



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
02120383

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS 304-558-2402

RFQ COPY
 TYPE NAME/ADDRESS HERE

VENDOR

SHIP TO

DIVISION OF HIGHWAYS
 JOBSITE
 SEE SPECIFICATIONS

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/26/2012				

BID OPENING DATE: 04/11/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001				210-16		
<p>PRESTRESSED BOX BEAMS</p> <p>THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS TO PROVIDE THE AGENCY WITH PRESTRESSED CONCRETE BEAMS WITH ACCESSORIES PER THE ATTACHED SPECIFICATIONS.</p> <p>374 LINEAR FOOT - 36"X17" PRESTRESSED BOX BEAMS LENGTH: 41'-6" (OUT TO OUT) WIDTH: 27'-6" (OUT TO OUT, INCLUDE 3/4" BETWEEN BEAMS) SKEW: 20 DEGREE RFS DESIGN TO BE IN ACCORDANCE WITH SECTION 603 OF THE CURRENT WVDOH STANDARDS AND SPECIFICATIONS.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>EXHIBIT 10</p> <p>REQUISITION NO.:</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.html and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>ADDENDUM ACKNOWLEDGEMENT</p> <p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p> <p>ADDENDUM NO.'S:</p> <p>NO. 1</p> <p>NO. 2</p> <p>NO. 3</p> <p>NO. 4</p> <p>NO. 5</p> <p>I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.</p> <p>VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p style="text-align: center;">..... SIGNATURE</p> <p style="text-align: center;">..... COMPANY</p> <p style="text-align: center;">.....</p>						

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DATE						
NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.						
REV. 09/21/2009						
PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS						
1. EXCEPT WHEN AUTHORIZED BY THE DIRECTOR OF THE PURCHASING DIVISION PURSUANT TO SUBSECTION 2 BELOW NO CONTRACTOR MAY USE OR SUPPLY STEEL PRODUCTS FOR A STATE CONTRACT PROJECT OTHER THAN THOSE STEEL PRODUCTS MADE IN THE UNITED STATES. AS USED USED IN THIS CONTRACT,						
A. "STATE CONTRACT PROJECT" MEANS ANY ERECTION OR CONSTRUCTION OF, OR ANY ADDITION TO, ALTERATION OF OR OTHER IMPROVEMENT TO ANY BUILDING OR STRUCTURE, INCLUDING, BUT NOT LIMITED TO, ROADS OR HIGHWAYS, OR THE INSTALLATION OF ANY HEATING OR COOLING OR VENTILATING PLANTS OR OTHER EQUIPMENT, OR THE SUPPLY OF AND MATERIALS FOR SUCH PROJECTS, PURSUANT TO A CONTRACT WITH THE STATE OF WEST VIRGINIA FOR WHICH BIDS WERE SOLICITED ON OR AFTER JUNE 6, 2001.						
B. "STEEL PRODUCTS" MEANS PRODUCTS ROLLED, FORMED, SHAPED, DRAWN, EXTRUDED, FORGED, CAST, FABRICATED OR OTHERWISE SIMILARLY PROCESSED, OR PROCESSED BY A COMBINATION OF TWO OR MORE OF SUCH OPERATIONS, FROM STEEL MADE BY THE OPEN HEARTH, BASIC OXYGEN, ELECTRIC FURNACE, BESSEMER OR OTHER STEEL MAKING PROCESS.						

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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130						
THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED: SEALED BID						
BUYER:		ALAN CUMMINGS - FILE 33				
RFQ. NO.:		02120383				
BID OPENING DATE:		4/11/2012				
BID OPENING TIME:		1:30 P.M.				
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: -----						
CONTACT PERSON (PLEASE PRINT CLEARLY): -----						
ANY INDIVIDUAL SIGNING THIS BID IS CERTIFYING THAT: (1) HE OR SHE IS AUTHORIZED BY THE BIDDER TO EXECUTE THE BID OR ANY DOCUMENTS RELATED THERETO ON BEHALF OF						

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DIVISION OF HIGHWAYS
 JOBSITE-
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03/26/2012				

BID OPENING DATE: **04/11/2012** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
THE BIDDER, (2) THAT HE OR SHE IS AUTHORIZED TO BIND THE BIDDER IN A CONTRACTUAL RELATIONSHIP, AND (3) THAT THE BIDDER HAS PROPERLY REGISTERED WITH ANY STATE AGENCIES THAT MAY REQUIRE REGISTRATION. ***** THIS IS THE END OF RFQ 02120383 ***** TOTAL: _____						

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Specifications One Time Purchase

Purpose: To provide the West Virginia Division of Highways with prestressed concrete beams (designed for a deck) with accessories to be used on Project # S323-14-2.67, Slab Fork Bridge.

1.0 DEFINITIONS

- A. The "Agency" shall be defined as the West Virginia Division of Highways
- B. The "Vendor" shall be defined as the successful bidder.
- C. The "Purchase Order" shall be defined as the binding agreement that is entered into between the State of West Virginia and the Vendor to provide the services as herein specified.
- D. "Mandatory Requirements: The terms "must", "will", "shall", "minimum", "maximum", or "is/are required" identify a mandatory item or factor. Decisions regarding compliance with any mandatory requirements shall be at the sole discretion of the State.

2.0 SCOPE OF WORK

The successful Vendor shall provide 36" wide x 17" deep prestressed concrete beams (designed for a deck) with accessories.

2.1 Technical Requirements:

All prestressed concrete beams (designed for a deck) with accessories provided shall be in accordance with West Virginia Division of Highways Standard Specifications Roads and Bridges, adopted 2010 and the current Supplemental Specifications and the attached control prints.

www.transportation.wv.gov/highways/engineering/Pages/publications.aspx

2.2.1 All shipments are to be FOB Destination

2.2.2 The Vendor shall be responsible for all costs associated with delivery to the job site.

2.2 Delivery

2.2.1 Deliveries shall be made to job site on CR 14 (Map Attached)

2.2.2 Vendor shall coordinate delivery with the District Bridge Engineer @ 304-528-5655.

2.3 Delivery is an integral part of this purchase order and failure to comply will be cause to initiate a WV-82, vendor Performance Form. This form will officially notify the West Virginia Division of Purchasing and the Vendor of unsatisfactory performance in the execution of this purchase order and the requirements herein.

3.0 INVOICING

3.1 Payment

3.1.1 The Vendor must send an invoice to:
West Virginia Division of Highways, District Two
801 Madison Avenue
Huntington, WV 25704

3.2 Partial Payment of Approved Beams

3.2.1 Upon completion of manufacture and approval by the Division of Highways of all beams specified on the purchase order, the vendor may invoice and the Division will pay for the cost of manufacturing the Beams, not to exceed 65% of the total cost of the delivered Beams. The remaining, 35% or more, may be invoiced when all the Beams are delivered. Partial payment for Beams shall be subject of the following conditions:

- a. The vendor must request partial payment and furnish an official invoice for the manufactured and approved Beams.
- b. The partial payment invoice shall be accompanied by a surety bond equal to the invoiced amount guaranteeing delivery of all items specified on the purchase order.

- c. The vendor shall furnish a statement of approved Beams' condition and exact storage location.
- d. The vendor shall furnish a legal right-of-entry onto the storage site to Division of Highways' employees and/or agents for the purpose of inspecting, sampling, testing, and removing any or all Beams.
- e. The vendor shall certify that the stored Beams are suitably marked and identified as property of the Division of highways and will not be used for any purpose not designated by the Division.

4.0 AWARD

Purchase order will be awarded complete and not split.

Cost Sheet

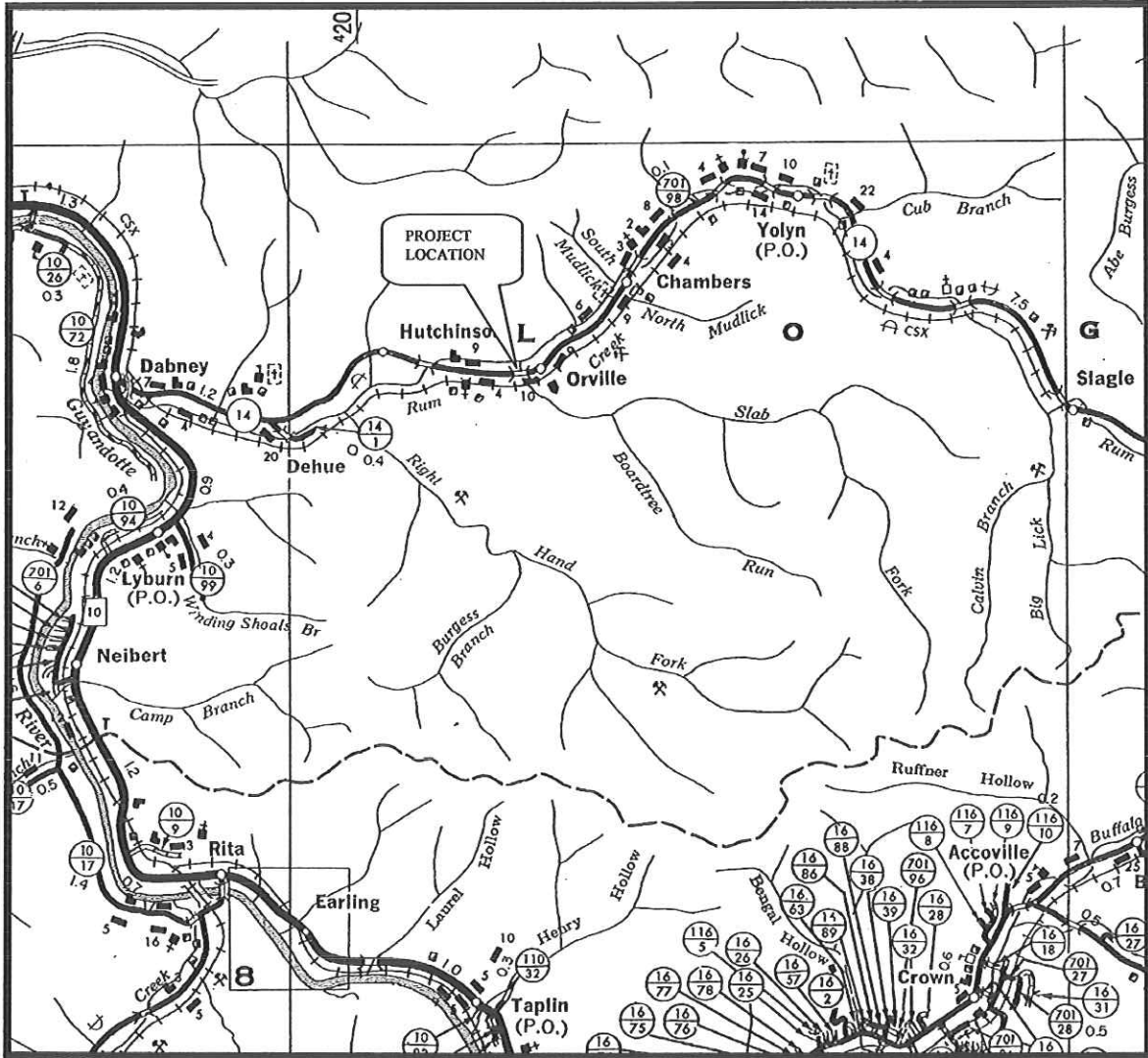
RFQ#

Item Number	Quantity	Unit of Measurement	Description	Unit Price	Extended Amount
1	290.5	Lineal feet	Interior Beam 17" prestressed concrete box beam (3ft. Wide) 7 beams x 41.5		
2	83	Lineal feet	exterior Beam 17" prestressed concrete box beam (3ft. Wide) 2 beams x 41.5		
3	36	Each	Elastomeric Bearing Pads		
4	18	Each	1" Diameter x 2'-0" Anchor bolt or No. 8 deformed rebar		
5	18	Each	Guardrail Attachment Assembly for box beam w/ studs, nut and washers		
6	5	Each	1" Diameter Post- Tensioning Bar w/nuts		
7	18	Each	Bearing Plates		
8	1	lump sum	Thick sponge rubber Preformed joint filler		
9	85	Lineal feet	Guardrail		
				Total	

Items for Project S323-14-2.67, Slab Fork

SLAB FORK CONCRETE BEAM BRIDGE

S323-14-2.67 00



PROJECT NUMBERS	FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
STATE	N.A.	2	LOGAN		
S302-14-2-87					

Bearing Notes:

Elastomeric Bearing Pads are designed in accordance with Design Method B contained in Section 14 of the AASHTO LRFD Bridge Design Specifications.

The provisions for fabrication, installation, testing, and shipping of Elastomeric Bearings, specified in Section 18, Bearings, of the AASHTO LRFD Bridge Construction Specifications, shall apply. The laminate material shall be AASHTO M183 or equivalent in the thickness detailed.

The cost of Elastomeric Bearing Pads shall be included in the price bid for Item 603016-007, 17x36 Precast Concrete Box Beam.

The Bearings shall be low temperature Grade 3 and have a Shear Modulus between 130 and 175 PSI. Durometer hardness of 60. Reinforcing shims shall have a minimum yield strength of 36 ksi.

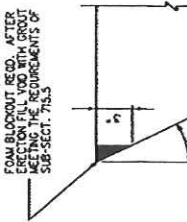
Bearing surfaces shall be finished according to Section 615.4.6. Finish in the direction of rotation.

Bearings shall be positioned so that they are centered at 68" P.

Install beams and bearings to provide full contact with bearing surfaces. If full contact is not achieved after the deck is in place, field adjustments or modifications shall be made by the Contractor to provide full contact of no additional cost to the WYDOH. Adjustments/modifications are subject to the approval of the Engineer.

This sheet shall be used in conjunction with Standard Sheets BR-B17A & B, BR-B100, BR-B101, BR-B102A & B, BR-B103, BR-B104, BR-B105A & B, and BR-B106 as appropriate.

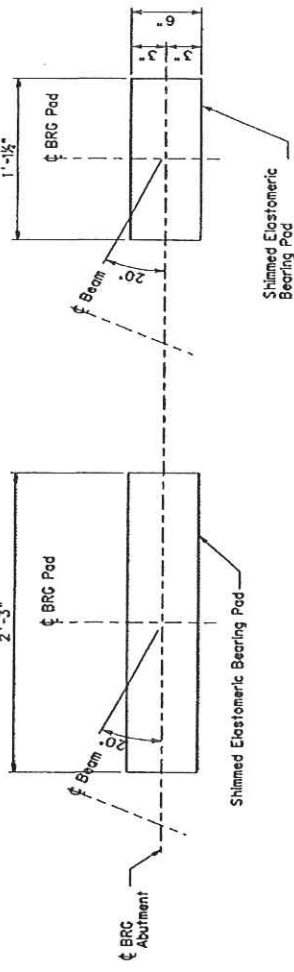
DRP GROOVE DETAIL
EXTERIOR BEAM



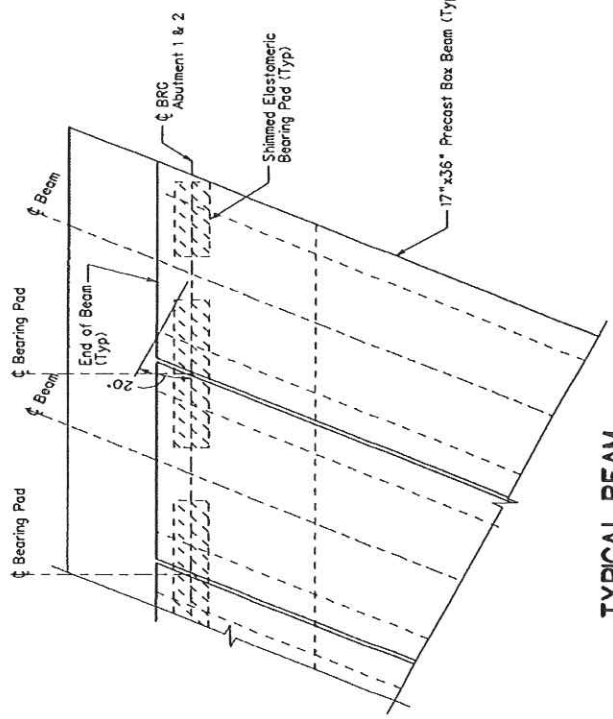
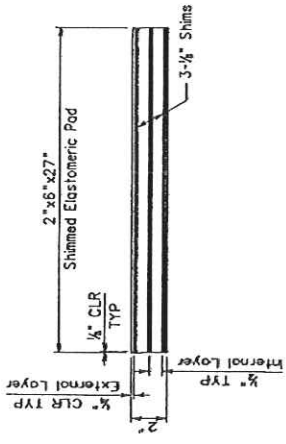
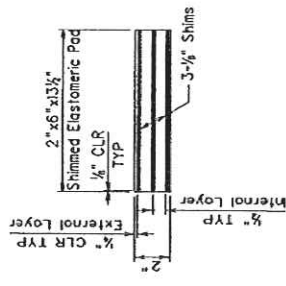
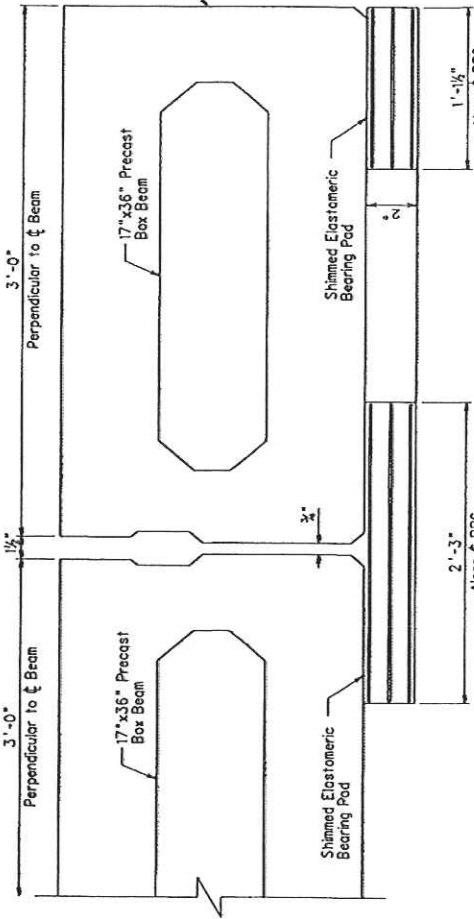
SKIN BLOCKOUT DETAIL



PLAN



ELEVATION

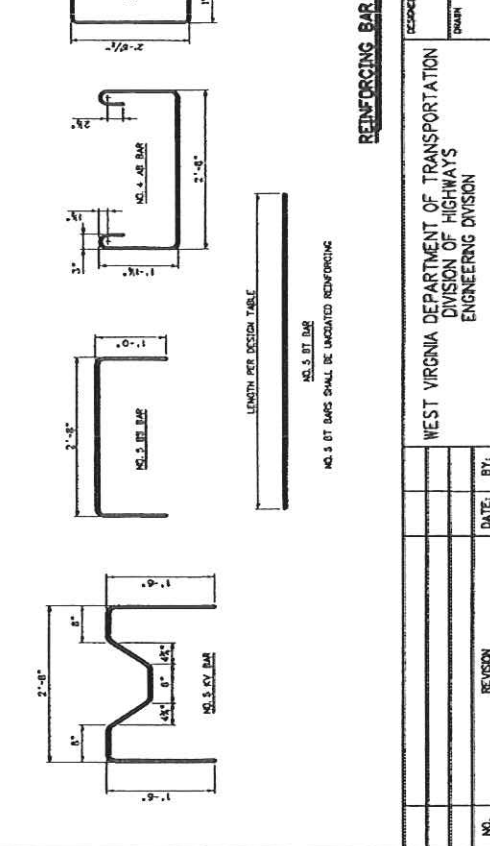
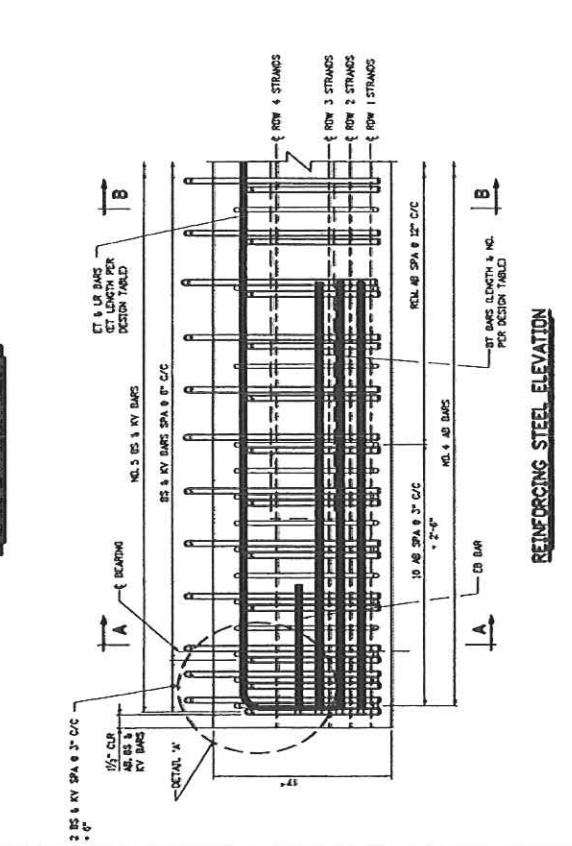
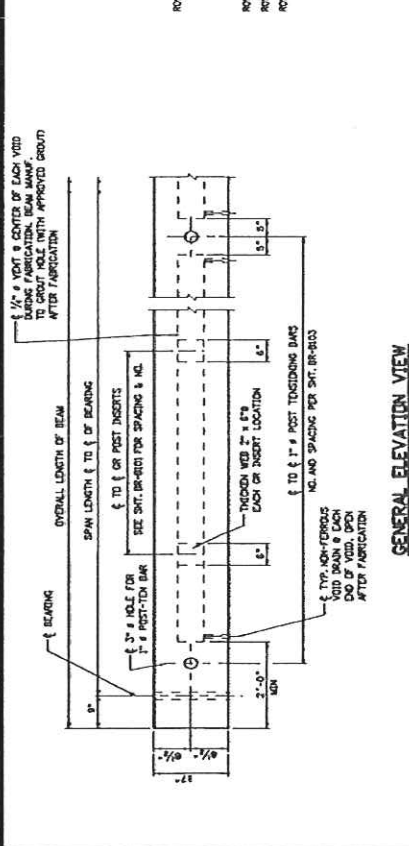
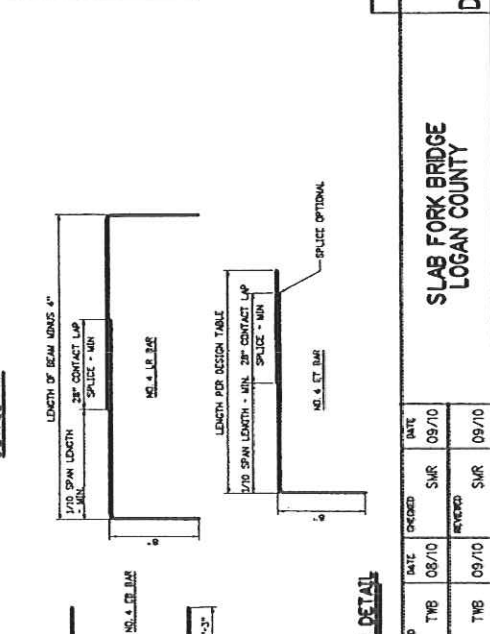
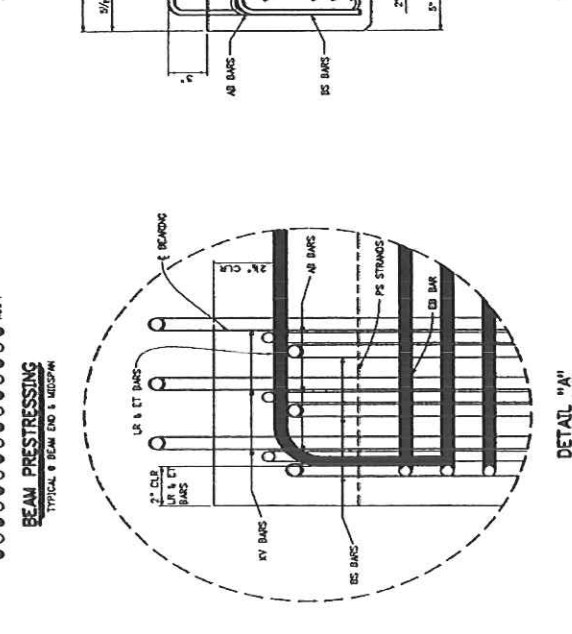
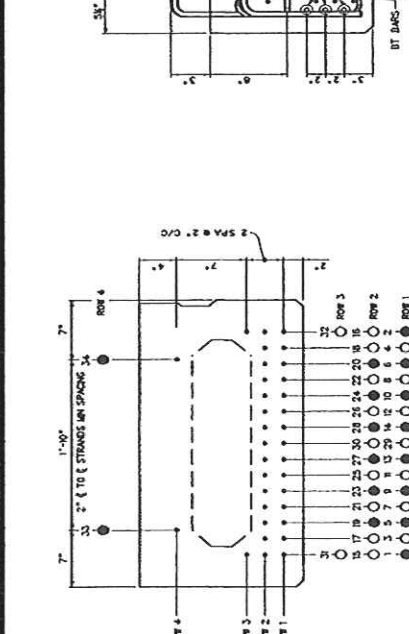


SHIMMED ELASTOMERIC BEARING PAD
BEARINGS @ ABUTMENT 1 (8 Required)
BEARINGS @ ABUTMENT 2 (8 Required)

SHIMMED ELASTOMERIC BEARING PAD @ ABUTMENT 1 & 2
BEARINGS @ ABUTMENT 1 (2 Required)
BEARINGS @ ABUTMENT 2 (2 Required)

NO.	REVISION	DATE:	BY:
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS ENGINEERING DIVISION			
DESIGN	TWB	DATE	09/10
PERFORMED	SMR	DATE	09/10
CHECKED	SMR	DATE	09/10
DATE	09/10	DATE	09/10
SLAB FORK BRIDGE LOGAN COUNTY			
BEARING PAD DETAILS			
SHEET 1 OF 13 DESIGN NUMBER			

PROJECT NO.	333-14-247	DISTRICT	N.A.	COUNTY	LOGAN	SHEET NO.	TOTAL
STATE	W.V.	FEDERAL	2				



DATE	DESIGNED	DATE	REVIEWED	DATE	BY
08/10	TWB	09/10	TWB	09/10	
09/10	SMR	09/10	SMR	09/10	

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ENGINEERING DIVISION

SLAB FORK BRIDGE
 LOGAN COUNTY

SHEET BR-B7A
 17" PRESTRESSED
 CONCRETE BOX BEAM
 DESIGN & ASSEMBLY DETAILS

NOTES:
 1. REFER TO SHEET BR-B7A FOR SCAFFOLD DETAILS.
 2. DESIGNER SHALL USE THE FOLLOWING KEY TO INDICATE THE LOCATION OF REINFORCEMENT BARS AND TENDONS IN THE SHEET.
 ○ - TOP BARS
 △ - BOTTOM BARS
 □ - STIRRUPS
 ○ - TENDON SPACING FROM END OF BEAM
 △ - TENDON SPACING FROM END OF BEAM
 □ - TENDON SPACING FROM END OF BEAM
 3. THIS SHEET SHALL BE USED IN CONFORMANCE WITH STANDARD SHEET BR-B7A, BR-B7B, BR-B7C, BR-B7D, BR-B7E, BR-B7F, BR-B7G, BR-B7H, BR-B7I, BR-B7J, BR-B7K, BR-B7L, BR-B7M, BR-B7N, BR-B7O, BR-B7P, BR-B7Q, BR-B7R, BR-B7S, BR-B7T, BR-B7U, BR-B7V, BR-B7W, BR-B7X, BR-B7Y, BR-B7Z, BR-B7AA, BR-B7AB, BR-B7AC, BR-B7AD, BR-B7AE, BR-B7AF, BR-B7AG, BR-B7AH, BR-B7AI, BR-B7AJ, BR-B7AK, BR-B7AL, BR-B7AM, BR-B7AN, BR-B7AO, BR-B7AP, BR-B7AQ, BR-B7AR, BR-B7AS, BR-B7AT, BR-B7AU, BR-B7AV, BR-B7AW, BR-B7AX, BR-B7AY, BR-B7AZ, BR-B7BA, BR-B7BB, BR-B7BC, BR-B7BD, BR-B7BE, BR-B7BF, BR-B7BF, BR-B7BG, BR-B7BH, BR-B7BI, BR-B7BJ, BR-B7BK, BR-B7BL, BR-B7BM, BR-B7BN, BR-B7BO, BR-B7BP, BR-B7BQ, BR-B7BR, BR-B7BS, BR-B7BT, BR-B7BU, BR-B7BV, BR-B7BW, BR-B7BX, BR-B7BY, BR-B7BZ, BR-B7CA, BR-B7CB, BR-B7CC, BR-B7CD, BR-B7CE, BR-B7CF, BR-B7CF, BR-B7CG, BR-B7CH, BR-B7CI, BR-B7CJ, BR-B7CK, BR-B7CL, BR-B7CM, BR-B7CN, BR-B7CO, BR-B7CP, BR-B7CQ, BR-B7CR, BR-B7CS, BR-B7CT, BR-B7CU, BR-B7CV, BR-B7CW, BR-B7CX, BR-B7CY, BR-B7CZ, BR-B7DA, BR-B7DB, BR-B7DC, BR-B7DD, BR-B7DE, BR-B7DF, BR-B7DF, BR-B7DG, BR-B7DH, BR-B7DI, BR-B7DJ, BR-B7DK, BR-B7DL, BR-B7DM, BR-B7DN, BR-B7DO, BR-B7DP, BR-B7DQ, BR-B7DR, BR-B7DS, BR-B7DT, BR-B7DU, BR-B7DV, BR-B7DW, BR-B7DX, BR-B7DY, BR-B7DZ, BR-B7EA, BR-B7EB, BR-B7EC, BR-B7ED, BR-B7EE, BR-B7EF, BR-B7EF, BR-B7EG, BR-B7EH, BR-B7EI, BR-B7EJ, BR-B7EK, BR-B7EL, BR-B7EM, BR-B7EN, BR-B7EO, BR-B7EP, BR-B7EQ, BR-B7ER, BR-B7ES, BR-B7ET, BR-B7EU, BR-B7EV, BR-B7EW, BR-B7EX, BR-B7EY, BR-B7EZ, BR-B7FA, BR-B7FB, BR-B7FC, BR-B7FD, BR-B7FE, BR-B7FF, BR-B7FF, BR-B7FG, BR-B7FH, BR-B7FI, BR-B7FJ, BR-B7FK, BR-B7FL, BR-B7FM, BR-B7FN, BR-B7FO, BR-B7FP, BR-B7FQ, BR-B7FR, BR-B7FS, BR-B7FT, BR-B7FU, BR-B7FV, BR-B7FW, BR-B7FX, BR-B7FY, BR-B7FZ, BR-B7GA, BR-B7GB, BR-B7GC, BR-B7GD, BR-B7GE, BR-B7GF, BR-B7GF, BR-B7GG, BR-B7GH, BR-B7GI, BR-B7GJ, BR-B7GK, BR-B7GL, BR-B7GM, BR-B7GN, BR-B7GO, BR-B7GP, BR-B7GQ, BR-B7GR, BR-B7GS, BR-B7GT, BR-B7GU, BR-B7GV, BR-B7GW, BR-B7GX, BR-B7GY, BR-B7GZ, BR-B7HA, BR-B7HB, BR-B7HC, BR-B7HD, BR-B7HE, BR-B7HF, BR-B7HF, BR-B7HG, BR-B7HH, BR-B7HI, BR-B7HJ, BR-B7HK, BR-B7HL, BR-B7HM, BR-B7HN, BR-B7HO, BR-B7HP, BR-B7HQ, BR-B7HR, BR-B7HS, BR-B7HT, BR-B7HU, BR-B7HV, BR-B7HW, BR-B7HX, BR-B7HY, BR-B7HZ, BR-B7IA, BR-B7IB, BR-B7IC, BR-B7ID, BR-B7IE, BR-B7IF, BR-B7IF, BR-B7IG, BR-B7IH, BR-B7II, BR-B7IJ, BR-B7IK, BR-B7IL, BR-B7IM, BR-B7IN, BR-B7IO, BR-B7IP, BR-B7IQ, BR-B7IR, BR-B7IS, BR-B7IT, BR-B7IU, BR-B7IV, BR-B7IW, BR-B7IX, BR-B7IY, BR-B7IZ, BR-B7JA, BR-B7JB, BR-B7JC, BR-B7JD, BR-B7JE, BR-B7JF, BR-B7JF, BR-B7JG, BR-B7JH, BR-B7JI, BR-B7JJ, BR-B7JK, BR-B7JL, BR-B7JM, BR-B7JN, BR-B7JO, BR-B7JP, BR-B7JQ, BR-B7JR, BR-B7JS, BR-B7JT, BR-B7JU, BR-B7JV, BR-B7JW, BR-B7JX, BR-B7JY, BR-B7JZ, BR-B7KA, BR-B7KB, BR-B7KC, BR-B7KD, BR-B7KE, BR-B7KF, BR-B7KF, BR-B7KG, BR-B7KH, BR-B7KI, BR-B7KJ, BR-B7KK, BR-B7KL, BR-B7KM, BR-B7KN, BR-B7KO, BR-B7KP, BR-B7KQ, BR-B7KR, BR-B7KS, BR-B7KT, BR-B7KU, BR-B7KV, BR-B7KW, BR-B7KX, BR-B7KY, BR-B7KZ, BR-B7LA, BR-B7LB, BR-B7LC, BR-B7LD, BR-B7LE, BR-B7LF, BR-B7LF, BR-B7LG, BR-B7LH, BR-B7LI, BR-B7LJ, BR-B7LK, BR-B7LL, BR-B7LM, BR-B7LN, BR-B7LO, BR-B7LP, BR-B7LQ, BR-B7LR, BR-B7LS, BR-B7LT, BR-B7LU, BR-B7LV, BR-B7LW, BR-B7LX, BR-B7LY, BR-B7LZ, BR-B7MA, BR-B7MB, BR-B7MC, BR-B7MD, BR-B7ME, BR-B7MF, BR-B7MF, BR-B7MG, BR-B7MH, BR-B7MI, BR-B7MJ, BR-B7MK, BR-B7ML, BR-B7MM, BR-B7MN, BR-B7MO, BR-B7MP, BR-B7MQ, BR-B7MR, BR-B7MS, BR-B7MT, BR-B7MU, BR-B7MV, BR-B7MW, BR-B7MX, BR-B7MY, BR-B7MZ, BR-B7NA, BR-B7NB, BR-B7NC, BR-B7ND, BR-B7NE, BR-B7NF, BR-B7NF, BR-B7NG, BR-B7NH, BR-B7NI, BR-B7NJ, BR-B7NK, BR-B7NL, BR-B7NM, BR-B7NN, BR-B7NO, BR-B7NP, BR-B7NQ, BR-B7NR, BR-B7NS, BR-B7NT, BR-B7NU, BR-B7NV, BR-B7NW, BR-B7NX, BR-B7NY, BR-B7NZ, BR-B7OA, BR-B7OB, BR-B7OC, BR-B7OD, BR-B7OE, BR-B7OF, BR-B7OF, BR-B7OG, BR-B7OH, BR-B7OI, BR-B7OJ, BR-B7OK, BR-B7OL, BR-B7OM, BR-B7ON, BR-B7OO, BR-B7OP, BR-B7OQ, BR-B7OR, BR-B7OS, BR-B7OT, BR-B7OU, BR-B7OV, BR-B7OW, BR-B7OX, BR-B7OY, BR-B7OZ, BR-B7PA, BR-B7PB, BR-B7PC, BR-B7PD, BR-B7PE, BR-B7PF, BR-B7PF, BR-B7PG, BR-B7PH, BR-B7PI, BR-B7PJ, BR-B7PK, BR-B7PL, BR-B7PM, BR-B7PN, BR-B7PO, BR-B7PP, BR-B7PQ, BR-B7PR, BR-B7PS, BR-B7PT, BR-B7PU, BR-B7PV, BR-B7PW, BR-B7PX, BR-B7PY, BR-B7PZ, BR-B7QA, BR-B7QB, BR-B7QC, BR-B7QD, BR-B7QE, BR-B7QF, BR-B7QF, BR-B7QG, BR-B7QH, BR-B7QI, BR-B7QJ, BR-B7QK, BR-B7QL, BR-B7QM, BR-B7QN, BR-B7QO, BR-B7QP, BR-B7QQ, BR-B7QR, BR-B7QS, BR-B7QT, BR-B7QU, BR-B7QV, BR-B7QW, BR-B7QX, BR-B7QY, BR-B7QZ, BR-B7RA, BR-B7RB, BR-B7RC, BR-B7RD, BR-B7RE, BR-B7RF, BR-B7RF, BR-B7RG, BR-B7RH, BR-B7RI, BR-B7RJ, BR-B7RK, BR-B7RL, BR-B7RM, BR-B7RN, BR-B7RO, BR-B7RP, BR-B7RQ, BR-B7RR, BR-B7RS, BR-B7RT, BR-B7RU, BR-B7RV, BR-B7RW, BR-B7RX, BR-B7RY, BR-B7RZ, BR-B7SA, BR-B7SB, BR-B7SC, BR-B7SD, BR-B7SE, BR-B7SF, BR-B7SF, BR-B7SG, BR-B7SH, BR-B7SI, BR-B7SJ, BR-B7SK, BR-B7SL, BR-B7SM, BR-B7SN, BR-B7SO, BR-B7SP, BR-B7SQ, BR-B7SR, BR-B7SS, BR-B7ST, BR-B7SU, BR-B7SV, BR-B7SW, BR-B7SX, BR-B7SY, BR-B7SZ, BR-B7TA, BR-B7TB, BR-B7TC, BR-B7TD, BR-B7TE, BR-B7TF, BR-B7TF, BR-B7TG, BR-B7TH, BR-B7TI, BR-B7TJ, BR-B7TK, BR-B7TL, BR-B7TM, BR-B7TN, BR-B7TO, BR-B7TP, BR-B7TQ, BR-B7TR, BR-B7TS, BR-B7TT, BR-B7TU, BR-B7TV, BR-B7TW, BR-B7TX, BR-B7TY, BR-B7TZ, BR-B7UA, BR-B7UB, BR-B7UC, BR-B7UD, BR-B7UE, BR-B7UF, BR-B7UF, BR-B7UG, BR-B7UH, BR-B7UI, BR-B7UJ, BR-B7UK, BR-B7UL, BR-B7UM, BR-B7UN, BR-B7UO, BR-B7UP, BR-B7UQ, BR-B7UR, BR-B7US, BR-B7UT, BR-B7UU, BR-B7UV, BR-B7UW, BR-B7UX, BR-B7UY, BR-B7UZ, BR-B7VA, BR-B7VB, BR-B7VC, BR-B7VD, BR-B7VE, BR-B7VF, BR-B7VF, BR-B7VG, BR-B7VH, BR-B7VI, BR-B7VJ, BR-B7VK, BR-B7VL, BR-B7VM, BR-B7VN, BR-B7VO, BR-B7VP, BR-B7VQ, BR-B7VR, BR-B7VS, BR-B7VT, BR-B7VU, BR-B7VV, BR-B7VW, BR-B7VX, BR-B7VY, BR-B7VZ, BR-B7WA, BR-B7WB, BR-B7WC, BR-B7WD, BR-B7WE, BR-B7WF, BR-B7WF, BR-B7WG, BR-B7WH, BR-B7WI, BR-B7WJ, BR-B7WK, BR-B7WL, BR-B7WM, BR-B7WN, BR-B7WO, BR-B7WP, BR-B7WQ, BR-B7WR, BR-B7WS, BR-B7WT, BR-B7WU, BR-B7WV, BR-B7WW, BR-B7WX, BR-B7WY, BR-B7WZ, BR-B7XA, BR-B7XB, BR-B7XC, BR-B7XD, BR-B7XE, BR-B7XF, BR-B7XF, BR-B7XG, BR-B7XH, BR-B7XI, BR-B7XJ, BR-B7XK, BR-B7XL, BR-B7XM, BR-B7XN, BR-B7XO, BR-B7XP, BR-B7XQ, BR-B7XR, BR-B7XS, BR-B7XT, BR-B7XU, BR-B7XV, BR-B7XW, BR-B7XX, BR-B7XY, BR-B7XZ, BR-B7YA, BR-B7YB, BR-B7YC, BR-B7YD, BR-B7YE, BR-B7YF, BR-B7YF, BR-B7YG, BR-B7YH, BR-B7YI, BR-B7YJ, BR-B7YK, BR-B7YL, BR-B7YM, BR-B7YN, BR-B7YO, BR-B7YP, BR-B7YQ, BR-B7YR, BR-B7YS, BR-B7YT, BR-B7YU, BR-B7YV, BR-B7YW, BR-B7YX, BR-B7YY, BR-B7YZ, BR-B7ZA, BR-B7ZB, BR-B7ZC, BR-B7ZD, BR-B7ZE, BR-B7ZF, BR-B7ZF, BR-B7ZG, BR-B7ZH, BR-B7ZI, BR-B7ZJ, BR-B7ZK, BR-B7ZL, BR-B7ZM, BR-B7ZN, BR-B7ZO, BR-B7ZP, BR-B7ZQ, BR-B7ZR, BR-B7ZS, BR-B7ZT, BR-B7ZU, BR-B7ZV, BR-B7ZW, BR-B7ZX, BR-B7ZY, BR-B7ZZ.

PROJECT NUMBERS		SHEET NO.	
STATE	FEDERAL	COUNTY	TOTAL
S333-14-2-87	N.A.	LOGAN	2

DESIGN TABLE

SPAN LENGTH ϕ TO ϕ BEARINGS	40'-0"
OVERALL LENGTH OF BEAM	41'-6"
NO. OF 270 KSI, $\frac{1}{2}$ " ϕ LOW-RELAXATION STRANDS, AREA/STRAND = 0.153 SQ. IN.	16
ROW 1	12.5, 6, 9, 10, 13, 14
ROW 2	19, 20, 23, 24, 27, 28
ROW 3	0
STRAND POSITION NUMBER	
ROW 4	33, 34
PRESTRESSING FORCE IMMEDIATELY AFTER STRAND RELEASE, Ppt. (KIPS/BEAM)	517
EFFECTIVE PRESTRESSING FORCE AFTER ALL LOSSES, Ppe. (KIPS/BEAM)	473
REQUIRED FACTORED MOMENT ϕ STRENGTH $L_1 M_u$ (FT-KIPS/BEAM)	535
FACTORED FLEXURAL RESISTANCE, M_r (FT-KIPS/BEAM)	919
TOTAL NO. DEBONDED STRANDS	0
ROW 1	0
ROW 2	0
NUMBER & LENGTH ϕ 4 ET TOP TENSION BARS ϕ EACH END	3 - #4 x 6'-0"
NUMBER & LENGTH ϕ 5 BT BOTTOM TENSION BARS ϕ EACH END	2 - #5 x 6'-0"
DESIGN CAMBER	0.582
** POSITIVE (UP)	0.809
(INCHES)	0.543
WEIGHT OF TYPICAL BEAM INCLUDING DIAPHRAGM (TONS)	10.6

NOTES

SUPER IMPOSED DEAD LOADS INCLUDE TYPE TL-2 GUARDRAIL (50 PLF) AND A FMS OF 25 PSF. PREDICTED DESIGN CAMBER VALUES LISTED IN THE TABLE ARE BASED ON EMPIRICAL FORMULAS AND AS SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TO-DEPTH RATIOS AT OR EXCEEDING 25, THE TOLERANCE VALUES LISTED IN APPENDIX B OF PCI MANUAL FOR QUALITY CONTROL, MNL-116, MAY NOT APPLY. MEASUREMENT OF CAMBER FOR COMPARISON TO PREDICTED DESIGN VALUES SHOULD BE COMPLETED WITHIN 72 HOURS OF RELEASE. ADDITIONALLY, CAMBER SHOULD BE EVALUATED UNDER CONDITIONS THAT MINIMIZE THE EFFECT OF TEMPERATURE VARIATION. DESIGNER, FABRICATOR, AND ERECTOR SHALL BE AWARE THAT SKEWED END BEAMS MAY TWIST OR WARP, CAUSING UNEVEN BEAM SEATING AT THE BEARINGS. THE CONTRACTOR IS REQUIRED TO CORRECT AT THE TIME OF ERECTION, BEFORE THE BEAMS ARE SECURED IN PLACE. METHOD OF CORRECTION SHALL PROVIDE AN EVEN, TOTAL BEARING AND A LEVEL TOP BEAM SURFACE. TOLERANCE, AFTER CORRECTION, SHALL BE (+/-) 1/8 INCH. THE FABRICATOR SHALL NOTIFY THE CONTRACTOR AND DESIGNER OF CORRECTIONS ARE REQUIRED PRIOR TO SHIPMENT.

- 5500 PSI
- 8000 PSI
- 33.62 Kips
- 0.167 SQ. IN.

SHEET BR-8178

SLAB FORK BRIDGE
LOGAN COUNTY

DESIGN TABLE FOR 17"
PRESTRESSED BOX BEAM

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

DESIGN	DATE	BY
THB	08/10	SMR
REVISION	DATE	BY
THB	08/10	SMR

NO.	DATE	BY

PROJECT NUMBER	COUNTY	SHEET NO.
STATE	DISTRICT	TOTAL
5323-14-2-87	2	LOGAN

NO.	REVISION	DATE	BY:

17" PRESTRESSED CONCRETE BOX BEAM DESIGN & ASSEMBLY NOTES

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

SLAB FORK BRIDGE
LOGAN COUNTY

GOVERNING SPECIFICATIONS
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE SUPPLEMENTAL SPECIFICATIONS ISSUED JANUARY 1, 2009. THE CONTRACT PLANS AND CONTRACT SPECIAL PROVISIONS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

DESIGN NOTES
ALL BEAMS ARE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION, DATED 2007.
THE ALUMINUM PRESTRESSED CONCRETE BRIDGE BEAMS FOR THIS PROJECT ARE DESIGNED TO MEET THE FOLLOWING CRITERIA:
1. DESIGN LOADS
16-K13 LIVE LOAD IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
FUTURE WEARING SURFACE OF 25 PSF OF ROADWAY.
TYPE 17-2 GUARDRAIL WEIGHING 50 PLF.
DIAPHRAGM DEAD LOAD, NUMBER REQUIRED BASED ON 15'-0" MAX. SPACING.
2. TWO LANE BRIDGE WITH AN OVERALL WIDTH OF 27'-6" (INCL. 3/4" GAP BETWEEN ADJ. BEAMS), A CURB-TO-CURB WIDTH OF 27'-6", TRANSVERSE POST-TENSIONING, A 6" CONCRETE DECK, AND 20" SKEW.
3. DESIGN STRENGTH AND UNIT STRESSES
MINIMUM CONCRETE STRENGTH @ STRAND RELEASE --- 6000 PSI
MINIMUM CONCRETE STRENGTH @ 28 DAYS --- 8000 PSI
TEMPORARY STRESS LIMITS IN CONCRETE BEFORE LOSSES:
COMPRESSION STRESS LIMIT @ STRAND RELEASE --- 3600 PSI
TENSION STRESS LIMIT @ STRAND RELEASE --- -200 PSI
COMPRESSIVE STRESS LIMITS IN CONCRETE @ SERVICE I AFTER LOSSES:
@ FINAL 1 (PSI-0-0) --- 4800 PSI
@ FINAL 2 (PSI-0-0) --- 3600 PSI
@ FINAL 3 (50MPa-0-0-0) --- 3200 PSI
TENSILE STRESS LIMIT IN CONCRETE @ SERVICE I AFTER LOSSES:
@ FINAL 1 (PSI-0-0) --- -270 PSI
TENSION STRESS LIMIT PRIOR TO TRANSFER --- 202.5 KSI
TENSION STRESS LIMIT AFTER ALL LOSSES --- 194.4 KSI
4. DEBONDING OR SCHEDULING OF STRANDS TO REDUCE TEMPORARY TENSILE STRESSES
IN NO INSTANCES SHALL OUTER STRANDS BE DEBONDED. DEBONDED STRANDS SHALL BE SEPARATED BY AT LEAST ONE FULLY BONDED STRAND AND SHALL BE SYMMETRICAL ABOUT THE FACE OF THE BEAM.
SCHEDULING OF STRANDS SHALL BE ACCOMPLISHED BY TAPING OR TIGHT FITTING PLASTIC TUBES TAPED AT EACH END.
5. THE ELASTOMERIC BEARING PADS PROVIDED IN THE STANDARD DESIGNS ARE BASED ON ZERO GRADE AND ARE LIMITED TO A MAXIMUM OF SIX GRADE. IN INSTANCES OF GRADES EXCEEDING THIS LIMIT, PADS SHALL BE SPECIFICALLY DESIGNED. INDIVIDUAL PAD DESIGNS SHALL BE IN ACCORDANCE WITH SECTION 14, AASHTO LRFD. BEVELED SOLE PLATES ARE PERMITTED.
6. MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.
7. WHEN ALTERNATE DESIGNS OR SITE SPECIFIC DESIGNS ARE PROVIDED, CRITERIA SET FORTH IN THESE STANDARDS SHALL APPLY.
8. NEGATIVE DESIGN CMBER AFTER ALL LOSSES IS NOT PERMITTED.
9. EACH BEAM PROVIDED IN THESE STANDARD DESIGNS HAS BEEN LOAD RATED IN ACCORDANCE WITH SECTION 3.15 OF THE WEST VIRGINIA DIVISION OF HIGHWAYS BRIDGE DESIGN MANUAL 2004. ADDITIONALLY, LOAD RATING PROCEDURES ARE IN ACCORDANCE WITH THE AASHTO MANUAL FOR CONDITION EVALUATION AND LOAD AND RESISTANCE FACTOR RATING OF HIGHWAY BRIDGES, 2003.

WELDING
* TACK WELDING OF REINFORCEMENT IS NOT PERMITTED. REINFORCING CAGES AND LONGITUDINAL STEEL SHALL BE ACCURATELY TIED WITH APPROVED MEANS TO PREVENT RACKING AND MISALIGNMENT.
* ALL WELDING OF FABRICATED ITEMS, AS SHOWN IN THESE PLANS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF AASHTO/DIAGNOSIS 015, 2002.
POST-TENSIONING BEAMS
* ALL POST-TENSIONING THREAD BARS SHALL BE ONE INCH DIAMETER, 150 KSI STEEL, AND SHALL CONFORM TO AASHTO M270, TYPE II. STEEL THREAD BARS SHALL BE DESIGNED TO ALLOW THE USE OF HEAVY HEX NUTS AND COUPLERS THAT THREAD INTO THE END OF THE DEFORMATION. HEAVY HEX NUTS AND COUPLERS SHALL BE OF A DESIGN AND MATERIAL RECOMMENDED BY THE BAR MANUFACTURER TO DEVELOP THE FULL TENSILE STRENGTH OF THE BAR. PROPERLY DOCUMENTED CERTIFIED MILL TEST REPORTS SHALL BE PROVIDED FOR EACH HEAT OF STEEL THREAD BARS.
* ALL POST-TENSIONING THREAD BARS, NUTS, BEARING PLATES, COUPLERS, AND ANCHORAGE HARDWARE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M11. THE GALVANIZING PLANT SHALL ADMINISTER ADEQUATE QUALITY CONTROL MEASURES TO SAFEGUARD AGAINST HYDROGEN EMBRITTLEMENT. QUALITY CONTROL MEASURES SHALL COMPLY WITH ASTM A143. CERTIFICATION FOR HOT-DIP GALVANIZING SHALL BE PROVIDED BY THE GALVANIZING PLANT.
* ALL POST-TENSIONING BEARING PLATES SHALL CONFORM TO AASHTO M270, GRADE 36.
SHAR KEY GROUT
* SHAR KEY GROUT SHALL BE A GROUT THAT IS RECOMMENDED BY THE MANUFACTURER FOR A PROBABLE GROUT APPLICATION AND THAT BASED ON THE MANUFACTURER'S TEST DATA WILL ATTAIN A MINIMUM OF 4500 PSI COMPRESSIVE STRENGTH IN 3 DAYS UNDER CONDITIONS REPRESENTATIVE OF THE CONDITIONS TO BE EXPERIENCED AT THE SITE. THE GROUT MUST BE LISTED ON THE APPROVED LIST OF GROUTS PUBLISHED BY THE WEST VIRGINIA DIVISION OF HIGHWAYS, MATERIALS CONTROL, SOIL AND TESTING DIVISION. THE CONTRACTOR SHALL PRE-TEST THE PROPOSED GROUT FOR COMPRESSIVE STRENGTH AT 3 AND 7 DAYS AND SUBMIT THE RESULTS TO THE BRIDGE PROJECT MANAGER FOR APPROVAL PRIOR TO INSTALLATION OF THE GROUT IN THE STRUCTURE. THE TESTS WILL BE BASED ON A POURABLE CONSISTENCY WITH THE SAME WATER/GROUT MIXTURE RATIO TO BE USED IN THE STRUCTURE.
* THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT FOR EACH PROJECT, THE GROUT PRE-TEST RESULTS OBTAINED IN THE NOTE ABOVE. THE CONTRACTOR SHALL BE REQUIRED TO PERFORM A NEW PRE-TEST AND SUBMISSION FOR APPROVAL UNDER ANY OF THE FOLLOWING CONDITIONS:
* A PERIOD OF 18 MONTHS HAS ELAPSED SINCE LAST PRE-APPROVAL TESTING.
* THE CONTRACTOR MANUFACTURER HAS REVISED OR CHANGED THE GROUT SPECIFICATIONS.
* THE CONTRACTOR ALTERS THE WATER/GROUT MIXTURE RATIO.
* THE CONTRACTOR CHANGES GROUT MANUFACTURERS.
* THE CONTRACTOR IS REQUIRED TO COMPLETE THE GROUT STRENGTH TABLE ON BR-8103.
* TEST PROCEDURE FOR DETERMINING THE COMPRESSIVE STRENGTH OF GROUT SHALL USE CUBE SPECIMENS IN ACCORDANCE WITH ASTM C109, AS MODIFIED BY ASTM C1017. GROUT TESTING IN ACCORDANCE WITH AASHTO T23 (STANDARD CYLINDER TEST) IS NOT ACCEPTABLE.
PROTECTIVE SURFACE TREATMENT
* EACH PRESTRESSED CONCRETE BEAM SHALL BE TREATED BY THE MANUFACTURER AT THE FABRICATION PLANT WITH AN APPROVED CONCRETE SEALER (SILANE), AN APPROVED LIST OF CONCRETE SEALERS ARE ON FILE AT THE WEST VIRGINIA DIVISION OF HIGHWAYS, MATERIALS CONTROL, SOIL AND TESTING DIVISION. COVERAGE SHALL INCLUDE TOP AND BOTTOM OF INTERIOR BEAMS, AND TOP, BOTTOM AND EXTERIOR SIDE OF EXTERIOR BEAM. APPLICATION RATE SHALL BE PER TREATMENT MANUFACTURER'S RECOMMENDATION.
* AFTER COMPLETION OF THE SILANE TREATMENT BY FABRICATOR AND A MAXIMUM OF FIVE WORKING DAYS PRIOR TO SHIPMENT OF THE BEAM, THE FABRICATOR SHALL BE RESPONSIBLE FOR ABRASIVE BLAST CLEANING TO CLEAN WHITE CONCRETE THE INTERIOR SURFACES OF BEAMS FOR THE FULL LENGTH. CLEAN WHITE CONCRETE SHALL MEAN REMOVAL OF ALL DIRT, GRAZE, OIL, AND LOOSE CONCRETE LANTAGE AND PROVIDE A REDUCED CONCRETE SURFACE. BLASTING MEDIUM SHALL BE APPROVED BY THE DIVISION OF HIGHWAYS.
SHOP DRAWINGS
THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF SHOP DRAWINGS IN ACCORDANCE WITH THE WEST VIRGINIA DIVISION OF HIGHWAYS DOCUMENTS, DD-102 AND THE STANDARD SPECIFICATIONS. ADDITIONAL INFORMATION IS PROVIDED IN SECTION 7 OF THE BRIDGE DESIGN SHOP DRAWINGS SHALL INCLUDE THE FABRICATOR'S DETAILING PLAN.

MATERIALS & FABRICATION NOTES
* THE PRESTRESSED CONCRETE BEAMS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF SECTION 603 OF THE STANDARD SPECIFICATIONS.
WELD REINFORCEMENT
* ALL WELD REINFORCING STEEL SHALL BE GRADE 60, DEFORMED BILLET STEEL AND SHALL BE EPOXY COATED EXCEPT WHERE NOTED. ALL UNCOATED REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M31. ALL EPOXY COATED REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M24, EXCEPT WHERE INDICATED BY SECTION 709.1 OF THE STANDARD SPECIFICATIONS.
* ALL TENSION LAP SPICES SHALL BE A CLASS B, CONTACT TYPE, MINIMUM LAP SPICE LENGTHS SHALL AS GIVEN IN THE "LAP SPICE TABLE", THIS SHEET, ADDITIONALLY, IF LAP SPICING OF E.T.L.R. AND BT BARS IS USED, TERMINATION OF THE SPICE SHALL BE NO CLOSER TO THE END OF THE BEAM THAN 1/10 OF THE SPAN LENGTH.
* MINIMUM BAR BENDING DIAMETER SHALL BE 6 BAR DIAMETERS, EXCEPT THAT NO. 4 BARS MAY HAVE A MINIMUM BEND DIAMETER OF 4 BAR DIAMETERS.
* MINIMUM CONCRETE COVER SHALL BE AS SPECIFIED IN SECTION 603.5 OF THE STANDARD SPECIFICATIONS, EXCEPT WHERE NOTED ON THE PLANS.
PRESTRESSING STRAND
* ALL PRESTRESSING STEEL SHALL BE 1/2" # 4, GRADE 270.7 WIRE UNCOATED, LOW-RELAXATION STRAND MEETING THE REQUIREMENTS OF AASHTO M203, SUPPLEMENT 51.
* ALL BEAMS DESIGNED IN THESE STANDARDS UTILIZE STRANDS WITH A NOMINAL AREA OF 0.167 SQ. IN. HOWEVER THE DESIGNER IS ENCOURAGED TO USE THE LARGER STRAND FOR UNIFORMITY REASONS. IN NO CASES WILL STRESS-RELIEVED STRAND BE PERMITTED.
* ALL STRANDS SHALL BE ENCLOSED INSIDE THE STIRRUP CAGE FOR THE FULL LENGTH OF THE BEAM.
* ALL EXPOSED PRESTRESSING STRAND AT EACH BEAM END SHALL BE SHOP COATED WITH A LIQUID COLD-APPLIED BITUMINOUS ELASTOMERIC WATERPROOFING MEMBRANE. MATERIAL SHALL MEET ASTM C839-84.
CONCRETE
* ALL CONCRETE USED IN MANUFACTURING PRESTRESSED CONCRETE BEAMS SHALL MEET THE REQUIREMENTS OF SECTION 603.6 OF THE STANDARD SPECIFICATIONS. DESIGN STRENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES SET FORTH IN THESE PLANS.
* ALL CONCRETE USED IN PARAPETS AND CURBS SHALL BE CLASS K CONCRETE.
ELASTOMERIC BEARING PADS
* ALL BEARING PADS SHALL MEET THE APPLICABLE REQUIREMENTS AS SET FORTH IN SECTION 18.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 1998 EDITION WITH CURRENT INTERIMS. ALL BEARINGS SHALL BE STEEL REINFORCED LAMINATED BEARINGS.
* THE ELASTOMER MATERIAL SHALL BE 60 DUROMETERS WITH A MINIMUM LOW TEMPERATURE GRADE OF 3 FZIN C.
* ALL STEEL REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36.
GUARDRAIL, GUARDRAIL POSTS, TUBING & INSERTS
* ALL WHEAM GUARDRAIL AND ATTACHMENT HARDWARE SHALL BE IN ACCORDANCE WITH SECTION 712.4 OF THE STANDARD SPECIFICATIONS. GUARDRAIL POSTS, STRUCTURAL TUBING, POST ATTACHMENT INSERTS, AND HARDWARE SHALL MEET THE LISTED MATERIAL AND COATING SPECIFICATIONS.

ITEM	DESCRIPTION	MATERIAL SPEC.	LOADING SPEC.
POST	W6X25	AASHTO M270, OR 36	AASHTO M11
PLATE	1/2" x 7"	AASHTO M270, OR 36	AASHTO M11
TUBING	TS 34x44x16	ASTM A500, OR 8	AASHTO M11
CHANNEL	C7x9.8	AASHTO M270, OR 36	AASHTO M11
FERRULE	TYPE 2A 1/4" # x 2 1/2" MIN LEN.	ASTM A108 (Q17 STEEL)	AASHTO M232
WIRE	ANCHOR 3/8" #	ASTM A510 (Q18 STEEL)	AASHTO M232
NUTS	1/4" # x 8" LONG	ASTM A108 (Q45 C.D. STEEL)	AASHTO M232
COUPLERS	TYPE 1A 1/4" # x 5" LONG	AASHTO M201, CLASS C	AASHTO M232
BOLTS	1/4" # x 12" LONG	ASTM A108 (Q18 STEEL)	AASHTO M232
WASHERS	1/4" # x ALL LEN.	AASHTO M54 (TYPE 1, H9)	AASHTO M232
	1/4" #	AASHTO M201, CLASS C	AASHTO M232
	ALL		AASHTO M232

THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-817A & B THRU BR-842A & B, BR-8101, BR-8102A & B, BR-8103, BR-8104, BR-8105A & B AND BR-8106 AS APPLICABLE.

NO.	REVISION	DATE	BY:

STATE	DISTRICT	SHEET NO.
5323-14-2-87	2	LOGAN

17" PRESTRESSED CONCRETE BOX BEAM DESIGN & ASSEMBLY NOTES

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

SLAB FORK BRIDGE
LOGAN COUNTY

GOVERNING SPECIFICATIONS
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE SUPPLEMENTAL SPECIFICATIONS ISSUED JANUARY 1, 2009. THE CONTRACT PLANS AND CONTRACT SPECIAL PROVISIONS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

DESIGN NOTES
ALL BEAMS ARE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION, DATED 2007.
THE ALUMINUM PRESTRESSED CONCRETE BRIDGE BEAMS FOR THIS PROJECT ARE DESIGNED TO MEET THE FOLLOWING CRITERIA:
1. DESIGN LOADS
16-K13 LIVE LOAD IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
FUTURE WEARING SURFACE OF 25 PSF OF ROADWAY.
TYPE 17-2 GUARDRAIL WEIGHING 50 PLF.
DIAPHRAGM DEAD LOAD, NUMBER REQUIRED BASED ON 15'-0" MAX. SPACING.
2. TWO LANE BRIDGE WITH AN OVERALL WIDTH OF 27'-6" (INCL. 3/4" GAP BETWEEN ADJ. BEAMS), A CURB-TO-CURB WIDTH OF 27'-6", TRANSVERSE POST-TENSIONING, A 6" CONCRETE DECK, AND 20" SKEW.
3. DESIGN STRENGTH AND UNIT STRESSES
MINIMUM CONCRETE STRENGTH @ STRAND RELEASE --- 6000 PSI
MINIMUM CONCRETE STRENGTH @ 28 DAYS --- 8000 PSI
TEMPORARY STRESS LIMITS IN CONCRETE BEFORE LOSSES:
COMPRESSION STRESS LIMIT @ STRAND RELEASE --- 3600 PSI
TENSION STRESS LIMIT @ STRAND RELEASE --- -200 PSI
COMPRESSIVE STRESS LIMITS IN CONCRETE @ SERVICE I AFTER LOSSES:
@ FINAL 1 (PSI-0-0) --- 4800 PSI
@ FINAL 2 (PSI-0-0) --- 3600 PSI
@ FINAL 3 (50MPa-0-0-0) --- 3200 PSI
TENSILE STRESS LIMIT IN CONCRETE @ SERVICE I AFTER LOSSES:
@ FINAL 1 (PSI-0-0) --- -270 PSI
TENSION STRESS LIMIT PRIOR TO TRANSFER --- 202.5 KSI
TENSION STRESS LIMIT AFTER ALL LOSSES --- 194.4 KSI
4. DEBONDING OR SCHEDULING OF STRANDS TO REDUCE TEMPORARY TENSILE STRESSES
IN NO INSTANCES SHALL OUTER STRANDS BE DEBONDED. DEBONDED STRANDS SHALL BE SEPARATED BY AT LEAST ONE FULLY BONDED STRAND AND SHALL BE SYMMETRICAL ABOUT THE FACE OF THE BEAM.
SCHEDULING OF STRANDS SHALL BE ACCOMPLISHED BY TAPING OR TIGHT FITTING PLASTIC TUBES TAPED AT EACH END.
5. THE ELASTOMERIC BEARING PADS PROVIDED IN THE STANDARD DESIGNS ARE BASED ON ZERO GRADE AND ARE LIMITED TO A MAXIMUM OF SIX GRADE. IN INSTANCES OF GRADES EXCEEDING THIS LIMIT, PADS SHALL BE SPECIFICALLY DESIGNED. INDIVIDUAL PAD DESIGNS SHALL BE IN ACCORDANCE WITH SECTION 14, AASHTO LRFD. BEVELED SOLE PLATES ARE PERMITTED.
6. MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.
7. WHEN ALTERNATE DESIGNS OR SITE SPECIFIC DESIGNS ARE PROVIDED, CRITERIA SET FORTH IN THESE STANDARDS SHALL APPLY.
8. NEGATIVE DESIGN CMBER AFTER ALL LOSSES IS NOT PERMITTED.
9. EACH BEAM PROVIDED IN THESE STANDARD DESIGNS HAS BEEN LOAD RATED IN ACCORDANCE WITH SECTION 3.15 OF THE WEST VIRGINIA DIVISION OF HIGHWAYS BRIDGE DESIGN MANUAL 2004. ADDITIONALLY, LOAD RATING PROCEDURES ARE IN ACCORDANCE WITH THE AASHTO MANUAL FOR CONDITION EVALUATION AND LOAD AND RESISTANCE FACTOR RATING OF HIGHWAY BRIDGES, 2003.

NO.	REVISION	DATE	BY:

STATE	DISTRICT	SHEET NO.
5323-14-2-87	2	LOGAN

17" PRESTRESSED CONCRETE BOX BEAM DESIGN & ASSEMBLY NOTES

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

SLAB FORK BRIDGE
LOGAN COUNTY

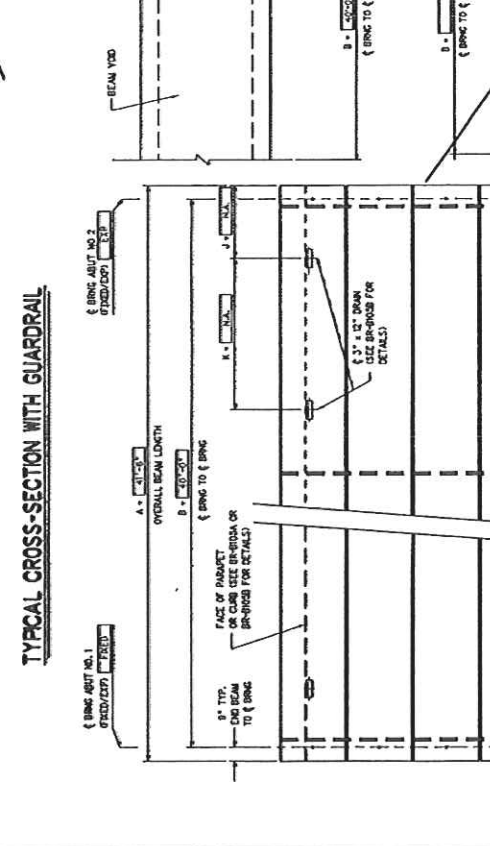
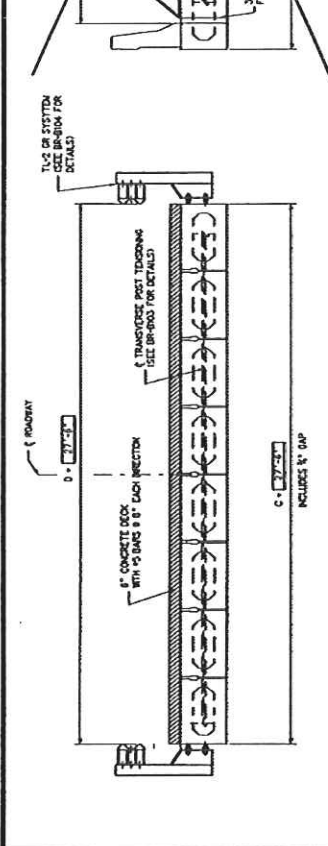
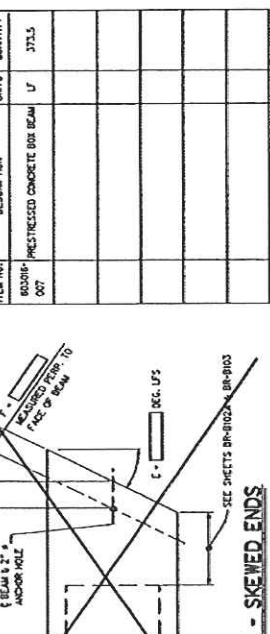
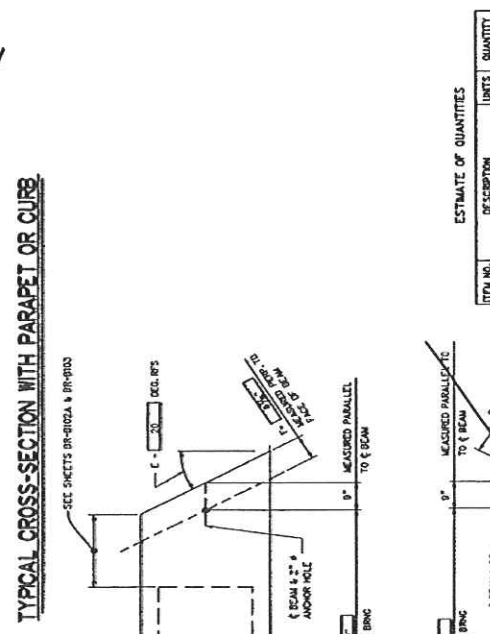
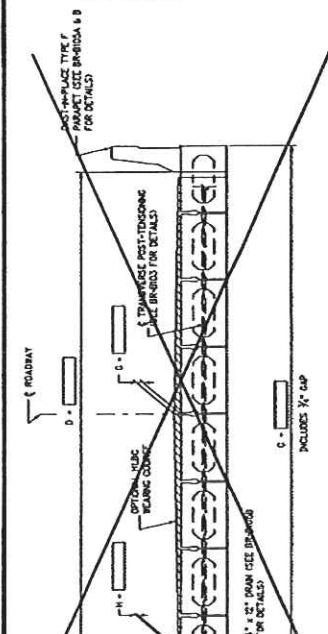
THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-817A & B THRU BR-842A & B, BR-8101, BR-8102A & B, BR-8103, BR-8104, BR-8105A & B AND BR-8106 AS APPLICABLE.

PROJECT NUMBERS		DISTRICT	COUNTY	SHEET	TOTAL
STATE	FEDERAL			NO.	NO.
SD33-H-2.67	N.A.	2	LOGAN	00	00

CONTROL DIMENSIONS		CODE	VALUE
OVERALL BEAM LENGTH		A	47'-0"
SPAN LENGTH & BEARING TO BEAMS		B	49'-0"
SUPERSTRUCTURE WIDTH - OUT TO OUT		C	27'-4"
ROADWAY WIDTH - FACE OF PARAPET TO FACE OF PARAPET		D	27'-4"
NUMBER OF BEAMS REQUIRED			6
BEAM SIZE (WIDTH x DEPTH)			36x17'
SHELF ANGLE (NORMAL, DEL. RFS OR DEL. LFS)		E	30° RFS
PERFORATOR HOLE FROM FACE OF BEAM TO BEARING		F	8 1/2"
HUNG BEARING COURSE REQUIRED (YES/NO)			NO
THICKNESS OF WEARING COURSE @ E OF DECK OR ROADWAY		G	N.A.
THICKNESS OF WEARING COURSE @ EDGE OF DECK OR PARAPET		H	N.A.
T1-2 BRIDGE GUARDRAIL SYSTEM REQUIRED (YES/NO)			YES
FABRICATOR TO SUPPLY T1-2 BRIDGE GUARDRAIL (YES/NO)			YES
FABRICATOR TO INSTALL BRIDGE GUARDRAIL PRIOR TO SHIPMENT (YES/NO) (IF NO, FABRICATOR TO SAMP LOADED)			YES
NUMBER OF GUARDRAIL POST HEIGHTS REQUIRED PER SIDE			8
TYPE OF PARAPET REQUIRED			NO
DRAINS REQUIRED (YES/NO)			NO
NUMBER OF DRAINS REQUIRED PER SIDE			N.A.
10" CURB REQUIRED (YES/NO)			NO

SHEET BR-B101

PRESTRESSED CONCRETE BEAM DESIGN & ASSEMBLY NOTES



ITEM NO.	DESCRIPTION	UNITS	QUANTITY
60004-007	PRESTRESSED CONCRETE BOX BEAM	LF	373.5

DECK PLAN VIEW

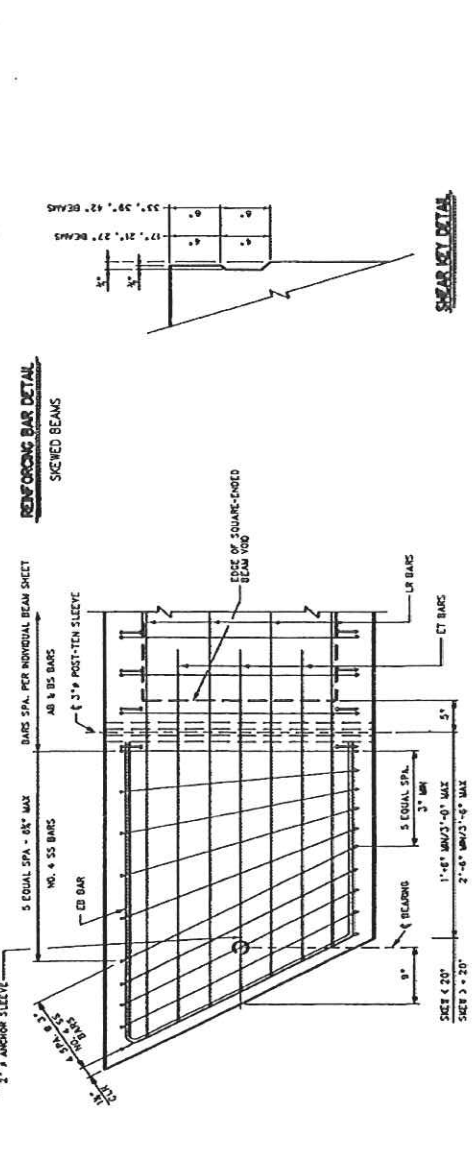
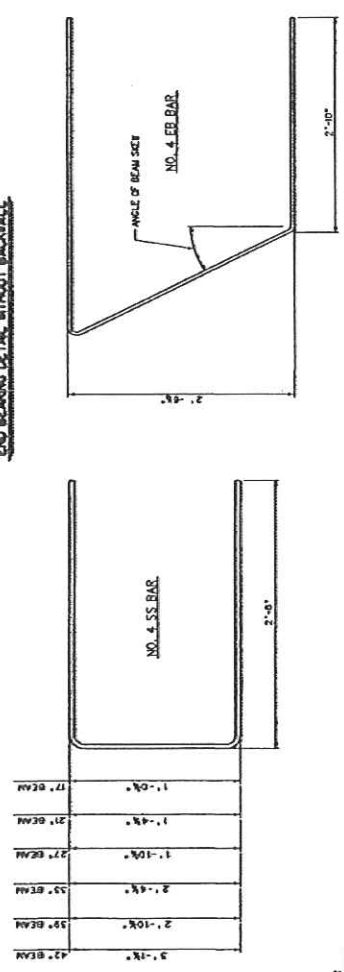
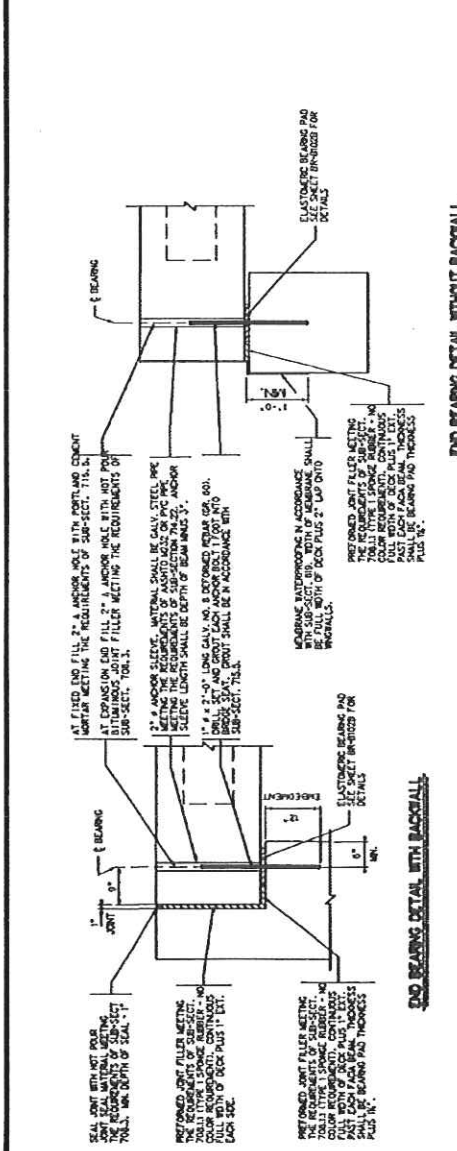
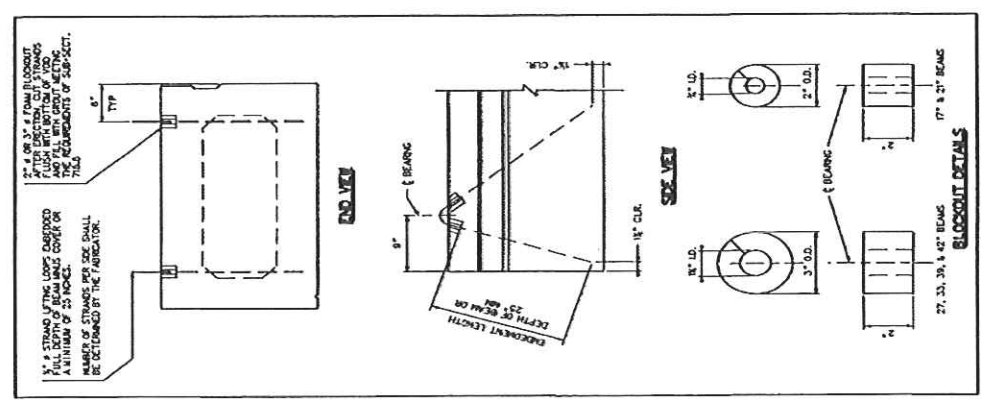
TOTAL BRIDGE GUARDRAIL LENGTH: 30'-3"

NOTES:

1. BRIDGE GUARDRAIL IS TO BE SUPPLIED BY THE BEAM FABRICATOR. FABRICATOR TO PROVIDE ALL NECESSARY MATERIALS AND ACCESSORIES. ITEMS NEEDED TO COMPLETELY INSTALL BRIDGE GUARDRAIL SHALL BE INCLUDED IN ITEM 60006 - PRESTRESSED CONCRETE BOX BEAM.
2. THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-B107A & B THRU BR-B124 & B, BR-B100, BR-B102A & B, BR-B103, BR-B104, BR-B105A & B AND BR-B106.

NO.	REVISION	DATE	BY:

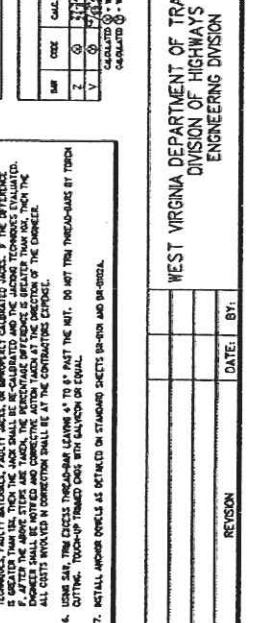
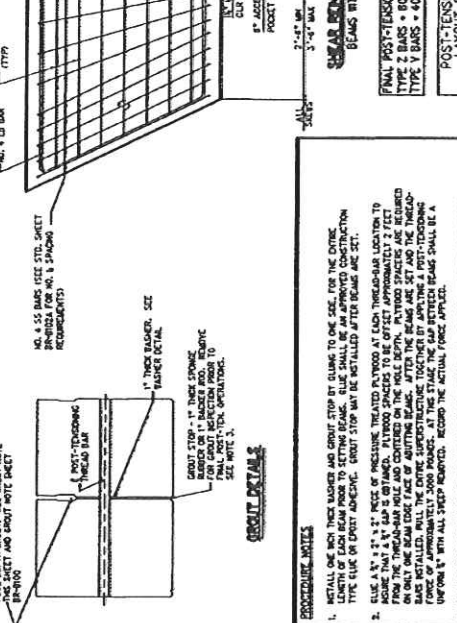
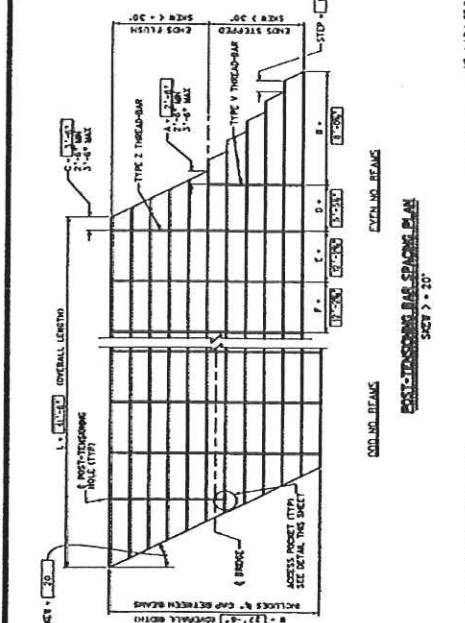
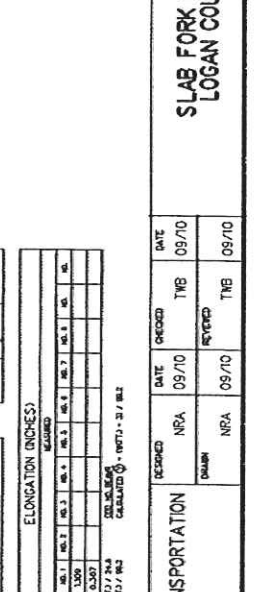
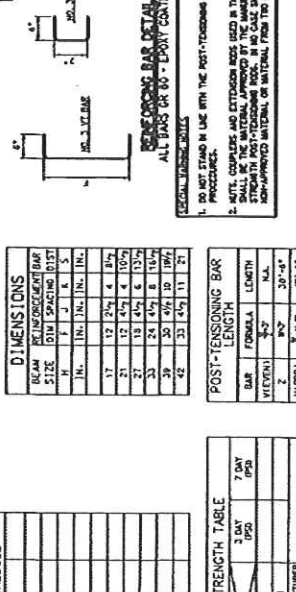
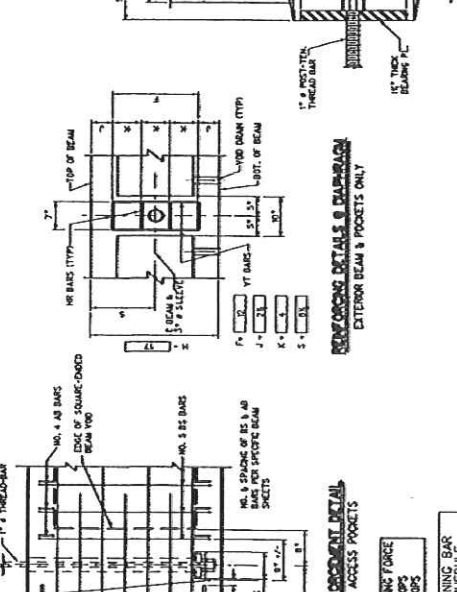
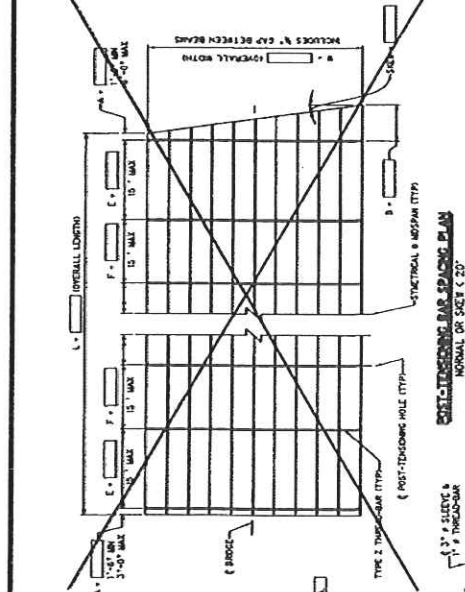
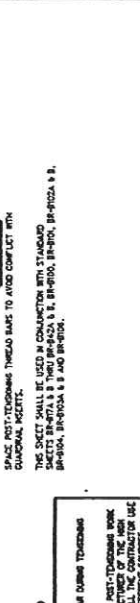
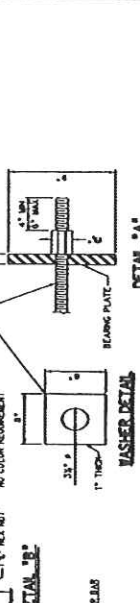
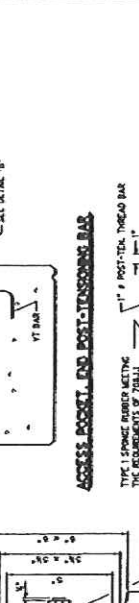
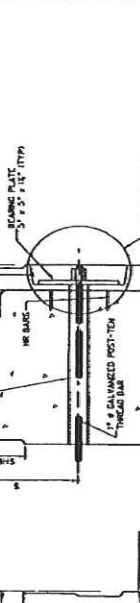
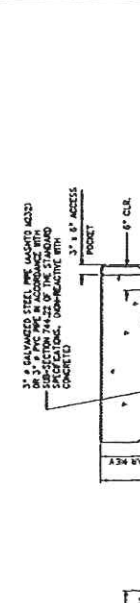
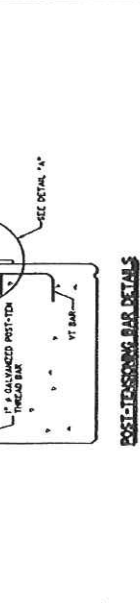
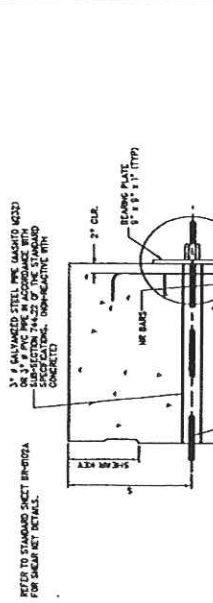
PROJECT NUMBER	DISTRICT	COUNTY	SHEET TOTAL
STATE FEDERAL	2	LOGAN	00 00
5323-14-2-87	N.A.		



THIS SHEET SHALL BE USED IN CONNECTION WITH STANDARD SHEETS BR-407A & B, THRU BR-402 & B, BR-400, BR-398, BR-397, BR-396, BR-395, BR-394, BR-393, BR-392, BR-391, BR-390, BR-389, BR-388, BR-387, BR-386, BR-385, BR-384, BR-383, BR-382, BR-381, BR-380, BR-379, BR-378, BR-377, BR-376, BR-375, BR-374, BR-373, BR-372, BR-371, BR-370, BR-369, BR-368, BR-367, BR-366, BR-365, BR-364, BR-363, BR-362, BR-361, BR-360, BR-359, BR-358, BR-357, BR-356, BR-355, BR-354, BR-353, BR-352, BR-351, BR-350, BR-349, BR-348, BR-347, BR-346, BR-345, BR-344, BR-343, BR-342, BR-341, BR-340, BR-339, BR-338, BR-337, BR-336, BR-335, BR-334, BR-333, BR-332, BR-331, BR-330, BR-329, BR-328, BR-327, BR-326, BR-325, BR-324, BR-323, BR-322, BR-321, BR-320, BR-319, BR-318, BR-317, BR-316, BR-315, BR-314, BR-313, BR-312, BR-311, BR-310, BR-309, BR-308, BR-307, BR-306, BR-305, BR-304, BR-303, BR-302, BR-301, BR-300, BR-299, BR-298, BR-297, BR-296, BR-295, BR-294, BR-293, BR-292, BR-291, BR-290, BR-289, BR-288, BR-287, BR-286, BR-285, BR-284, BR-283, BR-282, BR-281, BR-280, BR-279, BR-278, BR-277, BR-276, BR-275, BR-274, BR-273, BR-272, BR-271, BR-270, BR-269, BR-268, BR-267, BR-266, BR-265, BR-264, BR-263, BR-262, BR-261, BR-260, BR-259, BR-258, BR-257, BR-256, BR-255, BR-254, BR-253, BR-252, BR-251, BR-250, BR-249, BR-248, BR-247, BR-246, BR-245, BR-244, BR-243, BR-242, BR-241, BR-240, BR-239, BR-238, BR-237, BR-236, BR-235, BR-234, BR-233, BR-232, BR-231, BR-230, BR-229, BR-228, BR-227, BR-226, BR-225, BR-224, BR-223, BR-222, BR-221, BR-220, BR-219, BR-218, BR-217, BR-216, BR-215, BR-214, BR-213, BR-212, BR-211, BR-210, BR-209, BR-208, BR-207, BR-206, BR-205, BR-204, BR-203, BR-202, BR-201, BR-200, BR-199, BR-198, BR-197, BR-196, BR-195, BR-194, BR-193, BR-192, BR-191, BR-190, BR-189, BR-188, BR-187, BR-186, BR-185, BR-184, BR-183, BR-182, BR-181, BR-180, BR-179, BR-178, BR-177, BR-176, BR-175, BR-174, BR-173, BR-172, BR-171, BR-170, BR-169, BR-168, BR-167, BR-166, BR-165, BR-164, BR-163, BR-162, BR-161, BR-160, BR-159, BR-158, BR-157, BR-156, BR-155, BR-154, BR-153, BR-152, BR-151, BR-150, BR-149, BR-148, BR-147, BR-146, BR-145, BR-144, BR-143, BR-142, BR-141, BR-140, BR-139, BR-138, BR-137, BR-136, BR-135, BR-134, BR-133, BR-132, BR-131, BR-130, BR-129, BR-128, BR-127, BR-126, BR-125, BR-124, BR-123, BR-122, BR-121, BR-120, BR-119, BR-118, BR-117, BR-116, BR-115, BR-114, BR-113, BR-112, BR-111, BR-110, BR-109, BR-108, BR-107, BR-106, BR-105, BR-104, BR-103, BR-102, BR-101, BR-100, BR-99, BR-98, BR-97, BR-96, BR-95, BR-94, BR-93, BR-92, BR-91, BR-90, BR-89, BR-88, BR-87, BR-86, BR-85, BR-84, BR-83, BR-82, BR-81, BR-80, BR-79, BR-78, BR-77, BR-76, BR-75, BR-74, BR-73, BR-72, BR-71, BR-70, BR-69, BR-68, BR-67, BR-66, BR-65, BR-64, BR-63, BR-62, BR-61, BR-60, BR-59, BR-58, BR-57, BR-56, BR-55, BR-54, BR-53, BR-52, BR-51, BR-50, BR-49, BR-48, BR-47, BR-46, BR-45, BR-44, BR-43, BR-42, BR-41, BR-40, BR-39, BR-38, BR-37, BR-36, BR-35, BR-34, BR-33, BR-32, BR-31, BR-30, BR-29, BR-28, BR-27, BR-26, BR-25, BR-24, BR-23, BR-22, BR-21, BR-20, BR-19, BR-18, BR-17, BR-16, BR-15, BR-14, BR-13, BR-12, BR-11, BR-10, BR-9, BR-8, BR-7, BR-6, BR-5, BR-4, BR-3, BR-2, BR-1.

NO.		REVISION	DATE	BY	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS ENGINEERING DIVISION				SHEET BR-B102A PRESTRESSED CONCRETE BEAM SKEWED END REINFORCING DETAILS	
					DESIGNED	DATE	CHECKED	DATE	DATE	
					NRA	09/70	TWB	09/70	TWB	09/70
					BRN	09/70	REVIEWED	TWB	09/70	

PROJECT NUMBER	FEDERAL	COUNTY	TOTAL
STATE	N.A.	LOGAN	00
5225-14-2.57			00



PROJECT NUMBER	FEDERAL	COUNTY	TOTAL
STATE	N.A.	LOGAN	00
5225-14-2.57			00

PROJECT NUMBER	FEDERAL	COUNTY	TOTAL
STATE	N.A.	LOGAN	00
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PROJECT NUMBER	FEDERAL	COUNTY	TOTAL
STATE	N.A.	LOGAN	00
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PROJECT NUMBER	FEDERAL	COUNTY	TOTAL
STATE	N.A.	LOGAN	00
5225-14-2.57			00

REFER TO STANDARD SHEET BR-103A FOR SHEAR KEY DETAIL.

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SHEET BR-B103

PRESTRESSED CONCRETE BEAM TRAVERSE POST-TENSIONING DETAILS

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

LOGAN COUNTY

SLAB FORK BRIDGE

NO.	REVISION	DATE:	BY:

DESIGNED	NRA	DATE	09/10
CHECKED	NRA	DATE	09/10
APPROVED	NRA	DATE	09/10
DATE	09/10	TWB	TWB

00 of 01
SHEET INDEXED

PROJECT NUMBER	COUNTY	DISTRICT	SHEET NO.	TOTAL
STATE FEDERAL	LOGAN	2	00	00
5323-14-2-87	LOGAN	2	00	00

DATE	BY	REVISION

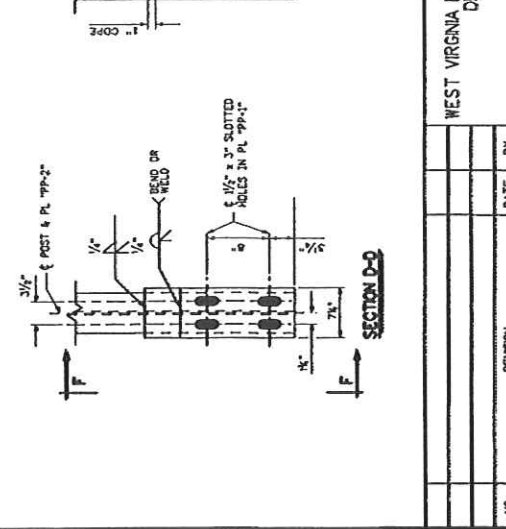
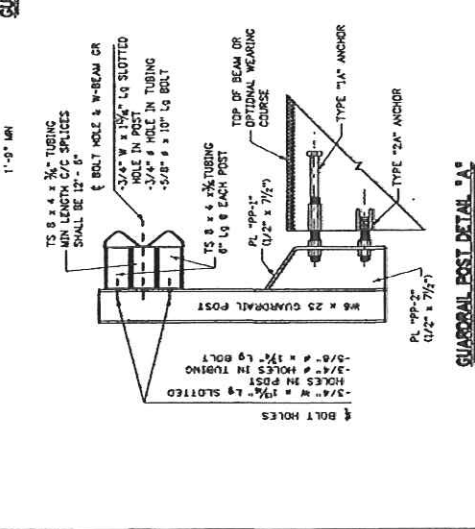
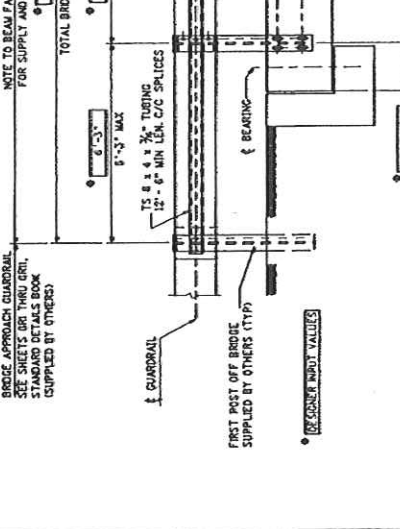
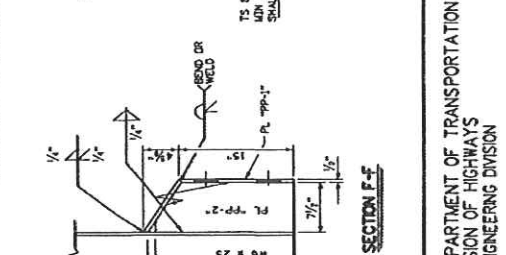
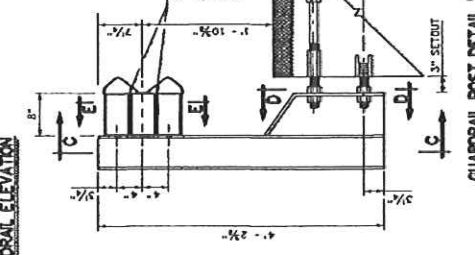
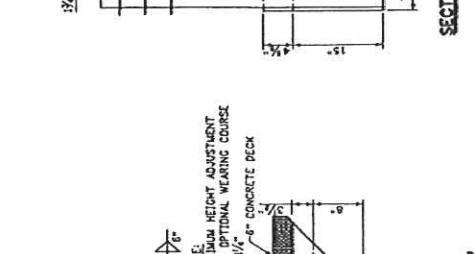
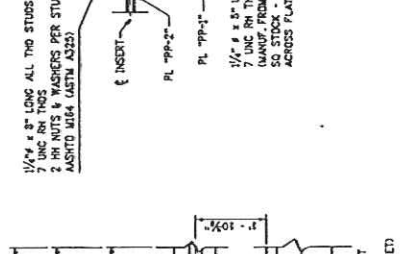
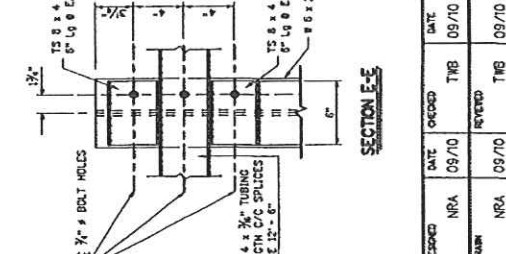
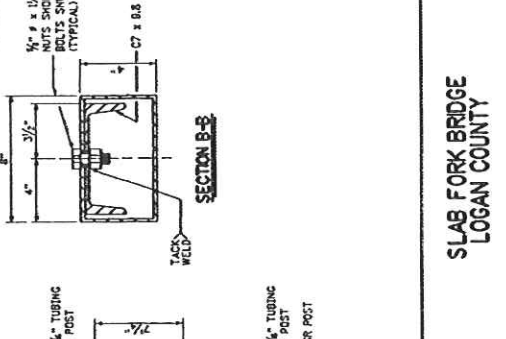
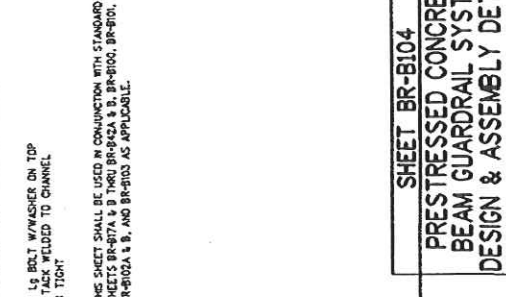
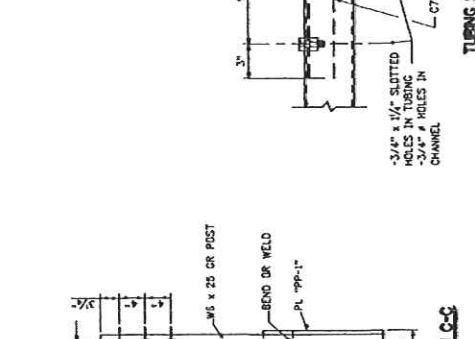
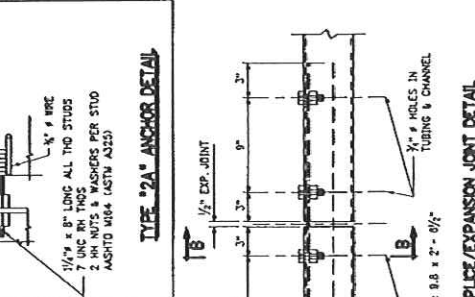
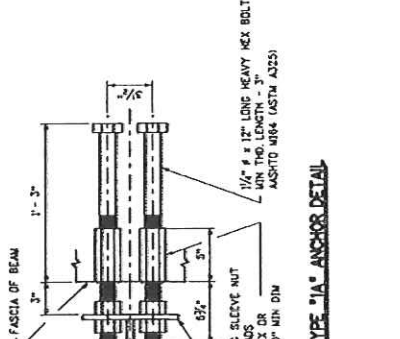
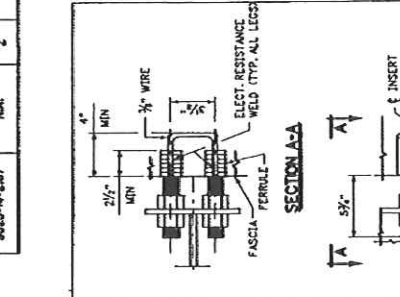
SHEET BR-B104
PRESTRESSED CONCRETE
BEAM GUARDRAIL SYSTEM
DESIGN & ASSEMBLY DETAILS

SLAB FORK BRIDGE
LOGAN COUNTY

DATE	DATE	DATE	DATE
09/10	09/10	09/10	09/10
TRB	TRB	TRB	TRB

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

DATE	BY



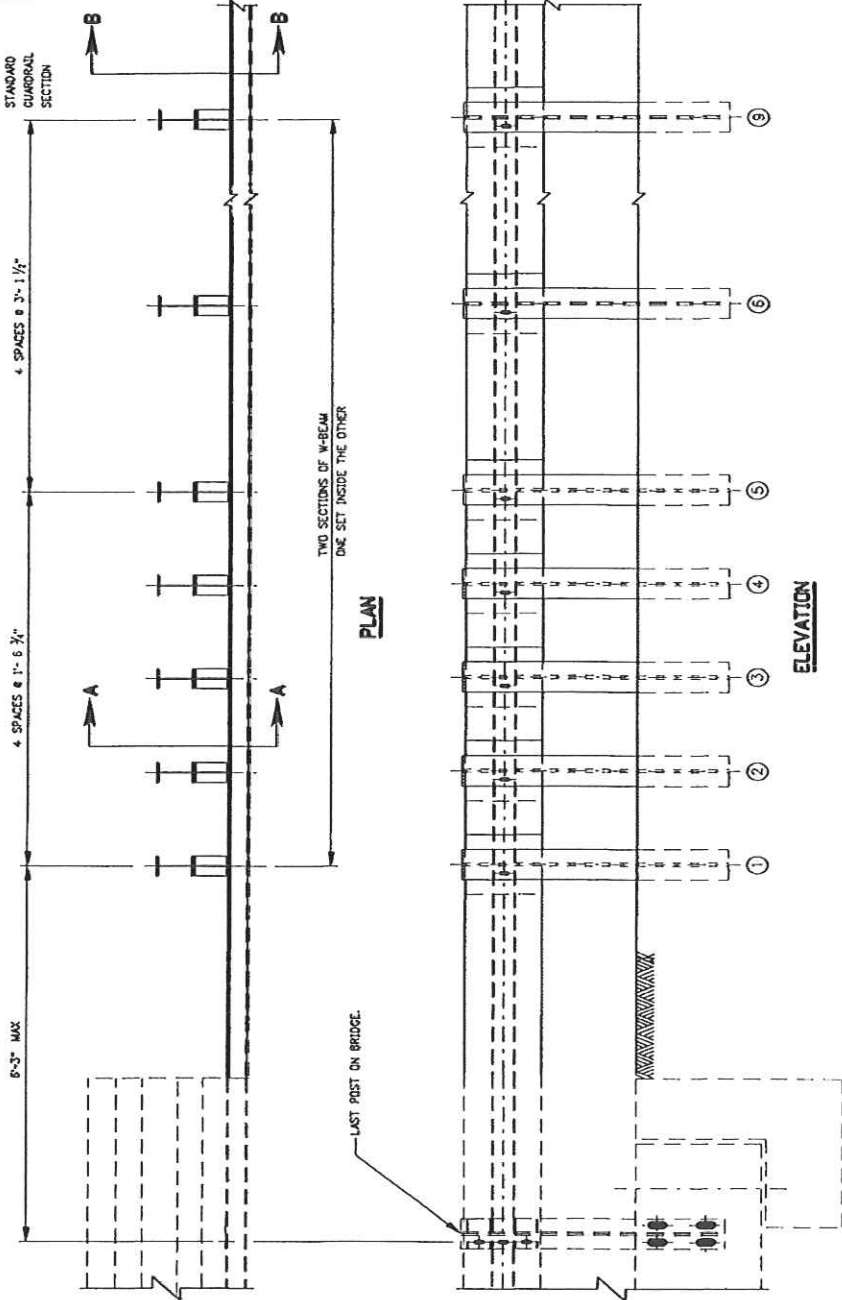
NOTE TO BEAM FABRICATOR: REFER TO BR-B100 FOR SUPPLY AND INSTALLATION REQUIREMENTS.

BRIDGE APPROACH GUARDRAIL: SEE SHEETS BR-B101, BR-B102, BR-B103, BR-B104, BR-B105, BR-B106, BR-B107, BR-B108, BR-B109, BR-B110, BR-B111, BR-B112, BR-B113, BR-B114, BR-B115, BR-B116, BR-B117, BR-B118, BR-B119, BR-B120, BR-B121, BR-B122, BR-B123, BR-B124, BR-B125, BR-B126, BR-B127, BR-B128, BR-B129, BR-B130, BR-B131, BR-B132, BR-B133, BR-B134, BR-B135, BR-B136, BR-B137, BR-B138, BR-B139, BR-B140, BR-B141, BR-B142, BR-B143, BR-B144, BR-B145, BR-B146, BR-B147, BR-B148, BR-B149, BR-B150, BR-B151, BR-B152, BR-B153, BR-B154, BR-B155, BR-B156, BR-B157, BR-B158, BR-B159, BR-B160, BR-B161, BR-B162, BR-B163, BR-B164, BR-B165, BR-B166, BR-B167, BR-B168, BR-B169, BR-B170, BR-B171, BR-B172, BR-B173, BR-B174, BR-B175, BR-B176, BR-B177, BR-B178, BR-B179, BR-B180, BR-B181, BR-B182, BR-B183, BR-B184, BR-B185, BR-B186, BR-B187, BR-B188, BR-B189, BR-B190, BR-B191, BR-B192, BR-B193, BR-B194, BR-B195, BR-B196, BR-B197, BR-B198, BR-B199, BR-B200.

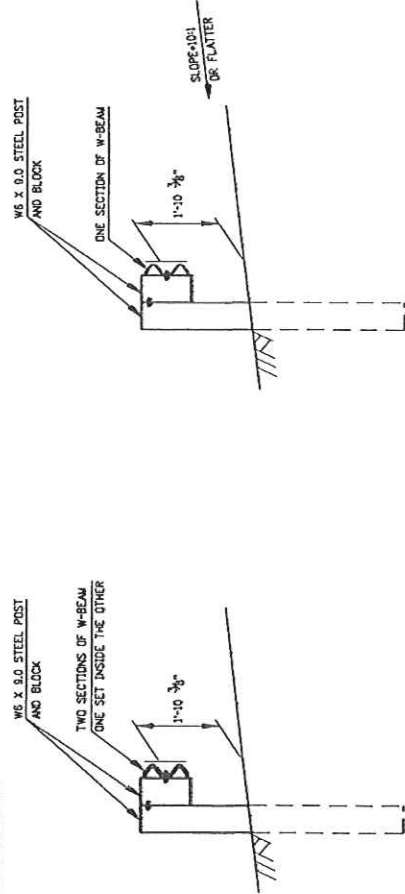
PROJECT NUMBERS		COUNTY	SHEET NO.	TOTAL
STATE	FEDERAL			
5323-H-2.87	N.A.	LOGAN	00	00

NOTES

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO GUARDRAIL ON BRIDGE.
2. W-BEAM IS NOT BOLTED TO POSTS AT POSTS 2 THROUGH 4 AND POST 6.
3. SEE STANDARD SHEET BR-B104 FOR ANCHOR DETAILS.
4. THERE IS NO SEPARATE PAY ITEM FOR THIS CONNECTION AND ALL COMPONENTS AS DETAILED HEREIN SHALL BE INCLUDED IN THE CONTRACT PRICE FOR GUARDRAIL.



ELEVATION



SECTION A-A

SECTION B-B

NO.	REV/NO	DATE:	BY:
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS ENGINEERING DIVISION			
SCOPE:	NSA	DATE:	09/10
DRAWN:	NSA	DATE:	09/10
CHECKED:	TWB	DATE:	09/10
REVISED:	TWB	DATE:	09/10
SLAB FORK BRIDGE LOGAN COUNTY			
SHEET BR-B106			
PRESTRESSED CONCRETE BEAM GUARDRAIL SYSTEMS DESIGN & ASSEMBLY DETAILS			SHEET 00 of 00 DESIGN NUMBER

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ Signed: _____
Date: _____ Title: _____

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

RFQ No. _____

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ____ day of _____, 20__.

My Commission expires _____, 20__.

AFFIX SEAL HERE

NOTARY PUBLIC. _____

Please use this document for technical questions, posing in a question format

Please refer to the section your question is in reference to.

Technical questions for RFQ# _____

Vendor Name: _____

Questions:
