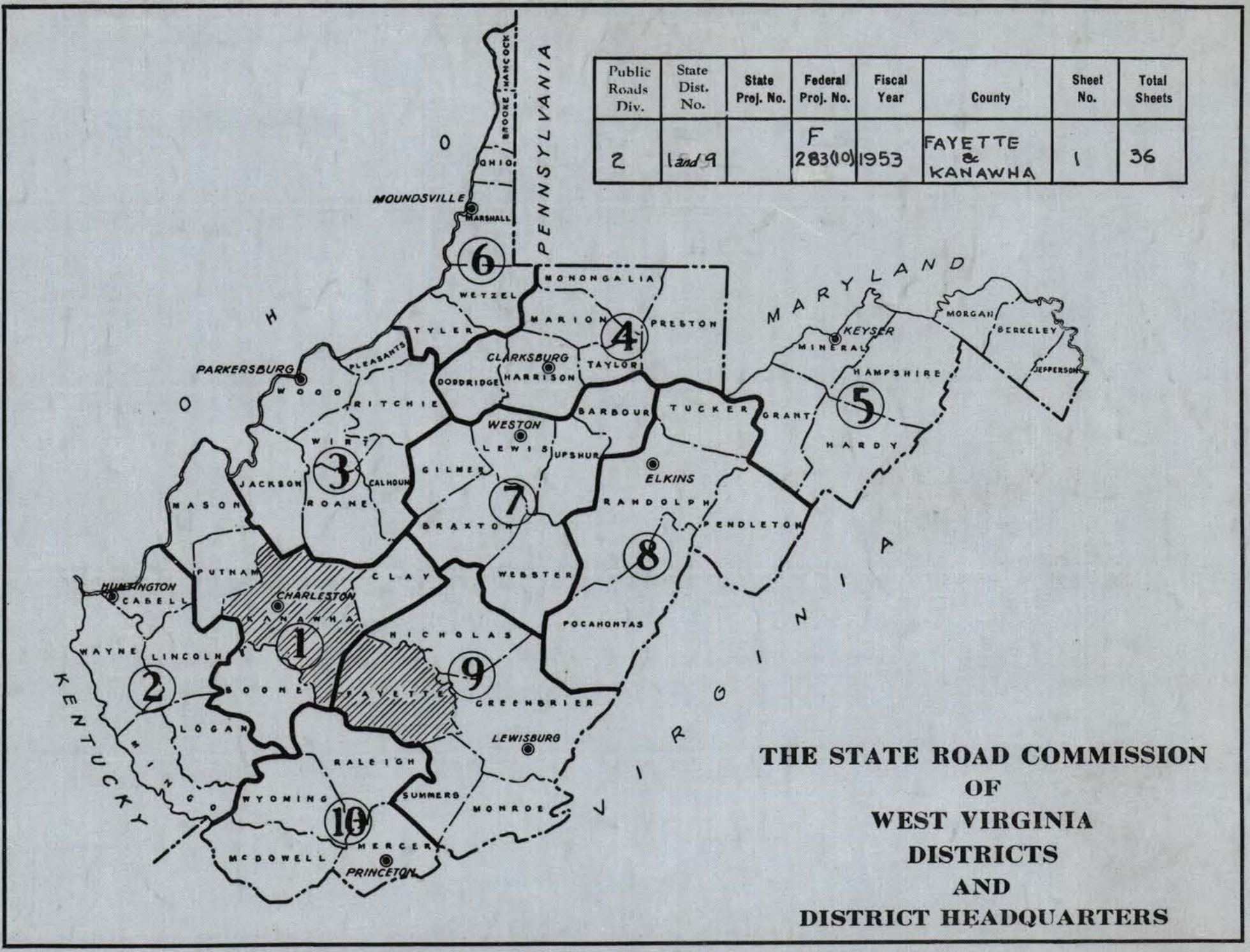
# THE STATE ROAD COMMISSION OF WEST VIRGINIA

## PLAN AND PROFILE FOR CONSTRUCTION OF STATE ROAD PROJECT NO. F 283 (10) ROUTE NO. W. VA. 6

CABIN CREEK DISTRICT KANAWHA COUNTY  
KANAWHA DISTRICT FAYETTE COUNTY  
MONTGOMERY BRIDGE #1899

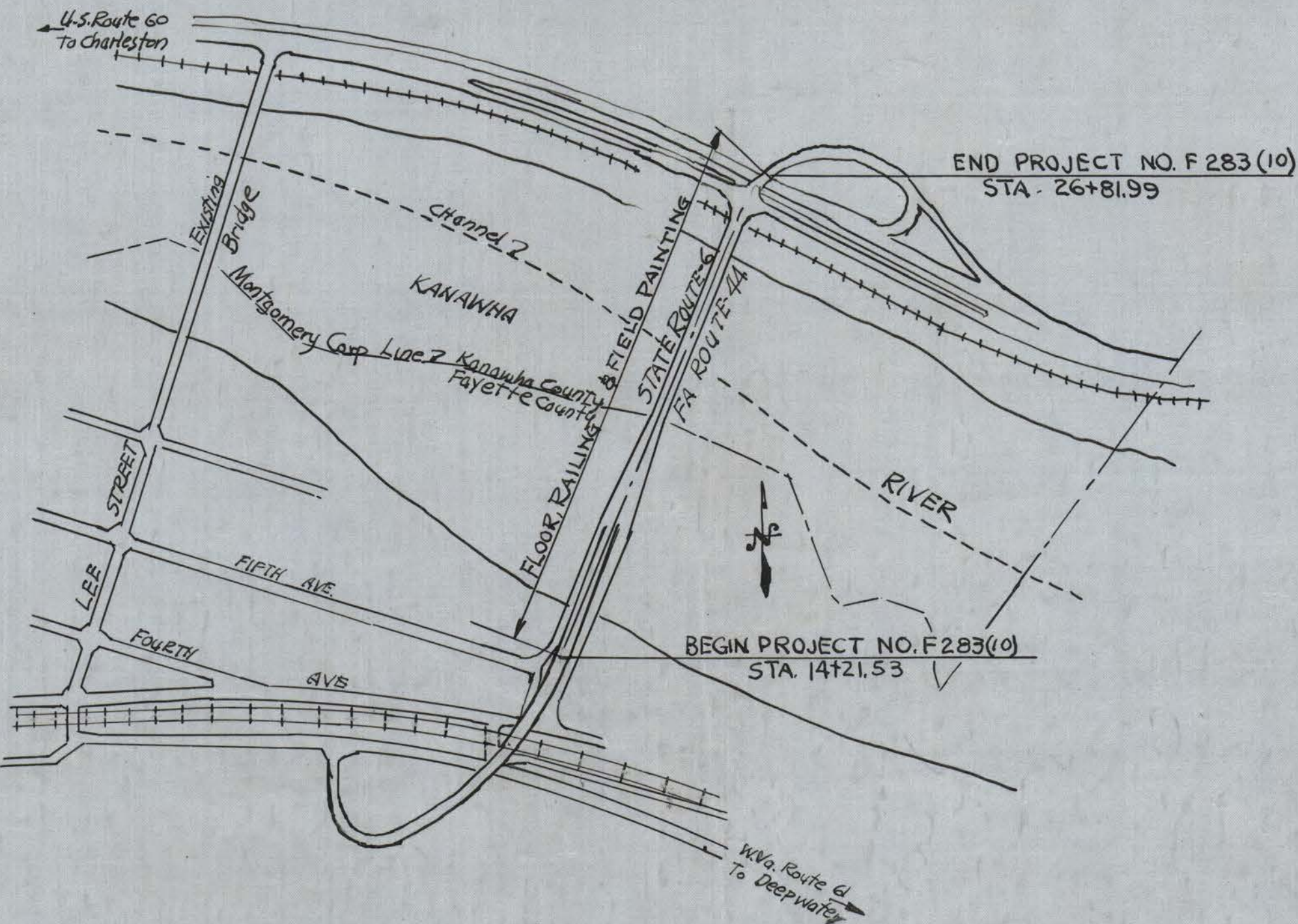
Sta. 14+21.53 To Sta. 26+81.99  
Length = 0.239 Mi. = 1260.46 Ft.

Plan 1 IN. =  
SCALES (AS SHOWN)  
PROFILE HOR. 1 IN. = VERT. 1 IN. =



### TYPE OF CONSTRUCTION

- FLOOR AND RAILING - CONTRACT NO. 1
- FIELD PAINTING - CONTRACT NO. 2



LAYOUT  
SCALE 1 IN. = 300 FT.

### INDEX TO SHEETS FOR FLOOR AND RAILING CONTRACT NO. 1

NO.	DESCRIPTION
1	Title and Layout
1A	Situation Plan
2	General Plan & Elevation - Pier VI to Pier XII
3	General Plan & Elevation - North Approach
5 & 6	Contour Sheets
7, 9 & 10	Framing Plans
26	Drainage Details
28	General Notes & Estimated Quantities
29	Slab Reinforcing Details - Ramps
30	Slab Reinforcing Details - Piers VIII to X
31	Slab Reinforcing Details - Main Span
32	Slab Reinforcing Details - Piers XI to XII & XIV to Abut.
33	Slab Reinforcing Details - Piers XII to XIV
34	Railing Details
35	Temporary Curb & Railings
36	Miscellaneous Details
36-A	Retaining Walls

### INDEX TO SHEETS FOR FIELD PAINTING CONTRACT NO. 2

NO.	DESCRIPTION
1	Title and Layout
2	General Plan & Elevation - Pier VI to Pier XII
3	General Plan & Elevation - North Approach
28	General Notes & Estimated Quantities

ROUTE NO. W. VA. 6  
PROJECT NO. F 283 (10)

PREPARED & RECOMMENDED  
BRIDGE ENGINEER - STATE ROAD COMMISSION  
REVIEWED  
STATE CONSTRUCTION ENGINEER - STATE ROAD COMMISSION  
APPROVED  
STATE ROAD COMMISSIONER

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT F-283 (10)  
APPROVED BY OFFICIAL ORDER OF THE STATE ROAD COMMISSION OF WEST VIRGINIA, ENTERED ... DAY OF ... 1954.  
SECRETARY

### CONVENTIONAL SIGNS

- State Line
- County Line
- Corporation Line
- District Line
- Right of Way Line
- Property Line
- Fence Line
- Guard Rail
- Proposed Road
- Traveled Road
- Railroad
- Electric Railway
- Frame Dwelling
- STONE CONCRETE Wall
- Marsh
- Hedge
- Drop Inlet
- Bridge
- Present Culvert
- Proposed
- Telegraph Pole
- Trolley Pole
- Power Pole
- Tree
- Brick Dwelling

PLANS COMPLETED December 1954  
Revised March 1955.

APPROVED DATE:  
DISTRICT ENGINEER  
BUREAU OF PUBLIC ROADS  
DEPARTMENT OF COMMERCE



**GOVERNING SPECIFICATIONS**

Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia, 1952, approved by the B.P.R. January 2, 1953, except as noted and except that the design is to be in accordance with American Association of the State Highway Officials Specifications of 1949, except as noted.

Designed for H20-516-44 Live Load applied in accordance with 1949, AASHO Specifications.

Required Contract Provisions for projects financed with Federal Funds, dated Dec. 1, 1954, approved by Bureau of Public Roads Dec. 20 1954.

Labor rates for Fayette and Kanawha Counties

See Supplemental Specifications for Permits and Licenses; for Aluminum Railings, and for Field Painting.

Excerpts from Railway Agreement.

Portland Cement Concrete Admixtures Supplement to Standard Specifications adopted 1952, dated July 27 1955

**GENERAL NOTES**

**Scope of Contract**

The work to be performed under these contracts includes the painting, except as noted, of all metalwork, erected by others, with the coats of field paint specified; the construction of the concrete roadway slabs, curbs and sidewalks; and the fabrication and erection of an aluminum handrailing in addition to such temporary curbs and railings as are required by the plans for the direction and safety of traffic.

The construction will extend from Pier VI (Sta. 14+215.3) in Montgomery to the Abutment (Sta. 26+81.99) on the North bank and will include the North Approach Ramps from the ends of the retaining wall sections of Ramps X and W. The center portion of the roadway from Pier VI to Pier VIII (Stage II) and the earth fill and concrete roadway, curbs and sidewalks on the retained fill portion of Ramps X and W are not included in these Contracts.

Items 71-A, 78, 75-C and 130 are to be included in Contract No. 1, and Item 90-A is to be included in Contract No. 2

**GENERAL NOTES FOR PAINTING**

All structural metalwork, except bronze bearings, corrosion-resisting alloy metals and surfaces in contact with concrete, has been given a shop coat of red lead paint.

The contractor for the Steel Superstructure Proj. F 283 (9) is required to spot paint, with red lead paint, all field connections and any paint surfaces damaged as a result of his operations.

The contractor for the floor and railing will be required to thoroughly clean all metal surfaces that may be soiled as a result of his operations and he also will be required to clean and repaint any surface on which the shop coat of paint has been damaged as a result of his operations.

Painting below the floor will not be permitted until concrete has been poured and the forms removed.

**Surfaces not to be painted** Surfaces, on which the shop paint has been omitted as specified above, shall not be given any field paint. Aluminum hand-rail materials will not be painted.

**Point** All metalwork, except as otherwise specified, shall be given one coat of Red Lead Paint (First Field Coat) as specified in Section 3.11.7 and a finish coat of Aluminum Paint (Second Field Coat) as specified in Section 3.11.9.

**Painting** Painting shall be in accordance with Art. 290-933 G of the Standard Road and Bridge Specifications of the State Road Commission of West Virginia, except that the first paragraph of G (3) shall be modified as follows: (3) Field Painting: As soon as the field cleaning has been done to the satisfaction of the Engineer, any surfaces, including rivet heads, from which the paint has been worn off or has become otherwise defective, shall be repainted with a spot coat of red lead paint and this paint permitted to dry, prior to the application of the first field coat of red lead paint.

Approx. weight of steel to be painted = 2500 Tons.

The contractor for Field Painting, Item 90-A shall submit a lump sum bid for this item. This lump sum shall be full compensation for furnishing all the material and doing all the work herein prescribed in a workmanlike and acceptable manner, including all labor, tools, equipment, supplies, materials and incidentals necessary to complete the item.

**GENERAL NOTES FOR CONCRETE AND REINFORCING**

**Classes of Concrete**

All concrete in this contract shall be Class 'A' Superstructure Concrete, Air-Entrained.

**Cement**

Cement shall be AASHO-M85-53, Type I or II, or M151-53 Type IS, plus approved air-entraining admix, or shall be AASHO-M134-53, Type IA or II A, or M151-53, Type IS-A.

**Finish and Curing**

The top surface of all concrete roadway slabs, curbs, and sidewalks shall be finished as specified in Section 2.71-73.3(P). All other surfaces shall have an ordinary finish. Curing of concrete shall be by means of burlap and water in accordance with the Specifications.

**Construction Joints**

Construction joints other than those shown shall be made only as directed or approved by the Engineer. Suitable and adequate keys shall be used at construction joints. See Section 2.71-73.3(L).

**Expansion Joints**

Copper water stops called for on the plans shall conform to Section 3.9.16(A). All joint filler for vertical joints shall be Sponge Rubber Type III, or Cork Type I conforming to Specifications Art. 3.8.2.

**Reinforcing Bars**

Reinforcing steel may be structural or intermediate grade billet steel and shall conform to section 3.9.1 of the Standard Specifications except that the manufacture of the billet steel may be in accordance with ASTM Specifications A15-52T.

Deformations of reinforcing steel shall be in accordance with ASTM-A305-53T.

**Bar Splices and Clearances**

Unless otherwise shown on the plans all bars shall be lapped 25 diameters. The clear distance between the bars and the face of concrete shall be as shown on the drawings but in no case shall be less than 1 1/2" for roadway reinforcing and 1" for sidewalks.

**Tests**

The contractor shall furnish certified copies, secured from the manufacturer, of the results of tests for autoclave expansion and chemical analysis for all Portland cement used in this project. Six of these certified copies shall be submitted to the Department of Tests, Mechanical Hall, Morgantown, West Virginia.

**Chamfers**

A 3/4" chamfer strip shall be used on all exposed edges of concrete, except where other size chamfer strips are specified. See section 2.71-73.3.

**Divisor Strips**

The divisor strips in the vicinity of Pier VIII and Pier XIII shall be finished with a one inch thick coat of white Portland cement concrete as indicated on the plans. The proportions and methods of placing and curing, in so far as they are adaptable, shall be in accordance with Section 2.110.3(B) for Plain Concrete Curb, Whiteface. This shall be included in the price bid for Class 'A' Concrete.

**Measurement and Payment**

All concrete items included in this contract will be paid for under Item 71-A "Class A Concrete in Superstructure", per cubic yard. Measurement and payment will be in accordance with Sections 2.71-73.4 and 2.71-73.5.

**Curbs**

Vary height of curb if necessary to construct same on uniform grade.

**ALUMINUM RAILING**

All railing materials above the tops of the concrete sidewalks shall be aluminum alloy 6061 T6 heat treated, of the ASTM designations given in the Specifications,

with stainless steel expansion sleeves as shown on the plans.

Materials, fabrication, erection, measurement and payment for aluminum handrailing shall be in accordance with the Supplemental Specifications

Shop drawings for railings are to be in ink on tracing cloth or in pencil on special cloth lacquered after completion.

**TEMPORARY CURBS AND RAILINGS**

Temporary concrete curbs are required at Pier VIII to direct vehicular traffic to ramps as shown on the plans, prior to completion of Stage II. These curbs shall be poured independently of the roadway slab to facilitate their removal at a later date. Construction of these curbs, together with all materials incidental thereto, will be included and paid for under Items 71A and 78.

Temporary railings are required at Piers VI and VIII as shown on the plans and will be furnished and paid for under Item 75C of this contract.

**REFLECTORS**

Reflector units furnished by the State shall be installed by the Contractor as directed by the Engineer, this to be included in the price bid for Class 'A' Concrete.

**ANCHOR BOLTS**

The Substructure Plans provide for the installation, in the tops of the Retaining Walls of anchor bolts for the installation of handrail posts. The contractor shall verify the location of all anchor bolts prior to the erection of any railing and shall adjust the details to correct for variations in the locations of the substructure work as constructed.

The cost of any alterations to the railing, found necessary to make it fit the substructure as built, shall be included in the unit price bid for Item 75C.

**CHAIN LINK FENCE**

The chain link fence shown on the plans shall be Cyclone Safeguard Chain Link Fence with top rail, or approved equal.

Item 130 will include furnishing and installing all fence and gate materials at Piers XIII and XIV.

**HEIGHTS OF HAUNCHES FOR ROADWAY SLABS**

The thicknesses of concrete above the steel supports for the roadway are to be determined by deducting the actual elevations of the steel supports as constructed from the roadway elevations on the contour sheets or computed from the lines and grades indicated on the plans, adding thereto the dead load cambers for the concrete roadway, sidewalks and railings given on the stress sheets.

DIST. NO.	STATE PROJ. NO.	FED. AD. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (9)	1953	FAYETTE & KANAWHA	28	36

**QUANTITY SUMMARY**

Location	Bar Size	# 3-lbs	# 4-lbs	# 5-lbs	Total lbs	Conc. Y.
South Approach Ramps		2,493	50,707	340	53,540	268
Pier VIII to Pier X		1,730	73,929		75,659	362
Truss Span		4,560	85,023		89,583	440
Pier XI - Pier XII		972	18,038		19,010	98
Pier XII - Pier XIV		699	26,701	8,906	36,306	165
Pier XIV - N. Abut.		376	11,376	156	11,908	59
North Approach Ramps		2,961	65,611		68,572	349
Splash Blocks						10
Temporary Curbs		429	722		1,151	15
Totals		14,220	332,107	9,402	355,729	1766

**ESTIMATED QUANTITIES**

Item	Description	Quantity	Units	AS BUILT
71A	Class A Concrete in Superstructure	1766	C. Y.	1776.39
78	Reinforcing Steel Bars	355,729	lbs	355,777.71
90-A	Field Painting (Approx 2500 Tons)		L.S.	
75C	Metal Railing	5,186	L.F.	5,186.0
130	Chain Link Fence	53	L.F.	53.0

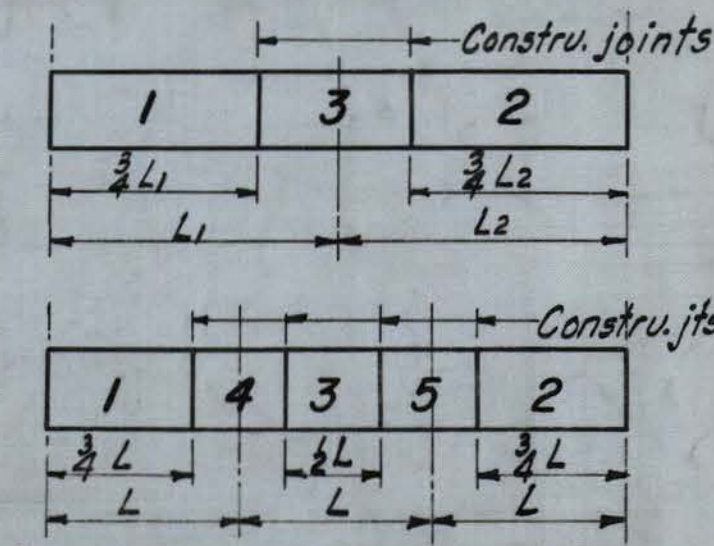
All the above items are in Contract No. 1 except Item 90-A which is Contract No. 2

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

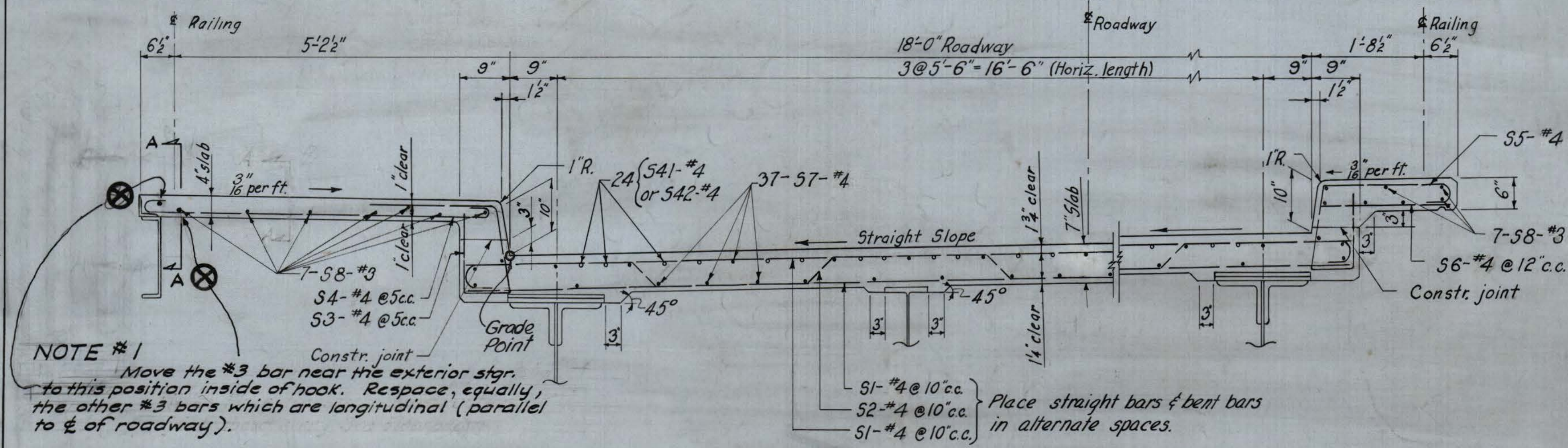
**GENERAL NOTES AND ESTIMATED QUANTITIES**



**ORDER OF POURING CONTINUOUS SPANS**

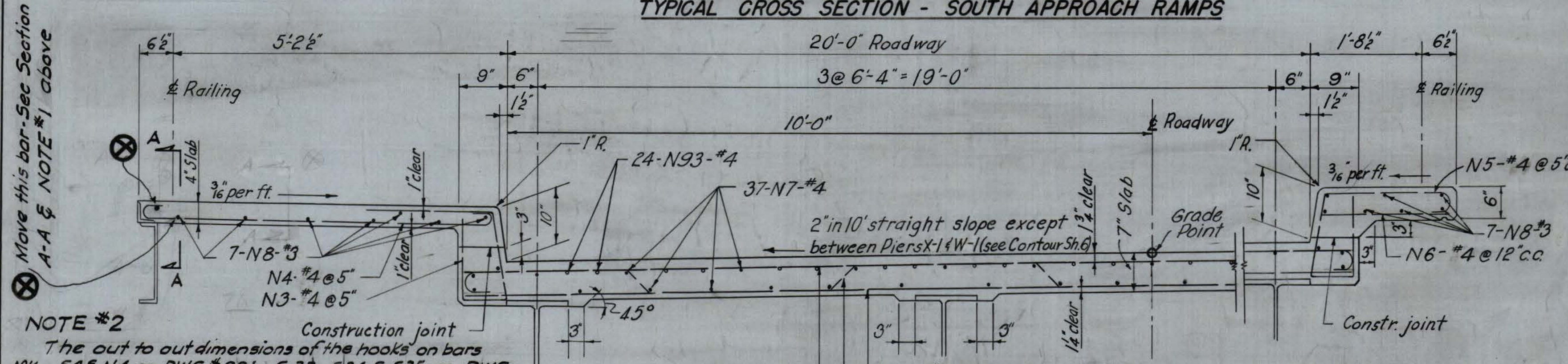


Construction joints may be eliminated between successive pours if pouring is continuous and in sequence indicated.



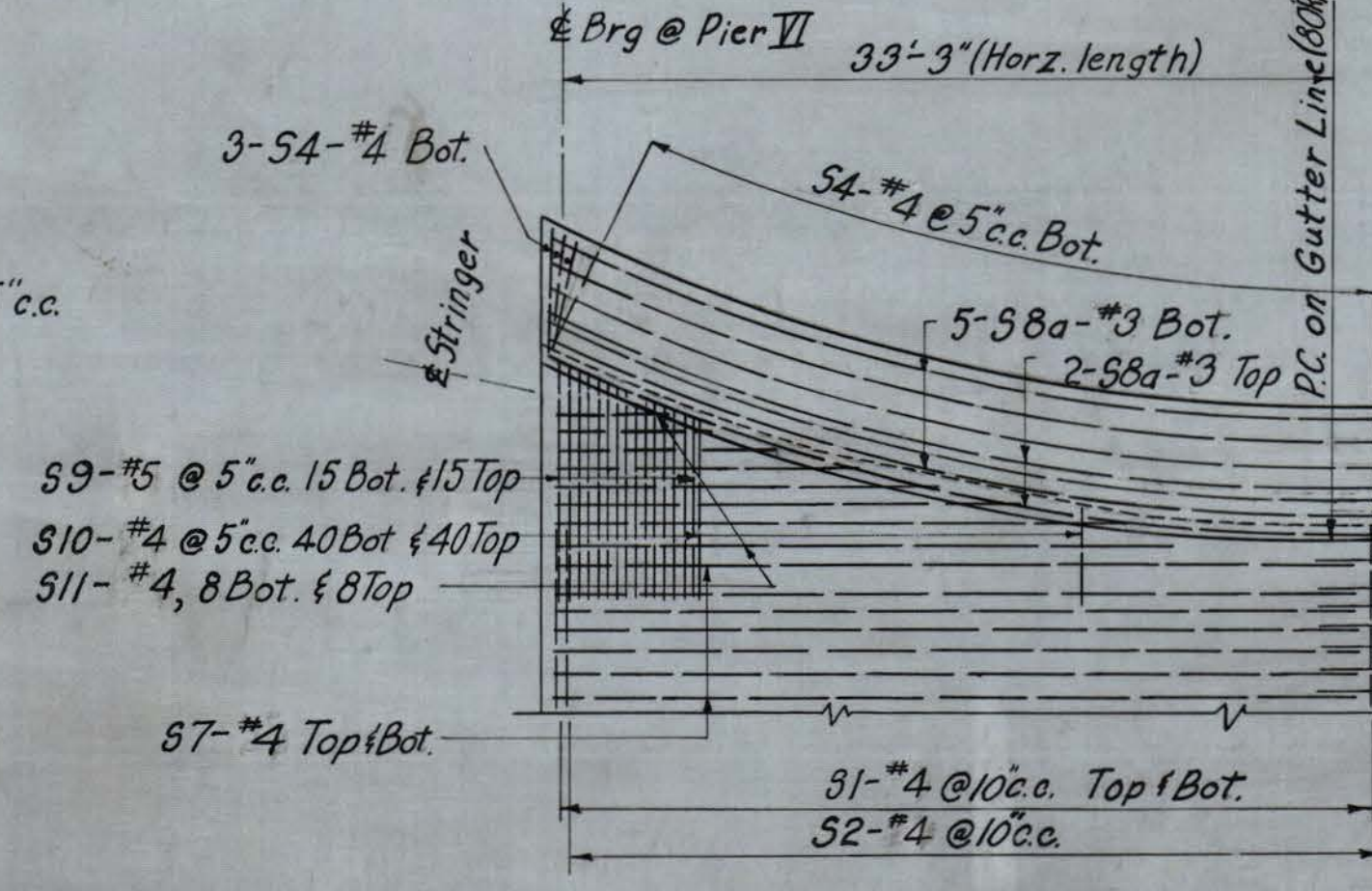
**TYPICAL CROSS SECTION - SOUTH APPROACH RAMP**

**NOTE #1**  
Move the #3 bar near the exterior str. to this position inside of hook. Respace, equally, the other #3 bars which are longitudinal (parallel to & of roadway).

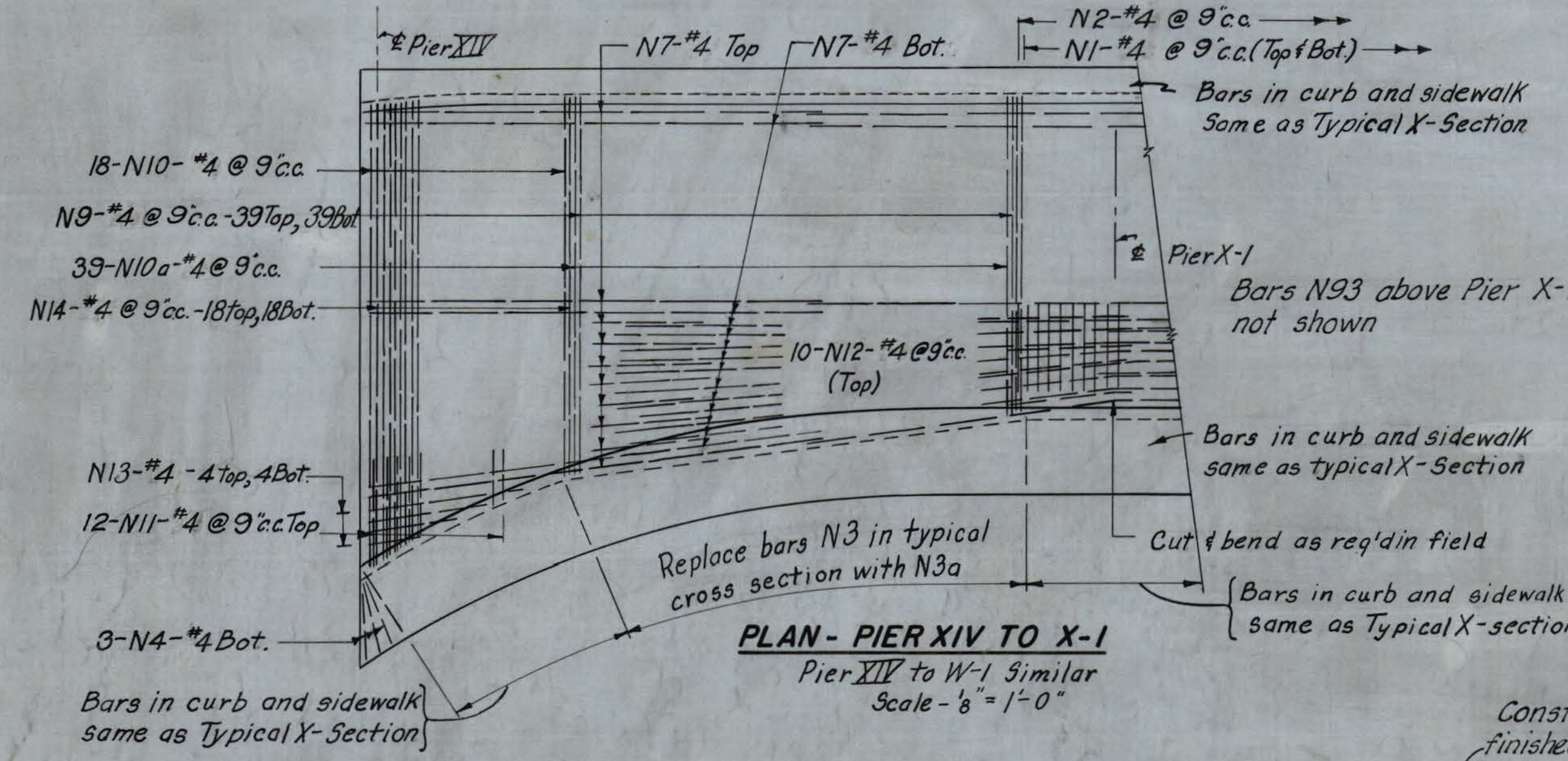


**TYPICAL CROSS SECTION - NORTH APPROACH RAMP**

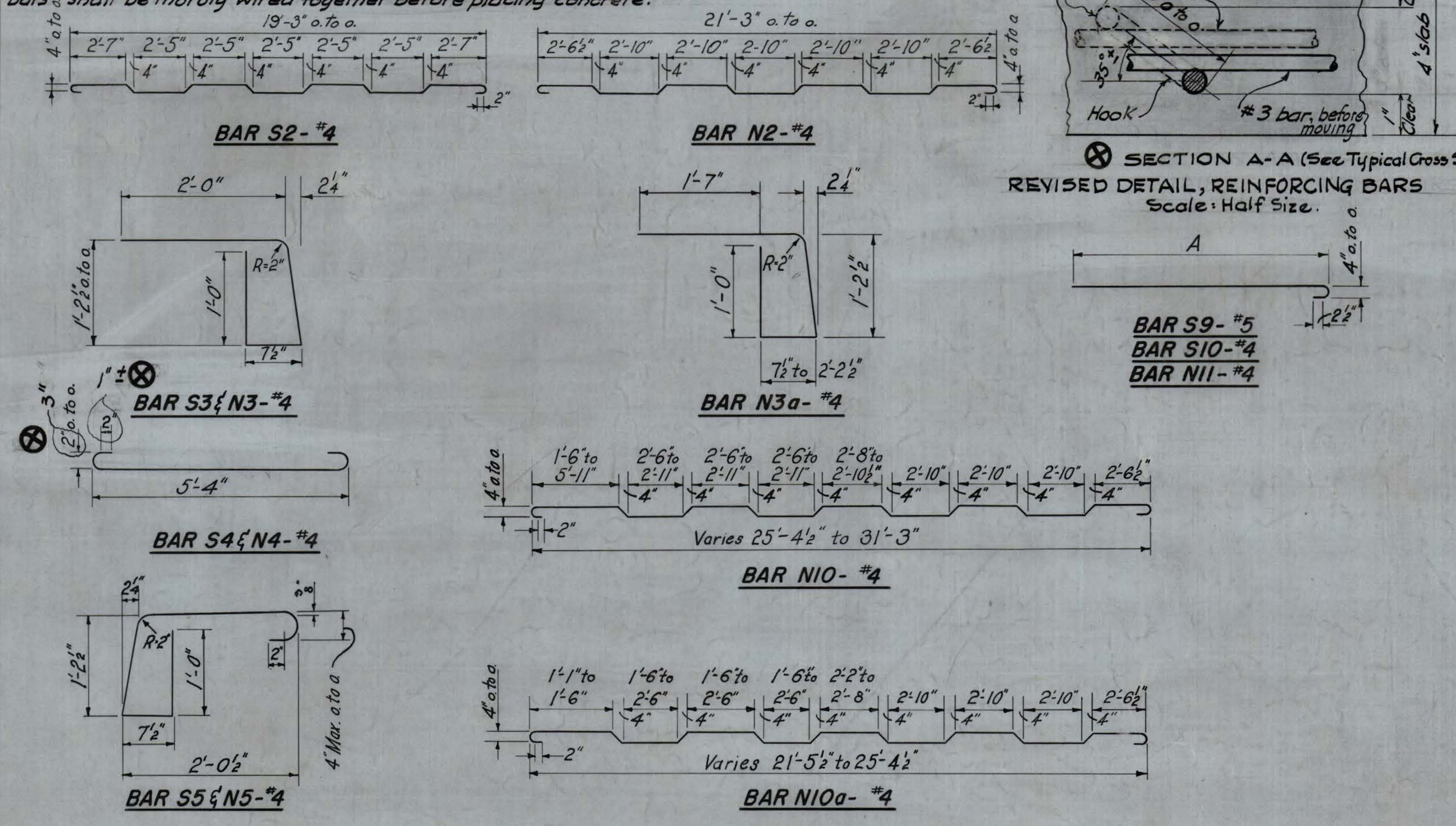
**NOTE #2**  
The out to out dimensions of the hooks on bars MK, 54 & N4 on DWG. #29; 533, 534 & 535 on DWG. #30; 74 & 78 on DWG. #31; N15, N27, N30, N37, N53 & N55; N16 & N28; N31 & N38 on DWG. #32; and N63 on DWG. #33 shall be 3" instead of 2" as originally shown on Plans. The hook end (extension) shall be parallel to the bar.  
In addition to supporting the main #4 bars, the #3 bars which are placed inside the hooks at both ends shall be thoroly supported. All these bars shall be thoroly wired together before placing concrete.



**PLAN OF CURVE AT PIER VII**  
Scale 1/8" = 1'-0"



**PLAN - PIER XIV TO X-1**  
Pier XIV to W-1 Similar  
Scale - 1/8" = 1'-0"



**BAR SCHEDULES**

South Approach Ramps			
Mark	No.	Stock	Bend
31	1101	#4 x 19'-3"	Straight
32	550	#4 x 21'-1 1/2"	See Detail
33	1104	#4 x 4'-10"	do
34	1107	#4 x 6'-1"	do
35	1100	#4 x 5'-1"	do
36	459	#4 x 1'-11"	Straight
37	519	#4 x 33'-10"	do
38	190	#3 x 33'-7"	Straight
38a	7	#3 x 35'-6"	80' Rad Curve
39	31	#5 x 10'-6" (Ave)	See Detail
310	80	#4 x 6'-2" (Ave)	do
311	16	#4 x 16'-6" (Ave)	Straight
541*	96	#4 x 32'-6"	Straight
542*	240	#4 x 13'-0"	Straight

North Approach Ramps			
Mark	No.	Stock	Bend
N1	1241	#4 x 21'-3"	Straight
N2	620	#4 x 23'-1 1/2"	See Detail
N3	1182	#4 x 4'-10"	do
N3a	144	#4 x 6'-5" (Ave)	do
N4	1332	#4 x 6'-1"	do
N5	1323	#4 x 5'-1"	do
N6	552	#4 x 1'-11"	Straight
N7	580	#4 x 30'-10"	do
N7a	111	#4 x 34'-1"	do
N8	211	#3 x 30'-7"	do
N8a	42	#3 x 33'-10"	do
N9	156	#4 Varies 21'-3" to 25'-3"	do
N10	37	#4 x 30'-5" (Ave)	See Detail
N10a	78	#4 x 25'-6" (Ave)	do
N11	24	#4 Varies 3'-6" to 7'-0"	do
N12	20	#4 x 5'-8"	Straight
N13	16	#4 Varies 3'-6" to 10'-0"	do
N14	72	#4 Varies 23'-3" to 31'-3"	do
N93*	168	#4 x 25'-0"	do

**Remarks:-**  
541 - These additional bars occur adjacent to Pier VII & Splice above Pier VII  
542 - These additional bars occur above intermediate floor-beams except floor-beams above and adjacent to Pier VII.  
59-A varies from 11'-0" to 9'-0" by 6" every 3 bars, with Top  
S10-A varies from 7'-6" to 3'-9" by 5" every 4 bars, Bot. & Top  
S11 varies from 27'-0" to 6'-0" by 3'-0" every bar, Bot. & Top  
N7a & N8a - between Pier W 3 & Abutment W only.  
N11 - A-5-3  
N93 - These additional bars occur above Piers X-1, X-2, X-4, X-5, W-1, W-2 & W-4  
\*Place approx. symmetrically about Piers & Floorbeams, stagger Ends ±!



**TYPICAL CONSTRUCTION JOINT**  
Scale: 1/2" = 1'-0"

Transverse construction joints - S. Approach Ramps  
Longitudinal construction joint - Pier VIII to IX  
Transverse construction joint - Pier XIII and  
Transverse construction joints - N. Approach Ramps.

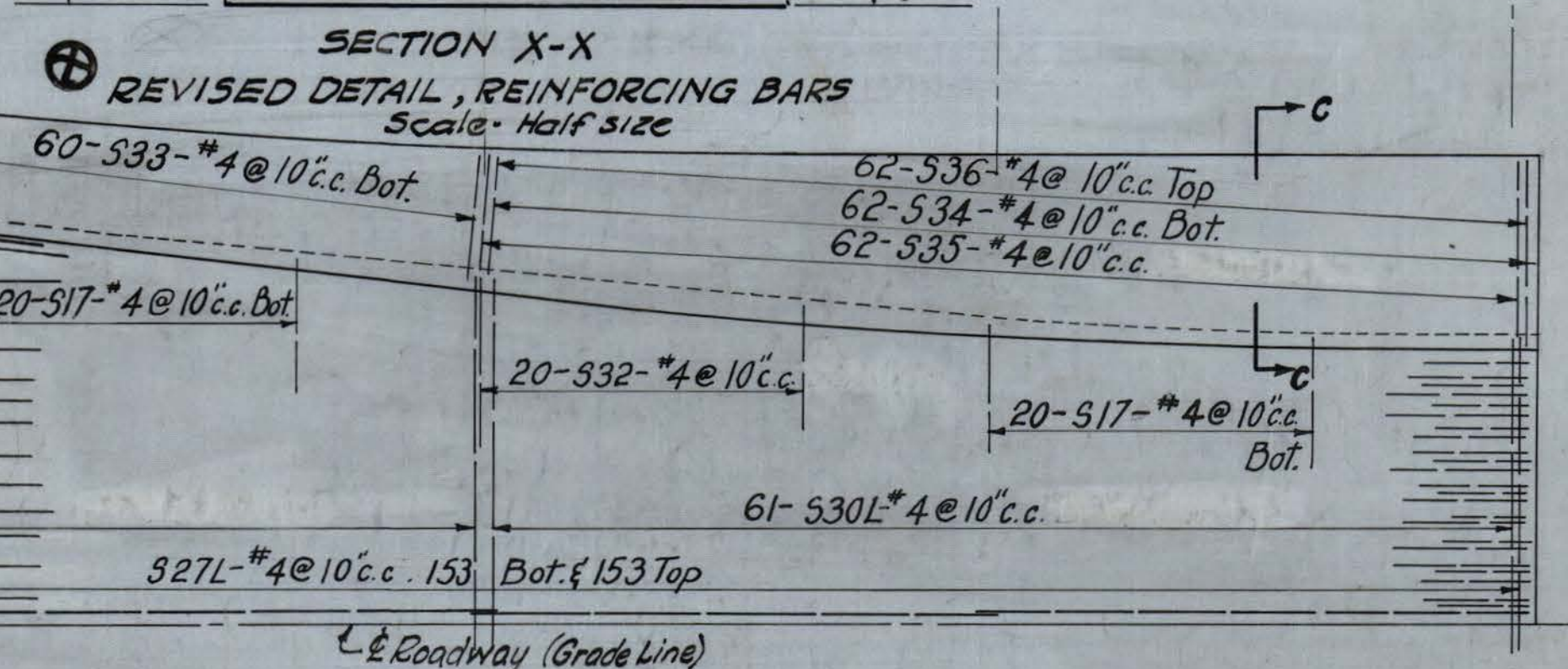
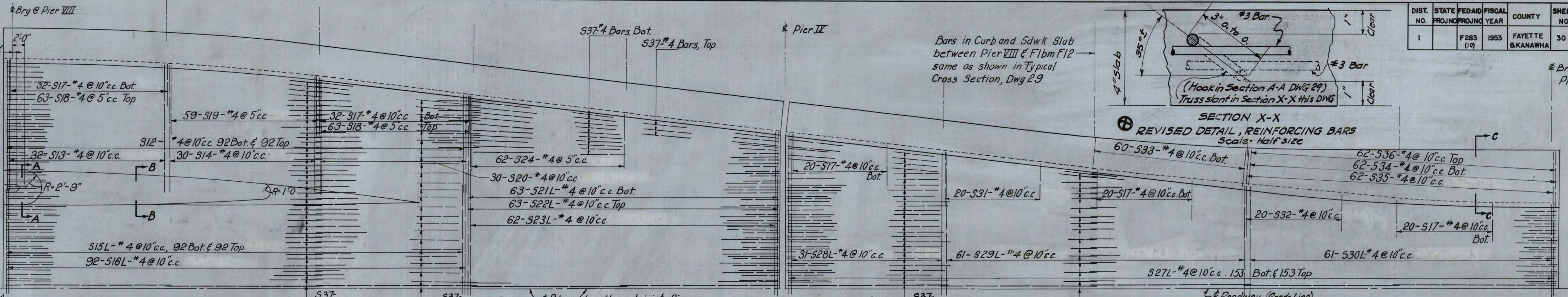
**NOTE:**  
Vary height at haunches as required to make 7" Rdwy. Slab conform to contours given on Sheets 5 and 6. See notes on Sheet 28.

**THE STATE ROAD COMMISSION OF WEST VIRGINIA**  
**MONTGOMERY BRIDGE NO. 1899**  
**OVER KANAWHA RIVER AT MONTGOMERY, W. VA.**  
**SLAB REINFORCING DETAILS**  
**RAMP**

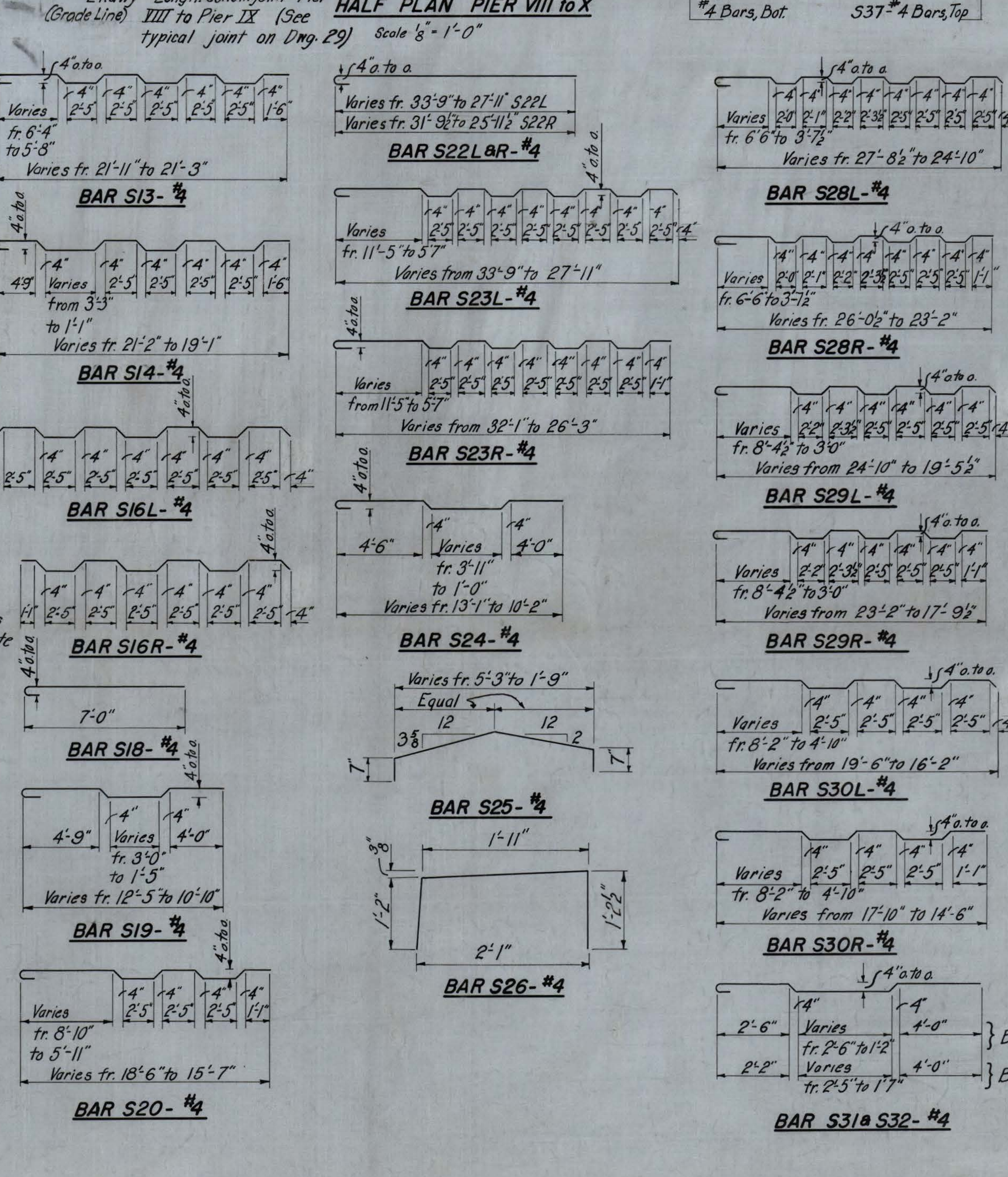
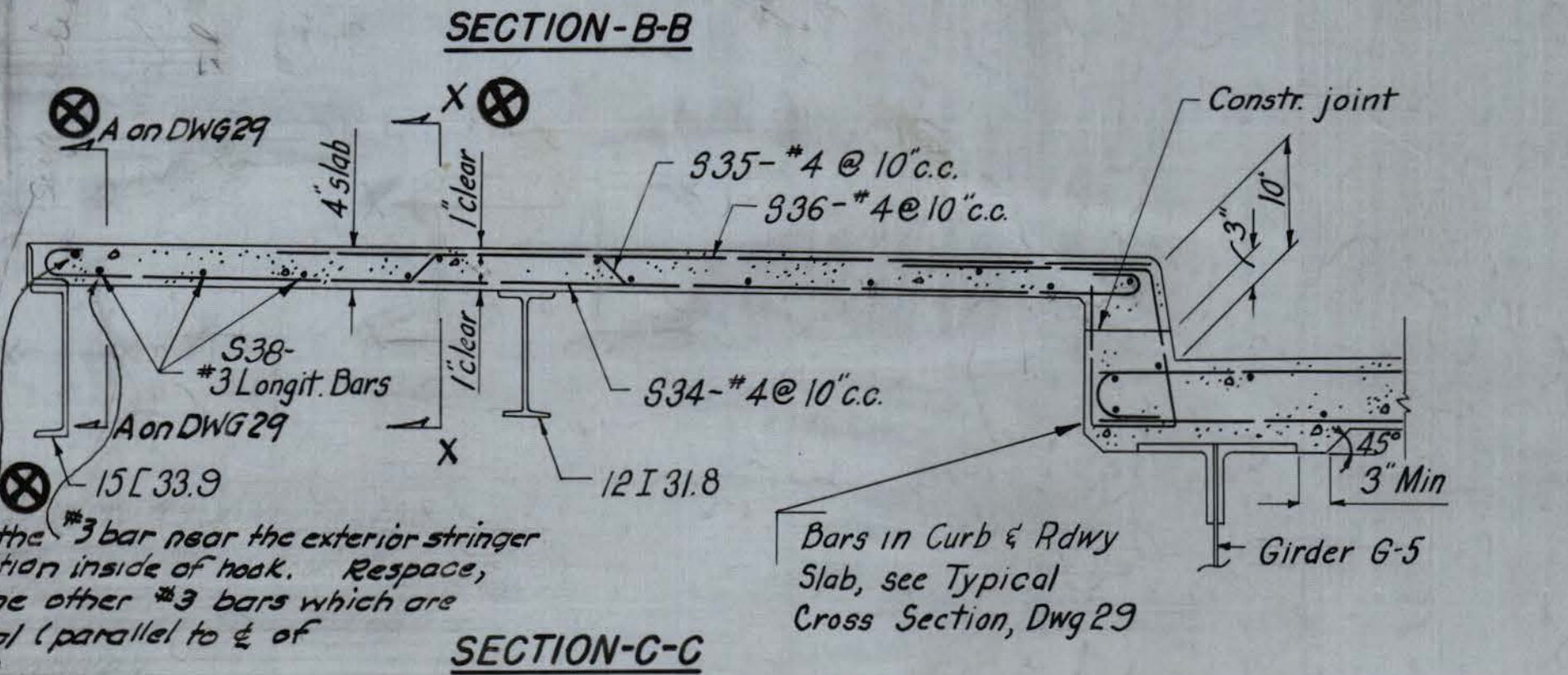
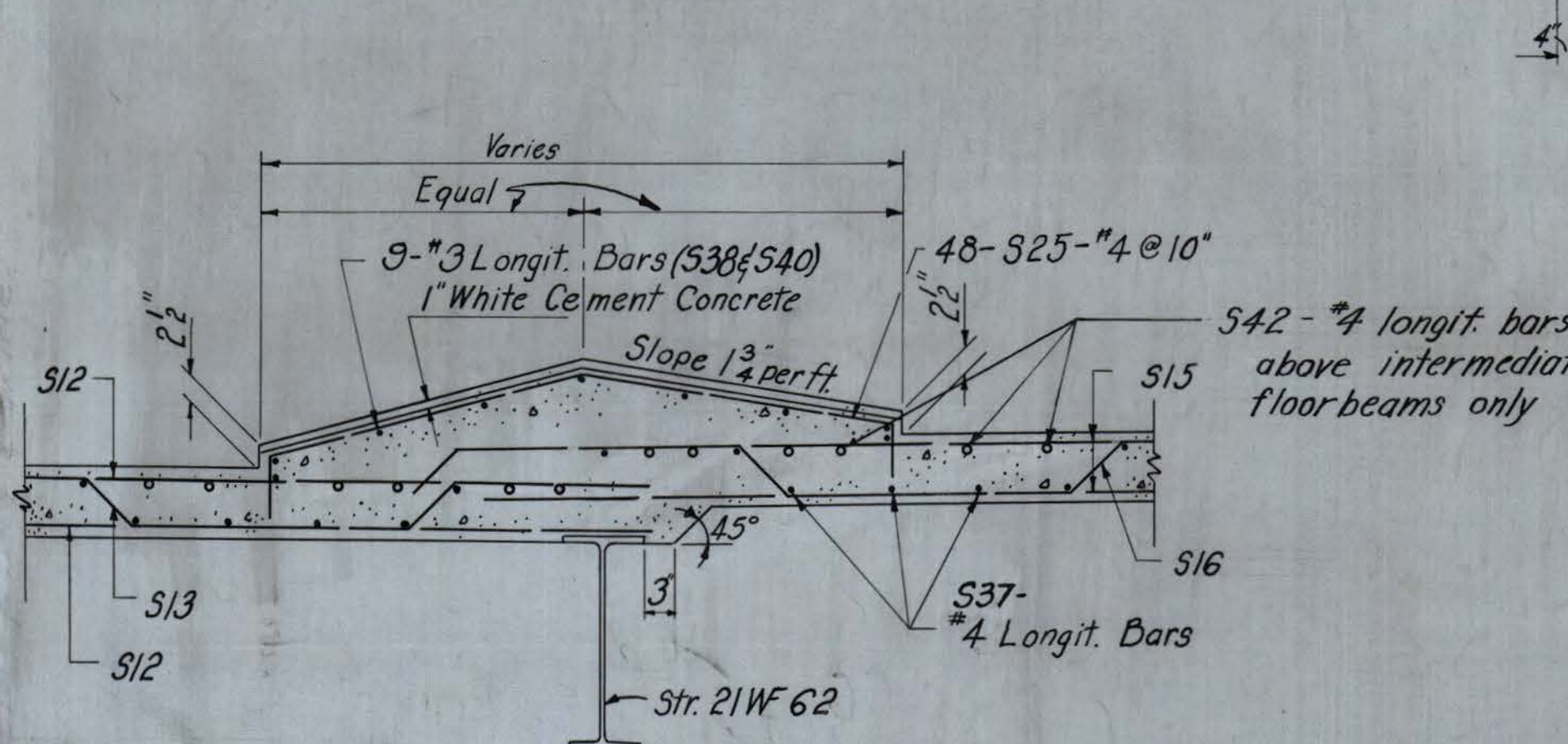
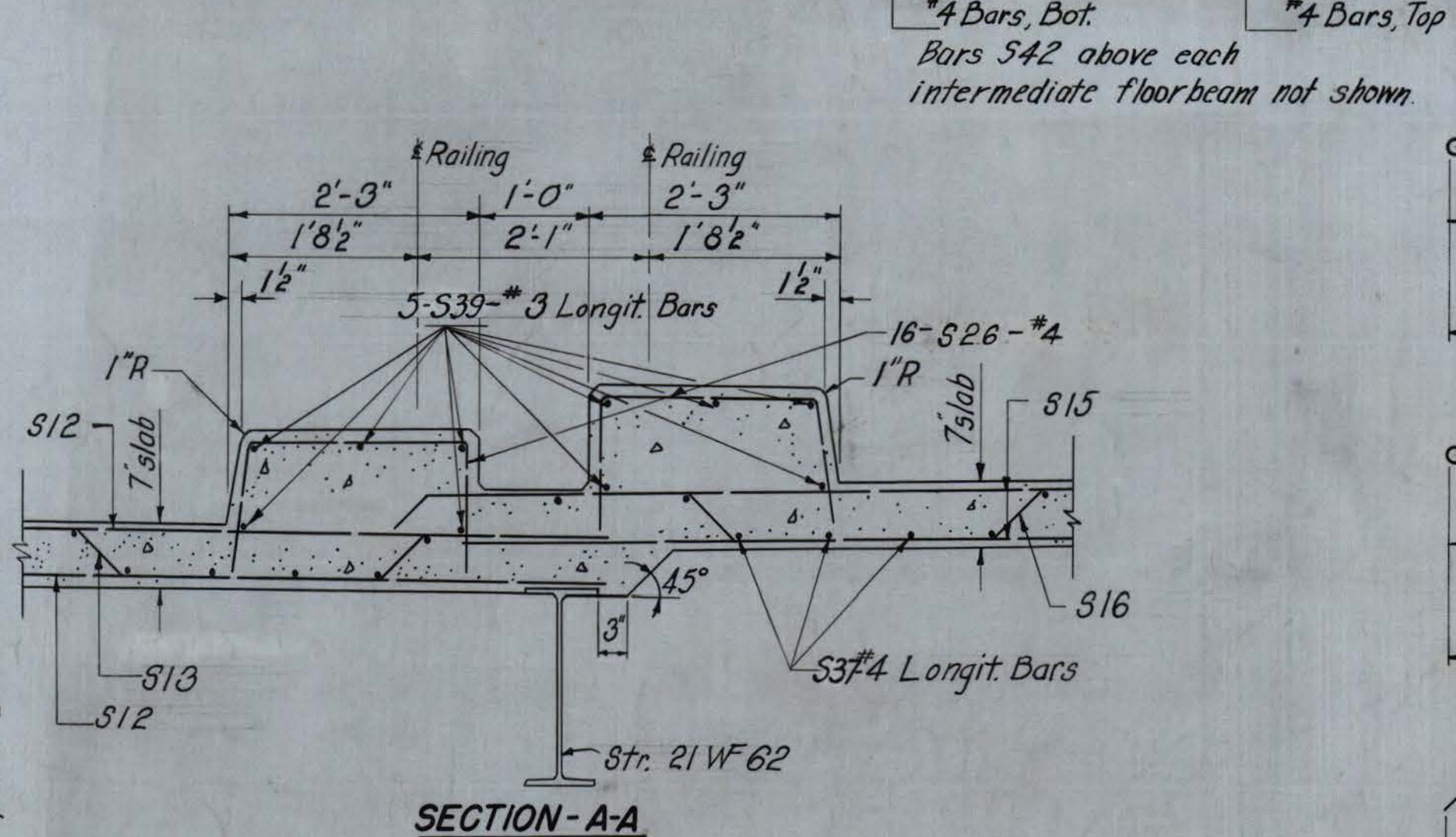
SCALE IN FEET EXCEPT AS NOTED

Revised 3-8-1956





NOTE #4 The out-to-out dimension of the truss-ribs on bars N16 & N28; N31 & N38 on DWG #30; N16 & N28; N31 & N38 on DWG #32; N63 on DWG #33 shall be 3" instead of 2" as originally shown on Plans. The 2" truss-base, or horizontal dimension as shown on Plans, will hold. All parts of each bar shall lie in the same plane and the hook-end (extension) shall be parallel to the bar. In addition to supporting the main #4 bars, the #3 bars which are placed inside the hooks at both ends shall be thoroughly supported. All these bars shall be merely wired together before placing concrete.



Mark	No.	Stock	Bend	Mark	No.	Stock	Bend
S3	1240	*4 x 4'-10"	See Detail, Dwg 29	S24	124	*4 x 12'-5" (Ave)	See Detail
S4	873	*4 x 6'-1"	do	S25	96	*4 x 5'-3" (Ave)	do
S12	368	*4 x 19'-10" (Ave)	Str. Varies fr. 21'-11" to 16'-2"	S26	32	*4 x 4'-3 1/2"	do
S13	64	*4 x 22'-11" (Ave)	See Detail	S27L	306	*4 x 21'-10" (Ave)	Str. Varies fr. 21'-5" to 16'-2"
S14	60	*4 x 21'-6" (Ave)	do	S27R	306	*4 x 19'-10 1/2" (Ave)	Str. Varies fr. 21'-5" to 14'-2 1/2"
S15L	185	*4 x 19'-0"	Straight	S28L	31	*4 x 28'-0 1/2" (Ave)	See Detail
S15R	184	*4 x 17'-0 1/2"	do	S28R	31	*4 x 26'-2 1/2" (Ave)	do
S16L	92	*4 x 20'-8"	See Detail	S29L	61	*4 x 23'-7" (Ave)	do
S16R	93	*4 x 18'-10 1/2"	do	S29R	61	*4 x 21'-10" (Ave)	do
S17	249	*4 x 7'-0"	Straight	S30L	61	*4 x 19'-0" (Ave)	do
S18	252	*4 x 7'-6 1/2"	See Detail	S30R	61	*4 x 17'-2" (Ave)	do
S19	118	*4 x 12'-5" (Ave)	do	S31	40	*4 x 9'-9 1/2" (Ave)	do
S20	60	*4 x 18'-1 1/2" (Ave)	do	S32	40	*4 x 9'-7 1/2" (Ave)	do
S21L	63	*4 x 30'-10" (Ave)	Str. Varies fr. 33'-9" to 27'-11"	S33	60	*4 x 6'-6" (Ave)	do
S21R	63	*4 x 28'-10 1/2" (Ave)	Str. Varies fr. 31'-9 1/2" to 25'-11 1/2"	S34	124	*4 x 8'-8" (Ave)	do
S22L	63	*4 x 31'-4 1/2" (Ave)	See Detail	S35	124	*4 x 8'-11" (Ave)	do
S22R	63	*4 x 29'-4 1/2" (Ave)	do	S36	124	*4 x 6'-2" (Ave)	Str. Varies fr. 5'-3" to 6'-8"
S23L	62	*4 x 32'-7" (Ave)	do	S37	1038	*4 x 26'-8"	Straight
S23R	62	*4 x 30'-9 1/2" (Ave)	do	S38	169	*3 x 27'-0"	do
				S39	5	*3 x 9'-10" (Ave)	See Detail
				S40	9	*3 x 16'-9"	Straight
				S42*	606	*4 x 13'-0"	Straight

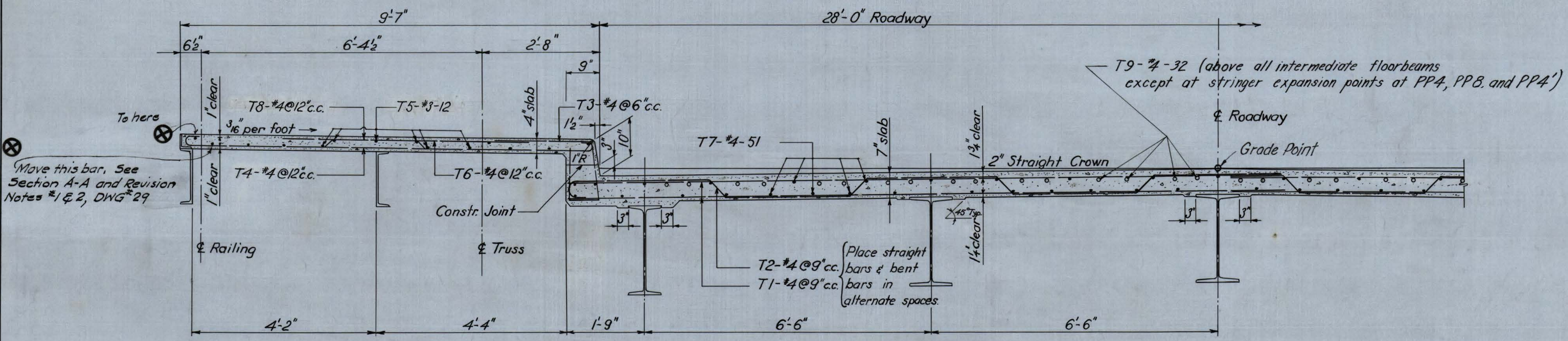
\*These additional bars occur above floorbeams F5 to F8 and F11 to F14 incl. Stagger ends 1'

Note: Concrete at Girder G3 must be haunched a min. of 1/4" below bottom of slab. Vary height of haunches as required to make 7" roadway slab conform to contours given on sheet 5. See note on Sheet 28.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
 SLAB REINFORCING DETAILS  
 PIER VIII TO X  
 SCALE IN FEET EXCEPT AS NOTED  
 MODJESKI & MASTERS, ENGINEERS DWG. #30  
 #1899

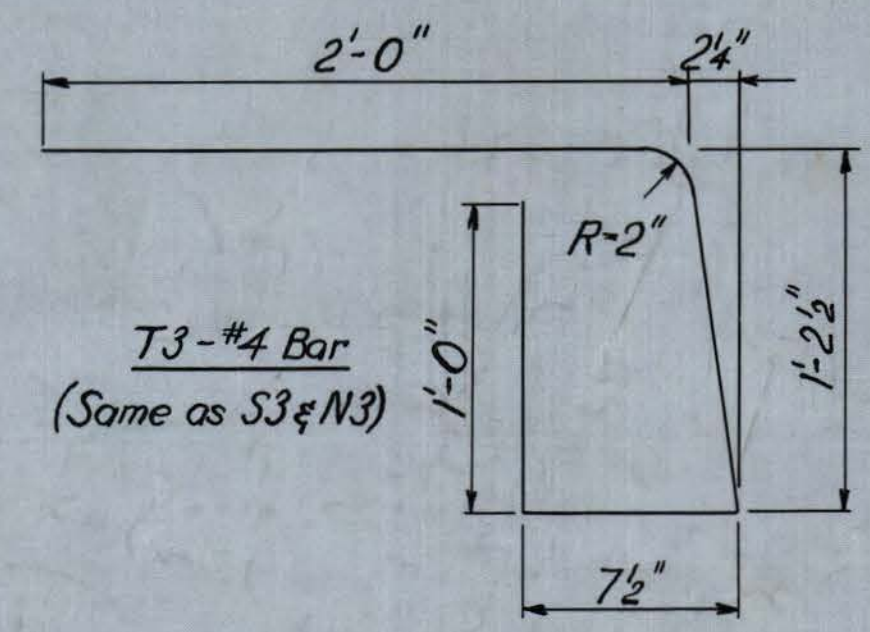
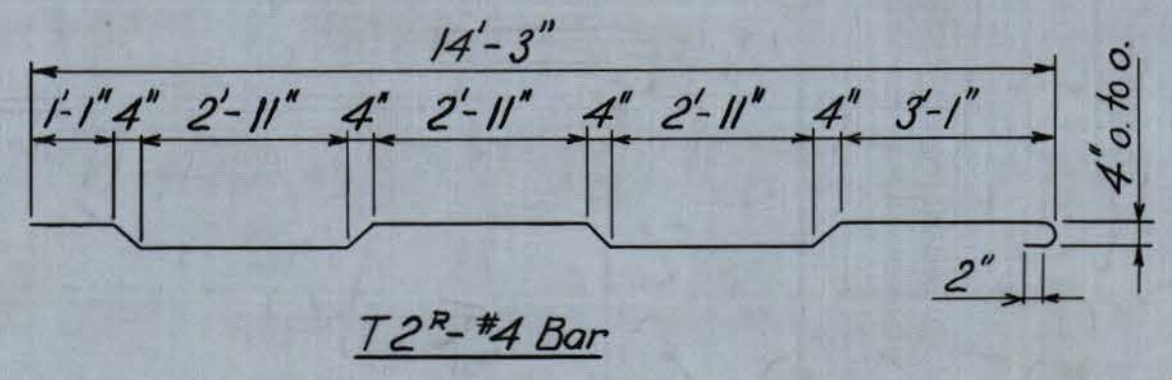
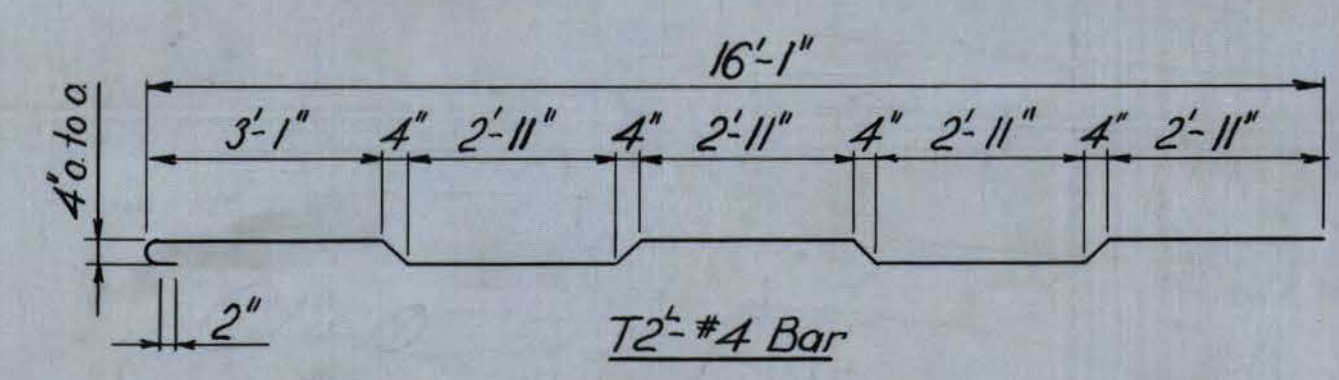
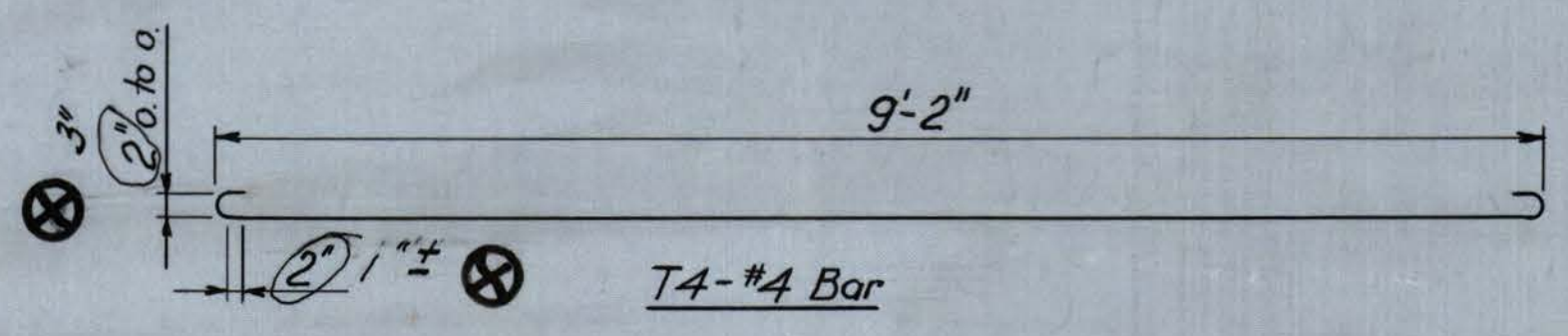
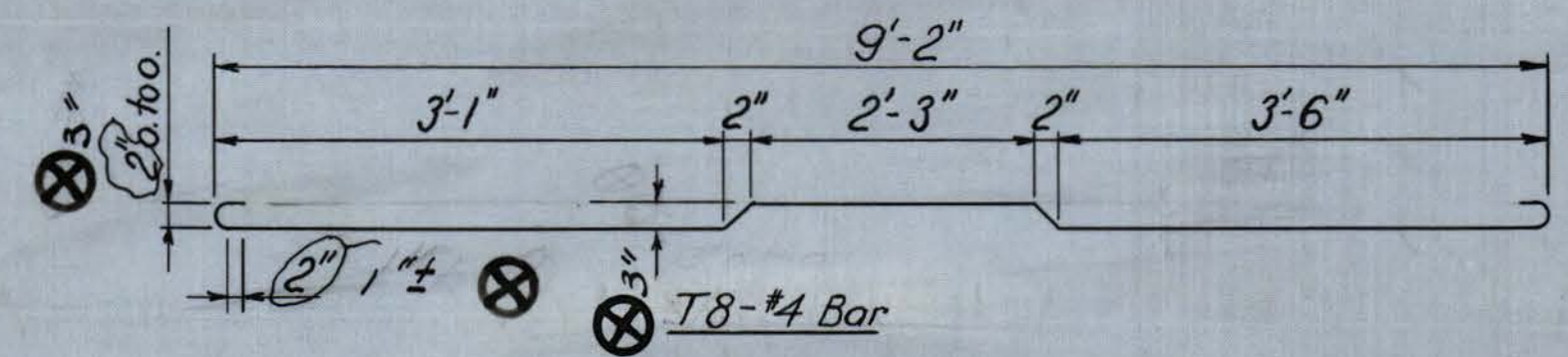
Revised 3-8-1956





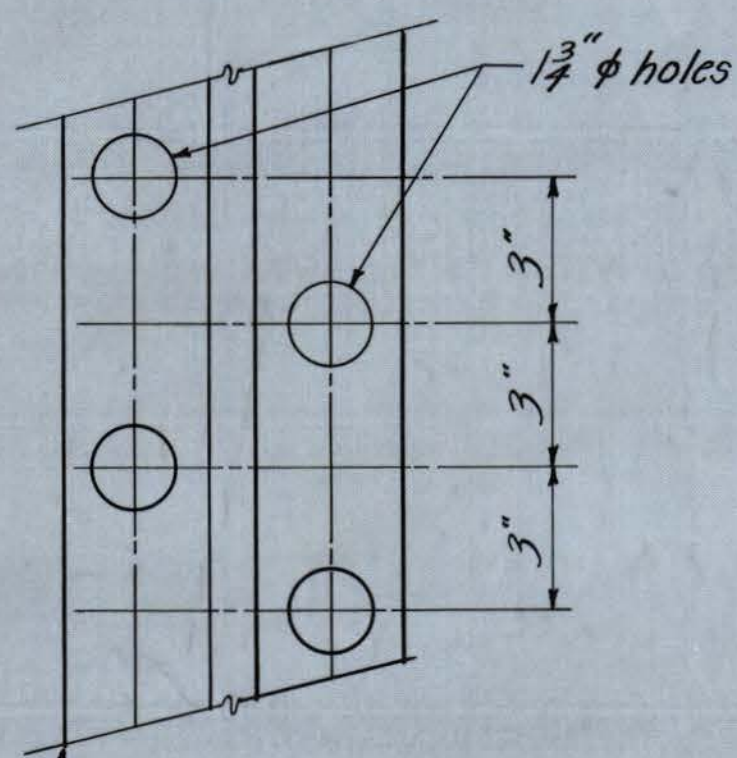
TYPICAL CROSS SECTION

Move this bar. See Section A-A and Revision Notes #1 & 2, DWG #29

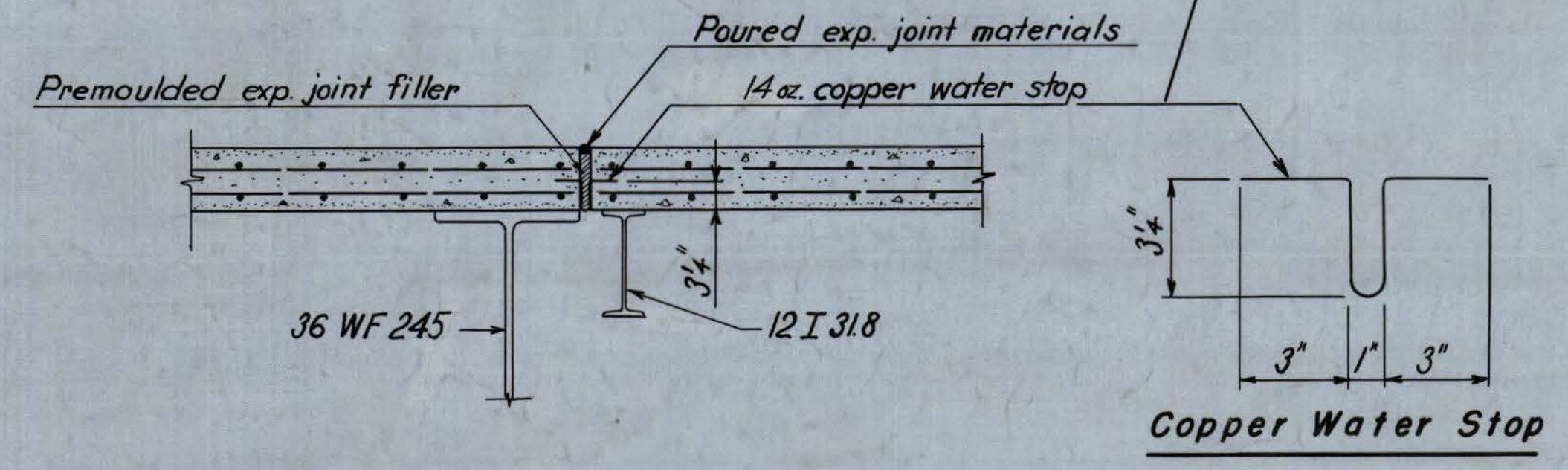


Mark	No	Stock	Bend
T1 <sup>L</sup>	1307	#4 x 16'-1"	Straight
T1 <sup>R</sup>	1306	#4 x 14'-3"	do
T2 <sup>L</sup>	652	#4 x 17'-2"	See Detail
T2 <sup>R</sup>	652	#4 x 15'-4"	do
T3	1952	#4 x 4'-10"	do
T4	977	#4 x 9'-11"	do
T5	385	#3 x 31'-6"	Straight
T6	977	#4 x 6'-0"	do
T7	816	#4 x 31'-6"	do
T8	977	#4 x 9'-10"	See Detail
T9*	385	#4 x 16'-0"	Straight

\* Stagger ends ±1'



Plan



STRINGER EXPANSION JOINT PP4-PP8-PP4'

NOTES

All drip beads are 1/2" R.  
 All chamfers are 3/4"  
 All bar dimensions are out to out, and all radii are inside.  
 All reinforcement shall be of the deformed type, A.S.T.M. A 305-50T, lapped 25 dia. at splices.  
 Concrete shall be Class A.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
 SLAB REINFORCING DETAILS  
 MAIN SPAN



SCALE IN FEET  
 MODJESKI & MASTERS, ENGINEERS

DWG. #31

Revised 3-8-1956

#1899



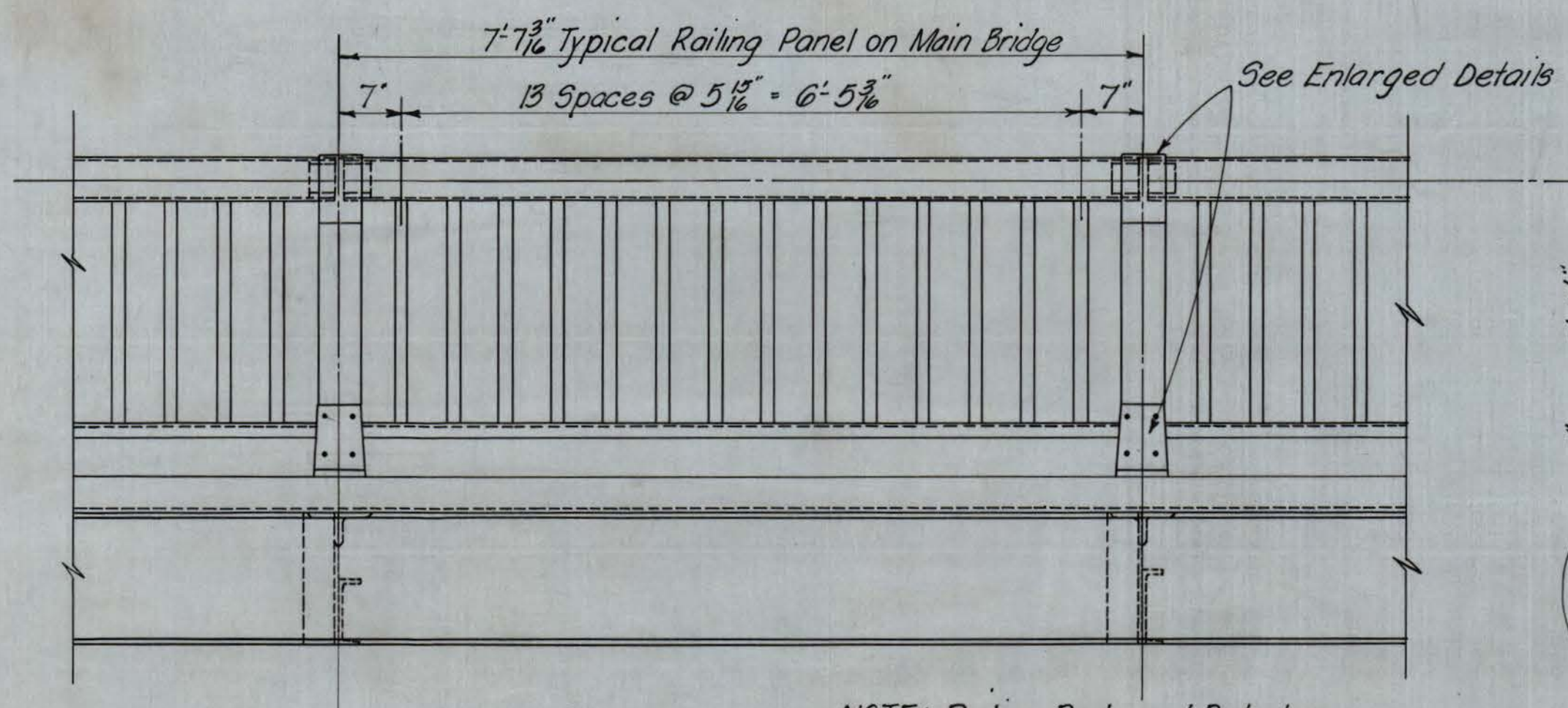




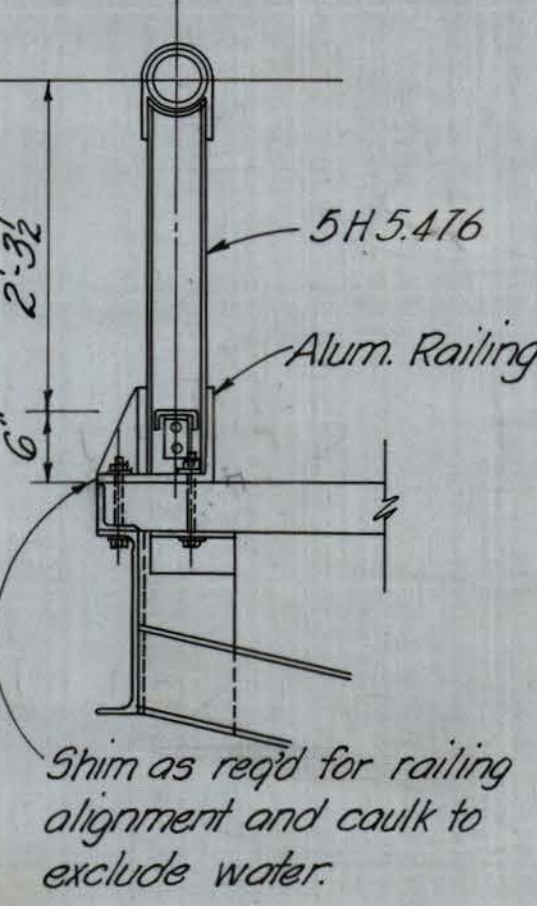




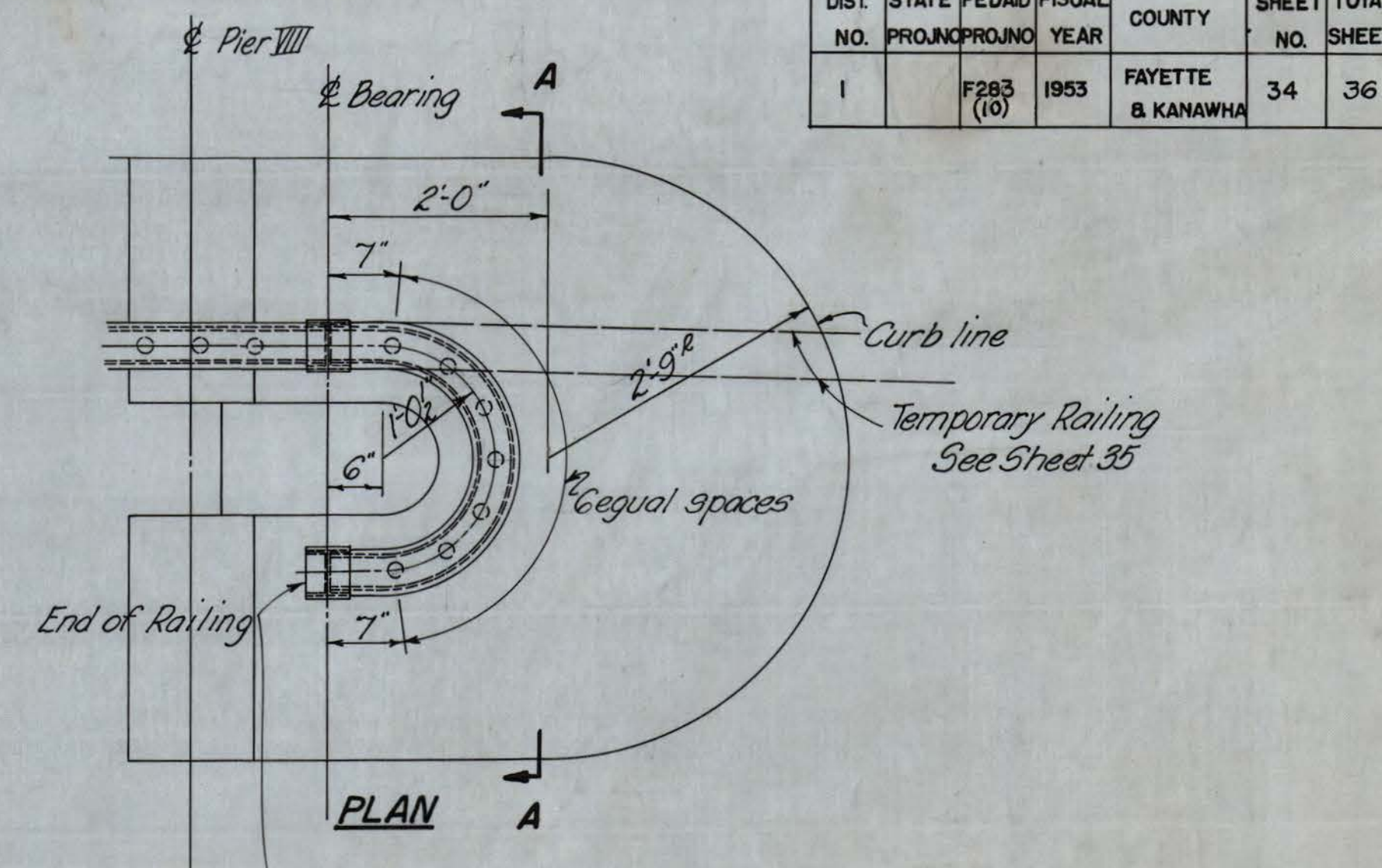
DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (10)	1953	FAYETTE & KANAWHA	34	36



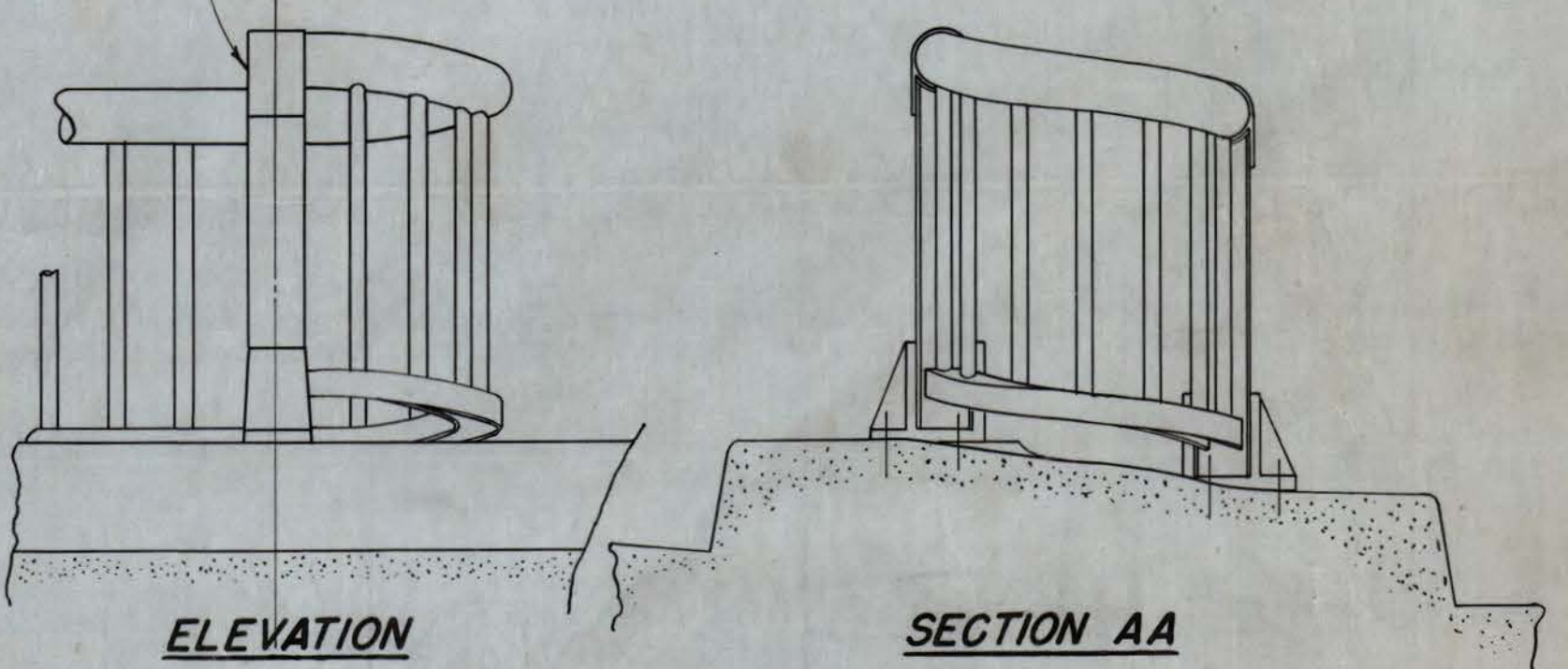
NOTE: Railing Posts and Balusters to be set vertical



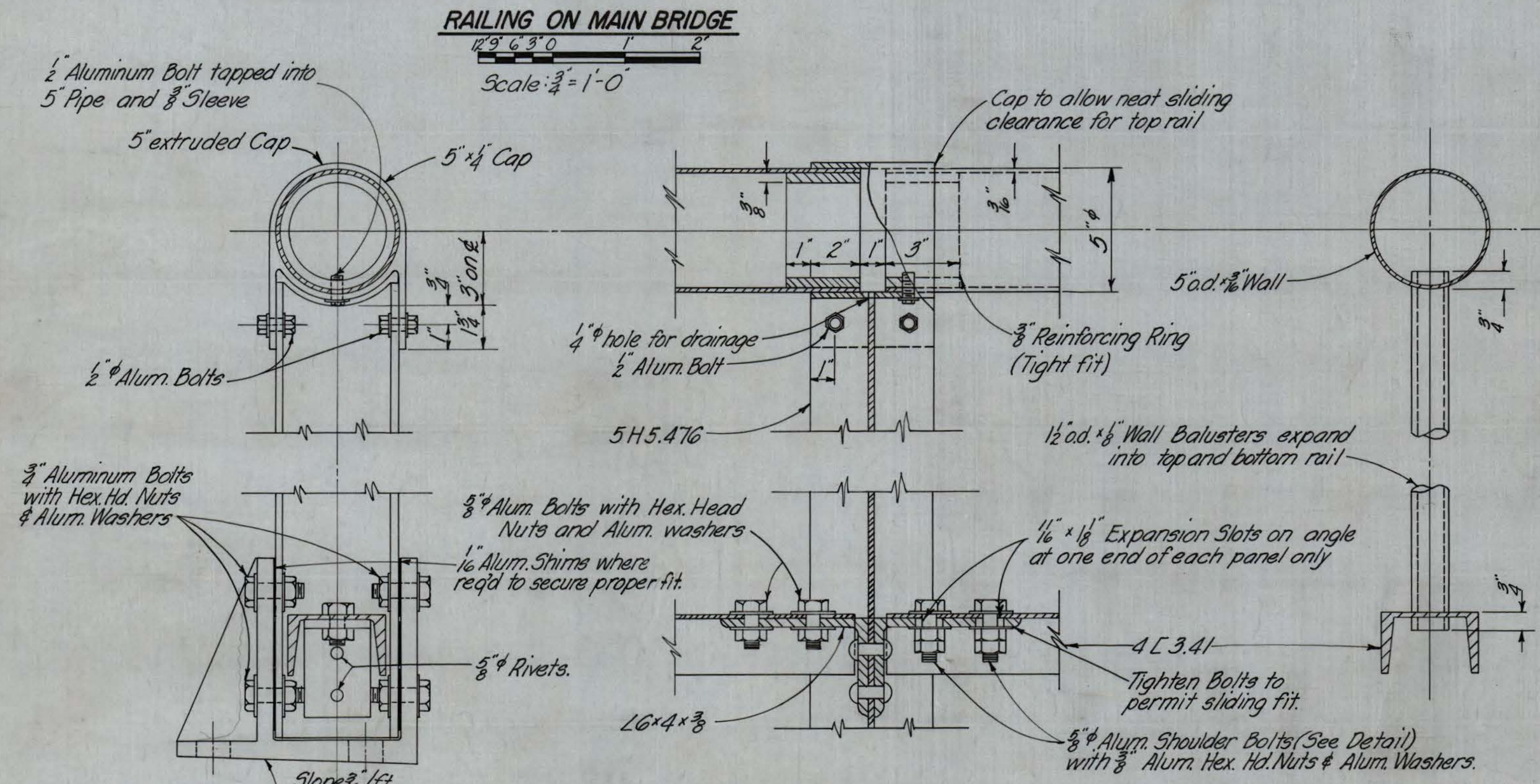
TYPICAL RAILING POST AND SUPPORT FOR 1'-6" SIDEWALKS  
Scale: 3/4" = 1'-0"



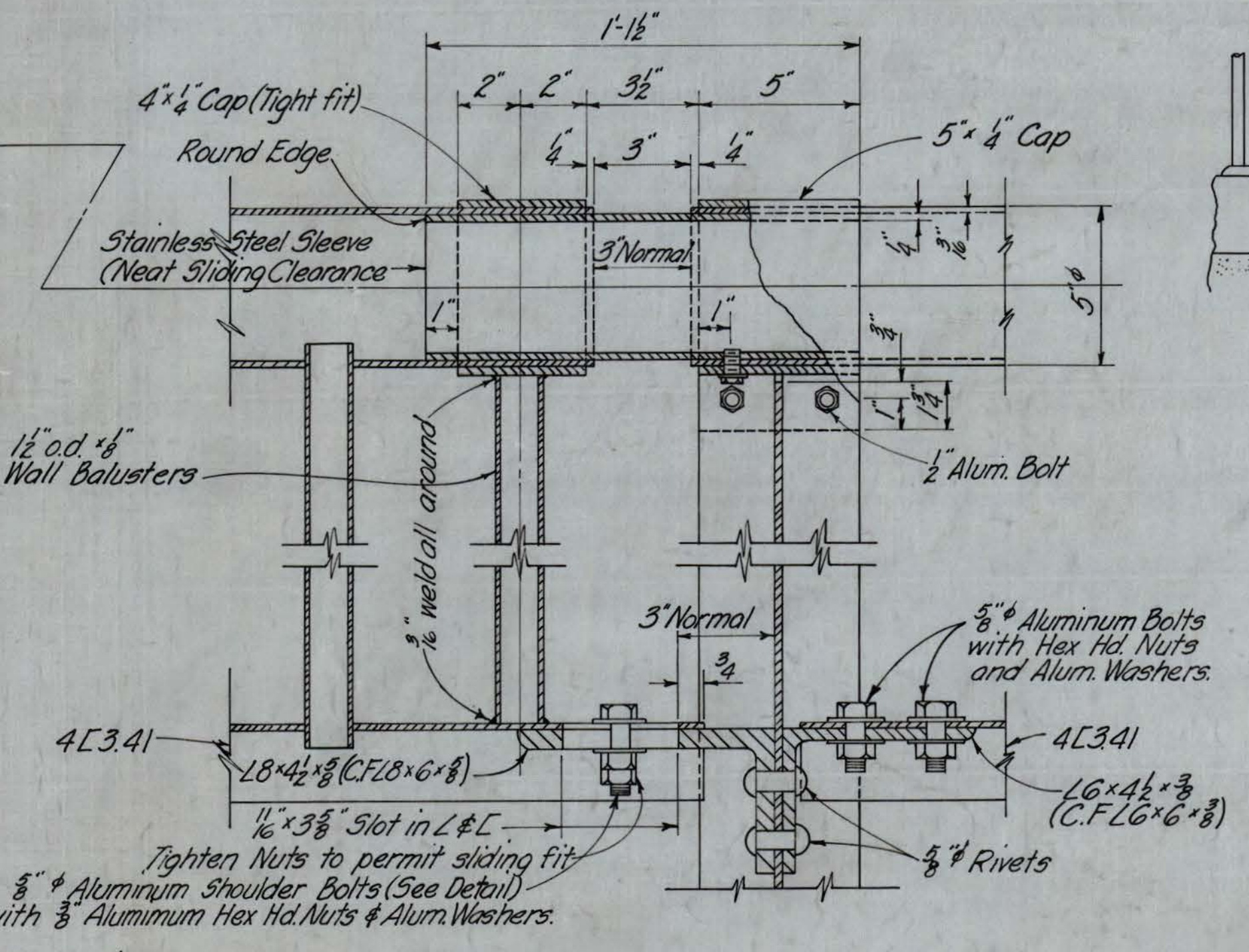
PLAN A



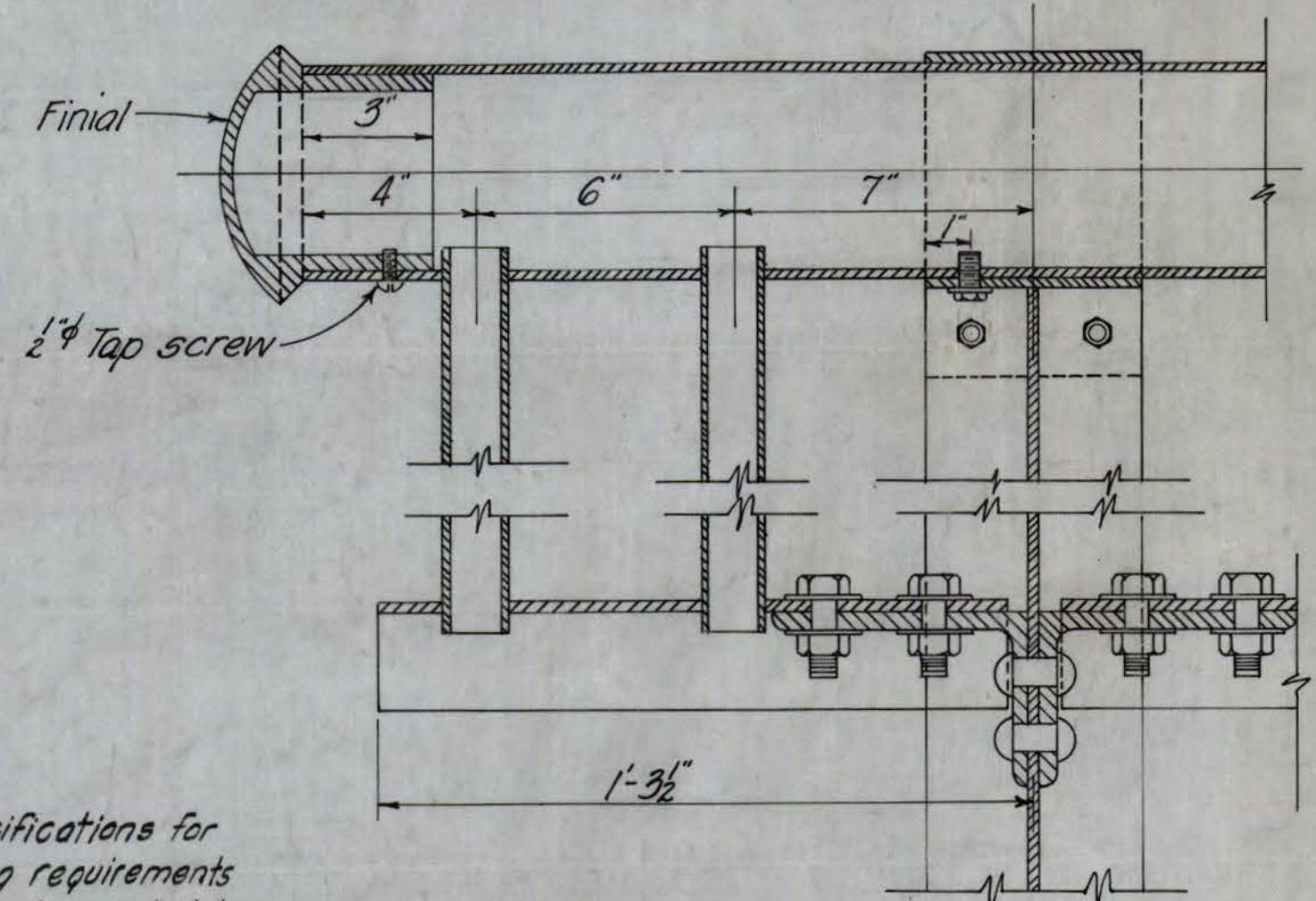
DETAILS OF SPECIAL RAILING PANELS AT PIER VIII  
Scale: 3/4" = 1'-0"



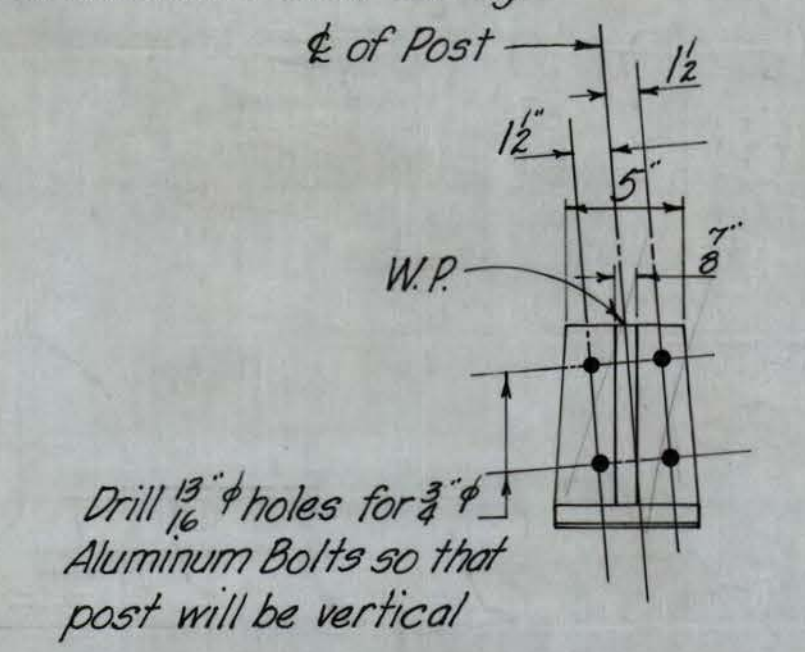
TYPICAL RAILING DETAILS  
Scale: 3/8" = 1'-0"



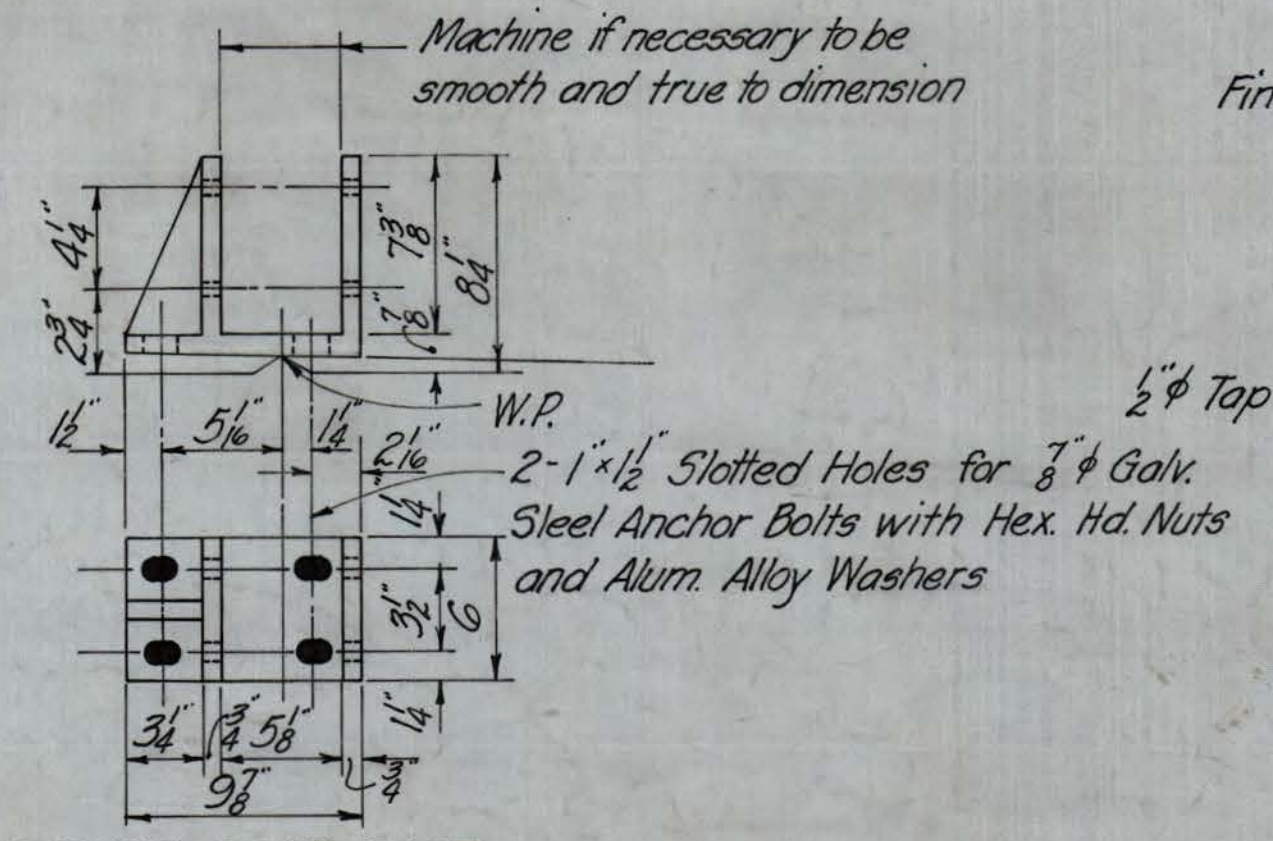
TYPICAL EXPANSION POST DETAIL  
Scale: 3/8" = 1'-0"



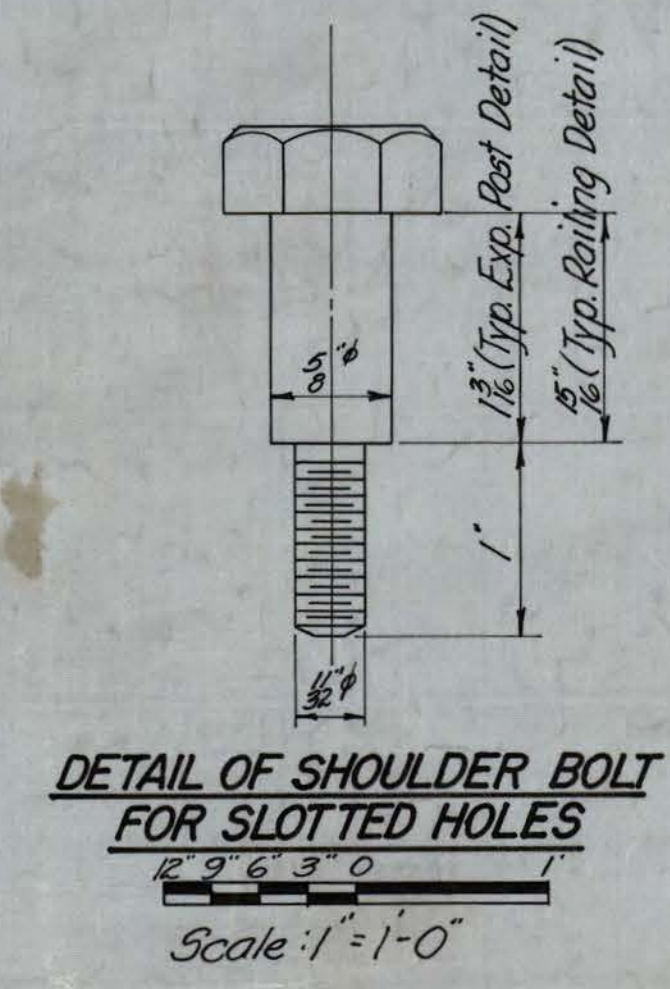
END OF RAILING - PIER VIII & N. ABUTMENT  
Scale: 3/8" = 1'-0"



ALUMINUM RAILING POST BASE  
Scale: 1/2" = 1'-0"



DETAILS OF END OF RAILING - N. APPROACH RAMP  
Scale: 3/8" = 1'-0"



DETAIL OF SHOULDER BOLT FOR SLOTTED HOLES  
Scale: 1" = 1'-0"

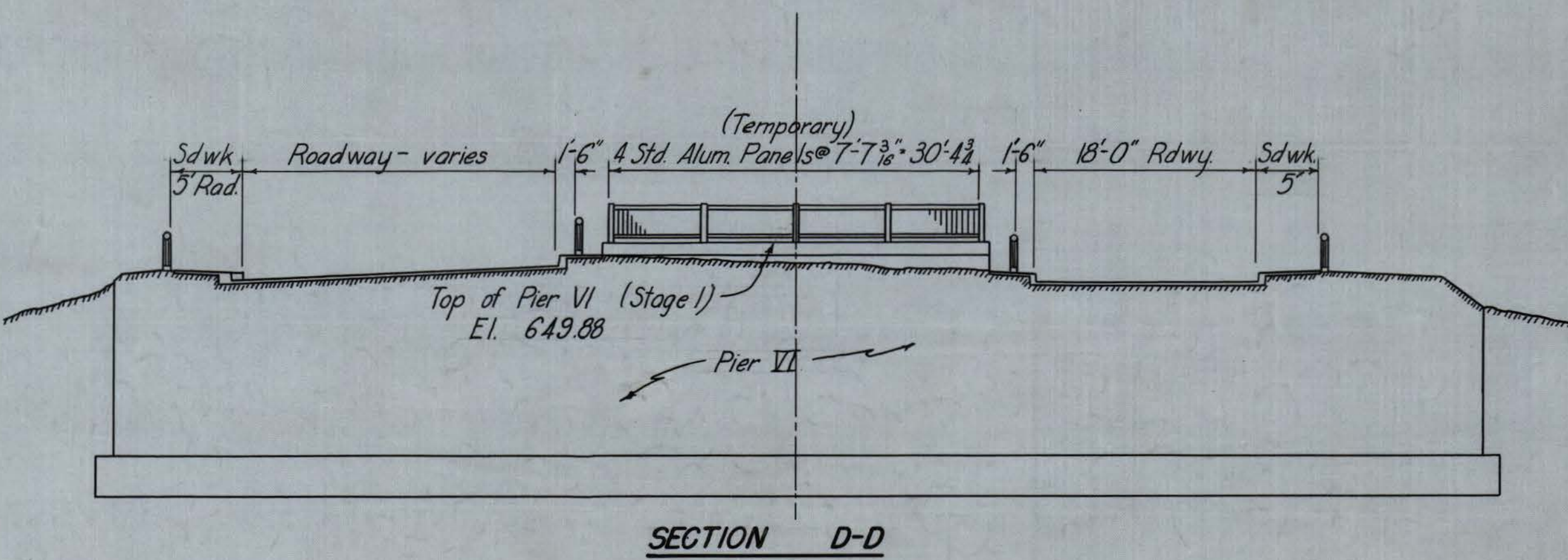
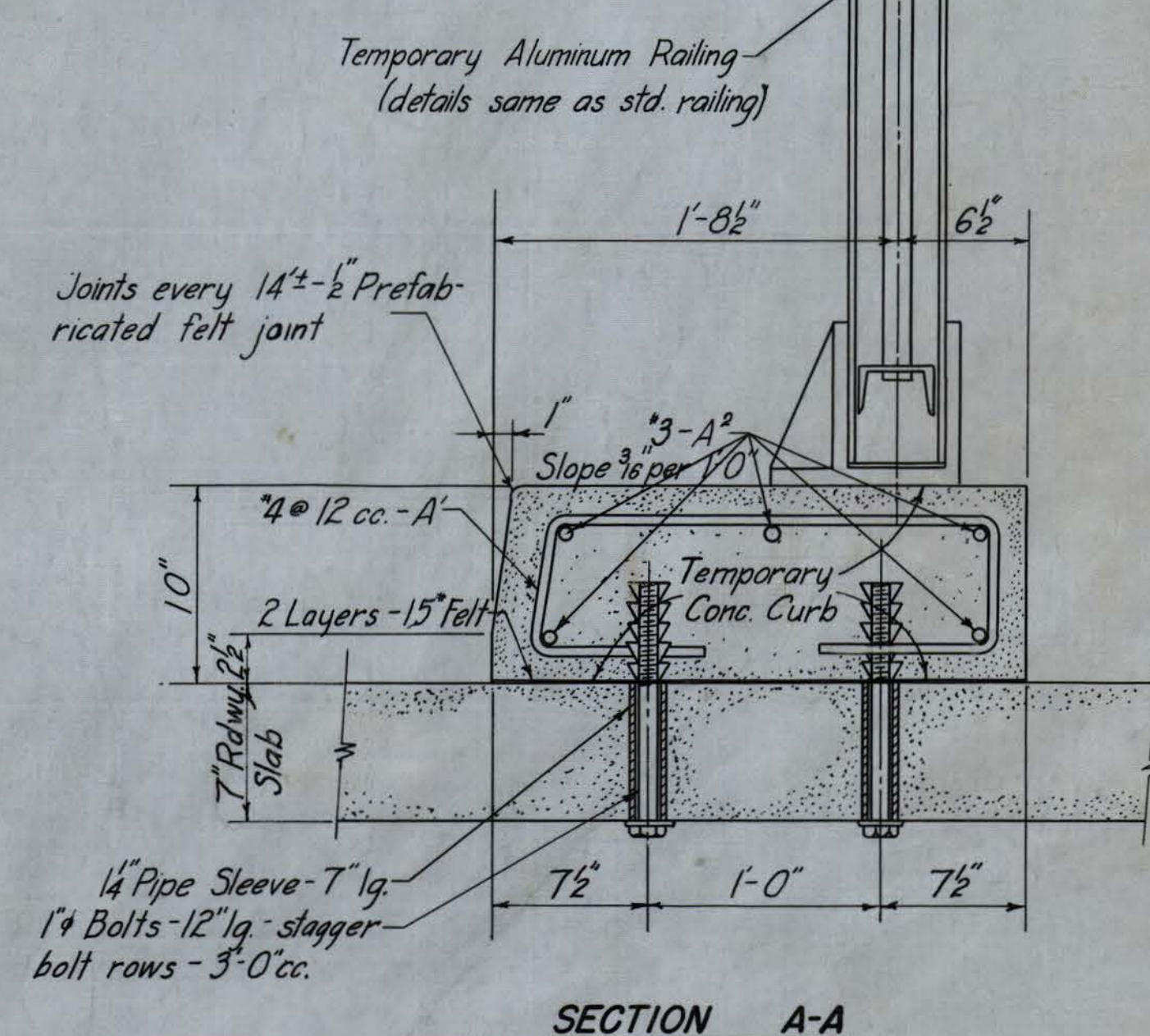
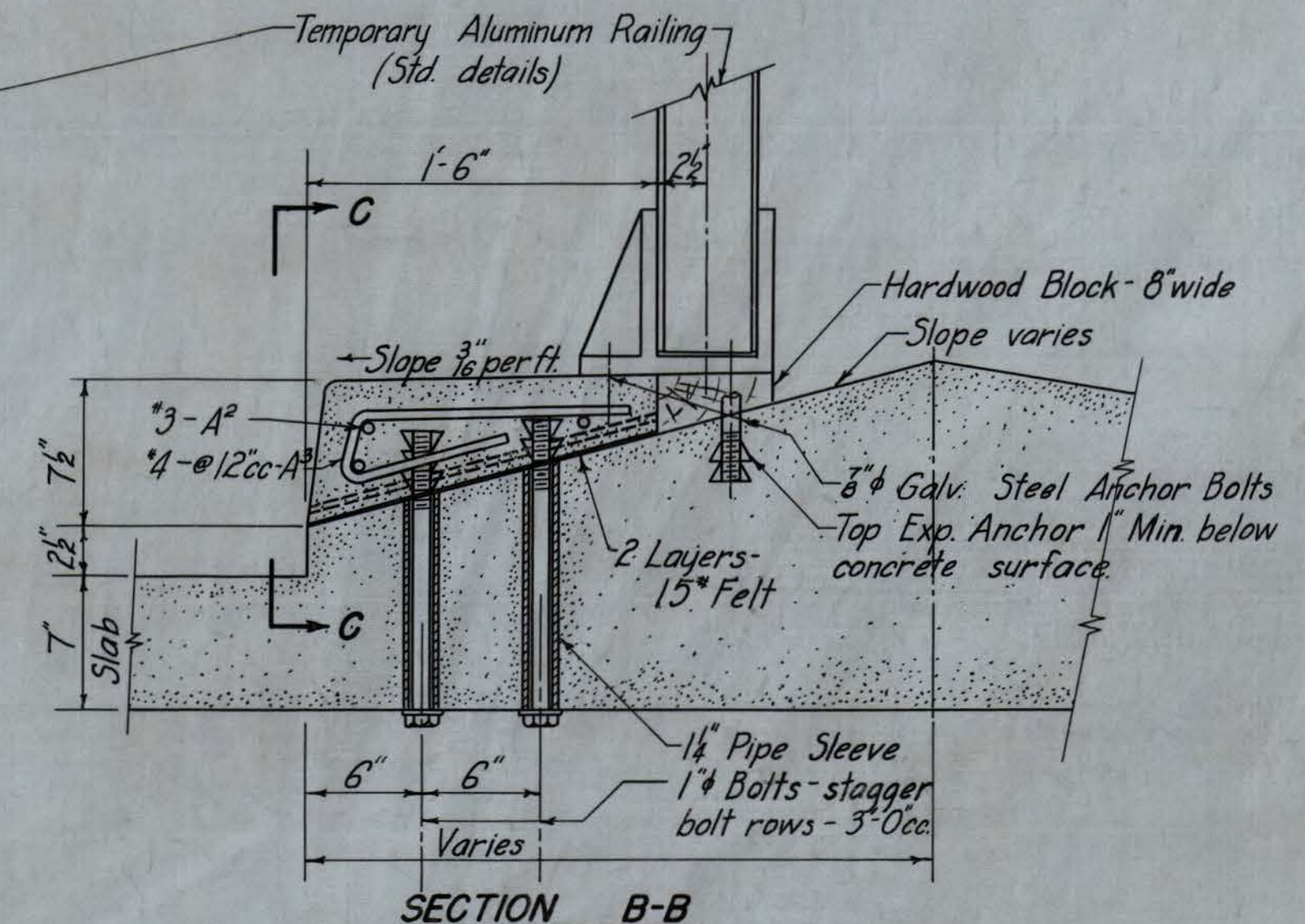
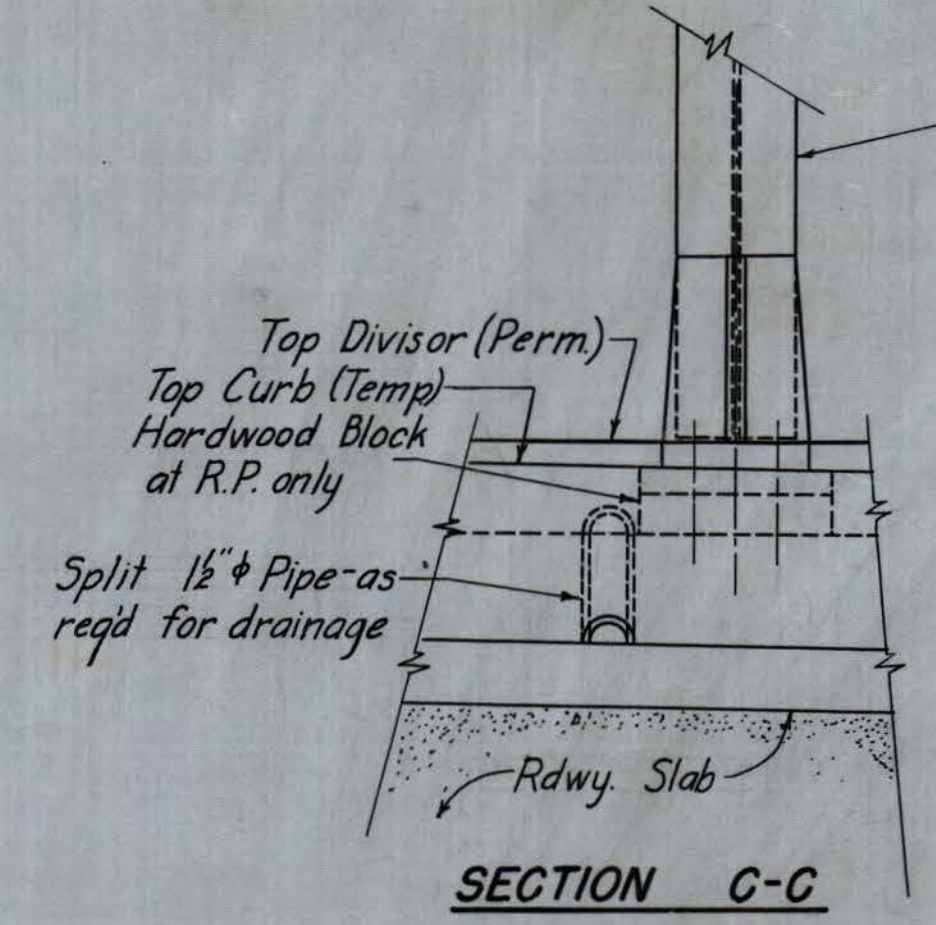
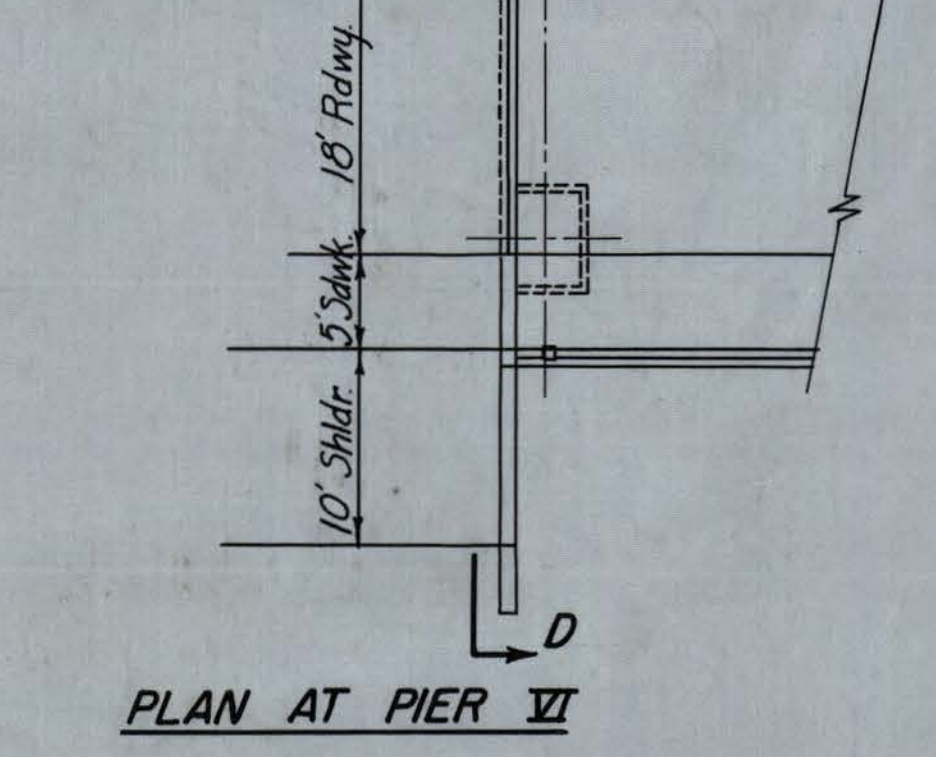
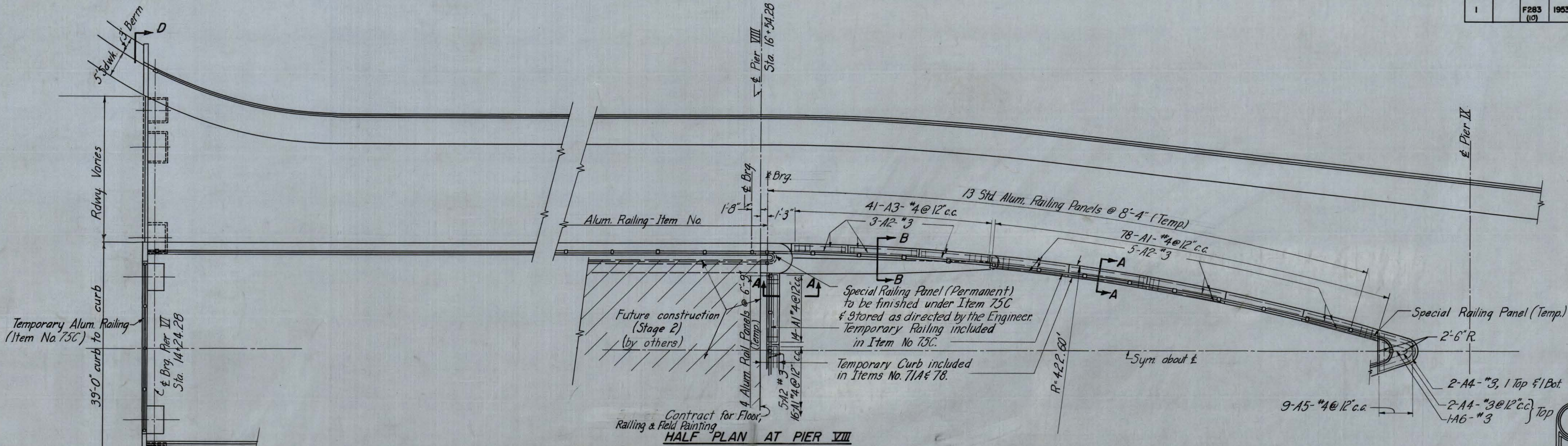
NOTE: See Supplemental Specifications for Aluminum Railing for setting requirements for Aluminum in contact with other materials.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

RAILING DETAILS



DIST. NO.	STATE PROJ. NO.	FED-AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
1		F283 (10)	1953	FAYETTE & KANAWHA	35	36



TEMPORARY CURB BAR SCHEDULE				TEMPORARY CURB BAR SCHEDULE			
Mark	No.	Stock	Bend	Mark	No.	Stock	Bend
A1	186	#4 x 4'-7"	1'-11" (9" x 9")	A4	4	#3 x 17'-4 3/4" (Avg)	44" x 2" (6'-0" x 7")
A2	78	#3 x 13'-7 1/2" (Avg)	Straight - 6 @ 9'-8 1/2", 17 @ 12'-8 1/2", 50 @ 14'-3 1/2", 5 @ 14'-0 1/2"	A5	9	#4 x 5'-10 3/4" (Avg)	2 @ R-2'-3 1/2", 1 @ R-1'-3 1/2", 1 @ R-0'-3 1/2"
A3	82	#4 x 2'-2"	1'-2" (3 1/2" x 8 1/2")	A6	1	#3 x 8'-4"	8'-4" varies from 8'-4 1/2" to 4'-3 1/2", lea by 1", 1A @ 2'-5 1/2" Straight.

**NOTE:**  
Hardwood blocks, prefabricated felt, pipe sleeves, & bolts to be included in the price bid for Class A Concrete Superstructure, Air Entrained (Item No. 71A).

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**TEMPORARY CURBS & RAILINGS**

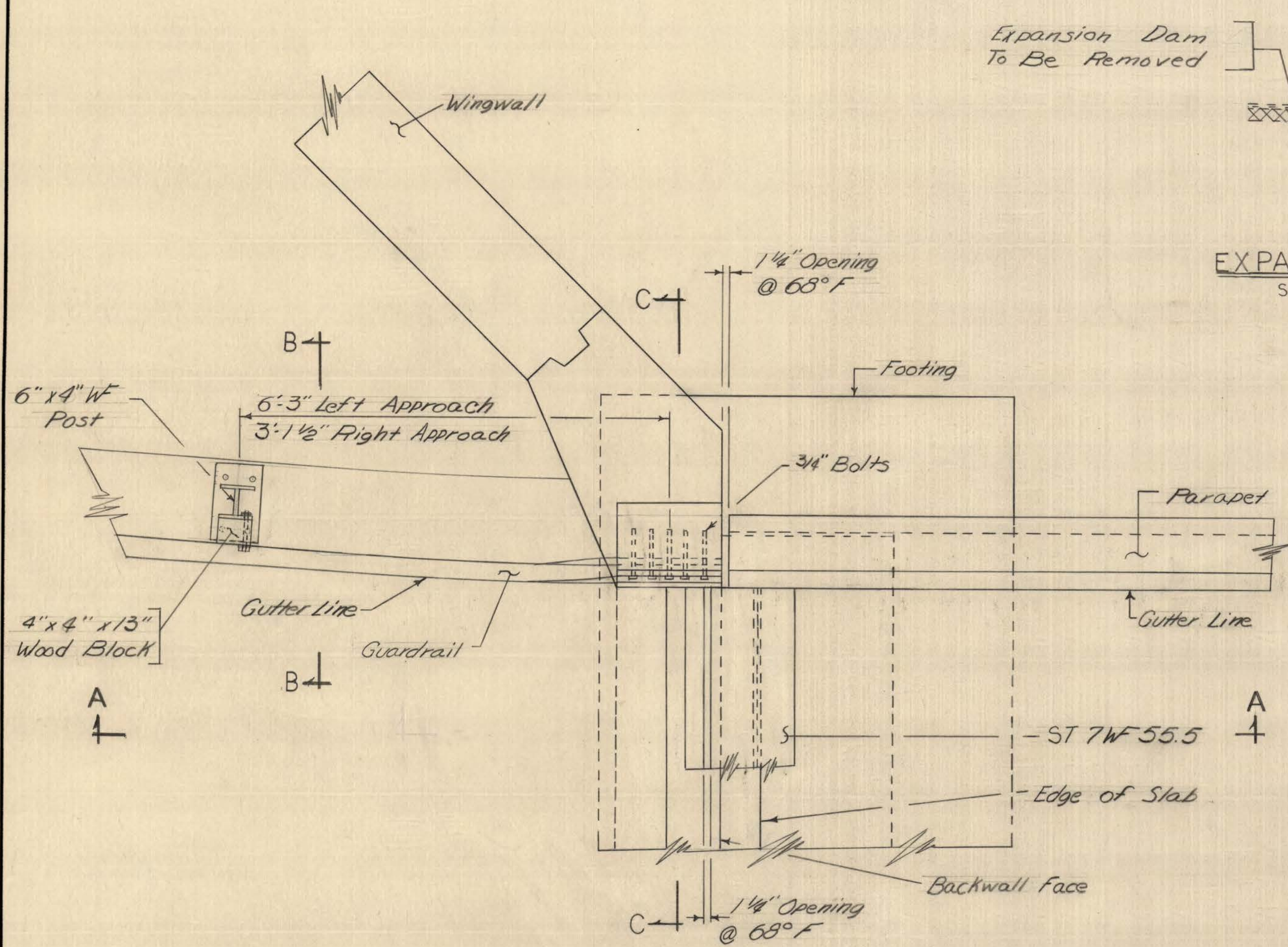
SCALE IN FEET

MODJESKI & MASTERS, ENGINEERS      DWG. #35  
#1899

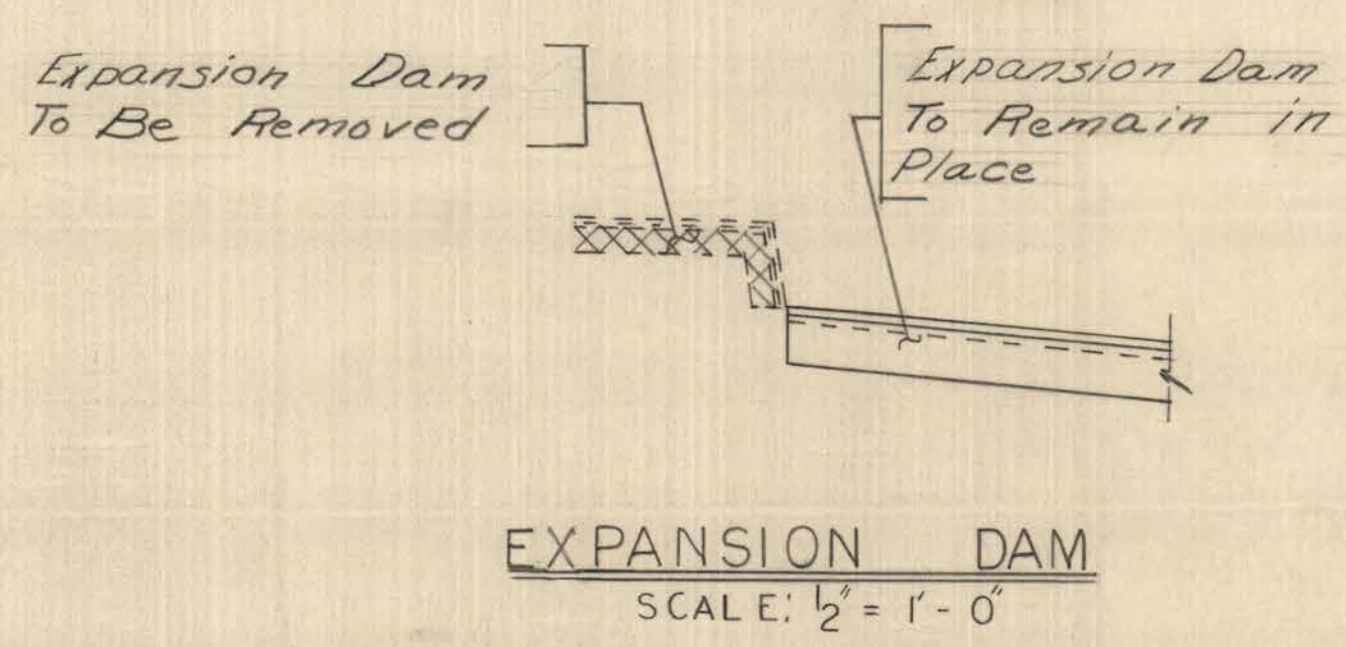




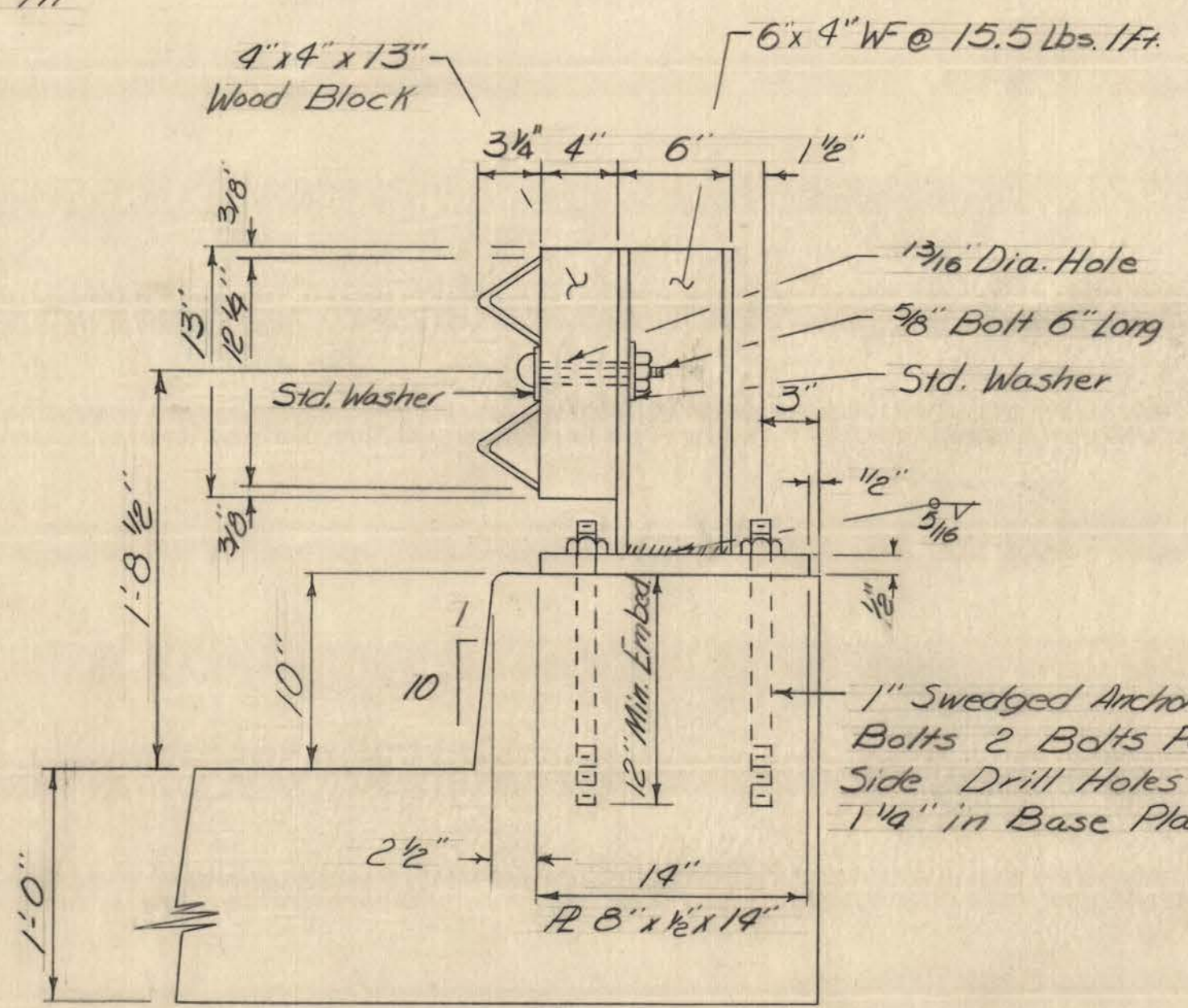




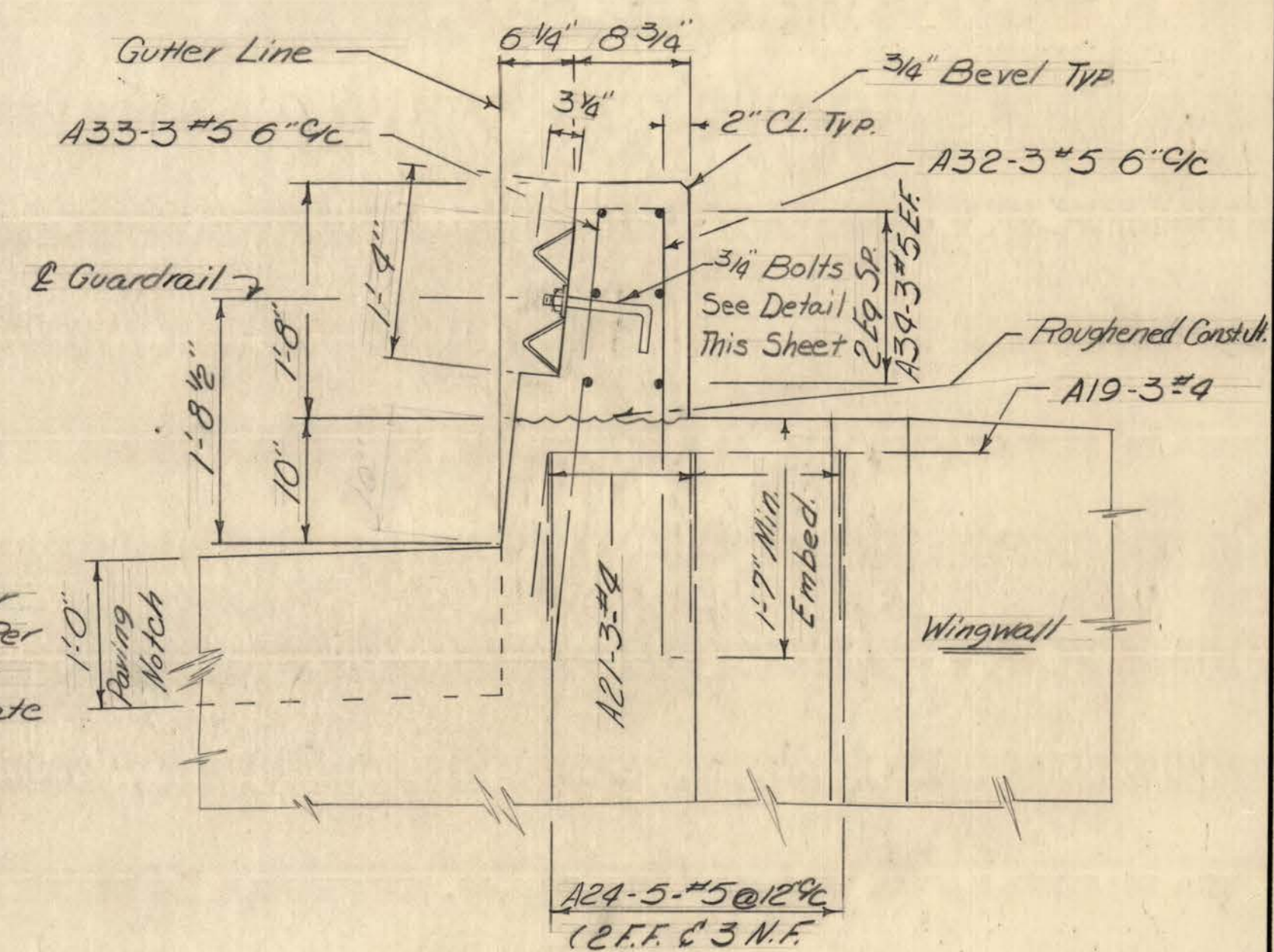
PLAN VIEW  
SCALE: 3/4" = 1'-0"



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



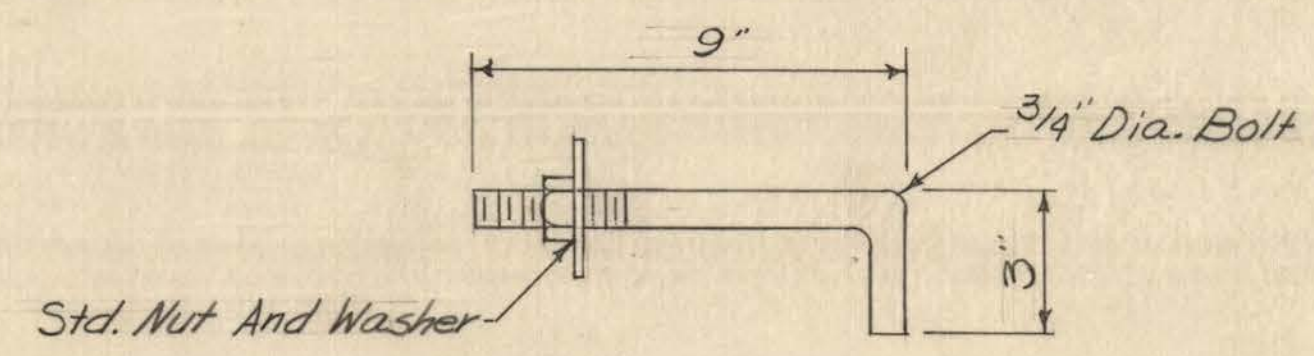
SECTION B - B  
SCALE: 1 1/2" = 1'-0"



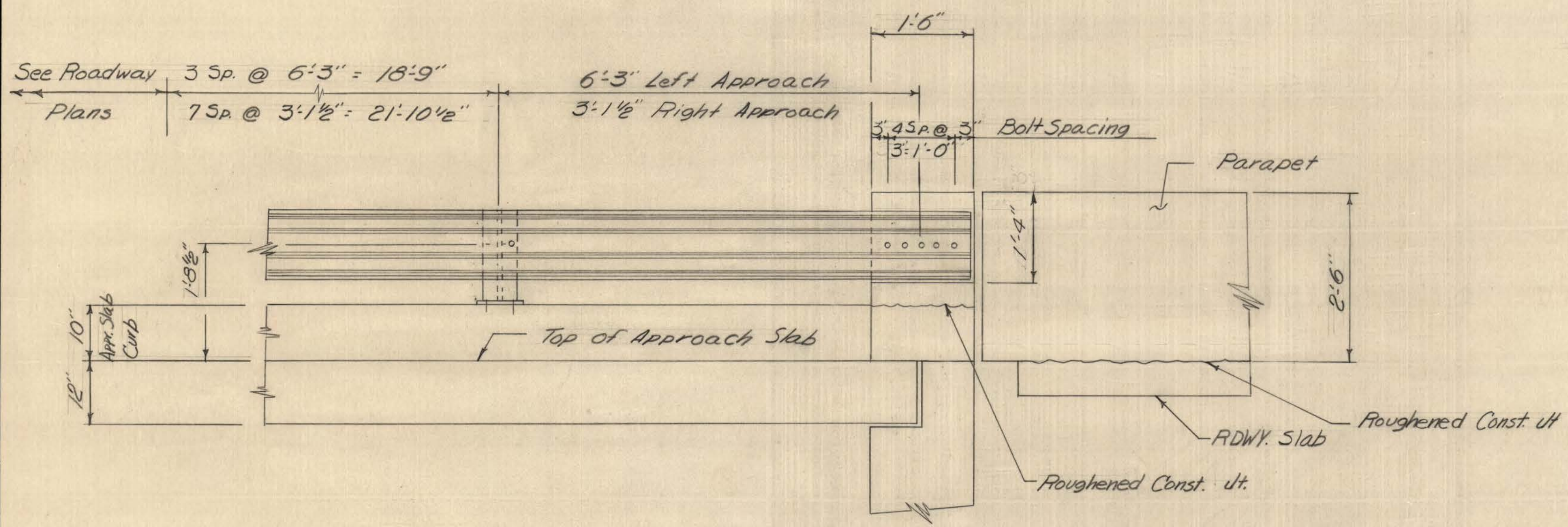
SECTION C - C  
SCALE: 1" = 1'-0"

NOTE:  
Left Approach Shown In All Views,  
Right Approach Opposite Hand  
Except For Guardrail Spacing, Which  
Is Noted.

REINFORCING BAR LIST						
MARK	SIZE	TYPE	NO REQ	LENGTH	A	B
A32	5	A	6	3'-5"	4	3'-1"
A33	5	Str.	6	3'-1"		
A34	5	Str.	12	1'-2"		



BOLT DETAIL  
SCALE: 3" = 1'-0"



SECTION A - A  
SCALE: 3/4" = 1'-0"

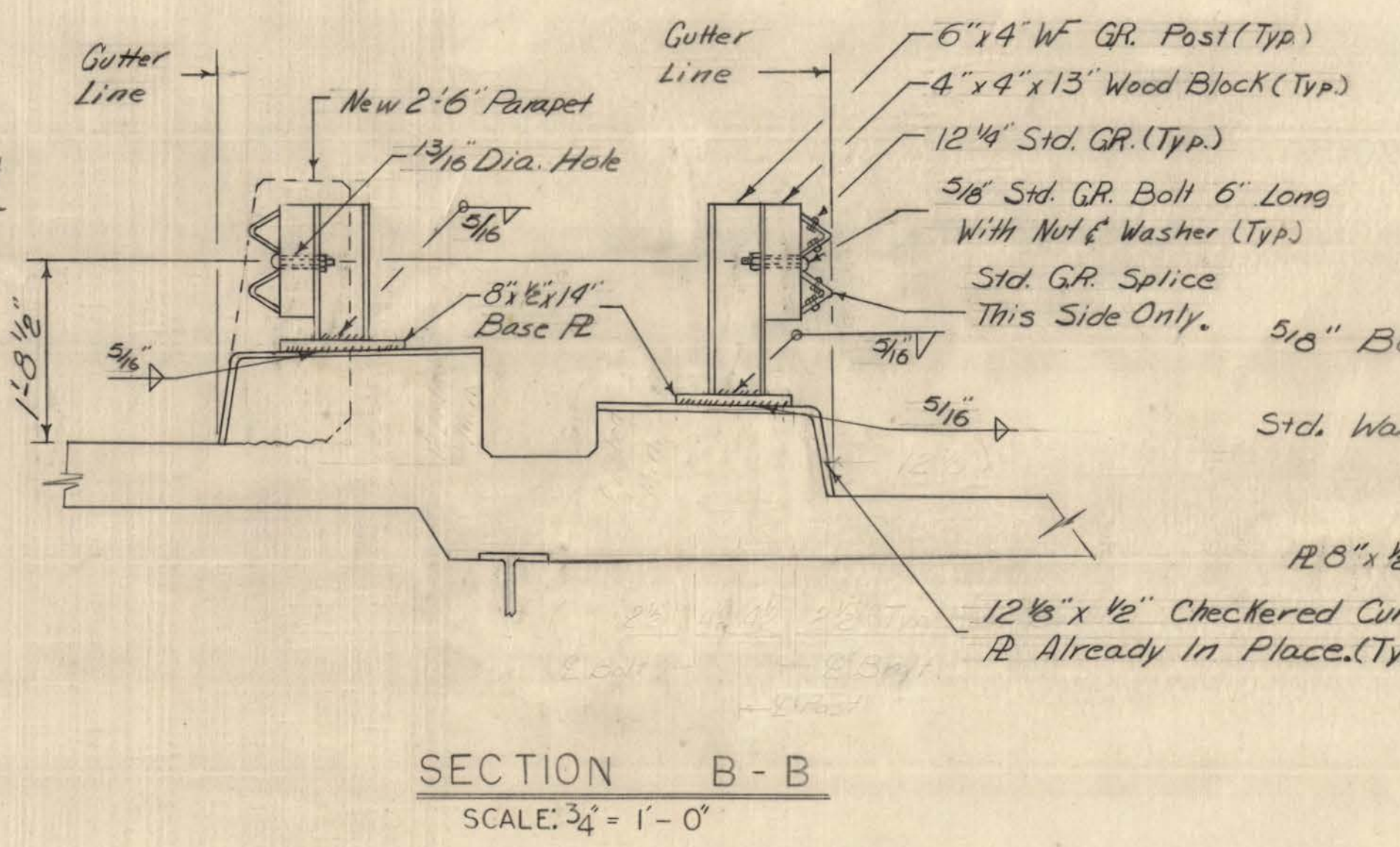
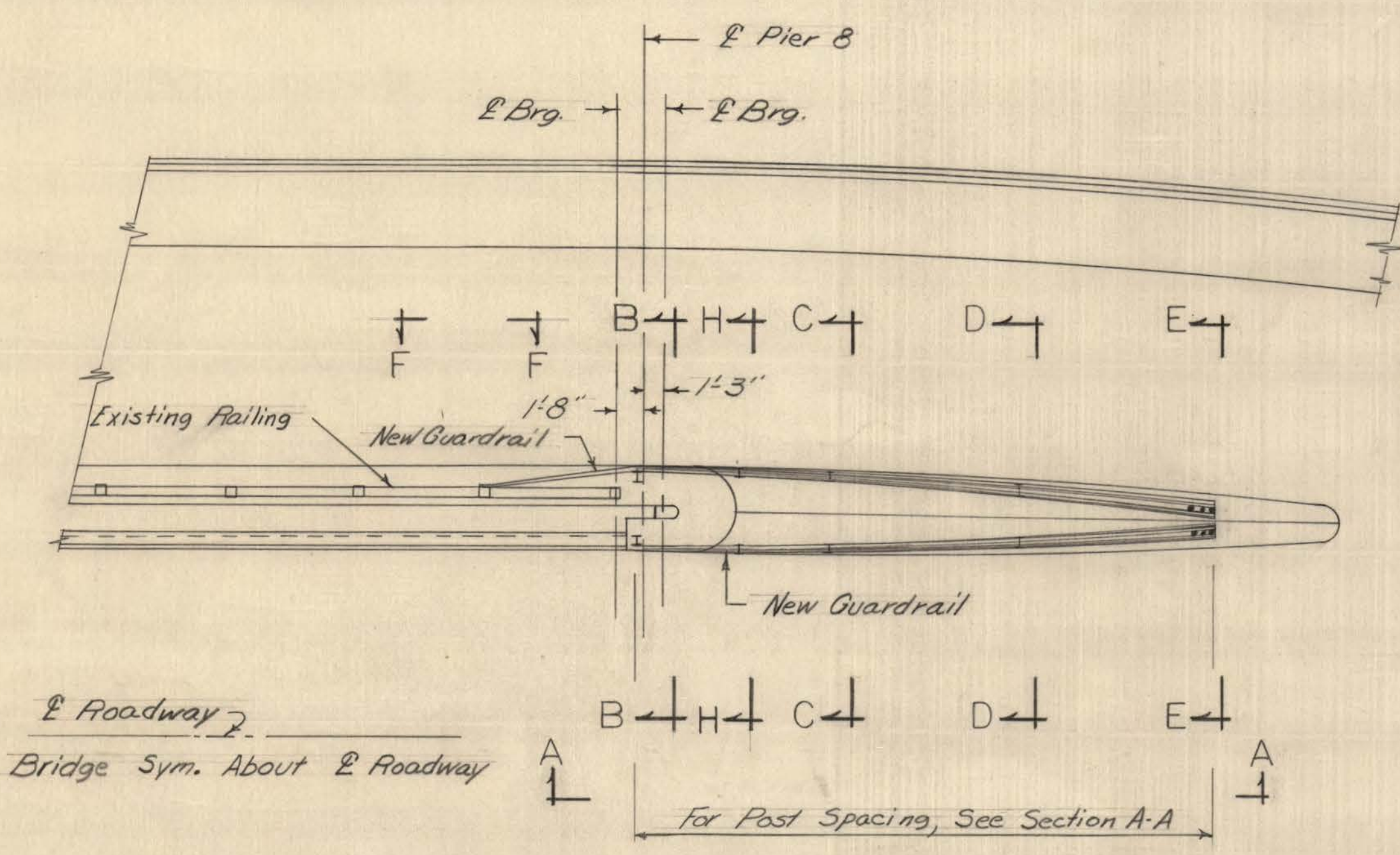
MONTGOMERY BRIDGE NO. 1899  
GUARDRAIL TIE-IN SOUTH ABUT.

DESIGNED BY  
**THE STATE ROAD COMMISSION**  
CHARLESTON, W. VA.  
Scale as shown  
Project F 283 (15) C 3  
Date JULY 1968  
Sheet C-1 of 2 Sheets  
**No. 1899**

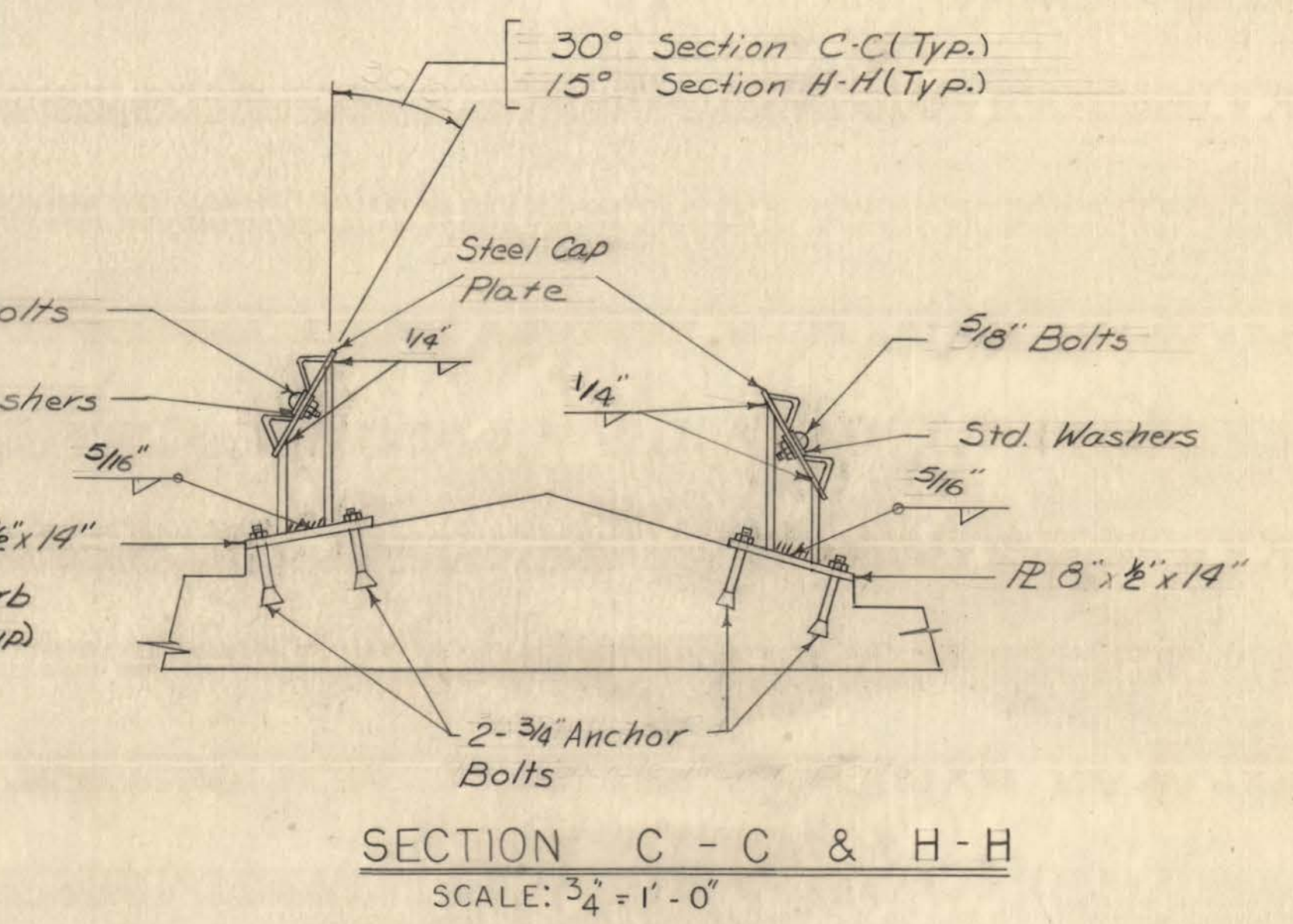
MADE BY R. THOLLIDAY. DATE 7-2-68.  
TRACED BY..... DATE.....  
CHECKED BY..... DATE.....  
CHECKED BY..... DATE.....

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

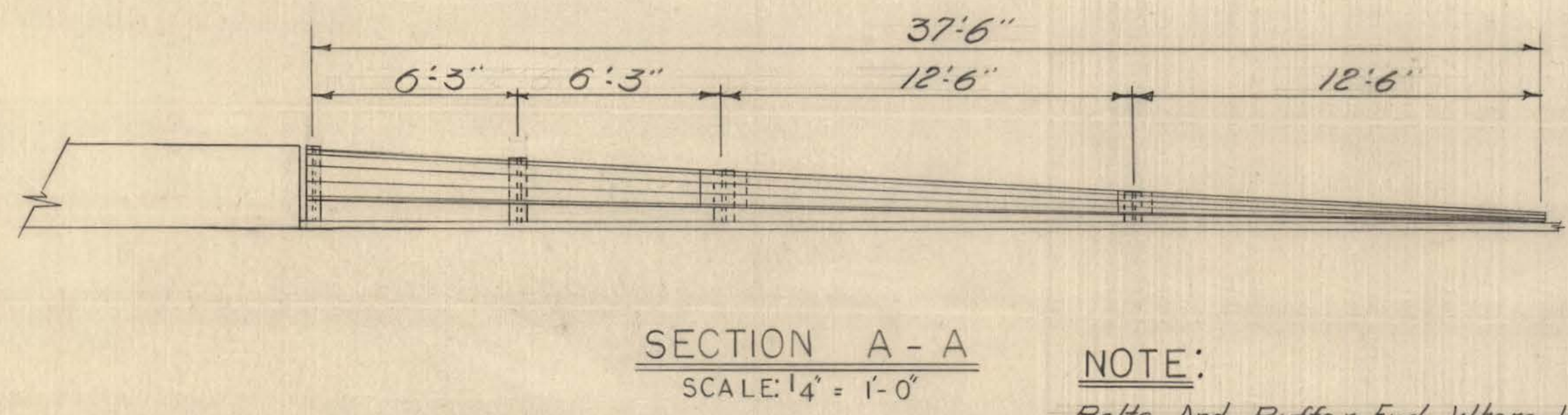




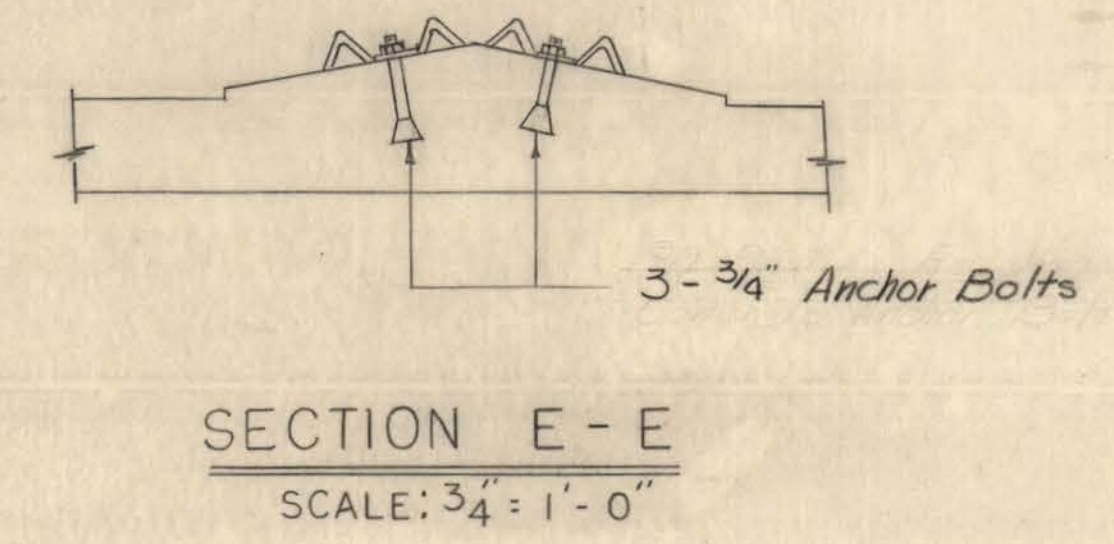
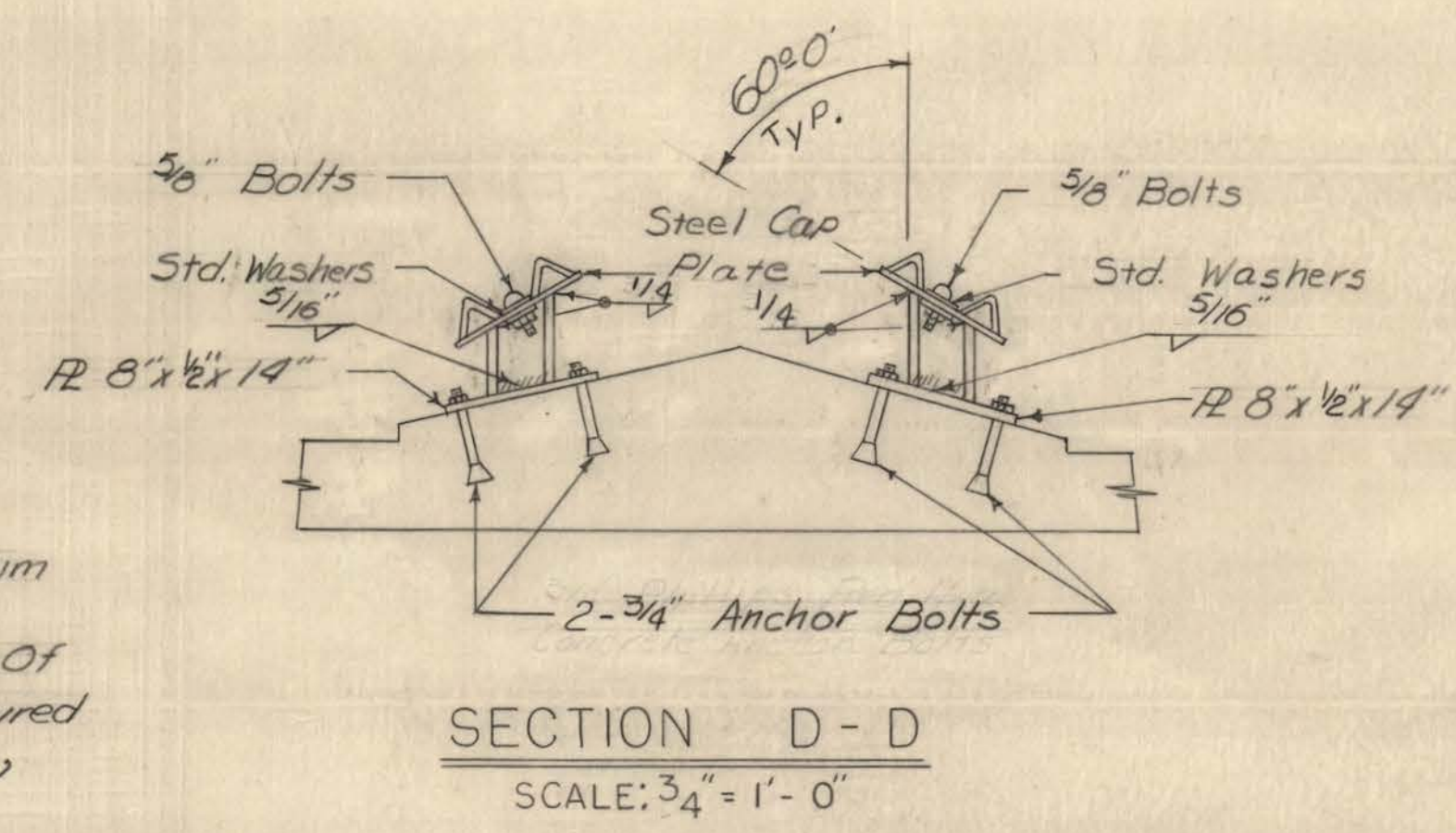
NOTES FOR SECTION B-B  
1. Base Pls. To Be Centered On 12 1/8" x 1/2" Checkered Expansion Dam Pl.



NOTE:  
1. All 3/4" Anchor Bolts To Be Phillips Self Drilling Red Head Concrete Anchors, Or, Star Slugin Compounded Anchors, Or, An Approved Equal.

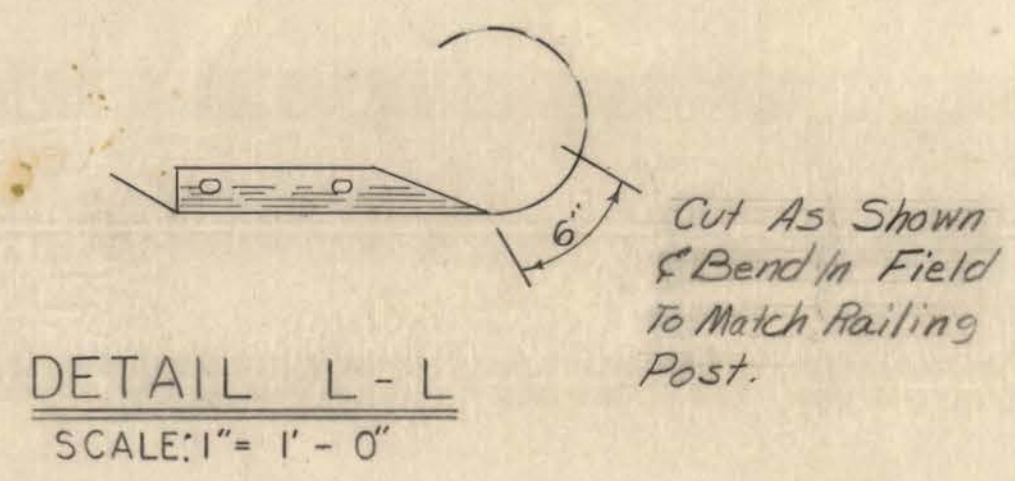
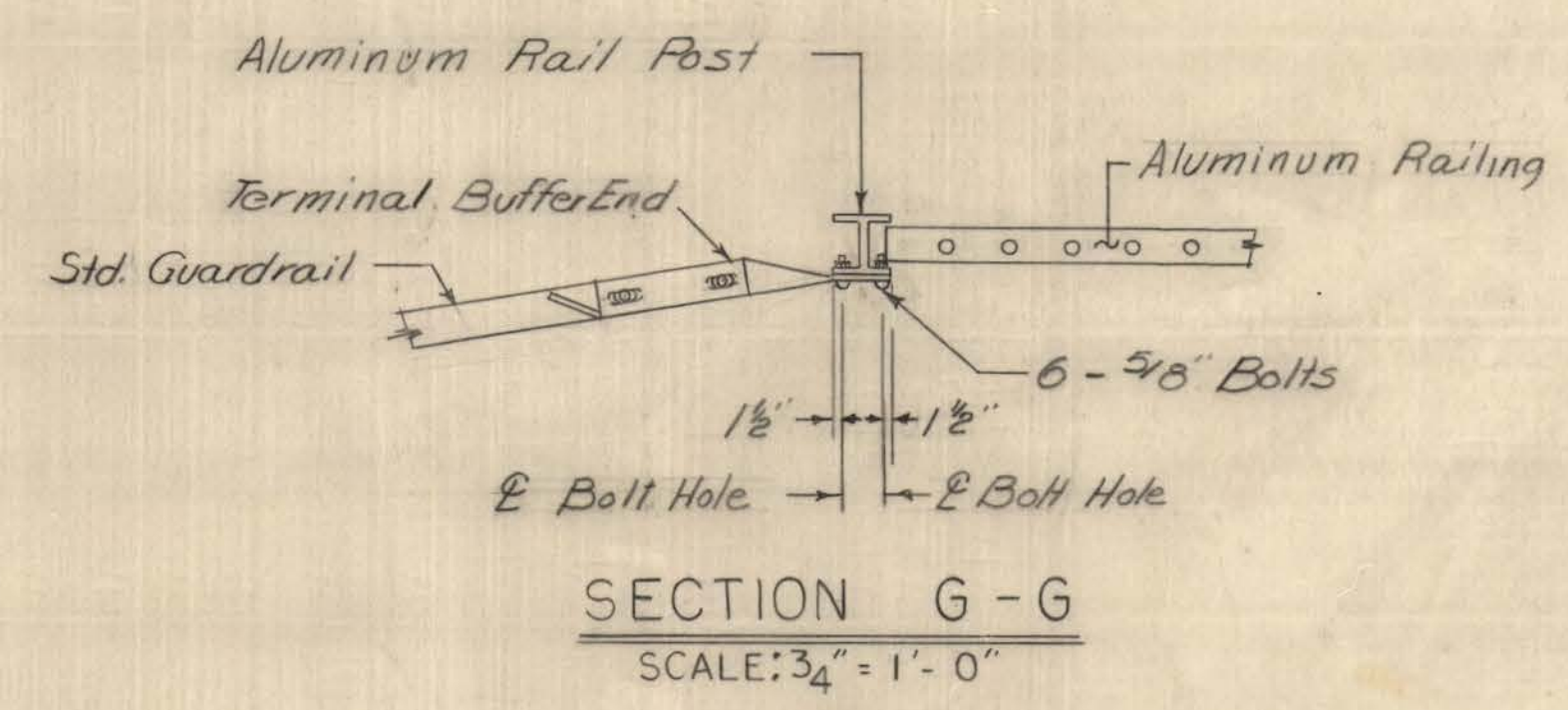
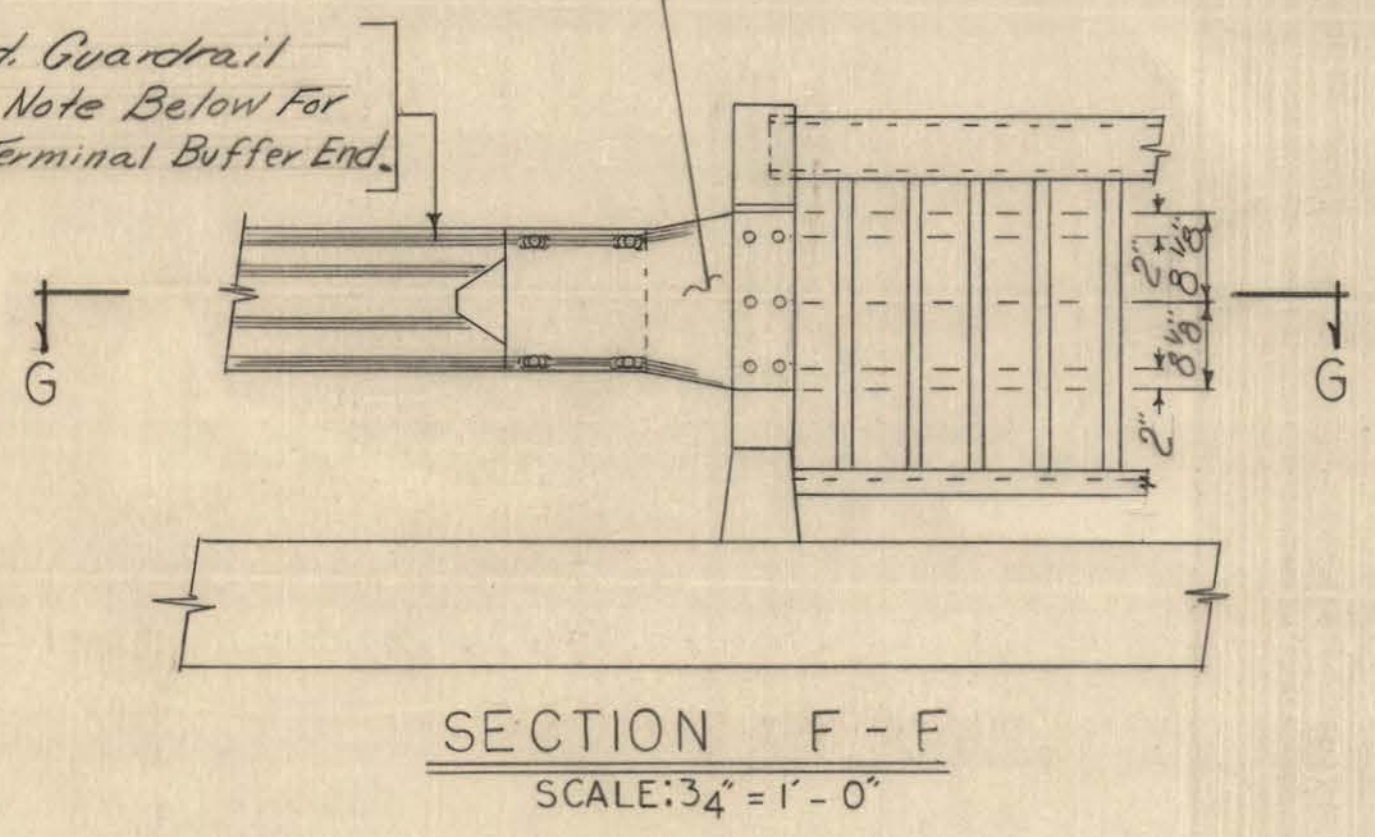


NOTE:  
Bolts And Buffer End, Where In Contact With Aluminum Post, To Be Coated With, Either, "Alumilastic" As Manufactured By The Parr Paint And Color Company Of Cleveland, Ohio, Or "Permagum 531" As Manufactured By The Presstite Engineering Company Of St. Louis, Missouri, Or Approved Equal.



Std. Terminal Buffer End Cut To Match Railing Post. See Detail L-L This Sheet.

Cut From Std. Guardrail Section. See Note Below For Connection To Terminal Buffer End.



NOTE:  
1. Bolt Holes Connecting Guardrail Section To Rail Post Will Be Std. Slotted Splice Holes, And Bolt Holes Connecting Guardrail Section To Buffer End Will Be 3/4" x 4" Slotted Holes.  
2. For Bolting Purposes, The 5/8" Connection Bolts Are To Be Centered On 4" Slotted Holes @ 60° F.

3. Tighten Nuts On Guardrail Bolts At 4" Slotted Holes To Permit Sliding Fit.

MADE BY R.T. HOLIDAY	DATE 7-11-68				
TRACED BY	DATE				
CHECKED BY	DATE				
CHECKED BY	DATE				
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	

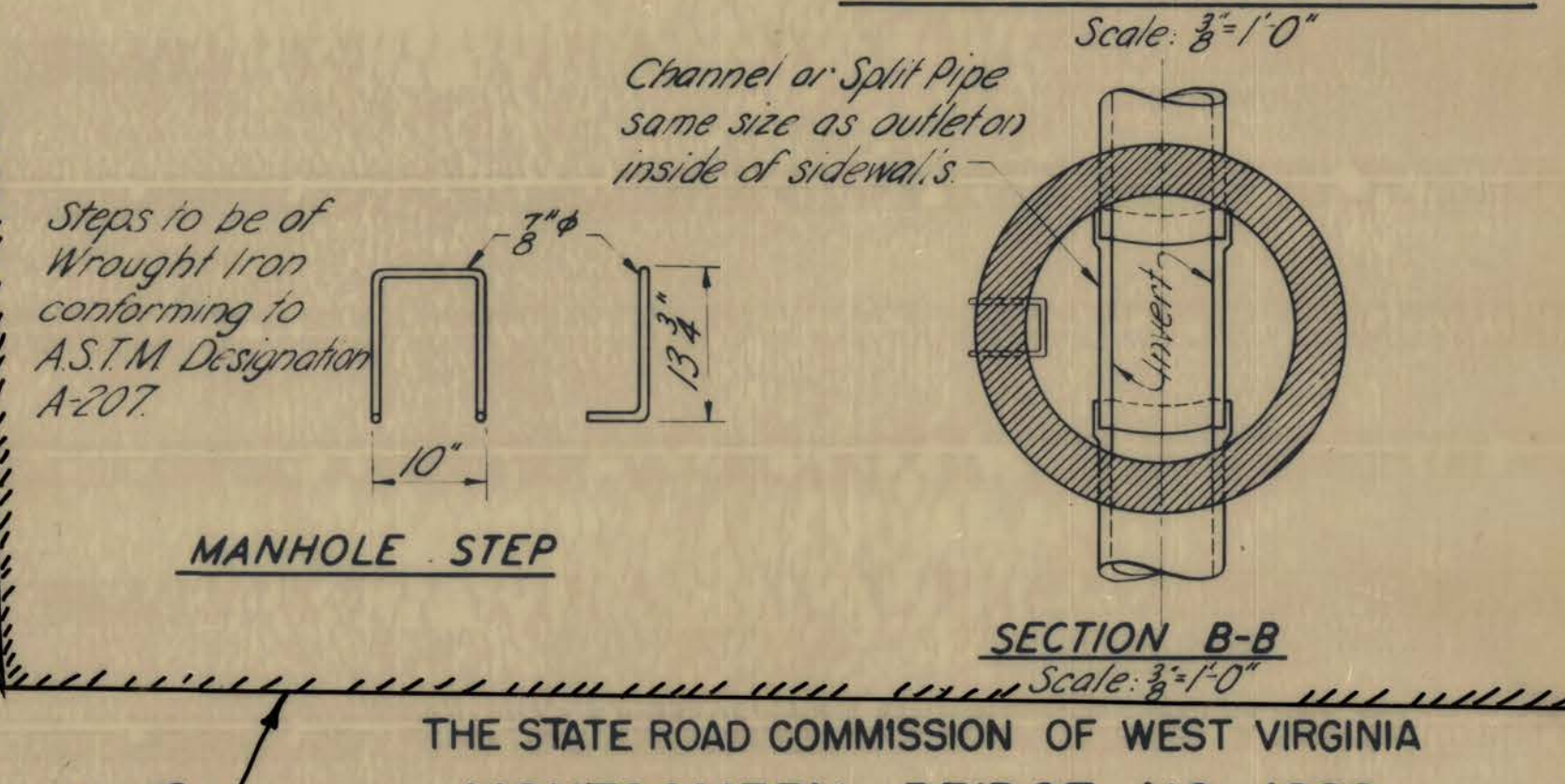
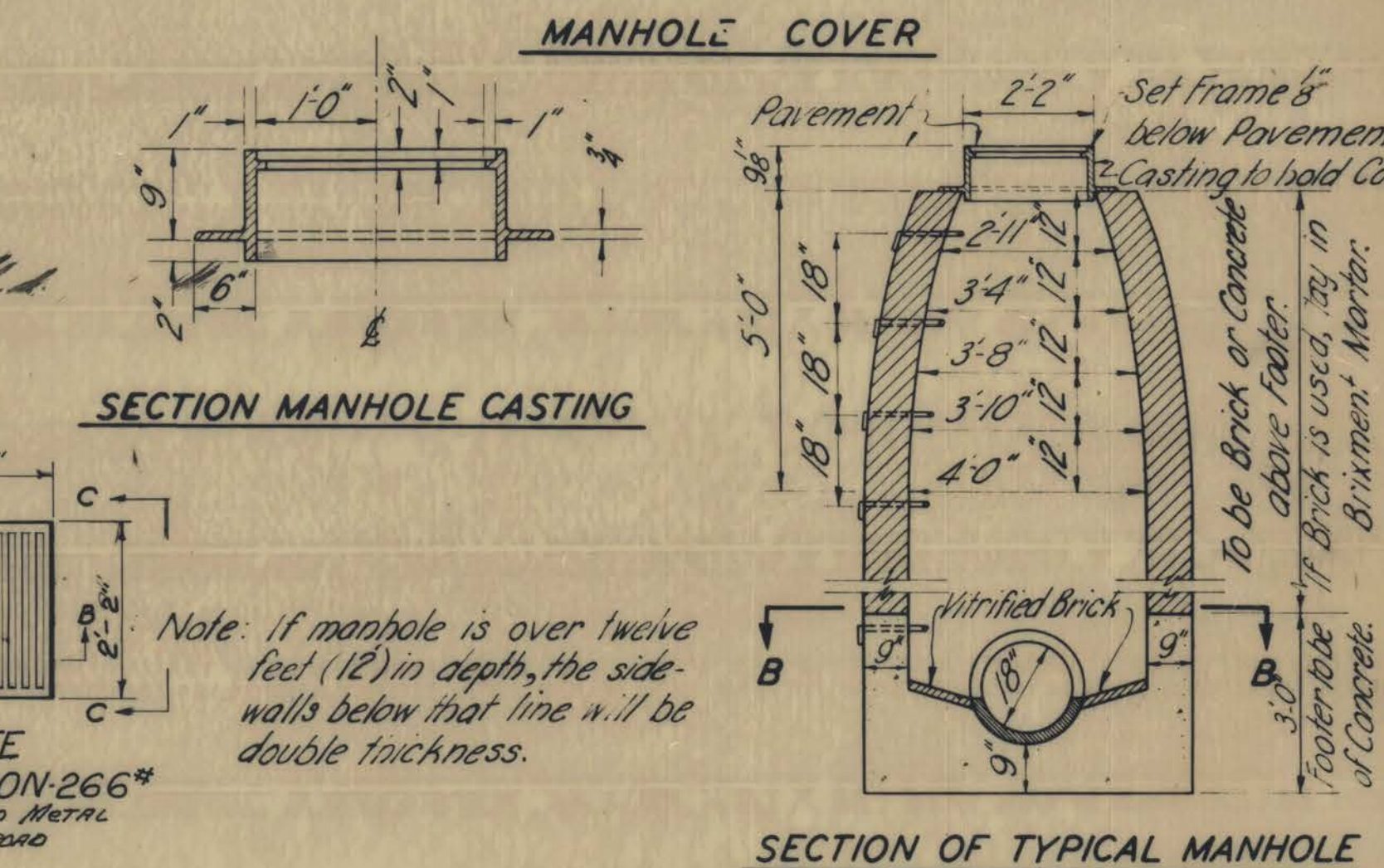
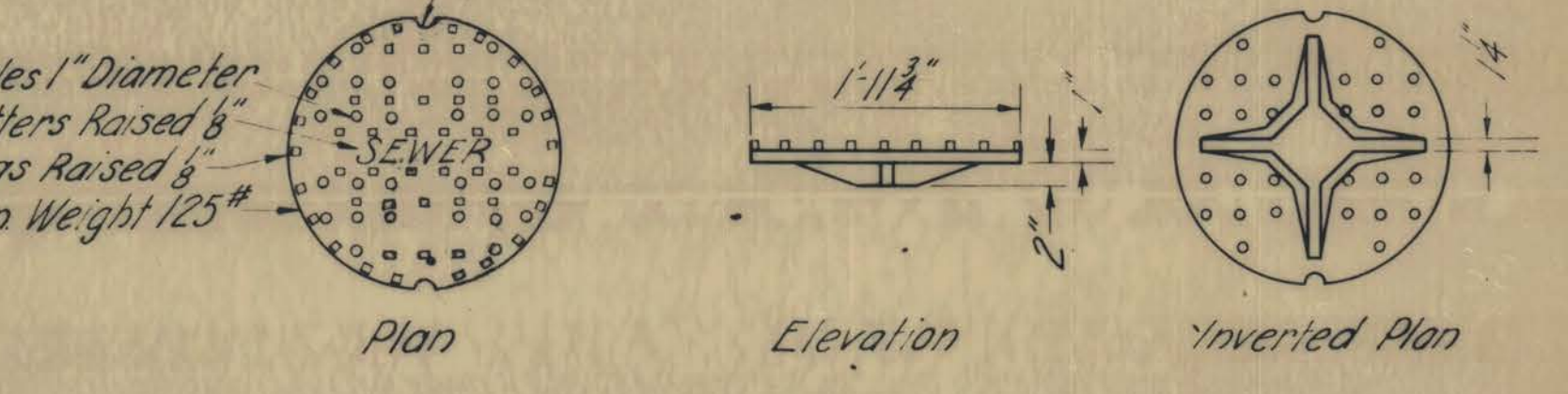
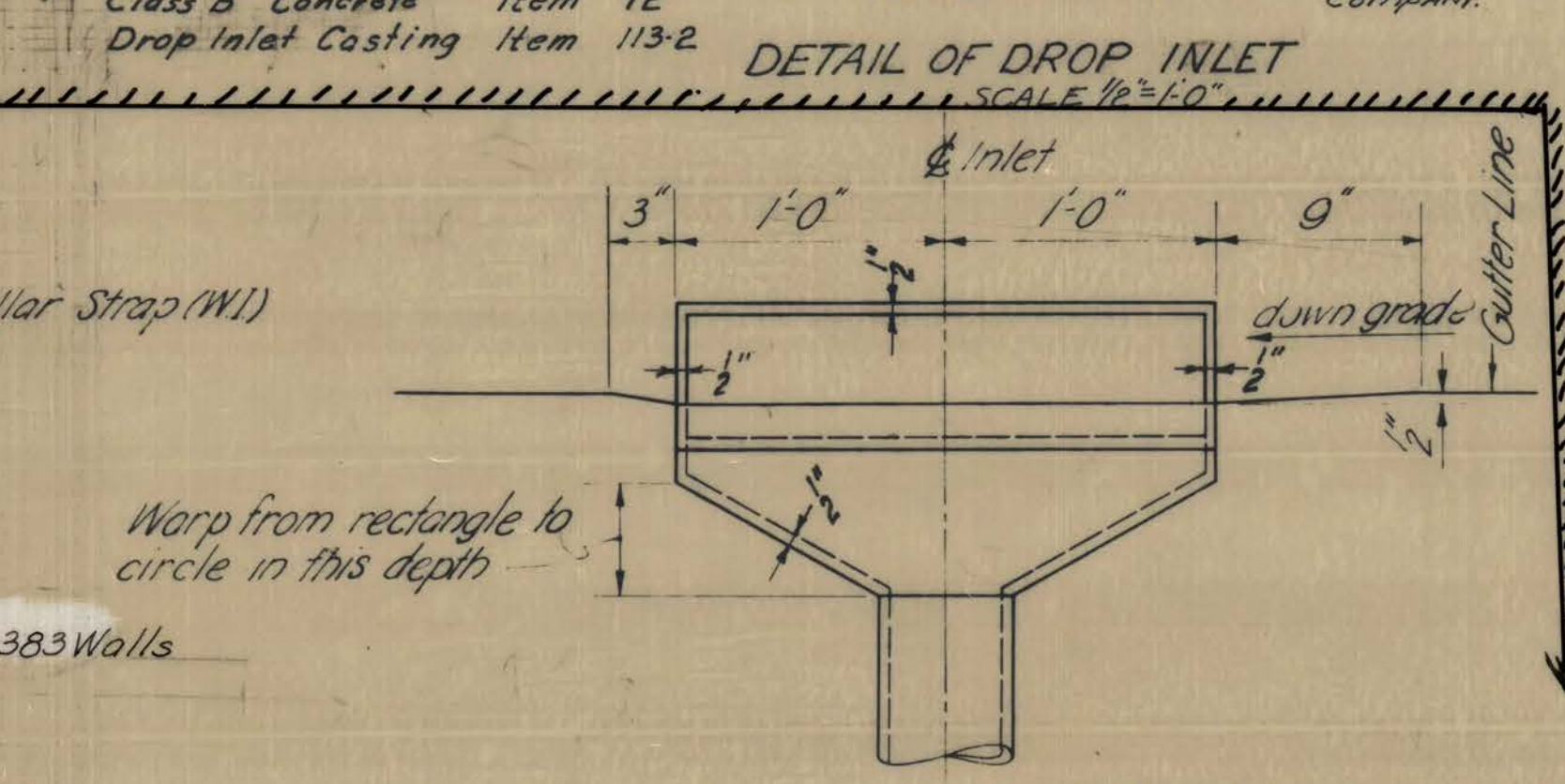
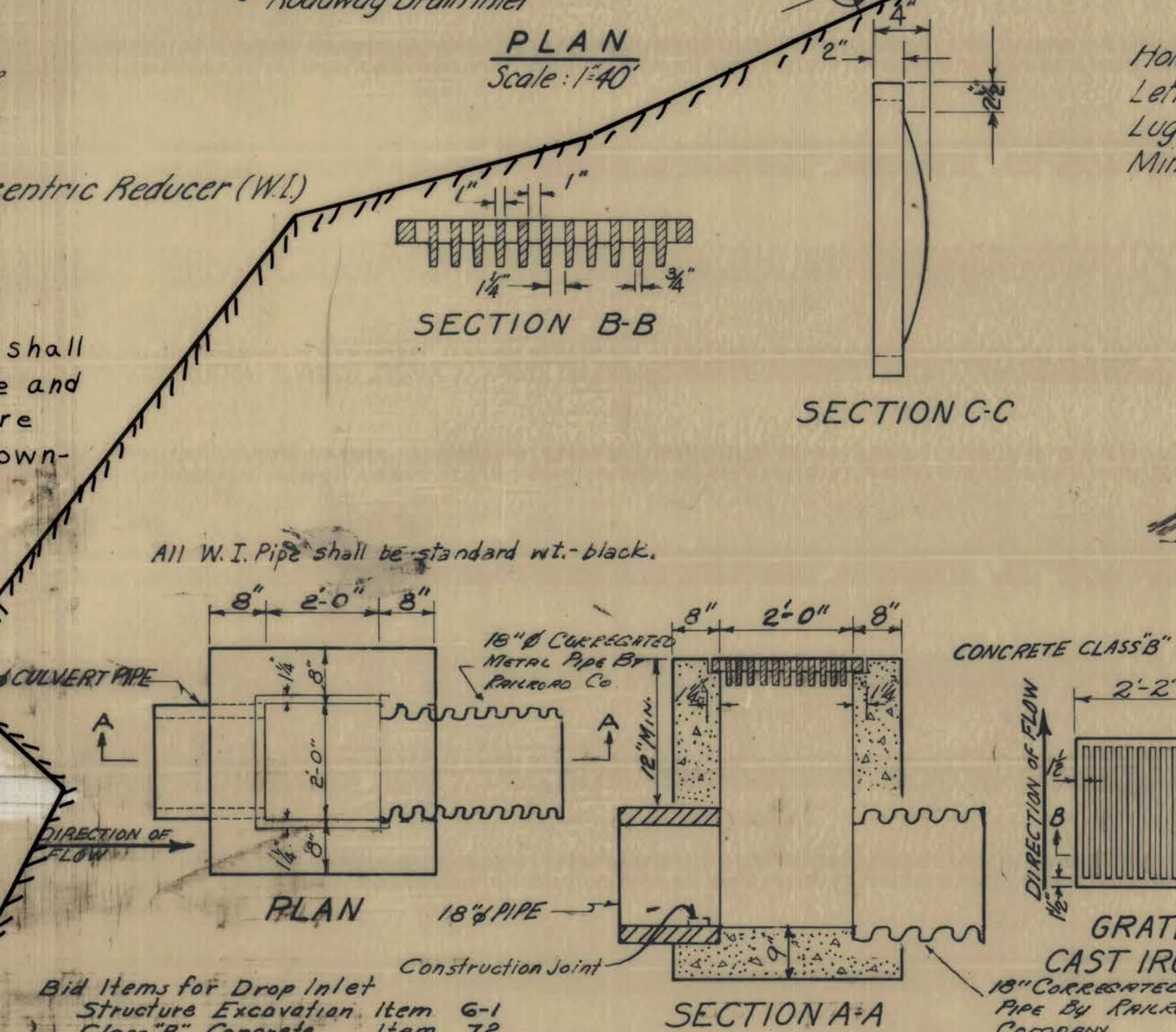
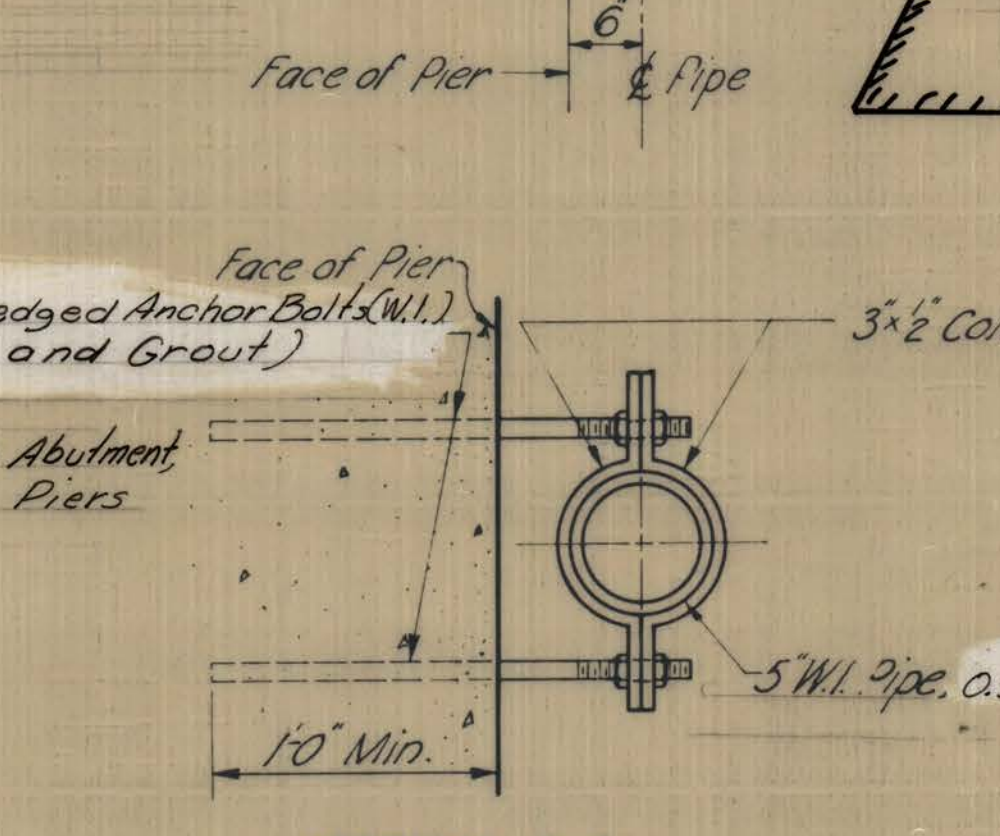
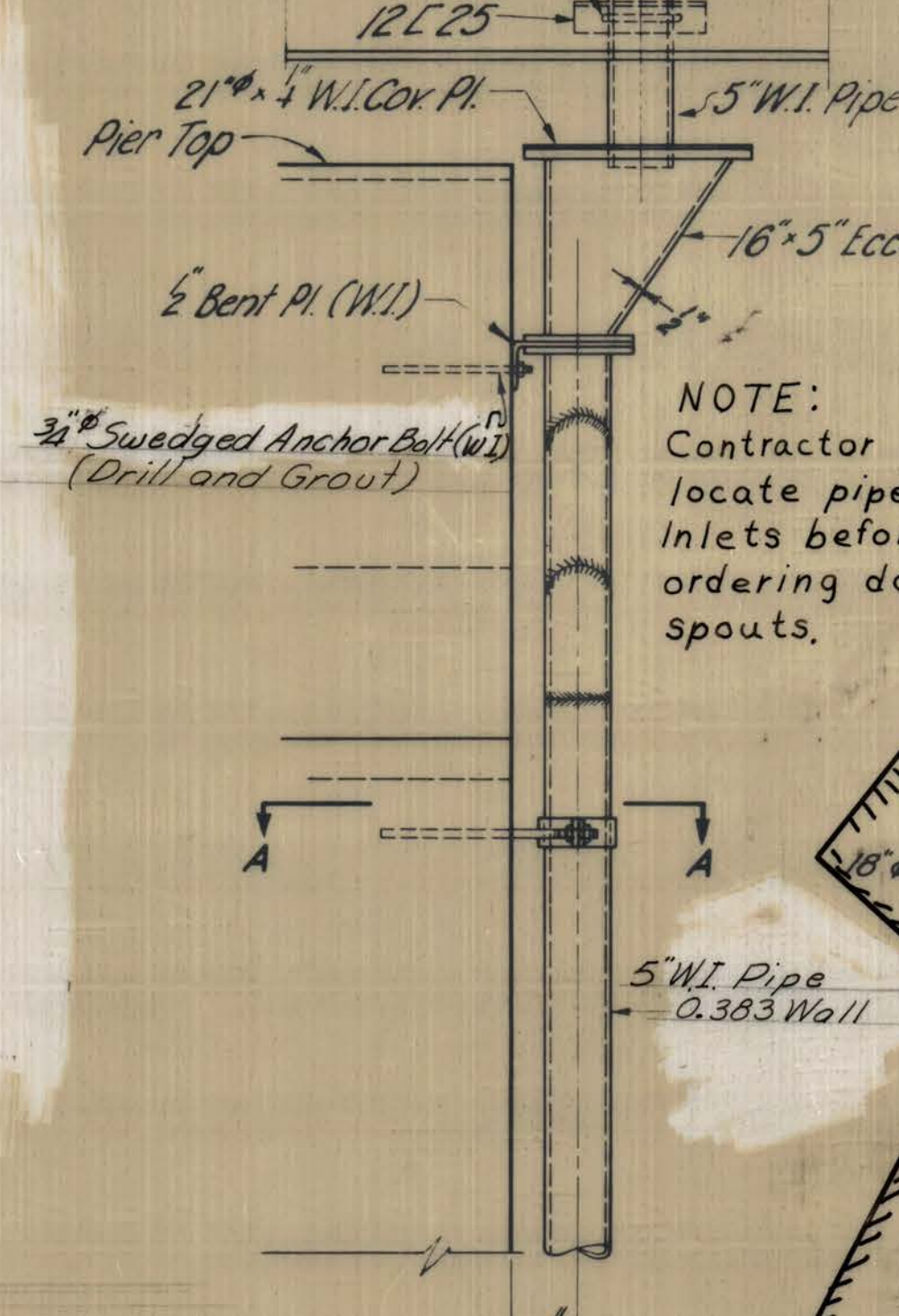
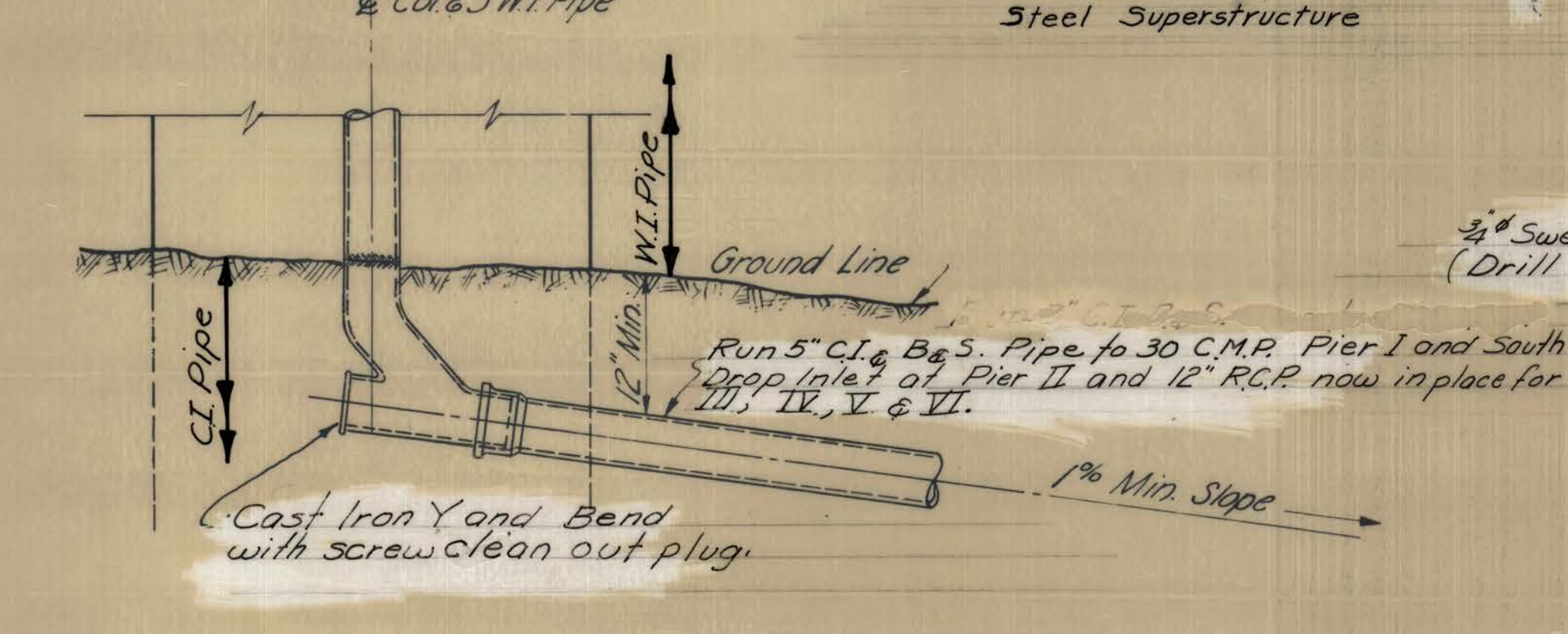
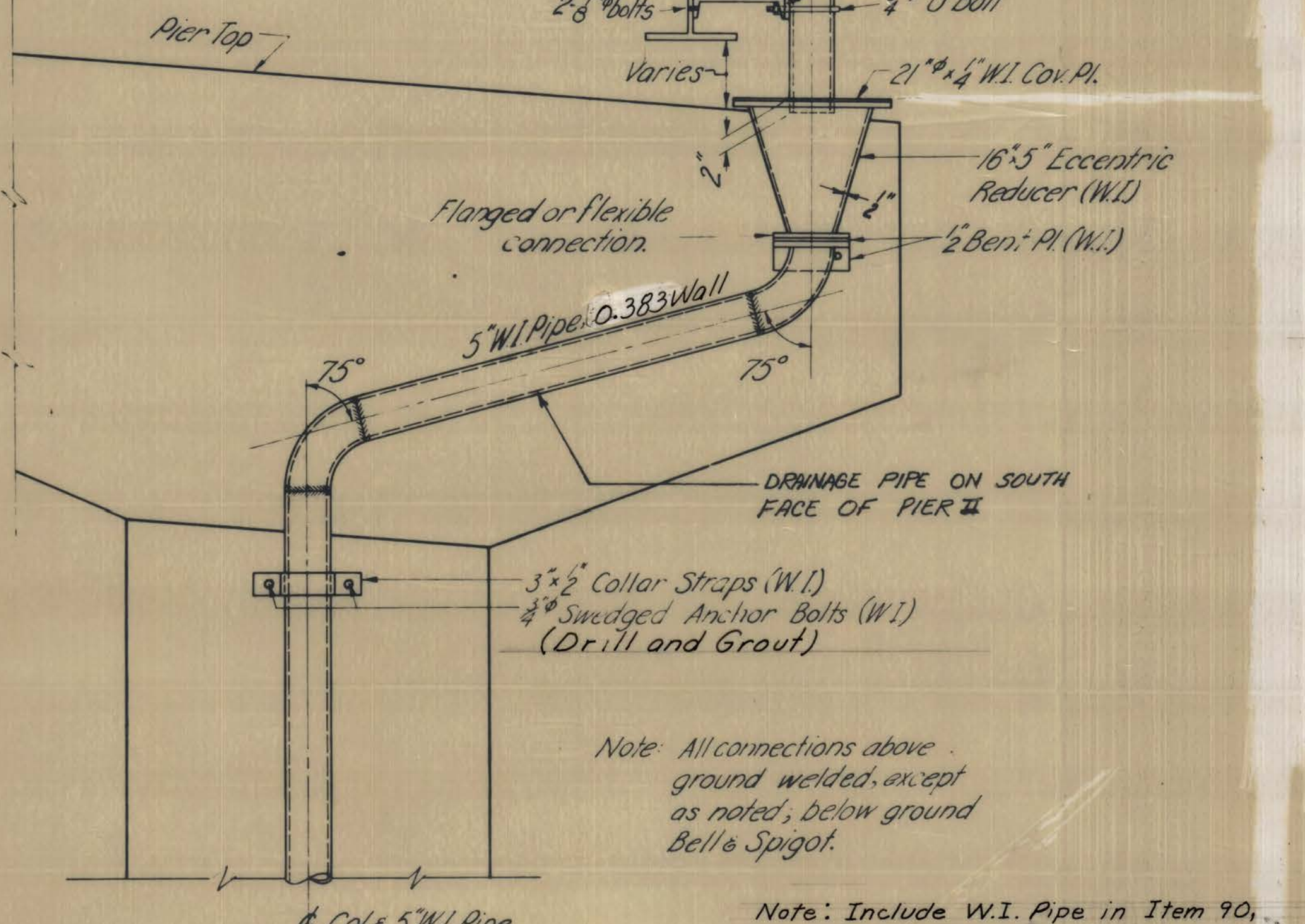
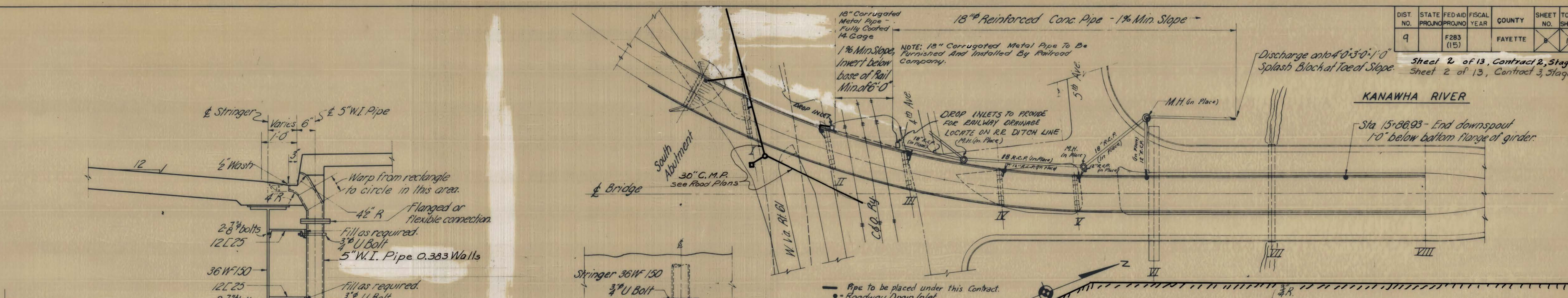
MONTGOMERY BRIDGE NO 1899  
TREATMENT OF GORE AREAS

DESIGNED BY  
**THE STATE ROAD COMMISSION**  
CHARLESTON, W. VA.  
Scale as shown  
Project F-283 (15) C#3  
Date JULY 1968  
Sheet C-2 of 2 Sheets  
No. 1899



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9		F283 (15)		FAYETTE	2	13

Sheet 2 of 13, Contract 2, Stage 2  
Sheet 2 of 13, Contract 3, Stage 2



TYPICAL DRAINAGE DETAILS AT PIERS I II III IV & V  
PIER VI & SOUTH ABUTMENT SIMILAR  
(Pier VI Shown)

See Sheet 10 for Drainage Detail of Pier II  
Note: 3/4" Swaged Anchor Bolts were furnished under contract 1. Include cost of drilling and grouting in Item 90, Steel Superstructure.

DETAIL OF ROADWAY DRAIN INLET  
Scale: 1/2" = 1'-0" (Cast Iron)

Note: The drainage system included in Superstructure Contract shall be included under Item 90 and includes all drain inlets, W.I. Pipe, W.I. Plate, U. Bolts and supports.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

DRAINAGE PLAN & DETAILS

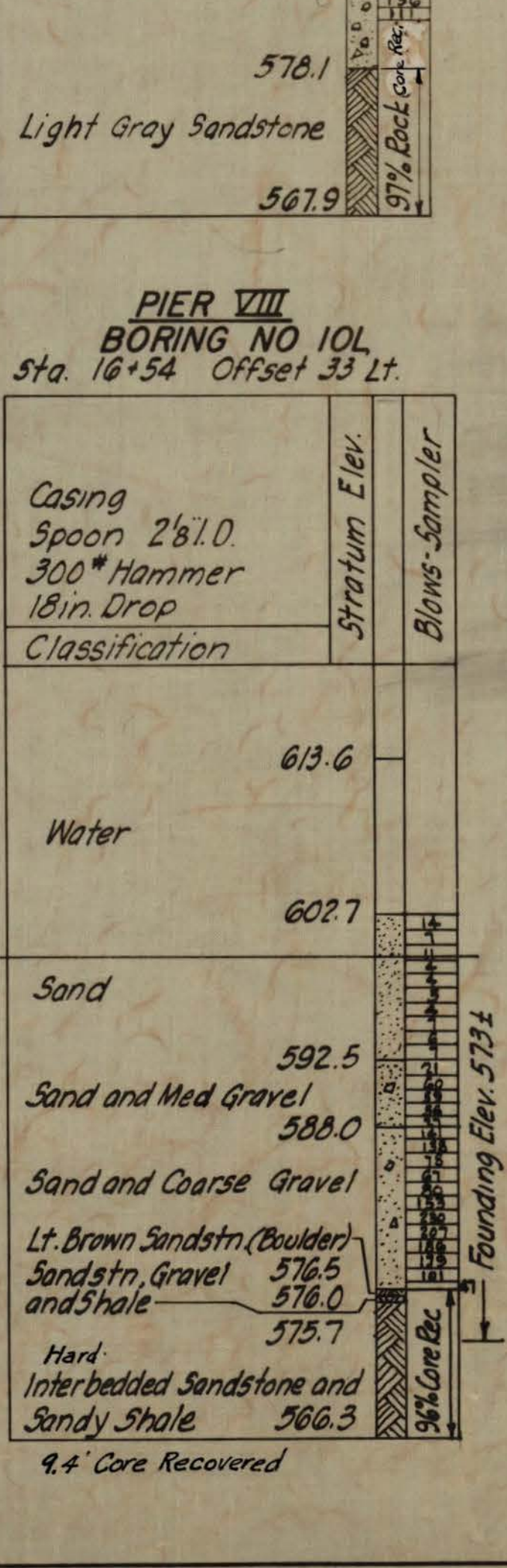
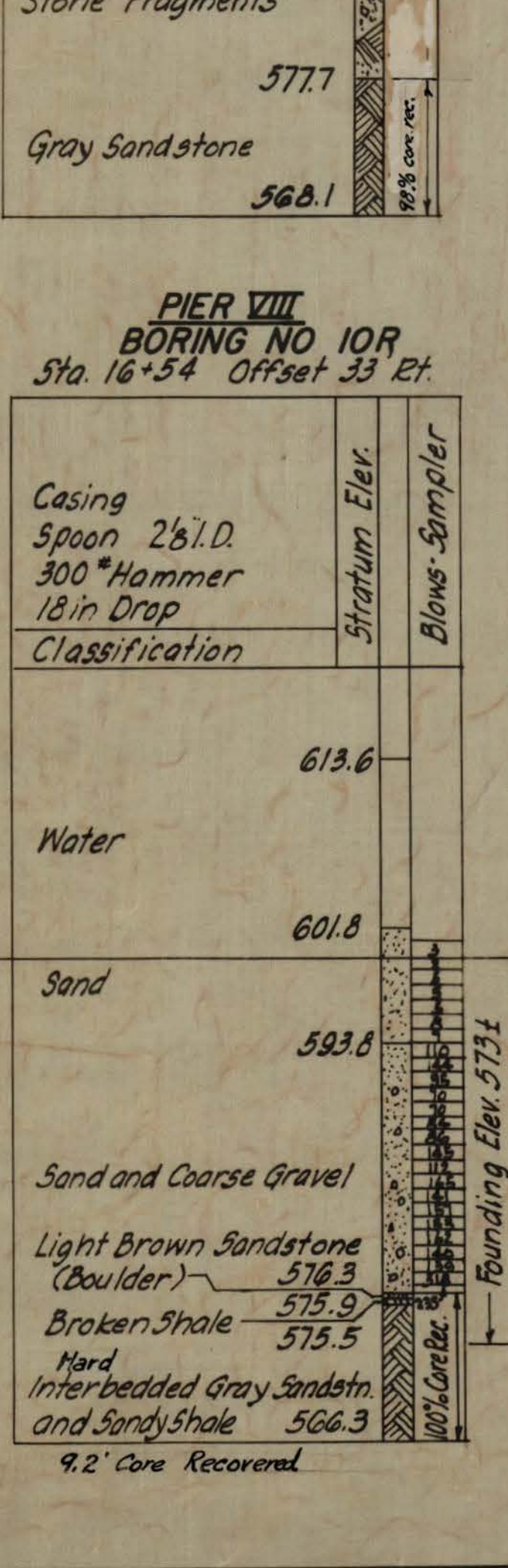
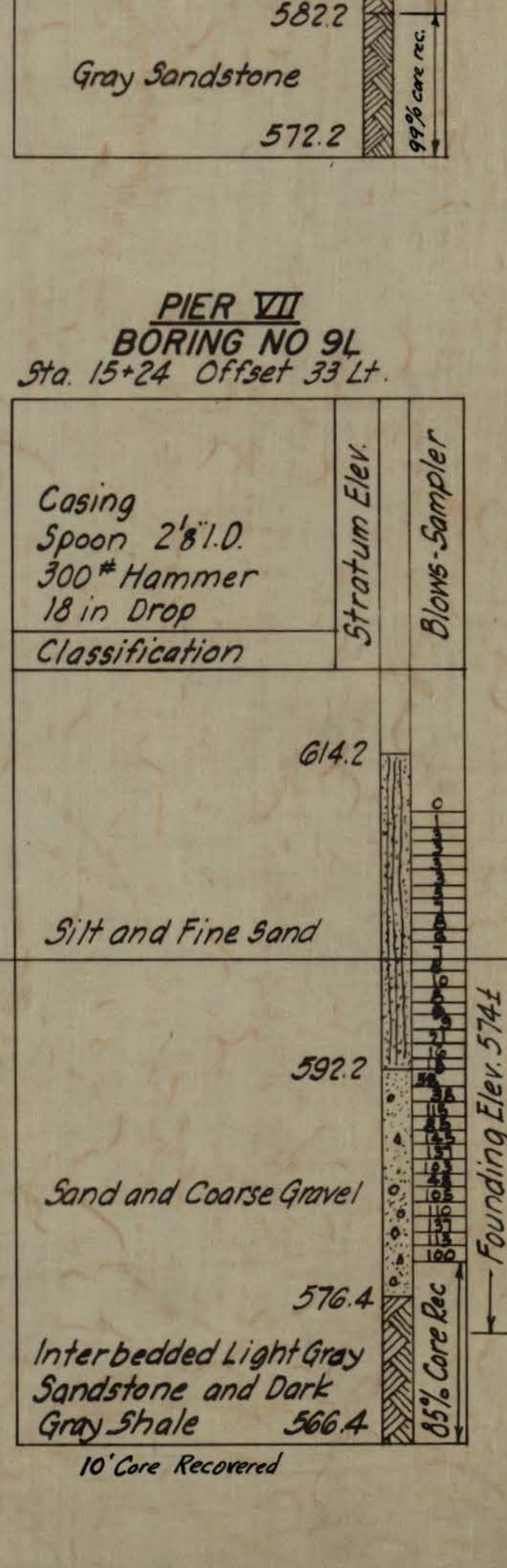
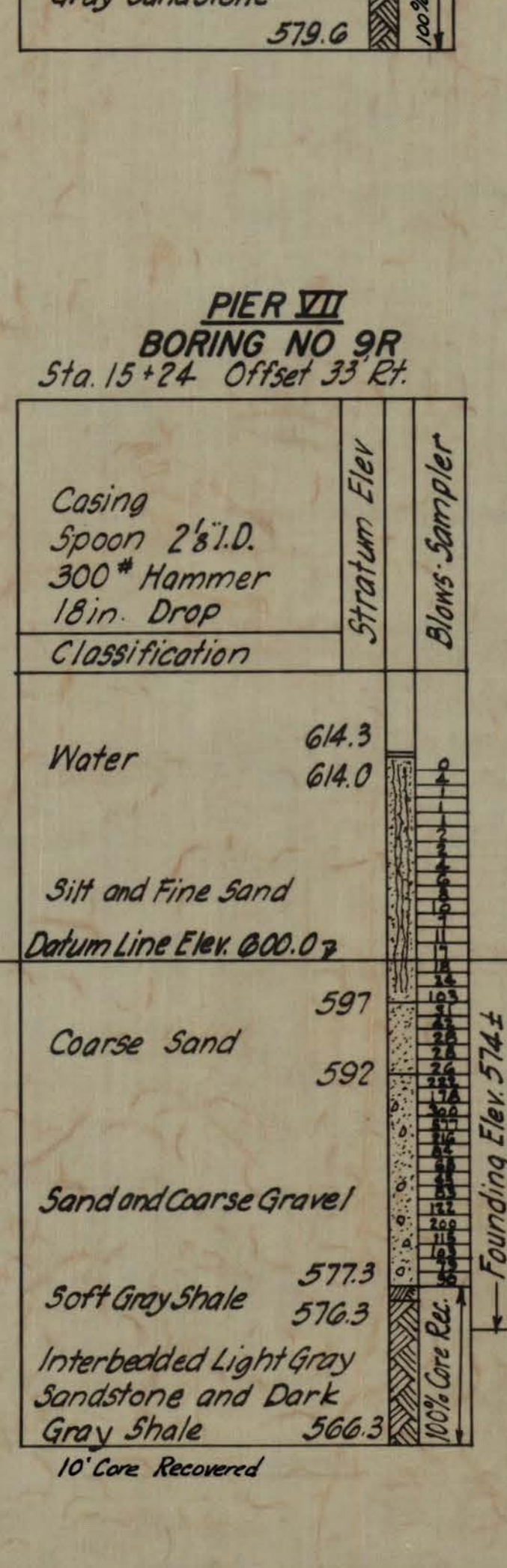
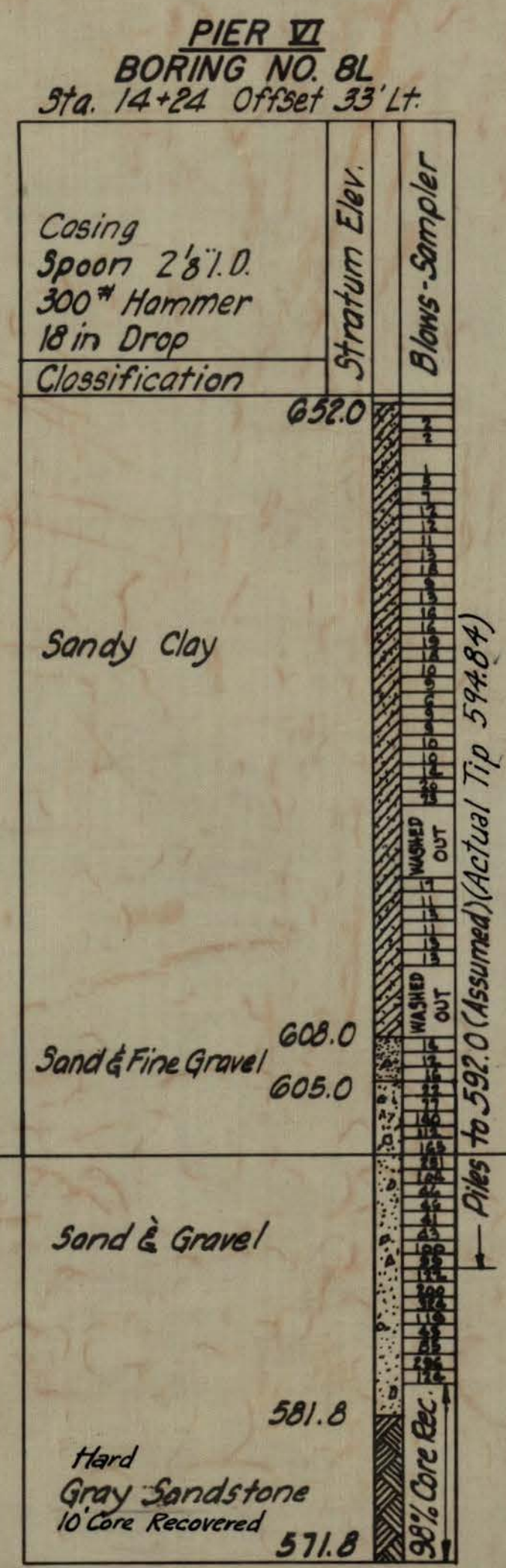
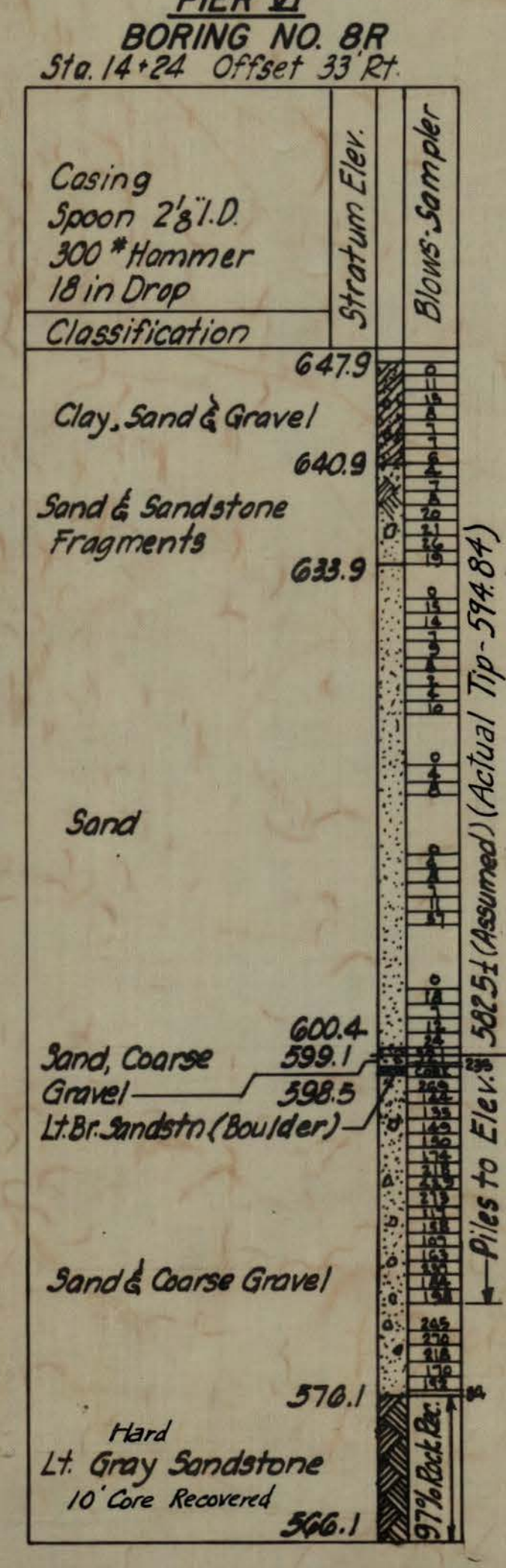
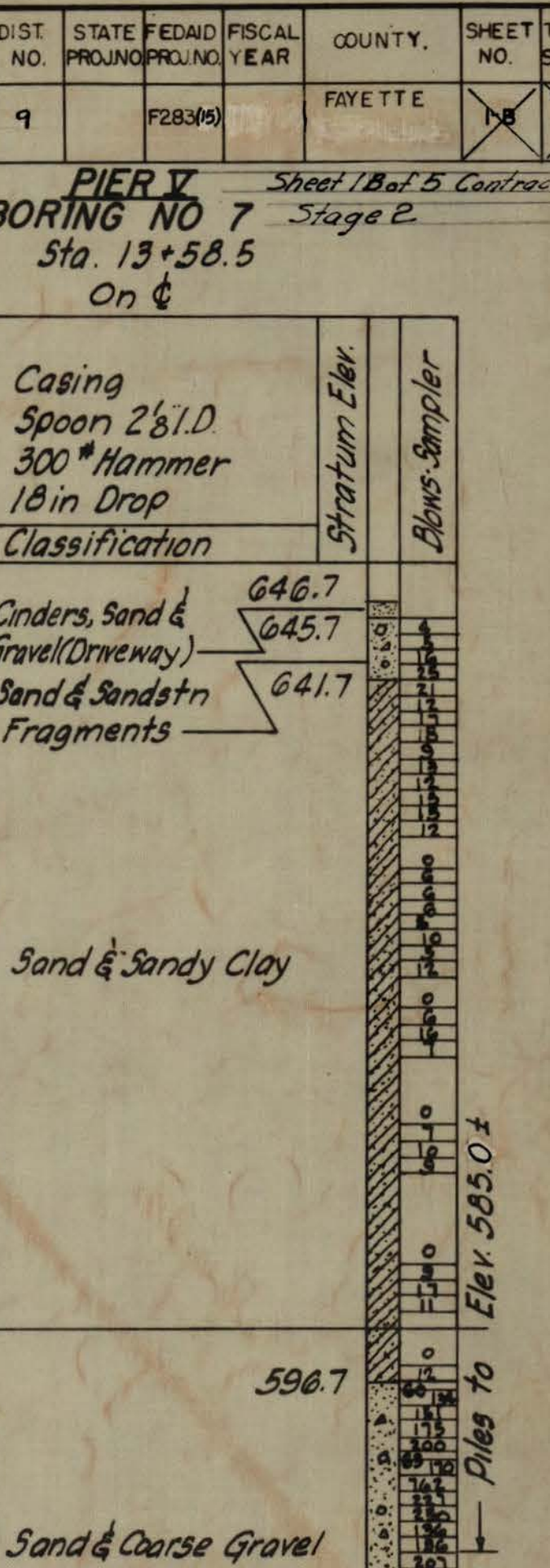
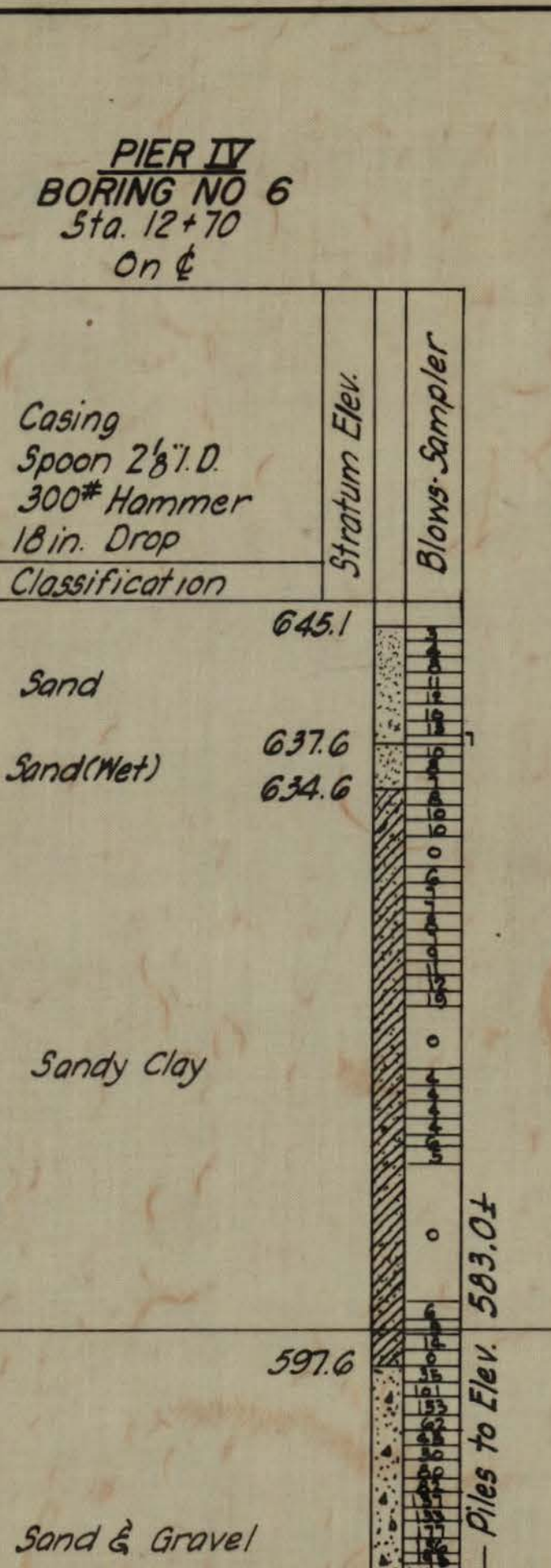
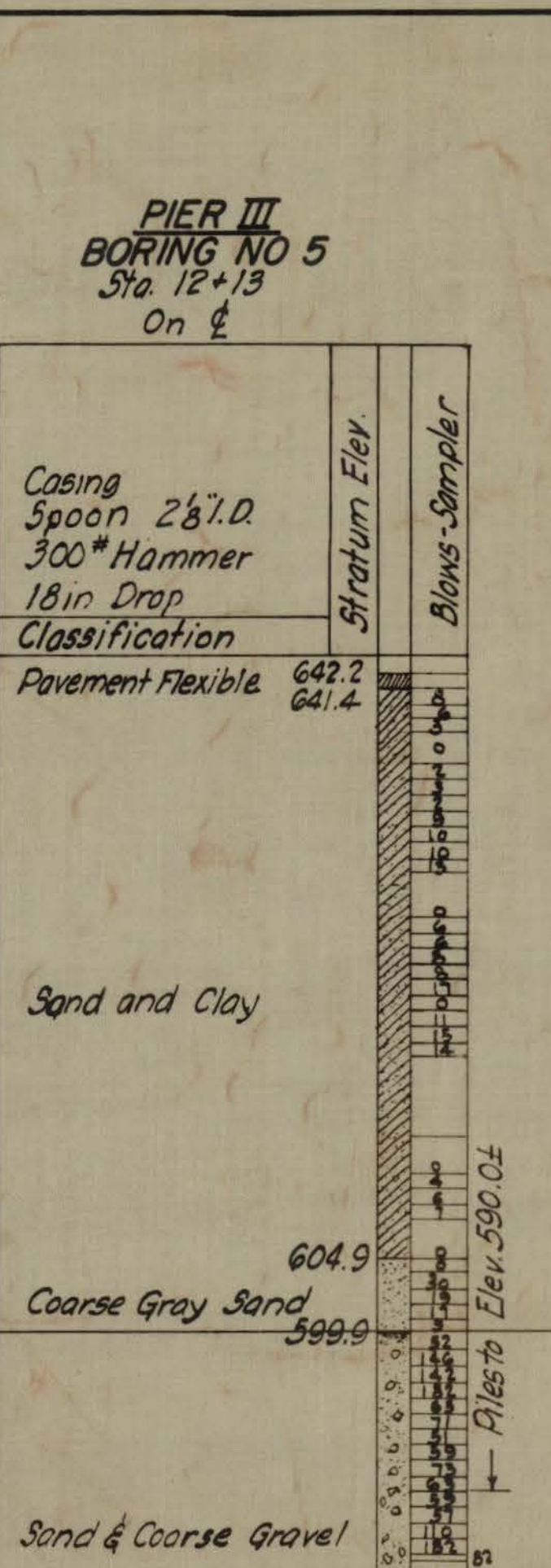
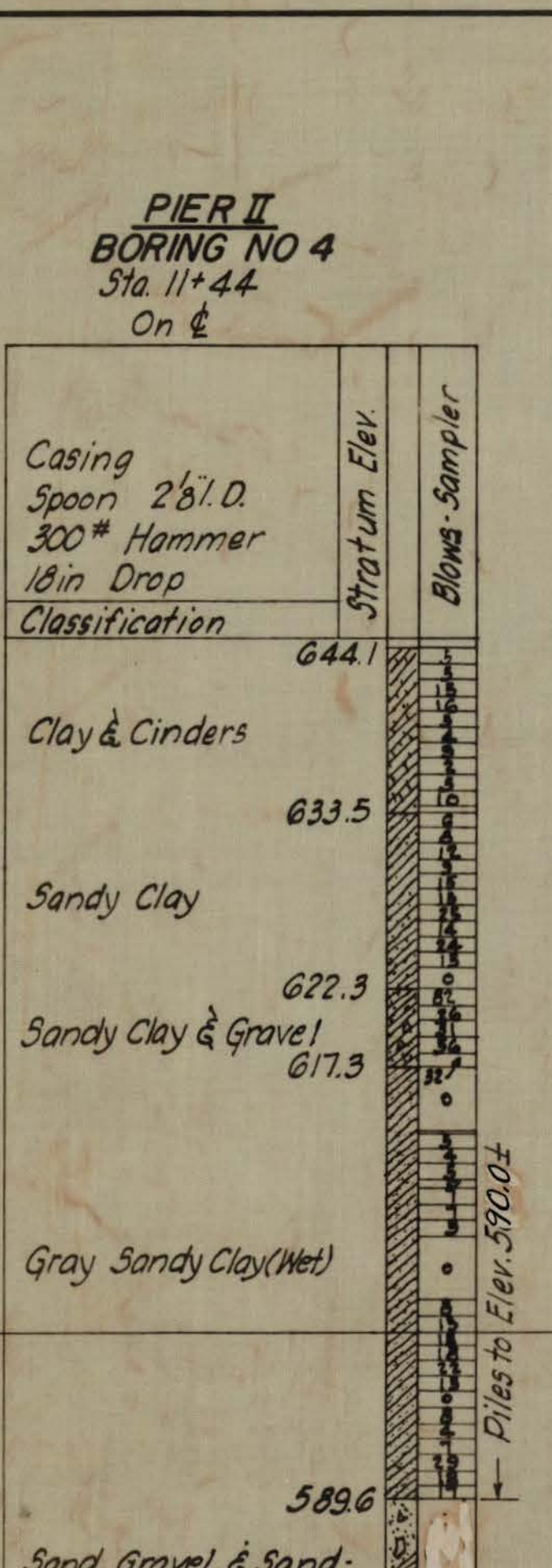
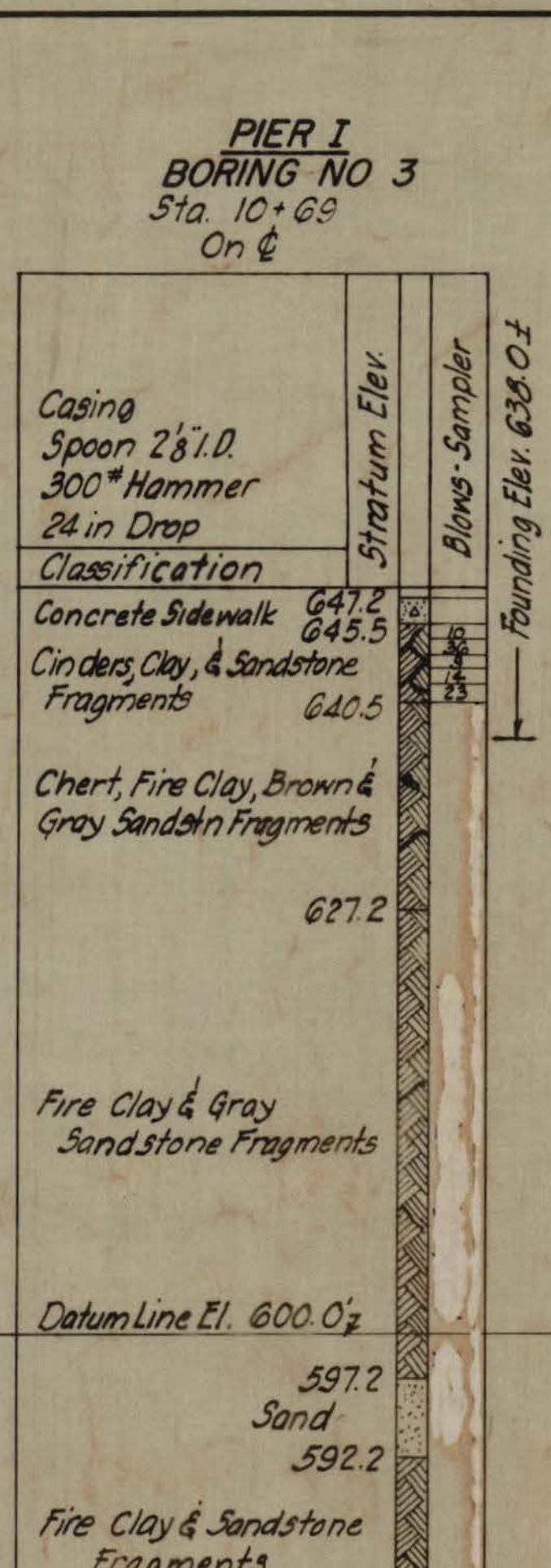
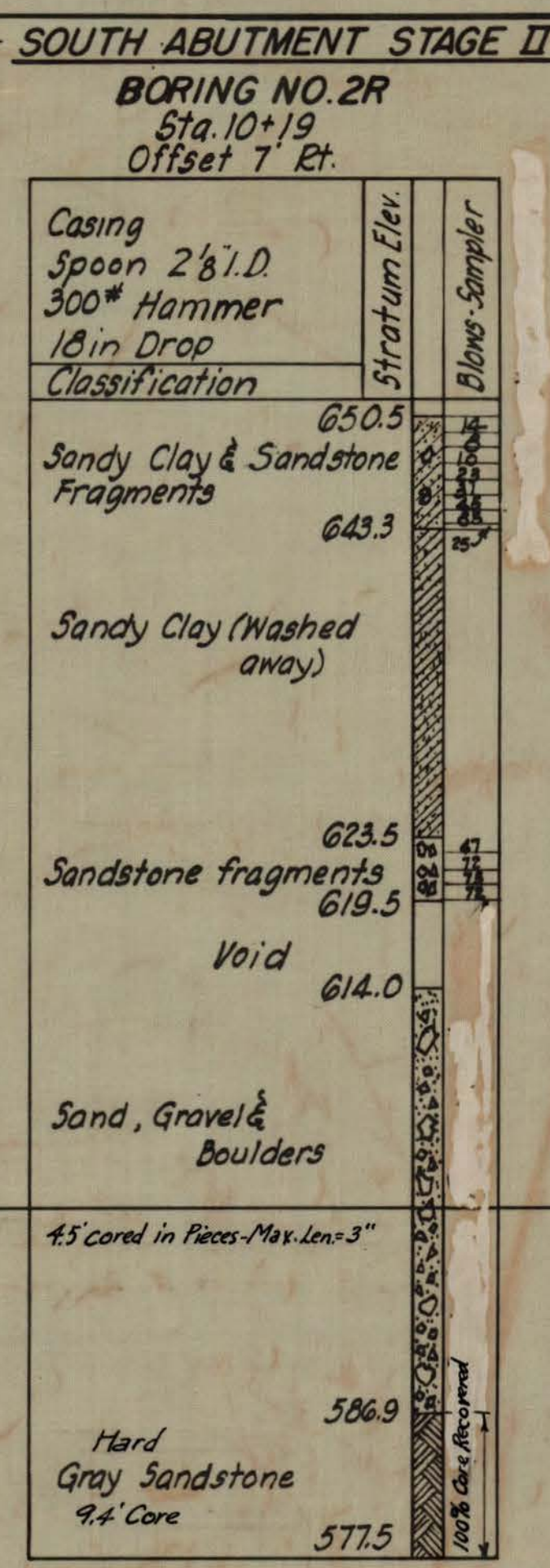
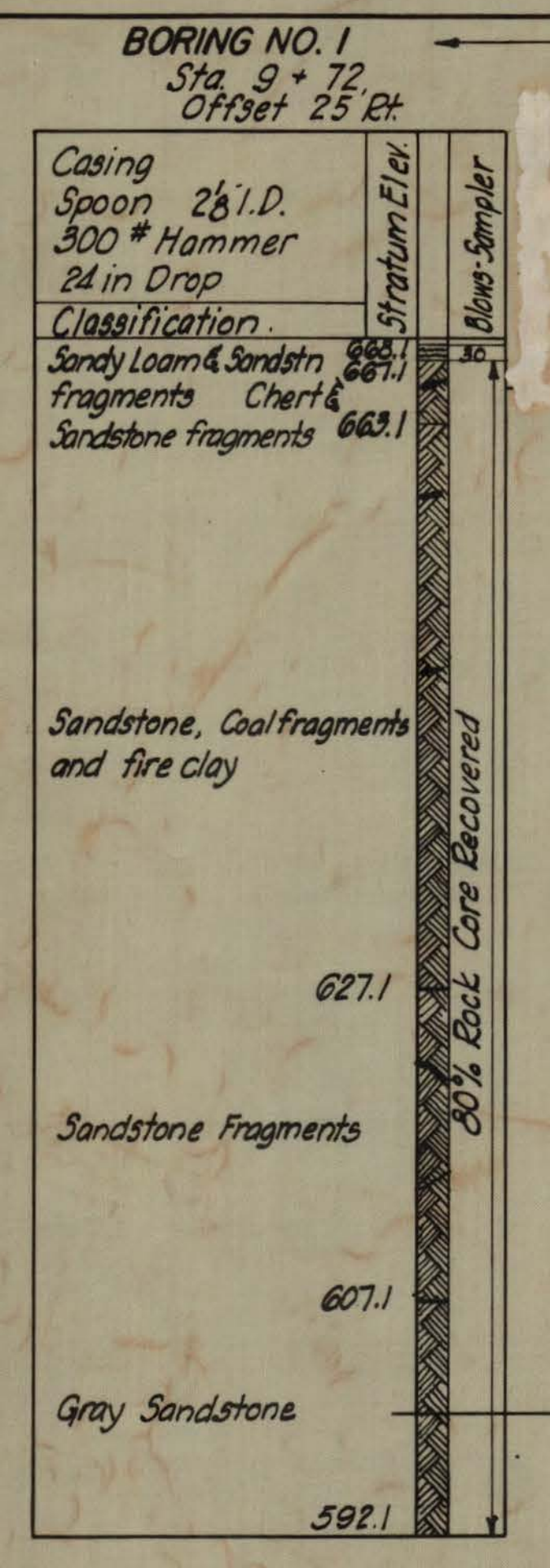
12' 6" 0 1 2 3'  
SCALE IN FEET EXCEPT AS NOTED

MODJESKI & MASTERS ENGINEERS DWG. #2  
REV. 10-3-58 REV. 3-16-59  
REV. 3-20-58 REV. 9-9-63 #1899



DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9	F283(9)			FAYETTE	18	18

**SOUTH ABUTMENT STAGE II**



**AUGER BORINGS**

Hole 2LA Sta. 10+19  
12 ft. left of E. El. 647.8

Hole 3RA Sta. 10+79  
14' Rt. of E. El. 648.7

0'-1' Road Base  
1'-29' Sandy Clay & Small Boulders  
29'-43' Sandy Clay - Beyond P.L. - Small Boulders  
43'-64' Sandy Clay - Beyond L.L. - Small Boulders  
64'-65.5' Broken Rock - Not Solid  
65.5' Refusal on hard rock

0'-1' Roadway  
1'-4' Sandy Clay - Beyond P.L. - Boulders  
4'-28' Same - Drier & Firmer - No recovery from 10' to 28' - Water on top  
28'-60' Softer - Sandy Clay with boulders  
60'-63.5' Rock - Broken - Not solid  
63.5' Refusal on hard rock

**NOTE:**  
Borings were made from June to August, 1952 under contract with the State Road Commission of West Virginia. (except Auger Borings 2LA and 3RA)  
Elevations refer to Sandy Hook Datum.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**BORINGS I TO 10L**

STAGE #2

SCALE IN FEET

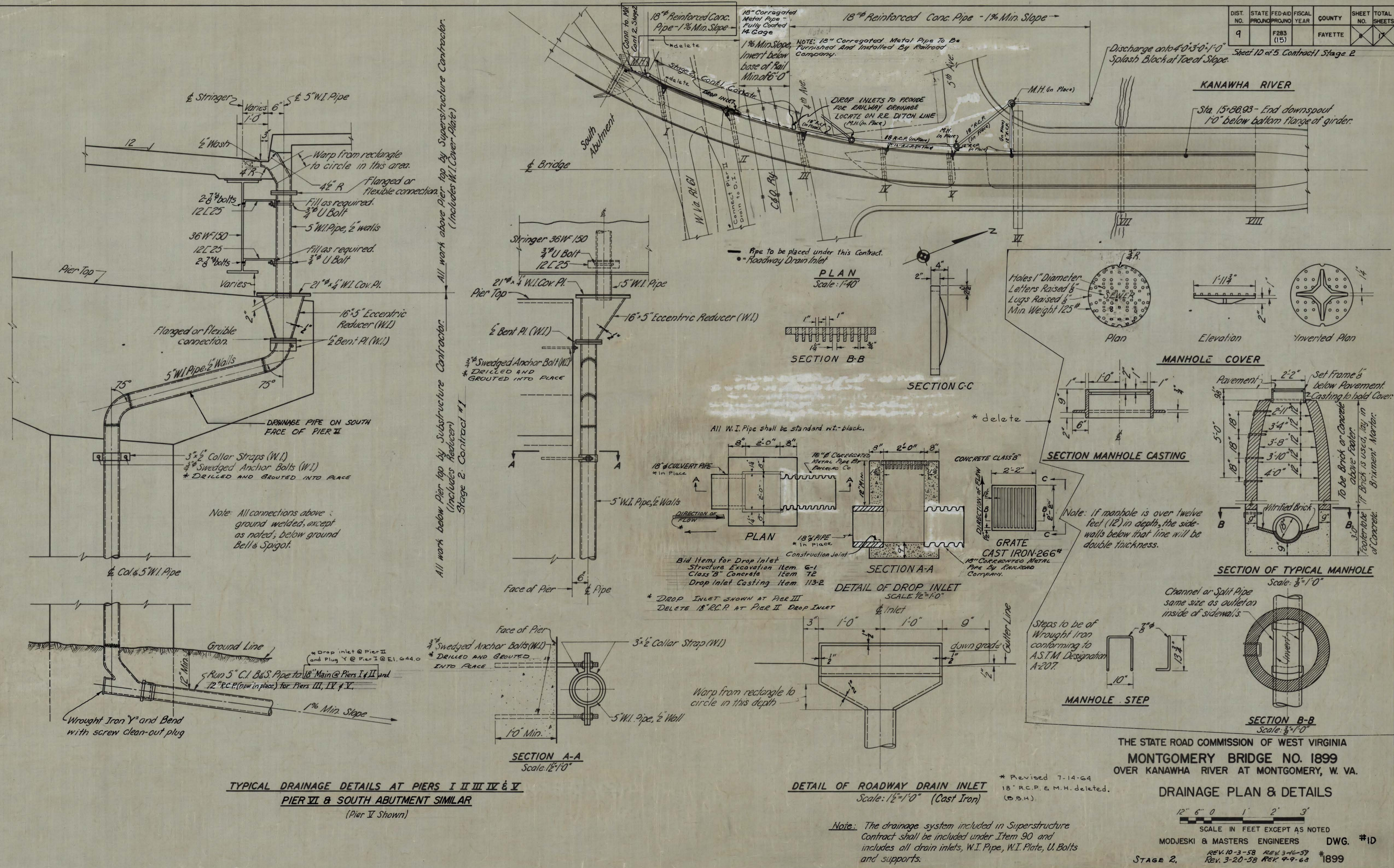
MODJESKI & MASTERS, ENGINEERS  
OCTOBER, 1952

DWG. #1-B



DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9	F283 (15)			FAYETTE		

Sheet 10 of 5 Contract 1 Stage 2



**TYPICAL DRAINAGE DETAILS AT PIERS I II III IV & V  
PIER VI & SOUTH ABUTMENT SIMILAR**  
(Pier VI Shown)

**DETAIL OF ROADWAY DRAIN INLET**  
Scale: 1/2" = 1'-0" (Cast Iron)

**DRAINAGE PLAN & DETAILS**

12' 6" 0' 1' 2' 3'  
SCALE IN FEET EXCEPT AS NOTED

MODJESKI & MASTERS ENGINEERS DWG. #1D  
REV. 10-3-58 REV. 3-16-59  
REV. 3-20-58 REV. 9-9-63 #1899

Note: The drainage system included in Superstructure Contract shall be included under Item 90 and includes all drain inlets, W.I. Pipe, W.I. Plate, U. Bolts and supports.

\* Revised 7-14-64  
18" R.C.P. & M.H. deleted.  
(D.B.H.)

All work above Pier top by Superstructure Contractor. (Includes W.I. Cover Plate)

All work below Pier top by Substructure Contractor. (Includes Reducer) Stage 2 - Contract #1

Note: All connections above ground welded, except as noted, below ground Bell & Spigot.

Note: If manhole is over twelve feet (12') in depth, the side-walls below that line will be double thickness.

To be Brick or Concrete above Footer. Brick is used, lay in Footings of Concrete. Brick-mortar.

Bid Items for Drop Inlet  
Structure Excavation Item 6-1  
Class "B" Concrete Item 72  
Drop Inlet Casting Item 113-2

\* DROP INLET SHOWN AT PIER III  
DELETE 18" R.C.P. AT PIER II DROP INLET

Steps to be of Wrought Iron conforming to A.S.T.M. Designation A-207

Channel or Split Pipe same size as outlet on inside of sidewalls.

Warp from rectangle to circle in this depth

All W.I. Pipe shall be standard wt. black.

GRATE  
CAST IRON-266#  
18" CORRUGATED METAL PIPE BY RAILROAD COMPANY.

Set Frame 1/2" below Pavement. Casting to hold Cover.

\* delete

PLAN  
Scale: 1" = 40'

SECTION B-B  
Scale: 1" = 40'

SECTION C-C

SECTION A-A  
SCALE 1/2" = 1'-0"

SECTION MANHOLE CASTING

SECTION OF TYPICAL MANHOLE  
Scale: 3/8" = 1'-0"

MANHOLE STEP

SECTION B-B  
Scale: 3/8" = 1'-0"

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.



**GOVERNING SPECIFICATIONS**

Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia, 1952, (Approved by B.P.R. January 2, 1953) except as noted and except that the design is to be in accordance with American Association of State Highway Officials Specifications of 1957 except as noted.

Required Provisions - Federal Aid Contracts, Primary Highways, dated Nov. 1, 1959, Approved by B.P.R. Jan. 28, 1958, Dec. 28, 1959, of Public Roads, Minimum Wage Rates for Fayette County, SPECIAL RAILROAD PROVISIONS, DATED Weight Enforcement Provisions, dated Feb. 1, 1957, Right of Way Statement.

Supplemental Specification for Aluminum Railing dated March 7, 1958 Proposal Guaranty dated Feb. 28, 1958 Revisions to 1952 Specifications as follows: 5-1 - Measurement and Payment, dated Feb. 7, 1958 5-10 - Piling 5-14 - Asphaltic Materials 5-15 - Preformed Joint Filler 5-16 - Coarse Aggregates

**LOADS AND UNIT STRESSES**

**Loads**  
**D=Dead Load** - For future paving, a load of 15 lb. per sq. ft. of roadway shall be added to the Dead Loads set forth in the AASHO Standard Specifications for Highway Bridges.  
**L=Live Load** - H20-S16, applied in accordance with 1949 AASHO Standard Specifications for Highway Bridges.

**Unit Stresses**

	Carbon
Axial Tension - Net Section	18,000 #/in <sup>2</sup>
Axial Compression - Gross Section	15,000 - 0.25(#)/in <sup>2</sup>
Stress in extreme Fiber of Pins	27,000 #/in <sup>2</sup>
Shear in Plate Girder Webs - Gross Section	11,000 #/in <sup>2</sup>
Shear in Power Driven Rivets and pins	12,000 #/in <sup>2</sup>
Bearing in Power Driven Rivets and pins	24,000 #/in <sup>2</sup>
Bearing on Milled Stiffeners & Other Steel Parts in contact	27,000 #/in <sup>2</sup>
Bearing on Concrete	600 #/in <sup>2</sup>
Bearing on Rollers and Rockers	600 #/in <sup>2</sup>

Erection Stresses shall not exceed 1.15 times basic allowable Stresses or 1.30 times when combined with erection wind.

Provision has been made for jacking the girder spans for maintenance and adjustment after completion. The resulting jacking stresses shown on the drawings are the actual values thus indicating an allowable 50% increase in basic unit stress.

**GENERAL NOTES FOR METAL WORK**

**Camber**  
 Girders, and stringers, in spans 1 thru 6, shall be cambered for dead load. Camber dimensions shall be shown on the shop drawings.

**Materials**

All steel work shall be Structural Carbon Steel. Structural carbon steel shall be A.S.T.M. A7-58  
 Wrought Iron shall be A.S.T.M. A42-55  
 Bronze Expansion Plates shall be Bronze Castings A.S.T.M. B22-52 Alloy B or C or Rolled Copper Alloy B100-55 Alloy #1  
 Corrosion Resisting Alloy Metal Rollers shall conform to A.S.T.M. A296-55 Grade CA15 Type 12 Chromium Heat Treated.  
 Top and Bottom Roller Plates shall be Corrosion Resisting Alloy Steel Clad Plate, A.S.T.M. A263-44T medium carbon steel base Grade A-Type 410 modified, with single clad of 1/8 in. finished thickness on side in contact with rollers.  
 Corrosion Resisting Alloy Metal Teeth shall conform to A.S.T.M. A276-57, Type 410 Fully annealed.  
 Cast Steel Bearing shoes shall conform to A.S.T.M. A27-57 Grade 65-35, fully annealed.  
 Forged Steel Pins shall conform to A.S.T.M. A235-55 Class E annealed.

**Grillages and Anchor Bolts**

The substructure plans provide for the installation of grillages and anchor bolts in the tops of Piers VI, VII, and VIII, all accurately scribed with centerlines of bearings and grillages. The Contractor shall verify the location and elevation of all embedded material prior to the erection of any steel work and shall adjust the heights of shoes and details to correct for variations in the elevations and locations of the substructure work as constructed.

Metal templates showing the spacing of the anchor bolts ~~will be supplied by the substructure contractor~~ which shall be used for the accurate location of anchor bolt holes in bearing plates and shoes.

The cost of any alterations to the steel work, found to be necessary in order to make the steel work fit the substructure as built, shall be included in the lump sum price bid for Item 90.

**Bearings**

All bearings shall be assembled completely in the shop and match-marked. Rollers shall be checked for full bearing and contact in side locking ribs.

The contact surfaces between plates and rollers shall be finished with a fine machine finish in the direction of movement. Corrosion Resisting Alloy Metal shall not be painted.

The space around anchor bolts within the holes shall be filled with babbit after the shoes and Roller plates are set in final position.

Where no grillages are provided the design requires a 14ply, 1/4" Preformed Fabric pad, in accordance with Art. 2.10.3(K) - of A.A.S.H.O. 1957 Specs., between the dressed concrete surfaces and the bearing plates. The cost of these pads shall be included in the price bid for Steel superstructure, Item 90.

**Expansion Dams**

Expansion Dams shall be carefully assembled in the shop to correct roadway crown, clearances carefully checked and match-marked. Holes for connections shall be subpunched and reamed to size in field. Shims as required for adjustment shall be provided.

Expansion Dam to be embedded in the Curtain Wall of the South Abutment shall not be set or Back Wall poured until the Superstructure steel is in place.

The expansion dam materials at Pier VIII are to be furnished under Stage I. This Contractor shall erect and adjust the portion of the dam which attaches to the Stage II Metal work, and is stored at the bridge site.

**Match Marking**

All members assembled in the shop shall be carefully match-marked with paint and steel stencil and the Engineer furnished with copies of the matchmarking diagrams.

**Shop Drawings**

Shop drawings are to be in ink on tracing cloth or in pencil on special prepared cloth, lacquered after completion.

**Rivets**

All rivets shall be 5/8" except as otherwise noted on the plans.

**Preparation of Rivet Holes**

All holes for shop and field rivets in carbon steel shall be prepared in accordance with the requirements of para. 2.90-933(A) of the Standard Specification except as follows:

- 1-General reaming is required for all holes in main members including holes for stitch rivets.
- 2- Connections of floor system to girders shall be reamed thru steel template.

**Painting**

All metalwork except Corrosion Resisting Alloy Metal and aluminum handrail materials shall be given one shop coat of paint and two field coats. The paint for the shop coat and first field coat shall be in accordance with Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia. ~~or may be Red Lead-Iron Oxide paint conforming to the Supplemental Specifications.~~ The finish coat shall be Aluminum. All painting shall be in accordance with Art. 2.90-93.3 D & G of the Standard Road and Bridge Specifications of the State Road Commission of West Virginia.

**Falsework**

The Contractor shall keep all staging and falsework in a safe condition, and provide such temporary stairways, gangways, staging, railings, or other means of access, as the Engineer may direct for a thorough inspection of the work during construction and previous to the final acceptance of the structure.

**Payment for Metalwork**

All metal parts such as structural carbon steel, shoes, rockers, rollers, bearing plates, pins, drainage castings, corrosion resisting alloy metals and bronze plates shall be included under Item 90 "Steel Superstructure" as per plan, complete in place, excluding concrete floor. Payment will be made under Item 90 on a lump sum basis for all metalwork required under this Contract, complete in place, excluding concrete floor and railing, and with one shop coat and two field coats of paint as specified.

Materials required for the shipping, storing and erection of Metalwork will be included in the lump sum price bid for Item 90.

**GENERAL NOTES FOR CONCRETE AND REINFORCING**

**Classes of Concrete**

All concrete in this contract shall be Class "A" Superstructure Concrete, Air-Entrained.

**Cement**

~~Cement shall be AASHO M85-53 Type I or II or M151-53 Type IS plus approved air entraining admix or AASHO M134-53 Type IA or IIA or M151-53, Type IS.~~

**Finish**

Only silica sand shall be used for fine aggregate for superstructure concrete. The top surface of all concrete roadway slabs, curbs and side walks shall be finished as specified in Section 2.71-73.3 (P). All other surfaces shall have an ordinary finish.

Curing of concrete shall be by burlap and water in accordance with the Specifications.

**Construction Joints**

Construction joints other than those shown shall be made only as directed or approved by the Engineer. Suitable and adequate keys shall be used at construction joints. See Section 2.71-73.3 (L).

**Reinforcing Bars**

Reinforcing Steel may be structural or intermediate grade billet steel and shall conform to section 3.9.1 of the Standard Specifications. ~~except the manufacture of the billet steel may be in accordance with ASTM Specifications A-15-52.~~

~~Deformations of reinforcing steel shall be in accordance with ASTM-A305-53.~~

**Bar Splices and Clearances**

Unless otherwise shown on the plans all bars shall be lapped 25 Diameters. The clear distance between the bars and the face of concrete shall be as shown on the drawings but in no case less than 1/4" for roadway reinforcing and 1" for sidewalks.

**Tests**

The Contractor shall furnish certified copies secured from the manufacturer of the results of tests for autoclave expansion and chemical analysis for all Portland Cement used in this project. Six of these certified copies shall be submitted to the Department of tests, Box 878, Morgantown, West Virginia.

**Chamfers**

A 3/8" chamfer strip shall be used on all exposed edges of concrete except where other size chamfer strips are specified. See section 2.71-73.3

**Measurement and Payment**

All concrete items included in this contract will be paid for under Item 71-A "Class A Concrete in Superstructure," per cubic yard. Measurement and Payment will be in accordance with Sections 2.71-73.4 and 2.71-73.5.

**Reflectors**

Reflector units furnished by the State shall be installed by the Contractor as directed by the Engineer; this to be included in the price bid for class "A" Concrete.

**ALUMINUM RAILING**

All railing materials above the tops of the concrete sidewalks shall be aluminum alloy GS 11A-Heat treated With stainless steel expansion sleeves as shown on the plans.

Materials, fabrication, erection, measurement and payment for aluminum handrailing shall be in accordance with the Supplemental Specifications.

Shop drawings for railings are to be in ink on tracing cloth or in pencil on special cloth lacquered after completion.

**REMOVAL OF TEMPORARY CURBS AND RAILINGS**

Temporary Concrete curbs and railings were to be installed in the vicinity of Pier VIII to direct traffic, under another Contract. These temporary curbs are poured independently of the roadway slab and are anchored thereto with 1" bolts thru pipe sleeves in the roadway slab. After completion of the work under this Contract, ready for traffic, the Contractor shall remove and dispose of these temporary curbs and remove and store, as directed, all temporary railing materials.

Removal of these temporary curbs & railings will be included and paid for under Item 128A "Removal of Temporary Curbs and Railings" for which payment will be made on a lump sum basis.

**DRAINAGE SYSTEM**

The Contractor shall furnish and install under Item 90 all drainage inlets and pipe above the pier tops as shown on the plans. All drainage items below the tops of piers are by others.

**ESTIMATED QUANTITIES (SUPERSTRUCTURE)**

Item	Description	Quantity	Units
71A	Class A Concrete in Superstructure	481	Cu. Yds.
7B	Reinforcing Steel Bars	99,720	Lbs.
90	Steel Superstructure		
	Structural Carbon Steel	803,114 lbs	
	Castings and Forgings	8,000 lbs	
	Drainage System (includes inlets)	2,560 lbs	
	Wrought Iron	10,276 lbs	
	Corrosion Resisting Alloy Metals	2,720 lbs	
	Total	826,670 lbs	Lump Sum
75C	Aluminum Spindle Railing	1275	Lin Ft.
128A	Removal of Temporary Curbs & Railings		Lump Sum

**SUMMARY OF REINFORCING STEEL**

# 3 Bars	3,470*
# 4 Bars	96,250*
Total	99,720*

FOR SUBSTRUCTURE QUANTITIES SEE SHEET 13

Traffic on the present bridge and streets is not to be interrupted.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
 GENERAL NOTES AND ESTIMATED QUANTITIES  
 SUPERSTRUCTURE



### DRAINAGE STRUCTURE

ALL DRAINAGE WORK BELOW THE TOPS OF THE PIERS SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. THE MAIN SHALL BE STANDARD-STRENGTH 18" REINFORCED CONCRETE PIPE. THE PIPE BENEATH THE C&O RAILROAD SHALL BE 18" RAILWAY EXTRA STRENGTH CONCRETE CULVERT PIPE AND CONFORM TO A.R.E.A. SPEC. (CH. 8 PART 1). THE PIPE SHALL BE CIRCULAR WITH CIRCULAR REINFORCING AND HAVE BELL AND SPIGOT ENDS. THE RAILWAY PIPE SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY THE RAILWAY CO. WITHOUT COST TO THE CONTRACTOR. All down drains at the piers shall be 5" Wrought Iron Pipe and fittings, with welded joints and with 5" C.I. B&S Pipe laterals to the main.

The man holes, frames and covers for the 18" concrete main shall be of Standard design as shown on the plans and constructed in accordance with Sections 2.113 and 2.114 of the Standard Specifications. Standard Cast Iron Culvert Pipe shall be equal to Cast Iron Soil Pipe, A.S.T.M. A 74 (55).

#### Piles

All piling shall be 12" B.P. @ 53#. All piles shall be driven with an air or steam hammer to a minimum capacity of 70 tons which develops an energy of not less than 12000 ft-lbs. per blow.

The piles in the abutment shall not be driven until the approach fill is in place.

Two test piles shall be driven at Abut. #1 and 1 in each footing of each pier as directed by the Engineer. The driving of the test piles will be waived, if the Contractor so elects, in which case the Contractor will assume the full responsibility for determining the lengths of piles to be ordered and no payment will be made for cut-offs. Splicing, in accordance with the specifications, will be permitted to extend the length of any pile, in which case the Contractor shall assume the cost.

The unit price bid for 5" W.I. Pipe, Item 52, shall include the cost of eccentric reducers, cleanout plugs and all fittings and hangers.

#### GOVERNING SPECIFICATIONS

Standard Specifications for Roads and Bridges by the State Road Commission of West Virginia, 1952, (Approved by B.P.R. January 2, 1953) except as noted and except that the design is to be in accordance with American Association of the State Highway Officials Specifications of 1949, except as noted.

Designed for H20-516-44 Live Load.  
Required Contract Provision for projects financed with Federal Funds, dated December, 1954 approved by Bureau of Public Roads December 20, 1954.

Labor rates for Fayette County for Project 282.  
See Supplemental Specifications for Permits and Licenses; for Surveys, and Borings.  
Excerpts from Railroad Agreement.

#### GENERAL NOTES FOR CONCRETE AND REINFORCING

##### Classes of Concrete

All concrete shall be Class 'A' Air-entrained.  
All concrete shall be placed in the dry.

##### Cement

Cement shall be Type I or Type II AASHTO M 85-49.

##### Finish

All exposed concrete surfaces shall be given a rubbed finish conforming to specifications. Curing of concrete shall be by burlap and water in accordance with the specifications.

##### Construction Joints

Construction joints other than those shown shall be made only as directed or approved by the Engineer. Suitable and adequate keys shall be used at construction joints. See section 2.71-73.3.

##### Reinforcing Bars

Reinforcing steel may be structural or intermediate grade billet steel and shall conform to section 3.91 of the Standard Specifications, or rail steel bars in accordance with Art. 3.92 of the Standard Specifications except as noted. Deformations shall conform to A.S.T.M. A-305-53-F.

The lengths of bars shown in the bill of steel are based on the lengths for billet steel and the amount paid for will be based on these lengths. Where additional lengths of bars are required on account of larger bends, for rail steel, the additional lengths are to be furnished by the contractor without extra cost to the State.

##### Bar Splices and Clearances

Unless otherwise shown on the plans all bars shall be lapped 25 diameters. Bars shall be 3" clear from the face of the concrete.

##### Tests

The contractor shall furnish certified copies, secured from the manufacturer, of the results of tests for autoclave expansion and chemical analysis for all portland cement used in this project. Six of these certified copies shall be submitted to the Department of Tests, Box 878, Morgantown, West Virginia.

##### Chamfers

A 3/4" chamfer strip shall be used on all exposed edges of concrete except where other size chamfer strips are specified. See section 2.71-73.3. Unless otherwise approved the edges of all vertical construction joints shall be chamfered 3/4". Edges of horizontal construction joints shall not be chamfered.

#### PIER VI EXTENSION

##### Construction by Others

All final construction work at Pier VI is to be completed to Elevation 648.88 under Stage I. After completion of the work to this elevation the Stage I Contractor is required to bend all vertical reinforcing bars protruding above El. 648.88 down, paint them with grease and embed them in a 1ft thick temporary concrete cap. The temporary cap is to be separated from the final work by a tar paper joint.

The Stage I Superstructure Contractor is required to furnish and erect a temporary 4 panel Aluminum Railing on top of the temporary concrete cap.

##### Work to be Performed by This Substructure Contractor

This Substructure Contractor shall carefully remove the temporary Aluminum Railing and concrete cap so as not to damage the embedded reinforcing steel. Railing materials shall be stored as directed by the Engineer. The reinforcing bars shall be straightened and cleaned using suitable solvents and the concrete cleaned of all foreign matter to the satisfaction of the Engineer, before any new construction is started. Price included in Class 'A' Concrete, Item 71-B.

#### GENERAL NOTES

##### Piles

All piles shall be as shown on sheet No. 7.  
All piles shall be driven to firm bearing with a minimum capacity of 40 tons per pile. Piling shall be driven with a steam or air hammer developing an energy per blow of not less than 12,000 ft-lbs. Price bid for piles shall include shell, tip, reinforcing and concrete for piles driven complete in place.  
No payment will be made for pile cut-offs as stipulated in section 2.60-644.

##### Waterproofing

The rear face of the South Abutment and wing walls shall have Membrane Waterproofing without Protection Course, from the bottom of the wall to within one foot of the finished ground elevation.

##### Grillages and Anchor Bolts

The contractor shall assemble complete in the shop the structural grillages at Pier VI to be embedded in concrete with the bearing plates and supporting structural shapes accurately fitted before drilling or reaming rivet holes to final size.

Centerlines of bearings and centerlines of grillages shall be scribed and marked with prick punch marks for use of the Contractor in setting grillages in the field.

The Contractor shall furnish copies of the match marking diagrams to the Engineer for his use in the field in checking the accurate placement of metal work.

The top surfaces of steel bearing slabs shall be planed in the shop after assembly of the grillages.

The Contractor shall accurately set all bearing grillages and anchor bolts as indicated on the plans on satisfactory concrete or metal supports, at the correct elevation and alignment, securely braced against displacement during the pouring of the embedding concrete.

Metal templates showing the spacing of anchor bolts shall be delivered to the superstructure Contractor as directed by the Engineer.

The Contractor shall be wholly responsible for the accurate placement of grillages and anchor bolts and any variation from the finished positions as indicated on the plans shall be corrected by the Contractor at his sole expense and in a manner satisfactory to the Engineer. Leveling nuts shall be provided on the anchor bolts as indicated on the plans, for accurate adjustment of steel grillages to level and elevation prior to placing concrete encasement.

##### Payment for Excavation

All excavation is "Structure Excavation" except for rock excavation.

The contractor shall backfill around structures as soon as possible after removal of forms and falsework.

Pier No.	Max Gross Dead Load Tons/Sq Ft	Pressure of Existing Earth Tons/Sq Ft	Net Additional Dead Load Pressure Tons/Sq Ft	Live Load Pressure	Net Additional Dead + Live Pressure Tons/Sq Ft
S/Abut					
Pier I					
Pier II & III					
Pier IV & V					

Pier No.	Reinforcing Steel - lbs.						Concrete Class A C.Y.	
	Bar Size							
	4	5	6	7	8	9		Total
South Abut	974	1845	636				3455	61.4
Pier I	1385	1750	1477			1722	6334	64.1
Pier II	1412	2296	1461			3810	8979	96.4
Pier III	1403	2259	1461			3806	8929	94.2
Pier IV	1227	1219	895		492	164	3797	51.3
Pier V	1083	1050	895		527	164	3719	47.2
Vertical	316	670					986	30
TOTAL	7800	11089	6825		1019	9666	36899	444.6

ESTIMATED QUANTITIES (SUBSTRUCTURE)		
Item	Description	Quantity Units
6A	Structure Excavation	327 Cu Yds
6B	Rock Excavation	25 Cu Yds
41A(3)	5" B15 Standard Cast Iron Culvert Pipe	55 Lin Ft
52	5" W.I. Pipe	145 Lin Ft
49A(8)	18" Reinforced Concrete Culvert Pipe (Std Strength)	90 Lin Ft
49B(4)	18" Railway Concrete Culvert Pipe (Extra Strength)	60 Lin Ft
63	Steel Bearing Piles	4788 Lin Ft
71B	Class A Concrete in Substructure	444.6 Cu Yds
78	Reinforcing Steel Bars	36399 lbs
87	Membrane Waterproofing without Protection Course	14 Sq Yds
92	Fabricated Structural Steel	
	Anchor Bolts	789 727
	Grillage	870
	Expansion Dam	1268
	Total	2,927 lbs.
113C	Manhole Frame and Cover Castings	1 each
114C	Manholes, complete except Casting	1 each
72	Class B Concrete	2.5 C.Y.
113B	Drop Inlet Casting	2 Each

For Superstructure Quantities and Governing Specifications - See Dwg. #3.

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

### GENERAL NOTES AND ESTIMATED QUANTITIES SUBSTRUCTURE



VOID

SOUTH ABUTMENT			
Mark	No.	Stock	Bend
F1	40	#5x2'-8"	Straight
F2	2	#6x6'-10"	Det. G, A=5'-6" and Det. H
F3	32	#6x8'-6"	Det. F, A=5'-3", B=3'-0", R=1'-0" and Det. H
F4	33	#4x6'-4"	Det. G, A=5'-6" and Det. H
F5	9	#4x3'-0"	Straight
A1	30	#5x7'-9 1/2" (Avg)	Det. A, A varies from 3'-0" to 5'-5", 30 ea.
A2	3	#4x2'-9"	Straight vary by 1", B=3'-7", C=0'
A3	1	#4x2'-3"	Straight
A4	1	#4x1'-3"	Straight
A5	2	#5x4'-4"	Det. A, A=3'-0", B=1'-4", C=1'-3"
A6	2	#5x6'-9"	Det. A, A=5'-5", B=1'-4", C=1'-3"
A7	8	#4x4'-11"	Det. A, A=3'-7", B=1'-4", C=0'
A8	6	#5x2'-9"	Straight
A9	6	#4x3'-5"	Det. A, A=1'-10", B=1'-7", C=1'-1/2"
A10	2	#4x4'-4"	Det. B, A=1'-10", B=1'-5", C=1'-1", D=1'-0"
A11	2	#5x2'-8"	Straight
A12	5	#5x3'-2"	do
A13	5	#4x3'-1"	Det. E, A=1'-10", B=2'-2", C=28'-1", D=2'-2", E=1'-10"
A14	2	#4x3'-2"	Straight F=2'-4"
A15	1	#5x1'-0"	do
A16	1	#5x2'-9"	do
A17	16	#5x2'-11"	do
A18	2	#5x3'-0"	do
A19	6	#4x4'-8 1/2" (Avg)	Det. C, 2@A=4'-9", B=0'-C=1'-D=1'-1/2", 2@A=1'-7", B=1'-2", C=1'-1", D=1'-1/2", 2@A=1'-9", B=1'-7", C=1'-1", D=1'-1/2"
A20	2	#4x2'-7"	Straight D=1'-1/2"
A21	6	#4x3'-4"	Det. B, A=1'-2", B=1'-0", C=1'-2", D=0"
A22	28	#5x7'-0"	Det. B, A=5'-3", B=3'-C=1'-6", D=0"
A23	28	#5x7'-11" (Avg)	Det. A, A varies from 6'-5 1/2" to 9'-0", 28 ea. vary by 2 1/2"
A24	10	#5x9'-4" (Avg)	Straight, 5@8'-1", 5@10'-7", 1", B=1'-0", C=0"
A25	5	#5x5'-6"	Straight
A26	14	#5x7'-7"	Det. G, A=6'-6" and Det. H
W1	6	#4x10'-3"	Straight
W2	46	#4x3'-6"	Det. B, A=1'-3", B=1'-0", C=1'-3", D=0"
W3	2	#4x1'-10 1/2"	Det. A, A=11", B=10'-11 1/2", C=5'-9"
W4	2	#5x1'-10 1/2"	Det. A, A=11", B=10'-11 1/2", C=5'-9"
W5	22	#4x5'-0 3/4" (Avg)	Straight, 20 vary from 1'-9" to 7'-9", ea. vary by 8", 2@8'-2"
W6	22	#5x5'-0 1/2" (Avg)	Straight, 20 vary from 1'-9" to 7'-9", ea. vary by 8", 2@8'-2"
W7	14	#4x7'-6 1/2" (Avg)	Straight, 10 vary from 3'-0" to 9'-10", ea. vary by 1'-8 1/2", 4@10'-4"
W8	14	#5x7'-6 1/2" (Avg)	Straight, 10 vary from 3'-0" to 9'-10", ea. vary by 1'-8 1/2", 4@10'-4"
A27	22	#6x6'-3"	See Detail L

PIER I			
Mark	No.	Stock	Bend
F1	52	#5x9'-7 1/2"	Det. G, A=8'-6" and Det. H
F2	53	#6x10'-9 3/4"	Det. G, A=9'-6" and Det. H
F3	48	#5x3'-1"	Straight
P1	8	#4x9'-7"	do
P2	16	#9x15'-0"	do
P3	8	#4x23'-0 1/2" (Avg)	Straight, 4@35'-7" & 4@10'-6"
P4	4	#9x13'-2 3/4"	Det. F, A=11'-11", B=0", R=0" and Det. K
P5	6	#9x35'-7"	Straight
P6	48	#5x20'-11" (Avg)	Straight, 24@21'-9" & 24@20'-1"
P7	28	#4x9'-11" (Avg)	Det. B, D=0, B=3'-6", A=C, 16 where A varies from 2'-4 1/2" to 4'-0", 2 ea. vary by 2 1/2"; 12-A varies from 2'-4" to 4'-1" 2 ea. vary by 4 1/2"
P8	8	#4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9"
P9	28	#4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4"
P10	40	#4x15'-1"	Det. J
P11	40	#6@10'-3"	Det. L
P13	8	#4x9'-6"	Str.
P15	80	#4@7'-3"	Det. M

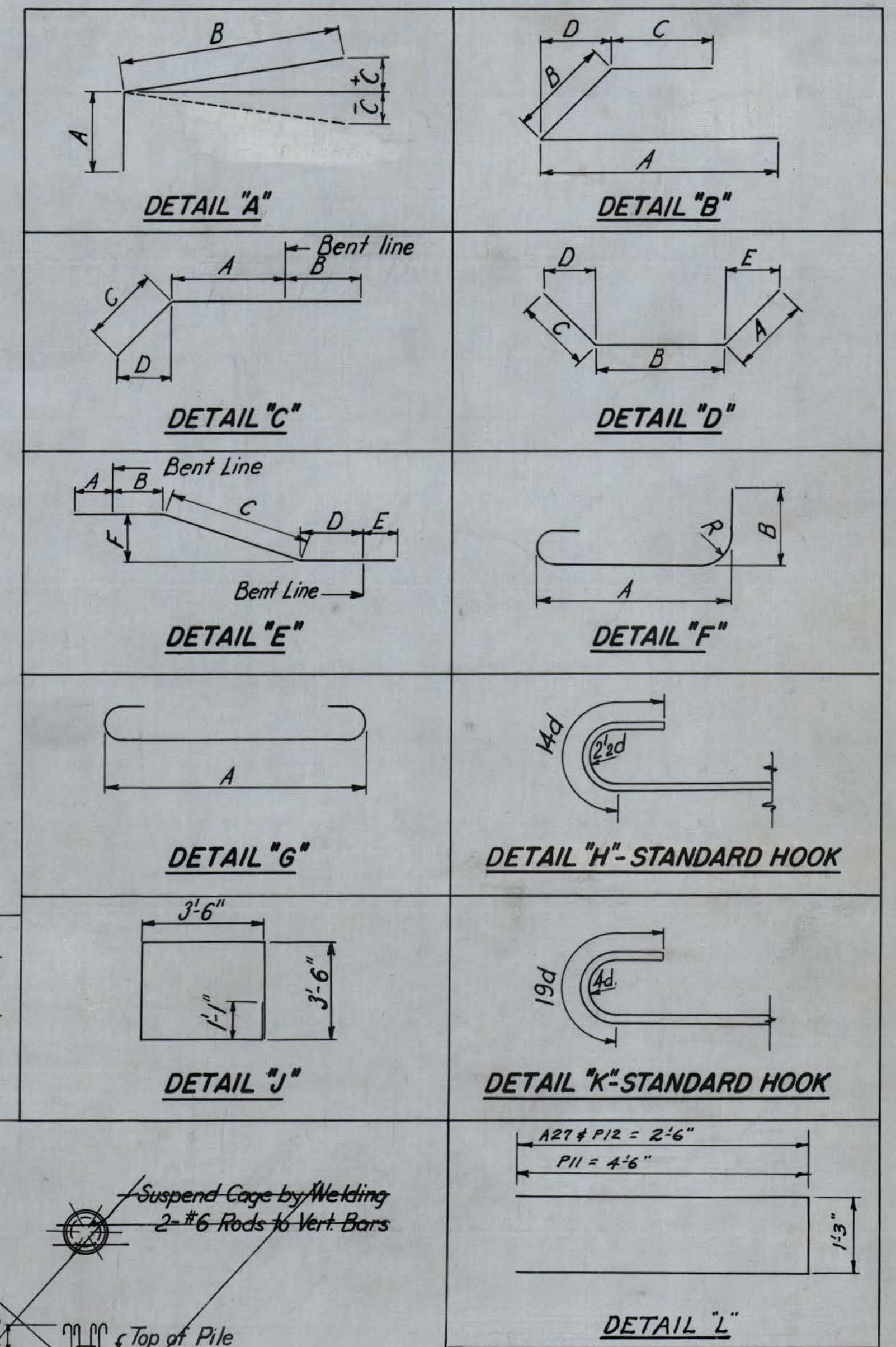
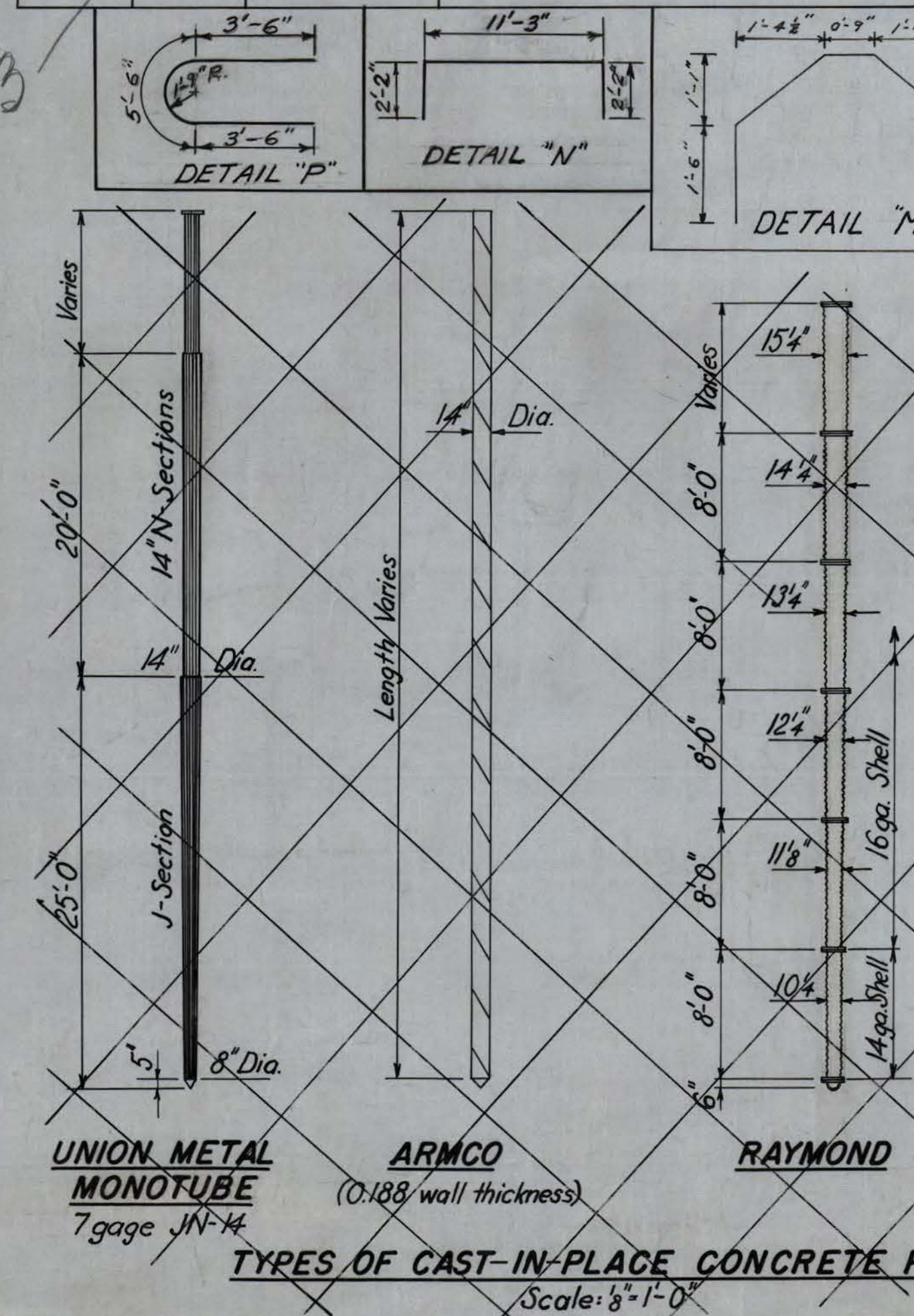
PIER II			
Mark	No.	Stock	Bend
F1	52	#5x9'-7 1/2"	Det. G, A=8'-6" and Det. H
F2	52	#6x10'-9 3/4"	Det. G, A=9'-6" and Det. H
F3	48	#5x2'-8"	Straight
P1	8	#4x9'-4"	do
P2	16	#9x14'-5"	do
P3	8	#4x21'-9 1/2" (Avg)	Straight, 4@33'-7" and 4@10'-0"
P4	4	#9x12'-9 3/4"	Det. F, B=0", A=11'-6", R=0" and Det. K
P5	6	#9x33'-7"	Straight
P6	48	#5x28'-0 1/2" (Avg)	Straight, 24@28'-9" and 24@22'-4"
P7	24	#4x9'-9 1/2" (Avg)	Det. B, D=0, B=3'-6", A=C, 14 where A varies from 2'-4 1/2" to 4'-0", 2 ea. vary by 3 1/2"; 10 where A varies from 2'-4" to 3'-10", 2 ea. vary by 4 1/2"
P8	8	#4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9", D=0
P9	24	#4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4", D=0
P10	44	#4x15'-1"	Det. J
P11	40	#6x10'-3"	Det. L
P13	8	#4x9'-6"	Str.
P15	88	#4@7'-3"	Det. M
C1	24	#9x19'-3"	Straight
C2	20	#5x15'-7"	Detail N
C3	14	#9x12'-6"	Detail P
C4	14	#5x11'-3"	Straight

PIER III			
Mark	No.	Stock	Bend
F1	52	#5x9'-7 1/2"	Det. G, A=8'-6" and Det. H
F2	52	#6x10'-9 3/4"	Det. G, A=9'-6" and Det. H
F3	48	#5x2'-8"	Straight
P1	8	#4x9'-1"	do
P2	17	#9x14'-0"	do
P3	8	#4x21'-2" (Avg)	Straight, 4@32'-4" & 4@10'-0"
P4	4	#9x12'-6 3/4"	Det. F, B=0, A=11'-3", R=0" and Det. K
P5	6	#9x32'-4"	Straight
P6	48	#5x23'-2" (Avg)	Straight, 24@22'-6" and 24@23'-10"
P7	24	#4x9'-6 1/2" (Avg)	Det. B, D=0, B=3'-6", A=C, 14 where A varies from 2'-4 1/2" to 4'-0", 2 ea. vary by 3 1/2"; 10 where A varies from 2'-4" to 3'-10", 2 ea. vary by 4 1/2"
P8	8	#4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9"
P9	24	#4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4"
P10	44	#4x15'-1"	Det. J
P11	40	#6x10'-3"	Det. L
P13	8	#4x9'-6"	Str.
P15	88	#4@7'-3"	Det. M
C1	24	#9x19'-3"	Straight
C2	18	#5x15'-7"	Detail N
C3	14	#9x12'-6"	Detail P
C4	14	#5x11'-3"	Straight

PIER IV			
Mark	No.	Stock	Bend
F1	22	#5x6'-7 1/2"	Det. G, A=5'-6" and Det. H
F2	24	#6x9'-9 3/4"	Det. G, A=8'-6" and Det. H
F3	48	#5x3'-1"	Straight
P1	9	#4x8'-8"	do
P2	14	#8x13'-2"	do
P3	8	#4x18'-11" (Avg)	Straight, 4@30'-1" & 4@7'-9"
P4	4	#9x12'-0 1/4"	Det. F, A=10'-9", B=0", R=0" and Det. K
P5	7	#6x30'-1"	Straight
P6	48	#5x18'-3" (Avg)	Straight, 24@18'-11" & 24@17'-7"
P7	23	#4x9'-11 1/4" (Avg)	Det. B, D=0, B=3'-6", A=C, 12 where A varies from 2'-6 3/4" to 4'-1/2", 2 ea. vary by 3 1/2"; 1@A=2'-3"; 10 where A varies from 2'-4" to 4'-1", 2 ea. vary by 5 1/4"
P8	8	#4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9"
P9	23	#4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4"
P10	36	#4x15'-1"	Det. J
P12	24	#6x6'-3"	Det. L
P14	8	#4x8'-6"	Str.
P15	72	#4@7'-3"	Det. M

PIER V			
Mark	No.	Stock	Bend
F1	22	#5x6'-7 1/2"	Det. G, A=5'-6" and Det. H
F2	24	#6x9'-9 3/4"	Det. G, A=8'-6" and Det. H
F3	48	#5x3'-1"	Straight
P1	8	#4x8'-8"	do
P2	15	#8x13'-2"	do
P3	8	#4x18'-11" (Avg)	Straight, 4@30'-1" and 4@7'-9"
P4	4	#9x12'-0 3/4"	Det. F, A=10'-9", B=0", R=0" and Det. K
P5	7	#6x30'-1"	Straight
P6	48	#5x14'-10 1/2" (Avg)	Straight, 24@14'-3" and 24@15'-6"
P7	23	#4x9'-11 1/4" (Avg)	Det. B, D=0, B=3'-6", A=C, 12 where A varies from 2'-6 3/4" to 4'-1/2", 2 ea. vary by 3 1/2"; 1@2'-3" and 10 where A varies from 2'-4" to 4'-1", 2 ea. vary by 5 1/4"
P8	8	#4x13'-0"	Det. B, D=0, B=3'-6", A=C=4'-9", D=0
P9	23	#4x6'-2"	Det. B, D=0, B=3'-6", A=C=1'-4", D=0
P10	29	#4x15'-1"	Det. J
P12	24	#6x6'-3"	Det. L
P14	8	#4x8'-6"	Str.
P15	58	#4@7'-3"	Det. M

PIER VI EXTENSION			
Mark	No.	Stock	Bend
P1	27	#4x11'-6 1/2"	Det. B, A=C=5'-1", B=1'-4 1/2", D=0"
P2	12	#4x13'-5 1/2"	Det. B, A=7'-0", B=1'-4 1/2", C=5'-1", D=0"
P3	20	#5x4'-6"	Det. B, A=B=C=1'-6", D=0"
P4	10	#5x3'-2"	Straight
P5	2	#5x23'-0"	do
P6	2	#5x16'-6"	do
P7	2	#5x10'-0"	do
P8	2	#5x3'-6"	do
P9	10	#5x13'-6"	Det. B, A=B=C=4'-6", D=0"



**NOTES**  
 All dimensions are out to out, radii are inside.  
 All bars are to be bent around pins, the minimum sizes of which are as follows:  
 Billet Steel Bars      Rail Steel Bars  
 Stirrups & Ties      3d      Stirrups & Ties      5d  
 Size #8 & smaller      5d      All other bars      8d  
 Sizes over #8      8d  
 d = nominal diameter of bar

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
 MONTGOMERY BRIDGE NO. 1899  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**BAR SCHEDULES AND PILES**

**UNION METAL MONOTUBE** (7 gage JN-14)  
**ARMCO** (0.188 wall thickness)  
**RAYMOND** (Included in Cast per Lin. Ft. of Pile)  
**PILE REINFORCING** (Scale: 4" = 1'-0")  
**TYPES OF CAST-IN-PLACE CONCRETE PILES** (Scale: 8" = 1'-0")

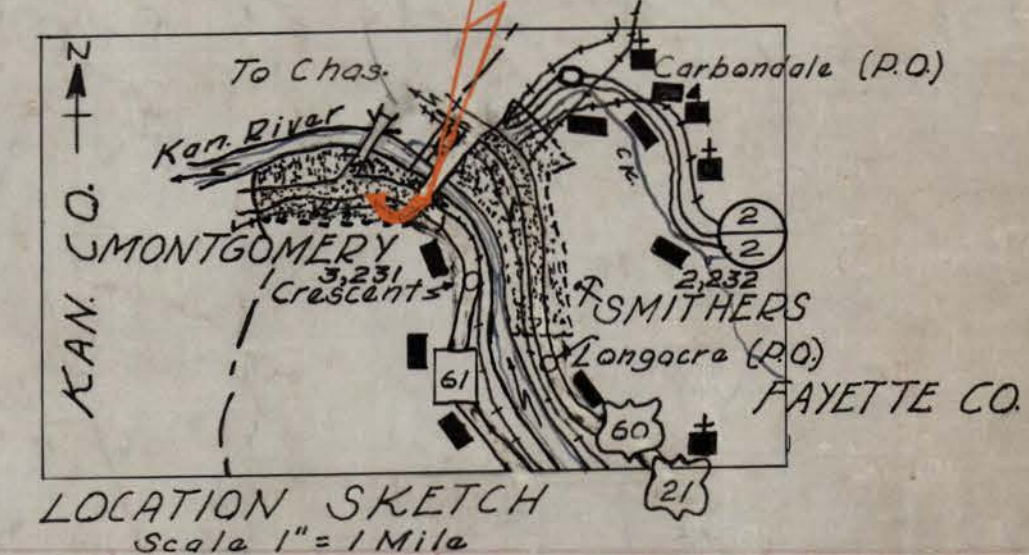


PLAN	SURVEYED	DATE
NOTE BOOK	ADJUSTED	BY
NO.	NO.	NO.
3-5-58	3-5-58	Carney King

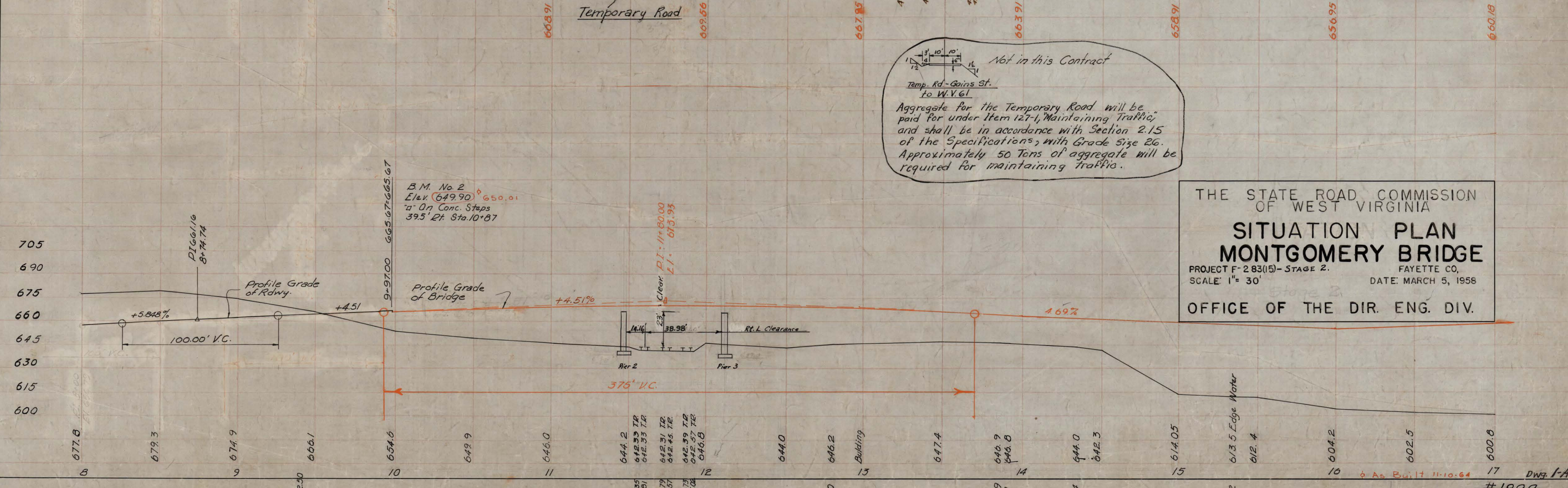
PROFILE	SURVEYED	DATE
NOTE BOOK	ADJUSTED	BY
NO.	NO.	NO.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
9	283	(15)			Fayette	18	18

Sheet 1A of 5 Contract 1, Stage 2  
 Rev. 3-20-58  
 REV. 10-3-58  
 Sheet 1A of 13 Contract 2, Stage 2  
 Sheet 1A of 13 Contract 3, Stage 2



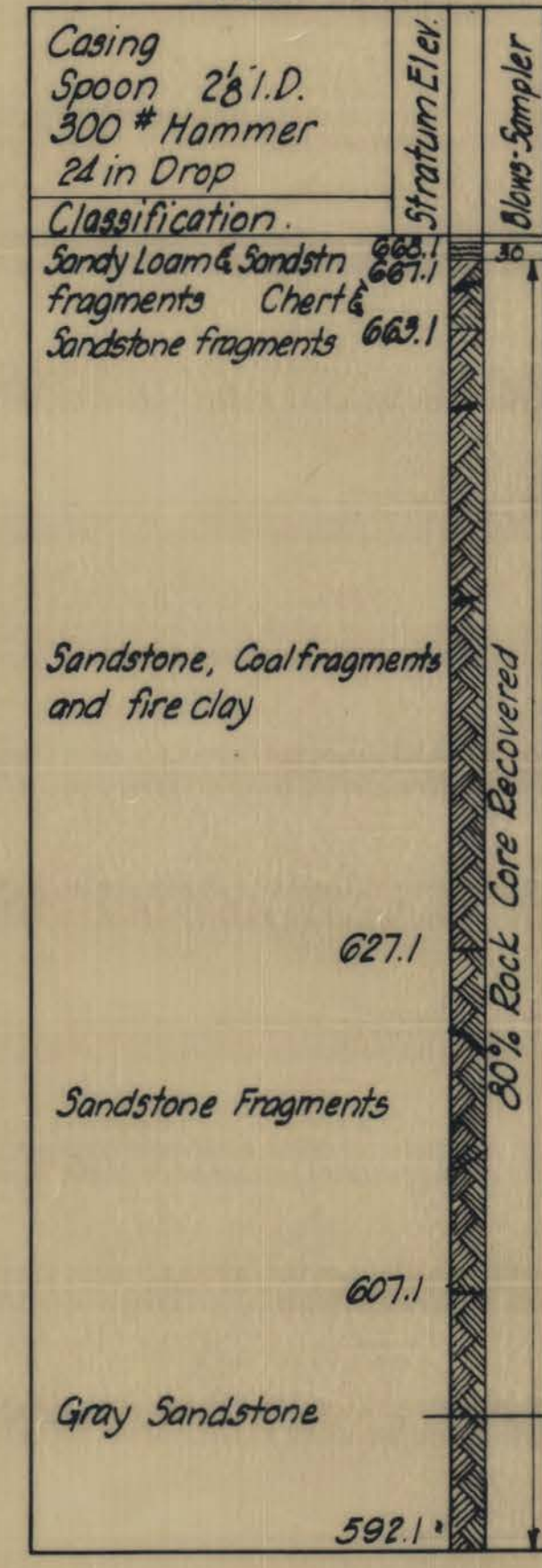
Not in this Contract  
 Temp. Rd - Gains St.  
 to W.V. 61  
 Aggregate for the Temporary Road will be paid for under Item 127-1, "Maintaining Traffic," and shall be in accordance with Section 2.15 of the Specifications, with Grade Size 26. Approximately 50 Tons of aggregate will be required for maintaining traffic.



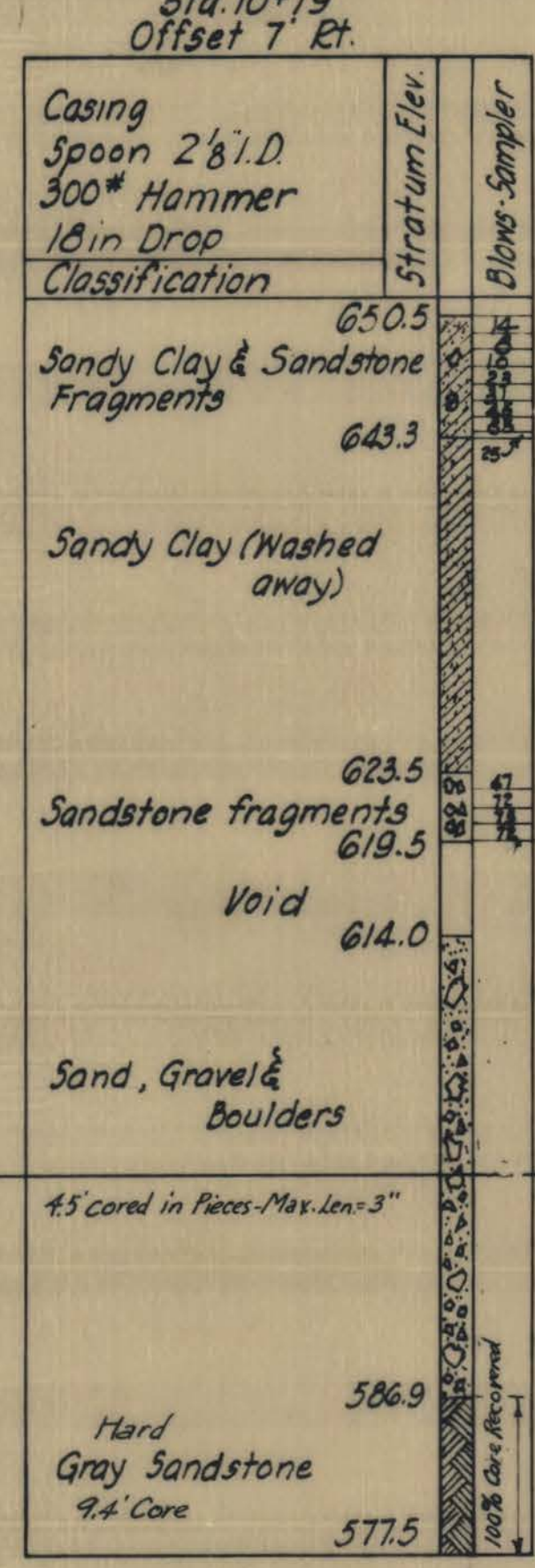
THE STATE ROAD COMMISSION  
 OF WEST VIRGINIA  
**SITUATION PLAN**  
**MONTGOMERY BRIDGE**  
 PROJECT F-283(15)-STAGE 2. FAYETTE CO.  
 SCALE 1" = 30' DATE: MARCH 5, 1958  
 OFFICE OF THE DIR. ENG. DIV.



**BORING NO. 1**  
Sta. 9+72  
Offset 25 Rt.



**BORING NO. 2R**  
Sta. 10+19  
Offset 7 Lt.



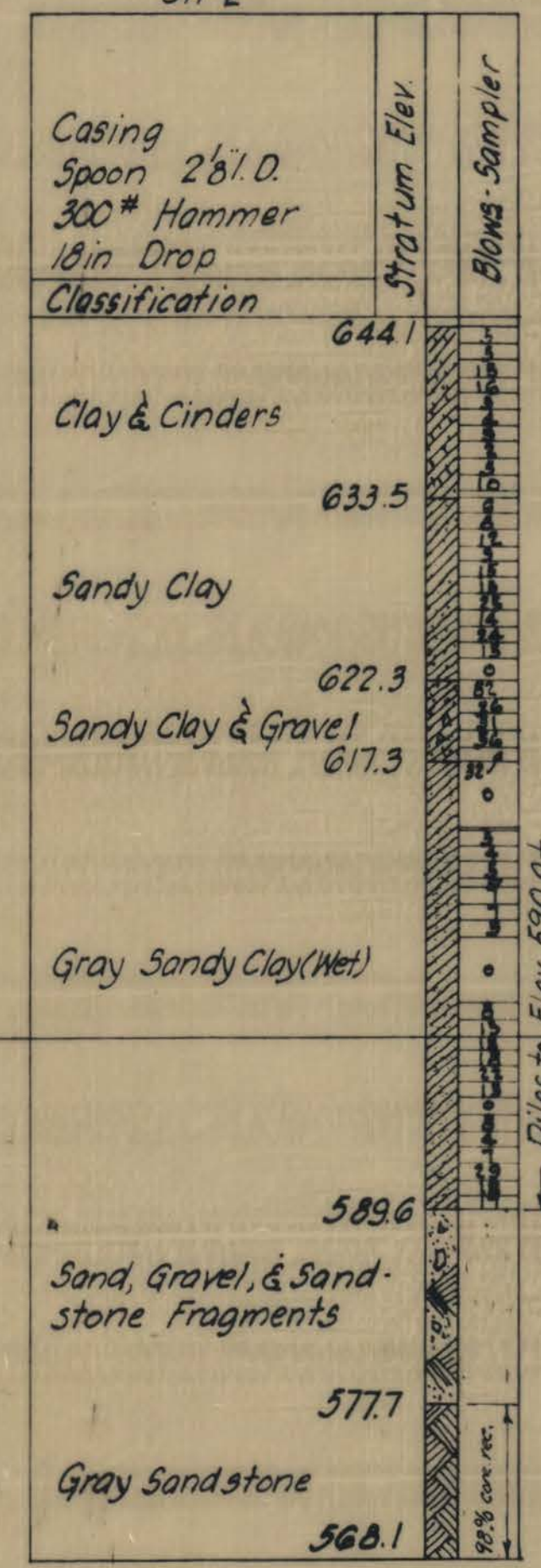
**BORING NO. 2L**  
Sta. 10+19  
Offset 15 Lt.



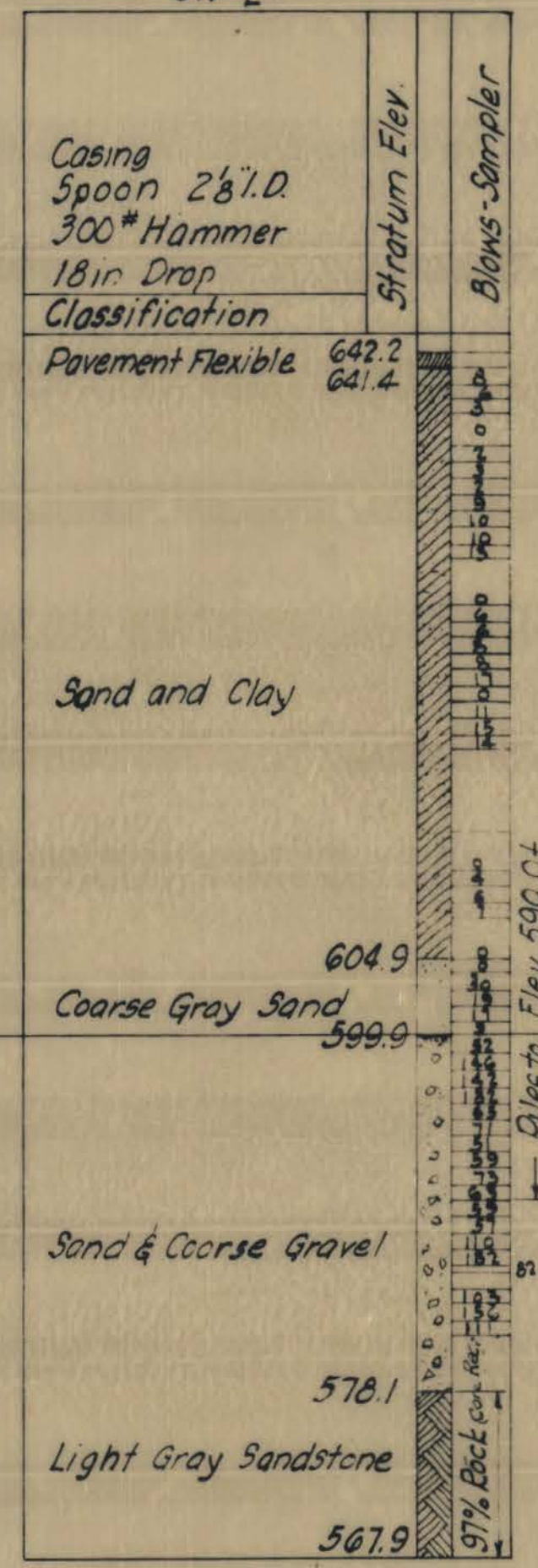
**PIER I BORING NO 3**  
Sta. 10+69  
On C



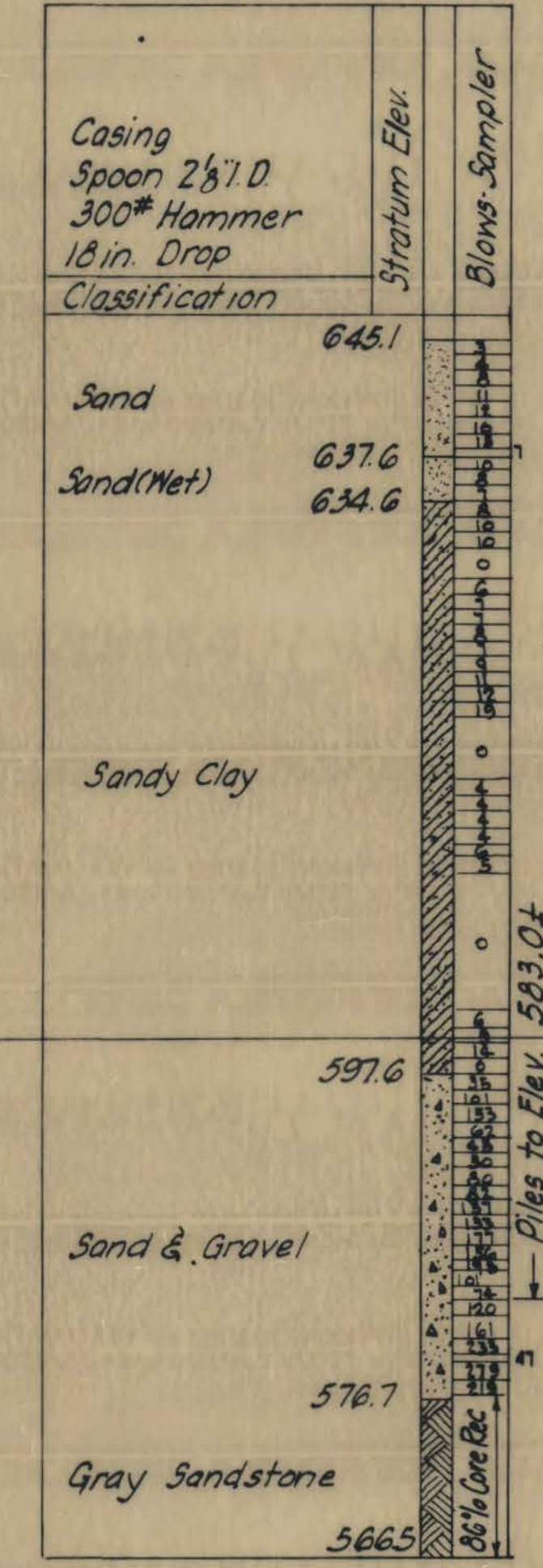
**PIER II BORING NO 4**  
Sta. 11+44  
On C



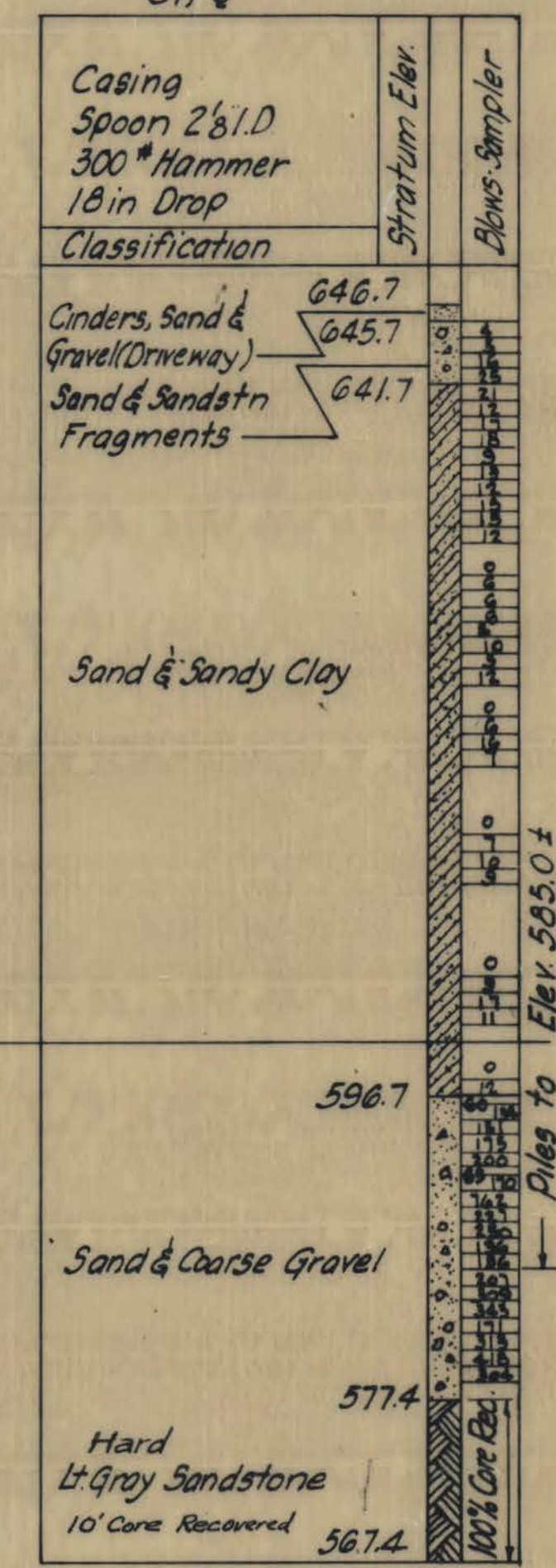
**PIER III BORING NO 5**  
Sta. 12+13  
On C



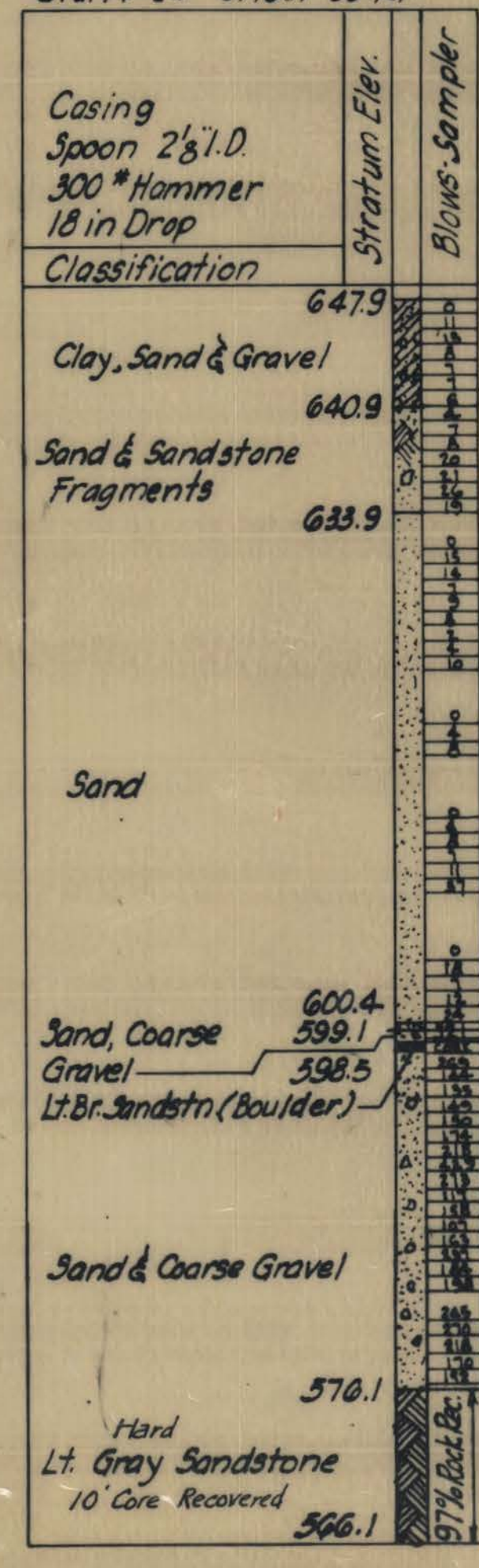
**PIER IV BORING NO 6**  
Sta. 12+70  
On C



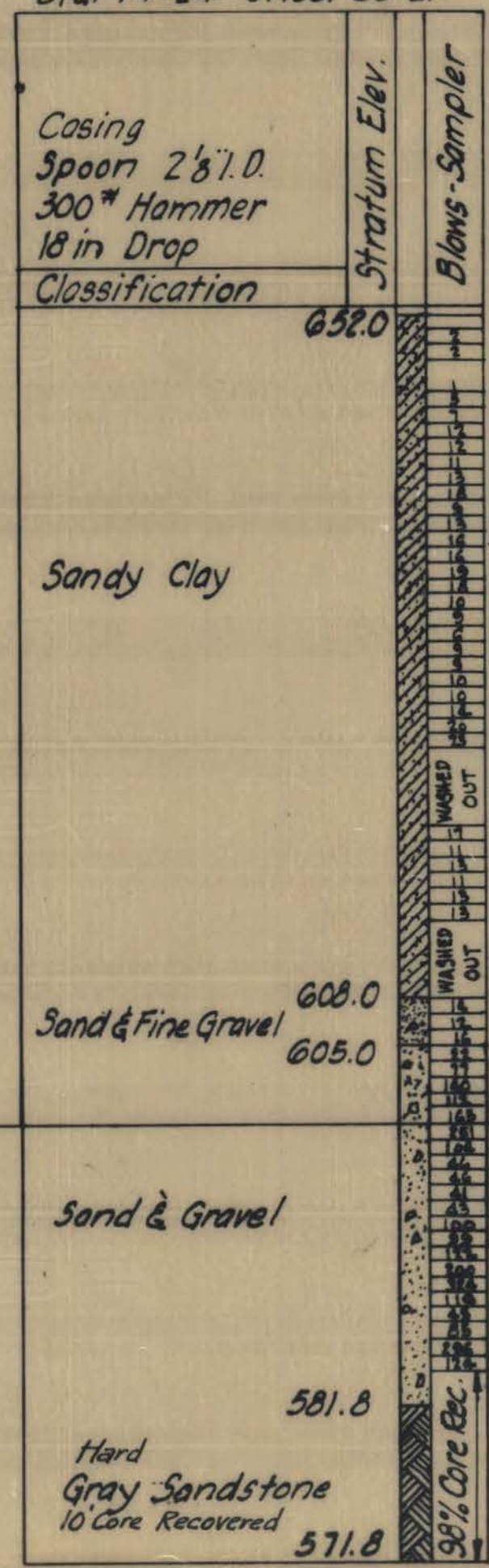
**PIER V BORING NO 7**  
Sta. 13+58.5  
On C



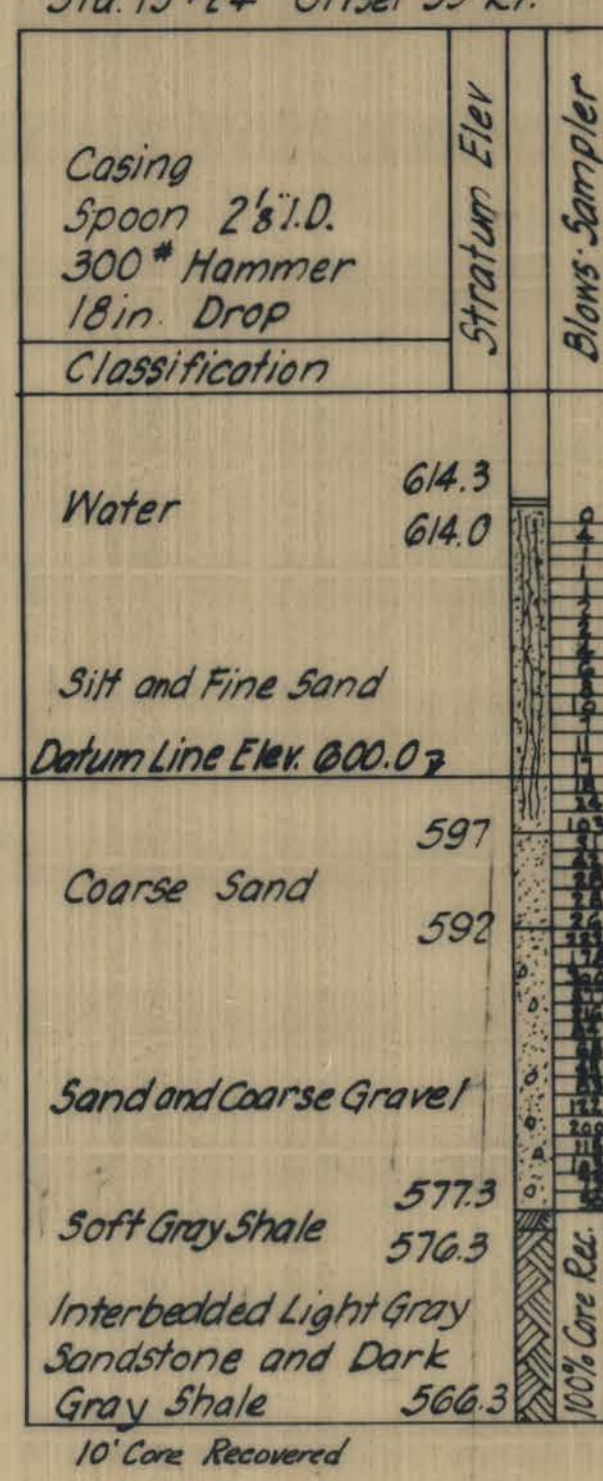
**PIER VI BORING NO. 8R**  
Sta. 14+24 Offset 33 Rt.



**PIER VII BORING NO. 8L**  
Sta. 14+24 Offset 33 Lt.



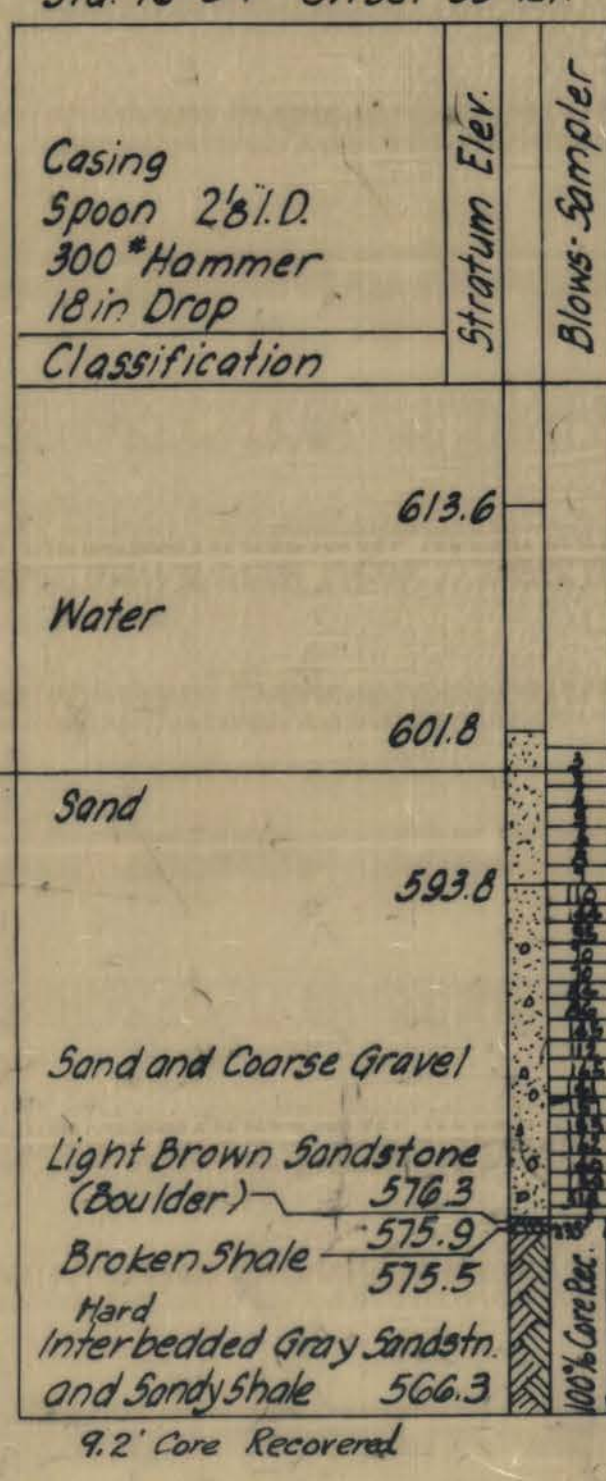
**PIER VII BORING NO 9R**  
Sta. 15+24 Offset 33 Rt.



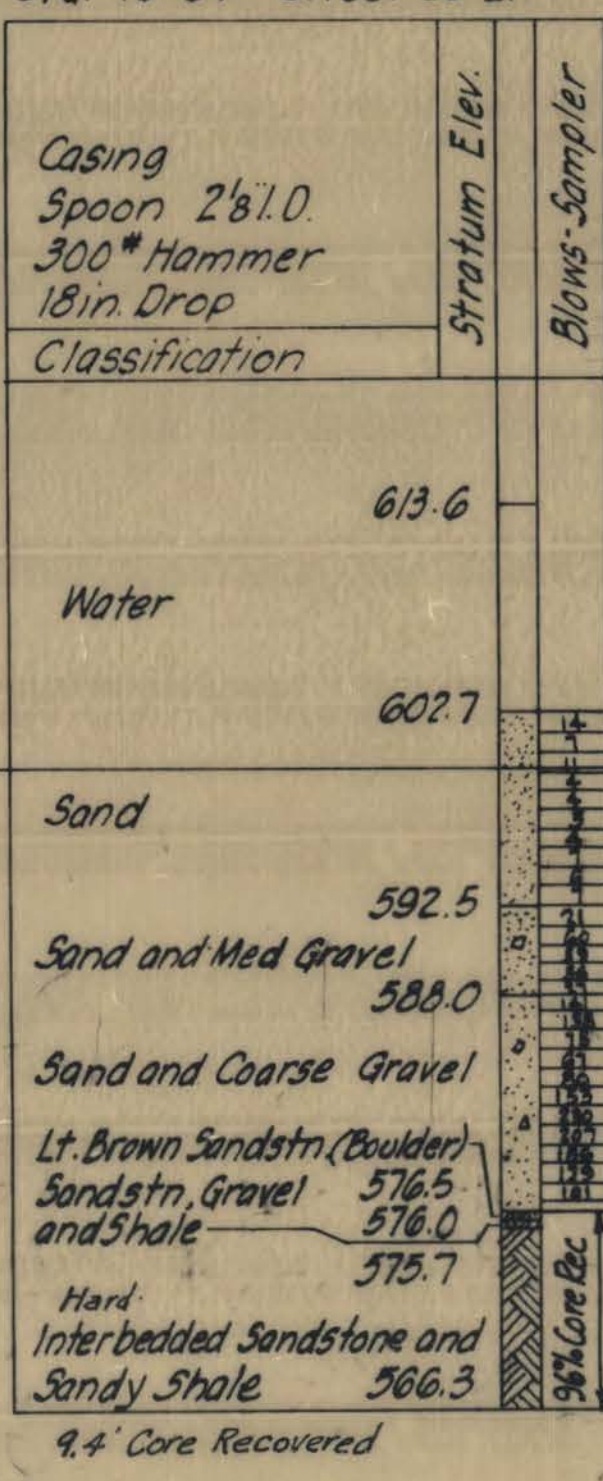
**PIER VII BORING NO 9L**  
Sta. 15+24 Offset 33 Lt.



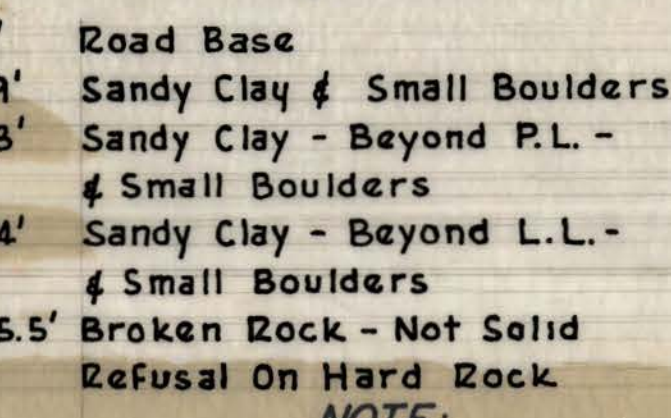
**PIER VIII BORING NO 10R**  
Sta. 16+54 Offset 33 Rt.



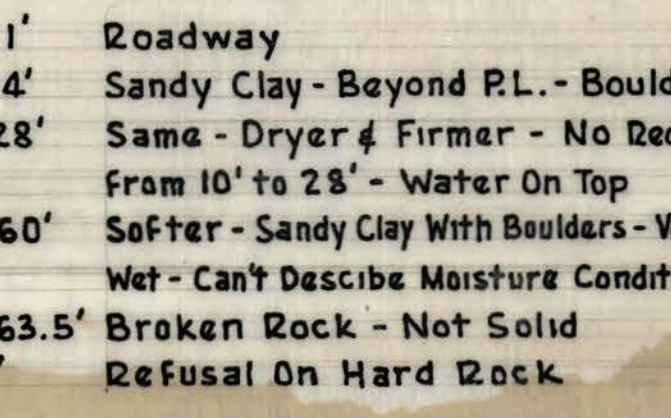
**PIER VIII BORING NO 10L**  
Sta. 16+54 Offset 33 Lt.



**Hole 2 LA** Sta. 10+19  
12' Left of C Elev. 649.8



**Hole 3 RA** Sta. 10+79  
14' Right of C Elev. 648.7



**NOTE:**  
Borings were made from June to August, 1952 under contract with the State Road Commission of West Virginia. (except Auger Borings 2 LA & 3 RA)  
Elevations refer to Sandy Hook Datum.

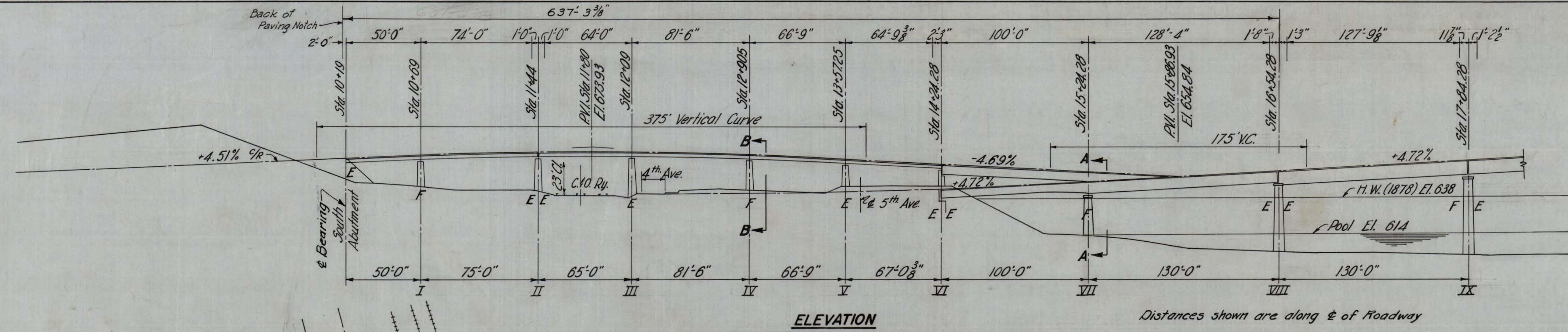
THE STATE ROAD COMMISSION OF WEST VIRGINIA  
MONTGOMERY BRIDGE NO. 1899  
OVER KANAWHA RIVER AT MONTGOMERY, W. VA.

**BORINGS I TO 10L**



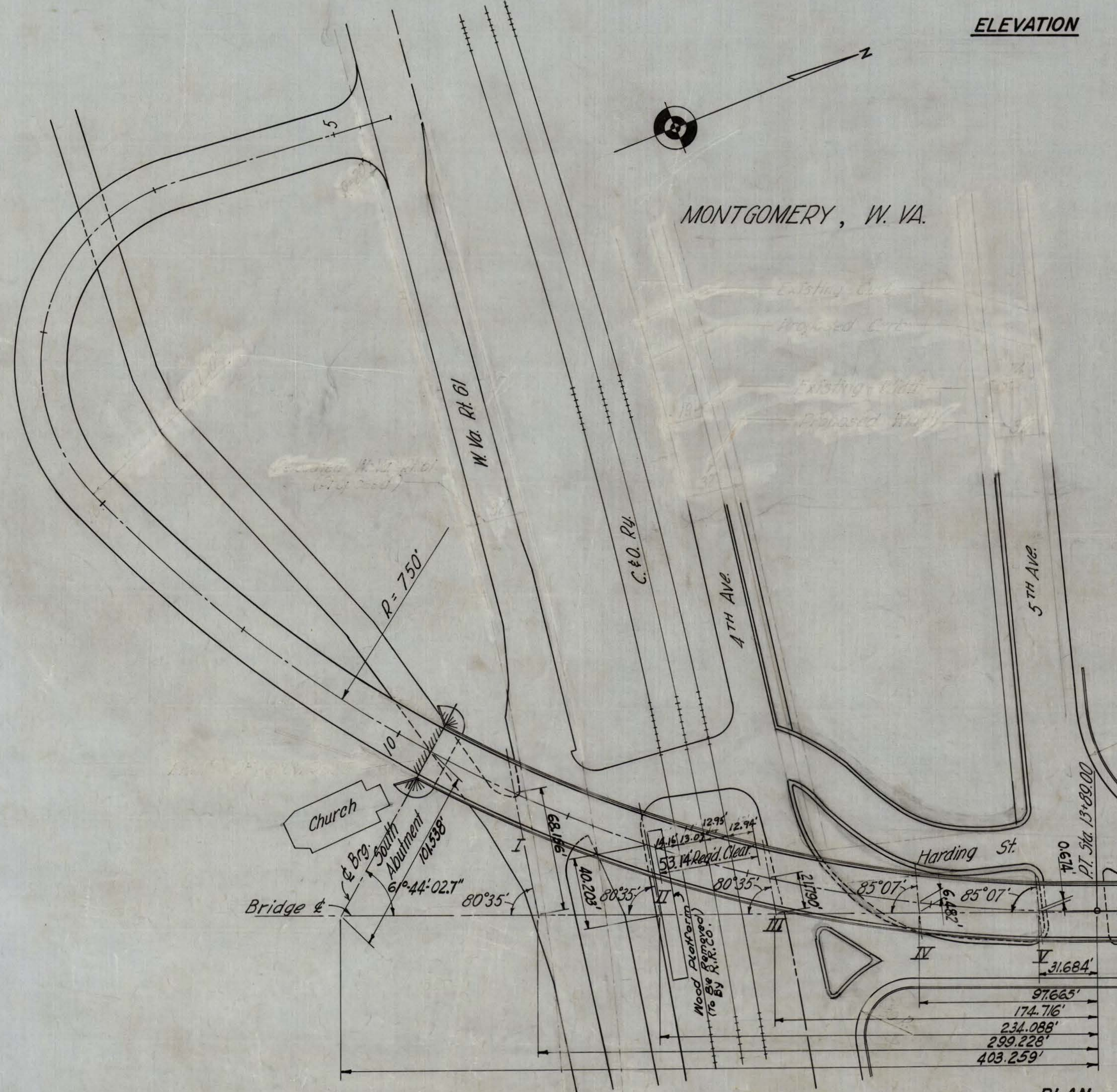
DIST. NO.	STATE PROJ. NO.	FED. AID PROJ. YEAR	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
9		F283 (15)		FAYETTE	2	5

Sheet 10 of 5 Contract 1, Stage 2

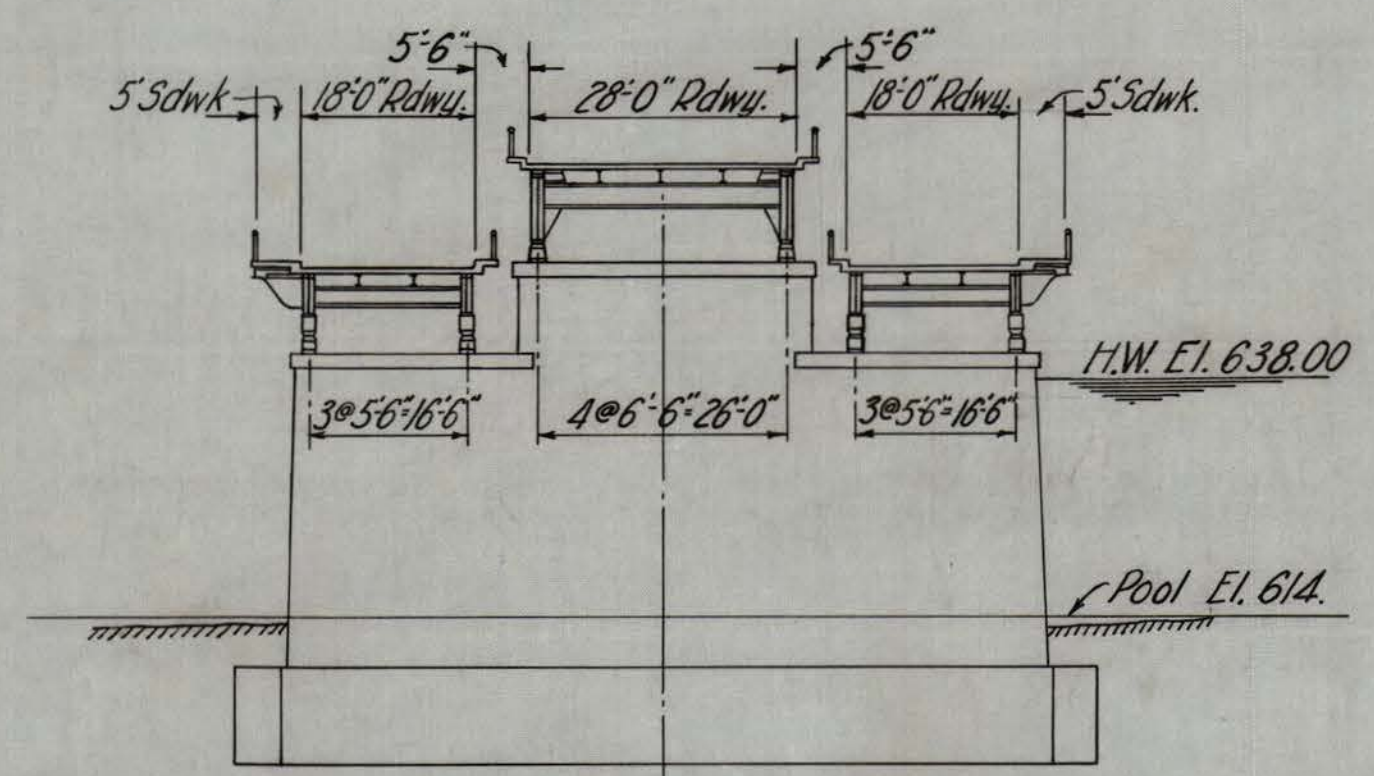


**ELEVATION**

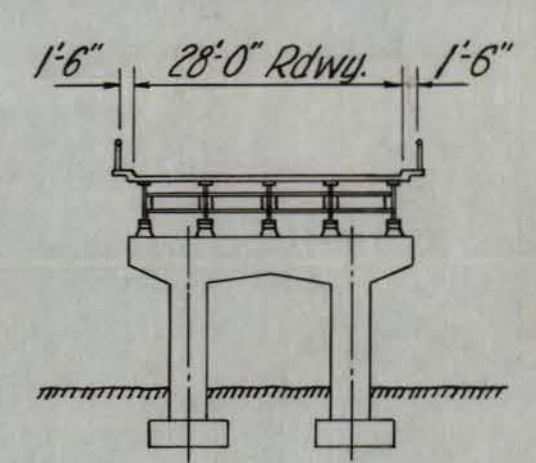
Distances shown are along centerline of roadway



**PLAN**



**SECTION A-A**  
Scale: 1" = 20'-0"



**SECTION B-B**  
Scale: 1" = 20'-0"

THE STATE ROAD COMMISSION OF WEST VIRGINIA  
**MONTGOMERY BRIDGE NO. 1899**  
 OVER KANAWHA RIVER AT MONTGOMERY, W. VA.  
**GENERAL PLAN AND ELEVATION**  
**SOUTH APPROACH**

STAGE #2  
 SCALE IN FEET, UNLESS NOTED  
 MODJESKI & MASTERS, ENGINEERS  
 REVISED 10-3-58  
 Revised 6-14-58  
 DWG. #1C  
 #1899  
 DR. TR. H.H.H. CK.