

GENERAL NOTES:

11. All structural steel plates shall conform to ASTM A709, Grade 50, unless otherwise noted.
12. For new stiffeners, all angles shall conform to ASTM A36, Grade 36, unless otherwise noted.
13. For new stiffeners, a "Bolt" callout requires the bearing end to have at least 75% contact with the flanges.
14. For new stiffeners, a "Tight Fit" callout is defined as allowing a gap of up to 2mm (1/64") between the stiffener and the flange.

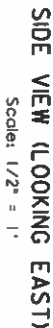
Corroded area



ARLINGTON, VA
STRUCTURAL ENGINEER

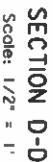
Scale: As shown

		COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION	
		STRUCTURE AND BRIDGE DIVISION	
		CBRT NB NORTH CHANNEL BRIDGE REPAIRS REPAIR TYPE I - I	
No.	Description	Date	
Revisions			
Designed: NSA		Date	
Drawn: NSA			
Checked: NSA		June 2022	
		Print No.	Sheet No.
			1 of 4



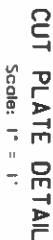
PROPOSED REPAIRS AT TRUSS SPAN NORTH
CHANNEL BRIDGE (SPAN 9) STRINGER 1 AT
FLOORBEAM 3' (STRINGER 5 SIMILAR)

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



NOTE:

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



- Field drilled holes in plates
- Shop drilled holes in plates

1. Clean with hand tools and power tools, grind out, fill with epoxy putty, smooth to match the adjacent surface, and point hole in floorbeam web at Spon 17 - Floorbeam 6 - Stringer 4. The location shall be monitored during future biennial inspections for any change in condition.
2. Fit with cleared section loss in floorbeam web shall be fitted with $1/2$ " fill plate. Gaps between the fill plate and web shall be filled with epoxy putty and smoothed to match adjacent surface.

3. Stiffening splice plates shall be tight fit at the top flanges.
4. Contractor may shop drill plates 1 and 3 if match drilled with plates 5 and 4, respectively.
5. Horizontal positions of plates 1 to 5, may need to be shifted to accommodate as-built position of stiffeners.

QUANTITY		
REPAIR TYPE 1 - SPAN 9	2	EA
REPAIR TYPE 1 - SPAN 17	1	EA

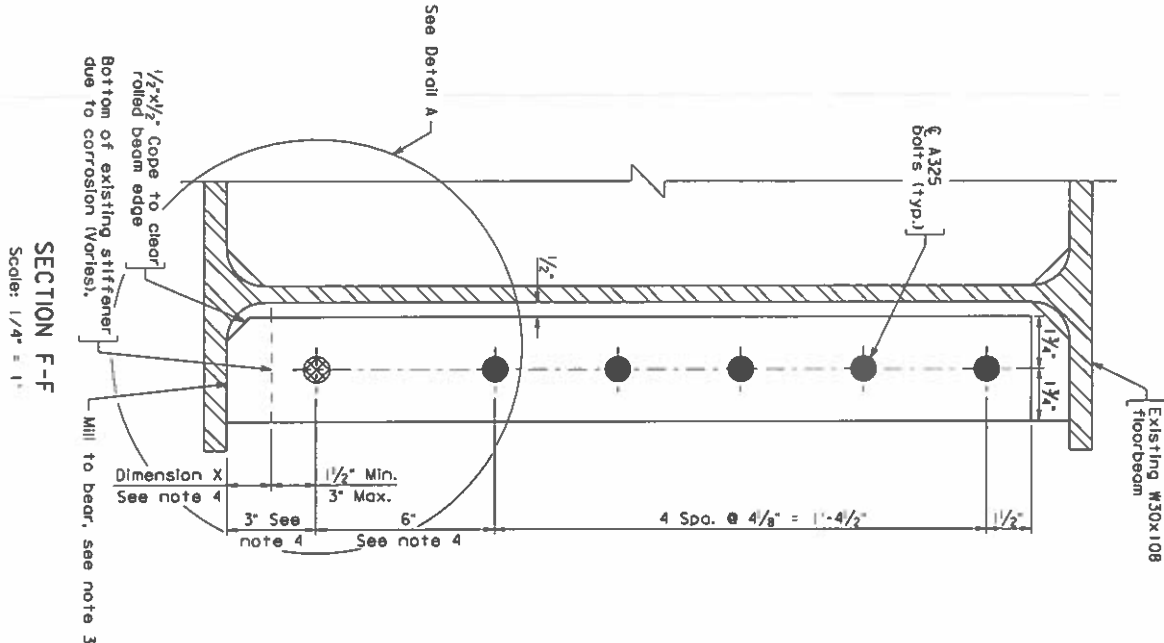
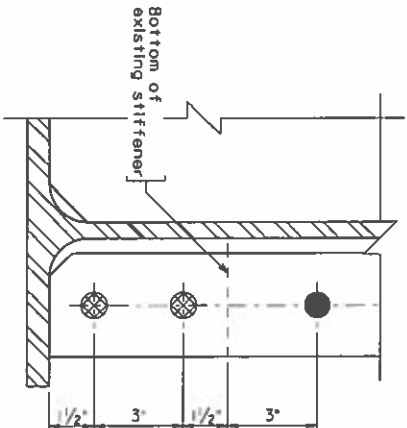
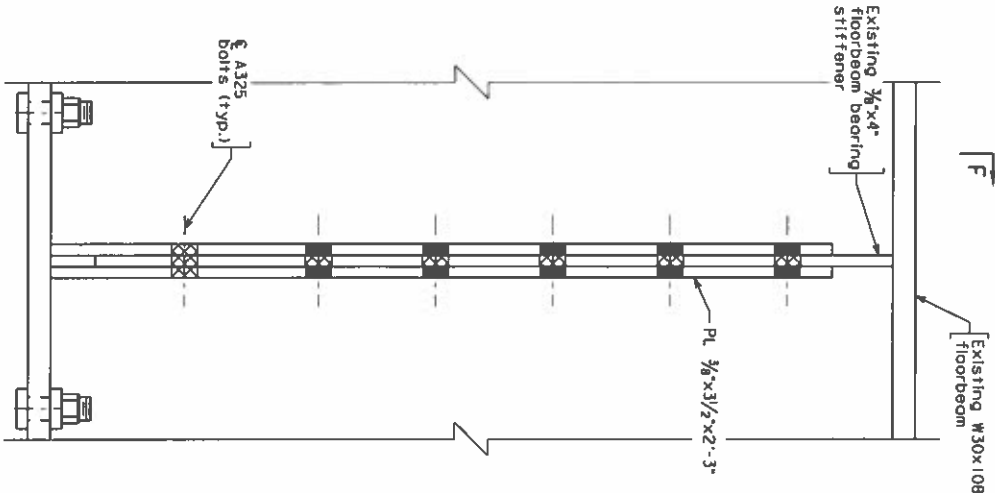
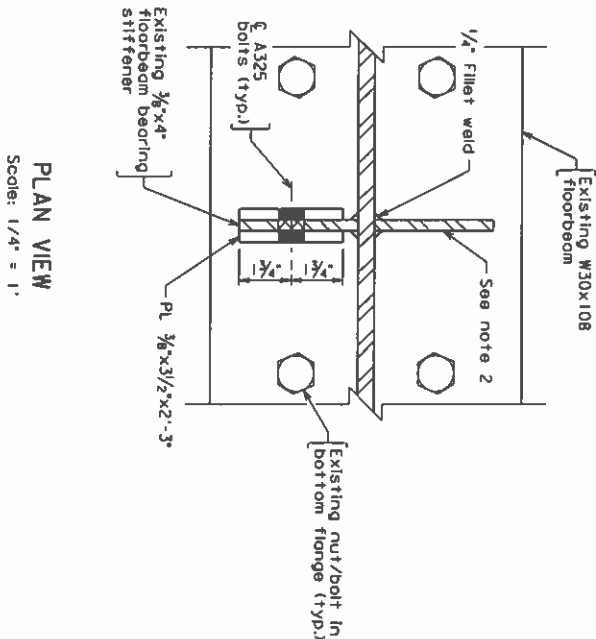
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
CBBT NB NORTH CHANNEL BRIDGE REPAIRS REPAIR TYPE I - II			
No.	Description	Date	
Revisions			
Designed: MSE	Date	Plan No.	Sheet No.
Drawn: WPC	June 2022		2 OF 4
Checked: WPC			

STATE	SHEET NO.
VA.	3

REPAIR LOCATION			
SPAN	FLOODREAM	QUADRANT	
1	4	SW	
2	8	SW	
2	9	SW	
2	10	SW	
3	3	SW	
3	9	SW	
5	8	NW	
8	1	SW	
8	6	NW	
11	7	NW	
11	7	SW	
11	8	SE	
11	8	SW	
12	2	SE	
12	10	NE	
13	1	SW	
13	2	NW	
13	2	SW	
14	4	NE	
14	4	SE	
14	5	SW	
14	6	SW	
14	8	SW	
15	1	NW	
15	2	SW	
15	3	NW	
15	3	SW	
15	4	NW	
15	8	NW	
15	9	NW	
15	9	SW	
15	10	SW	
16	2	NW	
16	2	SW	
16	4	SW	
16	5	SW	
16	6	SW	
16	7	SW	
16	8	SW	
16	9	NW	
16	9	SW	
16	10	SW	
17	1	NW	
17	1	SW	
17	2	NW	
17	2	SW	
17	3	SW	
17	4	NW	
17	4	SW	
17	5	NE	
17	5	SW	
17	6	NW	
17	7	NW	
17	8	SW	

QUANTITY
REPAIR TYPE 2 54 EA

NOTE: Quantity includes 54 bearing repairs listed in the table and detailed as shown. Payment will be made at the Contract unit price per each which payment will include the fabricated plates with proper fit, bolts, nuts, washers, field drilling, epoxy filler, oil surface preparation including hand and power tool cleaning and grinding of corroded surfaces, soft removal, painting, galvanizing, galvanizing repair, bolting, traffic control, access, safety, equipment, and incidentals needed to complete the work.



LEGEND:

- Field drilled holes in plates
- Shop drilled holes in plates

GENERAL NOTES:

1. Match drill opposing splice plates in the shop.
2. Back to back repair condition will exist. Refer to table.
3. Restore mill to bear contact due to corrosion of existing bearing stiffener.
4. When Dimension X is $1\frac{1}{2}$ " or less, use single field drilled hole as shown. When Dimension X is $1\frac{1}{2}$ " and 6", cut out existing stiffener to a height of 6", above the top of bottom flange, grind fillet weld flush with web, add $\frac{3}{8}$ "x4"x6" fill plate with a 1"x1" cope to clear rolled beam edge, and use two drilled holes as shown in Detail A. The fill plate need not be welded to the web.

SEQUENCE NOTES:

- A. Clean and grind corroded areas as required. As part of cleaning and preparing the top of the bottom flange, up to $\frac{1}{8}$ section loss for the bottom flange is acceptable. For bottom flange section loss greater than $\frac{1}{8}$, the contractor shall notify the owner prior to proceeding with the repair. Determine if Section F or Detail A is necessary.
- B. Achieve mill to bear condition for the first splice plate and temporarily clamp it in place. Ensure alignment of the clamped position will provide proper edge distance ($1\frac{1}{2}$) for the field drilled holes. Using the shop drilled holes as a template, field drill splices for the floorbeam stiffener. Achieve a mill to bear condition for the second splice plate. The second splice plate shall be drilled to match the first splice plate. Insert field plate if required. Holes shall be filled with a field stiffener splice plate to match existing surface. Temporarily clamp the second stiffener splice plate in place and field drill the bottom most one or two bolt holes as determined in the field.
- C. Remove the temporarily clamped splice plates. Clean the galvanized splice/fill plates and clean the entire existing steel area to be plated. Paint any bare steel using the three coat system. Repair any damages to galvanized surfaces.
- D. Bolt the splice/fill plates to both sides of the floorbeam stiffener and remove clamps.

JACOBS
ARLINGTON, VA
STRUCTURAL ENGINEER

Score: As shown

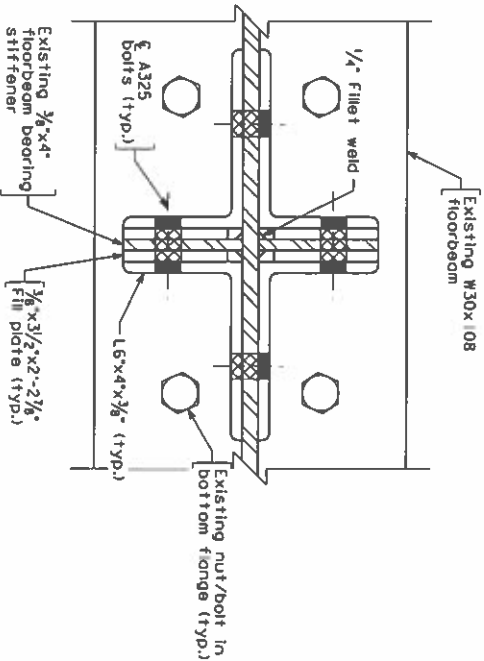
REPAIR LOCATION		
SPAN	FLOORBEAM	QUADRANT
1	3	NE
1	3	SE
4	2	NE
4	2	SE
4	3	NE
4	7	SE
8	7	NE
10	2	NE
10	2	SE
11	2	NE
11	2	SE

QUANTITY		
REPAIR TYPE	3	7 EA

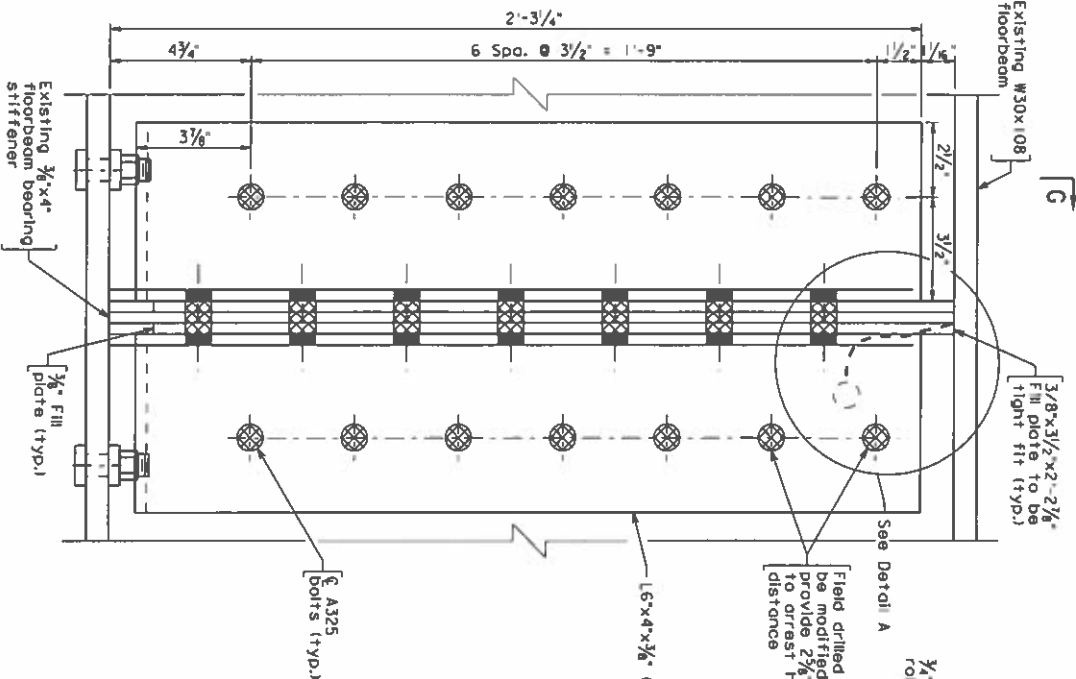
NOTE:
Quantity includes 7 bearing stiffener repairs at the 11 locations listed in the table and detailed as shown. Payment will be made at the contract unit price per each which payment will include the fabricated plates and angles with proper fit, bolts, nuts, washers, field drilling, surface preparation, grinding, and power tool cleaning and grinding of corroded surfaces. Payment will also include the cost of non-destructive testing, field grinding, bolting, painting, galvanizing, repair, traffic control, access, safety, and mobilization including all labor, tools, materials, equipment, and incidentals needed to complete the work.

SEQUENCE NOTES:

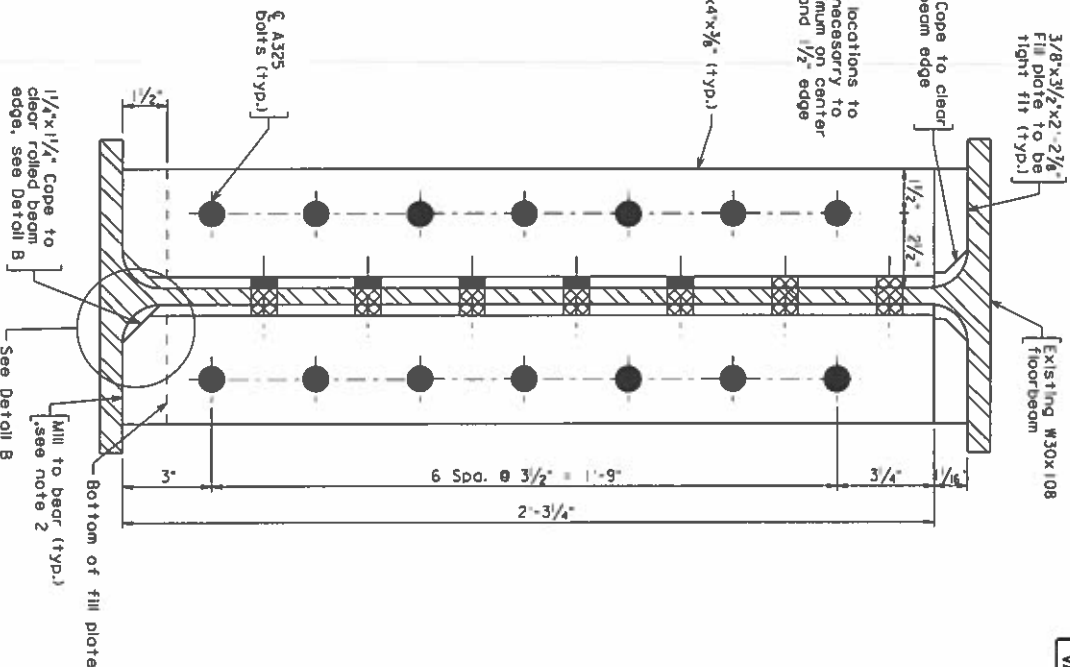
- Near top flange, locate fillet weld crack along bearing stiffener and grind out affected weld flush to base metal. Base metal shall not be removed during grinding. Check weld area with dye penetrant or magnetic particle testing to ensure the crack has been removed. All ground out weld areas are to be the same length on both sides of the stiffener.
- If the crack has propagated into the base metal, locate the ends of the crack(s) using some non-destructive testing methods and arrest the crack tip as shown in Detail A. Clean and grind corroded areas as required.
- Achieve tight fit condition for two opposing fill plates and mill to bear condition for the first angle and temporarily clamp all in place. Ensure alignment of the clamped shop drilled holes as a template, field drill through the fill plates and the floorbeam web. Achieve a mill to bear condition for the second angle on this same side of the floorbeam web. Also align with the field drilled holes in the fill plate. Repeat process for the opposite side of the floorbeam web. With all four angles clamped in place and using the shop drilled holes as a template, field drill through the floorbeam web and the opposite side angle.
- Remove the temporarily clamped angles and fill plates. Clean the galvanized steel elements and clean the entire existing steel area to be plated. Paint any bare steel surfaces.
- Bolt the angles and fill plates to both sides of the floorbeam stiffener and remove clamps.



PLAN VIEW
Scale: 1/4" = 1'

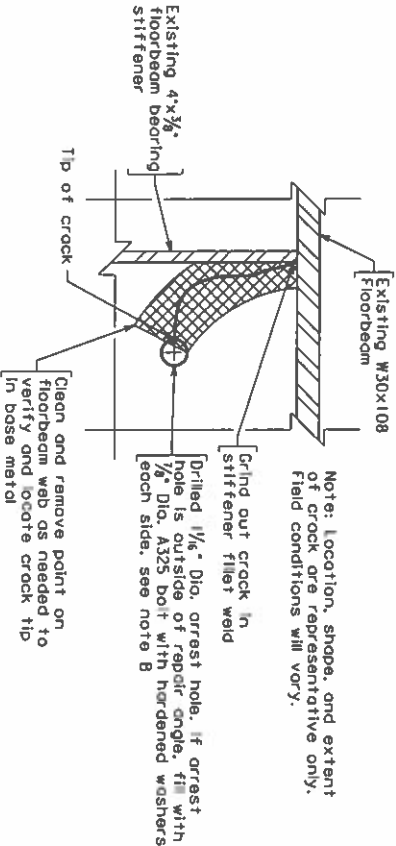


ELEVATION
Scale: 1/4" = 1'

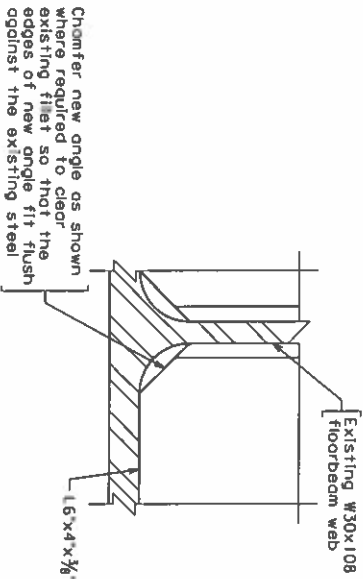


SECTION G-G
Scale: 1/4" = 1'

FLOORBEAM BEARING STIFFENER REPAIR OVER LONGITUDINAL GIRDERS



DETAIL A
Scale: 1/4" = 1'



DETAIL B
Scale: 3/16" = 1'

LEGEND:

- Field drilled holes in plates
- Shop drilled holes in plates

GENERAL NOTES:

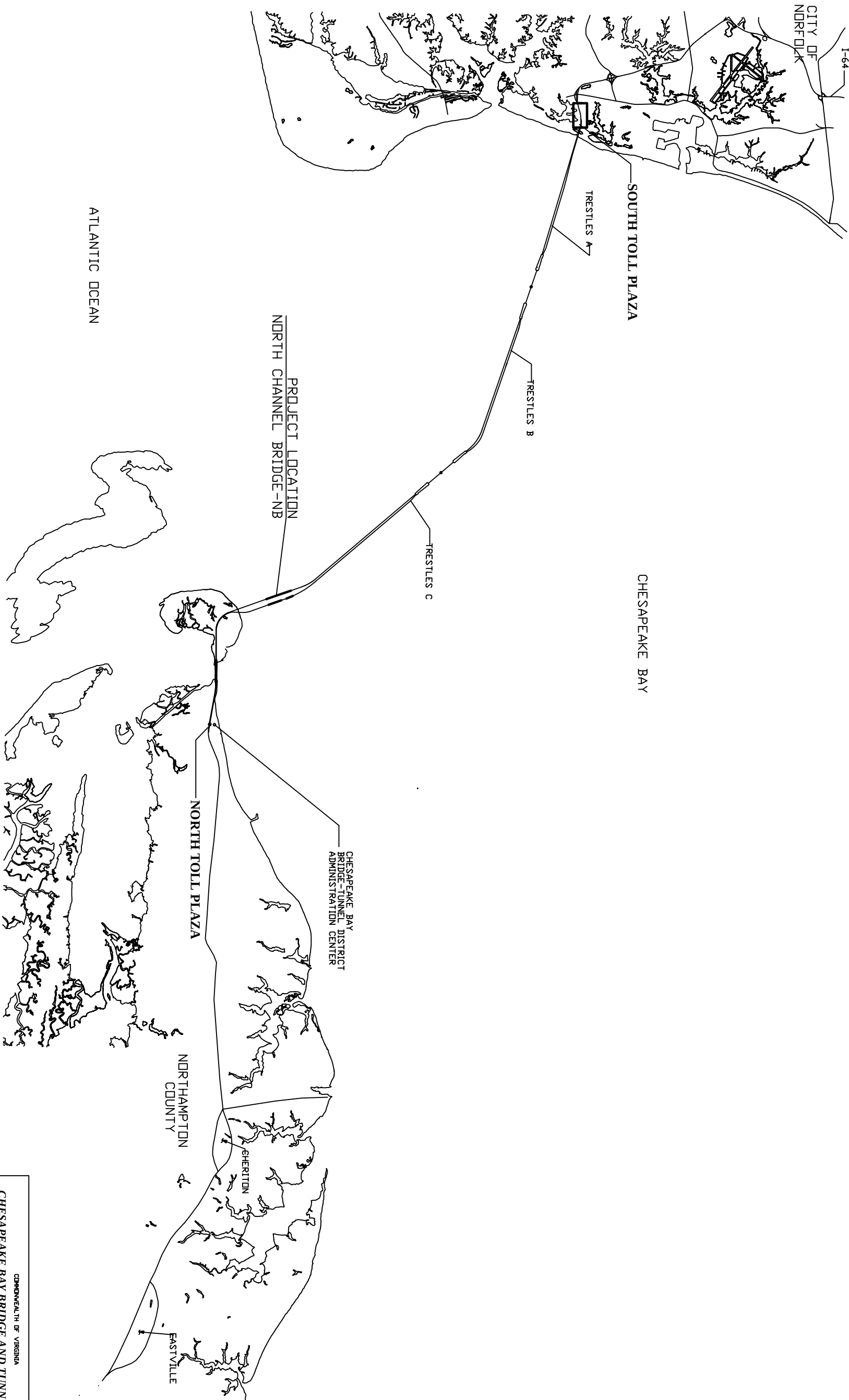
- Match drill opposing angle legs in the shop.
- Angles shall be mill to bear at the bottom flange connection.
- Fill plates shall be tight fit at the top flange.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION
**CBBT NB NORTH CHANNEL
BRIDGE REPAIRS
REPAIR TYPE 3 - 1**

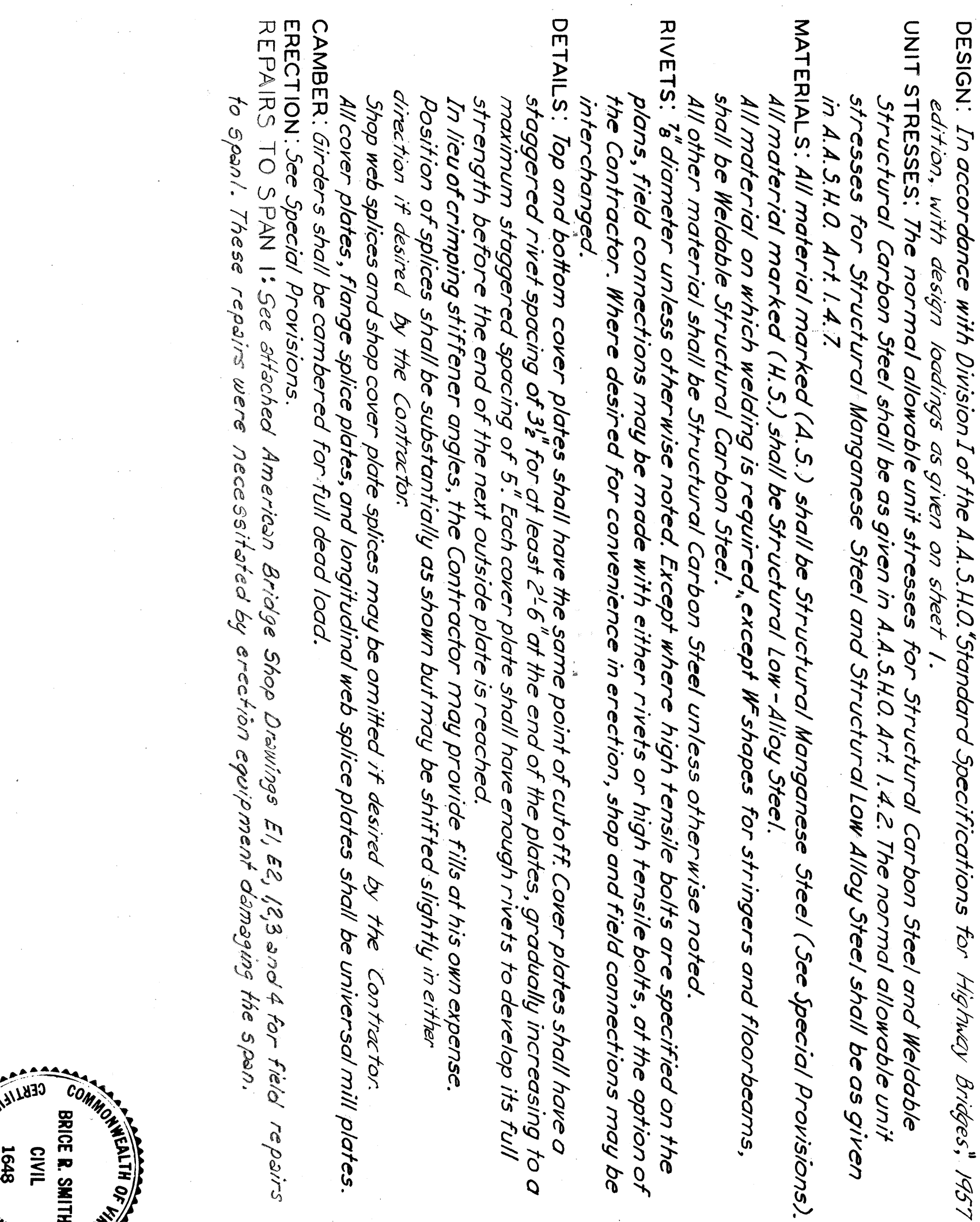
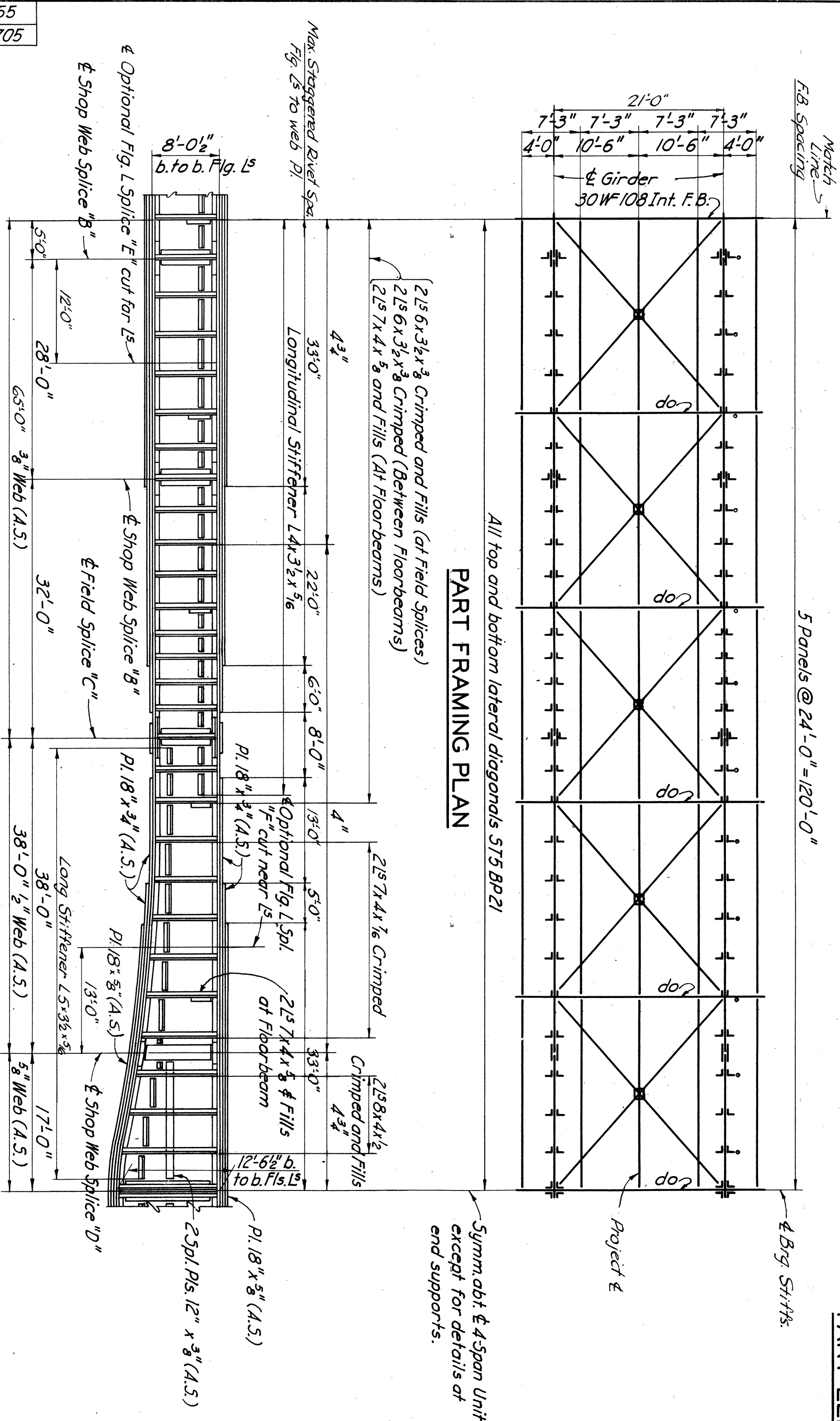
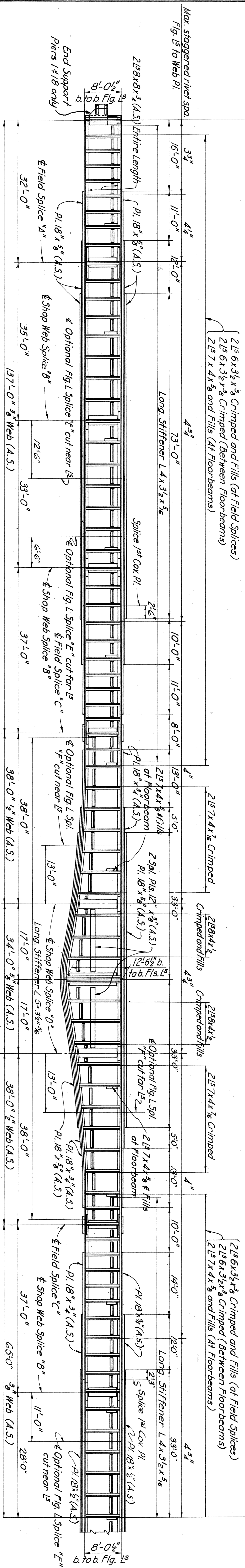
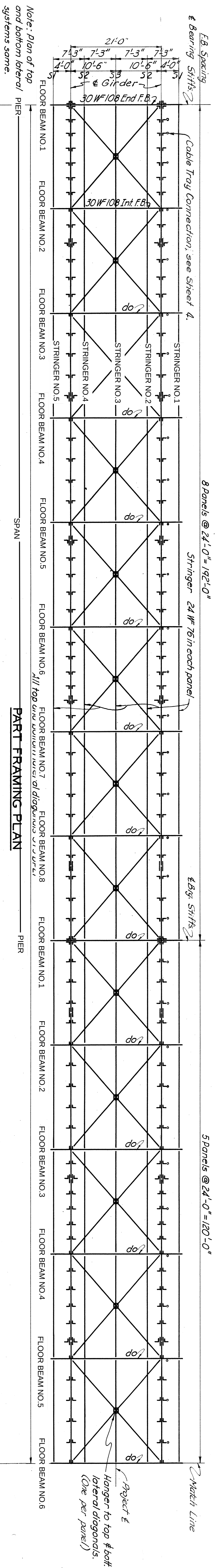
No.	Description	Date	Designed: MSA	Date	Plan No.	Sheet No.
1	Revisions		Drawn: JAC	June 2022		4 of 4



JACOB S. JACOBSON
Professional Engineer
License No. 001345
State of Virginia



COMMONWEALTH OF VIRGINIA			
CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT			
CAPE CHARLES, VIRGINIA 23310-0111			
PROJECT: STEEL BRIDGE REPAIRS			
RIMF NO: 5042.5020			
BID NO: M-22-004			
LOCATION MAP			
DRAWN BY: V.S.S.	NOT TO SCALE		
CHECKED BY: T.R.H.	DATE: August 2022		
Approved: _____	DWG. NO. 1		



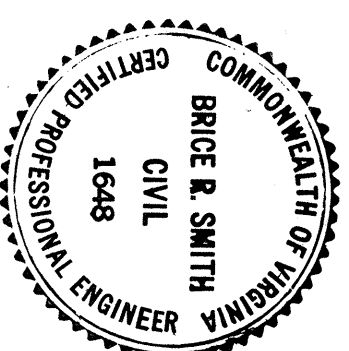
GIRDER SPAN NOTES

Note: Gage line of longitudinal web stiffener angle shall be $\frac{1}{2}$ D from toe of compression flange angle, where D is the clear distance between flanges. An overlap D between pairs of transverse stiffeners shall be used where the flange is sloping. All longitudinal dimensions are measured parallel to grade along back of top flange angles.

P-1555
585705

PART ELEVATION OF GIRDER

Note: Do not scale this drawing. Follow dimensions.



CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT
NORFOLK 1, VIRGINIA
SVERDRUP & PARCEL, CONSULTING ENGINEERS NEW YORK, N. Y.-ST. LOUIS, MO.-NORFOLK, VA.
CHESAPEAKE BAY BRIDGE-TUNNEL CROSSING NORTH CHANNEL BRIDGE - SUPERSTRUCTURE GIRDER SPANS-FRAMING PLAN AND ELEVATION

RECOMMENDED:		DRAWN BY: W.P.		SCALE: $\frac{3}{8}'' = 1' - 0''$	
<i>E. R. Livingston</i>		CHECKED BY: K.L.F.		DATE/FEB. 1, 1961	
APPROVED:		DWG. NO. 2 OF 14			
<i>W. R. Austin</i>		SECTION NO. NC-2			