

CALL 002  
AMENDMENT NUMBER 02  
STATE PROJECT NUMBER; S340-50-7.39 00  
BUZZARD CREEK BR  
PUTNAM COUNTY  
REQUEST FOR PROPOSALS (RFP)

I hereby acknowledge the receipt of this amendment by checking the appropriate space in Section J of the Notice OR by attaching this Instruction for Revision(s) to the Contractor's Proposal. By signing this Proposal, I certify that I have made the necessary revision(s) to this Proposal, Plans, and/or Specifications or other applicable documents and have CONSIDERED the amendment(s) in the calculation of my bid. I further acknowledge that failure to confirm receipt of the amendment(s) will cause my bid to be rejected.

This amendment is necessary to revise the West Virginia Division of Highways Request for Proposals (RFP); Contractor's Bidding Proposal and Exhibits.

**Plan Sheet(s):**

The following Plan Sheet(s) have been revised and are attached to this amendment.

Plan Sheet 25.

Plan Sheet 26.

Plan Sheet 27.

Plan Sheet 41.

PLEASE PRINT OUT THE ATTACHED AMENDMENT REVISIONS AND INSERT  
THEM INTO YOUR PRINTED COPY.

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WW	01	S340 -50- 7.39.00		2020	PUTNAM	25	72

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SUMMARY OF ESTIMATED QUANTITIES			
ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
203001-000	DISMANTLING STRUCTURE	LS	1
212001-000	STRUCTURE EXCAVATION	CY	113
212005-000	SELECT MATERIAL FOR BACKFILLING	CY	32
218006-000	FOUNDATION PROTECTION	CY	255
601002-001	CLASS B CONCRETE	CY	67
601003-001	CLASS K CONCRETE	CY	12
601009-001	CLASS H CONCRETE	CY	55
602002-001	EPOXY COATED REINFORCING STEEL BAR	LB	18,831
615001-001	* * STEEL SUPERSTRUCTURE	LS	1
615029-001	NON-GUIDED BEARING, ELASTOMERIC	EA	6
616005-018	HPI4x73 STEEL BEARING PILE, PRE-DRILLED AND DRIVEN	LF	252
639001-001	CONSTRUCTION LAYOUT STAKE	LS	1

\* \* STEEL SUPERSTRUCTURE INCLUDES 52,029 LBS. (50 ksi)


* * * ITEM 615001-001 INCLUDES		
DESCRIPTION	UNIT	QUANTITY
AASHTO M270 GRADE 50W STEEL	LB	52,029
SHEAR STUD CONNECTORS	EA	234

\*\*\* FOR INFORMATION ONLY.

LOCATION	ITEM 602002-001 EPOXY COATED REINFORCING STEEL BARS (LB)							ITEM 212001-000 STRUCTURE EXCAVATION	ITEM 212005-000 SELECT MATERIAL FOR BACKFILLING	ITEM 218006-000 FOUNDATION PROTECTION	ITEM 601002-001 CLASS B CONCRETE	ITEM 601003-001 CLASS K CONCRETE	ITEM 601009-001 CLASS H CONCRETE	ITEM 616005-018 HPI4x73 STEEL BEARING PILE, PRE-DRILLED & DRIVEN
	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	CY							
ABUTMENT 1			1630	236				48	9	138	21		9	132
ABUTMENT 2			1674	212				39	7	117	22		9	120
WINGWALL A			469	302				7	4		6			
WINGWALL B			469	302				7	4		6			
WINGWALL C			506	326				6	4		6			
WINGWALL D			506	326				6	4		6			
DECK	247	5569	3437	2620								12	37	
TOTAL	247	5569	8691	4324				113	32	255	67	12	55	252

2	REVISED STEEL TO GRADE 50W	1-23-2020	TTW
REVISION NUMBER	REVISION	DATE	BY

**WV DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**BUZZARD CREEK BRIDGE**  
**OVER**  
**TRACE FORK**  
**INDEX OF DRAWINGS AND**  
**SUMMARY OF QUANTITIES**

 White Brothers Consulting, LLC	447 CALL ROAD SUITE 216 CHARLESTON, WV 25312	SHEET <b>B2</b> OF <b>B40</b> BRIDGE NO. <b>11311</b>
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DESIGNED	DATE
GWG	02-18
DRAWN	
JCB	02-18
CHECKED	
GWG	02-18
CHECKED	
TTW	02-18

1/23/2020 2:52:21 PM SUBMISSION: 3-12-2018 PS&E \\server-pa\scans\highways\West Virginia\DOH\Projects\14-200-08 Buzzard Creek Bridge\Drawings\FINAL DRAWINGS REVIEWED 3 12 18\str index Buzzard1.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	01	S340 -50- 7.39 00		2020	PUTNAM	26	72

**GOVERNING SPECIFICATIONS:**

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS, ROADS AND BRIDGES, ADOPTED 2017, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, SUPPLEMENTAL SPECIFICATIONS, DATED JANUARY 1, 2019, THE CONTRACT DOCUMENTS, AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

**DESIGN:**

THE BRIDGE IS DESIGNED IN ACCORDANCE WITH THE LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD) IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION DATED 2012 AND THE 2013 INTERIMS, USING HL-93 LIVE LOADING.

THE DESIGN PROVIDES FOR AN ADDITIONAL WEARING SURFACE OF 25 POUNDS PER SQUARE FEET OF ROADWAY SURFACE. THIS ADDITIONAL WEARING SURFACE IS NOT INCLUDED IN THIS CONTRACT.

A UNIFORM DECK LOAD OF 15 PSF IS INCLUDED IN THE DESIGN FOR PERMANENT DECK FORMS.

THE BRIDGE DECK IS DESIGNED IN ACCORDANCE WITH THE EMPIRICAL DESIGN METHOD.

THE SUPERSTRUCTURE HAS BEEN DESIGNED AS A COMPOSITE SECTION.

**DESIGN UNIT STRESSES:**

CLASS B CONCRETE: f'c=3,000 psi n=9  
 CLASS K CONCRETE: f'c=4,000 psi n=8  
 CLASS H CONCRETE: f'c=4,000 psi n=8  
 REINFORCING STEEL: fy=60,000 psi

STRUCTURAL STEEL: AASHTO DESIGNATIONS:  
 AASHTO M270 GRADE 50W fy=50,000 psi

**CONCRETE:**

CLASS B CONCRETE SHALL BE USED FOR THE ABUTMENT BELOW THE BRIDGE SEAT, STEMS AND WINGWALLS.

CLASS K CONCRETE SHALL BE USED FOR BRIDGE BARRIERS.

CLASS H CONCRETE SHALL BE USED FOR THE ABUTMENT ABOVE THE BRIDGE SEAT AND BRIDGE DECK.

A WATER REDUCING RETARDING ADMIXTURE IN ACCORDANCE WITH SECTION 707.2 OF THE SPECIFICATIONS SHALL BE USED IN ALL SUPERSTRUCTURE CONCRETE. PAYMENT SHALL BE INCLUDED IN ITEM 601009-001, CLASS H CONCRETE. RETARDER WILL NOT BE REQUIRED BELOW 50 DEGREES F, BUT WATER REDUCING ADMIXTURE SHALL BE USED. THE CONTRACTOR'S ATTENTION IS CALLED TO THE TEST REQUIREMENTS FOR THE RETARDER ADMIXTURE.

CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4 INCHES FOR SUPERSTRUCTURE AND ONE INCH FOR SUBSTRUCTURE CONCRETE, UNLESS OTHERWISE NOTED.

ALL CONCRETE SHALL BE FINISHED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 601.11, OF THE STANDARD SPECIFICATIONS.

ALL CONCRETE SHALL BE PLACED IN THE DRY AND CURED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 601.12, OF THE STANDARD SPECIFICATIONS.

**JOINT FILLER:**

PREFORMED JOINT FILLER FOR VERTICAL JOINTS IN THE SUBSTRUCTURE SHALL BE SPONGE RUBBER IN ACCORDANCE WITH SECTION 708.1. THE COST SHALL BE INCLUDED IN ITEM 601002-001, CLASS B CONCRETE

**REINFORCING STEEL:**

ALL REINFORCING STEEL BARS SHALL BE INTERMEDIATE GRADE BILLET STEEL IN ACCORDANCE WITH AASHTO M31, GRADE 60, UNLESS OTHERWISE NOTED IN THE PLANS. THE CLEAR DISTANCE BETWEEN THE REINFORCING STEEL AND THE FACE OF THE CONCRETE SHALL BE:

TOP OF SLAB: 2.5 INCHES  
 BOTTOM OF SLAB: 1.0 INCHES  
 BOTTOM OF FOOTINGS: 3.0 INCHES  
 ALL OTHER LOCATIONS: 2.0 INCHES

EPOXY COATED BARS ARE SUFFIXED "E" AND ARE INCLUDED IN PAY ITEM 602002-001, EPOXY COATED REINFORCING BARS. ALL OTHER REINFORCING STEEL BARS ARE UNCOATED REINFORCING STEEL BARS AND ARE INCLUDED IN PAY ITEM 602001-001, REINFORCING STEEL BARS.

ALL REINFORCING BAR DIMENSIONS ARE OUT TO OUT. MINIMUM LENGTH OF LAP SPLICE UNLESS OTHERWISE NOTED.

\*4 = 1'-9" \*8 = 4'-11"  
 \*5 = 2'-2" \*9 = 6'-2"  
 \*6 = 2'-9" \*10 = 7'-10"  
 \*7 = 3'-9" \*11 = 9'-7"

FOR EPOXY COATED BARS, THE MINIMUM LAP SPLICE LENGTH SHALL BE INCREASED BY 50 PERCENT AT LOCATIONS WHERE CONCRETE COVER IS LESS THAN 3 BAR DIAMETER AND 20 PERCENT AT ALL OTHER LOCATIONS.

**STRUCTURAL STEEL:**

ALL ROLLED BEAMS SHALL MEET AASHTO M270 GRADE 50W-T2 AS SPECIFIED IN THE PLANS. ALL OTHER STRUCTURAL STEEL SHALL MEET AASHTO M270 GRADE 50W PAINTED STEEL.

ANCHOR BOLTS, NUTS AND WASHERS MAY BE MANUFACTURED FROM ORDINARY MILD STEEL AND SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M232 AFTER FABRICATION. THE FABRICATOR'S SHOP DRAWINGS SHALL IDENTIFY THE MATERIAL SPECIFICATION AND GRADE FOR EACH ITEM AND ARE SUBJECT TO APPROVAL OF THE ENGINEER.

THE LUMP SUM BID ITEM FOR ITEM 615001-001, STEEL SUPERSTRUCTURE, SHALL INCLUDE ALL STRUCTURAL STEEL COMPLETE IN PLACE, INCLUDING ELASTOMERIC BEARING PADS AND PAINTING

**BLAST CLEANING AND PAINTING:**

ALL STRUCTURAL STEEL SHALL BE BLAST CLEANED AND SHOP PAINTED ACCORDING TO SECTION 688 USING THE ZINC RICH LOW VOC SYSTEM, PER SECTION 711.22. THE SYSTEM SHALL CONTAIN AN EPOXY INTERMEDIATE COAT AND A URETHANE TOP COAT. THE CONTRACTOR SHALL APPLY THE FULL PAINT SYSTEM IN THE FABRICATION SHOP, EXCEPT FAYING SURFACES OF HIGH STRENGTH BOLTED CONNECTIONS, WHICH SHALL BE SHOP PAINTED WITH PRIMER ONLY. THE COLOR OF THE FINAL TOP COAT SHALL BE 20062 ACCORDING TO FEDERAL STANDARD 595 AND THE GLOSS AT AN ANGLE OF 60 DEGREES SHALL NOT EXCEED 25.

FIELD TOUCH UP AND PAINTING OF THE BOLTED CONNECTION AREA SHALL BE COMPLETED PRIOR TO PLACING THE FORMS FOR THE DECK. THE CONTRACTOR SHALL MAINTAIN THE FINISHED SURFACE OF THE PAINT AS NEW DURING PLACEMENT AND CURING OF THE DECK AND PARAPET CONCRETE. PRIOR TO FIELD TOUCH UP AND PAINTING, SURFACE CONTAMINATION SUCH AS DIRT, MUD, OIL, GREASE, CONCRETE OR OTHER FOREIGN MATERIAL SHALL BE REMOVED, FOLLOWED BY A HIGH PRESSURE WATER WASH. REPAIRS TO THE COATING SHALL BE IN ACCORDANCE WITH SECTION 688.2.8.

AREAS OF THE SHOP APPLIED PAINT SYSTEM WHICH ARE DAMAGED DURING ERECTION AND HIGH STRENGTH BOLTED CONNECTION AREAS THAT WERE ONLY PRIME PAINTED SHALL BE PROPERLY CLEANED AND PAINTED ACCORDING SECTION 688, AND TO THE SATISFACTION OF THE ENGINEER.

INCLUDE CLEANING AND PAINTING COSTS IN ITEM 615001-001, STEEL SUPERSTRUCTURE.

FOR INTEGRAL ABUTMENT STRUCTURES, THE CREVICE BETWEEN THE EMBEDDED STEEL AND THE CONCRETE SHALL BE SUITABLY CHAMFERED TO PROVIDE FOR PLACEMENT OF A SEALANT. SEAL THE CREVICE WITH A SEALANT MATERIAL MEETING THE REQUIREMENTS OF ASTM C920, TYPE S, GRADE NS, CLASS 25, USES NT AND M. SEALANT SHALL BE SUITABLE FOR BONDING BETWEEN CONCRETE AND THE TOP COAT OF THE SPECIFIED PAINT SYSTEM. ACID-CURE SEALANTS ARE NOT ALLOWED. INCLUDE PAYMENT IN ITEM 615001-001, STEEL SUPERSTRUCTURE.

**IDENTIFICATION MARKING OF STEEL MEMBERS:**

ALL STEEL MILL AND FABRICATOR IDENTIFICATION MARKINGS FOR STEEL PLATES, SHAPES, OR FABRICATED MEMBERS SHALL BE BY METAL TAGS, SOAPSTONE, OR SOME OTHER READILY REMOVABLE MATERIAL; OR, SHALL BE MARKED IN AN AREA OF THE COMPLETED MEMBER WHICH SHALL BE ENCASED OR COVERED WITH CONCRETE. MARKING METHODS AND LOCATIONS ARE SUBJECT TO APPROVAL OF THE ENGINEER.

DO NOT USE PAINT OR APPLY WAX-CRAYONS FOR MARKING.

**FINAL CLEANUP OF STRUCTURAL STEEL SURFACES:**

UPON COMPLETION OF ALL CONCRETE CURING OPERATIONS, THE CONTRACTOR SHALL CLEAN ALL STEEL SURFACES TO REMOVE ALL GREASE AND OIL, CONCRETE RESIDUE, DIRT, AND OTHER FOREIGN SUBSTANCES TO THE SATISFACTION OF THE ENGINEER.

CLEANING MAY BE BY HIGH PRESSURE WATER, POWER OR HAND WIRE BRUSHING, OR BY BRUSH-OFF BLAST CLEANING ACCORDING TO SSPC-SP 7. CLEANING SHALL BE FOLLOWED BY A CLEAN WATER RINSE TO REMOVE ALL RESIDUE OF DETERGENTS AND CLEANERS IF THEY WERE USED. ALL GREASE AND OIL SHALL BE REMOVED PRIOR TO THE CLEAN WATER RINSE BY SOLVENT CLEANING.

DO NOT USE ACIDS TO REMOVE STAINS.

INCLUDE COSTS FOR FINAL CLEANUP OF STEEL SURFACES IN ITEM 615001-001, STEEL SUPERSTRUCTURE.

**HANDLING AND STORING STEEL MEMBERS:**

STEEL MEMBERS MUST NOT BE GOUGED, SCRATCHED, DENTED, OR ALLOWED TO RUB AGAINST OTHER MEMBERS THAT WOULD RESULT IN DAMAGE TO THE BLAST CLEANED PROFILE OF THE STEEL. MEMBERS SHALL BE HANDLED USING SOFTENERS AND SLINGS INSTEAD OF CHOKERS AND CHAINS.

STORE MEMBERS IN THE FABRICATION SHOP AND ON THE PROJECT SITE IN SUCH A MANNER AS TO BE KEPT FREE AND CLEAN OF ALL FOREIGN SUBSTANCES SUCH AS GREASE, OIL, MORTAR AND CONCRETE SPATTER, CHALK AND CRAYON MARKS, PAINT, AND DIRT. ALL STORAGE MUST BE ABOVE GROUND AND SLOPED TO ALLOW FREE DRAINAGE OF MELTED SNOW, RAINWATER AND DEW. IF STORED FOR PERIODS LONGER THAN 3 MONTHS, THE MEMBERS MUST BE PLACED ON METAL SUPPORTS. FOR PERIODS OF STORAGE UP TO 3 MONTHS, MEMBERS MAY BE PLACED ON CLEAN, UNTREATED WOOD TIMBERS.

STORE PLATE GIRDERS AND ROLLED BEAMS WITH THE WEB IN THE UPRIGHT POSITION. THE MEMBERS MAY BE STACKED PROVIDED WOOD OR METAL SUPPORTS, AS NOTED ABOVE, SEPARATE INDIVIDUAL MEMBERS. UNDER NO CIRCUMSTANCES SHALL MEMBERS BE NESTED TOGETHER OR BUNDLED.

DO NOT ALLOW TREATED LUMBER OR TREATED TIMBER TO CONTACT STEEL MEMBERS. CONTACT WITH CLEAN, UNTREATED, LUMBER OR TIMBER WILL NOT DAMAGE THE STEEL MEMBERS


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**WV DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**BUZZARD CREEK BRIDGE  
OVER  
TRACE FORK**

**GENERAL NOTES SHEET 1 OF 3**

	447 CALL ROAD SUITE 216 CHARLESTON, WV 25312	SHEET B3 OF B40 BRIDGE NO. 11311
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SUBMISSION: 3-12-2018 3:02:17 PM 1/23/2020 \\server-pa\scms\highways\West Virginia\DOH\Projects\14-200-08 Buzzard Creek Bridge\Drawings\FINAL DRAWINGS REVIEWED 3 12 18\vtf\_gm\_notes\_buzzard.dgn

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**FASTENERS:**

ALL FASTENERS SHALL BE 7/8" DIA HIGH STRENGTH BOLTS (AASHTO M164), UNLESS OTHERWISE NOTED. THE THREADED ENDS OF BOLTS SHALL BE PLACED ON THE INSIDE, WHERE PRACTICAL FOR PROTECTION FROM THE WEATHER.

HIGH STRENGTH FASTENERS SHALL MEET SECTION 709.24 AND BE BLACK (UNCOATED) TYPE 3 (WEATHERING STEEL). THE HIGH STRENGTH FASTENERS USED IN REGIONS OF THE STRUCTURE THAT REQUIRE PAINTING SHALL BE TYPE 1 OR 3 AND SHALL BE MECHANICALLY GALVANIZED.

BEFORE ASSEMBLING THE HIGH STRENGTH BOLTED CONNECTIONS, REMOVE ALL LOOSE AND NON-ADHERENT RUST THAT MAY HAVE FORMED ON THE CONNECTION AREAS BY HAND OR POWER BRUSHING.

HOLES SHALL BE 1/16" LARGER THAN THE NOMINAL DIAMETER OF THE FASTENERS.

**WELDING:**

ALL WELDING SHALL COMPLY WITH ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5 CURRENT EDITION.

NO FIELD WELDING SHALL BE PERMITTED UNLESS SPECIFICALLY SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER.

ALL WELDING SHALL BE IN ACCORDANCE WITH SECTION 615.5.7, OF THE STANDARD SPECIFICATIONS.

**DECK SLAB OVERHANG FORM:**

DECK SLAB OVERHANG FORMS SHALL BE SUPPORTED FROM THE BOTTOM FLANGE OF FASCIA BEAMS AND SHALL NOT CAUSE EXCESSIVE TORSION TO THE BEAM

FORMING PLANS AND SUPPORTING CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ERECTING THE FORMWORK AND SHALL BE STAMPED BY A WEST VIRGINIA PROFESSIONAL ENGINEER.

**SHEAR STUD CONNECTORS:**

THE WELDED SHEAR STUDS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 615.3.3, EXCEPT AS FOLLOWS: "THE CONTRACTOR MAY SHOP INSTALL SHEAR STUDS TO THE BEAM OR GIRDER FOR THE PURPOSE OF ATTACHING A WORKER FALL PROTECTION SYSTEM. ONLY THE SHEAR STUDS REQUIRED TO PROPERLY INSTALL AND SUPPORT THE WORKER FALL PROTECTION SYSTEM MAY BE INSTALLED IN THE SHOP. ALL SHOP INSTALLED SHEAR STUDS FOR THE PURPOSE OF ATTACHING A WORKER FALL PROTECTION SYSTEM SHALL BE SHOWN ON THE SHOP DRAWINGS."

**PROTECTION OF CONCRETE SUBSTRUCTURE:**

BEFORE PLACING ANY STEEL SUPERSTRUCTURE MEMBERS ON THE CONCRETE SUBSTRUCTURE UNITS, THE CONTRACTOR SHALL COAT ALL EXPOSED AREAS OF THE ABUTMENTS TO THE GROUND OR WATERLINE ELEVATION WITH AN APPROVED SILANE BASED CONCRETE SEALER. PREPARATION OF SURFACES, APPLICATION RATES, AND METHODS SHALL BE AS RECOMMENDED BY THE SILANE MANUFACTURER.

THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT THE CONCRETE SUBSTRUCTURE FROM RUST STAINING DURING CONSTRUCTION AND CURING OF SUPERSTRUCTURE CONCRETE. WATER RUNOFF FROM CONCRETE CURING OPERATIONS SHALL BE DEFLECTED AWAY FROM THE STEEL BEAMS AND SHALL NOT DRAIN ONTO THE SUBSTRUCTURE CONCRETE AFTER CONTACTING THE WEATHERING STEEL.

UPON COMPLETION OF ALL SUPERSTRUCTURE CONCRETE CURING OPERATIONS, THE CONTRACTOR SHALL REMOVE ALL RUST STAINS FROM THE SUBSTRUCTURE UNITS USING PROPRIETARY CHEMICAL STAIN REMOVERS OR MILD ACID ETCHING. ABRASIVE BLAST CLEANING MAY BE USED TO SUPPLEMENT THE OTHER CLEANING METHODS IF THE STAINED AREAS ARE SEVERE OR EXTENSIVE. ALL CLEANING METHODS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

RE-COAT SUBSTRUCTURE CONCRETE AT ALL AREAS WHERE RUST STAINS WERE REMOVED, REGARDLESS OF THE CLEANING METHOD USED, WITH AN APPROVED SILANE BASED CONCRETE SEALER AS SPECIFIED ABOVE.

INCLUDE THE COST OF SILANE COATING, PROTECTING, CLEANING, AND RE-COATING SUBSTRUCTURE UNITS IN ITEM 601002-001, CLASS B CONCRETE.

**EXCAVATION:**

ALL EXCAVATION OUTSIDE THE LIMITS SHOWN FOR THE STRUCTURE EXCAVATION SHALL BE PAID FOR AS UNCLASSIFIED EXCAVATION, ITEM 207001-001 IN ROADWAY QUANTITIES.

NO EXCAVATION IS TO BE CLASSIFIED AS ROCK EXCAVATION. ALL EXCAVATION WITHIN THE LIMITS SHOWN ON THE PLANS SHALL BE PAID FOR AS STRUCTURE EXCAVATION. ITEM 212001-000.

ANY SHORING REQUIRED SHALL BE INCIDENTAL TO ITEM 212001-000, STRUCTURE EXCAVATION.

**BACKFILL:**

THE CONTRACTOR SHALL BACKFILL AROUND THE SUBSTRUCTURE AS SOON AS POSSIBLE AFTER FORM REMOVAL AND SLOPE THE SURFACES TO DRAIN, ALL IN ACCORDANCE WITH SUBSECTION 212.10 OF THE STANDARD SPECIFICATIONS.

**SELECT MATERIAL FOR BACKFILLING:**

SELECT MATERIAL FOR BACKFILLING SHALL BE PLACED TO THE LIMITS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SECTION 212.10 OF THE SPECIFICATIONS. ALL MATERIAL AND LABOR COSTS SHALL BE PAID FOR IN ITEM 212005-000, SELECT MATERIAL FOR BACKFILLING.

SIX INCH DIAMETER UNDERDRAIN PIPE MEETING THE REQUIREMENTS OF SECTION 714.19, SHALL BE INSTALLED AS SHOWN ON THE PLANS. ONLY PORTIONS OF THE PIPE WHICH LIE WITHIN THE SELECT BACKFILL SHALL HAVE PERFORATIONS. CONCRETE UNDERDRAIN SLOPEWALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING DR-8, SHEET 3 OF 4.

**FOUNDATION PROTECTION:**

THE AREA AROUND THE ABUTMENTS SHALL BE EXCAVATED TO A DEPTH AND WIDTH INDICATED ON THE PLANS, OR AS OTHERWISE DIRECTED.

THE FOUNDATION PROTECTION AT THE ABUTMENTS SHALL BE IN ACCORDANCE WITH SECTION 218.4 OF THE STANDARD SPECIFICATION. ALL COST AND LABOR SHALL BE PAID FOR UNDER ITEM 218006-000, FOUNDATION PROTECTION.

THE AVERAGE STONE SIZE FOR SCOUR PROTECTION FOR THIS BRIDGE IS 24 INCHES. UNIFORMLY GRADE THE ROCK FOR SCOUR PROTECTION AS FOLLOWS:

STONE SIZE	PERCENTAGE OF GRADATION SMALLER THAN:
48 INCH	100%
36 INCH	85%
24 INCH	50%
18 INCH	15%

THE STONE SHALL BE WELL GRADED THROUGHOUT THE SCOUR PROTECTION THICKNESS AS DECIDED BY THE ENGINEER BY VISUAL INSPECTION. STONES SMALLER THAN THE SPECIFIED 15% ARE NOT ALLOWED IN AN AMOUNT EXCEEDING 20% BY WEIGHT. MATERIAL SHALL CONSIST OF ROCK OF A QUALITY SATISFACTORY TO THE ENGINEER. THE USE OF SHALES IS NOT PERMITTED.

**PILING:**

ALL STEEL PILES SHALL BE HP14x73 STEEL BEARING PILES, PREDRILLED AND DRIVEN, AND SHALL MEET AASHTO M270, GRADE 50, REQUIREMENTS. HARDENED STEEL PILE POINTS SHALL BE USED. THE TARGET CAPACITY IS 244 KIPS PER PILE AT REFUSAL IN BEDROCK (THE MAXIMUM FACTORED LOAD IS 122 KIPS PER PILE). THE CONTRACTOR SHALL PREDRILL ALL THE PILE BOREHOLES TO A DEPTH 15 FEET BELOW THE BOTTOM OF THE PILE CAP. REFUSAL IS DEFINED IN BLOWS PER 1 INCH (BPI) OF PENETRATION USING A POWER HAMMER AS FOLLOWS:

HAMMER	ENERGY RATING (FT-LBS)	REQUIRED BPI REFUSAL CRITERIA ABUTMENT 1	REQUIRED BPI REFUSAL CRITERIA ABUTMENT 2
KOBE 13	25,428	20 BPI @ MAX SETTING	20 BPI @ MAX SETTING
ICE I-12v2	29,625	20 BPI @ MAX SETTING	20 BPI @ MAX SETTING
DELMAG 19-42	43,240	20 BPI @ MAX SETTING	20 BPI @ MAX SETTING

**PILING (CONTINUED):**

IT IS SUGGESTED THAT THE CONTRACTOR USE A HAMMER THAT IS LISTED IN THE TABLE USING THE APPROPRIATE FUEL SETTING AND BPI CRITERIA. HAMMERS LARGER THAN 50,000 ft-lbs SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER. THE CONTRACTOR IS ADVISED THAT MULTIPLE HAMMERS WITH ENERGY RATINGS HIGHER THAN THOSE LISTED IN THE TABLE WERE ANALYZED AND IT WAS DETERMINED THAT THEY OVERSTRESSED THE PILES AT REFUSAL CONDITIONS. IF THE CONTRACTOR ELECTS TO USE A HAMMER THAT IS NOT INCLUDED IN THE TABLE OR IF A HIGHER FUEL SETTING THAN THOSE LISTED ABOVE IS USED, THE CONTRACTOR SHALL SUBMIT DRIVING CRITERIA USING A WAVE EQUATION ANALYSIS, SUCH AS GRLWEAP. THE DRIVING CRITERIA SHALL BE SUBMITTED TO THE ENGINEER AT LEAST 14 DAYS PRIOR TO INSTALLATION OF THE FIRST PILE AND SHALL INCLUDE THE FUEL SETTING(S), STROKE HEIGHT, THE REQUIRED BLOWS PER 1 INCH OF PENETRATION TO ACHIEVE THE TARGET CAPACITY, AND THE MAXIMUM DRIVING STRESS AT REFUSAL. THE ANALYSIS SHALL DEMONSTRATE THAT THE TARGET CAPACITY CAN BE ACHIEVED WITHOUT DAMAGING THE PILES OR EXCEEDING 45 ksi MAXIMUM COMPRESSIVE STRESS. A MINIMUM OF 10 BPI MAY BE ALLOWED AS PRACTICAL REFUSAL BY THE ENGINEER BASED ON THE WAVE EQUATION ANALYSIS.

ALL PREDRILLED BOREHOLES SHALL HAVE A DIAMETER OF 24 INCHES AND SHALL BE BACKFILLED WITH DRY SAND PRIOR TO DRIVING.

ANY WAVE EQUATION ANALYSIS PERFORMED BY THE CONTRACTOR AND ASSOCIATED COSTS DUE TO DELAYS, DRIVING EQUIPMENT, OR MOBILIZATION SHALL BE AT THE CONTRACTOR'S EXPENSE. THE COST OF PILE POINTS AND SAND BACKFILL SHALL BE INCLUDED IN ITEM 616005-018, HP14x73 STEEL BEARING PILES, PRE-DRILLED AND DRIVEN.

**TEMPORARY BRIDGE:**

THE CONTRACTOR SHALL ERECT AND MAINTAIN A TEMPORARY BRIDGE AT THE LOCATION SHOWN ON THE PLANS PRIOR TO THE CLOSING OF THE EXISTING BRIDGE IT SHALL BE MAINTAINED UNTIL THE NEW BRIDGE IS OPEN TO TRAFFIC. THE BRIDGE LENGTH SHALL BE DETERMINED BY THE MINIMUM SUPERSTRUCTURE ELEVATION AND THE NET WATERWAY OPENING.

THE TEMPORARY BRIDGE SHALL HAVE A MINIMUM CLEAR ROADWAY WIDTH OF 12'-0" AND AN APPROXIMATE SPAN LENGTH OF 40'-0", WITH A MINIMUM NET WATERWAY OPENING OF 162 SQ. FT. BELOW ELEVATION 591.00. THE STREAM BANK SLOPE SHALL BE LIMITED TO A MAXIMUM OF 1.5 HORIZONTAL TO 1.0 VERTICAL.


THE STRUCTURE SHALL BE DESIGNED FOR H-20 LIVE LOADING. THE USE OF USED MATERIAL IS ACCEPTABLE, SUCH MATERIAL SHALL BE INSPECTED VISUALLY AND IS SUBJECT TO APPROVAL BY THE ENGINEER PRIOR TO ITS USE. THE DESIGN AND PLANS FOR THE TEMPORARY STRUCTURE SHALL BE STAMPED BY A WV PE AND SUBMITTED TO THE ENGINEER PRIOR TO THE BEGINNING OF CONSTRUCTION. IF THE PLANS AND CALCULATIONS SUBMITTED FOR REVIEW ARE NOT SATISFACTORY TO THE ENGINEER, THE CONTRACTOR SHALL MAKE SUCH CHANGES IN THEM AS MAY BE REQUIRED.

2	REMOVED TEMPORARY BRIDGE NOTE	1-23-2020	TTW
REVISION NUMBER	REVISION	DATE	BY

**WV DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**BUZZARD CREEK BRIDGE  
OVER  
TRACE FORK**

**GENERAL NOTES SHEET 2 OF 3**

 White Brothers Consulting, LLC	447 CALL ROAD SUITE 216 CHARLESTON, WV 25312	SHEET <b>B4</b> OF <b>B40</b> BRIDGE NO. <b>11311</b>
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DESIGNED	DATE
GWG	02-18
DRAWN	DATE
JCB	02-18
CHECKED	DATE
GWG	02-18
CHECKED	DATE
TTW	02-18

3-12-2018 3:04:54 PM 1/23/2020 12:18:51 PM Buzard Creek Bridge Drawings Final Drawings Reviewed 3 12 18 vst gen notes Buzard.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	01	S340-50-7.39.00		2020	PUTNAM	41	72

STEEL NOTES:

ALL GIRDERS SHALL MEET AASHTO M270 GRADE 50W-T2. ALL OTHER STRUCTURAL STEEL SHALL MEET AASHTO M270 GRADE 50W.

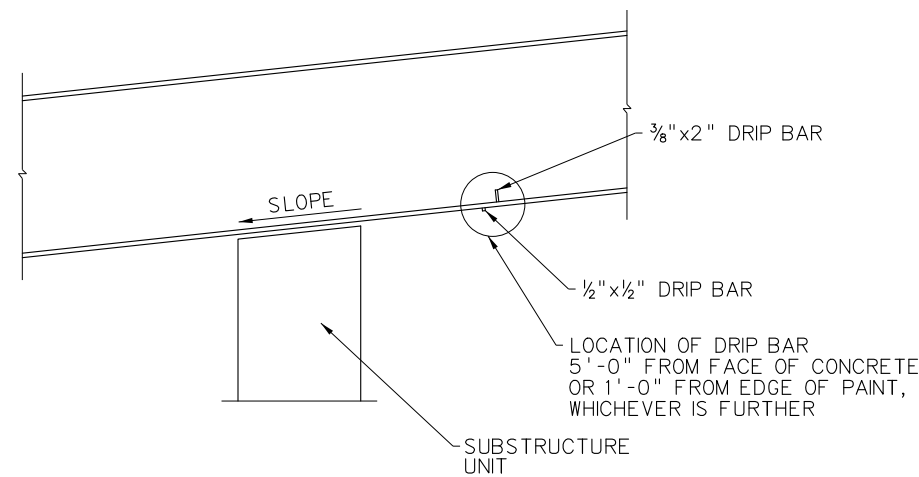
ALL HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER IN ACCORDANCE WITH AASHTO M164.

ALL GIRDERS ARE PARALLEL. ALL CENTERLINES OF BEARINGS ARE PARALLEL.

BEARING STIFFENERS AND ENDS OF GIRDERS SHALL BE VERTICAL UNDER FULL DEAD LOAD AT 68 DEGREES F.

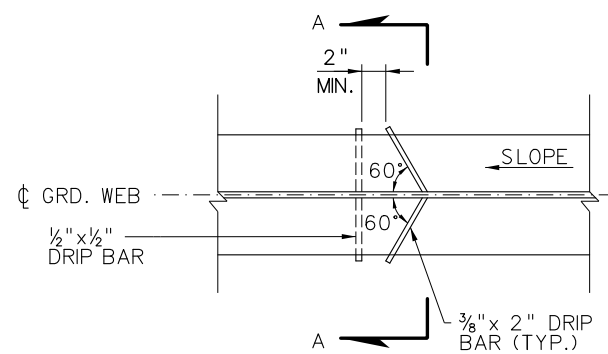
STIFFENERS, DIAPHRAGMS, AND CONNECTION PLATES SHALL BE PERPENDICULAR TO THE GIRDER FLANGES.

ABUTMENT DIAPHRAGMS SHALL BE LEFT IN PLACE AND PAINTED WITH A PRIMER COAT ONLY. ALL COST AND LABOR SHALL BE INCLUDED IN ITEM 615001-001, STEEL SUPERSTRUCTURE.



**DRIP BAR LOCATION**

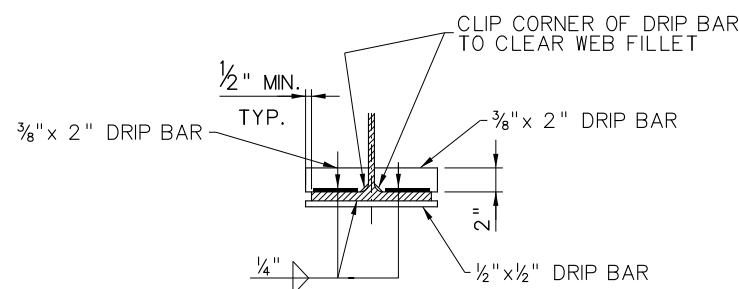
DRIP BARS SHALL BE LOCATED ON THE UPWARD SLOPE OF ALL GIRDERS ADJACENT TO SUBSTRUCTURE UNITS.



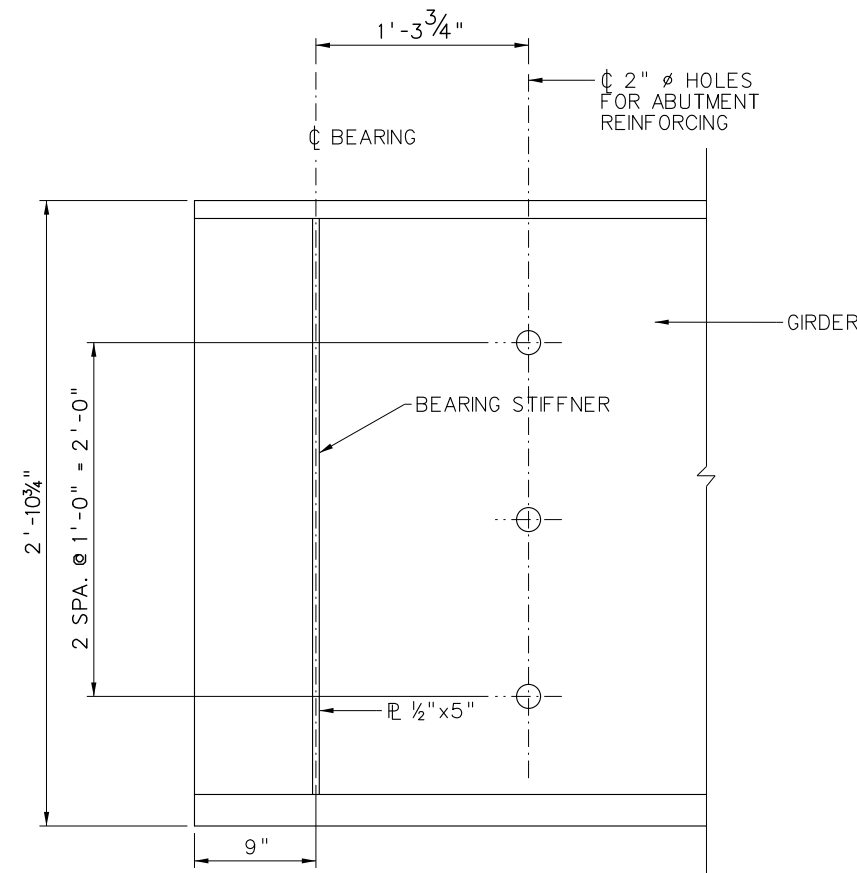
**DRIP BAR DETAIL**

NOTE:

DRIP BAR ON TOP OF BOTTOM FLANGE SHALL BE CAULKED AGAINST FLANGE, WEB, AND FILLET WELD WITH DARK BROWN CAULKING SUBJECT TO THE APPROVAL OF THE ENGINEER. INCLUDE COST IN ITEM 615001-001, STEEL SUPERSTRUCTURE.



**SECTION A-A**



**TYPICAL GIRDER END DETAIL**

2	REVISED STEEL TO GRADE 50W	1-23-2020	TTW
REVISION NUMBER	REVISION	DATE	BY

WV DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

BUZZARD CREEK BRIDGE  
OVER  
TRACE FORK

MISCELLANEOUS STEEL DETAILS

DESIGNED	DATE
GW	02-18
DRAWN	DATE
JCB	02-18
CHECKED	DATE
GW	02-18
CHECKED	DATE
TTW	02-18



White Brothers Consulting, LLC

447 CALL ROAD  
SUITE 216  
CHARLESTON, WV 25312

SHEET  
B18 OF B40  
BRIDGE NO.

11311

1/23/2020 3:06:52 PM SUBMISSION 3-12-2018 PS&E \\server-pa\scoms\highways\West Virginia\DOH Projects\14-200-08 Buzzard Creek Bridge\Drawings\FINAL DRAWINGS REVIEWED 3 12 18\str miscsteel details Buzzard.dgn