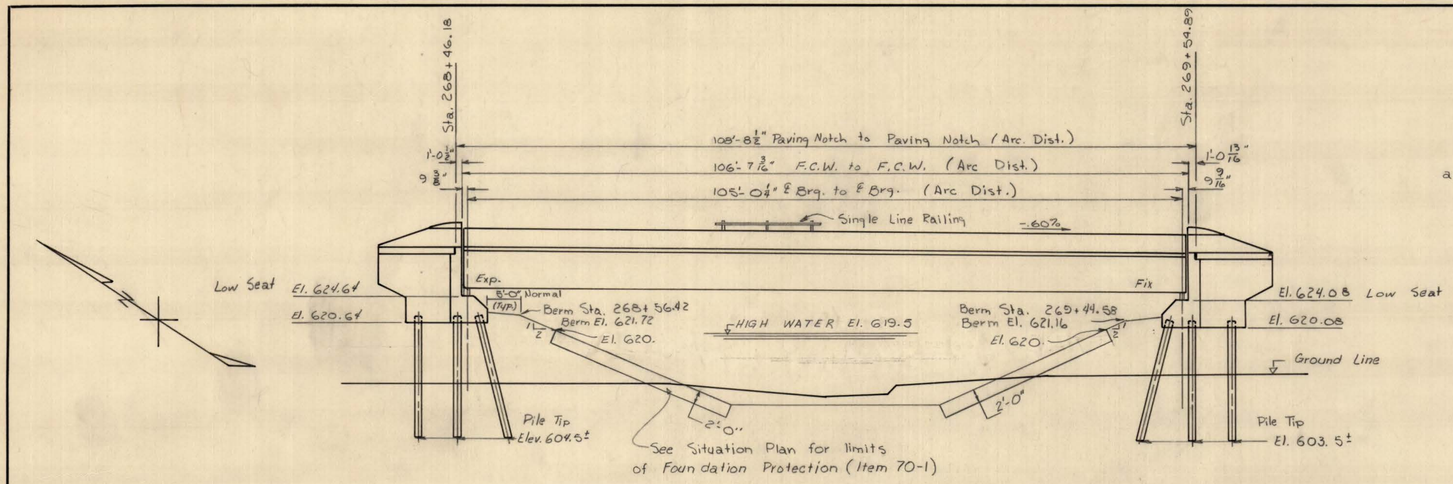
Public Roads Div.	State Div. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	1	19

263

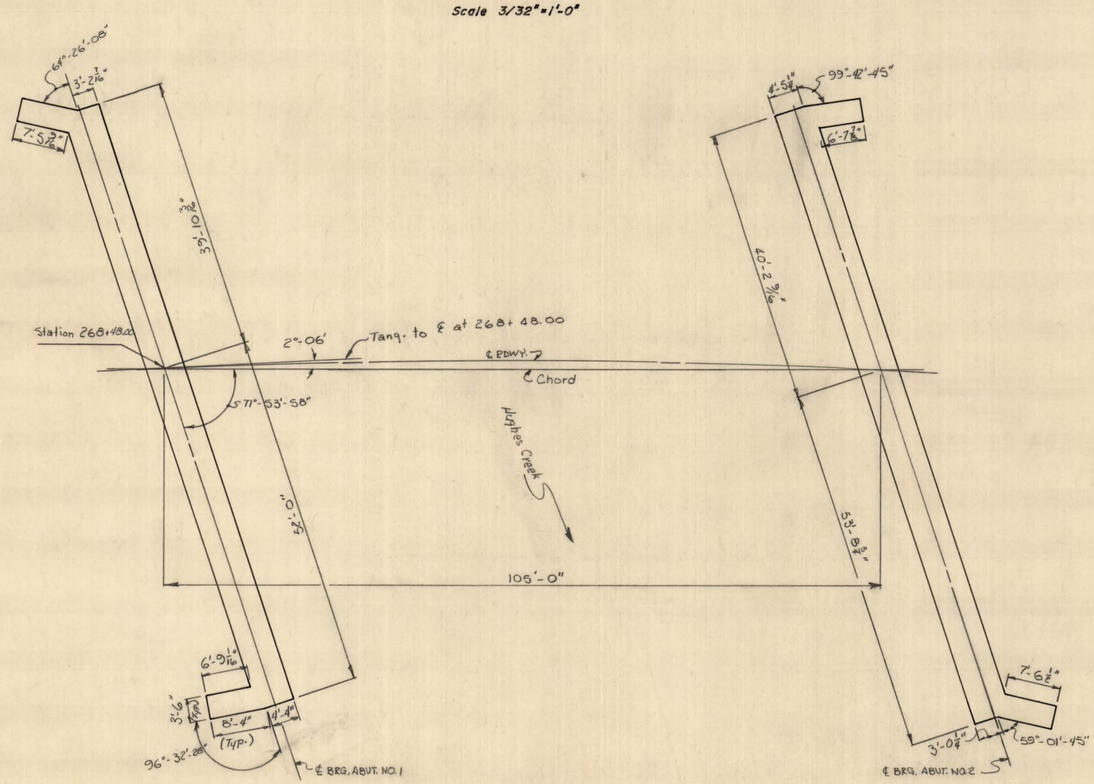
54



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

Bridge Seat Elevations shown are the lowest for each ℄ bearing.

HORIZONTAL CURVE DATA	
PI	271+69.57
Δ	48°-29'-30" RT.
D	4°-00'-00"
T	645.120
L	1212.29
R	1432.39
S.E.	.077 ft./ft.



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

MADE BY KOL	DATE 11/67			
TRACED BY J.E. Brunell	DATE 11/67			
CHECKED BY S.E.C.	DATE 11-67			
CHECKED BY P.T.T.	DATE 11-67			

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

LAYOUT

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown — Date November 1967
Project F-263(21) — Sheet 1 of 19 Sheets
No. 2631

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	2	19

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.

Special Provision, section 3.17.17 dated June 2, 1967, Polyethylene coated burlap; This material shall conform to the requirements of the U.S. Army Corps of Engineers Specifications CE 204.

DESIGN

The bridge is designed for an HS20-44 live loading. The design provides for an additional wearing surface of 25 lbs. per square foot of roadway. The additional wearing surface is not included in this contract. The design is in accordance with the 1965 A.A.S.H.O specifications for Highway Bridges.

Design Unit Stresses

F'_c = 3,000 psi
F_c = 1,200 psi
F_s = 20,000 psi (A-36 & Reinforcing Steel)
N = 10

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	1½"
Bottom of Slabs	1"
Footings	3"
All other Locations	2"

Chamfer all exposed edges of concrete, on superstructure, ¾" 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

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

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

CONCRETE FINISH

Inside and outside surfaces of parapets, and wingwalls above grade shall receive a rubbed finish.

Except as noted above, abutments shall be ordinary finish.

A water-reducing retarding admixture in accordance with the Special Provisions shall be used in all superstructure 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 10 BP42 piling shall have a design load of 56 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 to true elevations and planes.

RAILING

Contractor shall submit a bid for Item 75-4, Aluminum Railing single line and/or for Item 75-3, Ferrous Metal Railing (Alternate).

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 falsework, and slope surfaces to drain.

NAME PLATES

Section 1.4.10. of the 1960 Specifications - Name Plates - is deleted from this contract and will not be required.

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY
6-1	STRUCTURE EXCAVATION	C.Y.	157
6-5	SELECT MATERIAL FOR BACKFILLING	C.Y.	430
63	STEEL BEARING PILES-DRIVEN (10BP42)	L.F.	1181
70-1	FOUNDATION PROTECTION	C.Y.	3 est
71-1	CLASS A CONCRETE IN SUPERSTRUCTURE	C.Y.	288
71-2	CLASS A CONCRETE IN SUBSTRUCTURE	C.Y.	326
75-3	FERROUS METAL RAILING (ALT.)	L.F.	213
75-4	ALUMINUM RAILING (PRINC.)	L.F.	213
78	REINFORCING STEEL BARS	Lbs.	88054
90 *	STEEL SUPERSTRUCTURE	L.S.	LUMP SUM

REINFORCING STEEL BARS

LOCATION	REINFORCING BAR SIZE 4	5	6	7	8	9	10	11	TOTAL
ABUTMENT NO. 1		10071	1223	770					12064
ABUTMENT NO. 2		10127	1250	787					12164
TOTAL SUBSTR.		20198	2473	1557					24228
TOTAL SUPERSTR.	15619	46384	1730						63733
RE BARS	5	43	26	19					93
TOTAL	15624	66616	4229	1576					88054

* ITEM 90 - STEEL SUPERSTRUCTURE

A36 STEEL UNIT	A36 STEEL QUANTITY	CAST STEEL UNIT	CAST STEEL QUANTITY	WROUGHT IRON UNIT	WROUGHT IRON QUANTITY	TOTAL
Lb.	327000			Lb.	156	327156

MADE BY J.E. Brunell DATE 11-9-67
CHECKED BY S.S.C. DATE 11-67
CHECKED BY P.T.T. DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

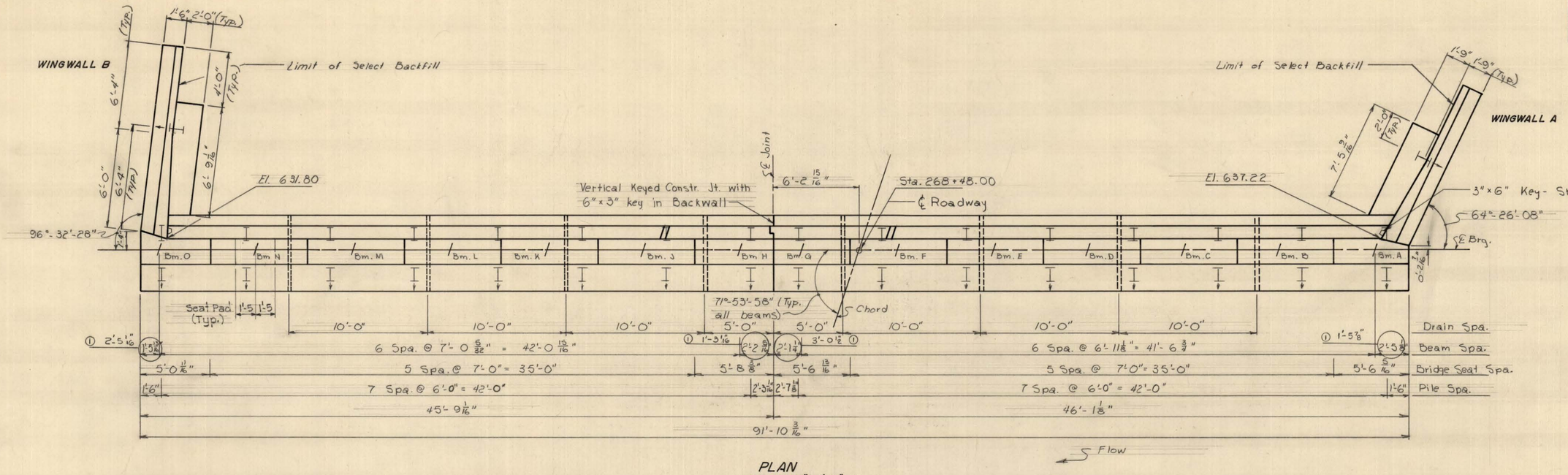
NOTES

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

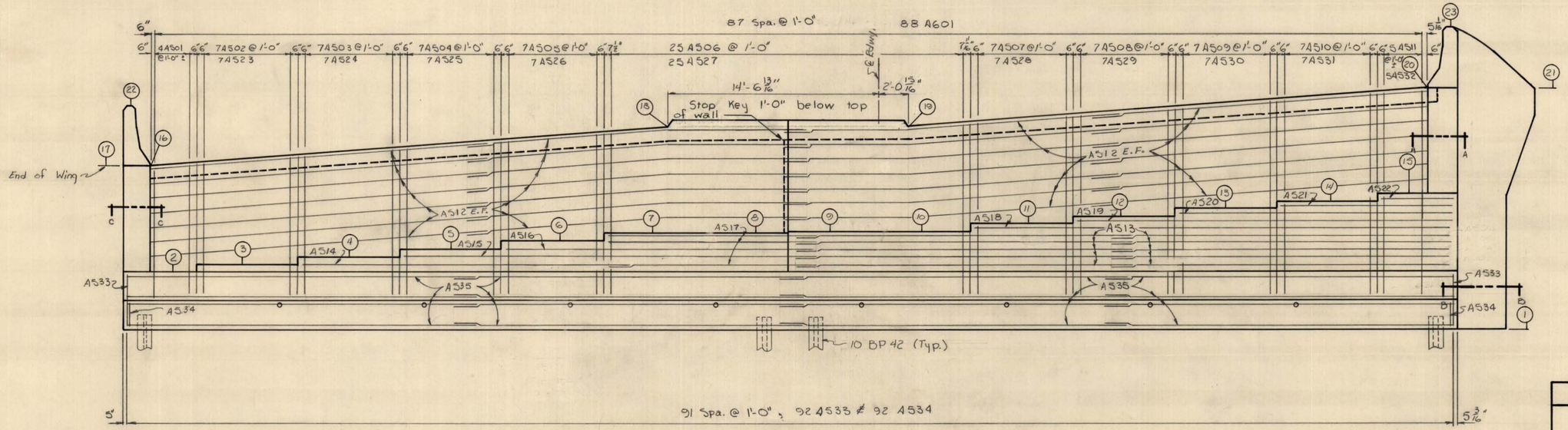
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)
Date November 1967
Sheet 2 of 19 Sheets
No. 2631

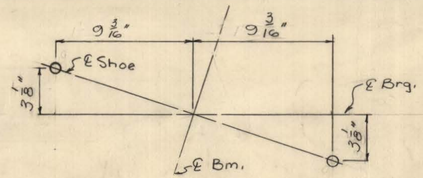
Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263 (21)		KANAWHA	3	19



PLAN
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"



ANCHOR BOLT LAYOUT

TABLE OF ELEVATIONS	
LOCATION	ELEVATION
1	620.64
2	624.64
3	625.16
4	625.70
5	626.23
6	626.76
7	627.30
8	627.37
9	627.38
10	627.44
11	627.97
12	628.49
13	629.02
14	629.54
15	630.06
16	631.80
17	632.04
18	634.49
19	634.52
20	637.22
21	637.46
22	635.95
23	641.37

MADE BY J.e. Brunell DATE 10/67
TRACED BY ____ DATE ____
CHECKED BY SSC DATE 11-67
CHECKED BY KOL DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	3	Abutment Dim. Revised	8-2-68	KOL

ABUTMENT NO. 1

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

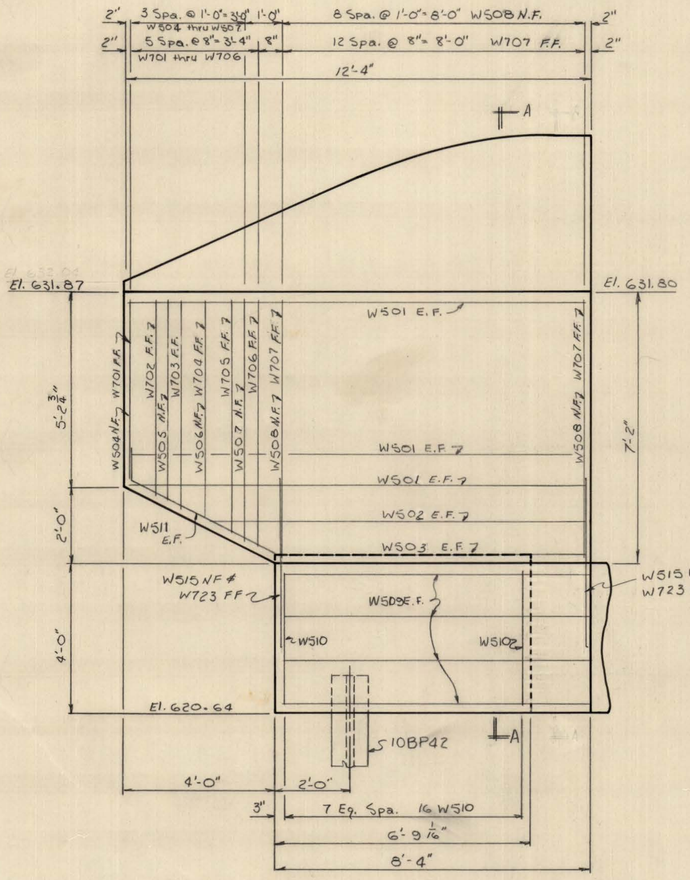
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)
Date October 1967
Sheet 3 of 19 Sheets
No. 2631

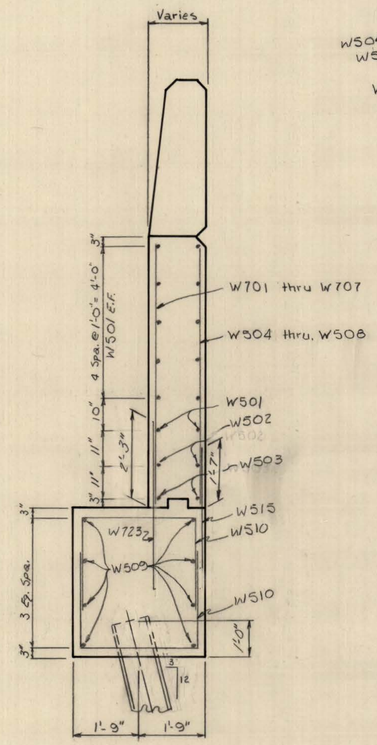
BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263 (21)		KANAWHA	4	19

NOTE:
For Reinforcing Bars in End Post, see Sheet 14 of 19.

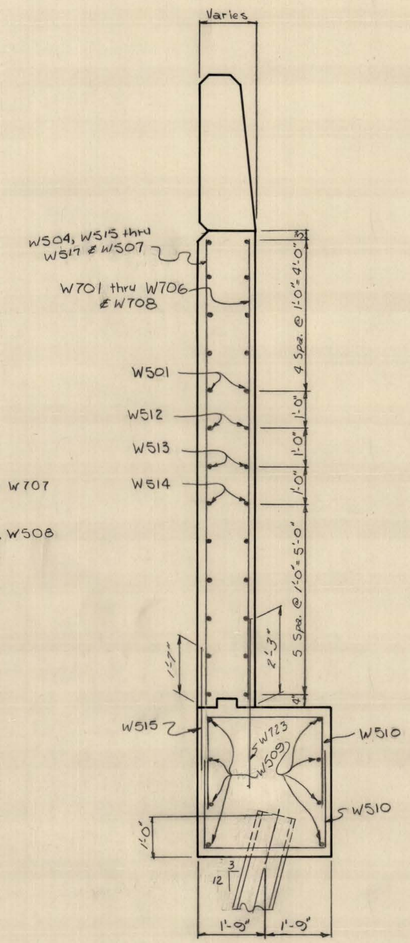


ELEVATION



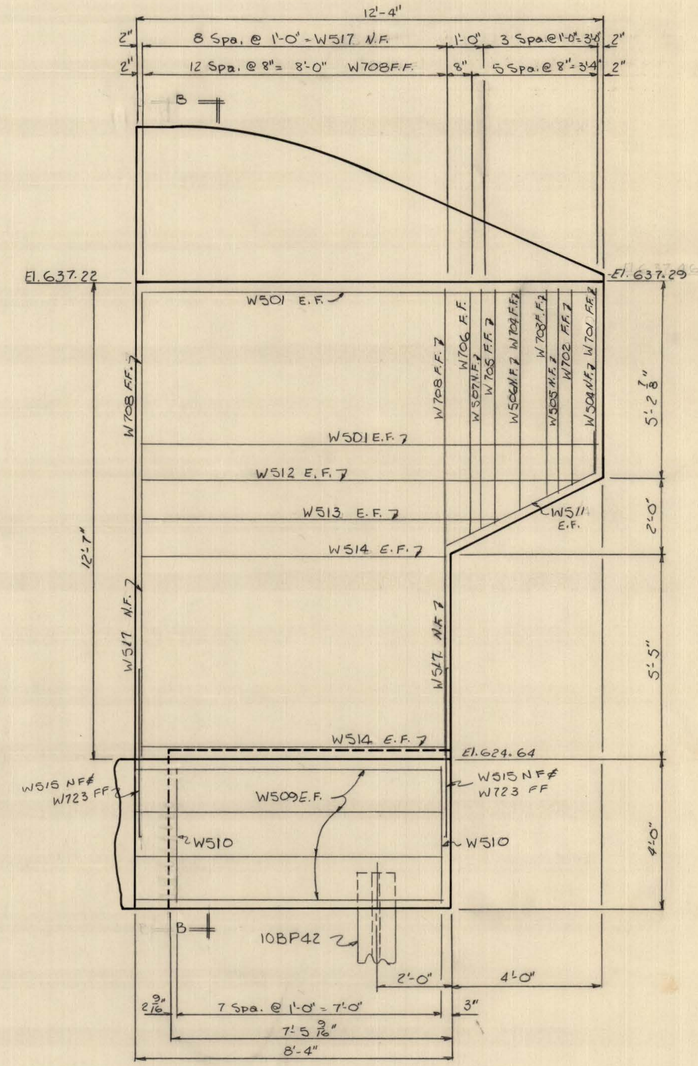
TYPICAL SECTION

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



TYPICAL SECTION

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



ELEVATION

WINGWALLS ABUTMENT NO. 1

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown — Date November 1967
Project F-263(21) — Sheet 4 of 19 Sheets
No. 2631

MADE BY KOL DATE 11/67
TRACED BY J.A. Brunell DATE 11/67
CHECKED BY P.T.T. DATE 12-67
CHECKED BY KOL DATE 12/67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	5	19

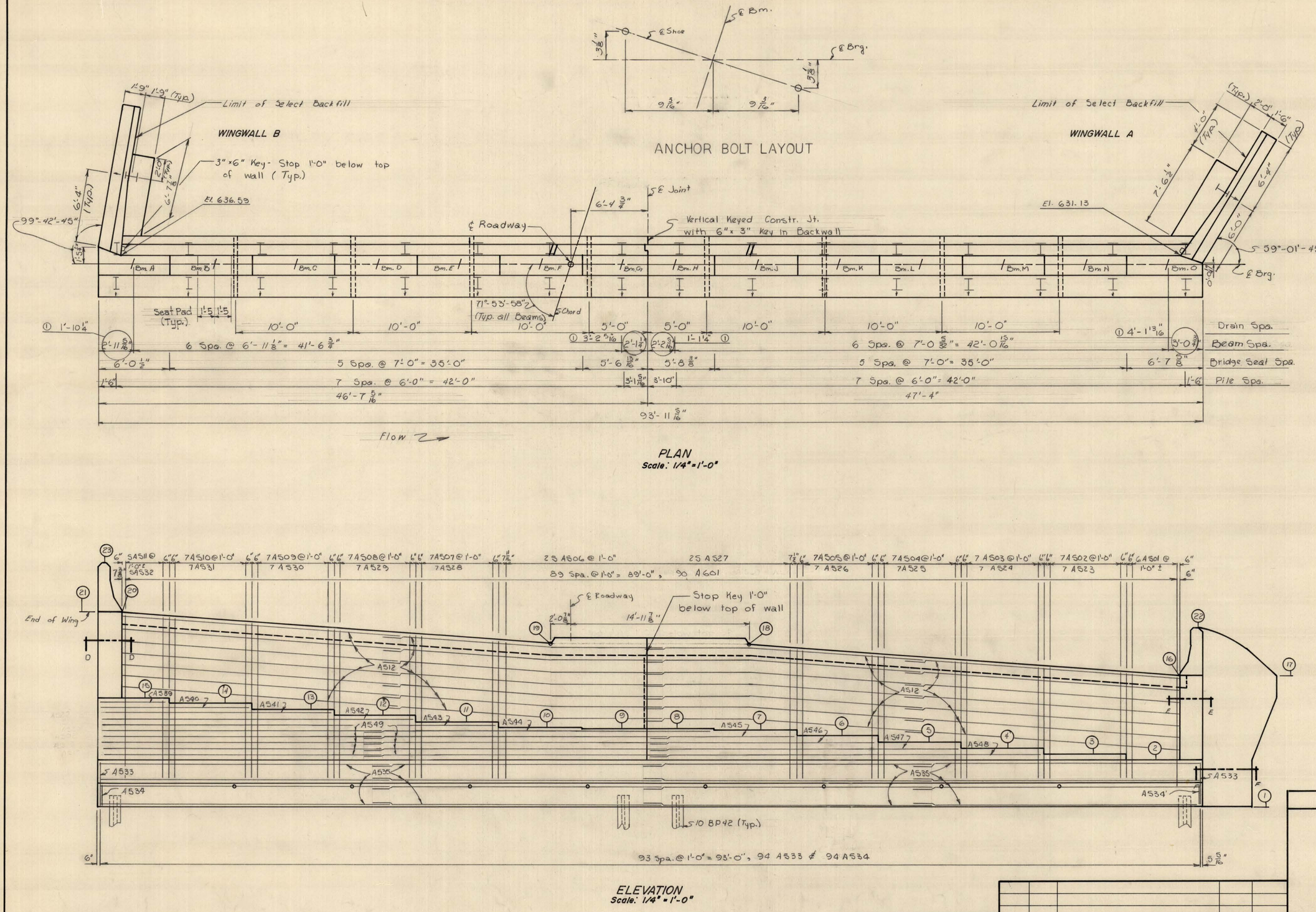


TABLE OF ELEVATIONS	
LOCATION	ELEVATION
1	620.08
2	624.08
3	624.59
4	625.12
5	625.64
6	626.16
7	626.66
8	626.74
9	626.75
10	626.81
11	627.32
12	627.84
13	628.35
14	628.87
15	629.38
16	631.13
17	631.22
18	633.85
19	633.89
20	636.60
21	636.70
22	635.28
23	640.75

MADE BY J.e. Brunell DATE 10/67
TRACED BY ..... DATE .....
CHECKED BY JSC DATE 11-67
CHECKED BY K.O.L. DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	5	Abutment Dim. Revised	8-2-68	KOL

ABUTMENT NO. 2

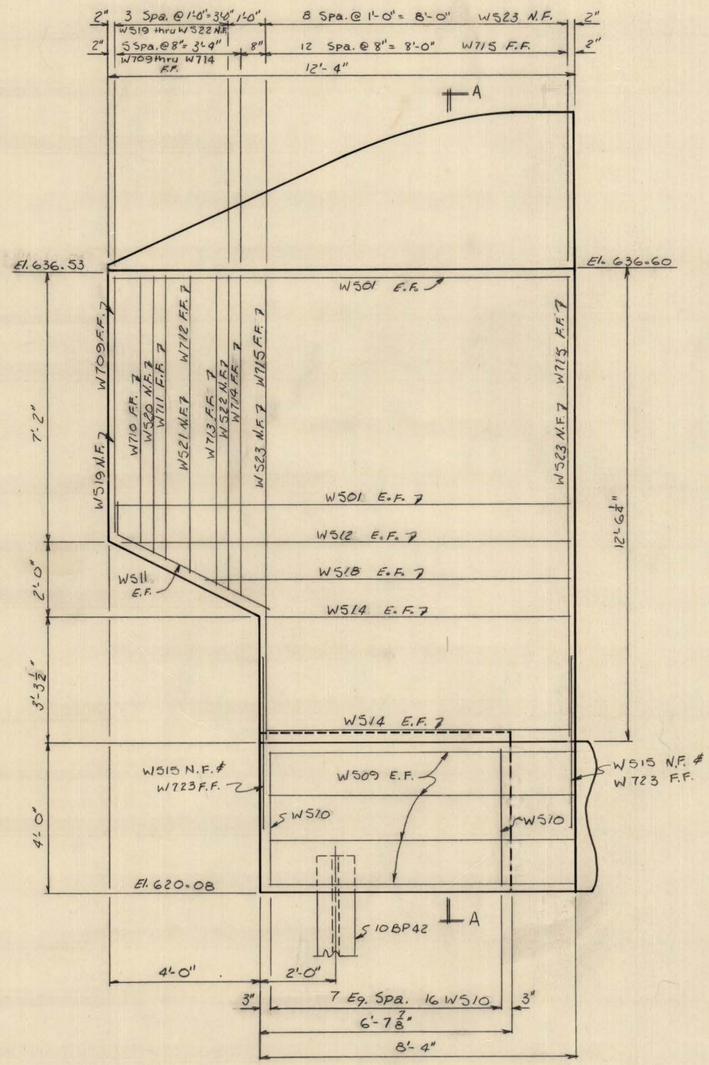
HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

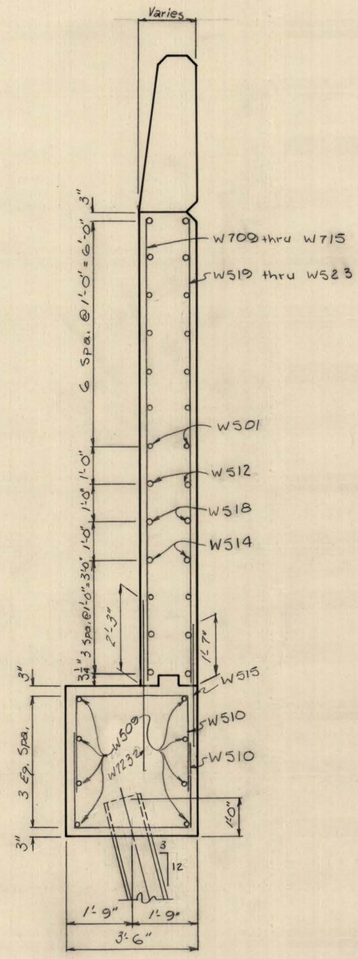
Scale as shown
Project F-263(21)
Date October 1967
Sheet 5 of 19 Sheets
No. 2631

BRUNING 40 197 —

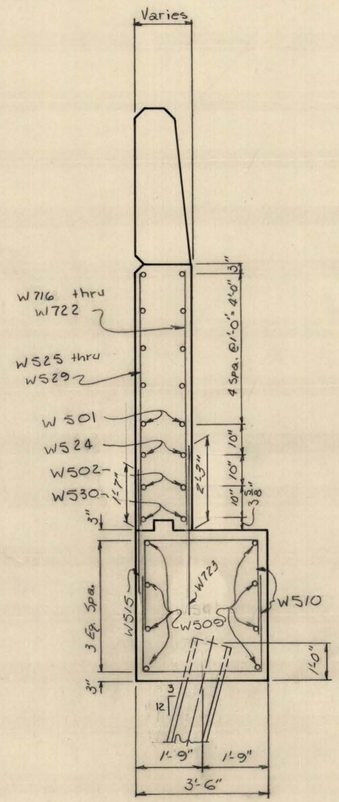
Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263 (21)		KANAWHA	6	19



ELEVATION



TYPICAL SECTION



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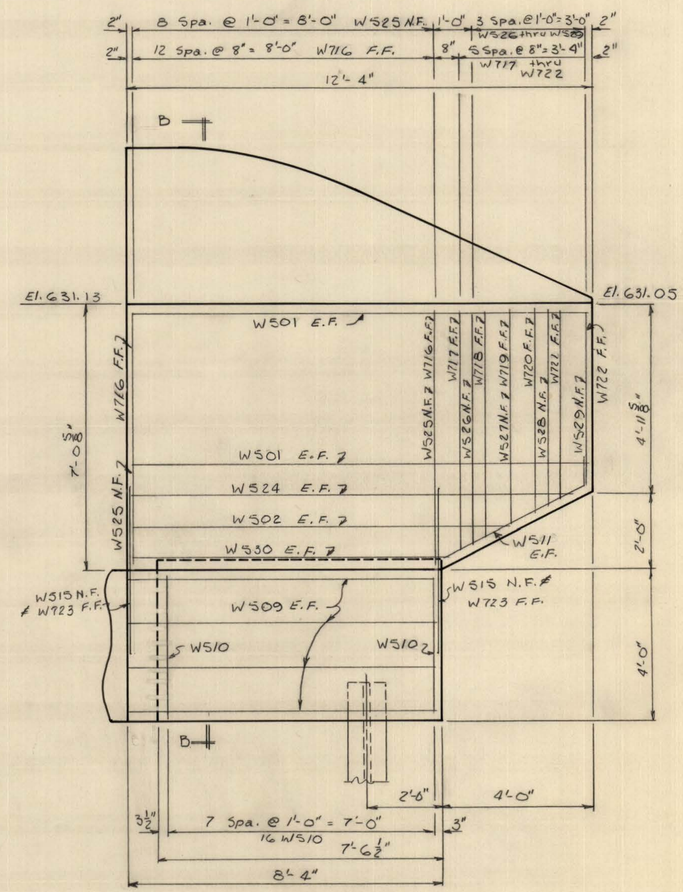


ELEVATION

WINGWALL B

Scale 1/2" = 1'-0"

NOTE:
For Reinforcing Bars in End Post, see Sheet 14 of 19.

WINGWALL A

Scale 1/2" = 1'-0"

MADE BY KOL	DATE 11/67
TRACED BY J.E. Brunell	DATE 11/67
CHECKED BY KOL	DATE 12-67
CHECKED BY P.T.T.	DATE 12-5-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

WINGWALLS ABUTMENT NO. 2

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

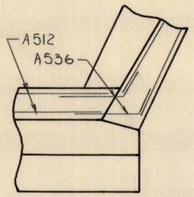
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)

Date NOVEMBER 1967
Sheet 6 of 19 Sheets
No. 2631

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	7	19



SECTION A-A
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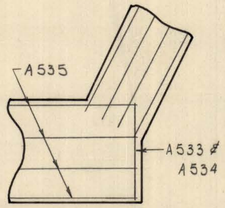
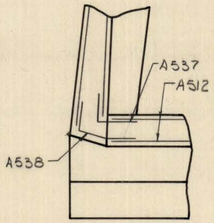
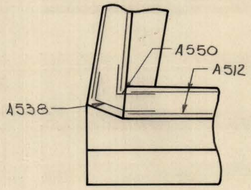


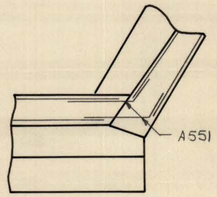
SECTION B-B
Scale: 1/4" = 1'-0"



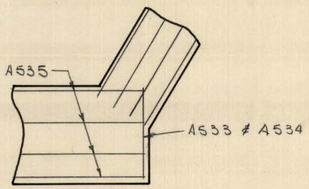
SECTION C-C
Scale: 1/4" = 1'-0"



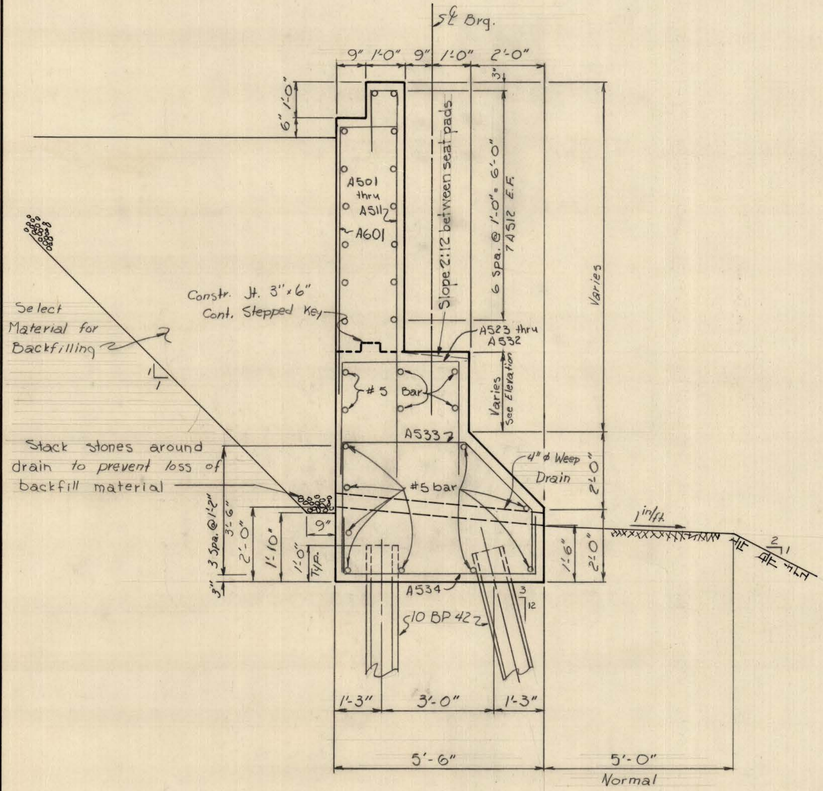
SECTION D-D
Scale: 1/4" = 1'-0"



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



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



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

ESTIMATE OF QUANTITIES

	ITEM	DESCRIPTION	UNIT	QUAN.
ABUTMENT #1	71-2	Class "A" Concrete Substructure	C.Y.	161
	78	Reinforcing Steel Bars	Lbs.	11270
ABUTMENT #2	71-2	Class "A" Concrete Substructure	C.Y.	165
	78	Reinforcing Steel Bars	Lbs.	11370

NOTES

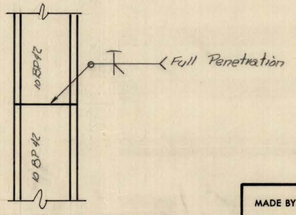
Backfill up to the bottom of the bridge seat and consolidate the fill before placing the bridge seat.

Concrete in the abutment backwalls shall not be placed until the superstructure slab is in place.

Slope bridge seats 2:12 between shoes for drainage.

Weep drains to be of non-rusting material. Include cost in Item 71-2.

E.F. = Each Face
N.F. = Near Face
F.F = Far Face
F.C.W. = Face of Curtain Wall



TYPICAL PILE SPLICE
N.T.S.

MADE BY J.E. Brunell DATE 10/67
TRACED BY ..... DATE .....
CHECKED BY J.J.C. DATE 11-67
CHECKED BY K.O.L. DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

DETAILS - ABUTMENT NO. 1 AND NO. 2

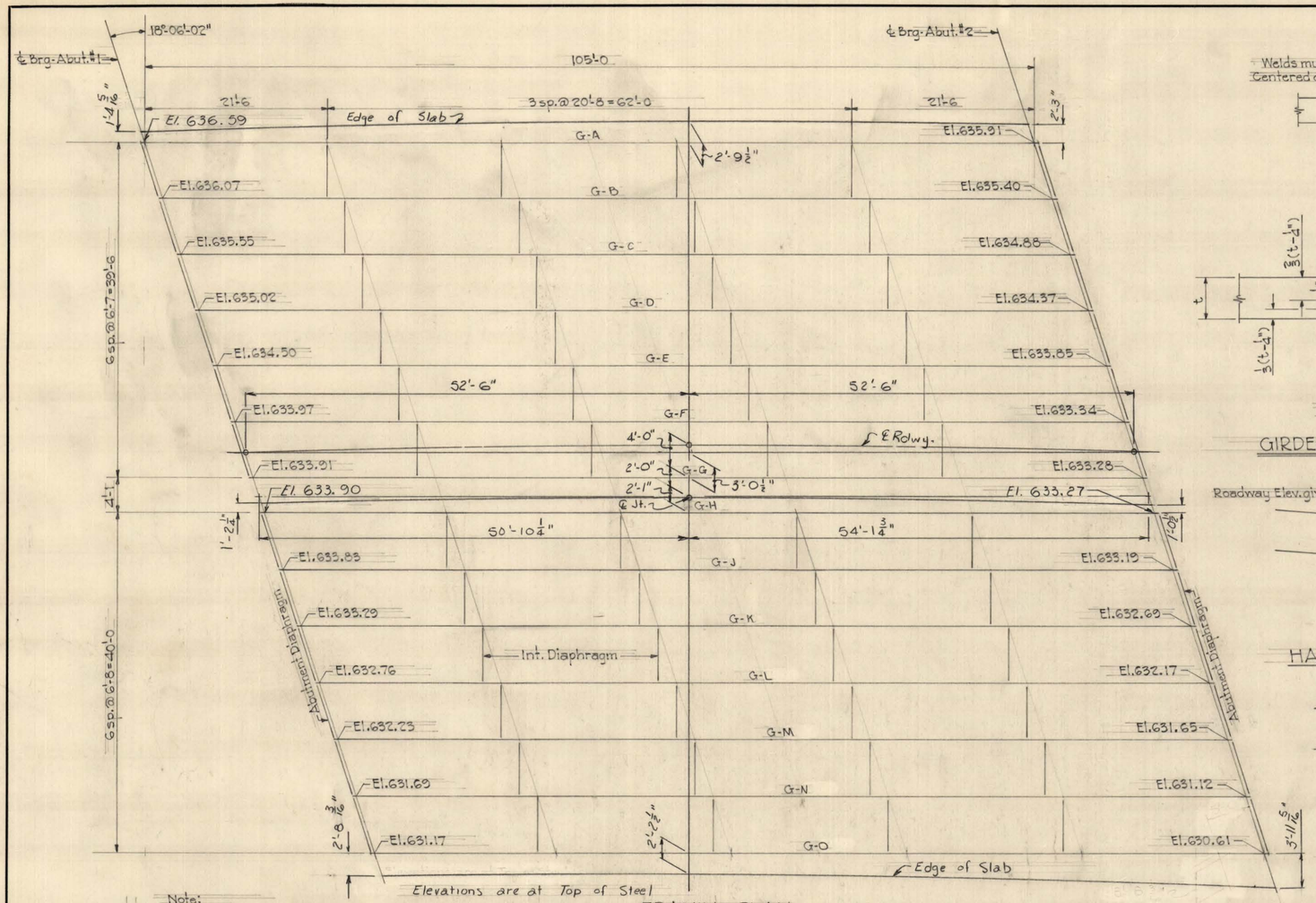
HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown
Project F-263(21)
Date October 1967
Sheet 7 of 19 Sheets
No. 2631

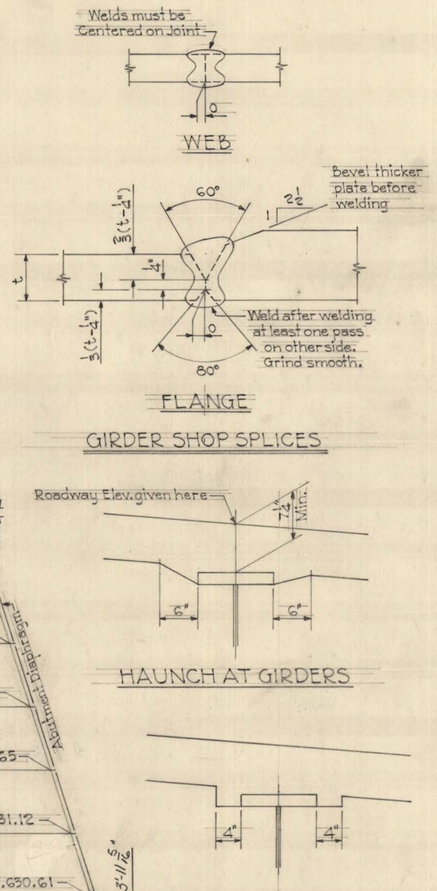
BRUNING 40 197 —

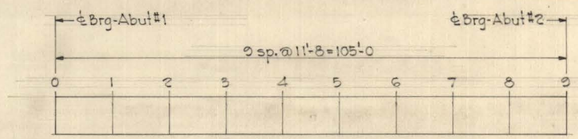
Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	8	19



FRAMING PLAN

1/8" = 1'-0



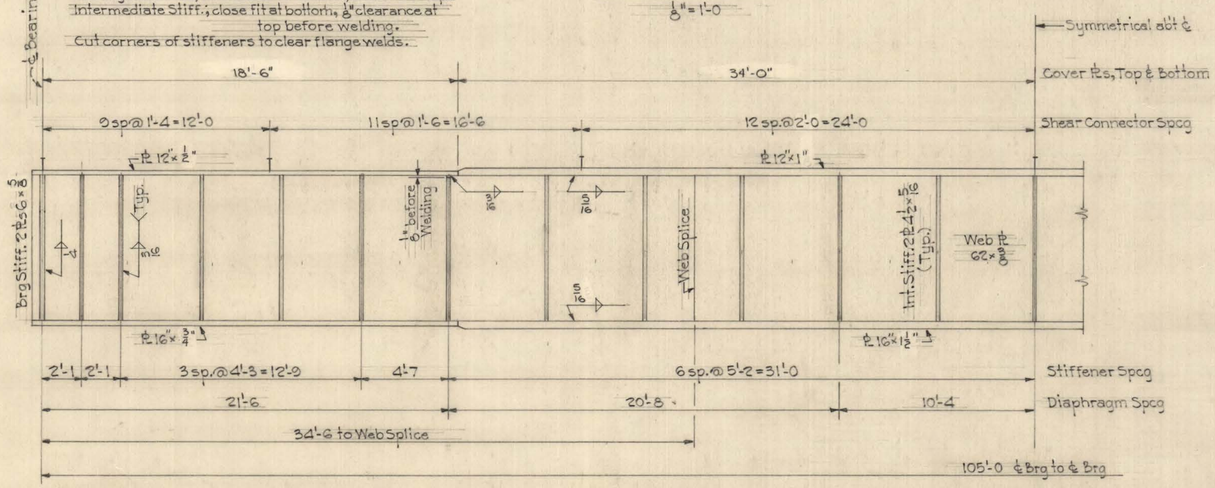


LOCATION OF POINTS ON GIRDERS

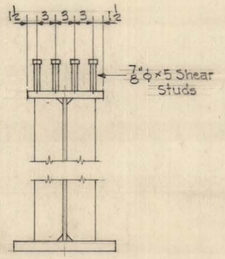
ELEVATIONS AT TOP OF ROADWAY & DEAD LOAD DEFLECTIONS

Point		0	1	2	3	4	5	6	7	8	9
G-A	Elev.	637.27	637.16	637.07	636.98	636.89	636.82	636.75	636.69	636.63	636.59
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-B	Elev.	636.74	636.64	636.54	636.45	636.37	636.30	636.23	636.17	636.12	636.07
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-C	Elev.	636.22	636.11	636.02	635.93	635.85	635.78	635.71	635.65	635.60	635.55
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-D	Elev.	635.69	635.59	635.50	635.41	635.33	635.26	635.19	635.13	635.08	635.04
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-E	Elev.	635.17	635.07	634.97	634.89	634.81	634.74	634.67	634.62	634.57	634.52
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-F	Elev.	634.64	634.54	634.45	634.37	634.29	634.22	634.16	634.10	634.05	634.01
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-G	Elev.	634.51	634.44	634.37	634.30	634.23	634.16	634.09	634.02	633.95	633.88
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-H	Elev.	634.50	634.43	634.36	634.29	634.22	634.15	634.08	634.01	633.94	633.87
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-J	Elev.	634.49	634.40	634.31	634.22	634.15	634.08	634.02	633.97	633.92	633.85
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-K	Elev.	633.96	633.87	633.78	633.70	633.62	633.56	633.50	633.44	633.40	633.36
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-L	Elev.	633.43	633.34	633.25	633.17	633.10	633.03	632.97	632.92	632.88	632.84
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-M	Elev.	632.90	632.81	632.72	632.64	632.57	632.51	632.45	632.40	632.36	632.32
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-N	Elev.	632.37	632.28	632.19	632.11	632.04	631.98	631.92	631.88	631.83	631.80
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0
G-O	Elev.	631.84	631.75	631.66	631.59	631.52	631.46	631.40	631.35	631.31	631.28
	Defl.	0	.05	.09	.12	.14	.14	.12	.09	.05	0

Note:
Bearing Stiffeners; mill to bear at bottom, close fit at top.
Intermediate Stiff.; close fit at bottom, 1/8" clearance at top before welding.
Cut corners of stiffeners to clear flange welds.



TYPICAL GIRDER ELEVATION



Centerlines of bearings are parallel. All girders are parallel. Elevations on framing plan are top of steel. After all superstructure steel has been erected and falsework removed, the engineer shall take elevations on the top of steel at the points where the roadway elevations are shown. The difference between these elevations and the roadway 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 at these points. The minimum slab thickness over the steel shall not be less than 7¼ at the centerline of the girder web. If the girders have excessive camber and this minimum cannot be obtained, the grade line shall be adjusted to obtain this minimum slab thickness.

Innershield method of welding will not be permitted. Field welding will not be permitted except where noted on the plans.

MADE BY P.T.T.	DATE 9-67
TRACED BY	DATE
CHECKED BY S.S.C.	DATE 11-67
CHECKED BY P.T.T.	DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

FRAMING PLAN

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

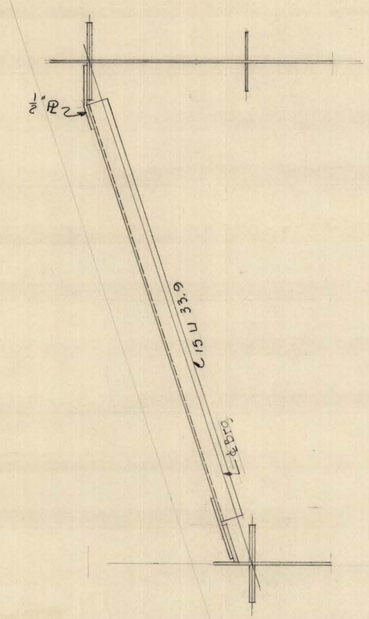
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)

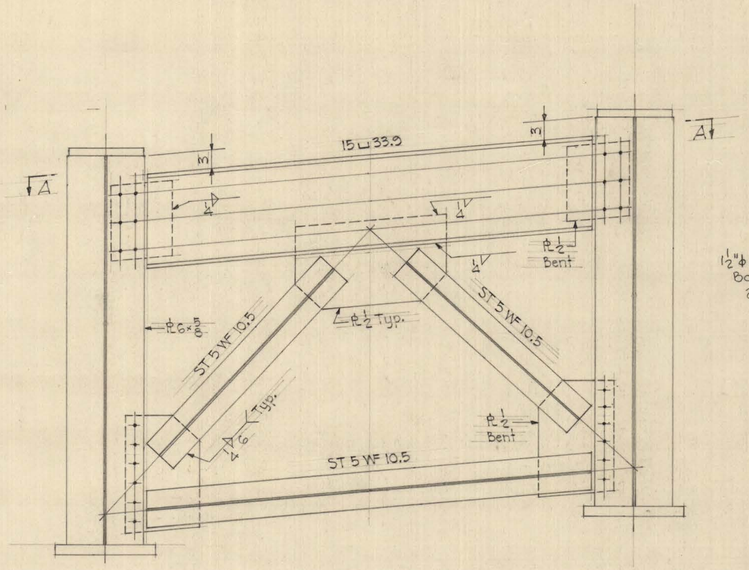
Date September 1967
Sheet 8 of 19 Sheets
No. 2631

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	9	19

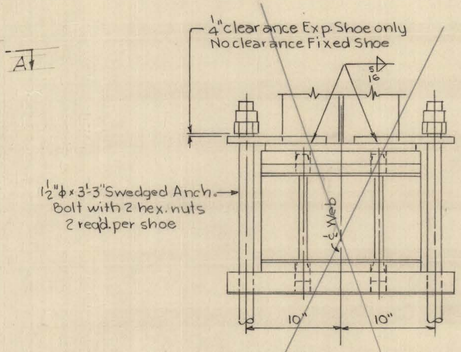


SECTION A-A



DIAPHRAGM AT ABUTMENTS

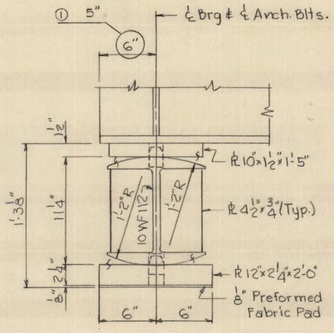
1" = 1'-0



EXTERIOR STRINGER

Detail for Fixed Shoe similar

4 Req'd - Exp.
4 Req'd - Fixed

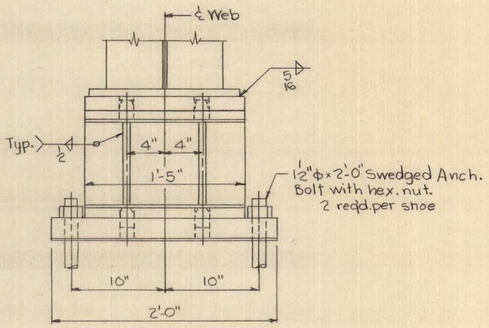


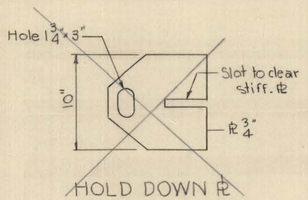
EXPANSION SHOE

14 Req'd.

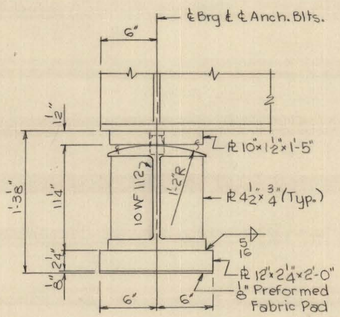
Note:

Shoes shall be so set that at a temperature of of 68° they will be in a verticle position.



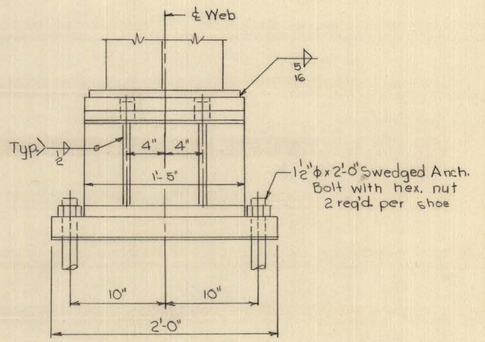


HOLD DOWN PL

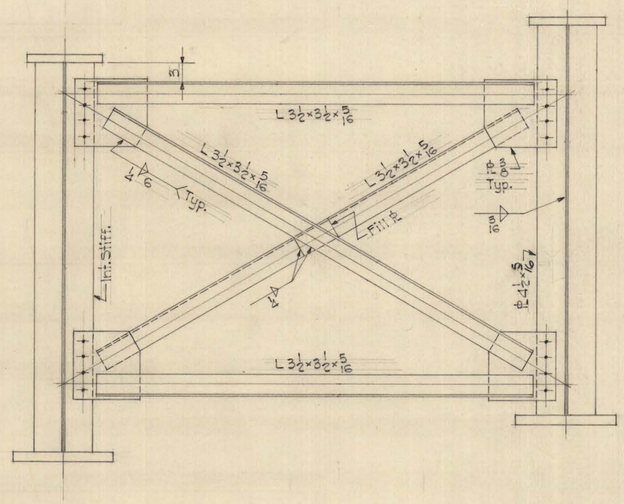


FIXED SHOE

14 Req'd.

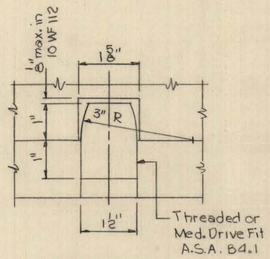


1½" = 1'-0"



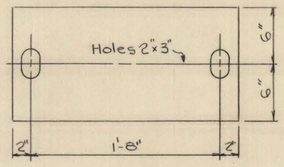
INTERMEDIATE DIAPHRAGM

1" = 1'-0



PINTLE

Half Size



MASONRY PL

1½" = 1'-0"

NOTE:

FILL SLOTTED HOLES IN MASONRY PLATE WITH MOLTEN ZINC AFTER SHOES ARE IN FINAL POSITION.

MADE BY P.T.T.	DATE 9-67
TRACED BY	DATE
CHECKED BY KOL	DATE 11-67
CHECKED BY P.T.T.	DATE 12-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	9	Dim. Revised	8-2-68	KOL

STEEL DETAILS

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

DESIGNED BY

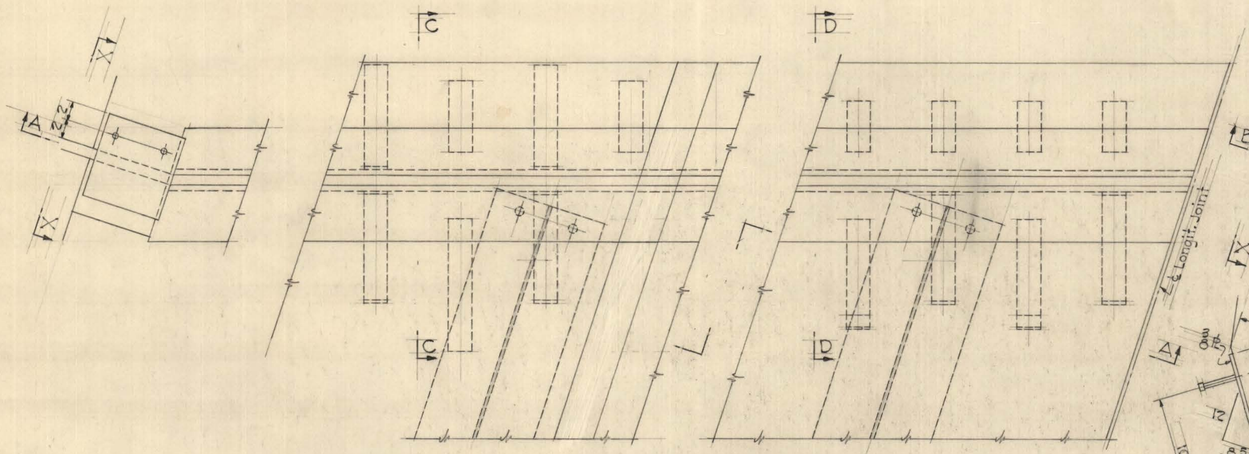
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

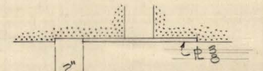
Scale as shown
Project F-263 (21)

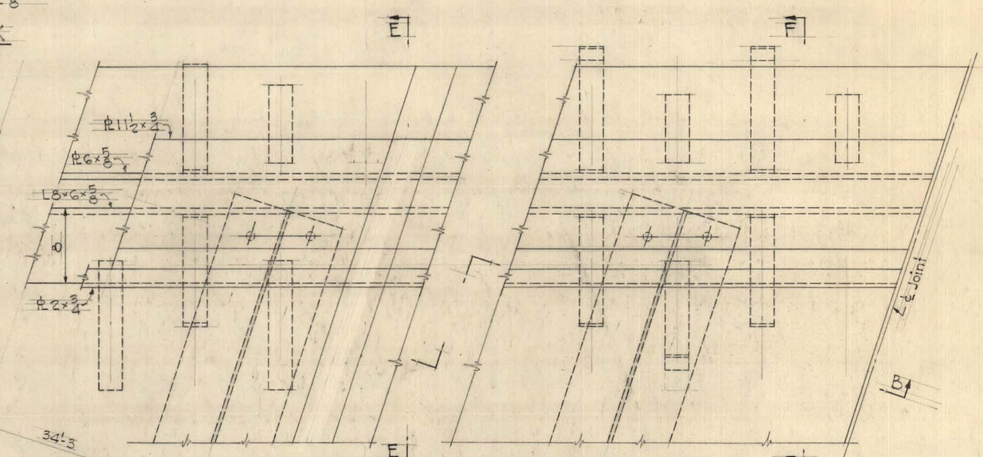
Date September 1967
Sheet 9 of 19 Sheets
No. 2631

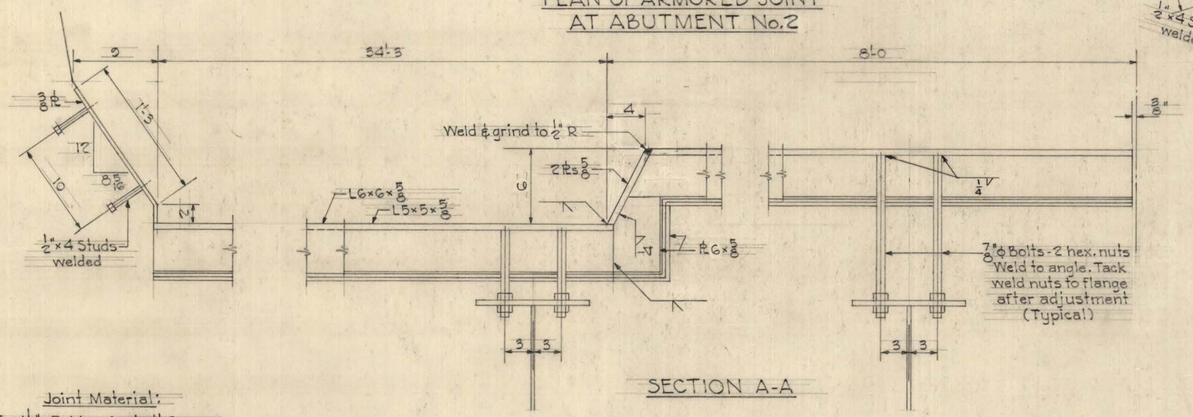
BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F263 (21)		Kanawha	10	19

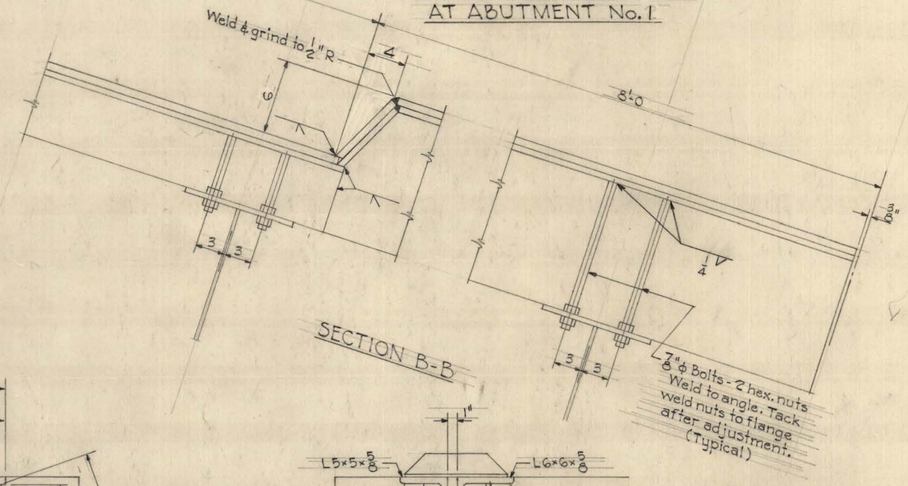






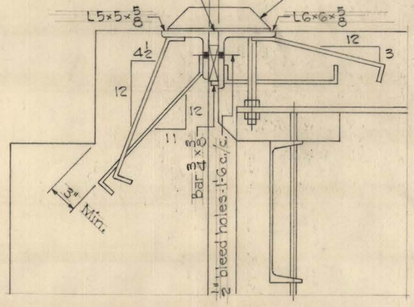


SECTION A-A

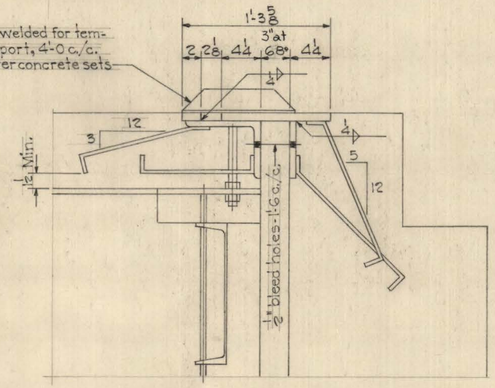


SECTION B-B

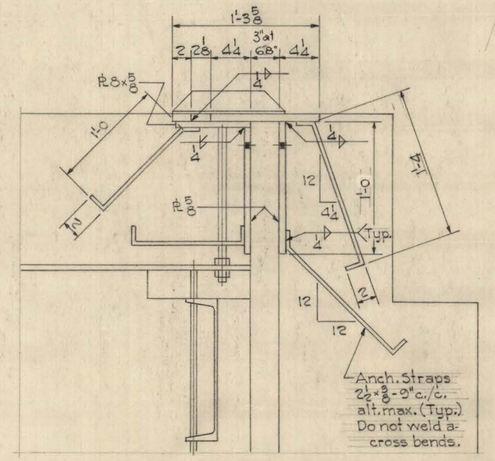
Joint Material:
Top 1 1/2", Rubber Asphalt Comp. conforming to Specif. Art. 3.5.2. Bottom, Preformed Joint Filler Type I, conforming to Specifications Article 3.8.2



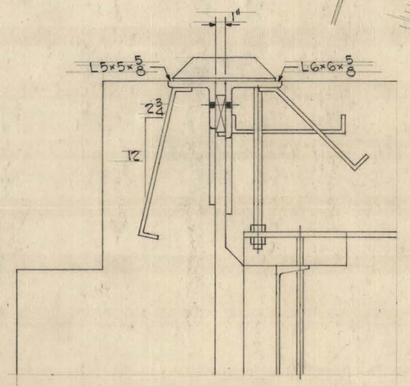
SECTION C-C



SECTION E-E



SECTION F-F



SECTION D-D

MADE BY P.T.T.	DATE 11-67			
TRACED BY	DATE			
CHECKED BY K.O.L.	DATE 12-67			
CHECKED BY P.T.T.	DATE 12-67			

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

STEEL DETAILS

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown
Project F-263(21)
Date DECEMBER 1967
Sheet 10 of 19 Sheets
No. 2631

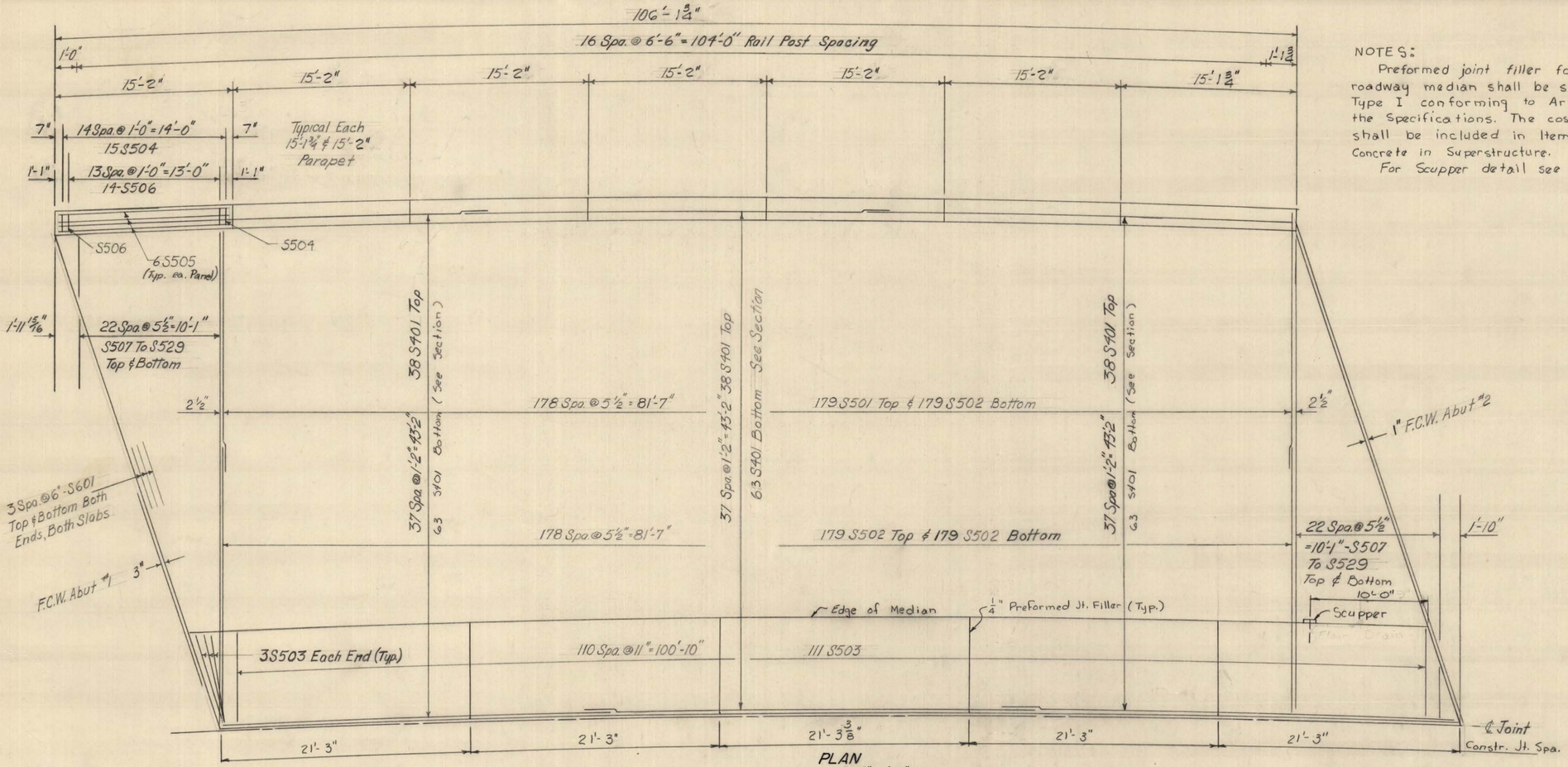
BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	11	19

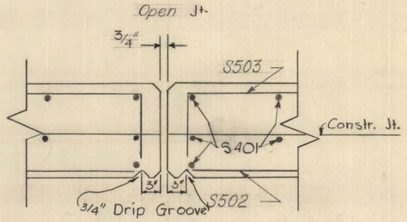
NOTES:

Preformed joint filler for joints in roadway median 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.

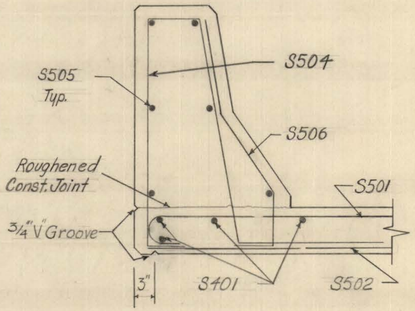
For Scupper detail see Sheet 12-A of 19.



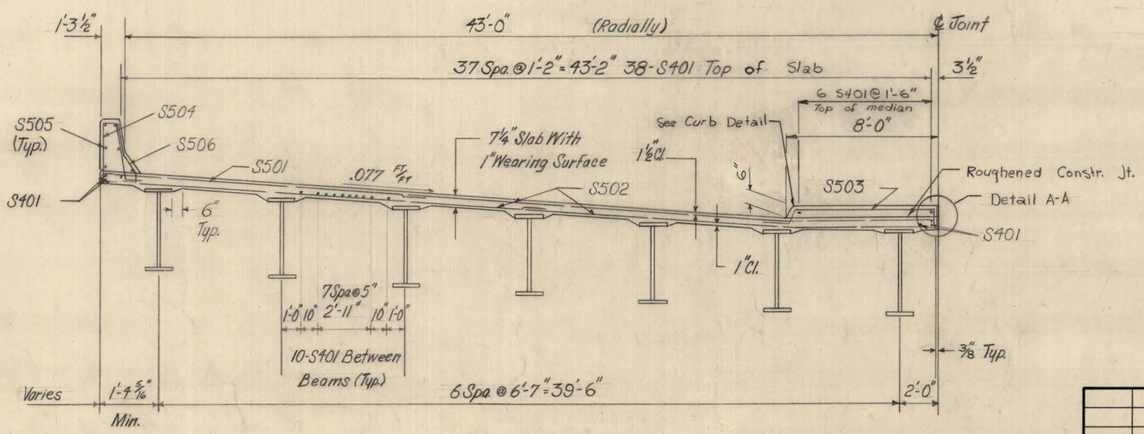
PLAN
Scale: 3/16" = 1'-0"



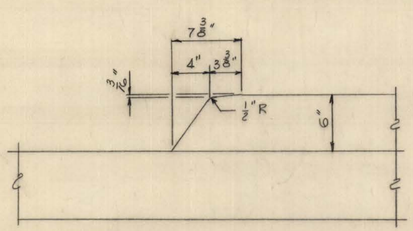
DETAIL A-A
Scale: 1" = 1'-0"



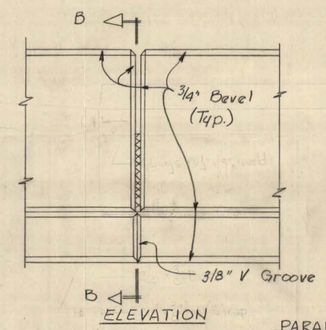
PARAPET DETAIL
Scale: 1" = 1'-0"



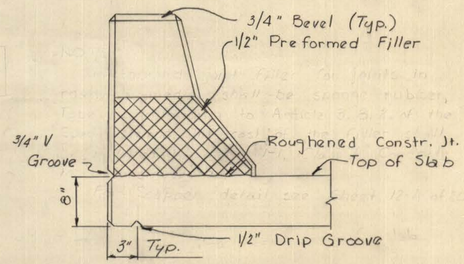
TYPICAL SECTION
Scale: 1/4" = 1'-0"



DETAIL OF CURB
1 1/2" = 1'-0"



ELEVATION



SECTION B-B

PARAPET JOINT
NO SCALE

MADE BY E.E.R.	DATE 7-67			
TRACED BY	DATE			
CHECKED BY S.S.C.	DATE 11-67			
CHECKED BY P.T.T.	DATE 11-67			
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

ROADWAY SLAB - WEST BOUND

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

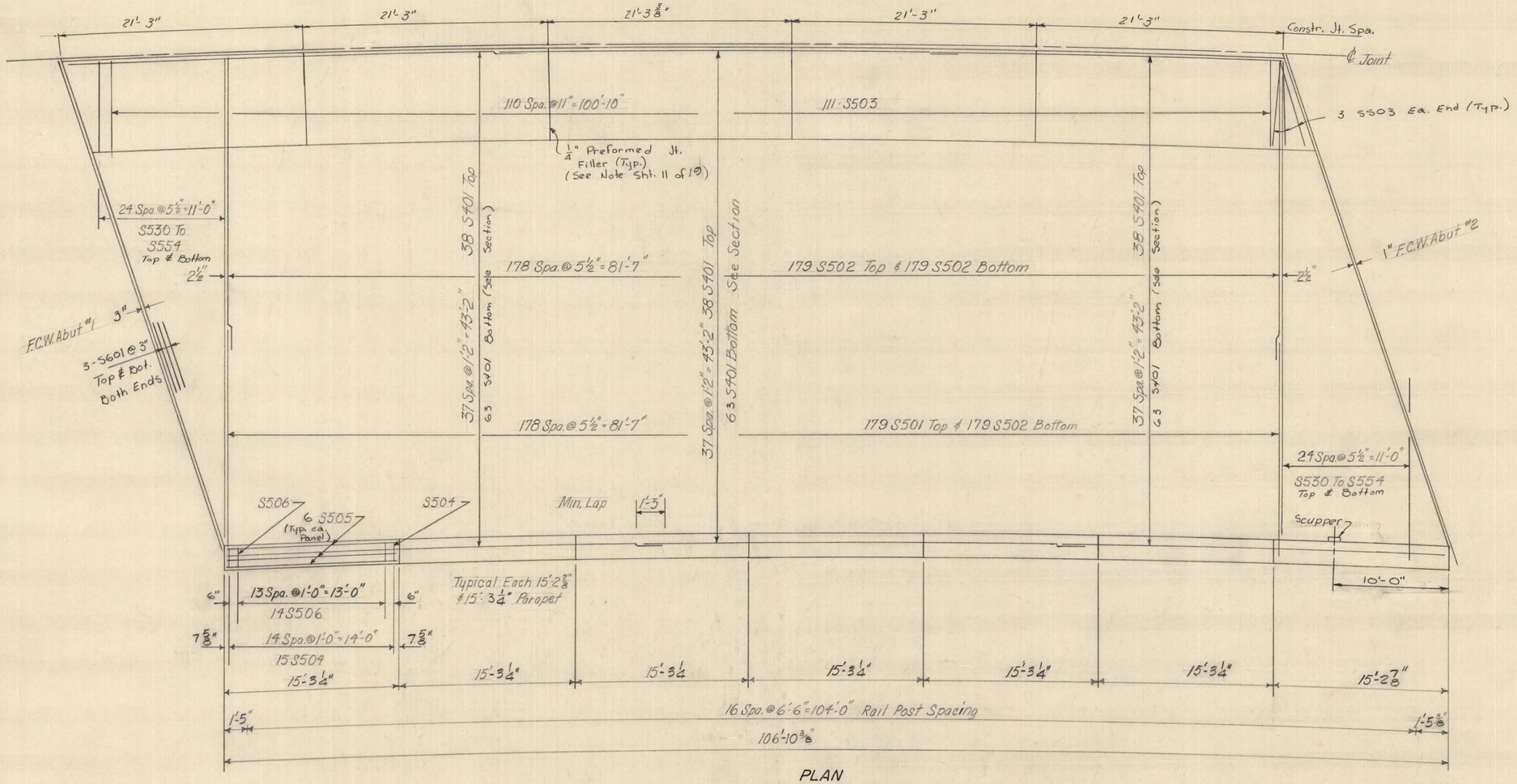
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)

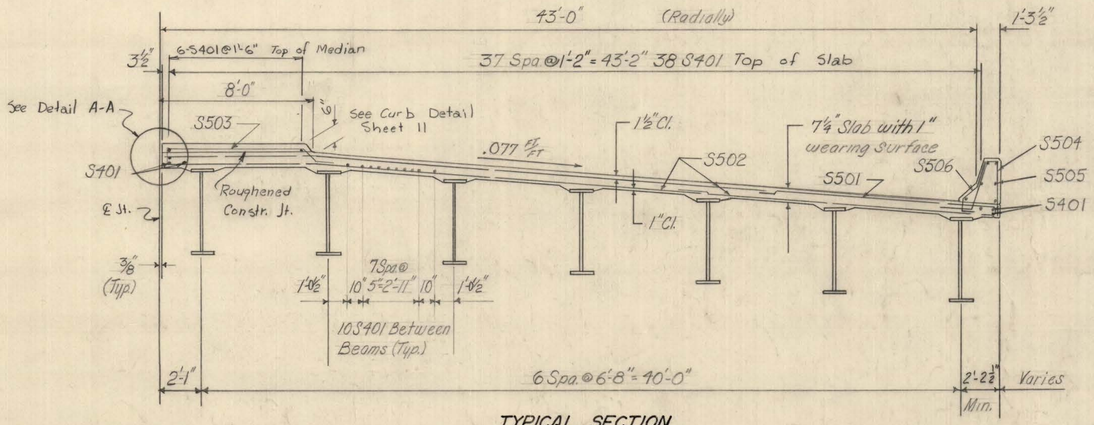
Date July 1967
Sheet 11 of 19 Sheets
No. 2631

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	12	19



PLAN
Scale: 3/16" = 1'-0"



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

NOTE:
For Parapet detail and Detail A-A see Sheet 10 of 19.
For Scupper detail see Sheet 12-A of 19.

MADE BY E.E.P.	DATE 7-67		
TRACED BY	DATE		
CHECKED BY S.S.C.	DATE 11-67		
CHECKED BY P.T.T.	DATE 11-67		

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

ROADWAY SLAB - EAST BOUND

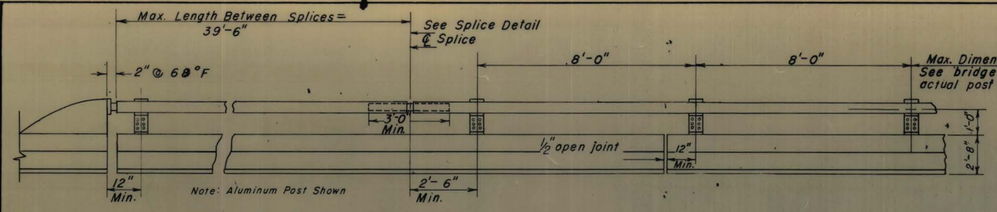
HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

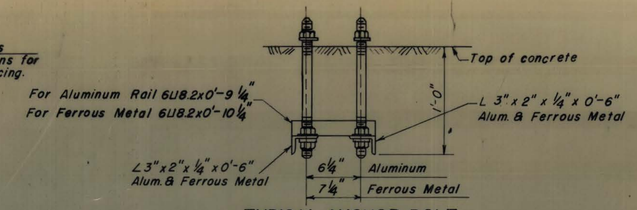
Scale as shown
Project F-263 (21)
Date July 1967
Sheet 12 of 19 Sheets
No. 2631

BRUNING 40 197 —

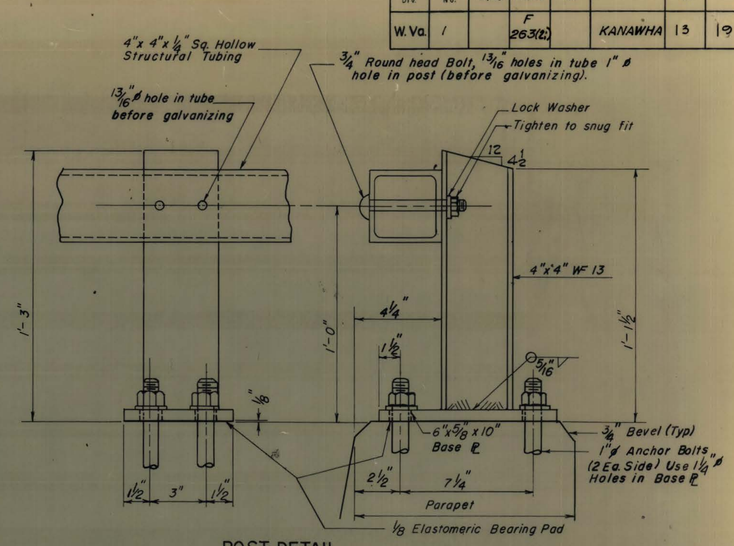
PUBLIC ROADS DIV.	STATE Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. Va.	1		F 263(21)		KANAWHA	13	19



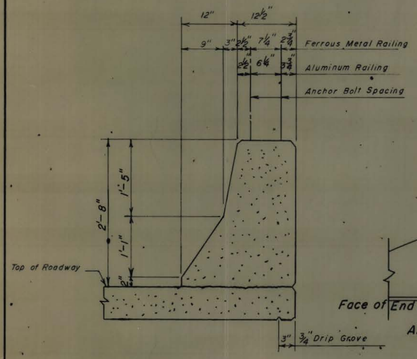
TYPICAL ELEVATION OF ALUMINUM & FERROUS METAL BRIDGE RAILING



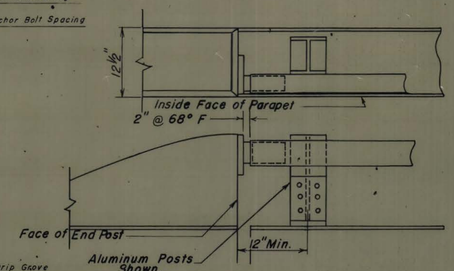
TYPICAL ANCHOR BOLT ASSEMBLY DETAIL
Scale: 1 1/2" = 1'-0"



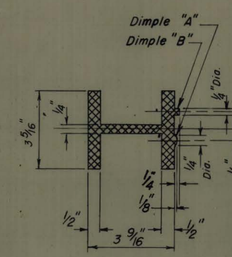
POST DETAIL
Scale: 3" = 1'-0"



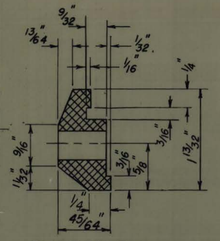
PARAPET DETAIL
Scale: 1 1/2" = 1'-0"



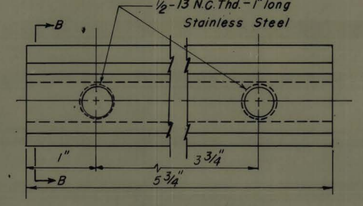
TYPICAL TERMINATION OF RAIL DETAIL
Scale: 1" = 1'-0"



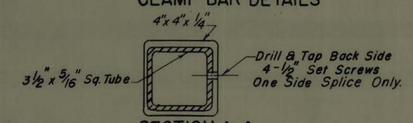
SECTION A-A
Aluminum



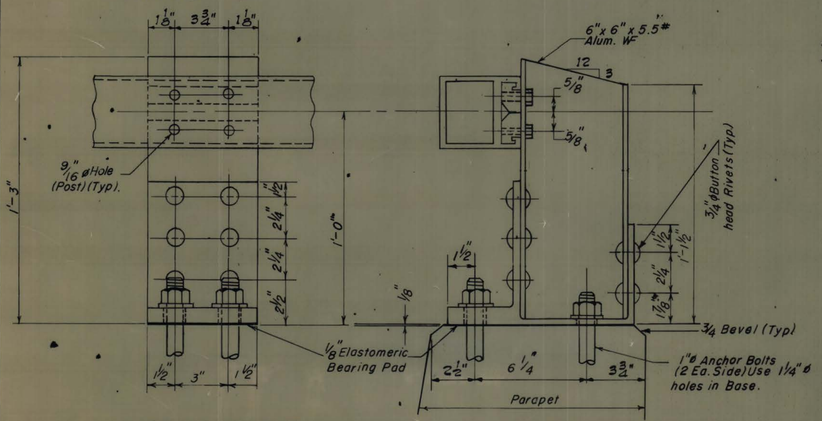
SECTION B-B



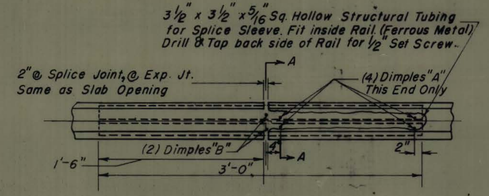
CLAMP BAR DETAILS



SECTION A-A
Ferrous Metal

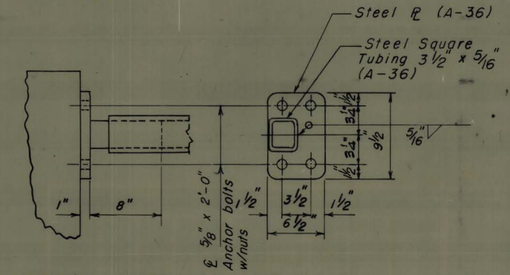


ALUMINUM POST DETAIL
Scale: 3" = 1'-0"

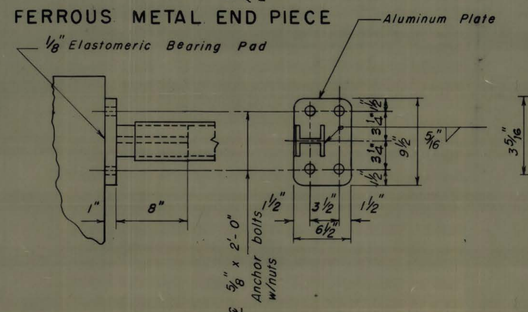


TYPICAL SPLICE DETAIL
Scale: 1 1/2" = 1'-0"

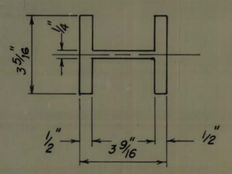
Note — Aluminum Railing:
Posts, rails and base plates shall be extruded shapes as detailed in accordance with ASTM B-221, alloy 6061-T6 or 6062-T6.
All rivets and set screws shall be ASTM B-221 alloy 6061-T6 temper.
Weld filler wire shall be ASTM B-285, alloy ER-5356.
Anchor bolts, washers and nuts shall be the same as specified for Ferrous Metal Railing.
Rails on curved sections shall be bent to the correct radius in the shop.
Anchor bolts to be cast in place.
Posts shall be set normal to grade unless otherwise noted on plans.
Cost of anchor bolts, railing, rail posts, hardware, and elastomeric pads shall be included in the price bid for Item 75-4, Aluminum Railing, per linear foot.
No painting of posts and railing is required.
All sharp edges shall be rounded.
Provide a 1/2" hole in bottom of sealed end for drainage.



FERROUS METAL END PIECE

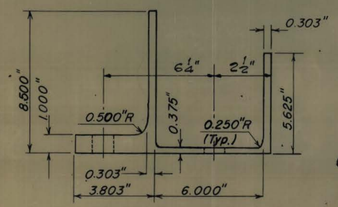


ALUMINUM END PIECE

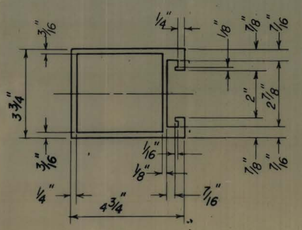


TYPICAL SECTION

Note — Ferrous Metal Railing:
All rails, posts, base plates and anchor bolt assemblies shall be A-36 Steel.
All anchor bolts, round head bolts, set screws, nuts and washers shall be ASTM-A307-61T, Grade A.
Round head bolts shall conform to ASA B18.5 with one regular semi-finished hexagon nut. Threads to be N.C. Class 2. One lock washer to be furnished for each bolt.
All bolts, except as otherwise noted, including anchor bolts, nuts, washers and miscellaneous hardware to be galvanized in accordance with ASTM-A-153.
All rails, posts and base plates, after all welding and drilling is completed, to be galvanized with hot-dipped zinc coating in accordance with AASHO Designation M111-60 (ASTM 123).
Anchor bolt assemblies (channels and angles) not to be galvanized or painted.
Provide a 1/8" hole in bottom of sealed end for drainage.
Rails on curved sections shall be bent to the correct radius in the shop.
Anchor bolts to be cast in place.
Posts shall be set normal to grade unless otherwise noted on plans.
Cost of anchor bolts, railing, rail posts, hardware and elastomeric pads shall be included in the price bid for Item 75-3, Ferrous Metal Railing, per linear foot.
No painting of posts and railing is required.
All sharp edges shall be rounded.
Stainless steel bolts and washers shall conform to ASTM A-276, Type 304 for bolts and Type 302 for washers.



BASE PLATE
Scale: 3" = 1'-0"



RAIL MEMBER

Railing design is in accordance with AASHO Interim Specifications, Int. I(64).

MADE BY R.W.G. DATE 11/66
CHECKED BY S.I.C. DATE 11-67
CHECKED BY P.T.T. DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

R-1 RAIL

ALUMINUM & FERROUS METAL
TRAFFIC BRIDGE RAILING
SINGLE LINE

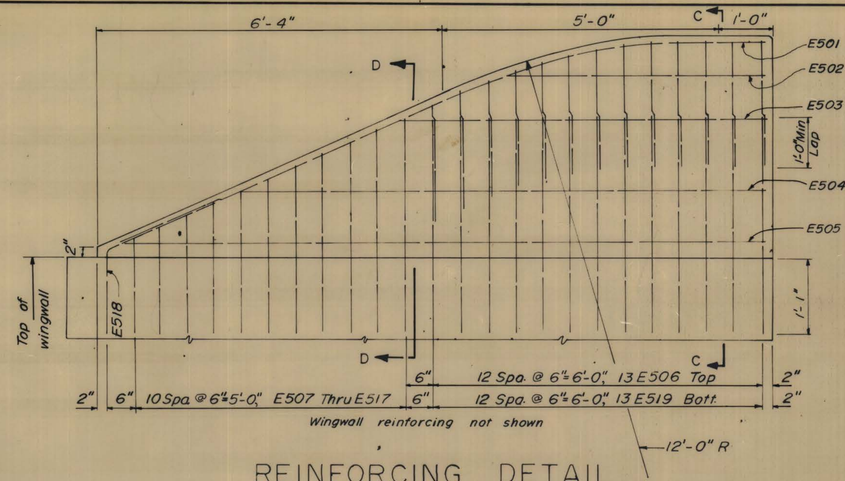
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)
Date October 1967
Sheet 13 of 19 Sheets
No. 2631

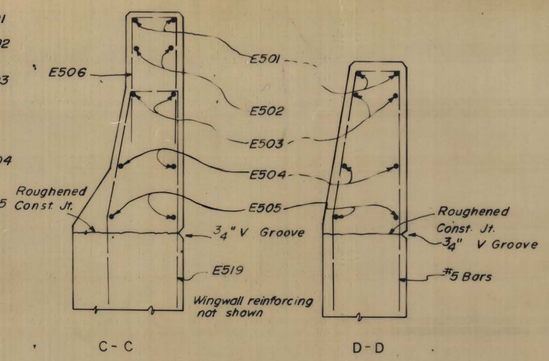
ALUMINUM BRIDGE RAILING

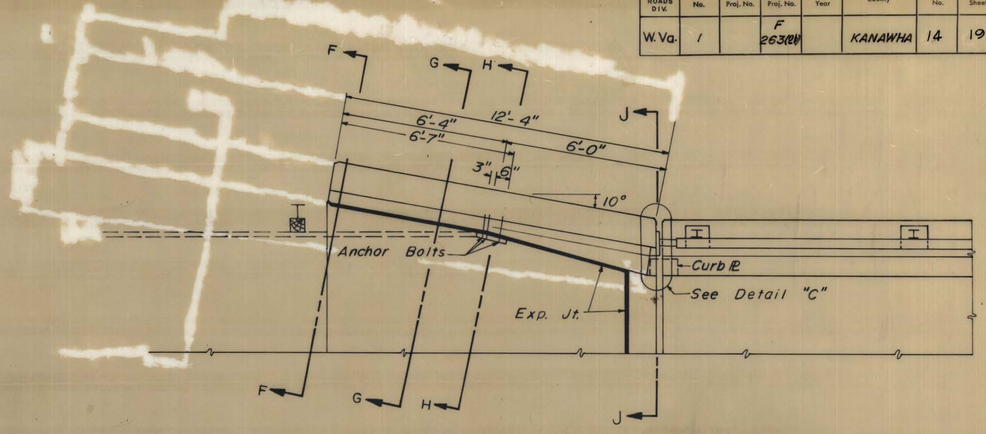
-6

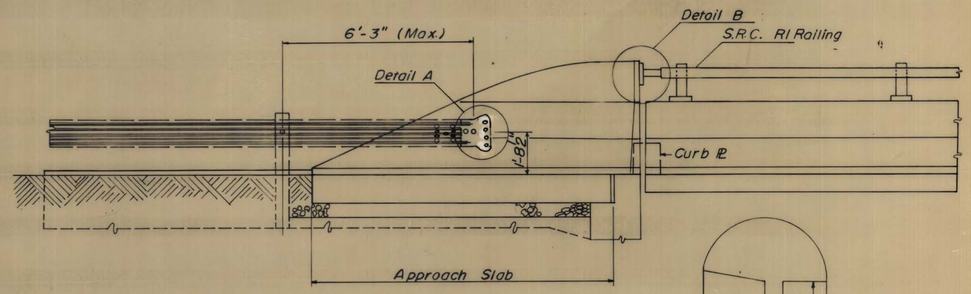
PUBLIC ROADS DIV.	Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. Va.	1		F 263(21)		KANAWHA	14	19

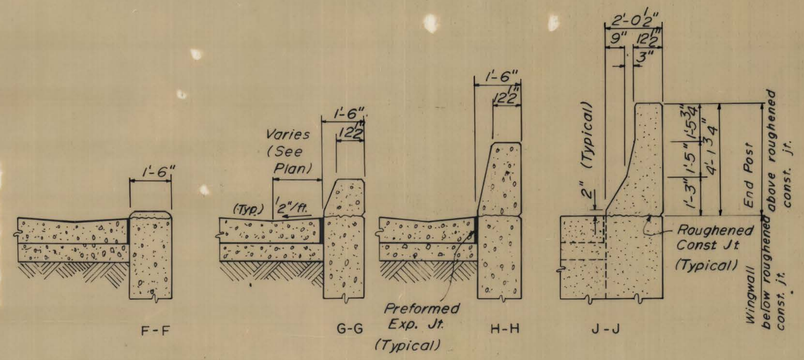


REINFORCING DETAIL

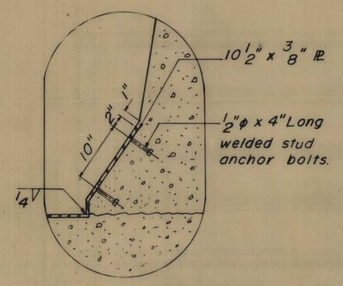




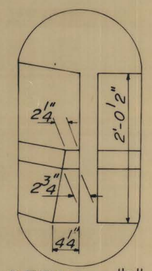




SECTIONS



CURB PLATE DETAIL



DETAIL "C"

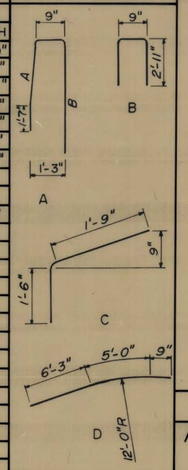
(Curb Pl. removed)

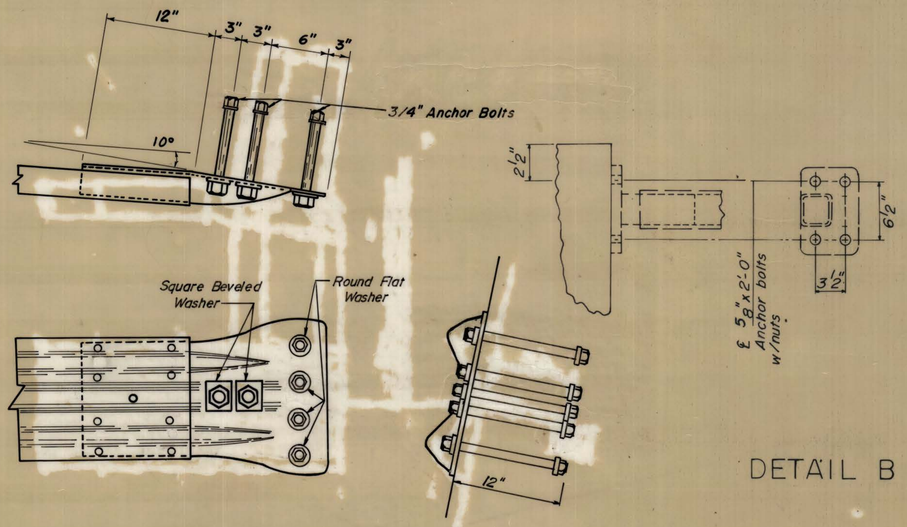
Notes:

Anchor bolts, nuts and washers shall be ASTM A307-61T Grade A, galvanized in accordance with ASTM A-153.

REINFORCING BAR LIST ONE END POST								
MARK	TYPE	SIZE	NUMBER REQ'D.	DIMENSIONS A	B	C	H	LENGTH
E501	D		2					12'-0"
E502	Str.		2					4'-9"
E503	Str.		2					6'-5"
E504	Str.		2					9'-5"
E505	Str.		2					11'-9"
E506	B		13					6'-7"
E507 thru	A		1 Each	0'-3 1/2"	2'-0 1/2"			4'-8"
			(increments of 0'-2 3/4" for A & B)					
E517				2'-7"	4'-4"			9'-3"
E518	C		2					3'-3"
E519	A		13	2'-7"	4'-7"			9'-6"

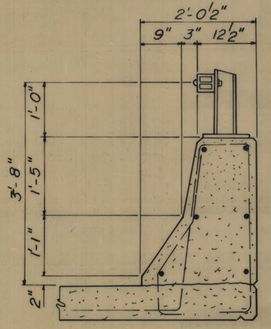
BAR BENDS





DETAIL A

DETAIL B



DETAIL OF BRIDGE PARAPET

MADE BY Rollins DATE 2-18-66
CHECKED BY S.S.C. DATE 11-67
CHECKED BY P.T.T. DATE 11-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

END POST DETAIL

HUGHES CREEK BRIDGE ON U.S. ROUTE 60 OVER HUGHES CREEK NEAR HUGHESTON KANAWHA COUNTY

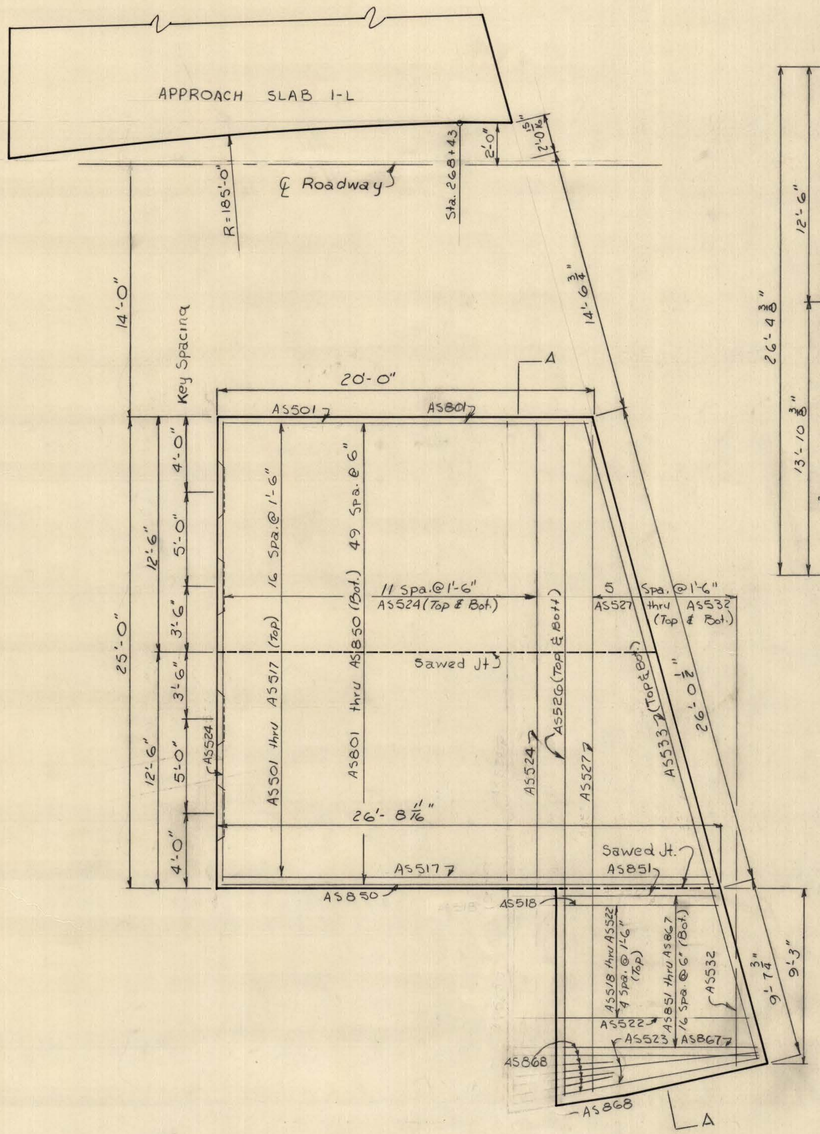
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)

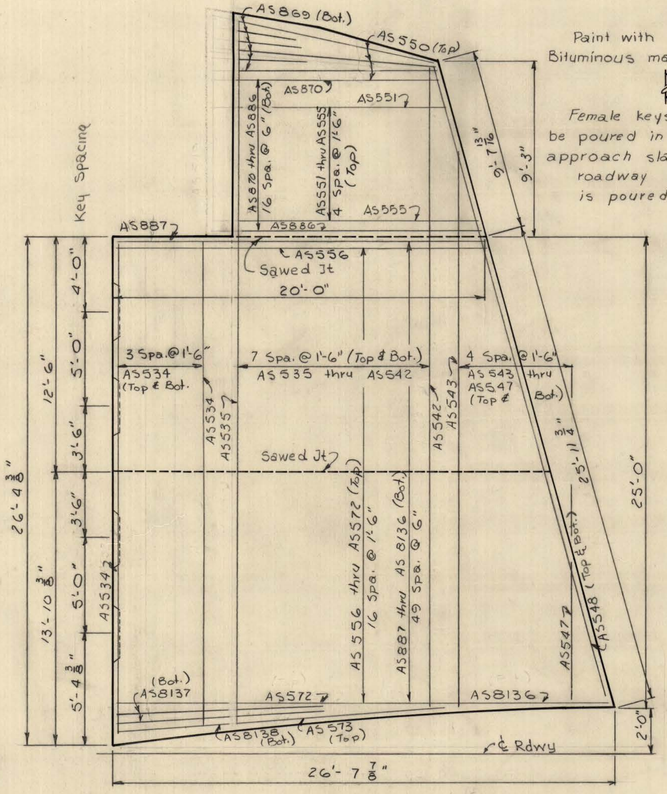
Date November 1967
Sheet 14 of 19 Sheets
No. 2631

Retraced 9-7-67 D.E.S.

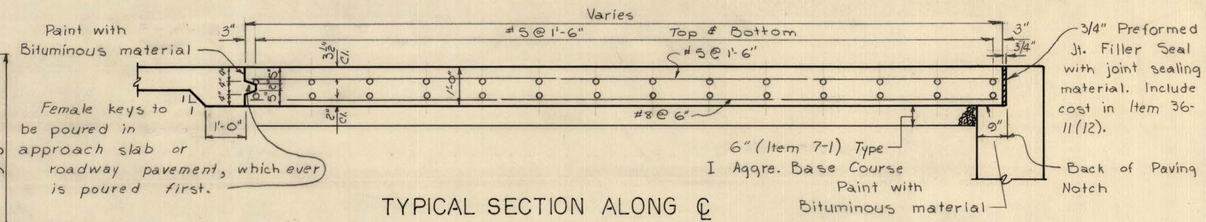
Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	15	19



APPROACH SLAB 1-R
SCALE: 1/4" = 1'-0"



APPROACH SLAB 1-L
SCALE: 1/4" = 1'-0"

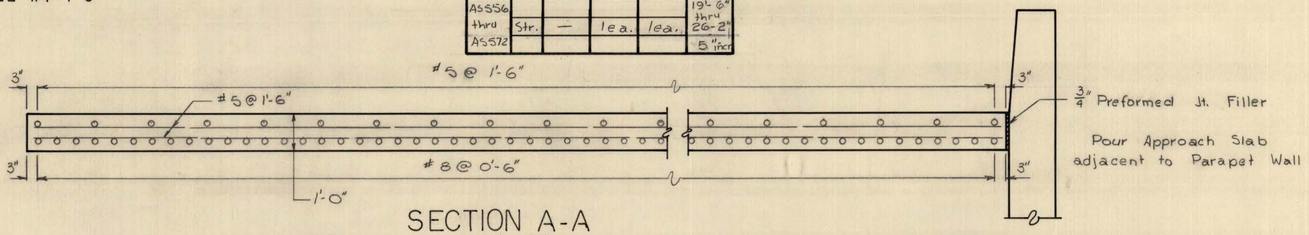


TYPICAL SECTION ALONG ℄ ROADWAY
SCALE: 1/2" = 1'-0"

MARK	TYPE	BARS REQUIRED 1-R	1-L	Total	Length
AS501 thru AS517	Str.	1 ea.	—	1 ea.	19'-6" thru 26'-2" 5" incr.
AS518 thru AS522	Str.	1 ea.	—	1 ea.	8'-3" thru 10'-3" 6" incr.
AS523	Str.	3	—	3	10'-6"
AS524	Str.	24	—	24	24'-6"
AS526	Str.	2	-	2	35'-10"
AS527 thru AS532	Str.	2 ea.	—	2 ea.	34'-9" thru 5'-7" 5'-10" decr.
AS533	Str.	2	—	2	35'-2"
AS534	Str.	—	8	8	25'-6"
AS535 thru AS542	Str.	—	2 ea.	2 ea.	37'-0" thru 34'-1" 5" decr.
AS543 thru AS547	Str.	—	2 ea.	2 ea.	29'-5" thru 7'-5" 5'-6" decr.
AS548	Str.	—	2	2	35'-0"
AS550	Str.	—	3	3	10'-8"
AS551 thru AS555	Str.	—	1 ea.	1 ea.	11'-6" thru 12'-8" 5" incr.
AS556 thru AS572	Str.	—	1 ea.	1 ea.	19'-6" thru 26'-2" 5" incr.

MARK	TYPE	BARS REQUIRED 1-R	1-L	Total	Length
AS573	Str.	—	1	1	17'-6"
AS801 thru AS850	Str.	1 ea.	—	1 ea.	19'-6" thru 26'-1 1/2" 1 5/8" incr.
AS851 thru AS867	Str.	1 ea.	—	1 ea.	8'-2" thru 10'-4" 1 5/8" incr.
AS868	Str.	6	—	6	10'-8"
AS869	Str.	—	6	6	10'-8"
AS870 thru AS886	Str.	—	1 ea.	1 ea.	10'-8" thru 12'-10" 1 5/8" incr.
AS887 thru AS8136	Str.	—	1 ea.	1 ea.	19'-6" thru 26'-1 1/2" 1 5/8" incr.
AS8137	Str.	—	2	2	11'-0"
AS8138	Str.	—	1	1	17'-6"

ESTIMATE OF QUANTITIES			
ITEM	DESCRIPTION	QTY.	UNIT
36-11(12)	PORTLAND CEMENT CONCRETE APPROACH SLAB	158	S.Y.
	REINFORCING STEEL BARS	10331	LBS.
7-1	TYPE I AGGREGATE BASE COURSE	26	C.Y.



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

Note:
For general notes and detail of key, See Sheet 16

MADE BY J.e. Brunell DATE 11/67
TRACED BY ____ DATE ____
CHECKED BY KOL DATE 12/67
CHECKED BY R.T.T. DATE 12-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

APPROACH SLAB NO. 1

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON, KANAWHA COUNTY

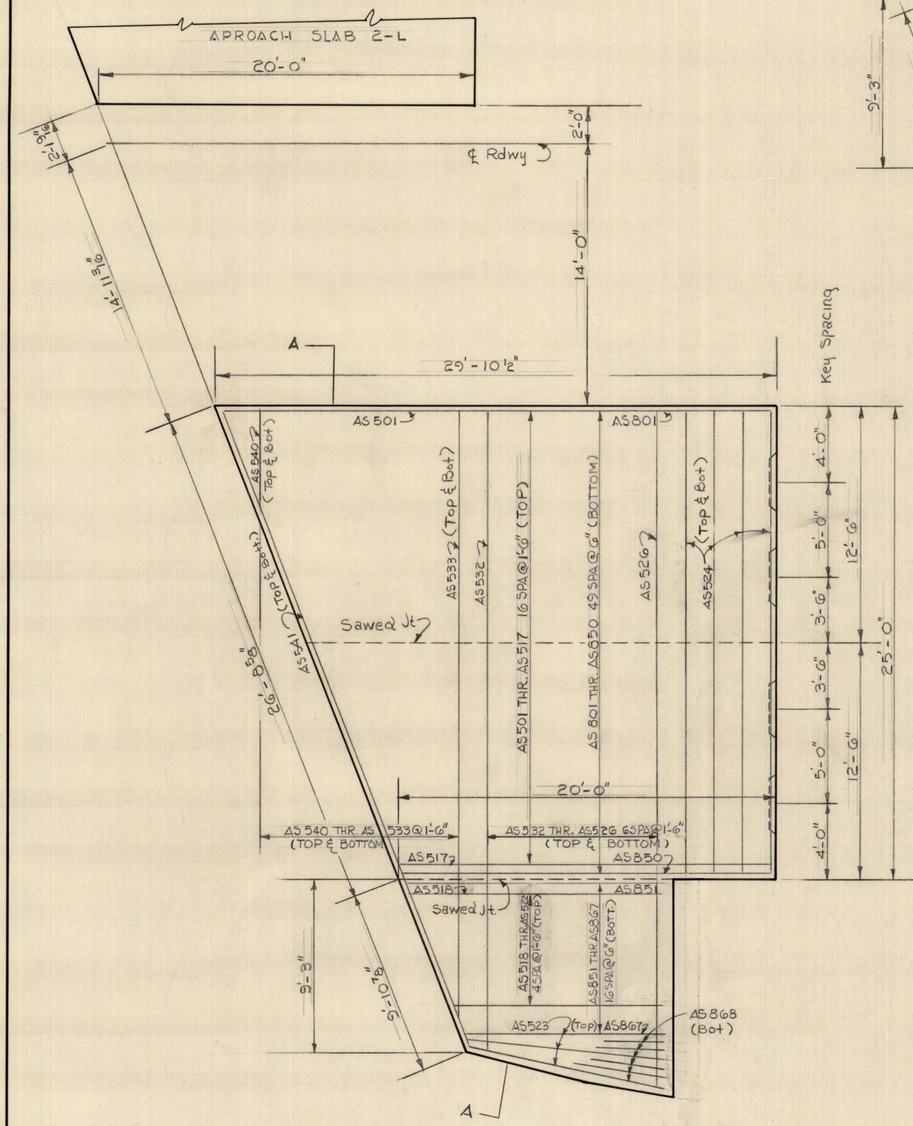
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

Scale as shown
Project F-263(21)
Date November 1967
Sheet 15 of 19 Sheets
No. 2631

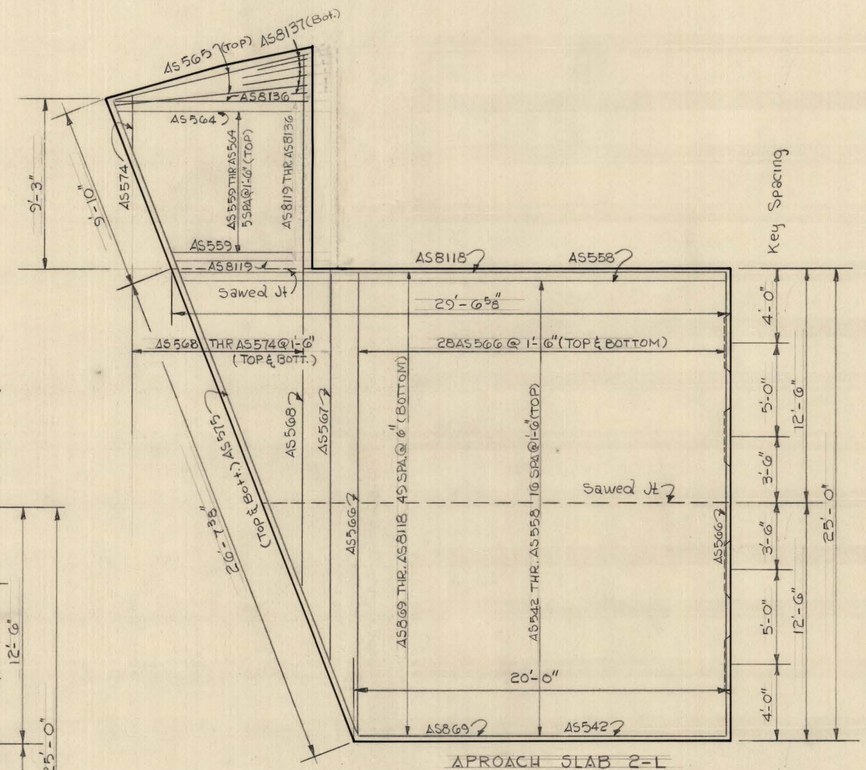
BRUNING 40 197

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	16	19

ESTIMATE OF QUANTITIES			
ITEM	DESCRIPTION	QTY.	UNIT
36-11(12)	PORTLAND CEMENT CONCRETE APPROACH SLAB	164	S.Y.
	REINFORCING STEEL BARS	10803	LBS.
7-1	TYPE 1 AGGREGATE BASE COURSE	27	C.Y.



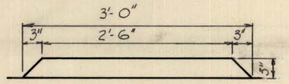
APROACH SLAB 2-R
SCALE 1/4" = 1'-0"



APROACH SLAB 2-L

MARK	TYPE	BARS REQUIRED RIGHT	LEFT	TOTAL COUNT	TOTAL LENGTH
AS501					29'-1"
thr.	Str.	1 ea.	—	1 ea.	7" decr.
AS517					19'-9"
AS518					13'-7"
thr	Str	1 ea.	—	1 ea	7" decr
AS522					11'-3"
AS523	Str	3	—	3	10'-9"
AS524	Str	8	—	8	24'-6"
AS526					35'-10"
thr	Str	2 ea.	—	2 ea.	3⅞" decr
AS532					33'-11"
AS533					32'-3½"
thr	Str	2 ea.	—	2 ea.	3'-10½" decr
AS540					5'-2"
AS541	Str	2	—	2	36'-2"
AS542					19'-6"
thr	Str	—	1 ea.	1 ea	7" incr
AS558					28'-10"
AS559					7'-3"
thr	Str	—	1 ea.	1 ea	7" incr
AS564					10'-2"
AS565	Str		2	2	10'-6"
AS566	Str	—	28	28	24'-6"

MARK	TYPE	BARS REQUIRED RIGHT	LEFT	TOTAL COUNT	TOTAL LENGTH
AS567	Str	—	2	2	20'-5"
AS568					28'-5"
thr	Str	—	2 ea.	2 ea	4'-2½" decr
AS574					3'-2"
AS575	Str	—	2	2	36'-0"
AS801					29'-2½"
thr	Str	1 ea.	—	1 ea	2⅜" decr
AS850					19'-6"
AS851					13'-5"
thr	Str	1 ea.	—	1 ea	2¼" decr
AS867					10'-9"
AS868	Str	6	—	6	10'-8"
AS869					19'-6"
thr	Str	—	1 ea	1 ea	2⅜" incr
AS8118					29'-2½"
AS8119					7'-0"
thr	Str	—	1 ea.	1 ea	2½" incr
AS8136					10'-6½"
AS8137	Str	—	6	6	10'-7"



KEY DETAIL
SCALE: 1" = 1'-0"

The approach slab shall be in accordance with Article 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 7-1, Type 1 Aggregate Base Course.

The approach slab reinforcing shall be intermediate grade billet steel in accordance with Article 3.9.1 of the Standard Specifications. Payment to be included in Item 36-11(12).

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

Curing of the approach slab to be by burlap and water in accordance with the Standard 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 Standard Specifications.

Fine aggregate for the approach slab concrete shall be silica sand.

Approach slab shall have a sawed longitudinal joint as shown on the plans. The sawed joint shall be cut to a depth of 3" and a width of ¼" with a tolerance in width of 1/16" ± and shall be filled with joint sealing material. Cost to be included in Item 36-11(12).

Approach Slab Reinforcing to be included in Reinforcing Steel Bars, Sheet 16 of 18.

MADE BY J.E. Brunell DATE 11/67
TRACED BY ____ DATE ____
CHECKED BY K.O.L. DATE 12/67
CHECKED BY P.T.T. DATE 12-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

APPROACH SLAB NO. 2

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown
Project F-263(21)
Date November 1967
Sheet 16 of 19 Sheets
No. 2631

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263(21)		KANAWHA	17	19

BILL OF REINFORCING STEEL BARS

	MARK	TYPE	NO. REQUIRED Abut. 1	Abut. 2	TOTAL	LENGTH EACH	DIMENSIONS A	B	C	D	E	R
ABUTMENTS	A501	A	4	6	10	11'-3"	9'-0"	1'-7"	0'-8"			
	A502		7	7	14	11'-9"	9'-6"	1'-7"	0'-8"			
	A503		7	7	14	12'-4"	10'-1"	1'-7"	0'-8"			
	A504		7	7	14	12'-10"	10'-7"	1'-7"	0'-8"			
	A505		7	7	14	13'-5"	11'-2"	1'-7"	0'-8"			
	A506		25	25	50	14'-1"	11'-10"	1'-7"	0'-8"			
	A507		7	7	14	14'-7"	12'-4"	1'-7"	0'-8"			
	A508		7	7	14	15'-1"	12'-10"	1'-7"	0'-8"			
	A509		7	7	14	15'-7"	13'-4"	1'-7"	0'-8"			
	A510		7	7	14	16'-2"	13'-11"	1'-7"	0'-8"			
	A511	A	5	5	10	16'-8"	14'-5"	1'-7"	0'-8"			
	A512	STR	56	56	112	24'-0"						
	A513		30	—	30	24'-0"						
	A514		3	—	3	22'-7"						
	A515		3	—	3	28'-3"						
	A516		3	—	3	21'-3"						
	A517		9	—	9	14'-3"						
	A518		3	—	3	33'-0"						
	A519		3	—	3	26'-0"						
	A520		3	—	3	19'-0"						
	A521		3	—	3	12'-0"						
	A522	STR	3	—	3	5'-0"						
	A523	B	7	7	14	7'-0"	1'-11"	3'-2"				
	A524		7	7	14	8'-2"	2'-6"	3'-2"				
	A525		7	7	14	9'-2"	3'-0"	3'-2"				
	A526		7	7	14	10'-2"	3'-6"	3'-2"				
	A527		25	25	50	11'-8"	4'-3"	3'-2"				
	A528		7	7	14	12'-8"	4'-9"	3'-2"				
	A529		7	7	14	13'-8"	5'-3"	3'-2"				
	A530		7	7	14	14'-8"	5'-9"	3'-2"				
	A531		7	7	14	15'-10"	6'-4"	3'-2"				
	A532	B	5	5	10	16'-10"	6'-10"	3'-2"				
	A533	D	92	94	186	10'-11"	3'-6"	3'-3"	2'-6"	1'-8"		
	A534	B	92	94	186	8'-4"	1'-8"	5'-0"				
	A535	STR	36	36	72	24'-0"						
	A536	E	14	—	14	5'-1"	3'-6"	1'-7"				
	A537	F	7	—	7	3'-7"	2'-0"	1'-7"				
	A538	G	7	7	14	4'-9"	1'-7"	1'-7"	1'-7"			
	A539	STR	—	3	3	5'-6"						
	A540		—	3	3	12'-6"						
	A541		—	3	3	19'-6"						
	A542		—	3	3	26'-6"						
	A543		—	3	3	33'-6"						
	A544		—	3	3	28'-8"						
	A545		—	3	3	12'-3"						
	A546		—	3	3	19'-3"						
	A547		—	3	3	26'-3"						
	A548		—	3	3	33'-3"						
	A549	STR	—	27	27	24'-10"						
	A550	F	—	7	7	3'-7"	2'-0"	1'-7"				
	A551	E	—	14	14	5'-1"	3'-6"	1'-7"				
	A601	C	88	90	178	9'-3"	7'-10"	1'-5"				
WINGWALLS	W501	STR	22	24	46	12'-0"						
	W502		2	2	4	10'-1"						
	W503		2	—	2	8'-2"						
	W504		2	—	2	4'-10"						
	W505		2	—	2	5'-4"						
	W506		2	—	2	5'-10"						
	W507		2	—	2	6'-4"						
	W508		9	—	9	6'-10"						
	W509	STR	16	16	32	9'-8"						
	W510	B	32	32	64	8'-1"	2'-6½"	3'-0"				
	W511	H	4	4	8	6'-1"	1'-7"	4'-6"				
	W512	STR	2	2	4	11'-7"						
	W513	STR	2	—	2	9'-5"						
	W514	STR	12	8	20	8'-0"						
	W515	STR	18	18	36	3'-2"						
	W516		NOT	USED								

	MARK	TYPE	NO. REQUIRED Abut. 1	Abut. 2	TOTAL	LENGTH EACH	DIMENSIONS A	B	C	D	E	R
WINGWALLS	W517	STR	9	—	9	12'-3"						
	W518		—	2	2	9'-6"						
	W519		—	1	1	6'-10"						
	W520		—	1	1	7'-3"						
	W521		—	1	1	7'-9"						
	W522		—	1	1	8'-3"						
	W523		—	9	9	12'-2"						
	W524		—	2	2	11'-6"						
	W525		—	9	9	6'-9"						
	W526		—	1	1	6'-1"						
	W527		—	1	1	5'-7"						
	W528		—	1	1	5'-1"						
	W529		—	1	1	4'-7"						
	W530	STR	—	2	2	8'-3"						
	W701					4'-10"						
	thru	STR	2 ea.	—	2ea.	thru	(4" incr.)					
	W706					6'-6"						
	W707	STR	13	—	13	6'-10"						
	W708	STR	13	—	13	12'-3"						
	W709					6'-10"						
	thru	STR	—	1 ea.	1 ea.	thru	(4" incr.)					
	W714					8'-6"						
	W715	STR	—	13	13	12'-2"						
	W716	STR	—	13	13	6'-9"						
	W717					6'-3"						
	thru	STR	—	1 ea.	1 ea.	thru	(4" decr.)					
	W721					4'-11"						
	W722	STR	—	1	1	4'-7"						
	W723	STR	26	26	52	4'-6"						
SLAB			Slab 1	Slab 2								
	S401	STR	324	324	648	36'-1"						
ROADWAY	S501	L	179	179	358	23'-6"	5"	4 1/4"	23'-0"			
	S502	STR	537	537	1074	23'-0"						
	S503	M	117	117	234	11'-7"	10"	7'-4"	10"	1'-7"		
	S504	J	105	105	210	9'-6"	1'-0"	3'-0"	8"	3'-0"	1'-11"	
	S505	STR	42	42	84	14'-9"						
	S506	K	98	98	196	4'-2"	1'-3"	1'-3"	8"	1'-0"		
	S507					6'-1"						
	thru	STR	4 ea.	—	4 ea.	thru	(1'-8" incr.)					
	S529					42'-9"						
	S530					5'-8"						
	thru	STR	—	4 ea.	4 ea.	thru	(1'-7" incr.)					
	S554					43'-8"						
	S601	STR	24	24	48	24'-0"						

MARK	TYPE	NO. REQUIRED	TOTAL	LENGTH EACH	DIMENSIONS A	B	C	D	E	R

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 TONS OR FRACTION THEREOF FOR EACH EXTRA SHIPMENT.

IN THE EVENT THAT ANY SHIPMENT OF MATERIAL HAS BEEN PRE-TESTED AND HAS BEEN IDENTIFIED IN ACCORDANCE WITH MATERIAL CONTROL, SOIL AND TESTING DIVISION'S INFORMATIONAL MEMORANDUM #17 (IM-17), THE SHIPMENT MAY BE ACCEPTED WITHOUT FURTHER TESTING SUBJECT TO RECORD SAMPLING PROCEDURES.

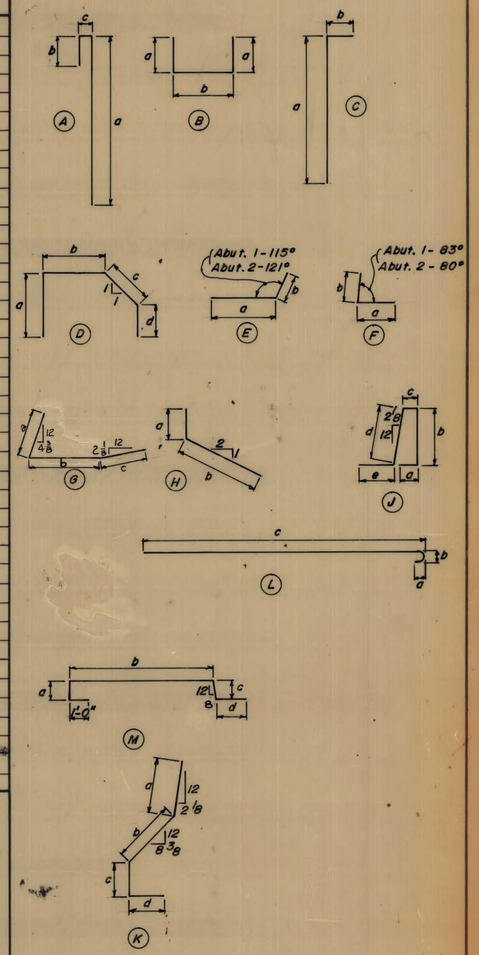
REPLACEMENT BARS

MARK	TYPE	NO. REQUIRED Sub	Super	WEIGHT UNIT	TOTAL	LENGTH UNIT	TOTAL
R.E. 4	STR.	—	1	.668	5.010	7'-6	7'-6
R.E. 5	STR.	2	3	1.043	34.072	8'-2	40'-10
R.E. 6	STR.	1	1	1.502	26.286	8'-9	17'-6
R.E. 7	STR.	1	—	2.044	10.248	9'-5	9'-5
R.E. 8	STR.	—	—				
R.E. 9	STR.	—	—				
R.E. 10	STR.	—	—				
R.E. 11	STR.	—	—				
TOTALS							

MADE BY J.E. Brunell DATE 12/6/67
CHECKED BY R.T.T. DATE 12-67
CHECKED BY J.E. Brunell DATE 12-27-67

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

BAR BENDING DIAGRAM



NOTES
1. FIGURES IN CIRCLES SHOW BAR TYPES.
2. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
3. RADIUS DIMENSION R IS TO OUTSIDE OF BAR.
4. NO CORRECTION IN LENGTH FOR BEND CURVATURE IS TO BE MADE.
5. FOR STANDARD HOOK DIMENSIONS, SEE A.C.I. MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES (A.C.I. COMMITTEES 315).
6. ALL BARS ARE TO BE LAPPED A MINIMUM OF 30 DIAM.

REINFORCING STEEL BARS

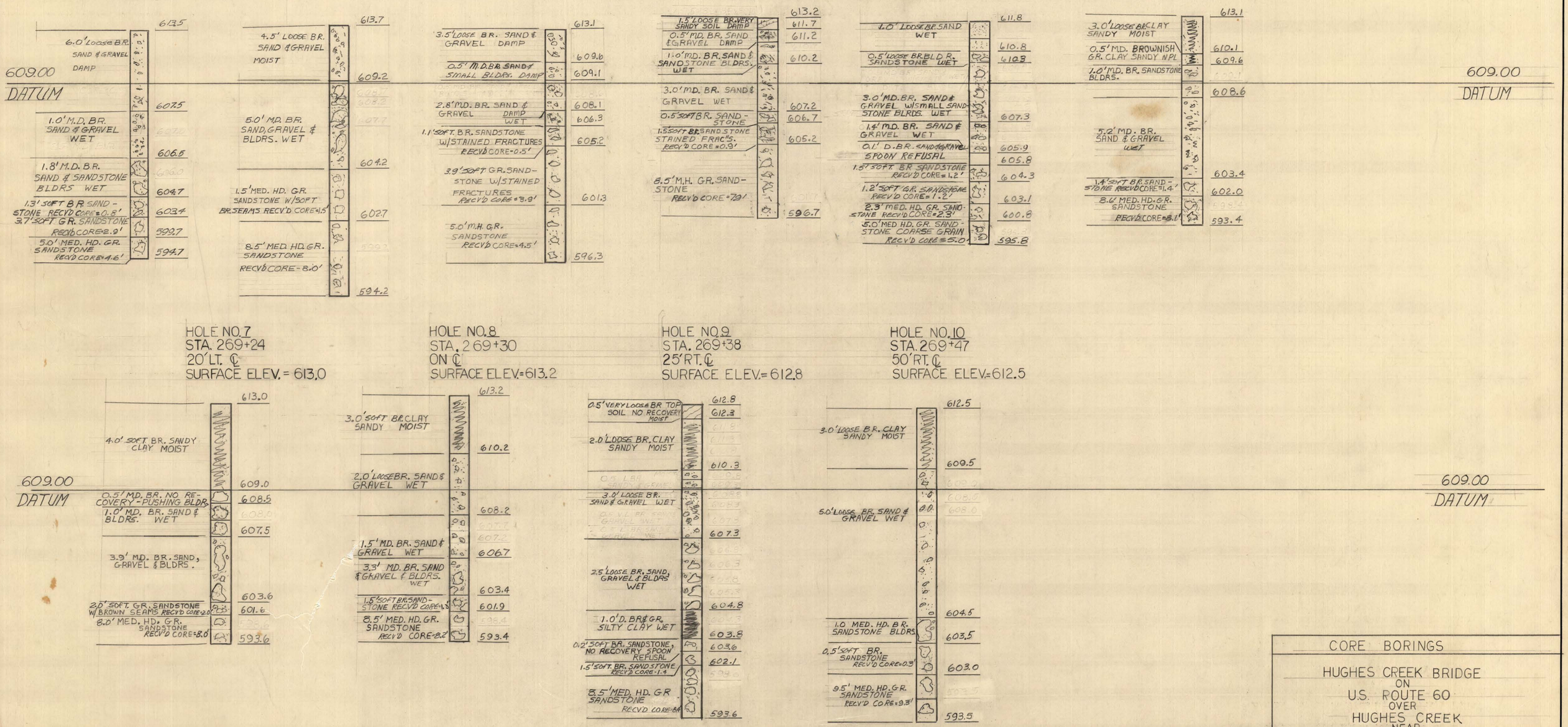
HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown
Project F-263(21)

Date November 1967
Sheet 17 of 19 Sheets
No. 2631

Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1	263	F 263 (21)		KANAWHA	18	19



MADE BY LG	DATE 10-66		
TRACED BY LG	DATE 10-66		
CHECKED BY DLS	DATE 12-66		
CHECKED BY S.S.C.	DATE 11-67		

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

CORE BORINGS

HUGHES CREEK BRIDGE
ON
U.S. ROUTE 60
OVER
HUGHES CREEK
NEAR
HUGHESTON KANAWHA COUNTY

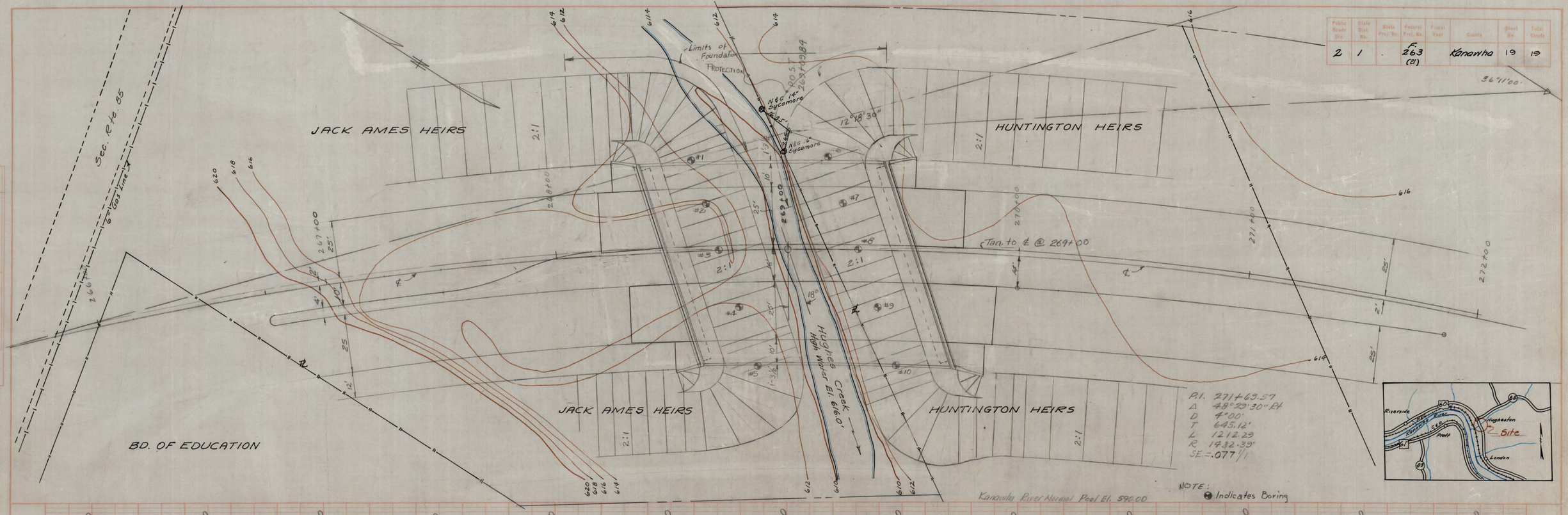
DESIGNED BY
THE STATE ROAD COMMISSION
CHARLESTON, W. VA.

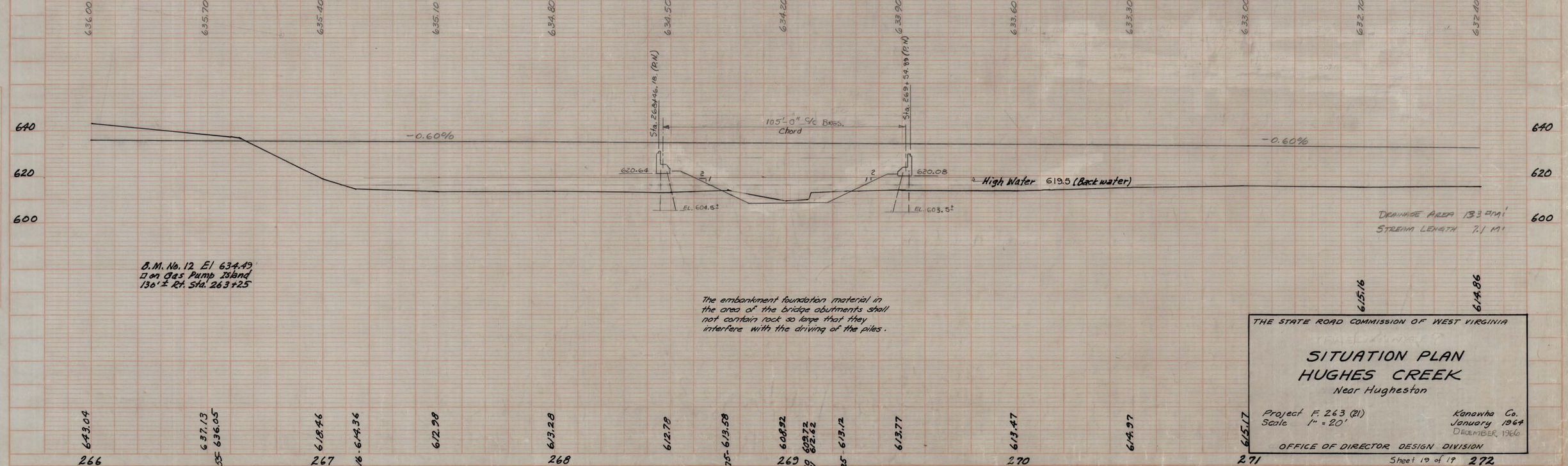
Scale as shown
Project F-263(21)

Date December, 1966
Sheet 18 of 20 Sheets
No. 2631

BRUNING 40 197 —

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
2	1	.	F 263 (21)		Kanawha	19	19





THE STATE ROAD COMMISSION OF WEST VIRGINIA

SITUATION PLAN
HUGHES CREEK
Near Hugheston

Project F. 263 (21) Kanawha Co.
Scale 1" = 20' January 1964
DECEMBER 1966

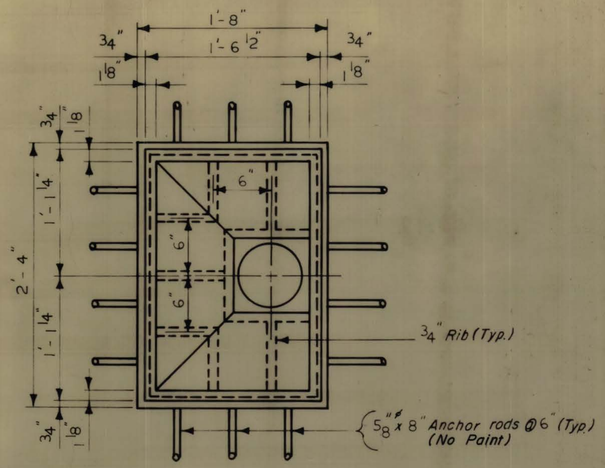
OFFICE OF DIRECTOR DESIGN DIVISION

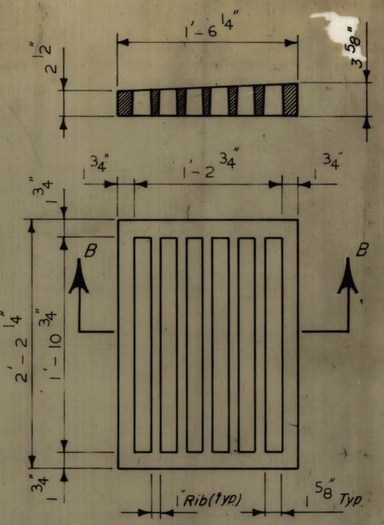
Sheet 19 of 19

1511

#2631

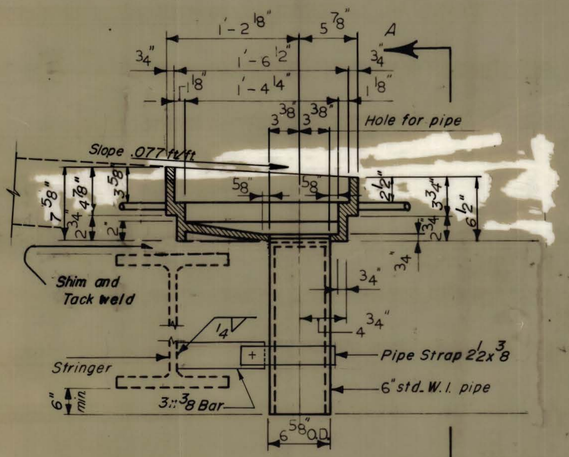
Public Roads Div.	State Dist. No.	State Proj. No.	Fed. Aid Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	1		F 263 (21)		KANAWHA	12-A	20





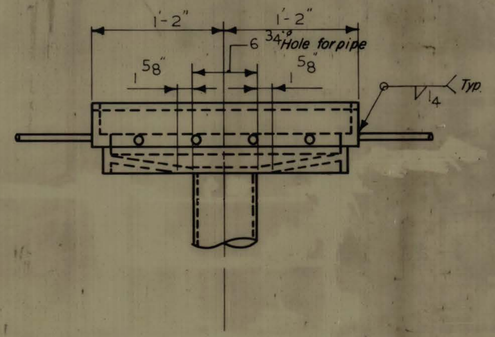
GRATING

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



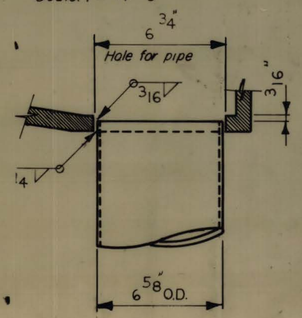
SCUPPER TYPE A

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



SECTION A-A

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



WELD DETAIL

Scale: 3" = 1'-0"

NOTES:

All drain pipe shall be 6" std. wrought iron.
All couplings and caps to be grooved type.
Material for scupper supports and pipe supports shall be structural carbon steel.
All frames and grating to be cast steel in accordance with A.S.T.M. A27 grade 65-35, malleable iron A.S.T.M. A47-61, grade 35018, or nodular iron, A.S.T.M. A536, grade 65-45-12

All W.I. pipe, gratings, frames, straps and anchor rods to be included in the lump sum bid for Item 90, Steel Superstructure.
For steel work General Notes see sheet 2 of 19.

Shims shall extend continuously over entire surface of supporting steel directly under scupper.
Pipe shall be welded to casting before concrete is poured.

MADE BY R. Eble DATE 10-65
CHECKED BY Rollins DATE 12-8-65
CHECKED ..... DATE .....

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

SCUPPER

HUGHES CREEK BRIDGE ON U.S. ROUTE 60
OVER HUGHES CREEK NEAR
HUGHESTON KANAWHA COUNTY

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

Scale as shown
Project F-263(21)
Date MARCH 1968
Sheet 12-A of 20 Sheets
No. 2631