



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
01110755

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
BUYER 33 304-558-2402

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
12/29/2010				

BID OPENING DATE: 02/09/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	SF		210-16		
PRESTRESSED CONCRETE BEAMS REQUEST FOR QUOTATION (RFQ) THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS FOR A CONTRACT TO PROVIDE PRESTRESSED CONCRETE BEAMS FOR PROJECT # S303-8/4-0.08, BIG HORSE CREEK BRIDGE IN BOONE COUNTY, PER THE ATTACHED SPECIFICATIONS. TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO SHERI SLONE IN THE WEST VIRGINIA STATE PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS RFQ, VIA FAX AT 304-558-2596, OR VIA EMAIL AT SHERI.D.SLONE@WV.GOV. DEADLINE FOR TECHNICAL QUESTIONS IS 01/21/2011 AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS LAPSED. EXHIBIT 10 ADDENDUM ACKNOWLEDGEMENT REQUISITION NO.:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
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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.htm 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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12/29/2010				

BID OPENING DATE: 02/09/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<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>..... SIGNATURE</p> <p>..... COMPANY</p> <p>..... DATE</p>						

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<p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009</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 style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p style="text-align: center;">DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: SHERI SLONE - FILE 33</p> <p>RFQ. NO.: 01110755</p>						

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
BID OPENING DATE: 02/09/2011 BID OPENING TIME: 1:30 PM PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: ----- CONTACT PERSON (PLEASE PRINT CLEARLY): ----- ***** THIS IS THE END OF RFQ 01110755 ***** TOTAL: _____						

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**TO PROVIDE PRESTRESSED CONCRETE BEAMS FOR PROJECT
S303-8/4-0.08, BIG HORSE CREEK BRIDGE IN BOONE COUNTY.**

SPECIFICATIONS

1. Beams are to be fabricated in accordance with attached plan sheets 1 through 9. These are standard bridge design sheets which have been detailed with specific requirements for this project.
2. Cost includes shipping to the project site which is located on an attached excerpt from a county highway map. May require steerable trailers due to one severe curve leading to a narrow bridge on Lincoln Co. Rte. 3/10. Call District Bridge Engineer at 304-558-3775 for scheduling delivery.

BID SCHEDULE

<u>ITEM</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1	357.5 LF	Int. Beam (33"x3') 70'0" c-c Brg. 71'6" Overall Length (5 Beams), No skew.	_____	_____
2	143.0 LF	Ext. Beam (33"x3') 70'0" c-c Brg. 71'6" Overall Length (2 Beams). No skew. (With GR inserts)	_____	_____
3	10 Each	B1 Elastomeric Lam. Brg. Pad	_____	_____
4	4 Each	B2 Elastomeric Lam. Brg. Pad	_____	_____
5	115 SF	1" Type 1 Sponge Rubber (for Backwalls)	_____	_____
6	86 SF	3" Type 1 Sponge Rubber (for Bridge Seats)	_____	_____
7	146 LF	1" Dia. Post-Tensioning Bar With Nuts as Required	_____	_____
8	12 Each	Bearing Plate 9" x 9" x 1" With Washers as Required	_____	_____
			TOTAL	_____

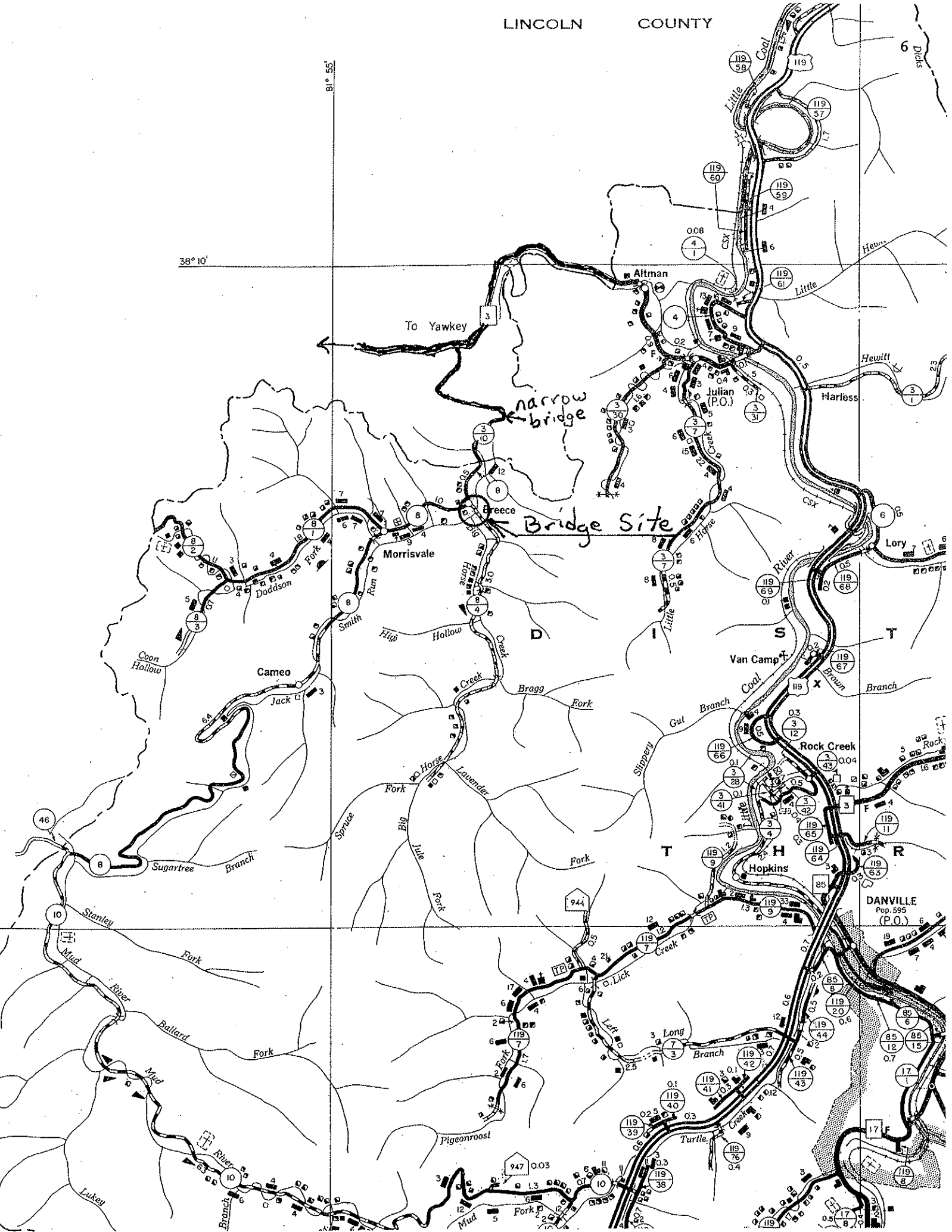
38° 10'

81° 55'

To Yawkey

Narrow bridge

Bridge Site



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:

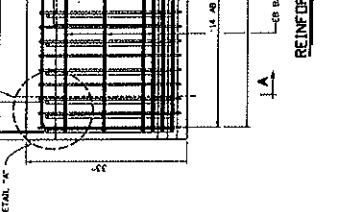
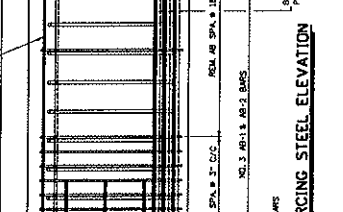
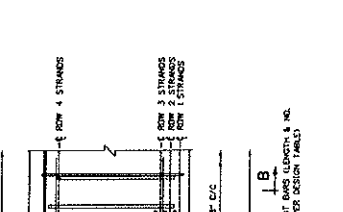
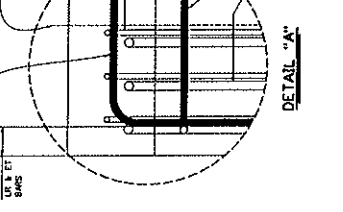
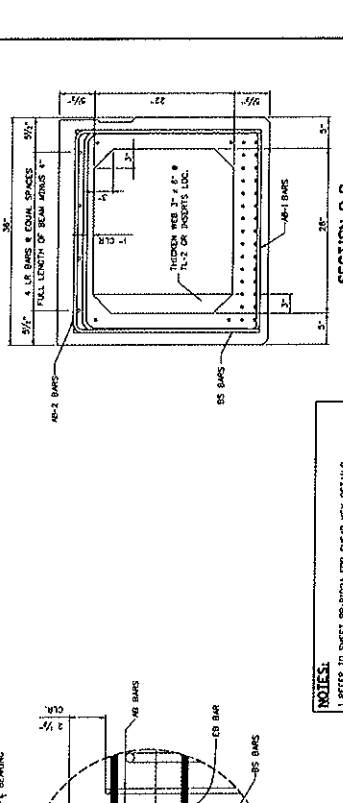
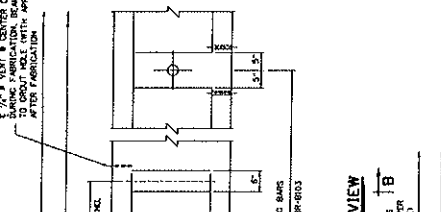
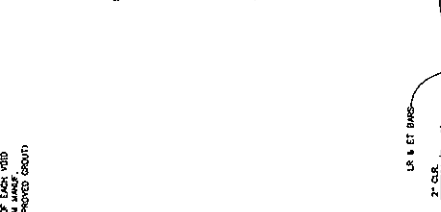
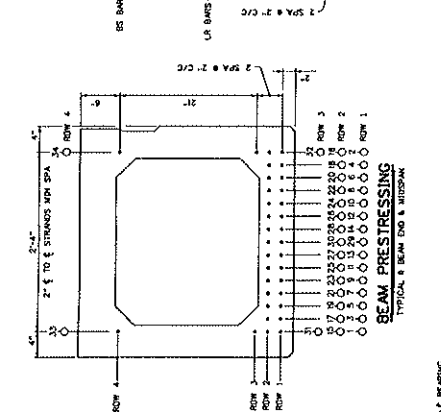
Taken, subscribed, and sworn to before me this ____ day of _____, 20____.

My Commission expires _____, 20____.

AFFIX SEAL HERE

NOTARY PUBLIC _____

PROJECT NUMBER	DISTRICT	COUNTY	SHEET TOTAL
STATE	NA 01	BOONE	7
FEDERAL			
LOCAL			



DESIGNED BY/REV	03-94-D08
PROJECT NO.	
DESIGNED BY/REV	
CHECKED BY/REV	
REVIEWED BY/REV	
DATE	
TITLE	
SHEET	
OF	
SHEET	
OF	

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**BIG HORSE CREEK BRIDGE
OVER BIG HORSE CREEK
IN
BOONE COUNTY**

33" PRESTRESSED BOX BEAM
DESIGN AND ASSEMBLY DETAILS

NOTES:
1. REFER TO SHEET BR-1024 FOR SHEAR KEY DETAILS.
2. DESIGNER SHALL USE THE FOLLOWING KEY TO INDICATE STRAND AND DEPENDENT PATTERN ON BEAM PRESTRESSING VIEWS:
 V - ACTIVE STRAND
 Δ - DEPEND STRAND LENGTH FROM END OF BEAM
 □ - DEPEND STRAND LENGTH FROM END OF BEAM
 3. THE FOLLOWING STRAND LENGTHS ARE TO BE USED WITH BR-1024 & B BR-1023, BR-1024, BR-1025 & B AND BR-1026 AS APPLICABLE.

LENGTH PER DESIGN TABLE
 NO. 4 #4 BAR
 NO. 4 #8 BAR
 NO. 4 #10 BAR
 SPlice OPTIONAL

LENGTH PER DESIGN TABLE
 NO. 5 #8 BAR
 NO. 5 #10 BAR
 NO. 5 #12 BAR

LENGTH PER DESIGN TABLE
 NO. 5 #8 BAR
 NO. 5 #10 BAR
 NO. 5 #12 BAR

LENGTH PER DESIGN TABLE
 NO. 5 #8 BAR
 NO. 5 #10 BAR
 NO. 5 #12 BAR

LENGTH PER DESIGN TABLE
 NO. 5 #8 BAR
 NO. 5 #10 BAR
 NO. 5 #12 BAR

LENGTH PER DESIGN TABLE
 NO. 5 #8 BAR
 NO. 5 #10 BAR
 NO. 5 #12 BAR

LENGTH PER DESIGN TABLE
 NO. 5 #8 BAR
 NO. 5 #10 BAR
 NO. 5 #12 BAR

STATE PROJECT NUMBER	8303-08-008	STATE PROJECT NUMBER	NA
COUNTY	BOONE	COUNTY	BOONE
SHEET NO.	3	SHEET NO.	9

MIN. CONCRETE STRENGTH & RELEASE = 5500 PSI
 MIN. CONCRETE STRENGTH @ 28 DAYS = 8000 PSI
 INITIAL PULL/STRAND = 33,820 LBS
 CROSS-SECTION AREA/STRAND = 0.167 SQ. IN.

DESIGN DATA FOR 33" DEPTH ADJACENT BOX BEAM

SPAN LENGTH TO & BEARING	50'-0"	52'-0"	54'-0"	56'-0"	58'-0"	60'-0"	62'-0"	64'-0"	66'-0"	68'-0"	70'-0"
OVERALL LENGTH OF BEAM	51'-0"	53'-0"	55'-0"	57'-0"	59'-0"	61'-0"	63'-0"	65'-0"	67'-0"	69'-0"	71'-0"
NO. OF 27# X51, 1/2" # LOW-RELAXATION STRANDS, AREA/STRAND = 0.07 SQ. IN.	12	12	12	12	14	14	16	16	18	18	18
ROW 1	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4	1.2, 7.8, 13.4, 13.7, 8.1, 13.4
ROW 2	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28	15.16, 27.28
ROW 3											
ROW 4	33.34	33.34	33.34	33.34	33.34	33.34	33.34	33.34	33.34	33.34	33.34
PRESTRESSING FORCE IMMEDIATELY AFTER STRAND RELEASE, PPL (KIPS/BEAM)	394	394	394	457	458	521	521	583	584	585	585
EFFECTIVE PRESTRESSING FORCE AFTER ALL LOSSES, PPM (KIPS/BEAM)	359	360	351	414	416	463	470	521	522	524	524
DESIGNER'S FLEXURE MOMENT & STRENGTH AT EACH END OF FACTORED FLEXURAL RESISTANCE AT EACH END	858	918	979	1042	1107	1244	1244	1383	1454	1527	1527
TOTAL NO. OBSERVED STRANDS	1092	1092	1092	1280	1280	1478	1478	1656	1656	1656	1656
ROW 1											
ROW 2											
NUMBER & LENGTH OF TENSION BARS AT EACH END	3 - #4 x 6'-6"	3 - #4 x 6'-6"	3 - #4 x 7'-0"	3 - #4 x 7'-0"	3 - #4 x 7'-0"	3 - #4 x 7'-6"	3 - #4 x 8'-0"	3 - #4 x 8'-0"	3 - #4 x 8'-0"	3 - #4 x 8'-6"	3 - #4 x 8'-6"
NUMBER & LENGTH OF TENSION BARS AT EACH END BOTTOM	5 - #6 x 6'-6"	5 - #6 x 6'-6"	5 - #6 x 7'-0"	5 - #6 x 7'-0"	5 - #6 x 7'-0"	5 - #6 x 7'-6"	5 - #6 x 8'-0"	5 - #6 x 8'-0"	5 - #6 x 8'-0"	5 - #6 x 8'-6"	5 - #6 x 8'-6"
DESIGN CHAMBER	0.19	0.18	0.17	0.27	0.26	0.25	0.38	0.51	0.50	0.48	0.48
** POSITIVE (UP)	0.25	0.22	0.19	0.35	0.32	0.27	0.49	0.44	0.66	0.59	0.52
** NEGATIVE (DOWN)	0.17	0.10	0.03	0.21	0.12	0.01	0.27	0.14	0.38	0.23	0.08
NO. OF INSERTS REQ'D.											
END OF BEAM TO											
OF FIRST INSERT											
EA END											
OF 1st INSERT											
TO & 2nd INSERT											
EA END											
SEE NOTE 6											
WEIGHT OF TYPICAL BEAM INCLUDING DIAPHRAGM (TONS)	19.9	20.6	21.3	22.0	22.7	23.4	24.4	25.1	25.8	26.5	27.2

- 1. BEARINGS LISTED IN THE DESIGN TABLE ARE BASED ON ZERO SKEW, 2 FT. LONG EMBANKMENT BEHIND THE BEAM. IF THE BEAM IS NOT PERPENDICULAR TO THE BEARING, LONGER ENDSHOCKS AND ADDITIONAL DIAPHRAGMS SHOULD BE ADAPTED ACCORDINGLY.
- 2. DESIGNERS SHOULD NOTE THAT DATA IN STANDARD TABLE IS BASED ON EACH SPAN LENGTH. A TWO LANE STRUCTURE & BEAMS WIDE AND ZERO SKEW. SUPERSEDED BEAM LOANS INCLUDE TYPE T PARABET (321) P.73 AND A TYPE OF 50 PSI. FOR NON-STANDARD BRIDGES DATA SHOULD BE IDENTIFIED AND IF REQUIRED NEW DESIGN DATA ENTERED INTO BLANK COLUMNS. IN NO CASE SHALL THE STANDARD DESIGN TABLE BE ALTERED.
- 3. SUGGESTED DESIGN CARRIER VALUES LISTED IN THE TABLE ARE BASED ON EMPIRICAL FORMULAS. PROBABILITIES OF FAILURE ARE GIVEN IN APPENDIX B OF PCI MANUAL FOR QUALITY CONTROL. UNCL. IIR. ANY NOT APPLY. BE CAREFUL FOR COMPARISON TO PREScribed DESIGN VALUES SHOULD BE COMPLETED WITHIN 72 HOURS OF RELEASE. ADDITIONAL CARRIERS SHOULD BE EVALUATED UNDER CONDITIONS THAT MINIMIZE THE EFFECT OF TEMPERATURE VARIATION.
- 4. DESIGNER, FABRICATOR AND ERECTOR SHALL BE AWARE THAT SKEWER END BEAMS MAY TWIST OR WARP. SKEWER END BEAM SEATING AT THE BEARINGS. THE CONTRACTOR IS REQUIRED TO CORRECT AT THE TIME OF ERECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF THE BEAM AN EVEN TOTAL BEARING AND A LEVEL TOP BEAM SURFACE. TOLERANCE AFTER CORRECTION SHALL BE 1/4" INCH. THE FABRICATOR SHALL NOTIFY THE CONTRACTOR AND DESIGNER IF CORRECTIONS ARE REQUIRED PRIOR TO SHIPMENT.
- 5. MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.
- 6. DESIGNER INPUT VALUES OF NUMBER OF INSERTS, DISTANCE FROM END OF BEAM TO & FIRST INSERT AND & SECOND INSERT, ABOVE VALUES SHALL BE BASED ON THE REQUIRED 6-3/8" QUADRANTAL POST SPACINGS ACROSS THE BRIDGE.
- 7. THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-831A, BR-810D, BR-810I, BR-810G & B, BR-810J, BR-810K, BR-905A & B AND BR-906 AS APPLICABLE.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ENGINEERING DIVISION

BIG HORSE CREEK BRIDGE
OVER BIG HORSE CREEK
IN BOONE COUNTY
 DESIGN TABLE FOR 33"
 PRESTRESSED BOX BEAM

DESIGNED BY:
 DRAWN BY:
 CHECKED BY:
 DATE:
 SHEET NO. OF 9
 PROJECT NUMBER: 03-94-008

STANDARD SHEET BR-833B
 DESIGN TABLE FOR 33"
 PRESTRESSED BOX BEAM

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ENGINEERING DIVISION

GOVERNING SPECIFICATIONS

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION, SHALL GOVERN UNLESS OTHERWISE SPECIFIED BY THE CURRENT SUPPLEMENTAL SPECIFICATIONS. THE CONTRACT PLANS AND GEO CONTRACT SPECIFICATIONS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

ALL BEAMS ARE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 1989 AS AMENDED BY THE 2003 INTERIM SPECIFICATIONS. ALL STANDARD JOINT PRESTRESSED CONCRETE BRIDGE BEAMS ARE DESIGNED TO MEET THE FOLLOWING CRITERIA:

- DESIGN LOADS:
 - DESIGN LOADS: IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 - FUTURE WEARING SURFACE OF 50 PSF OF ROADWAY.
 - TYPE F PARAPET WEIGHING 321 PLF.
 - DIAPHRAGM DEAD LOAD, NUMBER REQUIRED BASED ON 15'-0" MAX SPACING.

2. TWO-LANE BRIDGE WITH AN OVERALL WIDTH OF 24'-5" UNCL.; GAP BETWEEN A/B BEAMS, A C/B TO C/D WIDTH OF 22'-11"; TRANSVERSE POST-TENSIONING, AND ZERO 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	3600 PSI
COMPRESSION STRESS LIMIT @ STRAND RELEASE	200 PSI
COMPRESSION STRESS LIMITS IN CONCRETE @ SERVICE I AFTER LOSSES	4800 PSI
① FINAL 1 (PSI-DL+LL)	3600 PSI
② FINAL 2 (PSI-DL+LL)	3300 PSI
③ FINAL 3 (PSI-DL+LL)	200.5 KSI
TENSION STRESS LIMIT PRIOR TO TRANSFER	270 PSI
TENSION STRESS LIMIT AFTER ALL LOSSES	194.4 KSI

4. DEFENDING OR SHIELDING OF STRANDS TO REMOVE TEMPORARY TENSILE STRESSES IS PERMITTED, HOWEVER DEFENDING IS LIMITED TO 40% PER ROW AND 25% TOTAL IN NO INSTANCES SHALL OUTER STRANDS BE DEFENDED. DEFENDED STRANDS SHALL BE SEPARATED BY AT LEAST ONE FULLY BONDED STRAND AND SHALL BE SYMMETRICAL ABOUT THE C OF THE BEAM.

SHIELDING OF STRANDS SHALL BE ACCOMPLISHED BY TAPPING 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 CHARGE. 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 CAMBER AFTER ALL LOSSES IS NOT PERMITTED.

9. EACH BEAM PROVIDED IN THESE STANDARD DESIGNS HAS BEEN LOAD RATED IN ACCORDANCE WITH SECTION 4.15 OF THE WEST VIRGINIA DIVISION OF HIGHWAYS BRIDGE DESIGN MANUAL, 2004. ADDITIONAL LOAD RATING PROCEDURES ARE IN ACCORDANCE WITH THE AASHTO MANUAL FOR CONDITION EVALUATION AND LOAD AND RESISTANCE FACTOR RATING OF HIGHWAY BRIDGES, 2003.

BAR SIZE	NO. 3	NO. 4	NO. 5	NO. 6
SPLICE LEN.	24"	28"	34"	41"

THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-B17A & B 780; BR-B17A & B 810; BR-B17A & B 810-A; BR-B17A & B 810-B AND BR-B106 AS APPLICABLE.

POST-TENSIONING BEAMS

*POST-TENSIONING THREAD BARS SHALL BE ONE INCH DIAMETER 100 KSI STEEL AND SHALL CONFORM TO AASHTO M273, TYPE II. STEEL THREAD BARS SHALL BE DESIGNED TO ALLOW THE USE OF HEAVY HEX NUTS AND WASHERS THAT THREAD ONTO THE END OF THE REINFORCEMENTS. HEAVY HEX NUTS AND WASHERS SHALL BE OF 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 WASHERS 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 TO COMPLY WITH ASTM A-143, CERTIFICATION FOR HOT-DIP GALVANIZING SHALL BE PROVIDED BY THE GALVANIZING PLANT.

*ALL POST-TENSIONING BEARING PLATES SHALL CONFORM TO AASHTO M270, GRADE 26.

*SPEAR KEY GROUT SHALL BE A GROUT THAT IS RECOMMENDED BY THE MANUFACTURER FOR A FOURABLE 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 IN THE APPROVED LIST OF GROUTS PUBLISHED BY THE WEST VIRGINIA DIVISION OF HIGHWAYS. MATERIALS CONTROL, SOIL AND PUBLISHING DIVISION. THE CONTRACTOR SHALL PRE-TEST THE PROPOSED GROUT FOR COMPRESSIVE STRENGTH. PRE-TESTING SHALL BE DONE IN THE LABORATORY. THE TESTS WILL BE BASED ON A PORTABLE CONSISTENCY WITH THE SAME WATER/CEMENT 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 FURNISH A NEW PRE-TEST AND SUBMISSION FOR APPROVAL UNDER ANY OF THE FOLLOWING CONDITIONS:

- A PRE-TEST OF 10 WORKS HAS ELAPSED SINCE LAST PRE-APPROVAL TESTING.
- GROUT MANUFACTURER HAS REVISED OR CHANGED THE GROUT SPECIFICATIONS.
- THE CONTRACTOR ALTERS THE WATER/GROUT MIXTURE RATIO.
- THE CONTRACTOR CHANGES GROUT MANUFACTURER.
- THE CONTRACTOR IS REQUIRED TO COMPLETE THE GROUT STRENGTH TABLE ON BR-B103.

*TEST PROCEDURES FOR DETERMINING THE COMPRESSIVE STRENGTH OF GROUT SHALL USE CARE, SPECIFICALLY IN ACCORDANCE WITH ASTM C-403 AND AASHTO M-301. GROUT TESTING IN ACCORDANCE WITH AASHTO T-23 STANDARD CYLINDER TEST IS NOT ACCEPTABLE.

BEARING SURFACE TREATMENT

*PRESTRESSED CONCRETE BEAM SHALL BE TREATED BY THE MANUFACTURER AT THE FABRICATOR'S FACILITY WITH AN APPROVED LIST OF CONCRETE SEALERS. ALL FILLERS AND SEALERS SHALL BE APPLIED TO ALL EXPOSED INTERIOR SURFACES AND EXTERIOR SURFACES OF THE BEAM. APPLICATION RATE SHALL BE PER TREATMENT MANUFACTURER'S RECOMMENDATION.

*AFTER COMPLETION OF THE SLAKE TREATMENT BY FABRICATOR AND A MAXIMUM OF FIVE WORKING DAYS PRIOR TO SHIPMENT OF THE BEAMS, THE FABRICATOR SHALL CLEAN THE BEAMS WITH A HIGH PRESSURE WATER BLAST CLEANING TO CLEAN WHITE CONCRETE THE INTERIOR SURFACES OF BEAMS FOR THE REMOVAL OF ALL OIL, GREASE, AND ALL OTHER LAMINATE AND PROVIDE A REGRIND 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 00-102 AND THE STANDARD SPECIFICATIONS. ADDITIONAL INFORMATION IS PROVIDED IN SECTION 7 OF THE BRIDGE DESIGN MANUAL. SHOP DRAWINGS SHALL INCLUDE THE FABRICATOR'S DETAILING PLAN.

MATERIALS & FABRICATION NOTES

*THE PRESTRESSED CONCRETE BEAMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF SECTION 603 OF THE STANDARD SPECIFICATIONS.

WELD REINFORCEMENTS

*ALL WELD REINFORCING STEEL SHALL BE GRADE 60, REFORMED 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 M284, EXCEPT WHERE NOTED BY SECTION 705.1 OF THE STANDARD SPECIFICATIONS.

*ALL TENSION LAP SPLICES SHALL BE A CLASS B CONTACT TYPE. MINIMUM LAP SPLICE LENGTHS SHALL BE AS GIVEN IN THE "LAP SPLICE TABLE", THIS SHEET. ADDITIONALLY, LAPS INCLUDING OF E/F, L AND B/1 BARS IS USED. TERMINATION OF THE SPLICE SHALL BE TO COUPLER 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 603.6 OF THE STANDARD SPECIFICATIONS, EXCEPT WHERE NOTED ON THE PLANS.

PRESTRESSING STRANDS

*ALL PRESTRESSING STEEL SHALL BE 1/2" A 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 0.187 SQ. IN. STRANDS WITH A NOMINAL AREA OF 0.133 SQ. IN. IS PERMITTED FOR INDIVIDUAL OR ALTERNATE DESIGNS. HOWEVER THE DESIGNER IS ENCOURAGED TO USE THE LARGER STRAND FOR UNIFORMITY. RELAXING IN NO CASES WILL STRESS-RELIEVED STRAND BE PERMITTED.

*ALL STRANDS SHALL BE ENCLOSED INSIDE THE STRIPUP CASE 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 C-828-B-04.

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 ELASTOMERIC MATERIAL SHALL BE 60 DIAMETERS WITH A MINIMUM LOW TEMPERATURE GRADE OF 3 LDMC C.

*ALL STEEL REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36.

QUALITY CONTROL TESTS, TUBES & INSPECT

*ALL W-BEAM GUARDRAIL AND ATTACHMENT HARDWARE SHALL BE IN ACCORDANCE WITH SECTION 712.4 OF THE STANDARD SPECIFICATIONS. GUARDRAIL POSTS, STRUCTURAL TUBING, POST ATTACHMENT HARDWARE, AND HARDWARE SHALL MEET THE LISTED MATERIAL AND COATING SPECIFICATIONS:

ITEM	DESCRIPTION	MATERIAL SPEC.	COATING SPEC.
POST	W-26	AASHTO M270, OR 36	AASHTO M11
PLATE	1/2" x 7'	AASHTO M270, OR 36	AASHTO M11
TUBING	15" B&H/176	ASTM A500, OR B	AASHTO M11
FORMABLE	TYPE 3A 1/4"/3/8	AASHTO M270, OR 36	AASHTO M11
WIRE	ANCHOR 3/4" x 2 1/2" MIN LEN.	ASTM A108 (GILD STEEL)	AASHTO M232
STUDS	ANCHOR 3/4" x 8" LONG	ASTM A108 (GILD STEEL)	AASHTO M232
NUTS	1/2" x 8" LONG	AASHTO M184 (CLASS C)	AASHTO M232
COUPLERS	TYPE 1A 1/2" x 5" LONG	ASTM A108 (GILD STEEL)	AASHTO M232
BOLTS	ANCHOR 1/2" x 12" LONG	AASHTO M184 (TYPE 1, H)	AASHTO M232
NUTS	1/2" x 1" ALL LEN.	AASHTO M184 (TYPE 1, H)	AASHTO M232
WASHERS	3/8" ALL	AASHTO M293, CLASS C	AASHTO M232

WELDING

*TACK WELDING OF REINFORCEMENT IS NOT PERMITTED. REINFORCING CAGES AND LONGITUDINAL STEEL SHALL BE ADEQUATELY 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/AWS D15.2002.

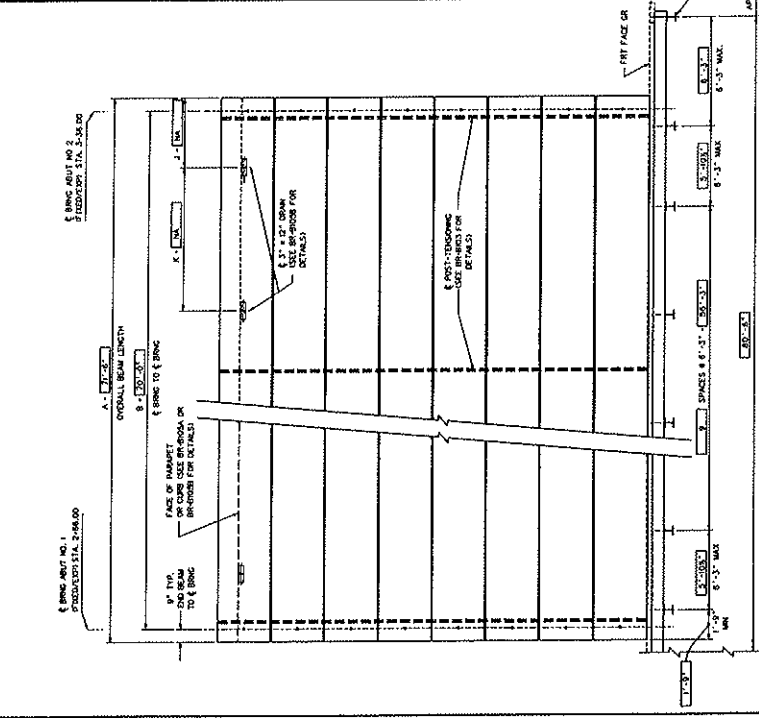
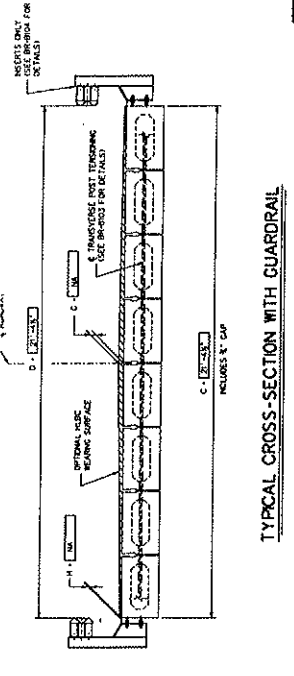
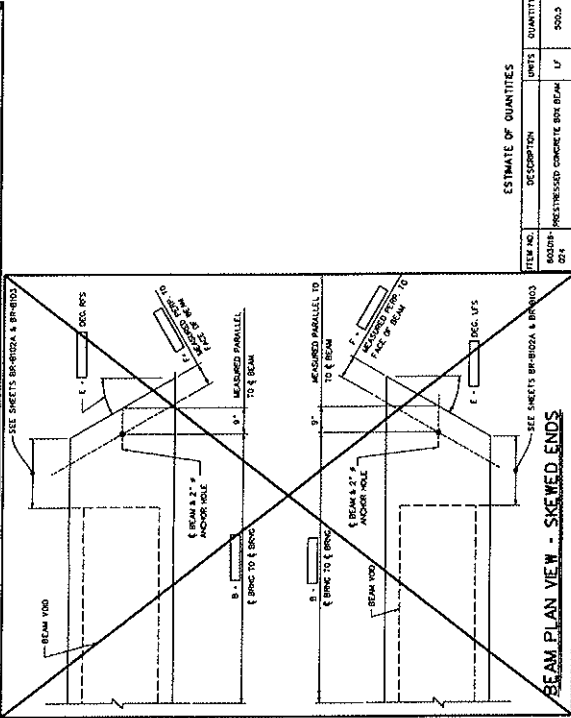
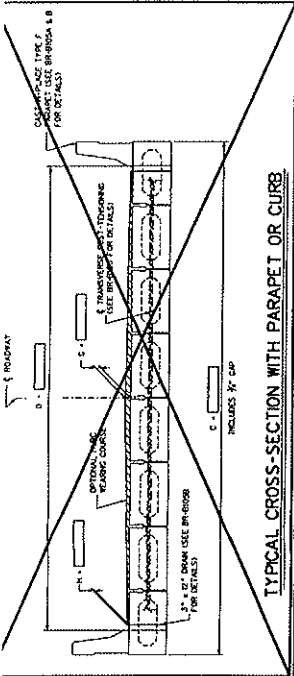
CONTROL DIMENSIONS	DESCRIPTION	CODE	VALUE
OVERALL BEAM LENGTH		A	71'-4"
SPAN LENGTH & BEAMS TO BEARING		B	70'-0"
SPACING OF CURB WITH 3" X 12" END BEAM TO FACE OF PARAPET		C	21'-4 1/2"
ROADWAY WIDTH - FACE OF PARAPET TO FACE OF PARAPET		D	31'-4 1/2"
NUMBER OF BEAMS REQUIRED			7
BEAM SIZE (WIDTH x DEPTH)			36" x 31"
DECK THICKNESS		E	NORMAL
TYPICAL VERTICAL CURB DETAIL FROM FACE OF BEAM TO FACE OF BEAM		F	NA
MINIMUM BEARING COURSE REQUIRED (FEET/IN)			NO
THICKNESS OF BEARING COURSE # OF DECK OR PARAPET		G	NA
THICKNESS OF BEARING COURSE # EDGE OF DECK OR PARAPET		H	NA
11-2 BRIDGE GUARDRAIL SYSTEM REQUIRED (YES/NO)			NO
FABRICATOR TO SUPPLY 11-2 BRIDGE GUARDRAIL (YES/NO)			NO
FABRICATOR TO INSTALL BROOKS GUARDRAIL FROM TO SUPPORT (YES/NO) POST FABRICATOR TO SUP. LOSES			NO
NUMBER OF GUARDRAIL POSTS REQUIRED PER SIDE			12
TYPE F PARAPET REQUIRED (YES/NO)			NO
ONKING REQUIRED (YES/NO)			NO
NUMBER OF DAMS REQUIRED PER SIDE			NA
10" CURB REQUIRED (YES/NO)			NO

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

BIG HORSE CREEK BRIDGE
OVER BIG HORSE CREEK
IN
BOONE COUNTY

PRESTRESSED CONCRETE BEAM
DESIGN & ASSEMBLY NOTES

03-894-0-08



ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNITS	QUANTITY
1	PRESTRESSED CONCRETE BOX BEAM	LF	500.3

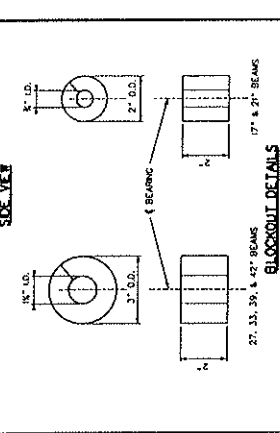
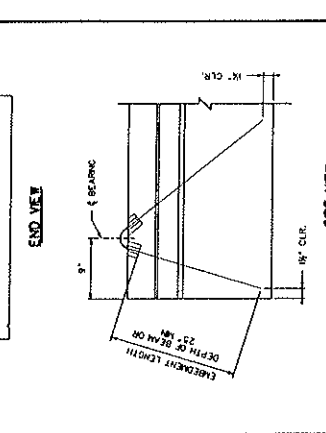
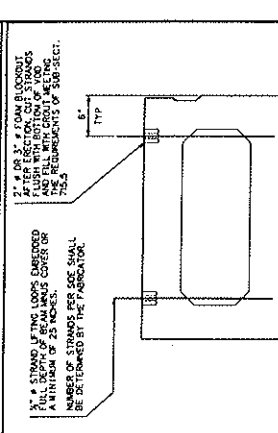
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

PRESTRESSED CONCRETE BEAM
DESIGN AND ASSEMBLY NOTES

STANDARD SHEET BR-801

- NOTES:
- BIG HORSE BRIDGE GUARDRAIL IS TO BE SUPPLIED BY THE BEAM FABRICATOR. COST OF ALL BRIDGE GUARDRAIL ITEMS TO INCLUDE POSTS, RAIL TO COMPLETELY INSTALL BRIDGE GUARDRAIL SHALL BE INCLUDED ITEMS NEEDED IN ITEM ADDRESS "PRESTRESSED CONCRETE BOX BEAM".
 - THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-802A & B, BR-802C & D, BR-803, BR-804 & B, BR-805, BR-806, BR-807, BR-808, BR-809, BR-810, BR-811, BR-812, BR-813, BR-814, BR-815, BR-816, BR-817, BR-818, BR-819, BR-820, BR-821, BR-822, BR-823, BR-824, BR-825, BR-826, BR-827, BR-828, BR-829, BR-830, BR-831, BR-832, BR-833, BR-834, BR-835, BR-836, BR-837, BR-838, BR-839, BR-840, BR-841, BR-842, BR-843, BR-844, BR-845, BR-846, BR-847, BR-848, BR-849, BR-850, BR-851, BR-852, BR-853, BR-854, BR-855, BR-856, BR-857, BR-858, BR-859, BR-860, BR-861, BR-862, BR-863, BR-864, BR-865, BR-866, BR-867, BR-868, BR-869, BR-870, BR-871, BR-872, BR-873, BR-874, BR-875, BR-876, BR-877, BR-878, BR-879, BR-880, BR-881, BR-882, BR-883, BR-884, BR-885, BR-886, BR-887, BR-888, BR-889, BR-890, BR-891, BR-892, BR-893, BR-894, BR-895, BR-896, BR-897, BR-898, BR-899, BR-900, BR-901, BR-902, BR-903, BR-904, BR-905, BR-906, BR-907, BR-908, BR-909, BR-910, BR-911, BR-912, BR-913, BR-914, BR-915, BR-916, BR-917, BR-918, BR-919, BR-920, BR-921, BR-922, BR-923, BR-924, BR-925, BR-926, BR-927, BR-928, BR-929, BR-930, BR-931, BR-932, BR-933, BR-934, BR-935, BR-936, BR-937, BR-938, BR-939, BR-940, BR-941, BR-942, BR-943, BR-944, BR-945, BR-946, BR-947, BR-948, BR-949, BR-950, BR-951, BR-952, BR-953, BR-954, BR-955, BR-956, BR-957, BR-958, BR-959, BR-960, BR-961, BR-962, BR-963, BR-964, BR-965, BR-966, BR-967, BR-968, BR-969, BR-970, BR-971, BR-972, BR-973, BR-974, BR-975, BR-976, BR-977, BR-978, BR-979, BR-980, BR-981, BR-982, BR-983, BR-984, BR-985, BR-986, BR-987, BR-988, BR-989, BR-990, BR-991, BR-992, BR-993, BR-994, BR-995, BR-996, BR-997, BR-998, BR-999, BR-1000.

PROJECT NUMBER	BOONE
DIST.	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01



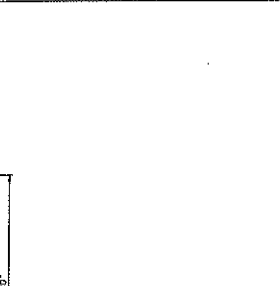
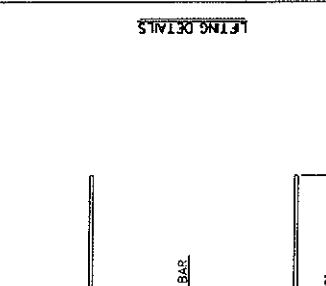
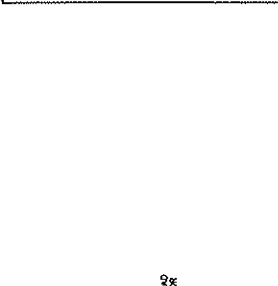
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

BIG HORSE CREEK BRIDGE
OVER BIG HORSE CREEK
IN
BOONE COUNTY

PRESTRESSED CONCRETE BEAM
SKEWED END REINFORCING
MISC DESIGN AND ASSEMBLY DETAILS

DESIGNED BY: TWP
CHECKED BY: TWP
REVIEWED BY: TWP
DATE:
SCALE:
SHEET 6 OF 9
08-94-008

PROJECT NUMBER	BOONE
DIST.	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01



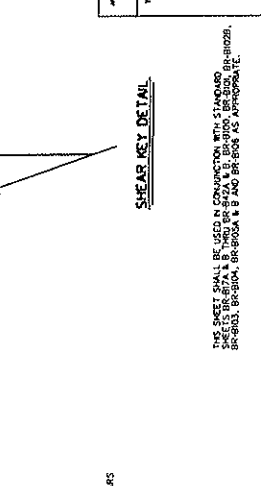
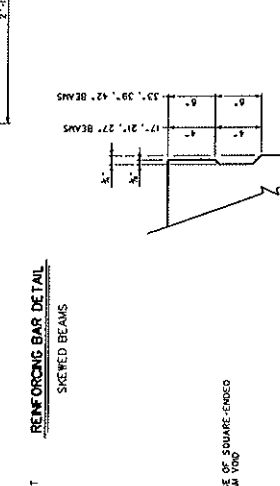
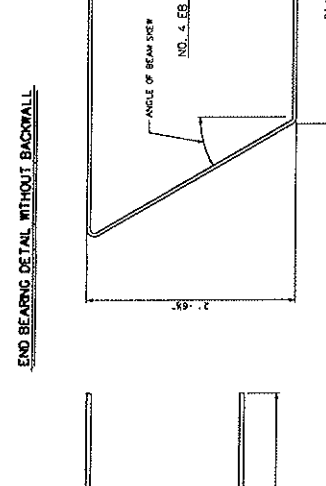
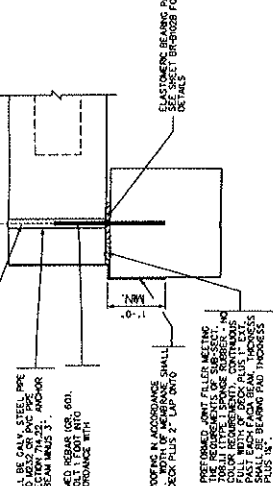
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION

BIG HORSE CREEK BRIDGE
OVER BIG HORSE CREEK
IN
BOONE COUNTY

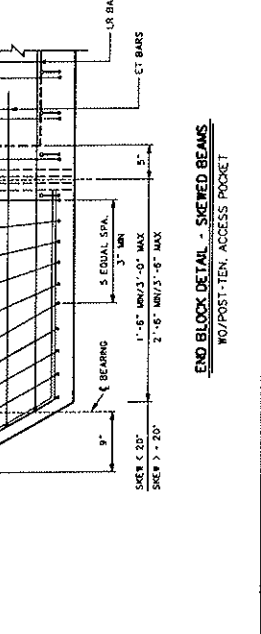
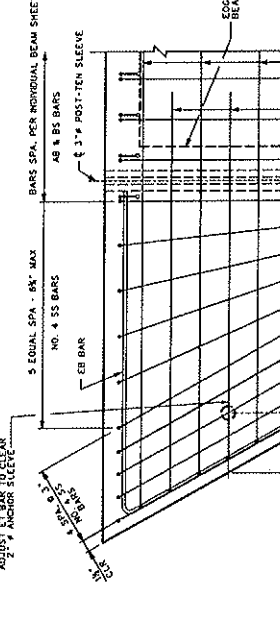
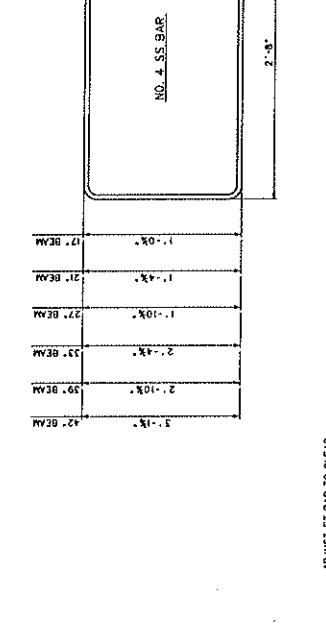
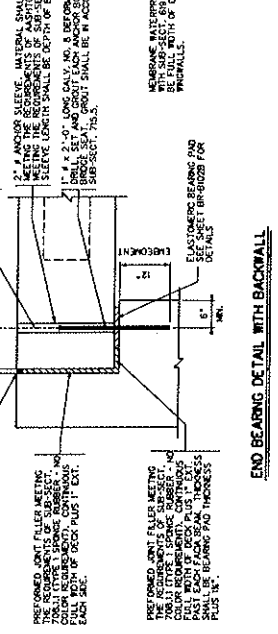
PRESTRESSED CONCRETE BEAM
SKEWED END REINFORCING
MISC DESIGN AND ASSEMBLY DETAILS

DESIGNED BY: TWP
CHECKED BY: TWP
REVIEWED BY: TWP
DATE:
SCALE:
SHEET 6 OF 9
08-94-008

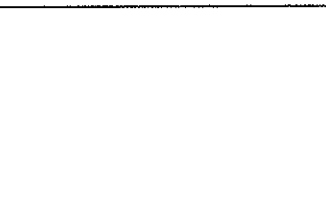
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DIST.	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01



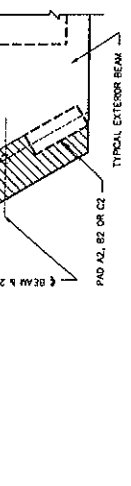
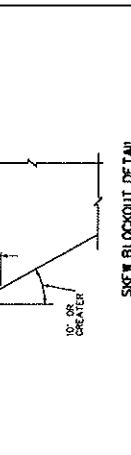
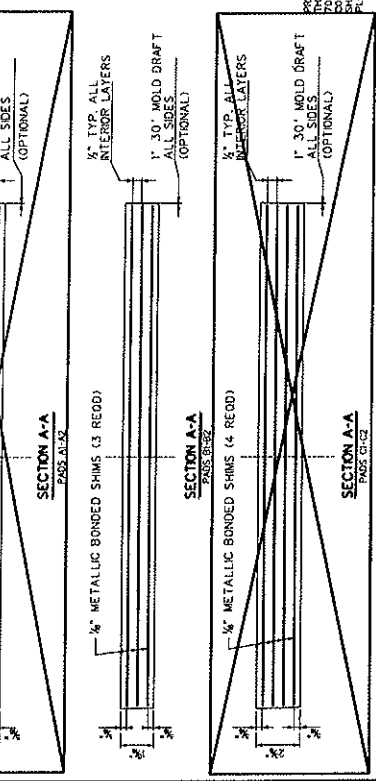
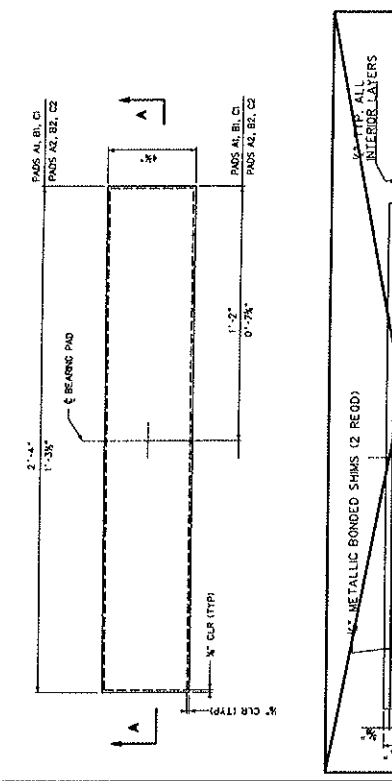
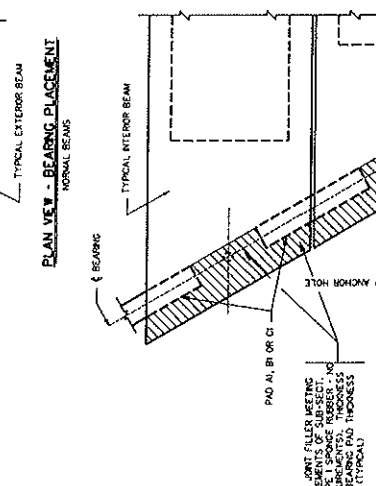
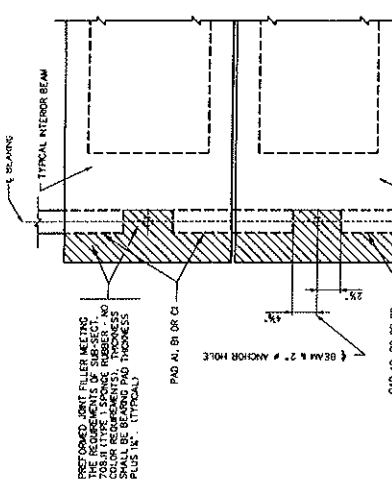
PROJECT NUMBER	BOONE
DIST.	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01



PROJECT NUMBER	BOONE
DIST.	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01
PROJECT NUMBER	NA
DATE	01



PROJECT NUMBER	MA 008	DIST. NO.	01	COUNTY	BOONE	SHEET NO.	7	TOTAL SHEETS	8
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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ENGINEERING DIVISION
**BIG HORSE CREEK BRIDGE
 OVER BIG HORSE CREEK
 IN
 BOONE COUNTY**

DESIGNED BY: TMB/1
 CHECKED BY: TMB
 REVISIONS BY: TMB
 DATE:
 SCALE:
 SHEET 7 OF 9
 BRIDGE NO. 93-84-008
 MISC. DESIGN AND ASSEMBLY DETAILS

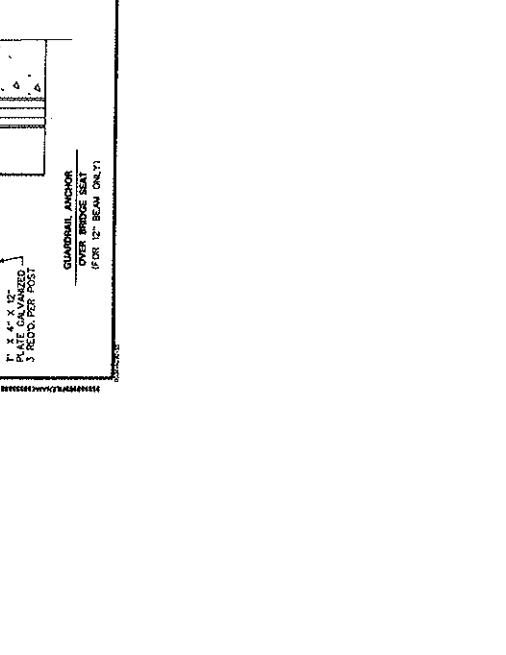
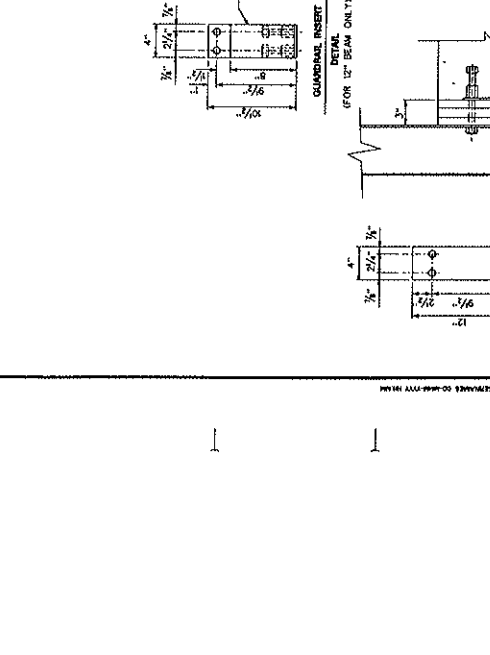
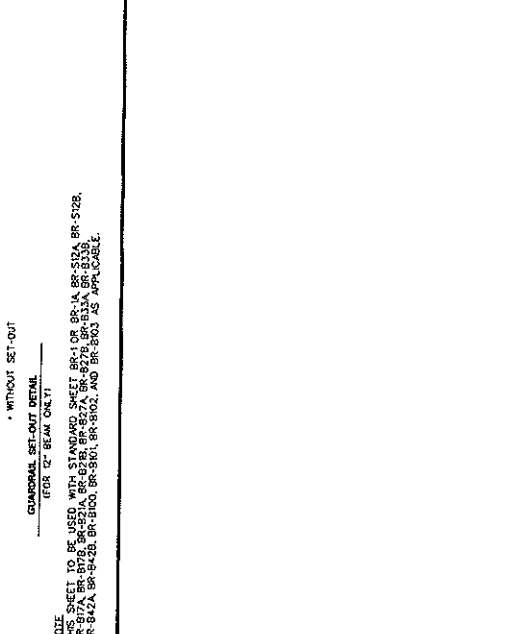
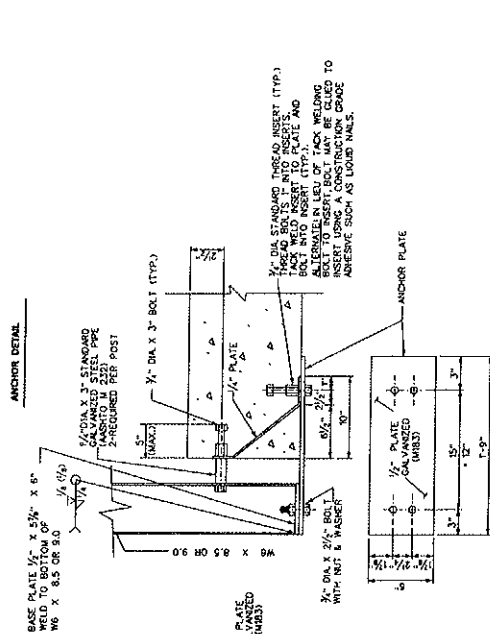
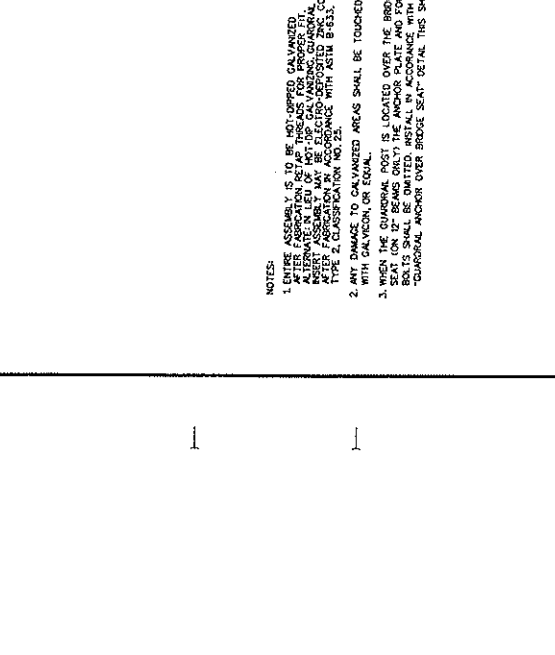
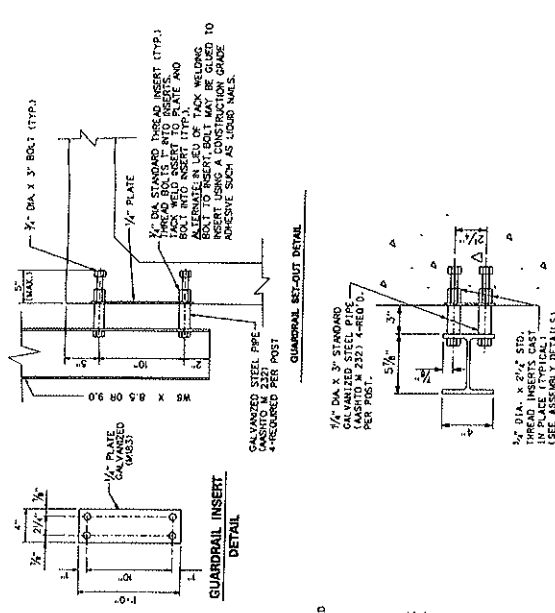
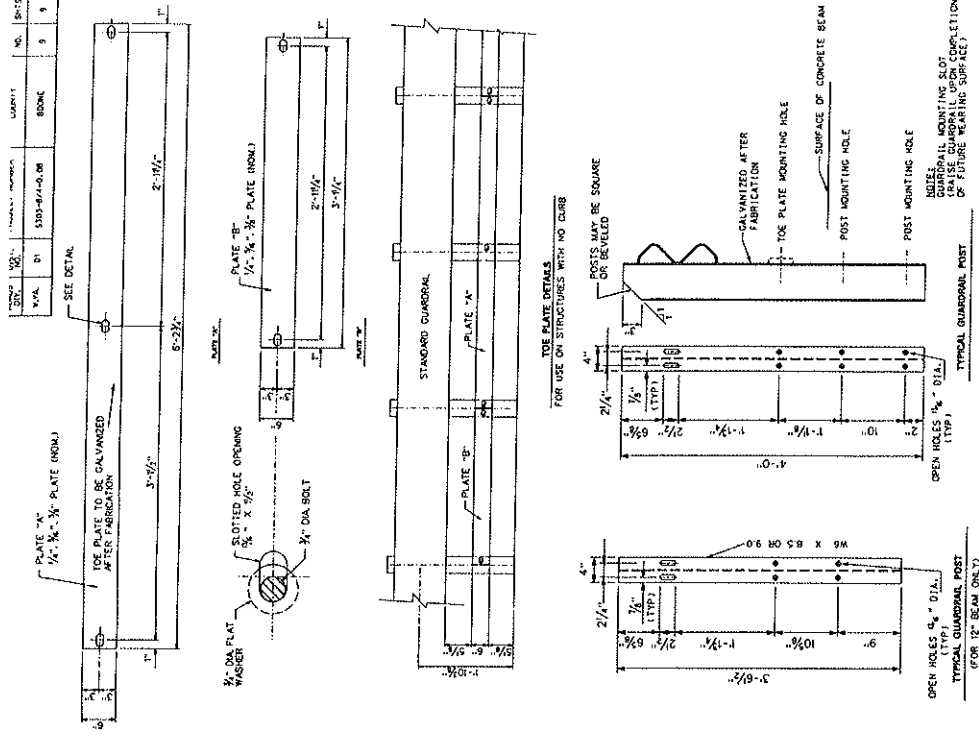
PLAN VIEW - BEARING PLACEMENT
 NORMAL BEAMS
 TYPICAL INTERIOR BEAM
 TYPICAL EXTERIOR BEAM
 BEARING PADS: A1, B1, OR C1
 BEARING PADS: A2, B2, OR C2

BOX BEAM BEARING PAD CONTROL DIMENSIONS

PAD	LENGTH	WIDTH	HEIGHT	NO. SHIMS	SHIM SIZE	SPACING RANGES	MINIMUM REACTION	MAXIMUM MOVEMENT ONE DIRECTION	MAXIMUM MOVEMENT TWO DIRECTIONS
A1	4'-0"	28"	18"	2	1/2" x 2 1/2"	20" - 38"	55 KIPS	0.39"	0.80"
B1	4'-0"	28"	18"	3	1/2" x 2 1/2"	40" - 78"	75 KIPS	0.80"	1.02"
C1	4'-0"	28"	28"	4	1/2" x 2 1/2"	80" - 100"	80 KIPS	1.02"	1.02"
A2	4'-0"	15 1/2"	18"	2	1/2" x 2 1/2"	20" - 38"	28 KIPS	0.39"	0.80"
B2	4'-0"	15 1/2"	18"	3	1/2" x 2 1/2"	40" - 78"	38 KIPS	0.80"	1.02"
C2	4'-0"	15 1/2"	28"	4	1/2" x 2 1/2"	80" - 100"	45 KIPS	1.02"	1.02"

NOTES:

1. CUSTOMER BEARING PADS ARE DESIGNED IN ACCORDANCE WITH DESIGN METHOD B CONTAINED IN SECTION 8 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS.
2. ALL BEARINGS ARE DESIGNED FOR A LOW TEMPERATURE (SEE C AND D) AND SHALL HAVE A SURFACE FINISH OF 60. METALLIC REINFORCEMENT SHALL HAVE A MINIMUM YIELD STRENGTH OF 55 KSI.
3. BEARING PADS ARE DESIGNED FOR ZERO BRIDGE GRADE. FOR BRIDGE GRADES GREATER THAN 1/4", BEVELED SOLE PLATES MAY BE USED.
4. DESIGNER, FABRICATOR AND ERECTOR SHALL BE AWARE THAT SKEWED END BEAMS MAY FIRST BE SET IN PLACE. BEARING PADS SHALL BE SET IN PLACE BEFORE THE BEAMS ARE SET IN PLACE. THE CONTRACTOR SHALL PROVIDE AN ELEVATION, TOTAL BEARING AND A LEVEL OF BEAM SURFACE. TOLERANCE SHALL BE AS SPECIFIED IN THE CONTRACT. CORRECTIONS ARE REQUIRED PRIOR TO SUPPORT.
5. FOR BEAMS WITH STEPPED ENDS USE PADS A2, B2, OR C2 ON BOTH SIDES OF EACH BEAM.
6. ELASTOMER BEARING PADS SHALL BE INCLUDED IN THE PRICE OF THE BEAMS.
7. THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-807A & B THRU BR-807A & B, BR-810, BR-810A, BR-810B, BR-810C, BR-810D, BR-810E, BR-810F, BR-810G & H AS APPROPRIATE.



NOTE: 1. ENTIRE ASSEMBLY IS TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION SET-OUT TOLERANCES FOR GUARDRAIL INSERT ASSEMBLY ARE ±1/8\"/>

2. WHEN GALVANIZED GUARDRAIL ANCHOR OVER BRIDGE SEAT IS LOCKED OVER THE BRIDGE SEAT, ON 12\"/>

3. WHEN THE GUARDRAIL POST IS LOCKED OVER THE BRIDGE SEAT, ON 12\"/>

4. GUARDRAIL ANCHOR OVER BRIDGE SEAT DETAIL THIS SHEET.

NOTE: THIS SHEET TO BE USED WITH STANDARD SHEET BR-1 OR BR-14, BR-52A, BR-52B, BR-97A, BR-97B, BR-97C, BR-97D, BR-97E, BR-97F, BR-97G, BR-97H, BR-97I, BR-97J, BR-97K, BR-97L, BR-97M, BR-97N, BR-97O, BR-97P, BR-97Q, BR-97R, BR-97S, BR-97T, BR-97U, BR-97V, BR-97W, BR-97X, BR-97Y, BR-97Z, BR-97AA, BR-97AB, BR-97AC, BR-97AD, BR-97AE, BR-97AF, BR-97AG, BR-97AH, BR-97AI, BR-97AJ, BR-97AK, BR-97AL, BR-97AM, BR-97AN, BR-97AO, BR-97AP, BR-97AQ, BR-97AR, BR-97AS, BR-97AT, BR-97AU, BR-97AV, BR-97AW, BR-97AX, BR-97AY, BR-97AZ, BR-97BA, BR-97BB, BR-97BC, BR-97BD, BR-97BE, BR-97BF, BR-97BG, BR-97BH, BR-97BI, BR-97BJ, BR-97BK, BR-97BL, BR-97BM, BR-97BN, BR-97BO, BR-97BP, BR-97BQ, BR-97BR, BR-97BS, BR-97BT, BR-97BU, BR-97BV, BR-97BW, BR-97BX, BR-97BY, BR-97BZ, BR-97CA, BR-97CB, BR-97CC, BR-97CD, BR-97CE, BR-97CF, BR-97CG, BR-97CH, BR-97CI, BR-97CJ, BR-97CK, BR-97CL, BR-97CM, BR-97CN, BR-97CO, BR-97CP, BR-97CQ, BR-97CR, BR-97CS, BR-97CT, BR-97CU, BR-97CV, BR-97CW, BR-97CX, BR-97CY, BR-97CZ, BR-97DA, 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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-STRUCTURES
BIG HORSE CREEK BRIDGE
OVER BIG HORSE CREEK
IN
BOONE COUNTY
PRESTRESSED CONCRETE BEAM
DESIGN & ASSEMBLY DETAILS
STANDARD SHEET BR-97A
BRIDGE NUMBER
03-3-1-0-08