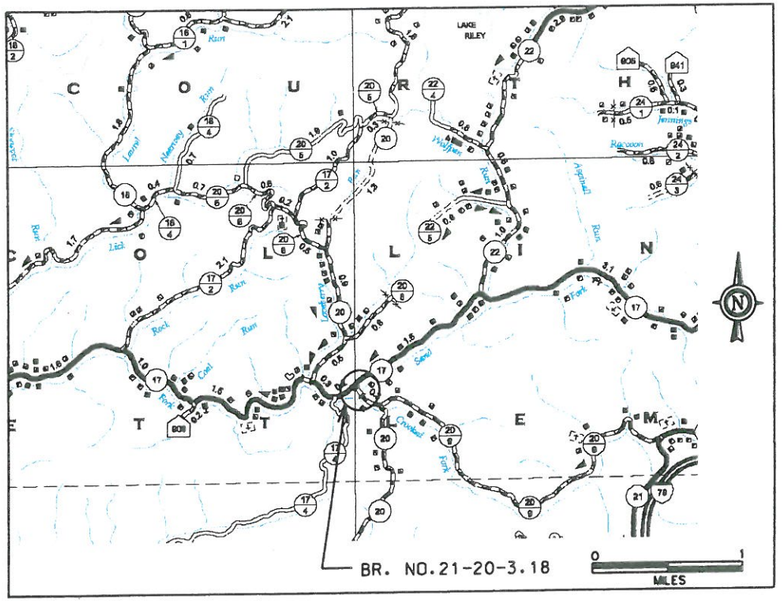


WEST VIRGINIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
CONSTRUCTION PLANS
OF

CROOKED FORK SUPERSTRUCTURE REPLACEMENT

STATE PROJECT NO. S321-20-3.18

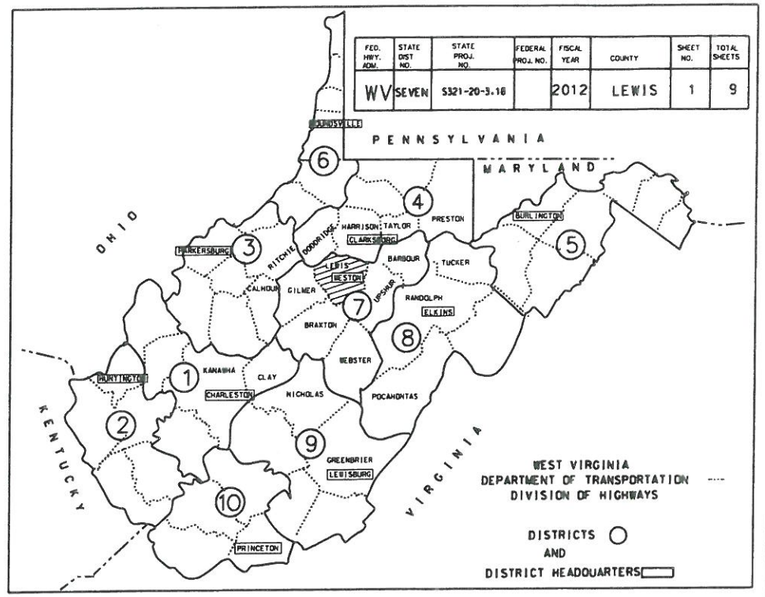
C.R. 20 (SLS)

COURT HOUSE DISTRICT

LEWIS COUNTY

TOTAL LENGTH = 104.00 L.F. = 0.020 MI.

FED. HWY. ADM.	STATE DIST NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	SEVEN	S321-20-3.18		2012	LEWIS	1	9

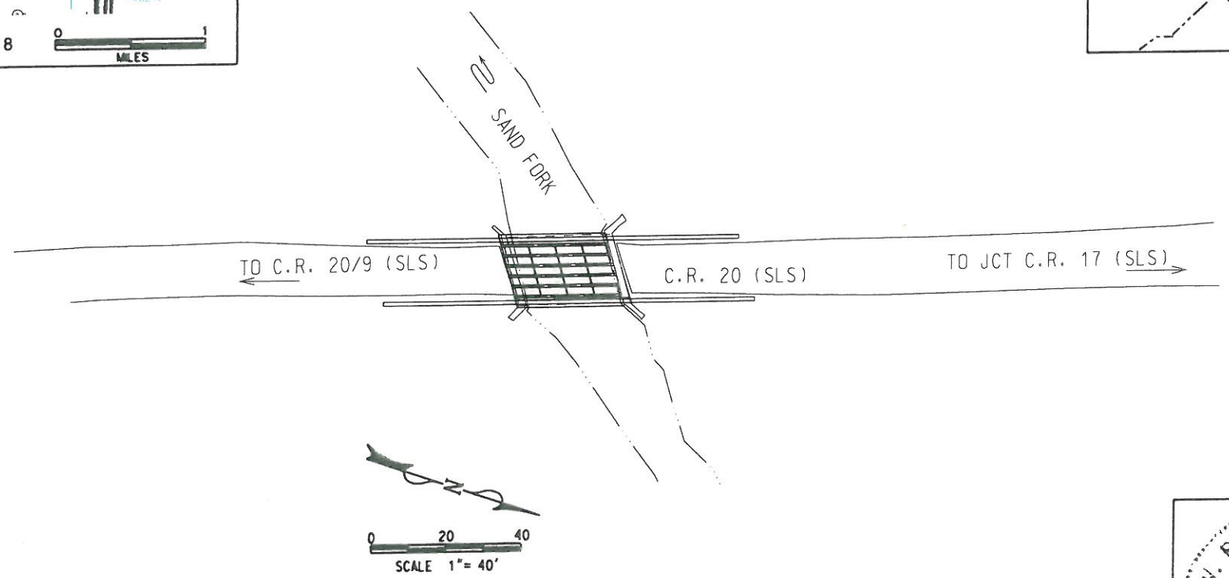


TYPE OF CONSTRUCTION

BRIDGE REPLACEMENT
BR. NO. 21-20-3.18
(8040.1)

UTILITIES ENCOUNTERED:

MON POWER A FIRST ENERGY COMPANY
FRONTIER OF WV



CONVENTIONAL SIGNS

- STATE LINE
- COUNTY LINE
- CORPORATION LINE
- PROPOSED R/W LINE
- PROPERTY LINE
- EXISTING FENCE
- DITCH
- EDGE OF STREAM
- PROPOSED GUARDRAIL
- EXISTING GUARDRAIL
- RAILROAD
- GAS LINE
- WATER LINE
- TELEPHONE LINE
- ELECTRIC LINE
- TELEPHONE POLE
- POWER POLE
- COMBINED POWER AND TELEPHONE POLE
- TREE
- SHRUB
- RIGHT OF WAY MARKER

INDEX TO SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3	EXISTING ELEVATION VIEW AND DECK SECTION. ESTIMATE OF QUANTITIES. AND SCOPE OF WORK.
4	PROJECT PLAN VIEW AND SURVEY CONTROL POINTS.
5	STEEL LAYOUT. DECK SECTION. DIAPHRAGM & BEARING PLATE DETAILS.
6-8	TL-2 GLULAM CURB DETAILS.
9	NAILING PATTERN AND NAIL CLIP DETAILS.

STANDARD SHEETS

NO.	DATE
BR-2A	8-93

DESIGN DESIGNATION

A.D.T. (2009)	80
A.D.T. (2029)	104
D.H.V.	
D.	
T.	
V.	

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

November 15, 2011

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT S321-20-3.18

Mia Crookshanks
EXECUTIVE SECRETARY

NOTE:

STANDARD DETAIL BOOK VOLUME 1. DATED JAN. 1. 2000 & VOLUME II DATED JAN. 1. 1994. SHALL APPLY TO THIS PROJECT.

W. RICHARD WHITE
REGISTERED
6349
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

SIGNED: W. Richard White
RESPONSIBLE CHARGE ENGINEER

DATE: 11/10/11

RECOMMENDED: _____
PROJECT ENGINEER

RECOMMENDED FOR APPROVAL: _____
STATE HIGHWAY ENGINEER

APPROVED: _____
COMMISSIONER OF HIGHWAYS

PROJECT NO. S321-20-3.18

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.	7	S321-20-3.18	LEWIS	2	9

GOVERNING SPECIFICATIONS

The governing provisions applicable to this project are the West Virginia Department of Highways Standard Specifications, Roads and Bridges, adopted 2000, as amended by the current* Supplemental Specifications of the West Virginia Department of Highways, the contract plans and the contract documents.

*Current Supplemental Specifications shall be the Specifications in effect on the first day of project advertisement for letting to contract.

DESIGN–NEW STRUCTURES (1)

This bridge is designed for an ~~HL–93~~ 50 live load capacity, as well as for a ~~25~~ p.s.f. wearing surface.
Design Unit Stresses:

Reinforcing Steel–f_s= 20,000 p.s.i.	Class B Concrete–f'_c= 3,000 p.s.i.
Structural Steel (A36)–f_s= 20,000 p.s.i.	Class B Concrete–f_c= 1,200 p.s.i.
Structural Steel (A588)–f_s= 27,000 p.s.i.	Class B Concrete–n = 10

DESIGN–REHABILITAION AND STRENGTHENING (2)

This bridge is strengthened for a live load capacity of (A). Strengthening steel design stress–f_s=(B) p.s.i. All structural steel shall be ASTM A36 unless otherwise designated on the construction plans.

CONCRETE (CAST–IN–PLACE) (3)

Concrete shall be cured in accordance with Subsection 601.12 of the Standard Specifications. If used, polyethylene coated burlap shall conform to the requirements of Subsection 707.5 of the Standard Specifications.

The minimum covering, measured from the surface of the concrete to the face of any reinforcing steel bar, shall be 3 inches if the concrete is in contact with the ground surface and 2 inches otherwise, except as specified differently on the plans.

SUBSTRUCTURE CONCRETE (CAST–IN–PLACE) (4)

All concrete in the substructure shall be Class B, air entrained.

Chamfer all exposed edges of the substructure concrete 1 inch, except for the abutment curbs, which shall be chamfered 3/4 inch.

The exposed surface of the substructure shall be Class 1, Ordinary Surface Finish, in accordance with Subsection 601.11.1 of the Standard Specifications, except for the abutment curbs and wingwalls, which shall be Class 2, Rubbed Finish, in accordance with Subsection 601.11.2 of the Standard Specifications.

The abutment curtain wall shall not be poured until after the superstructure is in place.

For footings embedded in rock, the top of the abutment footing shall be maintained at the elevations shown on the plans. The footings shall be carried a minimum of 1 foot into solid rock and poured against the face of the rock without forms, except where the rock excavation is not the entire depth of the footing.

The abutment bearing seat, upon which the shoes or other bearing devices will be set, shall be finished to true elevations as shown on the plans.

Fill anchor bolt holes with non–shrink grout after anchor bolts are set. The non–shrink grout shall consist of 1 part regular portland cement, 1 part silica sand and 1 part non–shrink admixture. The cost of the non–shrink grout shall be included in Pay Item 601–2, "Class B Concrete".

SUPERSTRUCTURE CONCRETE (CAST–IN–PLACE) (5)

All concrete in the superstructure shall be Class K, air entrained. All concrete for decks, curbs, parapets or medians shall be Class K, air entrained, containing 7 bags of cement per cubic yard.

Chamfer all exposed edges of the curbs, parapets or medians 3/4". The exposed surfaces of the curbs shall be Class 2, Rubbed Finish, in accordance with Subsection 601.11.2 of the Standard Specifications. Bridge decks shall be finished in accordance with Subsection 601.11.4 of the Standard Specifications.

REINFORCING STEEL BARS (6)

All reinforcing steel bars shall be intermediate grade billet steel, Grade 40 or 60 in accordance with Subsection 709.1 of the Standard Specifications . The requirements of Section 602 of the Standard Specifications shall be followed.

The minimum splice length or dowel bar embedment shall be 30 bar diameters.

Reinforcement under the shoes or other bearing device shall be so placed so as to avoid interference with drilling of anchor bolt holes.

The inspector shall select random bars from the reinforcing bar list for test bars. He shall cut 5'–0" from the bars chosen, rebars have been detailed to allow a 30 bar diameter splice at each end. One rebar for each 10 tons or fraction thereof of each size has been included in the bill of steel and will be paid for under Item 602–1. In the event all bars of any one size are not sent in one shipment, the supplier shall, at his expense, furnish one bar 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 Materials Control, Soil and Testing Division's Informational Memorandum Number 17(IM–17),the shipment may be accepted without further testing subject to record sampling procedures.

STRUCTURE EXCAVATION (FOOTINGS FOUNDED IN ROCK) (7)

Structure excavation quantities through earth fill shall be measured from the top of rock to the original ground line, 18 inches outside the neat lines of the footings. No excavation will be classified as wet or rock excavation. Rock shall be excavated and paid for as structure excavation to the neat lines of the footings only. Rock shall be excavated until a level surface is provided with the entire footing resting on hard rock.

STEEL TOUGHNESS REQUIREMENT (8)

The provisions of the AASHTO Specifications in accordance with Article 615.4.9 of the Standard Specifications shall apply to those items of structural steel as shown and/or designated by these plans.

PAINTING (NEW STRUCTURES) (9)

Shop and field painting shall be in accordance with Section 615 of the current Standard Specifications and/or Special Provisions.

OPTION: (9A)

Paint system shall consist of one shop prime coat, one field prime coat and two field finish coats.

Shop Prime Coat: One complete coat of vinyl shop primer conforming to the requirements of Subsection 711.7 of the Standard Specifications. This will replace the shop paint specified in Subsection 615.6.3. Dry film thickness shall be a minimum of two (2) mils.

Field Prime Coat: One complete coat of linseed/alkyd primer conforming to the requirements of Subsection 711.8 of the Standard Specifications. Dry film thickness shall be a minimum of two (2) mils.

First Finish Coat: One complete pigmented finish coat conforming to the requirements of Subsection 711.10 of the Standard Specifications. The color shall be (D) in accordance with Federal Standard 595, number (E). Dry film thickness shall be a minimum of two (2) mils.

Top Finish Coat: One complete pigmented finish coat conforming to the requirements of Subsection 711.11 of the Standard Specifications. The color shall be (D) in accordance with Federal Standard 595, number (F). Dry film thickness shall be a minimum of two (2) mils.

OPTION: (9B)

Paint system shall consist of shop prime coat, intermediate field fogcoat and finish topcoat. Field painting shall also include touch–up and repair of shop paint. Paint system shall be the inorganic zinc rich system meeting the requirements of Section 711.20 of the Standard Specifications.

Shop Prime Coat: Shall conform to the requirements of Subsection 711.20.2 of the Standard Specifications. Dry film thickness shall be minimum three (3) mils.

Intermediate Field Coat: Shall conform to the requirements of Subsection 711.20.3 of the Standard Specifications.

Topcoat: Shall conform to the requirements of Subsection 711.20.4 of the Standard Specifications. The color shall be (B) in accordance with Federal Standard 595, number (F). Dry film thickness of the total paint system shall be a minimum of seven (7) mils.

OPTION: (9C)

Paint system shall consist of application of shop prime coat and field touch–up and repair of shop coat. Paint system shall be the inorganic zinc rich primer meeting the requirements of Subsection 711.20.2 of the Standard Specifications. Dry film thickness shall be a minimum three (3) mils.

CLEANING AND PAINTING (EXISTING STRUCTURES) (10)

Field cleaning and painting shall be in accordance with either OPTION (10A) or (10B) and shall also conform to all applicable requirements of Section 620 of the current Standard Specifications and/or Special Provisions. When it is determined that the structure contains an environmentally hazardous existing paint system then option (10C) shall also apply.

OPTION: (10A)

Cleaning: The portions of the structure listed in the special notes and quantity sheet, which is approximately (C) per cent, shall be cleaned in accordance with Subsection 620.6.1 of the Standard Specifications.

The remaining portions of the structure not specified, shall be cleaned in accordance with Subsection 620.6.2.

It is not intended that sound, adherent old paint be removed unless it is excessively thick or inflexible.

Attention is called to the requirements of paragraph 2 of Section 620.6 which requires that edges of paint be properly feathered to produce a smooth apperance.

In the event that there is a difference of opinion as to which areas must be sandblasted or hand cleaned or to the extent of surface cleaning or surface preparation, the decision of the Engineer shall be final.

Spot Painting: All steel surfaces cleaned to bare metal shall receive one coat of linseed/alkyd primer conforming to the requirements of Section 711.8 of the Standard Specifications. This coat shall be tinted with a tinting agent, type as recommended by the paint manufacturer and approved by the Engineer.

Prime Coat: One complete coat of linseed/alkyd primer shall be applied to the entire structure upon completion of the spot painting. The primer shall conform to the requirements of Section 711.8 of the Standard Specifications. Dry film thickness shall be a minimum of two (2) mils.

Intermediate Field Coat: Upon completion of application of the prime coat, the entire structure shall receive a minimum of one complete color undercoat conforming to the requirements of Section 711.10 of the Standard Specifications. Dry film thickness shall be a minimum two (2) mils. The color shall be (D) in accordance with Federal Standard 595, number (E).

Top Coat–Pigmented Finish Coat: Upon completion of applicaton of the intermediate coat, the entire structure shall receive a minimum of one complete pigmented finish coat conforming to the requirements of Section 711.11 of the Standard Specifications. Dry film thickness shall be a minimum two (2) mils. The color shall be (F) in accordance with Federal Standard 595, number (G).

OPTION: (10B)

Cleaning: All surfaces to be painted shall be cleaned and prepared in accordance with Section 620.5 of the Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows:

Field Prime Coat: All bare surfaces shall be primed with an organic zinc rich primer conforming to the requirements of SSPC Specification Number 20, Type 2. Dry film thickness of the primer shall be a minimum of four (4) mils.

Field Intermediate Coat: The field intermediate coat shall conform to the requirements of Article 711.20.3 of the Standard Specifications.

Field Top Coat: The field top coat shall conform to the requirements of Article 711.20.4 of the Standard Specifications. The color shall be (F) in accordance with Federal Standard 595, number (G). Dry film thickness of the total paint system shall be a minimum seven (7) mils.

OPTION: (10C)

Environmental Protection: All portions of the structure shall be cleaned in accordance with the Special Provision for 620–Cleaning and Painting Existing Steel Bridges, Sub–articles 620.1, 620.9, 620.10, 620.11, and 620.12 as contained in these plans.

STRUCTURE EXCAVATION (FOOTINGS FOUNDED ON PILES) (11)

Structure excavation quantities through earth fill shall be measured from the bottom of the footing to the original ground line, 18 inches outside the neat line of the footings. No excavation will be classified as wet or rock excavation.

PREFORMED ELASTOMERIC JOINT SEALER (12)

The preformed elastomeric joint sealer shall conform to the requirements of Section 624 of the Standard Specifications.

BRIDGE GUARDRAIL (13)

The guardrail, buffer end terminal sections, posts and end anchors shall conform to the requirements as set forth by the West Virginia Department of Highways Standard Details Book (Standard Sheets G.R.1 through G.R.7, as applicable) and Standard Bridge Plan Sheet BR–G1. Blocks are required. End anchorage shall be in accordance with Design Directive DD 16.4. All guardrail mounting hardware will be hot–dip galvanized after fabrication. Threads shall be retapped to ensure proper fit. Guardrail posts may be square or beveled.

STRUCTURAL STEEL (14)

All structural steel shall conform to the requirements of ASTM A36 (f_s=20,000 p.s.i.) unless otherwise noted.

For superstructures utilizing steel grid flooring, structural steel conforming to the requirements of ASTM A588 (f_s=27,000 p.s.i.) may be substituted for ASTM A36 steel. No painting shall be required for ASTM A588 steel.

OPTION: (14A)

All ASTM A36 steel shall be blast cleamed and shop primed in accordance with Section 615 of the Standard Specifications.

STEEL GRID FLOORING (CONCRETE FILLED TYPE) (15)

The steel grid flooring shall conform to all applicable requirements of Section 621 of the current Standard Specifications and/or all Special Provisions of the West Virginia Department of Highways.
The grid shall conform to all applicable requirements as set forth by the Bridge Grid Flooring Manufacturers Association. Size and type shall be as specified on the plans.
The steel grid flooring shall conform to all requirements of ASTM A36, A572 or A588, type as specified on the plans.

Cleaning: All surfaces to be painted shall be cleaned and prepared in accordance with Section 615.6 of the Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows:

The steel grid flooring and all components shall either be shop painted with an inorganic zinc rich primer meeting Subsection 711.20.2 of the Standard Specifications or hot dipped galvanized meeting requirements of ASTM A123. Type of coating shall be as specified on the plans.

All reinforcing steel shall be number 3 billet steel bars either Grade 40 or 60 in accordance with Subsection 709.1 of the Standard Specifications.

The concrete used to fill the steel grid shall be Class A air entrained. The design stresses for this concrete are f'_c=3,500 psi, f_c=1,400 psi and n=10.

STEEL GRID FLOORING (OPEN TYPE) (16)

The steel grid flooring shall conform to all applicable requirements of Section 621 of the current Standard Specifications and/or all Special Provisions of the West Virginia Department of Highways.
The grid shall conform to all applicable requirements as set forth by the Bridge Grid Flooring Manufacturers Association. Size and type shall be as specified on the plans.
The steel grid flooring shall conform to all requirements of ASTM A36, A572 or A588, type as specified on the plans.

Cleaning: All surfaces to be painted shall be cleaned and prepared in accordance with Section 615.6 of the Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows:

The steel grid flooring and all components shall either be shop painted with an inorganic zinc rich primer meeting Subsection 711.20.2 of the Standard Specifications or hot dipped galvanized meeting requirements of ASTM A123. Type of coating shall be as specified on the plans.

MAINTAINING TRAFFIC (17)

Traffic shall be maintained in accordance with Section 636 and Subsection 104.5 of the Standard Specifications.

NAIL LAMINATED WOOD DECK (18)

Pine Bridge Lumber all lumber shall be surfaced four sides, pressure treated No. 2 Medium Grain or better Southern Pine as specified by current Grading Rules for Southern Pine Lumber published by the Southern Pine Inspection Bureau, New Orleans, Louisiana.

General Timber Deck Notes:

The allowable bending stress shall not be less than 1,200 p.s.i. and the allowable shearing stress shall not be less than 125 p.s.i.

All lumber shall be sized by being processed through a hit–or–miss surfacer.

This material shall be subject to random sampling and testing for compliance with the above specifications upon delivery.

Material will be accepted in bundles when the shipment is accompanied by a certificated, issued by a Department of Highways Materials Control, Soil and Testing Division certified inspector, showing that the lumber in the "white" meets the above requirements. When said certificate is not availabe, the material will be inspected by Department of Highways personnel at the delivery site and stacked and struck by the vendor.

Treatment: material for pressure treatment shall be in accordance with Subsection 710.5 of the Standard Specifications. Treatment shall be by either the full cell or empty cell process at 150 to 200 p.s.i. and a minimum retention as specified by the American Wood Preservative Association Standard C–2 shall be obtained.

Material and/or workmanship shall conform to the requirements of Subsection 710.1 of the Standard Specifications.

[•] Delivery: material shall be delivered in minimum shipments of 2,000 board feet or as directed by the Engineer. A maximum of 15 calendar days will be allowed for delivery following notification by the Engineer. The vendor shall notify the Engineer one working day prior to delivery of the material.

[•] General: any deviation from the above requirements may be cause for rejection, by the Engineer, of the entire shipment of lumber.

All non–specified material in any shipment shall be rejected and will be removed from the West Virginia Department of Highways storage area by the vendor prior to acceptance of the suitable material.

Notification shall be made on all receiving documents and/or delivery slips specifying reason(s) for rejection of any portion of a shipment. The signatures of both the Department of Highways and delivering agency representatives shall be affixed to documents on which rejection reason(s) is recorded.

The vendor must furnish to the Engineer a certificate of inspection, certifying that the total order meets the specifications for quality of lumber, preservative and retention required. A certified copy of the certificate of inspection must be attached to the invoice.

Under no circumstances may the vendor ship nor will the Department of Highways accept or pay for quantities of material in excess of the quantity stated on the purchase order, except upon advance approval of the Engineer.

The inspection agencies listed hereinafter may be considered as prequalified. If a vendor desires inspection by responsible agencies other than those listed, advance approval must be obtained from the Director, Materials Control, Soil and Testing Division, 312 Michigan Avenue, Charleston, West Virginia 25305.

Qualified Lumber Inspection Agencies:

McCallum Inspection Company
Norfolk, virginia

Froehling and Robertson, Inc.
Richmond, Virginia

A. W. Williams Inspection Company
Mobile, Alabama

Southern Pines Inspection Bureau
New Orleans, Louisiana

PRESTRESSED CONCRETE SUPERSTRUCTURE (19)

Refer to the appropriate Standard Plan sheet for design stresses, specifications or notes.
Although the plans are detailed for a particular type of prestressed concrete beam, alternate types or shaped prestressed concrete beams may be furnished with the following stipulations:

a) Supplier must submit proposed alternate with design computations for review and approval by the Department of Highways.
b) Contractor must supply revised modified construction plans showing all revisions and modifications as required by the use of the alternate beam for review and approval by the Department of Highways.
c) Completion date of the project will not be extended due to any delay encountered in obtaining alternate beam and revised modified plan approval by the Department of Highways.
d) The project canot be started until the revised modified plans are approved by the Department of Highways.

NOTE SELECTION TABLE

CODE	YES	NO	CODE	YES	NO
1	✓		10B		✓
2		✓	10C		✓
3		✓	11		✓
4		✓	12		✓
5		✓	13		✓
6		✓	14	✓	
7		✓	14A	✓	
8	✓		15		✓
9		✓	16		✓
9A		✓	17	✓	
9B		✓	18	✓	
9C		✓	19		✓
10		✓			
10A		✓			

CONTROL VALUE

CODE	VALUE
A	NA
B	NA
C	NA
D	NA
E	NA
F	NA
G	NA

APPROVED _____ DATE _____
DIRECTOR, STRUCTURES DIVISION

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS–STRUCTURES
STANDARD BRIDGE PLANS

GENERAL NOTES
STANDARD SHEET BR–2A

PREPARED: 11–26–90
REVISED: 5–91; 8–93

[•] These items are for Purchase Order Contract only.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS–STRUCTURES

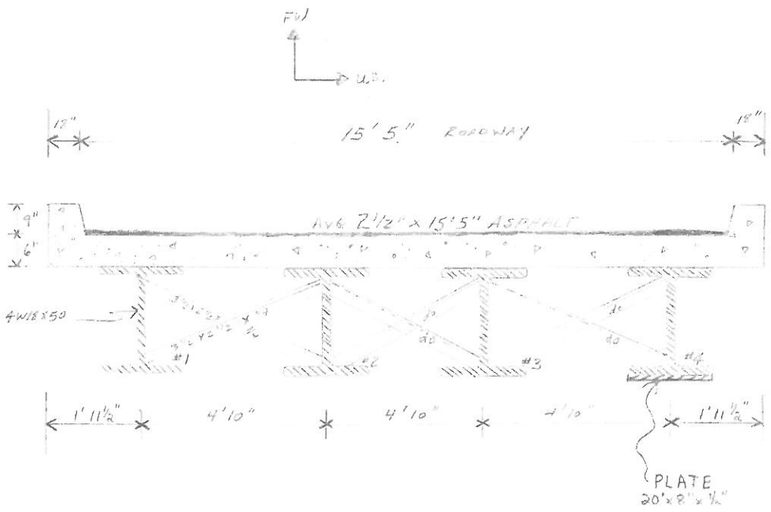
CONSTRUCTION PLANS OF
CROOKED FORK
SUPERSTRUCTURE REPLACEMENT
ON C.R. 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

GENERAL NOTES

DESIGNED BY: RMW
DRAWN BY: DWW
CHECKED BY: GFL
REVIEWED BY: WRW
DATE: 89–11
SCALE: NONE
SHEET NO.: 2 OF 9

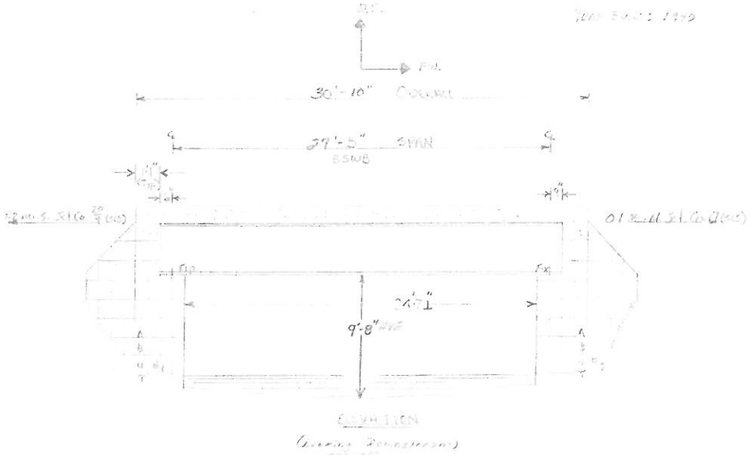
BRIDGE NUMBER
21–20–3.18
(8040.1)

PROJECT NUMBERS		WV	COUNTY	SHEET	OF
FEDERAL	STATE	DISTRICT			
	S321-20-3.18	SEVEN	LEWIS	3	9



EXISTING DECK SECTION

NO SCALE



EXISTING ELEVATION VIEW

NO SCALE

ESTIMATE OF QUANTITIES

PROJECT NO. S321-20-3.18
FOR INFORMATION ONLY

DESCRIPTION	UNITS	NO. AND SIZE	TOTAL
DECK TIMBER	EA	2" X 6" X 20'	239
NAILS	LB	20 PENNY	137
*NAILING CLIPS	EA	TF=9/16"	180
*BEARING PLATES	LB	15' 0" X 9" X 2" (2 EA.)	1838
*BACKWALL PLATES	LB	20' 0" X 5" X 1" (2 EA.)	681
*BACKWALL ANGLE	LB	8"X4"X1"∠19' 0"LONG (2 EA.)	1496
*STRINGERS W/ 15° R.F.S. MITER	LB	6-W18 X 50 X 28' 8"	8600
*DIAPHRAGM ASSEMBLIES	LB	15-EA	660
*¾" X 2" HIGH STRENGTH BOLTS	EA	W/NUT AND WASHER	18
*¾" X 2 ¼" HIGH STRENGTH BOLTS	EA	W/NUT AND WASHER	36
*1" X 14" DOME HEAD BOLTS	EA	W/NUT AND WASHER	120
*¾" X 30" DOME HEAD BOLT	EA	W/NUT AND IRON WASHER	24
*¾" X 10" DOME HEAD BOLT	EA	W/NUT AND IRON WASHER	64
*W6X15 STRAIGHT POST ASSEMBLY	LB	8-EA	857
*W6X15 ANGLED POST ASSEMBLY	LB	8-EA	855
*STRAIGHT SPLICE PLATE ASSEMBLY	LB	6-EA	350
*ANGLED SPLICE PLATE ASSEMBLY	LB	4-EA	232
SCUPPER BLOCKS	EA		12
GLULAM CURB	LF	SIZES VARY	199.71
HLBC WEARING COURSE	TON		7

* -ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A572 GRADE 50 AND SHALL BE HOT DIPPED GALVANIZED. GALVANIZING SHALL CONFORM TO ASTM A123 EXCEPT BOLTS AND NUTS WHICH SHALL CONFORM TO ASTM A153.

SCOPE OF WORK

1. CLOSE EXISTING STRUCTURE TO TRAFFIC.
2. REMOVE EXISTING SUPERSTRUCTURE.
3. DRILL CAPS AND GROUT 1" BOLTS 1' 0" DEEP.
4. PLACE BEARING PLATES OVER BOLTS AND INSTALL NUTS.
5. PLACE STRINGERS AND INSTALL DIAPHRAGMS.
6. WELD STRINGERS TO BEARING PLATES.
7. INSTALL 2" X 6" NAIL LAMINATED DECK.
8. INSTALL TL-1 GLULAM CURB SYSTEM.
9. PAVE.
10. OPEN STRUCTURE TO TRAFFIC.
11. SITE DRESS, SEED, & MULCH ALL DISTURBED AREAS.

REVISIONS	DATE	BY
DESIGNED BY: RMW	DATE: 06-11	
DRAWN BY: RMW	08-11	
CHECKED BY: GFL	09-11	
CHECKED BY:		
REVIEWED BY: WRW	09-11	

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

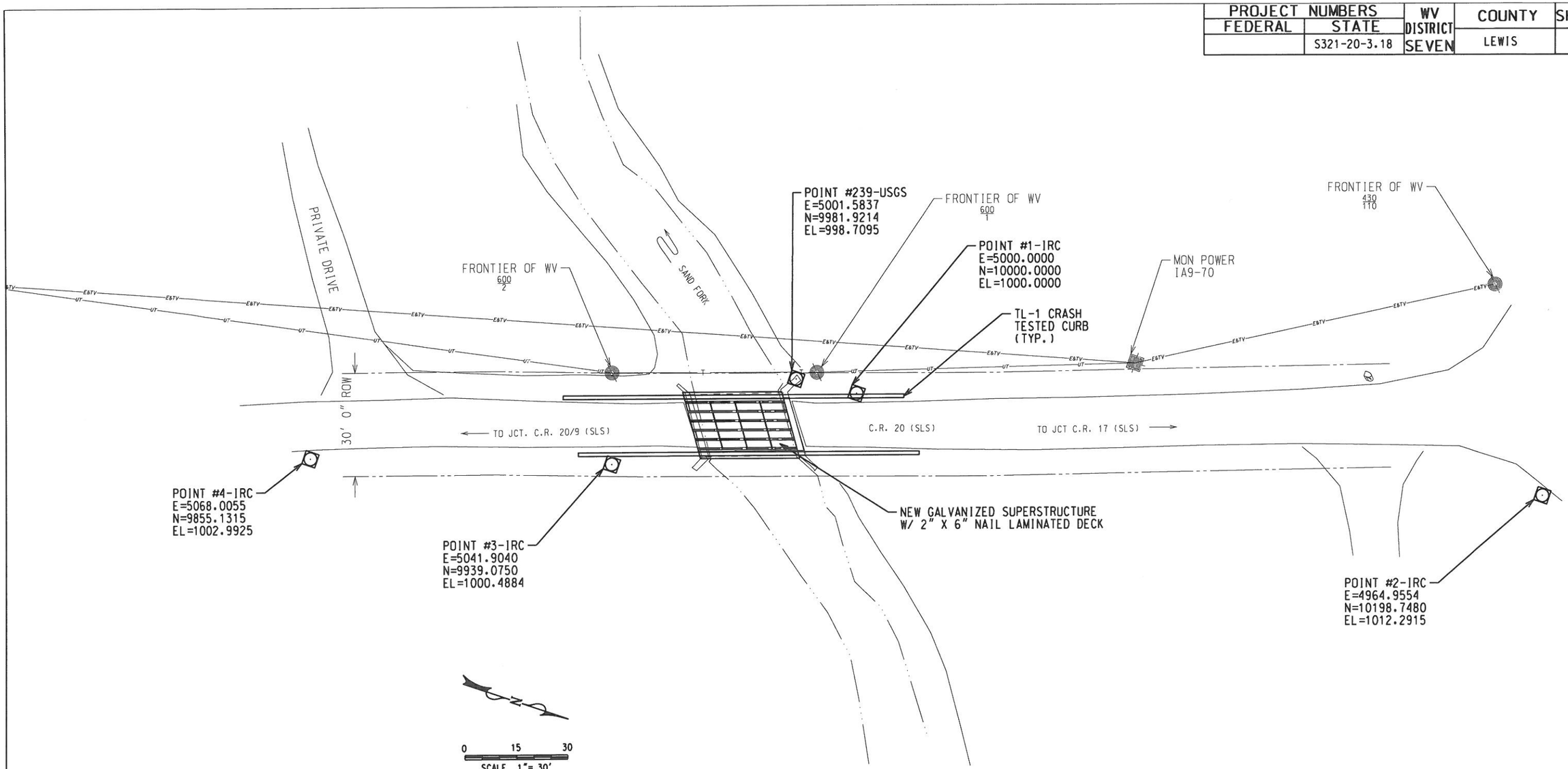
CONSTRUCTION PLANS OF
CROOKED FORK SUPERSTRUCTURE REPLACEMENT
ON C.R 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

EXISTING ELEVATION AND END VIEW. ESTIMATE OF QUANTITIES. & SCOPE OF WORK.

SHEET 3 OF 9

21-20-3.18
(8040.1)

PROJECT NUMBERS		WV DISTRICT	COUNTY	SHEET	OF
FEDERAL	STATE				
	S321-20-3.18	SEVEN	LEWIS	4	9



REVISIONS	DATE	BY
DESIGNED BY: RMW	DATE: 06-11	
DRAWN BY: RMW	06-11	
CHECKED BY: GFL	09-11	
CHECKED BY:		
REVIEWED BY: WRW	09-11	

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

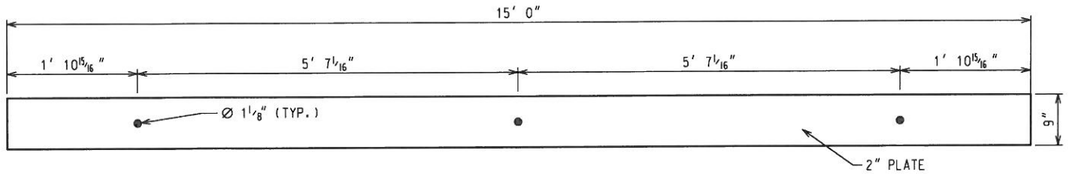
CONSTRUCTION PLANS OF
CROOKED FORK W-BEAM
SUPERSTRUCTURE REPLACEMENT
ON C.R. 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

PROJECT PLAN VIEW AND SURVEY
CONTROL POINTS

SHEET 4 OF 9

21-20-3.18
(11017)

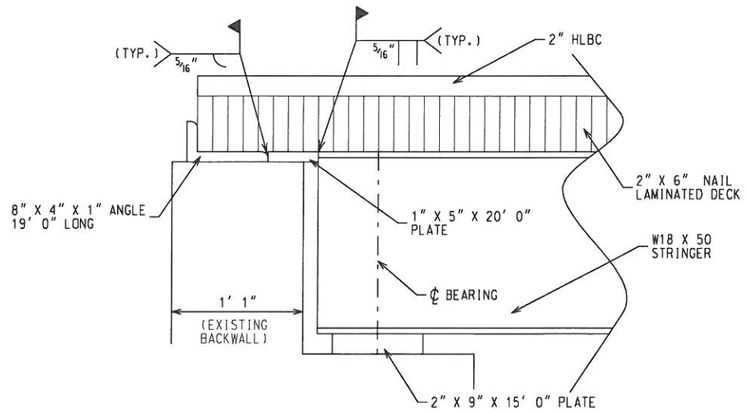
PROJECT NUMBERS		WV	COUNTY	SHEET	OF
FEDERAL	STATE	DISTRICT			
	S321-20-3.18	SEVEN	LEWIS	5	9



BEARING PLATE DETAIL

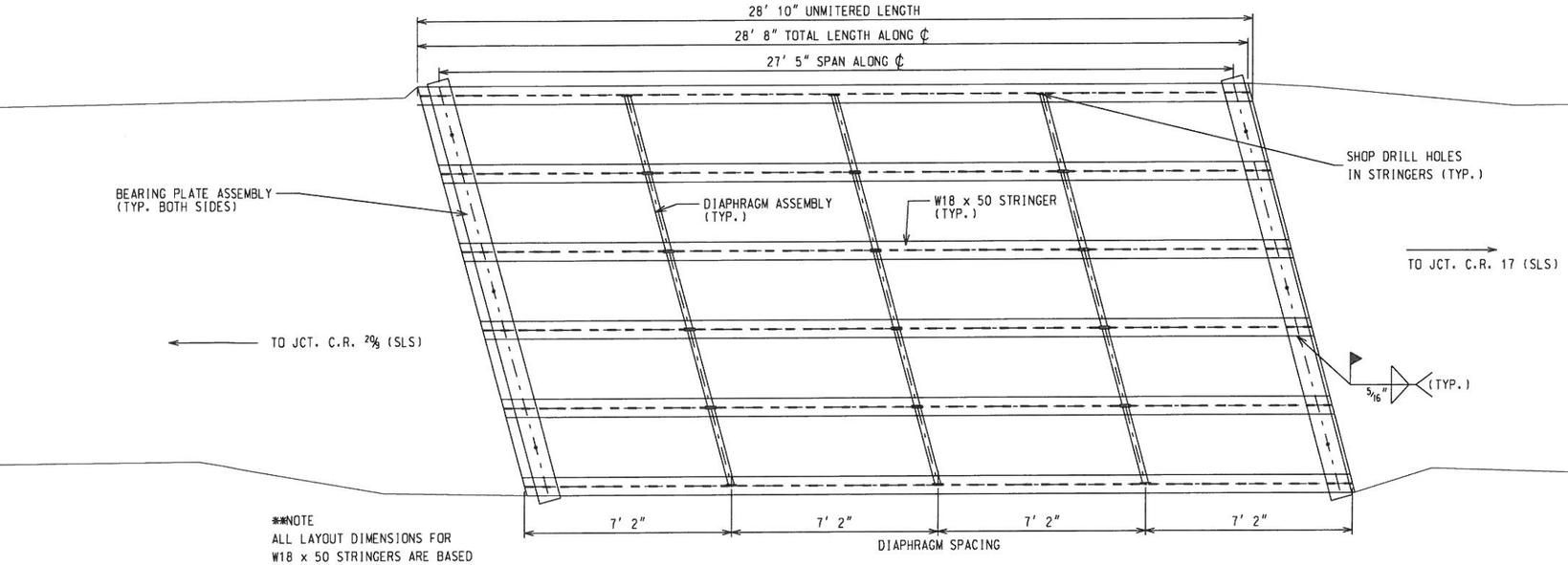
(NO SCALE)

NOTE: DRILL AND GROUT 1" ø BOLTS 1' 0" DEEP INTO CAP. SET BEARING PLATES AND PLACE WASHER AND NUT. AFTER INSTALLATION OF DIPHRAGMS. WELD STRINGERS TO BEARING PLATE.



TYP. BEARING PLATE PROFILE DETAILS

(NO SCALE)

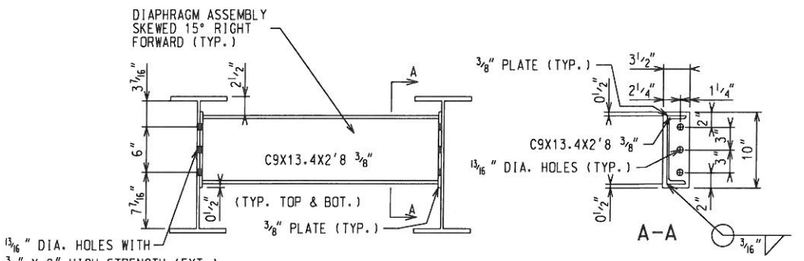


**NOTE
ALL LAYOUT DIMENSIONS FOR W18 x 50 STRINGERS ARE BASED ON ℄ BEAMS. BRIDGE IS SKEWED 15° RIGHT FORWARD.

STEEL FRAMING LAYOUT AND DIMENSIONING

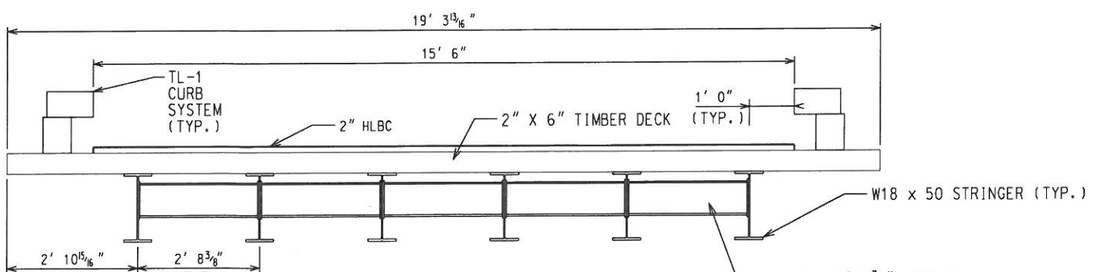
0 5

SCALE 1"= 5'



DIAPHRAGM ASSEMBLY DETAILS

(NO SCALE)



DECK SECTION

(NO SCALE)

REVISIONS	DATE	BY
DESIGNED BY: RMW	DATE: 07-11	
DRAWN BY: RMW	07-11	
CHECKED BY: GFL	09-11	
CHECKED BY:		
REVIEWED BY: WRW	09-11	

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

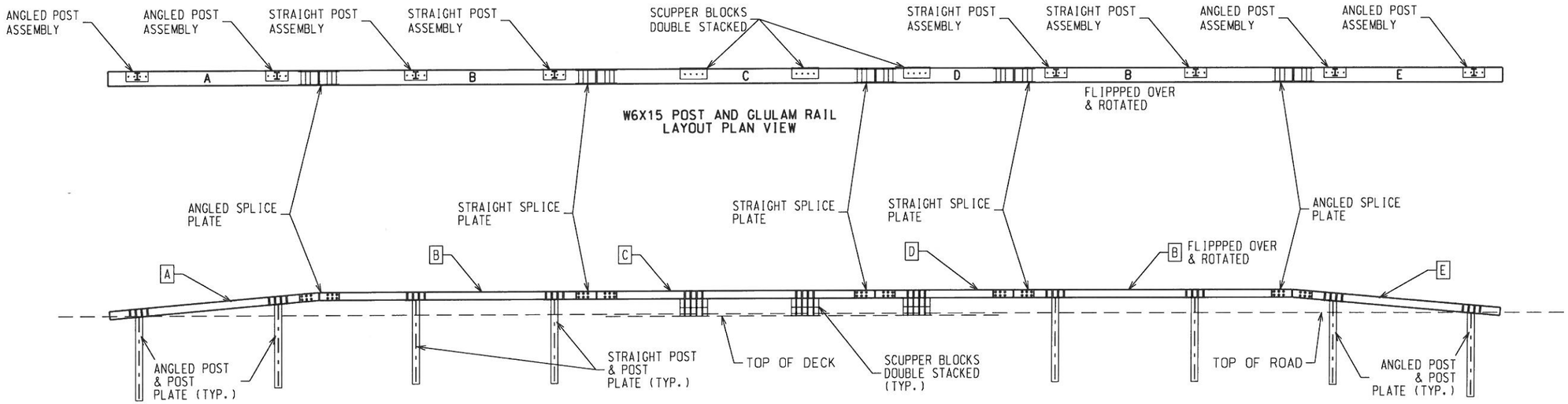
CONSTRUCTION PLANS OF
CROOKED FORK SUPERSTRUCTURE REPLACEMENT
ON C.R. 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

STEEL LAYOUT , DECK SECTION, DIAPHRAGM, AND BEARING PLATE DETAILS.

SHEET 5 OF 9

BR.NO.21-20-3.18
(8040.1)

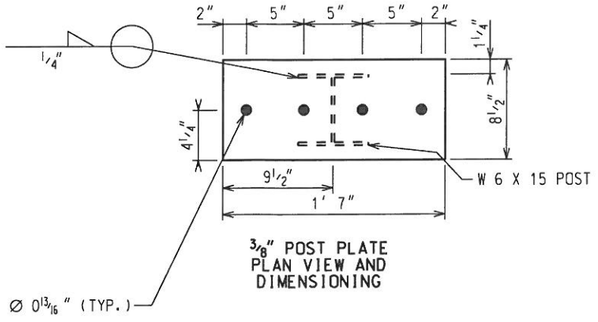
PROJECT NUMBERS		WV DISTRICT	COUNTY	SHEET	OF
FEDERAL	STATE				
	S321-20-3.18	SEVEN	LEWIS	6	9



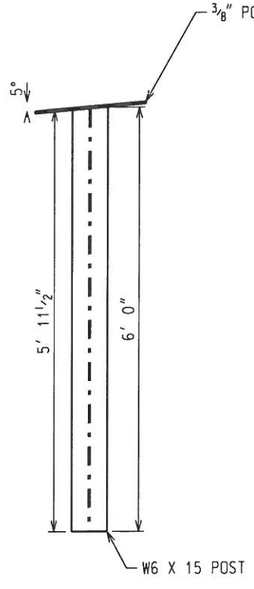
W6X15 POST AND GLULAM RAIL LAYOUT PLAN VIEW

W6X15 POST AND GLULAM RAIL LAYOUT ELEVATION VIEW

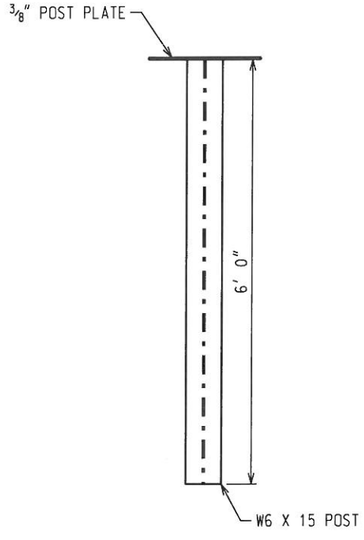
NOTE: SEE THIS SHEET FOR POST AND POST PLATE DETAILS. SEE 7 & 8 OF 9 FOR GLULAM DIMENSIONING AND SPLICE PLATE DETAILS.



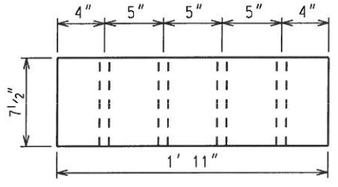
3/8" POST PLATE PLAN VIEW AND DIMENSIONING



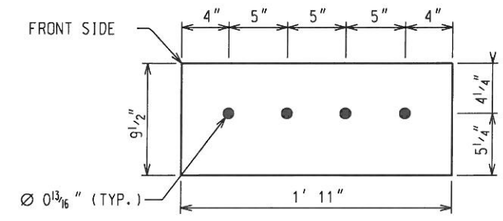
ANGLED POST ASSEMBLY ELEVATION VIEW AND DIMENSIONING



STRAIGHT POST ASSEMBLY ELEVATION VIEW AND DIMENSIONING



NO. 1 SOUTHERN YELLOW PINE SCUPPER BLOCK ELEVATION VIEW AND DIMENSIONING



NO. 1 SOUTHERN YELLOW PINE SCUPPER BLOCK PLAN VIEW AND DIMENSIONING

Notes: (1) Treated with Pentachlorophenol - 0.6 lbs/cu. ft.
(2) No. 1 Grade Douglas Fir may also be used for Scupper Blocks.

REVISIONS	DATE	BY
DESIGNED BY: GFL	DATE: 11-11	
DRAWN BY: GFL	11-11	
CHECKED BY: RMW	11-11	
CHECKED BY:		
REVIEWED BY: WRW	11-11	

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

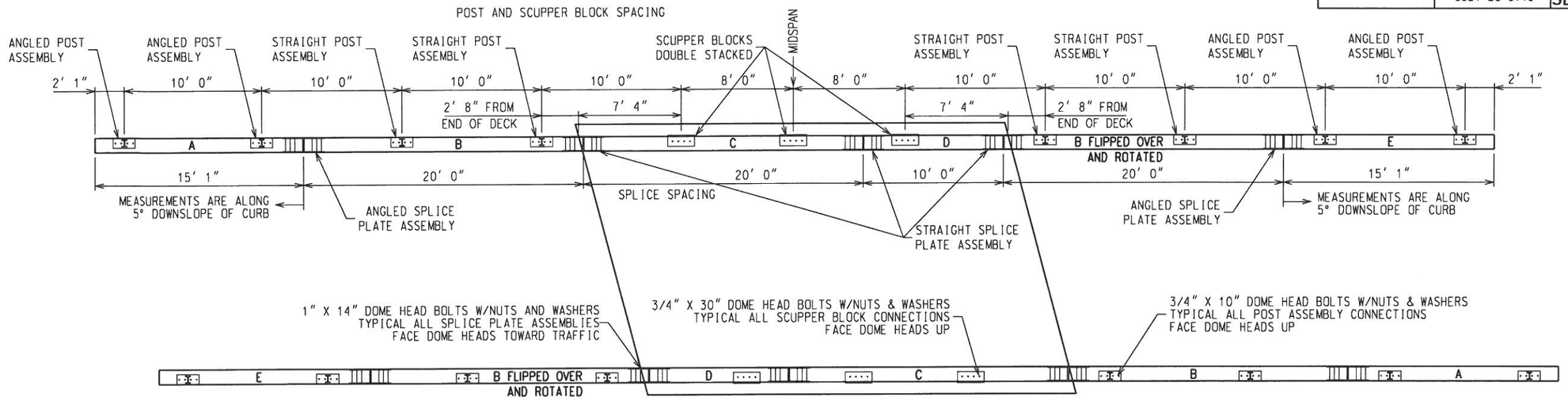
CONSTRUCTION PLANS OF
CROOKED FORK SUPERSTRUCTURE REPLACEMENT
ON C.R. 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

GLULAM CURB LAYOUT DETAILS

SHEET 6 OF 9

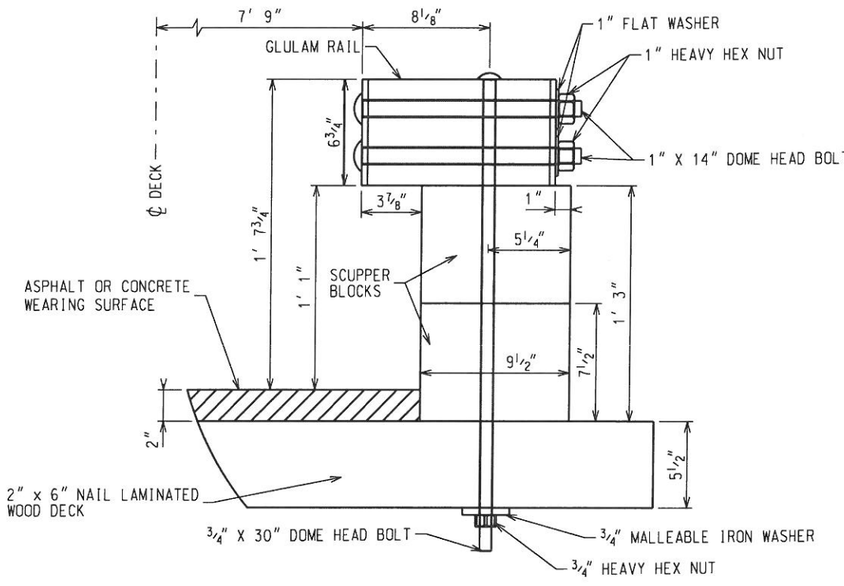
BR.NO.21-20-3.18
(8040.1)

PROJECT NUMBERS		WV DISTRICT	COUNTY	SHEET	OF
FEDERAL	STATE				
	S321-20-3.18	SEVEN	LEWIS	7	9

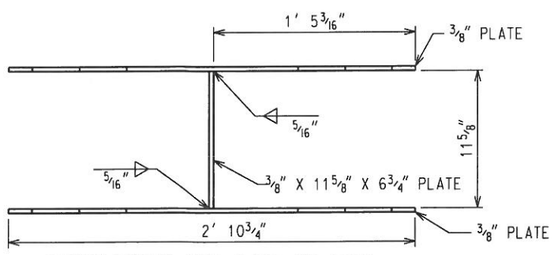


W6X15 POST, SPLICE PLATE, AND SCUPPER BLOCK PLAN LAYOUT AND DIMENSIONING

(NO SCALE)

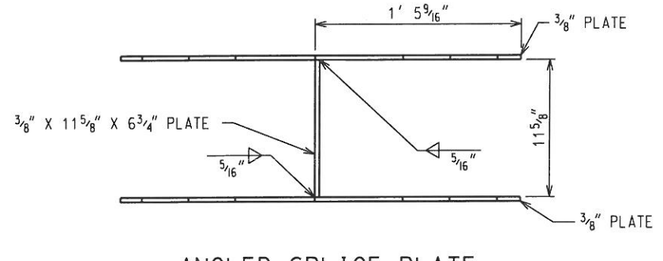


TIMBER BRIDGE RAIL CROSS SECTION



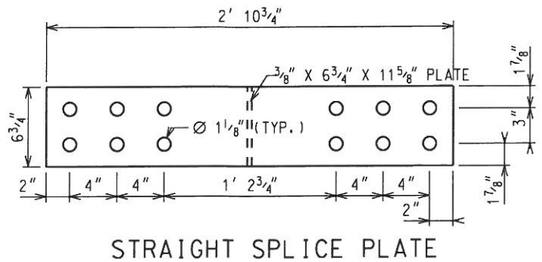
STRAIGHT SPLICE PLATE ASSEMBLY PLAN VIEW

(NO SCALE)



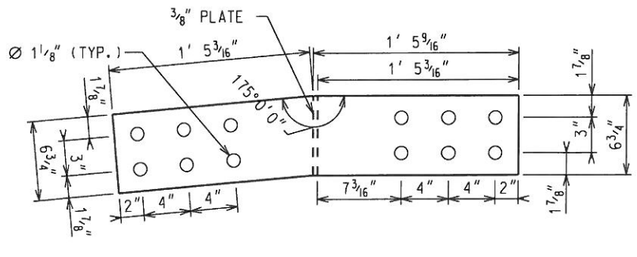
ANGLED SPLICE PLATE ASSEMBLY PLAN VIEW

(NO SCALE)



STRAIGHT SPLICE PLATE ASSEMBLY ELEVATION VIEW

(NO SCALE)



ANGLED SPLICE PLATE ASSEMBLY ELEVATION VIEW

(NO SCALE)

REVISIONS	DATE	BY	
DESIGNED BY: GFL	DATE: 11-11		
DRAWN BY: GFL	11-11		
CHECKED BY: RMW	11-11		
CHECKED BY:			
REVIEWED BY: WRW	09-11		

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

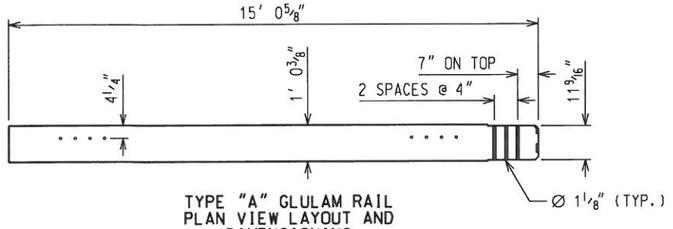
CONSTRUCTION PLANS OF
CROOKED FORK SUPERSTRUCTURE REPLACEMENT
ON C.R.20 (SLS)
OVER SAND FORK
LEWIS COUNTY

GLULAM CURB, SPLICE PLATE, AND ANGLED SPLICE PLATE DETAILS AND DIMENSIONING

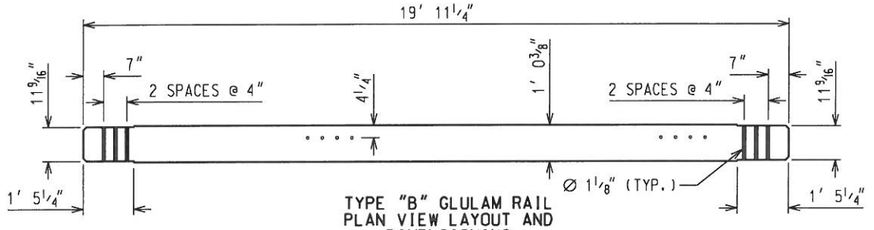
SHEET 7 OF 9

BR.NO.21-20-3.18 (8040.1)

PROJECT NUMBERS		WV DISTRICT	COUNTY	SHEET	OF
FEDERAL	STATE				
	S321-20-3.18	SEVEN	LEWIS	8	9



TYPE "A" GLULAM RAIL
PLAN VIEW LAYOUT AND
DIMENSIONING



TYPE "B" GLULAM RAIL
PLAN VIEW LAYOUT AND
DIMENSIONING

NOTES:

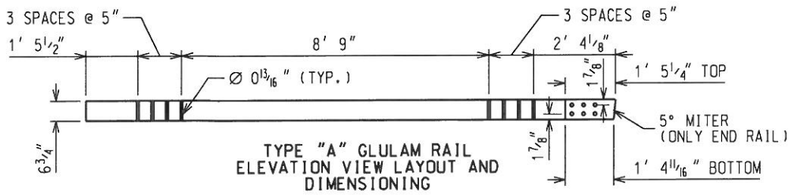
(1) GLULAM RAIL SHALL BE 6 3/4" X 12 3/8" COMBINATION NO. 48 SOUTHERN YELLOW PINE.

(2) END RAIL SEGMENTS ARE MITERED 5° ON SPLICE PLATE END.

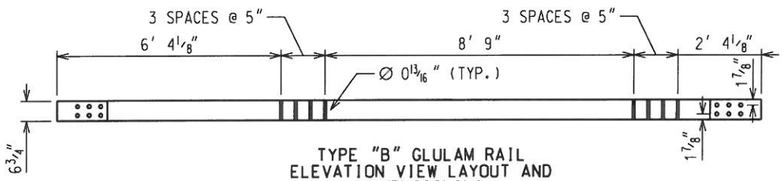
(3) ALL SECTIONS SHALL BE TREATED WITH PENTACHLOROPHENOL WITH HEAVY OIL - 0.6 LBS./CU. FT.

(4) COMBINATION #2 DOUGLAS FIR 6 3/4" X 12" MAY BE SUBSTITUTED FOR COMBINATION #48 SOUTHERN YELLOW PINE .

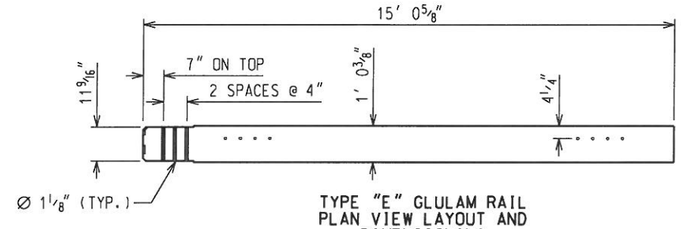
(5) ALL RAIL ENDS CUT TO ACCEPT SPLICE PLATES SHALL BE CHAMFERED (1" X 1").



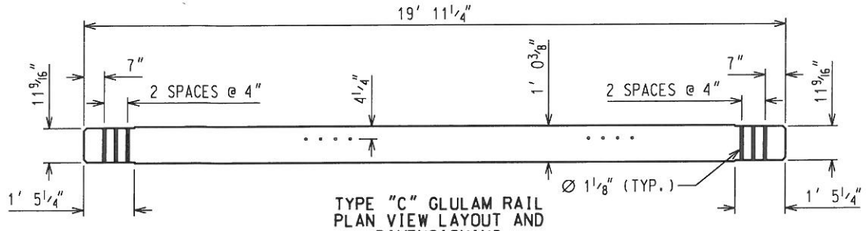
TYPE "A" GLULAM RAIL
ELEVATION VIEW LAYOUT AND
DIMENSIONING



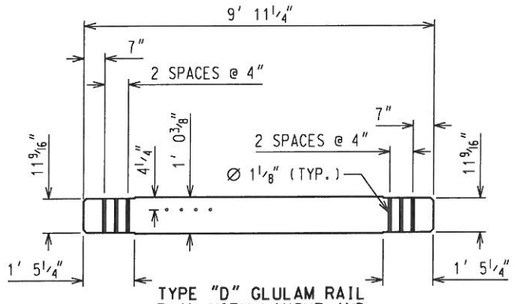
TYPE "B" GLULAM RAIL
ELEVATION VIEW LAYOUT AND
DIMENSIONING



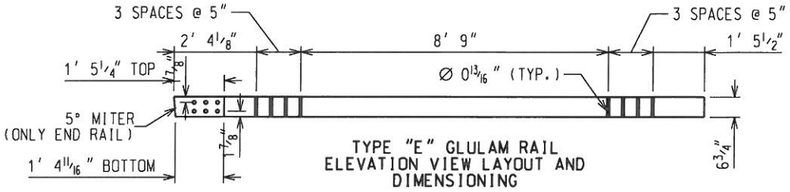
TYPE "E" GLULAM RAIL
PLAN VIEW LAYOUT AND
DIMENSIONING



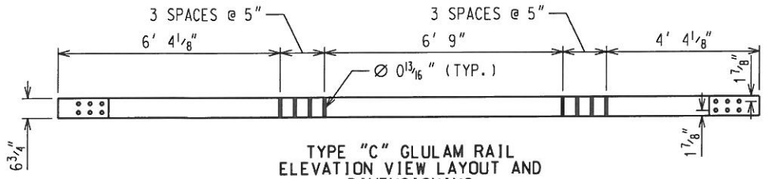
TYPE "C" GLULAM RAIL
PLAN VIEW LAYOUT AND
DIMENSIONING



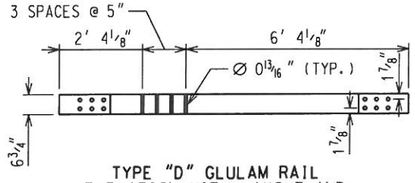
TYPE "D" GLULAM RAIL
PLAN VIEW LAYOUT AND
DIMENSIONING



TYPE "E" GLULAM RAIL
ELEVATION VIEW LAYOUT AND
DIMENSIONING



TYPE "C" GLULAM RAIL
ELEVATION VIEW LAYOUT AND
DIMENSIONING



TYPE "D" GLULAM RAIL
ELEVATION VIEW LAYOUT AND
DIMENSIONING

REVISIONS	DATE	BY	
DESIGNED BY: GFL	DATE: 11-11		
DRAWN BY: GFL	11-11		
CHECKED BY: RMW	11-11		
CHECKED BY:			
REVIEWED BY: WRW	11-11		

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

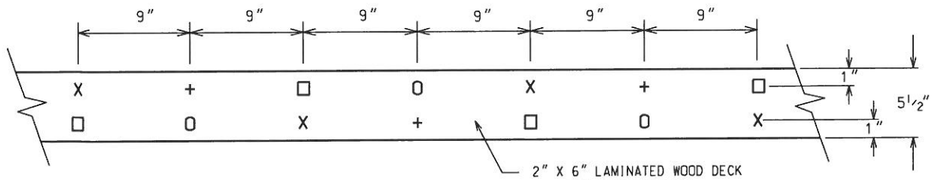
CONSTRUCTION PLANS OF
CROOKED FORK SUPERSTRUCTURE REPLACEMENT
ON C.R. 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

GLULAM CURB PLAN, ELEVATION, LAYOUT, AND DIMENSIONING

SHEET 8 OF 9

BR.NO.21-20-3.18
(8040.1)

PROJECT NUMBERS		WV DISTRICT	COUNTY	SHEET	OF
FEDERAL	STATE				
	S321-20-3.18	SEVEN	LEWIS	9	9



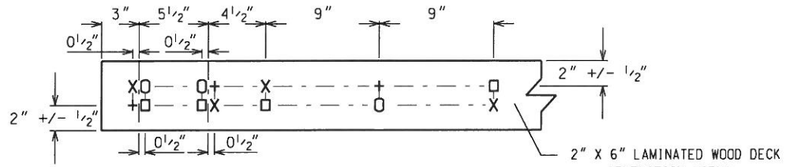
NAIL LOCATION		1ST PIECE OF WOOD				+
"	"	2ND	"	"	"	x
"	"	3RD	"	"	"	o
"	"	4TH	"	"	"	□
"	"	5TH	"	"	"	+

NOTE: ALL NAILS FOR BRIDGE DECK SHALL BE 20 PENNY WEIGHT.

INTERIOR TIMBER DECK NAILING DIAGRAM

NO SCALE

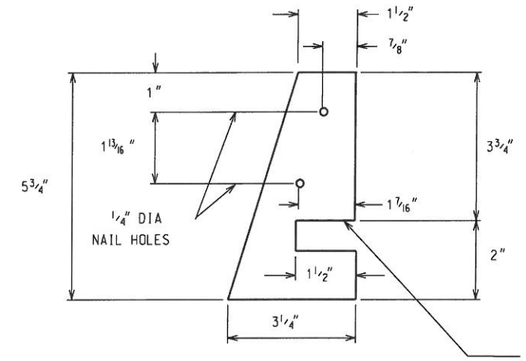
NOTE:
1) ALL NAILS FOR BRIDGE DECK SHALL BE 20 PENNY WEIGHT.
2) LIQUID NAILS ® ADHESIVE SHOULD BE APPLIED USING TWO BEADS MINIMUM TO THE END THREE FEET OF EXTERIOR WOOD DECK LENGTH. GLUE ADHESIVE MATERIAL SHALL CONSIST OF LIQUID NAILS-HEAVY DUTY CONSTRUCTION ADHESIVE.



NAIL LOCATION		1ST PIECE OF WOOD				+
"	"	2ND	"	"	"	x
"	"	3RD	"	"	"	o
"	"	4TH	"	"	"	□
"	"	5TH	"	"	"	+

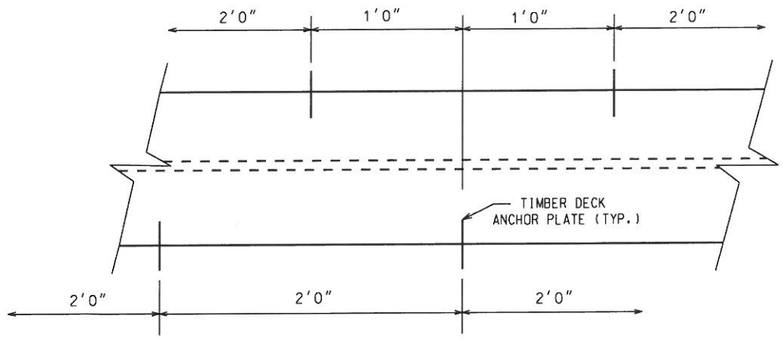
EXTERIOR TIMBER DECK NAILING DIAGRAM

NO SCALE



DECK ANCHOR PLATE DETAILS

NO SCALE



NOTE: ALL ANCHOR PLATES ON EXTERIOR STRINGERS SHALL BE PLACED ON INTERIOR FLANGE SPACED @ 1'0" c-c.

DECK ANCHOR PLATE SPACING DETAIL

(INTERIOR STRINGER)

NO SCALE

REVISIONS	DATE	BY

DESIGNED BY: RMW	DATE: 08-11
DRAWN BY: RMW	08-11
CHECKED BY: GFL	09-11
CHECKED BY:	
REVIEWED BY: WRW	09-11

WEST VIRGINIA DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT SEVEN

CONSTRUCTION PLANS OF
CROOKED FORK SUPERSTRUCTURE REPLACEMENT
ON C.R. 20 (SLS)
OVER SAND FORK
LEWIS COUNTY

NAILING AND DECK ANCHOR DETAILS

SHEET 9 OF 9

BR.NO.21-20-3.18
(8040.1)