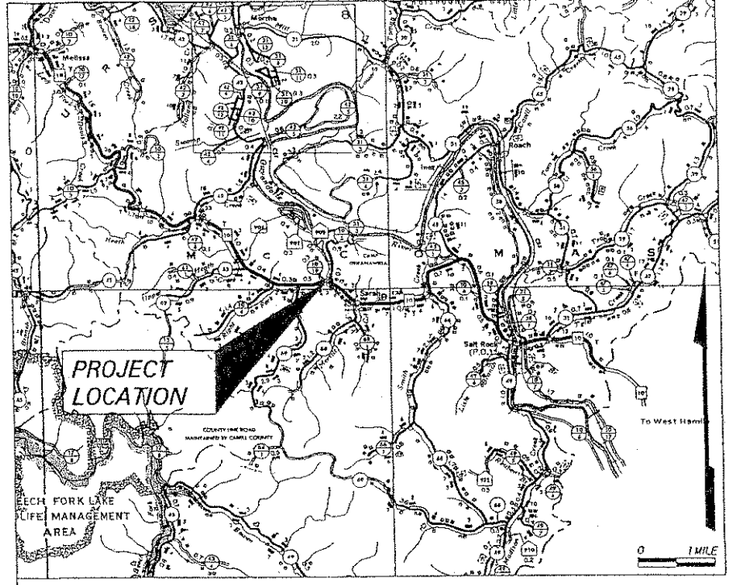
WEST VIRGINIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
CONSTRUCTION PLANS
OF
STATE HIGHWAY

FEDERAL PROJECT NO. BR-0010(113)E
STATE PROJECT NO. S306-10-4.99 00
WV ROUTE NO. 10
McCOMAS DISTRICT
CABELL COUNTY

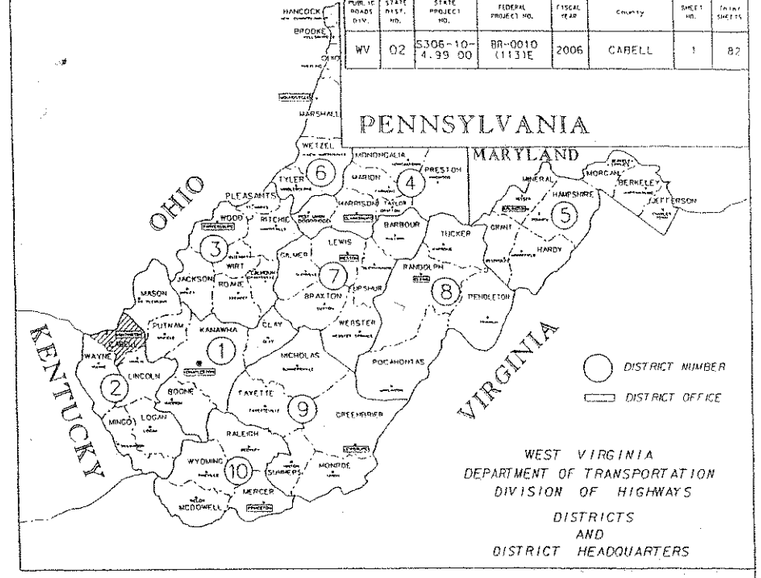
MERRITT CREEK BRIDGE

	Station		Station		ft.		mile(s)
ROADWAY	14+74.75	TO	14+94.75	=	20.0'	=	0.004
BRIDGE	14+94.75	TO	15+73.25	=	78.5'	=	0.015
ROADWAY	15+73.25	TO	15+93.25	=	20.0'	=	0.004

TOTAL PROJECT LENGTH = 118.5' = 0.023 MI



PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	County	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	1	82

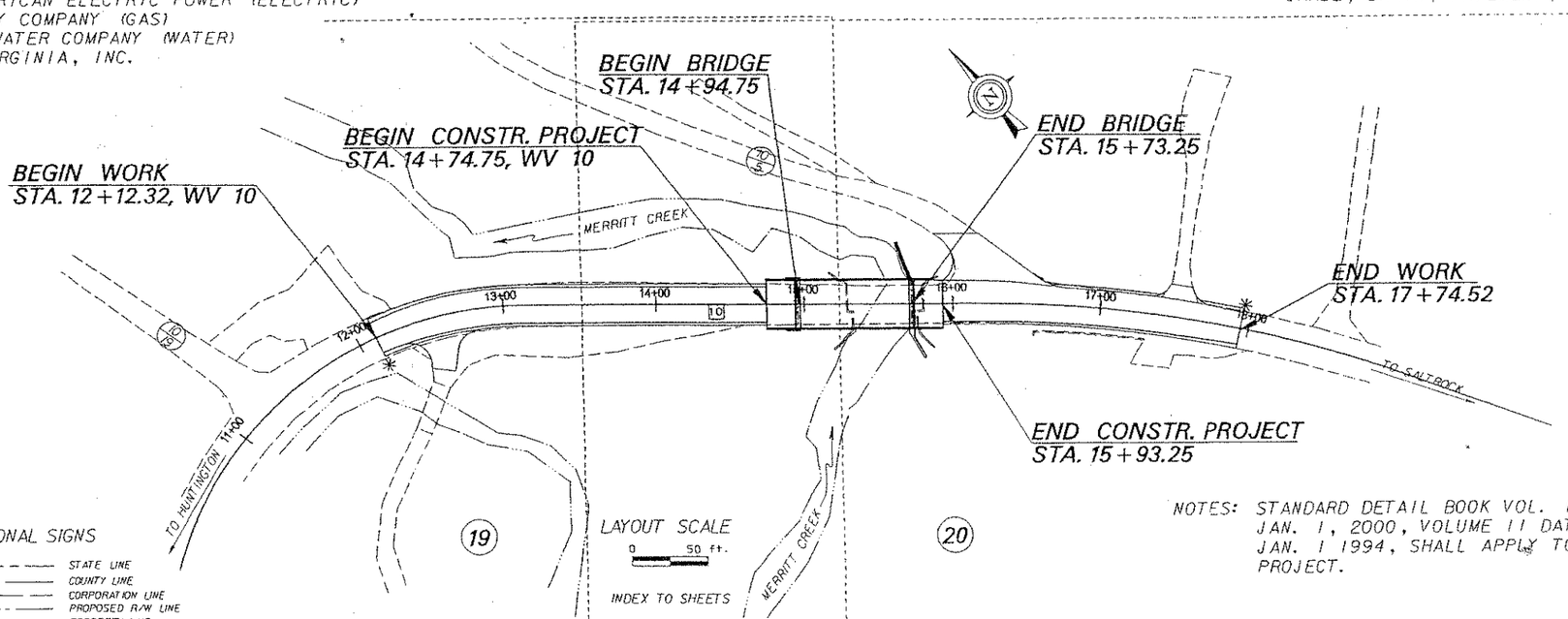


UTILITIES

APPALACHIAN POWER COMPANY D.B.A. AMERICAN ELECTRIC POWER (ELECTRIC)
CONSUMERS GAS UTILITY COMPANY (GAS)
WEST VIRGINIA - AMERICAN WATER COMPANY (WATER)
VERIZON - WEST VIRGINIA, INC.

TYPE OF CONSTRUCTION

GRADE, DRAIN, PAVEMENT, BRIDGE # 10574



LAYOUT SCALE
0 50 ft.

INDEX TO SHEETS

NOTES: STANDARD DETAIL BOOK VOL. I DATED JAN. 1, 2000, VOLUME II DATED JAN. 1 1994, SHALL APPLY TO THIS PROJECT.

SCALES

PLAN HOR. 0 — 20 ft.
PROFILE VERT. 0 — 5 ft.
HOR. 0 — 20 ft.

CONVENTIONAL SIGNS

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

DESIGN DESIGNATION

A.D.T. (2009)	7000
A.D.T. (2029)	8400
D.H.V.	
D	
T	5%
V. MPH	40

The WVDOH approved order of sheets was defined after the submission of this project.

For the new order of sheets please refer to Design Directive DD701.

NO.	DESCRIPTION
1	INDEX TO SHEETS
2	TYPICAL SECTIONS
3 - 4	CONTROL DATA
5 - 6	SUMMARY OF QUANTITIES
7	GENERAL NOTES
8 - 11	QUANTITY TABLES
12	SPECIAL DETAIL
13	GEOMETRIC LAYOUT
14 - 15	REFERENCE POINTS & BENCH MARKS
16 - 17	SUPERELEVATION
18	MAINTENANCE OF TRAFFIC
19 - 20	PLAN SHEETS
21 - 24	PROFILE SHEETS
25 - 56	BRIDGE # 10574
57 - 82	CROSS SECTIONS

*FUNDING SOURCE ID SIGNS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

11-04 2005
I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT S306-0-4.99 00, BR-0010(113)E
Kay Hutchinson
EXECUTIVE SECRETARY

BETH A. THORNTON REGISTERED 14882 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
Thornton Engineering, PLLC

JENNIFER W. FOX REGISTERED 13985 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
FOX Engineering, PLLC
CARSON'S CORNER PROFESSIONAL BUILDING
101 NORTH COURT STREET
RIPLEY, WV 25271

RECOMMENDED William E. Murray DESIGNER
RECOMMENDED FOR APPROVAL Marvin F. Murphy STATE HIGHWAY ENGINEER
APPROVED Paul A. Matox, Jr. COMMISSIONER OF HIGHWAYS

PROJECT NO. S306-10-4.99 00, BR-0010(113)E

6/7/2006 PRINTED BY WVDOT PRINTSHOP

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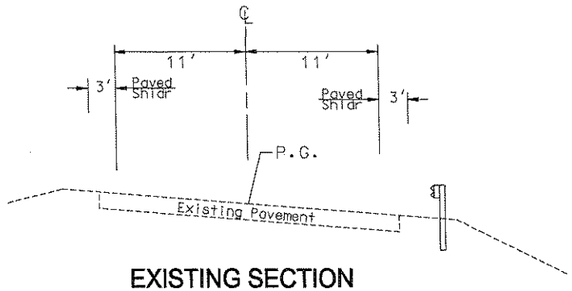
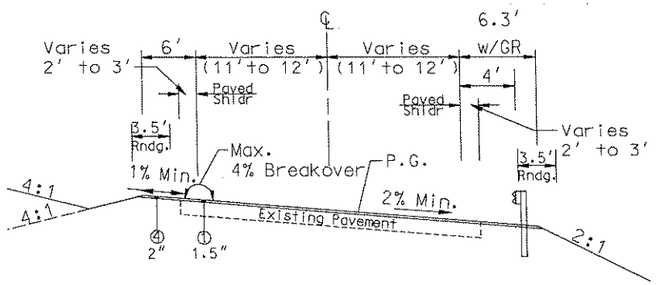
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	2	82

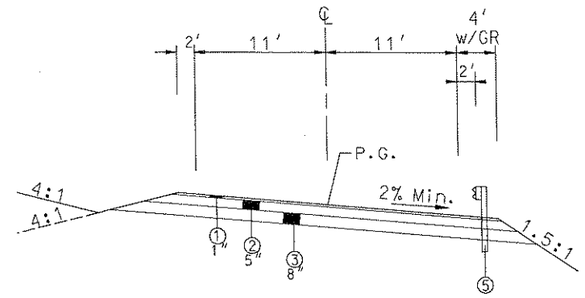


EXISTING SECTION
WV 10



SUPERELEVATED SECTION (CURVE RIGHT)
WV 10

Sta. 12+12.32 to Sta. 14+74.75
Sta. 15+93.25 to Sta. 17+94.52



SUPERELEVATED SECTION
Temp. Detour

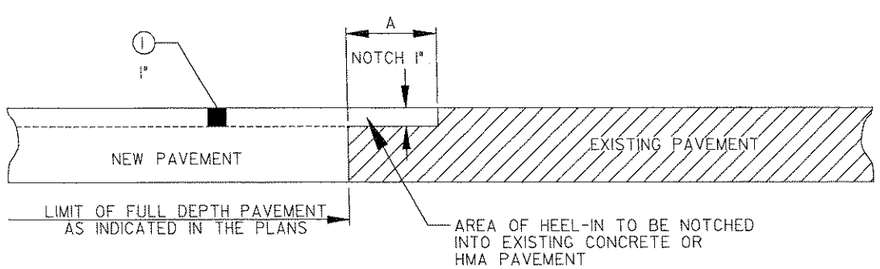
Sta. 20+00.00 to Sta. 22+85.00
Sta. 23+45.44 to Sta. 26+02.20

LEGEND

	ITEM #	DESCRIPTION	UNIT
①	401002-001	Marshall Hot Mix Asphalt Wearing course, SG, Type I	TN
②	401001-001	Marshall Hot Mix Asphalt Base Course, SG, Type I	TN
③	307001-000	Aggregate Base Course, Class 1	CY
④	307001-000	Aggregate Base Course, Class 10	CY
⑤	607001-001	Type 1 Guardrail, Class I	LF

Note: Pavement mix design on this project shall be in accordance with the Marshall Heavy Mix Design.

WHEEL RUTS BEYOND THE HEEL-IN NOTCH ARE TO BE FILLED AND TRANSITIONED TO MEET FIELD CONDITIONS.



1. THE COST OF ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT ALL PAVEMENT HEEL-INS WILL BE INCLUDED IN THE UNIT BID PRICE FOR, ①ITEM 401002-001
2. THIS DETAIL IS TO BE USED AT ALL LOCATIONS WHERE PROPOSED FULL DEPTH PAVEMENT CONNECTS TO EXISTING PAVEMENT.

POSTED SPEED LIMIT	A
25 mph	12'
30 TO 35 mph	14'
40 TO 45 mph	16'
50 TO 55 mph	18'

NOT TO SCALE

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/14/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
TYPICAL SECTIONS

FOX Engineering, PLLC
Thornton Engineering, PLLC

SHEET NO. 2 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	3	82

OWNERSHIP INDEX

PARCEL NO.	TRACT NO.	PLAN SHEET NO.	TITLEHOLDER	RECORDED DEED BOOK	RECORDED PAGE NO.	AREA - Sq.Ft.(Unless noted otherwise) C/A	NON-C/A	EASEMENT TYPE	EASEMENT AREA	REMAINING LEFT	REMAINING RIGHT	REMAINING TOTAL	TOTAL TAKEN	PARCEL TOTAL	REMARKS	R/W DEED RECORD DEED BOOK	R/W DEED RECORD PAGE NO.
1-1	1	4,5	DARRELL ADKINS	1121	550		8334				1.13 Ac.	1.13 Ac.	8334 (0.19 Ac.)	1.32 Ac.(c)	DEED PARCEL TOTAL = 2.25 Ac.		
	2	4,5		722	143			TCE	7829								
1-2		4,5	DARRELL ADKINS	1121	550		7950			4417		4417	7950	12367 (c)			
				722	143												
2		5	EDNA M. CREMEANS	613	155		1207			32353		32353	1207	33560 (c)			
2-1		4,5	EDNA M. CREMEANS	613	155								0	2.31 Ac.(c)	NO TAKE		
3	1	5	HOMER ADKINS AND LINDA ADKINS	1097	488		6878				1.33 Ac.	1.33 Ac.	6878 (0.16 Ac.)	1.49 Ac.(c)	TOTAL OF BOTH DEEDS		
	2	5		1116	44			TCE	12719								
	3	5						TSRE	2561								
~~4~~		~~5~~	~~CLOVIS & CONNIE J. FERGUSON~~	~~882~~	~~290~~										NO TAKE		
5	1	4,5	PUBLIC LAND CORPORATION					PE	3715				4784		MERRITT CREEK		
	2	5						PE	1069								
	3	5						TE	1280								
~~6~~		~~5~~	~~ADELPHIA COMMUNICATIONS~~												PRIVATE UTILITY - CABLE TV (NO TAKE)		
7		4	RICKFORD L. DILLON	933	268		259			1.12 Ac.		1.12 Ac.	259 (0.01 Ac.)	1.13 Ac.	DEED PARCEL TOTAL = 1.134 Ac.		

UTILITIES INDEX

STATION	SHEET NO.	DESCRIPTION	DISPOSITION
12+63.28' LT TO 13+59.77' LT	4	WV AMERICAN WATER - UNDERGROUND WATER	TO BE RELOCATED
16+49.25' LT TO 16+50.22' RT	5	WV AMERICAN WATER - UNDERGROUND WATER	RESIDENTIAL SERVICE TO BE REMOVED OR ABANDONED
15+46.56' LT TO 17+75.13' RT	5	APPALACHIAN POWER - OVERHEAD ELECTRIC	TO BE RELOCATED
17+21.41' LT TO 17+75.24' RT	5	CONSUMER GAS - UNDERGROUND GAS	RESIDENTIAL SERVICE TO BE REMOVED OR ABANDONED

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: DAM | DATE: 10/14/2005

MERRITT CREEK BRIDGE
OWNERSHIP AND UTILITIES INDEX

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO. 3 | TOTAL SHEETS 82

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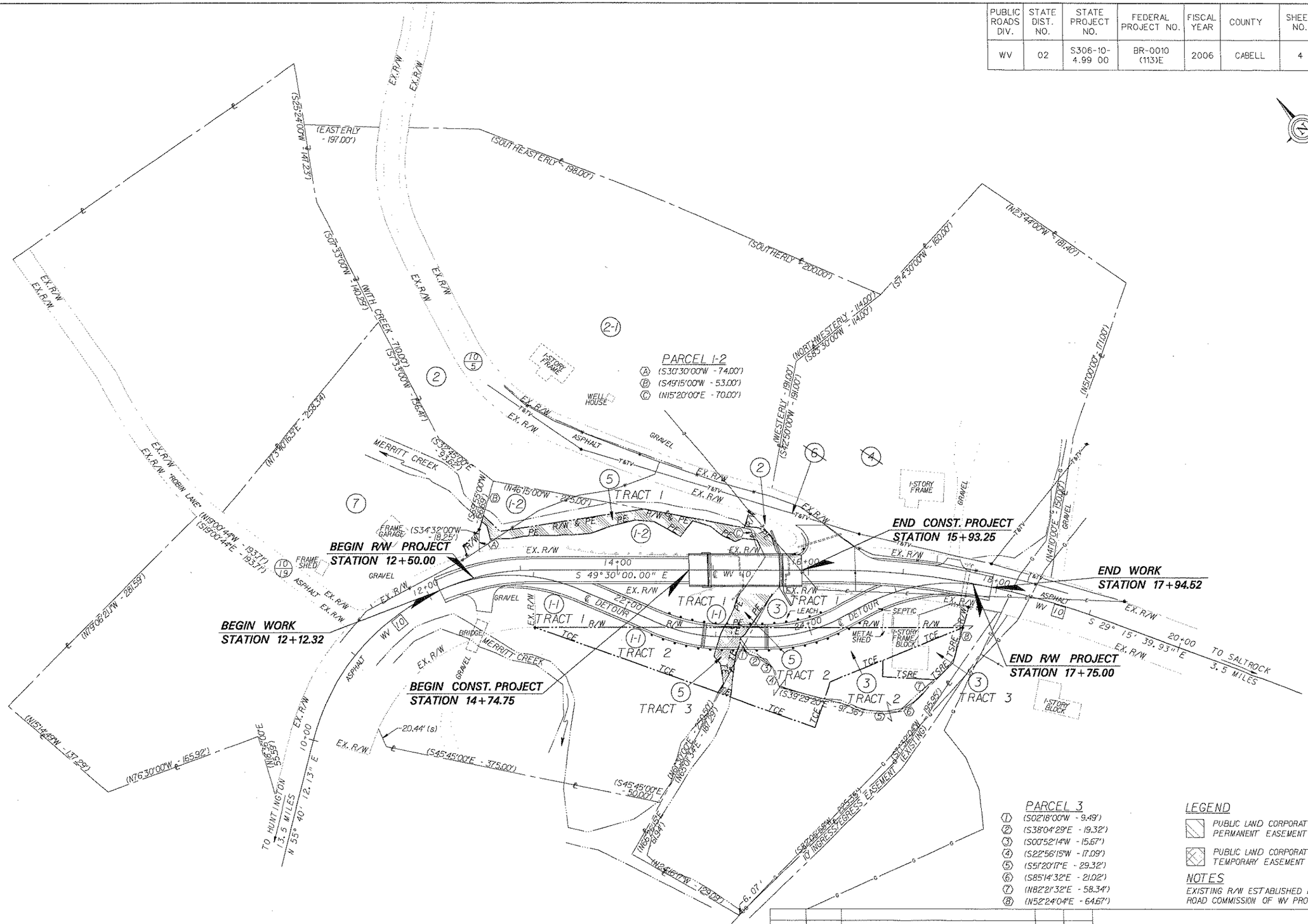
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	4	82



PARCEL 3

1. (S02°18'00"W - 9.49')
2. (S38°04'29"E - 19.32')
3. (S00°52'14"W - 15.67')
4. (S22°56'15"W - 17.09')
5. (S51°20'17"E - 29.32')
6. (S85°14'32"E - 21.02')
7. (N82°21'32"E - 58.34')
8. (N52°24'04"E - 64.67')

LEGEND

PUBLIC LAND CORPORATION PERMANENT EASEMENT

PUBLIC LAND CORPORATION TEMPORARY EASEMENT

NOTES

EXISTING R/W ESTABLISHED FROM STATE ROAD COMMISSION OF WV PROJECT 3155.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: DAM | CHECKED BY: KLF | DATE: 10/14/2005

MERRITT CREEK BRIDGE
PROPERTY MAP

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO.	TOTAL SHEETS
4	82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	5	82

SUMMARY OF QUANTITIES

ITEM NUMBER	PRINCIPAL OR ALTERNATE	DESCRIPTION	UNIT	TOTAL
		ROADWAY		
201001-000		CLEARING AND GRUBBING	LS	1
202001-000		BUILDING DEMOLITION NUMBER, BLD 3/1	LS	1
202001-000		BUILDING DEMOLITION NUMBER, BLD 3/2	LS	1
202003-000		SEPTIC TANK ABANDONMENT NUMBER, SEP 3/3	LS	1
204001-000		MOBILIZATION	LS	1
207001-001		UNCLASSIFIED EXCAVATION	CY	1466
211001-000		UNCLASSIFIED BORROW EXCAVATION	CY	3362
211002-000		ROCK BORROW EXCAVATION	CY	245
218009-001		GROUT FOR ROCK GUTTER	SY	90
307001-000		AGGREGATE BASE COURSE, CLASS 1	CY	235
307001-000		AGGREGATE BASE COURSE, CLASS 10	CY	14
502001-012		12 INCH PORTLAND CEMENT CONCRETE APPROACH SLAB	SY	142
601002-001		CLASS B CONCRETE	CY	0.7
604037-016		18 INCH REINFORCED CONCRETE PIPE, CLASS II	LF	50
605009-001		TYPE G INLET	EA	1
607001-001		TYPE 1 GUARDRAIL, CLASS I	LF	188
607006-001		THRIE BEAM GUARDRAIL BRIDGE TRANSITION	EA	4
607065-001		FLARED END TERMINAL	EA	3
633003-001		DUMPED ROCK GUTTER	CY	16
636007-001		ERADICATION OF PAVEMENT MARKING	LF	800
636008-001		TEMPORARY PAVEMENT MARKING - PAINT 4 IN SOLID LINE	LF	2400
636011-001		TRAFFIC CONTROL DEVICE	UN	5960
636012-010		PROJECT TRAFFIC CONTROL DEVICE CLEANING	EA	2
636013-001		INDIVIDUAL TRAFFIC CONTROL DEVICE CLEANING	EA	90
636014-001		FLAGGER	HR	160
636017-001		TEMPORARY CONCRETE BARRIER	LF	35
636019-001		TEMPORARY GUARDRAIL BARRIER	LF	415
636025-001		WARNING LIGHTS, TYPE B	DA	1260

SUMMARY OF QUANTITIES

ITEM NUMBER	PRINCIPAL OR ALTERNATE	DESCRIPTION	UNIT	TOTAL
		ROADWAY		
638002-001		RIGHT OF WAY MARKER	EA	9
638004-001		OUTLET MARKER	EA	1
639001-001		CONSTRUCTION LAYOUT STAKE	LS	1
640005-001		MINIMAL FIELD OFFICE	MO	6
642004-001		SEED MIXTURE, TEMPORARY	LB	53
642005-001		MULCH, STRAW OR HAY	TN	2
642006-001		FERTILIZER	TN	0.4
642009-001		CONTOUR DITCH	LF	356
642010-001		AGRICULTURAL LIMESTONE	TN	1.3
642011-001		HAY OR STRAW BALE	EA	30
642012-001		SILT FENCE	LF	237
642031-001		DITCH CHECK	EA	10
652001-001		AGRICULTURAL LIMESTONE	TN	0.7
652002-001		FERTILIZER, 10-20-10	TN	0.2
652002-002		FERTILIZER, UREA FORMALDEHYDE	TN	0.6
652003-001		SEED MIXTURES B, C-1, OR C-2	LB	40
652004-001		STRAW OR HAY MULCH	TN	0.9
655002-001		PERMANENT EROSION MATTING, TYPE A	SY	500
663001-004		EDGE LINE, TYPE II, WHITE	LF	950
663003-005		BARRIER LINE, TYPE II	LF	950
664001-008		IMPACT ATTENUATING DEVICE, TYPE IV	EA	4
		ROADWAY ALTERNATIVES		
401001-001	AA1	MARSHALL HOT-MIX ASPHALT BASE COURSE, STONE OR GRAVEL, TYPE 1	TN	89
401001-002	AA2	MARSHALL HOT-MIX ASPHALT BASE COURSE, SLAG, TYPE 1	TN	85
401002-001	BB1	MARSHALL HOT-MIX ASPHALT WEARING COURSE, STONE OR GRAVEL, TYPE 1	TN	75
401002-002	BB2	MARSHALL HOT-MIX ASPHALT WEARING COURSE, SLAG, TYPE 1	TN	72

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/20/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SUMMARY OF QUANTITIES

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO. 5 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	6	82

SUMMARY OF QUANTITIES

ITEM NUMBER	PRINCIPAL OR ALTERNATE	DESCRIPTION	UNIT	TOTAL
		BRIDGE #10574		
203001-000		DISMANTLING STRUCTURE	LS	1
212001-000		STRUCTURE EXCAVATION	CY	127
212002-000		WET EXCAVATION	CY	255
212004-000		COFFERDAM	EA	1
212005-000		SELECT MATERIAL FOR BACKFILLING	CY	78
601002-001		CLASS B CONCRETE	CY	201
601003-001		CLASS K CONCRETE	CY	12
601009-001		CLASS H CONCRETE	CY	108
601014-001		TEST SLAB	LS	1
602001-001		REINFORCING STEEL BAR	LB	26909
602002-001		EPOXY COATED REINFORCING STEEL BAR	LB	35355
603018-020		54 INCH PRESTRESSED CONCRETE I BEAM	LF	310
616004-006		HP12X53 STEEL BEARING PILE, DRIVEN	LF	281
616005-006		HP 12x53 STEEL BEARING PILE, PRE-DRILLED AND DRIVEN	LF	144
627005-001		REINFORCED ELASTOMERIC BEARING, LESS THAN 2 INCHES THICK	EA	4
627005-002		REINFORCED ELASTOMERIC BEARING, 2 INCHES-5 INCHES THICK	EA	4
636005-001		TEMPORARY STRUCTURE FOR MAINTAINING TRAFFIC	LS	1
639001-001		CONSTRUCTION LAYOUT STAKE	LS	1

SUMMARY OF QUANTITIES

ITEM NUMBER	PRINCIPAL OR ALTERNATE	DESCRIPTION	UNIT	TOTAL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/20/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SUMMARY OF QUANTITIES

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO. 6 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	7	82

GENERAL NOTES

GOVERNING SPECIFICATIONS

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, SUPPLEMENTAL SPECIFICATIONS, DATED JANUARY 1, 2003, CONTRACT DOCUMENTS AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

EROSION & SEDIMENT CONTROL

DETAILS NOT SHOWN IN THE PLANS SHALL BE IN ACCORDANCE WITH THE WEST VIRGINIA DIVISION OF HIGHWAYS EROSION AND SEDIMENT CONTROL MANUAL, DATED MARCH 1, 2003. IN THE EVENT THAT TEMPORARY EROSION AND POLLUTION CONTROL MEASURES ARE REQUIRED DUE TO THE CONTRACTORS NEGLIGENCE, CARELESSNESS OR FAILURE TO INSTALL PERMANENT CONTROLS AS PART OF THE WORK AS SCHEDULED, AND ARE ORDERED BY THE ENGINEER, SUCH WORK PERFORMED SHALL BE PERFORMED BY THE CONTRACTOR AT HIS OWN EXPENSE.

THE FIRST ORDER OF WORK FOR THE CONTRACTOR IS TO INSTALL SEDIMENT CONTROL STRUCTURES, SILT FENCE, HAY/STRAW BALES, ETC. TO ESTABLISH EROSION CONTROL AT THE EARLIEST POSSIBLE DATE. INITIAL CLEARING AND GRUBBING IS TO ONLY BE WHAT IS NECESSARY IN ORDER TO ACCOMPLISH THESE OPERATIONS.

IN ADDITION, THE CONTRACTOR IS TO NAME AN INDIVIDUAL TO REVIEW THE EROSION CONTROL FEATURES AT A MINIMUM OF ONCE A WEEK DURING PERIODS OF HEAVY PRECIPITATION AND/OR ACTIVE CONSTRUCTION AND ONCE A MONTH DURING WINTER SHUTDOWN TO ASSESS THE SUCCESS OF THE EROSION CONTROL STRUCTURES, REVEGETATION EFFORTS, AND SEE THAT REPLACEMENT, CLEANING AND /OR INSTALLATION OF ADDITIONAL FEATURES IF NECESSARY ARE CARRIED OUT.

IN ADDITION TO THE ENVIRONMENTAL MONITOR, PERIODIC INSPECTIONS WILL BE CONDUCTED BY REPRESENTATIVES OF THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT TO ENSURE THAT THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT ARE BEING FULFILLED, REPRESENTATIVES OF THE OTHER RESOURCE AGENCIES MAY CONDUCT PERIODIC INSPECTIONS THOUGH THE LIFE OF THE CONTRACT.

ALL SEDIMENT TRAPS OUTSIDE THE PROPOSED ROADWAY TEMPLATE ARE TO BE CLEANED AND LEFT IN PLACE (UNLESS OTHERWISE NOTED) UPON COMPLETION OF THE PROJECT.

EXISTING UTILITIES

THE LOCATION OF ALL KNOWN UTILITIES ARE SHOWN ON THE CONTRACT PLANS BASED ON THE BEST AVAILABLE INFORMATION FROM EXISTING PLANS AND FIELD INFORMATION. IT IS THE CONTRACTORS RESPONSIBILITY TO ASCERTAIN THE STATUS AND LOCATION OF EACH UTILITY WHEN PERFORMING WORK WHICH MAY AFFECT THESE FACILITIES, INCLUDING PROBING, EXCAVATION, OR ANY OTHER PRECAUTION REQUIRED TO CONFIRM LOCATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR DISRUPTION TO UTILITY LINES WHICH ARE KNOWN ACTIVE AND ARE TO REMAIN IN OPERATION.

BENCH MARKS

THE CONTRACTOR SHALL ATTEMPT TO HOLD BENCH MARK LOCATIONS THROUGHOUT THE LIFE OF THE PROJECT. IN THE EVENT THAT A BENCH MARK IS DISTURBED, THE CONTRACTOR, AS DIRECTED BY THE PROJECT ENGINEER, WILL RELOCATE OR REESTABLISH THE BENCH MARK. NO ADDITIONAL PAYMENT OR COMPENSATION WILL BE MADE FOR THIS WORK.

GEOTECHNICAL INFORMATION

ADDITIONAL GEOTECHNICAL INFORMATION MAY BE AVAILABLE IN REPORTS OF GEOTECHNICAL AND SUBSURFACE INVESTIGATIONS. ANY INQUIRES SHOULD BE DIRECTED TO:

GEOTECHNICAL SECTION
ENGINEERING DIVISION
WEST VIRGINIA DIVISION OF HIGHWAYS
BUILDING 5, ROOM A-317
1900 KANAWHA BLVD., EAST
CHARLESTON, WV 25305

VERIFICATION OF DIMENSIONS

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL PLAN AND ELEVATION DIMENSIONS PRIOR TO ORDERING MATERIALS FOR THE CONSTRUCTION OF VARIOUS BID ITEMS ON THIS PROJECT.

VERIFICATION OF CROSS SECTIONS

THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTING GROUNDLINE AS SHOWN ON THE CROSS SECTIONS PRIOR TO THE START OF ANY CONSTRUCTION.

PIPE, INLET, MANHOLE, HEADWALL, AND GUARDRAIL REMOVAL

ALL EXISTING FEATURES DESCRIBED ABOVE THAT ARE TO BE REMOVED DURING CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL VOIDS CREATED BY SUCH REMOVAL SHALL BE FILLED WITH RANDOM MATERIAL AS DIRECTED BY THE ENGINEER. THE COST OF THE REMOVAL AND FILLING OF VOIDS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201001-000, CLEARING AND GRUBBING.

HOT-MIX ASPHALT

THE HOT MIX ASPHALT FOR THIS PROJECT SHALL BE MARSHALL HEAVY MIX DESIGN. THE TERM HEAVY REFERS TO THE EQUIVALENT SINGLE AXLE LOADS (ESAL'S) AND DOES NOT REFLECT THE QUALITY OF THE HOT MIX ASPHALT.

FUNDING INDENTIFICATION SOURCE SIGNS

FUNDING IDENTIFICATION SOURCE SIGNS SHALL BE LOCATED IN THE FIELD AT THE DISCRETION OF THE PROJECT ENGINEER.

WATER QUALITY

THE CONTRACTOR WILL BE RESPONSIBLE FOR WATER QUANLITY THROUGHOUT THE DURATION OF CONSTRUCTION. THE PROJECT ENGINEER WILL WORK CLOSELY WITH THE PROJECT SUPERVISOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FOLLOWING:

1. DEVELOPING AND IMPLEMENTING AN EFFECTIVE EROSION CONTROL PLAN.
2. DIRECTING THE CONSTRUCTION, OPERATION AND DISMANTLING OF TEMPORARY EROSION CONTROL FEATURES.
3. IMPLEMENTING REMEDIAL ACTION REQUIRED TO REPAIR FAILING EROSION AND SEDIMENTATION CONTROL FEATURES.
4. IMPLEMENTING SHORT TERM WINTER SHUTDOWN PROCEDURES IF NECESSARY.
5. WILL SHAPE EARTHWORK PRIOR TO THE SUSPENSION OF GRADING OPERATIONS EACH DAY IN A MANNER THAT WILL PERMIT STORM RUNOFF WITH THE MINIMUM OF EROSION.
6. EROSION CONTROL FEATURES INSTALLED BY THE CONTRACTOR WILL BE OPERATED AND MAINTAINED IN AN ACCEPTABLE CONDITION.
7. WHEN ANY EROSION OR SEDIMENT CONTROL FEATURE HAS REACHED HALF ITS CAPACITY, THE DEVICE IS TO BE CLEANED OUT AND RESTORED TO IT Ω's ORIGINAL CONDITION.

THE CONTRACTOR WILL BE REQUIRED TO PREPARE A SPILL PREVENTION, CONTROL AND COUNTERMEASURES (SPCC) PLAN THAT ITEMIZES SPECIFIC MEASURES THAT WILL BE IMPLEMENTED TO PREVENT AND CLEAN UP CHEMICAL AND PETROLEUM PRODUCT SPILLS THAT MAY OCCUR DURING ALL PHASES OF PROJECT CONSTRUCTION. FUEL STORAGE AND REFUELING ACTIVITIES, EQUIPMENT MAINTENANCE ACTIVITIES AND EQUIPMENT WASHING WILL BE KEPT AT LEAST 500 FEET FROM ANY PERENNIAL OR INTERMITTENT WATERCOURSE OR WETLAND.

DRAINAGE

THE CONTACTOR SHALL MAINTAIN WORKING STORM DRAINAGE SYSTEMS THROUGHOUT THE WORK AREAS AT ALL TIMES DURING CONSTRUCTION. THE WORKING SYSTEM MAY CONSIST OF THE EXISTING STORM DRAINAGE SYSTEM, THE PROPOSED STORM DRAINAGE SYSTEM, OR A COMBINATION THEREOF. NO ADDITIONAL PAYMENT OR COMPENSATION WILL BE MADE FOR THIS WORK.

ALL DRAINAGE INLET/OUTLET STRUCTURES SHALL BE FIELD ADJUSTED AS REQUIRED TO MATCH THE EXISTING GROUND AS DIRECTED BY THE ENGINEER, UNLESS OTHERWISE NOTED.

ALL EXISTING DRAINAGE SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

WORKING HOURS/NOISE RESTRICTIONS

NO WORK SHALL BE PERMITTED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM WITHIN 600' OF ANY RESIDENCE. ALL CONSTRUCTION EQUIPMENT POWERED BY AN INTERNAL COMBUSTION ENGINE SHALL BE EQUIPPED WITH A PROPERLY MAINTAINED MUFFLER.

FERTILIZER, SEEDING AND MULCHING

ALL DISTURBED SOIL AREAS ARE TO BE SEEDED, MULCHED AND FERTILIZED. SEEDING, MULCHING AND FERTLIZER WILL BE AS SPECIFIED IN SECTION 652 OF THE STANDARD SPECIFICATIONS. TESTING WILL NOT BE REQUIRED ON THOSE ITEMS WHEN PURCHASED FROM A REPUTABLE DEALER.

EXISTING SIGNS

ALL EXISTING SIGNS ON THE PROJECT SHALL BECOME THE PROPERTY OF WVDOH TO BE RESET UPON COMPLETION OF THE PROJECT.

G-INLET

ALL TYPE 'G' INLETS IN THIS PROJECT REQUIRE TYPE I URBAN GRATES.

BUILDING DEMOLITION AND ASBESTOS ABATEMENT

THE CONTRACTOR IS HEREBY ADVISED THAT ASBESTOS INSPECTIONS ARE NOT COMPLETE FOR BUILDING DEMOLITION ITEM NUMBER 202001-000. THEREFORE, THE CONTRACTOR WILL NOT BE PERMITTED TO PERFORM THE BUILDING DEMOLITION ON THESE BUILDINGS UNTIL SUCH TIME AS THE ASBESTOS INSPECTIONS ARE COMPLETED BY THE WEST VIRGINIA DIVISION OF HIGHWAYS. IF THE ASBESTOS INSPECTIONS REVEAL THAT ASBESTOS IS PRESENT IN ANY FORM IN ANY OF THESE BUILDINGS, THE REPORT WILL BE MADE AVAILABLE TO THE CONTRACTOR AND THE CONTRACTOR WILL ARRANGE FOR THE ASBESTOS ABATEMENT TO BE PERFORMED BY A FIRM LICENSED IN THE STATE OF WEST VIRGINIA TO PERFORM SUCH WORK.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/14/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
GENERAL NOTES

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO. 7 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	8	82

PAVING QUANTITIES

LOCATION			307001-000	307001-000	401001-001	401001-002	401002-001	401002-002	REMARKS
SEGMENT	STATION	STATION	AGGREGATE BASE COURSE, CLASS 1	AGGREGATE BASE COURSE, CLASS 10	MARSHALL HOT MIX ASPHALT BASE COURSE, SG, TYPE I	MARSHALL HOT MIX ASPHALT BASE COURSE, SLAG, TYPE I	MARSHALL HOT MIX ASPHALT WEARING COURSE, SG, TYPE I	MARSHALL HOT MIX ASPHALT WEARING COURSE, SLAG, TYPE I	
			C.Y.	C.Y.	TON	TON	TON	TON	
WV 10	12+12.32	14+74.75	—	11	—	—	20	19	
WV 10	14+74.75	14+94.75	14	—	—	—	8	7.5	APPROACH SLAB
WV 10	15+73.25	15+93.25	14	—	—	—	8	7.5	APPROACH SLAB
WV 10	15+93.25	17+94.52	—	3	—	—	21	20	INCLUDES CR 10/5 & DRWY
DETOUR	20+00.00	22+85.00	104	—	45	43	9	9	
DETOUR	23+45.44	26+02.20	103	—	44	42	9	9	INCLUDES TEMP ACCESS
		TOTAL	235	14	89	85	75	72	

GRADING SUMMARY

LOCATION		TOTAL UNCLASS. EXCAV.	UNSUIT. EXCAV.	USABLE EXCAV.	SHRINK OR SWELL	ADJUST. EXCAV.	UNCLASS. EMBANK.	SELECT EMBANK.	TOTAL EMBANK.	EXCESS (+) OR BORROW(-)	REMARKS
STATION	STATION	C.Y.	C.Y.	C.Y.		C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	
WV 10											
12+12.32	12+25	3	3	0			0	0	0	0	
12+50	12+75	40	40	0			0	0	0	0	
13+00	13+25	15	15	0			0	0	0	0	
13+50	13+75	0	0	0			0	0	0	0	
14+00	14+25	0	0	0			0	0	0	0	
14+50	14+75	250	250	0			0	0	0	0	
15+00	15+25	746	746	0			0	0	0	0	
15+50	15+75	0	0	0			602	0	602	-602	
16+00	16+25	0	0	0			0	0	0	0	
16+50	16+75	0	0	0			0	0	0	0	
17+00	17+25	0	0	0			0	0	0	0	
17+50	17+94.52	0	0	0					0	0	
DETOUR											
20+00	20+25	5	5	0			0	0	0	0	
20+50	20+75	18	18	0			0	0	0	0	
21+00	21+25	61	61	0			2	0	2	-2	
21+50	21+75	43	43	0			20	0	20	-20	
22+00	22+25	39	39	0			231	0	231	-231	
22+50	22+75	0	0	0			462	0	462	-462	
23+00	23+25	0	0	0			225	0	225	-225	
23+50	23+75	0	0	0			811	0	811	-811	
24+00	24+25	3	3	0			585	0	585	-585	
24+50	24+75	147	147	0			88	0	88	-88	
25+00	25+25	80	80	0			0	0	0	0	
25+50	25+75	15	15	0			0	0	0	0	
26+00	26+02.20	1	1	0			0	0	0	0	
TOTAL		1466	1466	0		0	3026	0	3026	-3026	

BORROW COMPUTATIONS ✳

SELECT EMBANKMENT REQUIRED (FROM TABLE "GRADING SUMMARY") = 0 C.Y.

SELECT EMBANKMENT AVAILABLE (FROM TABLE "PROBABLE SOURCE OF SELECT EMBANKMENT") = 281

SELECT EMBANKMENT NEEDED = 281 C.Y.

ROCK BORROW EXCAVATION REQUIRED TO MEET SELECT EMBANKMENT REQUIREMENTS WITH 15% SWELL FACTOR: =

ITEM 211002-000, ROCK BORROW EXCAVATION = $\frac{\text{SELECT EMBANKMENT NEEDED}}{1+0.15}$ = 245 C.Y.

UNCLASSIFIED EMBANKMENT REQUIRED (FROM TABLE "GRADING SUMMARY") = 3026 C.Y.

ADJUSTED EXCAVATION (FROM TABLE "GRADING SUMMARY") = 0 C.Y.

SELECT EMBANKMENT AVAILABLE (TABLE "PROBABLE SOURCE OF SELECT EMBANKMENT") = 0

EMBANKMENT NEED = 3026 C.Y.

EXCAVATION REQUIRED TO MEET EMBANKMENT REQUIREMENTS WITH 10% SHRINK FACTOR: =

ITEM 211001-000, UNCLASSIFIED BORROW EXCAVATION= $\frac{\text{EMBANKMENT NEEDED}}{1-0.10}$ = 3362 C.Y.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/7/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
QUANTITY TABLES

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO. 8 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	9	82

SUMMARY OF DRAINAGE QUANTITIES

LOCATION		DIAMETER (IN.)	FILL HEIGHT (FT.)	REINFORCED CONCRETE PIPE			PRECAST CONCRETE BOX	ITEM 605004-001 TYPE B	ITEM 605009-001 TYPE G	INLET LOCATION	WINGWALL		CLASS B CONCRETE	REINFORCING*	REMARKS
STATION	STATION			L.F.	CLASS	END SECTION	L.F.	EA.	EA.	LT/RT/CL	LEFT EACH	RIGHT EACH	C.Y.	LBS.	
15+60	16+28	18	3	50	II				1	LT	1		0.67	41.8	
						TOTAL			1		1		0.67	41.8	

NOTE: ALL OFFSETS TO INLETS AS REFERENCED ON THIS TABLE OR ON THE PLANS ARE FROM CONSTRUCTION CENTERLINE TO THE CENTER OF THE GRATE.

PIPE SIZE:	15"	18"	30"
TOTAL LENGTH:		50'	

* FOR INFORMATION ONLY

GUARDRAIL

LOCATION		ITEM 607001-001				607065-001	607006-001	607030-001	ITEM 607025-001		REMARKS
		CLASS I (L.F.)		CLASS II (L.F.)					C.S.T.		
STATION	STATION	LEFT	RIGHT	LEFT	RIGHT	F.E.T	THRIE BEAM BRIDGE TRANSITION	S.T.E.T.	TYPE A	TYPE B	
12+43.50	14+74.75	175.00				1	1				
14+06.00	14+74.75					1	1				
15+93.25	CR 10/5	12.50					1				
15+93.25	16+62.00					1	1				
TOTAL		187.5				3	4				

BUILDING DEMOLITION, ASBESTOS ABATEMENT AND ABANDONMENT

LOCATION		TYPE OF IMPROVEMENT	BUILDING DEMOLITION NUMBER	SEPTIC ABANDONMENT NUMBER	ASBESTOS ABATEMENT NUMBER
STATION	OFFSET				
16+75	40 ft RT	SEPTIC		SEP3/3	
16+80	45 ft RT	METAL SHED	BLD 3/2		
17+00	45 ft RT	1 STORY FRAME/ BLOCK BLDG	BLD 3/1		BLD 3/1

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/5/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
QUANTITY TABLES

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO. 9 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	10	82

TEMPORARY POLLUTION CONTROL

LOCATION STATION	LOCATION STATION	642031-001 DITCH CHECKS EA.	642004-001 TEMPORARY SEED LBS.	642005-001 STRAW OR HAY MULCH TON	642006-001 FERTILIZER TON	642009-001 CONTOUR DITCH L.F.	642010-001 AGRICULTURAL LIMESTONE TON	642011-001 HAY OR STRAW BALES EA.	642012-001 SILT FENCE L.F.	REMARKS
12+12.32	17+74.52	10	53	1.8	0.35	356	1.3	30	237	INCLUDES DETOUR
TOTAL		10	53	1.8	0.35	356	1.3	30	237	

CLEARING & GRUBBING*

LOCATION STATION	LOCATION STATION	AREA S.F.	AREA ACRES	REMARKS
WV 10				
12+12.32	17+74.52	725	0.020	
DETOUR				
20+00	26+02.20	18,118	0.420	
		TOTAL	0.44	

*FOR INFORMATION ONLY

SEEDING & MULCHING

LOCATION STATION	LOCATION STATION	652001-001 AGRICULTURAL LIMESTONE TON	652002-001 FERTILIZER 10-20-10 TON	652002-002 UREA FORMALDEHYDE FERTILIZER TON	652003-001 SEED MIXTURE B, C-1, OR C-2 LBS.	652003-002 SEED MIXTURE D LBS.	625004-001 STRAW OR HAY MULCH TON	652004-002 WOOD CELLUOSE FIBER MULCH TON	REMARKS
WV 10									
12+12.32	17+74.52	0.03	0.01	0.01	2		0.04		
DETOUR									
20+00	26+02.20	0.63	0.21	0.60	38		0.84		
TOTALS		0.66	0.22	0.61	40		0.88		

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/14/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
QUANTITY TABLES

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO.	TOTAL SHEETS
10	82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	11	82

DUMPED ROCK GUTTER (DRG)

LOCATION		LENGTH (L.F.)		DEPTH	WIDTH	THICK	ITEM 633003-001	ITEM 218009-001	REMARKS
STATION	STATION	LEFT	RIGHT	FT.	FT.	FT.	C.Y.	S.Y.	
15+50	15+80	30		1.5	2	1.5	5.0	27.0	GROUTED
14+73.50	15+14		69	1.5	2	1.5	11.2	63.0	GROUTED
						TOTAL	16.2	90.0	

MATTING

LOCATION		LENGTH (L.F.)		TYPE	WIDTH	ITEM 655001-001	REMARKS
STATION	STATION	LEFT	RIGHT		FT.	S.Y.	
DETOUR							
21+75	22+25		50.0	A	2.0	100	
22+00	22+50	50.0		A	2.0	100	
25+50	24+50		100.0	A	2.0	200	
24+50	24+00	50.0		A	2.0	100	
					TOTAL	500	

RIGHT OF WAY MARKERS

STATION	OFFSET LEFT	OFFSET RIGHT	ITEM 638002-001 E.A.	REMARKS
12+50	25'		1	
12+50	35'		1	
12+67	48'		1	
13+14		60'	1	
14+41		25'	1	
14+41		60'	1	
15+40	61'		1	
17+72		47'	1	
17+75		25'	1	
		TOTAL	9	

OUTLET MARKERS

STATION	OFFSET LEFT	OFFSET RIGHT	ITEM 638004-001 E.A.	REMARKS
15+40	46'		1	
		TOTAL	1	

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/20/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
QUANTITY TABLES

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO. 11 | TOTAL SHEETS 82

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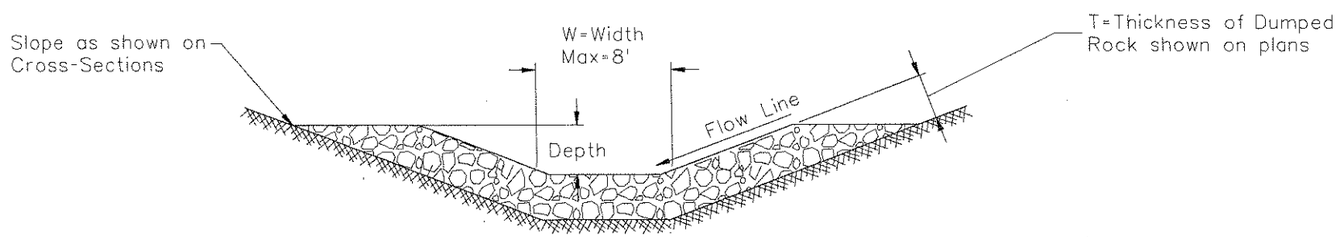
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	12	82



GROUTED DUMPED ROCK GUTTER
(For Maximum Width of 8 Feet)

NOTE:
THE COST OF DUMPED ROCK GUTTER SHALL BE INCLUDED IN ITEM 633003-001.

COST OF GROUT TO BE INCLUDED IN UNIT BID PRICE FOR ITEM 218009-001. GROUT FOR ROCK GUTTER, S.Y. GROUTED DUMPED ROCK GUTTER AND GROUTED CHANNEL SHALL BE CONSTRUCTED AS SHOWN AND THEN GROUTED AS SPECIFIED IN SECTION 218.3.3 OF THE STANDARD SPECIFICATIONS.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/14/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SPECIAL DETAILS

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO. 12 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	13	82

BM 1
PK NAIL IN ASPHALT LOT
STA. 10+47.10
OFFSET 31.11' LT.
ELEV. = 564.16

BM 2
5/8" REBAR WITH CAP
STA. 12+30.76
OFFSET 31.70' LT.
ELEV. = 561.14

BM 3
5/8" REBAR WITH CAP
STA. 18+29.41
OFFSET 30.65' LT.
ELEV. = 573.54

WV 10 CURVE #1

PI = 11+83.98
Δ = 74°49'48" Rt
D = 23°49'25"
R = 240.5'
L = 314.10'
T = 183.98'
E = 62.30'
SE = 9.98% (Existing)

WV 10 CURVE # 2

PI = 17+70.27
Δ = 20°14'20" Rt
D = 6°59'25"
R = 819.00'
L = 289.30'
T = 146.17'
E = 12.94'
SE = 5.6% (EXISTING)

DETOUR CURVE #1

PI = 20+79.58
Δ = 47°42'01" Rt
D = 31°49'51.56"
R = 180.00'
L = 149.85'
T = 79.58'
E = 16.81'
SE = 9.98% (Existing)

TEMP. DETOUR CURVE # 2

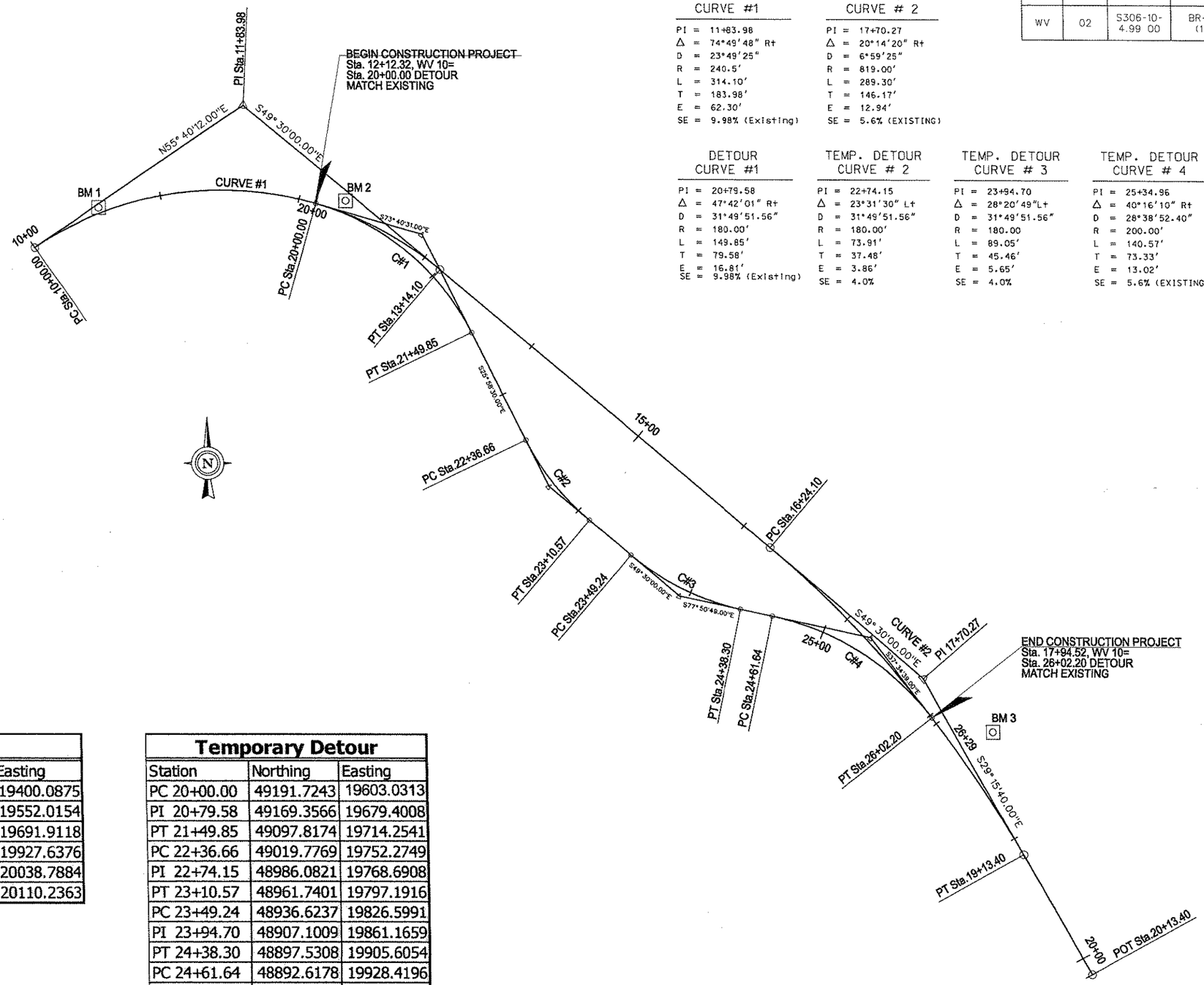
PI = 22+74.15
Δ = 23°31'30" Lt
D = 31°49'51.56"
R = 180.00'
L = 73.91'
T = 37.48'
E = 3.86'
SE = 4.0%

TEMP. DETOUR CURVE # 3

PI = 23+94.70
Δ = 28°20'49"Lt
D = 31°49'51.56"
R = 180.00
L = 89.05'
T = 45.46'
E = 5.65'
SE = 4.0%

TEMP. DETOUR CURVE # 4

PI = 25+34.96
Δ = 40°16'10" Rt
D = 28°38'52.40"
R = 200.00'
L = 140.57'
T = 73.33'
E = 13.02'
SE = 5.6% (EXISTING)



WV 10		
Station	Northing	Easting
PC 10+00.00	49159.4416	19400.0875
PI 11+83.98	49263.1964	19552.0154
PT 13+14.10	49143.7136	19691.9118
PC 16+24.10	48942.3847	19927.6376
PI 17+70.27	48847.4530	20038.7884
PT 19+13.40	48719.9316	20110.2363

Temporary Detour		
Station	Northing	Easting
PC 20+00.00	49191.7243	19603.0313
PI 20+79.58	49169.3566	19679.4008
PT 21+49.85	49097.8174	19714.2541
PC 22+36.66	49019.7769	19752.2749
PI 22+74.15	48986.0821	19768.6908
PT 23+10.57	48961.7401	19797.1916
PC 23+49.24	48936.6237	19826.5991
PI 23+94.70	48907.1009	19861.1659
PT 24+38.30	48897.5308	19905.6054
PC 24+61.64	48892.6178	19928.4196
PI 25+34.96	48877.1807	20000.1034
PT 26+02.20	48819.0668	20044.8207

SCALE : 0 40 ft.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/14/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
GEOMETRIC LAYOUT

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO. 13 | TOTAL SHEETS 82

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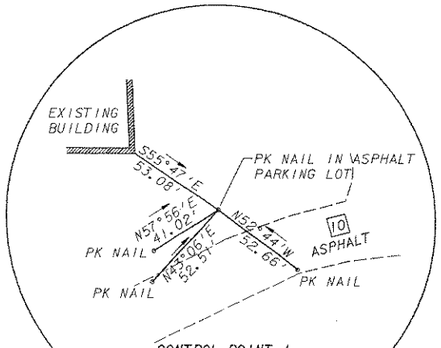
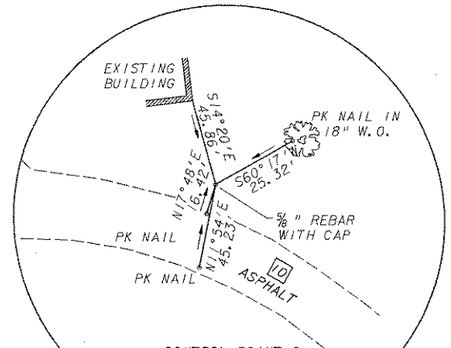
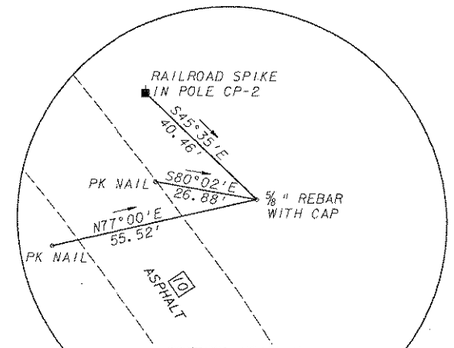
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	14	82



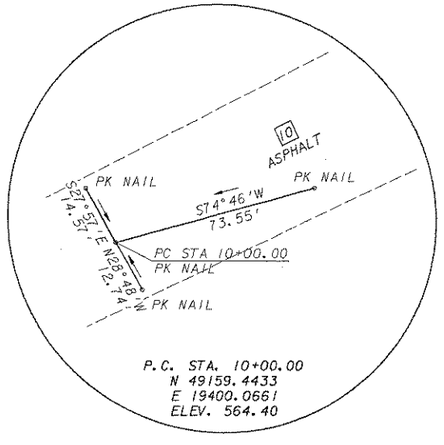
CONTROL POINT 1
STA. 10+47.10 - 31.11' LT.
N 49210.6520
E 19429.1213
ELEV. 564.16



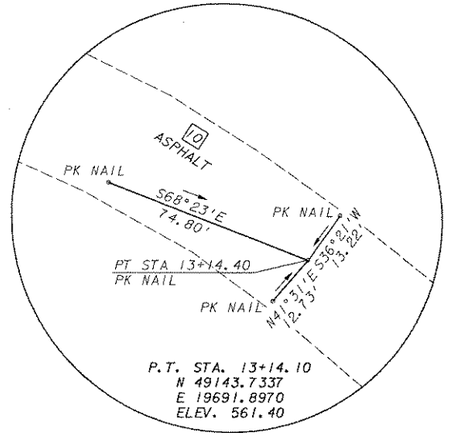
CONTROL POINT 2
STA. 12+30.76 - 31.70' LT.
N 49215.5580
E 19631.6946
ELEV. 561.14



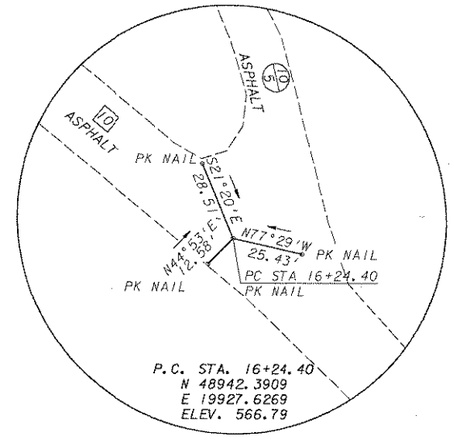
CONTROL POINT 3
STA. 18+29.41 - 30.65' LT.
N 48808.6167
E 20090.5635
ELEV. 573.54



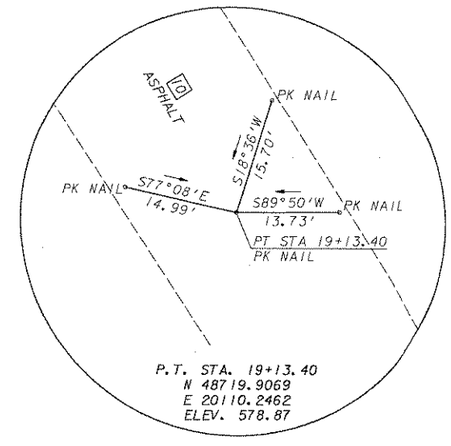
P.C. STA. 10+00.00
N 49159.4433
E 19400.0661
ELEV. 564.40



P.T. STA. 13+14.10
N 49143.7337
E 19691.8970
ELEV. 561.40



P.C. STA. 16+24.40
N 48942.3909
E 19927.6269
ELEV. 566.79



P.T. STA. 19+13.40
N 48719.9069
E 20110.2462
ELEV. 578.87

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: DAM | CHECKED BY: KLF | DATE: 10/14/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SURVEY REFERENCE POINTS

FOX Engineering, PLLC | Thornton Engineering, PLLC

SHEET NO.	TOTAL SHEETS
14	82

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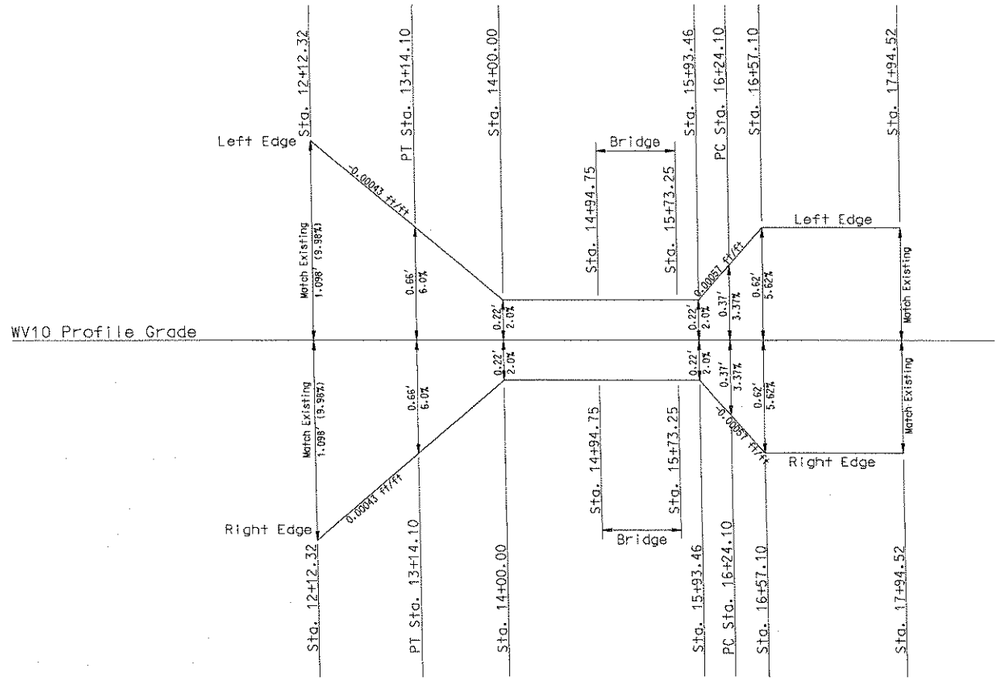
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	15	82



SUPERELEVATION TABLE

P.I. 11+83.98
P.C. 10+00.00
S.E. 9.98%

TRANS. LENGTH 101.72 ft
RUNOUT 0 ft

P.T. 13+14.10
WIDTH 11 ft

STATION	LEFT LANE PVMT EDGE ELEV	LEFT LANE CORR. (ft)	LEFT LANE WIDTH (ft)	LEFT LANE RATE (ft/ft)	PROFILE GRADE	RIGHT LANE RATE (ft/ft)	RIGHT LANE WIDTH (ft)	RIGHT LANE CORR. (ft)	RIGHT LANE PVMT EDGE ELEV
12+12.32	561.90	1.0978	11	0.0998	560.80	-0.0200	11	-0.0988	560.70
12+25	561.94	1.0384	11	0.0944	560.90	-0.0944	11	-1.0384	559.86
12+50	561.92	0.9218	11	0.0838	561.00	-0.0838	11	-0.9218	560.08
12+75	561.90	0.8041	11	0.0731	561.10	-0.0731	11	-0.8041	560.30
13+00	561.99	0.6877	11	0.0625	561.30	-0.0625	11	-0.6877	560.61
PT 13+14.10	561.97	0.6215	11	0.0565	561.35	-0.0600	11	-0.6600	560.69
13+25	561.97	0.5709	11	0.0519	561.40	-0.0519	11	-0.5709	560.83
13+50	562.05	0.4543	11	0.0413	561.60	-0.0413	11	-0.4543	561.15
13+75	562.34	0.3366	11	0.0306	562.00	-0.0306	11	-0.3366	561.66
14+00	562.62	0.2200	11	0.0200	562.40	-0.0200	11	-0.2200	562.18

SUPERELEVATION TABLE

P.I. 17+70.27
P.C. 16+24.10
S.E. 5.62%

TRANS. LENGTH 63.64 ft
RUNOUT 0 ft

P.T. 19+13.40
WIDTH 11 ft

STATION	LEFT LANE PVMT EDGE ELEV	LEFT LANE CORR. (ft)	LEFT LANE WIDTH (ft)	LEFT LANE RATE (ft/ft)	PROFILE GRADE	RIGHT LANE RATE (ft/ft)	RIGHT LANE WIDTH (ft)	RIGHT LANE CORR. (ft)	RIGHT LANE PVMT EDGE ELEV
15+93.46	566.32	0.2200	11	0.0200	566.10	-0.0200	11	-0.2200	565.88
16+00	566.36	0.2607	11	0.0237	566.10	-0.0237	11	-0.2607	565.84
16+24.10	566.97	0.3707	11	0.0337	566.60	-0.0337	11	-0.3707	566.23
16+25	567.02	0.4169	11	0.0379	566.60	-0.0379	11	-0.4169	566.18
16+50	567.77	0.5731	11	0.0521	567.20	-0.0521	11	-0.5731	566.63
16+57.10	568.22	0.6182	11	0.0562	567.60	-0.0562	11	-0.6182	566.98
16+75	568.72	0.6182	11	0.0562	568.10	-0.0562	11	-0.6182	567.48
17+00	569.92	0.6182	11	0.0562	569.30	-0.0562	11	-0.6182	568.68
17+25	570.82	0.6182	11	0.0562	570.20	-0.0562	11	-0.6182	569.58
17+50	571.42	0.2200	11	0.0200	571.20	-0.0200	11	-0.2200	570.98
17+75	572.92	0.6182	11	0.0562	572.30	-0.0562	11	-0.6182	571.68
17+94.52	573.82	0.6182	11	0.0562	573.20	-0.0562	11	-0.6182	572.58

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/10/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SUPER ELEVATION
WV 10

FOX Engineering, PLLC
Thornton Engineering, PLLC

SHEET NO. 15 | TOTAL SHEETS 82

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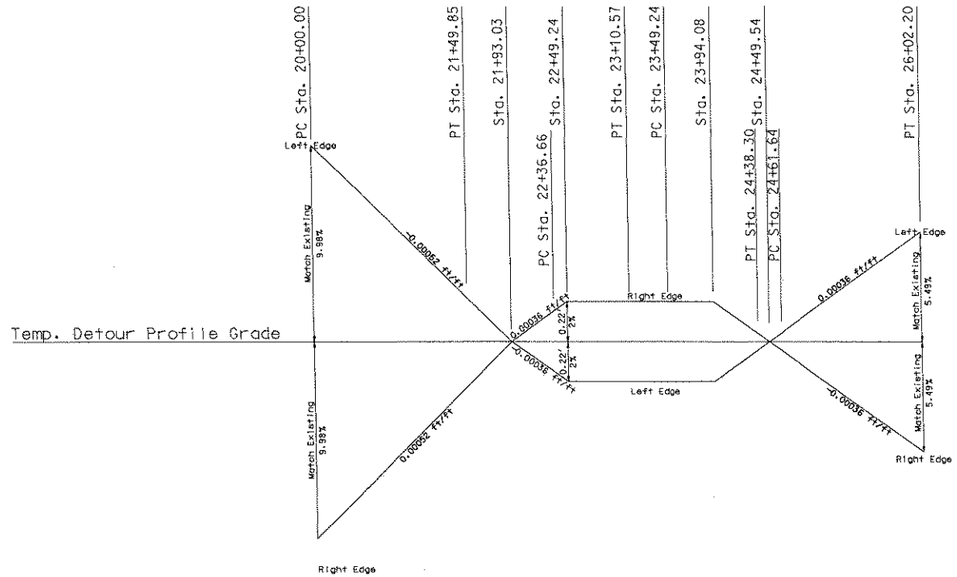
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	16	82



SUPERELEVATION TABLE

P.I. 20+79.58 P.C. 20+00.00 S.E. 9.98%
TRANS. LENGTH 193.03 RUNOUT 0
P.T. 21+49.85 WIDTH 11

STATION	LEFT LANE PVMT EDGE ELEV	LEFT LANE CORR. (ft)	LEFT LANE WIDTH (ft)	LEFT LANE RATE (ft/ft)	PROFILE GRADE	RIGHT LANE RATE (ft/ft)	RIGHT LANE WIDTH (ft)	RIGHT LANE CORR. (ft)	RIGHT LANE PVMT EDGE ELEV
PC 20+00	561.94	1.0978	11	0.0998	560.84	-0.0998	11	-1.0978	559.74
20+25	561.79	0.9548	11	0.0868	560.84	-0.0868	11	-0.9548	559.89
20+50	561.65	0.8118	11	0.0738	560.84	-0.0738	11	-0.8118	560.03
20+75	561.50	0.6688	11	0.0608	560.83	-0.0608	11	-0.6688	560.16
21+00	561.36	0.5258	11	0.0478	560.83	-0.0478	11	-0.5258	560.30
21+25	561.27	0.3828	11	0.0348	560.89	-0.0348	11	-0.3828	560.51
PT 21+49.85	561.54	0.2409	11	0.0219	561.30	-0.0219	11	-0.2409	561.06
21+50	561.54	0.2398	11	0.0218	561.30	-0.0218	11	-0.2398	561.06
21+75	561.86	0.0968	11	0.0088	561.76	-0.0088	11	-0.0968	561.66
21+93.03	562.17	0.0000	11	0.0000	562.17	0.0000	11	0.0000	562.17

SUPERELEVATION TABLE

P.I. 22+74.15 P.C. 22+36.66 S.E. 2.00%
TRANS. LENGTH 56.21 RUNOUT 0
P.T. 24+38.30 WIDTH 11

STATION	LEFT LANE PVMT EDGE ELEV	LEFT LANE CORR. (ft)	LEFT LANE WIDTH (ft)	LEFT LANE RATE (ft/ft)	PROFILE GRADE	RIGHT LANE RATE (ft/ft)	RIGHT LANE WIDTH (ft)	RIGHT LANE CORR. (ft)	RIGHT LANE PVMT EDGE ELEV
21+93.03	562.17	0.0000	11	0.0000	562.17	0.0000	11	0.0000	562.17
22+00	562.31	-0.0275	11	-0.0025	562.34	0.0025	11	0.0275	562.37
22+25	562.84	-0.1265	11	-0.0115	562.97	0.0115	11	0.1265	563.10
PC 22+36.66	563.08	-0.1727	11	-0.0157	563.25	0.0157	11	0.1727	563.42
22+49.24	563.26	-0.2200	11	-0.0200	563.48	0.0200	11	0.2200	563.70
PT 23+10.57	FULL SUPER								

SUPERELEVATION TABLE

P.I. 23+94.70 P.C. 23+49.24 S.E. 2.00%
TRANS. LENGTH 55.46 RUNOUT 0
P.T. 24+38.30 WIDTH 11

STATION	LEFT LANE PVMT EDGE ELEV	LEFT LANE CORR. (ft)	LEFT LANE WIDTH (ft)	LEFT LANE RATE (ft/ft)	PROFILE GRADE	RIGHT LANE RATE (ft/ft)	RIGHT LANE WIDTH (ft)	RIGHT LANE CORR. (ft)	RIGHT LANE PVMT EDGE ELEV
PC 23+49.24	FULL SUPER								
23+94.08	564.09	-0.2200	11	-0.0200	564.31	0.0200	11	0.2200	564.53
24+00	564.14	-0.1959	11	-0.0179	564.34	0.0179	11	0.1969	564.54
24+25	564.69	-0.0979	11	-0.0089	564.79	0.0089	11	0.0979	564.89
PT 24+38.30	565.25	-0.0451	11	-0.0041	565.30	0.0041	11	0.0451	565.35
24+49.54	565.82	0.0000	11	0.0000	565.82	0.0000	11	0.0000	565.82

SUPERELEVATION TABLE

P.I. 25+34.96 P.C. 24+61.64 S.E. 5.49%
TRANS. LENGTH 152.66 RUNOUT 0
P.T. 26+02.20 WIDTH 11

STATION	LEFT LANE PVMT EDGE ELEV	LEFT LANE CORR. (ft)	LEFT LANE WIDTH (ft)	LEFT LANE RATE (ft/ft)	PROFILE GRADE	RIGHT LANE RATE (ft/ft)	RIGHT LANE WIDTH (ft)	RIGHT LANE CORR. (ft)	RIGHT LANE PVMT EDGE ELEV
24+49.54	565.82	0.0000	11	0.0000	565.82	0.0000	11	0.0000	565.82
24+50	565.85	0.0022	11	0.0002	565.85	-0.0002	11	-0.0022	565.85
PC 24+61.64	566.44	0.0484	11	0.0044	566.39	-0.0044	11	-0.0484	566.34
24+75	567.12	0.1012	11	0.0092	567.02	-0.0092	11	-0.1012	566.92
25+00	568.39	0.2002	11	0.0182	568.19	-0.0182	11	-0.2002	567.99
25+25	569.66	0.2992	11	0.0272	569.36	-0.0272	11	-0.2992	569.06
25+50	570.99	0.3982	11	0.0362	570.59	-0.0362	11	-0.3982	570.19
25+75	572.32	0.4972	11	0.0452	571.82	-0.0452	11	-0.4972	571.32
26+00	573.65	0.5962	11	0.0542	573.05	-0.0542	11	-0.5962	572.45
PT 26+02.20	573.76	0.6039	11	0.0549	573.16	-0.0549	11	-0.6039	572.56

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/10/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SUPER ELEVATION
DETOUR

FOX Engineering, PLLC
Thornton Engineering, PLLC

SHEET NO. 16 | TOTAL SHEETS 82

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	17	82

TRAFFIC CONTROL SUMMARY

ITEM NO.	DESCRIPTION	QUANTITY UNIT	QUANTITY TOTAL
636002-001	AGGREGATE FOR MAINTAINING TRAFFIC, STONE OR GRAVEL	TON	
636002-002	AGGREGATE FOR MAINTAINING TRAFFIC, SLAG	TON	
636003-001	BITUMINOUS MATERIAL FOR DUST PALLATIVE	GAL.	
636004-001	CALCIUM CHLORIDE FOR DUST PALLATIVE	TON	
636005-001	TEMPORARY STRUCTURE FOR MAINTAINING TRAFFIC	L.S.	1
636006-001	PILOT TRUCK AND DRIVER	DAY	
636007-001	ERADICATION OF PAVEMENT MARKING	L.F.	800
636008-001	TEMPORARY PAVEMENT MARKINGS - PAINT 4 IN SOLID LINE	L.F.	2400
636009-001	TEMPORARY PAVEMENT MARKINGS - TAPE 4 IN SOLID LINE	L.F.	
636010-003	TEMPORARY RAISED PAVEMENT MARKERS - TYPE	EACH	
636011-001	TRAFFIC CONTROL DEVICE	UNIT	5960
636012-010	PROJECT TRAFFIC CONTROL DEVICE CLEANING	EACH	2
636013-001	INDIVIDUAL TRAFFIC CONTROL DEVICE CLEANING	EACH	90
636014-001	FLAGGER	HOUR	160
636014-002	TRAFFIC DIRECTOR	HOUR	
636015-001	TEMPORARY GUARDRAIL CHANNELIZATION DEVICE	L.F.	
636017-001	TEMPORARY CONCRETE BARRIER	L.F.	
636017-002	DOH FURNISHED TEMPORARY CONCRETE BARRIER	L.F.	
636018-001	REMOVE & RESET TEMPORARY CONCRETE BARRIER	L.F.	
636018-002	REMOVE & RESET DOH FURNISHED TEMP. CONCRETE BARRIER	L.F.	
636019-001	TEMPORARY GUARDRAIL BARRIER	L.F.	415
636020-001	REMOVE & RESET TEMPORARY GUARDRAIL BARRIER	L.F.	
636021-001	ELECTRIC ARROW	DAY	
636022-001	CHANGEABLE MESSAGE SIGN	DAY	
636023-001	TEMPORARY TRAFFIC SIGNAL	L.S.	
636024-001	TEMPORARY PIPE FOR MAINTAINING TRAFFIC	L.F.	
636025-001	WARNING LIGHTS, TYPE A	DAY	
636025-001	WARNING LIGHTS, TYPE B	DAY	1260
636025-001	WARNING LIGHTS, TYPE C	DAY	
636026-001	TEMPORARY LIGHTING	L.S.	
636028-001	SHADOW VEHICLE	DAY	
663001-004	EDGE LINE, TYPE II, WHITE	LF	950
663003-005	BARRIER LINE, TYPE II	LF	950
664001-008	IMPACT ATTENUATING DEVICE, TYPE IV	EACH	4
664001-009	REMOVE AND RESET G.R.E.A.T. ATTENUATOR DEVICE	EACH	

TRAFFIC CONTROL DEVICES QUANTITIES

DEVICE	DESCRIPTION	VALUES IN UNITS	QUANTITY	TOTAL UNITS
* 1	SIGNS ON PORTABLE MOUNTS AND BARRICADES (TOTAL SIGN AREA 16 SQ. FT. OR GREATER)	170	2	340
* 2	SIGNS ON PORTABLE MOUNTS AND BARRICADES (TOTAL SIGN AREA LESS THAN 16 SQ. FT.)	80	5	400
* 3	SIGNS ON PERMANENT POSTS (TOTAL SIGN AREA 16 SQ. FT. OR GREATER)	180	11	1980
* 4	SIGNS ON PERMANENT POSTS (TOTAL SIGN AREA LESS THAN 16 SQ. FT.)	90	8	720
* * 5	BARRICADES - TYPE I	35		
* * 6	BARRICADES - TYPE II	60		
* * 7	BARRICADES - TYPE III	90	8	720
* * 8	DRUMS	60	30	1800
9	CONES	5	0	0
10	VERTICAL PANELS OR GROUND MOUNTED DELINEATORS	10		
11	BARRIER OR GUARDRAIL MOUNTED DELINEATORS (TO BE BID INCIDENTAL TO THE COST OF THE BARRIER OR GUARDRAIL)	0	18	0
12	TEMPORARY OVERLAYS AND TEMPORARY OVERSIZE SIGNS (INCLUDES 2 MAX. FINE SIGNS)	300		
		TOTAL	5960	

* - ORANGE SIGN SHEETING TO BE REFLECTIVE FLOURESCENT ORANGE - TYPE V

* * - BARRICADES AND DRUM SHEETING TO BE 6" FLEXIBLE HIGH INTENSITY, TYPE IV

1. MAINTAINING TRAFFIC

A. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH SECTION 636 OF THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS, ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 1, 2003, THE CONTRACT DOCUMENTS, THE CONTRACT PLANS, AND THE MANUAL, "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS", NOVEMBER 1994, AND THE TRAFFIC PLAN FOR INDIVIDUAL SEGMENTS AS DESCRIBED IN THE PLANS.

B. ACCESS TO ALL HOUSES AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.

C. CONTRACTOR MUST MAINTAIN TWO-WAY, TWO-LANE TRAFFIC OVERNIGHT, ON WEEKENDS, OR HOLIDAYS WITH NO MORE THAN ONE LIFT DIFFERENCE IN ELEVATION (TWO INCHES PLUS OR MINUS) BETWEEN ADJACENT LANES.

D. THE CONTRACTOR SHALL MAINTAIN WORKING STORM DRAINAGE SYSTEMS THROUGH THE WORK AREAS AT ALL TIMES DURING CONSTRUCTION. THE WORKING SYSTEM MAY CONSIST OF THE EXISTING STORM DRAINAGE SYSTEM, THE PROPOSED STORM DRAINAGE SYSTEM, OR A COMBINATION THEREOF. DRAINAGE PIPES FOR THE PROPOSED SYSTEMS SHALL BE CONSTRUCTED IN SECTION LENGTHS NECESSARY TO MAINTAIN THE LANES OF TRAFFIC INDICATED IN THE MAINTENANCE OF TRAFFIC PLANS.

E. THE CONTRACTOR MUST RESTORE ANY PAVED, LANDSCAPED, CURBED, AND SIDEWALK AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES TO ITS ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ENGINEER.

2. TRAFFIC CONTROL DEVICES

A. LOCATION OF ALL TRAFFIC CONTROL DEVICES SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN ARE APPROXIMATE. FINAL LOCATION OF THE TRAFFIC CONTROL DEVICES ARE TO BE ESTABLISHED BY THE ENGINEER IN THE FIELD.

B. REFLECTIVE SHEETING ON TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE OF NEW CONDITION AT THE BEGINNING OF THE PROJECT LIFE. NIGHT VISIBILITY AND LEGIBILITY SHALL BE MAINTAINED.

C. FLAGGER: WHEN WORK IS PERFORMED AT NIGHT WITH A FLAGGER, THE FLAGGER STATIONS SHALL BE ADEQUATELY ILLUMINATED. THIS COST SHALL BE PAID FOR AS PART OF ITEM 636014-001.

D. TEMPORARY TAPE: ALL TEMPORARY TAPE SHALL BE MECHANICALLY APPLIED. SOLID LINES SHALL HAVE A 2 INCH GAP EVERY 50 FEET.

E. EXISTING SIGNS AND DELINEATORS
ANY SUCH EXISTING FACILITIES RELOCATED, REMOVED, OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT HIS EXPENSE AS PART OF ITEM 636011-001, UNLESS REPLACED BY FINAL SIGNS.

3. WINTER SHUTDOWN

THE PROJECT AREA AND ATTENDANT ROADWAY (TRAVEL LANES AND SHOULDERS, ETC.) SHALL BE LEFT IN A "SQUARED OFF" / EASILY TRAVERSIBLE, SAFE CONDITION THAT IS PRE-AGREED TO BY THE ENGINEER. SUCH WILL INCLUDE, BUT NOT BE LIMITED TO, PAVEMENT MARKINGS (TEMPORARY PAVEMENT MARKINGS), SIGNING, ETC., AS NOTED ON THE PLANS AND AS APPROPRIATE. TRAFFIC CONTROL DEVICES THAT ARE NOT NEEDED OR DESIRED SHALL BE EITHER REMOVED OR COVERED AND ALL SUCH SHALL BE BID INCIDENTAL TO ITEM 636011-001, TRAFFIC CONTROL DEVICE.

4. MAINTENANCE OF TRAFFIC

PHASE 1
INSTALL CASE A3 SIGNING AT 1500FT AND 1000FT DISTANCES ON BOTH APPROACHES OF WV10 AND CONSTRUCT THE TEMPORARY BRIDGE AND THE DETOUR FROM STA.. 21+60 TO 24+60 (OR AS DIRECTED BY THE ENGINEER). ADD W21-4'S "ROAD WORK ½ MILE" ALONG BOTH DIRECTIONS OF WV 10.

PHASE 2
CONSTRUCT THE REMAINING PORTION OF THE DETOUR OF WV10 UTILIZING THE SIGNING AND METHODS OF CASES A3, A4, AND A6. ACCESS SHALL BE MAINTAINED TO CR 10/5 AT ALL TIMES.

PHASE 3
INSTALL SIGNING, BARRICADES, AND STRIPING IN ACCORDANCE WITH CASE A12. SHIFT TRAFFIC TO DETOUR. CONSTRUCT NEW BRIDGE AND ITS APPROACHES USING CASES A4 AND A6. DIVERT TRAFFIC ONTO NEW BRIDGE.

PHASE 4
SCARIFY AND REMOVE DETOUR ROADWAY AND TEMPORARY BRIDGE. OVERLAY WV 10 FROM STA. 12+12.34 TO STA. 14+74.75 AND FROM 15+93.25 TO STA. 17+94.52 USING CASES A4 & A6.

5. TEMPORARY PAVEMENT MARKING NOTES

TEMPORARY PAINT SHALL BE PLACED ON WV 10 AT PROJECT COMPLETION. THE CONTRACTOR SHALL RETURN AFTER 30 DAYS TO APPLY PERMANENT PAVEMENT MARKINGS.

6. PERMANENT PAVEMENT MARKING NOTES

1.) ALL 4" SOLID WHITE OR SOLID YELLOW EDGE LINES, LANE LINES, CENTER LINES, AND BARRIER LINES SHALL BE TYPE II, PAVEMENT MARKING MATERIAL.

2.) EDGE LINES SHALL BE CENTERED 6" FROM EDGE OF RAMP PAVEMENT OR LANE AS APPLICABLE.

3.) ALL MARKINGS SHALL BE CONTINUOUS AND CONSISTENT WITH EXISTING MARKING WHERE THEY JOIN.

4.) NO MARKINGS SHALL BE PLACED ON EXPANSION JOINTS ON STRUCTURES OR ON LONGITUDINAL CONSTRUCTION JOINTS UNLESS SO DIRECTED BY THE ENGINEER.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/10/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

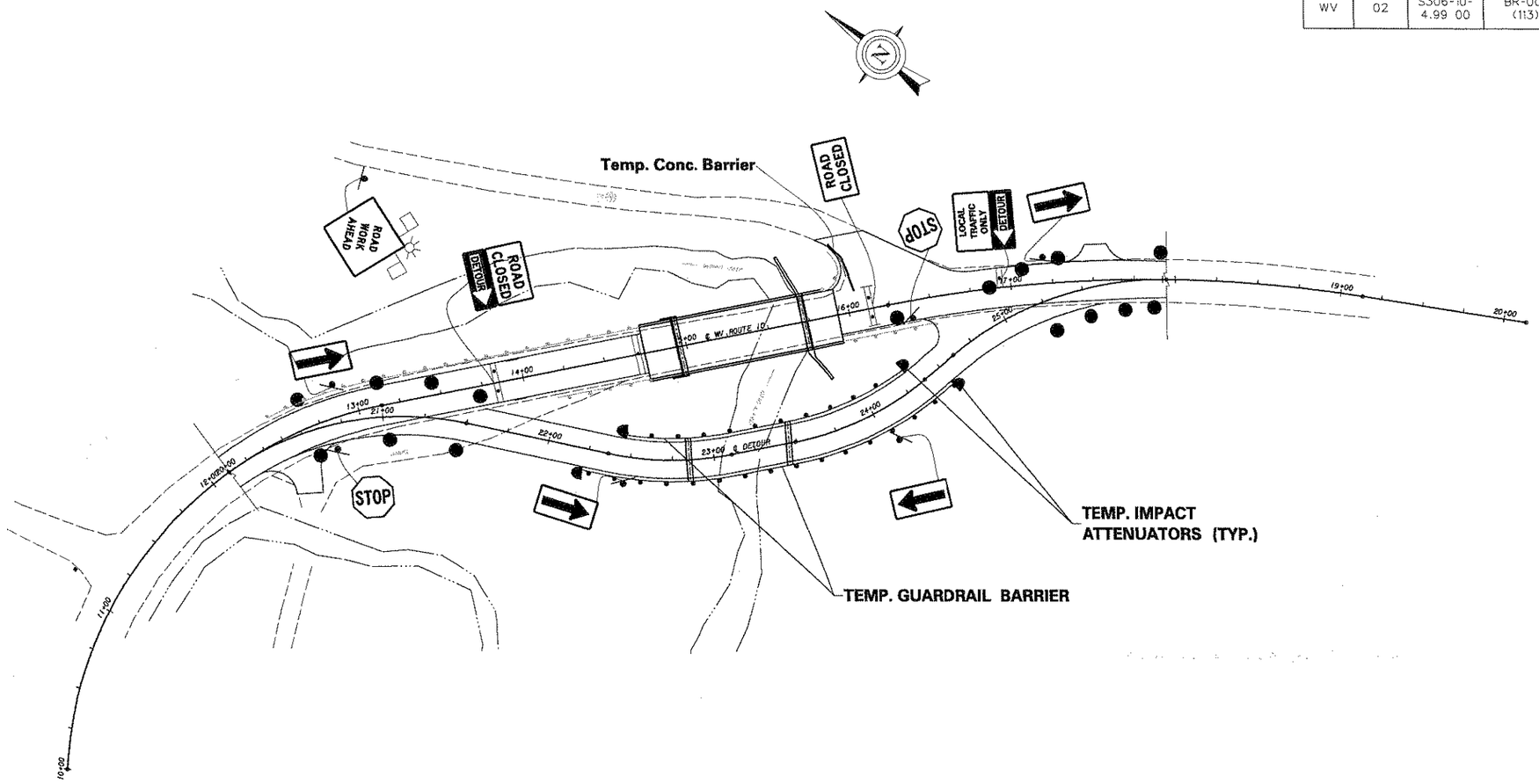
MERRITT CREEK BRIDGE
MAINTENANCE OF TRAFFIC

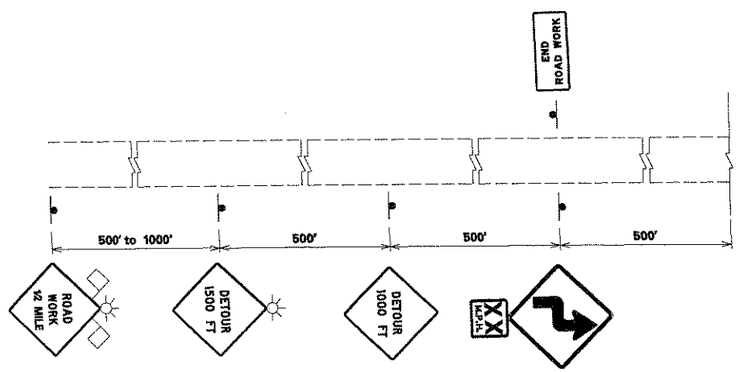
FOX Engineering, PLLC | Thornton Engineering, PLLC

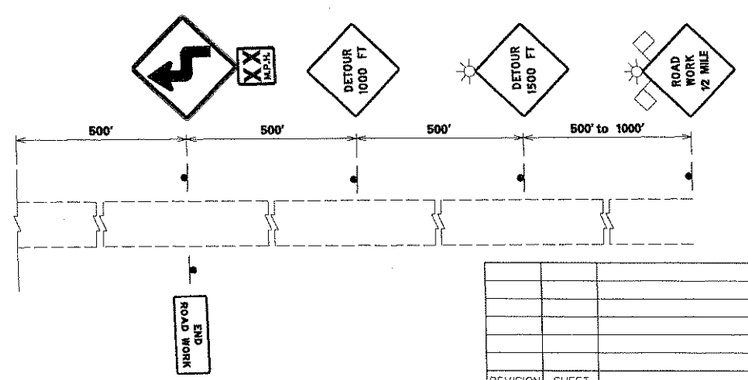
SHEET NO. 17 | TOTAL SHEETS 82

T:\Projects\08023W-Merritt Cr\Active Design Files\TRF_TCP_NOTES_Merritt.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	18	82







LEGEND

- CHANNELIZATION DEVICE (FLEXIBLE DRUM)
- SIGN LOCATION
- TYPE III BARRICADE
- TEMP. IMPACT ATTENUATOR

SCALE : 0 40 ft.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: BAT | CHECKED BY: BAT | DATE: 10/10/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
MAINTENANCE OF TRAFFIC

FOX Engineering, PLLC

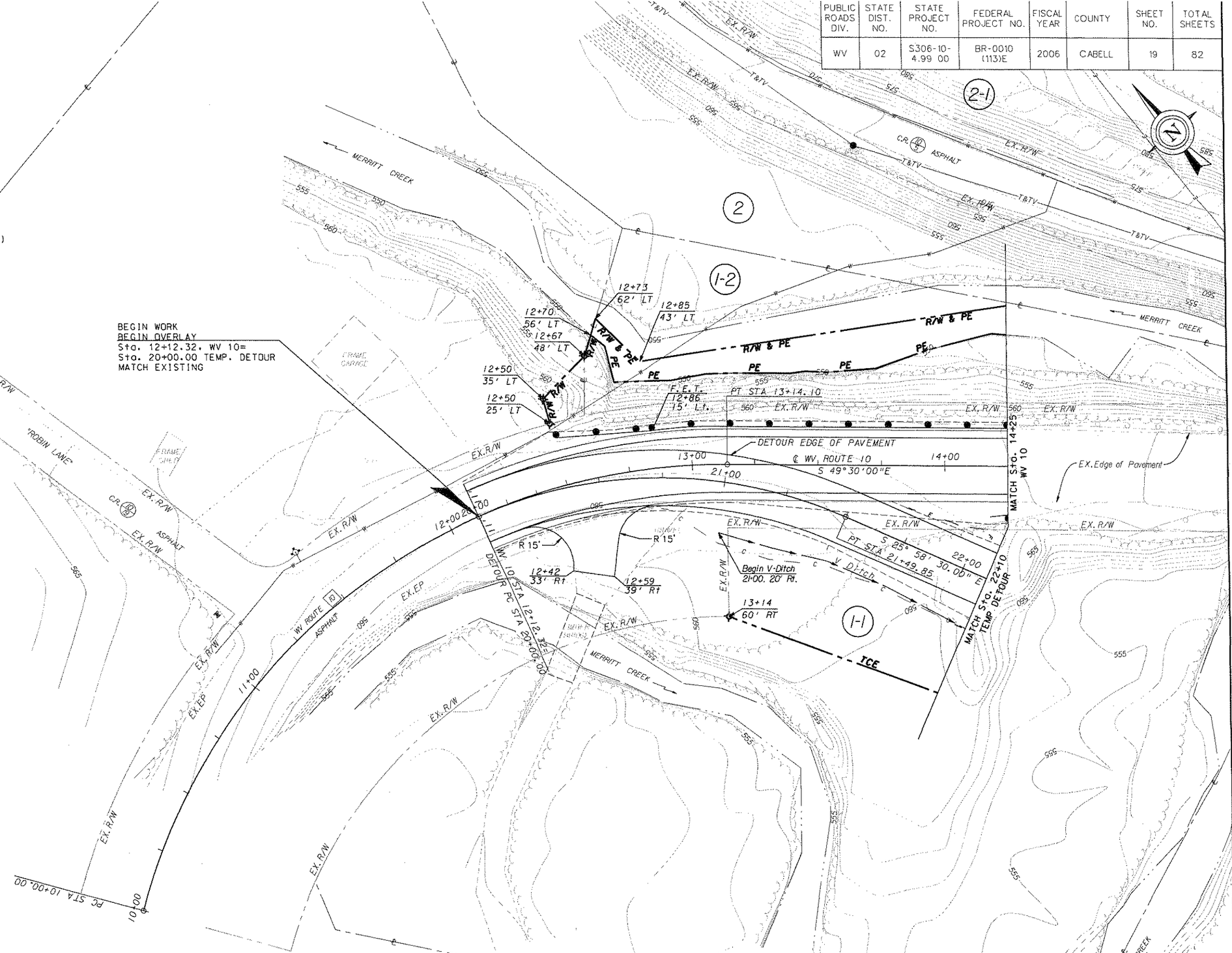
Thornton Engineering, PLLC

SHEET NO. 18 | TOTAL SHEETS 82

f:\Projects\00031W-Merritt Cr\Active Design Files\TRF_TCP_Merritt.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	19	82

WV 10 CURVE #1	TEMP. DETOUR CURVE #1
PI = 11+83.98	PI = 20+79.58
Δ = 74°49'48" Rt	Δ = 47°42'01" Rt
D = 23°49'25"	D = 31°49'01.00"
R = 240.5'	R = 180.00'
L = 314.10'	L = 149.85'
T = 183.98'	T = 79.58'
E = 62.30'	E = 16.81'
SE = 9.98% (Existing)	SE = 9.98% (Existing)



NOTE:
V-DITCHES SHALL BE REMOVED AND REGRADED TO APPROXIMATE ORIGINAL CONTOUR UPON REMOVAL OF TEMPORARY DETOUR.

SCALE : 0 20 ft.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/20/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
PLAN SHEET

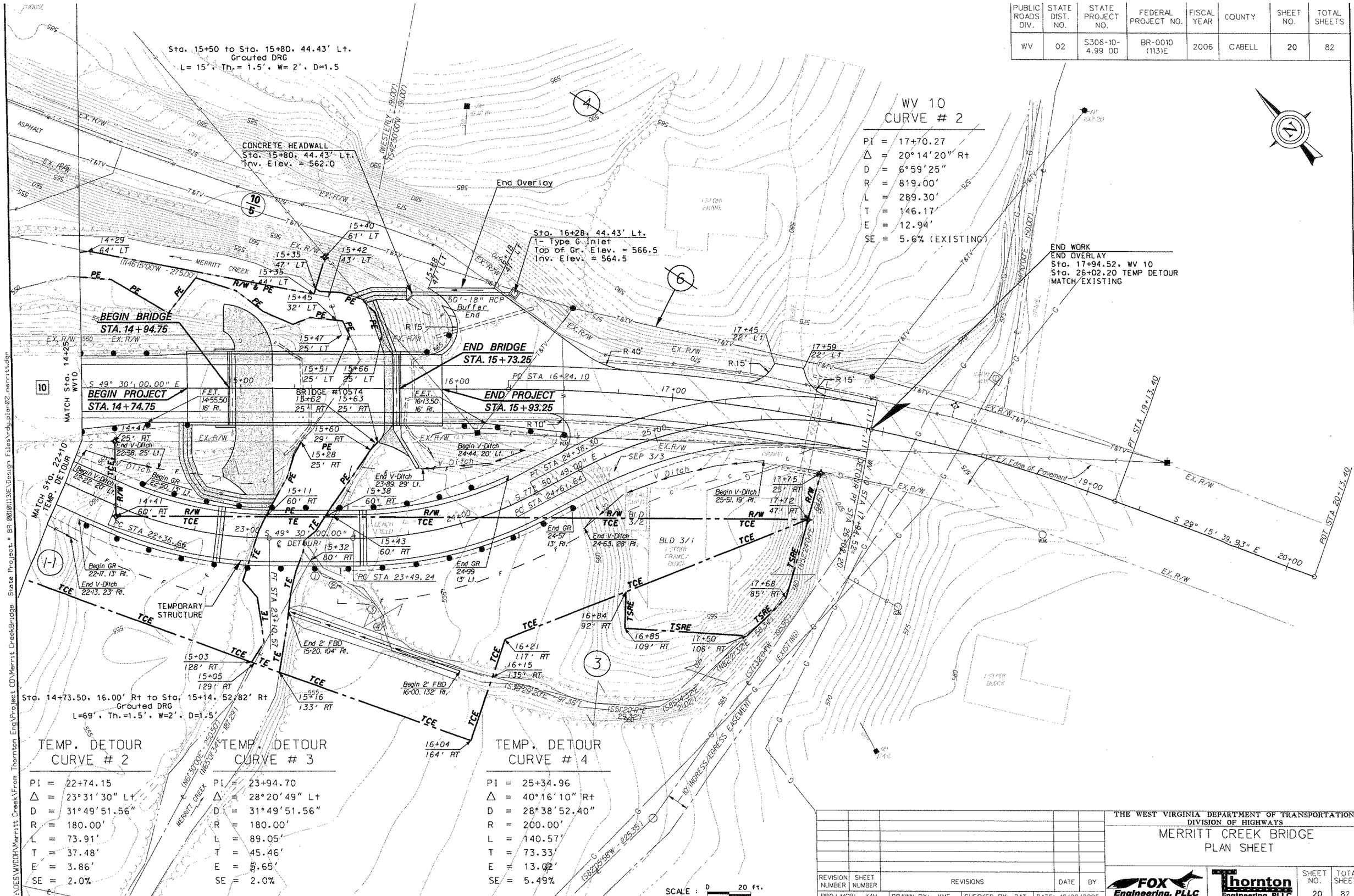
FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO. 19 | TOTAL SHEETS 82

F:\DES\WVDOH\Merritt Creek\From Thornton Eng\Project CD\Merrit CreekBridge State Project # BR-0010(113)E\Design Files\rdy_plan01_merritt.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	20	82



WV 10 CURVE # 2

PI = 17+70.27
Δ = 20°14'20" Rt
D = 6°59'25"
R = 819.00'
L = 289.30'
T = 146.17'
E = 12.94'
SE = 5.6% (EXISTING)

TEMP. DETOUR CURVE # 2

PI = 22+74.15
Δ = 23°31'30" Lt
D = 31°49'51.56"
R = 180.00'
L = 73.91'
T = 37.48'
E = 3.86'
SE = 2.0%

TEMP. DETOUR CURVE # 3

PI = 23+94.70
Δ = 28°20'49" Lt
D = 31°49'51.56"
R = 180.00'
L = 89.05'
T = 45.46'
E = 5.65'
SE = 2.0%

TEMP. DETOUR CURVE # 4

PI = 25+34.96
Δ = 40°16'10" Rt
D = 28°38'52.40"
R = 200.00'
L = 140.57'
T = 73.33'
E = 13.02'
SE = 5.49%

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 12/20/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
PLAN SHEET

FOX Engineering, PLLC
Thornton Engineering, PLLC

SHEET NO. 20 | TOTAL SHEETS 82

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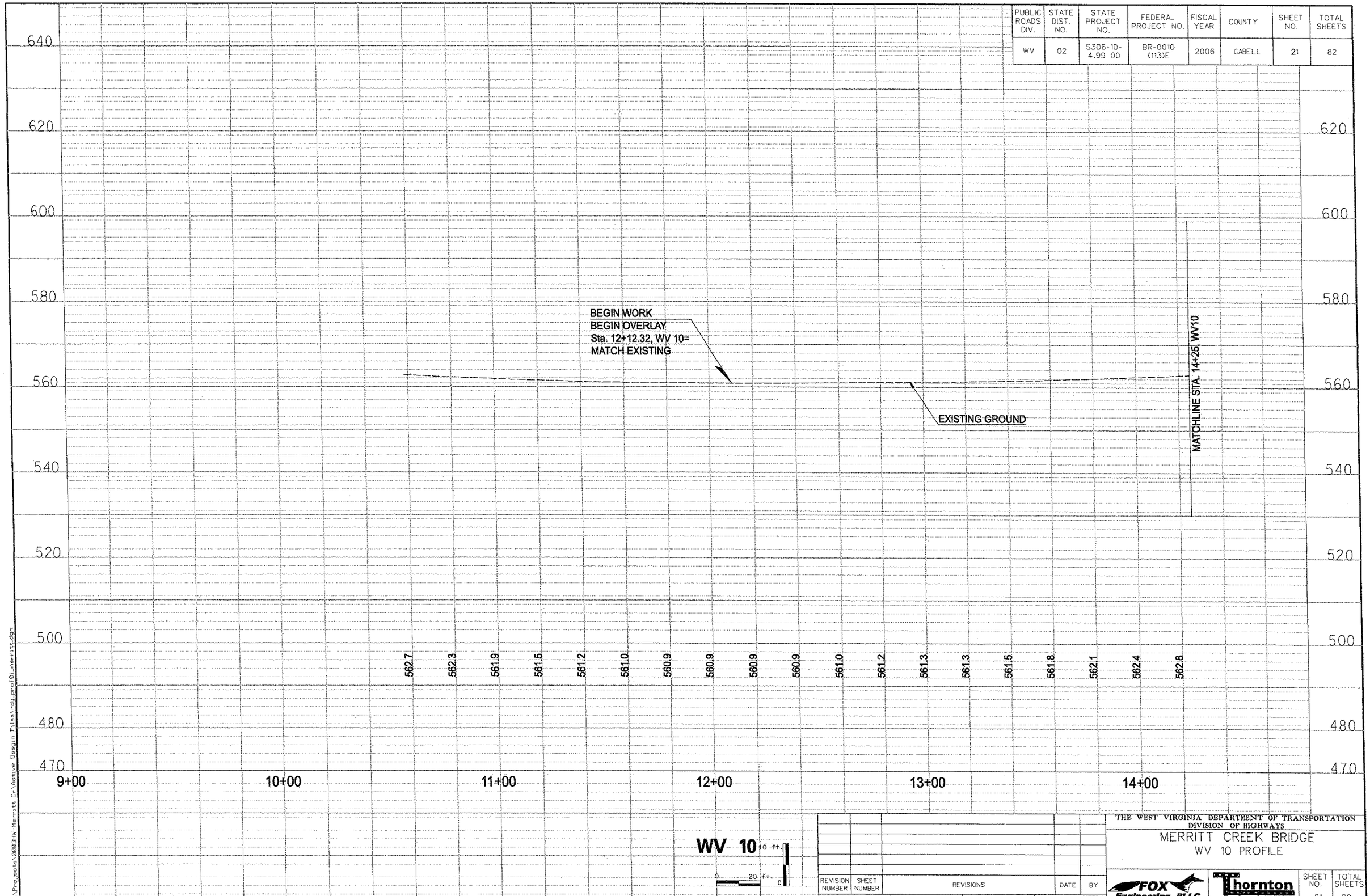
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	21	82



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/10/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
WV 10 PROFILE

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO.	TOTAL SHEETS
21	82

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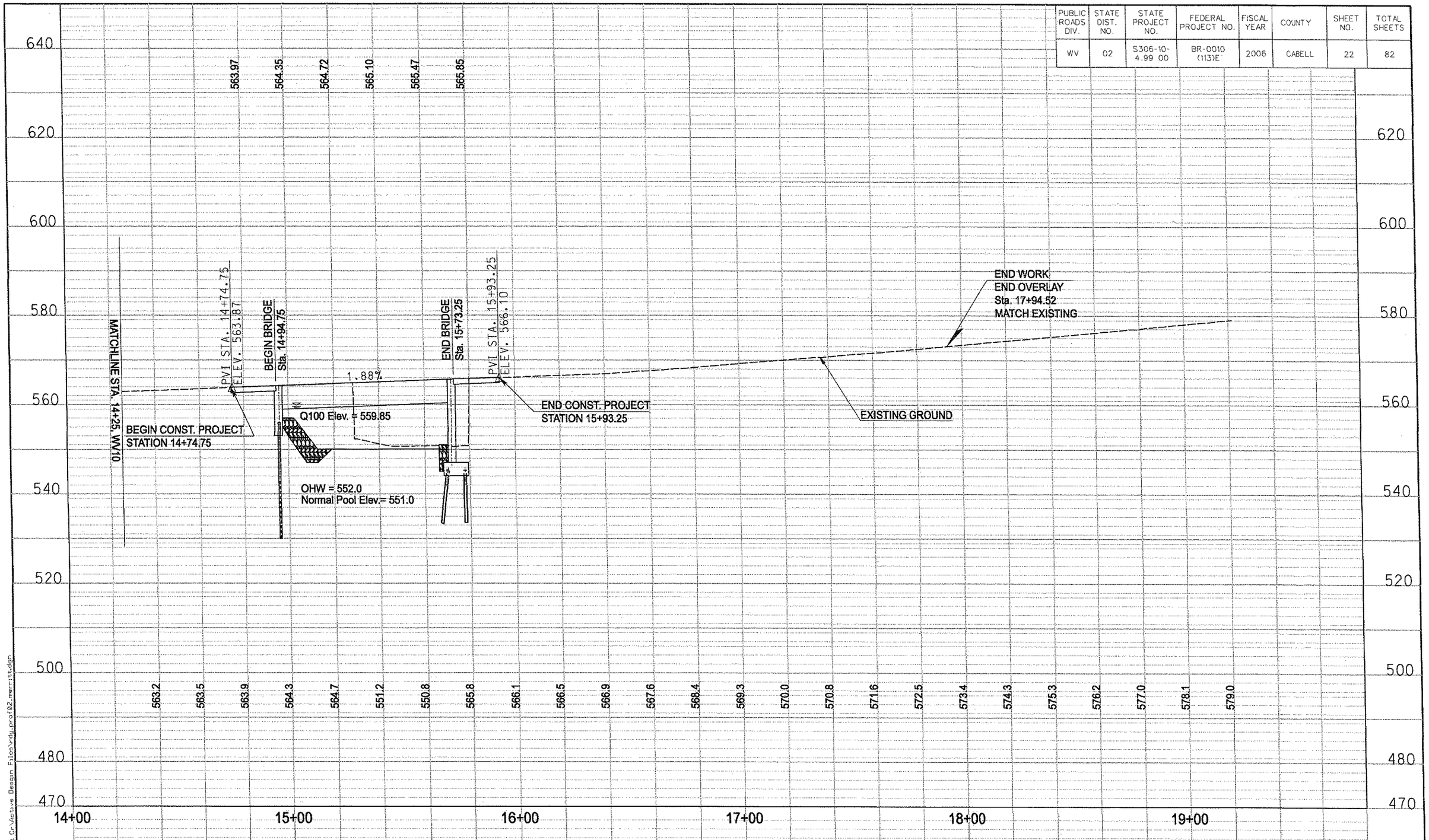
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	22	82



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WV 10 SCALE : 0 20 ft.

SCALE : 10 ft. 0

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/12/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

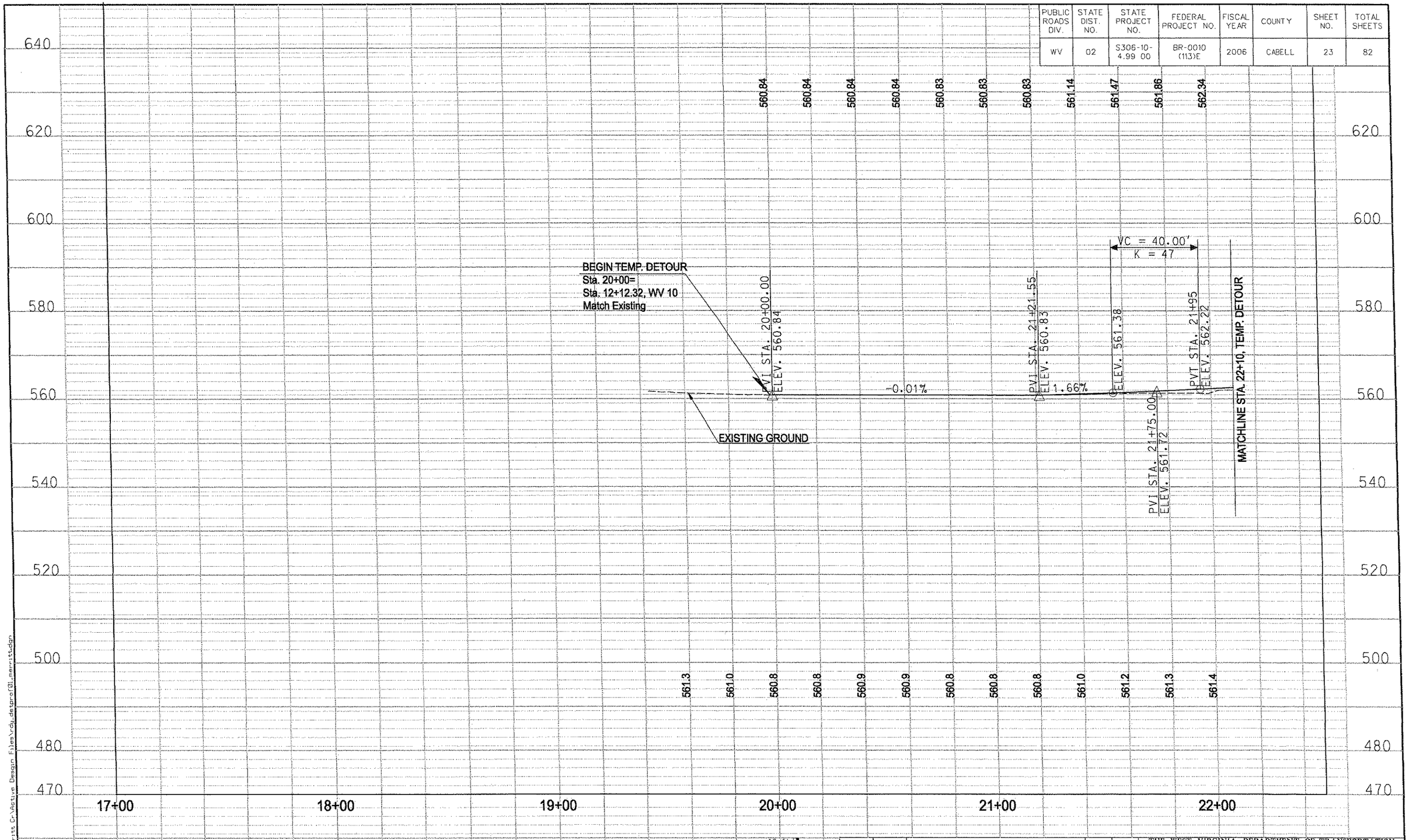
MERRITT CREEK BRIDGE
WV 10 PROFILE

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO.	TOTAL SHEETS
22	82

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	23	82



DETOUR

SCALE : 0 20 ft.

SCALE : 10 ft. 0

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/12/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DETOUR PROFILE

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO. 23 | TOTAL SHEETS 82

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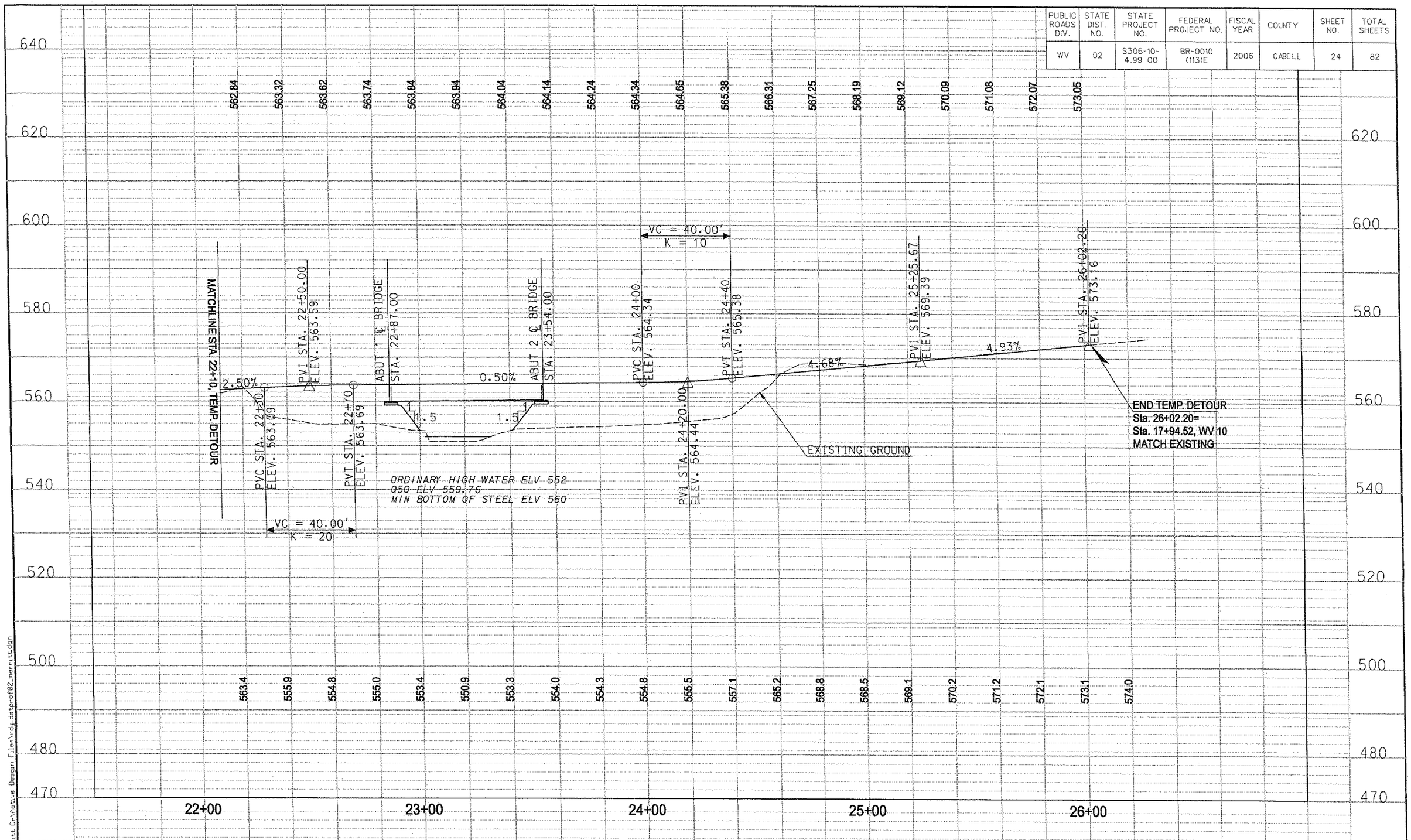
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	24	82



SCALE : 10 ft 0

DETOUR

SCALE : 0 20 ft

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KME | CHECKED BY: BAT | DATE: 10/11/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DETOUR PROFILE

FOX Engineering, PLLC

Thornton Engineering, PLLC

SHEET NO. 24 | TOTAL SHEETS 82

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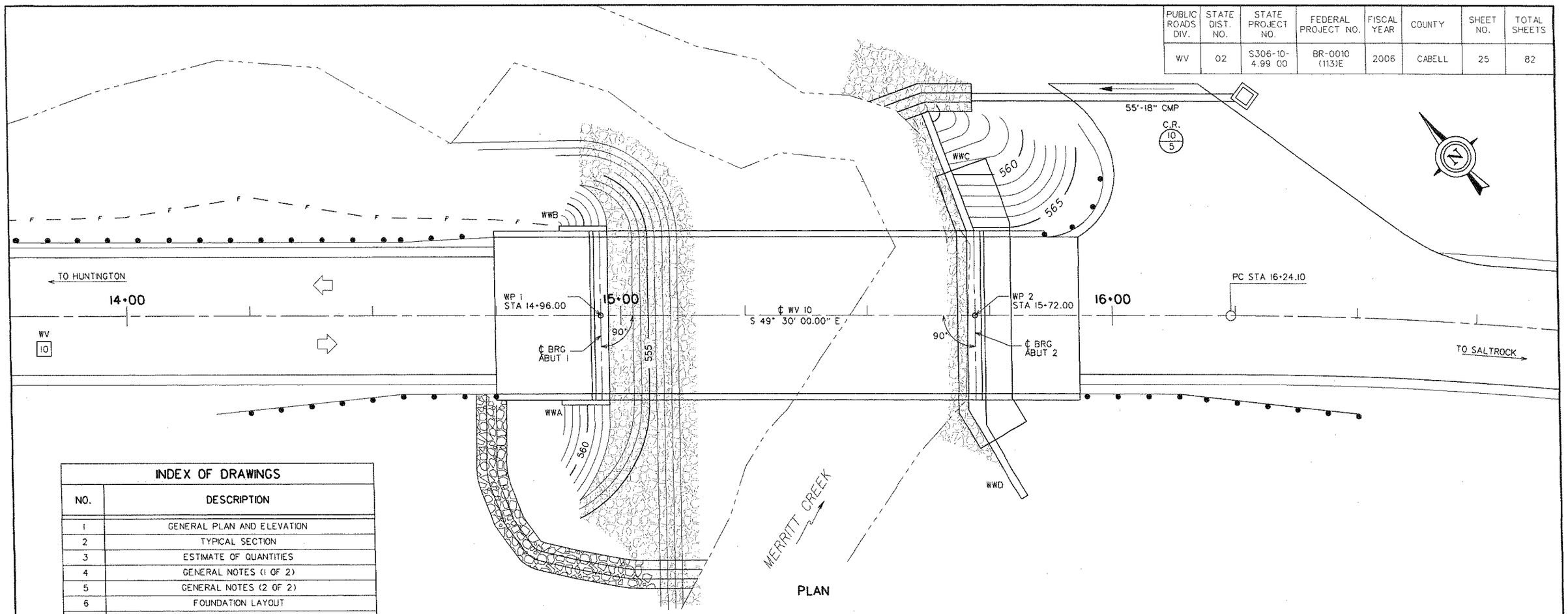
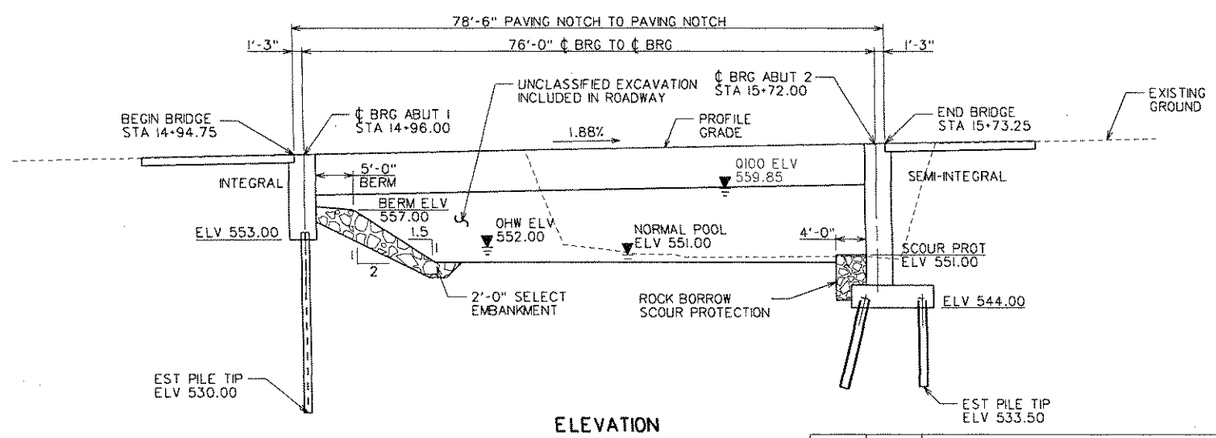
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	25	82



PLAN



ELEVATION

INDEX OF DRAWINGS

NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	TYPICAL SECTION
3	ESTIMATE OF QUANTITIES
4	GENERAL NOTES (1 OF 2)
5	GENERAL NOTES (2 OF 2)
6	FOUNDATION LAYOUT
7	ABUTMENT 1
8	ABUTMENT 1 DETAILS
9	ABUTMENT 1 REINFORCING SCHEDULE
10	ABUTMENT 2
11	ABUTMENT 2 DETAILS
12	ABUTMENT 2 REINFORCING SCHEDULE (1 OF 2)
13	ABUTMENT 2 REINFORCING SCHEDULE (2 OF 2)
14	FRAMING PLAN
15	BEAM ELEVATIONS
16	BEAM DETAILS
17	INTERMEDIATE DIAPHRAGM AND TEMPORARY BRACING
18	BEARING PAD DETAILS
19	DECK PLAN
20	DECK TYPICAL SECTION REINFORCING
21	DECK DETAILS
22	DECK REINFORCING SCHEDULE
23	DECK ELEVATIONS AND DEFLECTIONS
24	APPROACH SLAB PLAN
25	APPROACH SLAB DETAILS
26	APPROACH SLAB NOTES AND QUANTITIES
27	SITUATION PLAN
28	CORE BORING LOGS S-1 THRU S-3
29	CORE BORING LOGS S-4 THRU S-6
30	LOAD RATING 1 OF 3
31	LOAD RATING 2 OF 3
32	LOAD RATING 3 OF 3

LOW BEAM SEAT	
ABUT 1	558.59
ABUT 2	559.88

HYDRAULIC INFORMATION

WATERSHED AREA	2,860 ACRES
DISCHARGE	2,250 CFS (100 YR)
CHANNEL VELOCITY	3.27 FT/S (100 YR)

NOTES:

1. FOR ADDITIONAL BRIDGE DIMENSIONS, SEE SHEET 2.
2. THE COMPUTED SCOUR FOR THE 100 YEAR EVENT IS 1.91 FT.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: DAM | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
GENERAL PLAN
AND ELEVATION

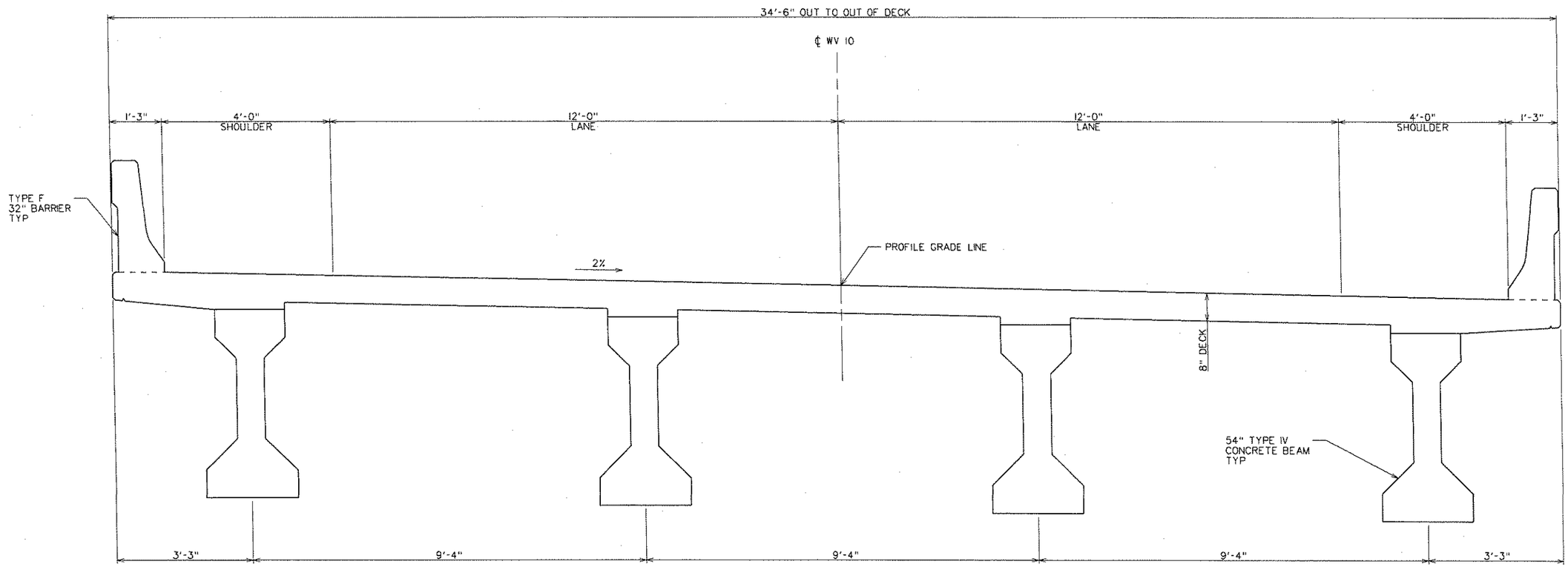
FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
1	32

F:\DES\WVDOH\Merritt Creek\Final Bridge\Drawings\General Plan.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	26	82



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: VGM | CHECKED BY: KLF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
TYPICAL SECTION

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
2	32

f:\dos\wvdoh\merritt creek\final bridge\drawings\Typ Sect.dgn

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	27	82

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
203001-000	DISMANTLING STRUCTURE	LS	1
212001-000	STRUCTURE EXCAVATION	CY	127
212002-000	WET EXCAVATION	CY	255
212004-000	COFFERDAM	EA	1
212005-000	SELECT MATERIAL FOR BACKFILLING	CY	78
601002-001	CLASS B CONCRETE	CY	201
601003-001	CLASS K CONCRETE	CY	12
601009-001	CLASS H CONCRETE	CY	108
601014-001	TEST SLAB	LS	1
602001-001	REINFORCING STEEL BARS	LB	26909
602002-001	EPOXY COATED REINFORCING STEEL BAR	LB	35355
603018-020	54 INCH PRESTRESSED CONCRETE I BEAM	LF	310
616004-006	HP12X53 STEEL BEARING PILE, DRIVEN	LF	281
616005-006	HP12X53 STEEL BEARING PILE, PRE-DRILLED AND DRIVEN	LF	144
627005-001	REINFORCED ELASTOMERIC BEARING, LESS THAN 2 INCHES THICK	EA	4
627005-002	REINFORCED ELASTOMERIC BEARING, 2 INCHES-5 INCHES THICK	EA	4
639001-001	CONSTRUCTION LAYOUT STAKE	LS	1

LOCATION	212001-000 STRUCTURE EXCAVATION CY	212002-000 WET EXCAVATION CY	212005-000 SELECT MATERIAL FOR BACKFILLING CY	601002-001 CLASS B CONCRETE CY	601003-001 CLASS K CONCRETE CY	601009-001 CLASS H CONCRETE CY
ABUTMENT 1	127		15	33		23
ABUTMENT 2		255	63	168		18
TOTAL SUBSTRUCTURE	127	255	78	201		41
TOTAL SUPERSTRUCTURE					12	67
PROJECT TOTAL	127	255	78	201	12	108

LOCATION	602001-001 REINFORCING STEEL BAR (LB)											602002-001 EPOXY COATED REINFORCING STEEL BAR (LB)										
	REINFORCING BAR SIZES											REINFORCING BAR SIZES										
	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 14	TOTAL	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 14	TOTAL
ABUTMENT 1			789	1556		764					3109			1453								1453
ABUTMENT 2		142	3569	3176	5560	11353					23800			1238								1238
TOTAL SUBSTRUCTURE		142	4358	4732	5560	12117					26909			2691								2691
TOTAL SUPERSTRUCTURE												252	10880	5111	16421							32664
PROJECT TOTAL		142	4358	4732	5560	12117					26909	252	10880	7802	16421							35355

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 12/6/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ESTIMATE OF QUANTITIES

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 3 | TOTAL SHEETS 32

F:\DES\WVDOH\Merritt Creek\Final Bridge\Drawings\Estimates

GOVERNING SPECIFICATIONS

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS, ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE SUPPLEMENTAL SPECIFICATIONS ISSUED JANUARY 1, 2003, THE CONTRACT DOCUMENTS, AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT. SPECIAL PROVISIONS 601 STRUCTURAL CONCRETE CLASS H BRIDGE DECKS AND 708 JOINT MATERIALS ARE APPLICABLE.

DESIGN CRITERIA

THE DESIGN IS ACCORDING TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THIRD EDITION INCLUDING 2005 INTERIMS. THE STRUCTURE HAS BEEN DESIGNED FOR A LIVE LOAD CAPACITY OF 2 LANES OF HL-93 VEHICULAR LOAD.

THE DECK IS DESIGNED BY THE EMPIRICAL METHOD. THE DESIGN PROVIDES FOR AN ADDITIONAL WEARING SURFACE OF 25 POUNDS PER SQUARE FOOT OF ROADWAY SURFACE. THIS ADDITIONAL WEARING SURFACE IS NOT INCLUDED IN THIS CONTRACT.

PERMANENT METAL DECK FORMS (15 PSF INCLUDING CONCRETE) ARE TO BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE SUPPLEMENTAL SPECIFICATIONS AND WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. CLASS H CONCRETE QUANTITIES DO NOT INCLUDE THE ADDITIONAL CONCRETE REQUIRED TO FILL THE METAL DECK FORMS.

DESIGN UNIT STRESSES

CLASS B CONCRETE:	F'C = 3000 PSI, N=9
CLASS K CONCRETE:	F'C = 4000 PSI, N=8
CLASS H CONCRETE:	F'C = 4000 PSI, N=8
STEEL REINFORCEMENT:	AASHTO M31 GRADE 60, FY = 60,000 PSI
STEEL BEARING PILES:	AASHTO M270 GRADE 50
PILE CAPACITIES:	SEE SHEETS 7 AND 10

CONCRETE

CLASS H CONCRETE IS TO BE USED IN THE DECK, ABUTMENTS (ABOVE THE SEAT), AND BACKWALLS.

CLASS B CONCRETE IS TO BE USED IN THE ABUTMENTS (BELOW THE SEAT) AND WINGWALLS.

CONCRETE FOR TYPE F BARRIERS ON BRIDGE DECK AND APPROACH SLABS SHALL BE CLASS K.

THE ADDITION OF EXTRA BAG OF CEMENT IN ORDER TO ACHIEVE HIGH EARLY STRENGTH AND REDUCE THE 7 DAY WET CURE SHALL NOT BE PERMITTED FOR ALL CLASSES OF CONCRETE.

ALL CONCRETE SHALL RECEIVE A SEVEN DAY WET CURE.

USE WATER REDUCING RETARDING ADMIXTURE ACCORDING TO SECTION 707.2 OF THE SPECIFICATIONS IN ALL SUPERSTRUCTURE CONCRETE. THE RETARDER WILL NOT BE REQUIRED BELOW 50 DEGREES F. THE RETARDER ADMIXTURE TEST REQUIREMENTS ARE CALLED TO THE CONTRACTOR'S ATTENTION.

CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4 IN FOR SUPERSTRUCTURE AND 1 IN FOR SUBSTRUCTURE CONCRETE.

FINISH THE EXPOSED SURFACES OF THE ABUTMENTS, WINGWALLS AND ALL SURFACES ON THE BARRIERS ON THE BRIDGE DECK AND WINGWALLS SHALL BE CLASS 2, RUBBED FINISH IN ACCORDANCE WITH SUBSECTION 601.11.2 OF THE STANDARD SPECIFICATIONS. THE BRIDGE DECK SHALL BE FINISHED IN ACCORDANCE WITH SUBSECTION 601.11.4 OF THE STANDARD SPECIFICATIONS AND SHALL BE PLACED IN THE SEQUENCE SHOWN ON THE PLANS.

CONCRETE FORMWORK

DECK SLAB OVERHANG FORMS SHALL BE SUPPORTED FROM THE BOTTOM FLANGE OF FASCIA GIRDERS. THE CONTRACTOR SHALL SUBMIT FORMING PLANS AND SUPPORTING CALCULATIONS FOR THE OVERHANG TO THE ENGINEER FOR REVIEW PRIOR TO ERECTING THE FORMWORK. DESIGN OF FORMING AND FALSEWORK SHALL BE BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WEST VIRGINIA, WHO SHALL ALSO VERIFY THAT THE DESIGN IS UTILIZED.

FORM SYSTEMS THAT WILL CAUSE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS SHALL NOT BE PERMITTED. THE CONTRACTOR SHALL SUBMIT CALCULATIONS VERIFYING THAT THIS REQUIREMENT IS SATISFIED.

THE STRUCTURE HAS BEEN DESIGNED BASED ON THE USE OF STAY-IN-PLACE METAL FORMS BETWEEN GIRDERS. ALL DECK SLAB ELEVATION TABLES AND GIRDER CAMBER TABLES THAT ARE SHOWN IN THESE PLANS ASSUME 15 PSF FOR STAY-IN-PLACE METAL FORMS BETWEEN GIRDERS. NO FILLER MATERIAL SHALL BE PERMITTED. FILL CORRUGATIONS WITH CONCRETE. THE COST OF STAY-IN-PLACE FORMS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 601009-001, CLASS H CONCRETE.

REINFORCING STEEL

ALL REINFORCING STEEL BARS SHALL BE INTERMEDIATE GRADE BILLET STEEL ACCORDING TO AASHTO M31, GRADE 60.

THE CLEAR DISTANCE BETWEEN THE REINFORCING STEEL AND THE FACE OF THE CONCRETE SHALL BE AS FOLLOWS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS:

TOP OF SLAB:	2.5 IN
BOTTOM OF SLAB:	1.0 IN
BOTTOM OF FOOTINGS (CAST AGAINST EARTH)	3.0 IN
ALL OTHER LOCATIONS:	2.0 IN

ALL REINFORCING STEEL BARS IN THE ABUTMENTS BELOW THE SEAT ELEVATIONS ARE UNCOATED REINFORCING STEEL. INCLUDE PAYMENT FOR REINFORCING STEEL BARS IN THE SUBSTRUCTURE UNITS IN ITEM 602001-001, REINFORCING STEEL BARS.

ALL REINFORCING STEEL BARS IN THE DECK, BARRIERS, AND ABOVE THE ABUTMENT SEATS SHALL BE EPOXY COATED. INCLUDE PAYMENT IN ITEM 602002-001, EPOXY COATED REINFORCING STEEL BARS.

EXCAVATION

PAYMENT FOR ALL EXCAVATION WITHIN THE LIMITS SHOWN IN THE DETAILED SUBSTRUCTURE PLANS FOR ABUTMENT 1 SHALL BE PAID AS STRUCTURE EXCAVATION, ITEM 212001-000. PAYMENT FOR ALL EXCAVATION BELOW ELEVATION 551.0 WITHIN THE LIMITS SHOWN IN THE DETAILED SUBSTRUCTURE PLANS FOR ABUTMENT 2 SHALL BE PAID AS WET EXCAVATION, ITEM 212002-000. EXCAVATE ROCK AND SHALE UNDER THESE CLASSIFICATIONS TO THE NEAT LINE OF THE FOOTINGS ONLY. EXCAVATION ABOVE ELEVATION 551.0 AT ABUTMENT 2 SHALL BE INCLUDED IN ITEM 203001-000, DISMANTLING STRUCTURE.

BACKFILL

THE CONTRACTOR SHALL BACKFILL AROUND THE SUBSTRUCTURE AS SOON AS POSSIBLE AFTER FORM REMOVAL AND SLOPE THE SURFACES TO DRAIN.

JOINT FILLER

PREFORMED JOINT FILLER AT THE LOCATIONS SHOWN ON THE PLANS SHALL BE SPONGE RUBBER IN ACCORDANCE WITH SECTION 708.1.1 OF STANDARD SPECIFICATIONS. THERE IS NO SEPARATE PAYMENT FOR FURNISHING AND INSTALLING THE PREFORMED JOINT FILLER AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 601009-001, CLASS H CONCRETE.

PILING

ALL WORK ASSOCIATED WITH FURNISHING AND INSTALLING PILING SHALL CONFORM TO SECTION 616 OF THE SUPPLEMENTAL SPECIFICATIONS AND THE FOLLOWING:

ALL STEEL BEARING PILES FOR ABUTMENT 1 SHALL BE HP12X53, PREDRILLED AND DRIVEN AND SHALL BE FITTED WITH PILE POINTS. PRE-DRILLING SHALL BE A MINIMUM OF FIFTEEN FEET BELOW THE BOTTOM OF THE ABUTMENT AND SHALL BE DRIVEN TO REFUSAL INTO THE FOUNDATION STRATA AS INDICATED BY THE ESTIMATED PILE TIP ELEVATION.

PAYMENT FOR PREDRILLED AND DRIVEN PILING IS INCLUDED IN ITEM 616005-006, HP12X53 STEEL BEARING PILE, PRE-DRILLED AND DRIVEN.

ALL STEEL BEARING PILES FOR ABUTMENT 2 SHALL BE HP12X53, DRIVEN AND SHALL BE FITTED WITH PILE POINTS. DRIVE PILING TO REFUSAL INTO THE FOUNDATION STRATA AS SHOWN BY THE ESTIMATED PILE LENGTHS OR THE PILE TIP ELEVATIONS.

PAYMENT FOR DRIVEN PILING IS INCLUDED IN ITEM 616004-006, HP12X53 STEEL BEARING PILE, DRIVEN.

REFUSAL IS DEFINED AS THE EQUIVALENT OF 20 BLOWS FOR ONE INCH OR LESS OF PENETRATION WITH A POWER HAMMER DEVELOPING A MINIMUM CAPACITY OF 15,000 FT-LBS OF ENERGY PER BLOW. FOR A LARGER HAMMER, THE NUMBER OF BLOWS IN THE LAST INCH OF PENETRATION MAY BE REDUCED IN DIRECT PROPORTION TO THE ENERGY RATING OF THE HAMMER, BUT TO NO LESS THAN 12.

ALL PILES SHOWN IN PLANS SHALL CONFORM TO AASHTO M270 GRADE 50.

COFFERDAMS – ITEM 212004-000

THE CONTRACTOR SHALL FURNISH ALL MATERIALS AND CONSTRUCT A COFFERDAM AT ABUTMENT 2 AS INDICATED ON SHEET 27. THE COST FOR DEWATERING WILL BE INCLUDED IN THE UNIT PRICE FOR ITEM 212004-000, COFFERDAM, PER EACH. THERE WILL BE NO SEPARATE PAYMENT FOR DEWATERING OF ABUTMENT 1.

ANY EXCAVATION OUTSIDE OF THE NEAT LINE OF THE FOOTERS SHALL BE BACKFILLED WITH SELECT EMBANKMENT TO FINISHED GROUND LINE. THE COST OF FURNISHING AND INSTALLING THE SELECT EMBANKMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 212004-000, COFFERDAM, PER EACH.

BEARING AND BEARING AREAS

THE BEARINGS VARY IN SIZE DEPENDING ON THE IMPOSED LOADS AND THE COMPUTED RANGE OF MOVEMENT.

THE STRUCTURAL STEEL COMPONENTS OF THE BEARING ASSEMBLY SHALL BE SHOP FABRICATED IN ACCORDANCE WITH SECTION 615. THE ELASTOMERIC BEARING PADS ARE SUBJECT TO THE SHOP DRAWING REQUIREMENTS OF SECTION 105.2.

FINISH THE BRIDGE SEATS TO A TRULY LEVEL PLANE AT THE EXACT REQUIRED ELEVATION.

THE QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH TYPE OF BEARING SYSTEM, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND DOING ALL THE WORK PRESCRIBED IN A WORKMANLIKE AND ACCEPTABLE MANNER, INCLUDING ALL LABOR, TOOLS, EQUIPMENT, SUPPLIES AND INCIDENTAL NECESSARY TO COMPLETE THE WORK.

PAY ITEMS

ITEM 627005-001	ELASTOMERIC BEARING, LESS THAN 2 INCHES THICK
ITEM 627005-002	ELASTOMERIC BEARING, 2 INCHES – 5 INCHES THICK

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
GENERAL NOTES
(1 OF 2)

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 4 | TOTAL SHEETS 32

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PROTECTION OF CONCRETE SUBSTRUCTURE

PRIOR TO PLACING ANY CONCRETE GIRDERS ON THE SUBSTRUCTURE UNITS, THE CONTRACTOR SHALL COAT ALL EXPOSED AREAS OF THE ABUTMENTS WITH AN APPROVED SILANE-BASED CONCRETE SEALER. PREPARATION OF SURFACES, APPLICATION RATES AND METHODS SHALL BE AS RECOMMENDED BY THE SILANE MANUFACTURER.

COST OF SILANE COATING SHALL BE INCLUDED IN ITEM 601002-001 CLASS B CONCRETE.

MATERIAL FOR SCOUR PROTECTION (SELECT EMBANKMENT)

MATERIAL FOR SCOUR PROTECTION (SELECT EMBANKMENT) AT THE ABUTMENTS AS INDICATED ON THE PLANS SHALL BE PAID FOR UNDER ROADWAY ITEM 211002-00, ROCK BORROW EXCAVATION, PER CUBIC YARD.

THE STONE SHALL BE UNIFORMLY GRADED AS FOLLOWS WITH AN AVERAGE SIZE OF 6 INCHES:

STONE	% OF GRADATION SMALLER THAN
14"	100%
12"	85%
6"	50%
3"	15%

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

DISMANTLING STRUCTURE

ITEM 203001-000, DISMANTLING STRUCTURE, PER LUMP SUM, SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING SUPERSTRUCTURE AND SUBSTRUCTURE IN ITS ENTIRETY.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE PROCEDURE FOR DISMANTLING STRUCTURE.

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN KEEPING ANY DEBRIS FROM FALLING INTO MERRITT CREEK DURING DISMANTLING. ANY DEBRIS FALLING INTO THE CREEK SHALL BE IMMEDIATELY REMOVED.

MATERIAL FROM THE DISMANTLED STRUCTURE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE RIGHT OF WAY.

COMPLIANCE WITH ALL FEDERAL AND STATE GUIDELINES IS THE RESPONSIBILITY OF THE CONTRACTOR, AND NO ADDITIONAL COST IS PERMITTED FOR DISPOSAL OF EXISTING STRUCTURE.

ERECTION PROCEDURE

THE ERECTION CALCULATIONS, PROCEDURES AND DRAWINGS SHALL BE SUBMITTED AS REQUIRED BY THE STANDARD SPECIFICATIONS, SECTIONS 105.2 AND 603.4, NO LATER THAN 30 CALENDAR DAYS PRIOR TO THE SCHEDULED ERECTION COMMENCEMENT.

TEMPORARY STRUCTURE FOR MAINTAINING TRAFFIC

THE CONTRACTOR SHALL ERECT AND MAINTAIN UNTIL THE NEW BRIDGE IS OPEN TO TRAFFIC A TEMPORARY STRUCTURE AT THE LOCATION SHOWN ON THE PLANS. THE TEMPORARY BRIDGE SHALL HAVE A MINIMUM CLEAR ROADWAY WIDTH OF 26'-0' BETWEEN FACE TO FACE OF STEEL GUARDRAILS OR CURBS OF TRAFFIC BARRIERS AND AN APPROXIMATE CLEAR SPAN LENGTH OF 67.0 FEET. THE BOTTOM ELEVATION OF THE SUPERSTRUCTURE SHALL MEET OR EXCEED ELEVATION 560.0 AS SHOWN ON THE DETOUR PROFILE.

THE TEMPORARY BRIDGE SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THIRD EDITION INCLUDING 2005 INTERIMS. THE STRUCTURE SHALL BE DESIGNED FOR A LIVE LOAD CAPACITY OF A HL-93 VEHICULAR LOAD.

USED MATERIAL IS ACCEPTABLE FOR THE TEMPORARY STRUCTURE, ONLY A VISUAL INSPECTION WILL BE MADE.

DESIGN CALCULATIONS AND PLANS FOR THE TEMPORARY STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND SHALL BE APPROVED BY THE ENGINEER BEFORE BEGINNING CONSTRUCTION. THE TEMPORARY STRUCTURE SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN WEST VIRGINIA.

AFTER THE PERMANENT STRUCTURE IS OPEN TO TRAFFIC, THE CONTRACTOR SHALL REMOVE THE TEMPORARY STRUCTURE FROM THE SITE. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR. TRAFFIC ON THE PRESENT STRUCTURE IS NOT TO BE INTERRUPTED UNTIL THE TEMPORARY STRUCTURE IS COMPLETED. ERECTION, MAINTENANCE, AND REMOVAL OF THE TEMPORARY STRUCTURE SHALL BE PAID FOR UNDER ITEM 636005-001, TEMPORARY STRUCTURE FOR MAINTAINING TRAFFIC.

BRIDGE PLATE

INSTALL A NEW BRIDGE PLATE ON THE ROADWAY FACE OF THE RIGHT BARRIER AT ABUTMENT 1 AS DIRECTED BY THE ENGINEER.

GEOTECHNICAL INFORMATION

ADDITIONAL GEOTECHNICAL INFORMATION MAY BE AVAILABLE IN THE FORM OF REPORTS OF GEOLOGICAL AND SUBSURFACE INVESTIGATIONS. ANY INQUIRIES SHOULD BE DIRECTED TO:

ENGINEERING DIVISION
GEOTECHNICAL SECTION
WVDOH
STATE CAPITOL COMPLEX
BUILDING 5
CHARLESTON, WV 25305

SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS FOR REVIEW AND APPROVAL AS REQUIRED BY THE STANDARD SPECIFICATIONS, SECTION 105.2 TO THE FOLLOWING ADDRESS:

FOX ENGINEERING, PLLC.
101 NORTH COURT STREET
RIPLEY, WV 25271

THE DESIGN CALCULATIONS AND PLANS FOR ANY PROPOSED FALSEWORK, COFFERDAMS, PERMANENT METAL DECK FORMS, SHEETING, OR OTHER TEMPORARY SUPPORTS OR BRACING REQUIRED TO CONSTRUCT THE STRUCTURE SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WEST VIRGINIA BEFORE BEING SUBMITTED TO THE ENGINEER FOR REVIEW.

COPIES OF ALL TRANSMITTAL LETTERS SHOULD BE SUBMITTED TO THE ENGINEER AT THE TIME OF SUBMITTAL.

ANY SUBMISSIONS CONSIDERED A DESIGN CHANGE SHOULD BE SUBMITTED TO THE ENGINEER.

LIST OF ABBREVIATIONS

ABUTMENT	ABT	LINEAR FEET	LF
ADJUST	ADJ	LIVE LOAD	LL
ALTERNATE	ALT	LOCATE, LOCATION	LOC
AMOUNT	AMT	LONG WAY	LW
APPROXIMATE	APPROX	MANUFACTURE	MFG
AZIMUTH	AZ	MAXIMUM	MAX
BACK FACE	BF	MEDIAN	MED
BASE PLATE	BP	MINIMUM	MIN
BEARING	BRG	MISCELLANEOUS	MISC
BENCH MARK	BM	NEAR FACE	NF
BOTTOM	BOT	NEAR SIDE	NS
CAST IN PLACE	CIP	NEGATIVE	NEG
CENTER	CTR	NUMBER	NO
CENTER LINE	℄	ON CENTER	OC
CENTER-TO-CENTER	C/C	OPPOSITE	OPP
CLEAR	CLR	OUTSIDE DIAMETER	OD
CONCRETE	CONC	PERPENDICULAR	PERP
CONSTRUCTION	CONST	PLATE	PL
CONSTRUCTION JOINT	CJ	POINT OF CURVE	PC
CONTINUOUS	CONT	POINT OF INTERSECTION	PI
CONVERSION	CONV	POINT OF TANGENT	PT
DEAD LOAD	DL	POUND	LB
DIAMETER	DIA or ø	POUNDS PER CUBIC FOOT	PCF
DISTANCE	DIST	POUNDS PER SQUARE FOOT	PSF
DOWEL	DWL	POUNDS PER SQUARE INCH	PSI
EACH	EA	PREFORMED JOINT FILLER	PJF
EACH END	EE	PROFILE GRADE LINE	PGL
EACH FACE	EF	REINFORCING	REINF
EACH SIDE	ES	REQUIRED	RQD
EACH WAY	EW	ROUGHENED CONST. JOINT	RCJ
ELEVATION	ELV	SCHEDULE	SCH
ESTIMATE, ESTIMATED	EST	SHEET	SHT
EQUAL	EQ	SHORT WAY	SW
EQUAL SPACES	EQ SPA	SHOULDER	SHLDR
EXPANSION	EXP	SPACE	SPA
EXTERIOR	EXT	SQUARE FEET	SF
FAR FACE	FF	STANDARD	STD
FEET	FT	STATION	STA
FIELD ADJUST	FA	STEEL	STL
FIELD CUT	FC	STRUCTURAL	STR
FINISH GRADE	FIN GRD	SUBSTITUTE	SUB
FLANGE	FLG	TANGENT	TAN
FOOTING	FTG	TOP & BOTTOM	T&B
FOUNDATION	FDN	TOP OF CONCRETE	TOC
GALVANIZED	GALV	TOP OF STEEL	TOS
GRADE	GRD	TRANSVERSE	TRANS
HORIZONTAL	HOR	TYPICAL	TYP
INCHES	IN	UNLESS NOTED OTHERWISE	UNO
INCREMENT	INCREM	VERTICAL	VRT
INSIDE DIAMETER	ID	VERTICAL CONST. JOINT	VCJ
INTERIOR	INT	WELDED WIRE FABRIC	WWF
INVERT	INV	WITH	W/
KEYWAY	KWY	WITHOUT	W/O
KIP PER SQUARE FOOT	KSF	WORK POINT	WP

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
GENERAL NOTES
(2 OF 2)

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 5 | TOTAL SHEETS 32

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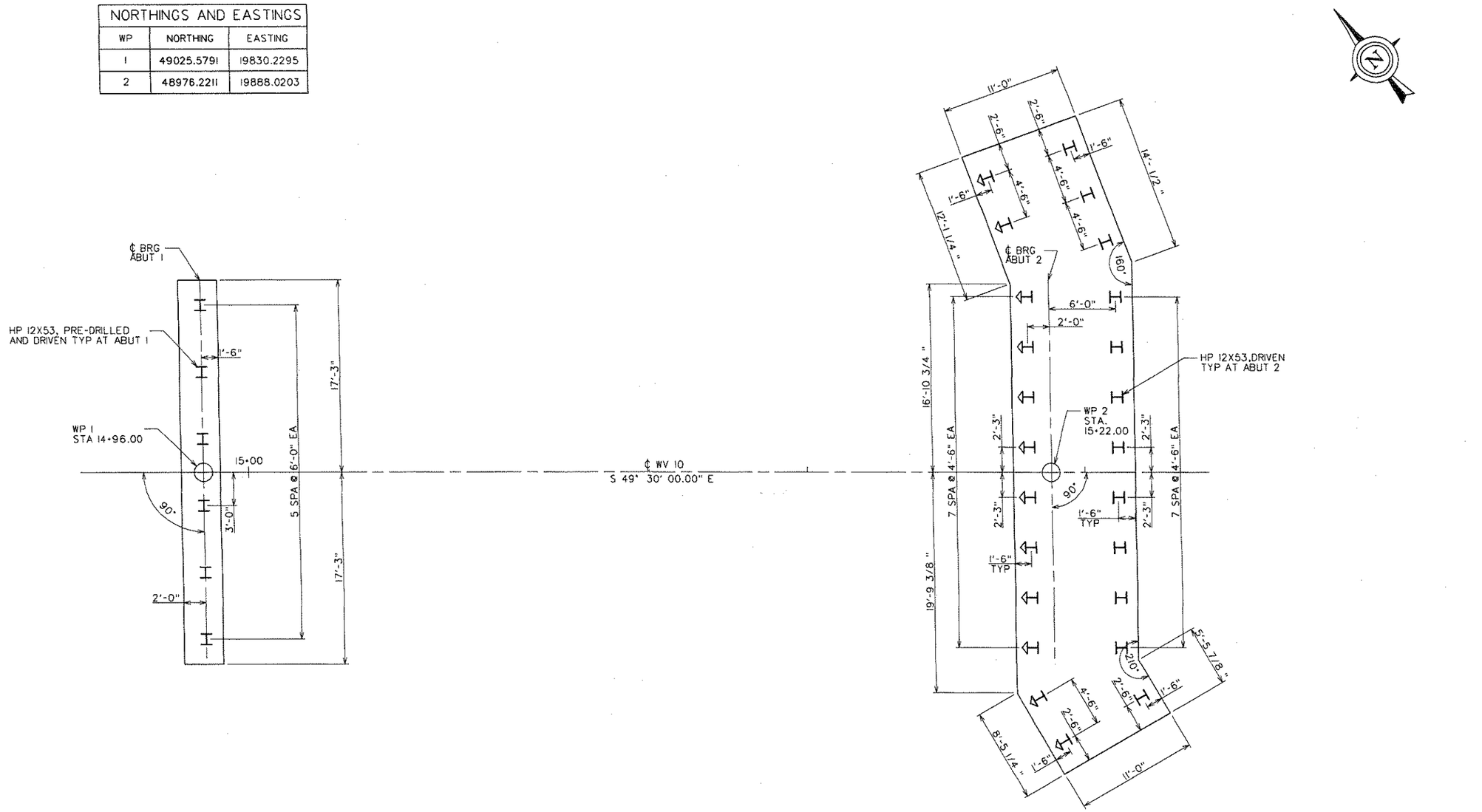
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	30	82

NORTHINGS AND EASTINGS		
WP	NORTHING	EASTING
1	49025.5791	19830.2295
2	48976.2211	19888.0203



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
FOUNDATION LAYOUT

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
6	32

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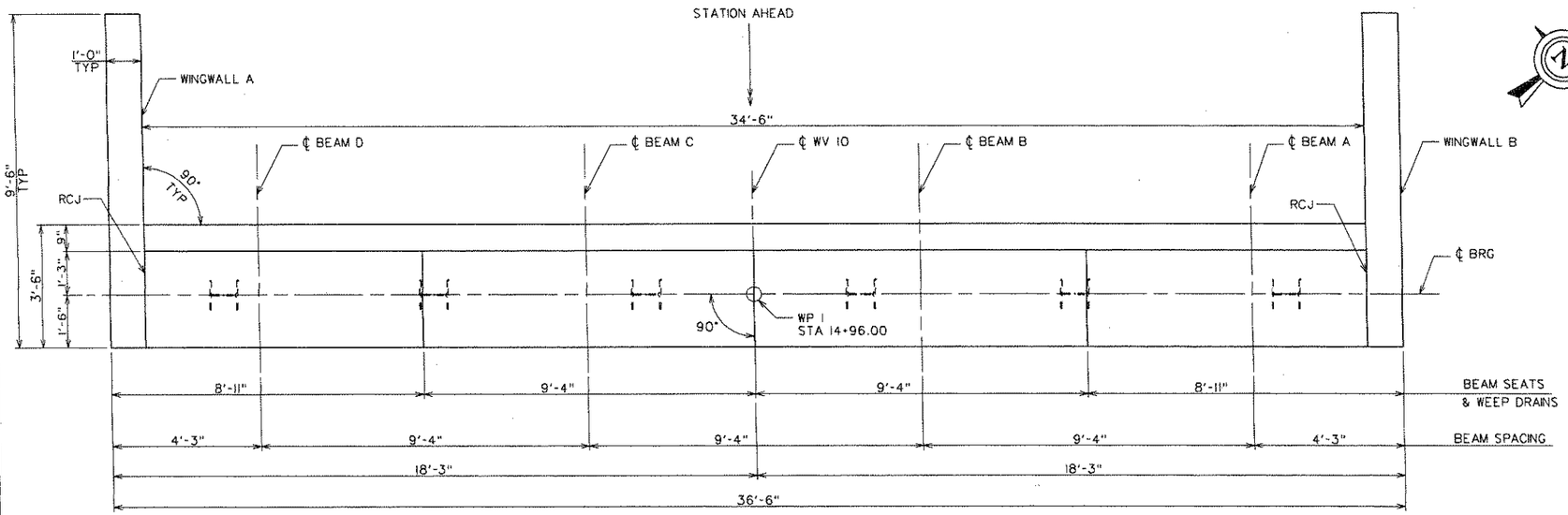
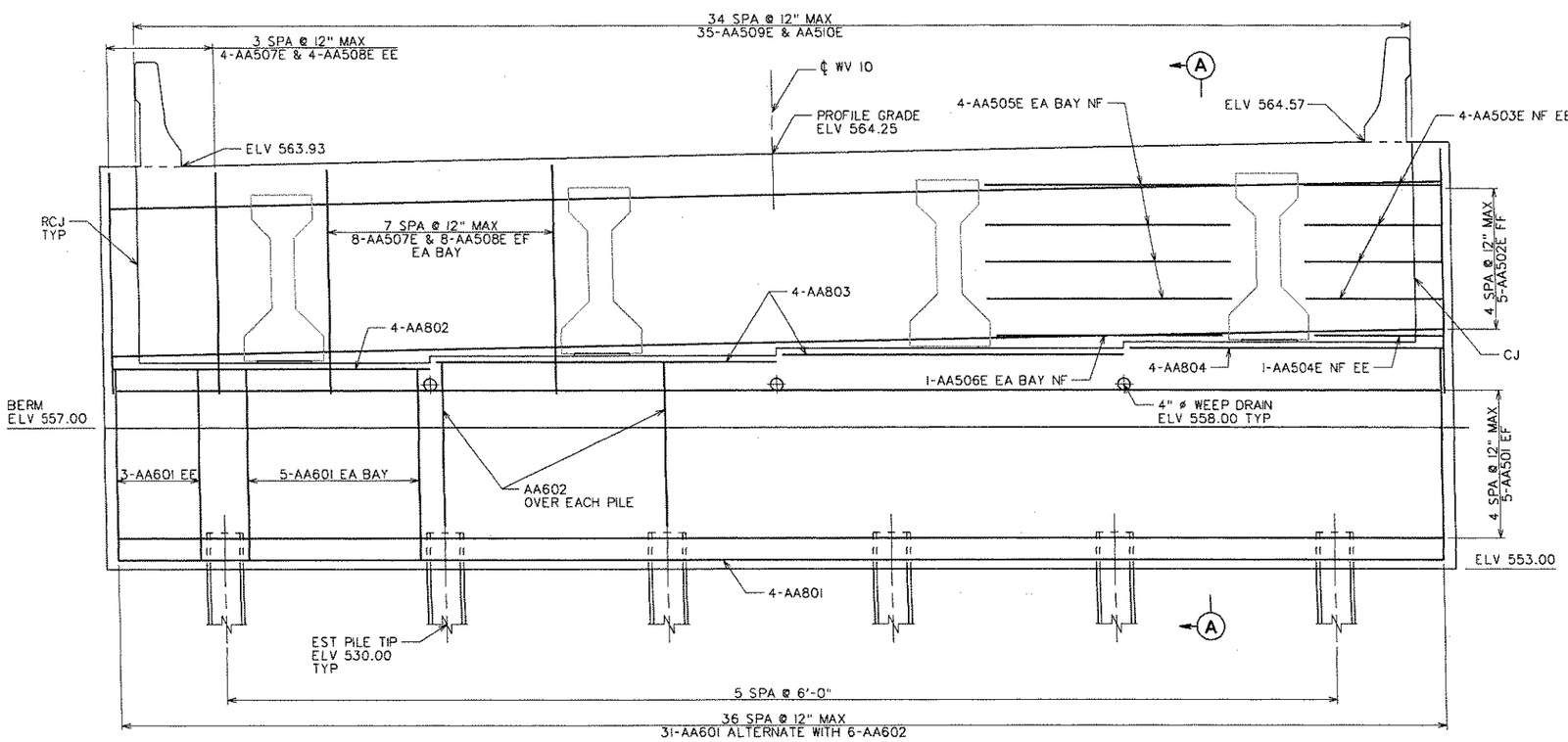
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	31	82



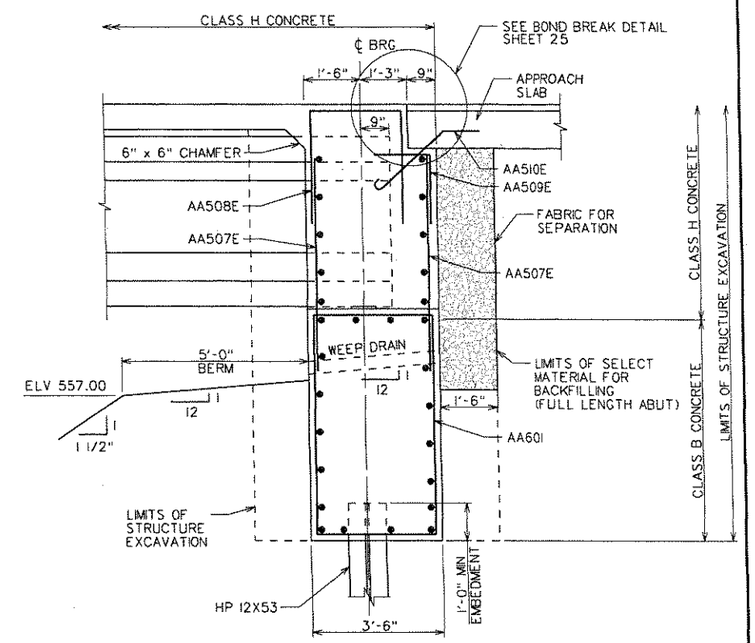
PLAN

NOTES:

1. ALL REINFORCING BELOW BEAM SEAT IS UNCOATED STEEL
2. ALL REINFORCING ABOVE THE BEAM SEAT IS EPOXY COATED.
3. THE COST OF WEEP DRAINS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 601002-001, CLASS B CONCRETE.
4. EXCAVATION BELOW THE ROADWAY ELEVATION SHALL BE PAID FOR AS STRUCTURE EXCAVATION.
5. THE MAXIMUM DESIGN PILE LOAD:
   205 KIPS (FACTORED)
   143 KIPS (SERVICE)
6. SEE SHEET 9 FOR THE REINFORCING DETAILS.
7. DECK ELEVATIONS ARE GIVEN AT THE PAVING NOTCH.



ELEVATION



SECTION A

LAP CHART	
BAR	LAP
#4	1'-9"
#5	2'-7"
#6	2'-10"
#8	5'-0"

SEAT ELEVATIONS	
BEAM	ABUT 1
A	559.15
B	558.97
C	558.78
D	558.59

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: JNH | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 1

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 7 | TOTAL SHEETS 32

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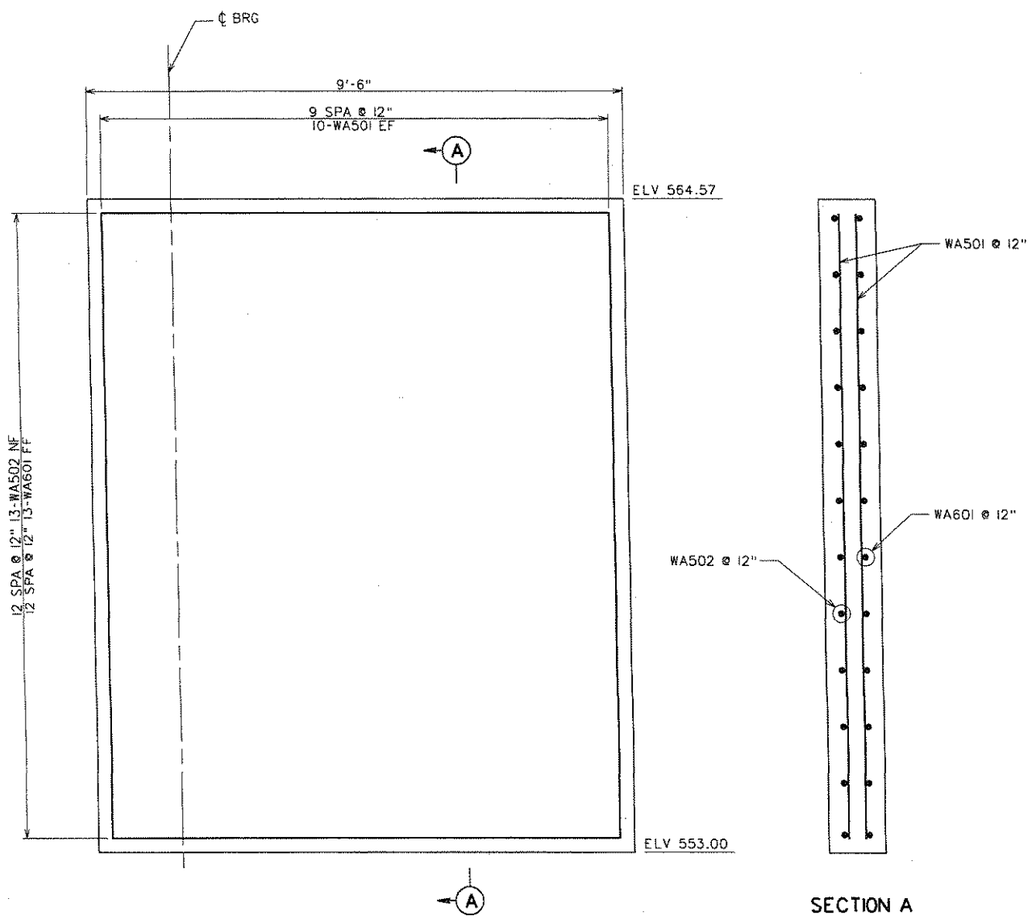
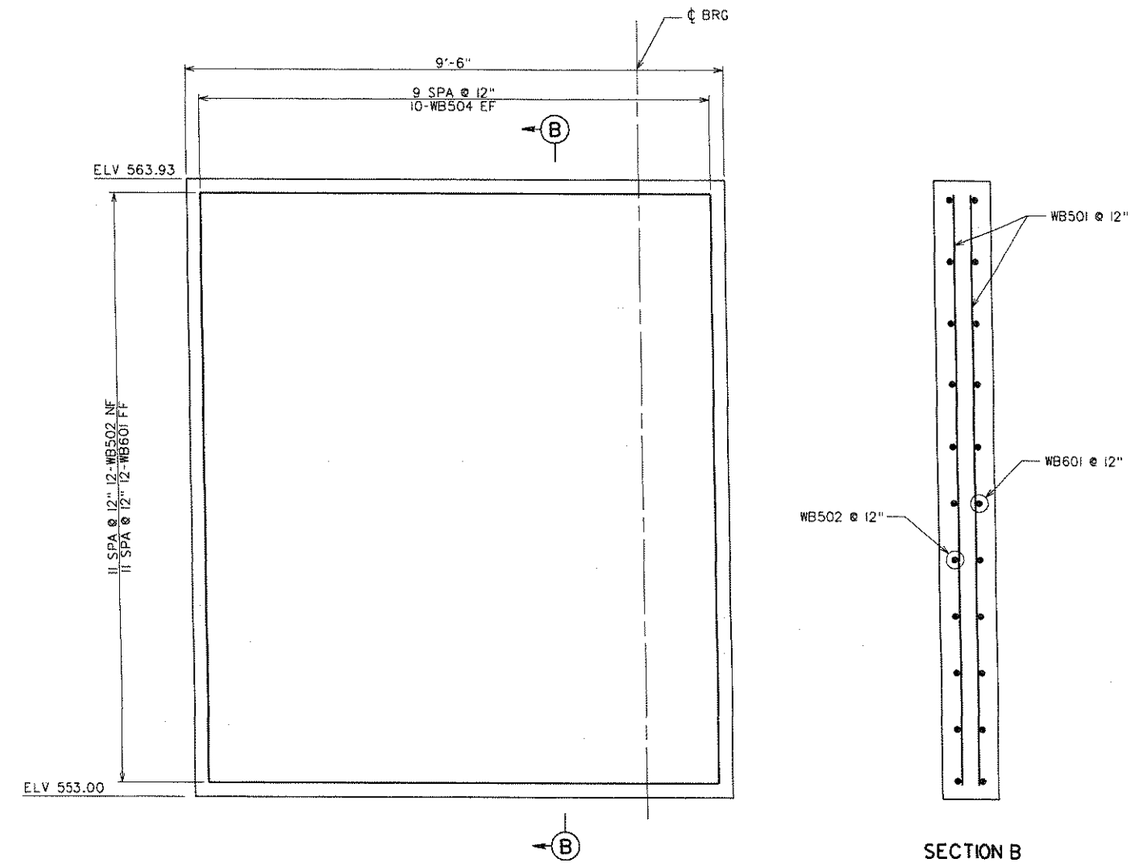
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	32	82



SECTION A

ELEVATION
WINGWALL B



SECTION B

ELEVATION
WINGWALL A

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: JNH | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 1 DETAILS

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
8	32

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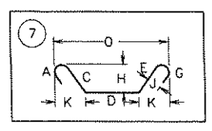
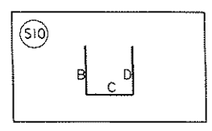
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	33	82

MARK	COUNT	TOTAL LENGTH	NUMBER PER SET	BEND TYPE	BENDING DIMENSIONS										
					A	B	C	D	E	F/R	G	H	J	K	O
AA501	10	36'-0"													
AA502E	5	36'-2"													
AA503E	8	3'-1"													
AA504E	2	2'-10"													
AA505E	12	7'-4"													
AA506E	3	6'-10"													
AA507E	64	7'-3"													
AA508E	32	8'-10"		S10		3'-3"	2'-4"	3'-3"							
AA509E	35	4'-4"		S10			1'-9"	2'-7"							
AA510E	35	5'-0"		7	7"		3'-2"	1'-3"				2'-2 1/4"		2'-5"	3'-8"
AA601	62	11'-8"	2	S10		4'-4"	3'-0"	4'-4"							
AA602	12	10'-8"	2	S10		3'-10"	3'-0"	3'-10"							
AA801	4	36'-0"													
AA802	4	8'-8"													
AA803	8	9'-2"													
AA804	4	8'-6"													
WA501	10	10'-6"													
WA502	12	7'-2"													
WA601	12	7'-4"													
WB501	10	11'-1"													
WB502	13	7'-2"													
WB602	13	7'-4"													





NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
2. DIMENSION "R" DESIGNATES OUTER BAR RADIUS.
3. ALL REINFORCING WITH "E" SUFFIX IS TO EPOXY COATED, ITEM 602002-001, EPOXY COATED REINFORCING STEEL BAR. ALL OTHER REINFORCING IS UNCOATED, ITEM 602001-001 REINFORCING STEEL BAR.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 1
REINFORCING SCHEDULE

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
9	32

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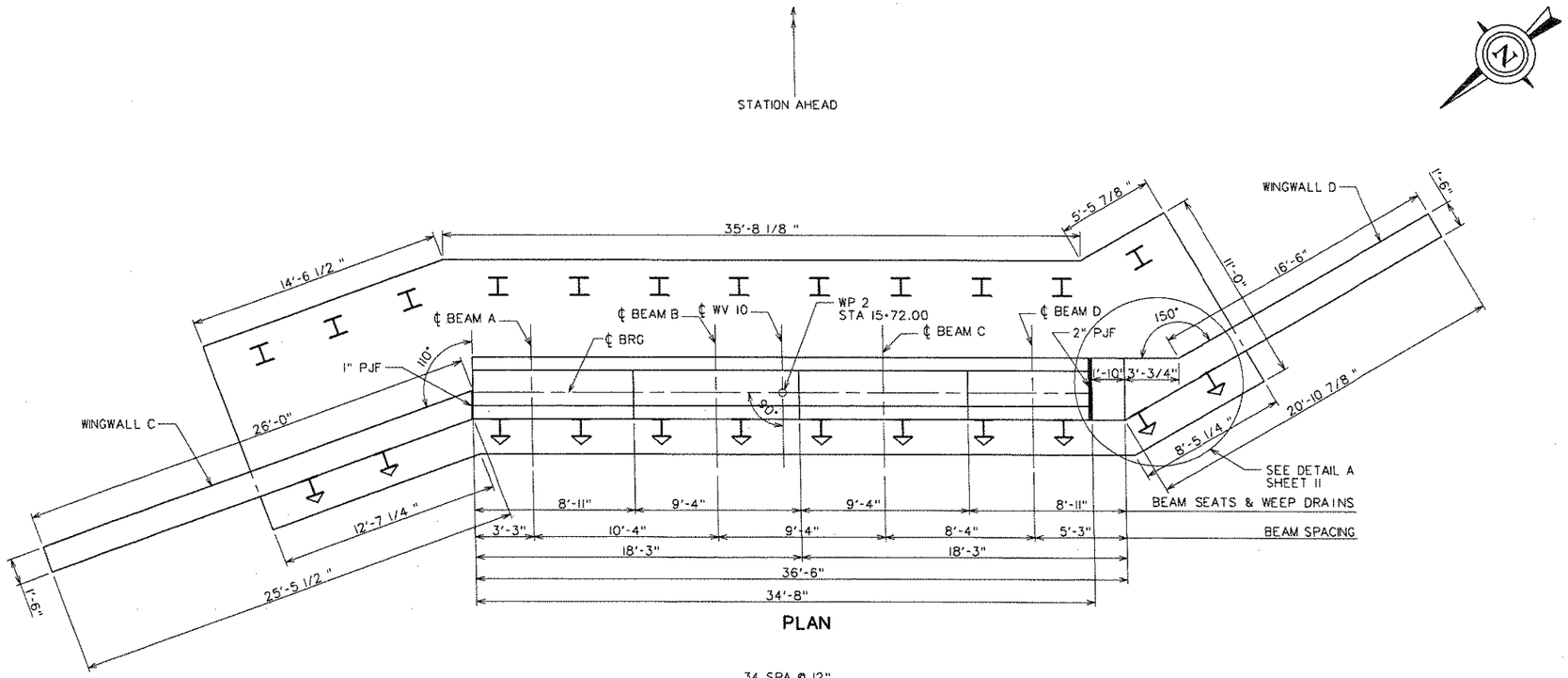
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	34	82

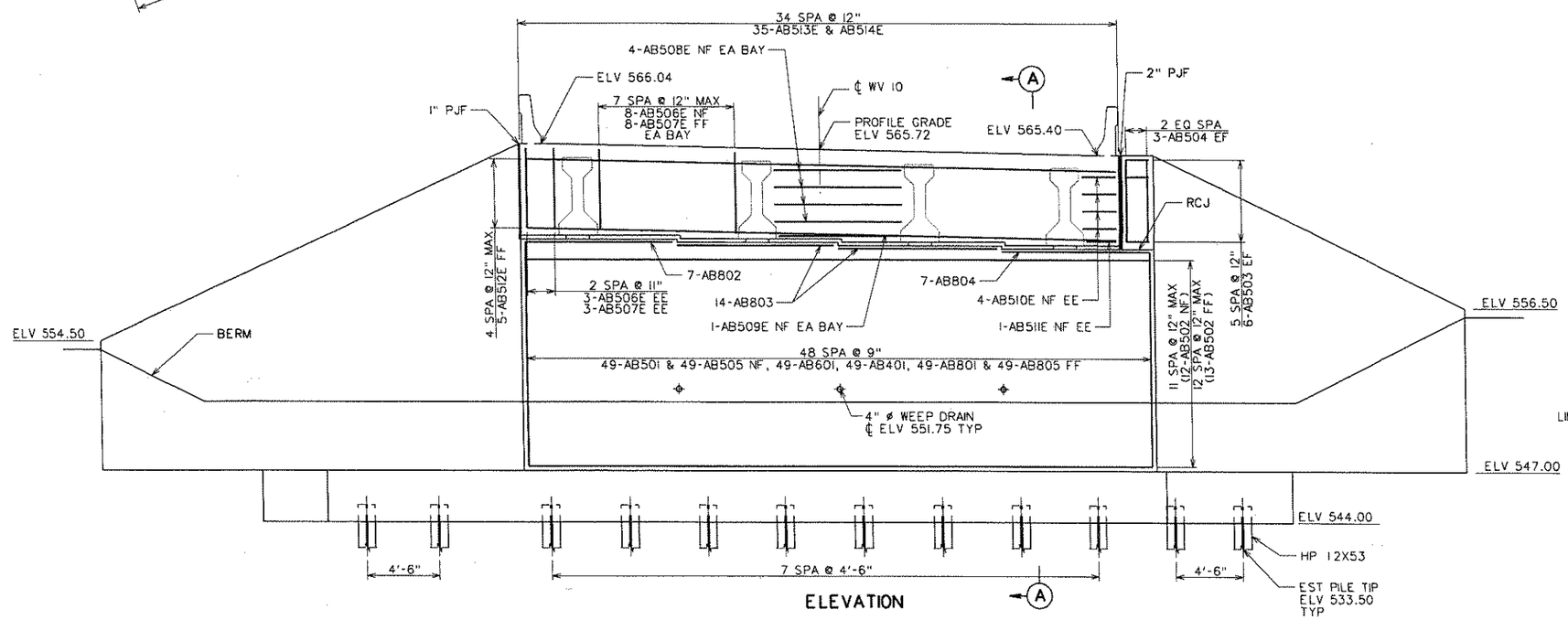
NOTES:

1. ALL REINFORCING BELOW BEAM SEAT IS UNCOATED STEEL.
2. ALL REINFORCING ABOVE THE BEAM SEAT IS EPOXY COATED.
3. THE COST OF WEEP DRAINS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 601002-001, CLASS B CONCRETE.
4. EXCAVATION BELOW THE ROADWAY ELEVATION SHALL BE PAID FOR AS STRUCTURE EXCAVATION.
5. THE MAXIMUM DESIGN PILE LOAD:
   244 KIPS (FACTORED)
   170 KIPS (SERVICE)
6. SEE SHEETS 12 AND 13 FOR THE REINFORCING DETAILS.
7. DECK ELEVATIONS ARE GIVEN AT THE PAVING NOTCH.
8. THE PILE BATTER IS 3:12.
9. JACK ALL GIRDERS AT THE ABUTMENT TO RELIEVE ELASTOMERIC BEARINGS OF TEMPERATURE AND CONSTRUCTION RELATED STRESSES AND STRAINS. PERFORM JACKING WHEN AMBIENT TEMPERATURE IS BETWEEN 40° AND 80° FAHRENHEIT. PERFORM JACKING AFTER COMPLETION OF THE SUPERSTRUCTURE DECK CONCRETE WORK AND BEFORE OPENING TO TRAFFIC. JACK THE GIRDERS A MAXIMUM OF 3/8" VERTICAL TO RELIEVE THE EXPANSION BEARING PAD OF ALL SUPERSTRUCTURE LOADS. JACKING AND LOWERING OF THE SUPERSTRUCTURE SHALL BE PERFORMED AT A SLOW UNIFORM RATE. PAYMENT TO BE INCLUDED IN ITEM 603018-020, 54 INCH PRESTRESSED CONCRETE I BEAM.

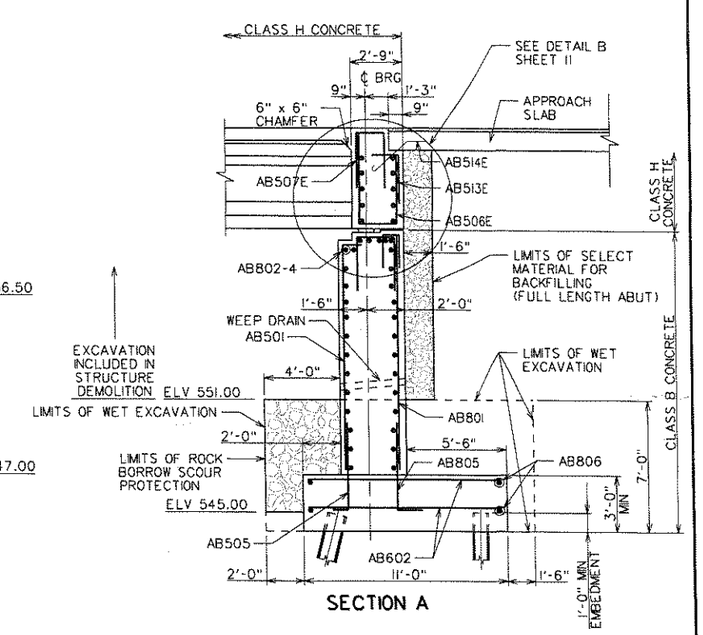
THE REQUIRED JACKING LOAD PER GIRDER:
DL = 100 KIPS (FACTORED)
LL = 185 KIPS (FACTORED)



PLAN



ELEVATION



SECTION A

LAP CHART	
BAR	LAP
#4	1'-9"
#5	2'-7"
#6	2'-10"
#8	5'-0"

SEAT ELEVATIONS	
BEAM	ABUT 1
A	560.44
B	560.25
C	560.07
D	559.88

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: JNH | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 2

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
10	32

TEXT SCALE ¼" = 1'

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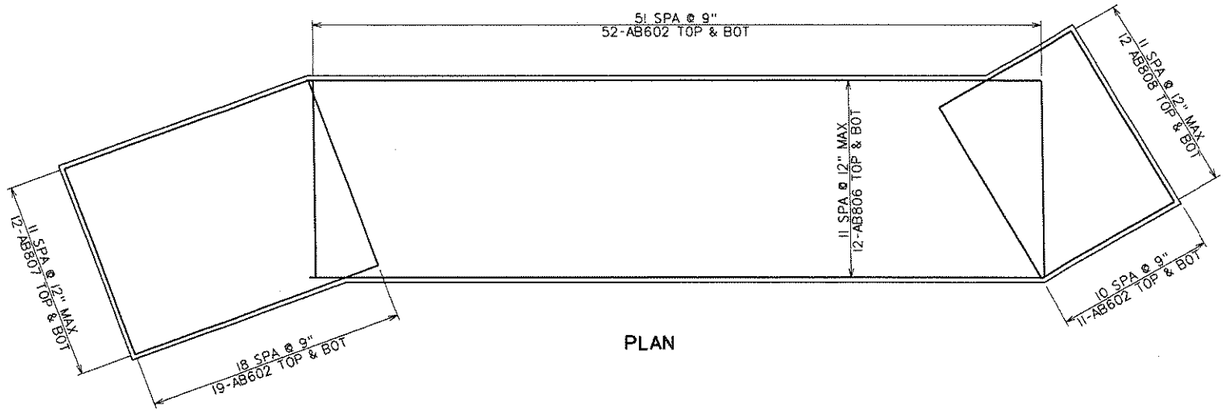
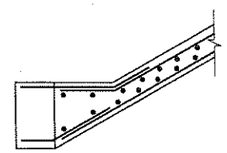
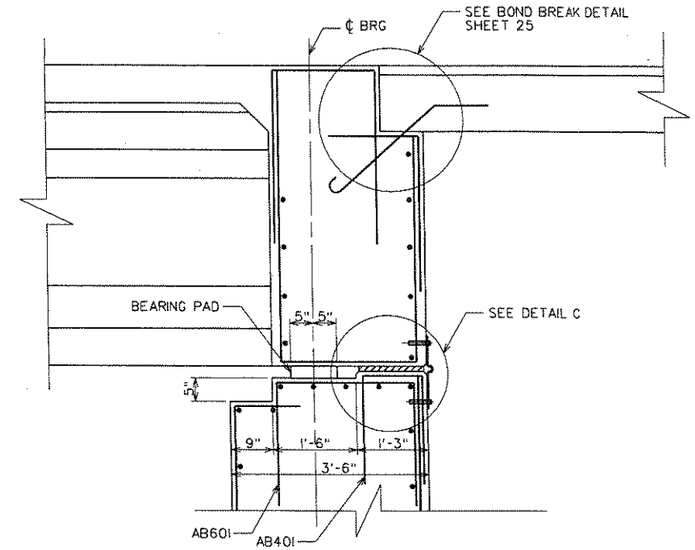
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	35	82



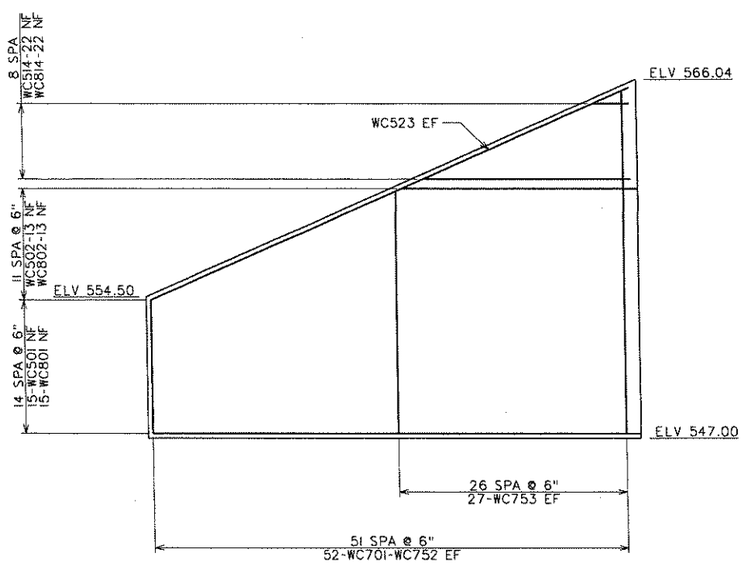
PLAN



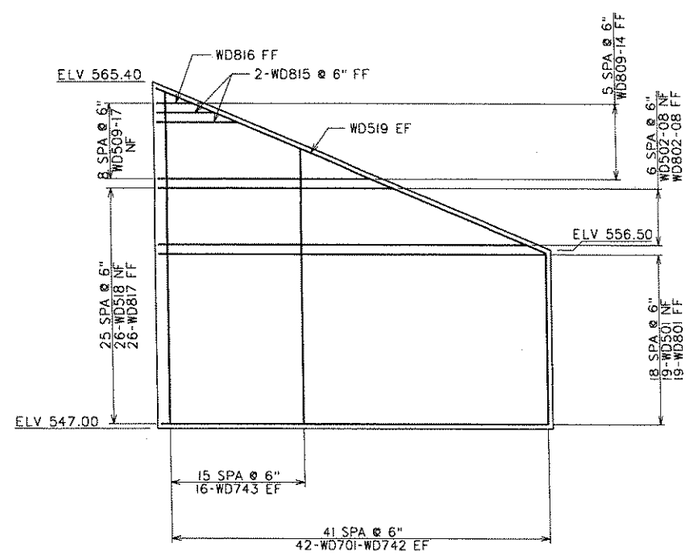
DETAIL A



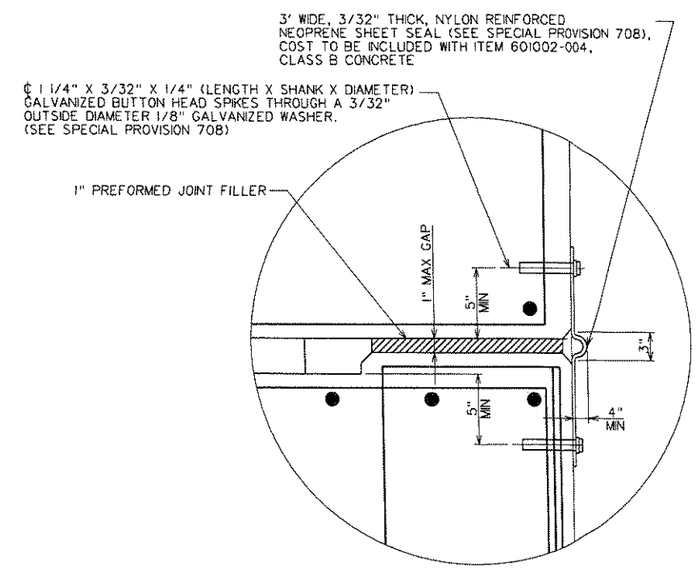
DETAIL B



ELEVATION
WINGWALL C



ELEVATION
WINGWALL D



DETAIL C

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: JNH | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 2 DETAILS

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 11 | TOTAL SHEETS 32

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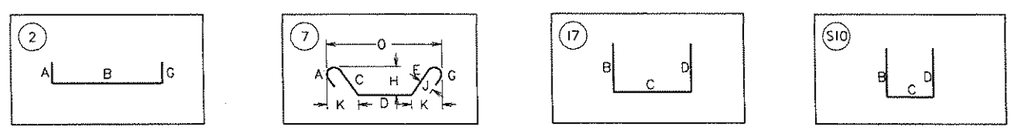
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	36	82

MARK	COUNT	TOTAL LENGTH	NUMBER PER SET	BEND TYPE	BENDING DIMENSIONS										
					A	B	C	D	E	F/R	G	H	J	K	O
AB401	49	4'-4"		S10		1'-9"	10"	1'-9"							
AB501	49	10'-7"		2	8"	9'-11"									
AB502	25	36'-2"													
AB503	12	1'-6"													
AB504	6	6'-8"													
AB505	49	8'-8"		2	10"	7'-10"									
AB506E	30	10'-10"		17		3'-9"	2'-4"	4'-9"							
AB507E	30	7'-6"		17		2'-11"	1'-8"	2'-11"							
AB508E	12	7'-4"													
AB509E	3	6'-10"													
AB510E	8	3'-1"													
AB511E	2	2'-10"													
AB512E	5	34'-2"													
AB513E	35	4'-4"		S10		2'-7"	1'-9"								
AB514E	35	5'-0"		7	7"		3'-2"	1'-3"				2'-2 1/4"		2'-5"	3'-8"
AB601	49	8'-0"		S10		2'-10	2'-4"	2'-10"							
AB602	164	10'-6"													
AB801	49	12'-8"													
AB802	7	7'-7"													
AB803	14	9'-2"													
AB804	7	9'-7"													
AB805	49	9'-2"		2	1'-4"	7'-10"									
AB806	24	38'-8"													
AB807	24	13'-10"													
AB808	24	8'-3"													



NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
2. DIMENSION "R" DESIGNATES OUTER BAR RADIUS.
3. ALL REINFORCING WITH "E" SUFFIX IS TO EPOXY COATED, ITEM 602002-001, EPOXY COATED REINFORCING STEEL BAR, ALL OTHER REINFORCING IS UNCOATED, ITEM 602001-001 REINFORCING STEEL BAR.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 2
REINFORCING SCHEDULE (1 OF 2)

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
12	32

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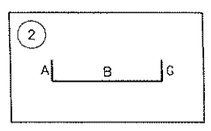
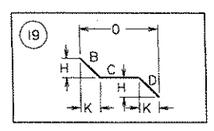
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	37	82

MARK	COUNT	TOTAL LENGTH	NUMBER PER SET	BEND TYPE	BENDING DIMENSIONS										
					A	B	C	D	E	F/R	G	H	J	K	O
WC501	15	28'-8"													
WC502	12	27'-9"													
THRU		THRU													
WC513		15'-4"													
WC514	9	10'-11													
THRU		THRU													
WC522		1'-11"													
WC523	2	27'-9"													
WC701	104	7'-1"	2												
THRU		THRU													
WC752		18'-2"													
WC753	54	6'-10"		2	1'-2"	5'-8"									
WC801	15	28'-8"													
WC802	12	27'-9"													
THRU		THRU													
WC813		15'-4"													
WC814	9	10'-11													
THRU		THRU													
WC822		1'-11"													
WD501	19	20'-7"													
WD502	7	19'-7"													
THRU		THRU													
WD508		12'-7"													
WD509	9	11'-3"													
THRU		THRU													
WD517		1'-10"													
WD518	26	4'-1"		19		2'-7"	1'-6"					1'-3"		2'-3"	3'-9"
WD519	2	22'-3"													
WD701	84	9'-1"	2												
THRU		THRU													
WD742		17'-7"													
WD743	32	6'-10"		2	1'-2"	5'-8"									
WD801	19	16'-3"													
WD802	7	15'-4"													
THRU		THRU													
WD808		8'-3"													
WD809	6	9'-11"		19		7'-0"	2'-11"					3'-6"		6'-1"	9'-0"
THRU		THRU				THRU						THRU		THRU	THRU
WD814		4'-2"				1'-2"	2'-11"					7"		1'-0"	3'-1"
WD815	2	2'-9"													
WD816	1	1'-9"													
WD817	26	11'-1"		19		5'-0"	6'-1"					2'-6"		4'-4"	10'-5"





NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
2. DIMENSION "R" DESIGNATES OUTER BAR RADIUS.
3. ALL REINFORCING WITH "E" SUFFIX IS TO EPOXY COATED, ITEM 602002-001, EPOXY COATED REINFORCING STEEL BAR, ALL OTHER REINFORCING IS UNCOATED, ITEM 602001-001 REINFORCING STEEL BAR.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
ABUTMENT 2
REINFORCING SCHEDULE (2 OF 2)

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 13 | TOTAL SHEETS 32

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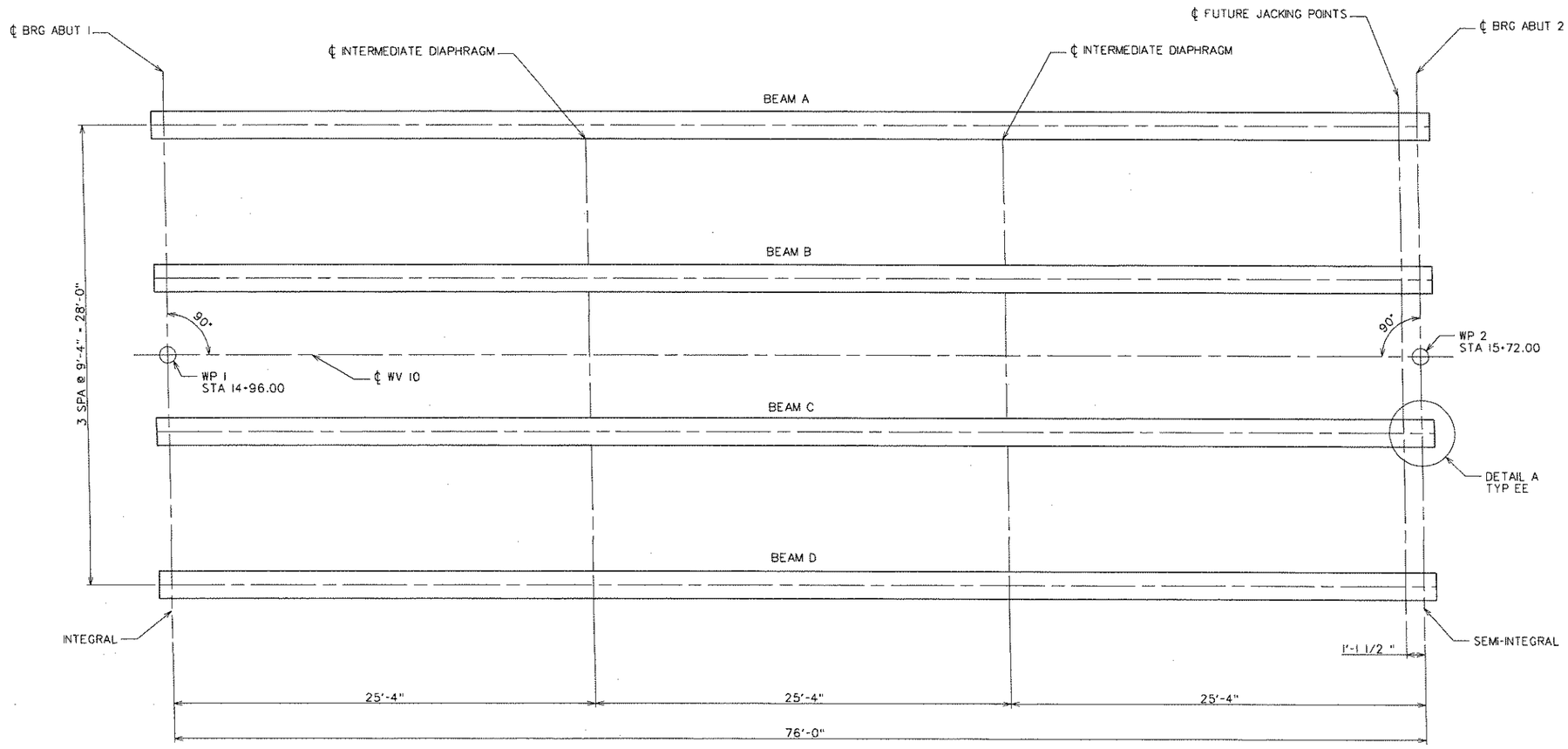
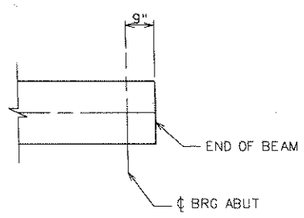
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	38	82





DETAIL A
TYPICAL EACH END

NOTES:

1. FOR SECTION PROPERTIES AND BEAM DETAILS, SEE SHEETS 16 AND 17.
2. FOR INTERMEDIATE DIAPHRAGM AND TEMPORARY BRACING DETAILS, SEE SHEET 17.
3. FOR ADDITIONAL BEAM NOTES, SEE SHEET 16.
4. THE REQUIRED JACKING LOAD PER GIRDER:
   DL = 100 KIPS (FACTORED)
   LL = 185 KIPS (FACTORED)

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: VGM | CHECKED BY: KLF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
FRAMING PLAN

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
14	32

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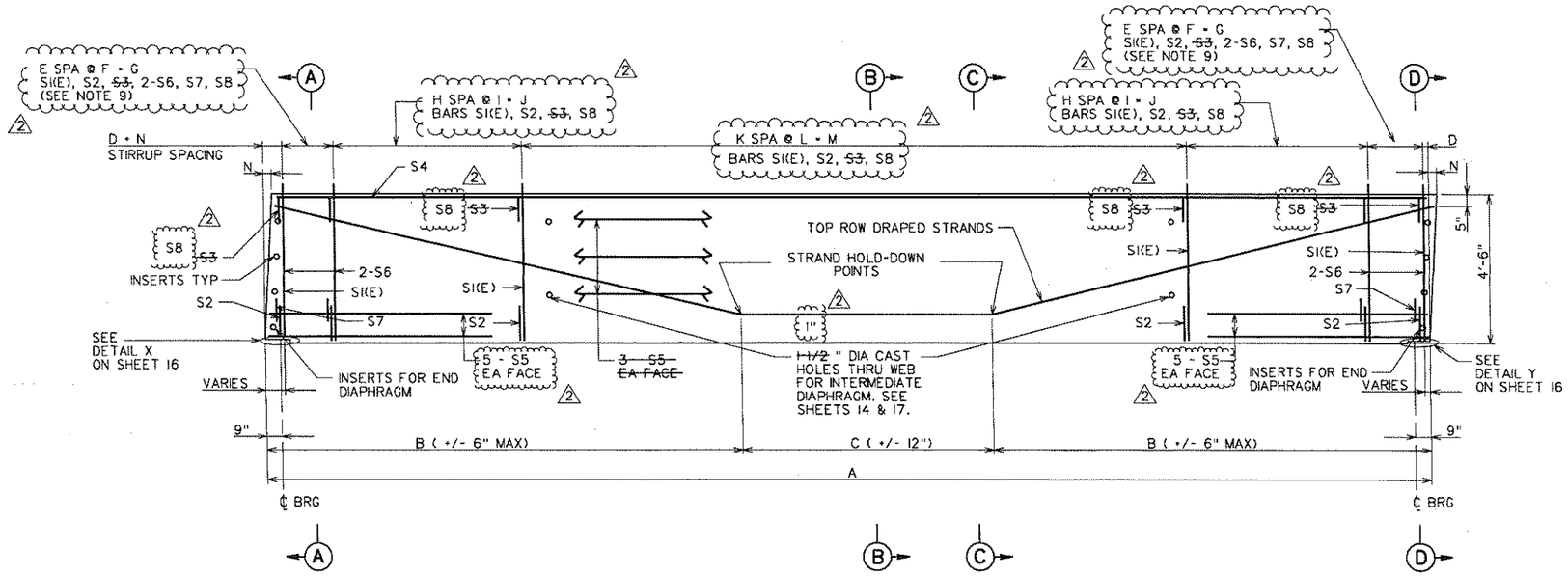
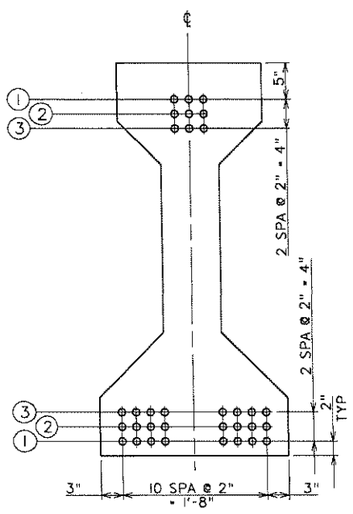
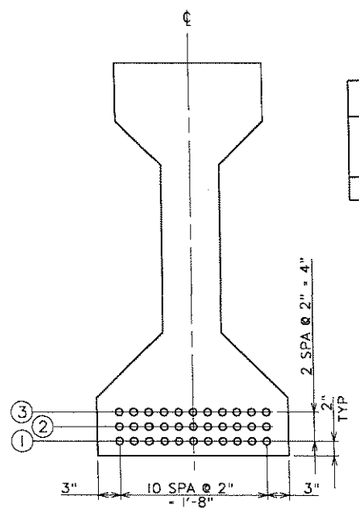
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	39	82



ELEVATION



STRAND PATTERN
SECTION A
END SPAN



STRAND PATTERN
SECTION B
MID SPAN

NOTES
1. ALL DIMENSIONS ARE HORIZONTAL.
2. THE CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF AT LEAST 6000 PSI AS SHOWN BY STANDARD CYLINDERS CURED IDENTICALLY WITH THE BEAMS, BEFORE TRANSFERRING BOND STRESS TO THE CONCRETE; OR BEFORE RELEASING THE END ANCHORS. CYLINDER STRENGTH SHALL BE 8,000 PSI WITHIN 28 DAYS.
3. THE DEPARTMENT WILL REJECT THE BEAMS IF THE FINISHED UNITS CONTAIN HONEYCOMBED CONCRETE TO THE EXTENT THAT THE ENGINEER DETERMINES THE STRENGTH OR DETERIORATION RESISTANCE IS REDUCED. BEAM SHORTENING DUE TO SHRINKING AND ELASTIC CHANGES IS LIMITED TO 0.0005L.
4. ROUGHEN THE TOP SURFACE OF EACH BEAM TO AN AMPLITUDE OF APPROXIMATELY¼INCH AND MAINTAIN CLEAN AND FREE OF LAITANCE.
5. SHOP DRAWINGS SHALL SHOW THE DETENSIONING PLAN BY NUMBERING THE SEQUENCE OF THE STRAND PATTERN.
6. PRESTRESSING STRANDS SHALL BE STABILIZED STRAND (1/2 INCH NOMINAL DIAMETER) LOW RELAXATION UNCOATED SEVEN WIRE STRAND IN ACCORDANCE WITH AASHTO M203 GRADE 270. AN INITIAL STRESS OF 202.5 KSI SHALL BE APPLIED TO THE STRAND.
7. THE THREADED INSERTS SHALL HAVE A MINIMUM SAFE WORK LOAD OF 2,500 LB IN TENSION. ALL INSERTS SHALL BE PLUGGED TO PREVENT CONCRETE INTRUSION. OMIT INSERTS ON EXTERIOR FACE OF EXTERIOR BEAMS. {EXCEPT AT THE ABUTMENTS.} 2
8. ALL THREADED INSERTS AND ANCHOR BOLTS ARE TO BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232, AFTER FABRICATION. INCLUDE THE COST IN ITEM 603018-020, 54 INCH PRESTRESSED CONCRETE I BEAM.
9. 15-S7 BARS AT EACH END, MATCH WITH S2 BARS.

BEAM DIMENSIONS (MEASURED ALONG BEAM ℄)

MARK	NO RQD	DIMENSIONS																				APPROX WEIGHT
		A (FT)	B (FT)	C (FT)	D (IN)	E	F (IN)	G (IN)	H	I (IN)	J (FT)	K	L (IN)	M (FT)	N (IN)	Q (IN)	R (IN)	S (IN)	T (IN)	U (IN)	V (IN)	EACH (LBS)
A-D	4	77.50	31.00	15.50	2.00	15	6.00	90.00	21	9.00	15.75	18	~~20.33~~ 20.44	~~30.50~~ 30.67	~~1.00~~ 0.00	0.53	15.00	0.25	0.55	16.00	0.25	63,705

2

NUMBER OF ¼" DIA - 7 WIRE STRANDS IN INDICATED ROW

MARK	MIDSPAN								END SECTION												TOTAL NO	CONCRETE STRENGTHS (PSI)		INITIAL PRESTRESS FORCE/STRAND (LBS)
	BOTTOM								BOTTOM								TOP							
	1	2	3						1	2	3						1	2	3				f'ci	f'c	
A-D	11	11	11						8	8	8						3	3	3			33	6,000	8,000	30,982

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
2	15,16	REVISED S5 BAR LENGTHS & LOCATION	10/06	VGM
	17,18	REVISED REINFORCING SPACING,		VGM
		REVISED NOTE 7		

PROJ MGR: KAH | DRAWN BY: JNH | CHECKED BY: VGM | DATE: 10/4/2006

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
BEAM ELEVATIONS

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 15 | TOTAL SHEETS 32

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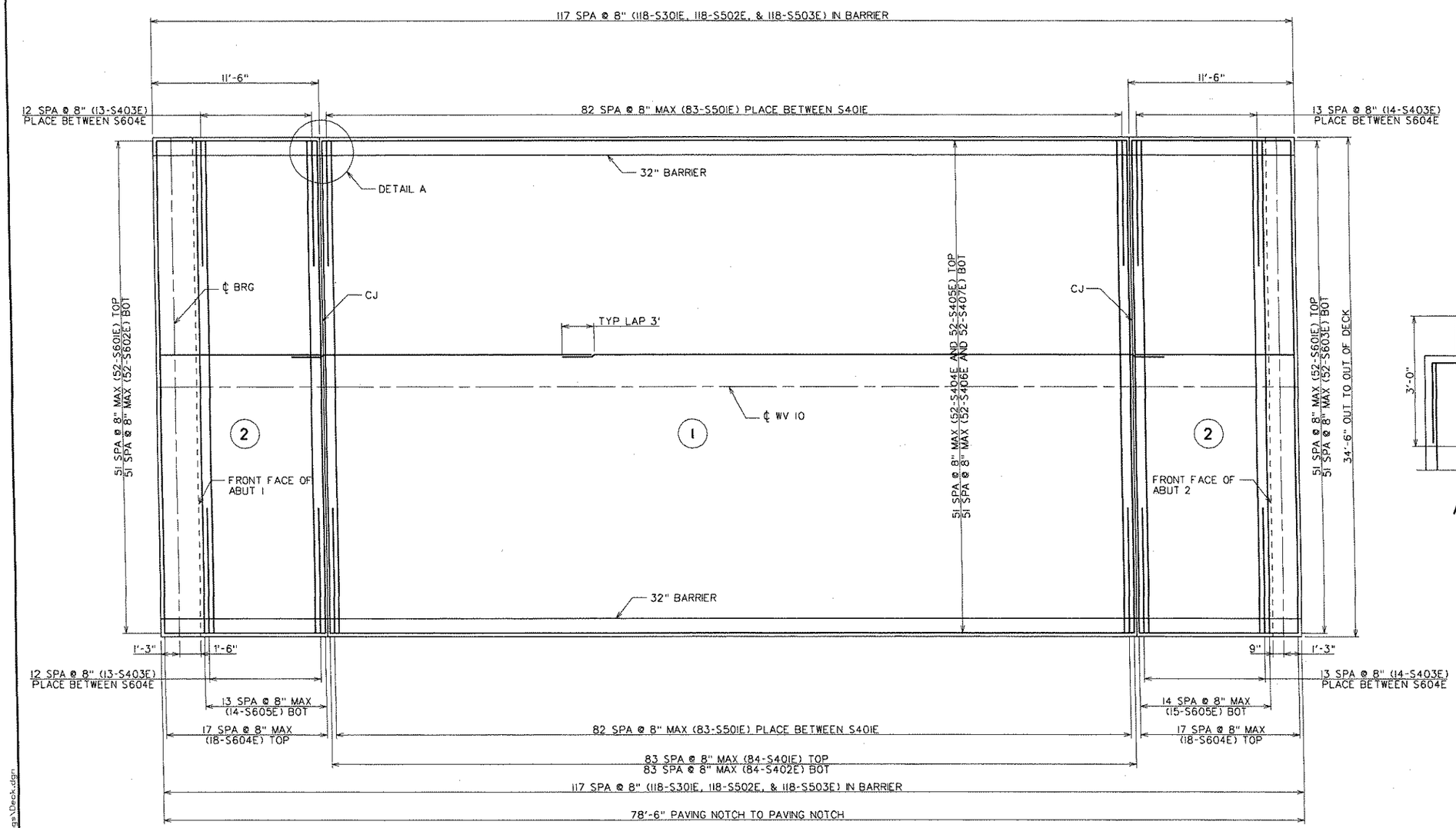
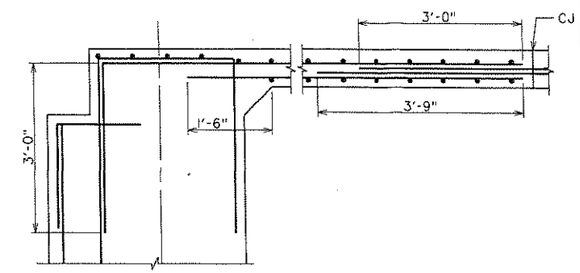
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	43	82





ABUTMENT LAP DETAIL

NOTES:
1. ALL LAPS SHALL BE STAGGERED.
2. ALL LAP LENGTHS ARE MINIMUM.
3. FOR BARRIER DETAILS SEE SHEET 21.
4. FOR REINFORCING SCHEDULE SEE SHEET 22.
5. NO CHANGE IN POURING SEQUENCE, INDICATED BY THE CIRCLED NUMBERS, WILL BE PERMITTED.
6. POUR 1 SHALL BE A HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI, BEFORE MAKING POUR 2.
7. POUR 2 IS TO BE MADE MONOLITHIC WITH ABUTMENTS ABOVE TOP OF CAP, AS SHOWN ON ABUTMENT DETAILS, SEE SHEETS 7 AND 10.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: VGM | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DECK PLAN

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 19 | TOTAL SHEETS 32

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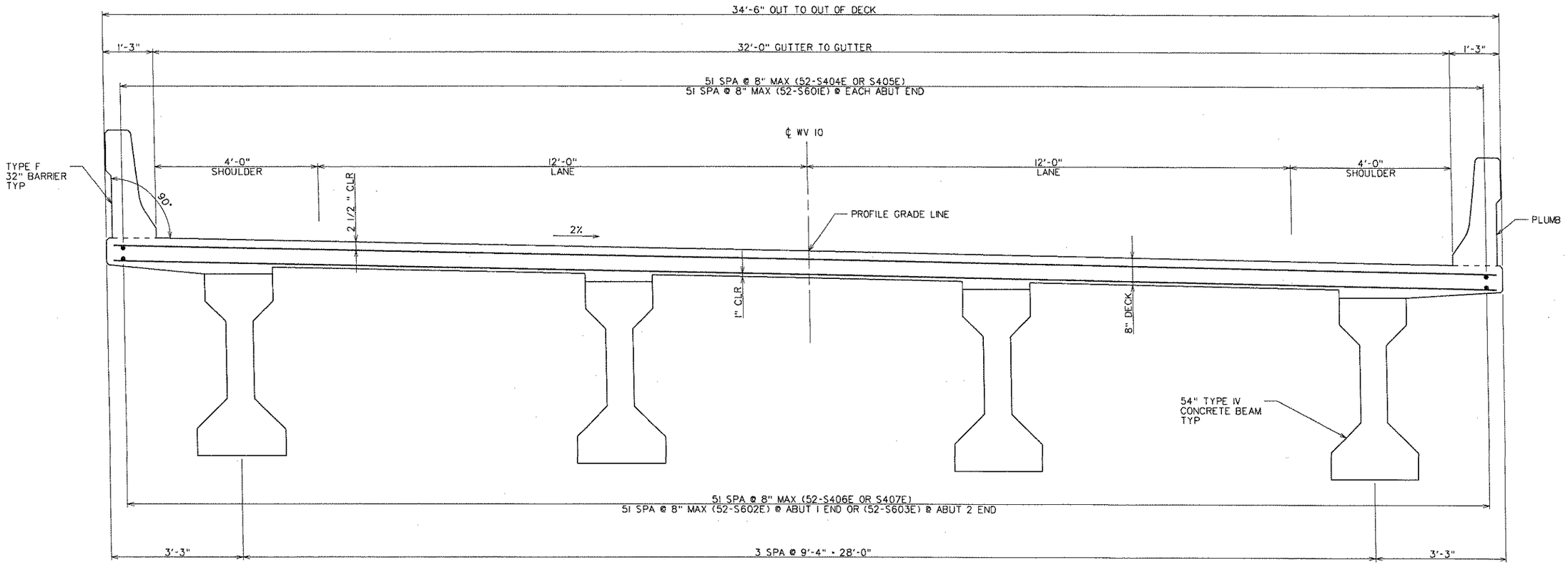
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	44	82



NOTES:

1. THE BARRIER ON THE HIGH SIDE SHALL BE PERPENDICULAR TO THE DECK. THE BARRIER ON THE LOW SIDE SHALL BE TRULY VERTICAL.
2. FOR BARRIER DETAILS SEE SHEET 21.
3. FOR REINFORCING SCHEDULE SE SHEET 22.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: VGM | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DECK TYPICAL SECTION
REINFORCING

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
20	32

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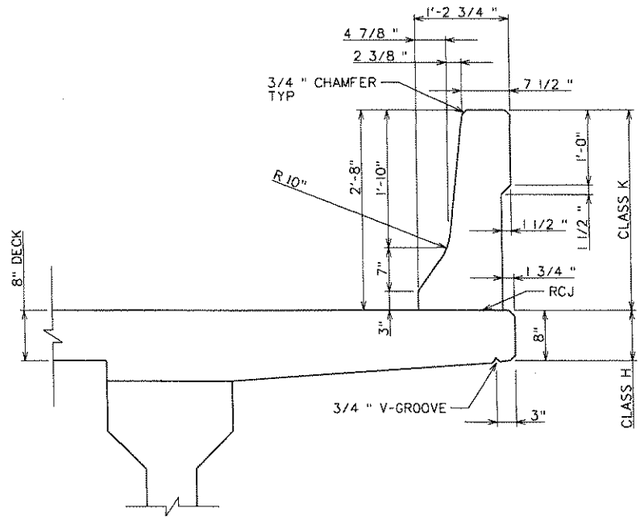
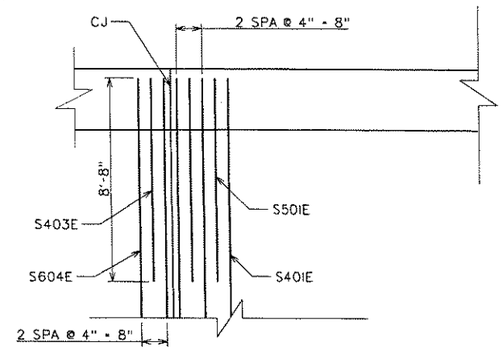
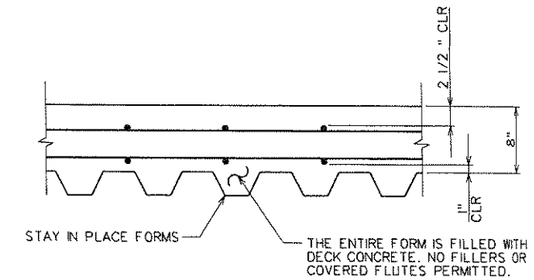
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	45	82



32" TYPE F BARRIER

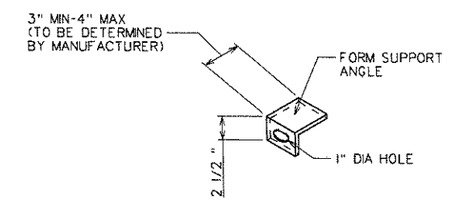


DETAIL A

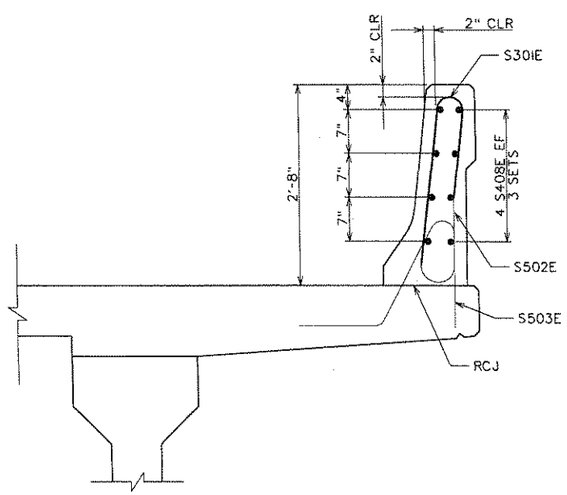


ESTIMATED AREA=1,697 SF

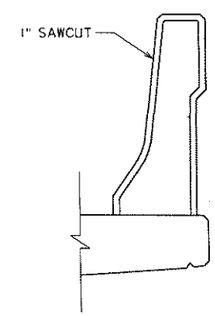
STAY IN PLACE FORM DETAIL



DETAIL B



32" TYPE F BARRIER REINFORCING



BARRIER CONTROL JOINT

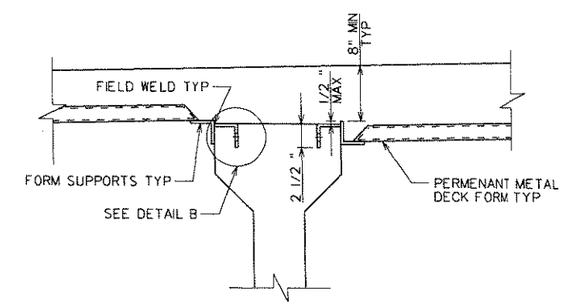
THE JOINTS SHALL BE CONSTRUCTED BY SAWING 1 INCH DEEP ALONG PERIMETER OF THE PARAPET. TIME CONSTRAINTS FOR SAWCUTTING WILL BE AS PER SPECIFICATION 601.8.8.

THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO ENSURE THAT THE CUT JOINTS IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WEDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH.

THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED WITH A SEALANT MATERIAL CONFORMING TO SPECIFICATION 708.4, TYPE I. APPLY SEALANT ACCORDING TO SPECIFICATION 501.16.1 TO A MINIMUM DEPTH OF 3/4 INCH THE BOTTOM ONE-HALF INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

IF PARAPETS ARE NOT SLIP FORMED, 'V' GROOVES AS SHOWN ON THIS SHEET MAY BE USED IN LIEU OF SAWCUT JOINTS. NO SEALANT IS REQUIRED FOR THE 'V' GROOVE OPTION.

PAYMENT FOR DEFLECTION JOINT SAWCUT AND SEALING MATERIAL FOR BARRIERS IS INCLUDED WITH CLASS H CONCRETE FOR PAYMENT.



STAY IN PLACE FORM ELEVATION

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: JNH | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DECK DETAILS

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 21 | TOTAL SHEETS 32

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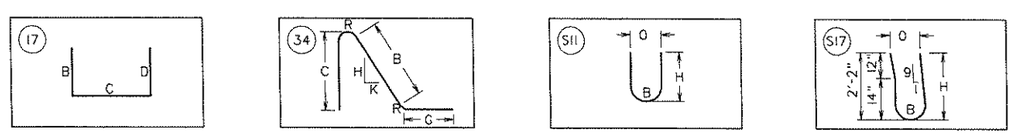
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	46	82

MARK	COUNT	TOTAL LENGTH	NUMBER PER SET	BEND TYPE	BENDING DIMENSIONS										
					A	B	C	D	E	F/R	G	H	J	K	O
S301E	236	2'-10"	-	S11	-	2'-10 1/4"	-	-	-	-	-	1'-4"	-	-	4"
S401E	84	34'-0"													
S402E	84	34'-0"													
S403E	54	8'-8"													
S404E	52	21'-2"													
S405E	52	43'-8"													
S406E	52	21'-11"													
S407E	52	44'-5"													
S408E	48	27'-5"													
S501E	166	8'-8"													
S502E	236	4'-7"		S17		4'-7"				2 1/2"		2'-2"			5 1/4"
S503E	236	4'-3"		34		1'-9 1/2"	1'-5"			1 7/8"	1'-0"	1'-5"		1'-1"	
S601E	104	14'-1"		17		3'-0"	11'-1"								
S602E	52	10'-1"													
S603E	52	10'-10"													
S604E	36	34'-0"													
S605E	29	34'-0"													



NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
2. DIMENSION "R" DESIGNATES OUTER BAR RADIUS.
3. ALL REINFORCING WITH "E" SUFFIX IS TO EPOXY COATED, ITEM 602002-001, EPOXY COATED REINFORCING STEEL BAR, ALL OTHER REINFORCING IS UNCOATED, ITEM 602001-001 REINFORCING STEEL BAR.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: JWF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DECK
REINFORCING SCHEDULE

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
22	32

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	47	82

LOCATION	BEAMS A&D					
	PRESTRESS CAMBER	DEFLECTION SELF WT	INITIAL CAMBER	DEFLECTION SLAB+HAUNCH+DIAPHRAGM	DEFLECTION BARRIERS	NET CAMBER
℄ BRG ABUT 1	0.000	0.000	0.000	0.000	0.000	0.000
0.1L	0.082	-0.030	0.052	-0.014	-0.001	0.036
0.2L	0.146	-0.054	0.092	-0.025	-0.002	0.065
0.3L	0.191	-0.071	0.121	-0.033	-0.002	0.085
0.4L	0.219	-0.081	0.138	-0.038	-0.003	0.097
0.5L	0.228	-0.084	0.144	-0.040	-0.003	0.101
0.6L	0.219	-0.081	0.138	-0.038	-0.003	0.097
0.7L	0.191	-0.071	0.121	-0.033	-0.002	0.085
0.8L	0.146	-0.054	0.092	-0.025	-0.002	0.065
0.9L	0.082	-0.030	0.052	-0.014	-0.001	0.036
℄ BRG ABUT 2	0.000	0.000	0.000	0.000	0.000	0.000

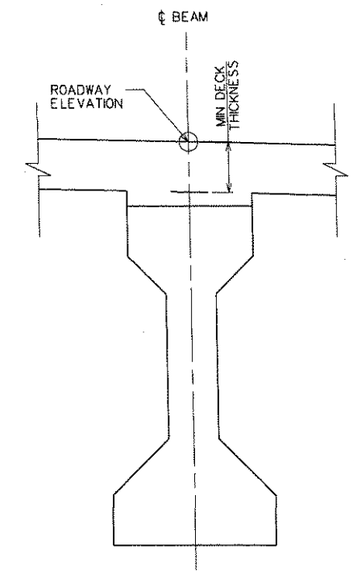
L = SPAN LENGTH (℄ BRG TO ℄ BRG)

LOCATION	BEAMS A&D					
	PRESTRESS CAMBER	DEFLECTION SELF WT	INITIAL CAMBER	DEFLECTION SLAB+HAUNCH+DIAPHRAGM	DEFLECTION BARRIERS	NET CAMBER
℄ BRG ABUT 1	0.000	0.000	0.000	0.000	0.000	0.000
0.1L	0.082	-0.030	0.052	-0.018	-0.001	0.033
0.2L	0.146	-0.054	0.092	-0.031	-0.002	0.059
0.3L	0.191	-0.071	0.121	-0.041	-0.002	0.077
0.4L	0.219	-0.081	0.138	-0.047	-0.003	0.088
0.5L	0.228	-0.084	0.144	-0.049	-0.003	0.092
0.6L	0.219	-0.081	0.138	-0.047	-0.003	0.088
0.7L	0.191	-0.071	0.121	-0.041	-0.002	0.077
0.8L	0.146	-0.054	0.092	-0.031	-0.002	0.059
0.9L	0.082	-0.030	0.052	-0.018	-0.001	0.033
℄ BRG ABUT 2	0.000	0.000	0.000	0.000	0.000	0.000

L = SPAN LENGTH (℄ BRG TO ℄ BRG)

LOCATION	STATION	LEFT GUTTER	BEAM A	BEAM B	BEAM C	BEAM D	RIGHT GUTTER
℄ BRG ABUT 1	14+96.00	564.59	564.55	564.36	564.18	563.99	563.95
0.1L	15+03.60	564.73	564.69	564.51	564.32	564.13	564.09
0.2L	15+11.20	564.88	564.84	564.65	564.46	564.28	564.24
0.3L	15+18.80	565.02	564.98	564.79	564.61	564.42	564.38
0.4L	15+26.40	565.16	565.12	564.94	564.75	564.56	564.52
0.5L	15+34.00	565.31	565.26	565.08	564.89	564.71	564.67
0.6L	15+41.60	565.45	565.41	565.22	565.03	564.85	564.81
0.7L	15+49.20	565.59	565.55	565.36	565.18	564.99	564.95
0.8L	15+56.80	565.73	565.69	565.51	565.32	565.13	565.09
0.9L	15+64.40	565.88	565.84	565.65	565.46	565.28	565.24
℄ BRG ABUT 2	15+72.00	566.02	565.98	565.79	565.61	565.42	565.38

L = SPAN LENGTH (℄ BRG TO ℄ BRG)



ELEVATION LOCATION

NOTES:

1. DEAD LOAD DEFLECTIONS AND ROADWAY ELEVATIONS GIVEN IN THE TABLE ARE MEASURED IN FEET.
2. DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE DECK, STAY-IN-PLACE FORMS, AND BARRIERS.
3. AFTER ALL BEAMS HAVE BEEN ERECTED, THE CONTRACTOR SHALL TAKE ELEVATIONS ALONG THE TOP OF THE BEAM FLANGES ON THE CENTERLINE AT THE POINTS WHERE THE ROADWAY ELEVATIONS ARE SHOWN. THE DIFFERENCE BETWEEN THESE ELEVATIONS AND THE ROADWAY ELEVATIONS, PLUS THE CONCRETE DEAD LOAD DEFLECTION WILL BE THE THICKNESS OF CLASS H CONCRETE DECK AT THESE POINTS.
4. THE MINIMUM DECK THICKNESS OVER THE TOP FLANGE OF THE BEAM SHALL NOT BE LESS THAN 8 IN.
5. IF THE BEAM HAS EXCESSIVE CAMBER AND THIS MINIMUM CANNOT BE OBTAINED, THE ROADWAY GRADE SHALL BE ADJUSTED TO OBTAIN THIS THICKNESS.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: VGM | CHECKED BY: KLF | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
DECK ELEVATIONS
AND DEFLECTIONS

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
23	32

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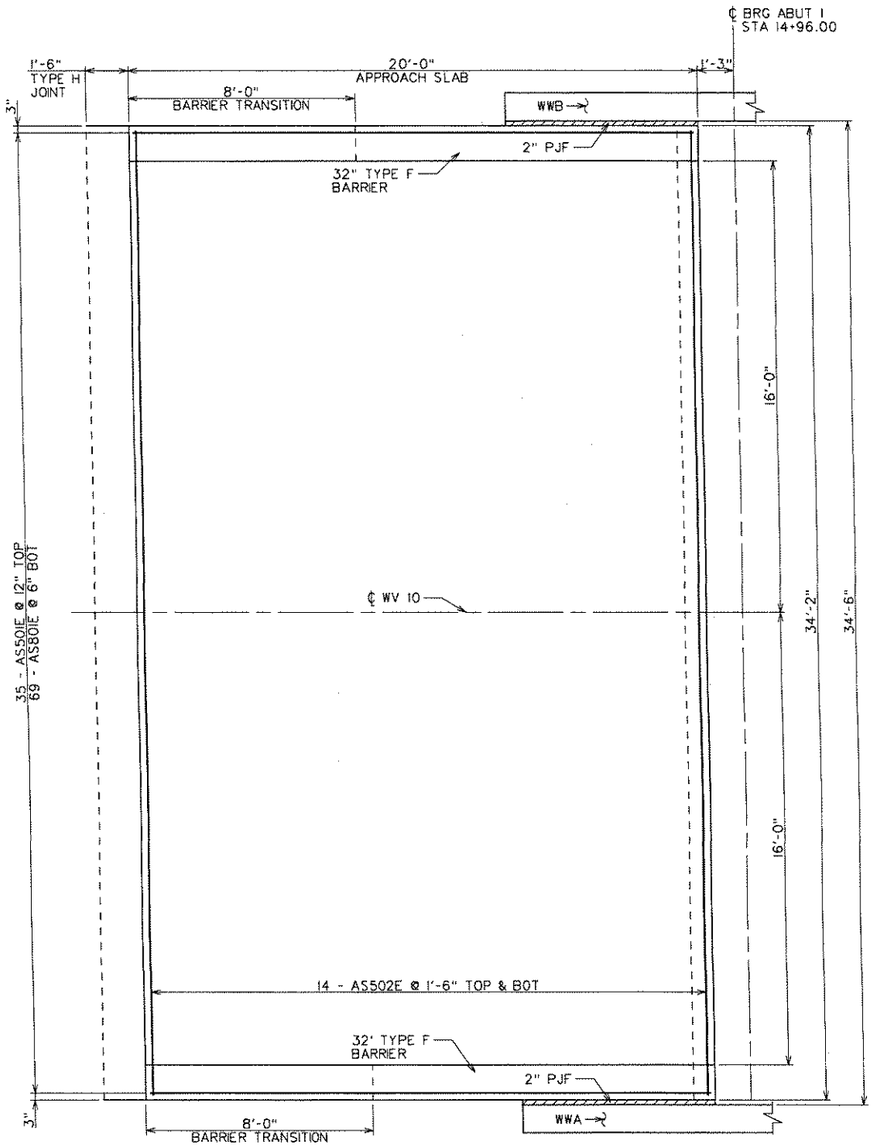
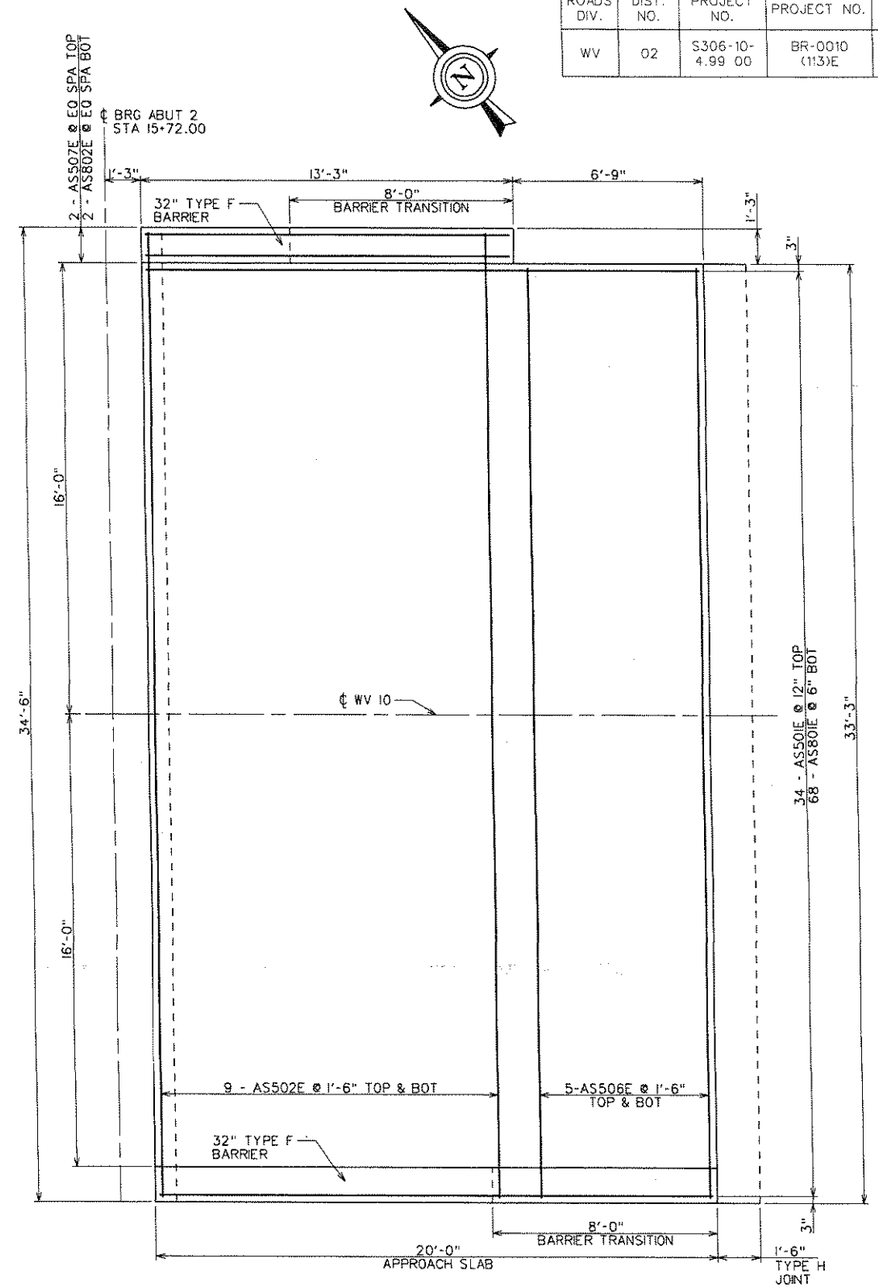
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	48	82



ABUTMENT 1 APPROACH SLAB PLAN



ABUTMENT 2 APPROACH SLAB PLAN

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: DAM | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
APPROACH SLAB
PLAN

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
24	32

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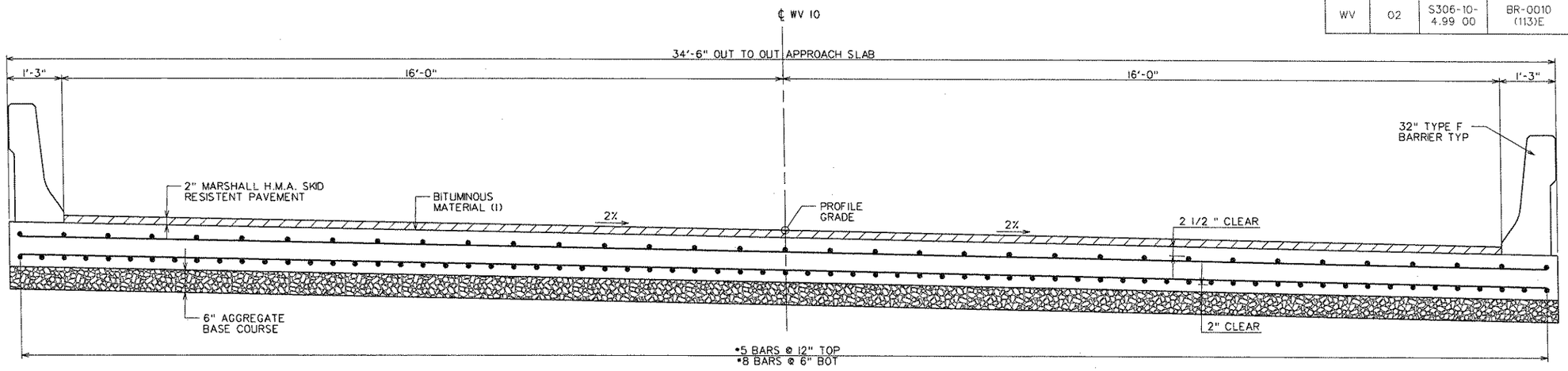
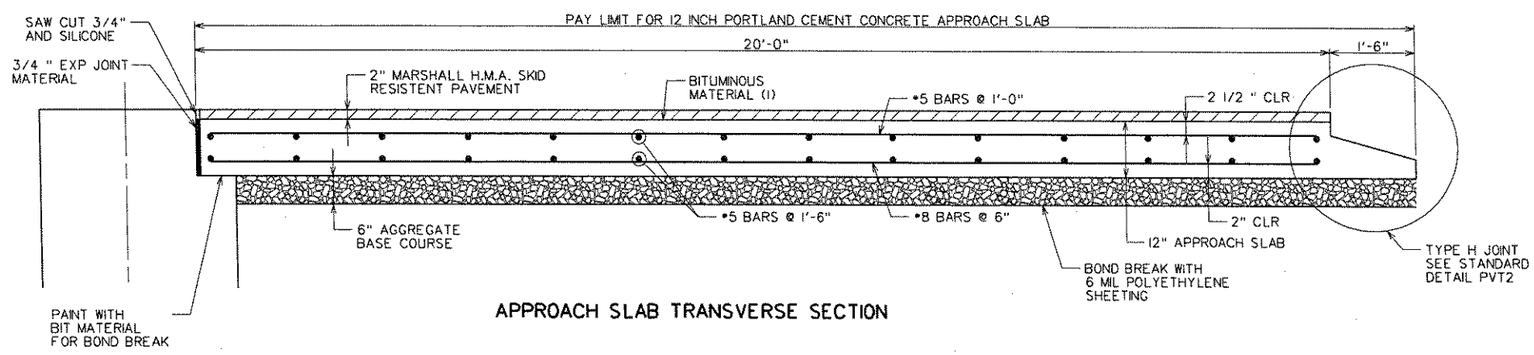
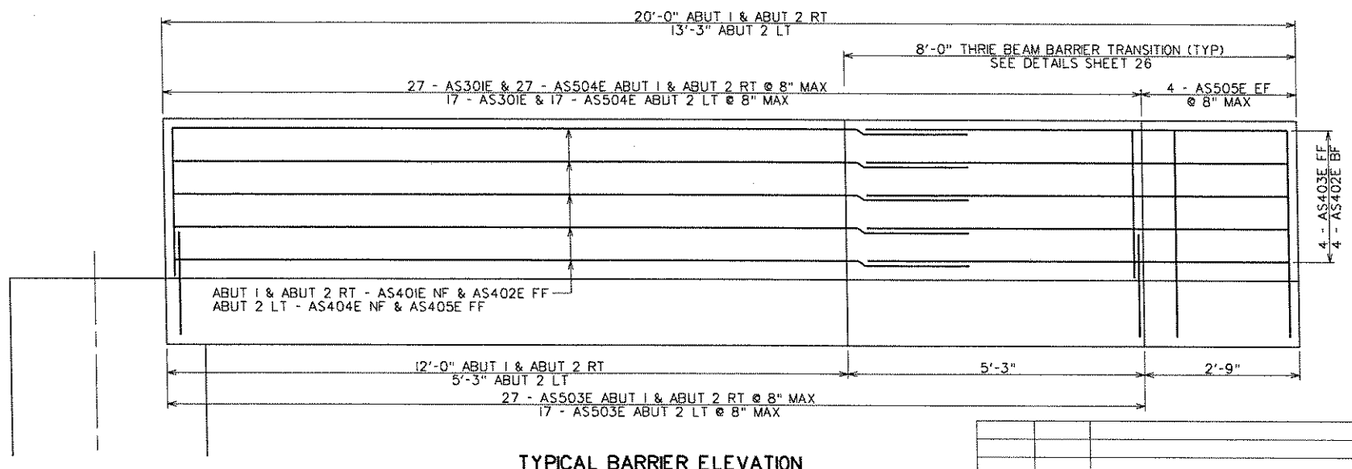
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	49	82



APPROACH SLAB SECTION



APPROACH SLAB TRANSVERSE SECTION



TYPICAL BARRIER ELEVATION

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ. MGR: KAH | DRAWN BY: DAM | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
APPROACH SLAB
DETAILS

FOX Engineering, PLLC

BRIDGE 10574

SHEET NO.	TOTAL SHEETS
25	32

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	50	82

ESTIMATED QUANTITIES - APPROACH SLABS (FOR INFORMATION ONLY)

ITEM NO.	DESCRIPTION	UNITS	ABUT 1	ABUT 2	TOTAL
307001-000	AGGREGATE BASE COURSE, CLASS 1	CY	14	14	28
502001-012	12 INCH PORTLAND CEMENT CONCRETE APPROACH SLAB	SY	83	82	164
401002-001	MARSHALL HOT-MIX ASPHALT WEARING COURSE, SG, TYPE 1	TN	8	8	16
601003-001	CLASS K CONCRETE	CY	4	3	7

ABUT 1 APPROACH SLAB - REBAR SCHEDULE

MARK	COUNT	TOTAL LENGTH	NUMBER PER SET	BEND TYPE	BENDING DIMENSIONS A	B	C	D	E	F/R	G	H	J	K	O
AS301E	54	2'-10"		S11		2'-10"						1'-4"			4"
AS401E	8	14'-0"													
AS402E	8	19'-8"													
AS403E	8	7'-6"		19			5'-0"	2'-6"				3 1/4 "		5'-0"	7'-6"
AS501E	35	19'-6"													
AS502E	28	34'-0"													
AS503E	54	4'-3"		34		1'-5"	1'-5"			1 7/8 "	1'-0"	1'-3"		8"	
AS504E	54	4'-7"		S17		4'-7"						2'-2"			4"
AS505E	16	4'-6"		2	1'-0"	3'-6"									
AS801E	69	19'-6"													

ABUT 2 APPROACH SLAB - REBAR SCHEDULE

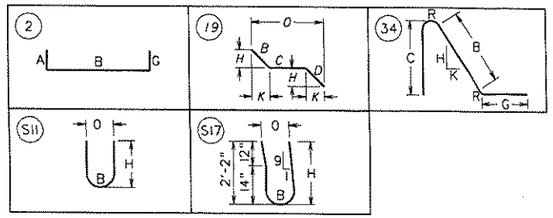
MARK	COUNT	TOTAL LENGTH	NUMBER PER SET	BEND TYPE	BENDING DIMENSIONS A	B	C	D	E	F/R	G	H	J	K	O
AS301E	44	2'-10"		S11		2'-10"						1'-4"			4"
AS401E	4	14'-0"													
AS402E	4	19'-8"													
AS403E	8	7'-6"		19			5'-0"	2'-6"				3 1/4 "		5'-0"	7'-6"
AS404E	4	7'-3"													
AS405E	4	12'-11"													
AS501E	34	19'-6"													
AS502E	18	34'-0"													
AS503E	44	4'-3"		34		1'-5"	1'-5"			1 7/8 "	1'-0"	1'-3"		8"	
AS504E	44	4'-7"		S17		4'-7"						2'-2"			4"
AS505E	16	4'-6"		2	1'-0"	3'-6"									
AS506E	10	32'-9"													
AS507E	2	12'-9"													
AS801E	68	19'-6"													
AS802E	3	12'-9"													

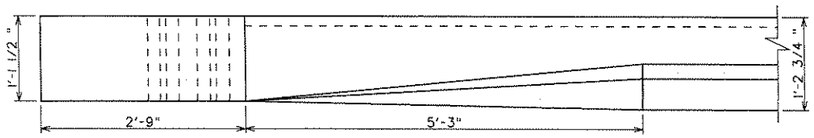
NOTES

1. THE APPROACH SLABS SHALL BE IN ACCORDANCE WITH THE SECTION 502 OF THE STANDARD SPECIFICATIONS, EXCEPT AS NOTED.
2. THE APPROACH SLABS SHALL BE PAID FOR AS 12-INCH PORTLAND CEMENT APPROACH SLAB, ITEM 502001-012, PER SQ. YD. METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE IN ACCORDANCE WITH ARTICLE 502.7 AND 502.8 OF THE SPECIFICATIONS.
3. EXPANSION JOINT MATERIAL SHALL CONFORM TO AASHTO STANDARD SPECIFICATION DESIGNATION M153, TYPE 1, SECTION 708.1.1.
4. REINFORCING SHALL CONFORM TO AASHTO M31, GRADE 60.
5. MATERIAL FOR SILICONE JOINT SEALANT SHALL CONFORM TO SECTION 708.4 OF THE SPECIFICATIONS.
6. CONCRETE SHALL BE CURED BY BURLAP AND WATER. THE USE OF VAPOR BARRIER BURLAP WILL BE PERMITTED.
7. THE APPROACH SLAB SHALL BE SLOPED IN ACCORDANCE WITH THE DETAILS.
8. THE COST OF THE BASE COURSE MATERIAL UNDER THE APPROACH SLABS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 307001-000, AGGREGATE BASE COURSE, CLASS 1 AND SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS.
9. APPROACH SLAB CONCRETE SHALL BE CLASS B CONCRETE.
10. THE APPROACH SLABS SHALL BE PRIMED WITH BITUMINOUS MATERIAL AND OVERLAYED WITH 2-INCH MARSHALL HOT-MIX ASPHALT SKID RESISTENT PAVEMENT. BITUMINOUS MATERIAL SHALL BE IN ACCORDANCE WITH ITEM 408002-001.
11. ALL REINFORCING STEEL BARS IN APPROACH SLABS SHALL BE EPOXY COATED.
12. THERE IS NO SEPERATE PAYMENT FOR PREFORMED EXPANSION JOINT MATERIAL, SILICONE JOINT SEALANT, BITUMINOUS MATERIAL, REINFORCING STEEL BARS, SAWING AND SEALING JOINTS. ALL COSTS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 502001-012, 12-INCH PORTLAND CEMENT CONCRETE APPROACH SLAB, PER SQ. YD.
13. ALL CONCRETE IN TYPE F BARRIER, SHALL BE CLASS K CONCRETE.

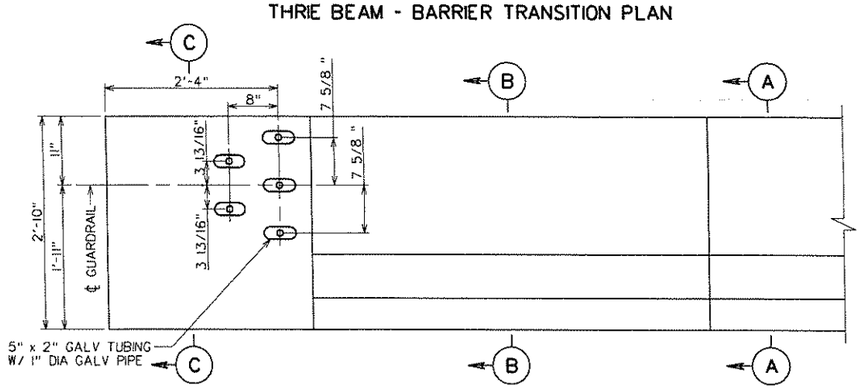
SUMMARY - REINFORCING STEEL BARS
(FOR INFORMATION ONLY)

SIZE	APPROACH SLAB ABUT NO 1	APPROACH SLAB ABUT NO 2	TOTAL
#3	58	47	105
#4	220	184	404
#5	2277	2178	4455
#8	3592	3643	7235
TOTAL	6147	6052	12199

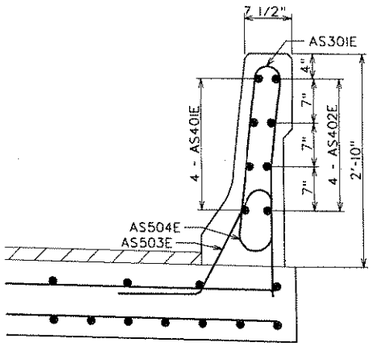




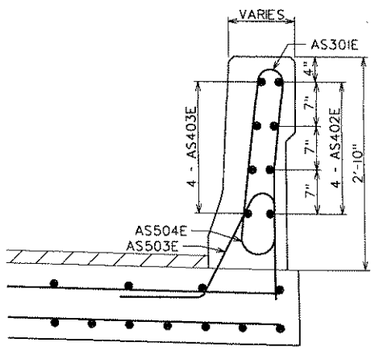
THRIE BEAM - BARRIER TRANSITION PLAN



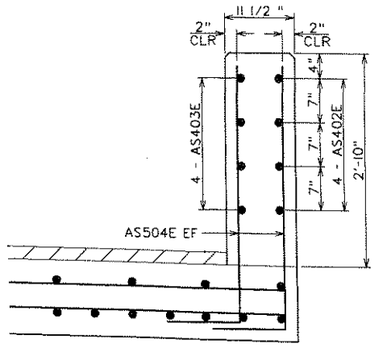
THRIE BEAM - BARRIER TRANSITION ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

LAP CHART	
BAR	LENGTH
#4	2'-0"

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: DAM | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
APPROACH SLAB
NOTES AND QUANTITIES

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
26	32

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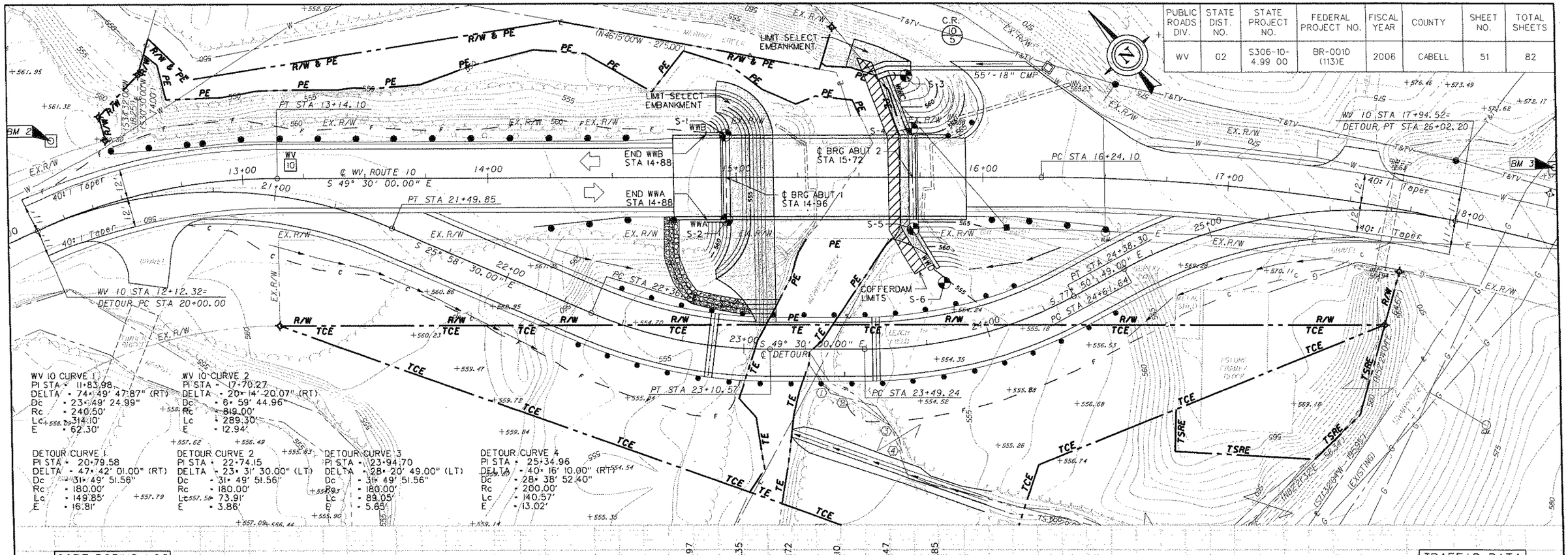
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	51	82

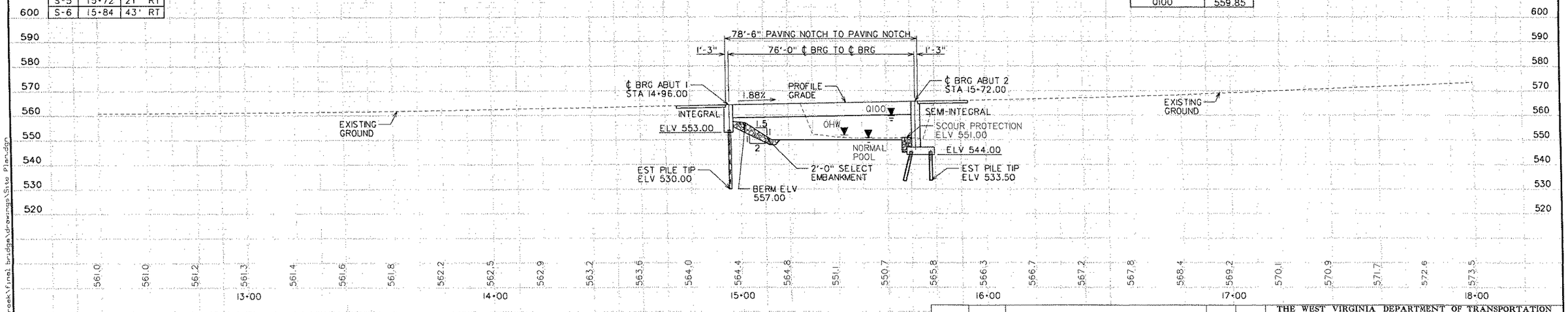


CORE BORING LOG		
CORE	STATION	OFFSET
S-1	14+96	17' LT
S-2	14+96	17' RT
S-3	15+70	42' LT
S-4	15+72	20' LT
S-5	15+72	21' RT
S-6	15+84	43' RT

LOW BEAM SEAT	
ABUT 1	558.59
ABUT 2	559.88

HYDRAULIC ELEVATIONS	
NORMAL POOL	551.00
OHW	552.00
Q100	559.85

TRAFFIC DATA	
YEAR	VEH PER DAY
2005	7000
2025	8400



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: DAM | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
SITUATION PLAN

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
27	32

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	53	82

Project Name: Merritt Creek Bridge, Cabell County, West Virginia
Project Number: 04-04-0076
TRIAD Engineering, Inc.

BORING LOG S-4

Location: Sta. 15+72 Offset: 20.0 LT
Surface El.: 562.5 ft.
Split Spoon; Shelby Tube; Rock Core; Bag Sample

ABUTMENT 2
EST PILE TIP
ELV 533.50

Depth, feet	Sample Type	Symbol / USCS	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows / 6 inches	Gravel %	Sand %	Silt and Clay %	Water Content %	Liquid Limit	Plastic Limit
			Brown SANDY TO CLAYEY SILT with rock fragments, wet, soft to very hard			1-1-1	39	44	17	23		
			- more sand (0.0 - 1.5 ft.)									
5						1-34-34						
			- boulder @ 6.0 ft.									
10			- boulder @ 10.0 ft.			50/5"						
			(A - 4)									
15			15.0									
			Gray SILTSTONE, soft to medium hard - weathered and soft (15.0 - 15.4 ft.)			50/5"						
			16.0									
			Gray SANDY SHALE, medium hard	50	0							
20			- vertical fracture (21.3 - 21.7 ft.)									
			21.7									
			Gray SANDSTONE, fine grained, medium hard to hard - vertical fracture (21.7 - 21.9 ft.) - unconfined compressive strength = 740 tsf (22.2 - 22.8 ft.) - high angle fractures (22.6 - 23.4 ft.)	94	42							
			23.4									
25			Gray SANDY SHALE, medium hard - clay lens at 25.3 ft.	80	0							
			28.0									
			Gray and reddish gray CLAYSTONE, soft to medium hard	76	16							
			Gray and reddish gray CLAYSTONE, soft to medium hard	40	0							
35			35.4									
			Bottom of Test Boring at 35.4 ft.									
40												
45												
50												
55												
60												

Completion Depth: 35.4 ft.
Date Boring Started: 3/2/05
Date Boring Completed: 3/2/05
Engineer/Geologist: JJH/ABN
Driller: WVDOH

Remarks: Water was noted at a depth of 0.5 ft. below the ground surface upon drilling completion.

Depth to Water @ 24 hrs.: 0.5 ft.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

TRIAD Engineering, Inc.

Figure 7

Project Name: Merritt Creek Bridge, Cabell County, West Virginia
Project Number: 04-04-0076
TRIAD Engineering, Inc.

BORING LOG S-5

Location: Sta. 15+72 Offset: 21.0 RT
Surface El.: 554.3 ft.
Split Spoon; Shelby Tube; Rock Core; Bag Sample

ABUTMENT 2
EST PILE TIP
ELV 533.50

Depth, feet	Sample Type	Symbol / USCS	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows / 6 inches	Gravel %	Sand %	Silt and Clay %	Water Content %	Liquid Limit	Plastic Limit
			TOPSOIL 0.2			1-2-4						
			Brown and gray SANDY TO CLAYEY SILT, wet, medium stiff									
5			- gray (5.0 - 20.0 ft.)			1-3-3				23	24	20
10						2-3-3						
15						2-3-3				24		
			(A - 4)									
20			20.0			50/6"						
			Gray SANDSTONE, fine grained, medium hard to hard - unconfined compressive strength = 550 tsf (21.3 - 22.1 ft.) - weathered (20.0 - 20.5 ft.)	96	40							
			23.3									
25			Gray SANDY SHALE, medium hard	88	20							
			27.8									
			Gray and reddish gray CLAYSTONE, soft	76	40							
			Gray and reddish gray CLAYSTONE, soft	44	24							
35			35.5	68	20							
			Gray and reddish gray SILTSTONE, soft to medium hard	60	0							
40			40.5	84	40							
			Bottom of Test Boring at 40.5 ft.									
45												
50												
55												
60												

Completion Depth: 40.5 ft.
Date Boring Started: 3/1/05
Date Boring Completed: 3/1/05
Engineer/Geologist: JJH/ABN
Driller: WVDOH

Remarks: Water was noted at a depth of 1.5 ft. below the ground surface upon drilling completion.

Depth to Water @ 24 hrs.: 2.0 ft.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

TRIAD Engineering, Inc.

Figure 9

Project Name: Merritt Creek Bridge, Cabell County, West Virginia
Project Number: 04-04-0076
TRIAD Engineering, Inc.

BORING LOG S-6

Location: Sta. 18+84 Offset: 43.0 RT
Surface El.: 554.9 ft.
Split Spoon; Shelby Tube; Rock Core; Bag Sample

Depth, feet	Sample Type	Symbol / USCS	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows / 6 inches	Gravel %	Sand %	Silt and Clay %	Water Content %	Liquid Limit	Plastic Limit
			TOPSOIL 0.2			2-4-4						
			Brown and gray SANDY TO CLAYEY SILT, moist, medium stiff to stiff									
5			- sand lens (5.0 - 6.5 ft.)			2-3-3						
10			- gray (10.0 - 20.0 ft.)			5-5-8				23		
15						2-3-3						
			(A - 4)									
20			20.0			13-29-26						
			Gray and brown SILTSTONE, weathered, very soft			50/2"						
			21.5									
			Gray SANDSTONE, fine grained, hard									
			23.7									
25			Gray SANDY SHALE, medium hard to hard - unconfined compressive strength = 640 tsf (23.9 - 24.3 ft.)	82	48							
			- reddish gray at (28.3 - 29.1 ft.)	88	32							
			29.3									
			Gray CLAYSTONE, soft	86	48							
			Gray CLAYSTONE, soft									
			31.8									
			Bottom of Test Boring at 31.8 ft.									
35												
40												
45												
50												
55												
60												

Completion Depth: 31.8 ft.
Date Boring Started: 2/28/05
Date Boring Completed: 2/28/05
Engineer/Geologist: JJH/ABN
Driller: WVDOH

Remarks: Water was noted at a depth of 2.3 ft. below the ground surface upon drilling completion.

Depth to Water @ 24 hrs.: 1.5 ft.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

TRIAD Engineering, Inc.

Figure 11

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 11/29/2005

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
CORE BORING LOGS
S-4 THRU S-6

FOX Engineering, PLLC

BRIDGE	10574
SHEET NO.	TOTAL SHEETS
29	32

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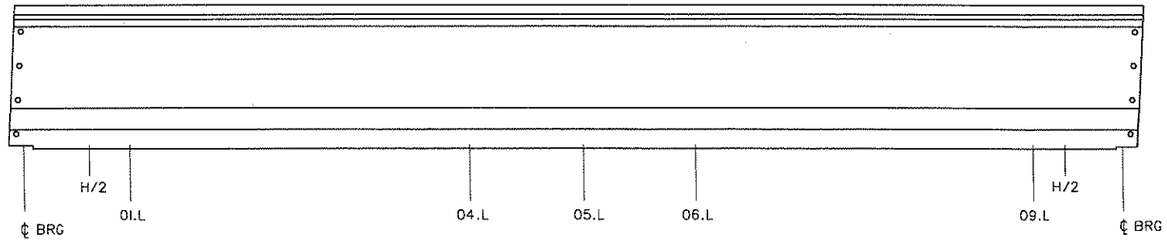
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	54	82



EXTERIOR BEAMS A & D

BEAM SECTION PROPERTIES

LOCATION	SECTION MODULUS TO THE TOP AND BOTTOM FLANGES				SECTION MODULUS TO THE TOP AND BOTTOM PRESTRESSING STRANDS			
	NONCOMPOSITE		COMPOSITE		NONCOMPOSITE		COMPOSITE	
	S_{TOP} (IN³)	S_{BOT} (IN³)	S_{TOP} (IN³)	S_{BOT} (IN³)	S_{TOP} (IN³)	S_{BOT} (IN³)	S_{TOP} (IN³)	S_{BOT} (IN³)
H/2	8,908	10,543	36,272	15,932	12,646	11,471	76,374	16,829
0.1L	8,908	10,543	36,272	15,932	18,208	11,471	390,800	16,829
0.4L	8,908	10,543	36,272	15,932	10,543	11,471	15,932	16,829
0.5L	8,908	10,543	36,272	15,932	10,543	11,471	15,932	16,829
0.6L	8,908	10,543	36,272	15,932	10,543	11,471	15,932	16,829
0.9L	8,908	10,543	36,272	15,932	18,208	11,471	390,800	16,829
H/2	8,908	10,543	36,272	15,932	12,646	11,471	76,374	16,829

SECTION CAPACITY

LOCATION	f'c (PSI)	CONCRETE TENSION (PSI)	CONCRETE COMPRESSION CASE 1 (PSI)	CONCRETE COMPRESSION CASE 2 (PSI)	FLEXURAL STRENGTH (K-FT)	H20 SHEAR STRENGTH (KIPS)	HS20 SHEAR STRENGTH (KIPS)	3S2 SHEAR STRENGTH (KIPS)	TYPE 3 SHEAR STRENGTH (KIPS)
H/2	8,000	-537	4,800	3,200	1,663	~~298~~ 387	~~298~~ 387	~~298~~ 387	~~298~~ 387
0.1L	8,000	-537	4,800	3,200	3,904	~~241~~ 396	~~241~~ 396	~~241~~ 396	~~241~~ 396
0.4L	8,000	-537	4,800	3,200	6,192	~~118~~ 144	~~115~~ 141	~~89~~ 115	~~89~~ 115
0.5L	8,000	-537	4,800	3,200	6,192	~~89~~ 115	~~89~~ 115	~~89~~ 115	~~89~~ 115
0.6L	8,000	-537	4,800	3,200	6,192	~~118~~ 144	~~115~~ 141	~~89~~ 115	~~89~~ 115
0.9L	8,000	-537	4,800	3,200	3,904	~~241~~ 396	~~241~~ 396	~~241~~ 396	~~241~~ 396
H/2	8,000	-537	4,800	3,200	1,663	~~298~~ 387	~~298~~ 387	~~298~~ 387	~~298~~ 387

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LRFD LIVE LOAD DISTRIBUTION FACTORS

LOCATION	MOMENT LLDF		SHEAR LLDF	
	ONE LANE	TWO + LANES	ONE LANE	TWO + LANES
H/2	0.814	0.821	0.814	0.821
0.1L	0.814	0.821	0.814	0.821
0.4L	0.814	0.821	0.814	0.821
0.5L	0.814	0.821	0.814	0.821
0.6L	0.814	0.821	0.814	0.821
0.9L	0.814	0.821	0.814	0.821
H/2	0.814	0.821	0.814	0.821

DESIGN MOMENTS AND AXIAL LOADS (LL+I MOMENTS HAVE A LLDF = 1.0)

LOCATION	DEAD LOAD		PRESTRESS		H20 TRUCK		HS20 TRUCK/LANE		3S2 TRUCK		TYPE 3 TRUCK	
	DL1 (K-FT)	DL2 (K-FT)	AXIAL (KIP)	MOMENT (K-FT)	M (+) (K-FT)	M (-) (K-FT)	M (+) (K-FT)	M (-) (K-FT)	M (+) (K-FT)	M (-) (K-FT)	M (+) (K-FT)	M (-) (K-FT)
H/2	162	33	807	672	119	0	195	0	167	0	139	0
0.1L	415	85	807	788	328	0	531	0	448	0	381	0
0.4L	1,191	244	807	1,394	855	0	1,333	0	1,110	0	968	0
0.5L	1,242	255	807	1,394	879	0	1,359	0	1,112	0	994	0
0.6L	1,191	244	807	1,394	855	0	1,333	0	1,110	0	968	0
0.9L	415	85	807	788	328	0	531	0	448	0	381	0
H/2	162	33	807	672	119	0	195	0	167	0	139	0

DESIGN SHEAR (LL+I SHEARS HAVE A LLDF = 1.0)

LOCATION	DL1 (KIPS)	DL2 (KIPS)	H20 TRUCK (KIPS)	HS20 T/L (KIPS)	3S2 TRUCK (KIPS)	TYPE 3 TRUCK (KIPS)
H/2	62	13	46	76	65	54
0.1L	53	11	43	70	59	50
0.4L	~~14~~ 13	3	28	43	32	31
0.5L	0	0	23	34	23	25
0.6L	~~14~~ 13	3	28	43	32	31
0.9L	53	11	43	70	59	50
H/2	62	13	46	76	65	54

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CONTROLLING RATING FACTOR

	H20		HS20		3S2		TYPE 3	
IRF	~~1.88~~	2.47	~~1.22~~	1.56	~~1.19~~	1.65	~~1.23~~	1.71
ORF	~~3.15~~	4.12	~~2.03~~	2.61	~~1.99~~	2.76	~~2.06~~	2.85

CONTROLLING RATING TONS

	H20		HS20		3S2		TYPE 3	
IR	~~37.7~~	49.3	~~43.9~~	56.2	~~42.9~~	59.5	~~30.8~~	42.7
OR	~~62.9~~	82.3	~~73.2~~	93.8	~~71.7~~	99.3	~~51.4~~	71.3

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H20 TRUCK

LOCATION	STRESSES			FLEXURE		SHEAR	
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF	ORF
H/2	28.74	137.78	93.64	6.64	11.09	~~2.47~~ 3.56	~~4.12~~ 5.95
0.1L	9.46	47.72	32.84	5.57	9.29	~~2.05~~ 4.08	~~3.43~~ 6.82
0.4L	3.04	17.10	11.99	2.84	4.74	~~1.94~~ 2.47	~~3.24~~ 4.12
0.5L	2.83	16.33	11.51	2.71	4.53	~~2.18~~ 2.81	~~3.63~~ 4.69
0.6L	3.04	17.10	11.99	2.84	4.74	~~1.94~~ 2.47	~~3.24~~ 4.12
0.9L	9.46	47.72	32.84	5.57	9.29	~~2.05~~ 4.08	~~3.43~~ 6.82
H/2	28.74	137.78	93.64	6.64	11.09	~~2.47~~ 3.56	~~4.12~~ 5.95

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HS20 TRUCK/LANE

LOCATION	STRESSES			FLEXURE		SHEAR	
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF	ORF
H/2	17.54	84.08	57.15	4.05	6.77	~~1.49~~ 2.16	~~2.49~~ 3.60
0.1L	5.85	29.48	20.28	3.44	5.74	~~1.26~~ 2.51	~~2.11~~ 4.19
0.4L	1.95	10.97	7.69	1.82	3.04	~~1.22~~ 1.56	~~2.03~~ 2.61
0.5L	1.83	10.56	7.45	1.75	2.93	~~1.47~~ 1.90	~~2.46~~ 3.17
0.6L	1.95	10.97	7.69	1.82	3.04	~~1.22~~ 1.56	~~2.03~~ 2.61
0.9L	5.85	29.48	20.28	3.44	5.74	~~1.26~~ 2.51	~~2.11~~ 4.19
H/2	17.54	84.08	57.15	4.05	6.77	~~1.49~~ 2.16	~~2.49~~ 3.60

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3S2 TRUCK

LOCATION	STRESSES			FLEXURE		SHEAR	
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF	ORF
H/2	20.48	98.18	66.73	4.73	7.90	~~1.75~~ 2.52	~~2.91~~ 4.21
0.1L	6.93	34.94	24.04	4.08	6.80	~~1.50~~ 2.98	~~2.50~~ 4.97
0.4L	2.34	13.17	9.24	2.19	3.65	~~1.19~~ 1.65	~~1.99~~ 2.76
0.5L	2.24	12.90	9.10	2.14	3.58	~~2.18~~ 2.81	~~3.63~~ 4.69
0.6L	2.34	13.17	9.24	2.19	3.65	~~1.19~~ 1.65	~~1.99~~ 2.76
0.9L	6.93	34.94	24.04	4.08	6.80	~~1.50~~ 2.98	~~2.50~~ 4.97
H/2	20.48	98.18	66.73	4.73	7.90	~~1.75~~ 2.52	~~2.91~~ 4.21

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TYPE 3 TRUCK

LOCATION	STRESSES			FLEXURE		SHEAR	
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF	ORF
H/2	24.61	117.96	80.17	5.69	9.49	~~2.10~~ 3.03	~~3.51~~ 5.07
0.1L	8.15	41.08	28.27	4.79	8.00	~~1.77~~ 3.51	~~2.95~~ 5.86
0.4L	2.68	15.10	10.59	2.51	4.19	~~1.23~~ 1.71	~~2.06~~ 2.85
0.5L	2.51	14.44	10.18	2.40	4.00	~~2.00~~ 2.59	~~3.34~~ 4.32
0.6L	2.68	15.10	10.59	2.51	4.19	~~1.23~~ 1.71	~~2.06~~ 2.85
0.9L	8.15	41.08	28.27	4.79	8.00	~~1.77~~ 3.51	~~2.95~~ 5.86
H/2	24.61	117.96	80.17	5.69	9.49	~~2.10~~ 3.03	~~3.51~~ 5.07

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NOTES:
1. TENSION STRESS IS ASSUMED TO BE NEGATIVE.
2. IF THE BEAMS HAVE SUFFERED SIGNIFICANT DETERIORATION, RECALCULATE THE BEAM SECTION PROPERTIES TO REFLECT THIS DETERIORATION.
3. BEAM AREA = 789 SQ. IN.
4. THE BEAMS WERE DESIGNED BASED ON THE AASHTO LRFD HL-93 DESIGN LIVE LOADING.
5. DL1 IS THE MOMENT DUE TO THE WEIGHT OF THE CONCRETE BEAMS, DIAPHRAGMS, HAUNCHES, STAY IN PLACE FORMS, AND THE CONCRETE DECK. THESE FORCE EFFECTS ARE RESISTED BY THE NON-COMPOSITE BEAM.
6. DL2 IS THE MOMENT DUE TO THE WEIGHT OF THE BARRIERS AND FUTURE WEARING SURFACE. THESE FORCE EFFECTS ARE RESISTED BY THE COMPOSITE BEAM.
7. PRESTRESS FORCE MOMENT AND THE AXIAL LOAD ARE THE PRESTRESS FORCE EFFECTS AFTER ALL LOSSES. THESE FORCE EFFECTS ARE RESISTED BY THE NON-COMPOSITE BEAM.
8. VEHICLE DESIGN MOMENTS SHOWN ARE SERVICE MOMENTS AND INCLUDE IMPACT AND THE AASHTO LRFD LIVE LOAD GIRDER DISTRIBUTION FACTOR.
9. VEHICLE DESIGN SHEARS SHOWN ARE SERVICE SHEARS AND INCLUDE IMPACT AND THE AASHTO LRFD LIVE LOAD GIRDER DISTRIBUTION FACTOR.
10. FLEXURAL STRENGTH AND SHEAR STRENGTH SHOWN ARE CALCULATED BASED ON AASHTO LRFD PROVISIONS.
11. FLEXURAL STRENGTH AND SHEAR STRENGTH SHOWN INCLUDE THE APPROPRIATE AASHTO LRFD RESISTANCE FACTORS.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	30,31,32	Corrected Load Rating Information	8/06	VGM

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 8/15/2006

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
LOAD RATING
(1 OF 3)

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 30 | TOTAL SHEETS 32

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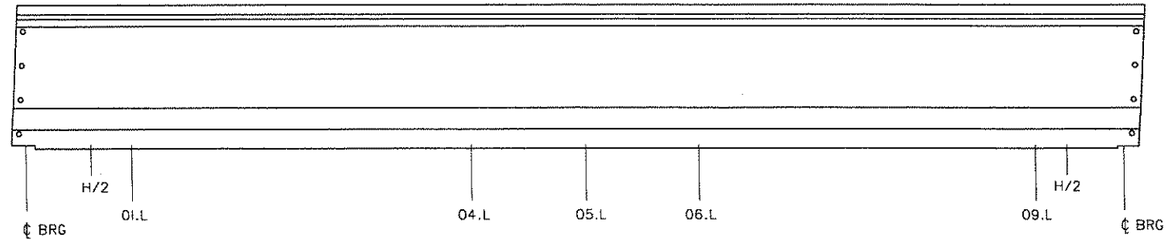
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	55	82



INTERIOR BEAMS B & C

BEAM SECTION PROPERTIES

LOCATION	SECTION MODULUS TO THE TOP AND BOTTOM FLANGES				SECTION MODULUS TO THE TOP AND BOTTOM PRESTRESSING STRANDS			
	NONCOMPOSITE		COMPOSITE		NONCOMPOSITE		COMPOSITE	
	S_{TOP} (IN³)	S_{BOT} (IN³)	S_{TOP} (IN³)	S_{BOT} (IN³)	S_{TOP} (IN³)	S_{BOT} (IN³)	S_{TOP} (IN³)	S_{BOT} (IN³)
H/2	8,908	10,543	40,456	16,214	12,646	11,471	91,962	17,101
0.1L	8,908	10,543	40,456	16,214	18,208	11,471	1,251,120	17,101
0.4L	8,908	10,543	40,456	16,214	10,543	11,471	16,214	17,101
0.5L	8,908	10,543	40,456	16,214	10,543	11,471	16,214	17,101
0.6L	8,908	10,543	40,456	16,214	10,543	11,471	16,214	17,101
0.9L	8,908	10,543	40,456	16,214	18,208	11,471	1,251,120	17,101
H/2	8,908	10,543	40,456	16,214	12,646	11,471	91,962	17,101

SECTION CAPACITY

LOCATION	f'c (PSI)	CONCRETE TENSION (PSI)	CONCRETE COMPRESSION CASE 1 (PSI)	CONCRETE COMPRESSION CASE 2 (PSI)	FLEXURAL STRENGTH (K-FT)	H20 SHEAR STRENGTH (KIPS)		HS20 SHEAR STRENGTH (KIPS)		3S2 SHEAR STRENGTH (KIPS)		TYPE 3 SHEAR STRENGTH (KIPS)	
H/2	8,000	-537	4,800	3,200	1,666	~~297~~	386	~~297~~	386	~~297~~	386	~~297~~	386
0.1L	8,000	-537	4,800	3,200	3,929	~~242~~	398	~~242~~	398	~~242~~	398	~~242~~	398
0.4L	8,000	-537	4,800	3,200	6,246	~~117~~	143	~~113~~	139	~~89~~	115	~~89~~	115
0.5L	8,000	-537	4,800	3,200	6,246	~~89~~	115	~~89~~	115	~~89~~	115	~~89~~	115
0.6L	8,000	-537	4,800	3,200	6,246	~~117~~	143	~~113~~	139	~~89~~	115	~~89~~	115
0.9L	8,000	-537	4,800	3,200	3,929	~~242~~	398	~~242~~	398	~~242~~	398	~~242~~	398
H/2	8,000	-537	4,800	3,200	1,666	~~297~~	386	~~297~~	386	~~297~~	386	~~297~~	386

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LRFD LIVE LOAD DISTRIBUTION FACTORS

LOCATION	MOMENT LLDF		SHEAR LLDF	
	ONE LANE	TWO + LANES	ONE LANE	TWO + LANES
H/2	0.582	0.825	0.733	0.907
0.1L	0.582	0.825	0.733	0.907
0.4L	0.582	0.825	0.733	0.907
0.5L	0.582	0.825	0.733	0.907
0.6L	0.582	0.825	0.733	0.907
0.9L	0.582	0.825	0.733	0.907
H/2	0.582	0.825	0.733	0.907

DESIGN MOMENTS AND AXIAL LOADS (LL+I MOMENTS HAVE A LLDF = 1.0)

LOCATION	DEAD LOAD		PRESTRESS		H20 TRUCK		HS20 TRUCK/LANE		3S2 TRUCK		TYPE 3 TRUCK	
	DL1 (K-FT)	DL2 (K-FT)	AXIAL (KIP)	MOMENT (K-FT)	M (+) (K-FT)	M (-) (K-FT)	M (+) (K-FT)	M (-) (K-FT)	M (+) (K-FT)	M (-) (K-FT)	M (+) (K-FT)	M (-) (K-FT)
H/2	182	33	812	676	119	0	195	0	167	0	139	0
0.1L	465	85	812	793	328	0	531	0	448	0	381	0
0.4L	1,334	244	812	1,402	855	0	1,333	0	1,110	0	968	0
0.5L	1,392	255	812	1,402	879	0	1,359	0	1,112	0	994	0
0.6L	1,334	244	812	1,402	855	0	1,333	0	1,110	0	968	0
0.9L	465	85	812	793	328	0	531	0	448	0	381	0
H/2	182	33	812	676	119	0	195	0	167	0	139	0

DESIGN SHEAR (LL+I SHEARS HAVE A LLDF = 1.0)

LOCATION	DL1 (KIPS)	DL2 (KIPS)	H20 TRUCK (KIPS)	HS20 T/L (KIPS)	3S2 TRUCK (KIPS)	TYPE 3 TRUCK (KIPS)
H/2	68	13	46	76	65	54
0.1L	60	11	43	70	59	50
0.4L	15	3	28	43	32	31
0.5L	0	0	23	34	23	25
0.6L	15	3	28	43	32	31
0.9L	60	11	43	70	59	50
H/2	68	13	46	76	65	54

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CONTROLLING RATING FACTOR

	H20		HS20		3S2		TYPE 3	
IRF	~~1.63~~	2.17	~~1.06~~	1.37	~~1.05~~	1.47	~~1.09~~	1.51
ORF	~~2.72~~	3.62	~~1.77~~	2.29	~~1.76~~	2.45	~~1.81~~	2.52

CONTROLLING RATING TONS

	H20		HS20		3S2		TYPE 3	
IR	~~32.6~~	43.4	~~38.1~~	49.4	~~37.9~~	52.7	~~27.2~~	37.8
OR	~~54.4~~	72.5	~~63.6~~	82.5	~~63.2~~	88.0	~~45.3~~	63.1

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H20 TRUCK

LOCATION	STRESSES			FLEXURE		SHEAR			
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF		ORF	
H/2	28.95	152.05	103.50	6.51	10.86	~~2.12~~	3.10	~~3.54~~	5.18
0.1L	9.36	52.17	36.05	5.47	9.14	~~1.78~~	3.62	~~2.97~~	6.04
0.4L	2.80	18.12	12.88	2.74	4.57	~~1.70~~	2.17	~~2.84~~	3.62
0.5L	2.59	17.25	12.34	2.61	4.36	~~1.97~~	2.54	~~3.29~~	4.25
0.6L	2.80	18.12	12.88	2.74	4.57	~~1.70~~	2.17	~~2.84~~	3.62
0.9L	9.36	52.17	36.05	5.47	9.14	~~1.78~~	3.62	~~2.97~~	6.04
H/2	28.95	152.05	103.50	6.51	10.86	~~2.12~~	3.10	~~3.54~~	5.18

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HS20 TRUCK/LANE

LOCATION	STRESSES			FLEXURE		SHEAR			
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF		ORF	
H/2	17.67	92.79	63.16	3.97	6.63	~~1.26~~	1.88	~~2.14~~	3.14
0.1L	5.78	32.23	22.27	3.38	5.64	~~1.09~~	2.22	~~1.82~~	3.71
0.4L	1.80	11.62	8.26	1.76	2.93	~~1.07~~	1.37	~~1.78~~	2.29
0.5L	1.67	11.16	7.98	1.69	2.82	~~1.33~~	1.72	~~2.22~~	2.87
0.6L	1.80	11.62	8.26	1.76	2.93	~~1.07~~	1.37	~~1.78~~	2.29
0.9L	5.78	32.23	22.27	3.38	5.64	~~1.09~~	2.22	~~1.82~~	3.71
H/2	17.67	92.79	63.16	3.97	6.63	~~1.26~~	1.88	~~2.14~~	3.14

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3S2 TRUCK

LOCATION	STRESSES			FLEXURE		SHEAR			
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF		ORF	
H/2	20.63	108.35	73.75	4.64	7.74	~~1.56~~	2.20	~~2.51~~	3.67
0.1L	6.86	38.20	26.40	4.01	6.69	~~1.30~~	2.64	~~2.16~~	4.40
0.4L	2.16	13.96	9.92	2.11	3.52	~~1.05~~	1.47	~~1.76~~	2.45
0.5L	2.05	13.63	9.76	2.06	3.44	~~1.97~~	2.54	~~3.29~~	4.25
0.6L	2.16	13.96	9.92	2.11	3.52	~~1.05~~	1.47	~~1.76~~	2.45
0.9L	6.86	38.20	26.40	4.01	6.69	~~1.30~~	2.64	~~2.16~~	4.40
H/2	20.63	108.35	73.75	4.64	7.74	~~1.56~~	2.20	~~2.51~~	3.67

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TYPE 3 TRUCK

LOCATION	STRESSES			FLEXURE		SHEAR			
	IRF TENSION	IRF COMP CASE 1	IRF COMP CASE 2	IRF	ORF	IRF		ORF	
H/2	24.79	130.17	88.60	5.57	9.30	~~1.81~~	2.64	~~3.02~~	4.41
0.1L	8.06	44.91	31.04	4.71	7.87	~~1.53~~	3.11	~~2.55~~	5.19
0.4L	2.47	16.00	11.38	2.42	4.04	~~1.09~~	1.51	~~1.81~~	2.52
0.5L	2.29	15.25	10.92	2.31	3.85	~~1.81~~	2.34	~~3.02~~	3.91
0.6L	2.47	16.00	11.38	2.42	4.04	~~1.09~~	1.51	~~1.81~~	2.52
0.9L	8.06	44.91	31.04	4.71	7.87	~~1.53~~	3.11	~~2.55~~	5.19
H/2	24.79	130.17	88.60	5.57	9.30	~~1.81~~	2.64	~~3.02~~	4.41

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NOTES:
1. TENSION STRESS IS ASSUMED TO BE NEGATIVE.
2. IF THE BEAMS HAVE SUFFERED SIGNIFICANT DETERIORATION, RECALCULATE THE BEAM SECTION PROPERTIES TO REFLECT THIS DETERIORATION.
3. BEAM AREA = 789 SQ. IN.
4. THE BEAMS WERE DESIGNED BASED ON THE AASHTO LRFD HL-93 DESIGN LIVE LOADING.
5. DL1 IS THE MOMENT DUE TO THE WEIGHT OF THE CONCRETE BEAMS, DIAPHRAGMS, HAUNCHES, STAY IN PLACE FORMS, AND THE CONCRETE DECK. THESE FORCE EFFECTS ARE RESISTED BY THE NON-COMPOSITE BEAM.
6. DL2 IS THE MOMENT DUE TO THE WEIGHT OF THE BARRIERS AND FUTURE WEARING SURFACE. THESE FORCE EFFECTS ARE RESISTED BY THE COMPOSITE BEAM.
7. PRESTRESS FORCE MOMENT AND THE AXIAL LOAD ARE THE PRESTRESS FORCE EFFECTS AFTER ALL LOSSES. THESE FORCE EFFECTS ARE RESISTED BY THE NON-COMPOSITE BEAM.
8. VEHICLE DESIGN MOMENTS SHOWN ARE SERVICE MOMENTS AND INCLUDE IMPACT AND THE AASHTO LRFD LIVE LOAD GIRDER DISTRIBUTION FACTOR.
9. VEHICLE DESIGN SHEARS SHOWN ARE SERVICE SHEARS AND INCLUDE IMPACT AND THE AASHTO LRFD LIVE LOAD GIRDER DISTRIBUTION FACTOR.
10. FLEXURAL STRENGTH AND SHEAR STRENGTH SHOWN ARE CALCULATED BASED ON AASHTO LRFD PROVISIONS.
11. FLEXURAL STRENGTH AND SHEAR STRENGTH SHOWN INCLUDE THE APPROPRIATE AASHTO LRFD RESISTANCE FACTORS.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	30,31,32	Corrected Load Rating Information	8/06	VGM

PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 8/15/2006

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
LOAD RATING
(2 OF 3)

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 31 | TOTAL SHEETS 32

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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
WV	02	S306-10-4.99 00	BR-0010 (113)E	2006	CABELL	56	82

Sample Rating Calculations

Rating of an interior beam for HS20 Vehicle.

Rating for flexure and concrete stresses at 0.5L.

- Applied moment, section properties and design data:

M_{DL1} = 1,392 K-FT
M_{DL2} = 255 K-FT
M^*_{LL+I} = 1,359 K-FT (live load moment based on one lane)
P = 812 K (effective prestress after losses)
$S_{t\ flange\ N.C.}$ = 8,908 IN^3
$S_{b\ flange\ N.C.}$ = 10,543 IN^3
$S_{t\ flange\ Comp.}$ = 40,456 IN^3
$S_{b\ flange\ Comp.}$ = 16,214 IN^3
A_{beam} = 789 IN^2
Ecc. = 20.73 IN
f'_c = 8,000 PSI
LLDF = 0.825 (AASHTO LRFD live load distribution factor)
ϕM_n = 6,246 K-FT

- Convert live load moment:

$$M_{LL+I} = LLDF\,(M^*_{LL+I})$$

$$M_{LL+I} = 0.825\,(1{,}359) = 1{,}121\ K\text{-}FT$$

Concrete Stresses

- Concrete tension (bottom of precast beam)

$$F_d = \frac{M_{DL1}}{S_{b\ flange\ N.C.}} + \frac{M_{DL2}}{S_{b\ flange\ Comp.}}$$

$$F_d = \frac{1{,}392\,(12)}{10{,}543}(-1) + \frac{255\,(12)}{16{,}214}(-1) = -1.77\ KSI$$

$$F_p = P\left[\frac{1}{A_{beam}} + \frac{Ecc.}{S_{b\ flange\ N.C.}}\right]$$

$$F_p = 812\left[\frac{1}{789} + \frac{20.73}{10{,}543}\right] = 2.63\ KSI$$

$$F_{LL+I} = \frac{M_{LL+I}}{S_{b\ flange\ Comp.}}$$

$$F_{LL+I} = \frac{1{,}121\,(12)}{16{,}214}(-1) = -0.83\ KSI$$

$$IRF = \frac{-6\sqrt{f'_c} - (F_d + F_p + F_s)}{F_l}$$

$$IRF = \frac{-6\sqrt{8{,}000}\,(\frac{1}{1{,}000}) - (-1.77 + 2.63 + 0)}{-0.83} = 1.67$$

- Concrete compression (top of precast beam)

$$F_d = \frac{M_{DL1}}{S_{t\ flange\ N.C.}} + \frac{M_{DL2}}{S_{t\ flange\ Comp.}}$$

$$F_d = \frac{1{,}392\,(12)}{8{,}908} + \frac{255\,(12)}{40{,}456} = 1.95\ KSI$$

$$F_p = P\left[\frac{1}{A_{beam}} - \frac{Ecc.}{S_{t\ flange\ N.C.}}\right]$$

$$F_p = 812\left[\frac{1}{789} - \frac{20.73}{8{,}908}\right] = -0.86\ KSI$$

$$F_{LL+I} = \frac{M_{LL+I}}{S_{t\ flange\ Comp.}}$$

$$F_{LL+I} = \frac{1{,}121\,(12)}{40{,}456} = 0.33\ KSI$$

Case 1

$$IRF = \frac{0.6f'_c - (F_d + F_p + F_s)}{F_l}$$

$$IRF = \frac{4.8 - (1.95 + -0.86 + 0)}{0.33} = 11.16$$

Case 2

$$IRF = \frac{0.4f'_c - 0.5(F_d + F_p + F_s)}{F_l}$$

$$IRF = \frac{3.2 - 0.5(1.95 + -0.86 + 0)}{0.33} = 7.98$$

Positive Flexure

$$IRF = \frac{\phi M_n - [1.3(M)_{DL1} + 1.3(M)_{DL2} + M_s]}{2.17(M)_{LL+I}}$$

$$IRF = \frac{6{,}246 - [1.3\,(1{,}392) + 1.3\,(255) + 0]}{2.17\,(1{,}121)} = 1.69$$

$$ORF = \frac{\phi M_n - [1.3(M)_{DL1} + 1.3(M)_{DL2} + M_s]}{1.3(M)_{LL+I}}$$

$$ORF = \frac{6{,}246 - [1.3\,(1.392) + 1.3\,(255) + 0]}{1.3\,(1{,}121)} = 2.82$$

Shear Rating at ~~0.1L~~ 0.4L.

- Applied shear and design data:

V_{DL1} = ~~60~~ 15 K
V_{DL2} = ~~11~~ 3 K
V^*_{LL+I} = ~~70~~ 43 K (live load shear based on one lane)
ϕV_n = ~~242~~ 139 K
LLDF = 0.907 (AASHTO LRFD live load distribution factor)

- Convert live load shear:

$$V_{LL+I} = LLDF\,(V^*_{LL+I})$$

$$V_{LL+I} = 0.907\,(\cancel{70}\ 43) = \cancel{63.5}\ 39.0K$$

$$IRF = \frac{\phi V_n - [1.3(V)_{DL1} + 1.3(V)_{DL2} + V_s]}{2.17(V)_{LL+I}}$$

$$IRF = \frac{\cancel{242}\ 139 - [1.3\,(\cancel{60}\ 15) + 1.3\,(\cancel{11}\ 3) + 0]}{2.17\,(\cancel{63.5}\ 39.0)} = \cancel{1.09}\ 1.37$$

$$ORF = \frac{\phi V_n - [1.3(V)_{DL1} + 1.3(V)_{DL2} + V_s]}{1.3(V)_{LL+I}}$$

$$ORF = \frac{\cancel{242}\ 139 - [1.3\,(\cancel{60}\ 15) + 1.3\,(\cancel{11}\ 3) + 0]}{1.3\,(\cancel{63.5}\ 39.0)} = \cancel{1.82}\ 2.28$$

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REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
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PROJ MGR: KAH | DRAWN BY: KLF | CHECKED BY: VGM | DATE: 8/15/2006

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERRITT CREEK BRIDGE
LOAD RATINGS
(3 OF 3)

FOX Engineering, PLLC

BRIDGE 10574
SHEET NO. 32 | TOTAL SHEETS 32

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