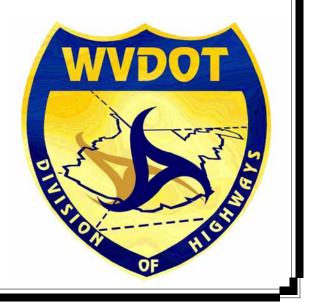


WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS STANDARD DETAILS BOOK VOLUME 3 BRIDGES AND MISCELLANEOUS STRUCTURES

ISSUE DATE: AUGUST 1, 1999

INCLUDES ADDENDUM 1, 2, 3 AND ERRATA

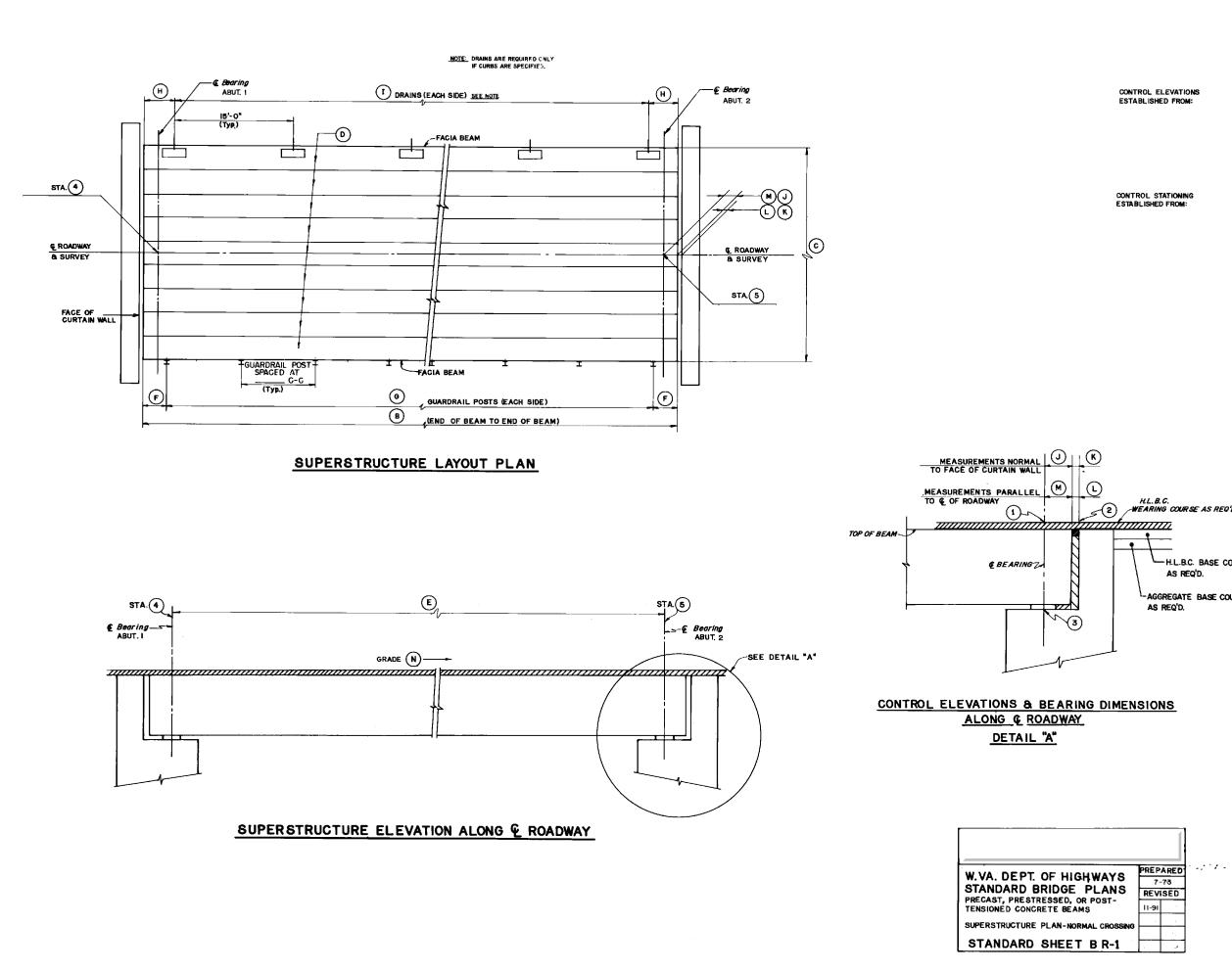


BR-1 SUPERSTRUCTURE PLAN-NORMAL CROSSING BR-1 SUPERSTRUCTURE PLAN-LEFT FORWAD SKEW BR-1 SUPERSTRUCTURE PLAN-RIGHT FORWARD SKEW BR-PS1 REINFORCED CONCRETE PIER STEM DET BR-1A SUPERSTRUCTURE PLAN ON PILING NORMAL CROSSING BR-PS2 REINFORCED CONCRETE PIER FOOTING ON PILING BR-1A SUPERSTRUCTURE PLAN ON LEFT FORWARD SKEW BR-PS3 REINFORCED CONCRETE PIER LAYOUT BR-1A SUPERSTRUCTURE PLAN ON PILING RIGHT FORWARD SKEW BR-DD1 DECK DRAIN DETAILS FOR AASHTO TYPE IV PRECAST PC BEAM SUPERSTRUCTURE BR-2A **GENERAL NOTES** BR-DD2 DECK DRAIN DETAILS FOR AASHTO TYPE IV MODIFIED PRECAST PC BEAM SUPERSTRUCTURE BR-2B **GENERAL NOTES** BR-DD3 DECK DRAIN DETAILS FOR PRECAST PC BOX BEAM SUPERSTRUCTURE BR-7S CONCRETE ABUTMENT BRIDGE SEAT DETAILS-LT. FORWARD SKEW DECK DRAIN DETAILS FOR STEEL SUPERSTRUCTURE BR-DD4 BR-7S CONCRETE ABUTMENT BRIDGE SEAT DETAILS-RT. FORWARD SKEW BRD-B 17X36 17"X36" P.C. SPREAD BOX BEAM BR-10 STEEL BEAM STRINGERS AND TIMBER DECK BRD-B 21X36 21"X36" P.C. SPREAD BOX BEAM DOWEL LAMINATED TIMBER DECK **BR-10A** BRD-B 27X36 27"X36" P.C. SPREAD BOX BEAM BR-11 STEEL BEAM STRINGERS AND STEEL GRID DECK BRD-B 33X36 33"X36" P.C. SPREAD BOX BEAM **BR-11M** MODIFIED STEEL GRID DETAILS-OPEN TYPE BRD-B 39X36 39"X36" P.C. SPREAD BOX BEAM BR-12 SHOE ASSEMBLY DETAILS-SPAN 60'-0" OR LESS BRD-B 42X36 42"X36" P.C. SPREAD BOX BEAM **BR-12L** SHOE ASSEMBLY DETAILS BRD--B17X48 17"X48" P.C. SPREAD BOX BEAM BR-13 CONCRETE ABUTMENT LAYOUT BRD--B21X48 21"X48" P.C. SPREAD BOX BEAM **BR-P13** CONCRETE ABUTMENT ON PILING 27"X48" P.C. SPREAD BOX BEAM BRD--B27X48 **BR-P14** CONCRETE ABUTMENT ON PILING-REINFORCING STEEL DETAILS BRD--B33X48 33"X48" P.C. SPREAD BOX BEAM CONCRETE ABUTMENT ON PILING-LEFT WINGWALL DETAILS BR--P15 BRD--B39X48 39"X48" P.C. SPREAD BOX BEAM **BR-P16** CONCRETE ABUTMENT ON PILING-RIGHT WINGWALL DETAILS BRD-B42X48 42"X48" P.C. SPREAD BOX BEAM **BR**--**P17** CONCRETE ABUTMENT ON PILING-RANGE 1, 2, & 3 AASHTO TYPE II 36" PRECAST CONCRETE BEAM BRD-II 36X12 **BR**_**P17** CONCRETE ABUTMENT ON PILING-RANGE 4 & 5 AASHTO TYPE III 45" PRECAST CONCRETE BEAM BRD-III 45X16 BR-14 REINFORCED CONCRETE ABUTMENT-REINFORCING STEEL DETAILS BRD-IV 54X20 AASHTO TYPE IV 54" PRECAST CONCRETE BEAM **BR-14S** BRIDGE SEAT DETAILS-LEFT FORWARD SKEW BRD-IVJ 60X37 AASHTO TYPE IV-J PC BEAM 60" DEEP, 37" TOP FLANGE BRIDGE SEAT DETAILS-RIGHT FORWARD SKEW **BR-14S** BRD-IVJ 60X43 AASHTO TYPE IV-J PC BEAM 60" DEEP, 43" TOP FLANGE BR-15 LEFT WINGWALL DETAILS BRD-IVJ 60X49 AASHTO TYPE IV-J PC BEAM 60" DEEP, 49" TOP FLANGE BR-16 **RIGHT WINGWALL DETAILS** BRD-IVJ 60X61 AASHTO TYPE IV-J PC BEAM 60" DEEP, 61" TOP FLANGE **BR-17** ABUTMENT FOOTING-RANGE 1, 2, & 3 BRD-IVJ 66X37 AASHTO TYPE IV-J PC BEAM 66" DEEP, 37" TOP FLANGE BR-17 ABUTMENT FOOTING-RANGE 4 & 5 AASHTO TYPE IV-J PC BEAM 66" DEEP, 49" TOP FLANGE BRD-IVJ 66X43 **BR-17A ABUTMENT FOOTING** BRD-IVJ 66X49 AASHTO TYPE IV-J PC BEAM 66" DEEP, 49" TOP FLANGE BR-S12A 12" PRESTRESSED PLANK BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVJ 66X61 AASHTO TYPE IV-J PC BEAM 66" DEEP, 61" TOP FLANGE BR-S12B DESIGN TABLE FOR 12" PRESTRESSED PLANK BEAM **BRD-IVJ** 72X37 AASHTO TYPE IV-J PC BEAM 72" DEEP, 37" TOP FLANGE BR--B17A 17" PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVJ 72X43 AASHTO TYPE IV-J PC BEAM 72" DEEP, 43" TOP FLANGE BR--B17B DESIGN TABLE FOR 17" PRESTRESSED BOX BEAM BRD-IVJ 72X49 AASHTO TYPE IV-J PC BEAM 72" DEEP, 49" TOP FLANGE BR-B21A 21" PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS AASHTO TYPE IV-J PC BEAM 72" DEEP, 61" TOP FLANGE BRD-IVJ 72X61 BR-B21B DESIGN TABLE FOR 21" PRESTRESSED BOX BEAM BRD-IVJ 78X37 AASHTO TYPE IV-J PC BEAM 78" DEEP, 37" TOP FLANGE BR-B27A 27" PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVJ 78X43 AASHTO TYPE IV-J PC BEAM 78" DEEP, 43" TOP FLANGE BR-B27B DESIGN TABLE FOR 27" PRESTRESSED BOX BEAM BRD-IVJ 78X49 AASHTO TYPE IV-J PC BEAM 78" DEEP, 49" TOP FLANGE BR-B33A 33" PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS **BRD-IVJ** 78X61 AASHTO TYPE IV-J PC BEAM 78" DEEP, 61" TOP FLANGE BR-B33B DESIGN TABLE FOR 33" PRESTRESSED BOX BEAM **BRD-IVJ 84X37** AASHTO TYPE IV-J PC BEAM 84" DEEP, 37" TOP FLANGE BR-B39A 39" PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS AASHTO TYPE IV-J PC BEAM 84" DEEP, 43" TOP FLANGE BRD-IVJ 84X43 BR-B39B DESIGN TABLE FOR 39" PRESTRESSED BOX BEAM BRD-IVJ 84X49 AASHTO TYPE IV-J PC BEAM 84" DEEP, 49" TOP FLANGE BR-B42A 42" PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVJ 84X61 AASHTO TYPE IV-J PC BEAM 84" DEEP, 61" TOP FLANGE BR-B42B DESIGN TABLE FOR 42" PRESTRESSED BOX BEAM BRD-IVM 60X36 AASHTO TYPE IV MODIFIED 60" PRECAST CONCRETE BEAM BR-B100 PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVM 66X36 AASHTO TYPE IV MODIFIED 66" PRECAST CONCRETE BEAM BR-B101 PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVM 72X36 AASHTO TYPE IV MODIFIED 72" PRECAST CONCRETE BEAM PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BR--B102A BRD-IVM 78X36 AASHTO TYPE IV MODIFIED 78" PRECAST CONCRETE BEAM BR-B102B PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS BRD-IVM 84X36 AASHTO TYPE IV MODIFIED 84" PRECAST CONCRETE BEAM BR--B103 PRESTRESSED BOX BEAM TRANSVERSE POST-TENSIONING DESIGN AND ASSEMBLY DETAILS BR--B104 PRESTRESSED BOX BEAM DESIGN AND ASSEMBLY DETAILS PRESTRESSED CONCRETE BEAM DESIGN AND ASSEMBLY NOTES BR-B105A BR-B105B PRESTRESSED CONCRETE BEAM DESIGN AND ASSEMBLY NOTES BR--B106 PRESTRESSED CONCRETE BEAM SKEWED END REINFORCING MISC. DESIGN AND ASSEMBLY DETAILS BR-T1 GLULAM TIMBER SUPERSTRUCTURE PLAN-NORMAL CROSSING BR-T1 GLULAM TIMBER SUPERSTRUCTURE PLAN-RIGHT FORWARD SKEW BR-T1 GLULAM TIMBER SUPERSTRUCTURE PLAN-LEFT FORWARD SKEW BR-T2 GLULAM TIMBER SUPERSTRUCTURE PLAN-GENERAL NOTES BR-T3 GLULAM TIMBER SUPERSTRUCTURE DECK FASTENING DETAILS GLULAM TIMBER SUPERSTRUCTURE DIAPHRAGM DETAILS BR-T4 BR-T5 GLULAM TIMBER SUPERSTRUCTURE-GUARDRAIL POST DETAILS GLULAM TIMBER SUPERSTRUCTURE-GIRDER ANCHORAGE DETAILS BR-T6 BR-PP2 REINFORCED CONCRETE PIER ON PILES LAYOUT **BR-PP3** REINFORCED CONCRETE PIER STEM DETAILS (SQUARE NOSE) Dregoy Baily DATE ____09/22/08 APPROVED

DIRECTOR ENGINEERING DIVISION

PROJECT	NUMBERS	DISTRICT	COUNTY	SHEET	TOTAL
STATE	FEDERAL		COONT	NO.	
 ROUND NO	SE)				

		NO.	REVISION	DATE:	BY:
		WEST	VIRGINIA DEPARTMENT OF TRANS	PORTA	TION
		-	DIVISION OF HIGHWAYS		-
			ENGINEERING DIVISION		
DESIGNED	DATE				
	12/5/06				
DRÁWN					
CHE CHED	_		lau	<u></u>	
CHECKED			SHE	OF	
REVIEWED				BRIDGE N	ю.



 PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W. VA.					

CODE	ABUTMENT 1	ABUTMENT 2
+*		
2*		
3		

FIFWEARING SURFACE IS DE-LETED, AFFECTED ELEV-ATIONS SHALL BE TAKEN AT THE TOP SURFACE OF THE BEAM AND CURTAIN WALL.

CONTROL STATIONING

CONTROL DIMENSIONS

DIMENSION	CODE	VALUE
NORMAL CROSSING	•	
LENGTH OF BEAMS, OUT-TO-OUT	B	
DECK WIDTH, OUT-TO-OUT	с	
NUMBER OF BEAMS	D	
SPAN LENGTH, & BEARING TO & BEARING	E	
DISTANCE FROM END OF BEAM TO FIRST GUARDRAIL POST	F	
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G	
DISTANCE FROM END OF BEAM TO & OF DRAIN (IF REQUIRED)	н	
NUMBER OF DRAINS, EACH SIDE	I	
PERPENDICULAR DISTANCE FROM & BEARING TO END OF BEAM	J	
PERPENDICULAR WIDTH OF EXPAN- SION OPENING	к	
WIDTH OF EXPANSION OPENING PARALLEL TO & OF ROADWAY	L	
DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)	м	
GRADE	N	
	DIMENSION NORMAL CROSSING LENGTH OF BEAMS, OUT-TO-OUT DECK WIDTH, OUT-TO-OUT NUMBER OF BEAMS SPAN LENGTH, & BEARING TO & BEARING DISTANCE FROM END OF BEAM TO FIRST GUARDRAIL POST NUMBER OF GUARDRAIL POSTS, EACH SIDE DISTANCE FROM END OF BEAM TO & OF DRAIN (IF REQUIRED) NUMBER OF DRAINS, EACH SIDE (IF REQUIRED) PERPENDICULAR DISTANCE FROM & BEARING TO END OF BEAM PERPENDICULAR WIDTH OF EXPAN- SION OPENING WIDTH OF EXPANSION OPENING PARALLEL TO & OF ROADWAY DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)	NORMAL CROSSING A LENGTH OF BEAMS, OUT-TO-OUT B DECK WIDTH, OUT-TO-OUT C NUMBER OF BEAMS D SPAN LENGTH, & BEARING TO E DISTANCE FROM END OF BEAM TO F NUMBER OF GUARDRAIL POST F NUMBER OF GUARDRAIL POSTS, G DISTANCE FROM END OF BEAM TO F NUMBER OF GUARDRAIL POSTS, G DISTANCE FROM END OF BEAM TO H VUMBER OF DRAINS, EACH SIDE I PERPENDICULAR DISTANCE FROM J PERPENDICULAR WIDTH OF EXPANSION OPENING K WIDTH OF EXPANSION OPENING K WIDTH OF EXPANSION OPENING PARALLEL TO & OF ROADWAY L DISTANCE FROM & BEARING TO END M

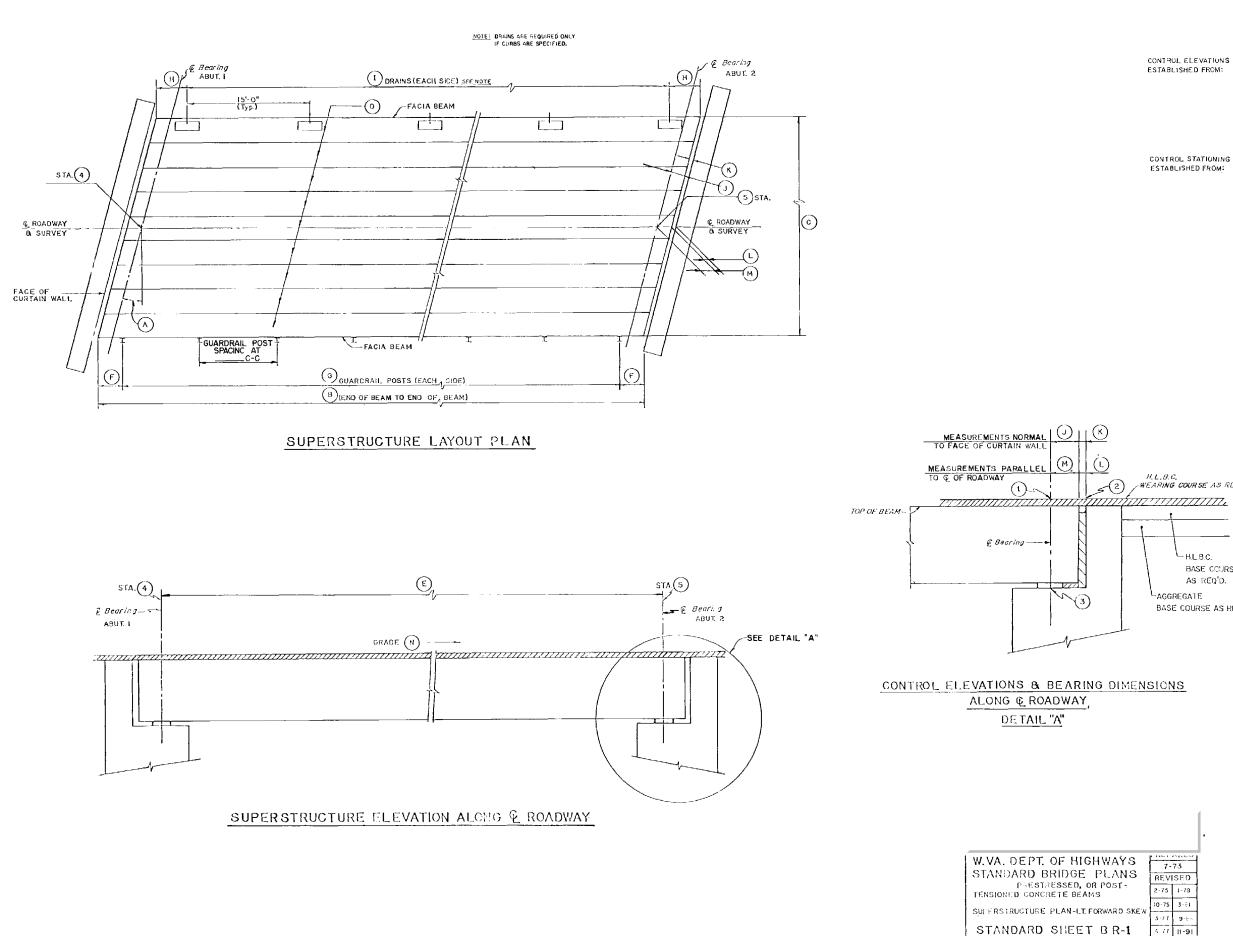
ESTIMATE OF QUANTITIES

ITEM		DESCRIPTION	UNIT	QUANTITY
603-1		PRESTRESSED CONCRETE BEAMS	L.F.	
40I-I(I)		H.L.B.C. BASE COURSE	TON	
307-1		CLASS I AGGREGATE BASE COURSE	C.Y.	
40I-2(<u>I</u> I)	Р	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (STONE OR GRAVEL AGGREGATE)	TON	
40!-2(III)	A	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (SLAG AGGREGATE)	TON	

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STRUCTURES DIVISION

DESIGNED BY: DRAWN BY: CHECKED BY: REVIEWED BY: DATE: BCALE: NON E BRIDGE NUMBER

SUPERSTRUCTURE PLAN



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS

CODE	ABUTMENT 1	ABUTMENT 2
1 *		
2*		
3		

X IF WEARING SURFACE IS DE-LETED, AFFECTED ELEV-ATIONS SHALL BE TAKEN AT THE TOP SURFACE OF THE BEAM AND CURTAIN WALL.

CONTROL STATIONING

CONTROL STATIONING ESTABLISHED FROM:

CODE	LOCATION	STATION	VALUE
CODE	LUCATION	ABUT, 1	ABUT 2
4	C BRIDGE AT		
5	C BRIDGE AT		

CONTROL DIMENSIONS

DIMENSION	CODE	VALUE
LEFT FORWARD SKEW	A	
LENGTH OF BEAMS, OUT-TO-OUT	8	
DECK WIDTH, OUT-TO-OUT	c	
NUMBER OF BEAMS	D	
SPAN LENGTH, & BEARING TO & BEARING	E	
DISTANCE FROM END OF BEAM TO FIRST GUARDRAIL POST	F	
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G	
DISTANCE FROM END OF BEAM TO & OF DRAIN (IF REQUIRED)	н	
NUMBER OF DRAINS, EACH SIDE	τ	
PERPENDICULAR DISTANCE FROM © BEARING TO END OF BEAM	J	
PERPENDICULAR WIDTH OF EXPAN- SION OPENING	к	
WIDTH OF EXPANSION OPENING FARALLEL TO & OF ROADWAY	L.	
DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)	м	
GRADE	N	

ESTIMATE OF QUANTITIES

ITEM		DESCRIPTION	UNIT	QUANTITY
603-1		PRESTRESSED CONCRETE BEAMS	L.F.	
.401-1(1)		H.L.B.C. BASE COURSE	TON	
307-1		CLASS AGGREGATE BASE COURSE	C. Y.	
40 1-2(II)	P	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (STONE OR GRAVEL AGGREGATE)	TON	
401-2(11)	Λ	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (SLAG AGGREGATE)	TON	



DESIGNED UY:
DRAWH BY:
CHARLES D. BY
- 1. " WED BY:
OATE
NONE
ទាកដ
BRIDGE NUMBER

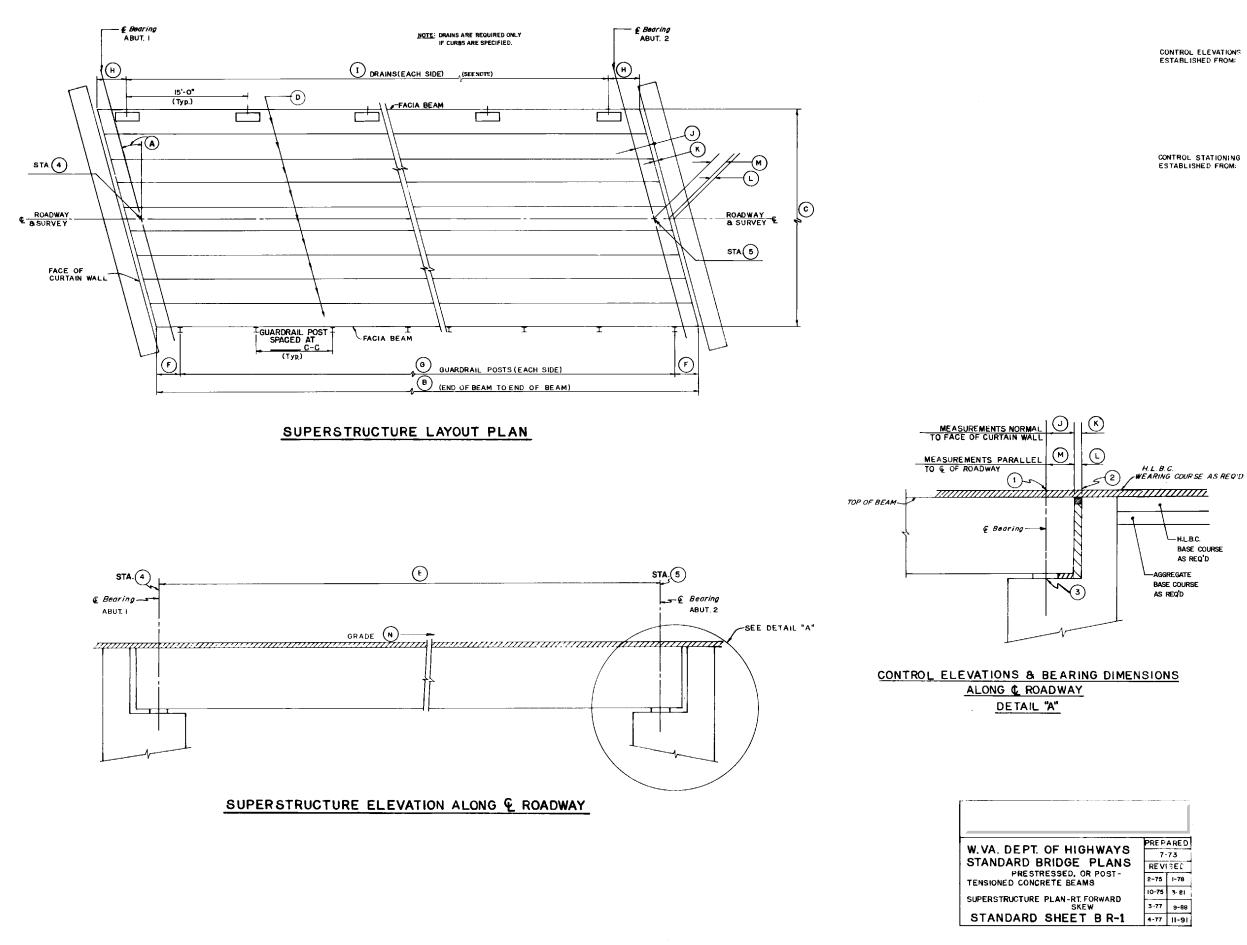
SUPERSTRUCTURE PLAN

H.L.B.C. AWEARI**NG COURSE** AS RED'D. mmonmmnn.

> - H.L.8.C. BASE COURSE

AS REO'D. AGGREGATE BASE COURSE AS REQ'D.

7-73 REVISED 2-75 1-75 10-75 3-81 9.8. 4 // 11-91



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
w.va .			,		

CODE	ABUTMENT 1	ABUTMENT 2
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2*		
3		

➡ IF WEARING SURFACE IS DE-LETED, AFFECTED ELEV-ATIONS SHALL BE TAKEN AT THE TOP SURFACE OF THE BEAM AND CURTAIN WAL

CONTROL STATIONING

CONTROL STATIONING ESTABLISHED FROM:

CODE	LOCATION	STATION VALUE		
CODE		ABUT. 1	ABUT. 2	
A	C BRIDGE AT			
4	C_ BEARING			
5	C⊈ BRIDGE AT			
Ŭ	C BEARING	_		

CONTROL DIMENSIONS

DIMENSION	CCDE	VALUE
RIGHT FORWARD SKEW	A	
LENGTH OF BEAMS, OUT-TO-OUT	в	
DECK WIDTH, OUT-TO-OUT	С	-
NUMBER OF BEAMS	C	
SPAN LENGTH, ଜୁ BEARING TO ଜୁ BEARING	E	
DISTANCE FROM END OF BEAM TO FIRST GUARDRAIL POST	F	
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G	1
DISTANCE FROM END OF BEAM TO & OF DRAIN (FREQUIRED)	н	
NUMBER OF DRAINS, EACH SIDE	I	
PERPENDICULAR DISTANCE FROM	J	
PERPENDICULAR WIDTH OF EXPAN- SION OPENING	ĸ	
WIDTH OF EXPANSION OPENING PARALLEL TO & OF ROADWAY	L	
DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)	M ·	
GRADE	N	1

ESTIMATE OF QUANTITIES

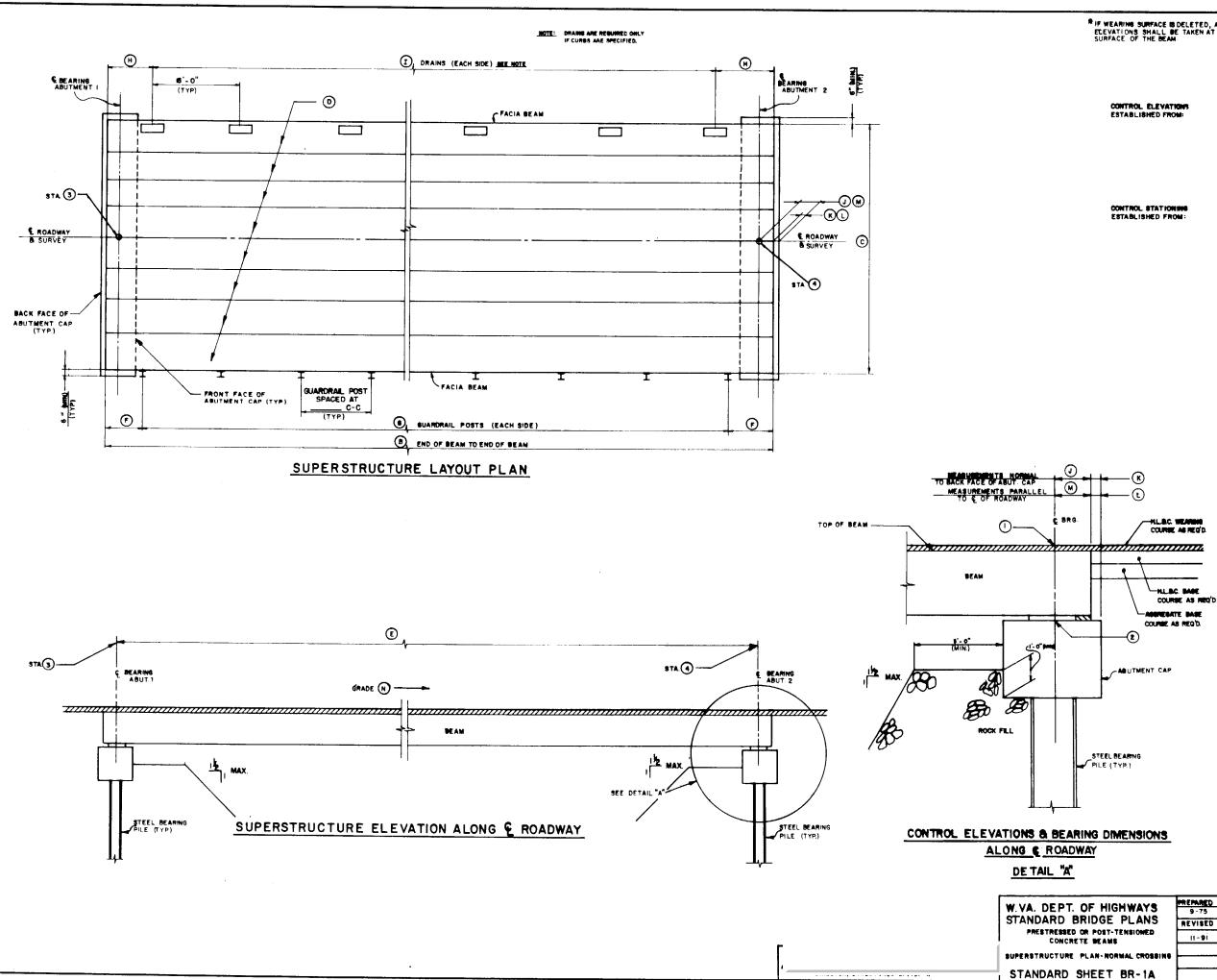
1 TE M 603-1		DESCRIPTION	UNIT	QUANTITY	
		PRESTRESSED CONCRETE BEANS	L.F.		
401-1(1)		H.L.B.C BASE COURSE	TON		
307-1	Î	CLASS / AGGREGATE BASE COURSE	C.Y.		
40I-2(<u>[</u>)	Р	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (STONE OR GRAVEL AGGREGATE)	TON		
401-2(11)	А	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (SLAG AGGREGATE)	TON		

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STRUCTURES DIVISION

DESIGNED B1:
DRAWN BY:
CHECKED BY:
REVIEWED BY:
DATE:
NONE
SHEET
O1
BRIDGE NUMBER



SUPERSTRUCTURE PLAN



INS SURFACE IS DELETED, AFFECTED ONS SHALL DE TAKEN AT THE TOP	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
E OF THE BEAM	W.VA.					

CODE	ABUTMENT I	ABUTMENT 2
۴.		
2		

CONTROL STATIONING

LOCATION STATION VALUE CODE BRIDGE AT 3 CBRIDGE AT 4

CONT	ROL	DIMENS	IONS

DIMENSION	CODE	VALUE
NORMAL CROSSING	A	
LENGTH OF BEAMS, OUT-TO-OUT	B	
DECK WIDTH, OUT-TO-OUT	с	
NUMBER OF BEAMS	D	
SPAN LENGTH, & BEARING TO & BEARING	E	
DISTANCE FROM END OF BEAM TO FIRST GUARDRAIL POST	F	
NUMBER OF OUARDRAIL POSTS, EACH SIDE	G	1
DISTANCE PROM END OF BEAM TO C OF DRAIN (FREQUIRED)	н	
NUMBER OF DRAINS, EACH SIDE	I	1
PERPENDICULAR DISTANCE FROM & BEARING TO END OF BEAM	Ŀ	
PERPENDICULAR DISTANCE FROM BEAM END TO BACK MACE OF ABUTMENT CAP	ĸ	1
D'STANCE FROM BEAM END TO BACK FACE of Abutment Cap (parallel to & Road)	L	1
DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)	M	1
GRADE	N	1

			CHRONE
			REVIEW
IIGHWAYS	PREPARED 9-75		antik
E PLANS			
	REVISED		SOALE
T-TENSIONED	II-9i		
NORMAL CROSSING			BRIT
T BR-1A		SUPERSTRUCTURE PLAN	1

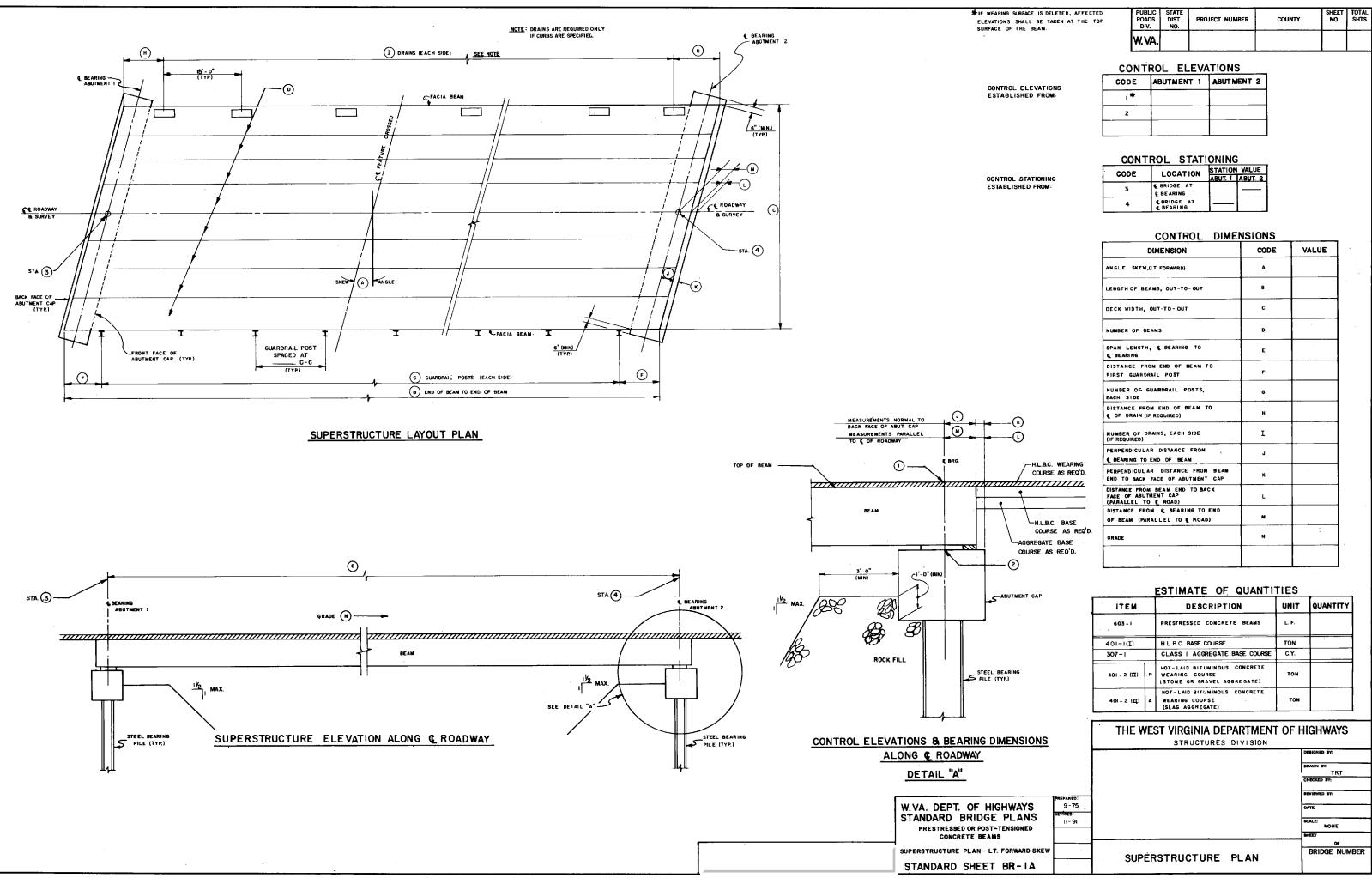
ESTIMATE OF QUANTITIES

ITEM		DESCRIPTION	UNIT	QUANTITY
603 - I		PRESTRESSED CONCRETE BEAMS	L.F	
401-1(1)		HLAC BASE COURSE	TON	
307-1		CLASS I AGGREGATE BASE COURSE	GY.	1
401-2 (II)	P	HOT-LAID BITUMMOUS CONCRETE Wearing Course (Stone or gravel Aggregate)	TON	
401-2 (01) A		HÔT-LAID BITUMINOUS CONCRETE Wearing Course (\$1.49 Aggregate)	TON	1

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS

STRUCTURES DIVISION

Addression BY: BY: CHICARD BY: CHICARD BY: BATS BOLL: NONE PHET BRIDGE NUMBER		
Gridinatio er: Reviewes pr: Britis BOALE NONE Britist er		
REVENES BY: BRIES BOALE NONE BRIEF		رمن
BONLE NONE		
SCALE NONE		
9482T 87		intit.
-		
BRIDGE NUMBER	-	SHEET
		BRIDGE NUMBER



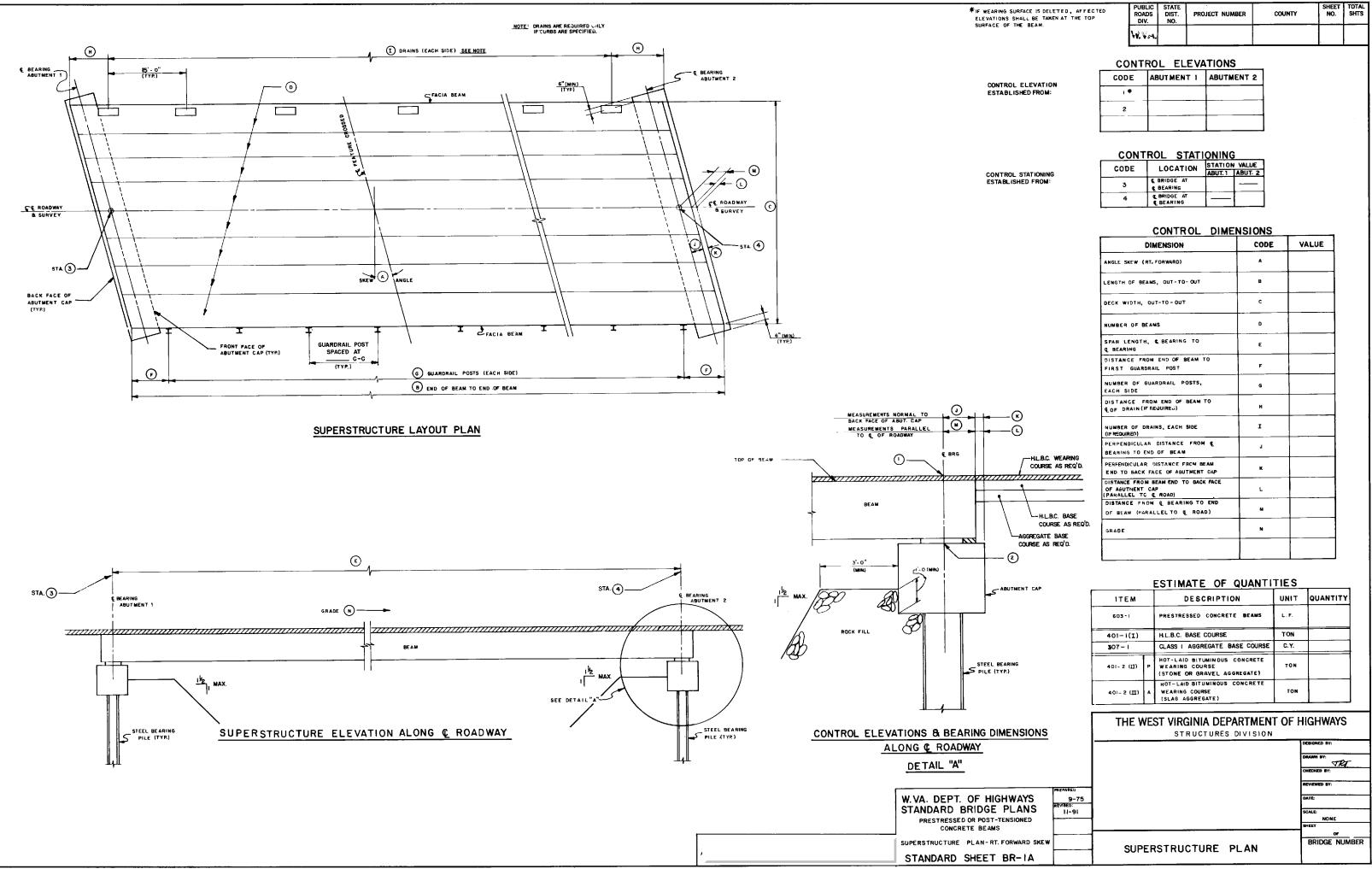
) SURFACE IS DELETED, AFFECTED S SHALL BE TAKEN AT THE TOP IF THE BEAM	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	Sheet No.	TOTAL SHTS
	W.VA.					

CODE	ABUTMENT 1	ABUTMENT 2
, I *		
2		

CODE	LOCATION	STATION VALUE		
CODE	LOCATION	ABUT. 1	ABUT 2	
3	E BRIDGE AT		—	
4	CORIDGE AT			

CONTROL DIMENSIONS			
DIMENSION	CODE	VALUE	
ANGLE SKEW, (LT. FORWARD)	A		
LENGTH OF BEAMS, OUT-TO-OUT	8		
DECK WIDTH, OUT-TO-OUT	c		
NUMBER OF BEANS	D		
SPAN LENGTH, & BEARING TO & BEARING	E	·	
DISTANCE FROM END OF BEAM TO FIRST GUARDRAIL POST	F		
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G		
DISTANCE FROM END OF BEAM TO & OF DRAIN (IF REQUIRED)	н		
NUMBER OF DRAINS, EACH SIDE (IF REQUIRED)	I		
PERPENDICULAR DISTANCE FROM	Ŀ		
PERPENDICULAR DISTANCE FROM BEAM END TO BACK FACE OF ABUTMENT CAP	к		
DISTANCE FROM BEAM END TO BACK FACE OF ABUTMENT CAP (PARALLEL TO & ROAD)	L		
DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)			
GRADE	N	i.	
GRADE	N		

ITEM	DESCRIPTION	UNIT	QUANTITY
603-1	PRESTRESSED CONCRETE BEAMS	L. F.	
401-1(I)	H.L.B.C. BASE COURSE	TON	
307 - 1	CLASS I AGGREGATE BASE COURS	E C.Y.	
401 - 2 (11)	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (STONE OR GRAVEL AGGREGATE)	TON	
40i-2 (Ц)	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (SLAG AGGREGATE)	TON	



SURFACE IS DELETED, AFFECTED S Shall be taken at the top F the beam.	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
FINE BEAM.	₩.¥⊶.					

CODE	ABUTMENT 1	ABUTMENT 2
* ا		
2		

CODE	LOCATION	STATION VALUE		
CODE	LUCATION	ABUT. 1	ABUT 2	
3	C BRIDGE AT			
4	C BRIDGE AT			

CONTROL	DIMENSIONS	

DIMENSION	CODE	VALUE
ANGLE SKEW (RT. FORWARD)	A	
LENGTH OF BEAMS, OUT-TO-OUT	в	
DECK WIDTH, OUT-TO-OUT	c	
NUMBER OF BEANS	D	
SPAN LENGTH, & BEARING TO & BEARING	E	
DISTANCE FROM END OF SEAM TO FIRST GUARDRAIL POST	F	
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G	
DISTANCE FROM END OF BEAM TO GOF DRAIN (IF REQUIRED)	н	
NUMBER OF DRAINS, EACH SIDE (IFREQUIRED)	I	
PERPENDICULAR DISTANCE FROM & BEARING TO END OF BEAM	J	
PERFENDICULAR DISTANCE FROM BEAM END TO BACK FACE OF ABUTMENT CAP	K.	
DISTANCE FROM BEAM END TO BACK FACE OF ABUTHENT CAP (PARALLEL TC & ROAD)	L	
DISTANCE FROM & BEARING TO END OF BEAM (PARALLEL TO & ROAD)	м	
GRADE	N	

1TEM 603-1		DESCRIPTION	UNIT	QUANTITY
		PRESTRESSED CONCRETE BEAMS	L.F.	
401-I(I)		H.L.B.C. BASE COURSE	TON	
307 - 1		CLASS I AGGREGATE BASE COURSE	C. Y.	
401-2 ([])	Р	HOT-LAID BITUMINOUS CONCRETE Wearing course (Stone or gravel aggregate)	TON	
40I-2 (<u>П</u>)	A	HOT-LAID BITUMINOUS CONCRETE Wearing course (Slag Aggregate)	TON	

GOVERNING SPECIFICATIONS

The governing provisions applicable to this project are the West Virginia Department of Highways Standard Specifications, Roads and Bridges, adopted 1993, as amended by the current* Supplemental Specifications of the West Virginia Department of Highways, the contract plans and the contract doc

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

DESIGN-NEW STRUCTURES (1)

This bridge is designed for an HS-25 live load capacity, as well as for a 25 p.s.f. wearing surface. Design Unit Stresse

Reinforcing Steel-fe= 20,000 p.s.i. Class B Concrete-fe= 3,000 p.s.i. Structural Steel (A36)-f_S= 20,000 p.s.i. Structural Steel (A588)-f_S= 27,000 p.s.i. Class B Concrete-fc= 1,200 p.s.i. Class B Concrete-n = 10

DESIGN-REHABILITAION AND STRENGTHENING (2)

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

CONCRETE (CAST-IN-PLACE) (3)

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

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

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

All concrete in the substructure shall be Class B air entrained

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

The exposed surface of the substructure shall be Class 1, Ordinary Surface Finish, in accordance with Subsection 601.11.1 of the Standard Specifications, except for the abutment curbs and wingwalls, which shall be Class 2, Rubbed Finish, in accordance with Subsection 601.11.2 of the Standard Specifications. The abutment curtain wall shall not be poured until after the superstructure is in place.

For footings embedded in rock, the top of the abutment footing shall be maintained at the elevations

shown on the plans. The footings shall be carried a minimum of 1 foot into solid rock and poured against the face of the rock without forms, except where the rock excavation is not the entire depth of the footing. The abutment bearing seat, upon which the shoes or other bearing devices will be set, shall be finished to true elevations as shown on the plans.

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

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

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

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

REINFORCING STEEL BARS (6)

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

The minimum splice length or dowel bar embedment shall be 30 bar diameters Reinforcement under the shoes or other bearing device shall be so placed so as to avoid interference with drilling of anchor bolt holes.

The inspector shall select random bars from the reinforcing bar list for test bars. He shall cut 5'-0" from the bars chosen, rebars have been detailed to allow a 30 bar diameter splice at each end. One rebar for each 10 tons or fraction thereof, of each size has been included in the bill of steel and will be paid for under item 602-1. In the event all bars of any one size are not sent in one shipment the supplier shall. at his expense, furnish one bar for each 10 tons or fraction thereof, for each extra shipment.

In the event that any shipment of material has been pre-tested and has been identified in accordance with Materials Control, Soil and Testing Division's Informatiional Memorandum Number 17(1M-17), the shipment may be accepted without further testing subject to record sampling procedures.

STRUCTURE EXCAVATION (FOOTINGS FOUNDED IN ROCK) (7)

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

STEEL TOUGHNESS REQUIREMENT (*)

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

PAINTING (NEW STRUCTURES) (9)

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

OPTION: (9A)

Paint system shall consist of one shop prime coat, one field prime coat and two field finish coats. Shop Prime Coat: One complete coat of vinyl shop primer conforming to the requirements of Subsection 711.7 of the Standard Specifications. This will replace the shop paint specified in Subsection 615.6.3. Dry film thickness shall be a minimum of two (2) mils.

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

711.10 of the Standard Specifications. The color shall be (D) in accordance with Federal Standard 595, number (E). Dry film thickness shall be a minimum of two (2) mils.

<u>Top Finish Coat</u>: One complete pigmented finish coat conforming to the requirements of Subsection 711.11 of the Standard Specifications. The color shall be ① in accordance with Federal Standard 595, number (F). Dry film thickness shall be a minimum of two (2) mils.

OPTION: (9B)

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

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

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

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

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

CLEANING AND PAINTING (EXISTING STRUCTURES) (10)

Field cleaning and painting shall be in accordance with either OPTION (10A) or (10B) and shall also conform to all applicable requirements of Section 620 of the current Stan and shard use control to call provisions. When it is determined that the structure contains an environmentally hazardous existing paint system then option (100) shall also apply.

OPTION: (10A)

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

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

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

Attention is called to the requirements of paragraph 2 of Section 620.6 which requires

that edges of paint be properly feathered to produce a smooth apperance. In the event that there is a difference of opinion as to which areas must be sandblasted or hand cleaned or to the extent of surface cleaning or surface preparation, the decision of the Engineer shall be final Spot Painting: All steel surfaces cleaned to bare metal shall receive one coat of linseed/alvkd primer

conforming to the requirements of Section 711.8 of the Standard Specifications. This coat shall be tinted with a tinting agent type as recommended by the paint manufacturer and approved by the Engineer.

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

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

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

OPTION: (10B)

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

Field Prime Coat: All bare surfaces shall be primed with an organic zinc rich primer conforming to the requirements of SSPC Specification Number 20, Type 2, Dry film thickness of the primer shall

- be a minimum of four (4) mils. Field Intermediate Coat: The field intermediate coat shall conform to the requirements of
- 711.20.3 of the Standard Specifications. Field Top Coat: The field top coat shall conform to the requirements of Article 711.20.4
- of the Standard Specifications. The color shall be (F) in accordance with Federal Standard 595, number (G) Dry film thickness of the total paint system shall be a minimum seven (7) mils
 - OPTION: (100)

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

STRUCTURE EXCAVATION (FOOTINGS FOUNDED ON PILES) (1)

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

PREFORMED ELASTOMERIC JOINT SEALER

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

BRIDGE GUARDRAIL (13)

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

STRUCTURAL STEEL (14)

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

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

OPTION: (14A)

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

STEEL GRID FLOORING (CONCRETE FILLED TYPE) (15)

The steel grid flooring shall conform to all applicable requirements of Section 621 of the current Standard Specifications and/or all Special Provisions of the West Virginia Department of Highways. The grid shall conform to all applicable requirements as set forth by the Bridge Grid Flooring Manufacturers

Association. Size and type shall be as specified on the plans The steel grid flooring shall conform to all requirements of ASTM A36, A572 or A588, type as specified

Cleaning: All surfaces to be painted shall be cleaned and prepared in accordance with Section

615.6 of the Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows:

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

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

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

STEEL GRID FLOORING (OPEN TYPE) (16)

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

on the plans.

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

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

MAINTAINING TRAFFIC (7)

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

NOTE SEL	ECTION TABLE	_			
CODE YES NO	CODE	YES	NO		
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				These items are for Purchase Order Contract only.	
6	14				
7	14A				
				THE WEST VIRGINIA DEPARTMENT OF TRA	NSPORTATION
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9B	18			DIVISION OF HIGHWAYS-STRUCTURE	
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
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NAIL LAMINATED WOOD DECK (18)

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

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

All lumber shall be sized by being processed through a hit-or-miss surface

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

Material will be accepted in bundles when the shipment is accompanied by a certificated issued by a Department of Highways Materials Control, Soil and Testing Division certified inspector, showing that the lumber in the "white" meets the above requirements. When said certificate is not available, the material will be inspected by Department of Highways personnel at the delivery site and stacked and struck by the vendor. Treatment: material for pressure treatment shall be in accordance with Subsection 710.5 of the

ndard Specifications. Treatment shall be by either the full cell or empty cell process at 150 to 200 p.s.i. and a minimum retention as specified by the American Wood Preservative Association Standard C-2 shall be obtained.

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

* Delivery: material shall be delivered in minimum shipments of 2,000 board feet or as directed by the Engineer. A maximum of 15 calendar days will be allowed for delivery following notification by the Engineer.

The vendor shall notify the Engineer one working day prior to delivery of the material.

<u>
 General:</u> any deviation from the above requirements may be cause for rejection, by the Engineer, entire shipment of lumber. All non-specified material in any shipment shall be rejected and will be removed from the West Virginia of the

Department of Highways storage area by the vendor prior to acceptance of the suitable material. Notification shall be made on all receiving documents and/or delivery slips specifying reason(s) for

rejection of any portion of a shipment. The signatures of both the Department of Highways and delivering agency representatives shall be affixed to documents on which rejection reason(s) is recorded The vendor must furnish to the Engineer a certificate of inspection, certifying that the total order

eets the specifications for quality of lumber, preservative and retention required. A certified copy of the certificate of inspection must be attached to the invoice.

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

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

> McCallum Inspection Company Norfolk, virginia Froehling and Robertson, Inc. Richmond, Virginia A. W. Williams Inspection Company Southern Pines Inspection Bureau New Orleans, Louisiana

PRESTRESSED CONCRETE SUPERSTRUCTURE (19)

Refer to the appropriate Standard Plan sheet for design stresses, specifications or notes, Although the plans are detailed for a particular type of prestressed concrete beam, alternate

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

DOWEL LAMINATED WOOD DECK (20)

MATERIAL:

A. Oak Bridge Lumber: All lumber shall be surfaced four (4) sides, red or white oak, and shall meet the current requirements as specified by <u>Rules for the Measurements & Inspection of Hardwood and Cypress</u> <u>Lumber</u>, issued by National Hardwood Assoc. for Hardwoods for Construction, Sound Square Edge (Boxed Hearts and Planking).

B. <u>Pine Bridge Lumber:</u> All lumber shAll be surfaced four (4) sides, No. 2 medium grain or better Southern Pine as specified by the current <u>Grading Rules for Southern Pine Lumber</u> published by the Southern Pine Inspection Bureau, New Orleans, Louisiana.

All lumber shall be sized prior to incorporation into the panels and the panels shall be sized by being processed through a hit-or-miss surfacer.

TREATMENT:

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

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

LAMINATING:

The lumber shall be laminataed with hot dipped galvanized spiral steel dowels as provided by Wadsworth Equipment Company, P.O. Box 6122, Akron, Ohio, or approved equal.

CERTIFICATION:

All lumber and dowels to be utilized in the panels shall be certified by Department of Highways Certified inspectors that they meet the above requirements prior to fabrication. Upon approval and certification

the material shall be stockpiled for use in fabrication. Prior to shipment or installation the panel shall be certified by Department of Highways Certified inspectors as to treatment.

Certifications shall be issued by the Department of Highways Materials Control, Soil and Testing Division certified inspectors.

* DELIVERY:

Material shall be delivered as directed by the Engineer. A maximum of fifteen (15) calendar days will be allowed for delivery following notification by the Engineer. The vendor shall notify the Engineer one (1) working day prior to delivery of the material.

GENERAL:

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

Notification shall be made on all receiving documents and/or delivery slips specifying reason(s) for rejection of any portion of a shipment. The signatures of both Department of Highways and delivering agency representatives shall be affixed to documents on which rejection reason(s) are recorded. The vendor must furnish to the Engineer a certificate of inspection, certifying that the total order

meets the specifications for lumber, preservative, retention, dowels and fabrication. A certified copy of the certificate of inspection must be attached to the invoice.

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

The inspection agencies listed under "Nail Laminated Wood Deck" shall apply equally to material furnished in Dowel Laminated Decks.

APPROVED _____ DIRECTOR, STRUCTURES DIVI CONTROL VALUE CODE VALUE WEST VIRGINIA DEPARTMENT OF TRANSPO DIVISION OF HIGHWAYS-STRUCTUR STANDARD BRIDGE PLAN **GENERAL NOTES** STANDARD SHEET B

A

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NOTE SELECTIC

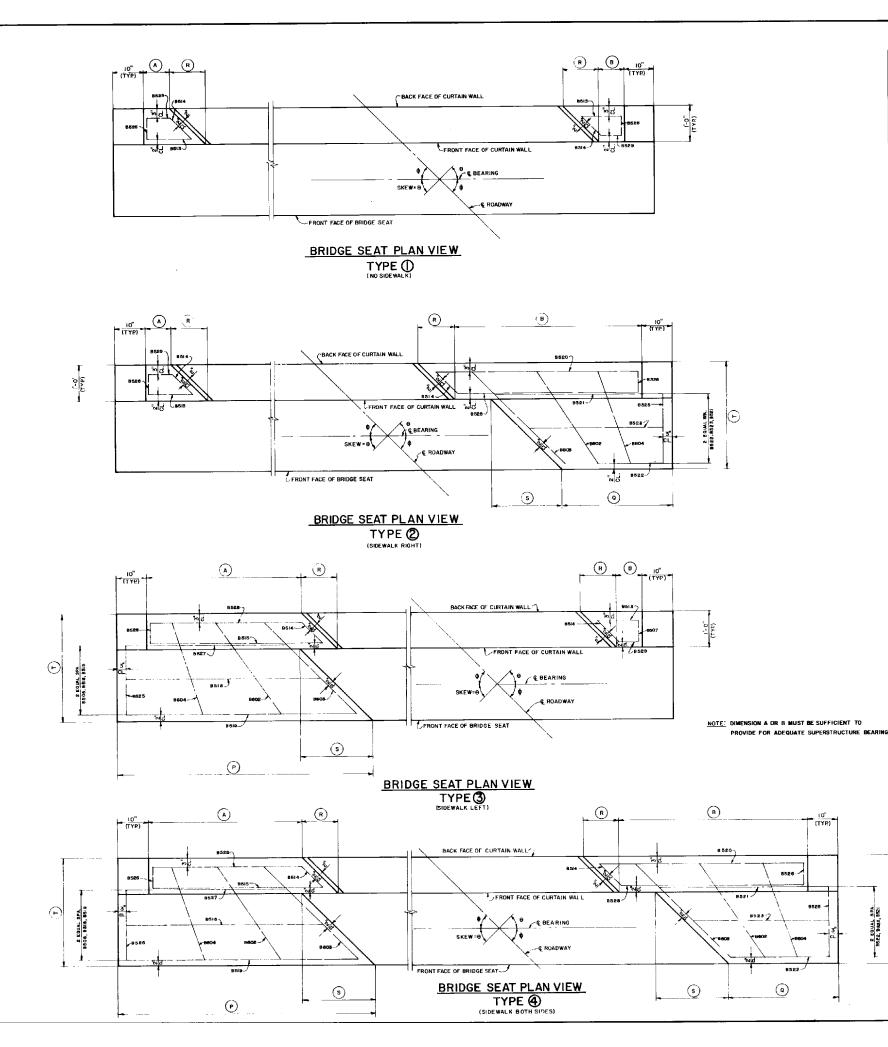
NO

YES

CODE

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

ON TAB	LE			
CODE	YES	NO		
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MARK	TYPE		BRIDGE S	EAT TYPE			FBARS	TOTAL NO. OF BARS	LENGTH OF BAR ABUT.I	LENGTH OF BAR ABUT. 2	TOTAL
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B524	.	_		×	_	1	1	2			
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B527	"	—	-	-	x	ļ '	'	2			
B604	BENT	_	×	-	-	1		2			
B604		-	-	x	-	1	1	2			
B604		_	-	—	x	2	2	4			
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B528		_	_	x	_			2			
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5	BENT	×		-	_	1	1	2			
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8602	-			×	-	1	1	2			
8602		-	-		x	2	2	4			
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B522	BENT	-	×	-	-	1	1	2			
8522		_	-	-	×	1 -	1	2			
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8523	BENT	-	×	-		1	1	٤			1
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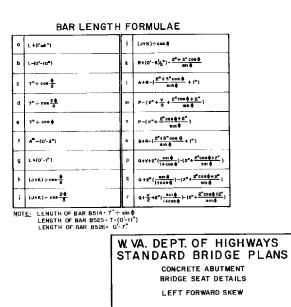
NOTE: FOR BAR IDENTIFICATION, CIRCLE MARKS USED.

NOTE: FOR PROPER BRIDGE SEAT, CIRCLE TYPE USED.

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2 EQUAL 3PA. B522, 9623, 3521

NOTE: THE MINIMUM LENGTH OF DIMENSION A OR B IS B"+ Cos O NOTE: REINFORCING STEEL SHOWN IS FOR THE TOP FACE OF THE CURBS AND STEP SLABS. NOTE: INTERCHANGE A 8 B FOR A* AS NECESSARY. (A= B FOR TYPE 4 PLAN VIEW).



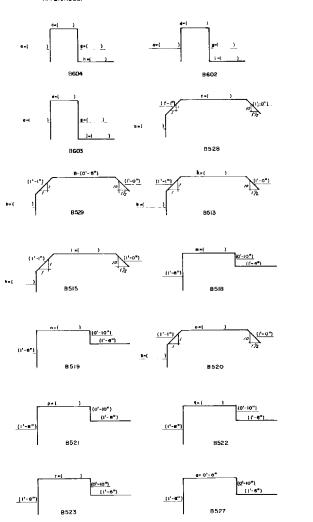
STANDARD SHEET BR-7S

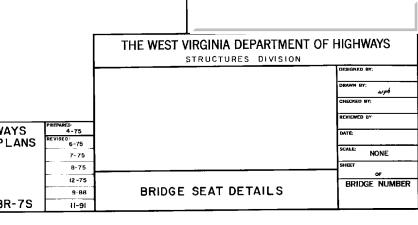
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	tot Shi
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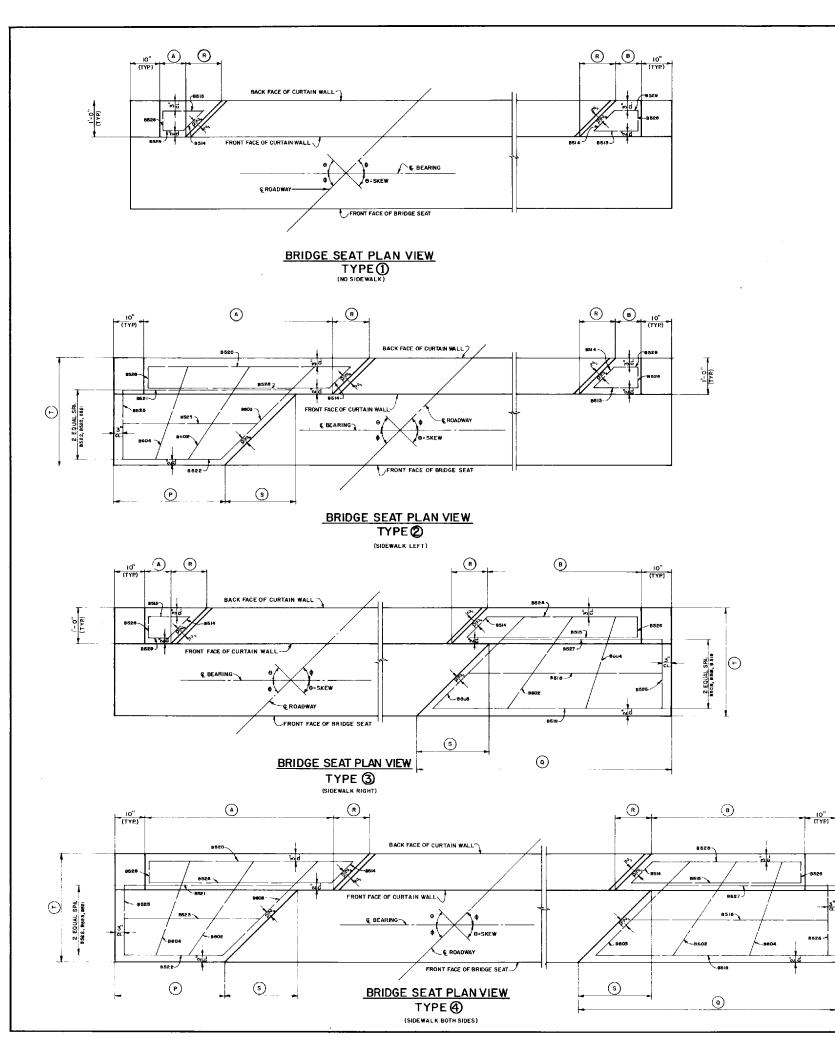
CONTROL DIMENSIONS

0005	DECORPUTION	VALUE		
CODE	DESCRIPTION	ABUT. I	ABUT. 2	
R	BEVEL OF CURB DUE TO SKEW	ł		
s	BEVEL OF STEP SLAB DUE TO SKEW			
Т	WIDTH OF BRIDGE SEAT			
Ð	SKEW ANGLE			
¢	COMPLEMENT OF SKEW ANGLE			

NOTE: FOR CONTROL DWENSIONS A, B, P, Q, B T REFER TO STANDARD SHEET BR-7 OR BR-13. NOTE: FOR ESTIMATE OF QUANTITIES FOR BRIDGE SEAT, REFER TO STANDARD SHEFT BR-7 WHEN APPLICABLE.







NO. OF BARS TOTAL NO. OF ABUT. 1. ABUT. 2 BARS BRIDGE SEAT TYPE LENGTH OF BAR ABUT, J MARK TYPE 2 3 4 B525 STR B525 . _ 2 x B525 _ _ 2 4 2 B526 STR. x х x 2 2 4 x BENT B527 -2 1 .. 8527 _ x 1 2 1 B604 — BENT x 2 1 8604 _ 1 2 x 8604 х 2 4 B528 BENT x _ B528 ı. 2 _ х _ 8528 ×____ ٤ 4 B529 BENT _ 2 4 --2 _ 6529 x _ 2 2 4 2 4 B529 4 B5I3 BENT х 2 2 8513 .. х _ ___ Т 2 8513 x 2 B514 STR. x х x x 2 2 4 B515 BENT _ 5 1 x 85/5 x 2 _ _ 1 8602 BENT ---x 1 2 8602 2 х B602 4 2 2 B603 BENT x 2 _ × 2 B603 --х 1 ... _ B 603 2 4 2 B518 — 2 BENT _ _ х 1 1 . B518 _ x 2 ----8519 BENT _ x _ 1 2 --x 2 8519 _ — 1 8520 BENT 2 1 х 8520 2 B521 BENT х _ 2 ... х 2 B521 _ _ _ B522 BENT x _ 1 2 _ Т . x B522 1 . 2 _ _ 8523 BENT x _ 1 2 _ B523 _ х 2 _

2 EQUAL SPA. 8508, 8518, 8519

 \odot

NOTE: FOR BAR IDENTIFICATION, CIRCLE MARKS USED. NOTE: FOR PROPER BRIDGE SEAT, CIRCLE TYPE USED. NOTE: THE MINIMUM LENGTH OF DIMENSION A 'OR B IS B^{+} + Cos Θ NOTE: REINFORCING STEEL SHOWN IS FOR THE TOP FACE OF THE CURBS AND STEPSLABS. <u>NOTE</u>: INTERCHANGE A B B AS NECESSARY. (A:B FOR TYPE 4 PLAN VIEW).

NOTE: DIMENSION A OR B MUST BE SUFFICIENT TO PROVIDE FOR ADEQUATE SUPERSTRUCTURE BEARING.

	BAR LENG	TH F	ORMULAE
U	L+(I ^I -4*)	i I	(J+K)÷cosŧ
b	L-(0'-10")	•	$A^{\frac{N}{4}}+(0^{1}-3^{\frac{N}{4}})-\frac{2^{\frac{N}{4}}+3^{\frac{N}{4}}\cos\phi}{\sin\phi}$
c	7"+ = es •	L	B+ R−(<u>2[#]+ 3⁴ cos φ</u> + i [#]) ain φ
d	7 ⁼ ÷cos <u>₽∳</u>	-	$Q - (2^{*} + \frac{3}{2} + \frac{2^{*}\cos\phi + 2^{*}}{\sin\phi})$
e	7"÷ cos♦	n	Q-(2"+ 2"cos\$+2") sin\$
f	K [#] −(∪'-3")	a	A+R-{ ^{2⁴+3⁴ cos ∳} ein ∳
g	£+(o'-1#)	р	$P+S+2^{n}\left(\frac{\sin \varphi}{1+\cos \varphi}\right)=\left(2^{n}+\frac{2^{n}\cos \varphi+2^{n}}{\sin \varphi}\right)$
h	(J+K)÷cos <mark>≜</mark>	q	$P+2^{n}\left(\frac{\sin\phi}{(t\cos\phi)}\right)-\left(2^{n}+\frac{2^{n}\cos\phi+2^{n}}{\sin\phi}\right)$
I	(J+K)÷ coa 2 ♣ 3	,	$P+\frac{S}{2}+2^{H}\left(\frac{\sin\phi}{ +\cos\phi}\right)- 2^{H}+\frac{2^{H}\cos\phi+2^{H}}{\sin\phi}$
NOT	E: LENGTH OF BAR B514 = 7 LENGTH OF BAR B525 = T LENGTH OF BAR B526 = 0	~(0'-11")	
			A. DEPT. OF HIGH NDARD BRIDGE F
			CONCRETE ABUTMENT Bridge seat detail
			RIGHT FORWARD SKEW

BILL OF REINFORCING STEEL

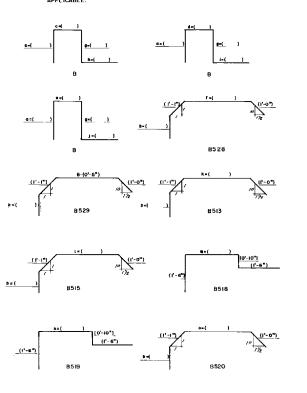
LENGTH	
LENGTH OF BAR Abut. 2	TOTAL Length
	<u> </u>
	- · - ·
_	
÷	

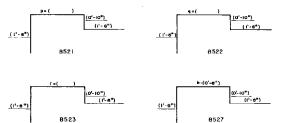
PUBLIC ROADS DIV.	STATE Dist. No.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.V					

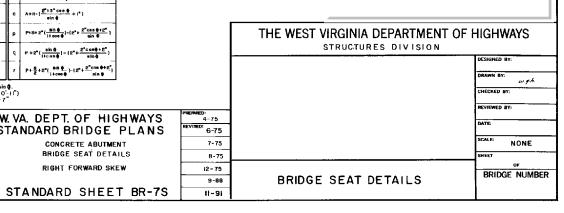
CONTROL DIMENSIONS

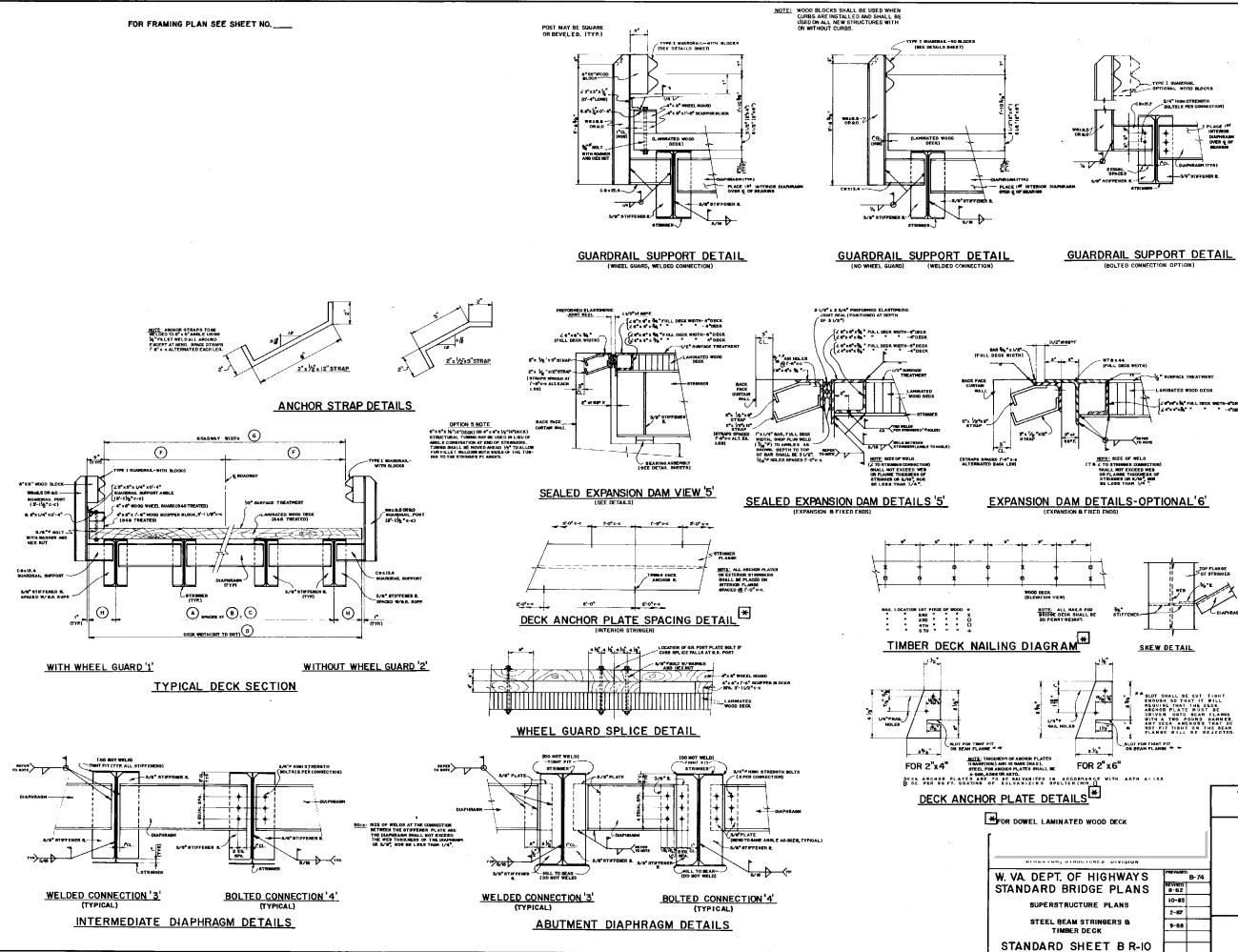
CODE	DESCRIPTION	VAL	UE
CODE	DESONIT HON	ABUT. I	ABUT 2
R	BEVEL OF CURB DUE TO SKEW		
S	BEVEL OF STEP SLAB DUE TO SKEW		
т	WIDTH OF BRIDGE SEAT		
θ	SKEW ANGLE		
Ф	COMPLEMENT OF SKEW ANGLE		-

NOTE: FOR CONTROL DIMENSIONS A, B, P, Q, &T REFERTO STANDARD SHEET BR-7 OR BR-13. NOTE: FOR ESTIMATE OF QUANTITIES FOR BRIDGE SEAT, REFER TO STANDARD SHEET BR-7 WHEN APPLICABLE.







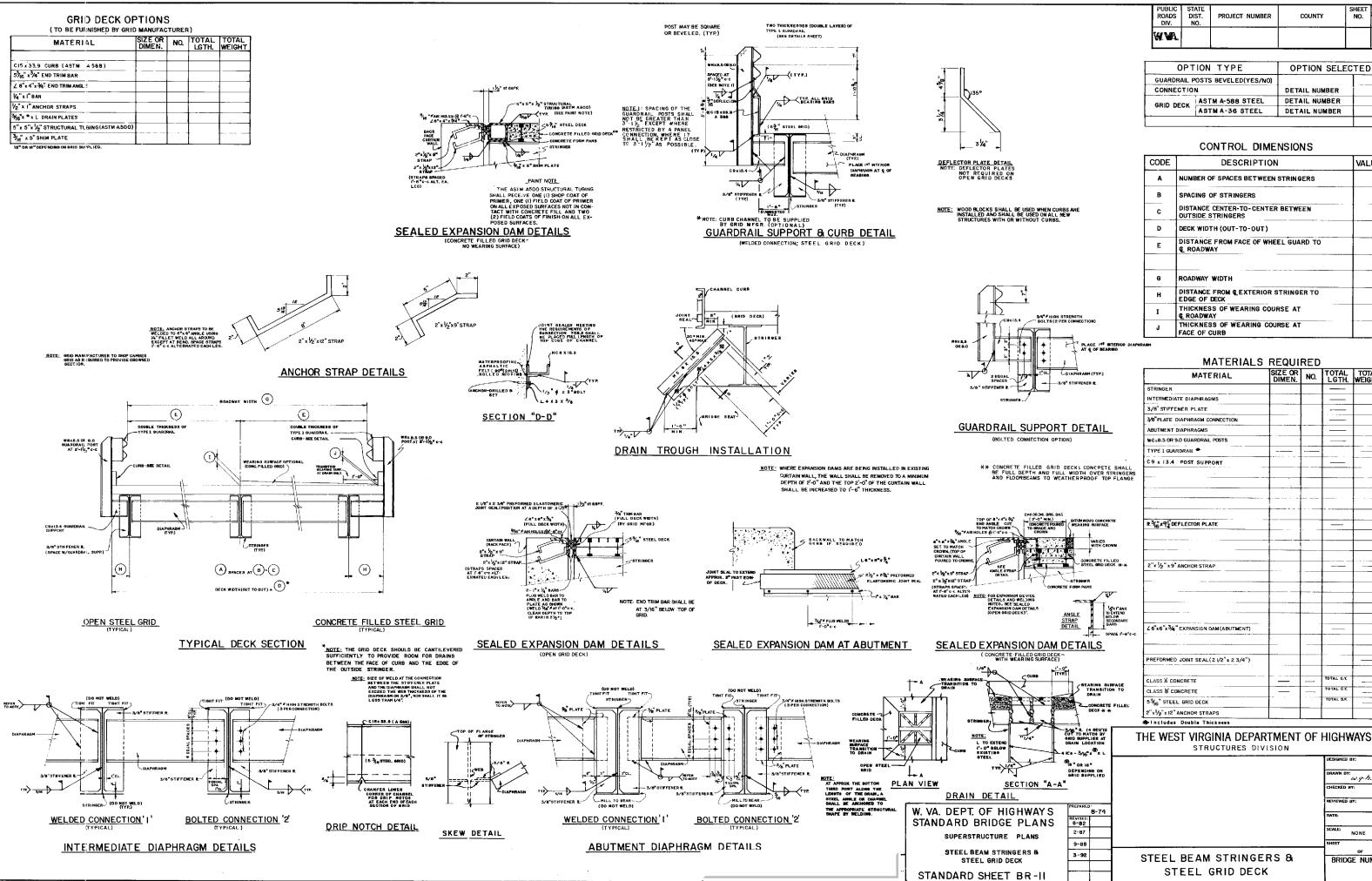


	PUBLIC ROADS DIV.		PROJECT NUMBER	COUNTY	SHEET NO.	tot Sh1	
	W.VA	•					
Γ		OPTIO	N TYPE	OPTION SELECTED			
Γ	WHEEL	GUARD		DETAIL NUMBER			
	CONNE	CTION		DETAIL NUMBER			
	EXPAN	SION DAM		DETAIL NUMBER			
		CC	ONTROL DIME	NSIONS			
0	CODE		N	VAL	IJΕ		
	•	NUMBER C	STRINGERS				

A	NUMBER OF SPACES BETWEEN STRINGERS	
B	SPACING OF STRINGERS	
c	DISTANCE CENTER-TO-CENTER BETWEEN OUTSIDE STRINGERS	
D	DECK WIDTH (OUT-TO-OUT)	
E	DISTANCE FROM FACE OF WHEEL GUARD TO	
F	DISTANCE FROM FACE OF GUARDRAIL TO	
G	ROADWAY WIDTH	
H	DISTANCE CEXTERIOR STRINGER TO EDGE	

MATERIALS REQUIRED

	MATERIALS	TEQUI			
CK WIDTN)	MATERIAL	SIZEOR	NO,	TOTAL LGTH.	TOTAL
	STRINGER	DIMEN.			WEIGHT
2" SURFACE TREATMENT	INTERMEDIATE DIAPHRAGMS			· ·	
LANINATED WOOD DECK	3/8"STIFFENER PLATE				
A "24" 24" A "A " FIRLL DECK WIDTH-S"DECK	3/8" R DIAPHRAGM CONNECTOR				
[{2*******	ABUTMENT DIAPHRAGMS				
1 I	W6x8.5 OR 9.0 GUARDRAIL POSTS	• • • • • • • • • • • • • • • • • • • •			
REFER	TYPE I GUARDRAIL				·
\r0 #01E					
OF WELD	C9x13.4 POST SUPPORT				
ER CONNECTION) EXCEED WEB	23x3*x1/4" POST SUPPORT ANGLE	0'-4"			
EX COMBLECTION THICKNESS OF THICKNESS OF NS 574 THEOR IAN 1/41 T	28 x6 x 34 "EXPANSION DAM ANGLE				
	20 X0 X 74			•••	
S-OPTIONAL'6	20x4 x 74			—	
<u> </u>	∠ 5"x5"x3⁄4 " " "				
	∠4"x4"x¥4" " " "				
	I"x1/4" EXPANSION DAM BAR				l
	3/4 "x 1/2" " "				
	WT 8x44 STRUCTURAL TEE			—	_
	6 x6 x1/2 STRUCTURAL TUBING (CIRCLE)				
II SOF STRINGER	5/8"# BOLT W/ WASHERS AND HEX NUT (A 307)				
WEB 36 "R	3/4" HIGH STRENGTH BOLT WITH NUT (A325)			—	
	2"x4" LAMINATED WOOD DECK	·			I — .
	2"x 6" "				i
	4"x 8" WOOD WHEEL GUARD				
-⊢γL	4"x8" WOOD SCUPPER BLOCK	ı'-6"			
SKEW DE TAIL	DECK ANCHOR PLATES				
JACH DE TALL	PREFORMED ELASTONERIC JOINT SEAL(2) x274)				
	20 PENNYWEIGHT NAILS				
Ŧ	2"x 1/2"x 9" ANCHOR STRAPS				
STALL BE GUT TIGHT ENOUGH SO THAT IT WILL REQUIRE THAT THE DECK ANGHOR PLATE MUST BE	2" x 1/2" x 12" ANCHOR STRAPS				
REQUIRE THAT THE DECK ANGHOR PLATE MUST BE	SURFACE TREATMENT	· · · · · · · · · · ·		TOTAL S.Y.	
WITH A TWO POUND HAMMER,					
N NOT FIT TIGHT ON THE BEAM FLANGE WILL BE REJECTED.	GUARDRAIL BLOCKOUT REQUIRED (YES				
LOT FOR TIGHT FIT					
N BEAM FLANGE 🎓 🗢	GUARDRAIL POSTS BEVELED (YES OR				
	OPTIONAL DOWEL LAMINATED DECK	ES OR NO)) A		
STH A- 153	OPTIONAL NAIL LAMINATED (YES OR N		-		
Т	HE WEST VIRGINIA DEPAR STRUCTURES DIV	TMENT	OF		
				DESIGNED B	r:
				DRAWN BY:	w
				CHECKED BY	r:
				REVIEWED B	¥:
I PREADED I				DATE:	
PEVISED				i.	
ANS B-B2				SCALE:	
ANS 8-82 3 10-83					IONE
ANS 82 10-83 2-67				SCALE: N	07
ANS 8-82 8-82	STEEL BEAM STRINGE	RS 8		SHEET	
ANS 8-82 10-85 5 2-87	STEEL BEAM STRINGER TIMBER DECK	RS Ba		SHEET	047



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	Sheet No.	TOTAL SHTS
W.WA.					

OPTION TYPE		OPTION SELECTED	
GUARDRAIL F	OSTS BEVELED (YES/NO)		
CONNECTION		DETAIL NUMBER	
GRID DECK ASTM A-588 STEEL		DETAIL NUMBER	
SHID DECK	ASTMA-36 STEEL	DETAIL NUMBER	

CONTROL DIMENSIONS

CODE	DESCRIPTION	VALUE
A	NUMBER OF SPACES BETWEEN STRINGERS	
в	SPACING OF STRINGERS	
C	DISTANCE CENTER-TO-CENTER BETWEEN OUTSIDE STRINGERS	
D	DECK WIDTH (OUT-TO-OUT)	
E	DISTANCE FROM FACE OF WHEEL GUARD TO & ROADWAY	
G	ROADWAY WIDTH	
н	DISTANCE FROM & EXTERIOR STRINGER TO EDGE OF DECK	
I	THICKNESS OF WEARING COURSE AT	
J	THICKNESS OF WEARING COURSE AT FACE OF CURB	

SIZE OR NO. TOTAL TOTAL DIMEN. NO. LGTH. WEIGHT

TOTAL C.Y.

TOTAL C.Y.

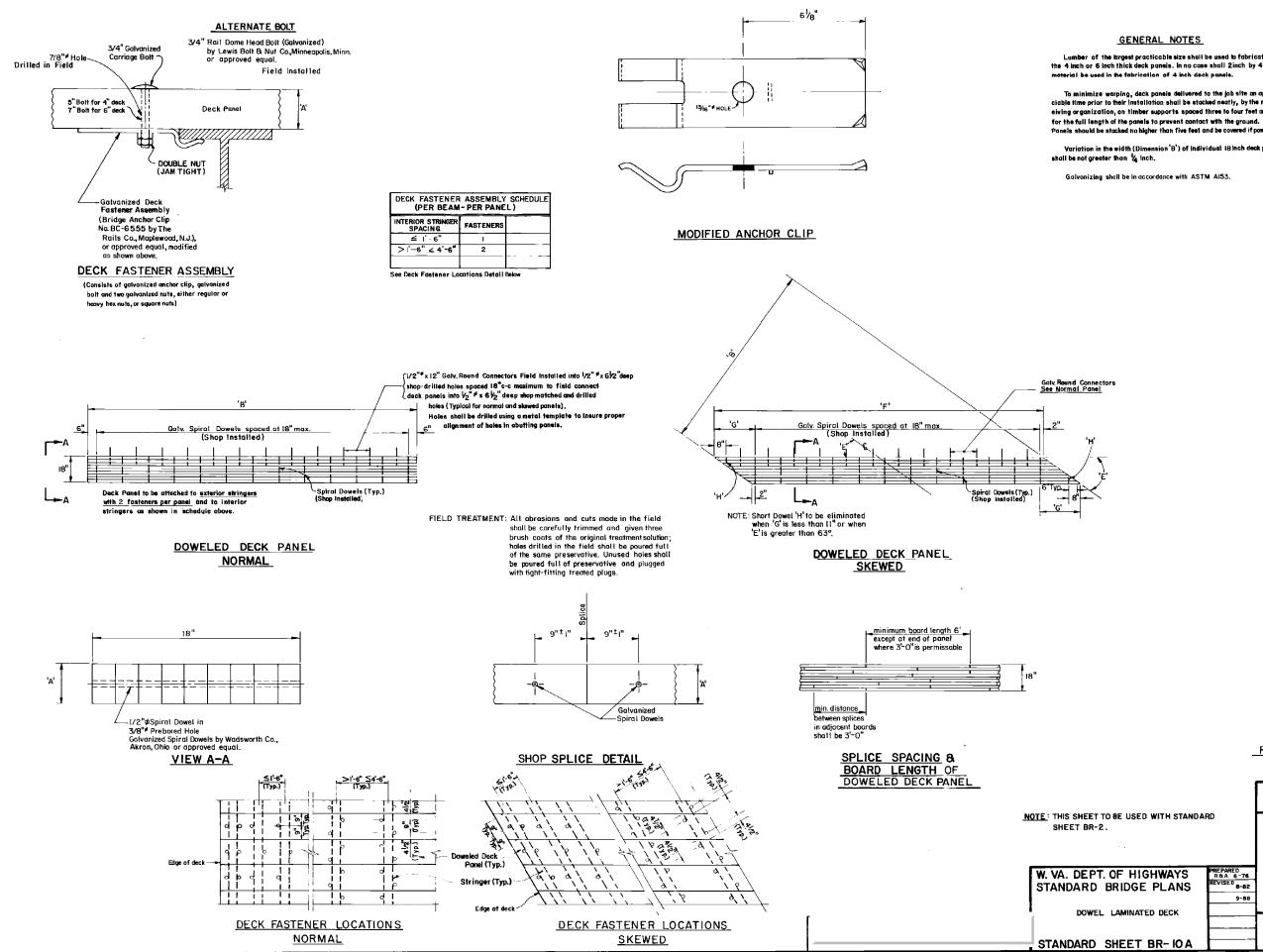
TOTAL S.F.

_



STEEL GRID DECK

	the second s
DDIDOC	NUMBER
DRIDGE	NUMBER



FED. HWY. ADM.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL. SHTS.
2 54 - 5					

GENERAL NOTES

Lumber of the largest practicable size shall be used to fabricate the 4 lunch or 6 inch thick deck panels. In no case shall 2inch by 4 inch

To minimize warping, deck panels delivered to the job site an appre-ciable time prior to their installation shall be stacked neatly, by the rec-eiving organization, on timber supports spaced three to four feet apart Panels should be stacked no higher than five feet and be covered if possible

Variation in the width (Dimension ${}^{\rm B}{}^{\rm I}$) of Individual 18 inch deck panels shall be not greater than ${}^{\rm I}_{\rm A}$ inch.

CONTROL DIMENSIONS

CODE	DESCR	VALUE	
A	DECK PANEL THICKNE	ESS (NOMINAL)	
8	DECK WIDTH (OUT TO ((TUC	
Е	SKEW ANGLE	RT. FORWARD	
-	SKEW ANGLE	LT. FORWARD	
F	DECK WIDTH (B) ÷ SINE E		
G	(18"÷ TAN. E)+2"		
н	SHORT SPIRAL DOWEL (6"x TAN. E) +6"	LENGTH	-

MATERIALS REQUIRED

	MATERIAL	UNIT	QUANT.	TOTAL LENGTH	TOTAL WEIGHT
NOTE 1	4"DOWEL LAMINATED DECK PANEL	Mfbm	<u> </u>	<u></u>	
NOTE 2	6"DOWEL LAMINATED DECK PANEL	Mfbm			
	FASTENER ASS'Y. W/ 3/4"x 5" BOLT	Each			
	FASTENER ASS'Y. W/ 3/4" x 7" BOLT	Each			
NOTE 3	1/2"# x 12" ROUND CONNECTOR	Each			
				_	
			L		
	NOTE 1: PANEL SIZE IS 4"x 18" x 8				
	NOTE 2: PANEL SIZE IS 6"x18"x'B' NOTE 3: FOR FIELD CONNECTION OF PANELS				

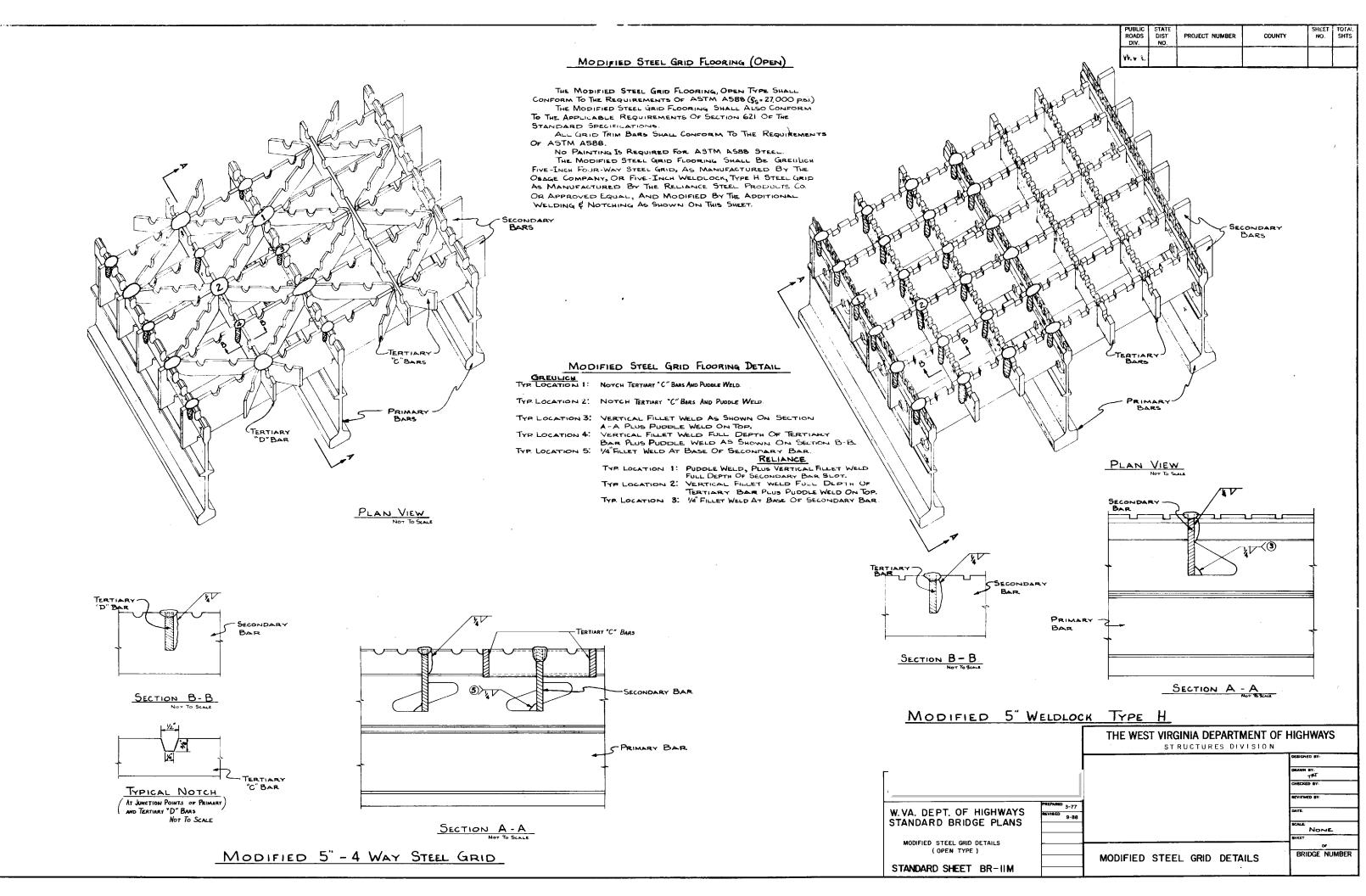
OPTIONS

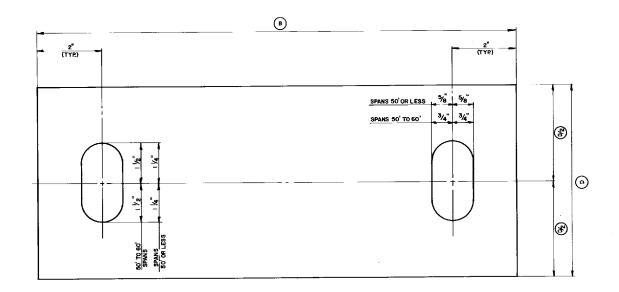
BOLTS TO BE GALVANIZED CARRIAGE BOLTS ONLY

- BOLTS TO BE DOME HEAD BOLTS ONLY (GALVANIZED) BOLTS TO BE GALVANIZED CARRIAGE BOLTS OR

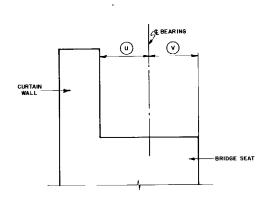
DOME HEAD BOLTS

	-	FRAMING PLAN Scale: "= 1-0"	
	:	THE WEST VIRGINIA DEPARTMENT STRUCTURES DIVISION	
ITH STANDA	RD		DESIGNED BY: RUDE & ASSOCIATES, INC.
			DRAWN BY:
			CHECKED BY:
	OPEDAOED		REVIEWED BY:
IWAYS	PREPARED R8A 6-76 REVISE0 8-82		DATE:
PLANS	8-82 9-88		SCALE: NONE
DECK			SHEET OF
		DOWEL LAMINATED	BRIDGE NUMBER
R- 10 A		TIMBER DECK	



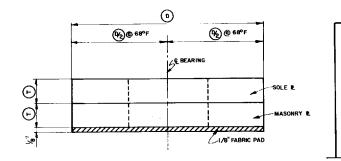


MASONRY & SOLE PLATE DETAIL



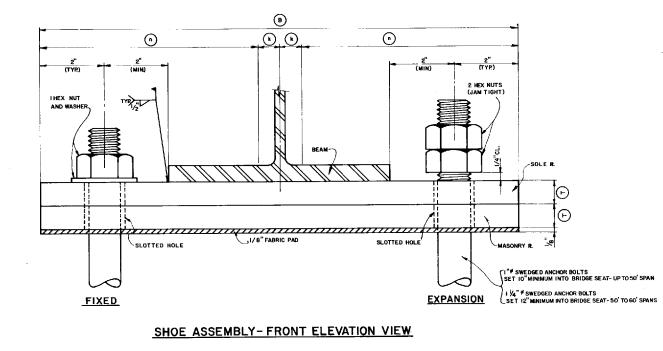
BRIDGE SEAT ELEVATION





SHOE ASSEMBLY-SIDE ELEVATION VIEW

PIER CONTINUOUS SPAN



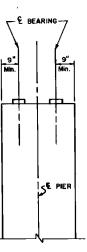
<u>NOTE:</u> FILL SLOTTED HOLES OF BOTH MASONRY AND SOLE PLATES WITH MOLTEN ZINC OR LEAD AT FIXED BEARING.

NOTE: FILL SLOTTED HOLES OF MASONRY PLATES ONLY WITH MOLTEN ZINC OR LEAD AT EXPANSION BEARING.

OPT	IONAL				
GALVANIZIN					
OPTION	CHECI				
YES					
NO					

W. VA. DEPT. OF HIGHWAYS STANDARD BRIDGE PLANS SHOE BEARING ASSEMBLY Span 60' or less STANDARD SHEET BR-12

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

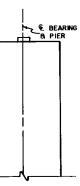


		CO	MPUTAT	ION TA	BLE		
R {KIPS}	D INCHES	D/2 (INCHES)	FORM MININ (INCHES)	ULAE IUM B (INCHES)	B (INCHES)	FORMUL A T (INCHES)	T (INCHES)
12.5-50	6	3	F.W. + 8"				3/4
50-84	6	3	F.W.+8"	R÷4.2		0. 1345 5n	
73.5-127	7	3 1/2	EW.+8"	R÷4.9		0.13455n	

NOTES: R= REACTION F.W.= FLANGE WIDTH B SHALL BE THE GREATER VALUE, AS CALCULATED FROM THE TWO MINIMUM FORMULAE, ROUNDED UP TO THE NEAREST DIGIT.

T SHALL BE ROUNDED UP TO THE NEAREST 1/8" (MIN. T= 3/4").

PIER SIMPLE SPAN

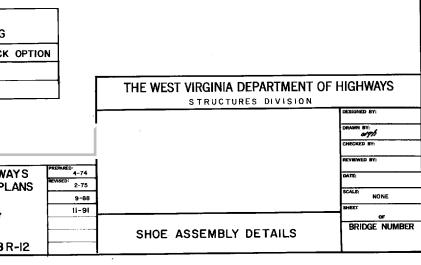


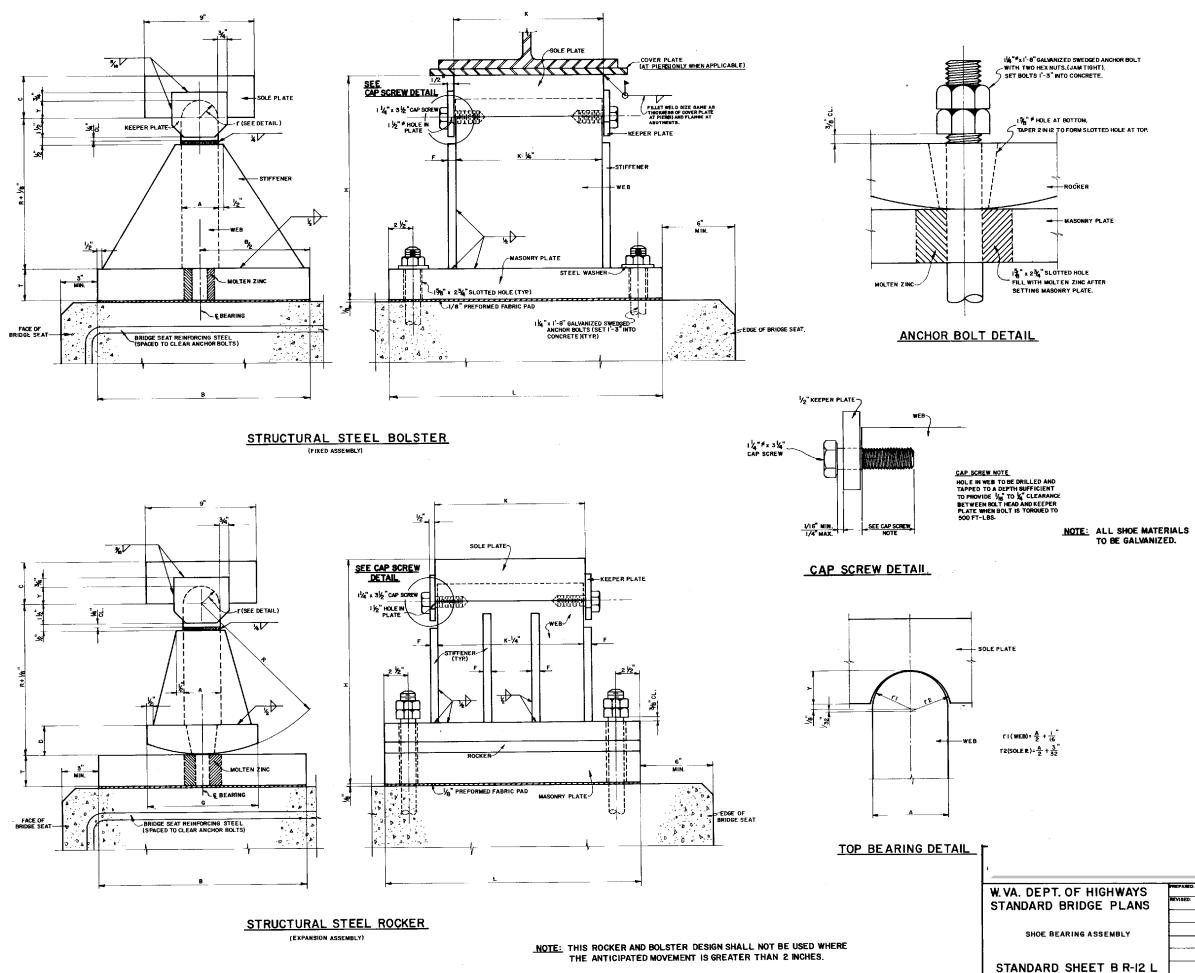
CONTROL DIMENSIONS

CODE	DESCRIPTION	VALUE
в	LENGTH OF SHOE ASSEMBLY (SOLE R., MASONRY R., AND FABRIC PAD)	
D	WIDTH OF SHOE ASSEMBLY (SOLE R, MASONRY R, AND FABRIC PAD)	
k	BEAM PROPERTY VALUE OBTAINED FROM "DIMENSIONS FOR DETAILING" TABLE IN THE LATEST A.I.S.C. MANUAL	
ħ	8/2-k(SEE FRONT ELEVATION VIEW)	
т	THICKNESS OF MASONRY PLATE AND SOLE PLATE	
U	DISTANCE FROM FRONT FACE OF CURTAIN WALL TO & BEARING (NORMAL)	
v	DISTANCE FROM FACE OF BRIDGE SEAT TO & BEARING(NORMAL)	

REQUIRED MATERIAL TABLE

	LUOI					
MATERIAL	SPEC.	EACH FIXED ASSEMBLY	NO. OF FIXED ASSEMBLIES	EXPANSION ASSEMBLY	NO. OF EXPAN. ASSEMBLIES	TOTAL QUANTITY
FABRIC PAD	715.13	S.F.		SE		SF.
MASONRY R Sole R	A-36	LBS		L8S		LBS
BOLTS	A-307	2		2		
HEX NUTS	A-307	2		4		
WASHERS	A-307	2		_	—	
NOLTEN ZINC		LBS		LBS		LBS





PUBLIC Roads DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

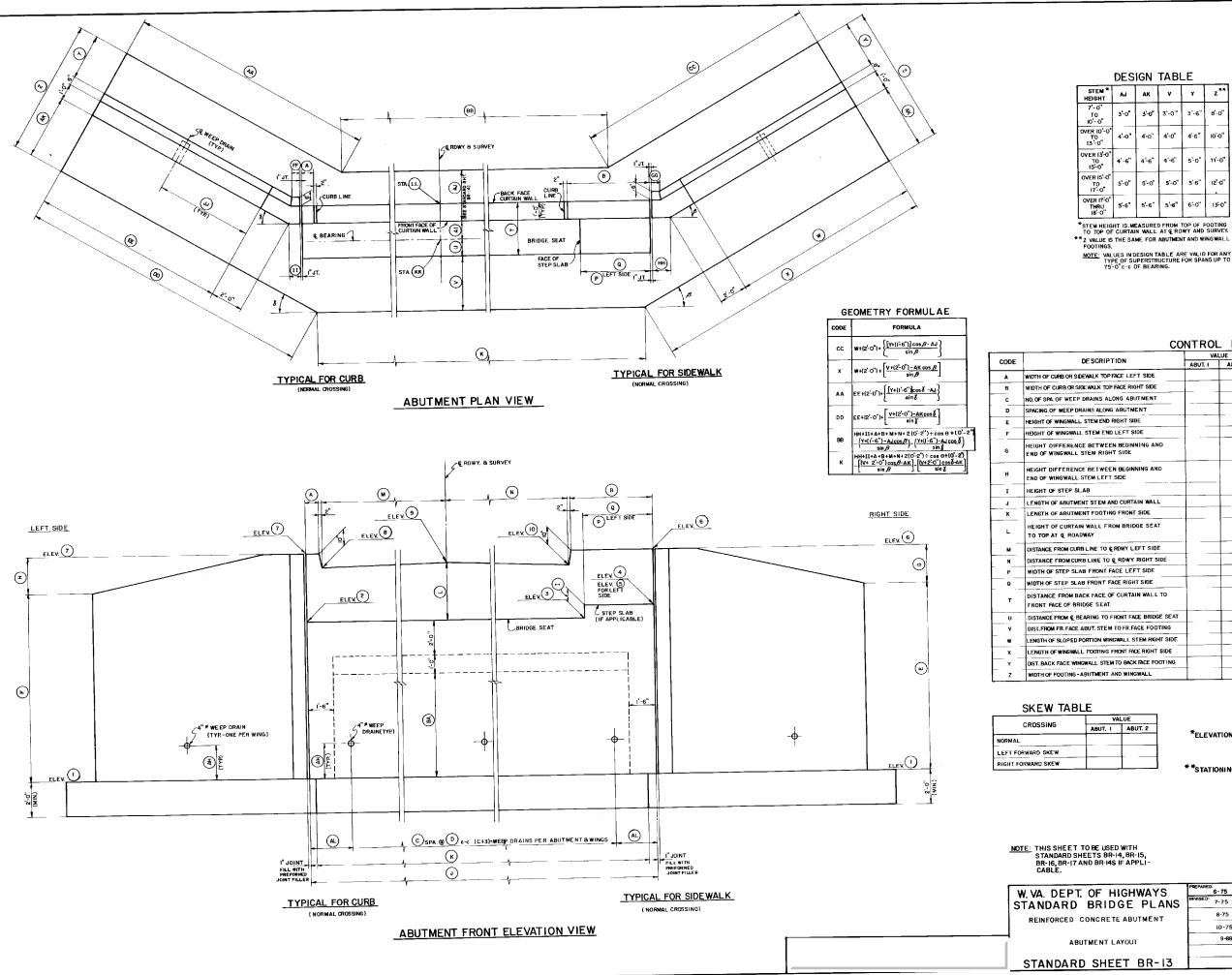
NOTE: CIRCLE THE APPROPRIATE MAXIMUM LOAD TO INDICATE THE CONTROLLING DIMENSIONS FOR THE ABUTMENTS(AND PIER(\$) IF APPLICABLE).

CODE			MA	XIMU	M LO	AD IN	KIPS			
WDE	75	100	125	150	175	200	225	250	275	300
A	21/2"	2 1⁄2"	3"·	3"	3"	3"	3"	31/2	31/2"	3½"
B	8"	10"	11"	12"	14 [#]	16"	17*	18"	19"	20"
c	21/2"	2 1/2"	3	3"	3½"	3 1/2"	3 ½"	з ½"	з½"	3 1/2"
D	13/4"	2"	2"	2 🙀 "	2 1/2"	2 1/4	2 1/4	2 3/4"	3 ¼	31/4
F	1⁄2"	1/2"	⊮₂ "	¥₂"	¥2"	% 8"	5∕8"	34"	34 "	3⁄4 "
G	7"	71/2"	8"	8 ½"	9"	9"	9"	10"	12"	12"
н	9%;"	10%"	12 1⁄8"	133/8	15 1/8"	163/8"	16%	17 % ;"	18 3/8"	ю%"
к	9"	9"	101/2"	11 /2"	12"	12"	13 "	13 "	14 "	14"
L	19.	19"	20"	22"	23,"	24"	25"	26"	27"	28"
M	16"	17"	18"	19"	20"	21*	22"	23"	24"	25"
R	51/2	6½"	7%2"	8 1/2"	9 1/2"	10 1/2"	11"	11/2"	12"	12 1/2
т	11/2"	1%"	ı‰"	13/4"	2"	21⁄4"	2 1⁄4"	z ½"	z ¾"	3"
Y	1346"	13/16	1/16	13/16"	1%6	1 7/16"	1 7/6"	"%i6	1%6	" ₆ "
BOLSTER	—	225	295	360	455	540	590	695	600	895
ROCKER	205	250	315	400	505	605	665	775	945	1050
NOTE:	WEIGUTS									

NOTE: WEIGHTS GIVEN ARE IN POUNDS, FOR ONE ROCKER OR BOLSTER A (INCLUDING FABRIC PAD, ANCHOR BOLTS AND WASHERS). MPLETE

MATERIAL	SPEC.	EACH FIXED Assembly	NO. OF FIXED ASSEMBLIES	EXPANSION Assembly	NO. OF EXPAN. ASSEMBLIES	TOTAL QUANTITY
FABRIC PAD	715, 13	S.F.		S.F.		SE
MASONRY R.	A-36	LBS.	-	LBS		LBS
SOLE R.	A-36	LBS		LBS.		LBS
KEEPER R.	A-36	LBS		LBS.		LBS
EXTERNAL STIFFENERS	A-36	LBS.		LBS.		LBS
INTERNAL STIFFENERS	A-36	LBS		LBS		LBS
WEB L	A-36	LBS		LBS.		LBS
HEX NUTS	A-307	:				
WASHERS	A-307					
ANCHOR BOLTS	A-307					
CAP SCREWS	A-307					
MOLTEN ZINC OR LEAD	—	LBS		LBS.		LBS
ROCKER R.	A~36			LBS.		LØS

	THE WEST VIRGINIA DEPARTMEN STRUCTURES DIVISION	
		DESIGNED BY:
		DRAWN BY:
		CHECKED BY:
REPARED:		REVIEWED BY:
REVISED		DATE:
8-82		SCALE: NONE
10-83		SHEET
9-88		BRIDGE NUMB
	4-74 REVISED: 2-75 8-82 10-83	STRUCTURES DIVISIO



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
w.va.					

DESIGN TABLE

AK	v	Y	z**
3'-0"	3,-0 .	3'-6"	8'-O''
4'-0"	4'-0"	4'-6"	ı0'-0"
4'-6"	4'-6"	5 [`] -0"	11'-0"
5'-0"	5'-0"	5'-6"	12-0"
5'-6"	5'-6"	e-0"	13-0"

NOTE: VALUES IN DESIGN TABLE ARE VALID FOR ANY TYPE OF SUPERSTRUCTURE FOR SPANS UP TO 75-0°C-C OF BEARING.

*CONTROL ELEVATIONS

		V V	LUE
CODE	DESCRIPTION	ABUT, I	ABUT. 2
I	ELEVATION AT TOP OF FOOTING		
2	ELEVATION AT END OF BRIDGE SEAT LEFT SIDE		
3	ELEVATION AT END OF BRIDGE SEAT RIGHT SIDE		
4	ELEVATION AT END OF STEP SLAB RIGHT SIDE		
5	ELEVATION AT END OF STEP SLAB LEFT SIDE		
6	ELEVATION AT END OF CURTAIN WALL AND TOP OF WINGWALL RIGHT SIDE		
7	ELEVATION AT END OF CURTAIN WALL AND TOP OF WINGWALL LEFT SIDE		
∆ ₈	ELEVATION AT BOTTOM FACE OF CURB LEFT SIDE		_
٥,9	ELEVATION AT TOP OF CURTAIN WALL AT & ROWY.		
Δ ₁₀	ELEVATION AT BOTTOM FACE OF CURB RIGHT SIDE		

CELEVATIONS 8, 9 AND IO ARE DESIGNATED AT THE FRONT FACE OF CURTAIN WALL.

**CONTROL STATIONING

	DECORPORTION.	VAL	UE
CODE	DESCRIPTION	ABUT.I	ABUT.2
кк	STATION AT & RDWY. AND & BEARING		
LL	STATION AT & RDWY, AND BACK FACE OF CURTAIN WALL		

CONTROL DIMENSIONS

	VA	LUE	CODE	DESCRIPTION	VALUE	
	ABUT. I	ABUT.2	CODE	DESCRIPTION	ABUT. (ABUT, 2
FT SIDE			AA	LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE		
IGHT SIDE			AH	DISTANCE TOP OF FOOTING TO & WEEP DRAINS		
UTMENT			14	DISTANCE FRONT FACE OF CURTAIN WALL TO & BEARING		
MENT			AJ	DISTANCE FROM BACK FACE OF ABUTMENT STEM TO BACK FACE OF FOOTING		
			АК	DISTANCE FROM FRONT FACE OF WINGWALL STEM TO FRONT FACE OF FOOTING		
			AL	DISTANCE FROM END OF ABUTMENT STEM TO & OF FIRST ABUTMENT WEEP DRAIN		
INING AND			ВА	DISTANCE FROM TOP OF ABUTMENT FOOTING TO EDGE OF CURTAIN WALL BEVEL (BACK FACE)		1
AIN WALL			BB	LENGTH OF ABUTMENT FOOTING BACK FACE		
T SIDE			cc	LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE		
DGE SEAT	· ·		DD	LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE		
			EE	LENGTH OF SLOPED PORTION WINGWALL STEM LEFT SIDE		
EFT SIDE			FF	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT BACK FACE LEFT SIDE		
FT SIDE			GG	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT BACK FACE RIGHT SIDE		
AT SIDE			нн	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT FRONT FACE RIGHT SIDE	-	
ACE BRIDGE SEAT				DISTANCE FROM BEGINNING OF WINGWALL STEM TO		
ACE FOOTING				TURNING POINT FRONT FACE LEFT SIDE		
STEM RIGHT SIDE	<u> </u>		JJ	DISTANCE TO & OF 4" WEEP DRAIN FROM BEGINNING OF WINGWALL SLOPE		
CE RIGHT SIDE	+	+	ß	ANGLE RIGHT WINGWALL STEM IS OFFSET FROM ABUTMENT		
K FACE FOOTING	+ -	+	8	ANGLE LEFT WINGWALL STEM IS OFFSET FROM ABUTMENT		
IGWALL		1	0			

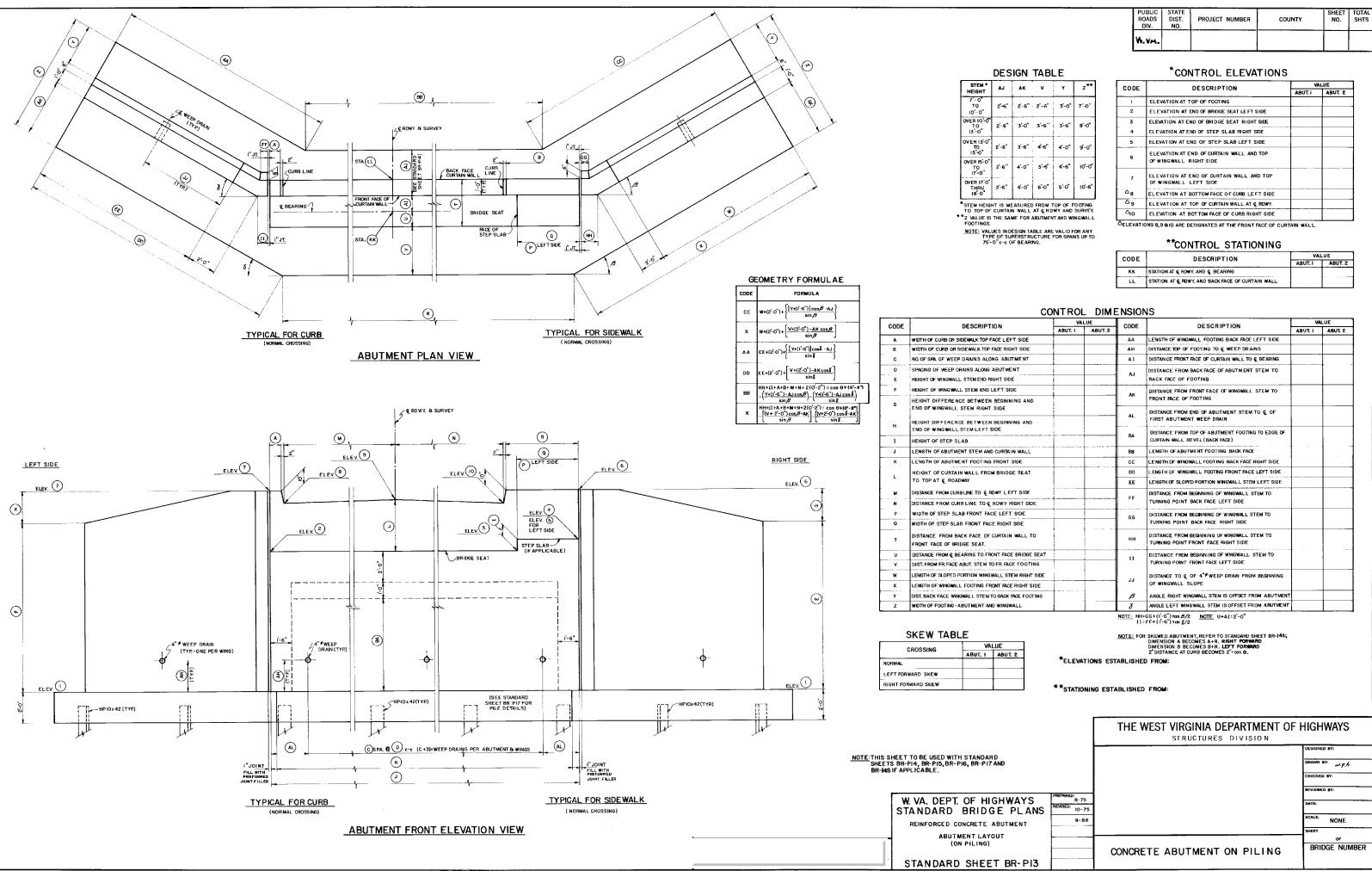
<u>NOTE:</u> HH=GG+(1'-6")tan /3/2 <u>NOTE:</u> U+AI=2'-0" II=FF+(1'-6")tan /3/2

NOTE: FOR SKEWED ABUTHENT, REFER TO STANDARD SHEET BR-I4S; DIMENSION A BECOMES A-RE FOR RIGHT FORWARD SKEW DIMENSION BECOMES A-RE FOR LEFT FORWARD SKEW 2°DISTANCE AT CURB BECOMES 2° ÷ cos θ.

*ELEVATIONS ESTABLISHED FROM:

**STATIONING ESTABLISHED FROM:

		THE WEST VIRGINIA DEPARTMENT OF	HIGHWAYS
	ŀ		DESIGNED BY:
H	ĺ		DRAWN BY: wg.h.
-15, PLI-			CHECKED BY:
			REVIEWED BY:
WAYS	PREPARED: 6-75		DATE:
PLANS	REVISED: 7-75		SCALE:
UTMENT	8-75		NONE
	10-7 5		OF
т	9-68	ANNOUT AND THE AVOUT	BRIDGE NUMBER
		CONCRETE ABUTMENT LAYOUT	
BR-13			



DIV.	NO.				
PUBLIC ROADS	STATE DIST.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS

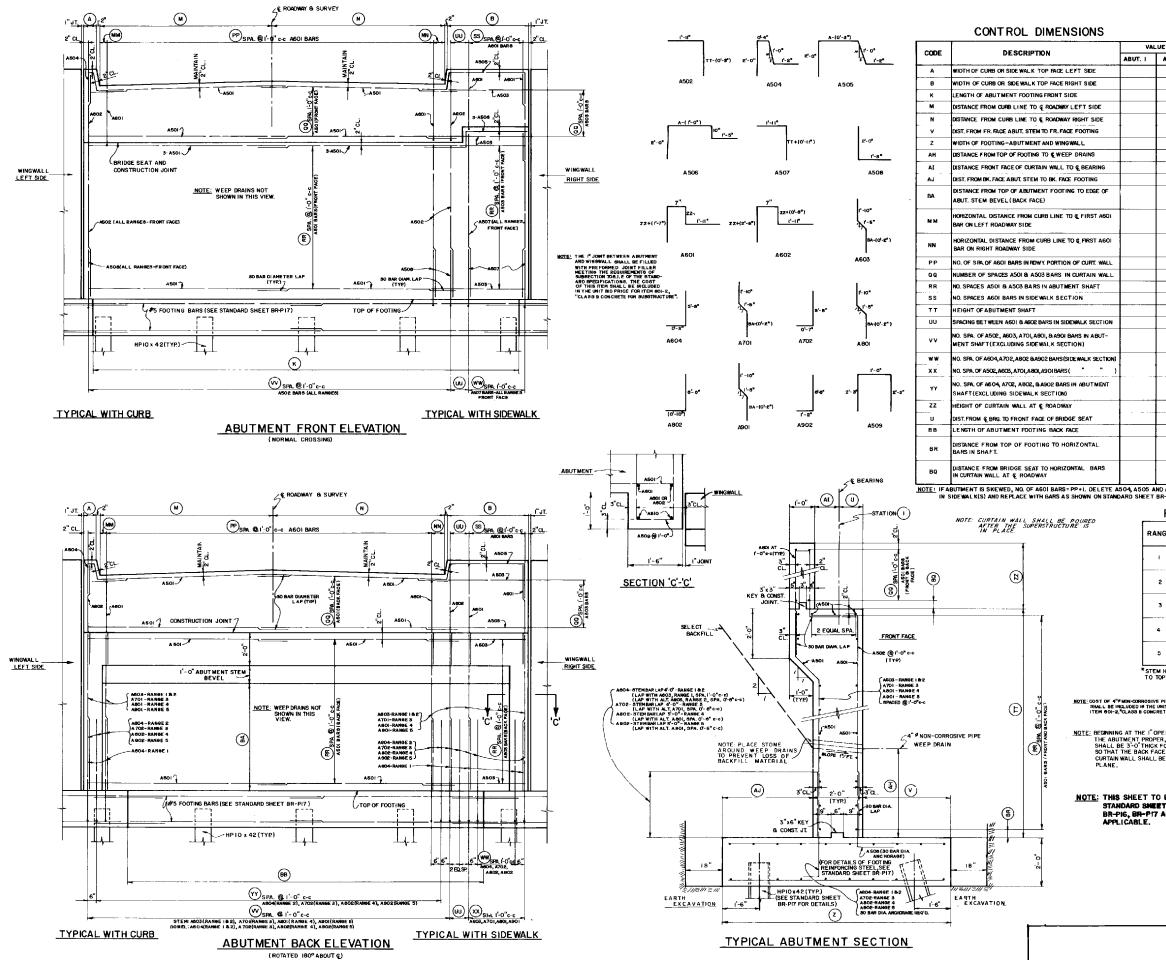
AK	v	Y	z**
2'-6"	2'-6"	3'-0"	7'-0"
3'-0"	3'-6"	3'-6"	9'-0 "
3'-6"	4'-6"	4' -0"	9'-0"
4'-0"	5'-6''	4'-6"	10'-0"
4'-0"	6'-0"	5'-0"	10'-6"

CODE	DESCRIPTION	VALUE			
UUDE	DESONFTION	ABUT. I	ABUT. 2		
1	ELEVATION AT TOP OF FOOTING				
2	ELEVATION AT END OF BRIDGE SEAT LEFT SIDE				
3	ELEVATION AT END OF BRIDGE SEAT RIGHT SIDE				
4	ELEVATION AT END OF STEP SLAB RIGHT SIDE				
5	ELEVATION AT END OF STEP SLAB LEFT SIDE				
6	ELEVATION AT END OF CURTAIN WALL AND TOP OF WINGWALL RIGHT SIDE				
7	ELEVATION AT END OF CURTAIN WALL AND TOP OF WINGWALL LEFT SIDE				
۵ ₈	ELEVATION AT BOTTOM FACE OF CURB LEFT SIDE				
60	ELEVATION AT TOP OF CURTAIN WALL AT & ROWY.				
i0	ELEVATION AT BOTTOM FACE OF CURB RIGHT SIDE				

CODE	DESCRIPTION	VA	LUE
CODE	DESCRIPTION	ABUT. I	ABUT. 2
КК	STATION AT & ROWY. AND & BEARING		
LL	STATION AT & ROWY, AND BACK FACE OF CURTAIN WALL		· ···-

			CODE	DESCRIPTION	VA	LUE
	ABUT. I	ABUT. 2	CODE	DESCRIPTION	ABUT. I	ABUT 2
FT SIDE			AA	LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE		
GHT SIDE			AH	DISTANCE TOP OF FOOTING TO & WEEP DRAINS		
UTMENT			A1	DISTANCE FRONT FACE OF CURTAIN WALL TO & BEARING		
ENT	1		LA	DISTANCE FROM BACK FACE OF ABUTMENT STEM TO		1
DE	1		AJ	BACK FACE OF FOOTING		
IDE			АК	DISTANCE FROM FRONT FACE OF WINGWALL STEM TO		
NING AND				FRONT FACE OF FOOTING	1	
			AL	DISTANCE FROM END OF ABUTMENT STEM TO & OF		
NING AND				FIRST ABUTMENT WEEP DRAIN		
			ВА	DISTANCE FROM TOP OF ABUTMENT FOOTING TO EDGE OF		
				CURTAIN WALL BEVEL (BACK FACE)		
IN WALL	1		BB	LENGTH OF ABUTMENT FOOTING BACK FACE		
SIDE			cc	LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE	1	
GE SEAT			DD	LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE		
			EE	LENGTH OF SLOPED PORTION WINGWALL STEM LEFT SIDE		
EFT SIDE				DISTANCE FROM BEGINNING OF WINGWALL STEM TO		
RIGHT SIDE	+		FF	TURNING POINT BACK FACE LEFT SIDE		
T SIDE			GG	DISTANCE FROM BEGINNING OF WINGWALL STEM TO		
T SIDE			00	TURNING POINT BACK FACE RIGHT SIDE		
N WALL TO			нн	DISTANCE FROM BEGINNING OF WINGWALL STEM TO		
			нн	TURNING POINT FRONT FACE RIGHT SIDE		
E BRIDGE SEAT			11	DISTANCE FROM BEGINNING OF WINGWALL STEM TO	t ·	-
CE FOOTING				TURNING POINT FRONT FACE LEFT SIDE]
TEM RIGHT SIDE	-]	DISTANCE TO & OF 4"#WEEP DRAIN FROM BEGINNING		
E RIGHT SIDE			11	OF WINGWALL SLOPE		
FACE FOOTING	1	1	ß	ANGLE RIGHT WINGWALL STEM IS OFFSET FROM ABUTMENT		
WALL			8	ANGLE LEFT WINGWALL STEM IS OFFSET FROM ABUTMENT		

NOTE: IN BILL OF REINFORCING MARKED BY (X) INDICATE NOTE: CIRCLE APPROPRIATE S



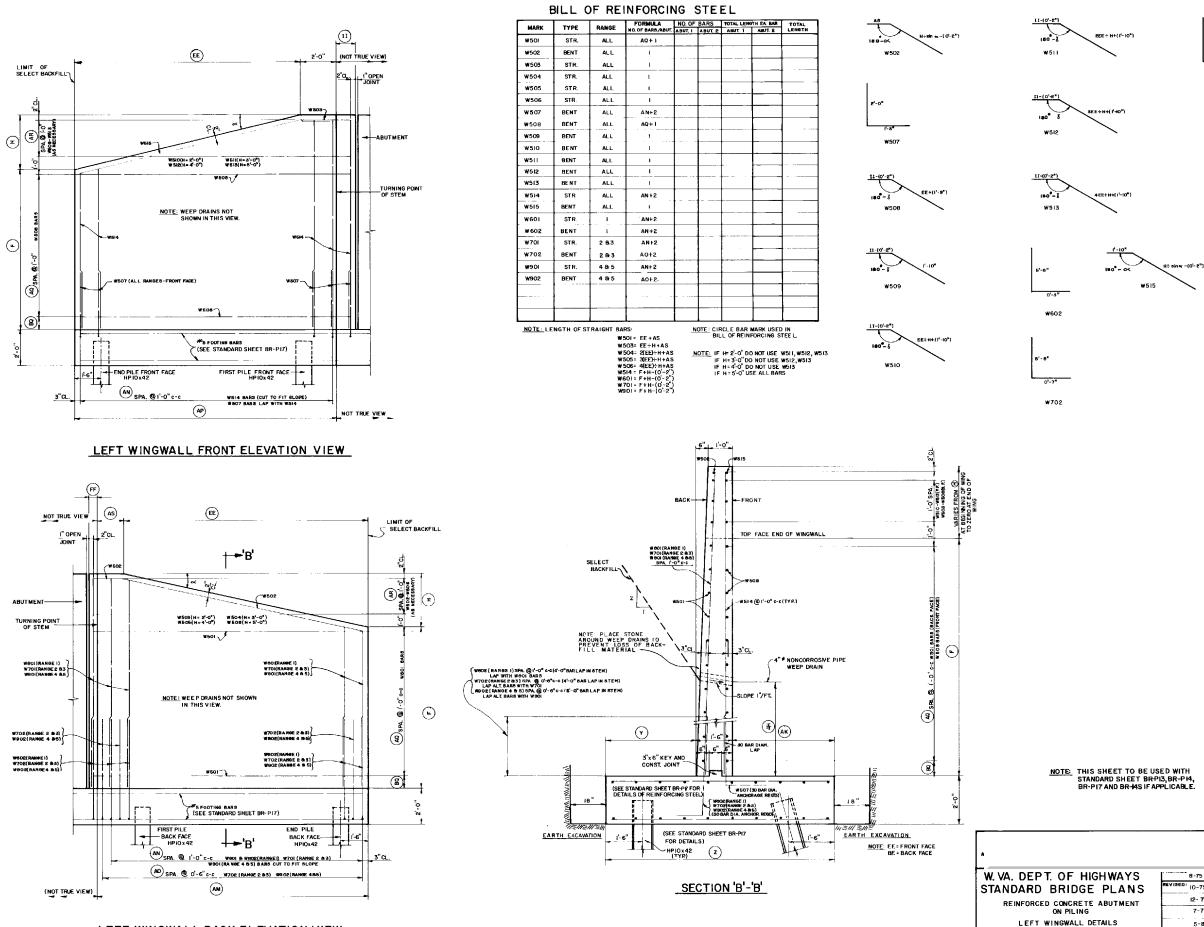
G STEEL, SIDEWALK NUMBER CATEGORIES ES BARS REQUIRED. SIDEWALK NUMBER.	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
NOTE: LENGTH OF BAR A501= M	HN+2A+4 +	10"; LENGTH	OF BAR A503- B+10"; LENGT	H OF BAR A510= TT- 3"		

	NOTE: CIRC	LE BARMA	RKU	ISED	IN B	ILL OF REP	; LENGTH OF BAR ADOS- BA					
			_			OF R	EINFORCING			Trease in		
	MARK	BAR	_	EWA	-	RANGE	FORMULA	NO. OF BARS		TOTAL LENGTH OF EACH BAR		TOTAL
17.2		ļ	0	<u> </u>	٤		NQ. BARS/ABUT.	ABUT. I	ABUT. 2	ABUT-1	BUT. 2	LENGTH
	A 501	STR	×	×	×	ALL	4(QQ)+4(RR)+12					
	A502	BENT	x	×	×	ALL	(VV)+2					
	A503	STR.		x	-	ALL	2(QQ)+2					
	A 503	· ·	-	- 1	x		4(QQ)+4					
	A504	BENT	x	1_		ALL		4	4			
	A504	"	-	x	-			2	2		- 1	
	A505	BENT	-	×		ALL		2	2	1 1	-	
	A505		1_	Ê.	x			4	4		1	
		I	1	+ -	ł	ł			1			
	A506	BENT		x	-	ALL	—	3	3	1		
	A506		<u> </u>	Ξ.	×			6	6	+		
	A507	BENT	-	x	-	ALL	(ww)++					
	A 507	"	<u> </u>	-	×		2(WW)+2					
	A601	BENT	x	-	-	ALL	(PP)+ i					
	A601 A601	1	_	× 	x		(PP)+(SS)+2 (PP)+2(SS)+3					
	A602	BENT	x	x	x	ALL		2	2			
	A603	BENT	x		-	1612	(VV)+2				_	
	A603 A603		-	×	×		(VV)+(XX)+2					
	A603 A604	BENT	×	E	×	2	(VV)+2(XX)+3 (YY)+(VV)+4		<u></u> }	┨───┤		
	A604		-	×	-	5	(YY}+{ww}+(VV)+(XX)+ 6					
	A604		-	<u> </u>	X		(YY)+(WW)2+8+(VV)+2(XX)		-			
	A701 A701	BENT	×	x -	=	3	(VV)+2 (VV)+(XX)+2					
	A701	"	-		x		(VV)+2(XX)+3					
	A702 A 702	BENT	×	x		3	(YY)+4+(VV) (YY)+(WW)+6 +(VV)+(XX)			I [
	A 702		-	12	x		(YY)+(WW)2+8+(VV)+2(XX)					
	ABOI	BENT	x	-	-	4	(VV)+2					
	ABOI			×	×		(VV)+(XX)+2 (VV)+2(XX)+3					
_	A802	BENT	x		-	4	(YY)+4+(VV)			t∵ t		
	A802		-	×	-	4	(YY)+(WW)+6+(VV}+(XX)					
	A802 A901	BENT	x	12	×	5	(YY)+(WW)2+8+(VV)+2(XX) (VV)+2			+ +		
	A90I		–	x	-		(VV)+(XX)+2			1 1		
	A901		-	<u> </u> _,	×		(VV)+2(XX)+3			┟──┝		
	A902 A902	BENT	× _	×		5	(YY)+4+(VV) (YY)+(WW)+6+(VV)+(XX)				1	
	A902	"	-	_	x		(YY)+(WW)2+0+(VV)+2(XX)					_
	A604 A604	BENT	x	1-	-	1	(VV)+2			T		
	A604 A604	н		× 	x		(VV)+(XX)+2 (VV)+2(XX)+3					
	A508	BENT	×	1-1		ALL	(VV)+2		t ·	† • • • †		
	A508 A508			x	×		(VV)+(WW)+3 (VV)+2(WW)+4					
OI BARS	A508 A509	BENT	×	×	1Â	ALL	2(RR)-2		ł	┝─┼		
S.	A510	STR	x	x	x	ALL		4	4	┢──┝		

RA	NGE TAE	BLE			CONTROL STATIONING
ANGE	STEM HEIGHT*	SELE	ECTION	CODE	DESCRIPTION
ANOL	HEIGHT [*]	ABUT. I	ABUT. 2	OODL	
1	7'-0" TO			I.	STATION AT & ROADWAY AND & BEARING
	10'-0"			STATION	NG ESTABLISHED FROM:
	ONEO LOL ON				

NGE	STEM	M SELECTION CODE DESCRIPTION		DESCRIPTION	VAL	.UE			
NGE	HEIGHT*	ABUT. I	ABUT. 2	CODE		DESCRIPTION	ABUT. I	ABUT. 2	
1	7'-0" TO]		I.	STATION	AT & ROADWAY AND & BEARING			ור
	10'-0"			STATION	NG EST	ABLISHED FROM:		•	_
2	OVER 10'-0" TO 13'-0"				E S1	IMATE OF QUANTITIES			
3	OVER 13'-0"			ITEM NO.			UNIT	QUAI	TITY
· · · ·	15'-0"			TIEM NO.	MINU DESCRIPTION			ABUT. I	ABUT. 2
4	OVER 15'-0" TO 17'-0"			601-2		CONCRETE FOR SUBSTRUCTURE NG WINGWALLS & FOOTING)	C. Y.		
5	OVER 17-0"	1		602-1	REINFORC	ING STEEL BARS (EXCLUDING WINGWALL'S & FOOTING)	LB.		
5	18-0			212~1	STRUCTU	RE EXCAVATION (INCLUDING WINGWALLS)	C. Y.		
	IT IS MEASURED I SURTAIN WALL A			212-5		MATERIAL FOR BACKFILLING NG WINGWALLS}	C. Y.		
UNIT BID	DR WEEP DRAIN PRICE FOR					W.VA. DEPT. OF HIGH	WAYS	PREPAR	8-75
RETE FO	R SUBST RUCTURE".					STANDARD BRIDGE	LANS	REVIAE	^{Di} IO-75
PEN JO	INT AT EACH END	0 OF				REINFORCED CONCRETE ABUTM	ENT		5-82

R, THE ABUTMENT STEM FORA DISTANCE OF I'-6", IES OF THE STEM AND BE IN THE SAME VERTICAL	ON PILING REINFORCING STEEL DETAILS	-	9-88
_	STANDARD SHEET BR	PI4	
BE USED WITH ITS BR-P13, BR-P15 AND BR-145 IF	THE WEST VIRGINIA DEPARTMENT OF I STRUCTURES DIVISION	HIGHW/	4YS
UN 24-142 15		DESIGNED BY:	wgh.
		REVIEWED BY:	
		SCALE: N SHEET	IONE
1	ABUTMENT DETAILS		NUMBER



LEFT WINGWALL BACK ELEVATION VIEW

STANDARD SHEET

 PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W. V #~.					

RANGE TABLE RANGE STEM HEIGHT * SELECTION ABUT 1 ABUT 2 Т **в**' то н' 2 OVER 11'TO 14 OVER 14'TO 16 3 4 OVER 16' TO I WER 18' TO 19 5

* STEM HEIGHT IS MEASURED FROM TOP OF F TOP OF STEM AT BEGINNING OF WINGWALL.

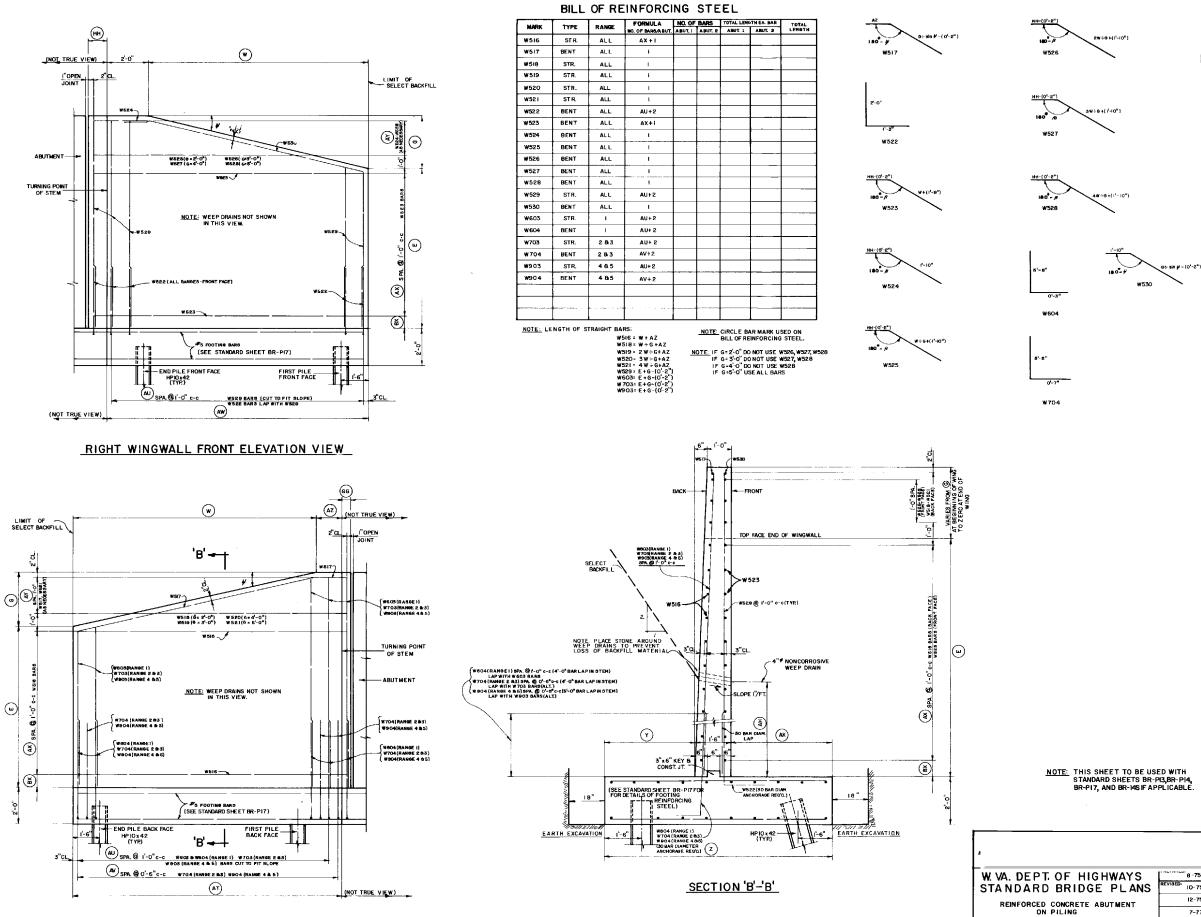
CONTROL DIMENSIONS

		VAL	UE
CODE	DESCRIPTION	ABUT. I	ABUT. 2
F	HEIGHT OF WINGWALL STEM		
н	HEIGHT DIFFERENCE BETWEEN BEGINNING AND END OF WINGWALL.		
АН	DISTANCE FROM TOP OF FOOTING TO & WEEP DRAINS		
Y	DISTANCE FROM BACK FACE OF WINGWALL TO BACK FACE OF FOOTING		
z	WIDTH OF FOOTING		
EE	HORIZONTAL LENGTH OF SLOPED PORTION DF WINGWALL STEM.		
11	DISTANCE FROM BEGINNING OF WINGWALL STEM TO THE TURNING POINT OF WINGWALL STEM AT FRONT FACE		
AK	DISTANCE FROM FRONT FACE OF WINGWALL TO FRONT FACE OF FOOTING		
АМ	LENGTH OF WING WALL FROM TURNING POINT TO END OF WING WALL AT BACK FACE		
AN	NO. OF SPAL OF W601, W602 (RAN GE I); W701 (RANGE 2 83); W901 (RANGE 4 85)BACK FACE & W507, W514 FRONT FACE		
AO	NO. OF SPA. OF W702 (RANGE 2 & 3), W902 (RANGE 4 & 5) BACK FACE.		
AP	LENGTH OF WINGWALL FROM TURNING POINT TO END OF WINGWALL AT FRONT FACE		
AQ	NO OF SPALOF W501(BACK FACE), W508 (FRONT FACE)		
AR	NO OF SPALOF HORIZ. BARS IN SLOPED PORTION OF WINGWALL STEM-POSSIBLE BARS W503-W506 (BACK FACE), W509-W513 (FRONT FACE).		
AS	DISTANCE FROM BEGINNING OF SLOPED PORTION OF WINGWALL STEM TO THE TURNING POINT ON BACK FACE		
×	ANGLE OF SLOPED PORTION OF WINGWALL		
FF	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT BACK FACE LEFT SIDE		
BQ	DISTANCE FROM TOP OF FOOTING TO HORIZONTAL BARS IN STEM		
ð	ANGLE WINGWALL STEM IS OFFSET FROM ABUTMENT (SEE STANDARD SHEET BR-P13)		

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT		TITY
	DESCRIPTION	ONTI	ABUT. I	ABUT. 2
601-2	CLASS B CONCRETE FOR SUBSTRUCTURE (EXCLUDING FOOTING)	C.Y.		
602-1	REINFORCING STEEL BARS (EXCLUDING FOOTING)	∟8.		

ET TO BE US SHEET BR-P			
D BR-H4S IF AF		THE WEST VIRGINIA DEPARTMENT OF STRUCTURES DIVISION	F HIGHWAYS
			DESIGNED BY:
			DRAWN BY: w.g.h.
			CHECKED BY:
			REVIEWED BY:
AYS ANS	8-75 REVISED: 10-75		DATE:
TMENT	12- 75		SCALE: NONE
~	7-77		SHEET
5	5-82		of BRIDGE NUMBER
8R-P15	9-88	LEFT WINGWALL DETAILS	



RIGHT WINGWALL BACK ELEVATION VIEW

RIGHT WINGWALL DETAIL STANDARD SHEET

1			RANGE TABLE			i
	W. V.A.					
	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS

RANGE		CTION	
RAINSE.	STEM HEIGHT	ABUT. I	ABUT. 2
i	в'то н'		
2	OVER II' TO HI'		
3	OVER 14 TO 16		
4	OVER 16' TO 18'		
5	OVER 18' TO 19'		

*<u>NOTE:</u> STEM HEIGHT IS MEASURED FROM TOP OF FOOT TO TOP OF STEM AT BEGINNING OF WINGWALL

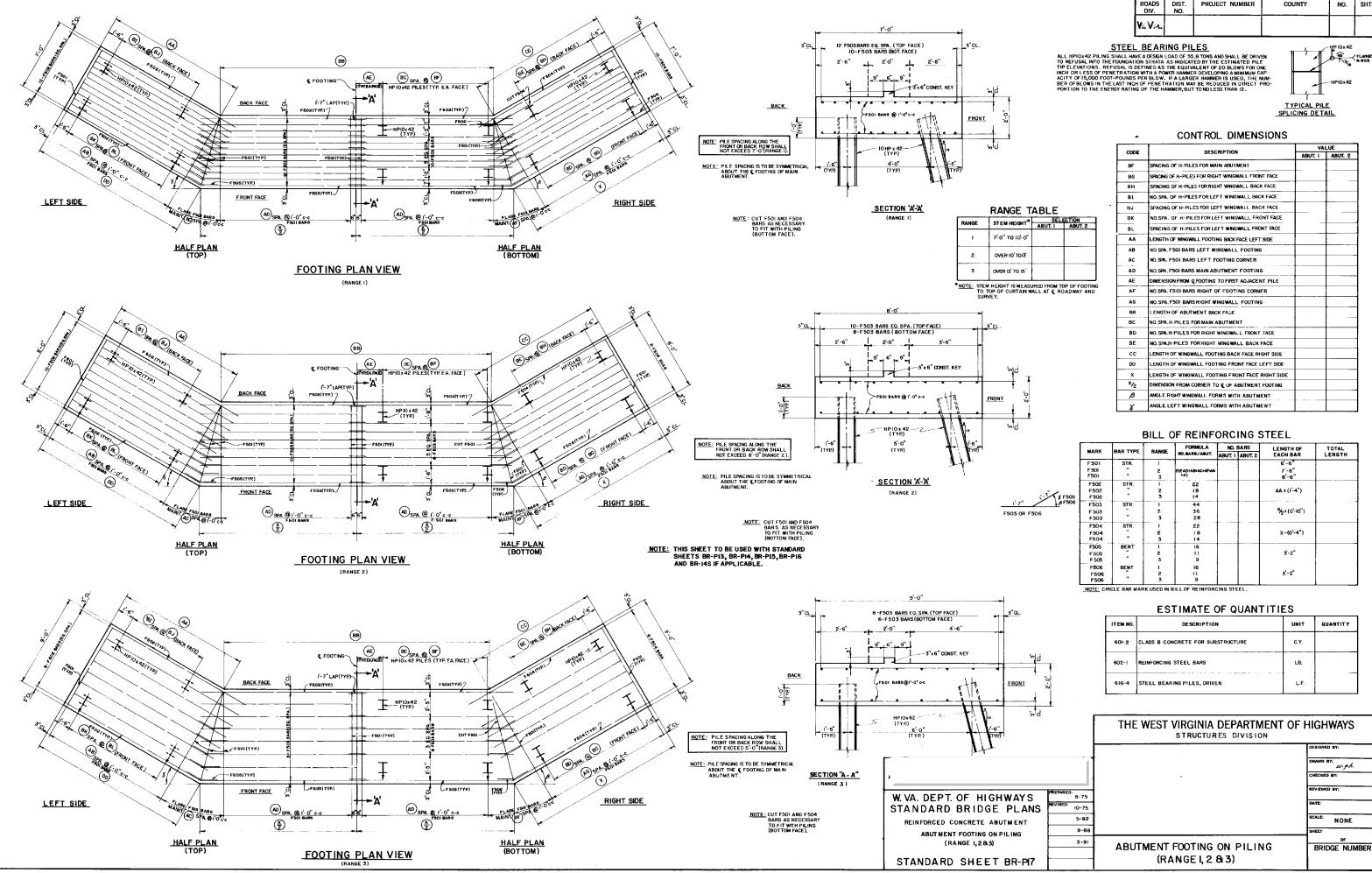
CONTROL DIMENSIONS

CODE	DE DESCRIPTION VALUE		
CODE	DESCRIPTION	ABUT. I	ABUT. 2
E	HEIGHT OF WINGWALL STEM		
G	HEIGHT DIFFERENCE BETWEEN BEGINNING AND End of Wingwall.		
АН	Distance from top of footing to & weep drains		
Y	DISTANCE FROM BACK FACE OF WINGWALL TO BACK FACE OF FOOTING		
Z	WIDTH OF FOOTING		
w	HORIZONTAL LENGTH OF SLOPED PORTION OF WINGWALL STEM		
нн	DISTANCE FROM BEGINNING OF WINGWALL STEM TO THE TURNING POINT OF WINGWALL STEM AT FRONT FACE		
AK	DISTANCE FROM FRONT FACE OF WINGWALL TO FRONT FACE OF FOOTING		
AT	LENGTH OF WINGWALL FROM TURNING POINT TO END OF WINGWALL AT BACK FACE		
AU	NO. OF SPALOF WG03, WG04 (RANGE I); W703 (RANGE 2 & 3); W903 (RANGE 4 & 5) BACK FACE & W522, W529 FRONT FACE		
AV	NO.OF SPA. OF W704(RANGE 2 & 3),W904(RANGE 4 & 5) BACK FACE		
AW	LENGTH OF WINGWALL FROM TURNING POINT TO END OF WINGWALL AT FRONT FACE		
AX	NO. OF SPA. OF W516 (BACK FACE), W523 (FRONT FACE)		
AY	NO. OF SPA. OF HORIZ, BARS IN SLOPED PORTION OF WINGWALL STEM - POSSIBLE BARS W517-W521 (BACK FACE), W524 - W528 (FRONT FACE)		
AZ	DISTANCE FROM BEGINNING OF SLOPED PORTION OF WINGWALL STEM TO THE TURNING POINT ON BACK FACE.		
¥	ANGLE OF SLOPED PORTION OF WINGWALL		
GG	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT BACK FACE RIGHT SIDE		
вх	DISTANCE FROM TOP OF FOOTING TO HORIZONTAL BARS IN STEM		
ß	ANGLE WINGWALL STEM IS OFFSET FROM ABUTMENT (SEE STANDARD SHEET BR-P(3)		

ESTIMATE OF QUANTITIES

ITCM NO			NTITY	
ITEM NO.	DESCRIPTION	UNIT	ABUT. I	ABUT. 2
601-2	CLASS B CONCRETE FOR SUBSTRUCTURE (EXCLUDING FOOTING)	C.Y.		
602-1	REINFORCING STEEL BARS (EXCLUDING FOOTING)	LB.		

EET TO BE USED WITH D SHEETS BR-PI3, BR-PI4,			
ND BR-1415 IF API		THE WEST VIRGINIA DEPARTMENT OF STRUCTURES DIVISION	HIGHWAYS
			DESIGNED BY:
			DRAWN BY: w.g.h.
			CHECKED BY:
			REVIEWED BY:
WAYS PLANS	6 -75 REVISED: IO-75		DATE:
UTMENT	12-75		SCALE: NONE
	7-77		SHEET
LS	5-62	RIGHT WINGWALL DETAILS	BRIDGE NUMBER
BR-PI6	9-88	RIGHT WINGWALL DETAILS	



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.V.A.					

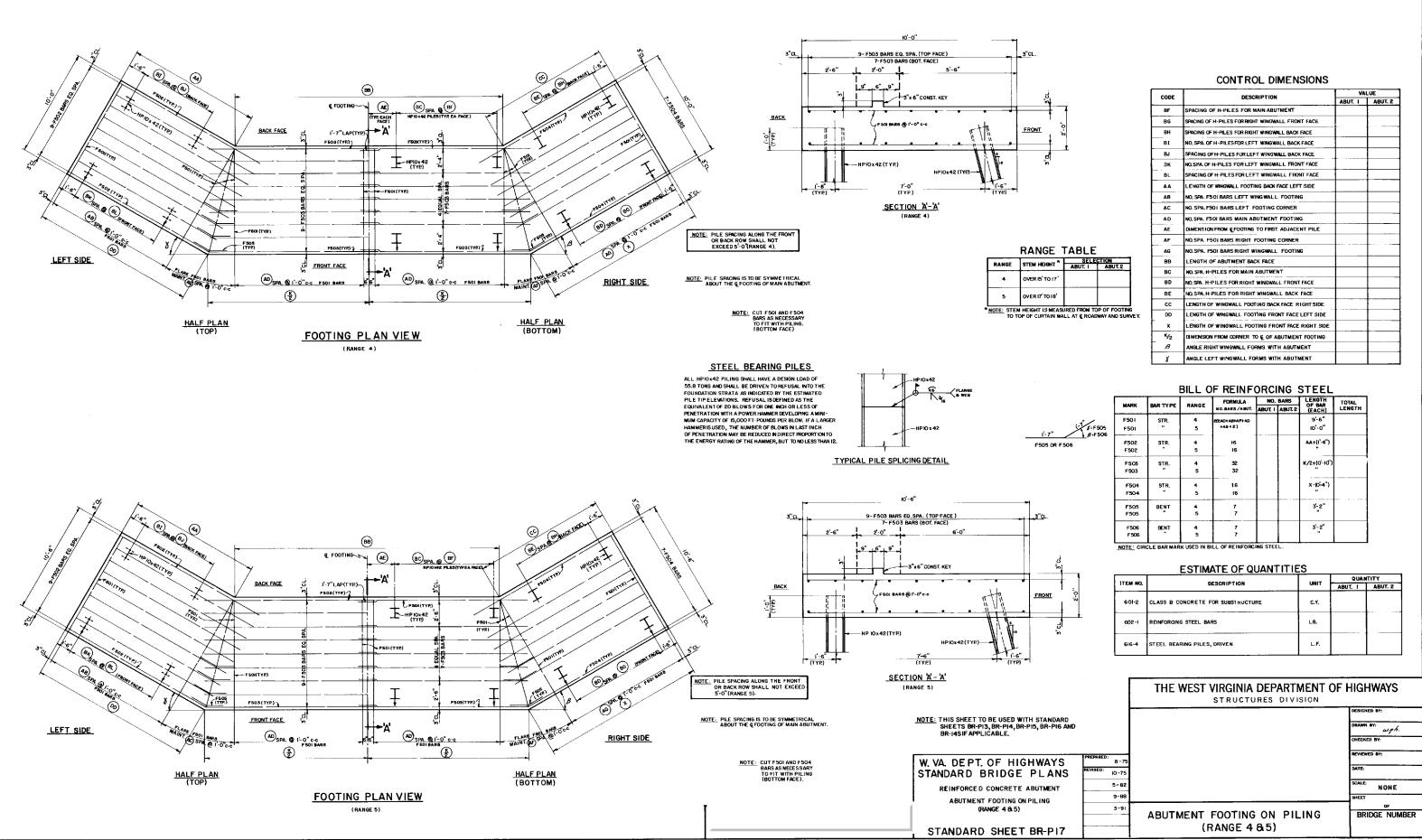


ABUT:1 ABUT:1 BF SPACING OF H-PILES FOR MAIN ABUTMENT B6 SPACING OF H-PILES FOR RIGHT WINGWALL FRONT FACE B1 NO.SPA. OF H-PILES FOR RIGHT WINGWALL BACK FACE B1 NO.SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE B1 NO.SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE B1 NO.SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE B1 NO.SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE B1 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B1 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B2 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B4 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B4 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B4 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B4 SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE B4 SPACING OF H-PILES FOR LEFT WINGWALL FOOTING A5 NO.SPA.F50I BARS MAIN ABUTMENT FOOTING A6 NO.SPA.F50I BARS RIGHT OF FOOTING CORNER A7 NO.SPA.F50I BARS RIGHT WINGWALL FOOTING A8 LENGTH OF AUTIMENT BACK FACE B6 NO.SPA.F50I BARS RIGHT WINGWALL FOOTING B7 NO.SPA.F50I BARS RIGHT WINGWALL FOOTING B8 LENGTH OF AUTIMENT BACK FACE B6 NO.SPA.H-PILES FOR RIGHT WING	CODE	DESCRIPTION	VALUE		
BG SPACING OF H-PILES FOR RIGHT WINGWALL FRONT FACE BH SPACING OF H-PILES FOR RIGHT WINGWALL BACK FACE B1 NO. SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE BJ SPACING OF H-PILES FOR LEFT WINGWALL BACK FACE BL NO. SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FAONT FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE AA LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE AA LENGTH OF WINGWALL FOOTING CORNER AD NO. SPA. F50I BARS LEFT FOOTING CORNER AD NO. SPA. F50I BARS NAIN ABUTMENT FOOTING AE DIMENSION FROM Q FOOTING TO FIRST ADJACENT PILE AF NO. SPA. F50I BARS RIGHT WINGWALL FOOTING BA LENGTH OF AUUTMENT BACK FACE BC NO. SPA. F50I BARS RIGHT WINGWALL FOOTING BB LENGTH OF AUUTMENT BACK FACE BC NO. SPA. F50I BARS RIGHT WINGWALL FOOTING BC NO. SPA. FPILES FOR RIGHT WINGWALL FOOTING BC NO. SPA. FPILES FOR RIGHT WINGWALL FOOTING BC NO. SPA. FPILES FOR RIGHT WINGWALL FOOTING FACE DD	CODE	DESCRIPTION	ABUT. I	ABUT. 2	
BH SPACING OF H-PILES FOR RIGHT WINGWALL BACK FACE BI NO. SPA. OF H-PILES FOR LEFT WINGWALL BACK FACE BJ SPACING OF H-PILES FOR LEFT WINGWALL BACK FACE BK NO. SPA. OF H-PILES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE AA LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE AB NO. SPA. F50I BARS LEFT FOOTING CORNER AD NO. SPA. F50I BARS MAIN ABUTMENT FOOTING AE DIMENSION FROM & FOOTING TO FIRST ADJACENT FILE AF NO. SPA. F50I BARS RIGHT OF FOOTING CORNER AG NO. SPA. F50I BARS RIGHT OF FOOTING CORNER AB NO. SPA. F50I BARS RIGHT WINGWALL FOOTING BR LENGTH OF AUUTMENT BACK FACE BC NO. SPA. FPILES FOR RIGHT WINGWALL FOOTING BB NO. SPA. H-PILES FOR RIGHT WINGWALL FOOTING FACE BC NO. SPA. H-PILES FOR RIGHT WINGWALL FOOTING ACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SID	BF	SPACING OF H-PILES FOR MAIN ABUTMENT			
BI NO. SPA. OF H-PLES FOR LEFT WINGWALL BACK FACE BJ SPACING OF H-PLES FOR LEFT WINGWALL BACK FACE BK NO. SPA. OF H-PLES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PLES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PLES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PLES FOR LEFT WINGWALL FRONT FACE AA LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE AB NO. SPA. FSOI BARS LEFT WINGWALL FOOTING AC NO. SPA. FSOI BARS MAIN ABUTMENT FOOTING AE DIMENSION FROM & FOOTING TO FIRST ADJACENT PILE AF NO. SPA. FSOI BARS RIGHT OF FOOTING CORNER AG NO. SPA. FSOI BARS RIGHT OF FOOTING CORNER AG NO. SPA. FSOI BARS RIGHT WINGWALL FOOTING BB LENGTH OF ABUTMENT BACK FAGE BC NO. SPA. FPILES FOR RIGHT WINGWALL FOOTING BD NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA.H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE <td>BG</td> <td>SPACING OF H-PILES FOR RIGHT WINGWALL FRONT FACE</td> <td></td> <td>1</td>	BG	SPACING OF H-PILES FOR RIGHT WINGWALL FRONT FACE		1	
BJ SPACING OF H-PILES FOR LEFT WINGWALL BACK FACE BK NO.SPA. OF H-PILES FOR LEFT WINGWALL FRONT FACE BL SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE BA LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE AA LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE AB NO.SPA.F50I BARS LEFT WINGWALL FOOTING AC NO.SPA.F50I BARS MAIN ABUTMENT FOOTING AE DIMENSION FROM GEOTING TORNER AE DIMENSION FROM GEOTING THERST ADJACENT PILE AF NO.SPA.F50I BARS RIGHT OF FOOTING CORNER AG NO.SPA.F50I BARS RIGHT OF FOOTING CORNER AG NO.SPA.F50I BARS RIGHT WINGWALL FOOTING BB LENGTH OF ABUTMENT BACK FACE BC NO.SPA.F1LES FOR MAIN ABUTMENT BD NO.SPA.H-PILES FOR RIGHT WINGWALL FOOTING BD NO.SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BC NO.SPA.H-PILES FOR RIGHT WINGWALL BOOT FACE RIGHT SIDE CC LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X <td< td=""><td>вн</td><td>SPACING OF H-PILES FOR RIGHT WINGWALL BACK FACE</td><td></td><td>I</td></td<>	вн	SPACING OF H-PILES FOR RIGHT WINGWALL BACK FACE		I	
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AF NO. SPA. FSOI BARS RIGHT OF FOOTING CORNER AG NO. SPA. FSOI BARS RIGHT WINGWALL FOOTING BB LENGTH OF ABUTMENT BACK FACE BC NO. SPA. H-PILES FOR MAIN ABUTMENT BD NO. SPA. H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BC NO. SPA.H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING JANGLE RIGHT WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING JB ANGLE RIGHT WINGWALL FOOTING WITH ABUTMENT	AD	NO. SPA. F50I BARS MAIN ABUTMENT FOOTING			
AG NO. SPA, F50I BARS RIGHT WINGWALL FOOTING BB LENGTH OF ABUTMENT BACK FAGE BC NO. SPA, H-PILES FOR MAIN ABUTMENT BD NO. SPA, H-PILES FOR RIGHT WINGWALL FRONT FACE BD NO. SPA, H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA, H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA, H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING Ø ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	AE	DIMENSION FROM & FOOTING TO FIRST ADJACENT PILE			
BB LENGTH OF ABUTMENT BACK FACE BC NO. SPA.H-PILES FOR MAIN ABUTMENT BD NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA.H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE HIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING Ø ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	AF	NO.SPA. F50I BARS RIGHT OF FOOTING CORNER			
BC NO. SPA.H-PILES FOR MAIN ABUTMENT BD NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA.H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING Ø ANGLE RIGHT WINGWALL FOOTS WITH ABUTMENT	AG	NO. SPA. F501 BARS RIGHT WINGWALL FOOTING			
BD NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE BE NO. SPA.H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING B ANGLE RIGHT WINGWALL FOOTS WITH ABUTMENT	BÐ	LENGTH OF ABUTMENT BACK FACE			
BE NO. SPA H-PILES FOR RIGHT WINGWALL BACK FACE CC LENGTH OF WINGWALL FOOTING BACK FACE HIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING ANGLE RIGHT WINGWALL FOOTINS WITH ABUTMENT	BC	NO. SPA. H-PILES FOR MAIN ABUTMENT			
CC LENGTH OF WINGWALL FOOTING BACK FACE FIGHT SIDE DD LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING A ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	BD	NO. SPA.H-PILES FOR RIGHT WINGWALL FRONT FACE			
DD LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING B ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	BE	NO. SPALH-PILES FOR RIGHT WINGWALL BACK FACE			
X LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE K/2 DIMENSION FROM CORNER TO € OF ABUTMENT FOOTING Ø ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	cc	LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE			
K/2 DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING B ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	DD	LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE			
ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT	x	LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE			
	K/2	DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING			
ANGLE LEET WINGWALL FORMS WITH ADVITMENT	ß	ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT			
A PARTE LET I WINGWALL FORMS WITH ADVINENT	8	ANGLE LEFT WINGWALL FORMS WITH ABUTMENT			

*	SELECTION		
M HEIGHT*	ABUT. I	ABUT. 2	
"ס-סו סד			
r 10' to13'			
13' TO 15'			

1	MARK	BAR TYPE		FORMULA	NO.	BARS	LENGTH OF	TOTAL
I	MARK	BAR ITPE	RANGE	NO.BARS/ABUT.	ABUT. I	ABUT. 2	EACH BAR	LENGTH
	F 50 I	STR.	1		T		6'-6"	
	F 501 F 501		23	2(2 AD+AB+AC+AF+A6 +2)	ł		7'-6" 8'-6"	
	F502	STR.		22	<u>+</u>			
	F502 F502		2	18			AA + (1'-4")	
t	F503	STR.	I	44		t		1
	F 503 F 503		2 3	36 28			K/2+(0'-10")	
t	F504	STR.	1	22				
l	F504 F504		2 3	18			x-(0'-4")	
t	F505	BENT	1	16				
l	F 505 F 505		2 3	11 9			3-2"	
t	F506	BENT	1	16				t
I	F506 F506		2 3	11 9	1		3'-2"	

	OF
BRIDGE	NUMBER



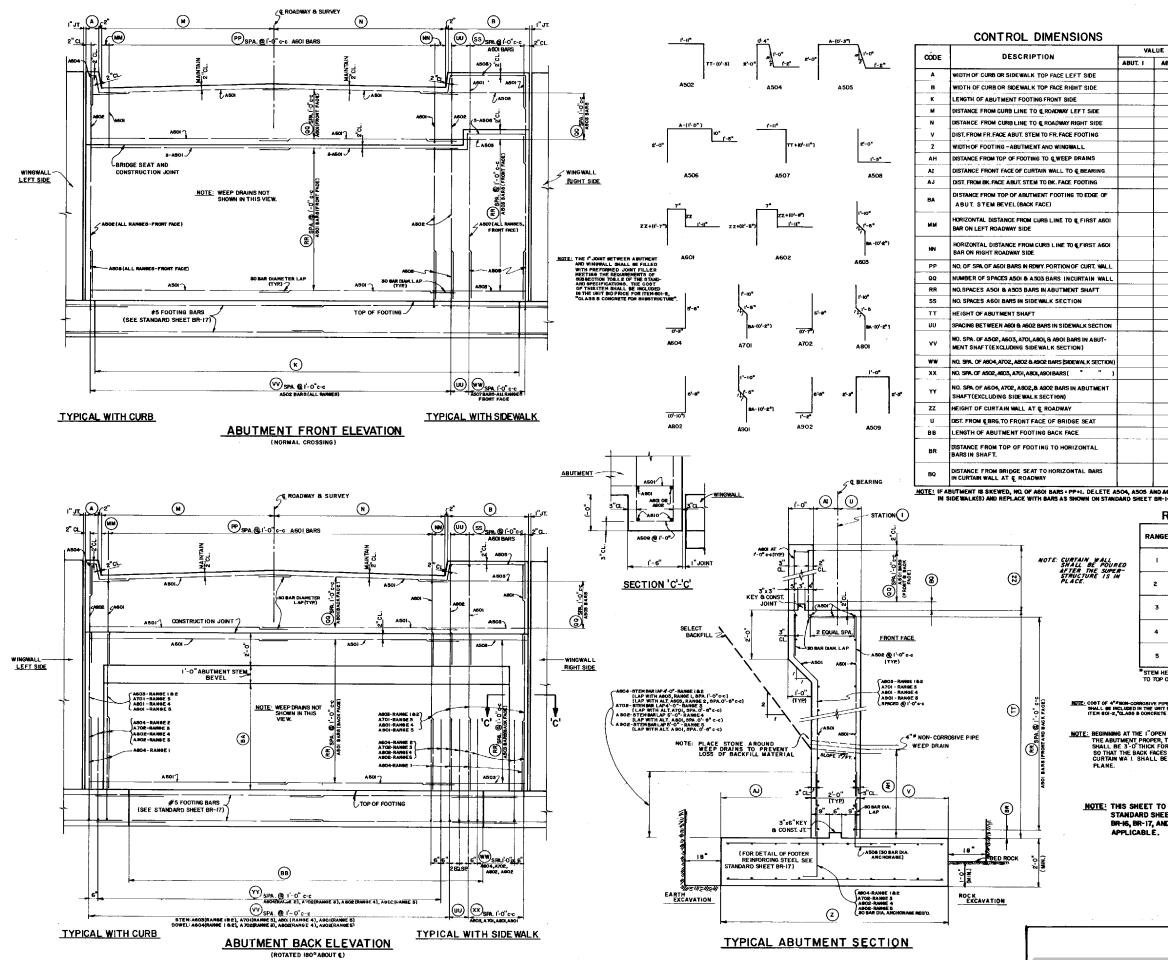
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W. VA.					

CODE	DESCRIPTION	VALUE		
	DESCRIPTION	ABUT. I	ABUT. 2	
BF	SPACING OF H-PILES FOR MAIN ABUTMENT			
86	SPACING OF H-PILES FOR RIGHT WINGWALL FRONT FACE			
BH	SPACING OF H-PILES FOR RIGHT WINGWALL BACK FACE			
81	NO. SPA. OF H-PILESFOR LEFT WINGWALL BACK FACE			
BJ	SPACING OF H-PILES FOR LEFT WINGWALL BACK FACE			
эк	NO. SPA. OF H-PILES FOR LEFT WINGWALL FRONT FACE			
BL	SPACING OF H-PILES FOR LEFT WINGWALL FRONT FACE			
AA	LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE]	
AB	NO. SPA. F50I BARS LEFT WING WALL FOOTING			
AC	NO. SPA. F501 BARS LEFT FOOTING CORNER			
AD	NO, SPA. F50I BARS MAIN ABUTMENT FOOTING			
AE	DIMENSION FROM & FOOTING TO FIRST ADJACENT PILE			
AF	NO. SPA. F501 BARS RIGHT FOOTING CORNER			
AG	NO.SPA. F50I BARS RIGHT WINGWALL FOOTING			
BB	LENGTH OF ABUTMENT BACK FACE			
BC	NO. SPA. H-PILES FOR MAIN ABUTMENT			
BD	NO. SPA. H-PILES FOR RIGHT WINGWALL FRONT FACE			
8E	NO. SPA. H-PILES FOR RIGHT WINGWALL BACK FACE			
cc	LENGTH OF WINGWALL FOOTING BACK FACE RIGHTSIDE			
DD	LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE	Ι		
×	LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE			
K/2	DIMENSION FROM CORNER TO & OF ABUTMENT FOOTING			
В	ANGLE RIGHT WINGWALL FORMS WITH ABUTMENT			
x	ANGLE LEFT WINGWALL FORMS WITH ABUTMENT			

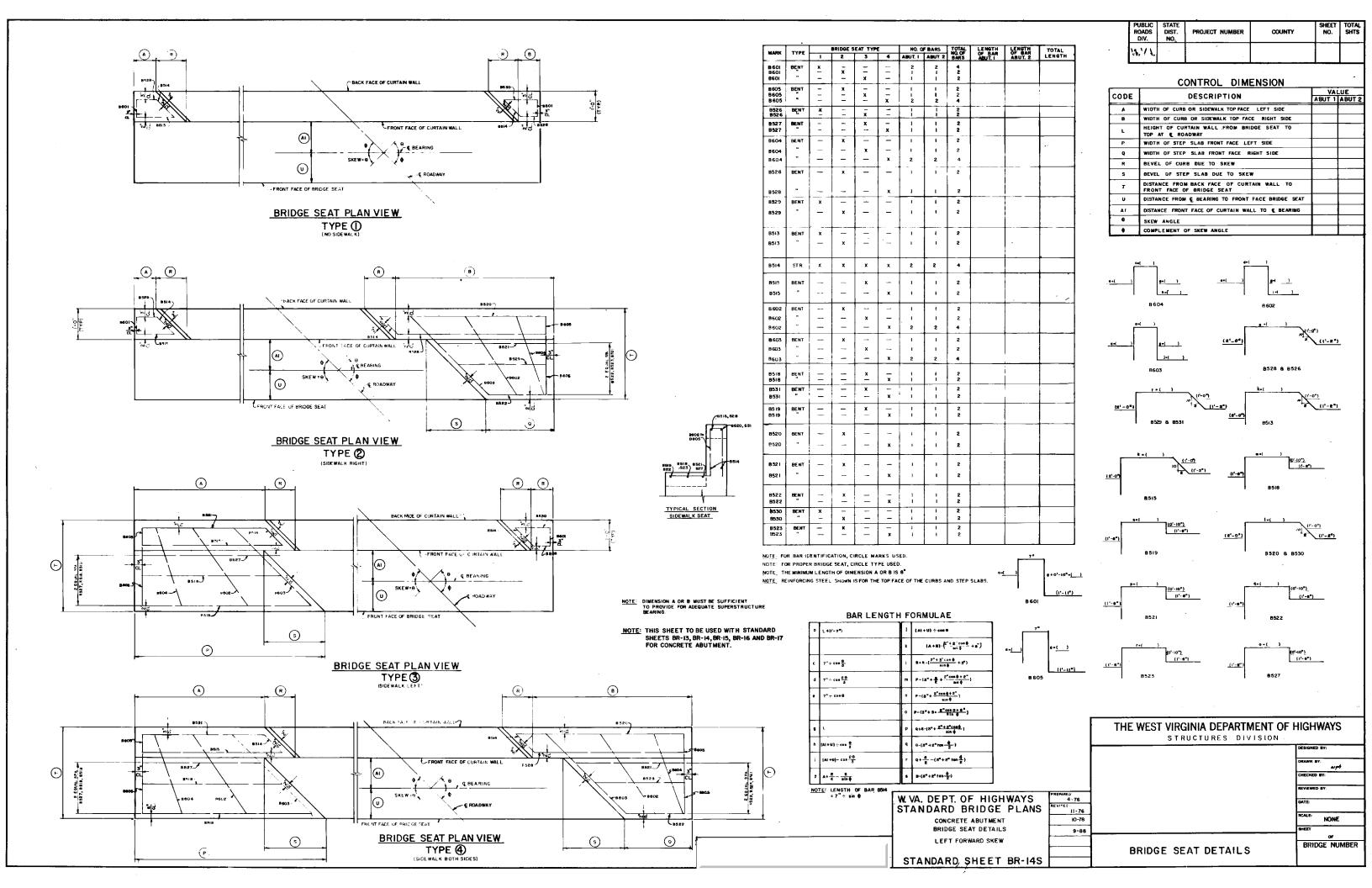
			FORMULA	NO.	BARS	LENGTH	TOTAL
MARK	BAR TYPE	RANGE	NG.BARS /ABUT.	ABUT. I	ABUT.2	OF BAR (EACH)	LENGTH
F501	STR.	4	2(2AD+AB+AF+AD			9'-6″	
F50I		5	+46+2)			10'-0"	
F502	STR.	4	16			AA+(I'-4")	
F502	"	5	16			n	
F503	STR.	4	32			K/2+(0'-10')	
F503	"	5	32			"	
F504	STR.	4	16			x-(0'-4")	
F504	n	5	16			"	
F505	BENT	4	7			3-2"	
F505		5	7			"	
F506	BENT	4	7			3'-2"	
F 506	"	5	7				

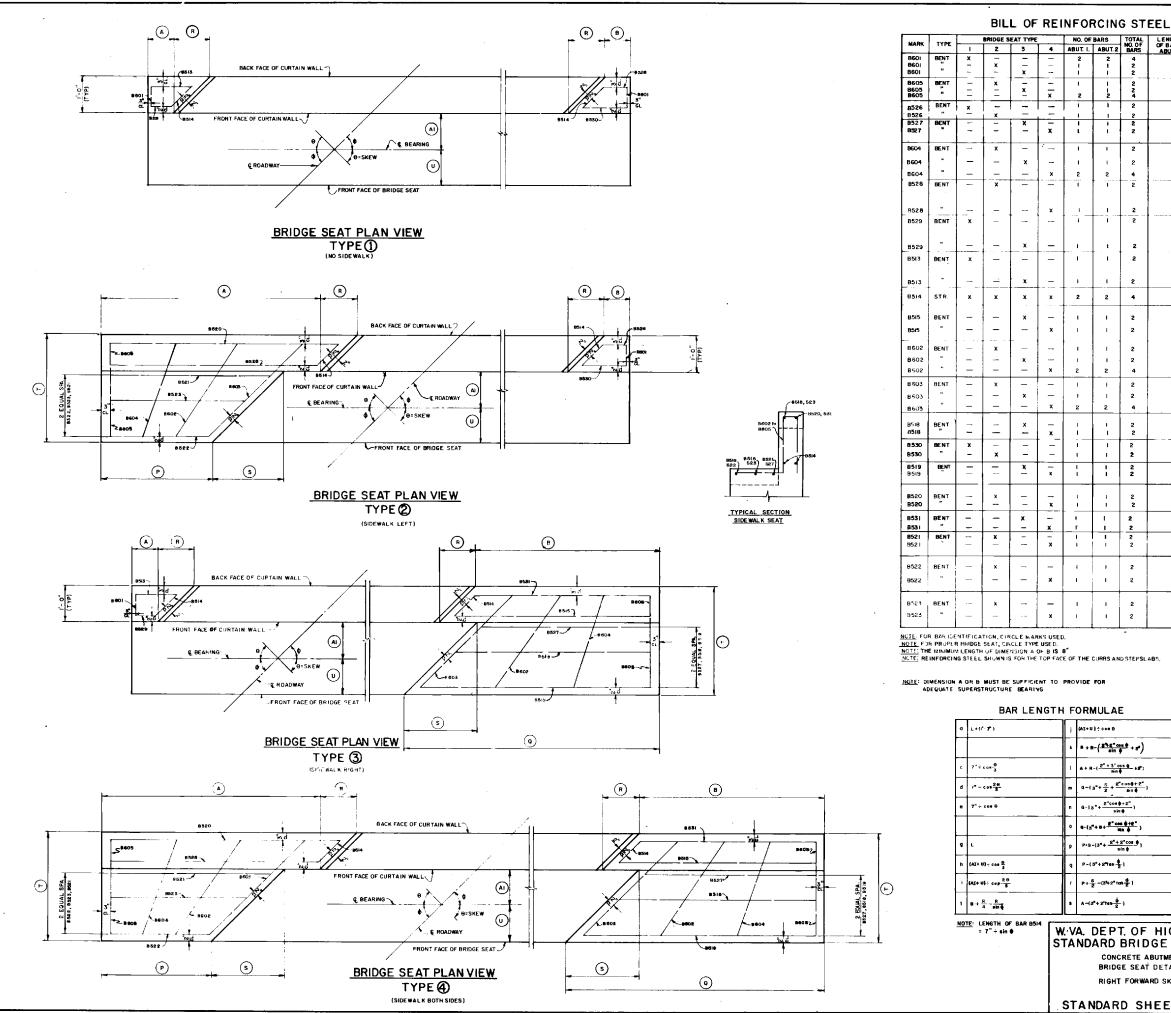
ITEM NO.			QUANTITY		
	DESCRIPTION	UNIT	ABUT. I	ABUT. 2	
601-2	CLASS B CONCRETE FOR SUBSTRUCTURE	C.Y.			
602-1	REINFORCING STEEL BARS	LÐ.			
616-4	STEEL BEARING PILES, DRIVEN	L.F.			

NOTE: IN BILL OF REINFORCING MARKED BY (X) INDICATES NOTE: CIRCLE APPROPRIATE SID



	ARS		3"		
NOTE: CIRCLE BAR MARK USED IN BILL OF REINFORCING STEEL. BILL OF REINFORCING STEEL BILL OF REINFORCING STEEL BILL OF REINFORCING STEEL MARK BAR SIDEWALK ABUT: 2 MARK TYPE 0 1 2 NO. BARS/ABUT. ABUT I	ARS		3"		·
BILL OF REINFORCING STEEL	ARS	-			
ABUT. 2 MARK BAR TYPE 0 I 2 RANGE NO. BARS/ABUT. ABUT I A		TOTAL 1			
	ABUT. 2		ENOTA Di Bar	TOTAL LENGTH	
A 501 STR. X X ALL 4(QQ)+4(RR)+12		ABUT.1	ABUT.R	+	
A 502 BENT X X X ALL (VV)+2					
A503 STR X - ALL 2(QQ)+2 A503 " X " 4(QQ)+4				ŀ	
A304 BENT X ALL 4	4	4'- 6"	4°-0°	†	1
A504 " - X - " 2 A505 BENT - X - ALL 2	2				-
A505 " ~ - X " 4	4				
A506 BENT - X - ALL 3	3 6				
A507 BENT - X - ALL (WW)+i A507 " - X " 2(WW)+2				1	1
					1
AGOI - - - - 0 (PP)+(sS)+2 AGOI - - - - (PP)+2(SS)+3 - AGO2 BENT X X ALL - 2	2			1	-
A603 BENT X 182 (VV)+2 A603 " - X - " (VV)+2				•	1
A603 " X " (VV)+2(XX)+3 A604 BENT X 2 (VY)+(VV)+4					-
A604 " - X - " (YY)+(WW)+(VV)+(XX)+6 A604 " - X " (YY)+(WW)240+(VV)+2(X)					⊥ I
A701 BENT X − − 3 (VV)+2 A701 " − X − " (VV)+(XX)+2 A701 " − − X " (VV)+(XX)+2 (VV)+(XX)+2					
A702 BENT X 3 (YY)+4+(VY) A702 " - X - " (YY)+0ww/+6+(YY)+(XX)		_	-		1
A 702 " – – X " (YY)+(WW/2+8+(VY)+2(XX) A801 BENT X – – 4 (VY)+2					-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					
AB02 BENT X 4 ((YY)+4+(VY) AB02 - X - '' (YY)+(WN)+6+(VV)+(XX) AB02 X '' (YY)+(WN/2+6+(VV)+2(XX)					
A901 BENT X 5 (VV)+2 A901 " - X - " (VV)+(XX)+2				1	1
A901 " X " (VV)+2(XX)+3 A902 BENT X 5 (YY)+4+(VV)					- 1
ASU2 - A - (11)+(WW)+6+(VV)+(XX) ASU2 X '' (YY)+(WW)2+8+(VV)+2(XX)				1	ÌÌ
A604 BENT X I (VV)+2 A604 " - X " (VV)+2(XX)+2 A604 " - - X " " (VV)+2(XX)+2				-	
A508 BENT X - - ALL $(VV)+2$ A508 " - X - " $(VV)+2$	Ĩ	s. s*	8'-3'		
A508 " - - X " (VV)+2(WW)+4 A601 BARS A509 BENT X X A LL 2(PR)-2		3'- 6"	5'-6'	-	
	4 C				ן כ
STEM SELECTION	CONTROL STATIONING				
GE STEM HEIGHT* ABUT 1 ABUT 2 CODE DESCRIPTION 7'-0" I STATION AT & ROADWAY AND & BEARING I STATION AT & ROADWAY AND & BEARING	[ABU	r. I	ABUT, 2	
TO 10'-0" STATIONING ESTABLISHED FROM:					┘│
OVER 10'-0" TO 13'-0" ESTIMATE OF QUANTIT	IFS				
0VER 13-0" TO TO TO TO TO TO TEM NQ DESCRIPTION		UN	πĹ	QUAN	TITY
				ABUT. I	ABUT. 2
TO 601-2 (EXCLUDING WINGWALLS & FOOTING)		G. Y.	_		
OVER 17-0 602-1 REINFORCING STEEL BARS(EXCLIDING WINGWALLS B THRU 18-0" 212-1 STRUCTURE EXCAVATION (INCLUDING WINGWALLS B		LB. C. Y	_		
HEIGHT IS MEASURED FROM TOP OF FOOTING P OF CURTAIN WALL AT & ROADWAY 212-5 (INCLUDING WINGWALLS)		C.Y	<i>.</i>		-1
			 'e	PREPARE	D: 6-75
TEFOR SUBSTRUCTURE".			-	REVISED	7-75
IN JOINT AT EACH END OF REINFORCED CONCRETE	ABUTM	ENT			8-75
THE ABUTMENT STEM OR A DISTANCE OF I-6, ES OF THE STEM AND ES IN THE SAME VERTICAL REINFORCING STEEL	DETAILS	5			5-82
STANDARD SHEET BR-14					
THE WEST VIRGINIA DEPARTME				NAYS	
OBE USED WITH STRUCTURES DIVISION EETS BR-13, BR-15,					
ND BR-14S IF			SIGNED		
			ECKED	w.q.h	
			VIEWED		
		DA	TE		
		sc	ALE	NONE	
		\$H	IEET		
ABUTMENT DETAILS		F	BRID	GE NUI	MBER





NO. OF BARS TOTAL ABUT. I. ABUT. 2 BARS LENGTH OF BAR

2

2 2

2

t.

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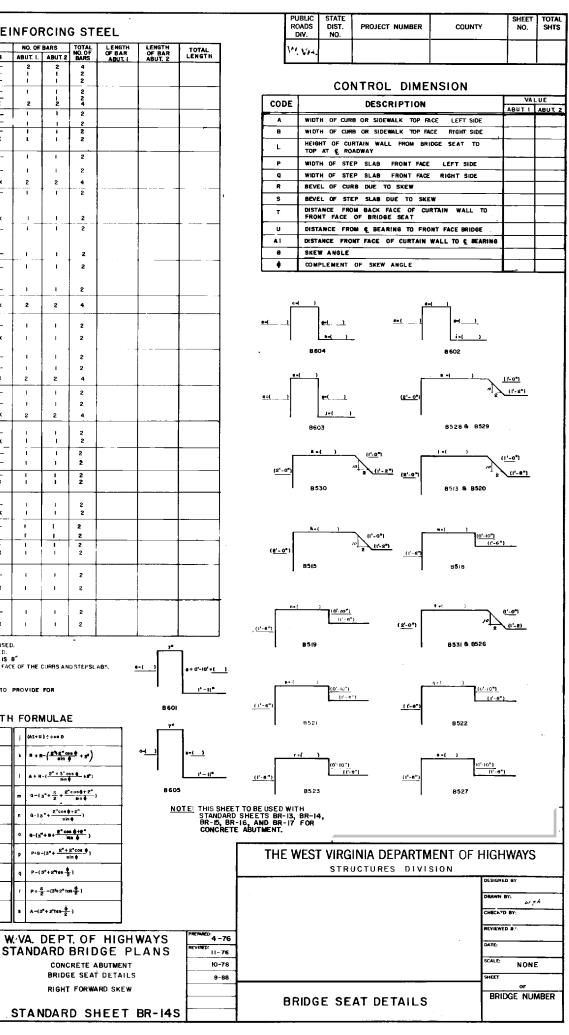
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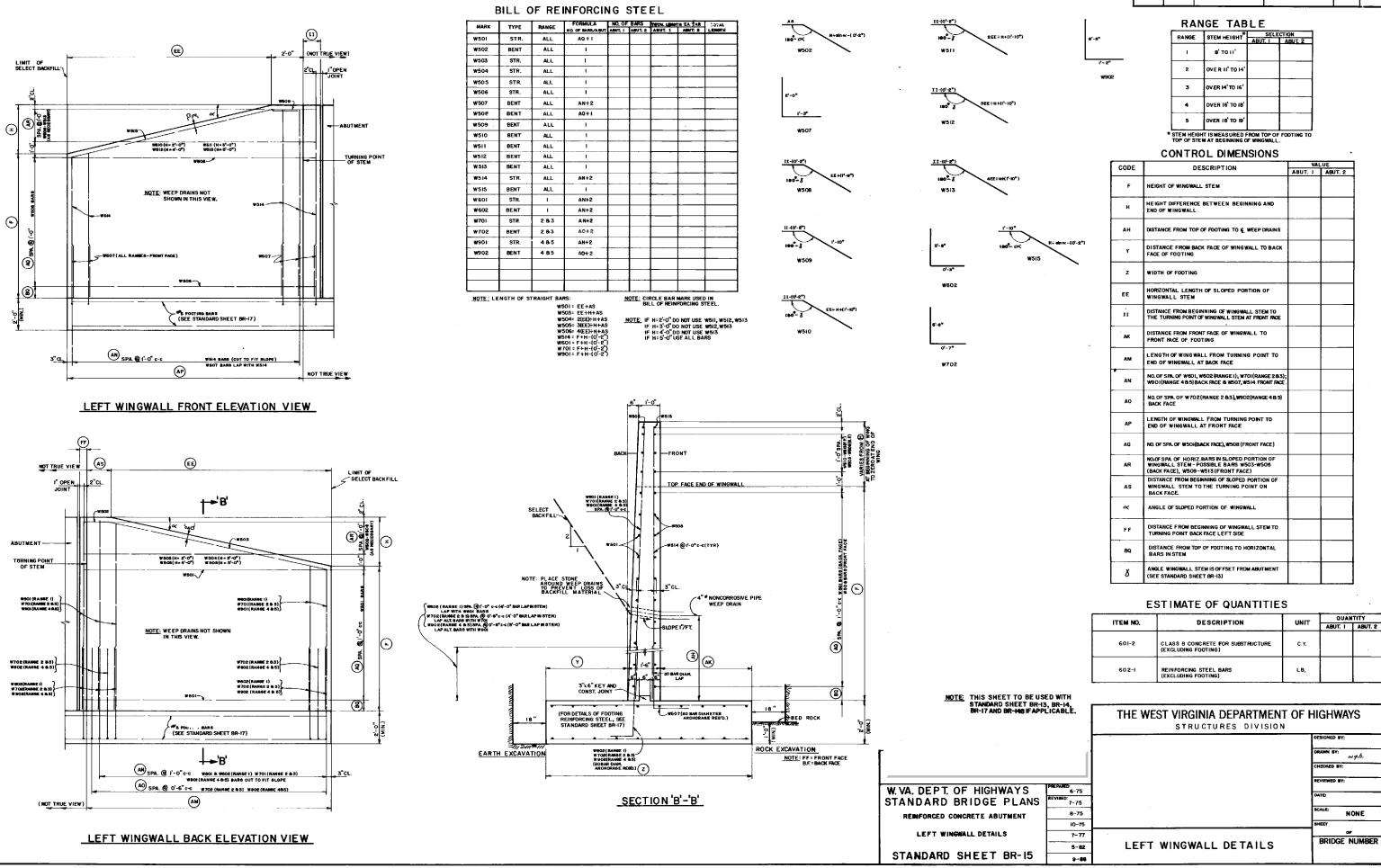
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STANDARD SHEET BR-14S





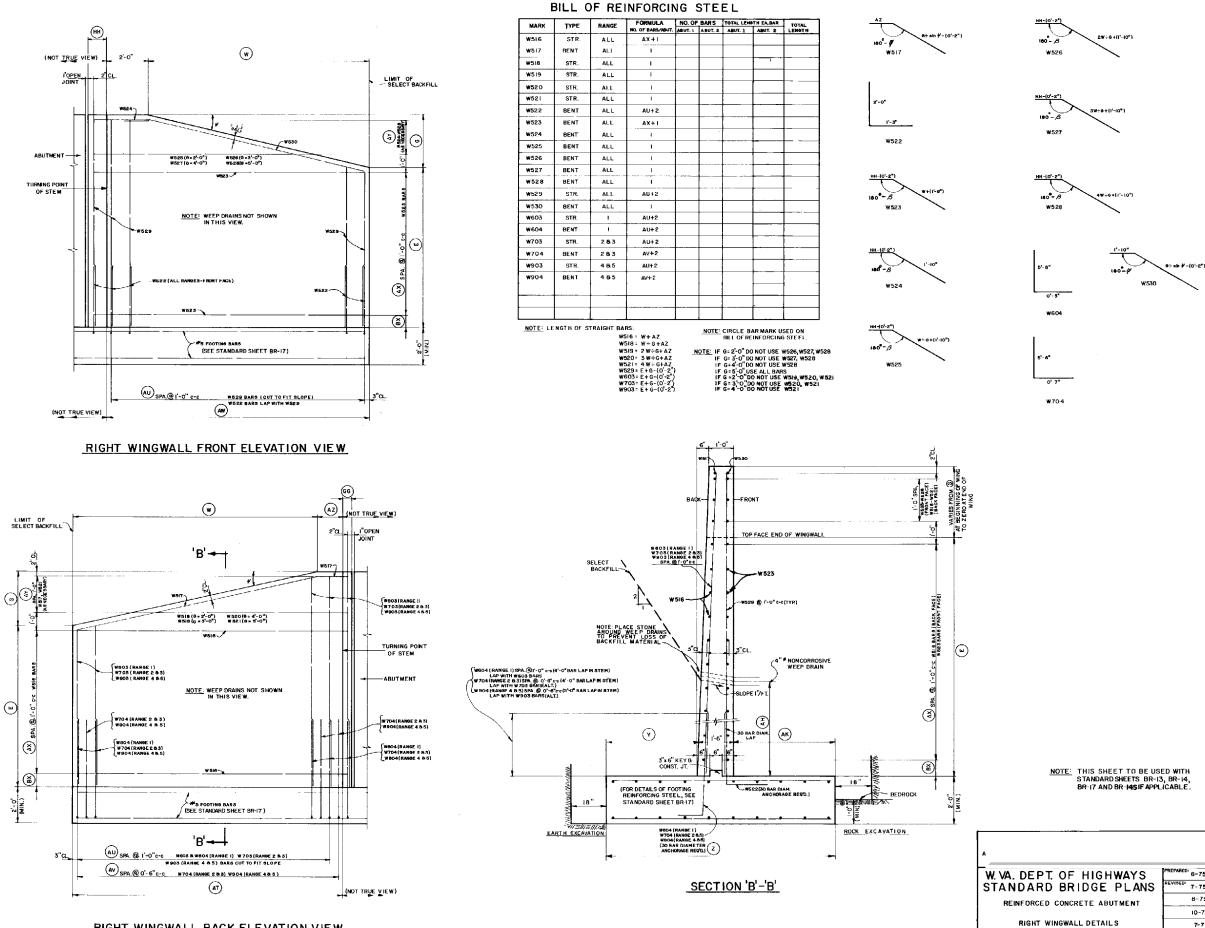
·.		PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL Shts
		W.VA.					
	I		RA	NGE TABLE			
H+(I'-10")	6'-8"		RANGE	STEM HEIGHT ABU	SELECTION		
`			1	8' TO II'			



CONTROL DIMENSIONS					
CODE	DESCRIPTION	VAL ABUT. J	NE ABUT. 2		
F	HEIGHT OF WINGWALL STEM				
н	HEIGHT DIFFERENCE BETWEEN BEGINNING AND END OF WINGWALL.				
АН	DISTANCE FROM TOP OF FOOTING TO & WEEP DRAINS				
Y	DISTANCE FROM BACK FACE OF WINGWALL TO BACK FACE OF FOOTING				
z	WIDTH OF FOOTING				
EE	HORIZONTAL LENGTH OF SLOPED PORTION OF WINGWALL STEM				
, II	DISTANCE FROM BEGINNING OF WINGWALL STEM TO THE TURNING POINT OF WINGWALL STEM AT FRONT FACE				
АК	DISTANCE FROM FRONT FACE OF WINGWALL TO FRONT FACE OF FOOTING				
AM	LENGTH OF WING WALL FROM TURNING POINT TO END OF WINGWALL AT BACK FACE				
AN	NO.OF SPALOF W601, W602 (RANGE 1); W701 (RANGE 283); W901 (RANGE 485) BACK FACE & W507, W514 FRONT FACE .				
AO	NO. OF SPA. OF W702 (RANGE 2 8:3), W902 (RANGE 4 8:5) BACK FACE				
AP	LENGTH OF WINGWALL FROM TURNING POINT TO END OF WINGWALL AT FRONT FACE				
AQ	NO. OF SPAL OF W504 (BACK FACE), W508 (FRONT FACE)				
AR	NO.OF SPA OF HORIZ.BARS IN SLOPED PORTION OF WINGWALL STEM - POSSIBLE BARS W503-W506 (BACK FACE), W509-W513 (FRONT FACE)				
AS	DISTANCE FROM BEGINNING OF SLOPED PORTION OF WINGWALL STEM TO THE TURNING POINT ON BACK FACE.				
æ	ANGLE OF SLOPED PORTION OF WINGWALL				
FF	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT BACK FACE LEFT SIDE				
BQ	DISTANCE FROM TOP OF FOOTING TO HORIZONTAL BARS IN STEM				
ð	ANGLE WINGWALL STEM IS OF FSET FROM ABUTMENT (SEE STANDARD SHEET BR-13)				



ITEM NO.	DESCRIPTION	UNIT	QUANTITY		
ITEM NU.	DESCRIPTION		ABUT. I	ABUT. 2	
601-2	CLASS B CONCRETE FOR SUBSTRUCTURE (EXCLUDING FOOTING)	C.Y.			
602-1	REINFORCING STEEL BARS (EXCLUDING FOOTING)	LB.			



RIGHT WINGWALL BACK ELEVATION VIEW

STANDARD SHEET E

 PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.V					

RANGE TABLE

RANGE	STEM HEIGHT		CTION
RANGE	SIEMMEIGHT	ABUT. I	ABUT.2
I	8' 10 II'		
2	OVER II' TO 14'		
3	OVER 14'TO 16'		
4	OVER 16' TO 18'		
5	OVER 18' TO 19'		

*<u>NOTE</u>: STEM HEIGHT ISMEASURED FROM TOP OF FOOTING TO TOP OF STEM AT BEGINNING OF WINGWALL.

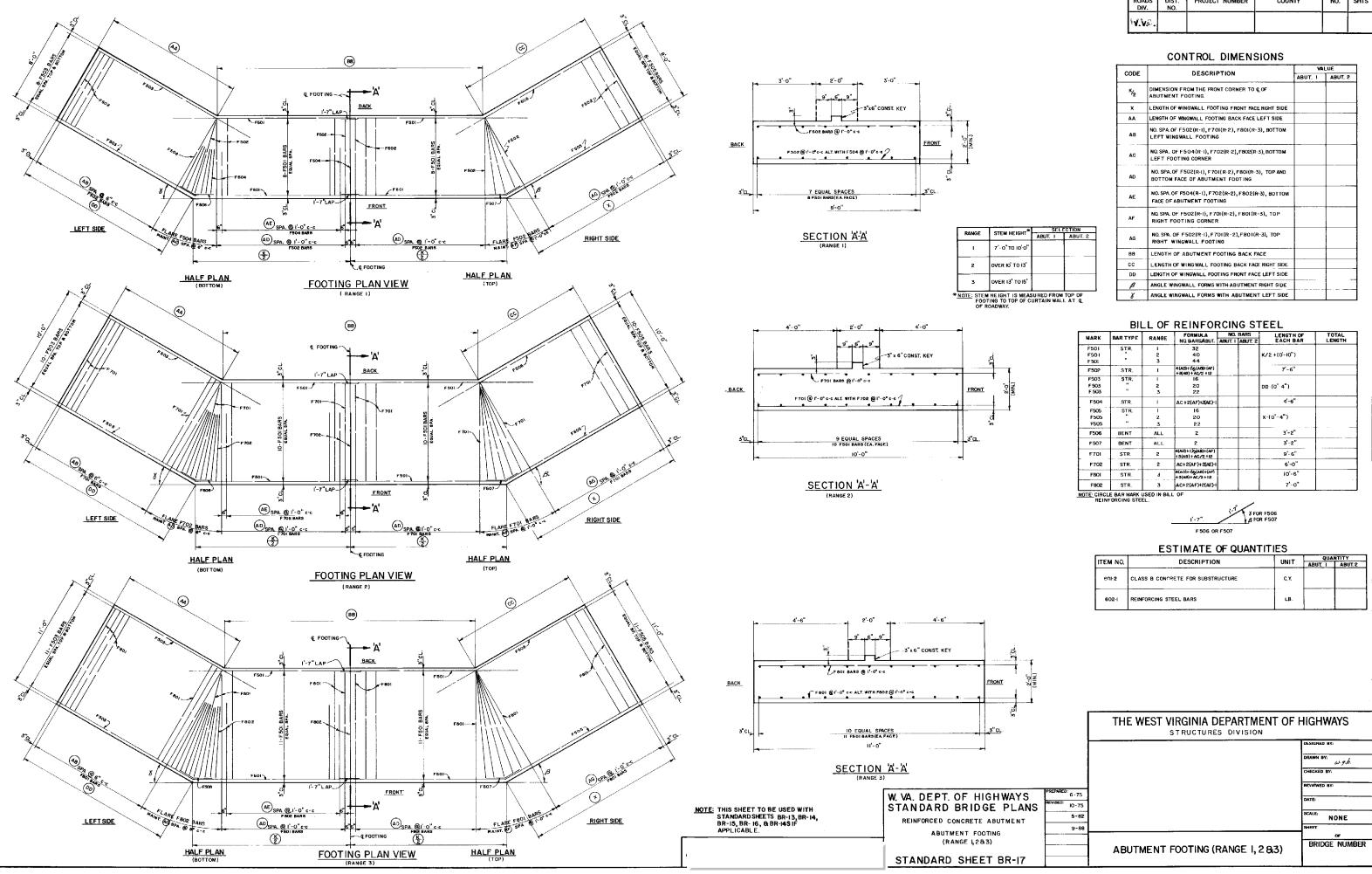
CONTROL DIMENSIONS

		VALUE			
CODE	DESCRIPTION	ABUT I	ABUT. 2		
E	HEIGHT OF WINGWALL STEM				
G	HEIGHT DIFFERENCE BETWEEN BEGINNING AND END OF WINGWALL.				
Ан	DISTANCE FROM TOP OF FOOTING TO & WEEP DRAINS				
Y	DISTANCE FROM BACK FACE OF WINGWALL TO BACK FACE OF FOOTING				
z	WIDTH OF FOOTING				
w	HORIZONTAL LENGTH OF SLOPED PORTION OF WINGWALL STEM				
нн	DISTANCE FROM BEGINNING OF WINGWALL STEM TO THE TURNING POINT OF WINGWALL STEM AT FRONT FACE				
AK	DISTANCE FROM F RONT FACE OF WINGWALL TO FRONT FACE OF FOOTING				
AT	LENGTH OF WINGWALL FROM TURNING POINT TO END OF WINGWALL AT BACK FACE				
AU	NO. OF SPA. OF W603, W604 (RANGE I); W703(RANGE 28.3); W903(RANGE 4 8.5) BACK FACE & W522, W529 FRONT FACE				
AV	NO. OF SPA. OF W 704 (RANGE 283), W904 (RANGE 485) BACK FACE				
AW	LENGTH OF WINGWALL FROM TURNING POINT TO END OF WINGWALL AT FRONT FACE				
AX	NO. OF SPA. OF W516 (BACK FACE), W523 (FRONT FACE)				
AY	NO. OF SPA. OF HORIZ BARS IN SLOPED PORTION OF WINGWALL STEM - POSSIBLE BARS W517-W521 (BACK FACE), W524-W528 (FRONT FACE)				
۵Z	DISTANCE FROM BEGINNING OF SLOPED PORTION OF WINGWALL STEM TO THE TURNING POINT ON BACK FACE.				
ų	ANGLE OF SLOPED PORTION OF WINGWALL				
GG	DISTANCE FROM BEGINNING OF WINGWALL STEM TO TURNING POINT BACK FACE RIGHT SIDE				
BX	DISTANCE FROM TOP OF FOOTING TO HORIZONTAL BARS IN STEM				
ß	ANGLE WINGWALL STEM IS OFFSET FROM ABUTMENT. (SEE STANOARD SHEET BR-13)				

ESTIMATE OF QUANTITIES

ITEM NO.	REPORTION		QUANTITY	
TICMINU.	DESCRIPTION	UNIT	ABUT. I	ABUT. 2
601-2	CLASS B CONCRETE FOR SUBSTRUCTURE (EXCLUDING FOOTING)	C.Y.		
602-1	REINFORCING STEEL BARS (EXCLUDING FOOTING)	L8.		

T TO BE USED WITH SHEETS BR-13, BR-14,			
HEETS BR-13 BR-14SIF APPL	ICABLE.	THE WEST VIRGINIA DEPARTMENT OF STRUCTURES DIVISION	HIGHWAYS
			DEŞIGNED BY:
			DRAWN BY: Math.
			CHECKED BY:
	PREPARED: 6-75		REVIEWED BY:
VAYS PLANS	8-75 REVISED ¹ 7-75		DATE:
MENT	8-75		SCALE: NONE
	10-75		SHEET
	7-77		
	5-82	RIGHT WINGWALL DETAILS	BRIDGE NUMBER
3R-16	9-88		



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
₩.₩2.					

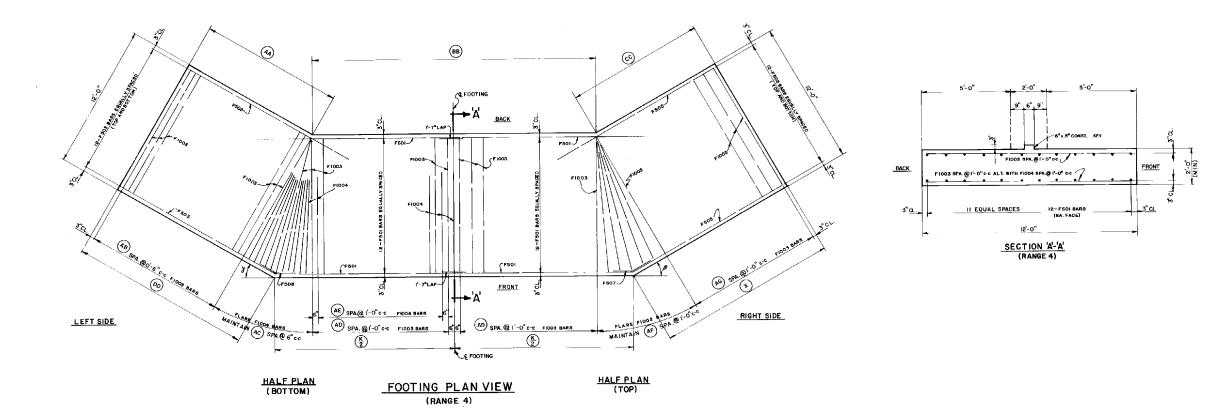
CODE	DESCRIPTION	VALUE			
CODE	DESCRIPTION	ABUT. I	ABUT. 2		
к/2	DIMENSION FROM THE FRONT CORNER TO & OF ABUTMENT FOOTING.				
x	LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE				
AA	LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE	T			
AB	NO. SPA.OF F502(R-I), F701(R-2), F801(R-3), BOTTOM LEFT WINGWALL FOOTING				
AC	NQ SPA. OF F504(R-I), F702(R-2), F802(R-3), BOTTOM LEFT FOOTING CORNER				
AD	NO. SPA.OF F502(R-1), F701(R-2), F801(R-3), TOP AND BOTTOM FACE OF ABUTMENT FOOTING				
AE	NO. SPA. OF F504(R-1), F702(R-2), F802(R-3), BOTTOM FACE OF ABUTMENT FOOTING				
AF	NO SPA OF F502(R-I), F701(R-2), F801(R-3), TOP RIGHT FOOTING CORNER				
AG	NO. SPA. OF F502(R-1), F701(R-2), F801(R-3), TOP RIGHT WINGWALL FOOTING				
88	LENGTH OF ABUTMENT FOOTING BACK FACE				
cc	LENGTH OF WING WALL FOOTING BACK FACE RIGHT SIDE				
DD	LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE				
ß	ANGLE WINGWALL FORMS WITH ABUTMENT RIGHT SIDE				
8	ANGLE WINGWALL FORMS WITH ABUTMENT LEFT SIDE				

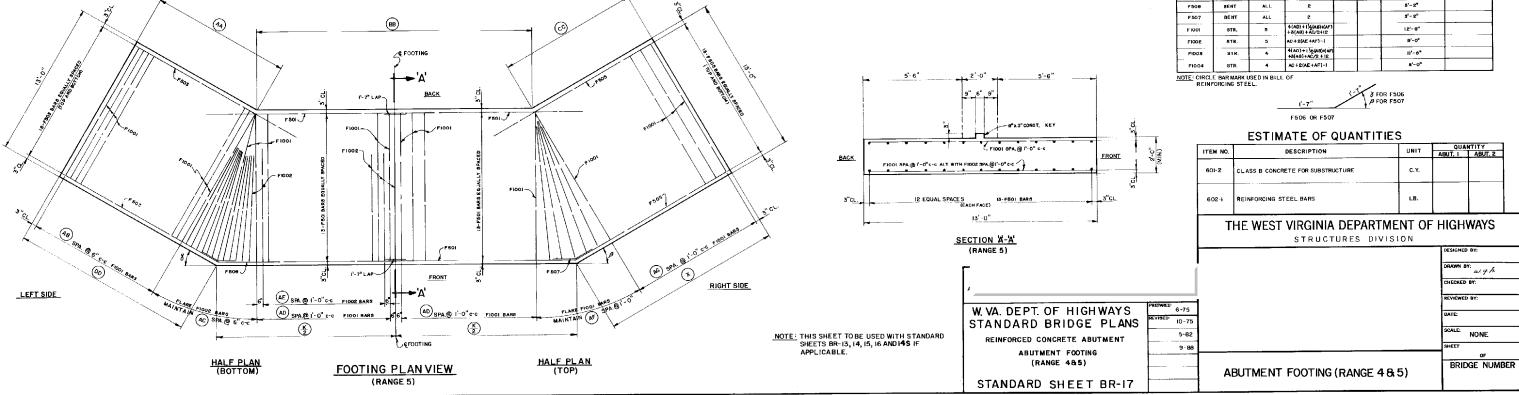
R 10' TO 13'						
r 13' to 15'						
THE SMEASURED FROM TOP OF						

		DILL OF ILLING OKOING S						
MARK	BAR TYPE	RANGE	FORMULA			LENGTH OF	TOTAL	
			NO BARSABUT.	ABUT. I	ABUT, 2	EACH BAR	LENGTH	
F501	STR.	I	32				1	
F501		23	40			K/2 +(0'-10")		
F 501		3	44					
F502	STR.	I	4(AD)+156(AB)+(AF) +3(AB)+AC/2+12			7'-6"		
F503	STR.	1	16					
F 503		2	20			DD (0'4")		
F 503		3	22					
F504	STR.	I	AC +2(AF)+2(AE)-1			4'-6"		
F505	STR,	-	16					
F505		2	20			X-(0'-4")		
F505		3	22					
F506	BENT	ALL	2			3'-2"		
F 507	BENT	ALL	2			3'-2"		
F70I	STR.	2	4(AD)+1/2(AB)+(AF) +3(AG)+AC/2+12			9'- 6''		
F702	STR.	2	AC+2(AF)+2(AE)-I			6'-0"		
FBOI	STR.	5	4(AD)+152(AB)+(AF) +3(A0)+AC/2+12			10'-6"		
F802	STR.	3	AC+ 2(AF)+2(AE)-1			7'-0"		



ITEM NO.	DESCRIPTION		QUA	TITY
THEM NO.	DESCRIPTION	UNIT	ABUT. I	ABUT.2
601-2	CLASS & CONCRETE FOR SUBSTRUCTURE	C. Y.		
602-1	REINFORCING STEEL BARS	LB.		





PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	Sheet NO.	TOTAL SHTS
W					

RANGE TABLE

017' ABUT	<u> </u>	ABUT. 2
0 17'		
RU 18		
	RUIB	RU 18'

E STEM HEIGHT IS MEASURED FROM TOP OF FOOTING TO TOP OF CURTAIN WALL AT Q ROADWAY.

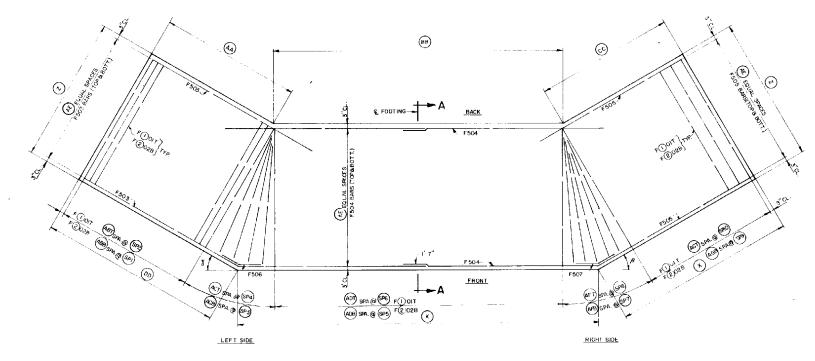
CONTROL DIMENSIONS

	DESCRIPTION	VALUE		
CODE	DESCRIPTION	ABUT. I	ABUT. 2	
<u>K</u> 2	DISTANCE FROM FRONT CORNER TO & ABUT. FOOT IN G			
x	LENGTH OF WINGWALL FOOT ING, FRONT FACE, RIGHT SIDE			
AA	LENGTH OF WINGWALL FOOTING, BACK FACE, LEFT SIDE			
BB	LENGTH OF ABUTMENT FOOTING, BACK FACE			
cc	LENGTH OF WINGWALL FOOTING, BACK FACE, RIGHT SIDE			
DD	LENGTH OF WINGWALL FOOTING, FRONT FACE, LEFT SIDE			
AB	NQ SPA.FIOOI(RANGE 5), FIOO3(RANGE 4) BARS, BOTTOM LEFT WINGWALL FOOTING			
AC	NQ STA. F1002 (RANGE 5), F1004 (RANGE 4) BARS, BOTTOM LEFT FOOTING CORNER			
AD	NO, SPA. FIOOI (RANGES), FIOO3 (RANGE 4) BARS, TOP AND BOTTOM ABUTMENT FOOTING			
AE	NO. SPA. FIOO2(RANGE 5), FIOO4(RANGE 4) BARS, BOTTOM ABUTMENT FOOTING			
AF	NO. SPA. FIOOI (RANGE 5), FIOO3 (RANGE 4) BARS, TOP RIGHT WINGWALL FOOTING			
AG	NO, SPA. FIOOI (RANGE 5), FIOD 3 (RANGE 4) BAHS, BOTTOM RIGHT FOOTING CORNER			
β	ANGLE WINGWALL FORMS WITH ABUTMENT, RIGHT SIDE			
X	ANGLE WINGWALL FORMS WITH ABUTMENT, LEFT SIDE		1	

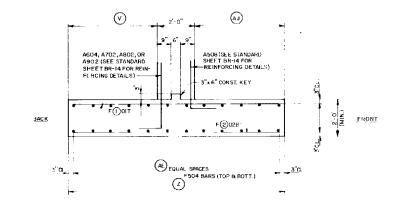
BILL OF REINFORCING STEEL

MARK	BAR TYPE	RANGE	FORMULA	NO. BARS		LENGTH OF	TOTAL
MARK	DAR ITPE	RANGE	NO. BARB / A BUT.	ABUT. I	ABUT. 2	EACH BAR	LENGTH
F 501 F 501	STR.	4 5	48 52			$(\frac{K}{2}) + (0' - 10'')$	
F503 F503	STR.	4 3	24			(0 ¹ - 4 ¹)	
F805 F605	STR.	4 6	24 26			(x)-(0'-4")	
F508	BENT	ALL	٤			8'-2"	
F507	BENT	ALL	2			5' - 2"	
F 1001	STR.	5	4(AD) + 1%(AB)+(AF) +8(A0) + AC/2+12		1	۱ £'- 6"	
F1002	STR.	5	AC+2(AE+AF)-1			B'-O"	
F1008	SIR.	4	4(AD)+1 (48)+(AF) +3(AG)+AC/2 +12			II'- 6"	
FI004	STR.	4	AC+2(AE+AF)-I			8'-0*	





FOOTING PLAN VIEW



SECTION 'A'-'A'

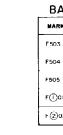
 8
 ANGLE LEFT WINGWALL IS OFFSET FROM A

 #
 ANGLE RIGHT WINGWALL IS OFFSET FROM A

 (i)
 BAR SIZE OF TOP TRANSVERSE REINFORCING

 (ii)
 BAR SIZE OF BOT TON TRANSVERSE REINFO

 - STEM HEIGHT



<u>NOTE:</u> THIS SHEET TO BE USED WITH STANDARD SHEETS BR-13, 14, 15, 16 AND 7-S IF APPLICABLE. W. VA. DEPT. OF HIGHWAYS STANDARD BRIDGE PLANS REINFORCED CONCRETE ABUTMENT ABUTMENT FOOTING STANDARD SHEET BR-17A

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
12.4					

CONTROL DIMENSIONS

	CODE	DESCRIPTION	VALUE		
			ABUT. I	ABUT. 2	
	к	LENGTH OF ABUTMENT FOOTING FRONT SIDE			
	v	DISTANCE FROM BACK FACE OF ABUTMENT STEM TO BACK FACE OF FOOTING			
	×	LENGTH OF WINGWALL FOOTING FRONT FACE RIGHT SIDE			
	Z.	WIDTH OF ABUTMENT AND WINGWALL FOOTING			
	AA	LENGTH OF WINGWALL FOOTING BACK FACE LEFT SIDE			
	AL	NUMBER OF SPACES OF F503, F504, & F505 BARS-TOP & BOTT.			
	ΑJ	DISTANCE FROM FRONT FACE OF ABUTMENT STEM TO FRONT FACE OF FOOTING			
	BB	LENGTH OF ABUTMENT FOOTING BACK FACE			
	· cc	LENGTH OF WINGWALL FOOTING BACK FACE RIGHT SIDE			
	DÐ	LENGTH OF WINGWALL FOOTING FRONT FACE LEFT SIDE			
	АВН	NUMBER OF SPACES OF TRANSVERSE STEEL - LEFT WINGWALL FOOTING BOTTOM			
	ABT	NUMBER OF SPACES OF TRANSVERSE STEEL - LEFT WINGWALL FOOTING TOP			
	ACB	NUMBER OF SPACES OF TRANSVERSE STEEL-LEFT FOOTING CORNER BOTTOM			
	ACT	NUMBER OF SPACES OF TRANSVERSE STEEL-LEFT			
	ADB	NUMBER OF SPACES OF TRANSVERSE STELL - ABUTMENT FOOTING BOTTOM			
	ADT	NUMBER OF SPACES OF TRANSVERSE STEFL - ABUTMENT			
	AFB	NUMBER OF SPACES OF TRANSVERSE STEEL - RIGHT FOOTING CORNER BOTTOM			
	AFT	NUMBER OF SPACES OF TRANSVENSE STEEL - RIGHT			
	AGB	NUMBER OF SPACES OF TRANSVERSE STEEL - RIGHT WINGWALL FOOTING BOTTOM			
	AGT	NUMBER OF SPACES OF TRANSVERSE STEEL - RIGHT WINGWALL FOOTING TOP			
	SP1	CENTER TO CENTER SPACING OF TRANSVERSE STEEL- LEFT WINGWALL FOOTING BOTTOM			
	SP2	CENTER-TO-CENTER SPACING OF TRANSVERSE STEEL-		1	
	SP3	CENTER-TO-CENTER SPACING OF TRANSVERSE STEEL-		1	
UTMENT	SP4	CENTER-TO-CENTER SPACING OF TRANSVERSE STEEL - LEFT FOOTING CORNER TOP		1	
BUTMENT	SP5	CENTER-TO-CENTER SPACING OF THANSVERSE STEEL- ABUTMENT FOOTING BOTTOM		1	
TEFI	SP6	CENTER-TO-CENTER SPACING OF TRANSVERSE STEEL-			
CING STEEL	SP7	CENTER-TO-CENTER SPACING OF TRANSVERSE STEEL- RIGHT FOOTING CORNER BOTTOM		1	
4	SPB	CENTER-TO-CENTER SPACING OF TRANSVERSE STEEL-		1	
		RIGHT FOOTING CORNER TOP		t	
	SP9	CENTER-TO-CENTER SPACING OF TRANSVERSE STELL- RIGHT WINGWALL FOOTING BOTTOM			

BAR FORMULAE

ĸ	NO. OF BARS	LENGTH
	?(AE)+?	DD-4"
	4(AE)+4	K/2+10"
	2(AE)+2	X-4"
)	AB+AC+AD+ AF+AG+I	Z -6"
02	AB+AC+AD+ AF+AG+I	Z-6"

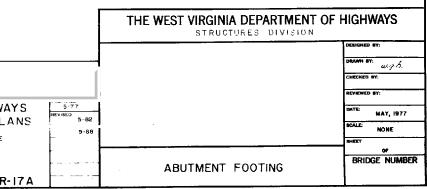
1'-7" \$ (F506) F506 OR F507

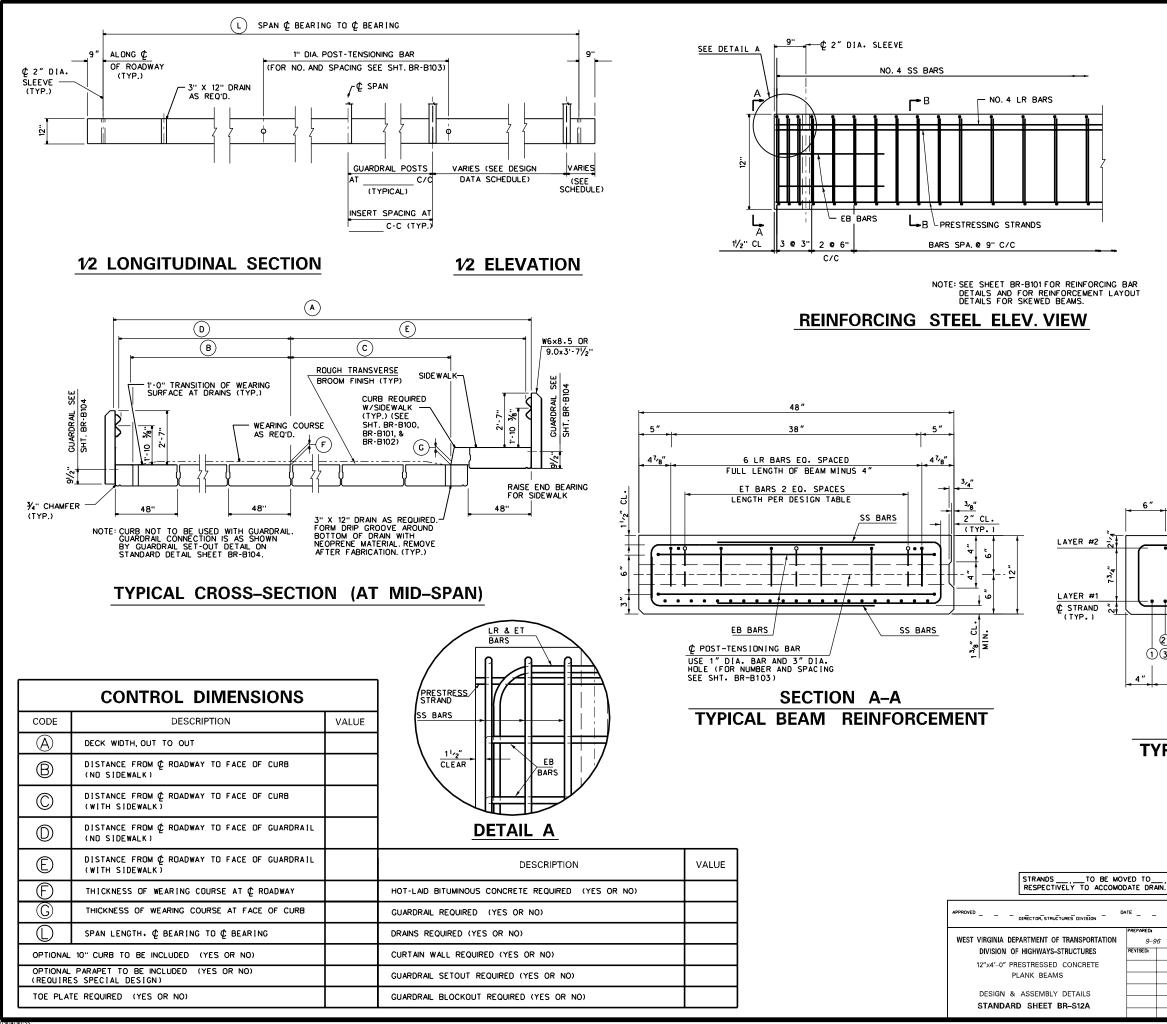
BILL OF REINFORCING STEEL BARS

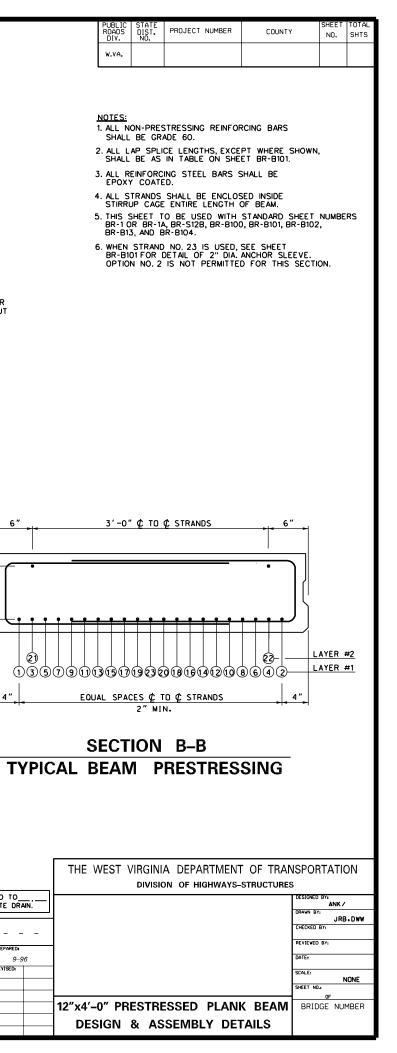
	BAR TYPE	NO. OF BARS		LGTH.E	A. BAR	TOTLE	NGTH	TOT. WEIGHT	
MARK	BARITPE	ABUT. I	ABUT.2	ABUT, (ABUT.2	ABUT. I	ABUT. 2	ABUTI	ABUT 2
F503	STR.								
f 504	STR.								
F505	ST.R.								
F506	BENT			3'2"	3'-2"			-	
F507	BENT			3'-2"	3'-2"				
F()01	STR.	1	Ī						
F(2)02	STR.								

ESTIMATE OF QUANTITIES

	05000005100	[QUANTITY			
ITEM NO.	DESCRIPTION	UNIT	ABUT. I	ABUT. 2		
601-2	CLASS B CONCRETE FOR SUBSTRUCTURE	C.Y.				
602-1	REINFORCING STEEL BARS	LB.				







MIN. CONCRETE STRENGTH @ DETENSION = 4,00 MIN. CONCRETE STRENGTH @ 28 DAYS = 5,000 F JACKING FORCE /LOW RELAX STRAND = 30,980

						DE	SIGN D	ATA FOR	12″ X 4	1′–0″ PLA	NK BEAN	M			
L SPAN	LENGTH & TO &	BEARING	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'
OVERALL	LENGTH ALONG Q	ROADWAY	11'-6"	12'-6"	13'-6"	14'-6"	15'-6"	16'-6"	17'-6''	18'-6''	19'-6''	20'-6''	21'-6''	22'-6''	23'-6"
ND. OF C STRANDS	AREA/STRAND=	DIA. LOW-RELAX. 0.153 SQ. IN.	7	8	8	8	8	9	9	10	10	11	12	12	13
STRAND F	POSITION NUMBER	1	1.2.11.12. 21.22 & 23	1.2.9.10. 17.18. 21 & 22	1.2.9.10. 17.18 21 & 22	1.2.9.10. 17.18 21 & 22	1.2.9.10. 17.18 21 & 22	1.2.7.8. 15.16. 21.22 & 23	1.2.7.8. 15.16. 21.22 & 23	1•2•7•8• 13•14•19• 20•21 & 22	1.2.5.6. 13.14.19. 20.21 & 22	1.2.7.8. 13.14.19, 20.21, 22 & 23	1.2.5.6. 9.10.13.14. 17.18. 21 & 22	1.2.5.6. 9.10.13.14. 17.18. 21 & 22	1.2.5.6. 9.10.13.14. 17.18. 21.22 & 23
PRESTRES (KIPS/BE	SING FORCE AT	DETENSION	212	241	241	241	241	271	271	300	300	329	358	358	386
FINAL PF (KIPS/BE	RESTRESSING FOF	RCE	197	223	223	223	223	249	249	274	275	300	324	325	349
ULTIMATE	DESIGN MOMENT	(FT-KIPS/BEAM)	123	135	147	160	173	186	199	213	227	241	255	270	285
ULTIMATE	ULTIMATE RESISTING MOMENT (FT-KIPS/BEAM)		162	189	189	189	189	215	215	240	240	264	288	288	310
TOTAL NU	IMBER OF DEBOND	DED STRANDS	-	-	-	-	-	-	-	-	-	-	-	-	-
	LAYER 1-DEBONDED STRAND POSITION NUMBER		-	-	-	-	-	-	-	-	-	-	-	-	-
	DEBONDED STRAN	ID POSITION NUMBER			-										
END TENS	SION STEEL EACH	IEND (SIZE & LENGTH)	3−#4 × 3′−0″	3−#4 × 3′−0″	3−#4 × 3′−0″	3−#4 × 3′−0″	3-#4 × 3'-6"	3−#4 × 3′−6″	3−#4 × 4′−0″	3−#4 × 4′−0″	3-#4 × 4′-0″	3-#4 × 4′-6″	3-#4 × 4′-6″	3-#4 × 5'-0"	3-#4 × 5′-0″
	DETENSION, I	NCHES +=UPWARD (in)	0.02	0.04	0.04	0.05	0.05	0.07	0.08	0.11	0.11	0.15	0.19	0.20	0.25
CAMBER	ERECTION. INC	CHES +=UPWARD (in)	0.04	0.07	0.07	0.08	0.08	0.12	0.13	0.18	0.18	0.24	0.31	0.32	0.40
		S +=UPWARD (in)	0.05	0.08	0.09	0.09	0.10	0.15	0.15	0.21	0.21	0.28	0.36	0.36	0.45
WEIGHT ((TONS) (DF TYPICAL BEAM 1),(2)	1	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.3	6.6	6.9
		NO. OF INSERTS	4	4	5	5	5	6	6	6	7	7	7	8	8
	ND SPACING DRAIL INSERTS	END OF BEAM TO ⊈ OF FIRST INSERT EACH END	1'-9''	1'-9''	1'-9''	1'-9''	1'-9"	1'-9''	1'-9''	1'-9''	1'-9''	1'-9''	1'-9''	1'-9''	1'-9''
		⊈ OF FIRST INSERT TO ⊈ SECOND INSERT EACH END	2'-51⁄4''	2'-111/4''	1'-10½''	2'-4 ¹ /2"	2'-10½''	1'-9¾"	2'-3¾''	2'-9¾''	1'-9''	2'-3''	2'-9"	1'-8'/4''	2'-2'/4"

DESIGN DATA FOR 12" X 4'-0" PLANK BEAM

NOTES:

1. BEAM WEIGHTS LISTED IN DESIGN TABLES IS APPROXIMATE AND IS BASED ON ZERO SKEW.

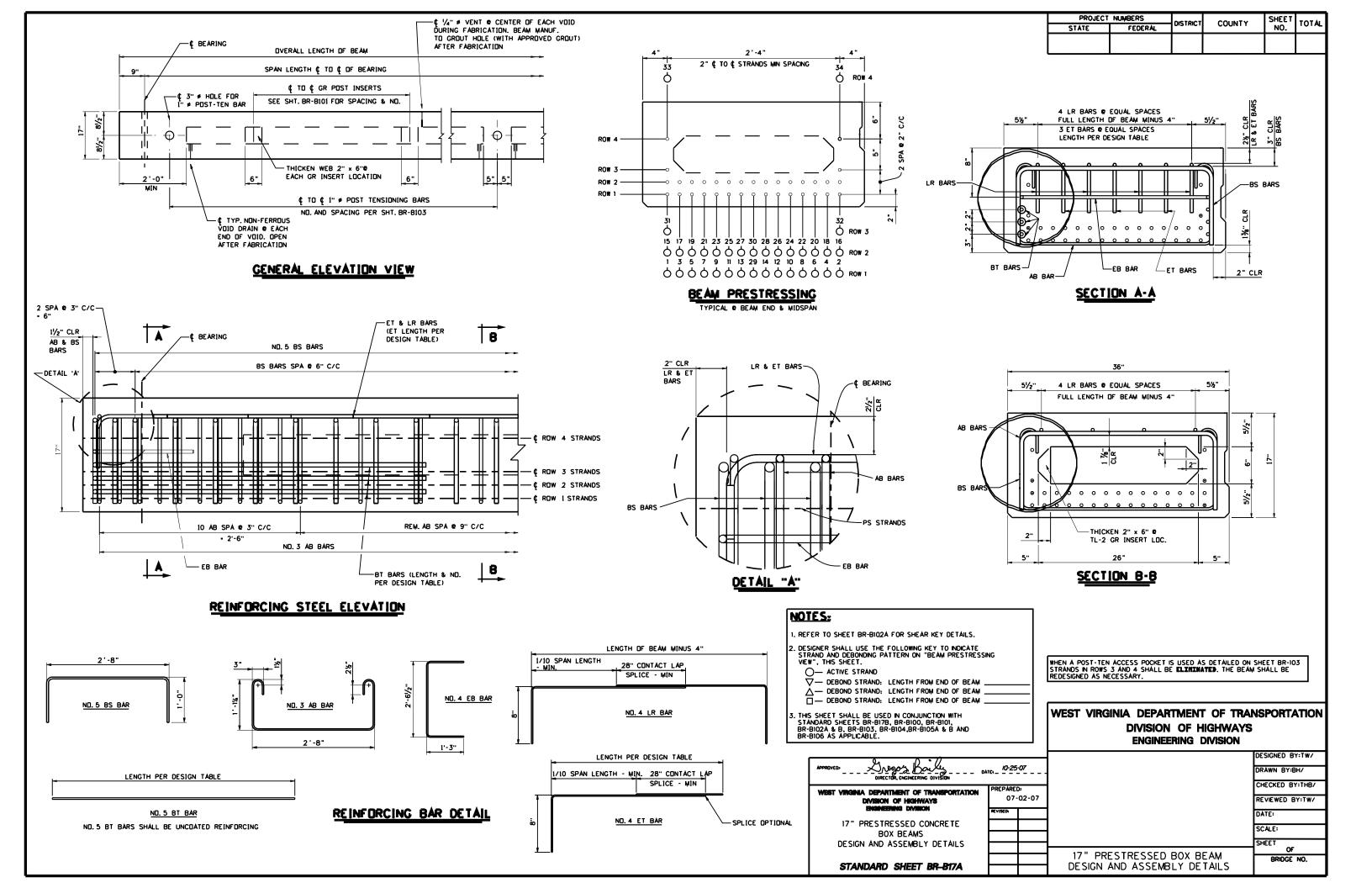
2. FOR STANDARD CURB, ADD 93 LBS. (0.05 TON) PER CURB, PER FOOT OF BEAM.

- 3. CAMBER VALUES LISTED IN DESIGN TABLE ARE APPROXIMATE AND ARE FOR COMPARISON PURPOSES ONLY. NOT TO BE USED FOR INSPECTION PURPOSES UNLESS PERMITTED BY THE DIRECTOR OF STRUCTURES DIVISION.
- 4. DATA LISTED IN THE DESIGN TABLE MAY NOT BE VALID FOR SPAN LENGTHS THAT FALL BETWEEN THE SPAN LENGTHS LISTED. IF DIFFERENCES ARE ENCOUNTERED, CALCULATE AND ENTER SPECIFIC DATA FOR BEAM LENGTH REQUIRED IN THIS COLUMN.
- 5. THIS SHEET TO BE USED WITH STANDARD SHEET NUMBERS BR-1 OR BR-1A, BR-S12A, BR-B100, BR-B101, BR-B102, BR-B103, AND BR-B104.
- 6. MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.
- 7. DESIGNER, FABRICATOR AND ERECTOR SHALL BE AWARE THAT SKEWED BEAM ENDS MAY TWIST OR WARP, CAUSING UNEVEN BEAM SEATING AT THE BEARINGS. CONTRACTOR IS REQUIRED TO CORRECT AT THE TIME OF BEAM ERECTION, BEFORE BEAMS ARE SECURED IN PLACE. METHOD OF CORRECTION SHALL PROVIDE EVEN, TOTAL BEARING ON THE PADS AND A LEVEL TOP BEAM SURFACE. METHOD SHALL BE A PRE-APPROVED METHOD BY DIRECTOR OF STRUCTURES DIVISION.
- 8. BEAM FABRICATOR SHALL NOTIFY CONTRACTOR THAT BEAM ENDS ARE TWISTED PRIOR TO SHIPPING OF BEAMS.
- 9. DEBONDING OF STRANDS IS NOT PERMITTED FOR THIS BEAM SECTION.



		PUBLIC ROADS DIV.	STATE DIST. NO.	PROJE	CT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
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							DESIGNED BY: ANK / DRAWN BY:	
							CHECKED BY:	/
ARED:							REVIEWED BY:	
9–96							DATE: SCALE:	
							N SHEET NO.a OF	IONE
	DE	SIGN	TAB	LE F	OR 12"	X 4'-0"	BRIDGE NUI	MBER

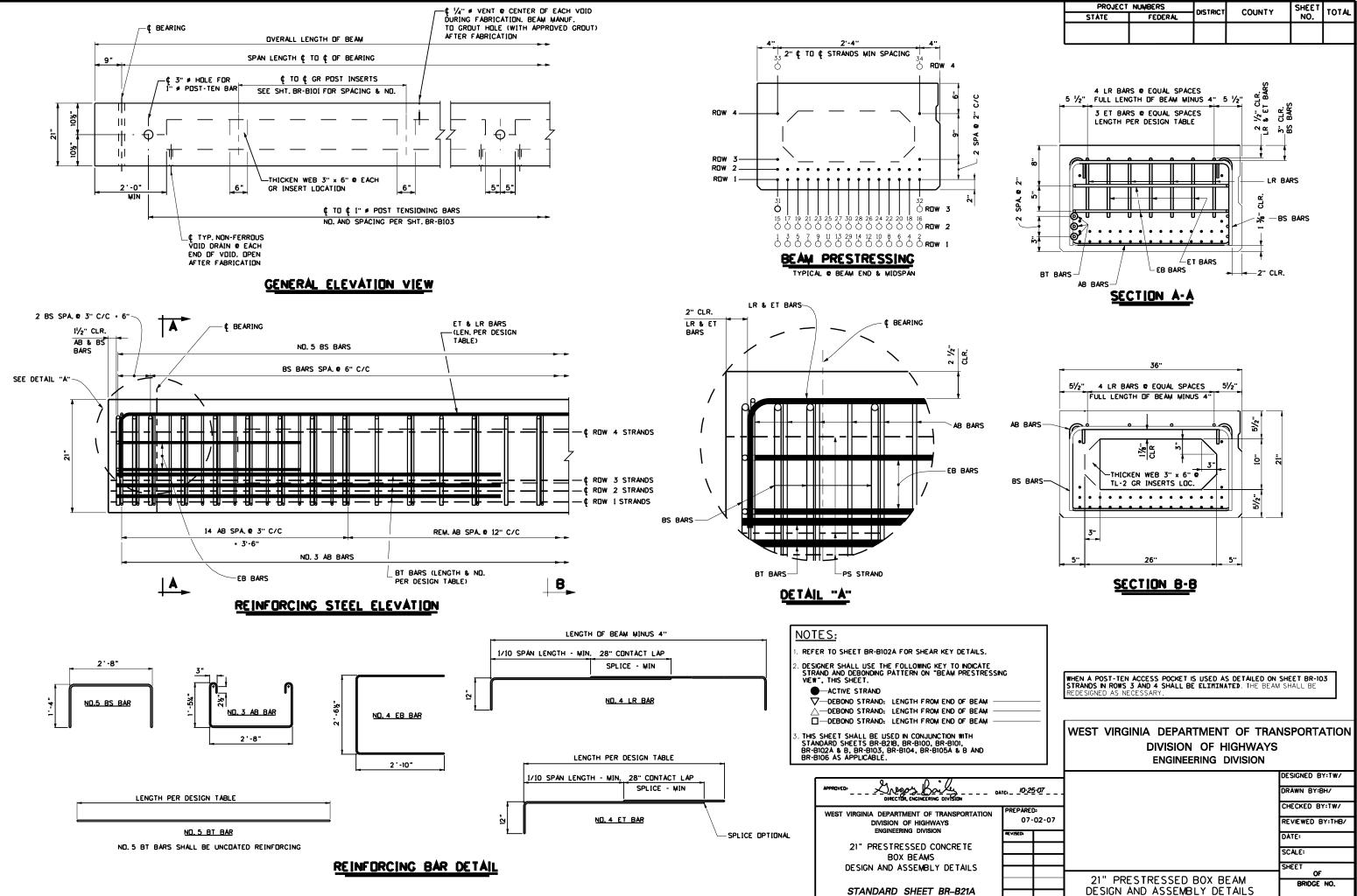
PRESTRESSED PLANK BEAM



																		STATE PROJECT NUMBER	FEDERAL PROJECT NUMBER	STATE DIST. NO.	COUNTY	SHEET TOTAL NOL SHEETS
					DE SIGN		OR 17" D		DJACENI	BOX BE	:Aw											
SPAN LENGTH ¢ TO ¢ BEARING		20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0''	32'-0"	34'-0"	36'-0''	38'-0"	40'-0"						MIN. CONCRE		HOREL	EASE - 5	500 PSI
DVERALL LENGTH OF BEAM		21'-6"	23'-6"	25'-6"	27'-6"	29'-6"	31'-6"	33'-6"	35'-6"	37'-6"	39'-6''	41'-6"						MIN. CONCRE				
ND. DF 270 KSI, 1/2" & LOW-RELA STRANDS, AREA/STRAND • 0.167 S		10	10	10	10	12	12	14	14	16	16	16						INITIAL PULL CROSS-SECT		RAND		3,820 LBS ,167 SQ, IN,
	ROW 1	1,2,11,12	1,2,11,12	1,2,11,12	1,2,11,12	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14										
	ROW 2	17,18,25,26	17,18,25,26	17,18,25,26	17,18,25,26	17,18,27,28	17,18,27,28	17,18,21,22, 27,28	17,18,21,22, 27,28	17,18,21,22, 27,28	17,18,21,22, 27,28	17,18,21,22, 27,28										
STRAND POSITION NUMBER	ROW 3										—											
	ROW 4	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34										
PRESTRESSING FORCE IMMEDIATE STRAND RELEASE, Ppt, (KIPS/BEAM		326	326	326	326	389	389	451	451	512	512	513										
EFFECTIVE PRESTRESSING FORCE ALL LOSSES, Ppe, (KIPS/BEAM)	AFTER	293	293	294	294	345	346	396	397	443	445	447										
REQUIRED FACTORED MOMENT STRENGTH 1, Mu (FT-KIPS/BEAM	vo	204	231	260	289	319	349	382	415	453	491	531										
FACTORED FLEXURAL RESISTANCE, Mr (FT-KIPS/BEAM)		408	408	408	408	496	496	566	566	646	646	646										
TOTÁL NO. DEBONDED STRÁNDS																						
DEBONDED STRÅND POSITION NUMBER & SHIELDING LENGTH	ROW 1																					
FROM EACH END	ROW 2						—															
NUMBER & LENGTH •4 ET TOP TENSION BARS & EACH END		3 - •4 × 3'-6''	3 - •4 × 3'-6"	3 - ●4 × 4'-0''	3 - ∎4 x 4'-0''	3 - •4 x 4'-0"	3 - •4 x 4'-6"	3 - •4 × 4'-6"	3 - ●4 × 5'-0''	3 - •4 × 9'-0''	3 - ●4 × 9'-0"	3 - •4 × 9'-6"										
NUMBER & LENGTH •5 BT BOTTO TENSION BARS & EACH END	M	2 - ●5 × 4'-0''	2 - ■5 × 4'-0"	2 - ●5 × 4'-6''	2 - ●5 × 4'-6"	2 - •5 × 4'-6"	2 - ●5 × 5'-0"	2 - ■5 × 5'-0''	2 - ●5 × 5'-6"	2 - ■5 × 5'-6"	2 - ●5 × 5'-6"	2 - ■5 × 6'-0''										
DESIGN CAMBER + = POSITIVE (UP)		0.13	0.14	0.16	0.17	0.28	0.30 0.47	0.40	0.42	0.59	0,62	0,63										
+ = POSITIVE (UP) INCHES) e FINAL	И	0.21	0.24	0.28	0.27 0.30	0.45	0.47	0.64	0.65	0.93	0.95	0.95										
	ERTS REQD.																					
NUMBER & SPACING DF TL-2 GUARDRAIL INSERTS	EAM TO ST INSERT																					
SEE NOTE 6 EE NOTE 6 C DF 1st 1 T O Q 2nd EA, END																						
WEIGHT OF TYPICAL BEAM INCLU DIAPHRAGM (TONS)	IDING	5.6	6.1	6.6	7.1	7.6	8.1	8.6	9.1	9.6	10.1	10.6										
WEIGHTS LISTED IN THE DESIGN APHRAGMS SPACED © 15 FT C/C ONAL DIAPHRAGRMS SHOULD BE DDITIONAL DIAPHRAGRMS ADD 135 KEW ADD 17 LBS/DEGREE OF SK DNGER ENDBLOCK, ADD 163 LBS/L MERS SHOULD NOTE THAT DATA I LANE STRUCTURE 8 BEAMS WID F PARAPET (321 PLF) AND A FWS ED AND IF REQUIRED NEW DESIGN TANDARD DESIGN TABLE BE ALTER STED DESIGN CAMBER VALUES LI S SUCH ARE APPROXIMATE. FOR DLERANCE VALUES LISTED IN AP PPLY. REMENT OF CAMBER FOR COMPAR I 72 HOURS OF RELEASE. ADDITI MINIMIZE THE EFFECT OF TEMPEN	C. WEIGHTS F ADJUSTED ACC LBS/DIAPHRA EW/END. F/END. N STANDARD E AND ZERD G DF 50 PSF. GN DATA ENT RED. STED IN THE MEMBERS WIT PENDIX B OF RISON TO PRE CONALLY, CAME	TABLE IS BA SKEW. SUPER FOR NON-ST ERED INTO BI TABLE ARE I TABLE ARE I TABLE ARE I TABLE ARE I TABLE ARE I COLOUNT ANUAL	BEAMS, LONG SED ON EVE RIMPOSED DE ANDARD BRIC LANK COLUMI BASED ON EN DEPTH RATIO FOR QUALIT GN VALUES S	ER ENDBLOCKS N SPAN LENGT AD LOADS INC DGES DATA SH NS. IN NO CAS WPIRICAL FORM S AT OR EXCE Y CONTROL, MI SHOULD BE CO	S AND LUDE DULD BE SE SHALL MULAS SEDING 25, NL-116, MAY IMPLE TED	CAUSII TIME (AN EV THE F 5. MAXIM 6. DESIGI TD ¢ THE B 8. THE B 8. THIS S	NG UNEVEN BE DF ERECTION., EN, TOTAL BEZ ABRICATOR SH UM BEAM SKE NER INPUT VA SECOND INSER RIDGE. AL STRAND NO OTTOM INSER MOVED TO PO USE SAME ST	EAM SEATING BEFORE THE ARING AND A HALL NOTIFY W SHALL BE NUES OF NUM RT. ABOVE V/ DIE FOR 17" T (TYPE 2A A SITIONS 17 A FRAND PATTER BE USED IN	AT THE BEAMS ARE BEAMS ARE LEVEL TOP THE CONTRA 30 DEGREES WBER OF INSI ALUES SHALL BOX SECTION ANCHOR? CONI ANCHOR? CONI AND 18. FOR RN. CONJUNCTION	ARINGS, THE SECURED IN BEAM SURFAC CTOR AND DE S. ERTS, DISTAN BE BASED O I ONLY: WHEN FLICTS WITH UNIFORMITY	CONTRACTOR PLACE. METH CE. TOLERANC SIGNER IF CO CE FROM END N THE REQUIN I TL-2 GUARD STRAND ND. 1 PURPOSES, AL DARD SHEETS	IS REQUIRED DD GF CORRE E, AFTER CORR IRRECTIONS A DF BEAM TO RED 6'-3" GUA RAIL INSERTS 5. STRANDS L BEAMS OF BR-B17A, BR-	AY TWIST OR WA TO CORRECT AT CTION SHALL PRI RECTION, SHALL I RE REQUIRED PR CFIRST INSER RORAIL POST SF ARE REQUIRED 5 AND 16 HAVE THE SAME DESIG BIOO, BR-BIO1.	THE DVIDE BE (+/-) % RIDR TD SH I, AND ¢ FI ACCING ACR	IPMENT. IRST INSERT USS	f tränsportätic IWÄYS 'ISION 'OR (17"	OATEC 10-25-07 N PREPAREDI 07-02-(RVIRED		RGINIA DEPA DIVISION ENGINEE	N OF HIC	SHWAYS VISION	SPORTATION DESIGNEO BY:THB/ DRAWN BY:THB/ CHECKED BY:TW/ REVIEWED BY:TW/ DATE: SCALE; SHEET NO DF BRIDGE NUMBER

- 2. DE SI A TW TYPE VERI THE 3. PRED AND THE NOT ME AS WITH THAT

			STÅTE PROJECT NUMBER	FEDERÅL PROJECT NUMBER	STATE DIST. ND.	COUNTY	Sheet Nol	TOTAL SHEETS
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	(+/-) 1/8 INCH. R TO SHIPMENT.							
			WEST VIR	CINIA DEPART	MENT	OF TRANS	PORTAT	ION
T, A PAC	ND ¢ FIRST INSERT ING ACROSS			DIVISION ENGINEER	of H Ing (IGHWAYS DIVISION		
							ESIGNED BYATI	18 /
N	APPERDATE	25-07	1				RÁWN BY÷THB/ HECKED BY¢TN	
N			4				EVIEWED BYFT	
		·02-07	1				ATE	
	DESIGN TABLE FOR 17"						CALE:	F
	PRESTRESSED BOX BEAM		DES	GIGN TABLE F	OR 1		BRIDGE NU	
	STANDARD SHEET BR-B17B	-	PRE	STRESSED BO	X BE	Ам		
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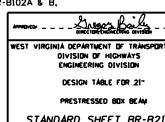
			DESIGNED BY:TW/
10 <u>-2</u>	5-07		DRAWN BY:BH/
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			SCALE:
			SHEET
		21" PRESTRESSED BOX BEAM	OF BRIDGE NO.

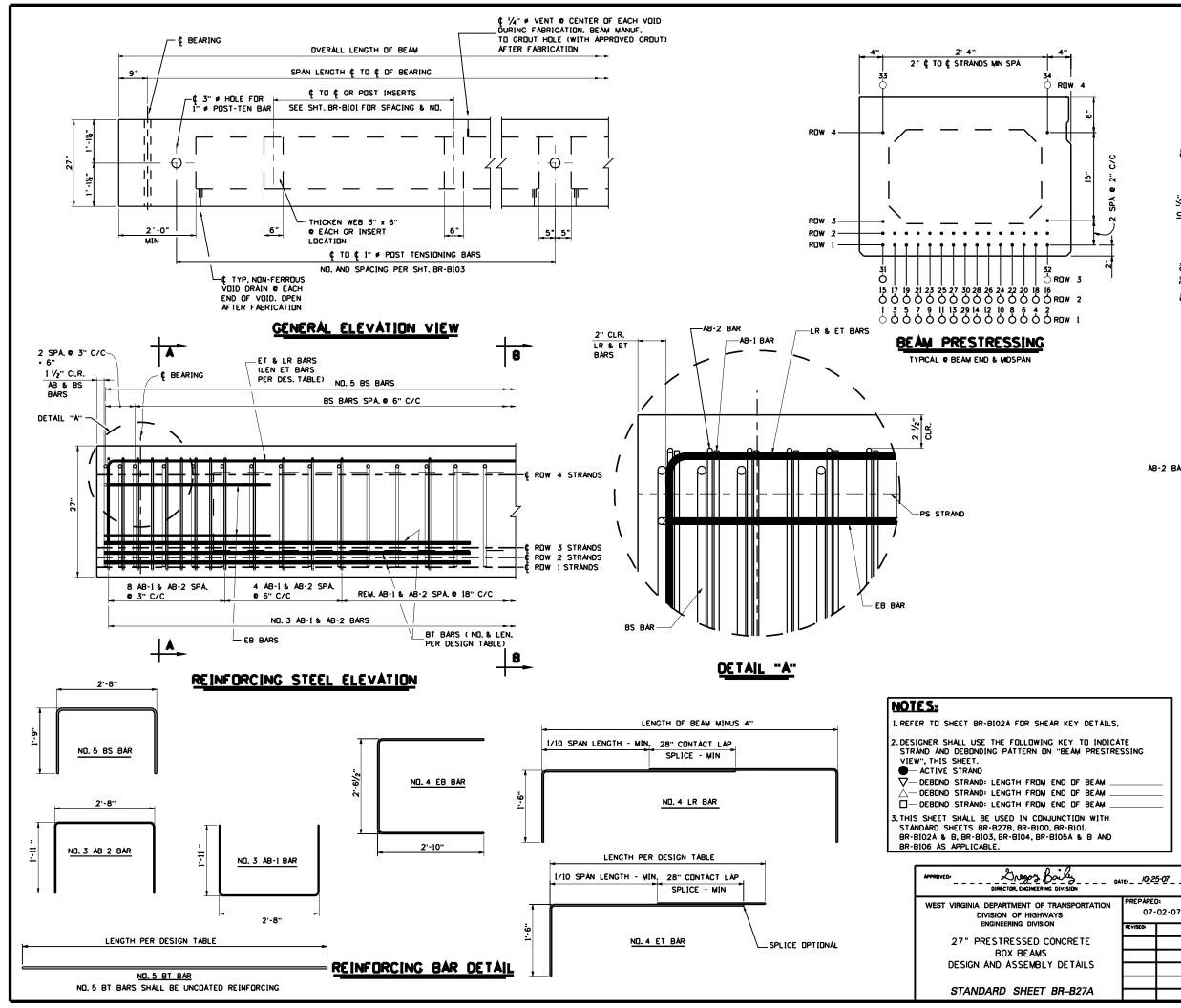
																		STATE PROJECT NUMBER	FEDERAL PROJECT NUMBER	DIST. ND.	COUNTY	SHEET TOTAL NOL SHEETS
					DESIGN		R 21" D		JACENT	BOX BE	ÂM											
PAN LENGTH ¢ TO ¢ BEARING		30'-0"	32'-0"	34'-0"	36'-0"	38'-0"	40'-0"	42'-0''	44'-0"	46'-0''	48'-0''	50'-0"	Ī					MIN. CONCRE	TE STRENGTI	H OC REL	EASE • 55	500 PSI
VERALL LENGTH OF BEAM		31'-6"	33'-6"	35'-6"	37'-6"	39'-6"	41'-6"	43'-6"	45'-6"	47'-6"	49'-6"	51'-6"						MIN. CONCRE				
D. DF 270 KSI, 1/2" Ø LDW-RELÅX TRÅNDS, ÅREÅ/STRÅND • 0.167 SI		10	10	10	12	12	14	14	14	16	16	16						INITIAL PULL CROSS-SECT				3,820 LBS 167 SQ. IN.
	ROW 1	1,2,11,12	1,2,11,12	1,2,11,12	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14								NAND	- 0,	107 50, 10,
	ROW 2	15,16,25,26	15,16,25,26	15,16,25,26	15,16,27,28	15,16,27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28										
TRAND POSITION NUMBER	RDW 3																					
	ROW 4	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34										
RESTRESSING FORCE IMMEDIATEL TRAND RELEASE, Ppt, (KIPS/BEAM		327	328	328	391	391	453	454	454	515	516	517										
FFECTIVE PRESTRESSING FORCE LL LOSSES, Ppe, (KIPS/BEAM)	AFTER	297	298	298	350	352	403	404	406	454	456	458										
EQUIRED FACTORED MOMENT STRENGTH 1, Mu (FT-KIPS/BEAM)	359	393	427	465	504	545	588	639	693	746	800										
ACTORED FLEXURAL ESISTANCE, Mr (FT-KIPS/BEAM)		527	527	527	644	644	743	743	743	853	853	853										
DTAL NO. DEBONDED STRANDS																						
EBONDED STRÅND POSITION IUMBER & SHIELDING LENGTH	ROW 1																					
ROM EACH END	ROW 2																					
UMBER & LENGTH •4 ET TOP ENSION BARS & EACH END		3 - ■4 × 4'-6''	3 - •4 × 4'-6"	3 - ∙4 × 5'-0''	3 - ∎4 × 5'-0''	3 - ∙4 ×5'-0''	3 - ●4 × 5'-6"	3 - ■4 × 5'-6"	3 - ■4 × 6'-0''	3 - •4 × 6'-0''	3 - ∙4 × 6'-0"	3 - ●4 × 6'-6"										
UMBER & LENGTH •5 BT BOTTON ENSION BARS © EACH END	1	2 - ■6 × 5'-0"	2 - •5 × 5'-0"	2 - •6 × 6'-0''	2 - •5 × 6'-0"	2 - ●5 × 6'-0''	2 - ■5 × 6'-0''	2 - ■5 × 6'-0''	2 - •5 × 6'-0"	2 - •5 × 6'-0"	2 - ■5 × 6'-0''	2 - ■5 × 6'-0"										
		0.15	0.15	0.15	0.26	0.27	0.37	0.38	0.38	0.55	0.55	0.54										
POSITIVE (UP) PERECTION INCHES) FINAL	N	0.23	0.23	0,22	0.40	0.39	0.56 0.55	0.55	0.52	0.79	0.76	0.71										
	ERTS REQD.	0.24	0.22	0.10	0.40	0.30		0.43	0,40	0.70		0,40										
UMBER & SPACING F TL-2 GUARDRAIL EA, END																						
NSERTS EE NDTE 6 EA. END																						
EIGHT OF TYPICAL BEAM INCLUE IAPHRAGM (TONS)	DING	9.2	9.8	10.4	10.9	11.5	12.0	12.6	13.1	13.8	14.3	14.9										
EIGHTS LISTED IN THE DESIGN T PHRAGMS SPACED • 15 FT C/C. DITIONAL DIAPHRAGMS SHOULD BE DITIONAL DIAPHRAGMS, ADD 226 L W ADD 21 LBS/DEGREE OF SKEW IGER ENDBLOCK, ADD 271 LBS/LF/ RS SHOULD NOTE THAT DATA IN ANE STRUCTURE 8 BEAMS WIDE PARAPET (321 PLF) AND A FWS (D AND IF REQUIRED NEW DESIGN NDARD DESIGN TABLE BE ALTERI ED DESIGN CAMBER VALUES LIST SUCH ARE APPROXIMATE. FOR MI LERANCE VALUES LISTED IN APPE PLY. WENT OF CAMBER FOR COMPARIS 72 HOURS OF RELEASE. ADDITIOI NIMIZE THE EFFECT OF TEMPERA	WEIGHTS FC ADJUSTED BS/DIAPHRAU VEND. STANDARD STANDARD AND ZERD S DF 50 PSF. DATA ENTE ED. IED IN THE EMBERS WITI NDIX B DF SON TO PREC NALLY, CAMBI	JR SKEWED B ACCORDINGLY GM. TABLE IS BAS SKEW. SUPERI FOR NON-STA RED INTO BL TABLE ARE B H SPAN-TO-DI PCI MANUAL F DICTED DESIG ER SHOULD B	SED ON EVEN SED ON EVEN IMPOSED DEAL ANDARD BRIDC ANK COLUMN BASED ON EMI FOR QUALITY SN VALUES SF	SPAN LENGTI D LOADS INCL SES DATA SHO S. IN NO CASI PIRICAL FORMI AT OR EXCEI CONTROL, MN	HS, LUDE DULD BE E SHALL ULAS EDING 25, L-116, MAY MPLETED	CAUSIN TIME (AN EV THE F 5.MAXIM 6.DESIGN TD ¢ THE B 7.THIS S	NG UNEVEN B JF ERECTION., EN, TOTAL BE. ABRICATOR SH JM BEAM SKE NER INPUT V/ SECOND INSE RIDGE.	EAM SEATING , BEFORE THE ARING AND A HALL NOTIFY W SHALL BE ALUES OF NUM RT. ABOVE VA BE USED IN	AT THE BEA BEAMS ARE LEVEL TOP THE CONTRA 30 DEGREES WBER OF INSI LUES SHALL CONJUNCTION	ARINGS. THE SECURED IN BEAM SURFAC CTOR AND DE S. ERTS, DISTANC BE BASED ON	CONTRACTOR PLACE. METHI E. TOLERANCI SIGNER IF CE CE FROM END THE REQUIR DARD SHEETS	IS REQUIRED DD OF CORREC E, AFTER COR DRRECTIONS A OF BEAM TO ED 6'-3" GUA	AY TWIST OR TO CORRECT CTION SHALL RECTION, SHAL RE REQUIRED ¢ FIRST INS RORAIL POST -BIOO, BR-BIO	AT THE PROVIDE L BE (+/-) ? PRIOR TO S ERT, AND ¢ SPACING AC I, BR-BI02A	SHIPMENT, FIRST INSERT RUSS & B, 	DET CONTRACTOR DET TRANSPORTA HIGHWAYS G DIVISION BLE FOR 21"	0116<10-25-07 11 IDN PREPARED 07-02- RV1950-	07	RGINIA DEPA DIVISIO ENGINEE	N DF HI(ERING D		PORTATION ESIGNED BY+TW/ RAWN BY+THB/ HECKED BY+THB/ EVIEWED BY+THB/ ATE; CALE; HEET ND DF BRIDGE NUMBER

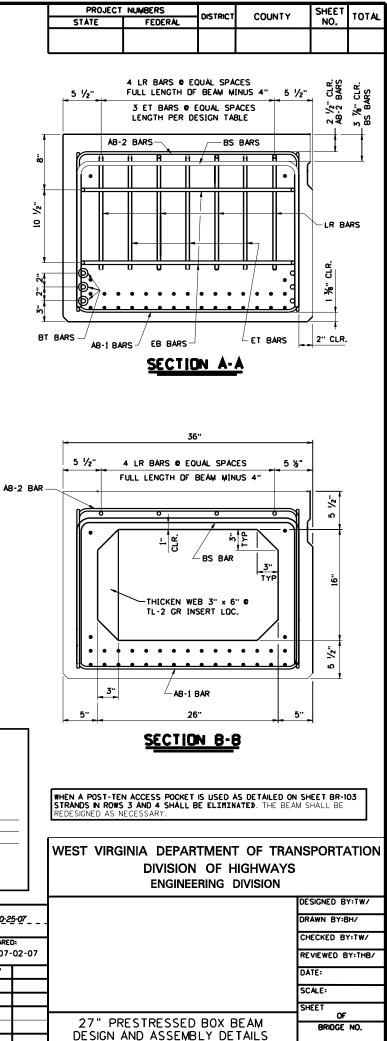
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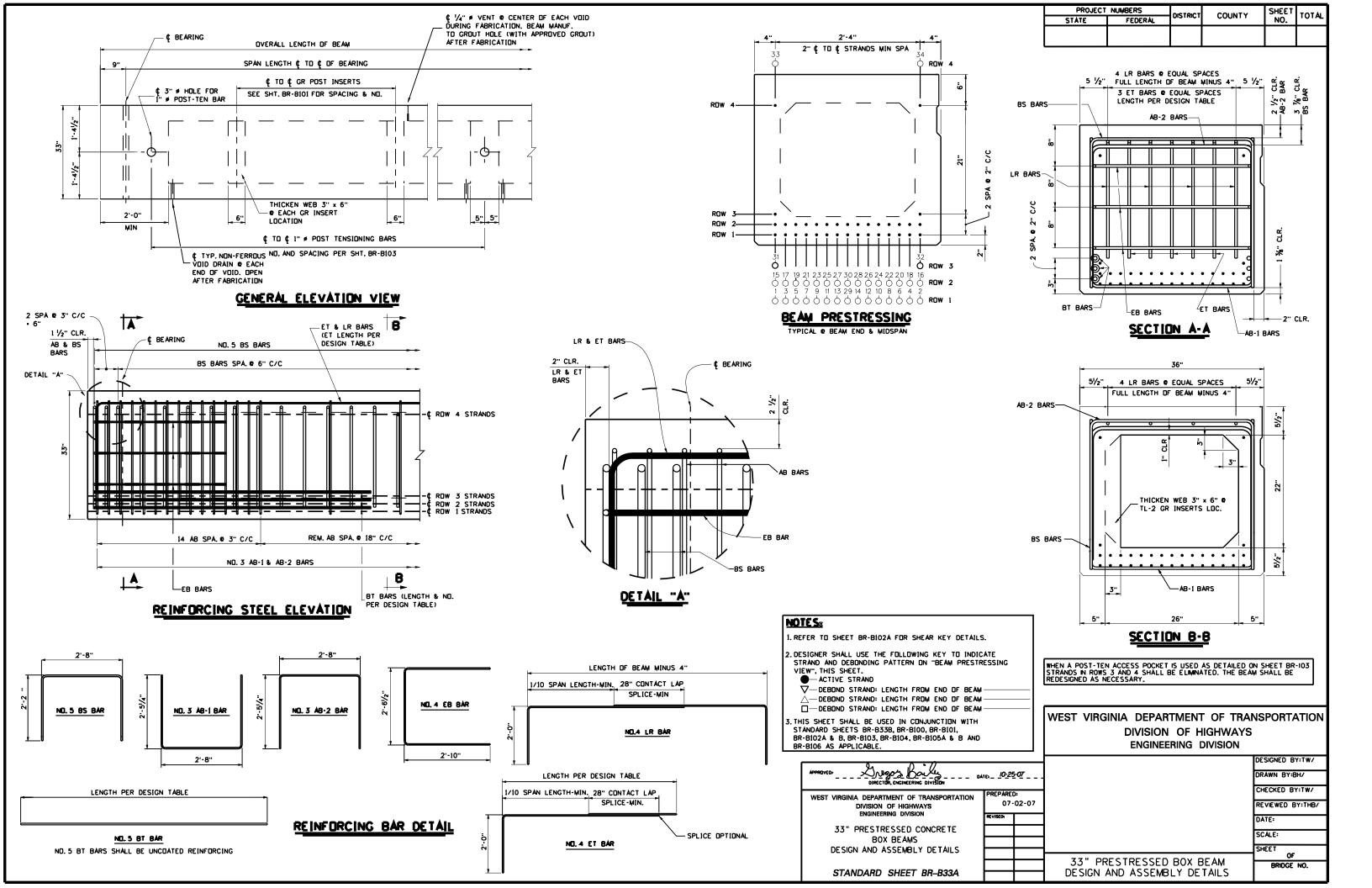
					DESIGN	DATA FO	r 27" (DJACEN	t box bi	E AM							STÅTE PROJECT NUMBER	FEDERAL PROJECT NUMBER	STATE DIST. NO.	COUNTY	SHEET TOTAL NOL SHEETS
SPAN LENGTH & TO & BEARING		40'-0"	42'-0"	44'-0"	46'-0"	48'-0"	50'-0''	52'-0"	54'-0"	56'-0''	58'-0''	60'-0"						MIN. CONCRE	TE STRENGTH	e Rele	ASE • 55	00 PSI
OVERALL LENGTH OF BEAM		41'-6"	43'-6"	45'-6"	47'-6"	49'-6"	51'-6"	53'-6"	55'-6"	57'-6"	59'-6"	61'-6"							TE STRENGT⊢	I Q 28 C	AYS - 80	00 PSI
ND. DF 270 KSI, ½" ø LDW-RELÅ STRÅNDS, ÅREÅ∕STRÅND + 0.167 S		10	10	12	12	12	12	14	14	16	16	18						INITIAL PUL	L/STRAND ION AREA/ST	RAND		.820 LBS 67 SQ. IN.
	ROW 1	1,2,11,12	1,2,11,12	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,7,8,13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14										
	ROW 2	15,16,25,26	15,16,25,26	15,16,27,28	15,16,27,28	15,16,27,28	15,16,27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22 27,28	15,16,21,22, 27,28	15,16,19,20, 23,24,27,28										
STRAND POSITION NUMBER	ROW 3																					
	ROW 4	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34										
PRESTRESSING FORCE IMMEDIATE STRAND RELEASE, Ppt, (KIPS/BEA)		329	329	392	393	393	393	456	457	519	519	581										
EFFECTIVE PRESTRESSING FORCE ALL LOSSES, Ppe, (KIPS/BEAM)	AFTER	301	302	355	356	357	358	411	413	463	465	514										
REQUIRED FACTORED MOMENT © STRENGTH 1, Mu (FT-KIPS/BEAM	v i)	563	608	660	717	772	829	887	946	1007	1069	1132										
FACTORED FLEXURAL RESISTANCE, Mr (FT-KIPS/BEAM)		706	706	868	868	868	868	1011	1011	1164	1164	1299										
TOTAL NO. DEBONDED STRANDS		—		<u> </u>						—												
DEBONDED STRÅND POSITION NUMBER & SHIELDING LENGTH	ROW 1																					
FROM EACH END	ROW 2																					
NUMBER & LENGTH •4 ET TOP TENSION BARS & EACH END	•	3 -∙4 × 5'-6''	3 - ●4 × 5'-6''	3 - •4 × 6'-0''	3 - •4 × 6'-0''	3 - ●4 × 6'-0''	3 - •4 × 6'-6"	3 - ∎4 × 6'-6"	3 - ●4 × 7'-0''	3 - ∎4 × 7'-0''	3 - ∎4 × 7'-0''	3 - ∎4 × 7'-6"										
NUMBER & LENGTH •5 BT BOTTO TENSION BARS @ EACH END	M	6 - •5 × 7'-0"	6 - •5 × 7'-0"	6 - •5 × 7'-0"	6 - ●5 × 7'-0"	6 - • 5 × 7'-0''	6 - ●5 × 7'-0''	6 - •5 × 7'-0"	6 - •5 × 7'-6"	4 - ●5 x 7'-6"	4 - ●5 × 7'-6"	4 - ●5 × 8'-0''										
DESIGN CAMBER		0.13	0.13	0.23	0.23	0.22	0.21	0.33	0.32	0.48	0.47	0.62										
+ = POSITIVE (UP) (INCHES) e FINAL	אנ	0.18	0.15	0.34	0.31	0.28	0.24	0.42 0.25	0.37	0.64	0.58	0.82										
	SERTS REQD.	0.13	0.07	0.14	0.22	0.14	0.04	0.25	0.13	0.44	0.30	0.55										
NUMBER & SPACING DF TL-2 GUARDRAIL INSERTS	EAM TO ST INSERT																					
SEE NOTE 6 CF 1st 1 TO ¢ 2nd EA. END																						
WEIGHT OF TYPICAL BEAM INCLU DIAPHRAGM (TONS)	JDING	13.8	14.4	15.0	15.7	16.3	16.9	17.5	18.1	18.7	19.3	19.9										
VEIGHTS LISTED IN THE DESIGN APHRAGMS SPACED © 15 FT C/C. INAL DIAPHRAGMS SHOULD BE AD IDITIONAL DIAPHRAGMS, ADD 361 L EW ADD 27 LBS/DEGREE OF SKE INGER ENDBLOCK, ADD 433 LBS/L ERS SHOULD NOTE THAT DATA IN LANE STRUCTURE 8 BEAMS WIDE PARAPET (321 PLF) AND A FWS ED AND IF REQUIRED NEW DESIG ANDARD DESIGN TABLE BE ALTEF TED DESIGN CAMBER VALUES LIS S SUCH ARE APPROXIMATE, FOR M LERANCE VALUES LISTED IN APP PLY. EWENT OF CAMBER FOR COMPARI 72 HOURS OF RELEASE. ADDITIO 4INIMIZE THE EFFECT OF TEMPER	. WEIGHTS F JUSTED ACCO BS/DIAPHRAG EW/END. F/END. N STANDARD AND ZERD OF 50 PSF. N DATA ENTO RED. STED IN THE MEMBERS WIT PENDIX B OF ISON TO PREI DNALLY, CAMB	OR SKEWED B JRDINGLY. JM. TABLE IS BAS SKEW. SUPERI FOR NON-STA ERED INTO BL TABLE ARE B H SPAN-TO-DO PCI MANUAL F DICTED DESIG JER SHOULD B	EAMS, LONGER SED ON EVEN IMPOSED DEA NDARD BRIDO ANK COLUMNS FOR OUALITY N VALUES SF	SPAN LENGT D LOADS INCL SES DATA SHO S. IN NO CAS PIRICAL FORM AT OR EXCE CONTROL, MN	AND HS, UDE DULD BE E SHALL ULAS EDING 25, L-116, MAY MPLETED	CAUSIN TIME D AN EVE THE F/ 5.MAXIMU 6.DESIGN TD ¢ 9 THE BF 7.THIS S	IG UNEVEN B IF ERECTION. EN, TOTAL BE ABRICATOR SI JM BEAM SKE IER INPUT V. SECOND INSE RIDGE, SHEET SHALL	EAM SEATING , BEFORE THE ARING AND A HALL NOTIFY W SHALL BE ALUES OF NUM RT. ABOVE VA	AT THE BEA BEAMS ARE LEVEL TOP THE CONTRA 30 DEGREES WBER DF INS ALUES SHALL CONJUNCTION	ARINGS. THE SECURED IN BEAM SURFAC CTOR AND DE S. ERTS, DISTANC BE BASED DI N WITH STANC	CONTRACTOR PLACE. METH E. TOLERANC SIGNER IF CI CE FROM END N THE REQUI DARD SHEETS	IS REQUIRED DD DF CORRE E, AFTER COR DRRECTIONS / DF BEAM TO RED 6'-3" GU	AY TWIST DR TD CORRECT CTIDN SHALL RECTIDN, SHAL ARE REQUIRED (FIRST INS ARDRAIL POST R-BIOO, BR-BIC	AT THE PROVIDE L BE (-/-) ½ PRIOR TO S ERT, AND ¢ SPACING A(01, BR-BI02A	FIRST INSER CROSS & B, 	CHOME CHING DIVISION - ENT DF TRANSPOR F HIGHWAYS	Олес 10-25- 17АТ IDN РЕЕРАЕОЛ 07-02 Ячиео	<u>07</u>	RGINIA DEPA DIVISION ENGINEE	I DF HIG RING DIV	HWAYS /ISION 08 08 08 08 08 08 08 08 08 08 08 08 08	PORTATION SIGNED BY:THB/ ANN BY:THB/ ECKED BY:TW/ VIEWED BY:TW/ VIEWED BY:TW/ TE: ECKED DF BRIDGE NUMBER

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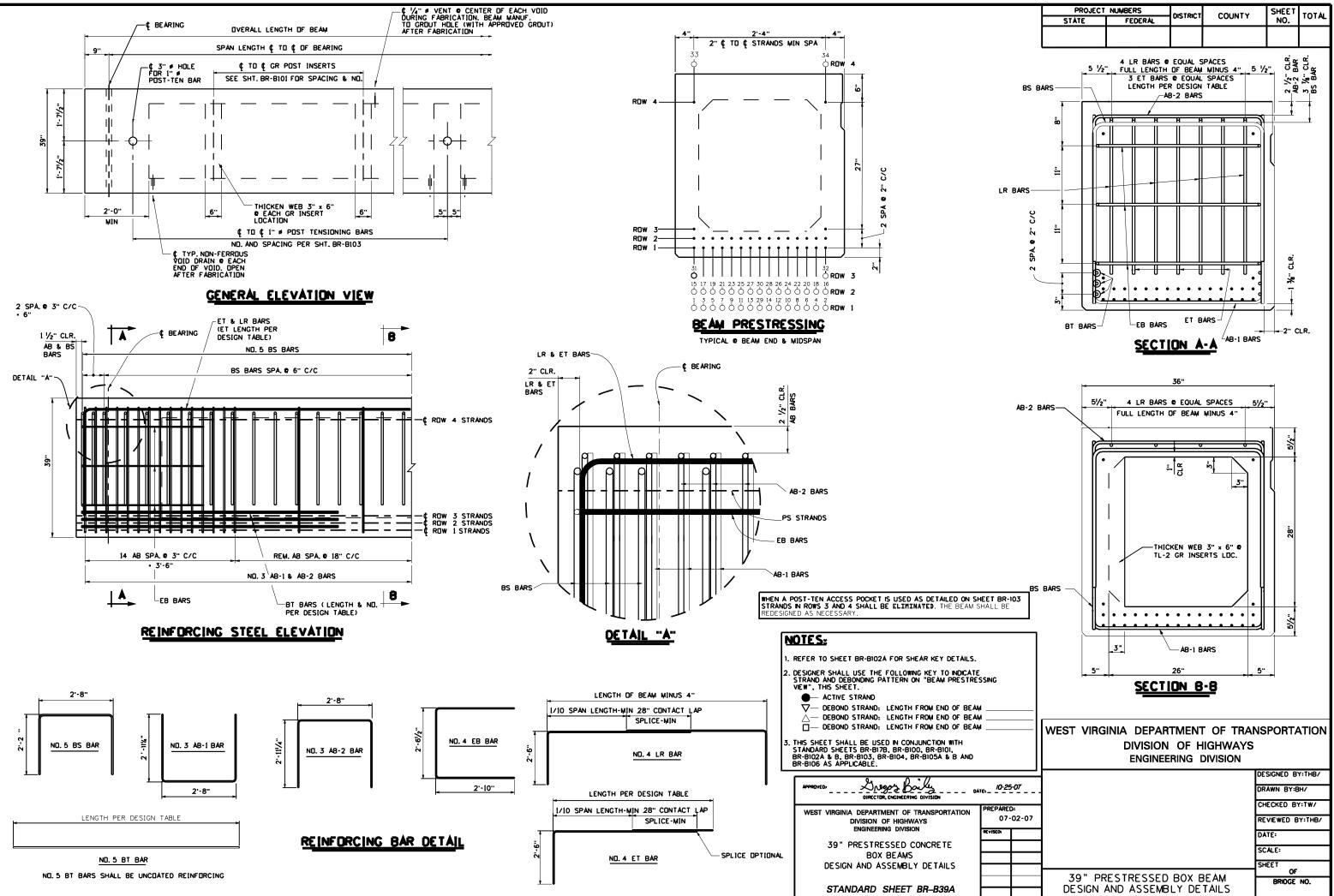


Note: Note: <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>STATE PROJECT NUMBER</th><th>FEDERÅL PROJECT NUMBER</th><th>STATE DIST. NO.</th><th>COUNTY</th><th>Sheet Total NGL Sheet</th></th<>																			STATE PROJECT NUMBER	FEDERÅL PROJECT NUMBER	STATE DIST. NO.	COUNTY	Sheet Total NGL Sheet	
						C	ESIGN	DATA FC)r 33'' (DEPTH /	ADJACEN	IT BOX	BEAM											
Deck Unit Unit <th< td=""><td>SPAN LENGTH & TO &</td><td>C BEARING</td><td></td><td>50'-0"</td><td>52'-0"</td><td>54'-0"</td><td>56'-0"</td><td>58'-0"</td><td>60'-0''</td><td>62'-0''</td><td>64'-0"</td><td>66'-0"</td><td>68'-0"</td><td>70'-0''</td><td></td><td></td><td></td><td></td><td> MIN CONCRE</td><td>TE STRENGTH</td><td></td><td>ASE . 55</td><td>500 PSI</td></th<>	SPAN LENGTH & TO &	C BEARING		50'-0"	52'-0"	54'-0"	56'-0"	58'-0"	60'-0''	62'-0''	64'-0"	66'-0"	68'-0"	70'-0''					 MIN CONCRE	TE STRENGTH		ASE . 55	500 PSI	
		-																						
				12	12	12	14			16	16	18	18	19					INITIAL PULL	/STRAND		- 33	3,820 LBS	
	STRANDS, AREA/STRAN	ND - 0.167 SQ								1,2,5,6,9,10,	1,2,5,6,9,10,	1,2,5,6,9,10,	1,2,5,6,9,10,	1,2,5,6,9,10,					 CROSS-SECT	ION AREA/ST	RAND	• 0.	.167 SQ. IN.	
		-								•	,			-										
			ROW 2	15,16,27,28	15,16,27,28	15,16,27,28																		
	STRAND POSITION NUN	IMBER	ROW 3																					
Name Control Contro Control Control			ROW 4	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34										
UPC (UP REPORT PROPERATION - 103 334 304 301 44 410 410 440 410 420 424 132 1333 144 1327 1				394	394	394	457	458	458	521	521	583	584	585										
ALL LODE AD IT DEFINING OND OND OLD VID							_											\vdash						
	ALL LOSSES, Ppe, (KIP	PS/BEAM)		359	360	361	414	416	417	468	470	521	522	524										
NUMER 1 Outso <				858	918	979	1042	1107	1173	1244	1312	1383	1454	1527										
NUMBER 1 STANL DET NOL				1092	1092	1092	1280	1280	1280	1478	1478	1656	1656	1656										
definition struke prestrime	TOTAL NO. DEBONDED	STRANDS																						
Rep 1	DEBONDED STRAND PO	OSITION	ROW 1																					
Vision locks a Loc fact v -0* v -0* <th -0*<<="" td=""><td></td><td>LENGTH ·</td><td>RDW 2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td></td> <td>LENGTH ·</td> <td>RDW 2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td> </td> <td></td>		LENGTH ·	RDW 2																				
Vicinity Name: Level to 1 1 0 1 <th1< th=""> 1 1 <th1< th=""></th1<></th1<>		4 51 100		3 - •4	3 - 14	3 - 14	3 - 14	3 - 14	X	7	3	3 . •4	3 . •4	3										
Testing lasses is cost from " r -0" + 6-0" is -0" is -0				× 6'-6"	× 6'-6"	× 7'-0"	× 7'-0"	× 7'-0"	× 7'-6"	× 7'-6"	× 8'-0"	× 8'-0"	× 8'-0"	× 8'-6"										
Design cudere (NO/ES) e ERECTION 0.28 0.22 0.49 0.44 0.66 0.59 0.52 0 0 0 NO/ES) e Fink 0.17 0.10 0.03 0.21 0.12 0.01 0.27 0.14 0.38 0.23 0.06 0													-											
NUMBER Loss Loss <thloss< th=""> Loss Loss <t< td=""><td>DESIGN CAMBER</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<></thloss<>	DESIGN CAMBER																							
Number a spacing pr 11, 2 guidentau tr 12, 2 guidentau tr 12, 2 guidentau tr 12, 2 guidentau tr 12, 2 guidentau tr 14, 2 guidentau tr																								
NUMBER & SPACING NETTS NUMBER & SPACING NETTS NETTS NUMBER SEE NOTE 6 C 0 F INT NEERT TO 2 200 NINEET TO 2 200 NINET			RTS REQD.	0.17	0.10	0.00	0,21	0.12	0.01	0.27	0.14	0.00	0.20	0.00										
INDERTIS Indextis Indextis Indextis Indextis Indextis SEE NOTE 6 Ind 2 Add INSERT Indextis Indextis Indextis Indextis WEIGHT 6 Ind 2 Add INSERT Indextis Indextis Indextis Indextis WEIGHT 6 Ind 2 Add INSERT Indextis Indextis Indextis Indextis WEIGHT 6 Indextis Indextis Indextis Indextis Indextis Indextis WEIGHT 5 LISTED IN THE DESION TABLE ARE BASED ON ZERD SKEW, 2 FT. LDNG ENOBLOCK APHRAUKS SPACED e IS FT C/C, WEIGHTS FDR SKEWE D BEANS, LDNGER ENOBLOCK ADD NOL OHAPKRAUK, SHOULD E AUDISTED ACCOMPARAUK, IEW ADD 31 ESCIENCER, FABRICATOR, AND ERECTOR SHALL BE AWARE THAT SKEWED END BEANS MAY TWIST DR WARP, Indextis A.DESIONER, FABRICATOR, AND ERECTOR SHALL BE AWARE THAT SKEWED END BEANS MAY TWIST DR WARP, Indextis A.DESIONER, FABRICATOR, AND ERECTOR SHALL BE AWARE THAT SKEWED END BEANS MAY TWIST DR WARP, Indextis A.DESIONER INDEXTIS A.DESIONER INDE		¢ OF FIRST																						
WEIGHT OF TYPICAL BEAM INCLUDING 19.9 20.6 21.3 22.0 22.7 23.4 24.4 26.1 25.8 27.2 Image: Constraints of the constraints		¢ OF 1st INS TO ¢ 2nd IN																						
 WEIGHTS LISTED IN THE DESIGN TABLE ARE BASED ON ZERO SKEW, 2 FT, LONG ENDBLOCK TAPHRAGMS SPACED © 15 FT C/C, WEIGHTS FOR SKEWED BEAMS, LONGER ENDBLOCK AND ONAL DIAPHRAGMS SHOLD BE ADJUSTED ACCORDINGLY. MORAL DIAPHRAGMS, ADD 497 LBS/DIAPHRAGM. VEW MOD 33 LBS/DEGREE OF SKEW/PRO. SMOER ENDBLOCK, ADD 596 LBS/LF/END. VERS SHOLD NOTE THAT DATA IN STANDARD TABLE IS BASED ON EVEN SPAN LENGTHS, LANE STRUCTURE 8 BEAMS WIDE AND ZERO SKEW. SUPERIMOSES D DE ADJUSTED AND CASE SHALL BE CAUSTRO CAMBER VALUES LISTED IN THE TABLE ARE BASED ON EMPIRICAL FORMULAS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING 25, S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING 25, S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS A S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS A S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD-DEPTH RATIDS AT OR EXCEEDING AS S SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TD			ING	19.9	20.6	21.3	22.0	22.7	23.4	24.4	25.1	25.8	26.5	27.2										
JREMENT OF CAMBER FOR COMPARISON TO PREDICTED DESIGN VALUES SHOULD BE COMPLETED N 72 HOURS OF RELEASE. ADDITIONALLY, CAMBER SHOULD BE EVALUATED UNDER CONDITIONS	DIAPHRAGM (TUNS) WEIGHTS LISTED IN TH DIAPHRAGMS SPACED @ IDNAL DIAPHRAGMS SHO ADDITIONAL DIAPHRAGMS SHO ADDITIONAL DIAPHRAGMS SKEW ADD 33 LBS/DEG ONGER ENDBLOCK, ADD INERS SHOULD NOTE TH D LANE STRUCTURE 8 E F PARAPET (321 PLF) A IED AND IF REQUIRED I STANDARD DESIGN TABLI CTED DESIGN CAMBER CTED DESIGN CAMBER S SUCH ARE APPROXIM TOLERANCE VALUES LIST APPLY. REMENT OF CAMBER FO N 72 HOURS OF RELEAT	THE DESIGN T. 15 FT C/C. 10ULD BE ADJU IS, ADD 497 LE GREE DF SKEW 596 LBS/LF/ HAT DATA IN BEAMS WIDE AND A FWS D NEW DESIGN LE BE ALTERE VALUES LIST MATE. FOR ME STED IN APPEI OR COMPARISI ASE. ADDITION	ABLE ARE E WEIGHTS FO JSTED ACCE BS/DIAPHRA W/END. /END. YEND. YEND. STANDARD AND ZERD S JF 50 PSF, DATA ENTE D. ED IN THE MBERS WIT NDIX B DF ED IN TD PREU	BASED ON ZEF DR SKEWED B JRDINGLY. .GM. TABLE IS BAS SKEW. SUPERI FOR NON-STA FOR NON-STA SKEW. SUPERI FOR STA DICTED DESIG FOR SHOULD B	RO SKEW, 2 F BEAMS, LONGEF SED ON EVEN IMPOSED DEA ANDARD BRIDO ANK COLUMN BASED ON EMI EPTH RATIOS FOR QUALITY SN VALUES SI	T, LONG ENDE R ENDBLOCKS I SPAN LENGT D LOADS INCL GES DATA SHO S. IN NO CAS PIRICAL FORM G AT OR EXCE CONTROL, MN HOULD BE COM	BLOCK AND ULDE DULD BE E SHALL ULAS EDING 25, IL -116, MAY WPLETED	4. DESIGN CAUSIN TIME (AN EV THE F 5. MAXIMI 6. DESIGN TO (THE BI 7. THIS S	NER, FÅBRICAT NG UNEVEN B DF ERECTION., EN, TOTAL BE. ABRICATOR SH UM BEÅM SKE NER INPUT VÅ SECOND INSE RIDGE. SHEET SHÅLL	OR, AND EREA EAM SEATING BEFORE THE ARING AND A HALL NOTIFY W SHALL BE ALUES OF NUI RT. ABOVE VA BE USED IN	CTOR SHALL AT THE BEA BEAMS ARE LEVEL TOP THE CONTRA 30 DEGREES MBER OF INS LUES SHALL CONJUNCTION	BE AWARE TH ARINGS. THE SECURED IN BEAM SURFA CTOR AND DE S. ERTS, DISTAN BE BASED OF	AT SKEWED E CONTRACTOR PLACE. METHI E. TOLERANC SIGNER IF CO CE FROM END I THE REQUIR DARD SHEETS	IND BEAMS M IS REQUIRED DD DF CORRE E, AFTER COR DRRECTIONS DF BEAM TO ED 6'-3'' GUA	TD CORRECT A CTIDN SHALL P RECTIDN, SHALL RE REQUIRED I ¢ FIRST INSE RORAIL POST S	NT THE ROVIDE BE (+/-) ! PRIOR TO S RT, AND (PACING AC , BR-B102A	FIRST INSERT ROSS & B. 	CHEMIC ANTISTIS	-07	DIVISION	i of hig <u>Ring di</u>	HWAYS VISION • • • •	DESIGNED BY:TW/ DRAWN BY:THB/ CHECKED BY:TW/ REVIEWED BY:THB/ DATE:	

FOR

FOR

R -	В102А & В,
	APPRENEDY
	WEST VIRGINIÅ DEPÅRTMENT DF TRÅNSPORT DIVISION DF HIGHWÅYS ENGINEERING DIVISION
	DESIGN TÅBLE FOR 33"
	PRESTRESSED BOX BEAM
	STANDADD SHEET DD.DZZ



						DE SIGN	DATA FO)r 39° (рертн А	DJACEN	t box bi	E AM				
SPAN LENGTH ¢ TD ¢	BEARING		60'-0''	62'-0''	64'-0"	66'-0''	68'-0''	70'-0"	72'-0"	74'-0'	76'-0''	78'-0"	80'-0''			Γ
OVERALL LENGTH OF	BEAM		61'-6"	63'-6"	65'-6"	67'-6"	69'-6"	71'-6"	73'-6"	75'-6"	77'-6"	79'-6''	81'-6"			ſ
ND. DF 270 KSI, 1/2" STRANDS, AREA/STRAN			14	14	16	16	16	16	18	18	20	20	20			ľ
		ROW 1	1,2,7,8,13,14	1,2,7,8,13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,5,6,9,10, 13,14	1,2,3,4,7,8, 11,12,13,14	1,2,3,4,7,8, 11,12,13,14	1,2,3,4,7,8, 11,12,13,14			ſ
		ROW 2	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28	15,16,21,22, 27,28			15,16,19,20, 23,24,27,28	15,16,19,20, 23,24,27,28	15,16,19,20, 23,24,27,28			ľ
STRÅND POSITION NU	MBER	ROW 3														ſ
		ROW 4	33.34	33,34	33,34	33,34	77.74	33,34	33,34	33,34	33,34	33,34	33,34			╞
			33,34		55,54	55,54	33,34	55,54	55,54	55,54	55,54		55,54			L
PRESTRESSING FORCE STRAND RELEASE, Ppt.		-	459	459	522	522	523	523	585	586	648	648	649			
EFFECTIVE PRESTRES ALL LOSSES, Ppe, (KIP		AFTER	417	418	471	472	473	475	527	528	578	580	582			
REQUIRED FACTORED © STRENGTH 1, Mu (F1)			1213	1287	1359	14 32	1506	1582	1660	1739	1828	1911	1995			
FACTORED FLEXURAL RESISTANCE, Mr (FT-K	(IPS/BEAM)		1549	1549	1792	1792	1792	1792	2015	2015	2249	2249	2249			ſ
TOTAL NO. DEBONDED	STRANDS										2	2	2			ſ
DEBONDED STRAND PC		ROW 1									7,8 © 5'-0" EA. END	7,8 62 5'-0'' EA.END	7,8 12 5'-0'' EA. END			
NUMBER & SHIELDING FROM EACH END	LENGIH	ROW 2														ſ
NUMBER & LENGTH •4 TENSION BARS & EAC			3 - •4 x 7'-6"	3 - ●4 × 7'-6''	3 - ●4 × 8'-0''	3 - •4 × 8'-0''	3 - ■4 × 8'-0''	3 - ●4 × 8'-6''	3 - ■4 × 8'-6''	3 - ■4 × 9'-0''	3 - ■4 × 9'-0''	3 - ■4 × 9'-0''	3 - ■4 × 9'-6''			ſ
NUMBER & LENGTH .5 TENSION BARS @ EAC			4 - ●6 × 8'-0''	4 - ●6 × 8'-0''	4 - •6 × 8'-6"	6 - •6 × 8'-6''	4 - ●6 × 8'-6''	4 - ●6 × 9'-0''	4 - ●5 × 9'-0''	4 - ●5 × 9'-0''	4 - ∙6 × 10'-0''	4 - ■6 × 10'-0''	4 - ■6 × 10'-0''			ſ
DESIGN CAMBER	C RELEASE		0.24	0.23	0.35	0.34	0.33	0.31	0.44	0.42	0.58	0.56	0.53			ſ
+ = POSITIVE (UP) (INCHES)	e ERECTION		0.30	0.26	0.47	0.43	0.38	0.33	0.53	0.47	0.71	0.65	0.56			ſ
	C FINAL		0.17	0.08	0.32	0.23	0.12	0.00	0.23	0.09	0.35	0.19	0.01			
	NO OF INSE	RTS REQD.														
NUMBER & SPÀCING DF TL-2 GUÀRDRÀIL INSERTS	END OF BEA ¢ OF FIRST EA. END															
SEE NOTE 6	¢ OF 1st IN TO ¢ 2nd II EA. END															ſ
WEIGHT OF TYPICAL DIAPHRAGM (TONS)	BEAM INCLUD	ING	24.6	25.7	26.4	27.1	27.8	28.6	29.3	30.0	31.0	31.8	32.8			ſ

NOTES

1, BEAM WEIGHTS LISTED IN THE DESIGN TABLE ARE BASED ON ZERD SKEW, 2 FT, LONG ENDBLOCK AND DIAPHRAGMS SPACED @ 15 FT C/C. WEIGHTS FOR SKEWED BEAMS, LONGER ENDBLOCKS AND ADDITIONAL DIAPHRAGMS SHOULD BE ADJUSTED ACCORDINGLY.

FOR ADDITIONAL DIAPHRAGMS, ADD 632 LBS/DIAPHRAGM.

FOR SKEW ADD 38 LBS/DEGREE OF SKEW/END.

FOR LONGER ENDBLOCK, ADD 758 LBS/LF/END.

2. DESIGNERS SHOULD NOTE THAT DATA IN STANDARD TABLE IS BASED ON EVEN SPAN LENGTHS, A TWO LANE STRUCTURE 8 BEAMS WIDE AND ZERO SKEW. SUPERIMPOSED DEAD LOADS INCLUDE TYPE F PARAPET (321 PLF) AND A FWS OF 50 PSF, FOR NON-STANDARD BRIDGES DATA SHOULD BE VERIFIED AND IF REQUIRED NEW DESIGN DATA ENTERED INTO BLANK COLUMNS. IN NO CASE SHALL THE STANDARD DESIGN TABLE BE ALTERED.

3. PREDICTED DESIGN CAMBER VALUES LISTED IN THE TABLE ARE BASED ON EMPIRICAL FORMULAS AND AS SUCH ARE APPROXIMATE. FOR MEMBERS WITH SPAN-TO-DEPTH RATIOS AT OR EXCEEDING 25, THE TOLERANCE VALUES LISTED IN APPENDIX B OF PCI MANUAL FOR QUALITY CONTROL, MNL-116, MAY NOT APPLY.

MEASUREMENT OF CAMBER FOR COMPARISON TO PREDICTED DESIGN VALUES SHOULD BE COMPLETED WITHIN 72 HOURS OF RELEASE. ADDITIONALLY, CAMBER SHOULD BE EVALUATED UNDER CONDITIONS THAT MINIMIZE THE EFFECT OF TEMPERATURE VARIATION.

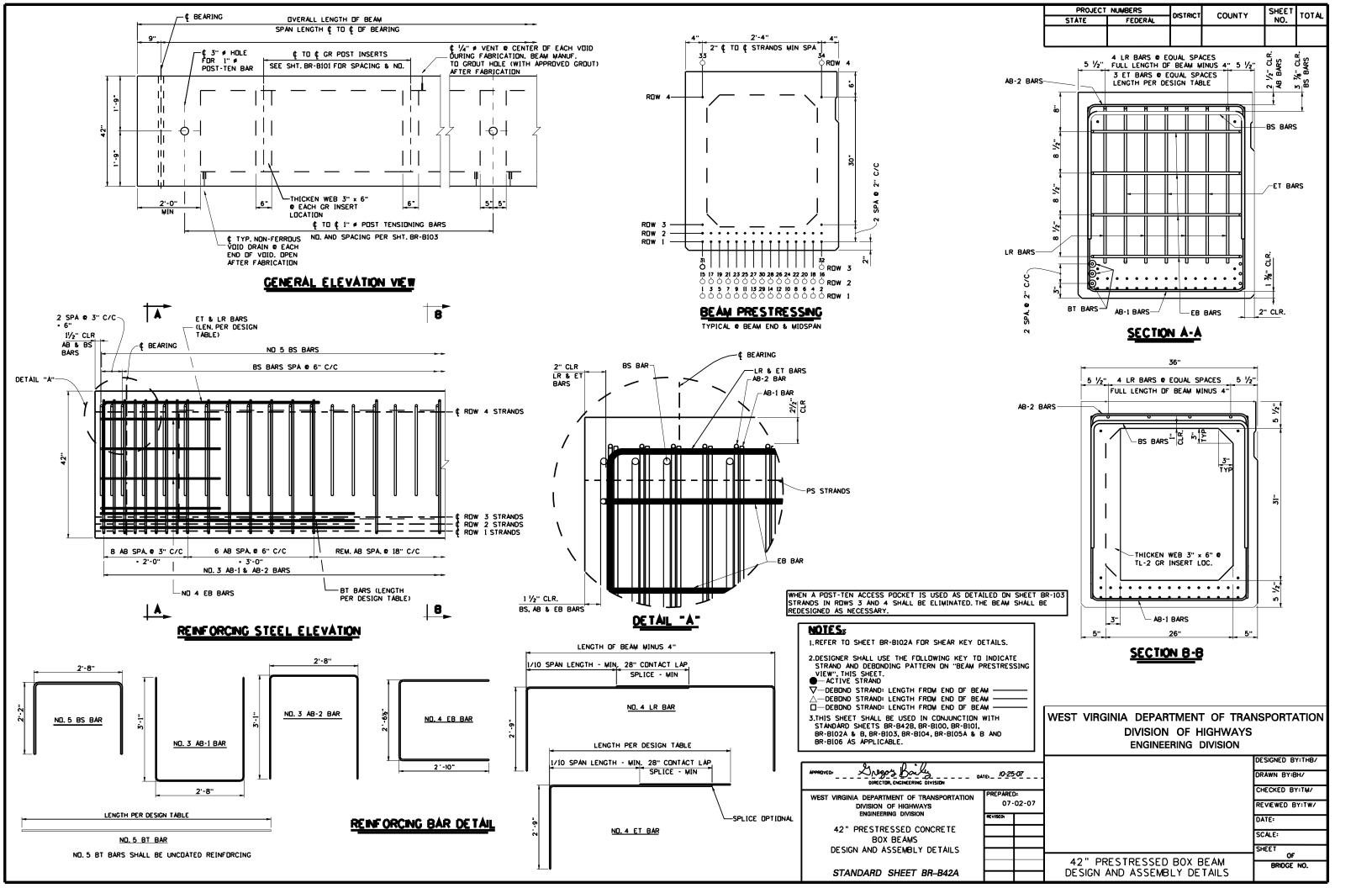
4, DESIGNER, FABRICATOR, AND ERECTOR SHALL BE AWARE THAT SKEWED END BEAMS MAY TWIST OR WA CAUSING UNEVEN BEAM SEATING AT THE BEARINGS. THE CONTRACTOR IS REQUIRED TO CORRECT AT TIME OF ERECTION., BEFORE THE BEAMS ARE SECURED IN PLACE. METHOD OF CORRECTION SHALL PRO AN EVEN, TOTAL BEARING AND A LEVEL TOP BEAM SURFACE. TOLERANCE, AFTER CORRECTION, SHALL BE THE FABRICATOR SHALL NOTIFY THE CONTRACTOR AND DESIGNER IF CORRECTIONS ARE REQUIRED PRI

5. MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.

6. DESIGNER INPUT VALUES OF NUMBER OF INSERTS, DISTANCE FROM END OF BEAM TO ¢ FIRST INSERT. TO C SECOND INSERT. ABOVE VALUES SHALL BE BASED ON THE REQUIRED 6'-3" GUARDRAIL POST SP THE BRIDGE.

7. THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-B39A, BR-B100, BR-B101, BR BR-B103, BR-B104, BR-B105A & B AND BR-B106 AS APPLICABLE.

			STATE PROJECT NUMBER	FEDERÅL PROJECT NUMBER	STATE DIST. ND.	COUNTY	SHEET NOL	TDTAL SHEETS
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			IN. CONCRETE					
			NITIAL PULL/		≪ ∠0		,820 L	
			ROSS-SECTIO		AND		67 SQ.	
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RP TH								
JVI BE	DE (+/-) <mark>//8</mark> INCH.							
	R TO SHIPMENT,							16:
r, A AC	ND ¢ FIRST INSERT ING ÅCRDSS		WEST VIR	SINIA DEPART DIVISION ENGINEER	OF HÌ	GHWAYS	PORTAT	ION
R-	B102Å & B,					06	SIGNED BYAT	
ĺ	APPREMEDY BURGY BULL	-25-07	1				ECKED BYFTW	
	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION PRE	PARED	1				VIEWED BY+TI	18 /
		7-02-07	-				ALE:	
	DESIGN TABLE FOR 39-	-					EET NO D BRIDGE NU	
	PRESTRESSED BOX BEAN	+	4	IGN TABLE F			OKIUUL NU	TOLK
	STANDARD SHEET BR-B39B		PRES	STRESSED BO	X BE	AM		



					Design D		r 42° D	EPTH AC	JACENT	BOX BE	A Ņ							STÅTE PROJECT NUMBER	FEDERAL PROJECT NUMBER	DIST. NO.	COUNTY	SHEET TDTAL NOL SHEETS
PAN LENGTH & TO & BEARIN	G	76'-0''	78'-0''	80'-0''	82'-0"	84'-0"	86'-0''	88'-0"	90'-0''	92'-0"	94'-0"	96'-0''	98'-0''	100'-0''				MIN. CONCRE	TE STRENGTH	I @ RELE	ASE - 55	00 PSI
VERALL LENGTH OF BEAM		77'-6"	79'-6"	81'-6"	83'-6"	85'-6"	87'-6"	89'-6"	91'-6"	93'-6"	95'-6"	97'-6"	99'-6''	101'-6''				MIN. CONCRE	TE STRENGTH	I © 28 (DAYS - 80	00 PSI
ND. OF 270 KSI, 1/2" & LOW-F STRANDS, AREA/STRAND • 0.10		18	20	20	22	22	22	24	24	26	26	28	28	30				INITIAL PULI CROSS-SECT	_/STRAND ION AREA/ST	RAND		3,820 LBS 167 SQ. IN.
	ROW 1	13,14	1,2,5,6,9,10, 13,14	13,14	1,2,3,4,7,8, 11,12,13,14	1,2,3,4,7,8, 11,12,13,14	1,2,3,4,7,8, 11,12,13,14	1,2,3,4,7,8, 11,12,13,14	11,12,13,14	1,2,3,4,5,6,9, 10,11,12,13,14 15,16,17,18,	10,11,12,13,14	10,11,12,13,14	10,11,12,13,14	1 THRU 14								
	ROW 2	15,16,21,22, 27,28	15,16,19,20, 23,24,27,28	15,16,19,20, 23,24,27,28	15,16,19,20, 23,24,27,28		15,16,19,20, 23,24,27,28	21,22,25,26, 27,28	21,22,25,26, 27,28			20,23,24,25,	19,20,23,24, 25,26,27,28	19,20,23,24,								
STRAND POSITION NUMBER	RDW 3	31,32	31,32	31,32	31,32	31,32	31,32	31,32	31,32	31,32	31,32	31,32	31,32	31,32								
	ROW 4	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34	33,34								
PRESTRESSING FORCE IMMEDI		587	649	650	711	712	713	774	775	835	836	896	897	956								
FFECTIVE PRESTRESSING FO		531	582	584	632	635	637	685	688	734	738	783	787	830								
REQUIRED FACTORED MOMENT	E AM)	1861	1945	2031	2118	2207	2297	2388	2482	2585	2682	2780	2879	2981								
ACTORED FLEXURAL RESISTANCE, Mr (FT-KIPS/BEA	M)	2179	2420	2420	2603	2603	2603	2803	2803	3007	3007	3186	3186	3370								
TOTAL NO. DEBONDED STRAND	5		2	2	4	4	4	4	4	6	6	6	6	6								
DEBONDED STRÅND POSITION NUMBER & SHIELDING LENGTH	ROW 1		5,6 © 5'-0"	5,6 © 5'-0''	3,4 € 5'-0"	3,4 ₽ 5'-0"	3,4 ₽ 5'-0"	3,4 ₽ 5'-0''	3,4 ≌ 5'-0''	3,4,9,10 ₽ 5'-0"	3,4,9,10 ₽ 5'-0''	3,4,9,10 © 5'-0''	3,4,9,10 ₽ 5'-0''	3,4,9,10 ₽ 5'-0''								
RDM EACH END	RDW 2				23,24 © 3'-0"	23,24 ₽ 3'-0"	23,24 © 3'-0"	25,26 © 3'-0''	25,26 © 3'-0"	25,26 © 3'-0''	25,26 © 3'-0''	25,26 © 3'-0''	25,26 € 3'-0"	25,26 © 3'-0''								
NUMBER & LENGTH •4 ET TO TENSION BARS @ EACH END	<u> </u>	3 - •4 × 9'-0''	3 - ∎4 × 9'-0''	3 - ●4 × 9'-6''	3 - •4 x 9'-6"	3 - •4 × 10'-0''	3 - •4 × 10'-0''	3 - •4 × 10'-0''	3 - •4 × 10'-6"	3 - ●4 × 10'-6''	3 - ●4 × 11'-0''	3 - • 4 × 11'-0''	3 - • 4 × 11'-0"	3 - • 4 × 11'-6"								
NUMBER & LENGTH •5 BT BO FENSION BARS @ EACH END	ттом	4 - •5 × 9'-6''	6 - •5 × 9'-6''	6 - ●5 × 10'-0''	6 - •5 × 10'-0''	6 - •5 × 10'-6"	6 - •5 × 10'-6"	4 - •5 × 10'-6"	4 - ●5 × 11'-0''	4 - •5 × 11'-0''	4 - ●5 × 11'-6''	2 - •5 × 11'-6''	2 - •5 × 11'-6''	2 -■ 5 × 12'-0''								
	ASE	0.39	0.52	0.50	0.67	0.65	0.62	0.79	0.76	0.96	0.93	0.97	1.16	1.12								
+ = POSITIVE (UP) e ERE(0.42	0.64	0.57	0.84	0.77	0.68	0.94	0.84	1.15	1.04	1.05	1.34	1.20								
	INSERTS REQD.	0,04	0,28	0,12	0,43	0,26	0,06	0,34	0.12	0.43	0,17	0.09	0,38	0,07								
	BEAM TO																					
	st INSERT 2nd INSERT)																					
VEIGHT OF TYPICAL BEAM IN	CLUDING	32.6	33.4	34.1	34.9	35.6	36.4	37.1	37.9	39.0	39.7	40.4	41.1	41.9								
VEIGHTS LISTED IN THE DES APHRAGMS SPACED © 15 FT INAL DIAPHRAGMS SHOULD BE DITIONAL DIAPHRAGMS, ADD 7 EW ADD 41 LBS/DEGREE OF NGER ENDBLOCK, ADD 840 LE ERS SHOULD NOTE THAT DAT LANE STRUCTURE 8 BEAMS M PARAPET (321 PLF) AND A F CD AND IF REQUIRED NEW DA ANDARD DESIGN TABLE BE AN TED DESIGN CAMBER VALUES SUCH ARE APPROXIMATE. F(LERANCE VALUES LISTED IN PLY. EMENT OF CAMBER FOR COMMING 72 HOURS OF RELEASE. ADD INIMIZE THE EFFECT OF TEM	C/C. WEIGHTS F ADJUSTED ACC 00 LBS/DIAPHR/ SKEW/END, S/LF/END. A IN STANDARD VIDE AND ZERD WS DF 50 PSF. SIGN DATA ENT TERED. LISTED IN THE IR MEMBERS WIT APPENDIX B DF PARISON TO PRE ITIONALLY, CAME	OR SKEWED E ORDINGLY. AGM. TABLE IS BA: SKEW. SUPER FOR NON-ST/ ERED INTO BL TABLE ARE E IH SPAN-TO-D PCI MANUAL DICTED DESIG BER SHOULD E	SED ON EVEN IMPOSED DEA ANDARD BRID ANK COLUMN BASED ON EM EPTH RATIOS FOR QUALITY SN VALUES S	R ENDBLOCKS N SPAN LENGT O LOADS INCI GES DATA SHI IS. IN NO CAS IPIRICAL FORM S AT OR EXCE ' CONTROL, MM HOULD BE CO	AND HS, LUDE JULD BE E SHALL ULAS EDING 25, IL-116, MAY WPLETED	CAUSIN TIME C AN EVI THE F/ 5.MAXIMU 6.DESIGN TO ¢ S THE BP 7.THIS S	NG UNEVEN B JF ERECTION, EN, TOTAL BE ABRICATOR SH JM BEAM SKE NER INPUT V/ SECOND INSEI RIDGE. SHEET SHALL	EAM SEATING BEFORE THE ARING AND A HALL NOTIFY W SHALL BE NLUES OF NUI RT. ABOVE VA BE USED IN	AT THE BEA BEAMS ARE LEVEL TOP THE CONTRA 30 DEGREES WBER OF INS LUES SHALL CONJUNCTION		CONTRACTOR PLACE. METH E. TOLERANC SIGNER IF CO CE FROM END THE REQUIR WARD SHEETS	IS REQUIRED DD OF CORRE E, AFTER COR DRRECTIONS OF BEAM TO ED 6'-3'' GUA	TO CORRECT CTION SHALL RECTION, SHA ARE REQUIRED O ¢ FIRST IN: RORAIL POST	AT THE PROVIDE LL BE (+/-) PRIOR TO SERT, AND ¢ SPACING Å(01, BR-B102Å	SHIPMENT, FIRST INSERT CROSS	IGHWÅYS DIVISION E FOR 42"	- 04162-00-25-07 TIDN PREPARED: 07-02-0 	7	RGINIA DEPAF DIVISION ENGINEE IGN TABLE	I DF HIG RING DIV	HWAYS VISION CC CC CC CC CC CC CC CC CC CC CC CC CC	PORTATION ESIGNED 8Y1THB/ RAWN 8Y5THB/ HECKED 8Y1TH/ EVIEWED 8Y5TW/ EVIEWED 8Y5TW/ EVIEWED 8Y5TW/ EVIEWED 8Y5TW/ EVIEWED 8Y5TW/ BRIDGE NUMBER

FOR

FOR

2. DESIGI A TWO TYPE F VERIFIE THE STA

BIO2A & B,
APPHENEDY ZALAGOS BOLL _
WEST VIRGINIÅ DEPÅRTMENT DF TRÅNSPOR Division of Highwäys Engineering Division
DESIGN TABLE FOR 42"
PRESTRESSED BOX BEAM
STANDARD SHEET BR-B42

GOVERNING SPECIFICATIONS

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

ALL BEAMS ARE DESIGNED IN ACCORDANCE WITH THE AASHTD LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 1998 AS AMENDED BY THE 2003 INTERIM SPECIFICATIONS. DESIGN NOTES

ALL STANDARD ADJACENT PRESTRESSED CONCRETE BRIDGE BEAMS ARE DESIGNED TO MEET THE FOLLOWING CRITERIA:

1. DESIGN LOADS:

HL-93 LIVE LOAD IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,

FUTURE WEARING SURFACE OF 50 PSF OF ROADWAY.

TYPE F PARAPET WEIGHING 321 PLF.

DIAPHRAGM DEAD LOAD, NUMBER REQUIRED BASED ON 15'-O" MAX, SPACING.

- 2. TWO LANE BRIDGE WITH AN OVERALL WIDTH OF 24'-5" (INCL. 34" GAP BETWEEN ADJ. BEAMS), A CURB-TO-CURB WIDTH OF 22'-1", TRANSVERSE POST-TENSIONING, AND ZERD SKEW.
- 3. DESIGN STRENGTH AND UNIT STRESSES:

MINIMUM CONCRETE STRENGTH @ STRAND RELEASE	6000 PSI
MINIMUM CONCRETE STRENGTH @ 28 DAYS	8000 PSI
TEMPORARY STRESS LIMITS IN CONCRETE BEFORE LOSSES:	
COMPRESSION STRESS LIMIT @ STRAND RELEASE	3600 PSI
TENSION STRESS LIMIT 🛛 STRAND RELEASE —— —— ——	-200 PSI
COMPRESSIVE STRESS LIMITS IN CONCRETE @ SERVICE I AFTER LOSSES:	
	4800 PSI
₽ FINAL 2 (PS+DL)	3600 PSI
<pre> e FINAL 3 [50%(PS+DL)+LL]</pre>	3200 PSI
TENSILE STRESS LIMIT IN CONCRETE @ SERVICE III AFTER LOSSES:	
@ FINAL 1 (PS+DL+LL)	-270 PSI
TENDON STRESS LIMIT PRIOR TO TRANSFER:	202.5 KSI
TENDON STRESS LIMIT AFTER ALL LOSSES:	194.4 KSI

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

SHIELDING OF STRANDS SHALL BE ACCOMPLISHED BY TAPING OR TIGHT FITTING PLASTIC TUBES TAPED AT EACH END.

- 5. THE ELASTOMERIC BEARING PADS PROVIDED IN THE STANDARD DESIGNS ARE BASED ON ZERO GRADE AND ARE LIMITED TO A MAXIMUM OF 5% GRADE. IN INSTANCES OF GRADES EXCEEDING THIS LIMIT, PADS SHALL BE SPECIFICALLY DESIGNED. INDIVIDUAL PAD DESIGNS SHALL BE IN ACCORDANCE WITH SECTION 14, AASHTO LRFD. BEVELED SOLE PLATES ARE PERMITTED.
- 6. MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.
- 7. WHEN ALTERNATE DESIGNS OR SITE SPECIFIC DESIGNS ARE PROVIDED, CRITERIA SET FORTH IN THESE STANDARDS SHALL APPLY.
- 8. NEGATIVE DESIGN CAMBER AFTER ALL LOSSES IS NOT PERMITTED.
- 9. EACH BEAM PROVIDED IN THESE STANDARD DESIGNS HAS BEEN LOAD RATED IN ACCORDANCE WITH SECTION 3.15 OF THE WEST VIRGINIA DIVISION OF HIGHWAYS BRIDGE DESIGN MANUAL, 2004. ADDITIONALLY, LOAD RATING PROCEDURES ARE IN ACCORDANCE WITH THE AASHTO MANUAL FOR CONDITION EVALUATION AND LOAD AND RESISTANCE FACTOR RATING OF HIGHWAY BRIDGES. 2003.

LAP SPLICE TABLE							
BAR SIZE	ND. 3	ND. 4	ND. 5	ND, 6			
SPLICE LEN.	21"	28"	34"	41"			

THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-B17A & B THRU BR-B42A & B, BR-B101, BR-B102A & B, BR-B103, BR-B104, BR-B105A & B AND BR-B106 AS APPLICABLE.

MATERIALS & FABRICATION NOTES

• THE PRESTRESSED CONCRETE BEAMS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF SECTION 603 OF THE STANDARD SPECIFICATIONS,

MILD REINFORCEMENT:

- · ALL MILD REINFORCING STEEL SHALL BE GRADE 60, DEFORMED BILLET STEEL AND SHALL BE EPDXY COATED EXCEPT WHERE NOTED. ALL UNCOATED REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M31. ALL EPOXY COATED REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M284, EXCEPT WHERE AMENDED BY SECTION 709.1 OF THE STANDARD SPECIFICATIONS.
- ALL TENSION LAP SPLICES SHALL BE A CLASS B. CONTACT TYPE. MINIMUM LAP SPLICE LENGTHS SHALL BE AS GIVEN IN THE "LAP SPLICE TABLE", THIS SHEET. ADDITIONALLY, IF LAP SPLICING OF ET, LR, AND BT BARS IS USED, TERMINATION OF THE SPLICE SHALL BE NO CLOSER TO THE END OF THE BEAM THAN 1/10 OF THE SPAN LENGTH.
- MINIMUM BAR BENDING DIAMETER SHALL BE 6 BAR DIAMETERS, EXCEPT THAT NO. 4 AB BARS MAY HAVE A MINIMUM BEND DIAMETER OF 4 BAR DIAMETERS.
- .MINIMUM CONCRETE COVER SHALL BE AS SPECIFIED IN SECTION 603.5 OF THE STANDARD SPECIFICATIONS, EXCEPT WHERE NOTED ON THE PLANS.

PRESTRESSING STRAND:

- •ALL PRESTRESSING STEEL SHALL BE 1/2" #, GRADE 270, 7 WIRE UNCDATED, LOW-RELAXATION STRAND MEETING THE REQUIREMENTS OF AASHTO M203, SUPPLEMENT SI.
- •ALL BEAMS DESIGNED IN THESE STANDARDS UTILIZE STRANDS WITH A NOMINAL AREA OF 0,167 SQ. IN. STRANDS WITH A NOMINAL AREA OF 0.153 SO. IN. IS PERMITTED FOR INDIVIDUAL OR ALTERNATE DESIGNS, HOWEVER THE DESIGNER IS ENCOURAGED TO USE THE LARGER STRAND FOR UNIFORMITY REASONS. IN ND CASES WILL STRESS-RELIEVED STRAND BE PERMITTED.
- •ALL STRANDS SHALL BE ENCLOSED INSIDE THE STIRRUP CAGE FOR THE FULL LENGTH OF THE BEAM.
- ALL EXPOSED PRESTRESSING STRAND AT EACH BEAM END SHALL BE SHOP COATED WITH A LIQUID COLD-APPLIED BITUMINOUS ELASTOMERIC WATERPROOFING MEMBRANE. MATERIAL SHALL MEET ASTM C836-84.

CONCRETE:

- ALL CONCRETE USED IN MANUFACTURING PRESTRESSED CONCRETE BEAMS SHALL MEET THE REQUIREMENTS OF SECTION 603.6 OF THE STANDARD SPECIFICATIONS. DESIGN STRENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES SET FORTH IN THESE PLANS.
- ALL CONCRETE USED IN PARAPETS AND CURBS SHALL BE CLASS K CONCRETE.

ELASTOMERIC BEARING PADS:

- + ALL BEARING PADS SHALL MEET THE APPLICABLE REQUIREMENTS AS SET FORTH IN SECTION 18.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 1998 EDITION WITH CURRENT INTERIMS. ALL BEARINGS SHALL BE STEEL REINFORCED LAMINATED BEARINGS
- THE ELASTOMER MATERIAL SHALL BE 60 DUROMETERS WITH A MINIMUM LOW TEMPERATURE GRADE OF 3 (ZONE C).
- •ALL STEEL REINFORCING SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36.

GUARDRAIL, GUARDRAIL POSTS, TUBING & INSERTS;

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

ITEM	DESCRIPTION	MATERIAL SPEC.	COATING SPEC.
POST	W6×25	AASHTD M270, GR 36	AASHTO M11
PLATE	½" × 7"	AASHTO M270, GR 36	AASHTD MIII
TUBING	TS 8x4x3/16	ASTM A500, GR B	AASHTO MIII
CHÂNNEL	C7×9.8	AASHTD M270, GR 36	AASHTO MIII
FERRULE TYPE 2A	11/4" # × 21/2" MIN LEN.	ASTM A108 (11L17 STEEL)	AASHTD M232
WIREANCHOR	∛8"∮	ASTM A510 (1018 STEEL)	AASHTO M232
STUDS	1¼" ≠ × 8" LONG	ASTM A108 (1045 C.D. STEEL)	AASHTO M232
NUTS	11/4" ø	AASHTO M291, CLASS C	AASHTD M232
COUPLERS TYPE 1A	1¼" ≠ × 5" LONG	ASTM A108 (12L14 STEEL)	AASHTD M232
BOLTS JANCHOR	1¼" ≠ × 12" LONG	AASHTD M164 (TYPE 1, HH)	AASHTO M232
BOLTS	∜8"∮× ALL LEN.	AASHTD MI64 (TYPE 1, HH)	AASHTD M232
NUTS	5⁄8" ≠	AASHTO M291, CLASS C	AASHTO M232
WASHERS	ALL	AASHTD M293	

WELDING:

• TACK WELDING OF REINFORCEMENT IS NOT PERMITTED. REINFORCING CAGES AND LONGITUDINAL STEEL SHALL BE ADEQUATELY TIED WITH APPROVED MEANS TO PREVENT RACKING AND MISALIGNMENT

· ALL WELDING OF FABRICATED ITEMS, AS SHOWN IN THESE PLANS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF AASHTD/AWS D1.5, 2002.

POST-TENSIONING BARS:

 ALL POST-TENSIONING THREAD BARS, NUTS, BEARING PLATES, COUPLERS, AND ANCILLARY HARDWARE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M111. THE GALVANIZING PLANT SHALL ADMINISTER ADEQUATE QUALITY CONTROL MEASURES TO SAFEGUARD AGAINST HYDROGEN EMBRITTLEMENT. QUALITY CONTROL MEASURES SHALL COMPLY WITH ASTM A-143. CERTIFICATION FOR HOT-DIP GALVANIZING SHALL BE PROVIDED BY THE GALVANIZING PLANT.

SHEAR KEY GROUT:

STRUCTURE.

PROTECTIVE SURFACE TREATMENT:

SHOP DRAWINGS:

			WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS ENGINEERING DIVISION			
			DESIGNED BYATHB/			
				DRÁWN BY=THB/		
Driger Baily 0116 10-25-07			CHECKED BYFTW/			
	PREPARED			REVIEWED BY+TW/		
ST VIRGINIÅ DEPÅRTMENT DF TRÅNSPORTÄTIDN DIVISION OF HIGHWÅYS	07-02			DATE:		
ENGINEERING DIVISION	#C 115C0=			SCALE:		
PRESTRESSED CONCRETE BEAM				SHEET NO DE		
DESIGN & ASSEMBLY NOTES			PRESTRESSED CONCRETE BEAM	BRIDGE NUMBER		
STANDARD SHEET BR-B100			DESIGN & ASSEMBLY NOTES			

STÅTE PROJECT NUVBER	FEDERÅL PROJECT NUMBER	STATE DIST. NO.	COUNTY	sheet NGL	TOTAL SHEETS

• POST - TENSIONING THREAD BARS SHALL BE ONE INCH DIAMETER, 150 KSI STEEL, AND SHALL CONFORM TO AASHTO M275, TYPE II. STEEL THREAD BARS SHALL BE DESIGNED TO ALLOW THE USE OF HEAVY HEX NUTS AND COUPLERS THAT THREAD ONTO THE END OF THE DEFORMATIONS. HEAVY HEX NUTS AND COUPLERS SHALL BE OF A DESIGN AND MATERIAL RECOMMENDED BY THE BAR MANUFACTURER TO DEVELOP THE FULL TENSILE STRENGTH OF THE BAR. PROPERLY DOCUMENTED CERTIFIED MILL TEST REPORTS SHALL BE PROVIDED FOR EACH HEAT OF STEEL THREAD BARS.

+ ALL POST-TENSIONING BEARING PLATES SHALL CONFORM TO AASHTO M270, GRADE 36.

• SHEAR KEY GROUT SHALL BE A GROUT THAT IS RECOMMENDED BY THE MANUFACTURER FOR A POURABLE GROUT APPLICATION AND THAT BASED ON THE MANUFACTURER'S TEST DATA WILL ATTAIN A MINIMUM OF 4500 PSI COMPRESSIVE STRENGTH IN 3 DAYS UNDER CONDITIONS REPRESENTATIVE OF THE CONDITIONS TO BE EXPERIENCED AT THE SITE. THE GROUT MUST BE LISTED ON THE APPROVED LIST OF GROUTS PUBLISHED BY THE WEST VIRGINIÀ DIVISION OF HIGHWAYS, MATERIALS CONTROL, SOIL AND TESTING DIVISION. THE CONTRACTOR SHALL PRE-TEST THE PROPOSED GROUT FOR COMPRESSIVE STRENGTH AT 3 AND 7 DAYS AND SUBMIT THE RESULTS TO THE BRIDGE PROJECT MANAGER FOR APPROVAL PRIOR TO INSTALLATION OF THE GROUT IN THE STRUCTURE. THE TESTS WILL BE BASED ON A POURABLE CONSISTENCY WITH THE SAME WATER/GROUT MIXTURE RATIO TO BE USED IN THE

• THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT FOR EACH PROJECT, THE GROUT PRE-TEST RESULTS OBTAINED IN THE NOTE ABOVE. THE CONTRACTOR SHALL BE REQUIRED TO PERFORM A NEW PRE-TEST AND SUBMISSION FOR APPROVAL UNDER ANY OF THE FOLLOWING CONDITIONS; . A PERIOD OF 18 MONTHS HAS ELAPSED SINCE LAST PRE-APPROVAL TESTING. . GROUT MANUFACTURER HAS REVISED OR CHANGED THE GROUT SPECIFICATIONS, . THE CONTRACTOR ALTERS THE WATER/GROUT MIXTURE RATIO.

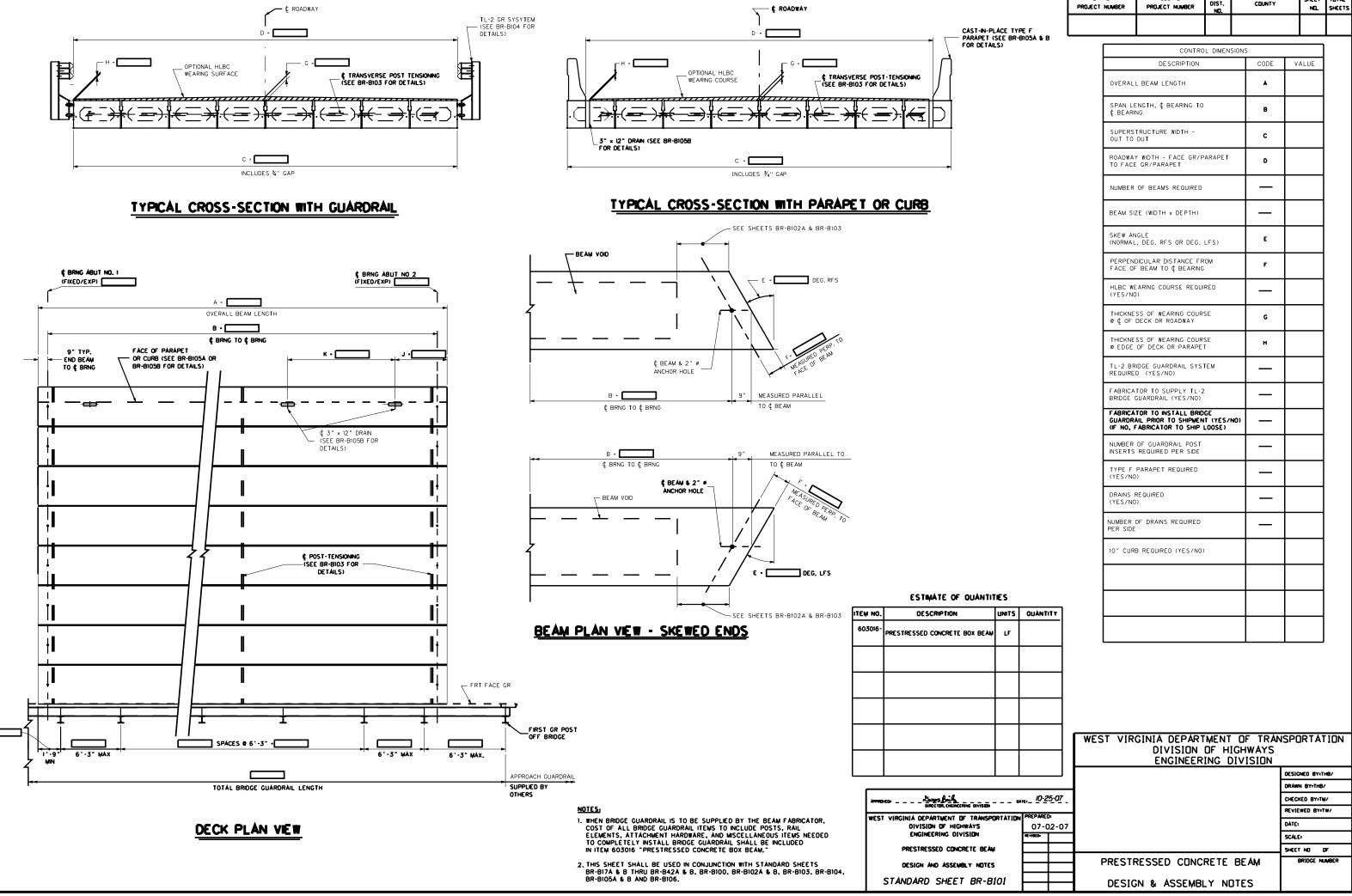
• THE CONTRACTOR CHANGES GROUT MANUFACTURER.

• THE CONTRACTOR IS REQUIRED TO COMPLETE THE GROUT STRENGTH TABLE ON BR-BI03. TEST PROCEDURE FOR DETERMINING THE COMPRESSIVE STRENGTH OF GROUT SHALL USE CUBE SPECIMENS IN ACCORDANCE WITH ASTM C109, AS MODIFIED BY ASTM C1107, GROUT TESTING IN ACCORDANCE WITH AASHTD T23 (STANDARD CYLINDER TEST) IS NOT ACCEPTABLE.

• EACH PRESTRESSED CONCRETE BEAM SHALL BE TREATED BY THE MANUFACTURER AT THE FABRICATION PLANT WITH AN APPROVED CONCRETE SEALER (SILANE), AN APPROVED LIST OF CONCRETE SEALERS ARE ON FILE AT THE WEST VIRGINIA DIVISION OF HIGHWAYS, MATERIALS CONTROL, SOIL AND TESTING DIVISION. COVERAGE SHALL INCLUDE TOP AND BOTTOM OF INTERIOR BEAMS, AND TOP, BOTTOM AND EXTERIOR SIDE OF EXTERIOR BEAM, APPLICATION RATE SHALL BE PER TREATMENT MANUFACTURER'S RECOMMENDATION.

· AFTER COMPLETION OF THE SILANE TREATMENT BY FABRICATOR AND A MAXIMUM OF FIVE WORKING DAYS PRIOR TO SHIPMENT OF THE BEAMS. THE FABRICATOR SHALL BE RESPONSIBLE FOR ABRASIVE BLAST CLEANING TO CLEAN WHITE CONCRETE THE INTERIOR SIDES OF BEAMS FOR THE FULL LENGTH. CLEAN WHITE CONCRETE SHALL MEAN REMOVAL OF ALL DIRT, GREASE, DIL, AND LODSE CONCRETE LAITANCE AND PROVIDE A ROUGHENED CONCRETE SURFACE. BLASTING MEDIUM SHALL BE APPROVED BY THE DIVISION OF HIGHWAYS.

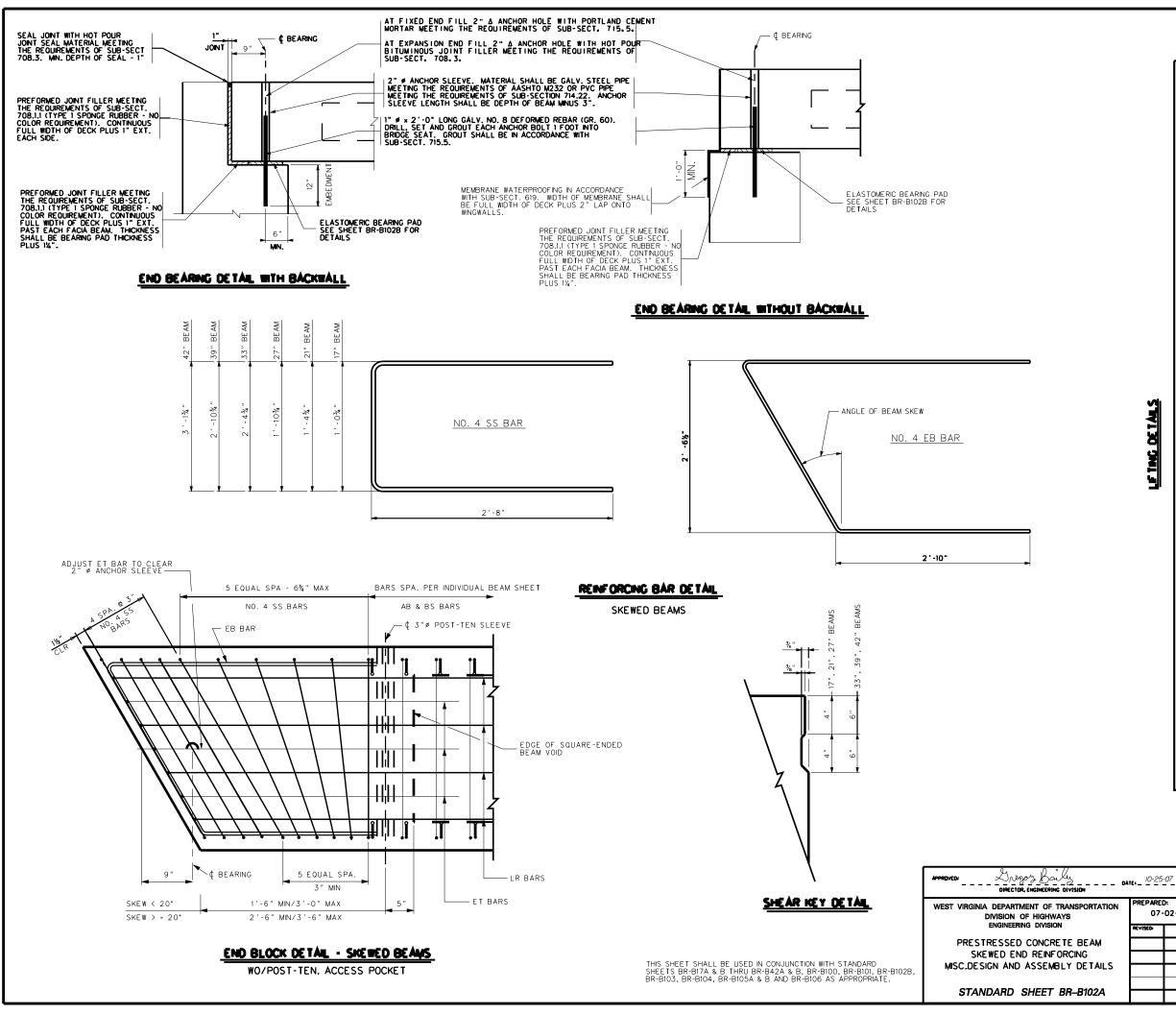
THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF SHOP DRAWINGS IN ACCORDANCE WITH THE WEST VIRGINIA DIVISION OF HIGHWAYS DOCUMENTS, DD-102 AND THE STANDARD SPECIFICATIONS. ADDITIONAL INFORMATION IS PROVIDED IN SECTION 7 OF THE BRIDGE DESIGN MANUAL. SHOP DRAWINGS SHALL INCLUDE THE FABRICATOR'S DETENSIONING PLAN.

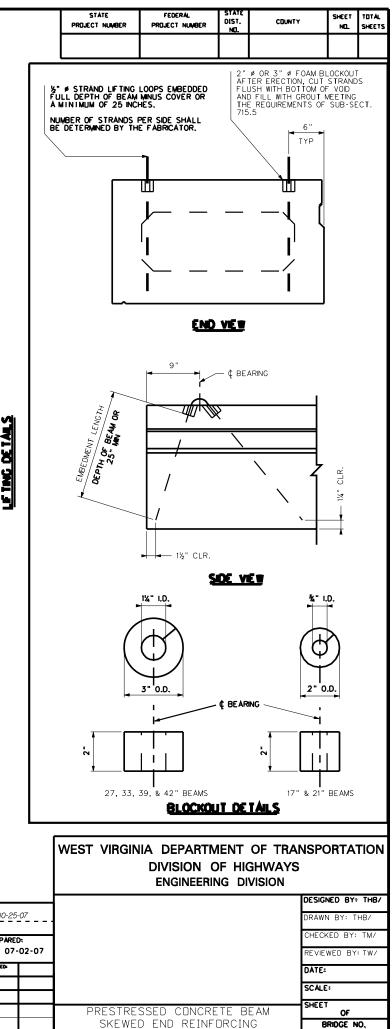


TYPE F BR-B105A	8	B	

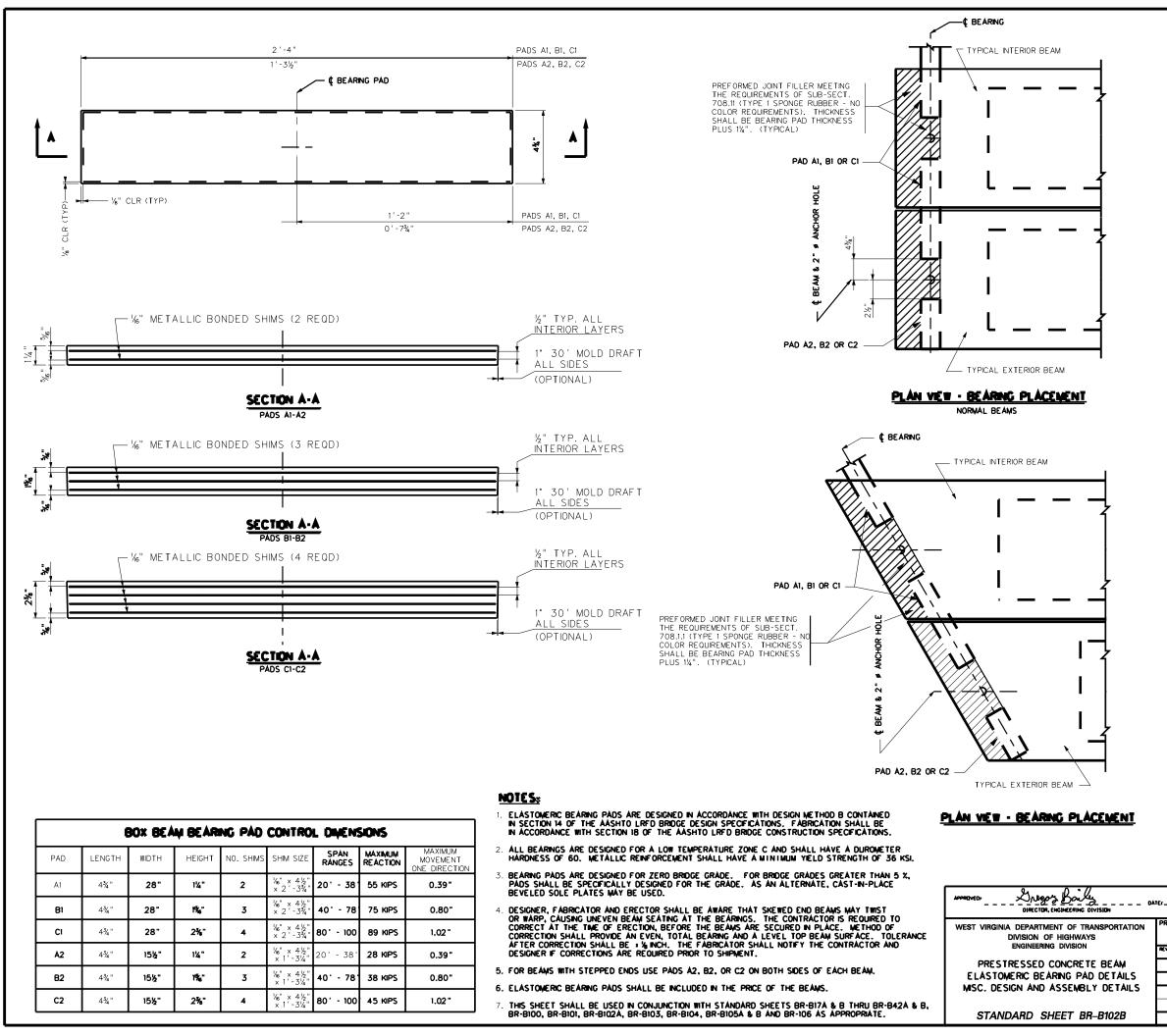
state Ject Number	FEDERAL PROJECT NUMBER	STATE DIST, NO,		COUNTY		Sheet NOL	T[SF
	CONTRO)l DIMEN	SION	S CODE	v	ALUE	
OVERA	LL BEAM LENGTH	▲	••	ALUL .			
SPAN ¢ BEA	LENGTH, ¢ BEARING TO RING			8			
	STRUCTURE WIDTH - 0 OUT			c			
	AY WIDTH - FACE GR/P CE GR/PARAPET	ARAPE T		D			
NUMBE	R OF BEAMS REQUIRED						
BEAM	SIZE (WIDTH × DEPTH)			_			
SKEW (NORM	ANGLE Al, deg. RFS or deg.	LFS)		E			
	NDICULAR DISTANCE FR OF BEAM TO & BEARING			F			
HLBC (YES/	WEARING COURSE REQUI	RED		—			
	NESS OF WEARING COUR F DECK OR ROADWAY	SE		G			
	NESS OF WEARING COUR E OF DECK OR PARAPE			н			
	BRIDGE GUARDRAIL SYS RED (YES/NO)	ТЕМ		_			
BRIDGE	CATOR TO SUPPLY TL-2 GUARDRAIL (YES/NO)			—			
GUÁRO	CATOR TO INSTALL BRID IRAIL PRIOR TO SHIPMEN , FABRICATOR TO SHIP	T (YES/	NO)	—			
INSERT	R OF GUARDRAIL POST IS REQUIRED PER SIDE			—			
(YES/				—			
(YES/	DRAINS REQUIRED (YES/NO)						
	NUMBER OF DRAINS REQUIRED PER SIDE						
10" CL	10" CURB REQUIRED (YES/NO)						

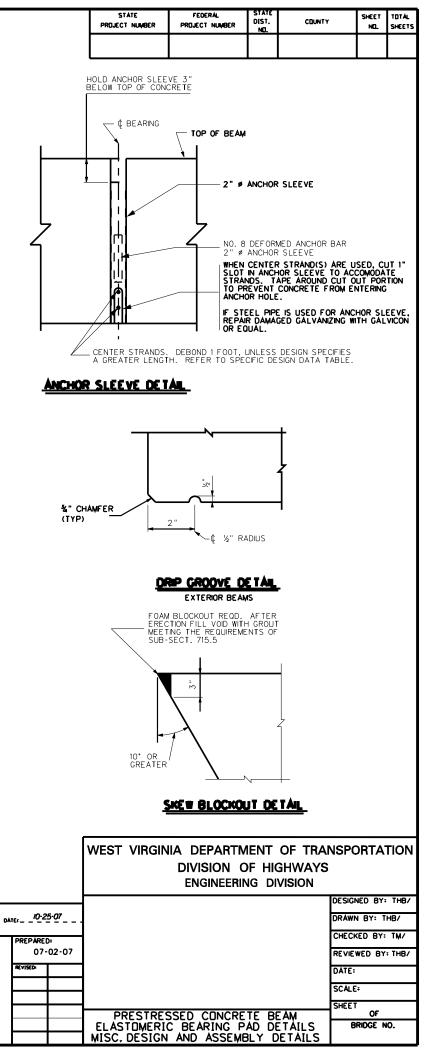
E	S		

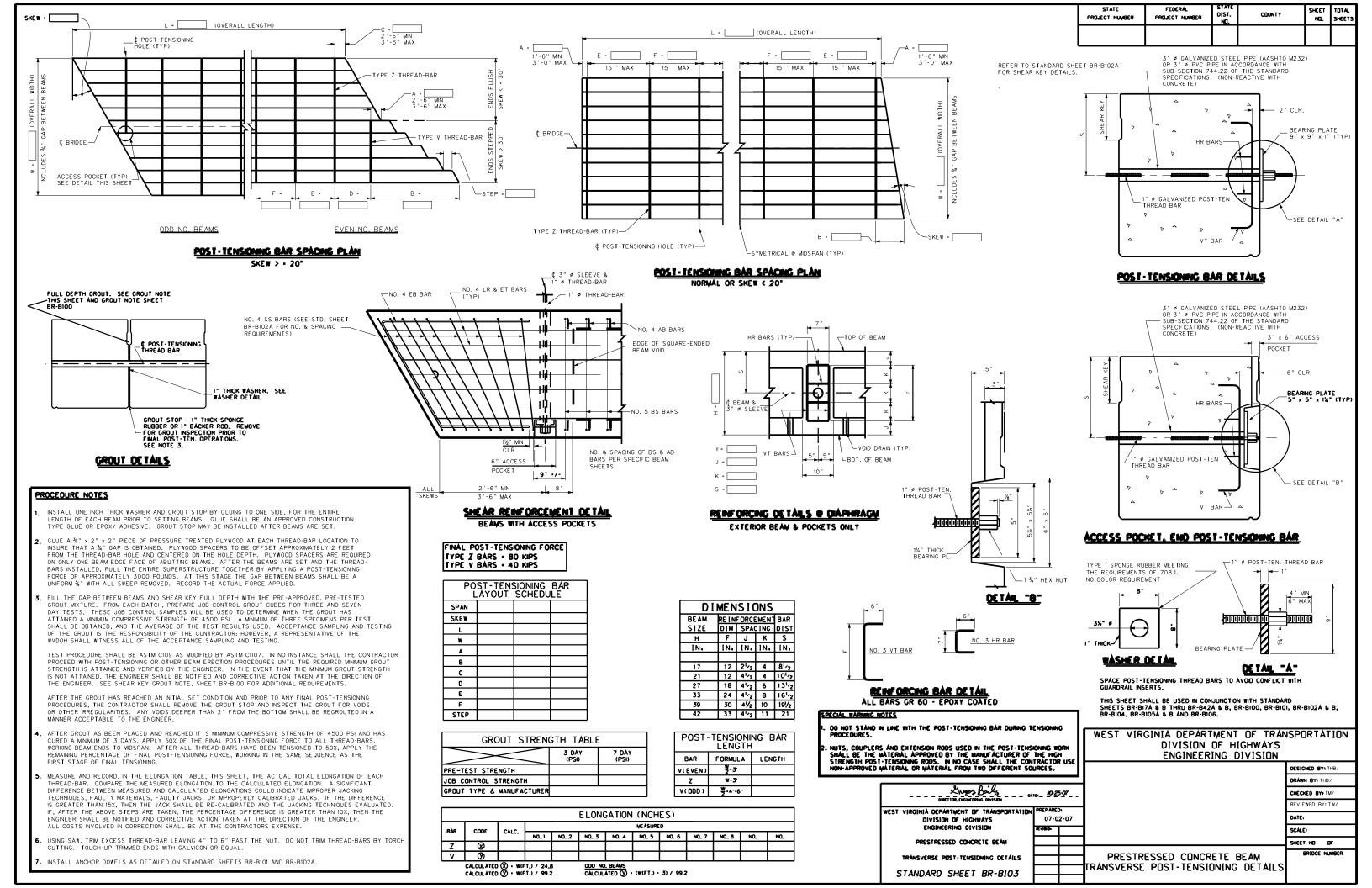


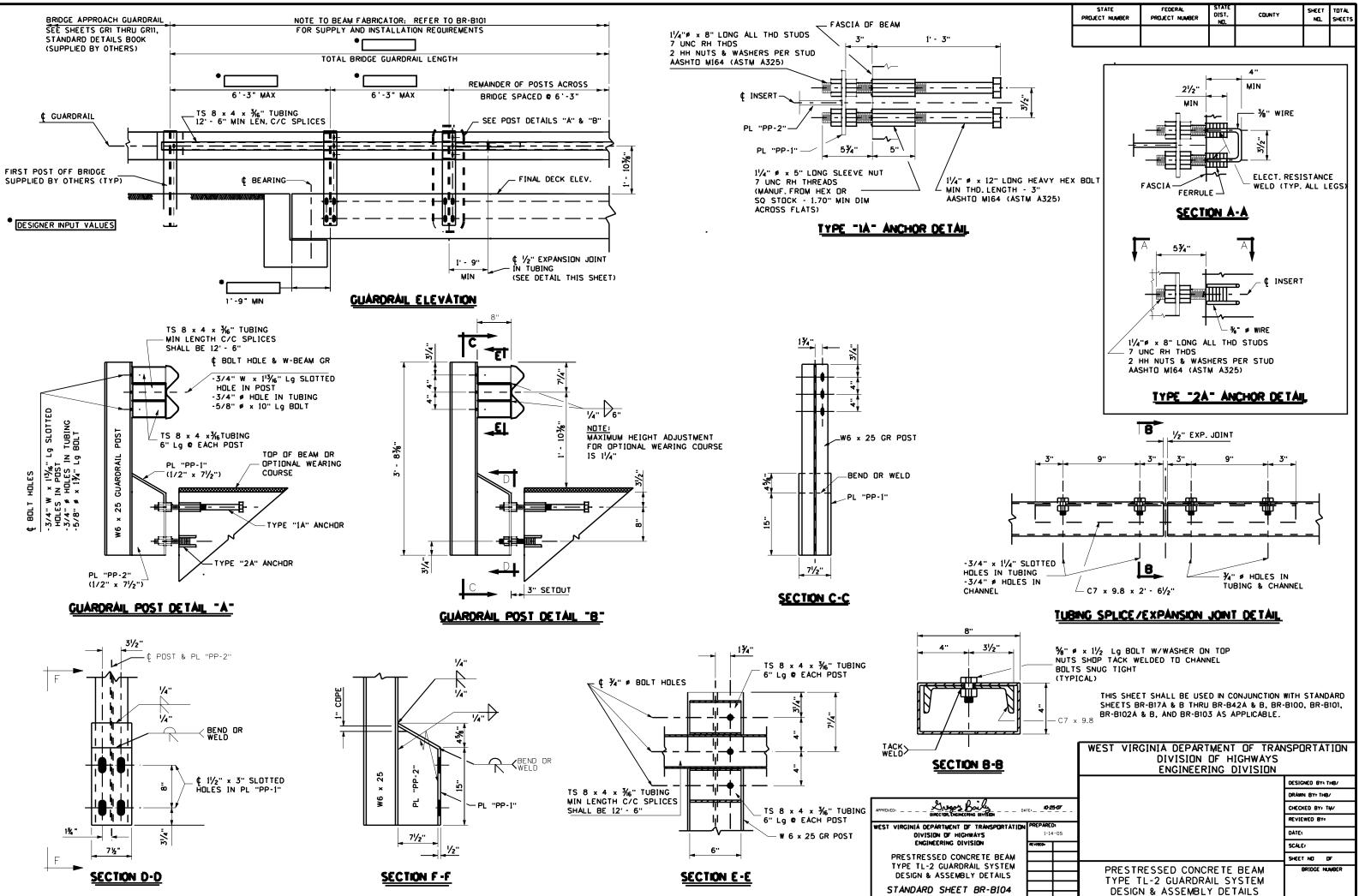


LF TNG DE TALS

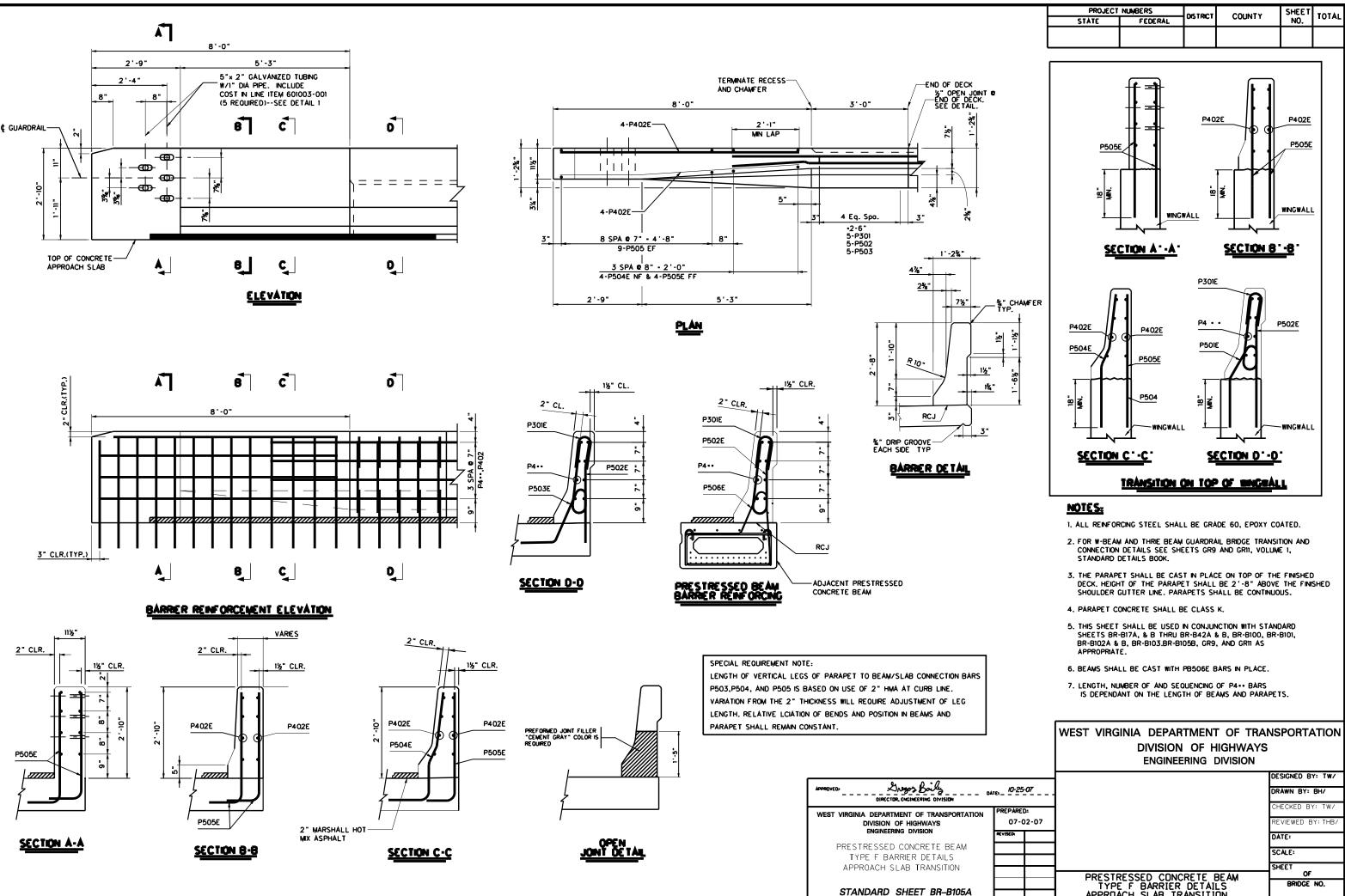




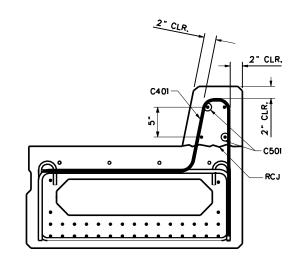


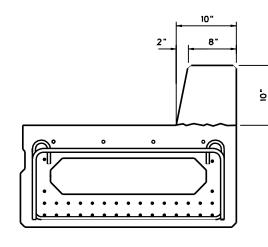


STANDARD SHEET BR-B104



	WEST VIRGINIA DEPARTMENT OF TRAI DIVISION OF HIGHWAYS ENGINEERING DIVISION	
		DESIGNED BY: TW/
5-07		DRÀWN BY: BH/
D×		CHECKED BY: TW/
02-07		REVIEWED BY: THB/
		DATE:
		SCALE:
		SHEET
	PRESTRESSED CONCRETE BEAM	BRIDGE NO.
	APPROACH SLAB TRANSITION	



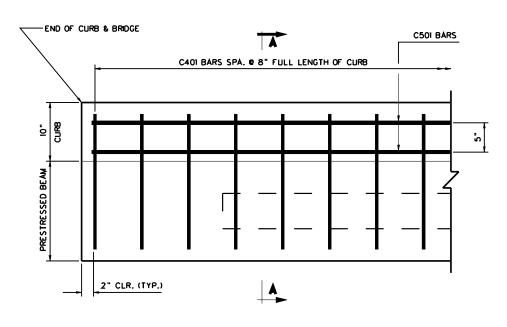


SECTION A-A

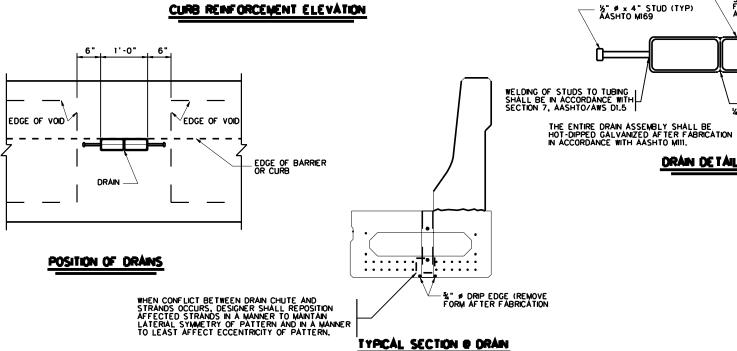
BRIDGE CURB SECTION

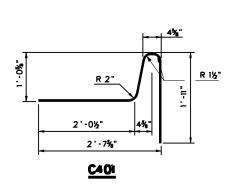
2

4%









CURB REINFORCING								
ŅĀRK	TYPE	NUMBER REOD	LENGTH EACH	TOTÁL LENGTH				
C401	BENT		10'-5"					
C501	STR	4						

STRUCTURAL TUBING 6 × 3 × ∛s FULL DEPTH OF BEAM ASTM 500

DRAN DETAIL - PLAN VIEW

<u>.</u> 24 8

BEAM

2

BEAM BEAM

33. -6<u>6</u> 4

2

BEAM BEAM

DRAIN DETAIL - ELEVATION VIEW

.

5 5



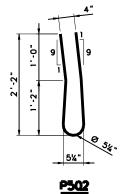
VERTICAL CONTROL JOINT DETAIL

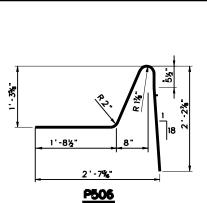
NOTES;

- 1. WHEN PARAPETS ARE REQUIRED, THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEET BR-BIO
- 2. ALL 10" CURBS SHALL BE CONTINUOUS AND CAST-IN-PL
- 3. ALL REINFORCING STEEL SHALL BE GRADE 60, EPOXY
- 4. CURB CONCRETE SHALL BE CLASS K.
- 5. USE OF 10" CURB ON PRECAST BOX BEAM STRUCTURES PERMITTED ONLY WHEN THE APPROVAL OF THE DIRECTO OF ENGINEERING DIVISION IS OBTAINED.

			WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS ENGINEERING DIVISION		
APPROVEDA				DESIGNED BY:TW/ DRAWN BY:BH/	
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS ENGINEERING DIVISION	PREPARED: 07-02-07			CHECKED BY:TW/ REVIEWED BY:THB/ DATE:	
PRESTRESSED CONCRETE BEAM BRIDGE CURB DETAILS BARRIER/CURB REINFORCING				SCALE:	
STANDARD SHEET BR-B105B			PRESTRESSED CONCRETE BEAM BRIDGE CURB DETAILS BARRIER/CURB REINFORCING	OF BRIDGE NO.	

	PROJECT	NUMBERS	DISTRICT	COUNTY	SHEET	TOTAL
	STATE	FEDERAL		COUNTY	NO,	IUIAL
Ì			•			





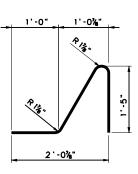


<u>P301</u>

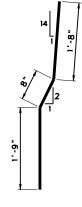
1'-0%"

P 14.

P50i

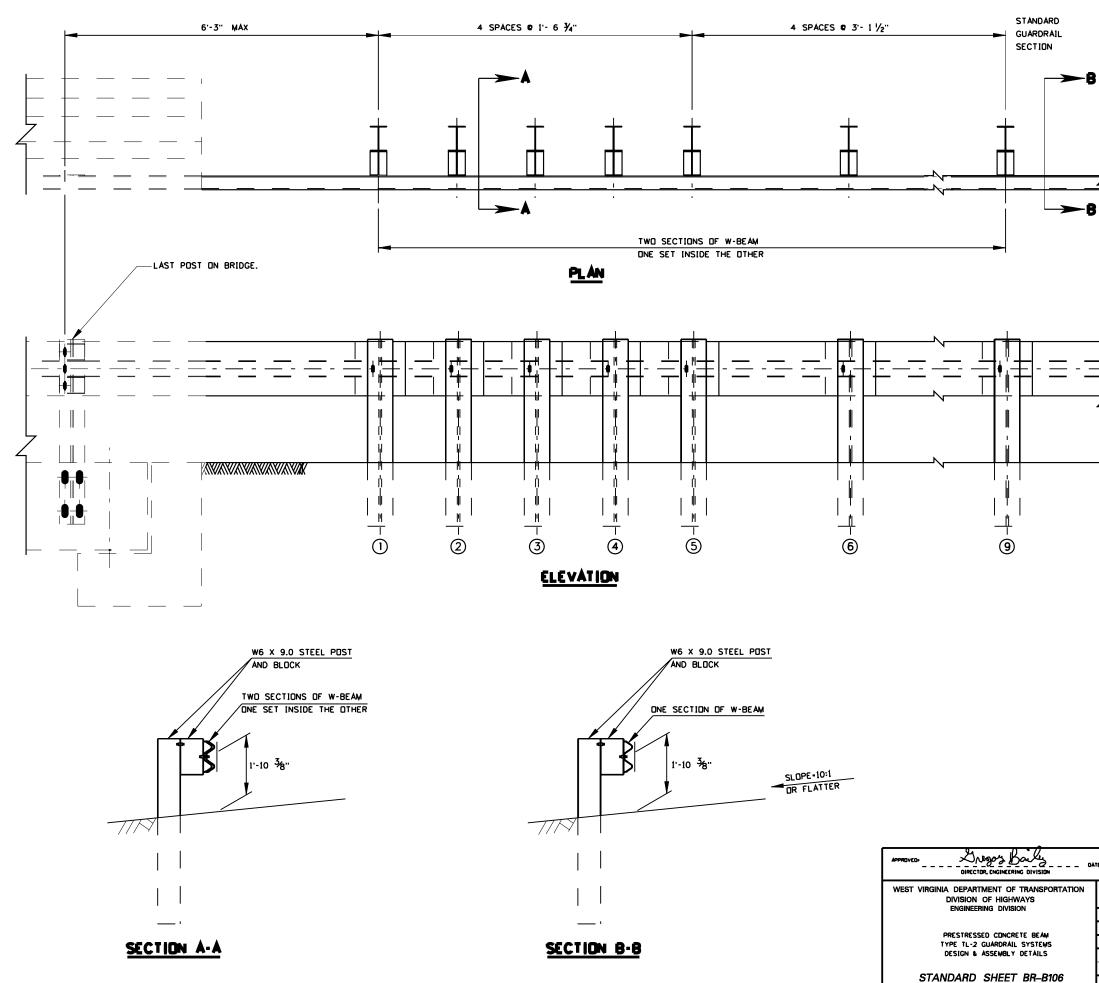






P504

	BARRER REINFORCING								
	ŅĀRK	TYPE	NUMBER REOD	LENGTH EACH	TOTÁL LENGTH				
	P301	BENT		3'-3"					
105A.	P401	STR							
PLACE.	P402	STR							
COATED.	P501	BENT		4'-4"					
	P502	BENT		4'-9"					
	P503	BENT		5'-9"					
S IS OR	P504	BENT		4'-2"					
UK	P505	STR		4'-2"					



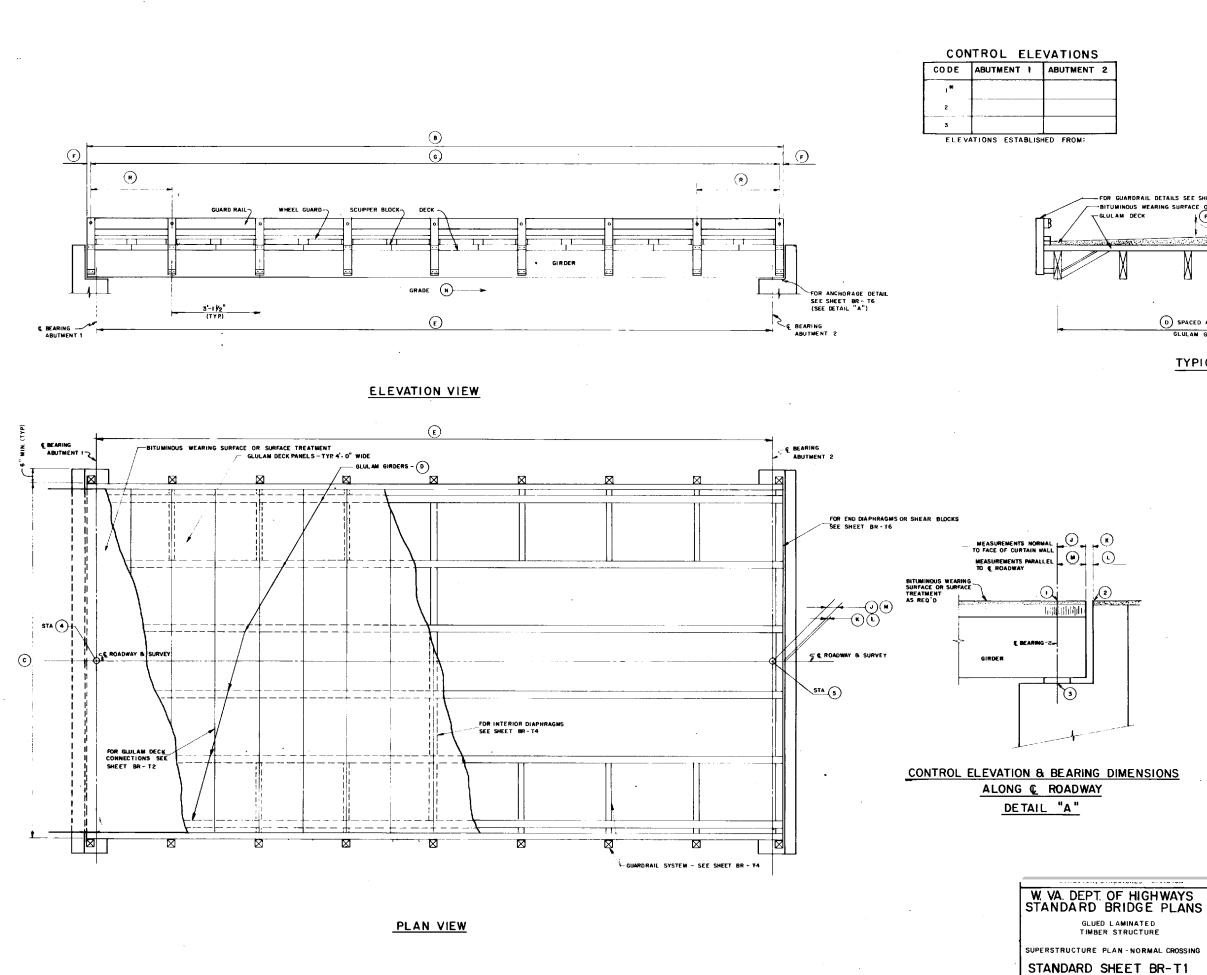
Γ	PROJECT	ROJECT NUMBERS				COUNTY	SHEET	TOTAL	
Г	STATE	FEDERAL		COUNTY	NO,	TUTAL			
Г									
L									
-									

NOTES

- 1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO GUARDRAIL ON BRIDGE.
- 2. W-BEAM IS NOT BOLTED TO POSTS AT POSTS 2 THROUGH 4 AND POST 6.
- 3. SEE STANDARD SHEET BR-BIO4 FOR ANCHOR DETAILS.
- 4. THERE IS NO SEPARATE PAY ITEM FOR THIS CONNECTION AND ALL COMPONENTS AS DETAILED HEREIN SHALL BE INCLUDED IN THE CONTRACT PRICE FOR GUARDRAIL.

THIS SHEET SHALL BE USED IN CONJUNCTION WITH STANDARD SHEETS BR-BI7A & B THRU BR-B42A & B, BR-B100, BR-B101, BR-B102A & B, BR-B103 AND BR-B104 AS APPLICABLE.

	WEST VIRGINIA DEPARTMENT OF TR/ DIVISION OF HIGHWAY ENGINEERING DIVISION	
		DESIGNED BY:TW/
_{E∓} <u>10-25-07</u>		DRAWN BY:BH/
PREPARED		CHECKED BY:TW/
07-02-07		REVIEWED BY:THB/
REVISED#		DATE
		SCALE:
		SHEET
	TYPE TL-2 GUARDRAIL TRANSITION	OF BRIDGE NO.



TREATMENT IS DELETED, AFFECTED Surface of the deck.	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	Sheet No.	TOTAL SHTS
	W.VA.					

CONTROL STATIONING

CODE	LOCATION	STA TION	VALUE
	Looning	ABUT. 1	ABUT. 2
4	EBRIDGE AT		
5	E BRIDGE AT	—	
CT.			

STATIONING ESTABLISHED FROM:

		DIMENSION	CODE	VALUE
		THICKNESS OF BITUMINOUS WEARING Surface or surface treatment At Q of RDADWAY	Р	
ETAILS SEE SHEET	8R - T 5	THICKNESS OF BITUMINOUS WEARING SURFACE OR SURFACE TREATMENT AT CURB LINE	Q	
\bigcirc	RFACE TREATMENT			
M	М			

D SPACED AT S= T GLULAN GIRDER SPACING

TYPICAL SECTION

CONTROL DIMENSIONS

.

DIMENSION	CODE	VALUE
NORMAL CROSSING	A	
LENGTH OF GIRDERS, OUT-TO-OUT	B	
DECK WIDTH, OUT-TO-OUT	Ċ	
NUMBER OF GIRDERS	D	1
SPAN LENGTH, & BEARING TO & BEARING	ε	1
DISTANCE FROM END OF GIRDER TO & OF FIRST GUARDRAIL POST	F	
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G	
PERPENDICULAR DISTANCE FROM &	J	
PERPENDICULAR DISTANCE FROM GIRDER END TO FRONT FACE OF CURTAIN WALL	к	
DISTANCE FROM GIRDER END TO FRONT FACE OF CURTAIN WALL (PARALLEL TO C OF ROADWAY)	L	• • • • • •
DISTANCE FROM & BEARING TO END OF GIRDER (PARALLEL TO & OF ROADWAY)	M	
GRADE	N	
SPACING OF GIRDERS	5	ŀ
DISTANCE & TO & OF EXTERIOR GIRDERS	T	-
DISTANCE FROM END GUARDRAIL POST TO FIRST INTERIOR GUARDRAIL POST	R	+····-

ESTIMATE OF QUANTITIES

405-1 SURFACE TREATMENT AGGREGATE TON 405-3 BITUMINOUS MATERIAL GALLON 627-1 GLUED LAMINATED TIMBER BRIDGE, COMPLETE BOARD FEET	
627 - I GLUED LAMINATED TIMBER BRIDGE, COMPLETE BOARD FEET	
	<u> </u>
HOT-LAID BITUMINGUIS CONCRETE 401-2 [11] P WEARING COURSE GTONE OR GRAVEL AGGREGATE) TO N	
401-2 (II) KILA AGREGATE TON	

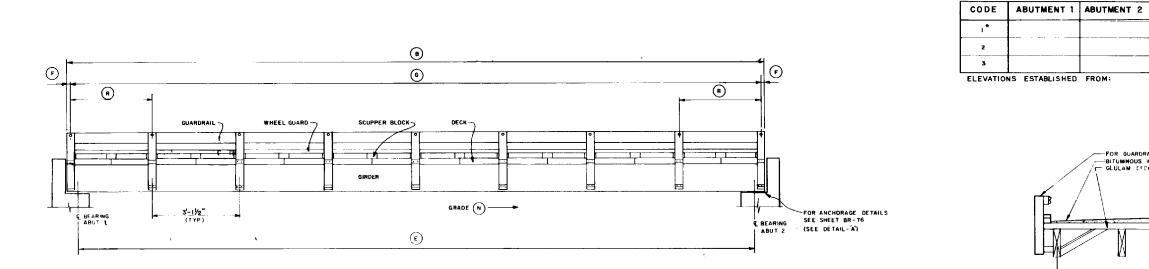
CHIECHEN EY: REVIEWED IN: DAYE ECALE: NONE

SUPERSTRUCTURE PLAN

	0 #
BRIDGE	NUMBER

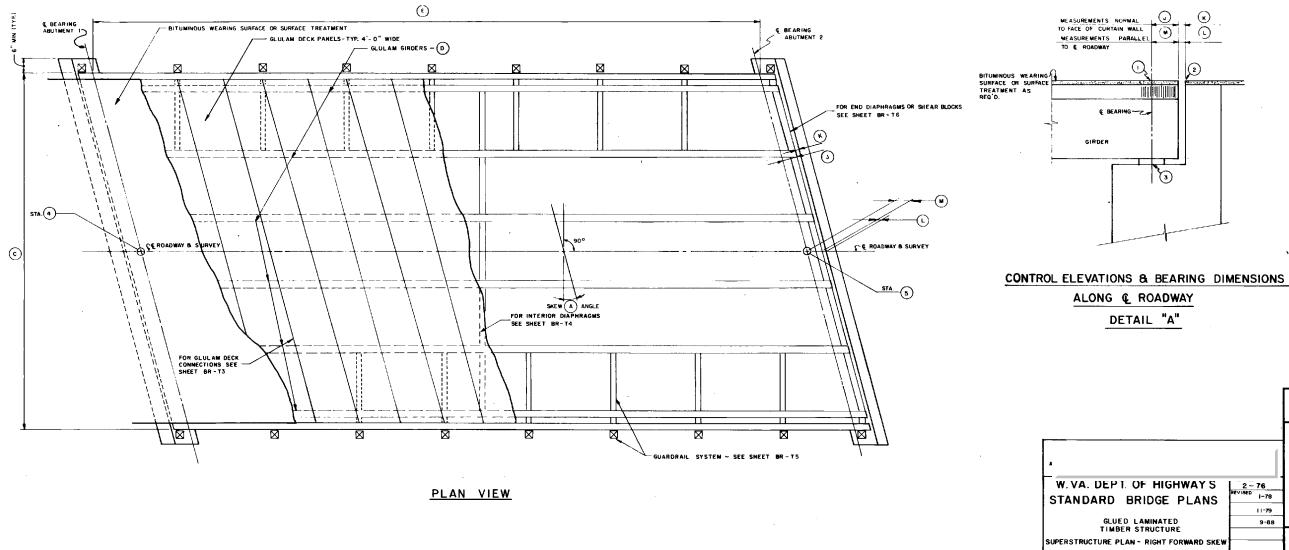
* IF BITUMINOUS WEARING IS DELETED, AFFECTED THE TOP SURFACE DF

CONTROL ELEVATIONS



ELEVATION VIEW





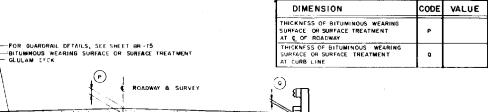
STANDARD SHEET BR-T1

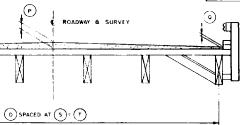
NG SURFACE OR SURFACE TREATMENT ID ELEVATIONS SHALL BE TAKEN AT F THE DECK.	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTA: SHTS
	W. W.					

CONTROL STATIONING

CODE	LOCATION	STATION VALUE				
0000	LOOATION	ABUT. I	ABUT. 2			
4	C BRIDGE AT					
5	E BRIDGE AT					
CTATIO	NUNO EETADU CH					

STATIONING ESTABLISHED FROM:



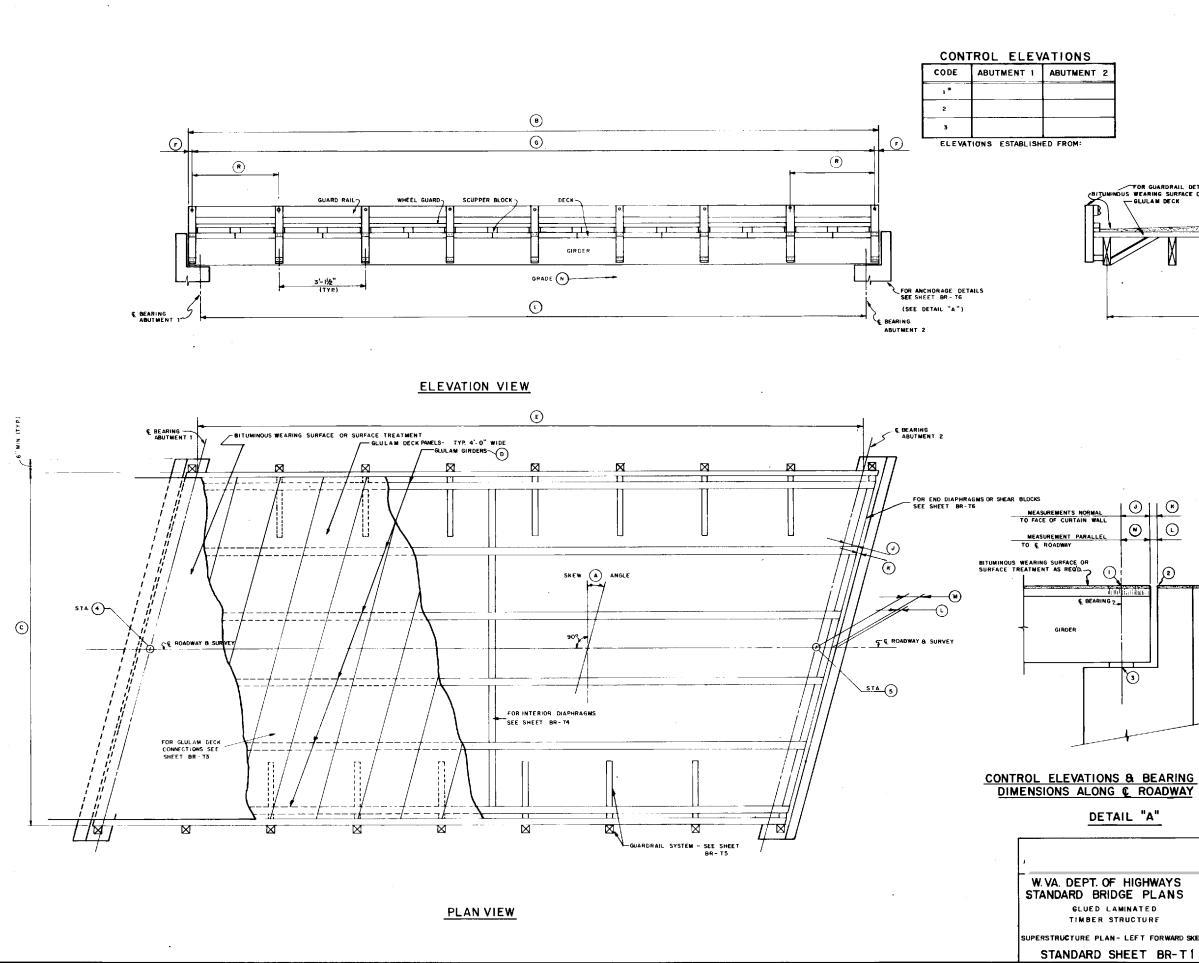


TYPICAL SECTION

CONTROL DIME	NSIONS	
DIMENSION	CODE	VALUE
RIGHT FORWARD SKEW	4	
LENGTH OF GIRDERS, OUT-TO-OUT	8	
DECK WIDTH, OUT-TO-OUT	с	
NUMBER OF GIRDERS	D	
SPAN LENGTH, & BEARING TO & BEARING	£	
DISTANCE FROM END OF GIRDER TO & OF FIRST GUARDRAIL POST	F	
NUMBER OF GUARDRAIL POSTS, EACH SIDE	G	
PERPENDICULAR DISTANCE FROM & BEARING TO END OF GIRDER	J	
PERPENDICULAR DISTANCE FROM GIRDER END TO FRONT FACE OF CURTAIN WALL	ĸ	
DISTANCE FROM GIRDER END TO FRONT FACE OF CURTAIN WALL (PARALLEL TO & OF ROADWAY)	L	
DISTANCE FROM & BEARING TO END OF GIRDER (PARALLEL TO & OF ROADWAY)	M	
GRADE	N	
SPACING OF GIRDERS	s	
DISTANCE & TO & OF EXTERIOR GIRDERS	:	
DISTANCE FROM END GUARDRAIL POST TO FIRST INTERIOR GUARDRAIL POST	R	

ESTIMATE OF QUANTITIES DESCRIPTION UNIT QUANTITY ITEM 405-1 URFACE TREATMENT AGGREGATE TON 405-3 GALLON BITUMINOUS MATERIAL 627 - 1 GLUED LAMINATED TIMBER BRIDGE, COMPLETE BOARD FEET HOT-LAID BITUMNOUS CONCRETE WEARING SURFACE 401-2 (II) TON (STONE OR GRAVEL AGGREGATE) HOT-LAID BITUMINOUS CONCRETE WEARING COURSE (SLAG AGGREGATE) 401-2 (II) TON THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STRUCTURES DIVISION AWN 5- 24 ECKED BY 1-78 11-79 NONE 9-88 OF BRIDGE NUMBER SUPERSTRUCTURE PLAN

,



MENT IS DELETE Hall be taken The deck.		R	NADS DI	ATE	PROJE	CT NUMBER	2	COUNTY		sheet No.	TOTAL SHTS
THE DECK.			DIV. N V. VA.	ю.			1				
		Ľ									
WARDRAIL DETAIL ING SURFACE OR IND DECK	CODE 4 5 STATI	ENT	A STAL	FROM	ALUE ABUT. 2))					
X	M	M		M							
		ED AT S = (
		L SECTIO	<u>DN</u>	SU AT SU AT	HICKNES IRFACE F C OF HICKNES JRFACE T CURB		TREATMI NOUS W TREATM	ENT EARING IENT	P Q	VAL	UE
		DIMEN		CON	TRC		ENS co		VAL	UE	
		SPACING OF C	SINDE RS				s	;			
		LEFT FORWAR					۵	<u> </u>			
		LENGTH OF C			- OUT		B				
		NUMBER OF G									
		SPAN LENGTH DISTANCE FRO FIRST GUARDR	M END OF 6	IRDER			F				
2		NUMBER OF C PERPENDICUL BEARING TO PERPENDICUL	AR DISTANC END OF GI AR DISTANC	CE FRO Rder Ce Fro	M GIRD						
Γ Τ		TO FRONT FAC DISTANCE FRO CURTAIN WALL DISTANCE FR GIRDER (PARA	GIRDER EN	D TO F	RONT FA	ADWAY }	L				
		GRADE DISTANCE FROM					N	ł			- 1
		INTERIOR GUA DISTANCE FRO	RDRAIL POS	ι <u>τ</u>			۹ ۱				
			ESTIM			QUAN	TIT		1		1
1		405-1	SURFACE		CRIPT	-			QUAN	TITY	
		405 - 3	BITUMINO	US NA	TERIAL	··	_	GALLON			
L		627-1	HOT-LAID	BITUM	NOUS CO	BRIDGE, COM	PLETE	BOARD FEE	r 		
		401-2(11) P 401-2(11) A	WEARING (STONE OF HOT-LAID WEARING (SLAG AG	BITUM COURS	EL AGGE			TON	+		
		THE		/IRG	INIA	DEPAR			HIGH	WAYS	;
<u>."</u>			<u> </u>	STR	UCTU	RES DIV	ISION		DESIGNE	D BY:	
	4								DRAWN I	₩: -7RT	
									CHECKED	_	
WAYS	2-76								REVIEWE DATE:	D 8Y:	
LANS	REVISED: 1 -78						·		SCALE:	NONE	
D RF	9-88								SHEET	OF	
FORWARD SKEW BR-T1		SUPER	RSTRU	сти	RE	PLAN			BRID	CGE NU	MBER
• •									1		

GENERAL

All structural glued laminated timber shall be furnished as shown detailed on the plans and as specified herein. Complete shop drawings shall be furnished by the fabricator and be approved by the West Virginia Department of Highways prior to fabrication.

DESIGN

Design loads conform to the Standard Specifications for Highway Bridges, adopted by the American Association of State Highway and Transportation Officials (A.A.S.H.T.O.), latest edition. Design loading criteria is as follows:

(A) Structural Glued Laminated Deck Panels: Structural glued laminated deck panels conform in design procedure to U.S.D.A. Forest Service research paper FPL 210, 1973, "Procedure for Design of Glued Laminated Orthotropic Bridge Decks", as adopted for inclusion in the latest edition of the "Standard Specifications for Highway Bridges", paragraph 1.3.4 (A). (B) Girders, Bracings, Railings and Miscellaneous Structural Elements:

These elements are designed in conformance with the latest editions of the following standards: "Standard Specifications for Highway Bridges", American Association of State Highway and Transportation Officials; "Timber Construction Manual", American Institute of Timber Construction; and "Manual of Steel Construction", American Institute of Steel Construction.

MANUFACTURE

Manufacture of the structural glued laminated timber shall be in compliance with Voluntary Product Standard PS 56-73, U.S. Department of Commerce, and the American Institute of Timber Construction Standards Series 100.

QUALITY CONTROL

Quality control shall be provided in conformance with Voluntary Product Standard for Structural Glued Laminated Timber, PS 56-73, U.S. Department of Commerce, and the American Institute of Timber Construction Inspection Manual, A.LTC 200-73.

A certificate of conformance to these requirements shall be furnished to the West Virginia Department of Highways

LUMBER

Laminating lumber shall be kiln dried and stress graded to meet the requirements of Standard Specifications for Structural Glued Laminated Timber, A.LT.C. 47-71, or Standard Specifications for Hordwood Glued Laminated Timber, A.I.T.C. 119-71, whichever is applicable.

Deck panels shall conform to the grade requirements and corresponding allowable unit stress for No.2 MG Southern Pine, L2 Hem-Fir and Douglas Fir, and Symbol E Red Oak or White Oak, wet conditions of use. Symbol E refers to allowable unit stress combinations for Structurel Glued Laminated Hardwood Timber, Table 2.11, Timber Construction Manual, A.I.T.C., Second Edition, 1974. This symbol compares to Sound Square Edge (Boxed Hearts and Planking) as specified in Rules for Measurement and Inspection of Hardwood and Cypress Lumber issued by the National Hardwood Lumber Association for Hardwoods for Construction.

Girders shall be Southern Pine, Hem-Fir, Douglas Fir, 24F combination, or Red Oak or White Oak, Symbol E, dry conditions of use, except compression perpendicular to grain shall be designed for wet conditions of use.

ADHESIVES

Adhesives shall be waterproof conforming to Voluntary Product Standard PS 56-73, and Section 4.6.2 of A.S.T.M. D2559-70.

PRESERVATIVES

All preservative treatments for glued laminated members shall be in accordance with A.I.T.C. 109-69, A.A.S.H.T.O. MI33, A.W.P.A. Cl and C2 and A.W.P.A. C28-73.

All Southern Pine, Hem-Fir or Douglas Fir decking shall be pressure treated after gluing with (See Table 1). The retention shall be as shown in Table 1.

All Red Oak or White Oak decking shall be pressure treated after gluing with (<u>See Table2</u>). The retention shall be 8 p.c.f. or refusal for creosote or 0.40 p.c.f. for penta in oil.

All Southern Pine, Hem-Fir or Douglas Fir laminated beams or girders shall be pressure treated with (See_ Table 1). The retention shall be as shown in Table 1.

All Red Oak or White Oak laminated beams or girders shall be pressure treated with (See Table 2). The retention shall be as shown in Table 2.

In addition, all Douglas Fir beams treated after gluing with creosote or penta in oil shall also have the top three laminations treated prior to gluing with pentachlorophenol in volatile solvents by the Cellan process to 0.4 p.c.f. retention.

APPEARANCE GRADE

Appearance shall be A.I.T.C. Industrial as defined in A.I.T.C. 110-7

HARDWARE

The Fabricator shall furnish all hardware as specified herein and as shown on the drawings except that which is embedded or partially embedded in concrete or welded to structural steel. Fabricated steel shapes shall conform to A.S.T.M. A588 unless otherwise specified. All fasteners shall be galvanized in accordance with the Specification for Zinc (Hat-Galvanized) Coatings, A.A.S.H.T.O. MIII (A.S.T.M. AI 23).

HANDLING, STORAGE & INSTALLATION

This item shall be in accordance with A.A.S.H.T.O. Standards Sections 2.20.3, 2.20.4 and 2.20.5.

BITUMINOUS MATERIAL

Bitumastic Super Service Block Coating, as manufactured by Koppers Company, Pittsburgh, Pa., or equal shall be applied to the face of the doweled panel joints before panels are pulled together to form a water tight seal. This material shall also be used to cover heads of drift pins or lag screw deck connectors to prevent moisture from penetrating deck panels or girders.

Road surfacing shall not be furnished by the Fabricator unless otherwise specified.

DELIVERY

Material shall be delivered as directed by the Engineer. A maximum of 15 calendar days will be allowed for delivery following notification by the Engineer. The vendor shall notify the Engineer one (I) working day prior to delivery of the material.

MISCELLANEOUS

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

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

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

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

LUMBER OPTIONS					
SPECIES.	DECK	GIRDERS	DIAPHRAGMS		
SOUTHERN PINE					
HEM-FIR					
DOUGLAS FIR					
RED OAK			1		
WHITE OAK					

W.VA. DEPT. OF HIGH STANDARD BRIDGE P GENERAL NOTES



CREOSOTE (AW P PENTA IN OIL (A CELLON AMPA.-

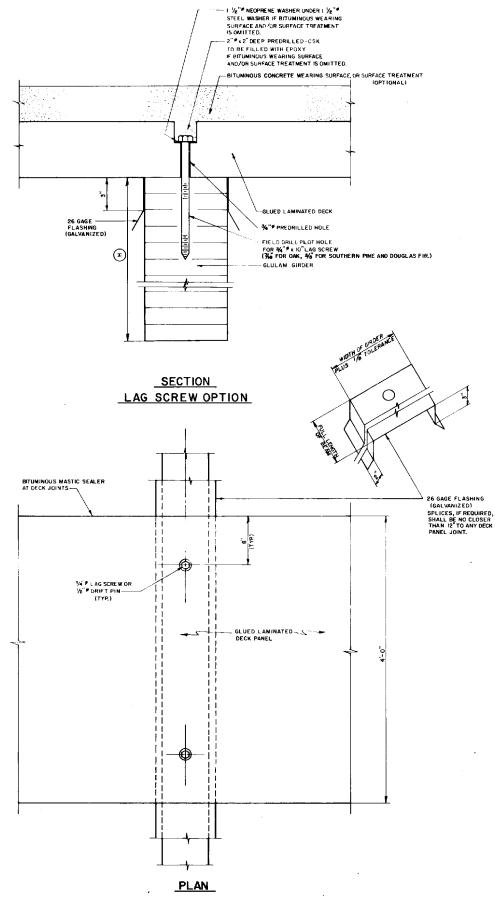
TRE

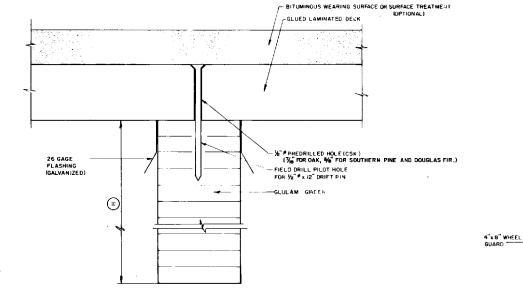
 PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	sheet No.	TOTAL SHTS
١¥.VA.					

TABLE 1 SOFT WOODS			TABLE 2 HARD WOODS			
	RETENT	ON (P.C.E)			RETENT	10N (P.C.E)
EATMENT	ABOVE GROUND			TREATMENT	GROUND	BELOW
P A PI)	8	12		CREOSOTE (A.W.P.API)	8 OR REFUSAL	REFUSAL
W.P.AP9)	0.4	0.6		PENTA IN OIL (AMP.AP9)	0.4	0.6
-P9) TYPE 'B' SOLVENT	0.4	0.6		· · · · · · · · · · · · · · · · · · ·		

NOTE: CELLON PROCESS TO BE APPLIED TO GROERS ONLY.

	THE WEST VIRGINIA DEPARTMENT STRUCTURES DIVISION	of Highways
		DESIGNED BY:
		DRAWN BY: W. g. h.
		CHECKED MY:
PREPARED 7-76		REVIEWED BY:
WATS REVISED 9-88		DATE
PLANS		SCALE:
		SHEET
		BRIDGE NUMBER
BR-T2	GENERAL NOTES	





<u>SECTION</u> DRIFT PIN OPTION

CONTROL DIMENSIONS

CODE	DESCRIPTION	VALUE
A	GIRDER SPACING	
B	DISTANCE FROM EDGE OF DECK TO Q OF EXTERIOR GIRDER	
c	DISTANCE FROM EDGE OF DECK TO EDGE OF EXTERIOR GIRDER	
D	DISTANCE FROM EDGE OF DECK TO & OF FIRST DOWEL	
E	THICKNESS OF DECK	
G	WIDTH OF GIRDER	
н	DEPTH OF GIRDER	
N	NUMBER OF DOWELS PER BAY	
Υ _N	DISTANCE C-C OF DOWELS	
4 _{2N}	DISTANCE FROM & GIRDER TO & DOWEL	1
5	DISTANCE BETWEEN GIRDERS	

ESTIMATE OF QUANTITIES

ITEM	QUANTITY
NUMBER OF 1 1/2" # x19 1/2" DOWELS REQUIRED (TOTAL PER STRUCTURE)	
NUMBER OF LINEAL FEET OF FLASHINGS REQUIRED (TOTAL PER STRUCTURE)	
NUMBER OF LAG SCREWS OR DRIFT PINS (TOTAL PER STRUCTURE)	

OPTIONS SELECTED

.

ITEM	YES OR NO
3/4" # x 10" LAG SCREWS	1
1/2" # x 12" DRIFT PINS	
HOT-LAID BITUMINOUS WEARING SURFACE	
SURFACE TREATMENT	_

PREDRILL TO DOWEL 0.D. DOWELS TO BE TIGHT FIT.

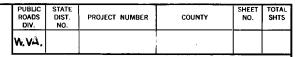
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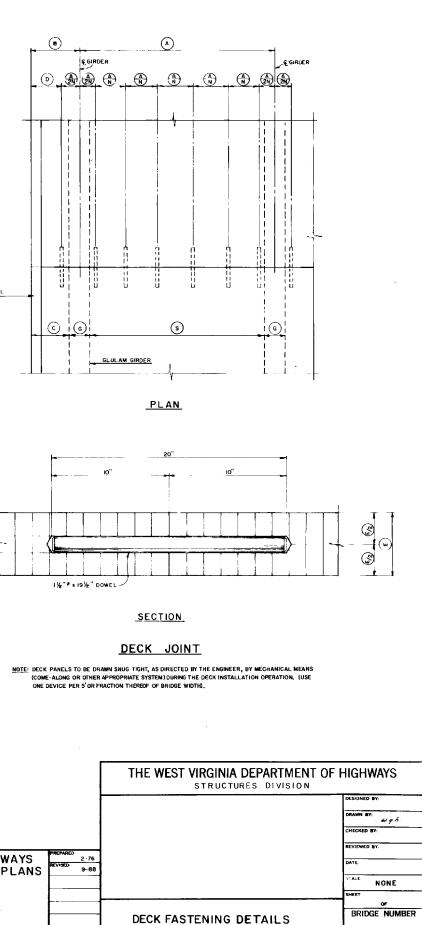
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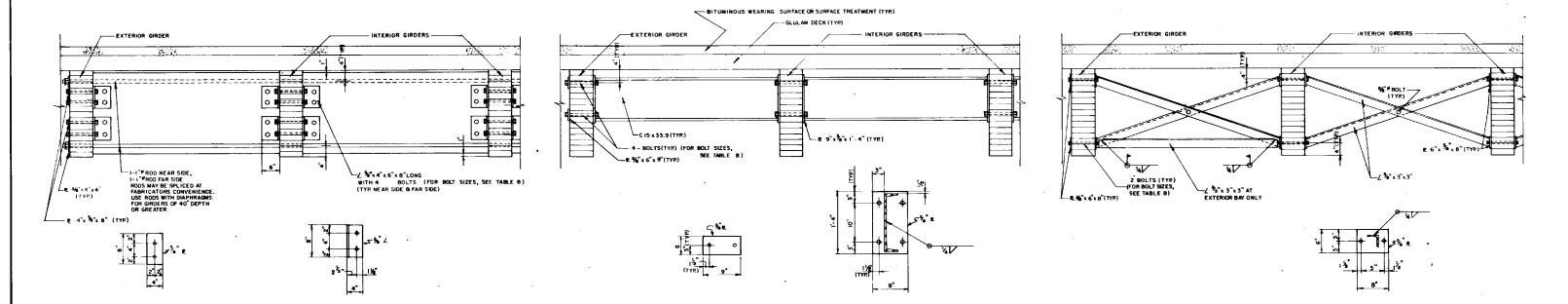
	W. VA. DEPT. OF HIGHWAYS STANDARD BRIDGE PLAN
-	GLUED LAMINATED TIMBER STRUCTURE
	STANDARD SHEET BR-T3

ANCHORAGE DETAILS FOR DECK

DIRECTOR, STRUCTURES DIVISION







INTERMEDIATE TIMBER DIAPHRAGM SYSTEM

TABLE A		
BRIDGE LENGTH	INTERMEDIATE DIAPHRAGMS AND SPACING	
0'-25'	NONE REQUIRED	
25-50	TIMBER, CHANNEL OR ANGLES AT CENTERLINE OF SPAN	
50 - 60	ANGLES AT 1/2 POINTS OF SPAN	

INTERMEDIATE CHANNEL DIAPHRAGM SYSTEM

STANDARD SHEET BR-T4

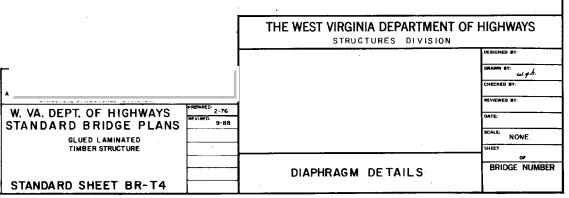
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
Vv. 74.					

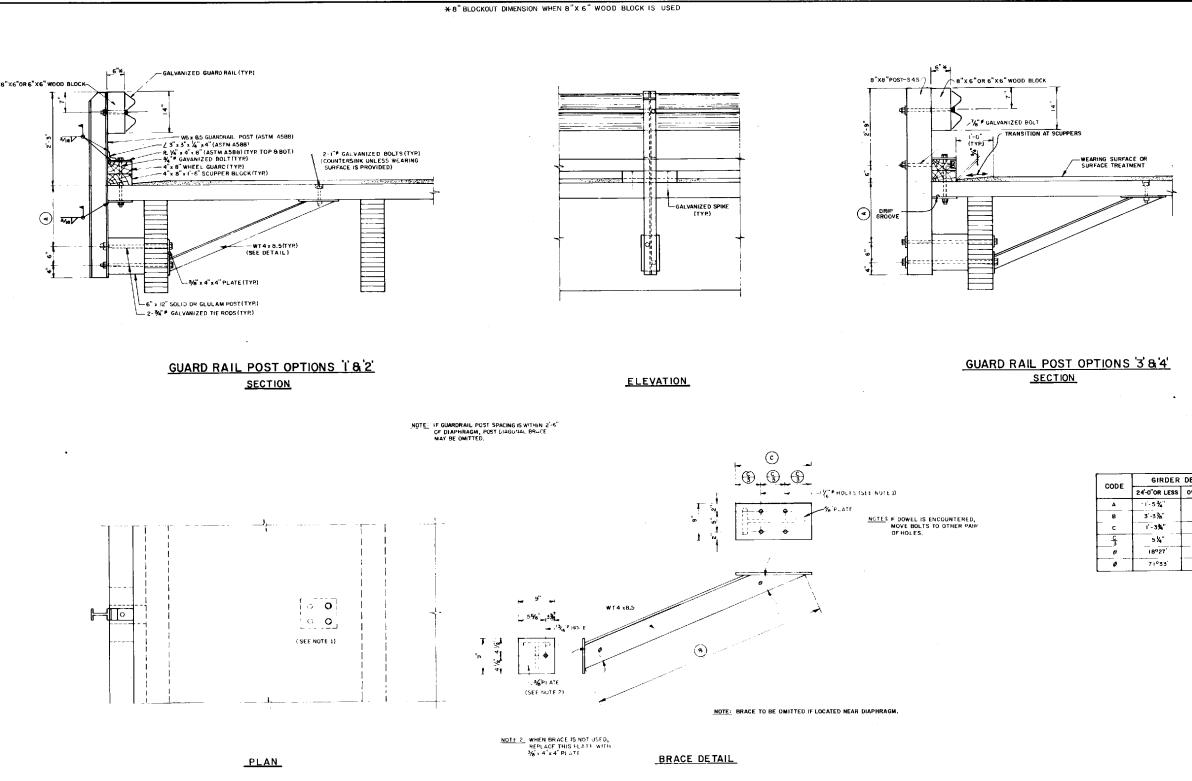
INTERMEDIATE ANGLE DIAPHRAGM SYSTEM

TABLE B				
GIRDER WIDTH BOLT SIZE				
5 %	2 @ 🖋 🕈			
6 74"	2 @%"*			
8 74"	2 @¾" #			
10 %4"	2 @ 76" *			
12 1/4"	2@ 1/1"*			
14 1/4"	2 @ 76 *			

OPTION SELECTED (SEE TABLE A)

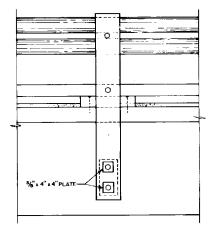
SYSTEM	YES OR NO
TIMBER DIAPHRAGMS	
CHANNEL DIAPHRAGMS	
ANGLE DIAPHRAGMS	





W. VA. DEPT. OF HIGHW STANDARD BRIDGE F glued laminated timber structure

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
1 d. V . s.					

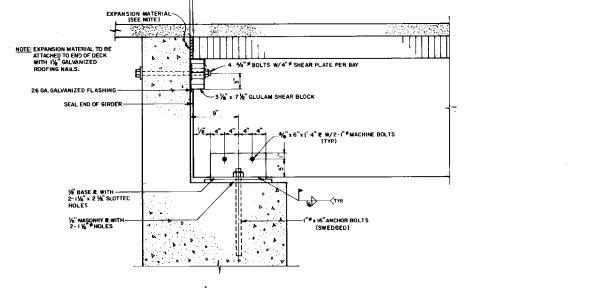


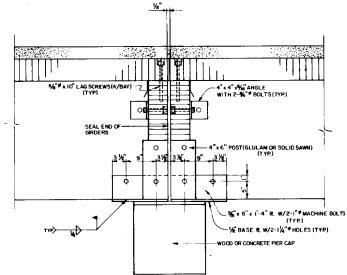
ELEVATION_

EPTH			
DVER 24'-0"			
2'-0"			
3'-1%			
ı '-0 "			
4"			
34° 35'			
55° 25'			

OPTIONS SELECTED						
CODE	1					
У.	STEEL POST WITH BRACE					
'2'	STEEL POST WITHOUT BRACE	-1				
'3'	WOOD POST WITH BRACE					
4	WOOD POST WITHOUT BRACE					
GUARDRA	IL BLOCKED OUT					
		I				
SURFACE	SURFACE TREATMENT					
WEARING	WEARING SURFACE					

	_		
	ſ	THE WEST VIRGINIA DEPARTMENT OF STRUCTURES DIVISION	F HIGHWAYS
t t		· · · · · · · · · · · · · · · · · · ·	DESIGNED BY:
	Ē		DRAWN BY: wigh
			CHECKED BY:
	PREPARED: 2-76		REVIEWED BY:
WAYS Plans	2-76 REVISED: 11-79		DATE:
	9-88		SCALE: NONE
:			SHEET OF
		GUARD RAIL POST DETAILS	BRIDGE NUMBER
R- T5			

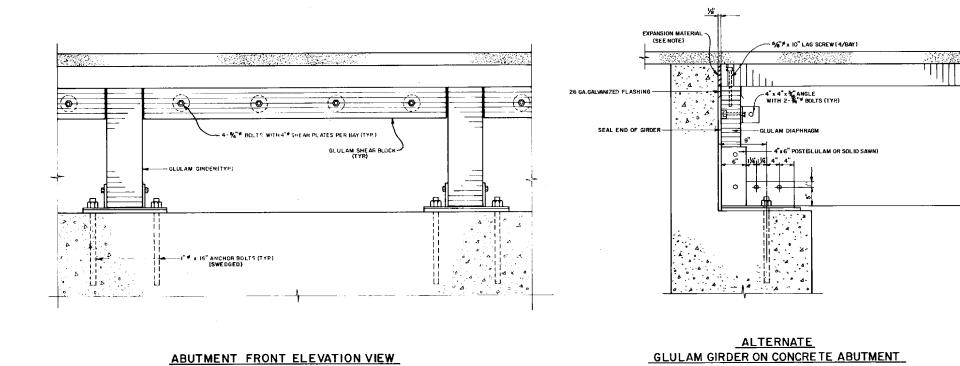




GLULAM GIRDER ON CONCRETE ABUTMENT

ABUTMENT FRONT ELEVATION VIEW

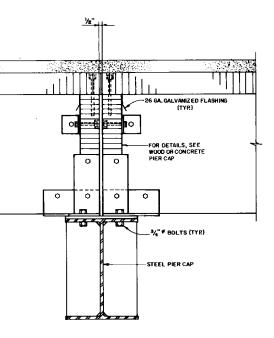
GLULAM GIRDER ON WOOD OR CONCRETE PIER CAP



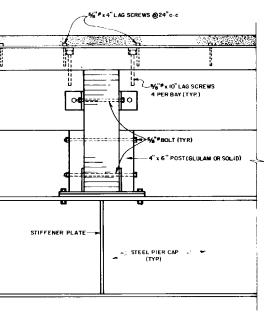
W.VA.DEPT.OF HIGHWAYS STANDARD BRIDGE PLANS GLUED LAMINATED TIMBER STRUCTURE

STANDARD SHEET BR-T6

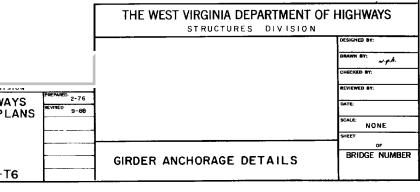
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
\$. %L					

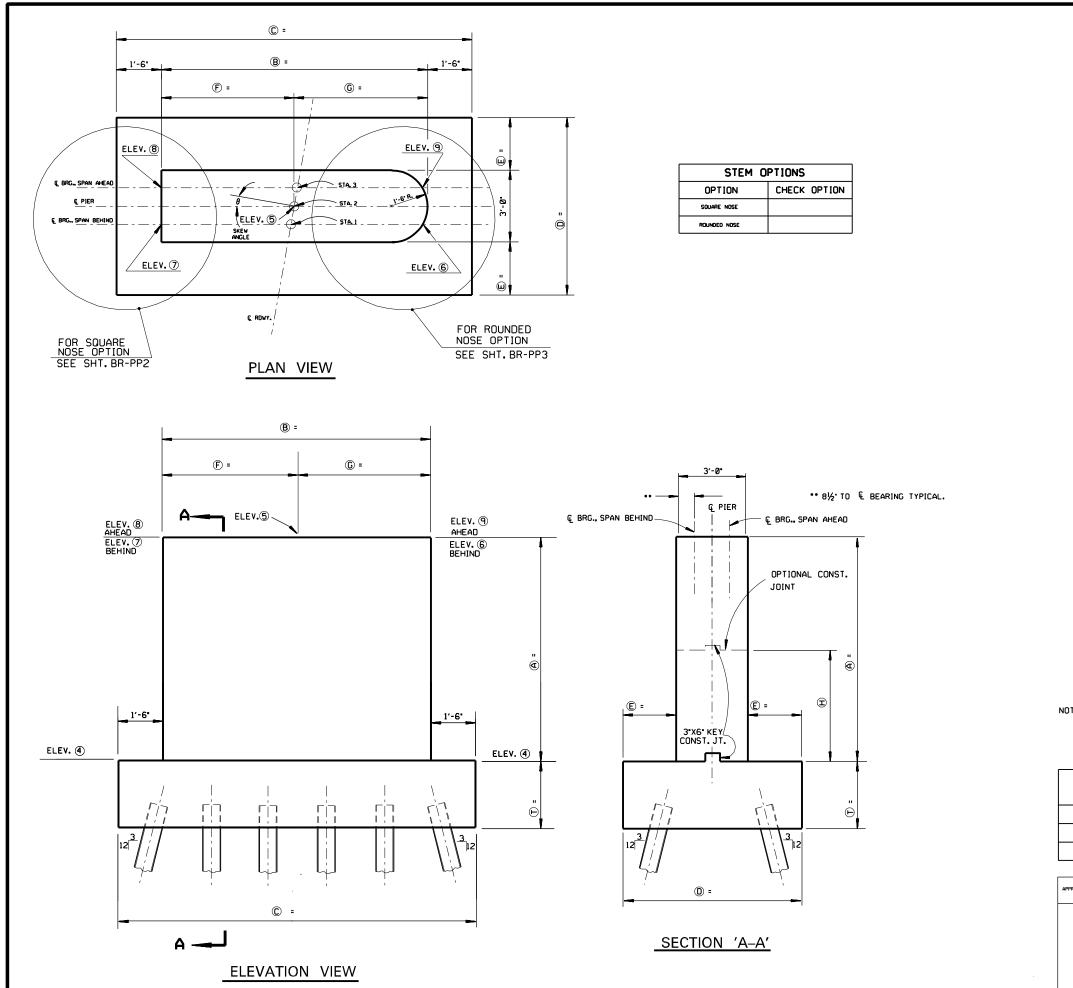


GLULAM GIRDER ON STEEL PIER CAP ELEVATION



SECTION





NOTE: THIS SHEET TO BE USED WITH BEAM SIZES 12" THRU 33" ONLY.

OPTIONAL

NOTE: THIS SHEET TO BE USED BR-PP2 OR BR-PP3 AND B

CONSTRUCTION JOIN
OPTION
CHECK OF
YES
NO
APPROVED
CONTENTION
OUT
OUT
CONTENTION
O

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

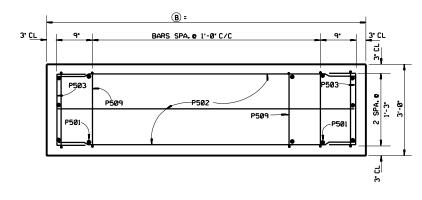
SKEW TABLE						
CROSSING	SELECTION	VALUE				
LT.FORWARD						
RT.FORWARD						
NORMAL						

	RANGE TABLE						
RANGE	STEM HT.	FTG. WIDTH	SEL.				
Ι	Ø' TO 10'	6′-0"					
II	>10' TO 20'	8'-0"					
ш	>20'TO 30'	10'-0"					

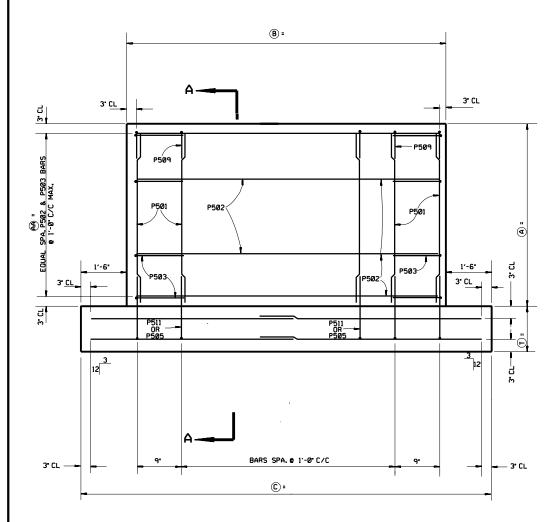
	CONTROL STATIONING			
CODE	DESCRIPTION			
1	STA, AT & OF RDWY & AT & BEARING, SPAN BEHIND			
2	STA, AT (LOF RDWY & AT GLOF PIER			
3	STA, AT (LOF RDWY & AT ଜୁBEARING, SPAN AHEAD			

	CONTROL ELEVATIONS	
CODE	DESCRIPTION	VALUE
4	ELEVATION AT TOP OF FOOTING	
5	ELEV. AT TOP PIER STEM	
6	ELEVATION & TOP PIER STEM RT. SIDE BEHIND	
7	ELEVATION & TOP PIER STEM	
8	ELEVATION O TOP PIER STEM	
9	ELEVATION & TOP PIER STEM RT. SIDE AMEAD	

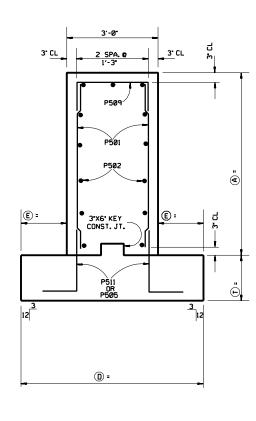
					DIMENSIONS		
			CODE	DESCRIPTION	FORMULA	VALUE	
			A	HT.OF STEM	<u> </u>		
_			В	LENGTH OF STEM	+SUPERSTR, VIDTH ROUND, TO NEAREST FT, + 3'-0"		
4			С	LENGTH OF FOOTING	STEM LEN. + 3'-0"		
_Y.			D	WIDTH OF FOOTING	SEE RANGE TABLE		
	TANDARD SHE	TC	Е	DIST.FACE OF PIER TO FACE OF FTG.	(D-3)/2		
BRPP4.	IANDARU SHI	1615	F	DIST. EDGE OF PIER TO C RDWY.LT. SIDE			
			G	DIST.EDGE OF PIER TO & RDWY.RT.SIDE			
			н	HEIGHT OF CONST. JOINT			
	7		Т	THICKNESS OF FOOTING	SEE STANDARD SHEET BR-PP4		
NT			• SUPERSTRUCTURE WIDTH=CDISTANCE OUT TO OUT OF BEAMS MEASURED PERPENDICULAR TO ROADWAY/COS $ heta$				
OPTION	1		INCLUDES	5 SIDEWALK IF USED)			
	1	THE W	EST V	IRGINIA DEI	PARTMENT	OF HIG	HWAYS
	-			STRUCTURI	ES DIVISION		
						DESIGNED BY	'
						DRAWN BY:	D.W.W.
_{DN} — —	DATE					CHECKED BY:	
YS 12-89						REVIEWED BY	':
	12-89 REVISED					DATE:	
ANS 9-92 9-92 PIER 2-94						DNE	
					SHEET NO.a	OF	
Ľ		REI	NFOR	RCED CON	CRETE	BRIDGE	E NUMBER
.PP1 PIE		r on	I PILES L	AYOUT			





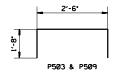


ELEVATION VIEW



SECTION 'A-A'

NOTE: ALL REBAR LAP SPLICES SHALL BE AS PRESCRIBED IN BAR LAP TABLE



NOTE: ALL REBAR DIMENSIONS ARE OUT-OUT

BAR LAP TABLE					
BAR NO.	BAR LAP (M]N.)				
•5	1'-7"				

NOTE: THIS SHEET TO BE USED WITH BEAM SIZES 12" THRU 33" ONLY.

NOTE: THIS SHEET TO BE USED WITH STANDARD SHEETS BR-PPI AND BR-PP4.

OPTIONAL EP	DXY COATING					
FOR STEM STEEL						
OPTION	CHECK OPTION					
YES						
NO						

(SQUARE NOSE) STANDARD SHEET B
REINFORCED CONCRET STEM DETAILS
W.V.DEPT.OF HIGH STANDARD BRIDGE
APPROVED DIRECTOR, STRUCTURES D

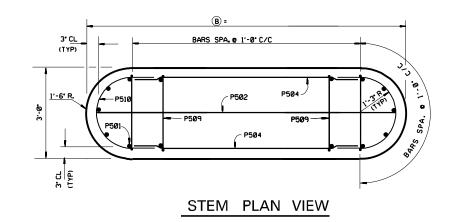
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

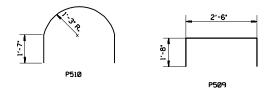
CONTROL DIMENSIONS							
CODE	DESCRIPTION	FORMULA	VALUE				
Α	HT. OF STEM						
в	LEN. OF STEM	•SUPERSTR. WID. ROUND. TO NEAREST FT. + 3'-0"					
С	LEN. OF FOOTING	STEM LEN. + 3'-0"					
D	WIDTH OF FOOTING	SEE RANGE TABLE ON BR-PP1					
E	DIST.FACE OF PIER TO FACE OF FOOTING	(D-3)/2					
н	HEIGHT OF CONST. JOINT						
AA	NO. SPA. OF P502 BARS & P503 BARS	A-6"					
т	THICKNESS OF FOOTING	SEE STANDARD SHEET BR-PP3					

SUPERSTRUCTURE WIDTH-IPERPENDICULAR WIDTH OF SUPERSTRUCTURE INCLUDING SIDEWALKS//COS 0

	STEM-BILL OF REINFORCING STEEL						
MARK	BAR TYPE	FORMULA NO. BARS FOR PIER	NO. BARS IN PIER	FORMULA LEN. OF BARS	LENGTH OF BARS	TOTAL LF	
P501	STR.	(B•2)+2		A-6"			
P502	STR.	(A+1)•2+1		B-6*			
P503	BENT	(A+1)•2			5'-10"		
P509	BENT	В			5'-10"		

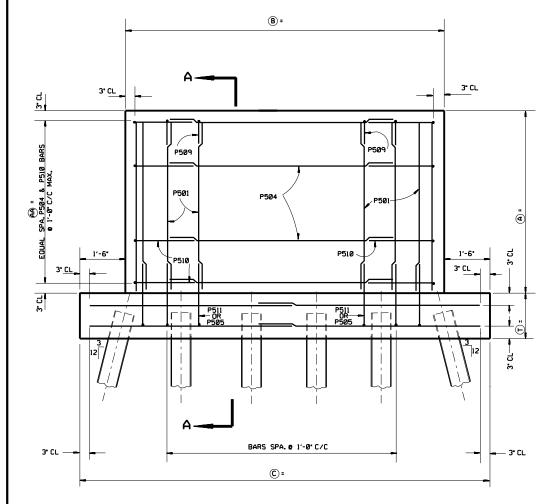
	S	TEM-ESTIMATE OF	QUANT	ITIES	
	ITEM	DESCRIPTION	UNIT	QUANTITY	
	601-2	CLASS B CONCRETE	CY		
	602-1	REINFORCING STEEL BARS	LB		
	602-2	EPOXY COATED REINFORCING STEEL BARS	LB		
_		THE WEST VIRGINIA STRUCT		FMENT OF	HIGHWAYS
]					SIGNED BY:
				-	RAWN BY: D.W.W. HECKED BY:
DIVIŜION	DATE				VIEWED BY:
IWAYS	PREPARED: 12-89				NTE:
PLANS	PEVISED			sc	ALE: NONE
TE PIER	2-94			SH	EET NO.: OF
, :)		REINFORCED C		RETE	BRIDGE NUMBER
BR-PP2		PIER ON PILES	S DET	AILS	

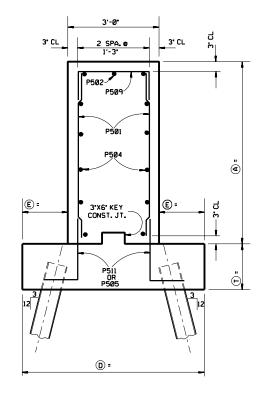




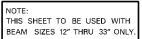
NOTE: ALL REBAR DIMENSIONS ARE OUT-OUT

BAR	LAP TABLE
BAR NO.	BAR LAP (MIN.)
•5	1'-7"





SECTION 'A-A'



NOTE: THIS SHEET TO BE USED WITH STANDARD SHEETS BR-PP1 AND BR-PP4.

OPTIONAL EP	OXY COATING				
FOR STEM STEEL					
OPTION	CHECK OPTION				
YES					
NO					
	•				

APPROVED DIRECTOR, STRUCTURES DIVISI
W.V.DEPT.OF HIGHWA
REINFORCED CONCRETE STEM DETAILS
(ROUNDED NOSE)
STANDARD SHEET BR



NOTE: ALL REBAR LAP SPLICES SHALL BE AS PRESCRIBED IN BAR LAP TABLE

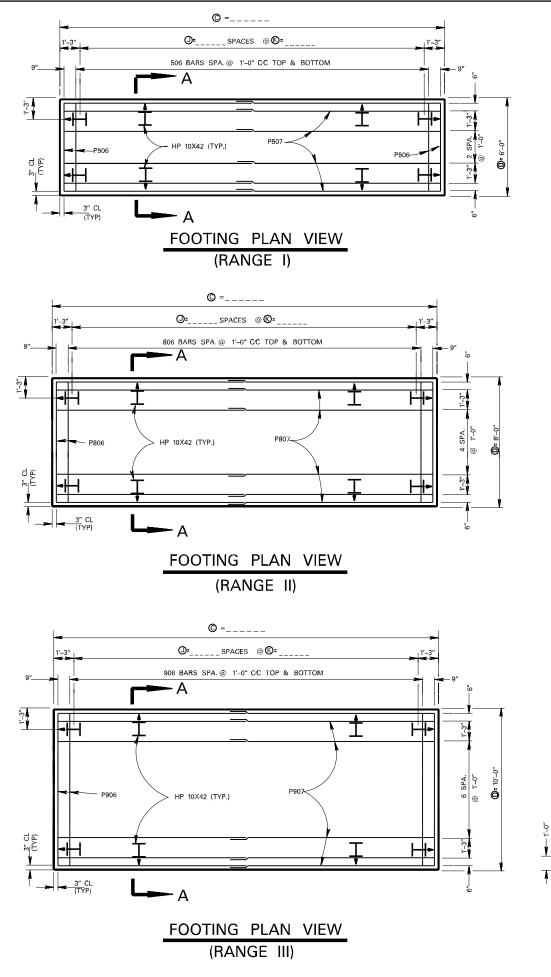
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

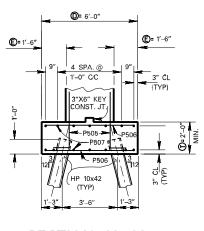
CONTROL DIMENSIONS						
CODE	DESCRIPTION	FORMULA	VALUE			
Α	HT. OF STEM					
в	LEN. OF STEM	•SUPERSTR. WID. ROUND. TO NEAREST FT. + 3'-0"				
с	LEN. OF FOOTING	STEM LEN. + 3'-0"				
D	WIDTH OF FOOTING	SEE RANGE TABLE ON BR-PP1				
E	DIST.FACE OF PIER TO FACE OF FOOTING	(D-3)/2				
н	HEIGHT OF CONST. JOINT					
AA	NO. SPA. OF P504 BARS & P510 BARS	A-6"				
т	THICKNESS OF FOOTING	SEE STANDARD SHEET BR-PP4				

-SUPERSTRUCTURE VIDTH: (PERPENDICULAR VIDTH OF SUPERSTRUCTURE INCLUDING SIDEWALKS)/COS 0

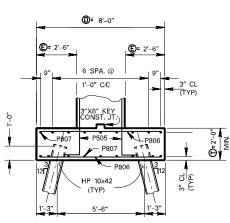
STEM-BILL OF REINFORCING STEEL						
MARK	BAR TYPE	FORMULA NO. BARS FOR PIER	NO. BARS IN PIER	FORMULA LEN. OF BARS	LENGTH OF BARS	TOTAL LF
P501	STR.	(B•2)+2		A-6"		
P502	STR.	1		B-6'		
P504	STR.	(A+1)+2		B-(3'-Ø")		
P509	BENT	B-2			5'-1 0 "	
P510	BENT	(A+1)•2			7′-2'	

					_
	51	EM-ESTIMATE OF	JUANI	THES	
	ITEM	DESCRIPTION	UNIT	QUANTITY	
	601-2	CLASS B CONCRETE	CY		
	602-1	REINFORCING STEEL BARS	LB		
	602-2	EPOXY COATED REINFORCING STEEL BARS	LB		
•					
		THE WEST VIRGINIA	DEPAR	TMENT O	F HIGHWAYS
		STRUC	rures i	DIVISION	
					DESIGNED BY:
					DRAWN BY: D.W.W.
DIVISION DATE					CHECKED BY:
	ARED				REVIEWED BY:
	12-89				DATE:
9-	92				SCALE: NONE
ie rien pe	94				SHEET NO.: OF
S		REINFORCED (CONC	RETE	BRIDGE NUMBER
3R-PP3		PIER ON PILES	S DET	AILS	





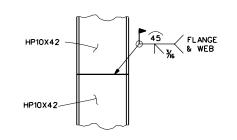




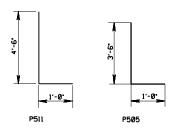
SECTION 'A-A' (RANGE II)



- 1. MAX. PILE SPACING SHALL NOT EXCEED 7'-6" FOR RANGES I, II AND III.
- 2. PILE SPACING IS TO BE SYMMETRICAL ABOUT THE € FOOTING.
- 3. CUT P506, P806, AND P906 BARS AS NECESSARY TO FIT WITH PILING (BOTTOM FACE). 4. IF PILES ARE NOT BATTERED, TWO ADDITIONAL
- PILES MAY TO BE ADDED AT THE DIRECTION OF THE ENGINEER. 5. THIS SHEET TO BE USED WITH STANDARD
- SHEET'S BR-PP1 AND BR-PP2 OR PR-PP3.
- 6. ALL HP10X42 PILING SHALL HAVE A DESIGN LOAD 6. ALL HP10X42 PILING SHALL HAVE A DESIGN LOAD OF 55.8 TONS AND SHALL BE DRIVEN TO REFUSAL INTO THE FOUNDATION STRATA AS INDICATED BY THE ESTIMATED PILE TIP ELEVATIONS. MIN. PILE LENGTH TO BE 10'. REFUSAL IS DEFINED AS THE EQUIVALENT OF 20 BLOWS FOR ONE INCH OR LESS OF PENETRATION WITH A POWER HAMMER DEVELOPING A A MINIMUM CAPACITY OF 15,000 FOOT-POUNDS PER BLOW. IF A LARGER HAMMER IS USED, 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.



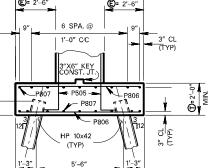


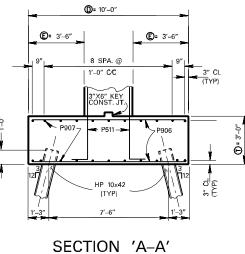


NOTE: ALL REBAR DIMENSIONS ARE OUT-OUT

BAR	LAP TABLE
BAR NO.	BAR LAP (MIN.)
•5	1'-7*
•8	2′-6"
=9	2'-10 '

			THE WEST VIRGINIA DEPARTMENT STRUCTURES DIVISION	OF HIGHWAYS
NOTE: THIS SHEET TO BE USED WITH BEAM SIZES 12" THRU 33" ONLY.	APPROVED DIRECTOR STRUCTURES OVISION	TE	REINFORCED CONCRETE PIER ON PILES DETAILS	DESIGNED BY: DRAWN BY: D.W.W. CHECKED BY: REVIEWED BY: DATE: SCALE: NONE SHEET NO.4 OF BRIDGE NUMBER





(RANGE III)

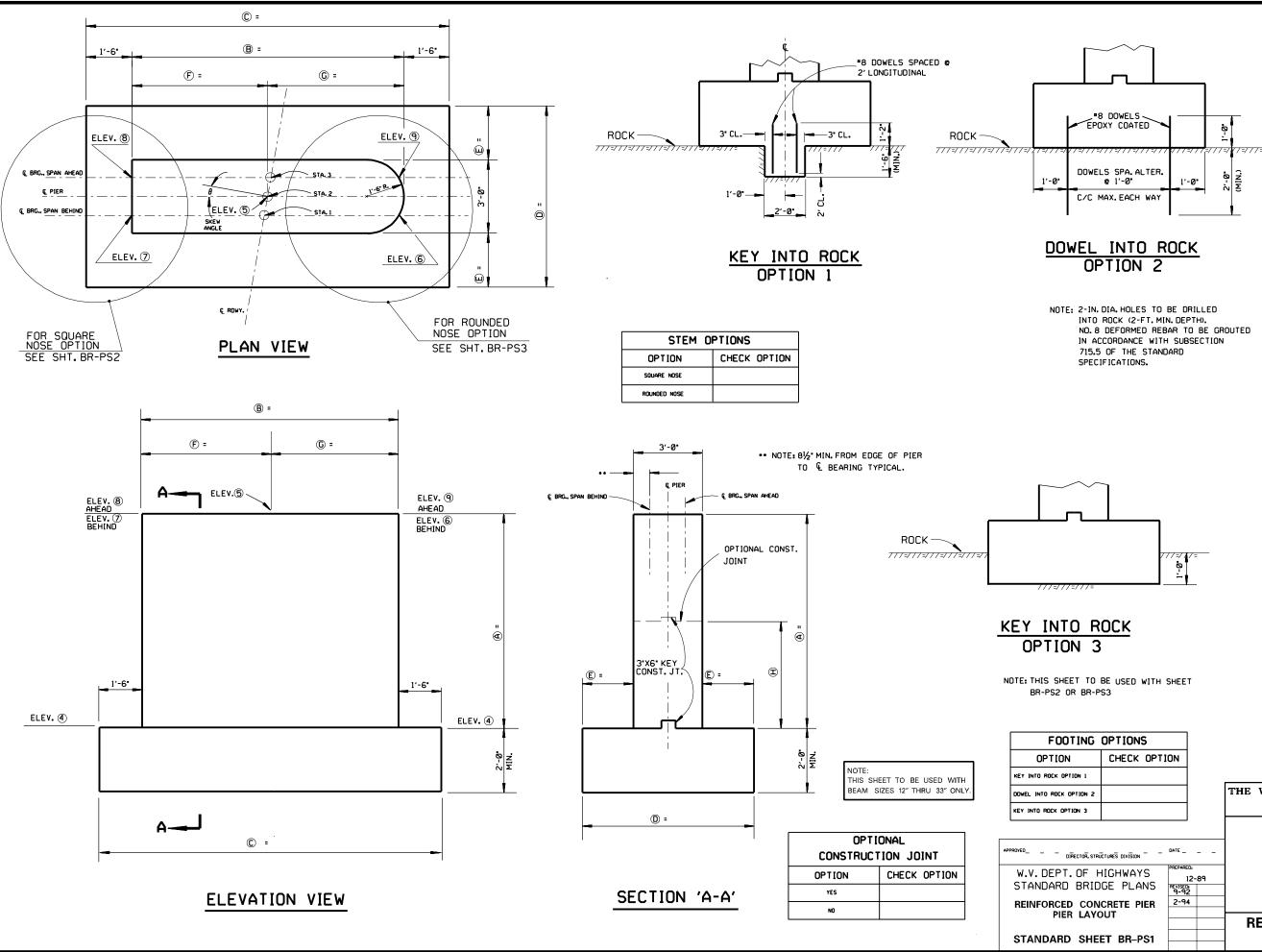
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

CONTROL DIMENSIONS					
CODE	DESCRIPTION	FORMULA	VALUE		
В	LEN. OF STEM	SEE SHT.BR-PP2 OR BR-PP3			
с	LEN. OF FOOTING	STEM LEN. + 3'-0"			
D	WIDTH OF FOOTING	SEE RANGE TABLE ON BR-PP1			
E	DIST.FACE OF PIER TO FACE OF FOOTING	(0-3)/2			
L	NO. OF SPACES BETWEEN PILES PER FACE	NO. PILES PER FACE -1			
к	SPACING OF PILES PER FACE	(C-(2'-6"))/J			
т	THICKNESS OF FOOTING	SEE RANGE ON THIS SHEET			

PILE SUMMARY						
FOOTING LENGTH	SPAN LENGTH	TOTAL NO. PILES				
<u>≤</u> 26'	<70'	8				
	<u>≥</u> 70' <u><</u> 94'	10				
	<70'	12				
>26' <u><</u> 33'	<u>≥</u> 70′ <u><</u> 94′	14				
>33. ₹32.	<70'	14				
	<u>></u> 70′ <u><</u> 94′	16				
	<70′	14				
>37′ ≤45′	<u>></u> 70' <u><</u> 94'	18				

FOOTING-BILL OF REINFORCING STEEL						
MARK	BAR TYPE	FORMULA NO. BARS FOR PIER	NO. BARS	FORMULA LEN. OF BARS	LENGTH OF BARS	total LF
P505	BENT	(B•2)+2			4'-6"	
P506	STR.	(C+1)+2			5′-6"	
P507	STR.		14	C-6"		
P511	BENT	B•2			5'-6"	
P806	STR.	(C+1)•2			7'-6"	
P807	STR.		18	C-6'		
P906	STR.	(C+1)+2			9'-6"	
P907	STR.		22	C-6"		

FOOTING-ESTIMATE OF QUANTITIES					
ITEM	DESCRIPTION	UNIT	QUANTITY		
601-2	CLASS B CONCRETE	CY			
602-1	REINFORCING STEEL BARS	LB			
616-4	STEEL BEARING PILES	LF			



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					

0	ROCK
N	2

ONS			
CK OPTI	ON		
SION	DATE _	-	-
AYS		2-89	
LANS	REVISED		
PIER	2-94	+	
		+	
R-PS1		+	

SKEW TABLE					
CROSSING	SELECTION	VALUE			
LT.FORWARD					
RT.FORWARD					
NORMAL					

RANGE TABLE			
RANGE	STEM HT.	FTG. WIDTH	SEL.
Ι	Ø'TO 10'	6′-0"	
II	>10' TO 20'	8'-0"	
III	>20'TO 30'	10'-0 "	

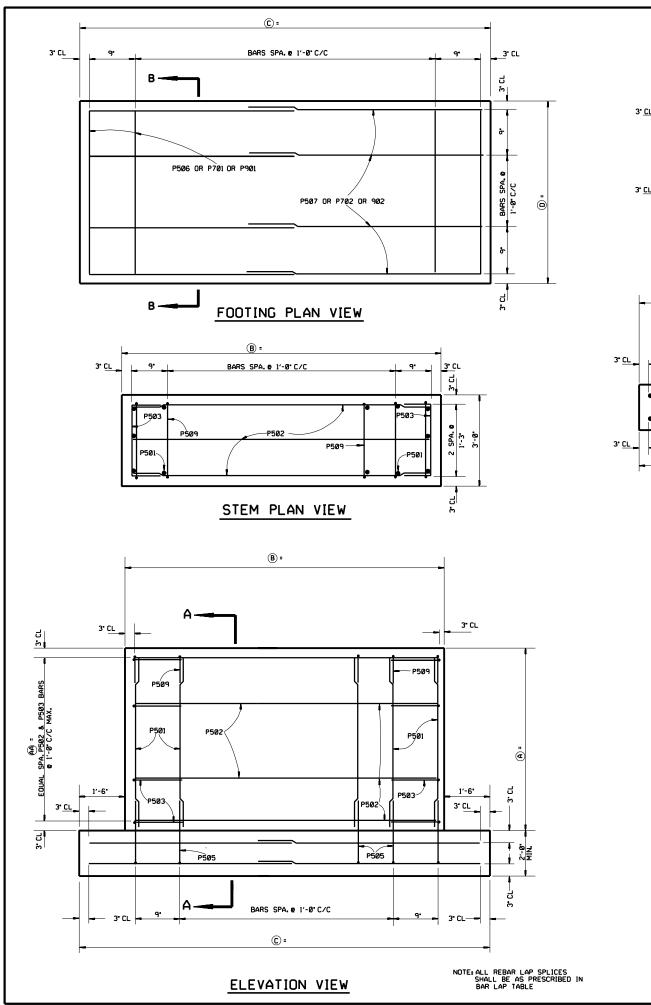
CONTROL STATIONING				
CODE	DESCRIPTION	VALUE		
1	STA, AT & OF RDWY & AT & BEARING, SPAN BEHIND			
2	STALAT (LOF RDWY & AT GLOF PIER			
3	STA. AT (LOF RDWY & AT C BEARING, SPAN AHEAD			

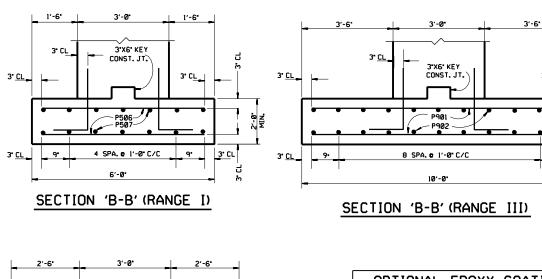
CONTROL ELEVATIONS		
CODE	DESCRIPTION	VALUE
4	ELEVATION AT TOP OF FODTING	
5	ELEV. AT TOP PIER STEM	
6	ELEVATION © TOP PIER STEM RT.SIDE BEHIND	
7	ELEVATION O TOP PIER STEM	
8	ELEVATION & TOP PIER STEM	
9	ELEVATION & TOP PIER STEM RT. SIDE AHEAD	

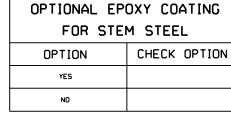
CONTROL DIMENSIONS				
CODE	DESCRIPTION	FORMULA	VALUE	
A	HT. OF STEM			
В	LENGTH OF STEM	SUPERSTR. WIDTH ROUND. TO NEAREST FT. + 3'-0		
С	LENGTH OF FOOTING	STEM LEN. + 3'-0"		
D	WIDTH OF FOOTING	SEE RANGE TABLE		
Е	DIST. FACE OF PIER TO FACE OF FTG.	(D-31/2		
F	DIST.EDGE OF PIER TO Ç RDWY.LT.SIDE			
G	DIST. EDGE OF PIER TO CERDWY. RT. SIDE			
н	HEIGHT OF CONST. JOINT			
			•	

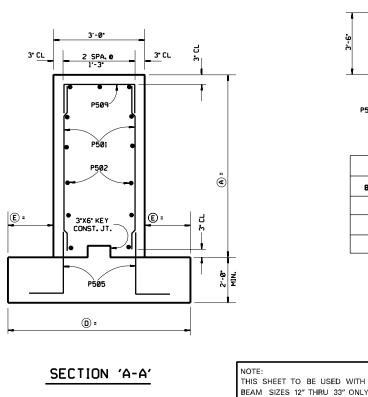
• SUPERSTRUCTURE WIDTH=(DISTANCE OUT TO OUT OF BEAMS MEASURED PERPENDICULAR TO ROADWAY)/COS ${\cal B}$ (INCLUDES SIDEWALK IF USED)

	THE WEST VIRGINIA DEPARTMENT	OF HIGHWAYS
	STRUCTURES DIVISION	
		DESIGNED BY:
	_	DRAWN BY: D.W.W.
		CHECKED BY:
PREPARED:	_	REVIEWED BY:
12-89		DATE:
P-92		SCALE: NONE
2-94		SHEET ND.
	REINFORCED CONCRETE	BRIDGE NUMBER
	PIER LAYOUT	
	1	









3"X6" KEY CONST. JT.

~ ₽**70**1___

____P702___

6 SPA.e 1'-0" C/C

8'-0"

SECTION 'B-B' (RANGE II)

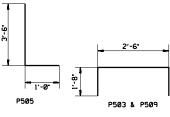
3" <u>CL</u>

9.

_3" CL

Ы

3" CL



NOTE: ALL REBAR DIMENSIONS ARE OUT-OUT

BAR	LAP TABLE
BAR NO.	BAR LAP (MIN.)
*5	1'- 7 -
•7	2'-3"
*9	2'-10"

NOTE: THIS SHEET TO BE USED WITH SHEET BR-PS1

APPROVEDDIRECTOR, STRUCTURES DIVIS
W.V. DEPT. OF HIGHW
STANDARD BRIDGE P
REINFORCED CONCRETE
DETAILS
(SQUARE NOSE)
STANDARD SHEET BE

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.					



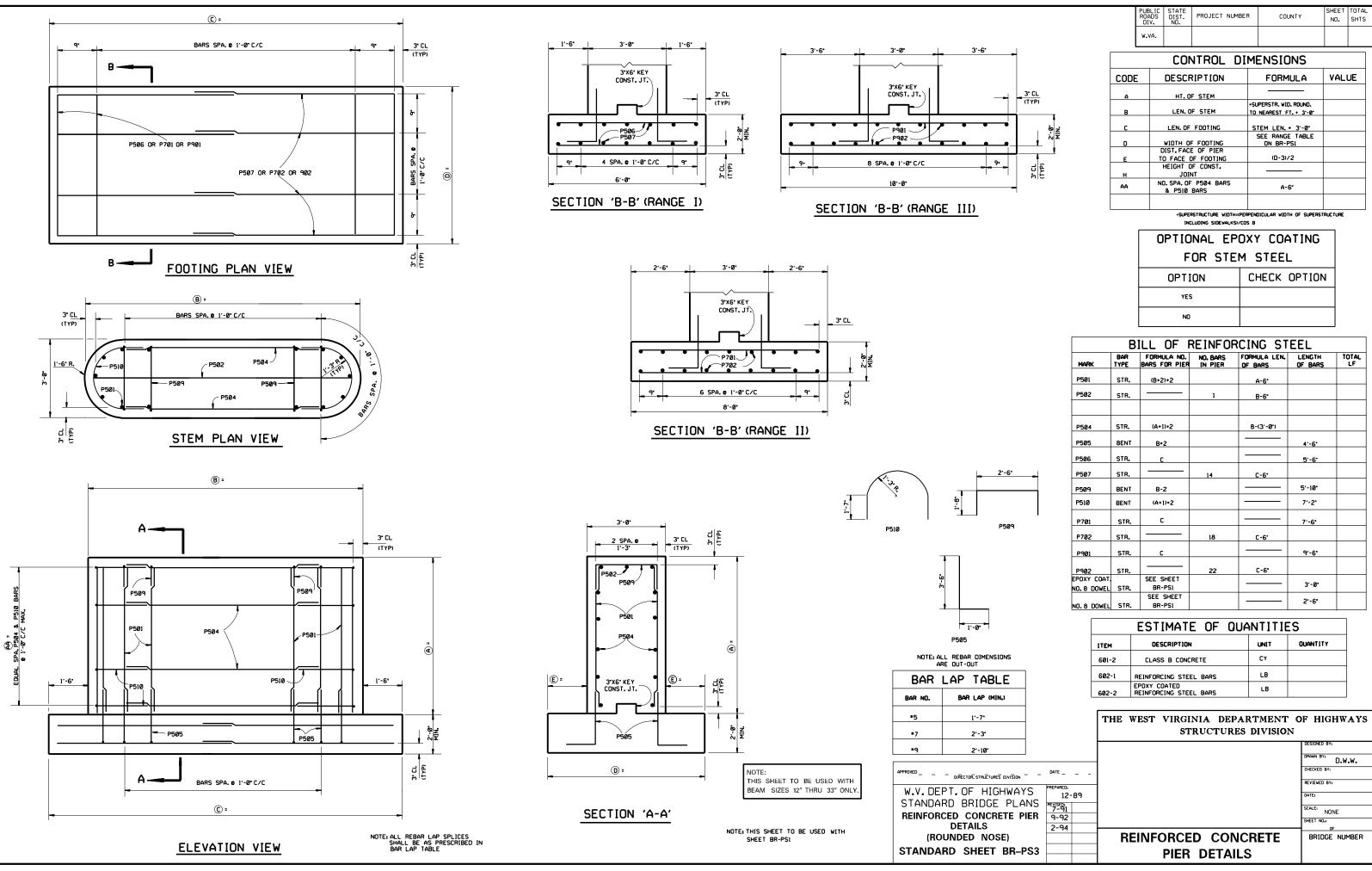
CONTROL DIMENSIONS					
CODE	DESCRIPTION	FORMULA	VALUE		
A	HT.OF STEM				
в	LEN. OF STEM	•SUPERSTR. WID. ROUND. TO NEAREST FT. + 3'-0"			
с	LEN. OF FOOTING	STEM LEN. + 3'-0"			
D	WIDTH OF FOOTING	SEE RANGE TABLE ON BR-PS1			
E	DIST.FACE OF PIER TO FACE OF FOOTING	(D-3)/2			
н	HEIGHT OF CONST. JOINT				
AA	NO. SPA. OF P502 BARS & P503 BARS	A-6'			
			1		

•SUPERSTRUCTURE WIDTH=(PERPENDICULAR WIDTH OF SUPERSTRUCTURE INCLUDING SIDEWALKS//COS 0

BILL OF REINFORCING STEEL						
MARK	BAR TYPE	FORMULA NO. BARS FOR PIER	NO. BARS	FORMULA LEN. OF BARS	LENGTH OF BARS	TOTAL LF
P501	STR.	(B+2)+2		A-6"		
P502	STR.	(A+1)•2+1		B-6*		
P503	BENT	(A+1)+2			5′-10 '	
P505	BENT	B•2			4'-6"	
P506	STR.	с			5'-6"	
P507	STR.		14	C-6'		
P509	BENT	в			5'-10"	
P701	STR.	с			7'-6"	
P702	STR.		18	C-6"		
P901	STR.	с			9'-6"	
P902	STR.		22	C-6'		
EPOXY COAT. NO.8 DOWEL	STR.	SEE SHEET BR-PS1			30.	
NO. 8 DOWEL		SEE SHEET BR-PS1			2'-6'	

ESTIMATE OF QUANTITIES				
ITEM	DESCRIPTION	UNIT	QUANTITY	
601-2	CLASS B CONCRETE	CY		
602-1	REINFORCING STEEL BARS	LB		
602-2	EPOXY COATED REINFORCING STEEL BARS	LB		

	THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STRUCTURES DIVISION		
DATE		DESIGNED BY: DRAWN BY: D.W.W. CHECKED BY:	
VAYS 12-89 PLANS 9-92		REVIEWED BY: DATE: SCALE: NONE	
E PIER 2-94	REINFORCED CONCRETE PIER DETAILS	SHEET NGJ OF BRIDGE NUMBER	



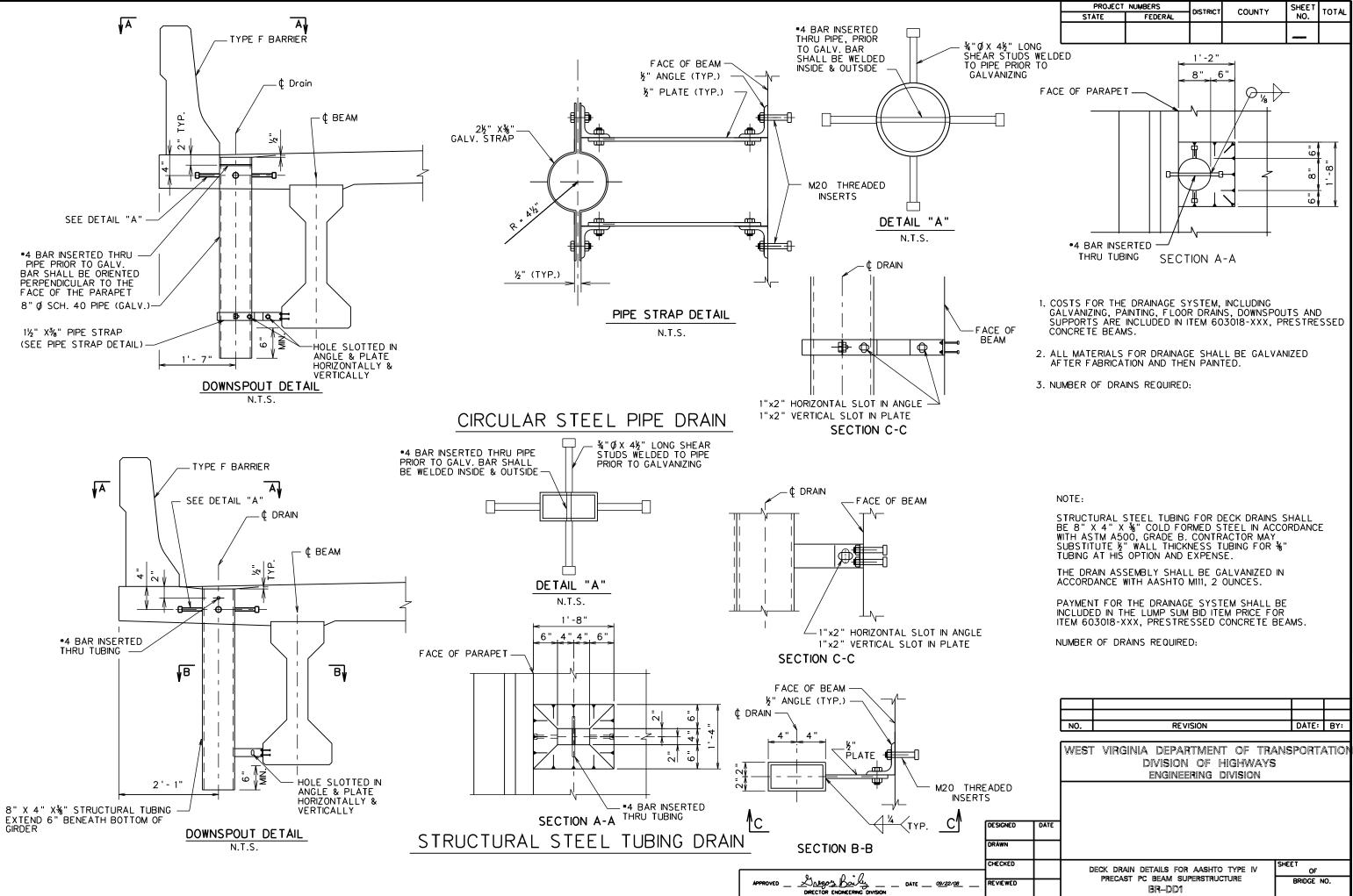
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS				
W.VA.									
 CONTROL DIMENSIONS									

CONTROL DIMENSIONS					
CODE	DESCRIPTION	FORMULA	VALUE		
A	HT.OF STEM				
в	LEN. OF STEM	•SUPERSTR. WID. ROUND. TO NEAREST FT. + 3'-0"			
U	LEN.OF FOOTING	STEM LEN. + 3'-0"			
D	WIDTH OF FOOTING	SEE RANGE TABLE ON BR-PS1			
E	DIST.FACE OF PIER TO FACE OF FOOTING	(D-3)/2			
н	HEIGHT OF CONST. JOINT				
AA	NO. SPA. OF P504 BARS & P510 BARS	A-6"			

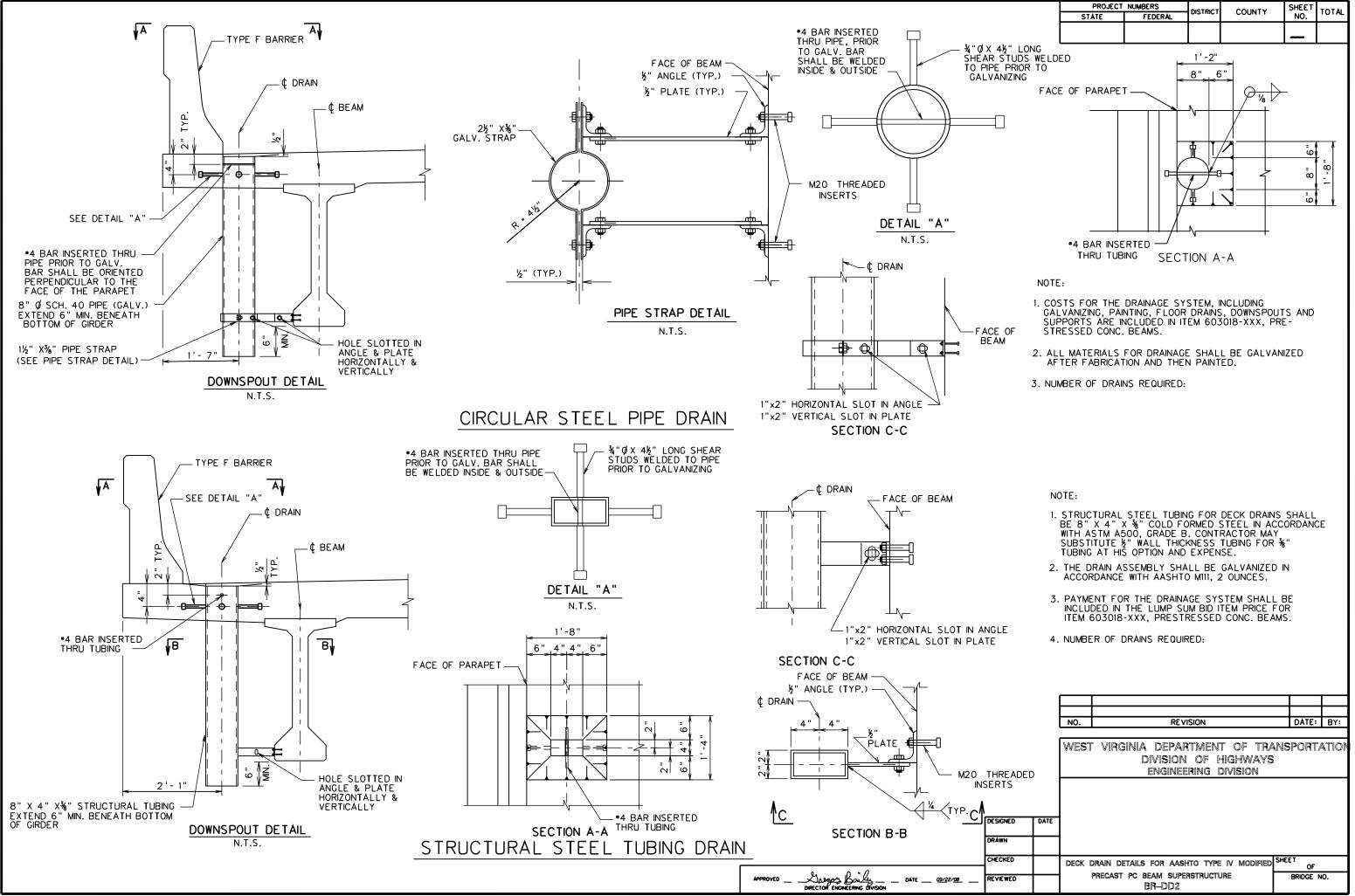
OPTIONAL EPOXY COATING						
FOR STEM STEEL						
OPTION	CHECK OPTION					
YES						
NO						

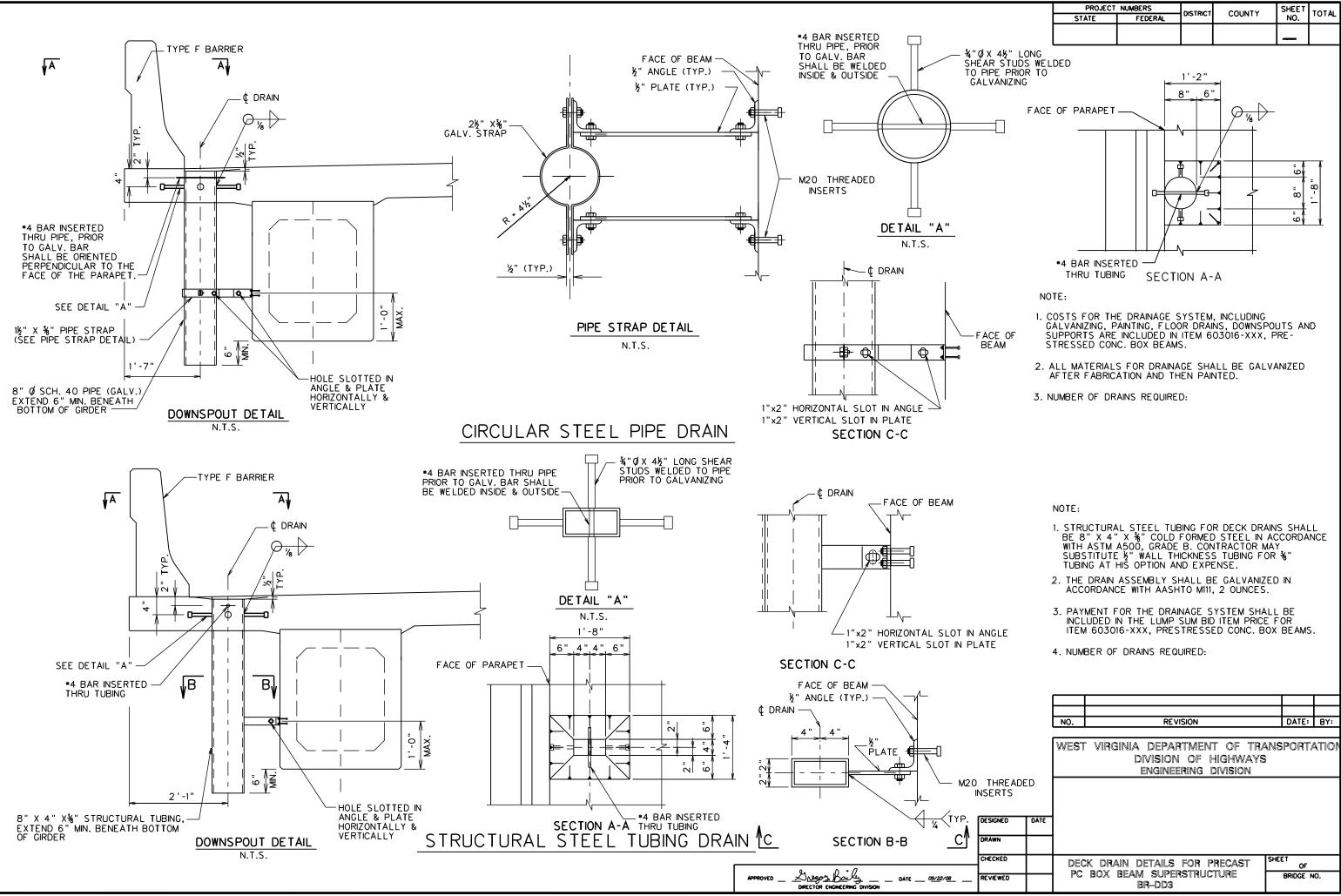
BILL OF REINFORCING STEEL							
MARK	BAR Type	FORMULA NO. BARS FOR PIER	NO. BARS	FORMULA LEN. OF BARS	LENGTH OF BARS	TOTAL LF	
P501	STR.	(B•2)+2		A-6"			
P502	STR.		1	B-6"			
P504	STR.	(A+1)+2		B-(3'-0")			
P505	BENT	B•2			4'-6"		
P506	STR.	с			5'-6"		
P507	STR.		14	C-6'			
P509	BENT	B-2			5'-10"		
P510	BENT	(A+1)+2			7'-2"		
P701	STR.	с			7'-6"		
P702	STR.		18	C-6.			
P901	STR.	с			9′-6"		
P902	STR.		22	C-6"			
EPOXY COAT. NO.8 DOWEL	STR.	SEE SHEET BR-PS1			3'-0"		
NO. 8 DOWEL	STR.	SEE SHEET BR-PS1			2'-6"		

ESTIMATE OF QUANTITIES						
ITEM	DESCRIPTION	UNIT	QUANTITY			
601-2	CLASS B CONCRETE	CY				
602-1	REINFORCING STEEL BARS	LB				
602-2	EPOXY COATED REINFORCING STEEL BARS	LB				

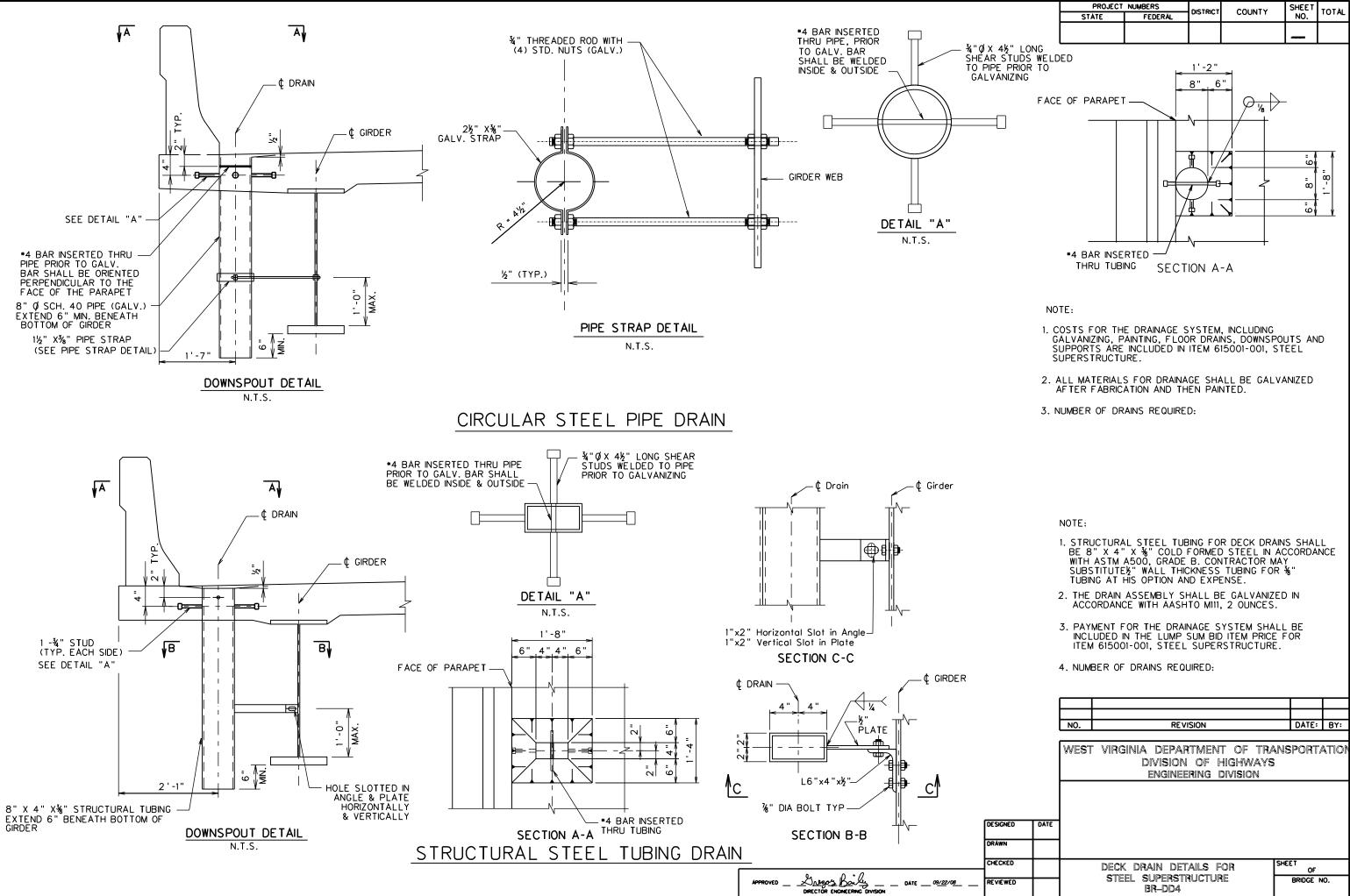


		NO.	REVISION	DATE:	BY:
		WEST	VIRGINIA DEPARTMENT OF TRANS DIVISION OF HIGHWAYS	PORT/	ATION
			ENGINEERING DIVISION		
EADED S					
5					
DESIGNED	DATE				
DRÁWN					
CHECKED		DE	DECK DRAIN DETAILS FOR AASHTO TYPE IV		
REVIEWED			PRECAST PC BEAM SUPERSTRUCTURE BR-DD1	BRIDGE N	0.

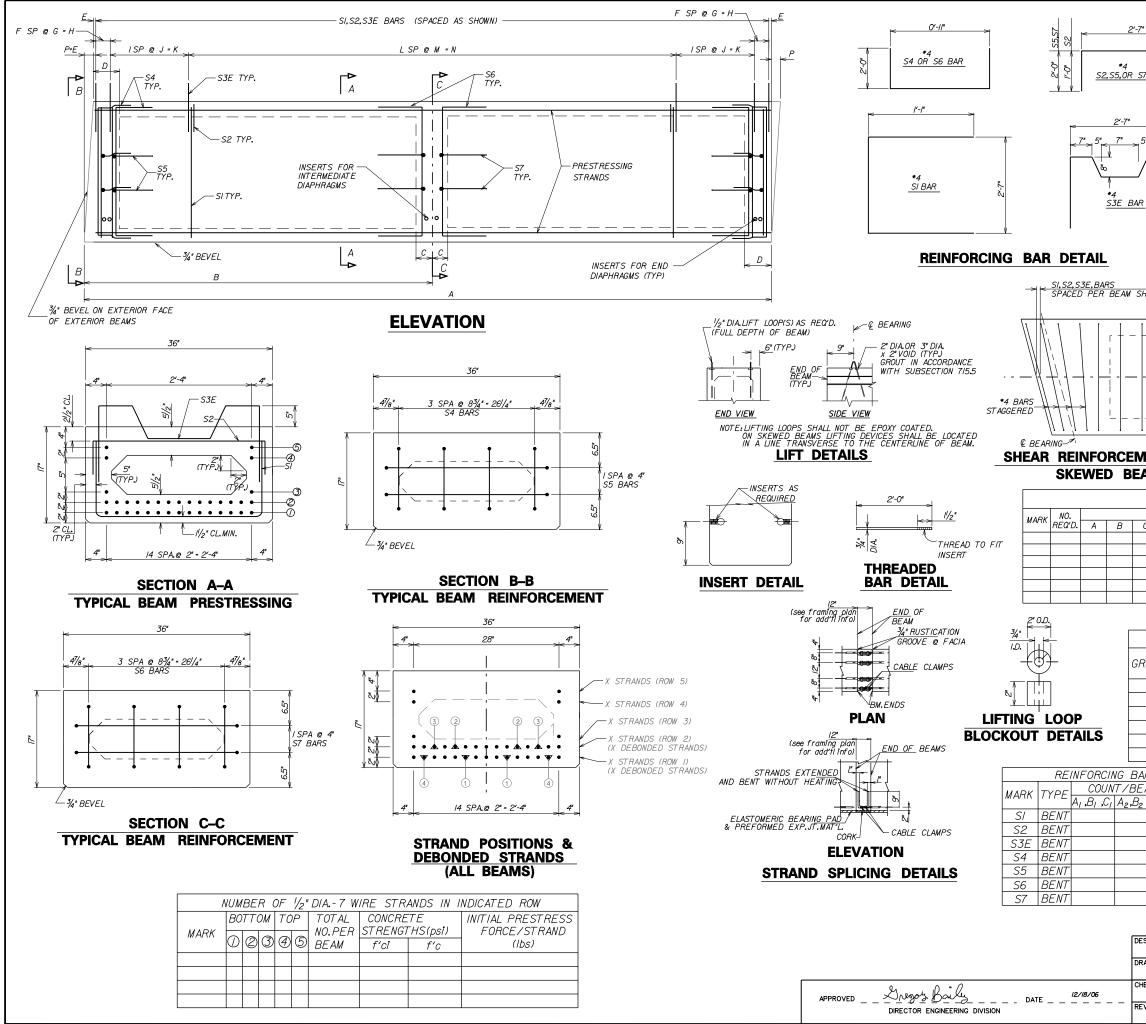




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		NO.	REVISION	DATE:	BY:
		WEST	VIRGINIA DEPARTMENT OF TRAN	ISPORT/	ATION
			DIVISION OF HIGHWAYS		
			ENGINEERING DIVISION		
THREADE	D				
NSERTS					
DESIGNED	DATE				
DRAWN					
CHECKED			K DHAIN DETAILS FOR PRECAST	IEET OF	
REVIEWED		PC	BOX BEAM SUPERSTRUCTURE BR-DD3	BRIDGE N	10.



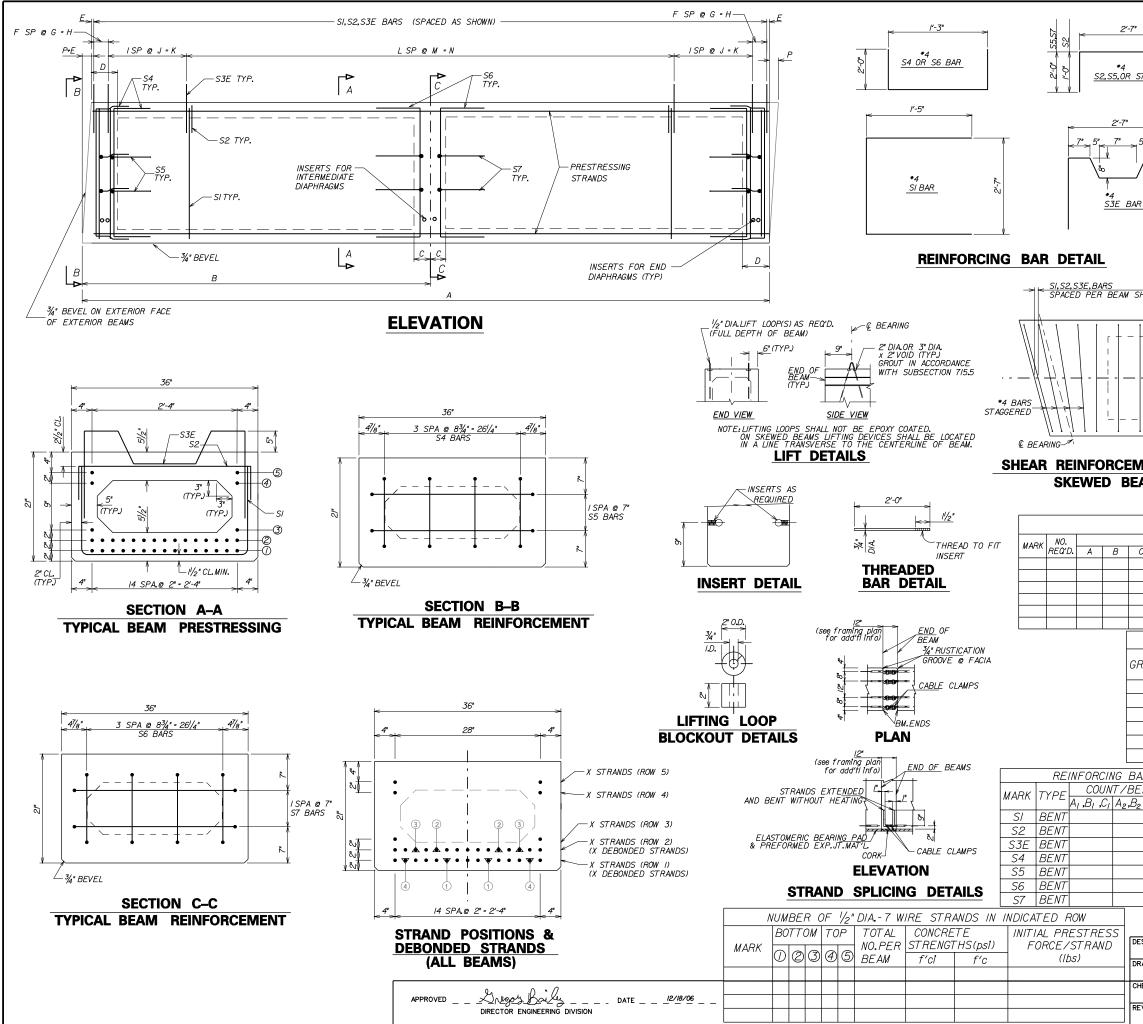
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		NO.	REVISION	DATE:	BY:
		WEST	VIRGINIA DEPARTMENT OF TRAI	NSPORT	
			DIVISION OF HIGHWAYS		
			ENGINEERING DIVISION		
DESIGNED	DATE				
DRÁWN					
CHECKED				SHEET	
			DECK DRAIN DETAILS FUR	OF	
REVIEWED			STEEL SUPERSTRUCTURE	BRIDGE N	0.
			BR-DD4		



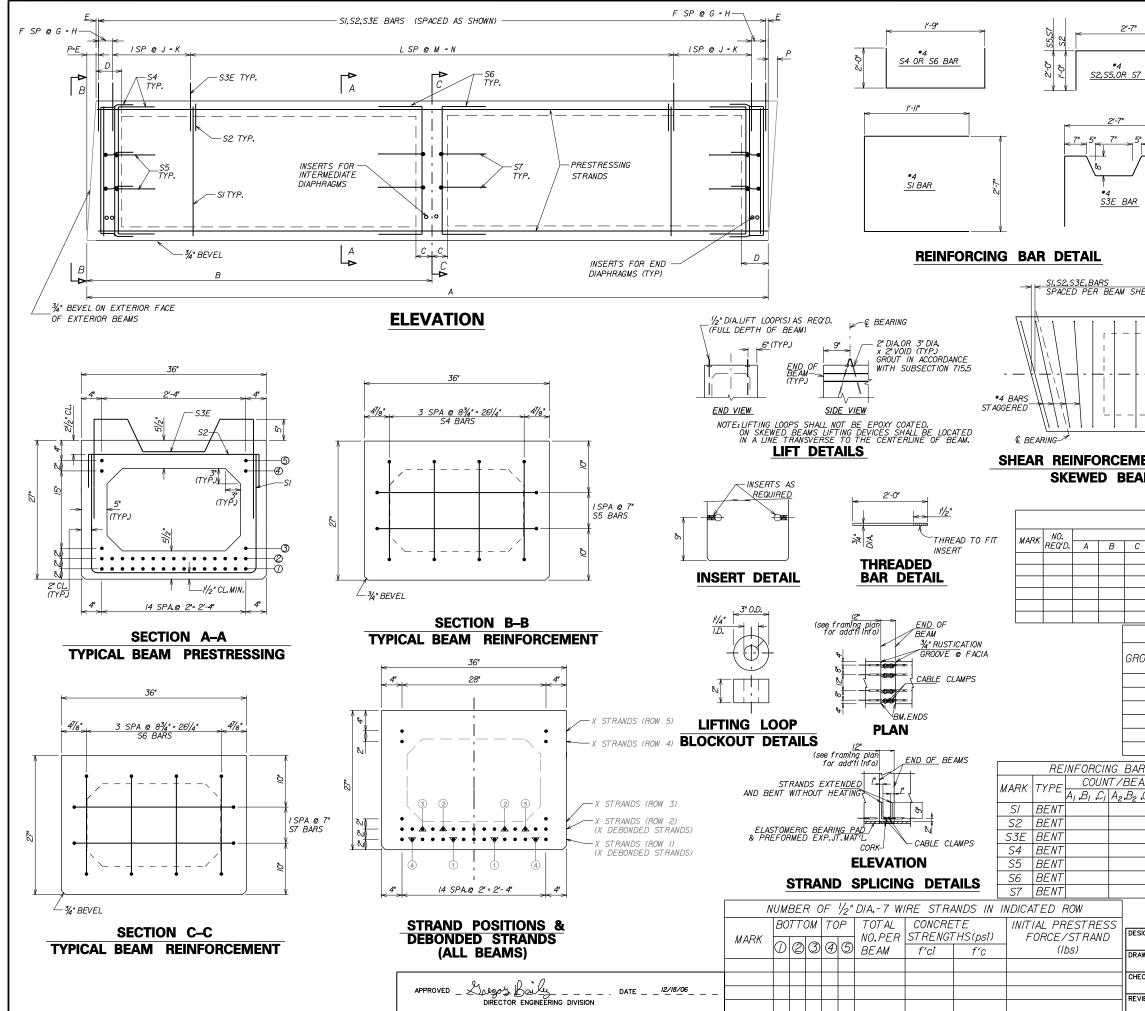
		NUMBERS	DISTRICT	COUNTY	SHEET	TOTAL
7"	STATE	FEDERAL			NO.	
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5" <u>7"</u>	PRETENS AN INITIA STRAND. THE FIN THE EXI OR DETE	SIONED XXXX P.C AL FORCE OF XX. THE DEPARTMEN ISHED UNITS COI FENT THAT THE ERIORATION RESIS	.BOX BEAN (X Ibs TO T WILL RE (TAINED H ENGINEER TANCE IS	AS SHALL BE USU EACH LOW-RELAX JECT THE BEAM ONEYCOMBED CON DETERMINES TH REDUCED.BEAM HANGES IS LIMITE	ED.APPLY ATION S IF CRETE TO HE STREN SHORTENI) IGTH NG
<u>}</u>	UNCOATE ACCORDA SYMMETF STRAND THE SEC	D SEVEN WIRE L NCE WITH AASHT RICALLY IN EACH LOCATIONS AND T QUENCE OF THE	OW-RELAXA O M2O3.TH LAYER.SHO THE DETE STRAND H	/2"NOMINAL DIA., ATION STRAND IN 1E STRANDS SHA P DRAWINGS SHA NSIONING PLAN B. PATTERN.THE SH TTERN FOR DEB	ALL BE PL ALL SHOW Y NUMBER	ACED THE ING NGS
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	STEEL E	ARS PROVIDED A MUST CONFORM 1	N EQUAL S	TED INSTEAD OF TEEL AREA IS A EQUIREMENTS OF	TT AINED.W	
	ALL NON-	PRESTRESSING R	EINFORCIN	G BARS SHALL BE	GRADE 6	50.
			ARS DESI	GNATED "E" SHALL	BE	
		NDS SHALL BE E		INSIDE STIRRUP	CAGE FOF	R THE
		ENGTH OF BEAN			~ ~ ~ ~ ~ ~	
	PROVAL.L	IFTING SHALL BE	BY EQUAL	ON SHOP DRAWIN LOADS TO EACH	DEVICE.	
IENT DET			1 603-01 , P	RESTRESSED COI	VCRETE	
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			_	SHIELDING LE	NGTH	FRAN
ROUP	R OF STRAND					i nom

	DEBONDING OF STRANDS												
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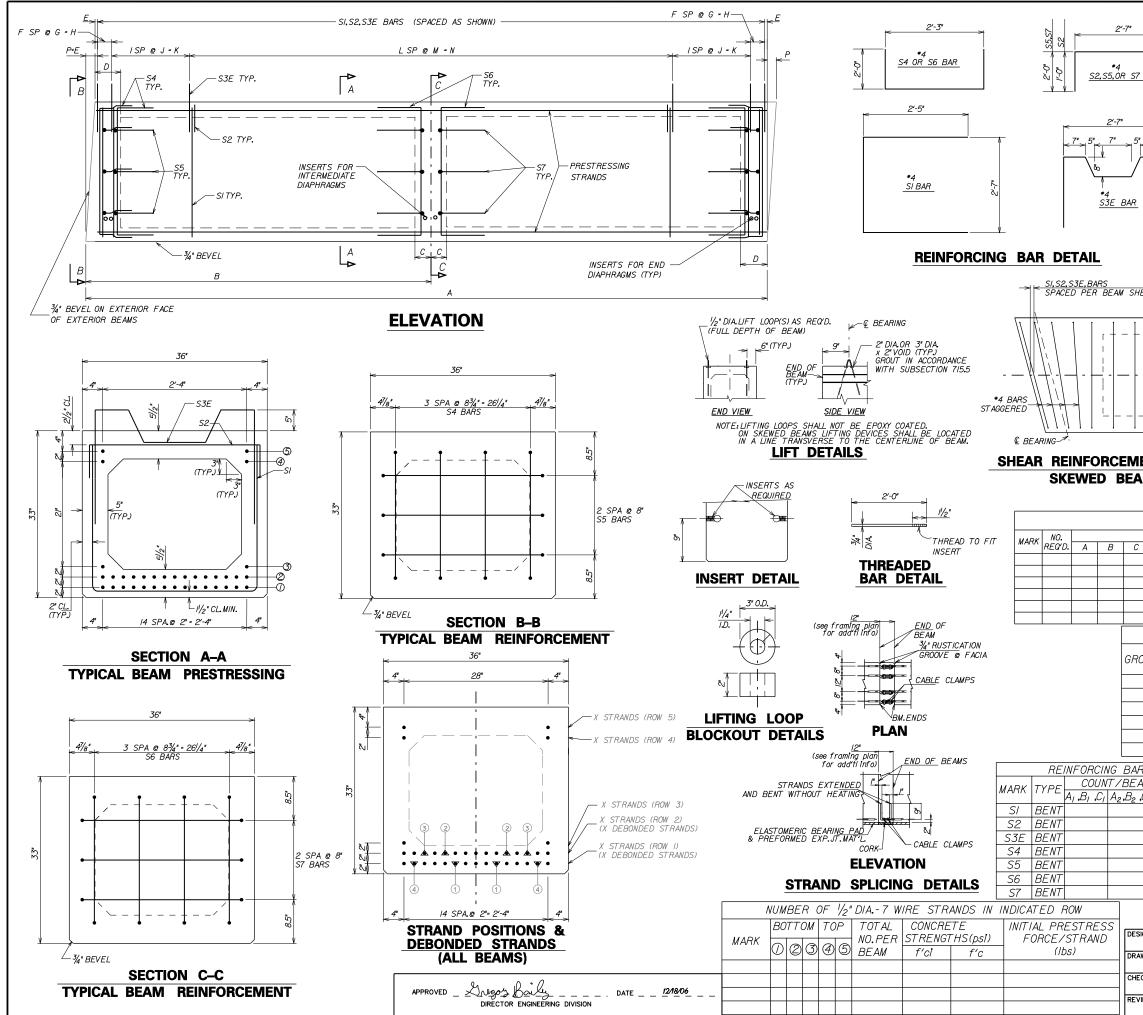
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					PARTMENT IGINEERING		WAYS	
DESIGNEI		DATE 12/5/06						
DRAWN								
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REVIEWE	D			BRE	D–B 17X36		BRIDGE N	10.



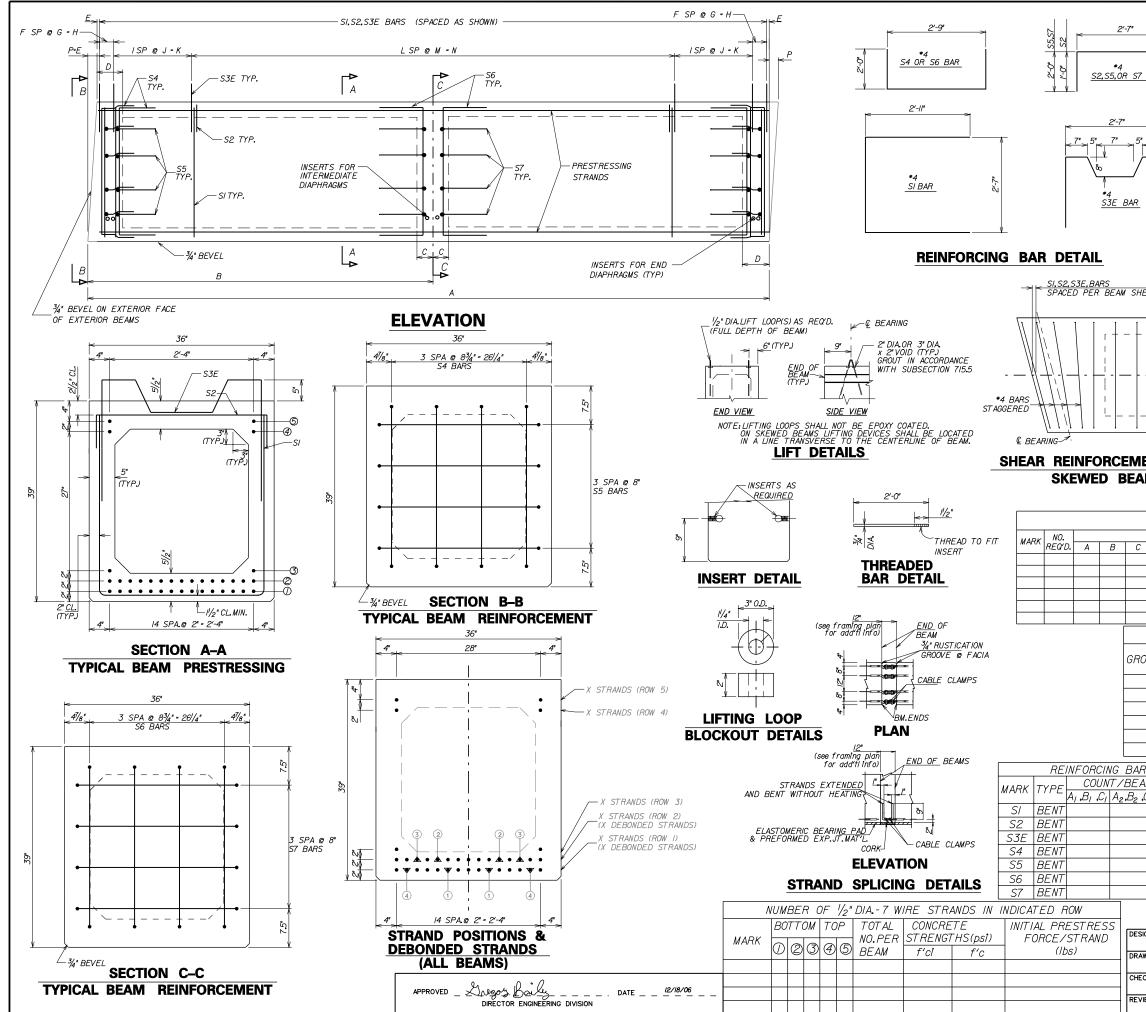
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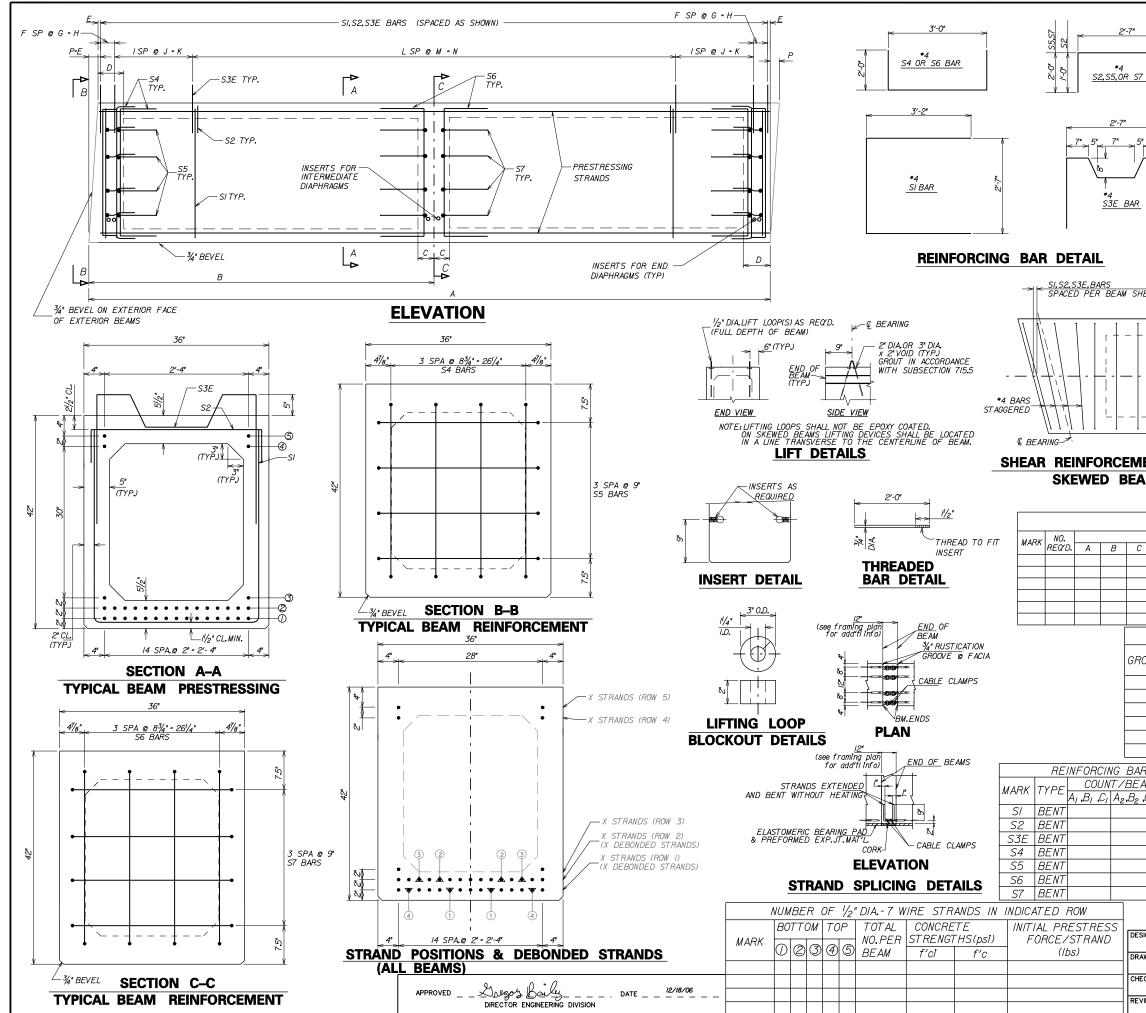
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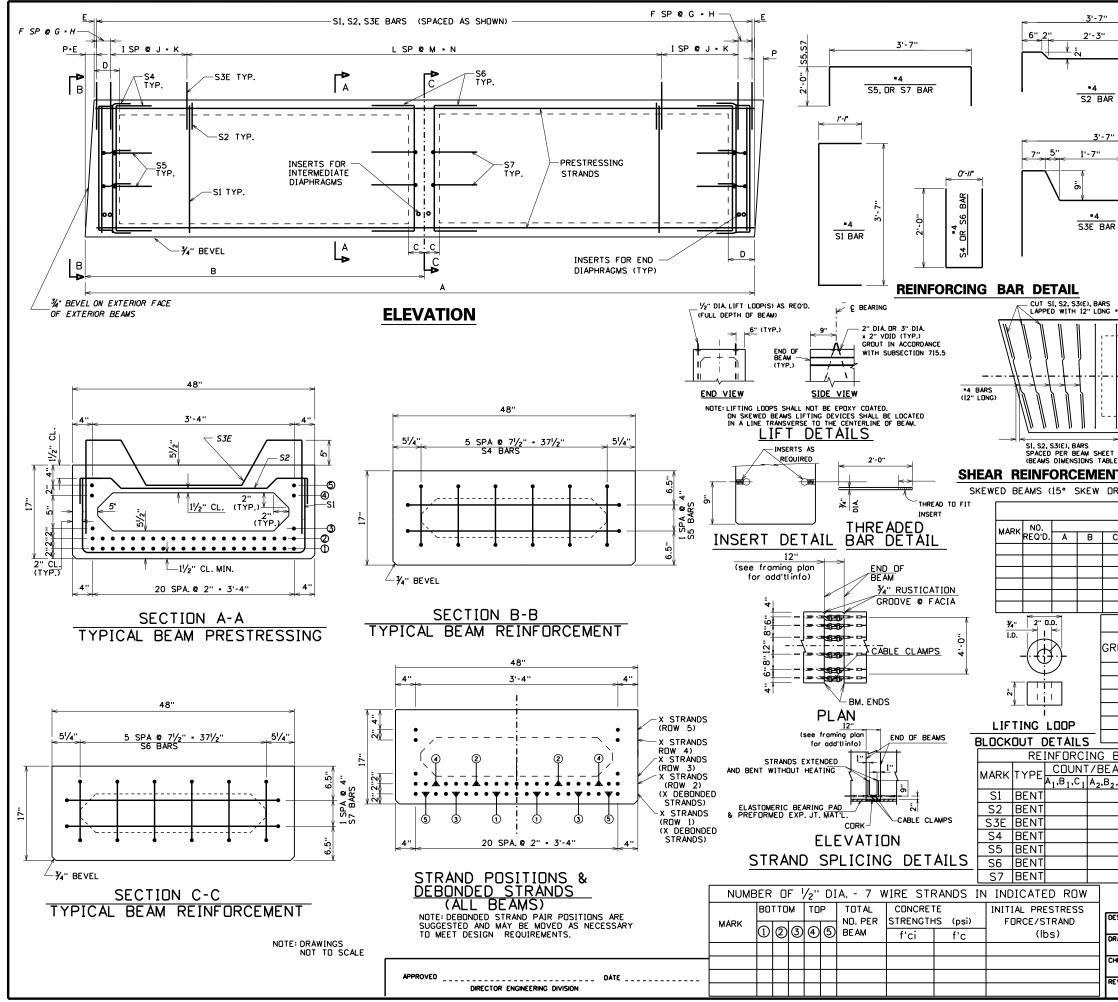
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		ALL NON-PRESTRESSING REINFORCING BARS SHALL BE GRADE 60.																
	ALL REINFORCING STEEL BARS DESIGNATED "E" SHALL BE EPOXY COATED. ALL STRANDS SHALL BE ENCLOSED INSIDE STIRRUP CAGE FOR THE ENTIRE LENGTH OF BEAM.																	
IEľ	ТИ	DEI	٢A	IL								DIN	SIDE	STIRRU		CAGE	FUR	I HE
	NT DETAIL UFTING DEVICES SHALL BE SHOWN ON SHOP DRAWINGS FOR AP- PROVALLIFTING SHALL BE BY EQUAL LOADS TO EACH DEVICE. INCLUDE PAYMENT IN ITEM 603-01, PRESTRESSED CONCRETE																	
						ICLUDE E AMS, F				ITEM	603-0	I,PR	ESTRE	SSED	CON	ICRET	Ε	
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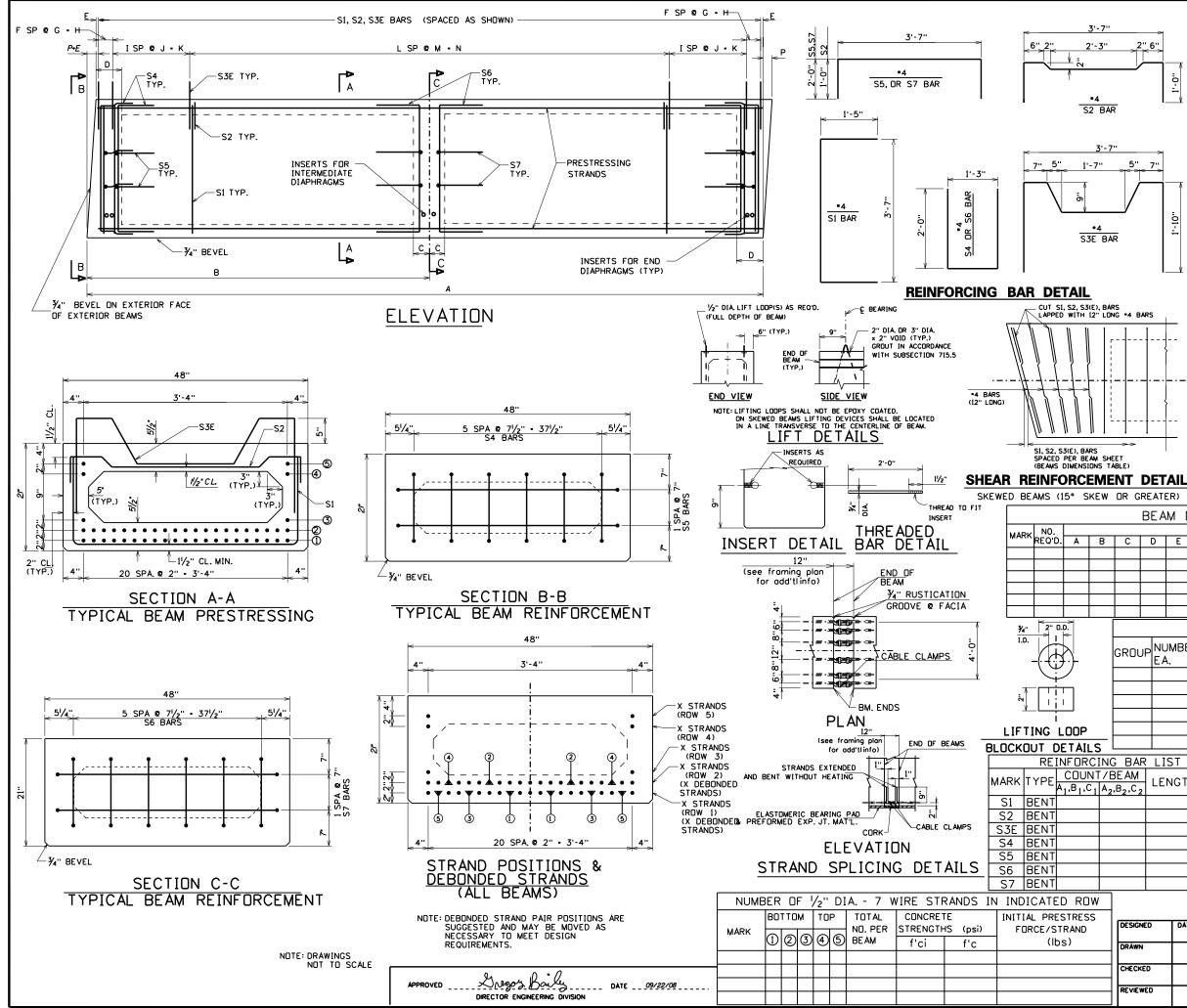
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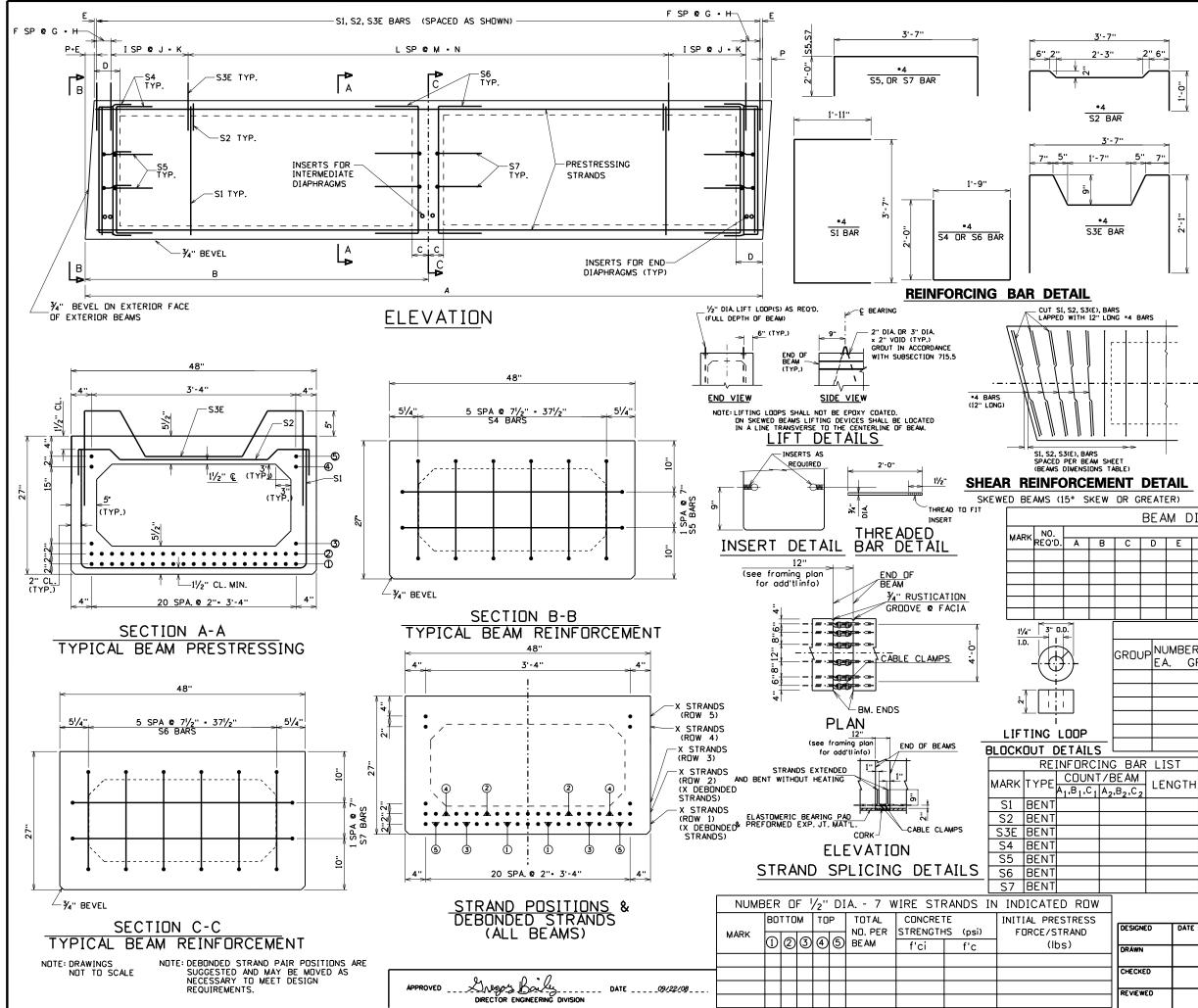
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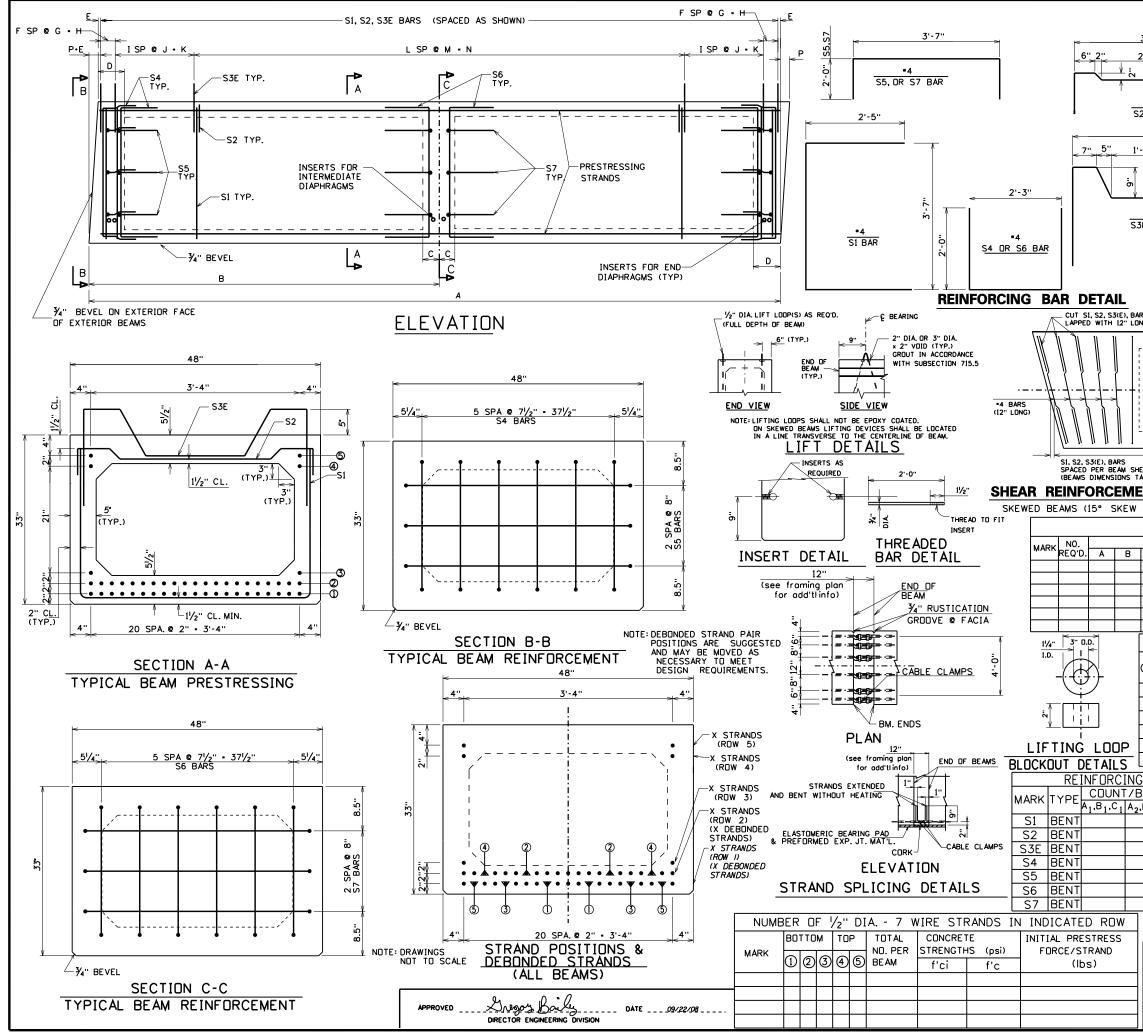
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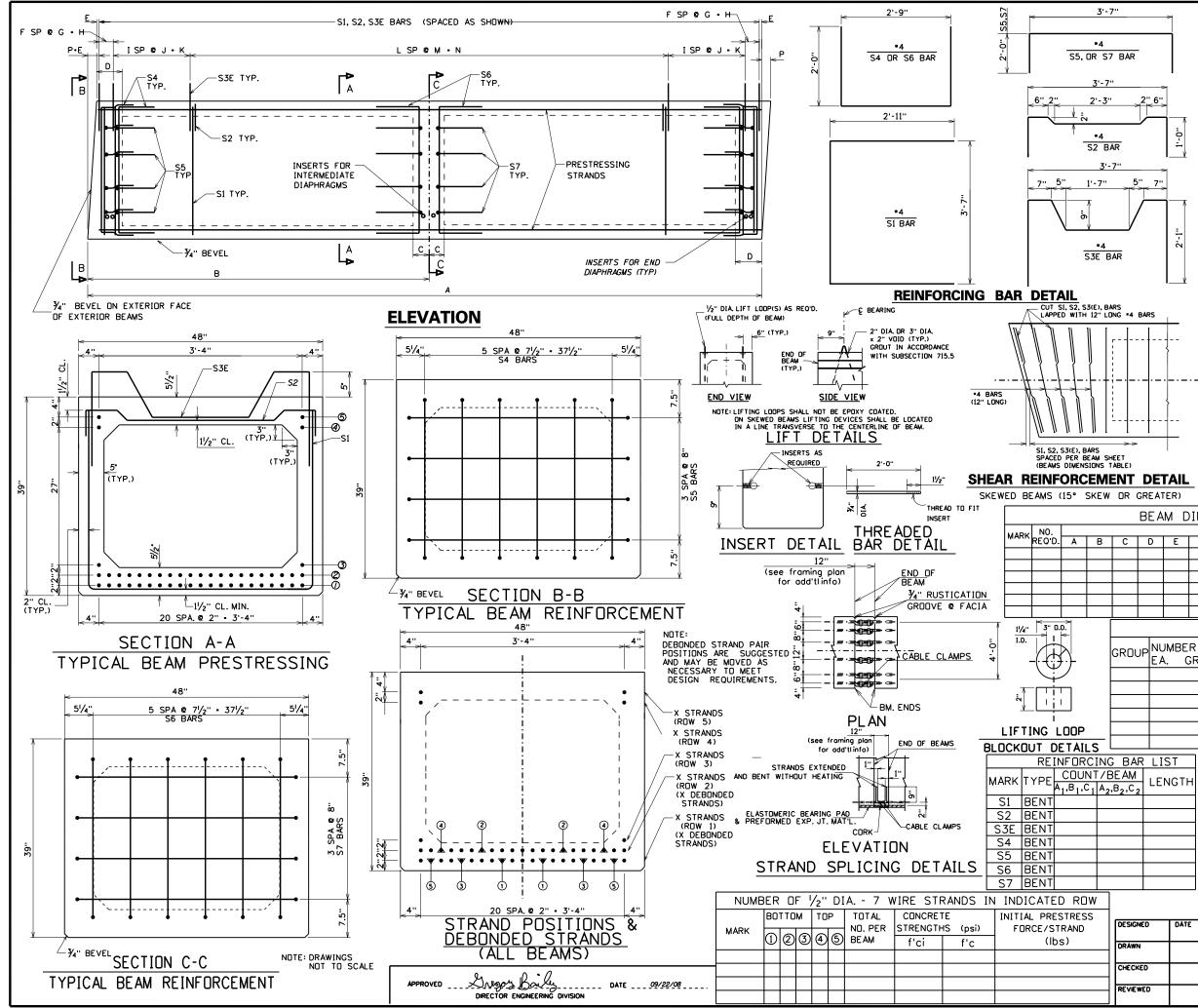
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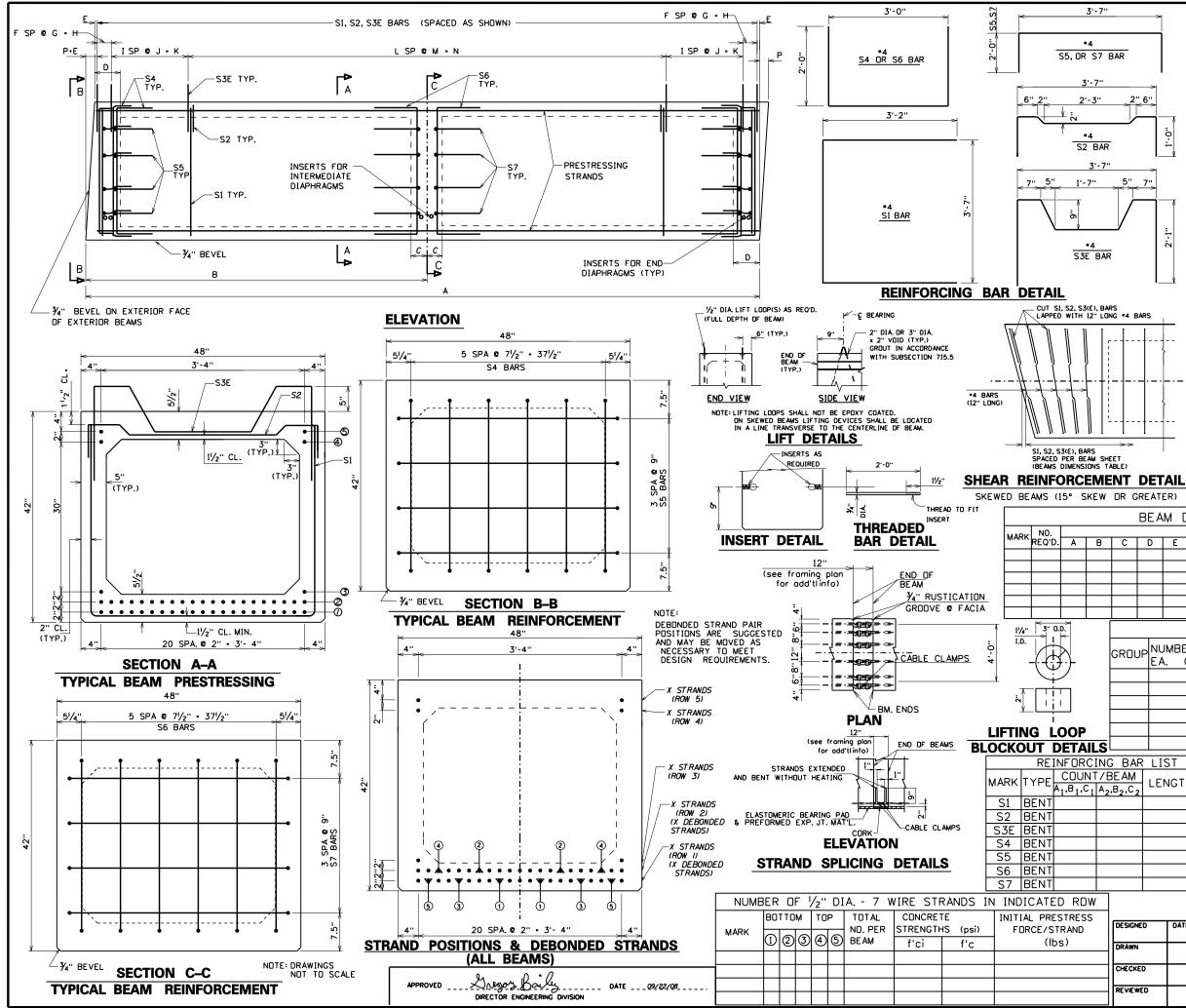
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PROJECT NUMBERS SHEET NO. DISTRIC COUNTY TOTAL STATE FEDERAL

NOTES:

THE CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF AT LEAST XXX 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 XXX psiWITHIN 28 DAYS. PRETENSIONED XXXX P. C. BOX BEAMS SHALL BE USED. APPLY AN INITIAL FORCE OF XXXX Ibs TO EACH LOW-RELAXATION STRAND. THE DEPARTMENT WILL REJECT THE BEAMS IF THE FINISHED UNITS CONTAINED 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. PRESTRESSING STRANDS SHALL BE 1/2" NOMINAL DIA., GRADE 270, UNCOATED SEVEN WIRE LOW-RELAXATION STRAND IN ACCORDANCE WITH AASHTO M203, THE STRANDS SHALL BE PLACED SYMMETRICALLY IN EACH LAYER, SHOP DRAWINGS SHALL SHOW THE STRAND LOCATIONS AND THE DETENSIONING PLAN BY NUMBERING THE SEQUENCE OF THE STRAND PATTERN. THE SHOP DRAWINGS SHALL ALSO SHOW THE STRAND PATTERN FOR DEBONDED STRANDS. ROUGHEN THE TOP SURFACE OF EACH BEAM TO AN AMPLITUDE OF APPROXIMATELY 1/4" AND MAINTAIN CLEAN AND FREE OF LAITANCE. DEFORMED WIRE FABRIC IS PERMITTED INSTEAD OF REINFORCING STEEL BARS PROVIDED AN EQUAL STEEL AREA IS ATTAINED. WIRE FABRIC MUST CONFORM TO THE REQUIREMENTS OF AASHTO SECTION M225. ALL NON-PRESTRESSING REINFORCING BARS SHALL BE GRADE 60. ALL REINFORCING STEEL BARS DESIGNATED "E" SHALL BE EPDXY CDATED. ALL STRANDS SHALL BE ENCLOSED INSIDE STIRRUP CAGE FOR THE ENTIRE LENGTH OF BEAM. LIFTING DEVICES SHALL BE SHOWN ON SHOP DRAWINGS FOR AP-PROVAL LIFTING SHALL BE BY EQUAL LOADS TO EACH DEVICE. INCLUDE PAYMENT IN ITEM 603-01, PRESTRESSED CONCRETE BEAMS, PER FOOT. BEAM DIMENSIONS (MEASURED ALONG & BEAM) DIMENSIONS
 DIMENSIONS
 APPROX. WEIGHT

 H
 I
 J
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 L
 M
 N
 P
 Q
 EACH (Ibs)
 F G DEBONDING OF STRANDS GROUP NUMBER OF STRANDS HEIGHT OF SHIELDING LENGTH FROM EA. GROUP STRAND (IN) EA. BM. END (IN) LENGTH DATE: BY: REVISION NO. W. VA. DEPARTMENT OF HIGHWAYS ENGINEERING DIVISION

42" X 48" P.C. SPREAD

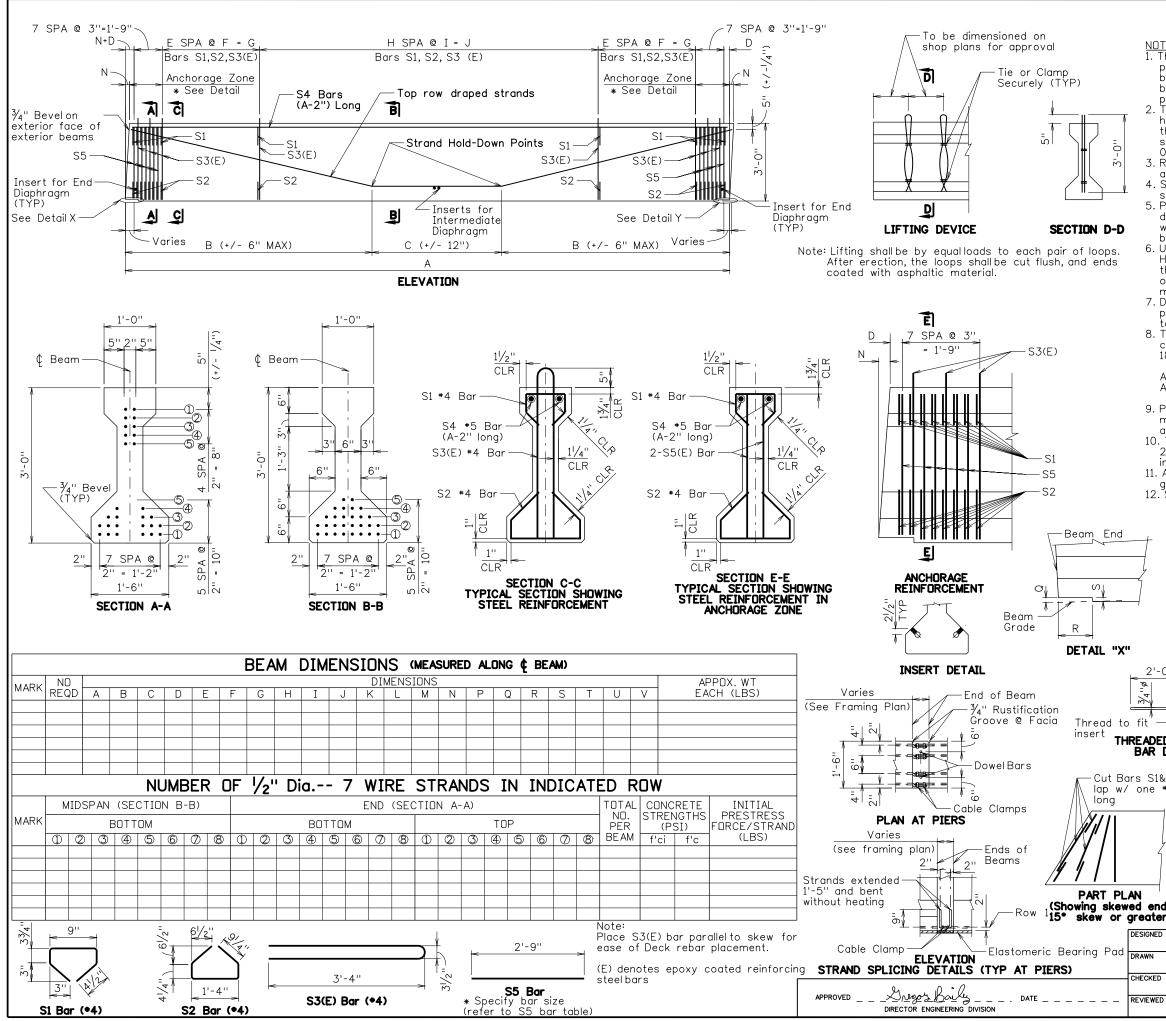
BOX BEAM DETAILS

BRD-B 42X48

SHEET

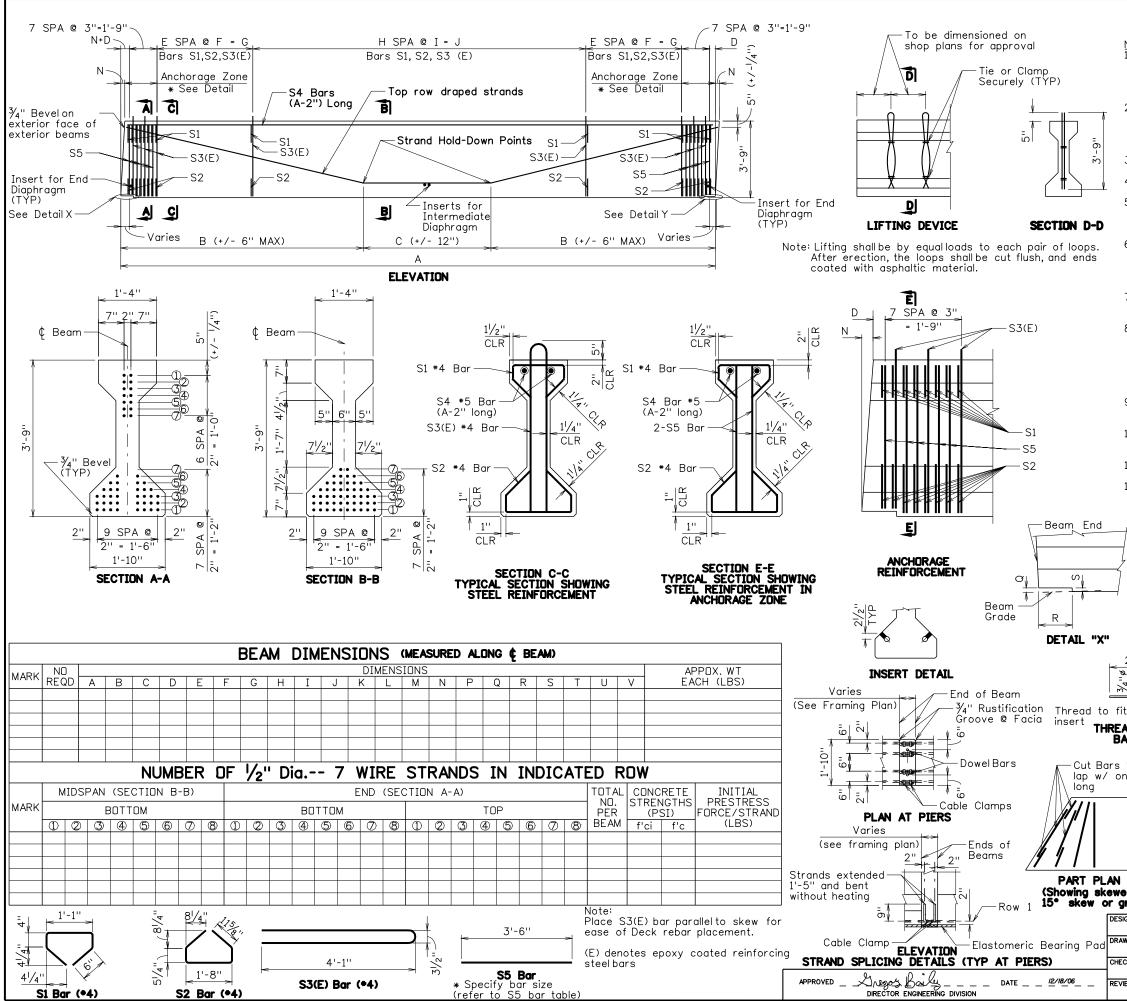
OF

BRIDGE NO.

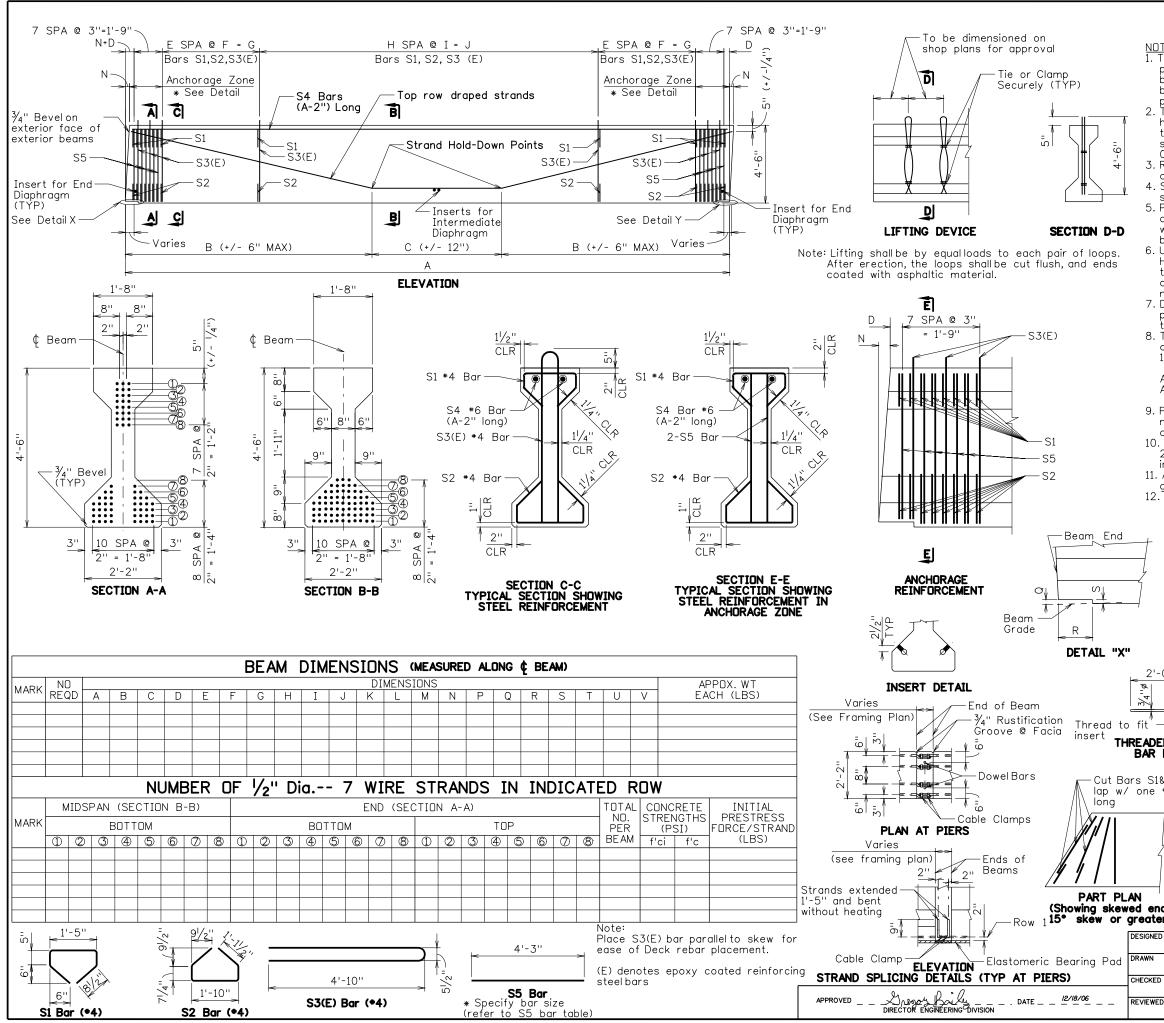


			NUMBERS	DISTRICT	COUNTY	SHEET	TOTAL
		STATE	FEDERAL			NO.	
NOTES:		ete shall atta	in a compres	siva at	renath of at	least \	
psi, c	as sh	own by stand	lard cylinders	cured	identically w	ith the	~~~
		fore transfer leasing the e					YYY
		28 days. rtment willrej	ect the beam	s if th	e finished un	its con	tained
hone	ycòm	bed concrete gth or deterio	e to the exte	nt that	the Engineer	^r deter	
shor	tening	g due to shri	nking and ela	stic ch	anges is limit	ted to	
0.00 3. Roug	hen	the tọp surfa	ce of each b	eam t	o an amplitu	de of	
appri 4. Shop	oximo drav	ntely ¹ /4 inch wings shall sha	and maintair w the deten	i clean sionina	and free of	laitanc berina	e. the
sequ	ence	of the strand	d pattern.	-		-	
diam	eter)	ing strands s low relaxatio	n uncoated s	even v	vire strand in	accor	dance
		ITD M 203 g I to the stra		n initial	stress of 20	2.5 ps	i shall
6. Unco	ated	seven wire s if the Contra	tress relieved	d strar this al	id may be si ternate he s	ubstitut hall pro	ed. vide
the d	desig	n for the stre	ess relieved :	strand	and shall revi	ise the	, iuo
modi	ficati	ns to reflect on shall be m	ade at the C	ontract	or's expense	•	
7. Defo provi	rmed ided	wire fabric i an equalsteel	s permitted i area is prov	nstead ided. V	of reinforcir Vire fabric m	ig stee ust cor	lbars nform
to th	ne re	quirements o [.] omeric bearir	f AASHTO See	ction M	225.		
conf	orm	to AASHTO D	ivision 2, Sec	tion 18	3 Duro 60. S	Section	andir
		specifies lamiı 	nate material	to be.			
	/ A24 / A51	45 70,Grade 36					
9. Pavr	nent i	for Elastomer	ic bearing pa	ds and	any preform	ned ioi	nt
mate	erial sp	pecified shall l	be included ir	1 Item	603-01. See	e pier 8	λ.
10. The	thre	sheets for de aded inserts	shall have a i	minimur	n safe work	load o	of .
		n tension. All Omit inserts					crete
		ed inserts and I after fabric					
12. S5	vertio	calreinforcing ned for bursti	bars placed	at the	ends of the	beam	
		S5 bar table		: us pe	F LRED 5.10.	10.1.	
-+-	В	eam End		REINF	ORCING BAR	LIST	
-	+		MARK SIZ			TAL LE	NGTH
Ļ	<u> </u>		S1				
	7 4	>	S2 = S3(E)				
Dei	/		S4				
Bea Gra					· · · · · · · · · · · · · · · · · · ·		
	DE1	AIL "Y"	MARK		CORCING BAR		TAL
2'-0''			*S5	SIZE			
<u>i</u> ø >	11/2					I	
4	<u> <²/2</u> ■	-					
"it [*]		NO.	DESC	RIPTIC	JIN	LOCA	NULL
		R					
AR DET	AIL						
S1&S2							
one #4x1	. 2						
		NO.	REV	SION		DATE	BY:
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Ž		WEST VIRG				PORTA	
			DIVISION		IIGHWAYS		
end, eater)							
	DATE						
AWN							
ECKED		2	AASHTO ⁻ 6" PRECAST (

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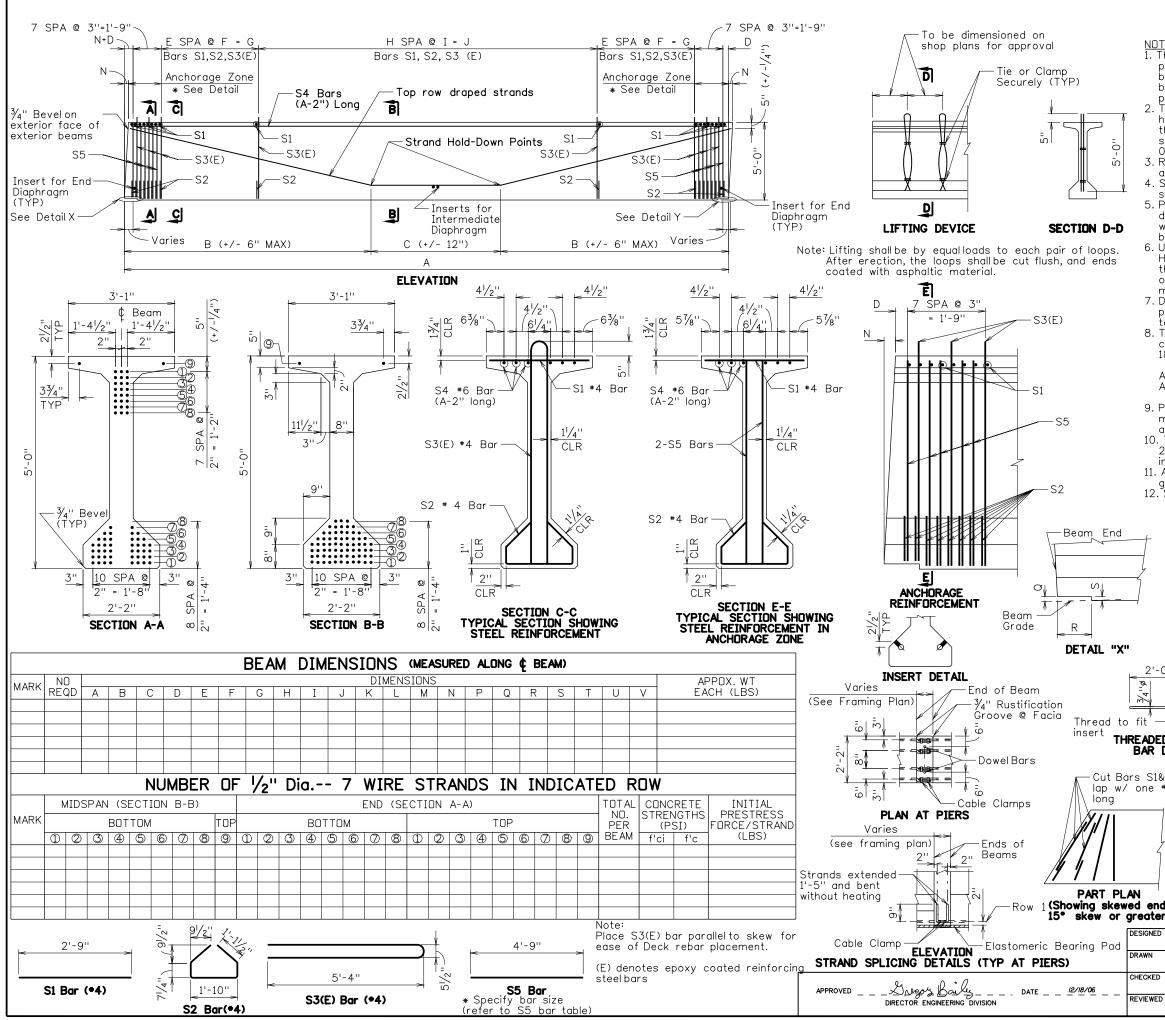
			PRO. STATE	JECT	NUMBERS FEDEF	AL.	DISTRICT	COUNTY		SHEET NO.	TOTAL
NOTES: 1. The c	l	ete	shall a	ittai	n a con	nores	sive st	rength of a	 http://doi.org/10.00000000000000000000000000000000000	least X	XX
psi, a beam befor psi wil	is sha is, be re rel thin 2	own fore leasi 28 c	by st trans ng the days.	and sfer e er	ard cylii ring bor nd anch	nders nd str ors. (cured ess to Cylinder	identically the concr strength	wi et sho	th the e; or all beY`	ΥYY
honey the s	ycom streng ening	bed gth (concr or det	ete erio	to the ration r	exte esisto	nt that ance is	e finished u the Engine reduced. anges is lir	er Be	deteri am	
3. Rough	hen t oxima	tely	∐⁄⊿ i	nch	and mo	iintain	clean	o an ampli and free o	of∣	laitanc	e.
4. Shop seque	drav ence	vings of t	s shall :he sti	sho rand	w the a I patter	deten: n.	sioning	plan by nu	Imt	bering	the
5. Prest diame with	ressi eter) AASH	ng s Iow TD I	strand relax M 203	s sł atior 3 gr	nallbe s n uncoa ade 27	tabiliz ted s	even w	and (1/2 ir vire strand stress of 2	in	accor	dance
6. Uncoc Howe	aˈted ver, i	sev f th	e Con	e st trac	tress re tor cho	oses	this al	d may be ternate, he	sł	nall pro	
origin modif	ial pla ficatio	ns t on s	o refl hall be	lect mc	these a de at t	chang he Ca	es. Thi ontract	and shallre s design a or's expens of reinford	nd se.	plan	lbara
provio to th	ded (le re	an e quire	qual s ements	teel s of	area is AASHTI	provi J Sec	ided. W ction M	/ire fabric 225.	mι	ust cor	nform
18.2.3	3.2 s	spec	AASHT	0 D amin	ivision 2 ate ma	2, Sec terial	tion 18 to be:	restressed Duro 60.	Se	ection	
	A57	70,0	Grade		o k*		do '	anıf			~+
máter abutr	rial sp nent	becif shee	^r ied sł ets fo	nall b r de	pe incluc stails.	led in	Item	any prefo 603-01. S	ee	pier 8	k
2500	lb ir	n te	nsion.	All i	inserts	shall b	oe plug		ve	nt con	crete
	2500 lb in tension. All inserts shall be plugged to prevent concrete intrusion. Dmit inserts on exterior face of exterior beams. 1. All threaded inserts and anchorage dowels are to be hot-dip										
galva	nized	aft	er fab	pricc	ation. Ir	clude	the c	ost in Item ends of th	16	603-01	•
is d	esign	ed t	for bu	rstir	ng resis			r LRFD 5.1			
Refe	_		bar t		·						
† -	-LBe	eam	End-	-7	MARK	SIZE		T/BEAM T	AR OT.		NGTH
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1	i –			>↓	S2						
F	-		<u></u>	, V	S3(E) S4						
Bea Gra			U			1					
		r⊲ AIL	"Y"		[1	ORCING B		1	T 44
2'-0''			•		-	MARK *S5	SIZE	COUNT/BE	<u>-</u> AN		TAL
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ne #4x12	<u>ک</u>										
	ł	NO.	,			REVI	SION			DATE	BY:
ź	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS										
	ENGINEERING DIVISION										
ed end, preater)											
	DATE 2/5/06										
CKED) TVP			SHE	ET	
IEWED					AASHTC PRECAS			M		OF BRIDGE	NO.
					BRD-						-



		PROJECT STATE	NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
	ĺ						
		ete shall attai					XX
beams	s, be	own by stand fore transfer	ring bond st	ress to	the concre	te; or	
		leasing the ei 28 days.	nd anchors.	Cylinde	r strength sh	iall beY`	YYY
2. The D)epar	tment will rej bed concrete					
the st	treng	gth or deteric	oration resist	ance is	reduced. Be	eam	1111103
0.000	5L.	due to shrir	5		5		
appro	xima	he top surfa tely 1⁄4 inch	and maintair	n clean	and free of	laitanc	е.
4. Shop	draw	vings shall sho of the strand	w the deten	sioning	plan by num	bering	the
5. Prestr	ressi	ng strands s low relaxatio	hall be stabili.	zed str	and (1/2 inc	h nomi	nal dance
with A	ASH	TO M 203 gi	rade 270. Ar				
6. Uncoa	ited	l to the strai seven wire s	tress relieve	d strar	id may be si	ubstitut	ed.
Howev the de	/er,i esiar	f the Contrac for the stre	ctor chooses ess relieved :	this al strand	ternate, he s and shall revi	hall pro ise the	vide
oriaina	al pĨa	ns to reflect on shallbe ma	these chana	es. Th	is desian and	plan	
7. Deform	med	wire fabric i	s permitted i	nstead	of reinforcir	ig stee	lbars
to the	e red	an equalsteel quirements of	f AASHTO Se	ction M	225.		
8. The E confo	lasto. rm	omeric bearin to AASHTO D	g pads under vivision 2, Sec	the p tion 18	restressed b 3 Duro 60. S	eams s Section	shall
		specifies lamir					
ASTM ASTM		15 70,Grade 36					
			ic boaring po	ide and	any proform	nod ioi	nt
mater	ial sp	or Elastomer	be included in	n Item	603-01. See	e pier 8	k l
10. The '	three	sheets for de aded inserts	shall have a	minimur	n safe work	load a	of
2500 intrusi	lb ir ion.	n tension. All Omit inserts	inserts shall l on exterior f	be plug ace of	ged to preve exterior bea	ent con ms.	crete
11. All thr	eade	ed inserts and after fabrico	d anchorage	dowels	are to be h	not-dip	
12. S5 v	ertic	calreinforcing	bars placed	at the	ends of the	beam	
		ed for bursti S5 bar table		e us pe	er LRFD 3.10.	.10.1.	
+	Be	eam End-7		REINF	ORCING BAR	LIST]
	<u> </u>				IT/BEAM TOT		NGTH
	-		S1 S2				
			= S3(E)				
/ Bear	 m —		S4				
Grad		< U >		DETNE		TOT	
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2'-0''			*S5				
- 4- β-	_1 /2'	-	BE	ARING]
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"it <i>"</i> /							
ADED AN		к					
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s S1&S2 c one #4x12						· -	
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	t	NO.	REV	SION		DATE	BY:
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1					IGHWAYS		
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eater)							
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ECKED			AASHTO TY	PE IV	S⊦	IEET	
		54″	PRECAST CC		ам ⊢	OF	NO

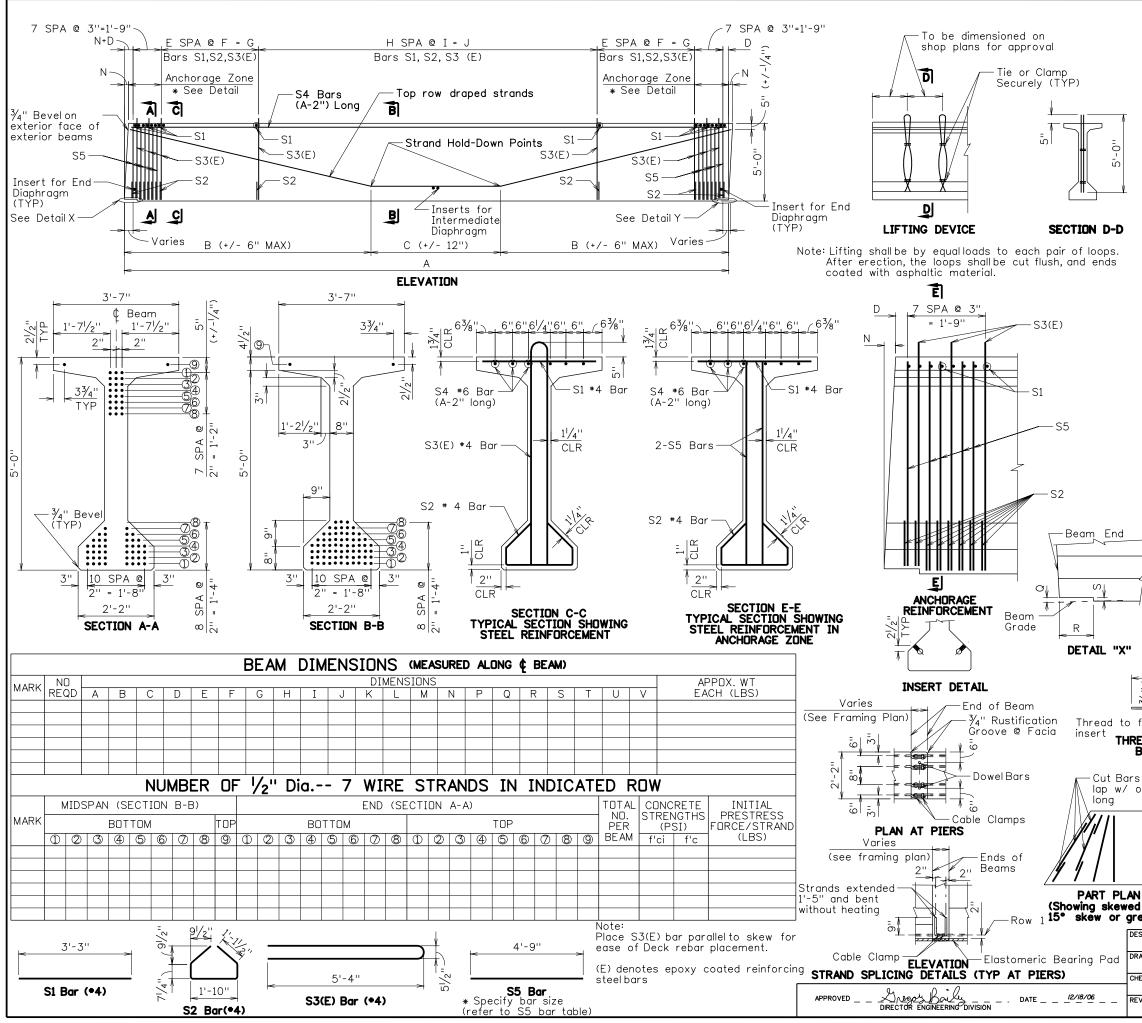
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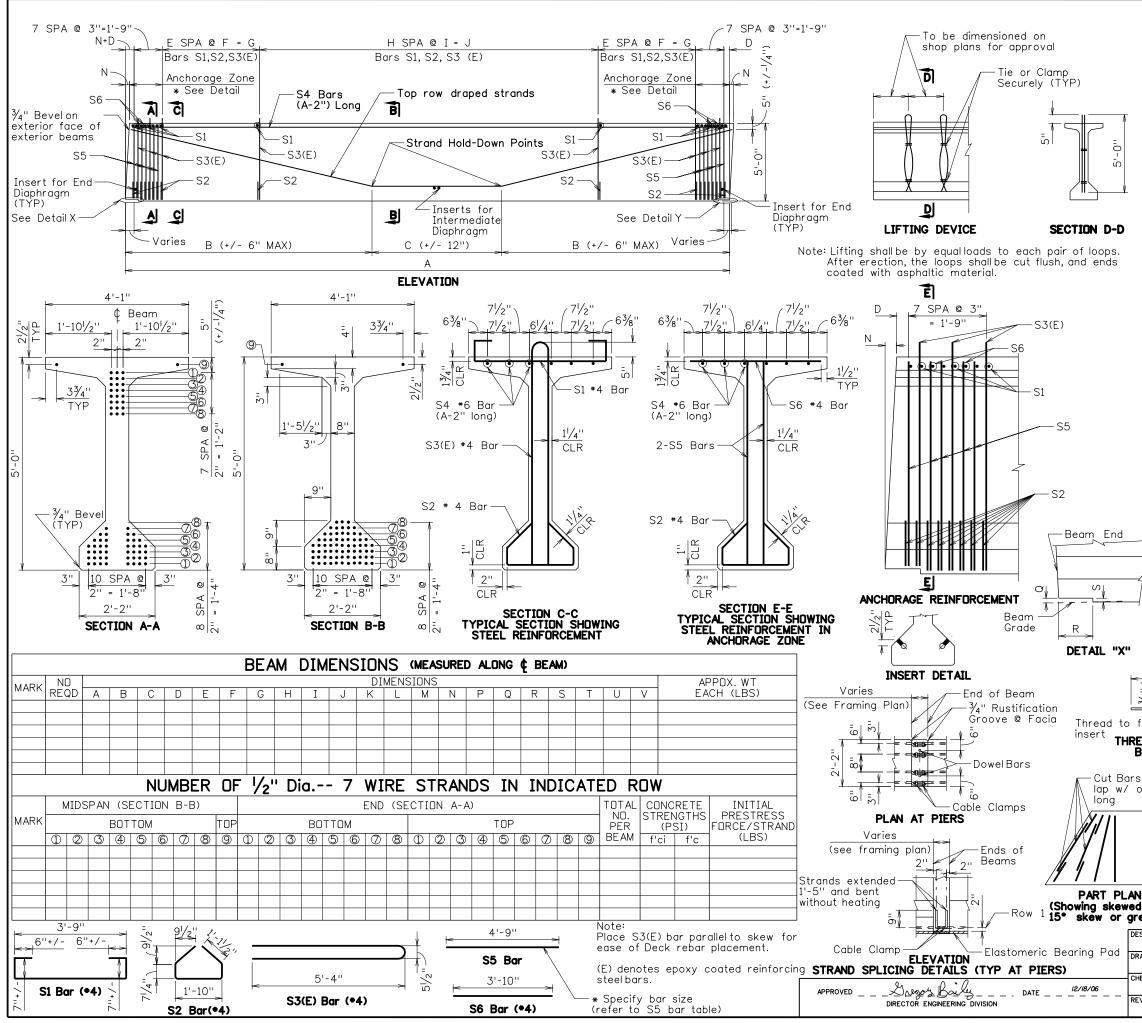


		PROJECT STATE	NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
NOTES: 1. The		ete shall atta	in a compres	l sive st	renath of at	least >	
psi,	as sh	own by stand	lard cylinders	cured	identically v	vith the	
befo	ore re	fore transfer leasing the e	nd anchors.	Cylinde	r strength sl	nall beY	YYY
2. The	Depai	28 days. rtment willrej	ect the beam	ns if the	e finished ur	its con	tained
hone	eycòm	bed concrete	e to the exte	nt that	the Enginee	r deter	mines
shor	tening	gth or deteric g due to shri					
3. Roud	05L. ahen t	the tọp surfa	ce of each b	eam t	o an amplitu	ide of	
appr	oxima	ately ¹ /4 inch wings shall sha	and maintair	n clean	and free of	laitanc	e. the
sequ	lence	of the strand	d pattern.				
diam	neter)	ing strands s low relaxatio	n uncoated s	seven w	<i>i</i> re strand i	n accor	dance
be c	applied	ITD M 203 g I to the stra	nd				
6. Unco How	oated ever i	seven wire s if the Contra	tress relieved	d stran this al	id may be s ternate he s	ubstitut shall pro	ed. vide
the	design	n for the stre	ess relieved :	strand	and shall rev	ise the	VIGC
mod	ificatio	ns to reflect on shall be m	ade at the Č	ontract	or's expense	e. '	
7. Defc prov	vided (wire fabric i an equalsteel	s permitted i area is prov	nstead ided. W	of reinforciı Iire fabric m	ng stee nust cor	lbars Iform
to t	he re	quirements o omeric bearin	f AASHTO See	ction M	225.		
conf	orm	to AASHTO D	Division 2, Sec	ction 18	B Duro 60. S	Section	shuii
		specifies lamiı 	nate material	to be:			
	M A24 M A57	45 70,Grade 36					
9. Payr	ment f	for Elastomer	ic bearing pa	ids, and	any prefor	med joi	nt
abut	ment	pecified shall sheets for de	etails.				
		aded inserts n tension. All					
intru	ision.	Omit inserts ed inserts an	on exterior f	ace of	exterior bec	ims.	
galv	anized	l after fabric	ation. Include	the c	ost in Item	603-01	
is	design	calreinforcing led_for_bursti	ng resistance	e as pe	ends of the er LRFD 5.10	.10.1.	
Rei	ter to	S5 bar table	э.				
+	B	eam End			ORCING BAR		
1			MARK SIZE	E COUN	IT/BEAM TO	TAL LE	NGTH
í	5-1		S2				
			= S3(E)				
	am —		S4				
Gr	ade			REINF	ORCING BAR	R LIST	
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× 4	<11/2	-	BEA	ARING	PADS		
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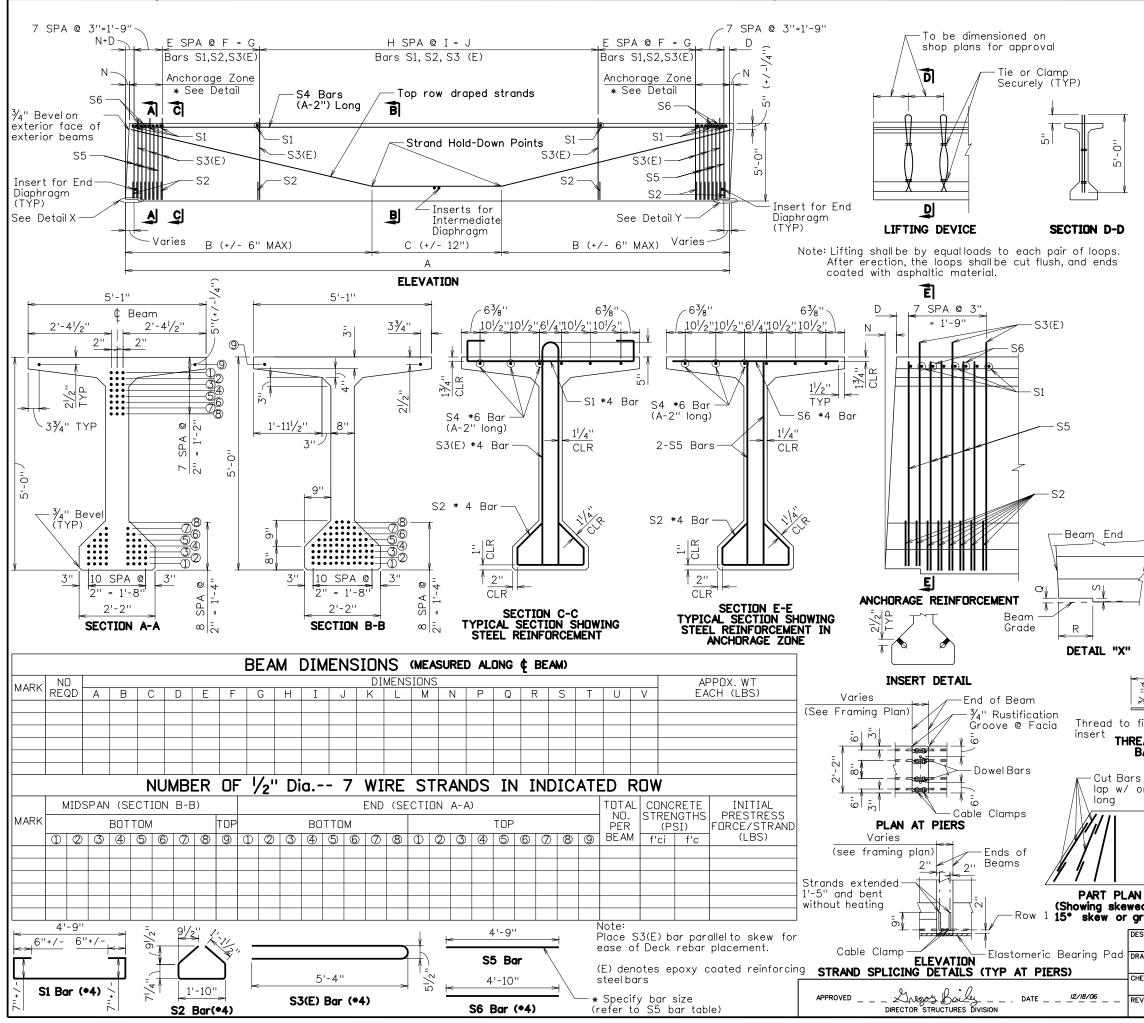
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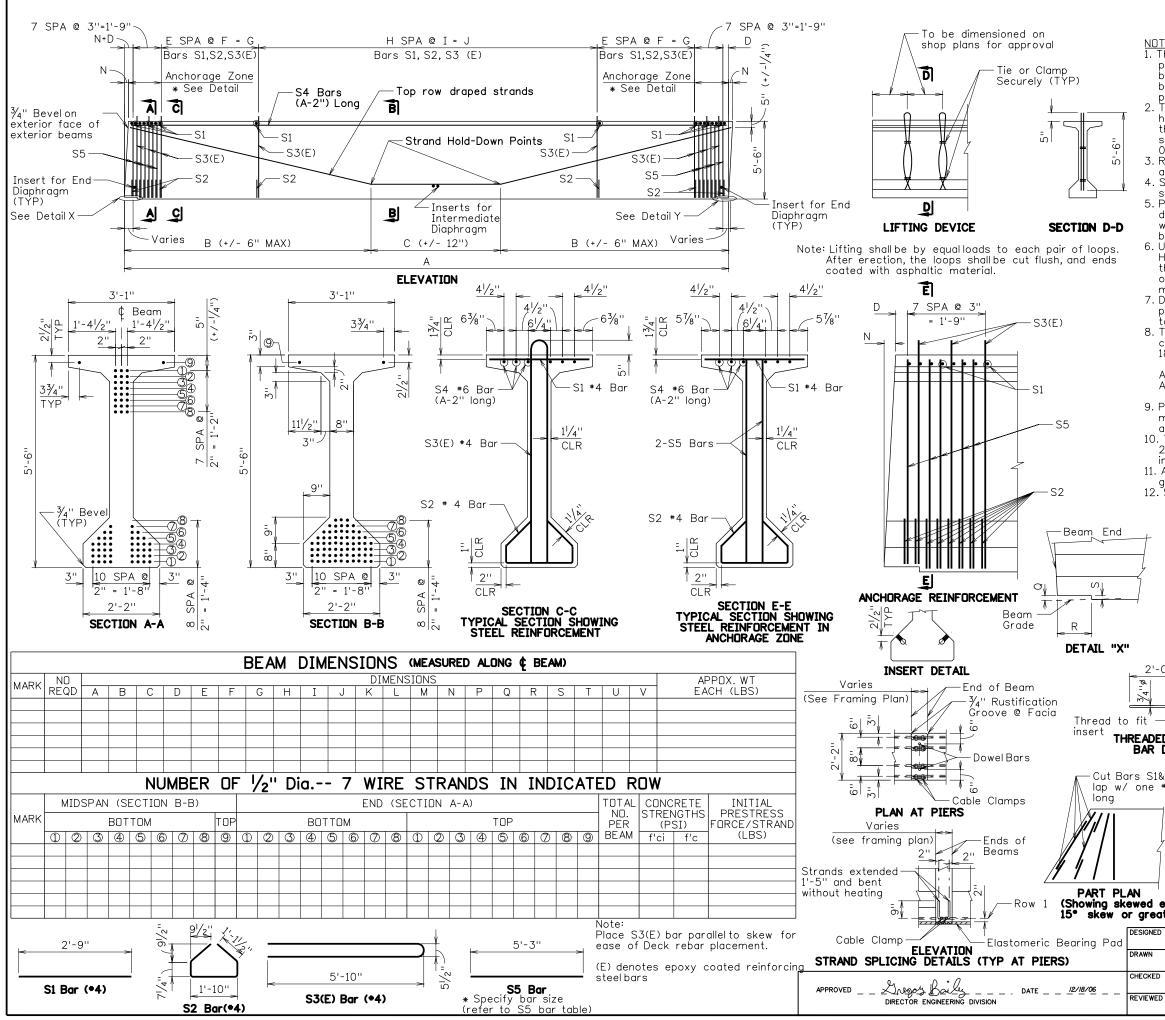
		F STA		NUMBERS FEDER	D	ISTRICT	COUNTY	·	SHEET NO.	TOTAL
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I. Ine psi,	as sh	own by	stanc	in a cor lard cyli	npress nders	cured	trength o identical	rat Iyw	ith the	* * *
bear	ms, be	efore tr	ansfei	rring bor	nd stre	ess to	o the cor r strengtl	icret	te; or	
		28 day		nu unch		yinide	rstrengt	1 51	unber	
2. The	Depa	rtmenť	willrej	ect the	beams	if th	e finishec the Engi	l uni	its cor	tained
							s reduced			mines
shor	rtening	g due t	o shri	nking an	d elas	tic ch	anges is	limit	ed to	
	005L. ghen '	the top	surfo	ice of e	ch be	am t	o an am	olitu	de of	
appr	roximo	utely 🖓	inch	and mo	intain	clean	and free	e of	laitanc	e.
4. Sho sequ	p ara Jence	of the	nali sno stran	d patter	n.	oning	plan by	num	bering	the
5. Pres	stress	ing stro	ands s	shallbe s	tabilize		and (1/2			
with	AASH		203 g	rade 27	0. An	initial	vire strar stress of	f 20	2.5 ps	i shall
be d	applied	d to the	e stra	ind stress re	lioved	strar	nd may b		betitut	tod
How	ever,	if the C	Contra	ctor cho	oses t	his a	Iternate, I	ie su ne s	hall pro	ovide
the	desig	n for th	ne str	ess relie	ved st	rand	and shall is design	revi	se the	:
mod	lificati	on shal	lbe m	ade at t	he Čor	ntract	tor's expe	ense	. '	
7. Defe	ormed	wire f	abric	is permi [.] Larea is	tted in	stead	of reinfo Vire fabri	orcin	ig stee	elbars nform
to t	the re	quireme	ents o	f AASHT	🛛 Sect	tion M	1225.			
8. The	Elast form	omeric	bearir	ng pads Division	under	the p	restresse 3 Duro 61	ed b	eams :	shall
18.2	.3.2	specifie	s Iami	nate ma	terial t	o be:		J. J	GUIUN	
∆⊂⊤	M A24	45								
		40 70, Gra	de 36							
9 Pav	ment ·	for Flag	tomer	ic heari	na nad	s and	any pre	forn	ned ic	int
mat	erials	pecified	shall	be includ	led in	Item	l any pre 603-01.	See	e pier	&
abut	tment	sheets	for d	etails.			m safe v			
250	0 lb i	'n tensio	on. All	inserts	shall be	e pluc	ged to p	reve	ent cor	ncrete
intru	usion.	Omit in	serts	on exte	rior fa	ce of	exterior	bea	ms.	
galv	anized	d after	fabric	ation. Ir	nclude	the c	are to l ost in Ite	em	603-0	1.
12. S5	verti	cal reinf	orcing	bars pl	aced o	at the	ends of er LRFD 5	the	beam	
					unce	us p		J.10.		
Re	ier to	S5 bc	ir tabi	e.						
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Be	B F ade			MARK S1 S2 S3(E)	MARK		TT/BEAM	TOT		INGTH
Be Gr 2'-0''	B 	rail "Y		MARK S1 S2 S3(E)	SIZE	REIN	TT/BEAM	TOT		
Be Gr	B F ade	rail "Y		MARK S1 S2 S3(E)	SIZE MARK *S5	REIN SIZE	FORCING	TOT		
Be Gr	B 	rail "Y	nd	MARK S1 S2 S3(E)	SIZE MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST)T AL
Be Gr 2'-0''	B 		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST	
Be Gr 2'-0'' fit EADED	B deam - ade DET 11/2 ANCHO		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST)T AL
Be Gr 2'-0'' fit EADED	B deam - ade DET 11/2 ANCHO		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST)T AL
Be Gr 2'-0'' fit ADED	B deam - ade DET 11/2 ANCHO FAIL		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST)T AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST)T AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST)T AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and		nd	MARK S1 S2 S3(E)	MARK *S5	REIN SIZE	FORCING COUNT/	TOT	LIST	DT AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and			MARK S1 S2 S3(E) S4	MARK *S5 BEAF DESCF	REINI SIZE RING RIPTIO	FORCING COUNT/ PADS N	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR		FORCING COUNT/ PADS IN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR REVISI		FORCING COUNT/ PADS DN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit ADED SAR DET	B and B and B and B and			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR REVISI		FORCING COUNT/ PADS IN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit EARED Sar DET S1&S2 one #4x	B and B and B and B and			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR REVISI		FORCING COUNT/ PADS DN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit fit SARED A SAR DET SARES2 Si&S2 Si&S2 Si & Si Si & Si &	B and B and B and B and			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR		FORCING COUNT/ PADS DN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' The second secon	B and DET 11/2 ANCHO ANCH			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR		FORCING COUNT/ PADS DN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit EADED A STAR DET SIGNED	B and DET 11/2 ANCHO ANCHO 12"			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR		FORCING COUNT/ PADS DN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit EARED Sar DET S1&S2 one #4x	B and DET 11/2 ANCHO ANCH			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCR		FORCING COUNT/ PADS DN	BAR	E LIST AL LE AL	DT AL
Be Gr 2'-0'' fit EADED A STAR DET SIGNED	B and DET 11/2 ANCHO ANCH		nd >,	INIA DE DIVIS	MARK *S5 BEA DESCF		FORCING COUNT/ PADS DN	BAR BEA BEA S	E LIST AL LE AL AL AL AL <th></th>	
Be Gr 2'-0'' fit EADED SIGNE SIGNE AWN	and 12''			MARK S1 S2 S3(E) S4	MARK *S5 BEA DESCF REVISI SION SINEER		FORCING COUNT/ PADS DN FORCING	BAR BEA BEA S	E LIST	



				NUMBERS		DISTRICT	COUNT	ŕ	SHEET	TOTAL
		STATE	-+	FEDE	RAL				NO.	
NOTES								<u> </u>		
psi, bear befo	as sh ms, be pre re	own by s fore trar leasing th	tando nsferi	ard cyli ring boi	nders nd str	cured ess to	rength o identical the cor r strengt	ly w ncret	ith the :e; or	
2. The hone the	Depai eycom stren	bed cono gth or de	creté eterio	to the ration i	exter resisto	nt that ince is	e finished the Eng reduced anges is	ineer I. B∈	⁻ deter eam	
3. Roue)05L. ghen t	the top s	surfac	ce of e	ach b	eam t	o an am and free	plitu	de of	0
4. Sho	p drav	wings sha of the s	III sho	w the	detens	sioning	plan by	num	bering	the
5. Pres diam with	stress neter) AASH	ing stran Iow rela: TO M 20	ds sł katior)3 gr	nallbe s n uncoc ade 27	stabiliz Ited s	even v	and (1/2 vire strar stress o	nd in	accor	dance
6. Unco How the	o'a'ted ever, desigr	if the Co n for the	re st ntrac stre	tor cho ss relie	ooses eved s	this al trand	nd may b Iternate, I and shall is design	ne s revi	hallprc se the	vide
mod 7. Defo	lificatio prmed	on shallb wire fab	e ma iric is	ide at l s permi	tted i	ontract nstead	or's expe of reinfo	ense prcin	Ig stee	
to t 8. The cont	he re Elast form	quiremen [:] omeric b	ts of earing TO Di	AASHT g pads ivision 1	Ö Sec under 2, Sec	tion M the p tion 18	Vire fabri 1225. restresse 3 Duro 6	ed b	eams s	
AST	M A24	•								
mát	erial sp		shall b	e inclu			any pre 603-01.			
10. The	e thre	aded inse	erts s	shall hav	ve a r shall b	ninimur e plug	n safe v ged to p	vork reve	load o ent con	of crete
intru	usion.	Omit inse	erts d	on exte	rior fo	ace of	exterior are to	bea	ms.	
galv	anized	l after fo	bricc	ition. Ir	nclude	the c	ost in Ite ends of	em	603-01	
is	desigr		urstir	ng resis			er LRFD :			
	B	eam End				REINF	ORCING	BAR	LIST	
_	+	~~	T/	MARK	SIZE		IT/BEAM	тот	AL LE	NGTH
Z	4		-	S1 S2						
			<u> ></u> ↓	S3(E)						
' Re	/ _∦ :am —		\ ^	S4						
	ade	_ U				REINF	ORCING	BAR	LIST	
	DET	AIL "Y"			MARK	SIZE	COUNT/	BEA	м тс	ITAL
2'-0''	-				*S5 S6					
4-8	11/2	-				DINO			1	
		- NO.				RING Riptic			LOCA	TION
fit' —/ FADED										
EADED A BAR DET										
s S1&S2										
one #4x	12"									
		NO.			REVI	SION			DATE	BY:
Ļ		W/EQT \					OF TR			
		VVE31 \	ling	DIVI	SION	OF H	IIGHWAY DIVISION			
N d end, reater)										
ESIGNED	DATE /2/5/06									
RAWN										
HECKED			знто	TYPE	IV	I PC	BEAM	SH	EET	
				EEP, 49					OF	

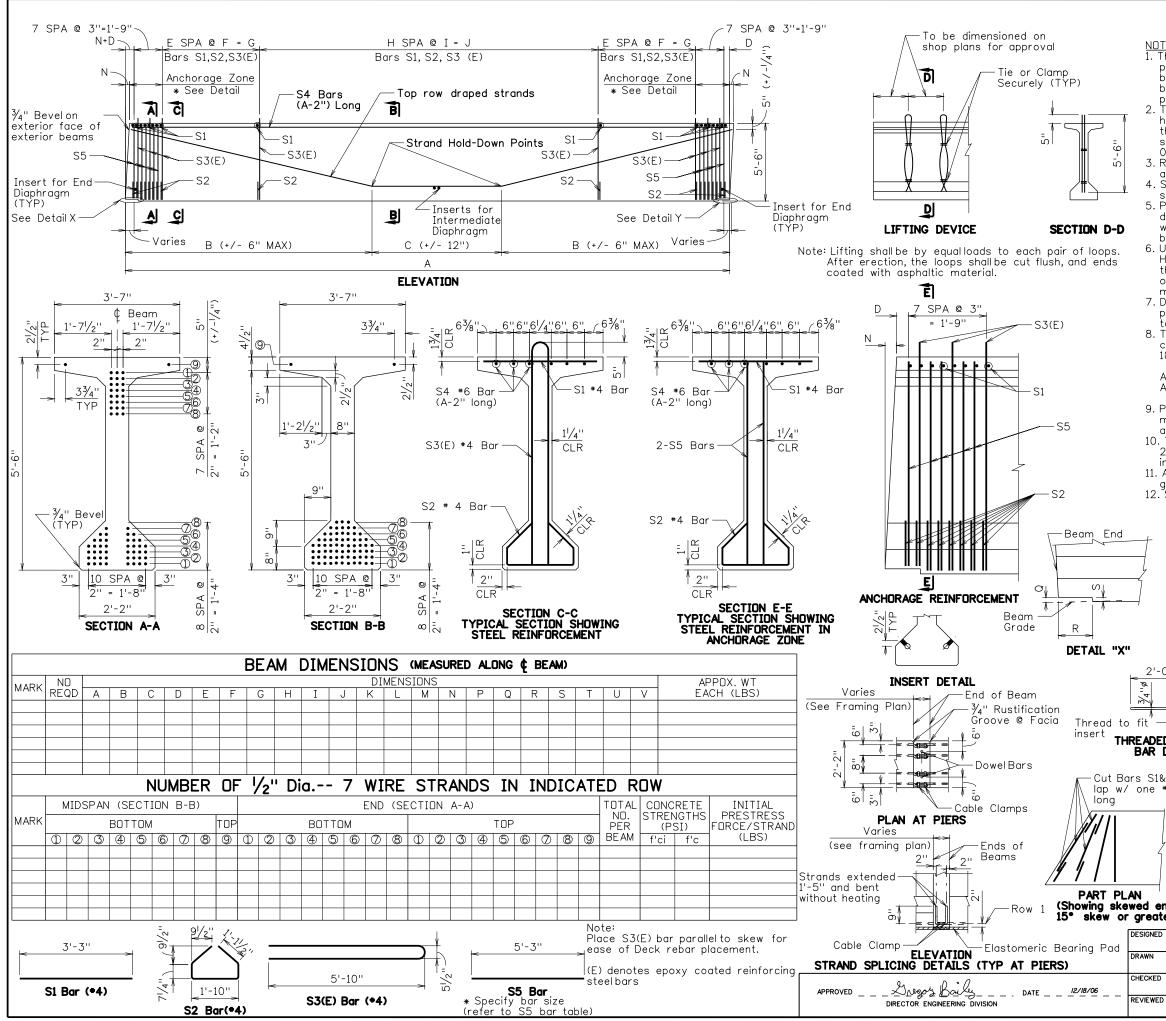


			NUMBERS		DISTRICT	COUNT	(SHEET	TOTAL
	STA	TE	FEDEF	RAL	DISTINICT	000111		NO.	
NOTES:									
1. The conc									
psi, as si									
						o the cor r strengtl			YYY
psi within	28 day	s.			•	-			
2. The Depo honeycor									
the strer	ngth or a	deteric	pration r	esisto	ince is	reduced	. Ве	am	
0.0005L.		o shrii	nking an	d elas	stic ch	anges is	limit	ed to	
3. Roughen	the tọp								
approxim 4. Shop dra	ately '/4 winas sł	inch nall sho	and mo ow the o	aintain detens	clean	and free	e ot num	laitanc berina	e. the
sequence	ofthe	strand	d patter	n.	5			5	
5. Prestress						and (1/2 vire strar			
with AAS	HTO M 2	203 g	rade 27						
be applie 6. Uncoated	d to th∉ ∣seven	e stra wire s	nd tress re	aliever	l strar	id may b	A 61	Institut	ed
However,	if the C	Contrad	ctor cho	oses	this al	ternate, ł	ne s	hall pro	vide
						and shall is design			
modificat	ion shall	be mo	ade at t	he Čo	ontract	or's expe	ense		
7. Deformed provided	d wire fo	abric i	s permi	tted i	nstead ded V	of reinfo /ire_fabri	orcin	g stee	lbars
to the re	equireme	ents of	f aashti	O Sec	tion M	225.			
8. The Elas conform	to AAS	bearin	ig pads	under	the p	restresse	ed b	eams s	shall
18.2.3.2							J. J	CCUUIT	
ASTM A2	45								
ASTM AZ ASTM A5		de 36							
9. Payment	for Flas	tomer	ic heari		de and	any pro	forn	ned ini	nt
materials	specified	shall	be includ	ded in	Item	603-01.	See	pier 8	&
abutment 10. The thre	sheets	for de	etails. shall hav		ninimur	n safe v	vork	load (⊃ f
2500 lb	in tensio	on. All	inserts	shall b	e plug	ged to p	reve	nt con	crete
intrusion. 11. All thread									
galvanize	d after	fabric	ation. Ir	nclude	the c	ost in Ite	em	603-01	l.
12. S5 vert	ical reinf	orcing	bars pl	aced	at the	ends of	the	beam	
			na resis	tance	as be	r I R⊢D '	5 10	10.1	
	s S5 ba			tance	as pe	er LRFD 5	5.10.	10.1.	
Refer to	o S5 ba	r tabl€		tance				10.1.	
Refer to		r tabl€	e. ¯		REINF	ORCING	BAR	10.1.	NGTH
Refer to	o S5 ba	r tabl€	MARK		REINF		BAR	10.1.	NGTH
Refer to	o S5 ba	r tabl€	e. ¯		REINF	ORCING	BAR	10.1.	NGTH
Refer to	o S5 ba	r tabl€	MARK	SIZE	REINF	ORCING	BAR	10.1.	NGTH
	o S5 ba	r tabl€	MARK S1 S2	SIZE	REINF	ORCING	BAR	10.1.	NGTH
Refer to	o S5 ba	r tabl€	MARK S1 S2 S3(E)	SIZE	REINF	TORCING	BAR Tot	10.1. LIST AL LE	NGTH
Refer to	b S5 ba		MARK S1 S2 S3(E)	SIZE		ORCING	BAR TOT	LIST	NGTH
Refer to F Beam – Grade DE	b S5 ba		MARK S1 S2 S3(E)	SIZE		ORCING	BAR TOT	LIST	
Refer to Hear - Beam - Grade DE	S S5 ba Beam Er		MARK S1 S2 S3(E)	SIZE		ORCING	BAR TOT	LIST	
Refer to	S S5 ba Beam Er		MARK S1 S2 S3(E)	SIZE MARK *S5 S6	REINF COUN REINF SIZE	ORCING	BAR TOT	LIST	
Refer to	S S5 ba Beam Er	nd	MARK S1 S2 S3(E)	MARK *S5 S6		ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST	DTAL
Refer to	S S5 ba Beam Er	nd	MARK S1 S2 S3(E)	MARK *S5 S6	REINF COUN REINF SIZE	ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST AL LE LIST M TC	DTAL
Refer to Refer to Eacher Refer to Beam - Grade DE 2'-0'' at 1/2 fit EACED ANCHO	2" ND	nd	MARK S1 S2 S3(E)	MARK *S5 S6	REINF COUN REINF SIZE	ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST AL LE LIST M TC	DTAL
Refer to Refer to Eacher Refer to Beam - Grade DE 2'-0'' at 1/2 fit EACED ANCHO	2" ND	nd	MARK S1 S2 S3(E)	MARK *S5 S6	REINF COUN REINF SIZE	ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST AL LE LIST M TC	DTAL
Refer to Each anche Beam - Grade DE 2'-0'' A fit EADED ANCHE BRETAIL	2" ND	nd	MARK S1 S2 S3(E)	MARK *S5 S6	REINF COUN REINF SIZE	ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST AL LE LIST M TC	DTAL
Refer to Refer to Eacher Beam - Grade DE 2'-0'' Fit EADED ANCHO BAR DETAIL S S1&S2 and	2" ND	nd	MARK S1 S2 S3(E)	MARK *S5 S6	REINF COUN REINF SIZE	ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST AL LE LIST M TC	DTAL
Refer to Hear - Beam - Grade DE	2" ND	nd	MARK S1 S2 S3(E)	MARK *S5 S6	REINF COUN REINF SIZE	ORCING IT/BEAM ORCING COUNT/ PADS	BAR TOT	LIST AL LE LIST M TC	DTAL
Refer to Refer to Eacher Beam - Grade DE 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and	S S5 ba Beam Er U TAIL "Y Z" NO DR		■. MARK S1 S2 S3(E) S4 (MARK *S5 S6 BEA DESC		ORCING IT/BEAM ORCING COUNT/ PADS IN	BAR TDT BEA	LIST LIST LIST M TC LOCA DATE:	TION
Refer to Refer to Eacher Beam - Grade DE 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and	D S5 ba Beam Er U TAIL "Y TAIL "Y DR	v3 Adder	Adum Ø7\ne	MARK *S5 S6 BEA DESC	REINF COUN REINF SIZE RING RIPTIC	ORCING IT/BEAM ORCING COUNT/ PADS IN IL-new.dgn	BAR TDT BEA BEA 26	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to Eacher Beam - Grade DE 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and	D S5 ba Beam Er U TAIL "Y TAIL "Y DR	v3 Adder	ARK S1 S2 S3(E) S4 (1 S4 (1 S4 (S4 (S4 (S4 (S4) (S4 (S4) (S4) (MARK *S5 S6 BEA DESC			BAR TOT BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to Eacher Beam - Grade DE 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and	D S5 ba Beam Er U TAIL "Y TAIL "Y DR	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TOT BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to Beam – Grade DE 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and one #4x12''	D S5 ba Beam Er U TAIL "Y TAIL "Y DR	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TOT BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam - Grade DE 2'-0'' Fit EADED ANCHO BAR DETAIL S S1&S2 and one *4x12''	D S5 ba Beam Er U TAIL "Y TAIL "Y DR	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TOT BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to Beam - Grade DE 2'-0'' A fit EADED ANCHO SAR DETAIL S S1&S2 and one #4x12''	D S5 ba Beam Er U TAIL "Y TAIL "Y DR	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TOT BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer	D S5 ba Beam Er U TAIL "Y TAIL "Y DR NO. C:\Users\U	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TOT BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to Eacher Beam – Grade DE 2'-0'' fit EADED ANCHO SAR DETAIL S S1&S2 and one #4x12'' Ned end, preater)	D S5 ba Beam Er U TAIL "Y TAIL "Y DR NO. C:\Users\U	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TDT BEA BEA CONTROL BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to File Beam - Grade DE 2'-0'' File EADED ANCHO SAR DETAIL S S1&S2 and one #4x12'' Ned end, preater) SIGNED DATE (2/5/06 RAWN	D S5 ba Beam Er U TAIL "Y TAIL "Y DR NO. C:\Users\U	v3 Adder	 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC REVIS **\BRD- EPAR SION			BAR TOT BAR BEA BEA 26 ANS S	10.1. AL LE LIST M TC 	DT AL
Refer to Refer to Eacher Beam - Grade DE 2'-0'' Signe #4x12'' N ad end, reater) SIGNED DATE [2/5/06]	S S5 ba Beam Er U TAIL "Y TAIL "Y NO C:\Users\\ WEST		 MARK S1 S2 S3(E) S4 S4 Indum Ø7\ne INIA DE DIVIS ENG 	MARK *S5 S6 BEA DESC PAR SION GINEE	REINF COUN REINF SIZE SIZE RING RING COF H RING I	ORCING IT/BEAM ORCING COUNT/ COUNT/ PADS N COUNT/ PADS N COUNT/ IGHVAY OVISION	BAR TOT BAR BEA BEA 26 ANS S	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Refer to File Beam - Grade DE 2'-0'' File EADED ANCHO SAR DETAIL S S1&S2 and one #4x12'' Ned end, preater) SIGNED DATE (2/5/06 RAWN	S S5 ba Beam Er U TAIL "Y TAIL "Y NO C:\Users\\ WEST		 MARK S1 S2 S3(E) S4 	MARK *S5 S6 BEA DESC PAR SION GINEE		ORCING IT/BEAM ORCING COUNT/ COUNT/ PADS N COUNT/ PADS N COUNT/ IGHVAY OVISION	BAR TOT BAR BEA BEA 26 ANS S	10.1.	TION



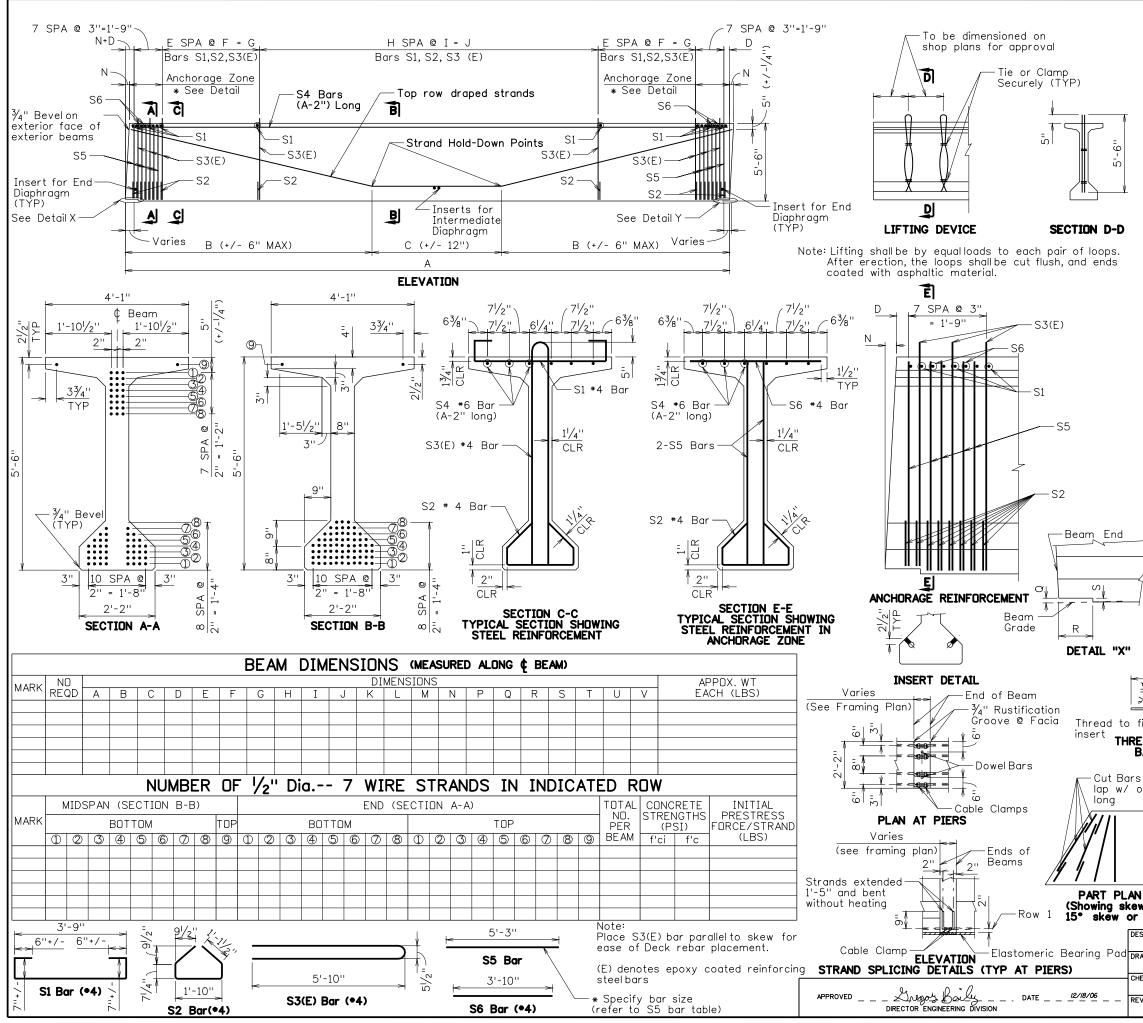
	PROJEC1 STATE	NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
NOTES:						
1. The cond	rete shall atto hown by stand					XX
beams, t	efore transfe eleasing the e	rring bond sti	ress to	the concret	e; or	, y y y
psi within	28 days. artment will re		,	5		
honeyco	nbed concrete ngth or deteri	e to the exte	nt that	the Engineer	deter	
shortenir 0.0005L	ng due to shri	inking and ela	stic ch	anges is limit	ed to	
3 Roughen	the top surfo ately 1/4 inch	ace of each b	eam t	o an amplitue	de of Jaitanc	۵
4. Shop dr	awings shall sh of the stran	ow the deten	sioning	plan by num	bering	the
5. Prestres	sing strands s) low relaxatio	shall be stabiliz				
with AAS	HTD M 203 g ed to the stro	grade 270. Ar				
6. Uncoate	d seven wire s if the Contra	stress relieve				
the desi	on for the str lans to reflec	ess relieved :	strand	and shall revi	se the	, ao
modifica	tion shall be m d wire fabric	iade at the Č	ontract	or's expense	•	lbars
provided	an equal stee equirements o	larea is prov	ided. V	Vire fabric m	ust cor	nform
8. The Elas	to AASHTO [na pads under	r the p	restressed b	eams s	shall
18.2.3.2	specifies lami	nate material	to be:		00000	
ASTM AZ ASTM AS	245 570,Grade 36					
9. Payment	for Elastomer specified shall	ric bearing pa	ids and 1 Item	any preform	ned joi	nt V
abutmen	t sheets for d eaded inserts	etails.				
2500 lb	in tension. Al Omit inserts	linserts shallt	be plug	ged to preve	ent con	crete
11. All threa	ded inserts an d after fabric	id anchorage	dowels	are to be h	ot-dip	
12. S5 ver	ical reinforcing ned for burst	, bars placed	at the	ends of the	beam	
Refer t	o S5 bar tabl	e.				
† +	Beam End			TORCING BAR		
ļļ		MARK SIZI S1			AL LE	NGTH
<u> </u>	>	S2 S3(E)				
Pogma		S4				
Beam - Grade			DETNE		LICT	
DE	TAIL "Y"	MARK		COUNT/BEA		TAL
<u>2'-0''</u>		* S5				
	2		ARING		1	
it [*]	NO.	DESC	RIPTIC)N	LOCA	TION
ADED ANCH	DR					
s S1&S2 and one #4x12''					1	
1						
	NO.	REV	SION		DATE	BY:
ź	WEST VIRG	INIA DEPAR			PORTA	
		DIVISION ENGINEE		IIGHWAYS DIVISION		
ed end, greater)						
SIGNED DATE	26					
AWN	1					
ECKED) TYPE IV – J		BEAM	EET OF	
VIEWED	⊣ 66″	DEEP, 37" TOP	FLANC	GE 🗖	BRIDGE	NO.

BRD-IVJ 66X37

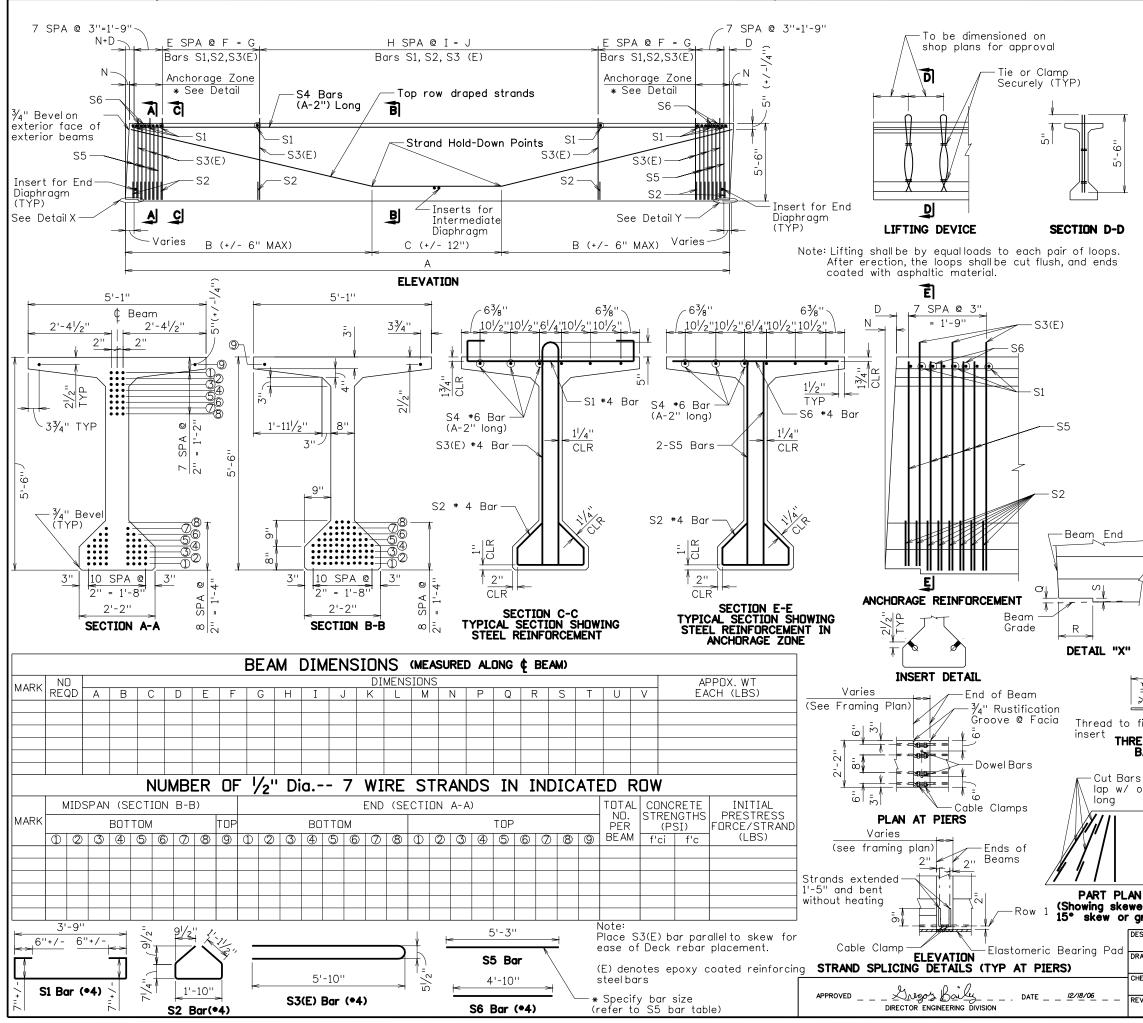


		ST		NUMBERS FEDE	PAI	DISTRICT	COUNTY	SHEET	TOTAL
		517		FEUE					
NOTES: 1. The c	concr	ete sh	all attai	in a cou	mores	L sive st	rength of a	l Least 3	
psi, c	is sh	own by	stand	ard cyl	inders	cured	identically the concre	with the	.,.,.
befor	re re	leasing	the e	nd anch	iors.	Cylinde	r strength s	hall beY	YYY
2. The	Depa		willrej				e finished u		
the s	stren	ath or	deterio	pration	resist	ance is	the Enginee reduced. E	eam	mines
shor1 0.00	tening 05L.	g due t	o shrii	nking ar	nd ela	stic ch	anges is lim	ited to	
							o an amplitu and free o		e.
4. Shop	drav	wings s	hall sho	ow the d patter	deten	sioning	plan by nur	nbering	the
5. Pres	tress	ing str	ands s	hall be s	stabiliz		and (1/2 ind vire strand i		
with	AASH		203 g	rade 27			stress of 20		
6. Unco	ated	seven	wire s	tress r			id may be s		
the d	desigr	n for tl	he stre	ess relie	eved s	strand	ternate, he and shall rev	vise the	viae
modi	ficati	on shal	llbe m	ade at '	the Č	ontract	is design an or's expens	e.	
							of reinforci Vire fabric n		
to th 8. The	ne re Flast	quirem omeric	ents of bearin	f AASHT a pads	Ö Seo under	tion M	225. restressed	oeams :	
confe	orm	to AAS	SHTO C	ivision nate ma	2, Sec	tion 18	3 Duro 60.	Section	
	0.2 (1 A24		o ranni			0 00			
		70, Gra	de 36						
9. Paym mate	nent f rial si	for Elas pecified	stomer 1 shall l	ic beari se inclu	ng pa ded ir	ds and 1 Item	any prefor 603-01. Se	med joi e pier	nt &
abutr	ment	sheets	for de	etails.			n safe wor	•	
2500) lb i	n tensi	on. All	inserts	shallt	be plug	ged to prev exterior be	ent con	crete
11. All th	reade	ed inse	rts and	d anchc	rage	dowels	are to be ost in Item	hot-dip	
12. S5	vertio	cal reint	forcing	bars p	laced	at the	ends of the er LRFD 5.10	e beam	
		S5 bo			stunce	: us pe	F LND J.IC	.10.1.	
+	В	eam E	nd —7			REINF	ORCING BA	R LIST	
-	\vdash		=	MARK	SIZE	E COUN	IT/BEAM TO	TAL LE	NGTH
7 1 4			— (_{>1}	S1 S2					
	<u> </u>			= S3(E))				
Bec		\checkmark		S4					
Gro			->			REINF	ORCING BA	R LIST	
01.0	DET	AIL "Y			MARK	SIZE	COUNT/BE.	АМ ТС	TAL
<u>2'-0''</u>	+				*S5				
- <u>4</u>	=1 ¹ /2	-				RING			
it	-).		DESC	RIPTIC	IN	LOCA	TION
		R 📂							
AR DET	AIL								
S1&S2									
one #4x1	۷								
		NO.			REVI	SION		DATE	BY:
Ļ						T. A			
1		VVEST	VIRG				f of tran: IIGHWAYS	SPURI	ATION
							DIVISION		
d end.									
reater)									
SIGNED	DATE 12/5/06								
AWN									
ECKED		-		O TYPE				HEET	
			66″	DEEP, 4	3″ TO	P FLAN	IGE -	BRIDGE	

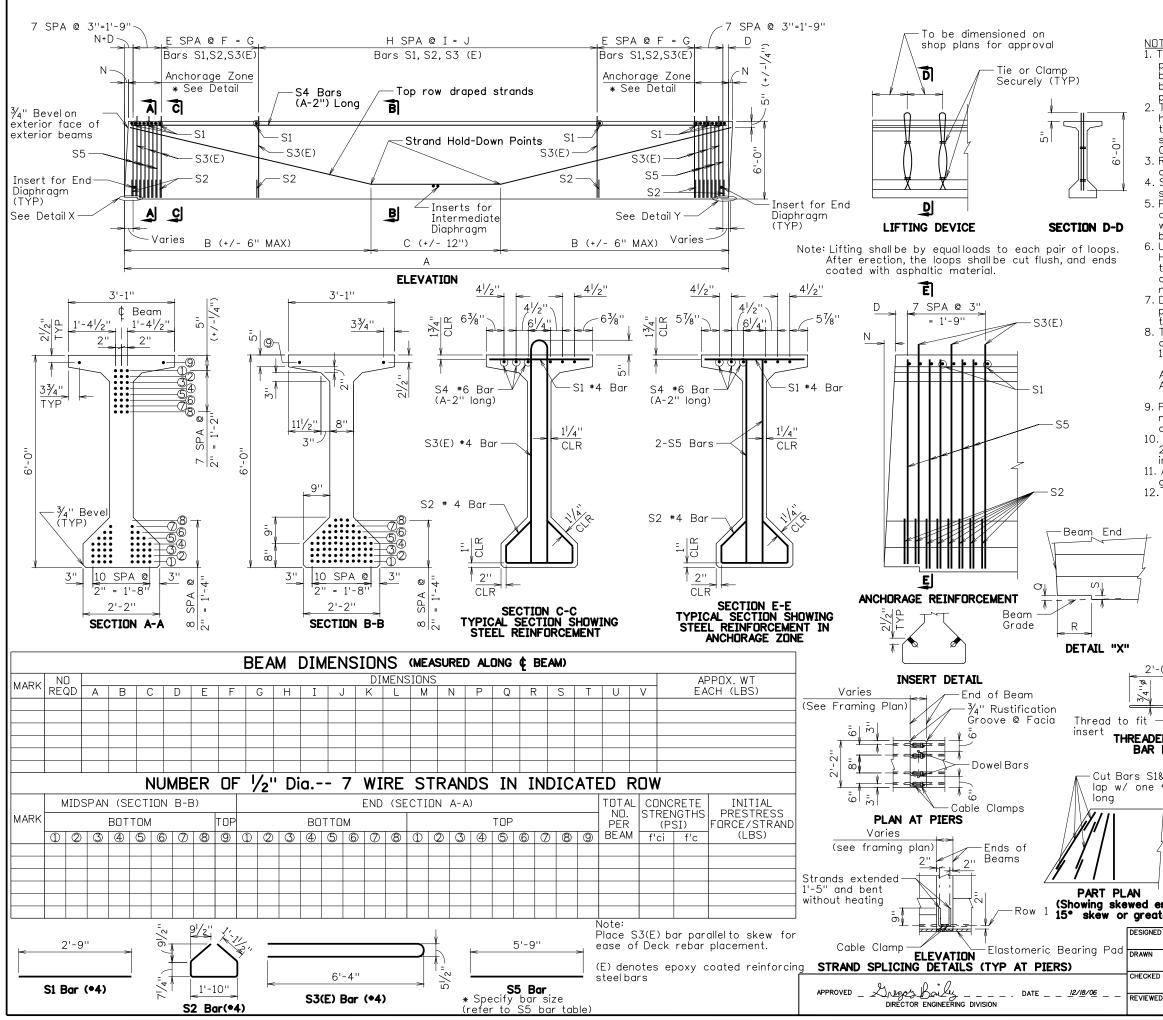
BRD-IVJ 66X43



	PROJECT	T NUMBERS				SHEET	
	STATE	FEDERAL		COUNTY		NO.	TOTAL
NOTES:	L	<u> </u>	<u> </u>	L			
1. The concr	ete shallatta own by stan	ain a compre dard cylinder	SSIVE S	identically	at	least) th the	KXX
beams, be	fore transfe	rring bond s	tress to	b the cond	cret	e; or	
before re	leasing the e						YYY
psi within 2. The Depa	28 days. rtment willre	ject the bea	ms if th	e finished	unit	ts con	tained
honeycom	bed concret	é to the ext	ent that	the Engin	neer	deter	
	gth or deteri g due to shr						
0.0005L.	y due to shi	inking unu ei		luliges is i	mmo	eu lo	
	the top surf						
	itely 1/4 incl wings shall sh						
sequence	of the strar	id pattern.	5			5	
	ing strands s						
	low relaxatio ITD M 203 d						
be applied	d to the stra	and				•	
	seven wire if the Contro						
the design	n for the str	ess relieved	strand	and shall r	revis	se the	, vide
	ins to reflec						
	on shallbe m wire fabric						lbars
provided	an equalstee	larea is pro	vided. N	Vire fabric	mı	ist cor	nform
to the re	quirements c omeric beari	na nade und	ection N	1225.	d ha	ame '	shall
conform	omeric beari to AASHTO	Division 2, Se	ection 18	B Duro 60	u De 1. Se	ection	snull
	specifies lam						
ASTM A24	45						
	70,Grade 36						
9. Payment	for Elastome	ric bearing r	ads and	l anv pref	orm	ied ini	nt
material s	pecified shall	be included					
abutment	sheets for c	letails.			باسم	امما ،	
2500 lb i	aded inserts n tension. Al	linserts shal	minimui be pluc	m sate w laed to pr	ork eve	nt con	crete
intrusion.	Omit inserts	on exterior	face of	exterior b	bear	ns.	01010
	ed inserts ar						
	l after fabric calreinforcinc						
is desigr	ned for burst						
						10.1.	
Refer to	S5 bar tab	le.				10.1.	
	S5 bar tabl	le.		FORCING E			
			REIN	FORCING E	BAR		NGTH
			REIN	FORCING E	BAR	LIST	NGTH
		MARK SI S1 S2	REIN	FORCING E	BAR	LIST	NGTH
		MARK SI S1 S2 S3(E)	REIN	FORCING E	BAR	LIST	NGTH
		MARK SI S1 S2	REIN	FORCING E	BAR	LIST	NGTH
		MARK SI S1 S2 S3(E)	REINI	FORCING E	BAR TOT	LIST AL LE	NGTH
Beam - Grade	eam End	MARK SI S1 S2 S3(E)		FORCING E	BAR TOT	LIST AL LE	NGTH
Beam - Grade	eam End	MARK SI S1 S2 S3(E) S4	REINI	FORCING E	BAR TOT	LIST AL LE	
Beam Grade DET	eam End	MARK SI S1 S2 S3(E) S4 MAF	REINI	FORCING E	BAR TOT	LIST AL LE	
Beam - Grade DET	eam End	MARK SI S1 S2 S3(E) S4 MAF *S1 S1 S2 S2 S3(E) S4 S1 S1 S1 S1 S2 S3(E) S4 S1 S1 S1 S1 S2 S3(E) S4 S1 S1 S1 S1 S1 S1 S1 S1 S1 S1	REINI	FORCING E	BAR TOT	LIST AL LE	
Beam Grade DET	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE	DTAL
Beam - Grade DET	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DTAL
Beam Grade DET 2'-0'' fit EADED ANCHO	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DTAL
Beam Grade DET	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DTAL
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DTAL
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DTAL
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S S	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DTAL
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S1 S3 S1 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	REINI	FORCING E	BAR TOT	LIST AL LE LIST	DT AL
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S1 S3 S1 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	REINI ZE COUN REINI K SIZE 5 3 EARING CRIPTIC	FORCING E	BAR TOT	LIST AL LE LIST 1 TC LOCA	DT AL
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S1 S3 S1 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIC CRIPTIC	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES DES DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam - Grade DET 2'-0'' fit fit Sale Ancho Bar DeTAIL s S1&S2 and one #4x12''	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES DES DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0" fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12"	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES DES DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0'' fit fit S S S S S S S S S S S S S S S S S S S	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES DES DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0'' fit fit S S S S S S S S S S S S S S S S S S S	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES DES DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0" 11/2 fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12" Nwed end, greater) SIGNED DATE 12/5/06	eam End	MARK SI S1 S2 S3(E) S4 MAF *S3 S1 DES DES BI DES DES DES	REINI ZE COUN REINI K SIZE 5 3 CRIPTIO	FORCING E	BAR TOT BAR BEAN	LIST AL LE LIST / TC LOCA LOCA DATE:	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12'' Swed end, greater) ESIGNED DATE I2/5/06 RAWN	eam End 	RE	REINI ZE COUN REINI REINI K SIZE 5 3 3 2 ARING CRIPTIO	FORCING E	BAR TOT	LIST AL LE LIST / TC LOCA DATE: PORTA	TION
Beam Grade DET 2'-0" 11/2 fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12" Nwed end, greater) SIGNED DATE 12/5/06		MARK SI S1 S2 S3(E) S4 MAF *S3 S4 DES B1 DES B DES DES B1 DES DES B DES B DES DES DES DES DES DES DES DES DES DES	REINI ZE COUN REINI K SIZE 3 3 CRIPTIC CRIPTIC		BAR TOT BAR BEAN	LIST AL LE LIST LIST LOCA DATE DATE	
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12'' Signed end, greater) ESIGNED DATE 12/5/06 RAWN		RE	REINI ZE COUN REINI K SIZE 3 3 EARING CRIPTIO		BAR TOT		



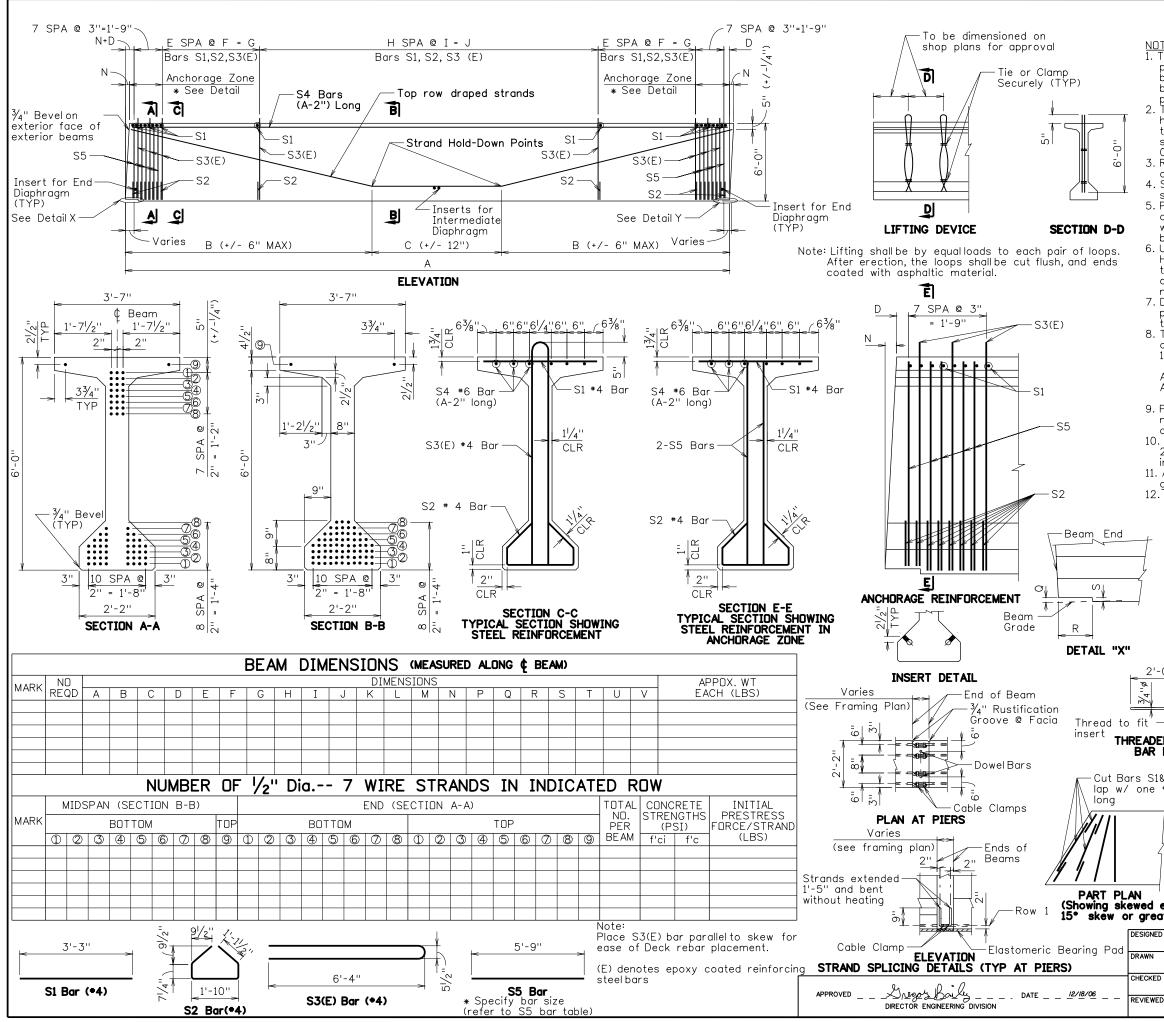
		PROJECT	NUMBERS		DISTRICT	COLINITY	/	SHEET	TOTAL
	STA	ATE	FEDEF	AL L	JISTRICT	COUNTY	ſ	NO.	TUTAL
<u>NOTES:</u> 1. The concr	ete sh	all attai	in a con	npress	ive st	rength o	f at	least >	XX
psi, as sh beams, be	own by	stand	lard cylii	nders	cured	identicall	ly wi	ith the	
before re									YYY
psi within			aat tha	haama	, :f +h	o finichea	است ا	to oon	tainad
2. The Depa honeycom									
the stren	gth or	deterio	oration r	esista	nce is	reduced	. Ве	am	
shortening 0.0005L.	g due t	o shrii	nking an	d elas	tic ch	anges is	limit	ed to	
3. Roughen									
approximo 4. Shop drav	ntely 1/2 wings s	1 INCH hall she	and mo ow the a	iintain Ietensi	ionina	and free	e ot num	laitanc berina	e. the
sequence	ofthe	strand	d patter	n.	-			•	
5. Prestress diameter)									
with AASH	ITO M	203 g	rade 27						
be applied 6. Uncoated				lieved	strar	id may b	e su	Ibstitut	ed.
However,	if the (Contrad	ctor cho	oses f	this al	ternate, ł	ne s	hall pro	
the design original plo									
modificati	on shal	lbe ma	ade at t	he Coi	ntract	or's expe	ense		
7. Deformed provided									
to the re	quireme	ents of	f AASHTI) Sect	tion M	225.			
8. The Elast conform	omeric to AAS	bearin SHTD D	iy pads)ivision 2	under 2. Sect	נne p ion 18	restresse 8 Duro 60	a b D. S	eams : ection	snall
18.2.3.2	specifie	s lamir	nate ma	terial t	o be:		5		
ASTM A24	45								
ASTM A5		de 36							
9. Payment	for Elas	stomer	ic bearir	ng pad	ls and	any pre	form	ned ioi	nt
material s	pecified	shall t	pe includ						
abutment 10. The thre				e a m	inimur	n safe v	vork	load a	of
2500 lb i	n tensi	on. All	inserts	shall be	e plug	ged to p	reve	nt con	
intrusion. 11. All threade									
galvanized	l after	fabric	ation. Ir	clude	the c	ost in Ite	em -	603-01	
12. S5 vertionis design	ned for	bursti	ng resis	acea d tance	as pe	ends of er LRFD 5	5.10.	10.1.	
Refer to	S5 bo	ar table	э.						
В	eam E	nd —			REINF	ORCING	BAR	LIST	
- +	_~~	\exists	MARK	1				ALLE	NGTH
ļļ		Ý	S1						
7 7 -1		_ >	S2						
		╡╡	= S3(E)						
Beam —	- <u> </u>		S4						
Grade	< 0	->-				ORCING			
DE1	AIL "Y	/11		MARK	SIZE	COUNT/	BEA	м тс	ITAL
2'-0''			-	*S5					
			l	S6					
\sim	-				RING				
fit	NC).		DESCF	RIPTIC	IN		LOCA	TION
EADED ANCHO	•								
BAR DETAIL	"								
s S1&S2 and one #4x12''	L							I	
ONG "HAIZ									
									1
	NO			REVIS					BY.
	NO.			REVIS	ION			DATE	BY:
Z		VIRG	INIA DE			OF TR/	ANS		
L Z		VIRG		PART	MENT	of Tr/			
2		VIRG	DIVI	PART SION	Ment of H				
		VIRG	DIVI	PART SION	Ment of H	IGHWAY			
ed end.		VIRG	DIVI	PART SION	Ment of H	IGHWAY			
ed end, greater)		VIRG	DIVI	PART SION	Ment of H	IGHWAY			
ed end, greater) ESIGNED DATE 12/5/06		VIRG	DIVI	PART SION	Ment of H	IGHWAY			
		VIRG	DIVI	PART SION	Ment of H	IGHWAY			
ed end, greater) ESIGNED DATE 12/5/06	WEST			EPART SION BINEER	Ment of H ing [IGHWAY DIVISION	S		
ed end, greater) ESIGNED DATE 12/5/06 RAWN HECKED	WEST	ASHTO	DIVI	Epart Sion Bineer	MENT OF H ING [IIGHWAY DIVISION BEAM	S		ATION
ed end, greater) ESIGNED DATE 12/5/06 RAWN	WEST	ASHTO		Epart Sion Sineer V - J " Top	MENT OF H ING [PC FLAN	IIGHWAY DIVISION BEAM	S		ATION



		PROJECT STATE	NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
NOTES:		_	· · · •				
1. The c		ete shall atta own by stand					
beam	ns, be	fore transfer leasing the e	ring bond str	ress to	the concre	te; or	
psi wi	ithin :	28 days. rtment willrej		,	5		
hone	ycòm	bed concrete gth or deteric	e to the exte	nt that	the Engineer	r deter	
short 0.000	tening	g due to shri	nking and ela	stic ch	anges is limit	ted to	
3 Roug	hen t	the top surfa itely 1/4 inch	ce of each b	eam t clean	o an amplitu	de of Jaitanc	e
4. Shop	drav	wings shall sho of the strand	ow the deten	sioning	plan by num	bering	the
5. Pres	tressi	ing strands s low relaxatio	hall be stabiliz				
with	AASH	ITO M 203 g to the stra	rade 270. Ar				
6. Unco Howe	ated ver.i	seven wire s if the Contra	tress relieved ctor chooses	this al	ternate.he s	hall pro	
the c	desigr	n for the stre ins to reflect	ess relieved s	strand	and shall revi	ise the	
7. Defoi	rmed	on shall be me wire fabric i	s permitted i	nstead	of reinforcir	ng stee	lbars
provi to th	ded d ne re	an equalsteel quirements of	area is prov f AASHTD Sea	ided. V ction M	Vire fabric m 225.	ust cor	nform
8. The	Elaste	o'meric bearin to AASHTO D	ia pads under	the p	restressed b	eams s Section	shall
18.2.	3.2 s	specifies lamir	nate material	to be:			
	1 A24 1 A57	45 70,Grade 36					
9. Paym	nent f	for Elastomer pecified shall I	ic bearing pa	ds and Litem	any preform	ned joi	nt &
abutr	nent	sheets for de aded inserts	etails.				
2500) Ib i	n tension. All Omit inserts	inserts shall b	be plug	ged to preve	ent con	crete
11. All th	reade	ed inserts and I after fabric	d anchorage	dowels	are to be h	not-dip	
12. S5	vertic	calreinforcing ied for bursti	bars placed	at the	ends of the	beam	
Ref	er ťo	S5 bar table	e.				
1.	B	eam End			ORCING BAR		NOTU
Ţ	Ļ		MARK SIZE		IT/BEAM TOT	FAL LE	NGTH
			S2 = S3(E)				
Bec	- <u>+</u>		S4				
Gro		< U >		DETNE	ORCING BAR	TOT	
	DET	AIL "Y"	MARK				ITAL
<u>2'-0''</u> >	+ .,		* S5				
- 4 - 4	=1 ¹ /2	-	BE	RING	PADS		
"it [*]	-	NO.	DESC	RIPTIC)N	LOCA	TION
ADED A		R					
s S1&S2 one #4x1						· ·	l
		NO.	REVI	SION		DATE	BY:
Ż		WEST VIRG	INIA DEPAR			PORTA	ATION
			DIVISION ENGINEE		IIGHWAYS DIVISION		
ed end, reater)							
SIGNED /	DATE 2/5/06						
AWN							
ECKED			TYPE IV – J EEP, 37" TOP			IEET OF	
		i 12 D	LEF, 37 IUF	LANG	L	BRIDGE	NO

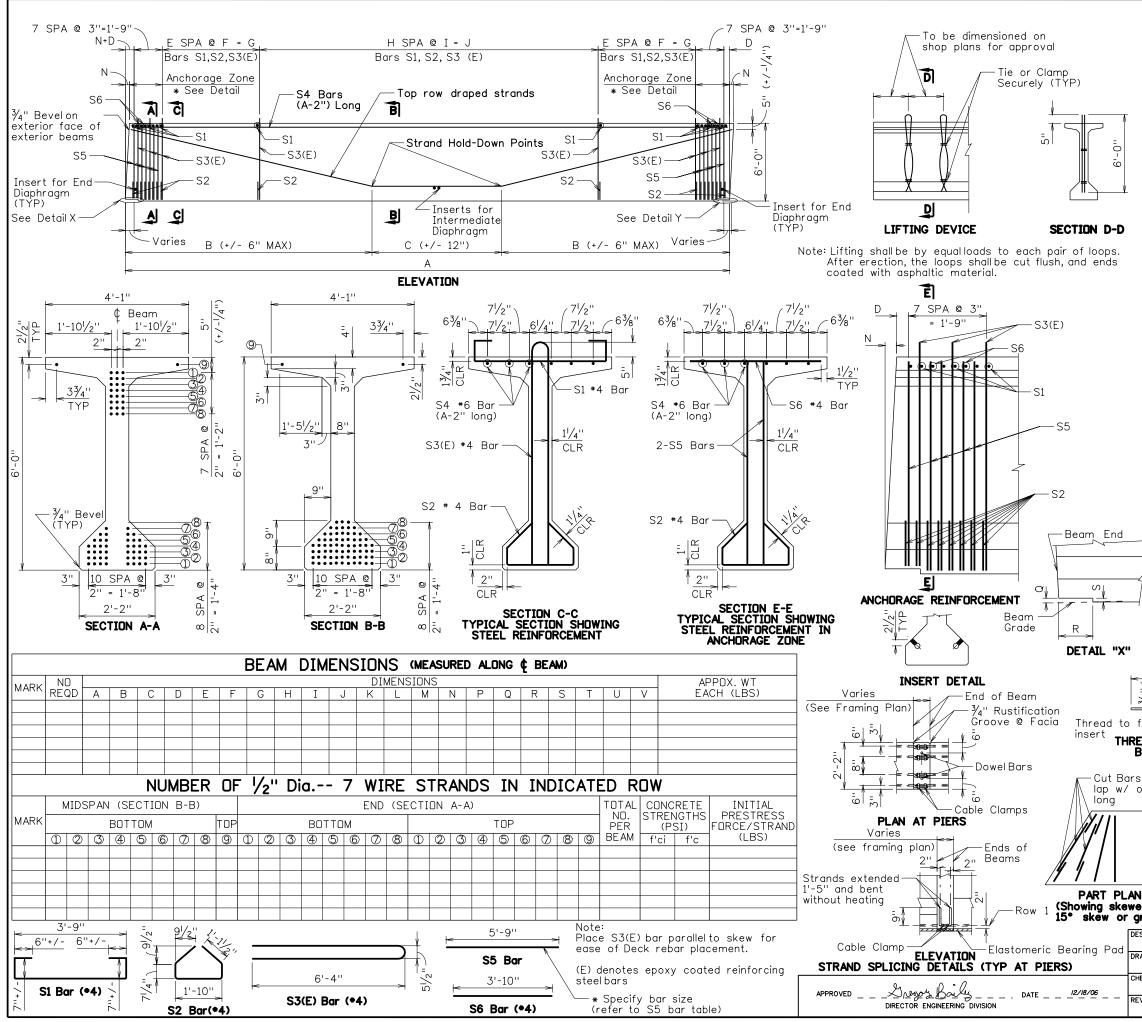
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BRD-IVJ 72X37

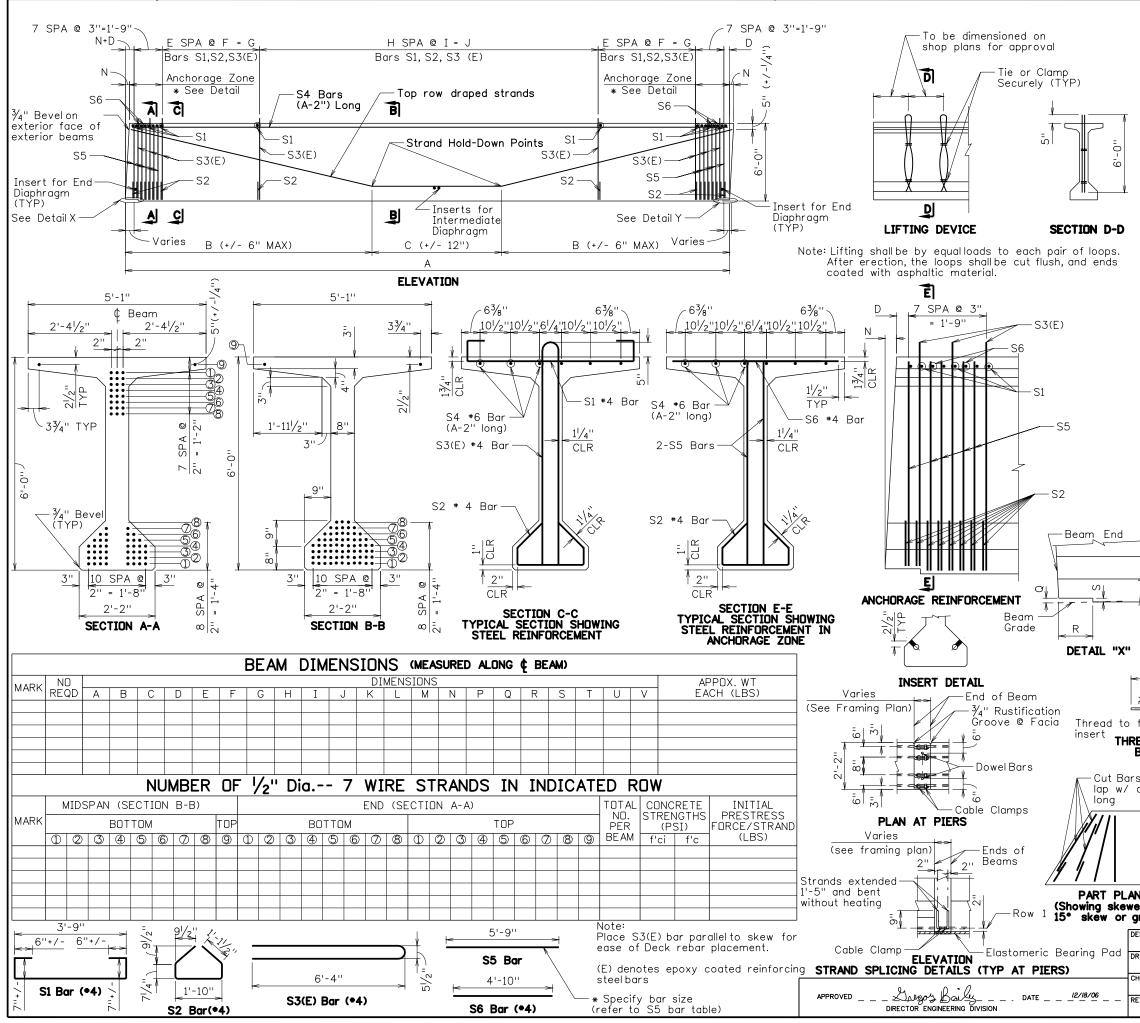


		PROJECT STATE	NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
NOTEO							
		ete shall attai					XX
beams	s, be	own by stand fore transfer	ring bond str	ress to	the concre	te; or	~~~
psi wit	hin 2	easing the ei 28 days.			5		
honev	còm	tment will rej bed concrete	to the exte	nt that	the Enaineer	r deter	
shorte	ening	gth or deteric due to shrir	nking and ela	ance is stic ch	anges is limi	eam ted to	
0.000 3. Rough	en t	he top surfa	ce of each b	eam t	o an amplitu	de of	
4. Shop	drav	tely /4 inch vings shall sho	w the deten	clean sioning	and free of plan by num	laitanc bering	e. the
5. Prestr	ressi	of the strand ng strands s	hall be stabiliz				
with A	ASH	low relaxatio TO M 203 gi	rade 270. Ar				
6. Uncoa	ited	to the strai seven wire s	tress relieved	d stran	id may be si	ubstitut	ed.
Howev	/er,i	f the Contrac for the stre	ctor chooses	this al	ternate, he s	hall pro	vide
origina	al pla	ns to reflect on shallbe ma	these chang	es. Th	is design and	l plan	
7. Deform	med	wire fabric i an equalsteel	s permitted i	nstead	of reinforcir	ng stee	
to the	e re	quirements of omeric bearin	F AASHTO Sec	ction M	225.		
confo	rm	to AASHTO D pecifies lamir	ivision 2, Sec	tion 18	3 Duro 60. S	Section	
ASTM							
		70, Grade 36					
9. Payme	ent f	or Elastomer becified shall b	ic bearing pa	ds and	any preform	ned joi	nt v
abutm	nent	sheets for de aded inserts	etails.				
2500	lb ir	n tension. All Omit inserts	inserts shall b	be plug	ged to preve	ent con	crete
11. All thr	eade	ed inserts and after fabrico	d anchorage	dowels	are to be h	not-dip	
12. S5 v	ertic	alreinforcing ed for bursti	bars placed	at the	ends of the	beam	
		S5 bar table		us pe		.10.1.	
+	Be	eam End		REINF	ORCING BAR		
1 1		/	MARK SIZE		IT/BEAM TO	TAL LE	NGTH
íĨ	, 	>	S2				
' F	<u></u>		S3(E)				
Bear Grac		U]
		AIL "Y"			ORCING BAR		T A1
2'-0''			MARK *S5	SIZE	COUNT/BEA		TAL
= - - - - - - - - -	_11/2'	·			D.400		
		NO.		RING		LOCA	TION
it' —/							
ADED AN		R					
S1&S2 c	and						
one #4x12							-
		NO.	REVI	SION		DATE	BY:
4	l r						
4		WEST VIRG	INIA DEPAR		f of trans IIGHWAYS	SPORT/	
			ENGINEE				
ed end,		_	_	_	_		
greater)							
	DATE 75/06						
AWN							
ECKED			TYPE IV -			IEET OF	
VIEWED		72″ 🛙	Deep, 43" top	FLANG	jE -	BRIDGE	NO

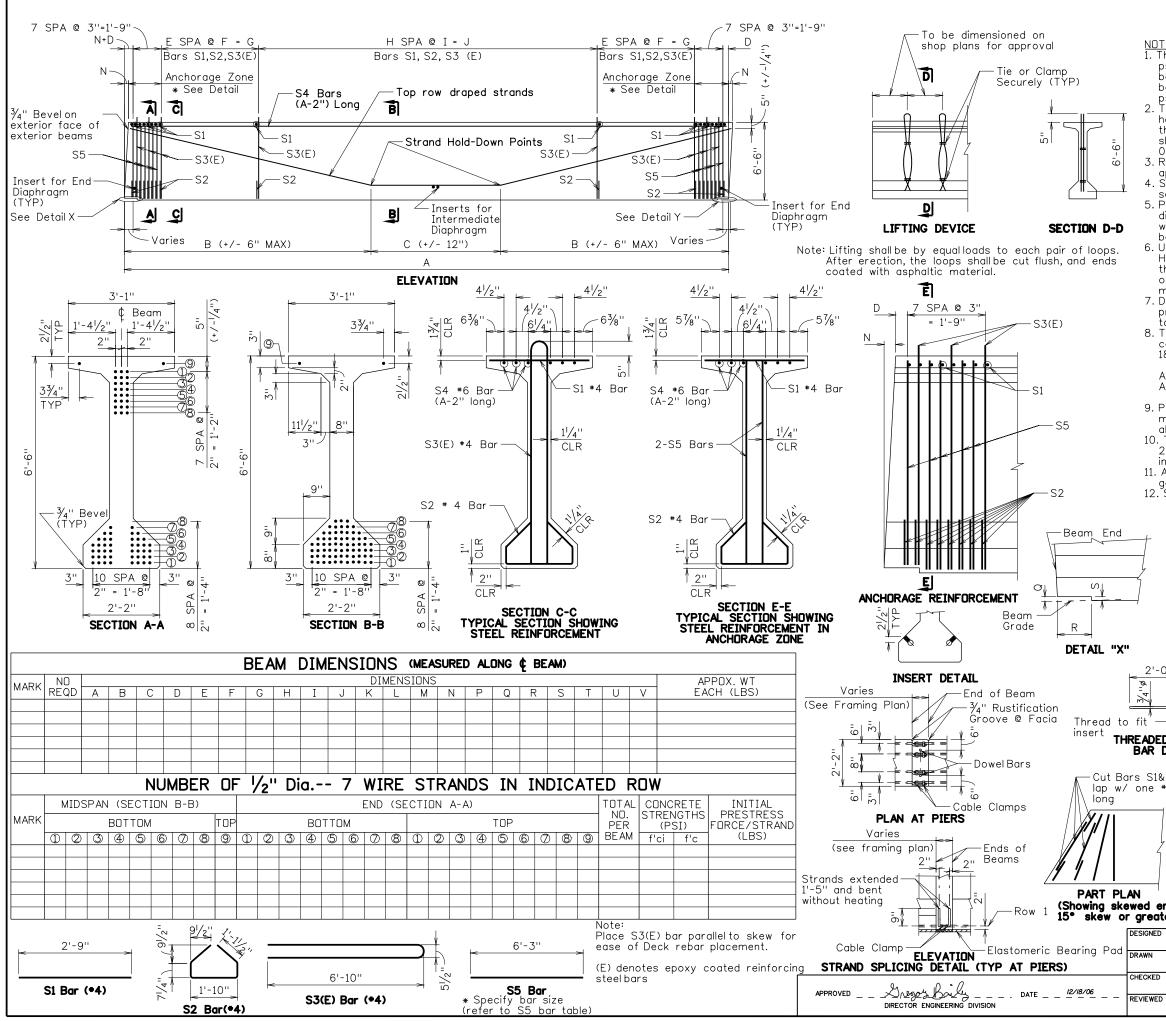
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		BRD	IVJ	72X4	3



				NUMBERS		DISTRICT	COUNTY		SHEET	TOTAL
		ST	ATE	FEDE	RAL	21011101	000111		NO.	101/12
NOTES	1									
1. The	concr	ete sh	all atta	in a coi	mpres	sive st	rength of	at	least >	<xx< td=""></xx<>
bear	ns.be	fore t	ransfer	ring bo	nd str	ess to	identically the cond r strength	cret	e; or	
psiw	vithin	28 day	/s.				e finished			
hone	eycóm	bed co	oncreté	e to the	e exte	nt that	the Engin	ieer	deter	
							reduced. anges is l			
0.00	05L.			5			5			
3. Roug	ghen t oximo	telv 1/	o surfa ∕inch	ce of e	ach b aintain	eam t clean	o an amp and free	lituc of	de of Taitanc	e
4. Shop	o drav	wings s	shall sha	ow the	deten	sioning	plan by n	num	bering	the
5 Pres	ience stress	of the ing str	strand ands s	d patter hallbe s	rn. stabiliz	red str	and (1/2	inch	n nomi	nal
diam	neter)	low re	elaxatio	n uncoc	nted s	even v	<i>v</i> ire stranc	d in	accor	dance
			203 g ie stra		'U. Ar	i initial	stress of	202	2.5 ps	i shall
6. Unco	bated	seven	wire s	tress r			id may be			
							ternate, he and shall r			
origi	nal pĨc	ins to	reflect	these	chang	es. Th	is design (and	plan	
mod 7. Defc	rmed	wire f	n be mi fabric i	uue at s permi	tted i	nstead	or's exper of reinfor	ise. rcin	g stee	Ibars
prov	rided	an equ	al steel		provi	ided. V	/ire fabric			
8. The	Elast	omeric	bearin	ig pads	under	the p	restressed	d b	eams s	shall
conf	orm	to AAS	SHTO C	Division	2, Sec	tion 18	8 Duro 60	. S	ection	
18.2	.J.Z S	specifie	s iumii	nate mo	reual	ιο ρε:				
	M A24	45 70, Gra	de 76							
							any pref 603-01.			
abut	ment	sheets	for de	etails.					•	
10. The	thre	aded ir	nserts	shall hav	ve a r	ninimur	n safe wo ged to pr	ork	load o	of croto
intru	ision.	Omit ir	nserts	on exte	rior f	ace of	exterior b	bear	ms.	crete
11. All th	nreade	ed inse	rts an	d ancho ation I	rage	dowels	are to b ost in Iter	e h	ot-dip	
12. S5	verti	cal rein	forcing	bars p	laced	at the	ends of t	the	beam	
is	desigr	ied for	· bursti ar table	ng resis	stance	as pe	er LRFD 5	.10.	10.1.	
i i i i i i i i i i i i i i i i i i i										
+	В	eam E	ind 7				ORCINGE			
\neg	T		—//	MARK				тот		
4			1/				IT/BEAM	IUI	AL LE	NGTH
4	7			S1			II/BEAM	101	AL LE	NGTH
				S2			II/BEAM		AL LE	NGTH
				S2 = S3(E)			II/BEAM		AL LE	NGTH
				S2						NGTH
	ade		>	S2 = S3(E)		REINF	ORCING E	BAR	LIST	
	ade	AIL "	>	S2 = S3(E)	MARK	REINF		BAR	LIST	NGTH
Gr 2'-0''	ade	<	>	S2 = S3(E)	MARK *\$5	REINF	ORCING E	BAR	LIST	
Gr 2'-0''	ade DET	י⊣ ו" AIL'	>	S2 = S3(E)) MARK *S5 S6	REINF	ORCING E	BAR	LIST	
Gr 2'-0''	ade	ריי AIL.	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	DT AL
Gr 2'-0''	ade DET	יא ו" AIL'	 /"	S2 = S3(E)	MARK *S5 S6	REINF	ORCING E COUNT/E	BAR	LIST M TC	
Gr 2'-0'' ♥ ₩ fit		`AIL "`\	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	DT AL
Gr 2'-0'' fit fit EADED A	ade DE1	`AIL "`\	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	DT AL
Gr 2'-0''	ncho All	`AIL "`\	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	DT AL
Gr 2'-0''	ade DET	`AIL "`\	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	DT AL
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2	ade DET	`AIL "`\	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	DT AL
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2	ade DET	`AIL "`\	 /"	S2 = S3(E)	MARK *S5 S6	REINF SIZE	ORCING E COUNT/E	BAR	LIST M TC	IT AL
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2	ade DET	AIL "1		= <u>S2</u> <u>S3(E</u> <u>S4</u>	MARK *S5 S6 BEJ DESC	REINF SIZE	ORCING E COUNT/E	BE AI		IT AL
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2	ade DET	AIL "\		= <u>S2</u> <u>S3(E</u> <u>S4</u> ndum Ø7\n	MARK *S5 S6 BE/ DESC	REINF SIZE	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2	ade DET	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2	ade DET	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS IN 9_new.dgn	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit Fit EADED A Sar DET s S1&S2 one *4x: 1	ade DET	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit fit EADED A BAR DET s S1&S2 one *4x:	ade DET	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit EADED A BAR DET s S1&S2 one #4x: N ed end,	ade DET	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' A Fit EADED A SAR DET S S1&S2 one *4x: N ed end, preater) SIGNED	ade DE1	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit EADED A SAR DET Sone #4x: N ad end, preater)	ade DE1 1/2 wcho AIL and 12''	AIL "\		ndum Ø7\n INIA D	MARK *S5 S6 BE/ DESC REVI ew\brD EPAR SION	REINF SIZE NRING RIPTIC	PADS	BAR BE AI	LIST M TC LOCA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' A Fit EADED A SAR DET S S1&S2 one *4x: N ed end, preater) SIGNED	ade DE1 1/2 wcho AIL and 12''	R	-> /"]. 	ndum Ø7\n INIA D	REVI ew \BRD- EPAR' SION GINEE	REINF SIZE RIPTIC SION IVJ 72x4 TMENT OF H RING I	PADS PADS	26 NNS	LIST M TC LOCA LOCA DATE: -JAN-200 PORTA	IT AL IT AL IT ION IT ION BY: 17 10:37
Gr 2'-0'' fit EADED A Sar DET s S1&S2 one #4x: Signe #4x: Signed signed signed Rawn	ade DE1 1/2 wcho AIL and 12''	R	->	ndum Ø7\n INIA D DIVI EN	MARK *S5 S6 BE/ DESC ew\BRD- EPAR SION GINEE	REINF REINF SIZE RIPTIC RIPTIC SION IVJ 72×4 TMENT OF H RING I	PADS PADS	26 NNS	LIST M TC LUCA DATE: DATE: PORTA	TION

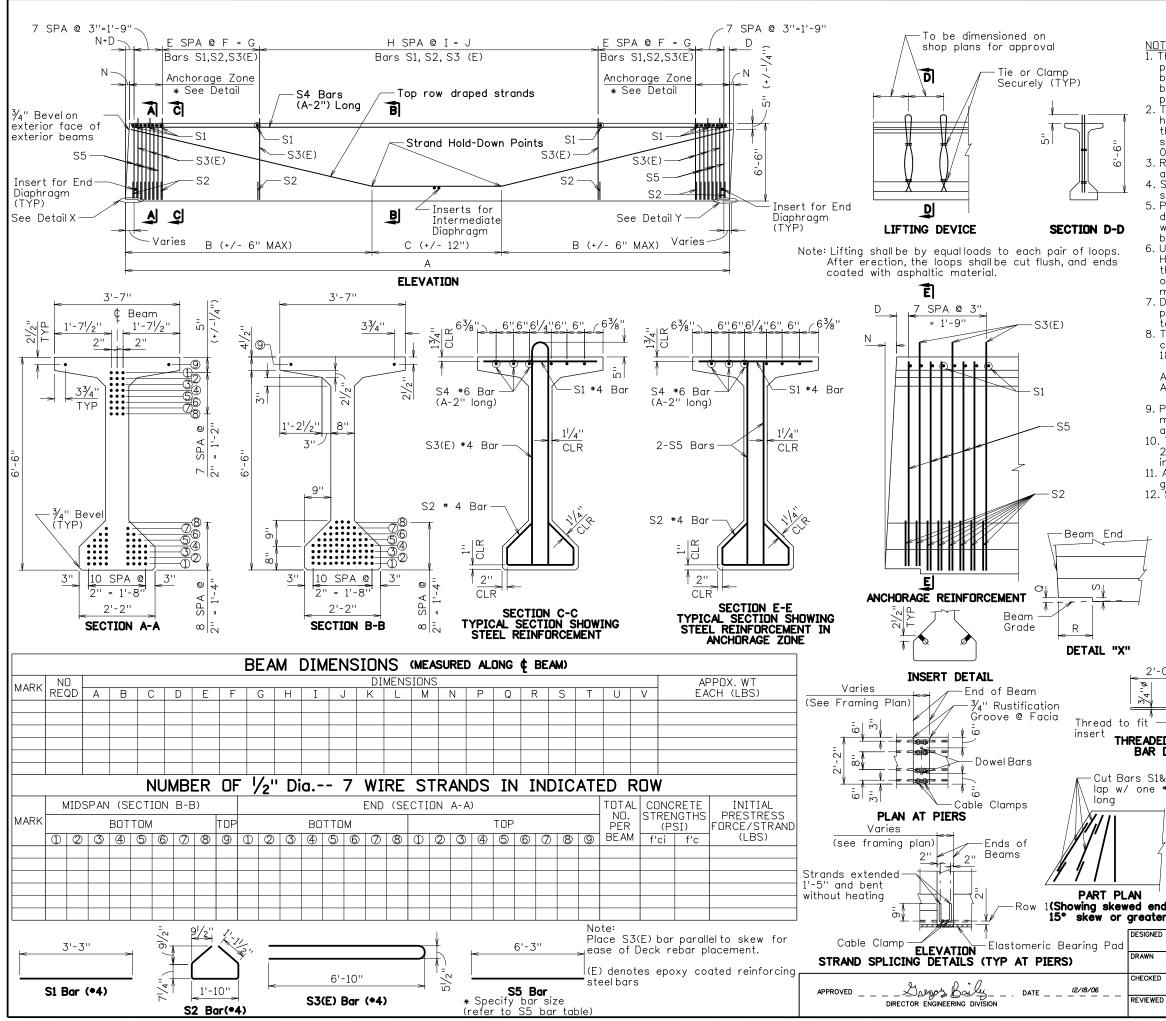


		ECT NUMBERS		DISTRICT	COUNTY	,	SHEET	TOTAL
	STATE	FEDE	RAL				NO.	
NOTES:								
1. The concr	ete shallat own by sto							
beams, be	efore trans	ferring bo	nd str	ess to	the con	cret	e; or	
before re psi within	leasing the 28 days	end anch	iors. (Cylinde	r strengti	ו sh	allbeY	ΥΥΥ
2. The Depa	rtmenť will r							
honeycom	ibed concre ath or dete	ete to the erioration	e exter resisto	nt that Ince is	the Engi	neer Re	deter am	mines
shortening	g due to sl							
0.0005L. 3. Roughen	the top sur	rface of e	ach be	eam t	o an amr	olitud	de of	
approxima	itely 1/4 in	ich and me	aintain	clean	and free	of	laitanc	e.
4. Shop drav sequence	of the str			sioning	pian by	num	bering	the
5. Prestress	ing strands	s shall be s	stabiliz					
	low relaxa ITO M 203							
be applied 6. Uncoated	to the st	trand	oliovod	latrar	d may b		betitut	ad
However,	if the Cont	ractor cho	oses	this al	ternate, r	ne s	hall pro	vide
	n for the s ins to refle							
modificati	on shallbe	made at t	the Čo	ontract	or's expe	ense		
7. Deformed provided	wire fabri an equalst	c is permi eelarea is	tted in provi	nstead ded. V	ot reinfo Ire fabrid	orcin c mi	g stee Jst cor	ibars nform
to the re	quirements	of AASHT	O Sec	tion M	225.			
8. The Elast conform	omeric bed to AASHTC	Division	under 2.Sec	tne p tion 1۶	restresse 3 Duro 60	a b D. S	eams : ection	snall
	specifies la					5		
ASTM A24	45							
ASTM A5	70, Grade C	36						
9. Payment	for Elastom	neric beari	ng pa	ds_and	any pre	form	ned joi	nt
material s	pecified she sheets for	all be inclu details	ded in	Item	603-01.	See	e pier 8	&
10. The thre	aded insert	ts shall hav	ve a n	ninimur	n safe w	/ork	load o	of .
intrusion.	n tension. Omit insert	Allinserts ts on exte	shall b rior fo	e plug ice of	ged to p exterior	reve bear	nt con ms.	crete
11. All thread	ed inserts	and ancho	rage (dowels	are to t	be h	ot-dip	
12. S5 verti	l after fabı calreinforci							
the set of the set of the set								
			stance	as pe	er LRFD 5	5.10.	10.1.	
Refer to	S5 bar to		stance	as pe	er LRFD 5	5.10.	10.1.	
Refer to		oble." 7		REINF	ORCING	5.10. B AR	10.1.	
Refer to	S5 bar to	ble. MARK		REINF	er LRFD 5	5.10. B AR	10.1.	NGTH
Refer to	S5 bar to	MARK		REINF	ORCING	5.10. B AR	10.1.	NGTH
Refer to	S5 bar to	ble. MARK S1 S2	SIZE	REINF	ORCING	5.10. B AR	10.1.	NGTH
Refer to	S5 bar to	MARK	SIZE	REINF	ORCING	5.10. B AR	10.1.	NGTH
Refer to	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	SIZE	REINF	ORCING	5.10. BAR TOT	10.1. LIST AL LE	NGTH
Refer to Beam Grade	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	SIZE	REINF	ORCING	BAR TOT	LIST	
Refer to Beam Grade	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	SIZE	REINF	ORCING	BAR TOT	LIST	NGTH
Refer to Beam Grade DE1	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF	ORCING	BAR TOT	LIST	
Refer to Beam - Grade	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	 SIZE MARK *S5 S6 	REINF	ORCING T/BEAM ORCING COUNT/	BAR TOT	LIST	
Refer to Refer to Beam – Grade 2'-0'' 3 + 1/2	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	LIST)TAL
Refer to Beam Grade DET	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	10.1.)TAL
Refer to Beam Grade DET	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	10.1.)TAL
Refer to Beam Grade DET	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	10.1.)TAL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	10.1.)TAL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL S S1&S2 and	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	10.1.)TAL
Refer to Beam Grade DE1	S5 bar to	$\begin{array}{c c} & & \\ \hline \\ & \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \hline \\ \\ \\ \\$	SIZE	REINF COUN REINF SIZE RING RIPTIC	ORCING T/BEAM CORCING COUNT/ PADS	BAR TOT	LIST LIST LIST M TC LUCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s SI&S2 and one *4x12''	S5 bar to eam End	ble. MARK S1 S2 S3(E) S4	SIZE	REINF COUN REINF SIZE RING RIPTIC	ORCING T/BEAM CORCING CORCING COUNT/ PADS IN	BAR TOT BAR BAR BEA	10.1.	TION
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s SI&S2 and one *4x12''	S5 bar to eam End 	→ MARK > S1 S2 S3(E) S4 S4	SIZE	REINF COUN REINF SIZE RING RIPTIC	ORCING ORCING T/BEAM ORCING COUNT/ PADS N N	BAR TOT BAR BAR BEA	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s SI&S2 and one *4x12''	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA D	KEVIS REVIS BEA BEA REVIS BEART		ORCING ORCING T/BEAM ORCING COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s SI&S2 and one *4x12''	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	KEVIS KE		CORCING CORCING CORCING COUNT/ COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12''	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	KEVIS KE		CORCING CORCING CORCING COUNT/ COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s SI&S2 and one *4x12''	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	KEVIS KE		CORCING CORCING CORCING COUNT/ COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12''	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	KEVIS KE		CORCING CORCING CORCING COUNT/ COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s S1&S2 and one #4x12'' N d end, reater) SIGNED DATE 12/5/06	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	KEVIS KE		CORCING CORCING CORCING COUNT/ COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO SAR DETAIL s S1&S2 and one #4x12'' N d end, reater) SIGNED DATE 12/5/06	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	KEVIS KE		CORCING CORCING CORCING COUNT/ COUNT/ PADS N N	5.10. BAR TOT BAR BEA BEA 26 ANS	LIST LIST LIST M TC LOCA LOCA LOCA	DT AL
Refer to Beam- Grade DET 2'-0" fit EADED ANCHO SAR DETAIL s S1&S2 and one #4x12"	S5 bar to eam End 	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI	SION BEART SION SION		PADS	5.10. BAR TOT BAR BEA BEA	10.1. <u>LIST</u> <u>LIST</u> <u>M</u> TC <u>DATE</u> <u>DATE</u> PORT	TION
Refer to Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL S SI&S2 and one #4x12'' Nad end, reater) SIGNED DATE (2/5/06 RAWN	S5 bar to eam End AIL "Y"	Able. MARK S1 S2 S3(E) S4 S4 Addendum Ø7\n RGINIA DI DIVI EN	SIZE MARK *S5 S6 BEA DESC BEA DESC EPART SION GINEEI	REINF COUN REINF SIZE SIZE RIPTIC RIPTIC	DRCING DRCING DRCING DRCING COUNT/ PADS N 	5.10. BAR TOT BAR BEA BEA	10.1. AL LE LIST M TC 	TION



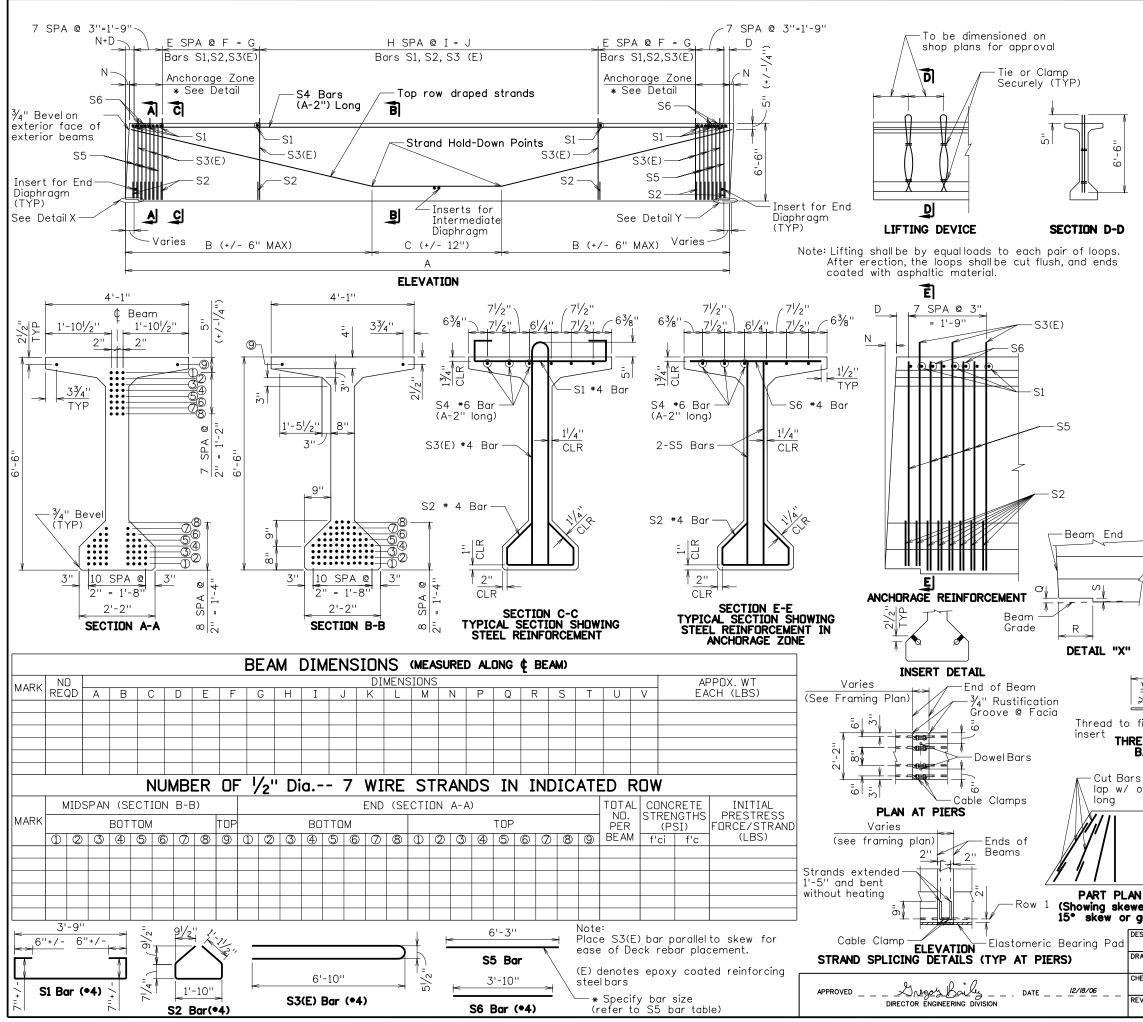
				DISTRICT	COUNTY	SHEET	TOTAL
		STATE	FEDERAL				
<u>NOTES:</u> 1. The		ete shallatt	ain a compre	l ssive st	renath of at	least >	
psi, (as sh	own by star	idard cylinder:	s cured	identically v	vith the	
befo	re re	leasing the	erring bond st end anchors.	Cylinde	r strength sl	nall beY	YYY
2. The	Depa		eject the bear				
hone the	eycom stren	bed concret ath or deter	e to the extension resis	ent that tance is	the Enginee reduced. B	r deter eam	mines
shor	tening 05L	g due to shi	inking and ela	istic ch	langes is limi	ted to	
3. Roug	ghen t		ace of each				
4. Shop	o drav	wings shall sh	h and maintai now the deter	n clean Isioning	plan by nun	nbering	e. the
		of the stra ing strands	nd pattern. shallbe stabili	zed str	and (1/2 inc	h nomi	nal
diam	neter)	low relaxati	on uncoated grade 270. A	seven v	vire strand i	n accor	dance
be c	applied	d to the str				•	
Howe	ever,	if the Contr	actor chooses	this al	lternate, he 🤅	shall pro	vide
origi	nal pľo	ins to reflea	ress relieved ct these chan	ges. Th	is design and	d plan	
			nade at the C is permitted				lbars
prov	rided	an equalste	elarea is prov of AASHTO Se	/ided. V	Vire fabric m		
8. The	Flast	omeric bear	ing pads unde Division 2, Se	r the p	restressed b	eams s	shall
18.2	.3.2 :	specifies lam	ninate materia	I to be:	5 Duro 60	Section	
	M A24						
		70,Grade 36					
9. Payr mate	nent 1 erial si	for Elastome pecified shal	ric bearing p Ibe included i	ads anc n Item	l any prefor 603-01. Se	med joi e pier l	nt &
abut	ment	sheets for				•	
2500	0 lb i	n tension. A	llinserts shall	be plug	ged to prev	ent con	crete
11. All th	hreade	ed inserts a	on exterior nd anchorage	dowels	are to be l	not-dip	
			cation. Includ g bars placec				
		ied for burs S5 bar tab	ting resistanc de.	e as pe	er LRFD 5.10	.10.1.	
+	В	eam End-,		DETNI	ORCING BA		
_	+		MARK SIZ			TAL LE	NGTH
Ļ	Ļ	/	S1				
]	1 ⊢∤	>	. S2 ¥ S3(E)				
	<u> −</u> ∦		* <u>SS(L)</u> S4				
	am — ade				I.		
	DET	AIL "Y"	MAR		CORCING BAR)TAL
2'-0''			*S5				
	11/2						
	<u>► ´`</u>	- NO.		A RING Criptic			TION
it [#] —							
ADED A		R					
	~~~						
S1&S2 one #4x3							
лю тх. ,	÷ ←						
		NO.	RE	ISION		DATE	: BY:
Ļ		MEGT MO					
4		WEST VIR	GINIA DEPAF DIVISION		f of trans IIGHWAYS	SPURIA	ATION
					DIVISION		
ed end, (reater)							
SIGNED	DATE 12/5/06						
AWN	12/ 3/00						
ECKED		ΔΛΟυτ	O TYPE IV -		RFAM Is	HEET	
			DEEP, 37" TOP			OF	

BRD-IVJ 78X37

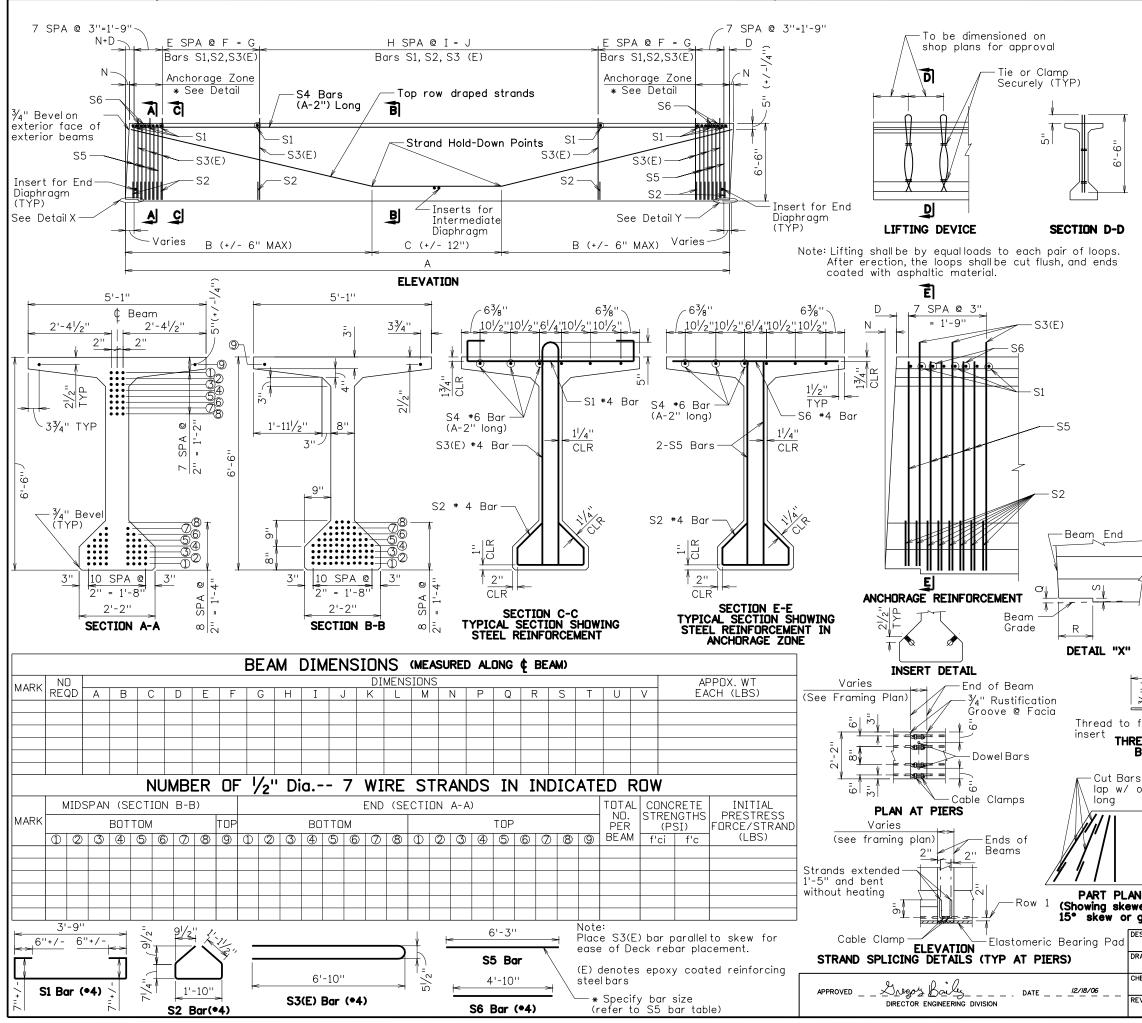


		PROJECT STATE	NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
NOTES:							
1. The	concr	ete shallatta own by stanc					XX
bear	ns, be	fore transfer leasing the e	ring bond sti	ress to	the concret	e; or	,,, I
psi w	/ithin	28 days. rtment willrej		·	5		
hone	eycòm	bed concrete gth or deterio	e to the exte	nt that	the Engineer	deter	
shor	tening 05L.	g due to shri	nking and ela	stic ch	anges is limit	ed to	
3 Roug	nhen t	the top surfa itely 1/4 inch	ice of each b	eam t	o an amplitue	de of Jaitanc	۵
4. Shop	o drav	wings shall sha of the stran	ow the deten	sioning	plan by num	bering	the
5. Pres	stress	ing strands s low relaxatio	hall be stabiliz				
with	AASH	ITO M 203 g to the stra	rade 270. Ar				
6. Unco	bated	seven wire s if the Contra	tress relieved	d strar this al	id may be su ternate he s	bstitut	ed. vide
the	desig	n for the stre ins to reflect	ess relieved s	strand	and shall revi	se the	, au
mod	ificati	on shallbe m wire fabric i	ade at the Č	ontract	or's expense	•	lbars
prov	vided	an equal steel quirements o	area is prov	ided. V	Vire fabric m	ust cor	nform
8. The	Elast	omeric bearir to AASHTO [	na pads under	the p	restressed b	eams s lection	shall
		specifies lami					
	M A24 M A51	45 70,Grade 36					
9. Payr mate	ment i erial si	for Elastomer pecified shall	ic bearing pa be included ir	ds and 1 Item	any preform 603-01. See	ned joi e pier 8	nt &
abut	ment	sheets for d aded inserts	etails.				
250	0 lb i	n tension. All Omit inserts	inserts shall b	be plug	ged to preve	ent con	crete
galv	anizec	ed inserts an I after fabric	ation. Include	the c	ost in Item	603-01	
is	desigr	calreinforcing ned_for_bursti	ng resistance	at the as pe	ends of the er LRFD 5.10.	beam 10.1.	
Ret		S5 bar table	э.				
1	-Е	eam End	MARK SIZE		TORCING BAR	LIST	NGTH
Ļ	Ļ		S1				
]	7 ⊢∤	>	S2 S3(E)				
Be	am —		S4				
Gr	ade			REINF	ORCING BAR	LIST	]
	DET	AIL "Y"	MARK				TAL
<u>2'-0''</u> <u>`</u>	≥11/2	11	<b>*</b> S5				]
× ×	<u></u>	- <u>NO.</u>		<b>ARING</b> RIPTIC		LOCA	TION
"it" —			DESC				
ADED A		R					
S1&S2	and						
one #4x							
		NO.	REVI	SION		DATE	BY:
Ļ							
		WEST VING	INIA DEPAR DIVISION ENGINEE	OF H	IIGHWAYS	PURIA	
l I end,		<b></b>					
eater) SIGNED	DATE						
AWN	DATE 12/5/06						
ECKED						FFT	
VEWED			) TYPE IV – DEEP, 43″ TOF		BEAM	EET OF BRIDGE	NO.

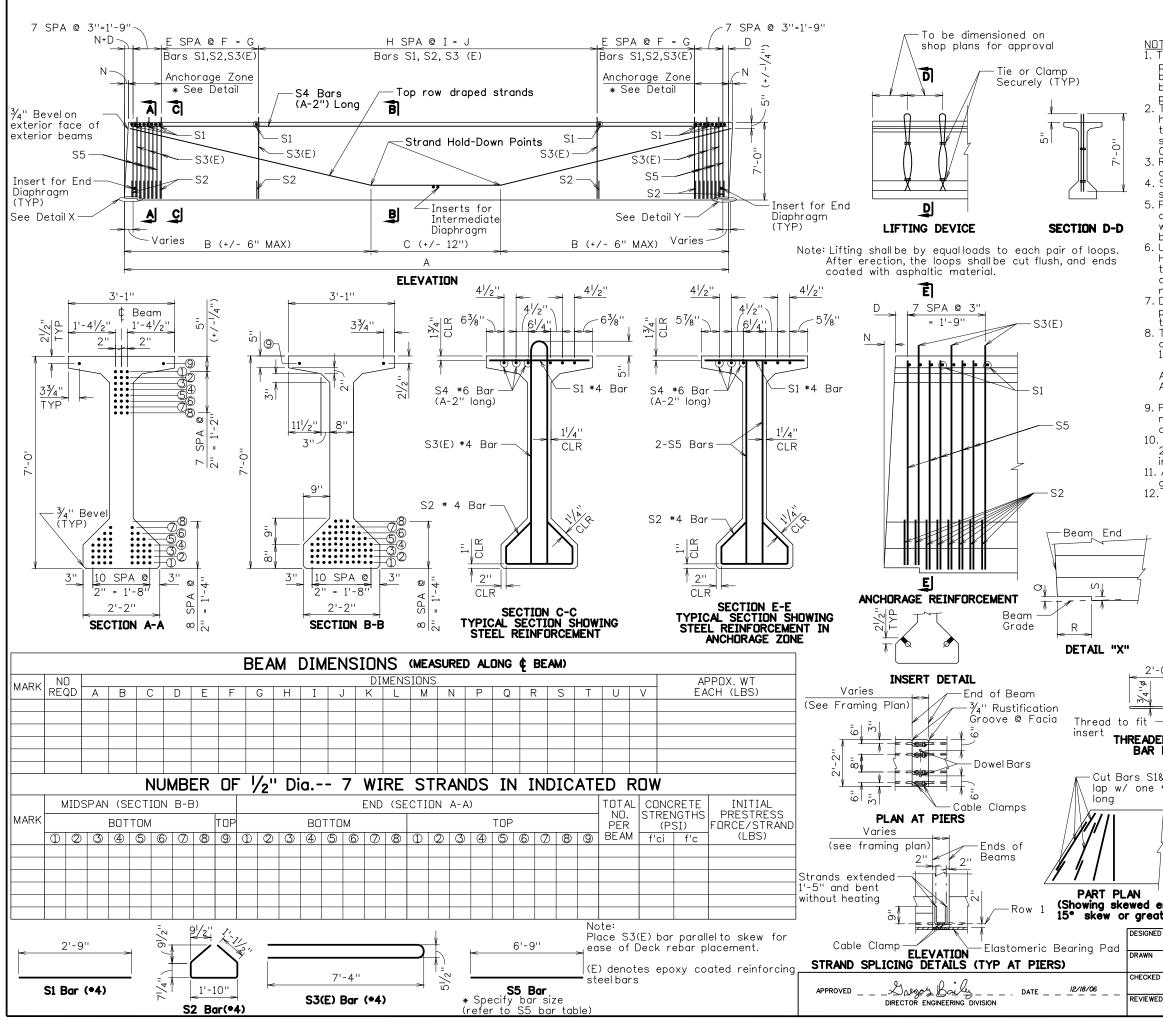
BRD-IVJ 78X43



	-					DISTRICT	COUNT	Y	SHEET NO.	TOTAL
	ŀ	51/	ATE	FEDEF					110.	
NOTES:										
1. The co	oncr	ete sh	all atta	in a cor	npres	sive st	renath o	f at	least 2	xxx
psi, as	s sha	own by	' stand	dard cyli	nders	cured	identical	ly w	ith the	
							the cor			~~~
		leasing 28 day		nu anch	urs. (	yımae	r strengt	n sn	ui be î	111
2. The D				ect the	beam	s if th	e finished	d uni	ts cor	tained
honeya	còm	bed co	oncrete	e to the	exte	nt that	the Eng	ineer	deter	
							reduced			
shorte 0.0005		aue t	lo shri	nking an	ia elas	stic ch	anges is	limit	ed to	
3. Rough		he tor	surfc	ice of e	ach b	eam t	o an am	plitu	de of	
appro>	xima	tely 1/2	4 inch	and ma	aintain	clean	and free	e of	laitanc	
4. Shop	drav	vings s	shall sha	ow the (	detens		plan by			
sequer 5. Prestr				d patter		od ot-	and (1/0	incl	h na	nal
							vire strar			
with A	ASH	то м	203 g	rade 27			stress o			
		to th				L _ L	ااس	_		had
6. Uncoa	ted	seven	wire s	stress re	elievec	l strar	id may b	e si	bstitut	ted.
the de	esiar	for t	he str	ess relie	ved s	trand	lternate, and shall	revi	se the	, viue
origina	al pľa	ns to	reflect	t these	change	es. Th	is design	and	plan	
modifi	catio	on sha	llbe m	ade at t	he Čo	ontract	or's exp	ense		
7. Deforr	med	wire f	abric	is permi Laroa	tted i	nstead	of reinfo Vire fabri	orcin	g stee	
to the	e red	auirem	ents o	f AASHT	Ó Sec	tion M	225.			
8. The El confor	lasta	omeric	bearir	ng pads	under	the p	restresse	ed b	eams	shall
confor	rm	to AAS	SHTO [	Division 2	2, Sec	tion 18	3 Duro 6	0. S	ection	
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10. The t	three	aded in	nserts	shall hav	ve a r	ninimur	n safe v	vork	h bol	of
2500	lb ir	n tensi	ion. All	inserts	shall b	e plug	ged to p	reve	ent cor	ncrete
intrusi	ion.	Omit ir	nserts	on exte	rior fo	ace of	exterior	bea	ms.	
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			loreine	i hars n						1.
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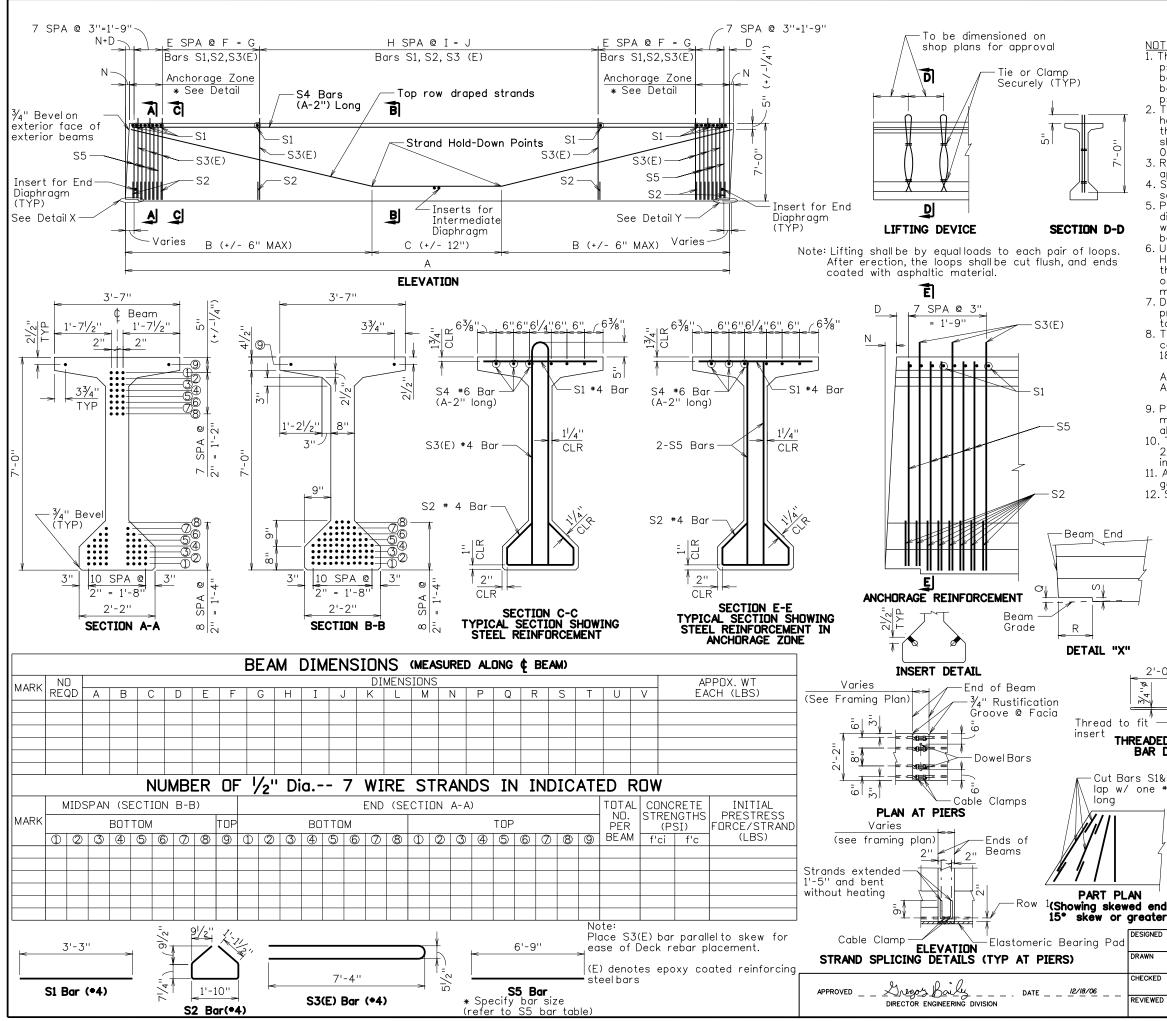


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	eam E	nd >	S1 S2						NGTH
B T T T T			S1						NGTH
			S1 S2						NGTH
Beam -			S1 S2 S3(E)						NGTH
			S1 S2 S3(E)				ТОТ	AL LE	NGTH
Beam – Grade			S1 S2 S3(E)		REINF	IT/BEAM	TOT	LIST	NGTH
Beam – Grade			S1 S2 S3(E)	MARK	REINF	IT/BEAM	TOT	LIST	
Beam - Grade			S1 S2 S3(E)	MARK *S5	REINF	IT/BEAM	TOT	LIST	
Beam - Grade			S1 S2 S3(E)	MARK	REINF	IT/BEAM	TOT	LIST	
Beam - Grade			S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	
Beam - Grade		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	
Beam - Grade DET		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' get 1/2 fit EADED ANCHO		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' get 1/2 fit EADED ANCHO		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' fit fit EADED ANCHO BAR DETAIL		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL		/11	S1 S2 S3(E)	MARK *S5 S6	REINF	T/BEAM	TOT	LIST	IT AL
Beam - Grade DE		/11	S1 S2 S3(E)	MARK *S5 S6 BEA DESC	REINI REINI SIZE	T/BEAM	TOT	LIST   LOCA	IT AL
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL		/11	S1 S2 S3(E)	MARK *S5 S6	REINI REINI SIZE	T/BEAM	TOT	LIST	IT AL
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL			S1 S2 S3(E) S4	MARK *S5 S6 BEA DESC	REINI REINI SIZE RING RIPTIC	T/BEAM	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL			S1 S2 S3(E) S4	MARK *S5 S6 BEA DESC		TORCING	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL			S1 S2 S3(E) S4	MARK *S5 S6 BEA DESC		T/BEAM	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TORCING	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit fit SARED ANCHO BAR DETAIL s S1&S2 and one #4x12''				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12''				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12''				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12''				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12'' N red end, greater) ESIGNED DATE				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12'' N red end, greater) SIGNED DATE [2/5/06				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12'' N red end, greater) SIGNED DATE [2/5/06				MARK *S5 S6 BEA DESC REVIS	REINF SIZE RING RIPTIC	TOF TRA	BAR	AL         LE           LIST	TION
Beam - Grade DET 2'-0'' fit fit SEADED ANCHO BAR DETAIL s S1&S2 and one #4x12'' Need end, greater) SSIGNED DATE [2/5/06 RAWN			S1 S2 S3(E) S4	MARK *S5 S6 BEA DESC REVIS		TORCING COUNT/1 PADS IN TOF TRA IIGHWAYS	BAR BEA	AL     LE       LIST       M     TC       I     DATE       DATE	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one *4x12'' N red end, greater) SIGNED DATE [2/5/06				MARK *S5 S6 BEA DESC REVIS EPAR SION GINEEI		TORCING COUNT/ COUNT/ PADS IN FOF TRA IGHWAYS DIVISION	BAR BEA	AL         LE           LIST	TION
Beam Grade DET 2'-0'' fit EADED ANCHO BAR DETAIL s S1&S2 and one #4x12'' N red end, greater) ESIGNED DATE 12/5/06 RAWN HECKED			S1 S2 S3(E) S4	MARK *S5 S6 BEA DESC REVIS EPAR SION GINEEI		TORCING COUNT/ COUNT/ PADS IN FOF TRA IGHWAYS DIVISION	BAR BEA	AL       LE         LIST	
Beam - Grade DET 2'-0'' fit fit SEADED ANCHO BAR DETAIL s S1&S2 and one #4x12'' Need end, greater) SSIGNED DATE [2/5/06 RAWN			S1 S2 S3(E) S4	MARK *S5 S6 BEA DESC REVIS EPAR SION GINEEI		TORCING COUNT/ COUNT/ PADS IN FOF TRA IGHWAYS DIVISION	BAR BEA		



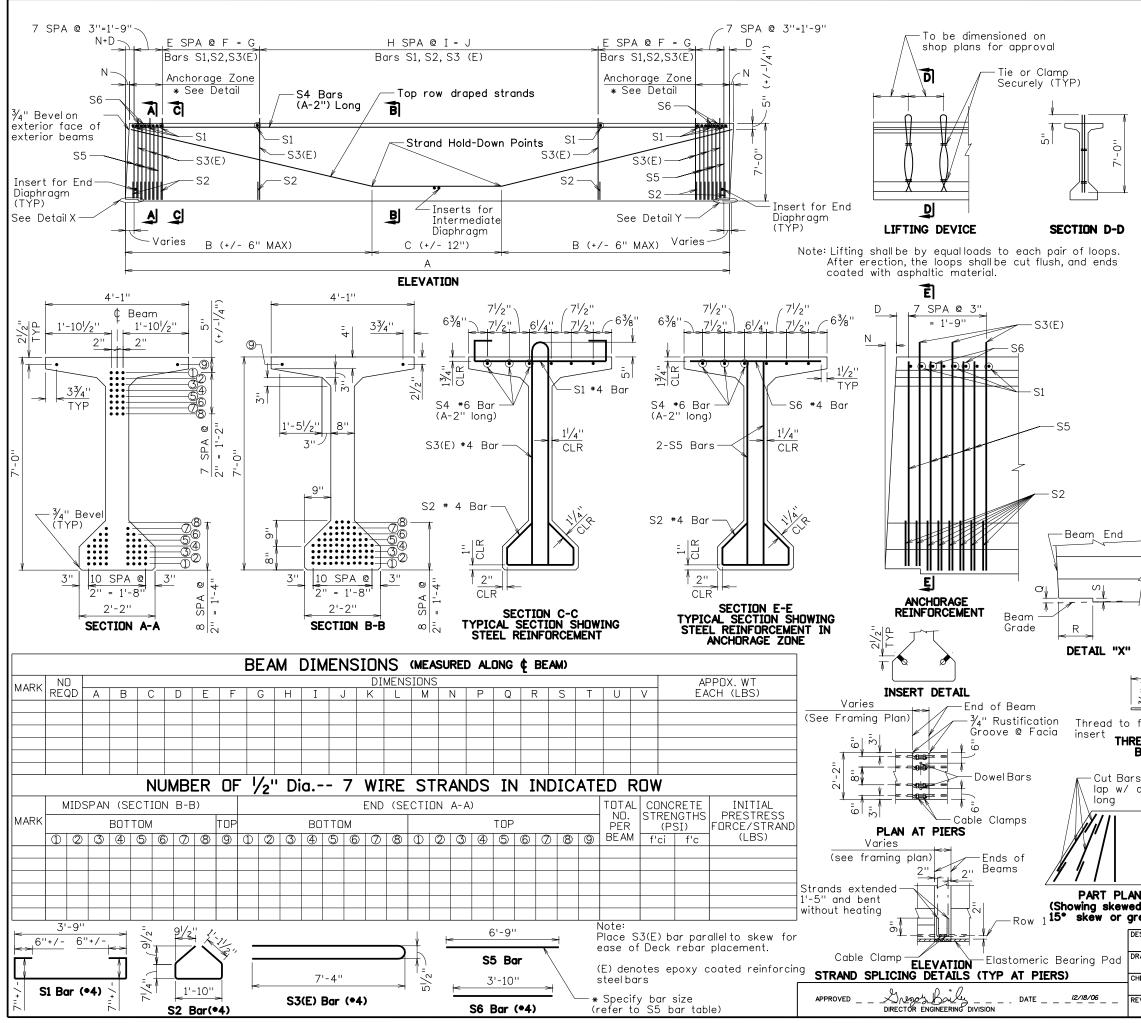
		PROJE STATE		S	DISTRICT	COUNTY	SHEET NO.	TOTAL
		UNIL						
	concr					rength of at		XX
bean	ns, be	fore trans	ferring b	ond str	ress to	identically w the concret	e; or	
psi w	ithin .	28 days.				r strength sh		
						e finished uni the Engineer		
the	śtren	gth or dete	erioration	resiste	ance is	reduced. Be anges is limit	am	
0.00	05L.		5			o an amplitud		
appr	oximo	itely 1/4 in	ch and n	naintain	clean	and free of plan by num	laitanc	e.
sequ	ience	of the str	and patte	ern.	5	and (1/2 incl	5	
diam	eter)	low relaxa	tion unco	bated s	even v	vire strand in	accor	dance
be c	pplied	to the st	rand			stress of 20		
Howe	ever,	if the Cont	ractor cł	nooses	this al	id may be su ternate, he s	hall pro	ed. vide
origi	nal pľc	ins to refle	ect these	chang	es. Th	and shallrevi is design and	plan	
7. Defo	rmed	wire fabri	c is pern	nitted i	nstead	or's expense of reinforcin	g stee	lbars
prov to ti	ided he re	an equalst quirements	eelarea i of AASH	s provi ITO Sec	ided. V ction M	Vire fabric m 225.	ust cor	nform
8. The conf	Elast	omeric bec to AASHTE	ring pad: I Division	s under 2, Sec	the p tion 18	restressed b 3 Duro 60. S	eams s ection	shall
		specifies la						
	M A24 M A57	45 70,Grade 3	36					
9. Payr	nent 1	for Elastom	neric bea	ring pa	ds and	any preforn 603-01. See	ned joi	nt
abut	ment	sheets for	details.					
2500	) lb i	n tension.	Allinserts	s shall t	be plug	n safe work ged to preve	ent con	crete
11. All th	nreade	ed inserts	and anch	orage	dowels	exterior bear are to be h	ot-dip	
12. S5	vertic	cal reinforci	ng bars	placed	at the	ost in Item ends of the	beam	
		ied for bur S5 bar to		istance	as pe	er LRFD 5.10.	10.1.	
+	В	eam End-	7		REINF	ORCING BAR	LIST	
-	+		MAR	K SIZE			AL LE	NGTH
7	ζ _{μι}		S1	,				
	am —		S4					
Gro					REINF	ORCING BAR	LIST	
2'-0''	DEI	AIL "Y"		MARK *S5	SIZE	COUNT/BEA	м то	TAL
<u></u>	11/2			*30				]
- <u>4</u>	= ^{1/2}	-						TION
"it [*]		NO.		DESC	RIPTIC	JIN	LOCA	
ADED A		R						
: S1&S2 one #4x1							1	
		NO.		REVI	SION		DATE	BY:
Ž		WEST VI	RGINIA I	DEPAR	TMENT	OF TRANS	PORTA	
						IIGHWAYS		
 I								
ed end, reater)								
SIGNED	DATE							
AWN	12/5/06							
ECKED		202		PEIV –	J PC	BEAM SH	EET	
			4" DEEP,				OF	

BRD-IVJ 84X37

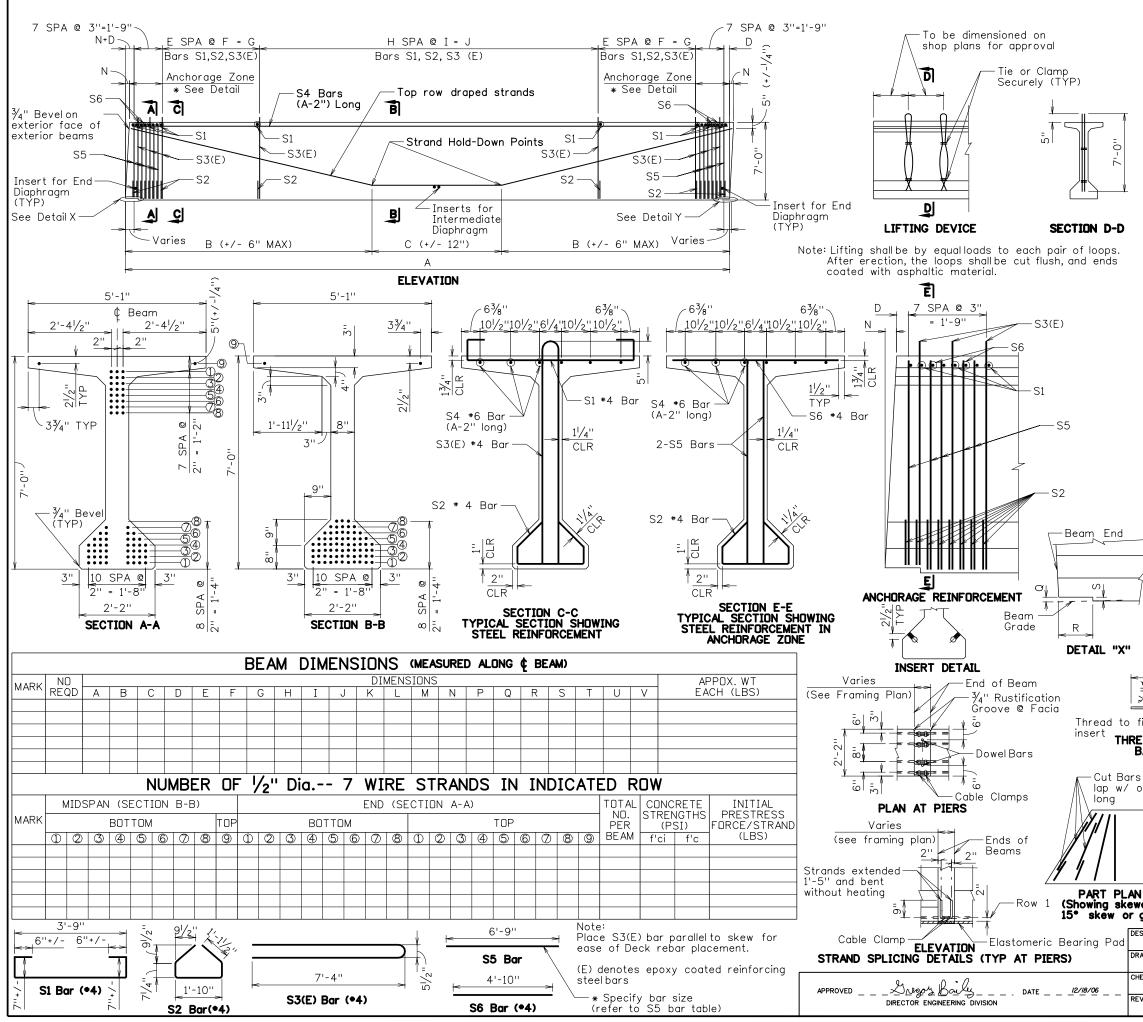


	PR		NUMBERS		DISTRICT	COUNTY		SHEET NO.	TOTAL
	STAIL	-					+		
<u>NDTES:</u> 1. The conc	L rete shall	atta	in a cor	npres	sive st	renath of a	 pt I	least X	(XX
psi, as sl	nown by :	stand	lard cyli	nders	cured	identically the concr	wi	th the	
before r		he e				r strength			YYY
2. The Depo	artment w	illrej							
the strer	ngth or de	eteric	pration r	resisto	ince is	the Engine reduced.	Be	am	111162
0.0005L.	5		5			anges is lir			
3. Roughen approxim	ately 🖓	inch	and mo	aintain	clean	and free a	o f 🛛	laitanc	e.
	of the s	stran	d patter	'n.	-			-	
5. Prestres: diameter						and (1/2 ir vire strand			
	HTD M 20 d to the			'0. An	initial	stress of 2	202	2.5 psi	shall
6. Uncoated	seven w	ire s	tress re	elievec	l strar this al	id may be ternate, he	sul st	bstitut all pro	ed. vide
the desid	n for the	e stre	ess relie	eved s	trand	and shallre is design a	evis	se the	vide
modificat	ion shall b	be m	ade at t	he Čo	ontract	or's expension	se.		Ibara
7. Deformed	an equal	steel	area is	provi	ded. V	Vire fabric	mu	ist cor	form
8. The Elas	equirement tomeric b	earin	ig pads	under	the p	restressed	þe	ams s	shall
	to AASH specifies					3 Duro 60.	Se	ection	
ASTM A2		_							
	70, Grade		<b>.</b> .					, -	
9. Payment materials	for Elast specified	omer shall l	ic beari be inclu	ng pa ded in	ds and Item	any prefo 603-01. S	rm ee	ied joi pier 8	nt %
abutment 10. The thre	sheets f aded ins			ve a r	ninimur	n safe wo	rk	load c	of
2500 lb	in tensior	n. All	inserts	shall b	e plug	ged to pre exterior be	ve	nt con	crete
11. All thread	led insert	s an	d ancho	rage (	dowels		ha	ot-dip	
12. S5 vert	ical reinfo	rcing	bars p	laced	at the		ne	beam	
	s S5 bar				de pe				
† , Е	Beam End	17			REINF	ORCING B			
1 F	•		MARK S1	SIZE		IT/BEAM T	OT	AL LE	NGTH
ί <del>ζ</del> μ	1	-   >1	S2					_	
			= S3(E)						
Beam - Grade	υ		S4						
	⊶ "Y" TAIL	+				ORCING B			
2'-0"				MARK *S5	SIZE	COUNT/BE	EAN		TAL
<u>~~</u> <u>~</u>	»"								
	<u> </u>				<b>RING</b> RIPTIC			LOCA	
"it"				2200				2007	
ADED ANCHI									
S10.50 ~~									
s S1&S2 and one #4x12''									
				DE: //				D.17-	
	NO.			REVIS	SION			DATE:	BY:
ζ	WEST	VIRG				OF TRAN	ISI	PORTA	TION
						IIGHWAYS			
l end, eater)									
SIGNED DATE	-								
12/5/06 AWN	4								
ECKED		SHTO	TYPE	IV – .I	PC	BEAM	SHE		
VIEWED			)EEP, 43"					OF BRIDGE	NO.

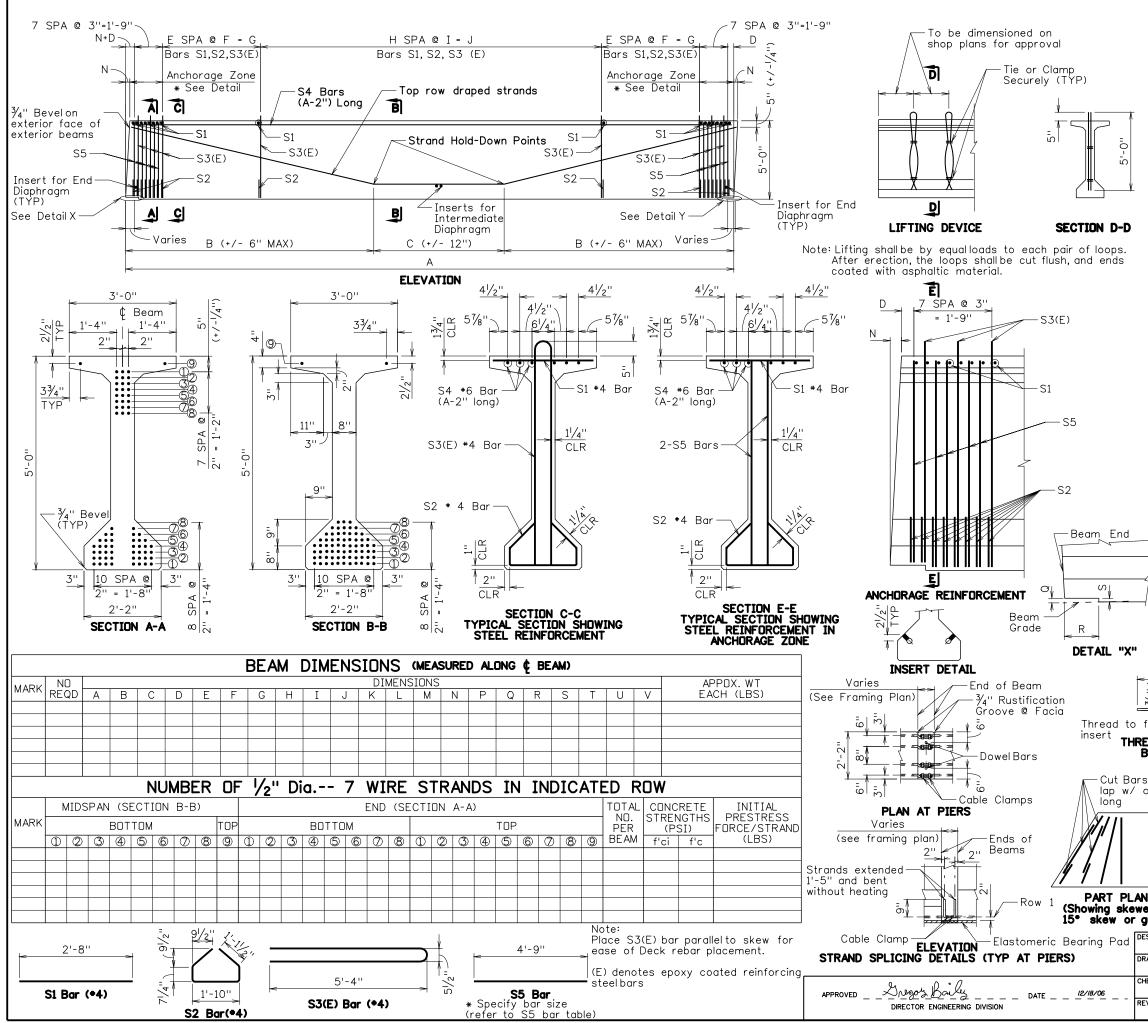
BRD-IVJ 84X43



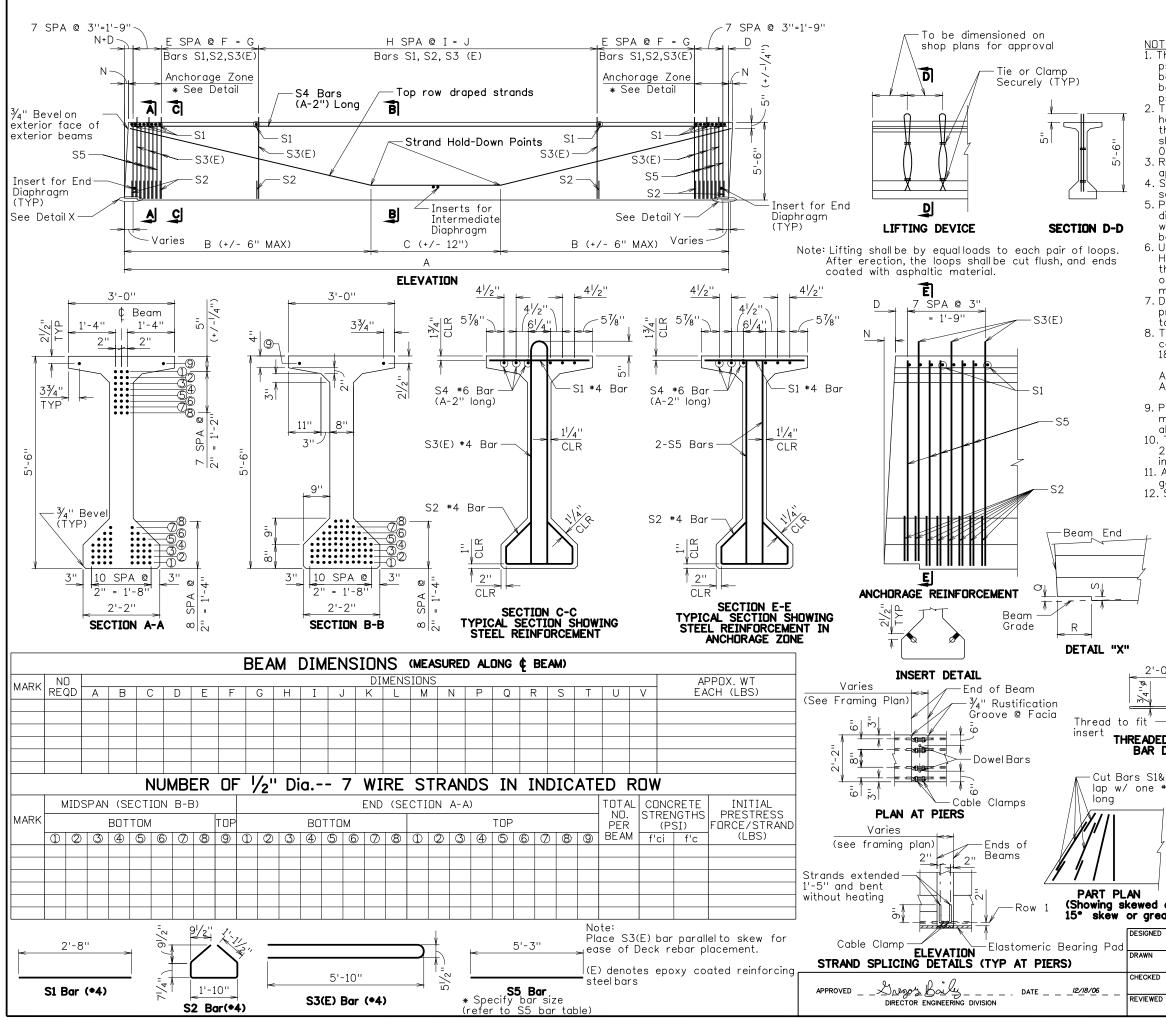
	1	PROJECT	NUMBERS					SHEET	
	ST		FEDEF	RAL	DISTRICT	COUNTY		NO.	TOTAL
NOTES:									
1. The conc	rete sh	all attai	in a cor	npres	sive st	rength of	at l	east >	XX
psi, as sr	own by	stana	ara cyii rina bor	nders	curea	identically the conci	WIU Coto	in the	
						r strength			YYY
psi within	28 day	'S.				5			
2. The Depo									
noneycor	nbed co nath or	deteric	to the	exte	nt that	the Engine reduced.	er Ro	aeter	mines
						anges is lir			
0.0005L.		_	5			5			
3. Roughen									
4. Shop dro	winds s	a inch hall she	w the a	detens	sioning	and free	umh	artanc erina	e. the
sequence	ofthe	stranc	d patter	n.					
5. Prestres									
						vire strand stress of 2			
be applie				0. ///	million	311033 01 2	202	.o po	Shai
6. Uncoated									
						ternate, he and shall re			vide
						is design a			
modificat	ion shal	lbe ma	ade at t	he Co	ontract	or's expen	se.		
7. Deformed									
to the re	an equ equirem	ents of	f AASHTI	provi D Sec	ueu. V ction M	Vire fabric 225.	mu	sicor	norm
8. The Elas	tomeric	bearin	g pads	under	the p	restressed	be	ams s	shall
conform	to AAS	SHTO D	ivision 2	2, Sec	tion 18	8 Duro 60.	Se	ection	
18.2.3.2	specifie	is lamir	nate ma	terial	to be:				
ASTM A2									
ASTM A5	70, Gra	de 36							
9. Payment	for Flas	stomeri	ic heari		ds and	any prefe	rm	ed ini	nt
						603-01. 5			
abutment	sheets	for de	etails.					·	
10. The thre									
						ged to pre exterior b			crete
11. All thread									
galvanize	d after	fabrico	ation. Ir	nclude	the c	ost in Item	n 6	03-01	
12. S5 vert	ical reint	orcing	bars pl	aced	at the	ends of ti er LRFD 5.1	10 1		
Refer to	s S5 ba	ar table	ny resis e.	tunce	us pe		10.1	0.1.	
_	_								
t	Beam E	nd 7			REINF	ORCING B			
+ $=$		—//	MARK	SIZE	E COUN	IT/BEAM T	OT/	AL LE	NGTH
4		1	S1						
ζ <u>γ</u> ⊢		>	S2						
			= S3(E)						
, ,	^ /*	1	S4						
Beam – Grade	U		r						
	<	->-			1	ORCING B			
DE	TAIL "Y	/11		MARK	SIZE	COUNT/B	EAM	1 TO	TAL
2'-0''				*S5					
<u> </u>			l	S6					
	2''			BF4	RING	PADS			]
		).			RIPTIC	= .		LOCA	TION
fit [®] —				2200			-+	2007	
EADED ANCH	)R								
BAR DETAIL							-+		
							-+		
s S1&S2 and	L								]
one #4x12"									
	NO.			REVI	SION			DATE	BY:
ζ	WEST	VIRG	INIA DE	<b>PAR</b>	TMENT	of trai	NSF	PORTA	TION
			DIVI	SION	OF H	IGHWAYS			
						DIVISION			
N									
d end,									
eater)									
ESIGNED DATE	1								
12/5/06									
RAWN	1								
HECKED	<u> </u>		<b>. .</b>		1 85	DEALA	C1 1F	<b>F</b> T	
	4		) TYPE				SHE	ET OF	
EVIEWED	1	84″ [	DEEP, 49			GE		BRIDGE	NO.
			BRD-IV	J 84X	(49				



	F STA		NUMBERS FEDE	RAL	DISTRICT	COUNTY	,	SHEET NO.	TOTAL
NOTES									
<u>NOTES:</u> 1. The concr psi, as sh beams, be	own by efore tr	stanc ansfer	lard cyli ring boi	nders nd str	cured ess to	identicall the con	y wi cret	ith the e; or	
before re psi within 2. The Depa honeycom	28 day rtment	s. will rej	ect the	beam	s if th	e finished	uni	ts con	tained
the stren shortening 0.0005L.	gth or g due t	deterio o shri	nking ar	resisto nd ela:	ance is stic ch	reduced anges is	. Be limit	eam .ed to	inines
<ol> <li>Roughen approxima</li> <li>Shop drav sequence</li> </ol>	itely ½ wings sl	inch hall sho	and mo ow the	aintain deten:	clean	and free	of	laitanc	e. the
5. Prestress diameter) with AASH	ing stro low rel ITO M 2	ands s Iaxatio 203 g	hallbe s n uncoc rade 27	stabiliz Ited s	even v	vire stran	d in	accor	dance
be applied 6. Uncoated However, the design	seven if the C n for th	wire s Contra ne stre	tress re ctor cho ess relie	ooses eved s	this al strand	Iternate, h and shall	ne si revi	hallprc se the	ed. vide
original plc modificati 7. Deformed provided	on shall wire fo	lbe m abric i	ade at l s permi	the Čá tted i	ontract nstead	or's expe of reinfo	nse. rcin	g stee	
to the re 8. The Elast conform 18.2.3.2	quireme omeric to AAS	ents o bearir HTD D	f AASHT 1g pads Division 1	0 Sec under 2, Sec	tion M the p tion 18	225. restresse	d b	eams s	
ASTM A24 ASTM A5	70, Grad								
9. Payment material s abutment 10. The thre	pecified sheets aded in	shall for de serts	be inclu etails. shall hav	dĕd'in /ear	ı Item ninimur	603-01. n safe w	See ork	e pier 8 load d	& of
2500 lb i intrusion. 11. All thread galvanized 12. S5 vertio	Omit in ed inser d after cal reinf	serts rts an fabric orcing	on exte d ancho ation. Ir bars p	rior f rage nclude laced	ace of dowels the c at the	exterior are to to ost in Ite ends of	bear be h m f the	ms. ot-dip 603-01 beam	
Refer to	S5 ba	ır table		stunce	us pe	er LRFD 5	5.10.	10.1.	
− B	eam Ei		MARK	<u> </u> SI7F		TORCING			NGTH
			S1 S2						
			= S3(E) S4	)					
~~~~~~	1 U								
Grade	<								
DET	AIL "Y			MARK *S5					ITAL
DE1	AIL "Y	- > 'U							ITAL
DE1	 AIL "Y			*S5 S6 BE/	SIZE	PADS		м тс	
DE	AIL "Y			*S5 S6 BE/	SIZE	PADS			
	AIL "Y			*S5 S6 BE/	SIZE	PADS		м тс	
DET	AIL "Y			*S5 S6 BE/	SIZE	PADS		м тс	
DET 2'-0'' fit fit EADED ANCHO BAR DETAIL S S1&S2 and	AIL "Y			*S5 S6 BE/	SIZE	PADS		м тс	
DET	FAIL "Y			*S5 S6 DESC	RIPTIC	PADS JN	BEAI	M TC	TION
DET	FAIL "Y	V3 Adden		*S5 S6 BE/ DESC REVI ew\BRD- EPAR	SION NTING SION IVJ 84×6 TMENT	PADS JN		M TC	TION BY: 17 10:38
DET	FAIL "Y	V3 Adden	inia di Divi	REVI ew\BRD- EPAR SION	SION NU B4x6 TMENT OF H	PADS IN		M TC	TION BY: 17 10:38
DET	FAIL "Y	V3 Adden	inia di Divi	REVI ew\BRD- EPAR SION	SION NU B4x6 TMENT OF H	PADS IN		M TC	TION BY: 17 10:38
DET	FAIL "Y FAIL "Y R NO. C:\Users\ WEST	V3 Adden	INIA DI DIVI EN	*S5 S6 DESC DESC REVI ew\BRD EPAR SION GINEE	SION IVJ 84×6 TMENT OF H RING I	PADS JN il_new.dgn F OF TR/ IIGHWAY DIVISION		M TC	TION BY: 17 10:38
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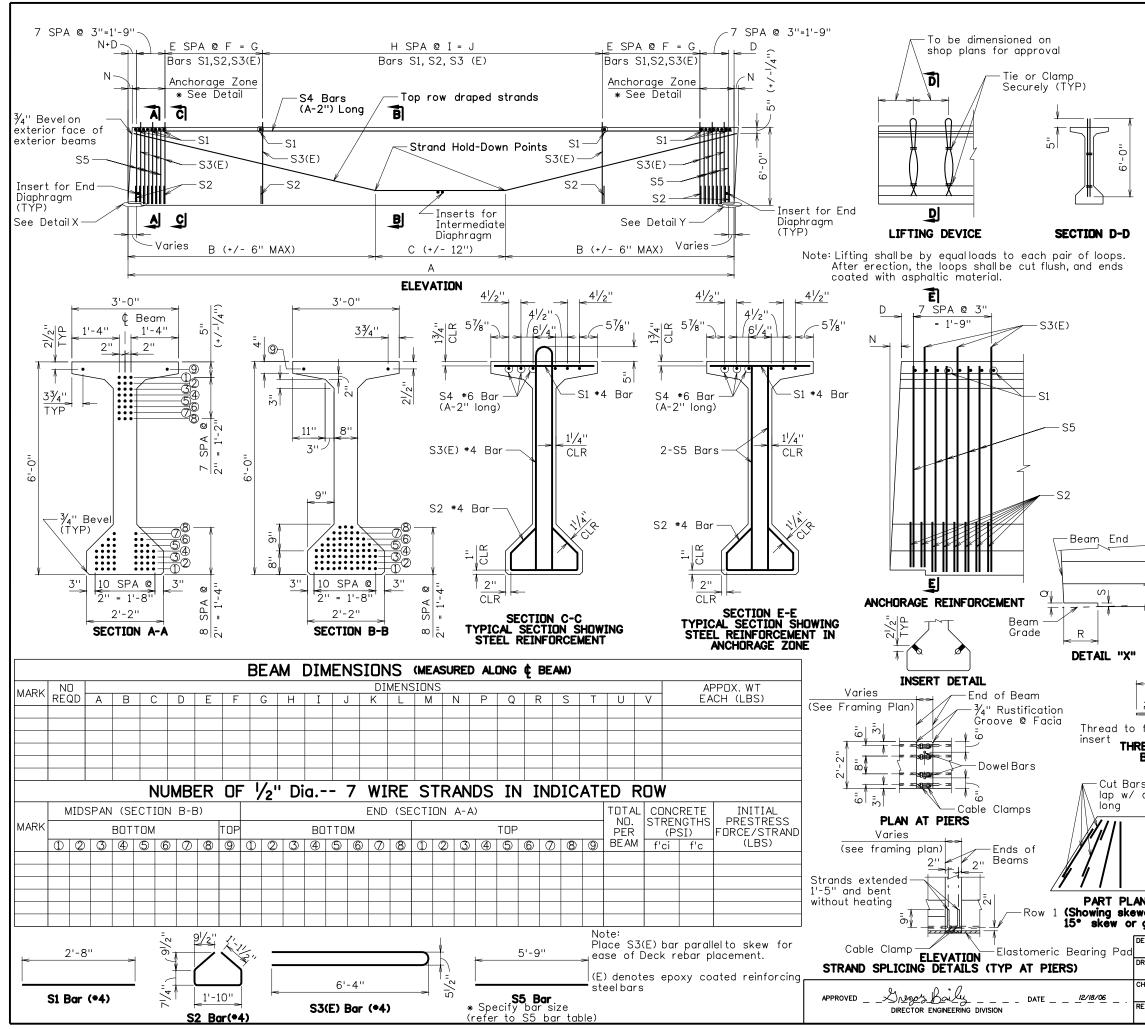


			PROJEC [®] STATE	NUMBERS		DISTRICT	COUNT	r	SHEET NO.	TOTAL
NOTES: 1. The		L	shallatta	l in a cor	npress	ive st	rength o	f at	least X	XX
psi, bear	as sh ns, be	own efore	by stand transfe	dard cyli rring boı	nders nd stre	cured ess to	identical the con strengt	ly wi Icret	th the e; or	
psiw	vithin .	28 c	days.				e finished			
hone	eycòm	bed	concret	é to the	exten	nt that	the Engi reduced	neer	deter	
shor							anges is			
appr	ōximc	ately	1/4 incl	n and mo	aintain	clean	o an amp and free	e of	laitanc	e.
4. Shop sequ	p drav Jence	wings of t	s shall sh he strar	ow the d patter	detens n.	ioning	plan by	num	bering	the
diam	neter)	low	relaxatio	on uncoa	ted se	even w	and (1/2 vire stran	id in	accor	dance
be c	applied	d to	the stro	ind			stress of			
How	ever,	if the	e Contro	ctor cho	oses	this al	d may b ternate, ł	ne sl	hall pro	
oriai	inal pĨc	ins t	o reflec	t these	chanae	es. Thi	and shall s design	and	plan	
7. Defc	ormed	wire	e fabric	is permi	tted in	stead	or's expe of reinfo	brcin	q stee	lbars
to t	he re	quire	ements c	f AASHT	O Sec	tion M	lire fabri 225.			
conf	form	to A	ASHTO	Division 2	2, Sect	tion 18	restresse Duro 60	a be D. S	eams s ection	snall
			ifies lam	nate ma	terial t	o be:				
ASTI		70,G	Grade 36							
mate	erial sp	pecif	ied shall	be inclu	ng pac ded in	is and Item	any pre 603-01.	form See	ned joi pier 8	nt &
10. The	e thre	aded		shall hav			n safe v			
intru	ision.	Omit	t inserts	on exte	rior fa	ice of	ged to p exterior	bear	ns.	crete
galv	anizec	d aft	er fabric	ation. Ir	nclude	the c	are to t ost in Ite	em (603-Ö1	
is	desigr	ned f	or burst bar tabl	ing resis	acea tance	at the as pe	ends of r LRFD 5	the 5.10.	beam 10.1.	
i i i i i i i i i i i i i i i i i i i				e.						
Ţ	+			MARK	SI7F		T/BEAM			NGTH
Ļ	Ļ			S1						
]	1 ⊢∤		>	S2 S3(E)						
Bo	/ <u>_</u> ∦ am —		<i></i>	S4						
	ade	~	U >						LICT	
	DET	AIL	"Y"		MARK		ORCING			TAL
2'-0''	>				* S5					
× 4"ø	_1 ¹ /2	 - [BEA	RING	PADS			
fit /			NO.			RIPTIO			LOCA	TION
ADED A		R								
BAR DET	'AIL									
s S1&S2 one #4x]
		N0.			REVIS	SION			DATE	BY:
Z				INIA DI			OF TR	ANS		
7				DIVI	EPART SION	ment of h	IGHWAY			
				DIVI	EPART SION	ment of h				
				DIVI	EPART SION	ment of h	IGHWAY			
reater)				DIVI	EPART SION	ment of h	IGHWAY			
l ed end, preater) signed	12"			DIVI	EPART SION	ment of h	IGHWAY			
SIGNED AWN	12'' DATE		ST VIRG		Epart Sion Gineef	ment of h ng c	IGHWAY DIVISION	S	PORTA	
signed	12'' DATE		ST VIRG	DIVI	Epart Sion Gineef	MENT OF H NNG C	IGHWAY DIVISION	S		ATION

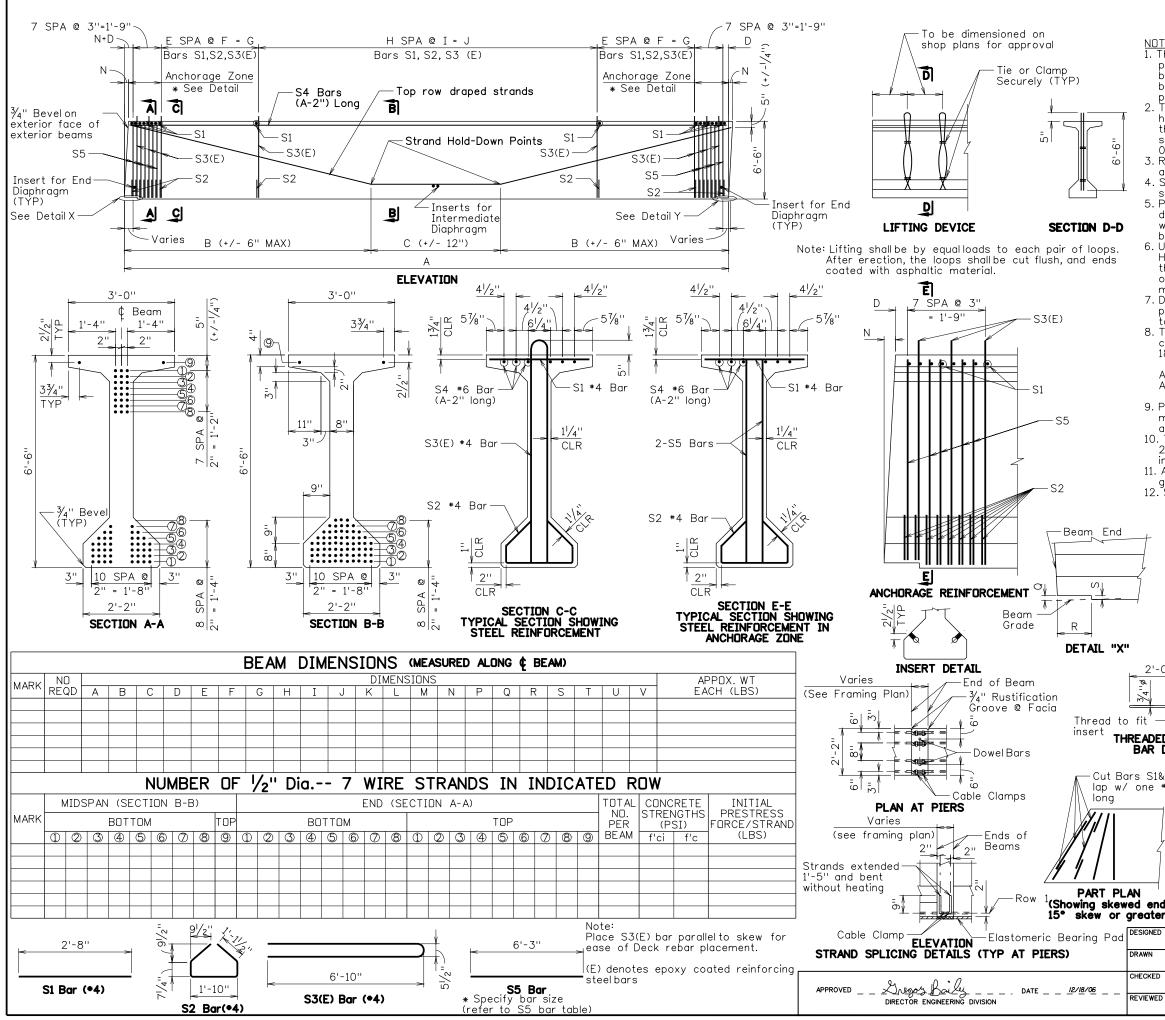


				NUMBERS		DISTRICT	COUNTY		HEET	TOTAL
		STAT	Ľ	FEDE	RAL			+	NO.	
NOTES:	l					•		<u> </u>		
psi, as beams, before	sho be rel	own by fore tro leasing f	stand Insfer the e	ard cyli ring bol	nders nd sti	cured ess to	rength of a identically the concr r strength s	with ete;	the or	
2. The De honeyc the str	epar com	bed con gth or d	vill rej Icrete eteric	to the pration i	exte resiste	nt that ance is	e finished u the Engine reduced. E	er d Bear	leterı n	tained mines
0.0005 3. Roughe	šL. en t	he top	surfa	ce of e	ach b	eam t	anges is lir o an amplit	ude	of	
approx 4. Shop c	ima drav	tely ½ vings sh	inch all sho	and mo w the	aintair deten	clean	and free o plan by nu	f la	itanc	e. the
5. Prestre diamet	essi er)	low rela	nds s axatio	hall be s n uncoc	stabiliz Ited s	even v	and (1/2 in vire strand stress of 2	in a	ccor	dance
6. Uncoat Howeve	ed er,i	f the Co	vire s ontra	tress re ctor cho	oses	this al	id may be s ternate, he and shall re	sha	llpro	
original modific 7. Deform	l pľa catio ned	ns to ro on shall I wire fa	eflect oe m bric i	these ade at f s permi	chang the Co tted i	es. Th ontract nstead	is design ar or's expens of reinforc	id p ie. ing	lan stee	lbars
to the 8. The Ele confor	rea asta m	quiremer omeric b	nts of pearin HTD D	f AASHT g pads)ivision	0 Sea under 2, Sea	tion M the p tion 18	/ire fabric r 225. restressed 3 Duro 60.	bea	ms s	
ASTM ASTM		45 70, Grad	e 36							
máterio abutme	al sp ent	becified sheets	shall I for de	pe inclu etails.	dedir	ı Item	any prefor 603-01. Se	ee p	bier 8	Ż
2500 I	abutment sheets for details. 10. The threaded inserts shall have a minimum safe work load of 2500 lb in tension. All inserts shall be plugged to prevent concrete intrusion. Omit inserts on exterior face of exterior beams.									
galvani 12. S5 ve is des	zed ertic sign	after f al reinfo	abrico orcing oursti	ation. Ir bars p ng resis	nclude laced	the c at the	are to be ost in Item ends of th er LRFD 5.10	60 e b	03-01 eam	
Ť +	Be	eam En	d —]/	MARK	517		ORCING BA			NGTH
	Η		-	S1 S2						
Beam	-			= S3(E) S4						
Grade		_ U	>					<u>.</u>	107	
I	DET	AIL "Y"	I		MARK	1	ORCING BA			TAL
2'-0''					*S5				.0	
× ×	1 /2'	-			DF		DADE]
		NO.				RING RIPTIC			_OCA	TION
at <u></u>	יחא:	R								
AR DETAI										
s S1&S2 ar										
one #4x12'										
		NO.			REVI	SION			DATE:	BY:
ł		WEST	VIRG	DIVI	SION	OF H	OF TRAN	SPO	ORTA	TION
l wed end, greater)										
	ATE 5/06									
ECKED					סר יי <i>י</i>	MOD		SHEET	r	
VIEWED				HTO TY PRECAS			ן עסוד		OF	NO.

BRD-IVM 66X36

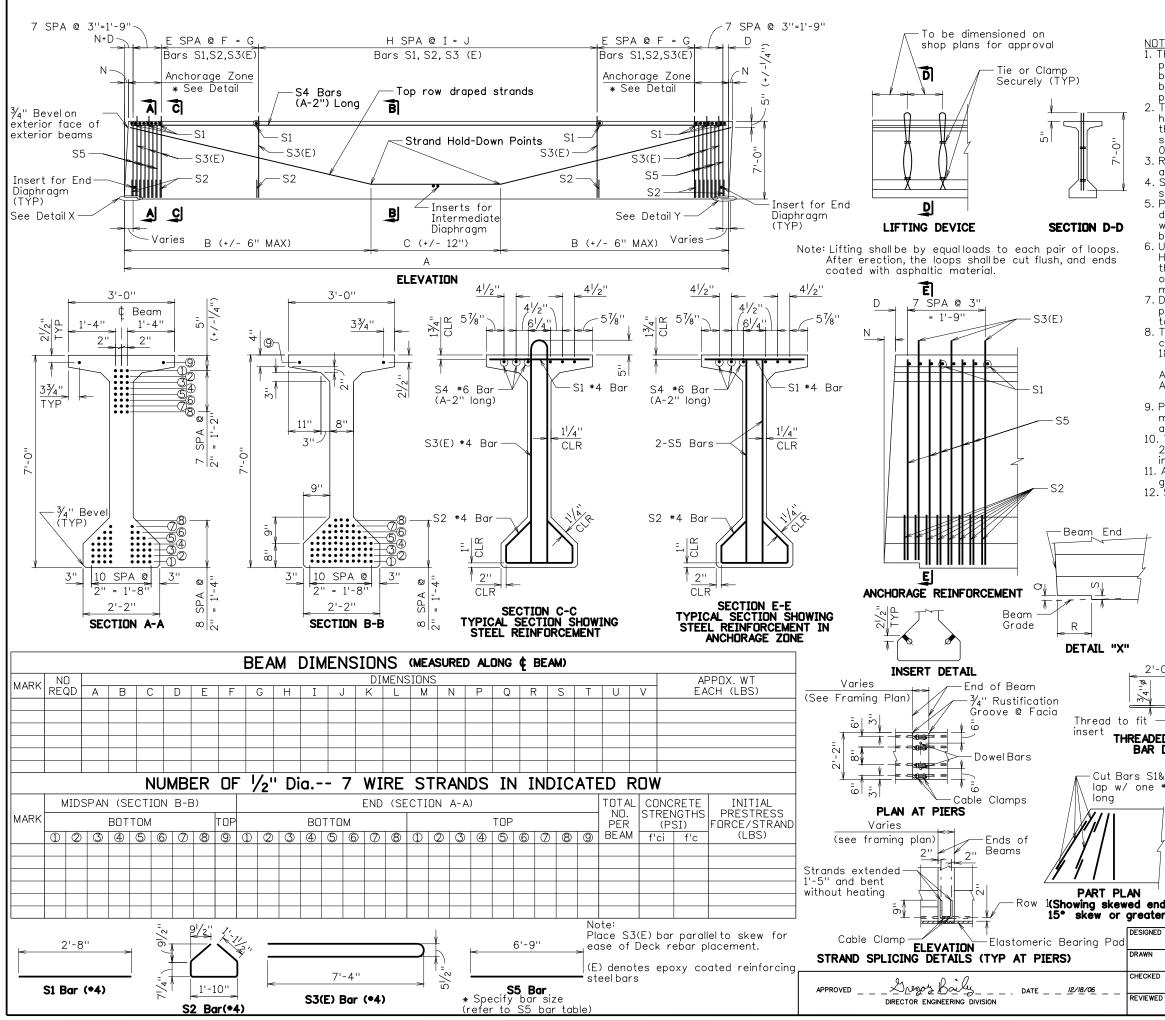


ļ	PROJECT					
1	STATE	T NUMBERS FEDERAL	DISTRICT	COUNTY	SHEET NO.	TOTAL
	JINE					
<u>NOTES:</u> (Ļ			
1. The concr psi as sho	ete shall atto own by stan	ain a compres dard cylinders	sive st cured	identically i	t least > with the	(XX
beams, be	fore transfe	rring bond st	ress to	the concre	ete; or	
before rel psi within 2		end anchors.	cylinde	r strength s	nailbeY	ττΥ
2. The Depar	tment will re	ject the beam				
the strend	uea concret gth or deteri	e to the exte ioration resist	ance is	reduced. E	er deter Beam	rnines
shortening	due to shr	inking and ela	stic ch	anges is lim	ited to	
0.0005L. 3. Roughen t	he tọp surf	ace of each b	eam t	o an ampliti	ude of	
approxima	tely 🖓 incł	n and maintair low the deten	n clean	and free o	f laitanc	e. the
sequence	of the strar	nd pattern.				
		shall be stabiliz on uncoated s				
with AASH	TO M 203 g	grade 270. Ar				
	to the stro seven wire	and stress relieve	d strar	id may be s	ubstitut	ed.
However,i	f the Contro	ctor chooses	this al	ternate, he	shall pro	vide
original pľa	ns to reflec	ess relieved s t these chang	es. Th	is design an	d plan	
modificatio	on shallbe m	nade at the C is permitted i	ontract	or's expens	e.	lhara
provided o	an equalstee	elarea is prov	ided. V	/ire fabric n	nust cor	nform
		of AASHTO See ng pads under			heams a	shall
conform	to AASHTO	Division 2, Sec	ction 18	B Duro 60.	Section	STOR
18.2.3.2 s	pecifies lam	inate material	to be:			
ASTM A24						
ASTM A57	'O,Grade 36	ò				
9. Payment f	or Elastome	ric bearing pa	ids, and	any prefor	med joi	nt
	pecified shall sheets for c	be included ir letails.	n Item	603-01. S€	e pier 8	Ść
10. The three	ded inserts	shall have a i				
		llinserts shallt on exterior f				crete
11. All threade	ed inserts ar	nd anchorage	dowels	are to be	hot-dip	
		cation. Include g bars placed				
is design	ed for burst S5 bar tab	ing resistance	e as pe	er LRFD 5.10	0.10.1.	
	eam End		DETNE			
				ORCING BA	1	
1 =				IT/BEAM TO	1	NGTH
		S1			1	NGTH
	>	S1 S2			1	NGTH
	>	S1			1	NGTH
Beam — Grade		S1 S2 S3(E)			1	NGTH
Grade	< >	S1 S2 S3(E) S4	REINF	ORCING BA	R LIST	
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK	REINF	IT/BEAM TO	R LIST	NGTH
Grade DET	AIL "Y"	S1 S2 S3(E) S4	REINF	ORCING BA	R LIST	
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARk *S5	E COUN REINF (SIZE	TORCING BA	R LIST	
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	REINF	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	E COUN REINF SIZE	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	E COUN REINF SIZE	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	E COUN REINF SIZE	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	E COUN REINF SIZE	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	E COUN REINF SIZE	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *\$5	E COUN REINF SIZE	TORCING BA	R LIST)T AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC	E COUN REINF SIZE	TORCING BA	R LIST	DT AL
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC	E COUN REINF SIZE	T/BEAM TO TORCING BA COUNT/BE.	R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC REV GINIA DEPAR	E COUN REINF SIZE	TORCING BA	R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC REV GINIA DEPAR	REINF		R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC BINIA DEPAR DIVISION	REINF		R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC BINIA DEPAR DIVISION	REINF		R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC BINIA DEPAR DIVISION	REINF		R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC BINIA DEPAR DIVISION	REINF		R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *85 BEA DESC BINIA DEPAR DIVISION	REINF		R LIST AM TO LOCA	TION
Grade DET	AIL "Y"	S1 S2 S3(E) S4 MARK *S5 BE, DESC BE, DESC SINIA DEPAR DIVISION ENGINEE	E COUN REINF SIDE		TAL LE	TION
Grade DET		S1 S2 S3(E) S4 MARK *S5 BE, DESC BE, DESC SHTO TYPE I	REINF		R LIST AM TO LOCA	
Grade DET		S1 S2 S3(E) S4 MARK *S5 BE, DESC BE, DESC SHTO TYPE IN 2" PRECAST C	REINF		R LIST AM TO LOCA DATE: SPORTA	
Grade DET		S1 S2 S3(E) S4 MARK *S5 BE, DESC BE, DESC SHTO TYPE I	REINF		TAL LE	



				NUMBERS		DISTRICT	COUNTY	SHEET	TOTAL
		STA		FEDE	RAL			NO.	
<u>NOTES:</u> 1. The		ete sh	all atta	in a cor	nores	sive st	rength of at	l least >	
psi, c bean befo	ns,be re re	own by fore tr leasing	stand ransfer the e	ard cyli ring bo	nders nd str	cured ess to	identically v the concre r strength sl	vith the te; or	
2. The hone the	Depai ycom stren	bed co gth or	will rej oncrete deterio	to the bration	exte resista	nt that ance is	e finished ur the Enginee reduced. B anges is limi	r deter eam	
0.00 3. Roug	05L.` hen t	he top	surfa	ce of e	ach b	eam t	o an amplitu	ide of	
4. Shop) drav	wings s	hall sha	ow the	deten	clean sioning	and free of plan by nun	[:] laitanc nbering	e. the
5. Pres diam	tress eter)	ing str low re	ands s Iaxatio	n uncoc	stabiliz Ited s	even v	and (1/2 inc vire strand in	n accor	dance
be a	pplied	d to th	e stră	nd			stress of 20 Id may be s	•	
Howe the origin	ever, desigr nal plo	if the (n for tl Ins to	Contra he stre reflect	ctor cho ess relie these	ooses eved s chang	this al strand es. Th	ternate, he s and shallrev is design and	shall pro rise the d plan	vide
7. Defo prov	rmed ided	wire f an equ	abric i al steel	s permi area is	tted i provi	nstead ided. V	or's expense of reinforci /ire fabric m	ng stee	l bars nform
8. The conf	Elast orm	omeric to AAS	bearin SHTD D	f AASHT g pads Division nate mo	under 2, Sec	the p tion 18	225. restressed b Duro 60. S	beams s Section	shall
	/ A24 / A57	45 70, Gra	de 36						
mate	erial sp	for Elas pecifiec sheets	shall I	pe inclu	ng pa ded ir	ds and I Item	any prefor 603-01. Se	med joi e pier l	nt &
10. The 2500	thre 1bi	aded ir n tensi	nserts on. All	shall hav inserts	shall b	be plug	n safe work ged to prev	ent con	of crete
11. All th	reade	ed inse	rts an	d ancho	rage	dowels	exterior bec are to be l ost in Item	hot-dip	
is c	desigr er to	ied for S5 bo	bursti ar table	ng resis			ends of the er LRFD 5.10		
1	в	eam E	nd —	MARK	SIZE		TORCING BAR	R list Tal Le	NGTH
L 1 ·				S1 S2					
	<u> </u>			= S3(E)					
Bea		υ		S4					
GIU			>						
2'-0''					MARK *S5	SIZE	COUNT/BEA	<u>ам тс</u>	TAL
8	_11/2						D 4 D 6		
).			RING RIPTIC		LOCA	TION
it' — ⁄ ADED A	NCHO								
ADED A		`							
s S1&S2 one #4x1									
	~								+
		NO.			REVI	SION		DATE	BY:
Ž		WEST	VIRG	DIVI	SION	OF H	OF TRANS	SPORTA	ATION
l I end, eater)									
SIGNED	DATE 12/5/06								
AWN ECKED					(DE			HEET	
				HTO TY PRECAS				BRIDGE	NO.

BRD-IVM 78X36



		PROJECT NUMBERS				DISTRICT	COUNTY	SHEET	TOTAL
		STATE		FEDE	RAL	Dio mio m	000111	NO.	101/12
NOTES:	:								
1. The	concr	ete shall	attai	in a co	mpres	sive st	rength of a	t least >	<xx< td=""></xx<>
psi, o bear	as sh ns be	own by s fore trar	stand	ard cyl rina bo	inders	cured ress to	identically the concr	with the	
befo	re re	leasing tl	ne er	nd anch	nors.	Cylinde	r strength	shall beY	YYY
		28 days. Itment wi	llrei	ect the	heam	s if th	e finished ι	inits con	tained
hone	eycòm	bed cond	reté	to the	e exte	nt that	the Engine	er deter	mines
							reduced. anges is lir		
0.00	05L.			5			5		
							o an ampli and free o		e.
4. Shop	o drav	vings sho	ıll shc	ow the	deten	sioning	plan by nu	mbering	the
		of the s na stran				zed str	and (1/2 ir	nch nomi	nal
diam	neter)	low rela:	xatio	n uncod	ated s	even v	vire strand	in accor	dance
		IUM20 Itothe			/U. Ar	n initial	stress of 2	02.5 ps	i shall
6. Uncc	bated	seven wi	ire s	tress r			d may be		
							ternate, he and shall re		
origi	nal pľc	ns to re	flect	these	chang	es. Th	is design a	nd plan	
7. Defc	ormed	wire fab	ric i	s perm	itted i	nstead	or's expens of reinford	ing stee	lbars
prov	ided ·	an equal:	steel	area is	provi	ided. V	/ire fabric	must coi	nform
		quiremen omeric b					ZZD. restressed	beams :	shall
conf	orm	to AASH	TO D	ivision	2, Sec	tion 18	8 Duro 60.	Section	
18.2	.3.2 9	specifies	lamir	nate mo	aterial	to be:			
	M A24		70						
AST	M A5.	70, Grade	36						
9. Payr	nent 1	or Elasta	omeri	ic bear	ing pa	ds and	any prefo	rmed jo	nt
mate abut	erial sp ment	sheets f	shall t or de	pe inclu etails.	ided ir	i Item	603-01. S	ee pier	\$
10. The	thre	aded inse	erts	shall ha	ve a r	minimur	n safe wo	rk load (of .
2500 intru	U Ib i Ision.	n tension Amit inse	. All erts	inserts on exte	shallt erior f	be plug ace of	ged to pre exterior be	vent con ams.	crete
11. All th	nreade	ed insert:	s and	d ancha	brage	dowels	are to be	hot-dip	
							ost in Item ends of th		
is (desigr	ed for b	ursti	ng resi	stance	e as pe	er LRFD 5.1	0.10.1.	
Rei	rer to	S5 bar	table	э.					
+	B	eam End	_7			REINF	ORCING B	R LIST	
	1		7/	MARK	K SIZE	E COUN	IT/BEAM T	JTAL LE	NGTH
Ļ	Ļ		ľ	S1					
]	5 ⊢≬		>	S2		_			
	/†		1 = 1	= S3(E)	_			
Be				S4					
Gro									
011	ade	U	-			RETNE			
011	ade	AIL "Y"	-		MARK		ORCING B		
2'-0''	ade	< >	-		MARK *S5		ORCING BA)TAL
2'-0''	ade DET	" AIL "Y "	-						ITAL
2'-0''	ade	" AIL "Y "	-		* S5		COUNT/BE		DTAL
2'-0''	ade DET	" AIL "Y "			*S5	SIZE	COUNT/BE		ITAL
2'-0''	ade DET	AIL "Y"			*S5	SIZE	COUNT/BE		
2'-0'' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0''' 2'-0'''' 2'-0'''' 2'-0'''' 2'-0'''' 2'-0''''' 2'-0'''' 2'-0'''' 2'-0''''' 2'-0''''' 2'-0'''' 2'-0''''' 2'-0'''' 2'-0'''' 2'-0'''' 2'-0''''' 2'-0'''' 2'-0''''' 2'-0''''' 2'-0''''''' 2'-0'''''''''''''''''''''''''''''''''''		AIL "Y"			*S5	SIZE	COUNT/BE		
2'-0''		AIL "Y"			*S5	SIZE	COUNT/BE		
2'-0'' it ADED A BAR DET S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"			*S5	SIZE	COUNT/BE		
	ade DET 11/2 NCHO AIL and	AIL "Y"			*S5	SIZE	COUNT/BE		
2'-0'' (it ADED A SAR DET S S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"			#S5 BE/ DESC	ARING BRIPTIC	COUNT/BE		TION
2'-0'' it ADED A BAR DET S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"			*S5	ARING BRIPTIC	COUNT/BE		TION
2'-0'' it ADED A BAR DET S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"			*S5 BE/ DESC	ARING BRIPTIC	PADS	AM TC	TION
2'-0'' it ADED A BAR DET S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"			REVI	ARING BRIPTIC	COUNT/BE	AM TC	TION
2'-0'' it ADED A BAR DET S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"	//IRG	DIV	REVI BEAR ISION	ARING BRIPTIC	PADS	AM TC	TION
2'-0'' it ADED A BAR DET S1&S2	ade DET 11/2 NCHO AIL and	AIL "Y"	/ / // // // // // // RG	DIV	REVI BEAR ISION	ARING BRIPTIC	PADS N OF TRAN	AM TC	TION
2'-0'' at a constraint of the second	ade DET 11/2 NCHO AIL and	AIL "Y"	//IRG	DIV	REVI BEAR ISION	ARING BRIPTIC	PADS N OF TRAN	AM TC	TION
2'-0"	ade DET	AIL "Y"	/IRG	DIV	REVI BEAR ISION	ARING BRIPTIC	PADS N OF TRAN	AM TC	TION
2'-0''	ade DET 11/2 NCHO AIL and	AIL "Y"	//IRG	DIV	REVI BEAR ISION	ARING BRIPTIC	PADS N OF TRAN	AM TC	TION
2'-0"	DET	AIL "Y"	//IRG	DIV	REVI BEAR ISION	ARING BRIPTIC	PADS N OF TRAN	AM TC	TION
2'-0''	DET	AIL "Y"		DIV EN	REVI BE/ DESC	ARING RIPTIC	PADS N OF TRAN IGHWAYS DIVISION		TION
2'-0"	DET	AIL "Y"	AASI	DIV	REVI BEA DESC REVI EPAR ISION IGINEE	ARING RIPTIC		LOCA	TION