

STRUCTURAL STEEL

Structural steel shall conform to Section 615 of the Standard Specifications. The Lump Sum bid for Item 615001-001, Steel Superstructure, shall include all structural steel complete in place including bearing assemblies, preformed fabric pads, expansion devices, anchor bolts and painting.

All Structural Steel shall conform to AASHTO M270, Grades to be as noted.

All work and materials shall conform to the ANSI/AASHTO/AWS D1.5-2002 Bridge Welding Code. All members and detail material of welded construction shall be shop welded. Field welding will not be permitted except where shown on the drawings.

The structural steel for members designated as (CVN) on the drawings must meet Zone 2 Charpy V Notch Test.

Use 1" diameter high strength bolts, ASTM A325 Type 3, for all connections unless noted. Place bolts where feasible, so that the threaded ends will be protected from the weather. Install bolt head on exterior face of exterior members. See the Standard Specifications for additional information. The minimum bolt spacing to be used unless otherwise noted, is as follows:

- 1" diameter H.S. Bolts in standard holes - 3"
- 1" diameter H.S. Bolts in slotted holes - 2" clear distance btwn. edges of adjacent holes

The minimum bolt edge distance to be used unless otherwise noted, is as follows:

- 1" diameter H.S. Bolts - 1 3/4"

High Strength Bolts to be installed in accordance with the Standard Specifications.

Connections shall be made to exclude threads from shear planes.

All bolted connections shall have a minimum slip coefficient of 0.50 (Class B Surface).

If girders can be fabricated in lengths longer than the sections shown on the plans, field splices may be omitted at the request of the Contractor. It is the Contractor's responsibility to determine if he can obtain a hauling permit for any proposed changes in section length before shop drawings are developed.

Upon completion of the steel erection and before final acceptance, the Contractor shall remove all falsework and temporary members, lugs, jacks, or the like, from the structure.

Provide drip bars for girder members as indicated. Drip Bar shall be caulked with dark brown caulking against flange, web and fillet weld subject to the approval of the Engineer. Include cost in Item 615001-001.

Before assembling the high strength bolted connections, remove all loose and non-adherent rust that may have formed on the connection areas by hand or power wire brushing.

Temporary bracing of the plate girders shall be installed prior to construction of the reinforced concrete deck. All temporary bracing shall remain in place until as such time as the reinforced concrete deck has reached a minimum compressive strength of 2000 psi. The temporary bracing details shown are one alternate. Other temporary bracing schemes shall be stamped by a Professional Engineer, registered in the State of West Virginia, and submitted to the Department prior to erection. All material required for manufacture, assembly and disassembly of the temporary bracing shall be incidental to Item 615001-001, Steel Superstructure. All temporary bracing shall become the property of the Contractor upon removal from the structure.

HANDLING AND STORING STEEL MEMBERS

Steel members must not be gouged, scratched, dented, or allowed to rub against other members that would result in damage to the blast cleaned profile of the steel. Members shall be handled using softeners and slings instead of chokers and chains.

Store members in the fabrication shop and on the project site in such a manner as to be kept free and clean of all foreign substances such as grease, oil, mortar and concrete, splatter, chalk and crayon marks, paint, and dirt. All storage must be above ground and sloped to allow free drainage of melted snow, rainwater, and dew. If stored for periods longer than 3 months, the members must be placed on metal supports. For periods of storage up to 3 months, members may be placed on clean, untreated, wood timbers.

Store plate girders and rolled beams with the web in the upright position. The members may be stacked provided metal or wood supports, as noted above, separate individual members. Under no circumstances shall the members be nested together or bundled.

Do not allow treated lumber or treated timber to contact steel members. Contact with clean untreated, lumber or timber will not damage the steel members.

BLAST CLEANING & PAINTING

Upon completion of all fabrication operations in the shop, and before shipment to the project site, all weathering steel bridge components shall be blast cleaned to a Near White surface condition according to SSPC-SP 10. Prior to the start of any blast cleaning, all oil, grease, cutting fluids, or other foreign matter shall be removed from the surfaces of the steel by solvent cleaning according to SSPC-SP 1.

The members or portions of members listed below shall be blast cleaned and shop painted according to Section 688 of the Standard Specifications, PAINTING STEEL STRUCTURES, using the Zinc Rich, Low VOC System, Section 711.22. Apply the full paint system in the fabrication shop, except faying surfaces of high strength bolted connections, which shall be primed only. The color of the top coat shall be 30045 according to Federal Standard 595 and the Glass at angle of 60 degrees shall not exceed 25.

- a) For integral abutment structures, paint the ends of the girders and all other structural components encased in the concrete abutment plus one additional foot in length.

Areas of the shop applied paint system which are damaged during erection shall be properly cleaned and painted according to Section 688 of the Standard Specifications, PAINTING STEEL STRUCTURES, and to the satisfaction of the Engineer.

After completion of all tightening operations, mechanical galvanized fasteners shall be solvent cleaned and field painted as specified for the structural steel.

Include cleaning and painting costs in Item 615001-001, Steel Superstructure.

For integral abutment structures, the crevice between the embedded steel and the concrete shall be suitably chamfered to provide for placement of a sealant. Seal the crevice with a sealant material meeting the requirements of ASTM C920, Type S, Grade NS, Class 25, Uses NT and M. Sealant shall be suitable for bonding between concrete and the top coat of the specified paint system. Acid-cure sealants are not allowed. Include payment in Item 615001-001, Steel Superstructure.

IDENTIFICATION MARKING STEEL MEMBERS

All steel mill and fabricator identification markings for steel plates, shapes, or fabricated members shall be by metal tags, soapstone, or some other readily removable material; or, shall be marked in an area of the completed member which will be encased or covered with concrete. Marking methods and locations are subject to approval of the Engineer.

Do not use paint or wax-based crayons for marking.

FINAL CLEANUP OF STRUCTURAL STEEL SURFACES

Upon completion of all concrete curing operations, the contractor shall clean all steel surfaces to remove all grease, oil, concrete residue, dirt, and other foreign substances to the satisfaction of the Engineer.

Cleaning may be by high pressure water, power or hand wire brushing, or by Brush-off Blast Cleaning according to SSPC-SP 7. Cleaning shall be followed by a clean water rinse to remove all residues of detergents and cleaners if they were used. All grease and oil shall be removed prior to the clean water rinse by Solvent Cleaning.

Do not use acids to remove stains.

Include costs for final cleanup of steel surfaces in Item 615001-001, Steel Superstructure.

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W.V.	05	S312-H-93.37	APD-0484 (236) C	2006	GRANT	101	389

PROTECTION OF CONCRETE SUBSTRUCTURE

Before placing any steel superstructure members on the concrete substructure units, the Contractor shall coat all exposed areas of the abutment to the ground or water line elevation with an approved silane based concrete sealer. Preparation of surfaces, application rates, and methods shall be as recommended by the silane manufacturer.

The Contractor shall take appropriate measures to protect the concrete substructure from rust staining during construction and curing of superstructure concrete. Water runoff from concrete curing operations shall be deflected away from the steel girders and shall not drain onto the substructure concrete after contacting the weathering steel.

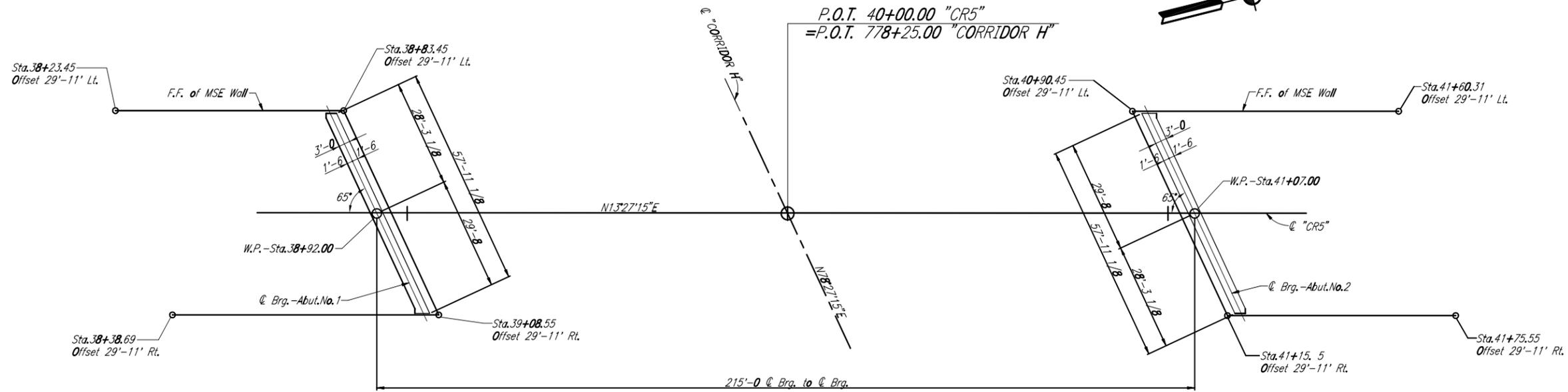
Upon completion of all superstructure concrete curing operations, the Contractor shall remove all rust stains from substructure units using proprietary chemical stain removers or mild acid etching. Abrasive blast cleaning may be used to supplement the other cleaning methods if the stained areas are severe or extensive. All cleaning methods shall be subject to approval of the Engineer.

Re-coat all areas where rust stains were removed, regardless of the cleaning method used, with an approved silane based concrete sealer as specified above.

Include the cost of silane coating, protecting, cleaning, and re-coating substructure units in Items 601002-001, Class B Concrete.

				WVDOT - DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				NOTES & QUANTITIES			
				PROJECT NO. S312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
				CONSULTING ENGINEERS			
DESIGNED BY	CHECKED BY	DATE	DATE	SCALE	BRIDGE NO.	DRWG. NO.	
DETAILED BY <u>DAM</u>	CHECKED BY <u>CMS</u>	DATE <u>9/04</u>		NONE	10425	3 of 27	
TRACED BY	CHECKED BY	DATE					

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	102	389



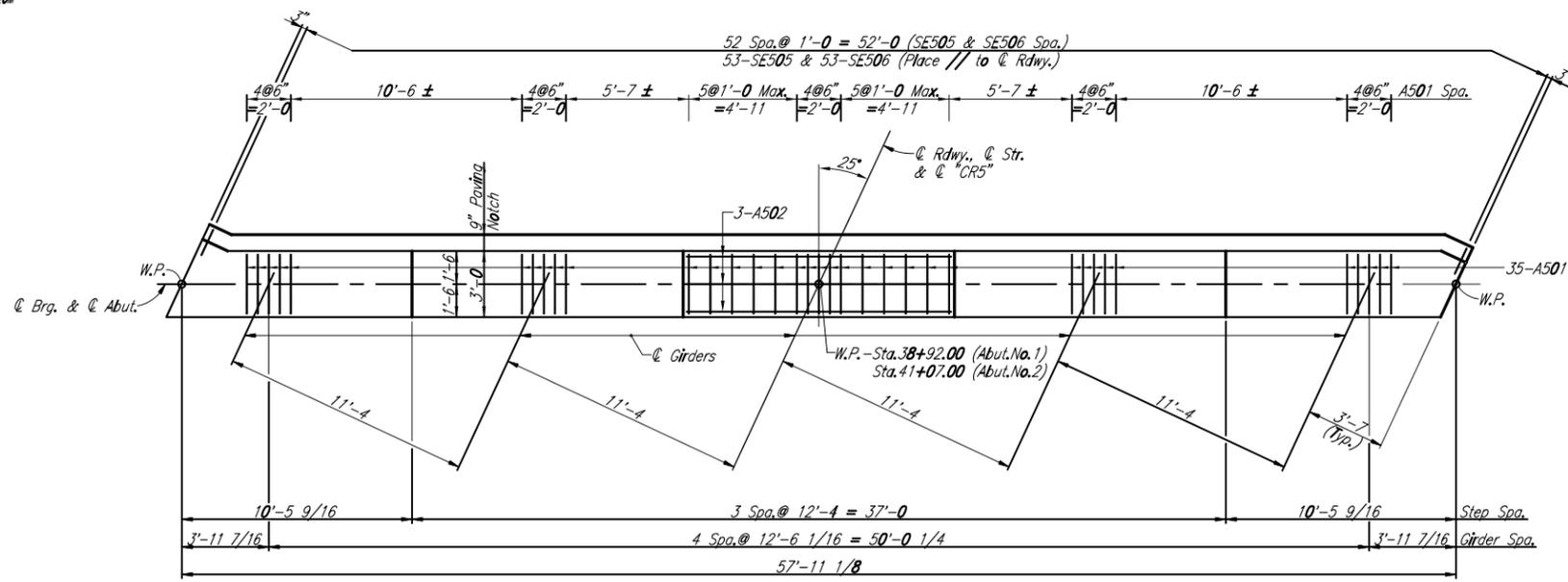
SUBSTRUCTURE LAYOUT
Scale: 1/16"=1'-0

Notes:
This layout is to be used only for the purpose of locating substructure units.
All substructure units are parallel.

LEGEND:
W.P. = Working Point

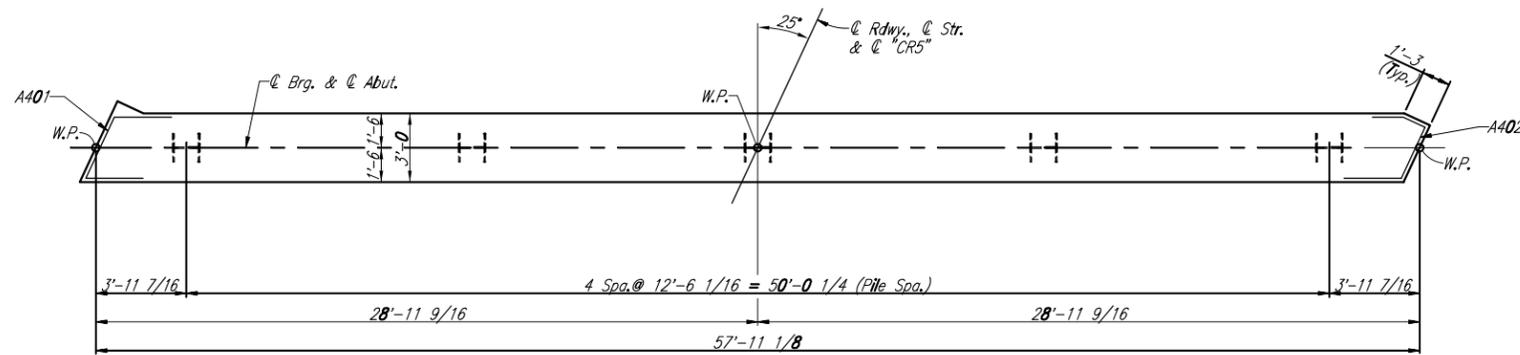
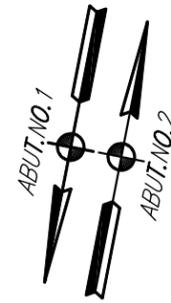
				WVDOT — DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				SUBSTRUCTURE LAYOUT			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
						AS NOTED	10425
DESIGNED BY	CHECKED BY	DATE			DATE	BRIDGE NO.	DRWG. NO.
DETAILED BY <u>DAM</u>	CHECKED BY <u>CMS</u>	DATE <u>9/04</u>				10425	4 of 27
TRACED BY	CHECKED BY	DATE					

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	103	389

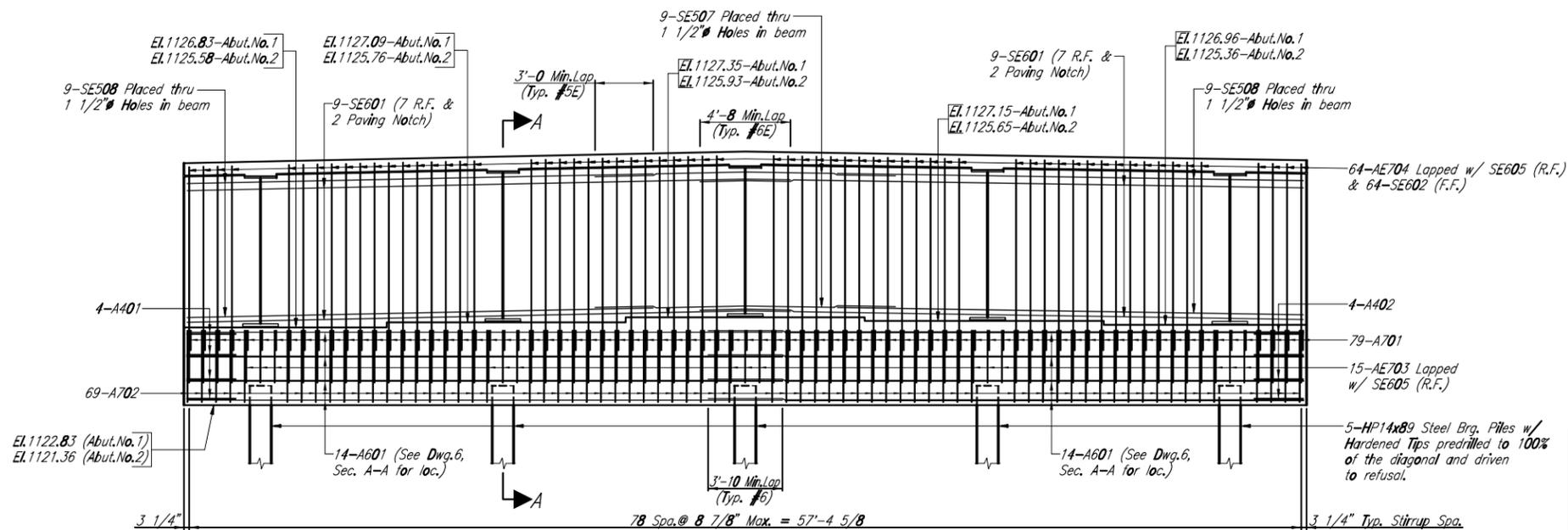


CAP PLAN
Scale: 1/4"=1'-0"

Note: See Elevation for cap stirrups.



FOOTING PLAN
Scale: 1/4"=1'-0"



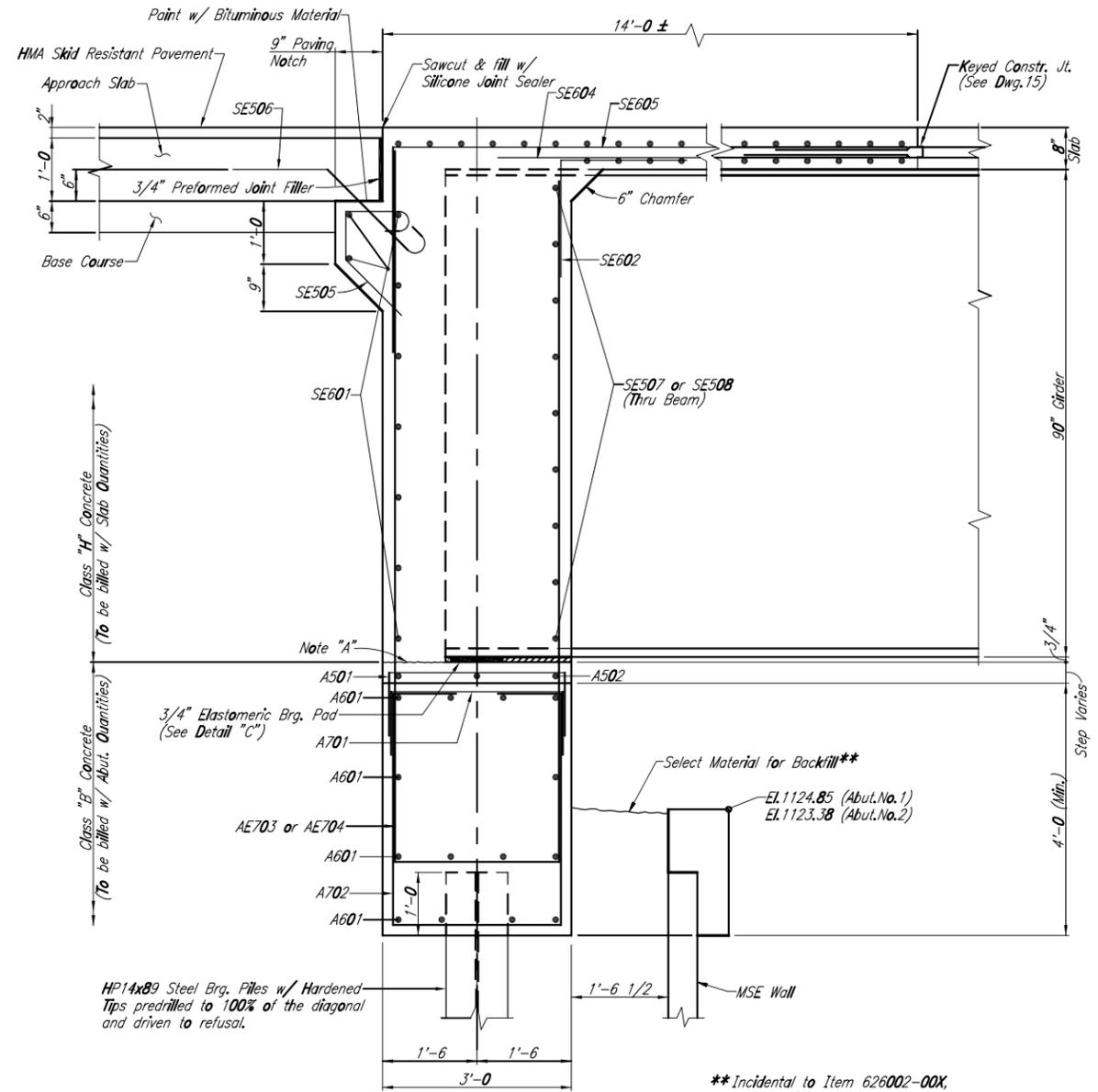
ELEVATION
Scale: 1/4"=1'-0"

Notes:
For Section A-A, additional details & Bill of Materials, see Dwg. 6
"E" denotes Epoxy Coated Reinforcing Steel.
Maximum Factored Design Pile Load = 326 Ton
Maximum Factored Design Pile Resistance = 326 Ton

WV DOT - DIVISION OF HIGHWAYS				COUNTY ROUTE 5 OVER CORRIDOR H			
ABUTMENT DETAILS				PROJECT NO. X312-H-93.37			
NEFF, LONGEST & BEAM & ASSOC.				CHARLESTON, W. VA. INDIANAPOLIS, IND.			
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
DESIGNED BY TSW	CHECKED BY CMS	DATE 9/04	DATE 9/04	DATE 9/04	AS NOTED	10425	DRWG. NO. 5 of 27
TRACED BY DAM	CHECKED BY CMS	DATE 9/04	DATE 9/04	DATE 9/04			

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	104	389

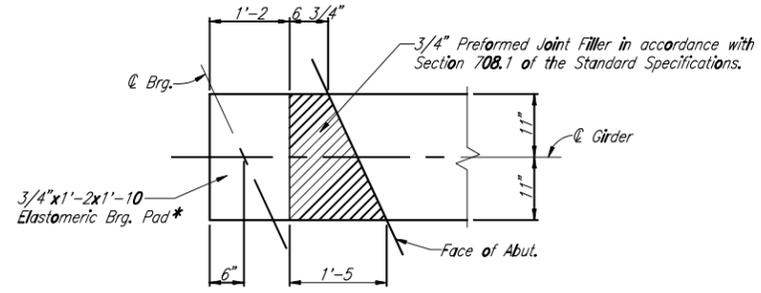
ABUTMENT NO. 1
(ABUTMENT NO.2 same, except as noted)



SECTION A-A
Scale: 3/4"=1'-0"

** Incidental to Item 626002-00X, MSE Retaining Wall

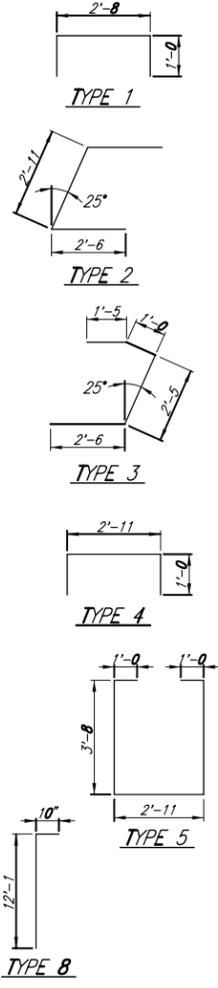
Note "A"
Mandatory Roughened Construction Joint (not roughened under Cork or Elast. Brg. Pad)
No concrete to be placed above this joint prior to pouring slab. (To be poured monolithic with slab).



DETAIL "C"
Scale: 3/4"=1'-0"

* Incidental to Item 601009-001, Class H Concrete.

REINFORCING BAR BILL				
MARK	TYPE	SIZE	NO.	LENGTH
A401	2	#4	4	7'-11"
A402	3	#4	4	7'-4"
A501	1	#5	35	4'-8"
A502	Str.	#5	3	12'-0"
A601	Str.	#6	28	30'-9"
A701	4	#7	79	4'-11"
A702	5	#7	69	12'-3"
AE703	6	#7	15	17'-10"
AE704	7	#7	64	24'-6"

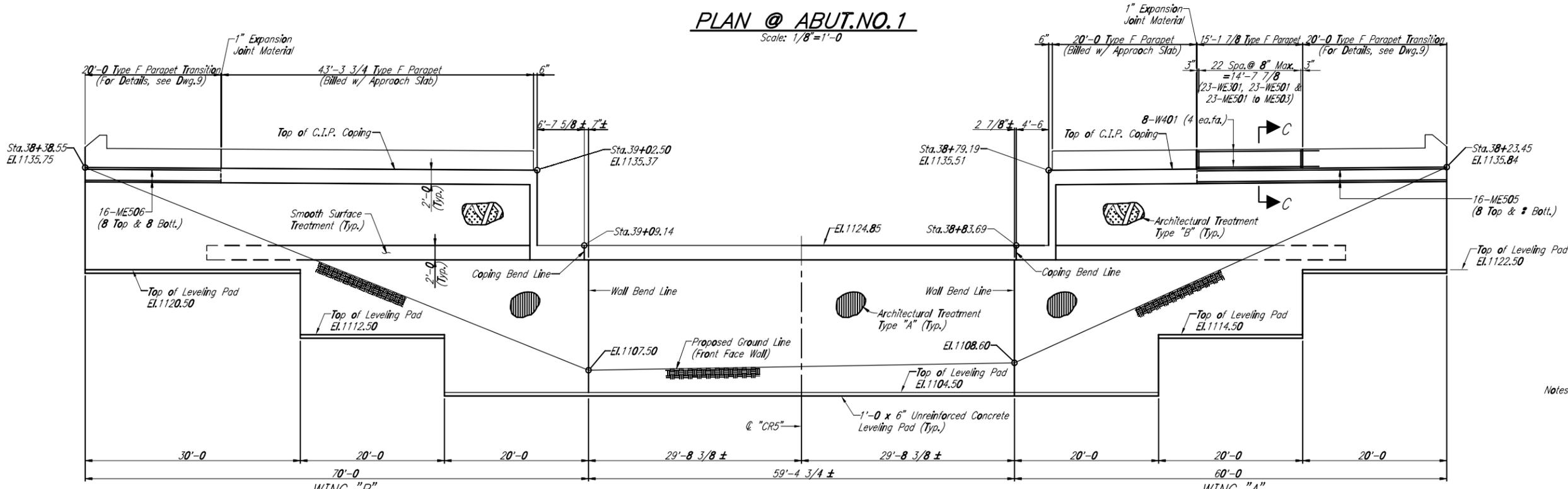
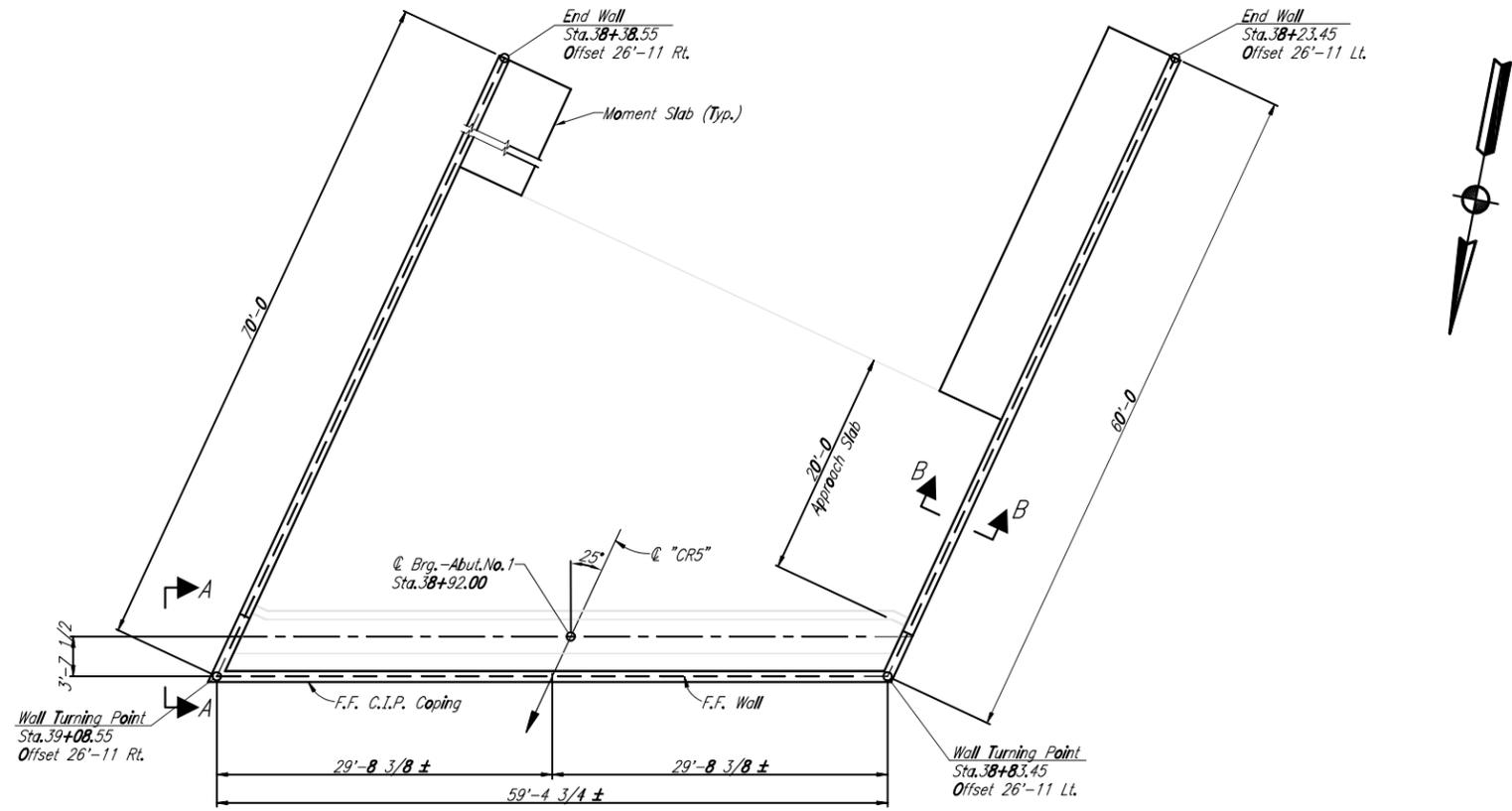


QUANTITIES			
ITEM NO.	ITEM	UNIT	QUANTITY
601002-001	CLASS B CONCRETE	CY.	28
602001-001	PLAIN REINFORCING STEEL	LB.	4064
602002-001	EPOXY COATED REINFORCING STEEL	LB.	3752
616005-017	HP14x89 STEEL BRG. PILES, PREDRILLED & DRIVEN (Abut.No.1)	LF.	150
616005-017	HP14x89 STEEL BRG. PILES, PREDRILLED & DRIVEN (Abut.No.2)	LF.	150

Notes:
For additional details, see Dwg.5
"E" denotes Epoxy Coated Reinforcing Steel.

WV DOT - DIVISION OF HIGHWAYS			
COUNTY ROUTE 5 OVER CORRIDOR H			
ABUTMENT DETAILS			
PROJECT NO. X312-H-93.37			
NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA.	
CONSULTING ENGINEERS		INDIANAPOLIS, IND.	
DESIGNED BY TSW	CHECKED BY CMS	DATE 9/04	DATE
DETAILED BY DAM	CHECKED BY CMS	DATE 9/04	SCALE AS NOTED
TRACED BY	CHECKED BY	DATE	BRIDGE NO. 10425
			DRWG. NO. 6 of 27

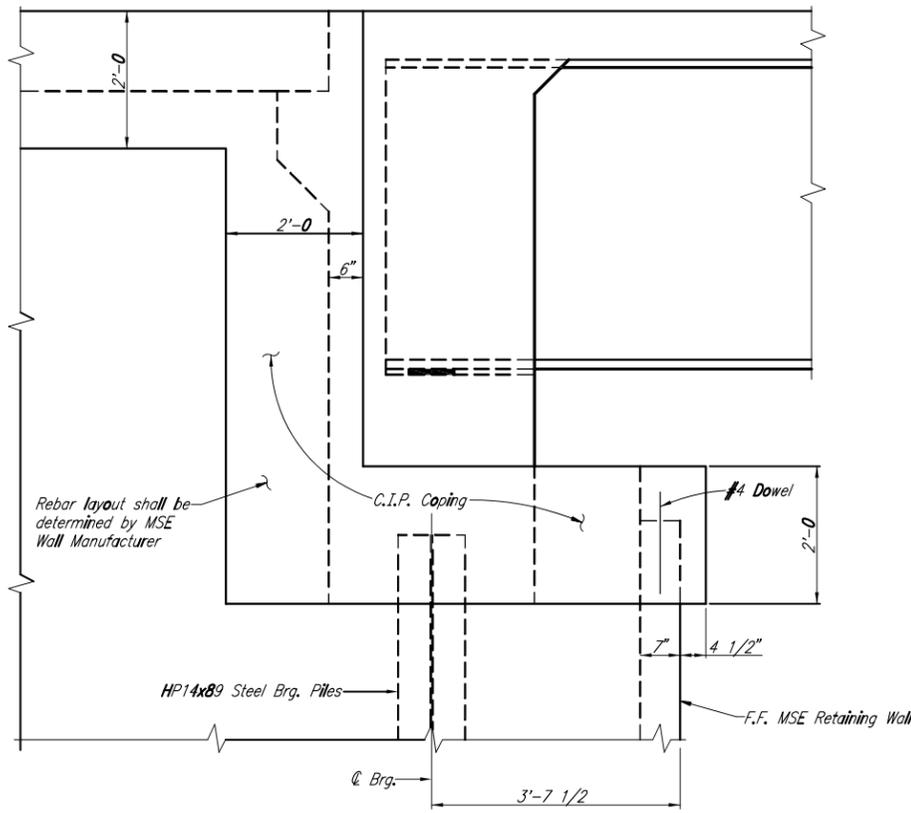
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	105	389



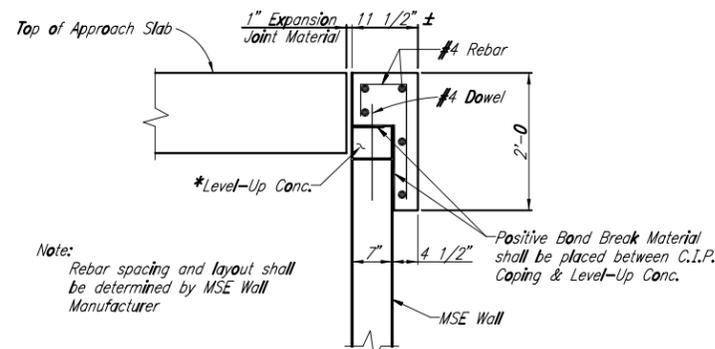
Notes:
 For additional details, see Dwg. 9
 All reinforcing steel to be Epoxy Coated.
 For Architectural Treatment Type "A", see Dwg. 16
 For Architectural Treatment Type "B", see Dwg. 10
 For Bill of Materials & Estimate of Quantities, see Dwg. 10
 For View A-A and Sections B-B & C-C, see Dwg. 9
 For Approach Slab Details, see Dwg. 25 & 26
 Stations and Offsets based on 7" wall panel thickness.

WVDOT - DIVISION OF HIGHWAYS			
COUNTY ROUTE 5 OVER CORRIDOR H			
MSE WALL DETAILS			
PROJECT NO. X312-H-93.37			
NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
CONSULTING ENGINEERS	DATE	SCALE	BRIDGE NO.
DESIGNED BY TSW	CHECKED BY CMS	DATE 9/04	DRWG. NO.
DATE	CHECKED BY CMS	DATE 9/04	AS NOTED
TRACED BY	CHECKED BY	DATE	10425
			7 of 27

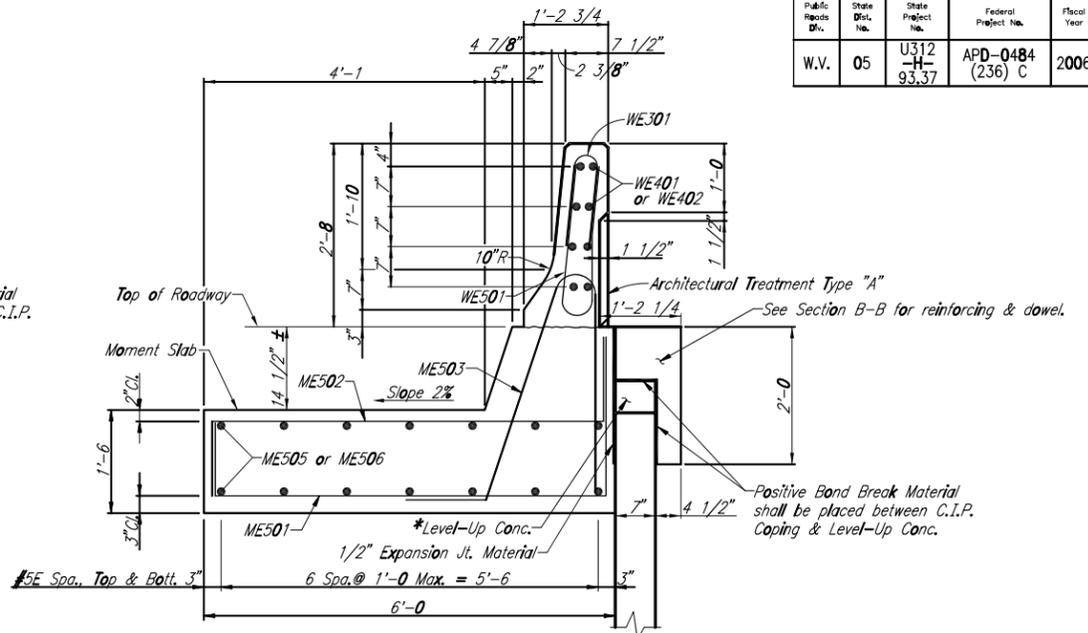
Public Roads Dist.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	U312-H-93.37	APD-0484 (236) C	2006	GRANT	107	389



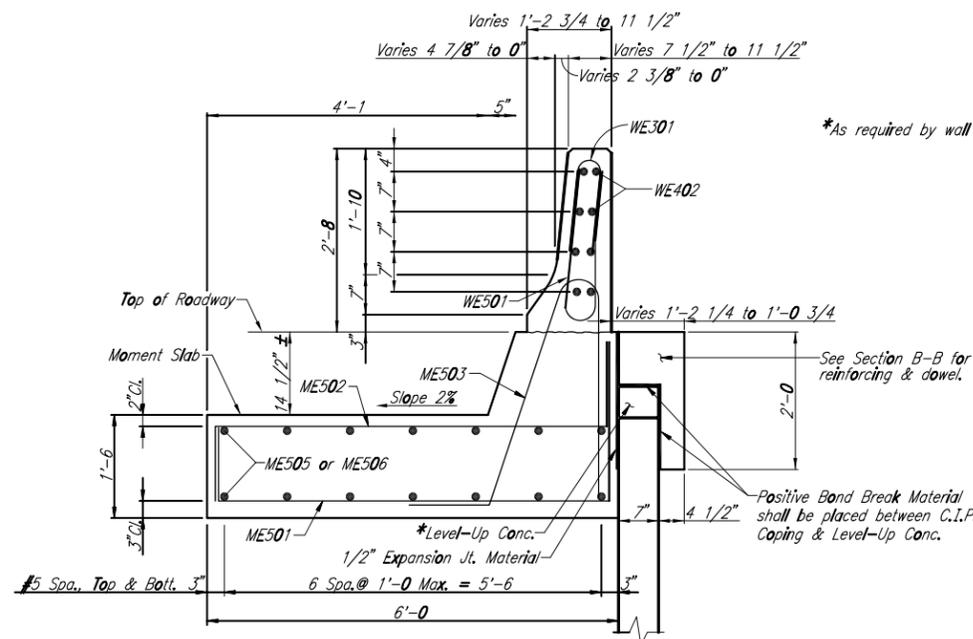
VIEW A-A
Scale: 3/4"=1'-0"



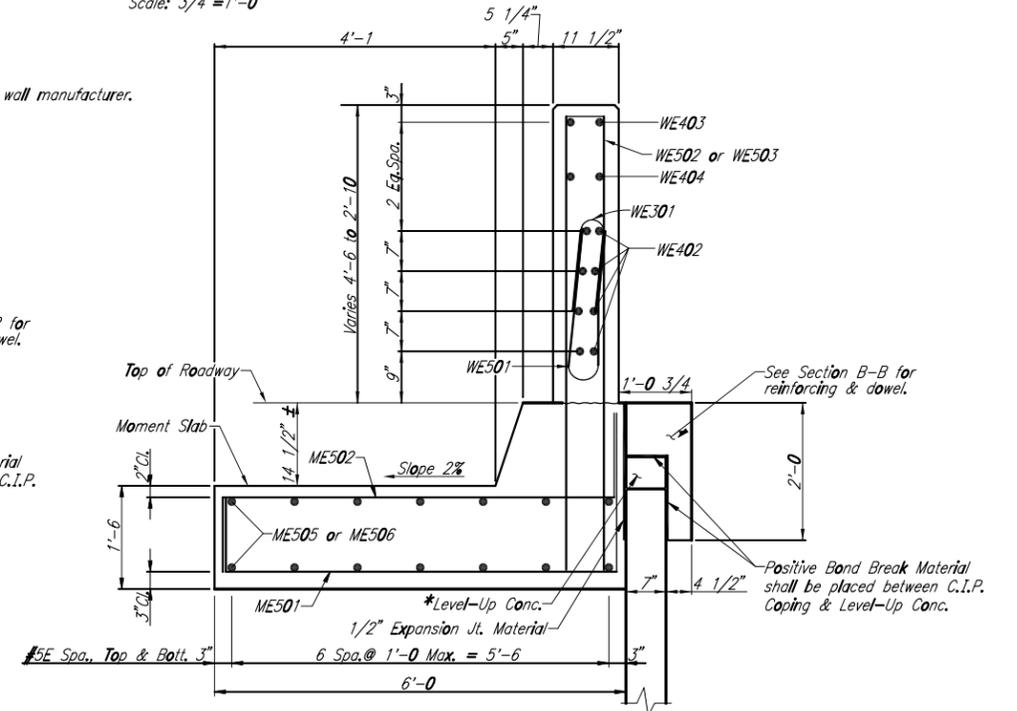
SECTION B-B
Scale: 3/4"=1'-0"



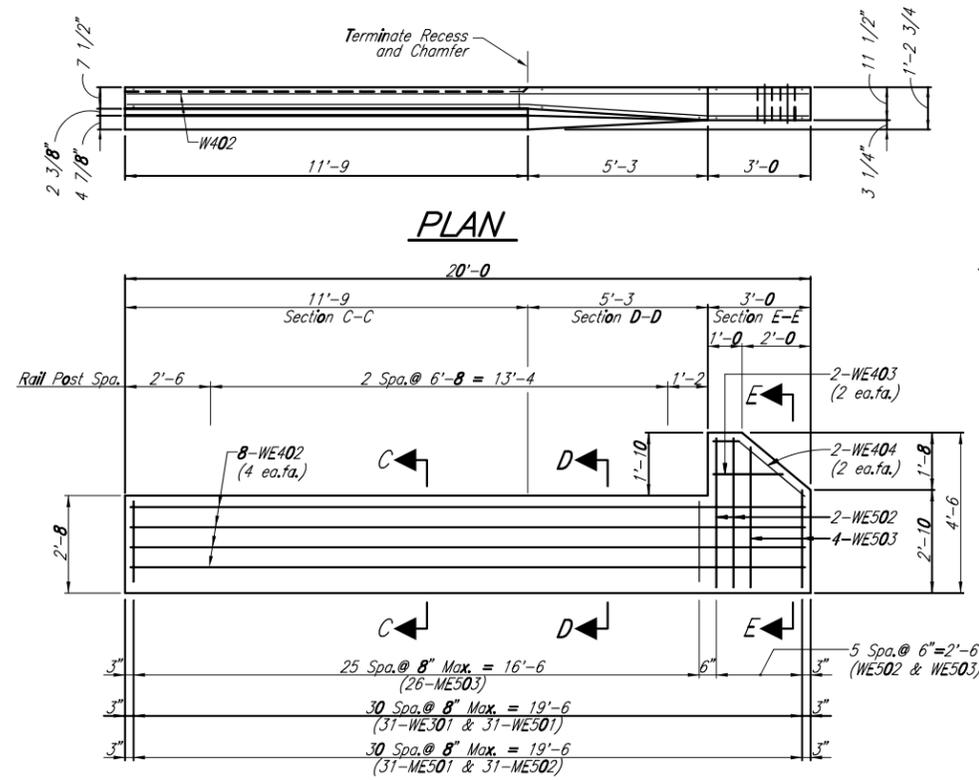
SECTION C-C
Scale: 3/4"=1'-0"



SECTION D-D
Scale: 3/4"=1'-0"



SECTION E-E
Scale: 3/4"=1'-0"



TYPE F PARAPET TRANSITION (20'-0")
Scale: 3/8"=1'-0"

Notes:

For additional details, see Dwg. 7 & 8

For location of Section A-A, B-B & C-C, see Dwg. 7 & 8

For Guardrail Attachment Details, see Dwg. 10

For Bill of Materials & Estimate of Quantities, see Dwg. 10

"E" denotes Epoxy Coated Reinforcing Steel.

The MSE system shall be constructed in conformance with the contract documents, the contract plans, the Standard Specifications, and the Manufacturer's recommendations.

The leveling pad shall be designed to maintain a minimum three foot cover over the top of the pad.

The ultimate bearing capacity is 16 ksf.

Cast in place coping on MSE Wall shall be designed by wall manufacturer. All concrete, reinforcing steel and dowels for cast in place coping shall be included in Item 626002-00X.

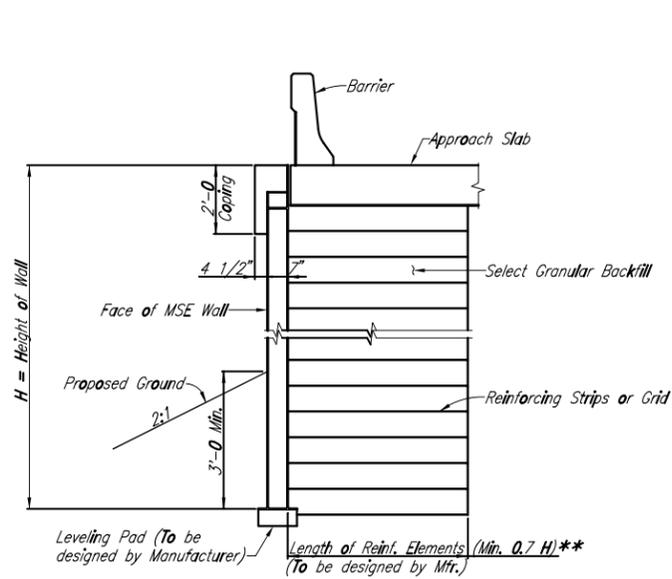
Test level for Type F parapets is TL-4.

WV DOT - DIVISION OF HIGHWAYS				COUNTY ROUTE 5 OVER CORRIDOR H			
MSE WALL DETAILS				PROJECT NO. U312-H-93.37			
NEFF, LONGEST & BEAM & ASSOC. CONSULTING ENGINEERS				CHARLESTON, W. VA. INDIANAPOLIS, IND.			
DESIGNED BY	TJW	CHECKED BY	CMS	DATE	9/04	DATE	SCALE
DETAILED BY	DAM	CHECKED BY	CMS	DATE	9/04	BRIDGE NO.	10425
TRACED BY		CHECKED BY		DATE		DRWG. NO.	9 of 27

CUTTING INCREMENTS

① 10" Cutting Increment
(2 Sets, 4 Ea.Set)

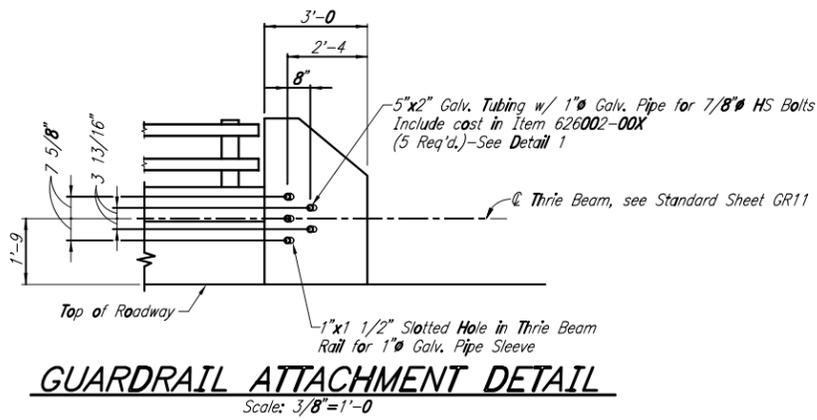
Public Roads Dist.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	108	389



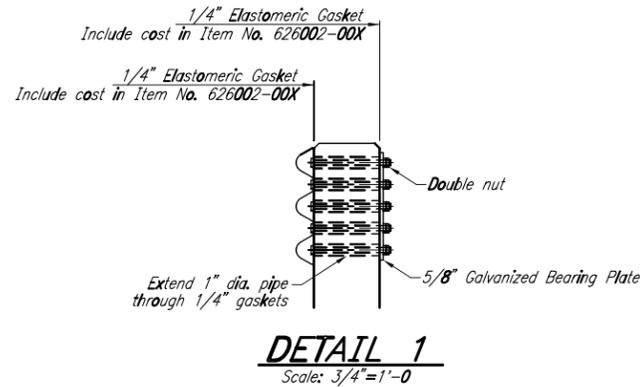
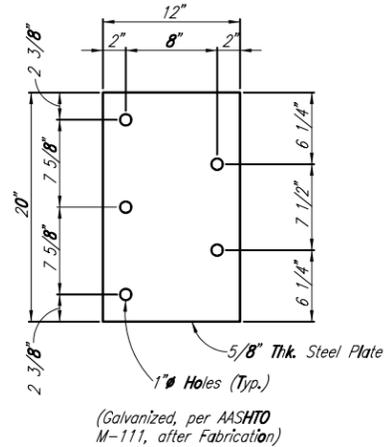
TYPICAL SECTION @ APPROACH SLAB
No Scale

**0.4 H for any portion of the wall constructed below the medium hard to hard silty shale bedrock. The reinforced width should immediately extend to 0.7 H once above the surface of the medium hard to hard silty shale.

SOIL PROPERTIES				
Soil Type	Moist Unit Weight (lb/ft ³)	Saturated Unit Weight (lb/ft ³)	Cohesion (psi)	Friction Angle (degrees)
Existing Soil	125.0	130.0	50.0	28.0
New Random Fill	125.0	130.0	100.0	30.0
Reinforced Soil (MSE)	120.0	125.0	2500.0	40.0
Soft Shale	130.0	135.0	500.0	35.0
Bedrock	135.0	140.0	5000.0	45.0

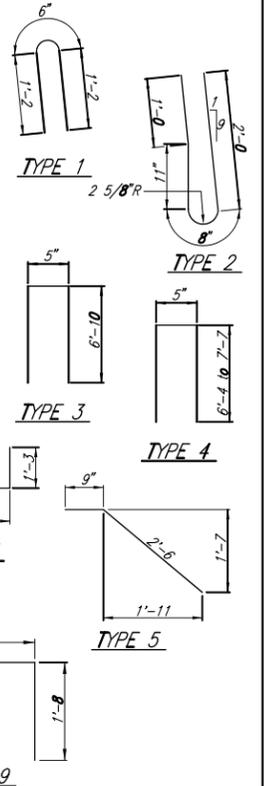


GUARDRAIL CONNECTION
Connect the Thrie Beam Terminal Plate and 5/8" Bearing Plate with 7/8" dia. bolts and two nuts. Tighten first nut against bearing plate and second nut against first nut to prevent nuts from loosening. Center the bolts in the 5"x2" tubing.



EPOXY COATED REINFORCING BAR BILL
ABUTMENT NO.1 (ABUT.NO.2, same)

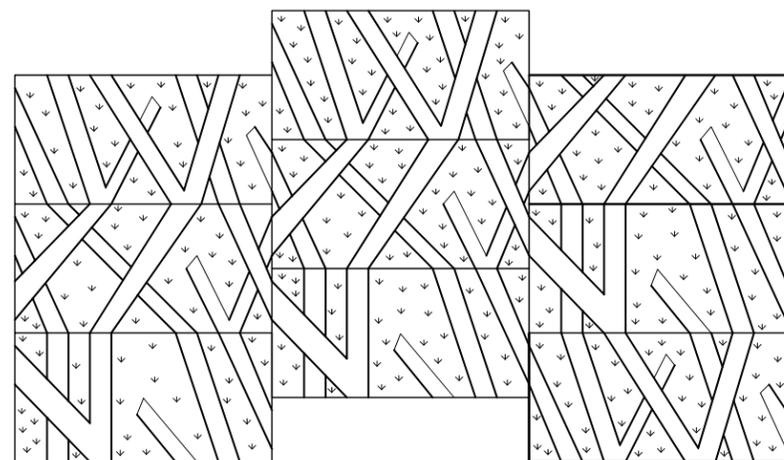
MARK	TYPE	SIZE	NO.	LENGTH
WE301	1	#3	85	2'-10"
WE401	Str.	#4	8	17'-11"
WE402	Str.	#4	16	19'-8"
WE403	Str.	#4	4	2'-0"
WE404	5	#4	4	3'-3"
WE501	2	#5	85	4'-7"
WE502	3	#5	4	14'-1"
WE503	4	#5	8	13'-1" to 15'-7"
ME501	6	#5	85	9'-0"
ME502	7	#5	85	8'-0"
ME503	8	#5	75	8'-2"
ME505	Str.	#5	16	34'-6"
ME506	Str.	#5	16	19'-8"



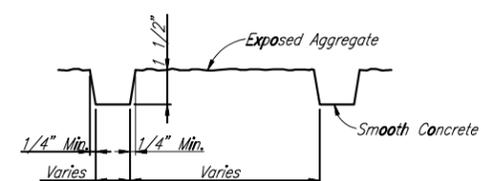
*** QUANTITIES**

ITEM NO.	ITEM	UNIT	QUANTITY
601009-001	CONCRETE CLASS H IN MOMENT SLAB	CY.	23
601009-003	CONCRETE CLASS H, ARCHITECTURAL IN PARAPET	CY.	6
602002-001	EPOXY COATED REINFORCING STEEL	LB.	4046
617003-001	ALUMINUM RAILING	LF.	50

*For Information Only. Quantities for moment slab and the parapets on the moment slab are not included in the Bridge Estimate of Quantities. See the Roadway Estimate of Quantities for these items.
† See Bridge Estimate of Quantities.



ARCHITECTURAL TREATMENT TYPE "B"
No Scale



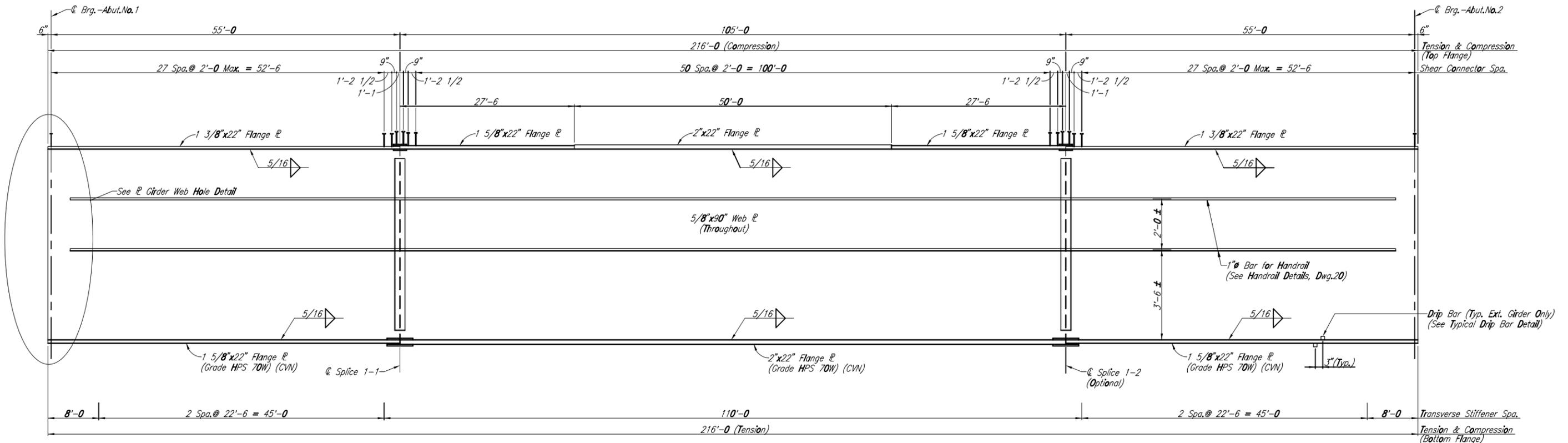
ARCHITECTURAL TREATMENT TYPE "B"
Scale: 3"=1'-0"

ESTIMATE OF QUANTITIES					
Item No.	Item	Unit	Abut.No.1	Abut.No.2	Total
626002-001	Mechanically Stabilized Earth Retaining Wall	SF.	3925	3868	7793
626002-002	Retained Earth Alternate	SF.	3925	3868	7793
626002-003	Reinforced Earth Alternate	SF.	3925	3868	7793
626002-004	ISO Grid Alternate	SF.	3925	3868	7793
626002-005	MSE Plus Alternate	SF.	3925	3868	7793
626002-006	Ares Alternate	SF.	3925	3868	7793
626002-006	TRIcon Alternate	SF.	3925	3868	7793

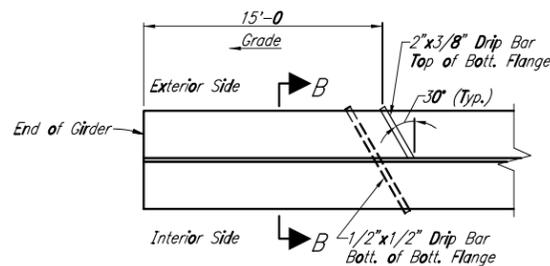
Note: For additional details, see Dwg. 7-9

WV DOT - DIVISION OF HIGHWAYS				COUNTY ROUTE 5 OVER CORRIDOR H	
MSE WALL DETAILS				PROJECT NO. X312-H-93.37	
NEFF, LONGEST & BEAM & ASSOC.				CHARLESTON, W. VA. INDIANAPOLIS, IND.	
DESIGNED BY	CHECKED BY	DATE	BY	DATE	SCALE
TSW	CMS	9/04		9/04	AS NOTED
TRACED BY	CHECKED BY	DATE	DATE	BRIDGE NO.	DRWG. NO.
DAM	CMS	9/04		10425	10 of 27

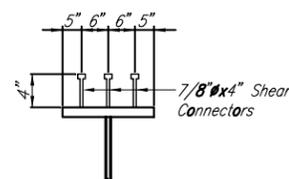
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	110	389



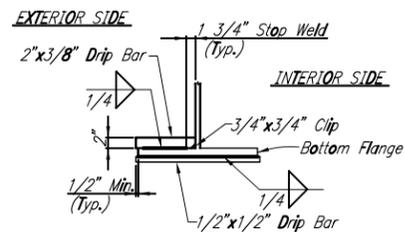
GIRDER ELEVATION
No Scale



TYPICAL DRIP BAR DETAIL
No Scale

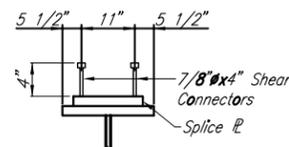


SHEAR CONNECTORS TYPICAL DETAIL
No Scale

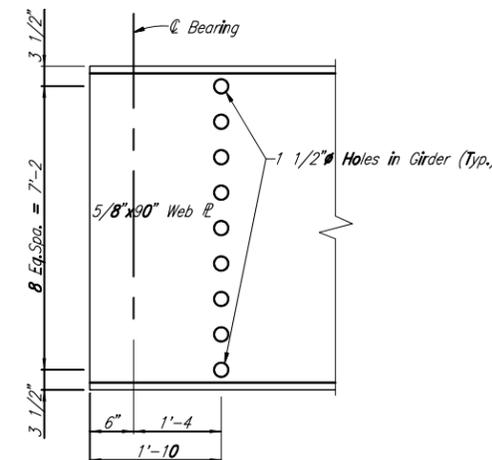


SECTION B-B
No Scale

Note: Drip Bars shall be located on the upward slope of all exterior girders adjacent to abutments.
Drip Bars shall be caulked with dark brown caulking against flange, web & fillet weld.



SHEAR CONNECTORS @ SPLICE DETAIL
No Scale

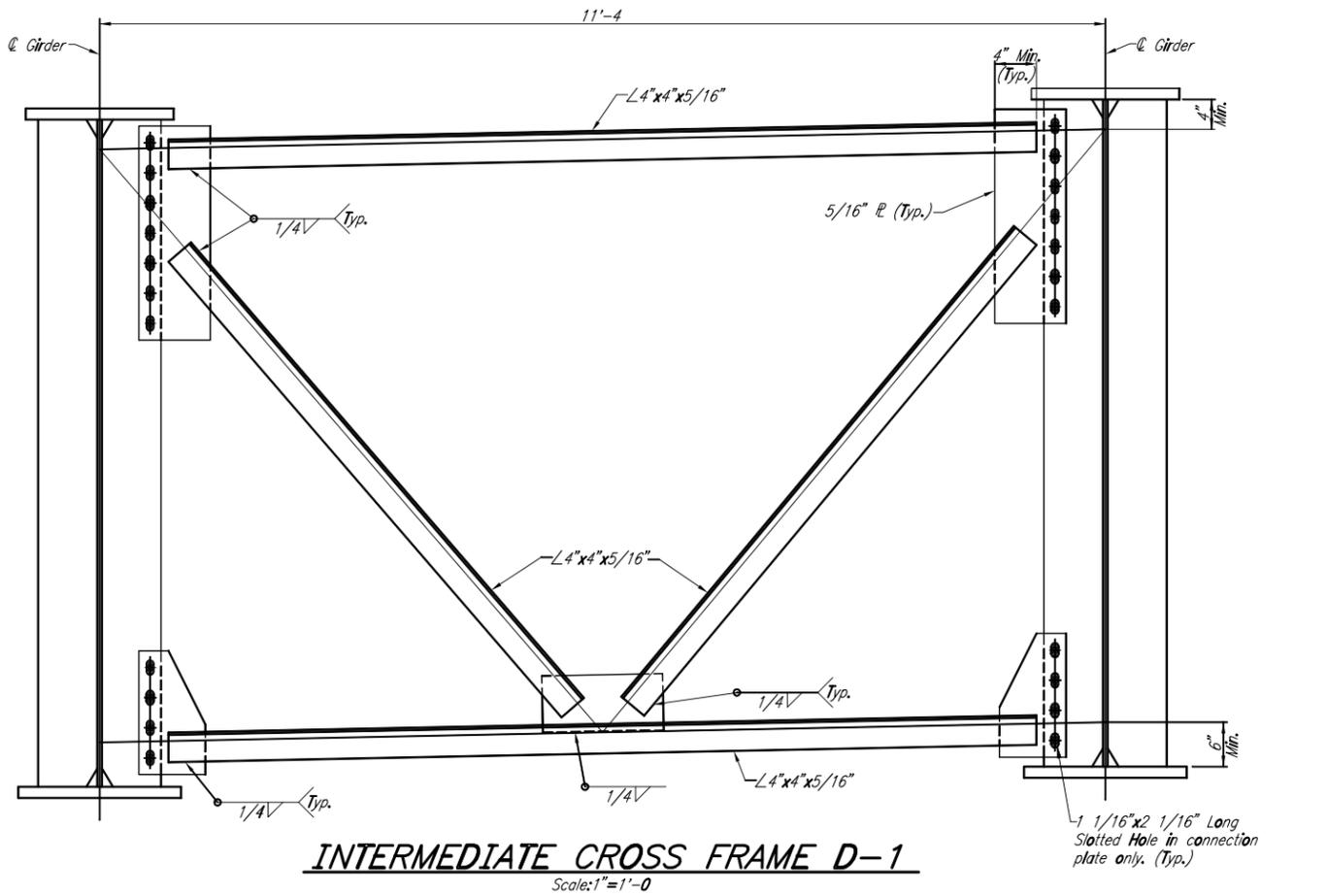


I GIRDER WEB HOLE DETAIL
(Abut. No.1 shown, Abut. No.2 same by 180°)
No Scale

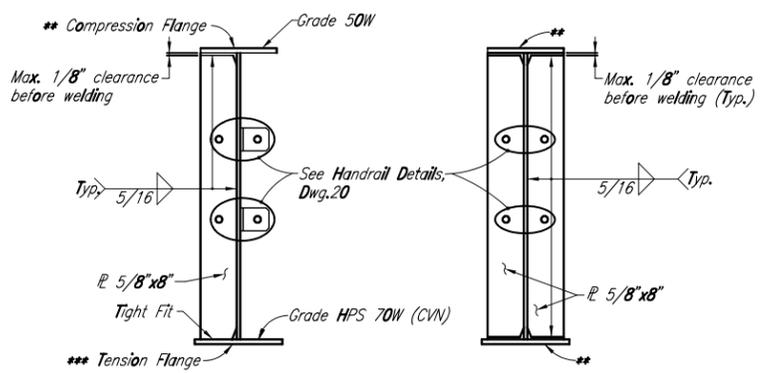
Notes:
For Framing Plan, see Dwg.11
For additional details, see Dwg.11, 13 & 14
For Steelwork General Notes, see Dwg.3
All structural steel to be grade 50W unless noted.
Handrails to be placed on the inside face of web for exterior girders and on each face of web for interior girders.

				WVDOT - DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				STEEL DETAILS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
				CONSULTING ENGINEERS			
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
DESIGNED BY JAP	CHECKED BY TSW	DATE 9/04			DATE 9/04	AS NOTED	10425
DETAILED BY DAM	CHECKED BY CMS	DATE 9/04					12 of 27
TRACED BY	CHECKED BY	DATE					

Public Roads Dist.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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Note:
Intermediate Cross Frame (D-1) shall be constructed with the bolts being snug tight prior to the concrete deck placement. Upon completion of the concrete deck placement, all the bolts shall be tightened to their required tension.

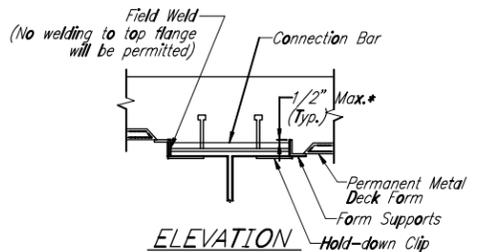
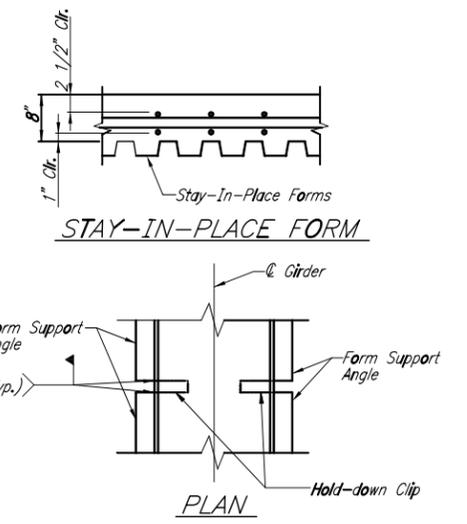


ALL OTHER LOCATIONS AT CROSS FRAMES
TRANSVERSE STIFFENERS
No Scale

Note: No plate req'd. exterior side of exterior girder.

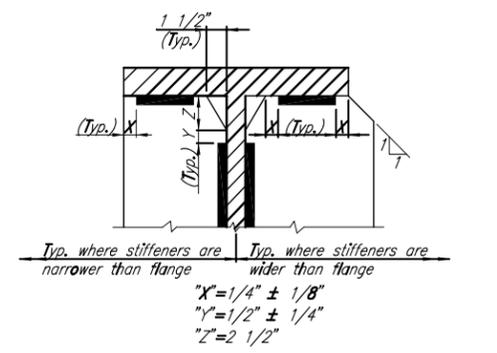
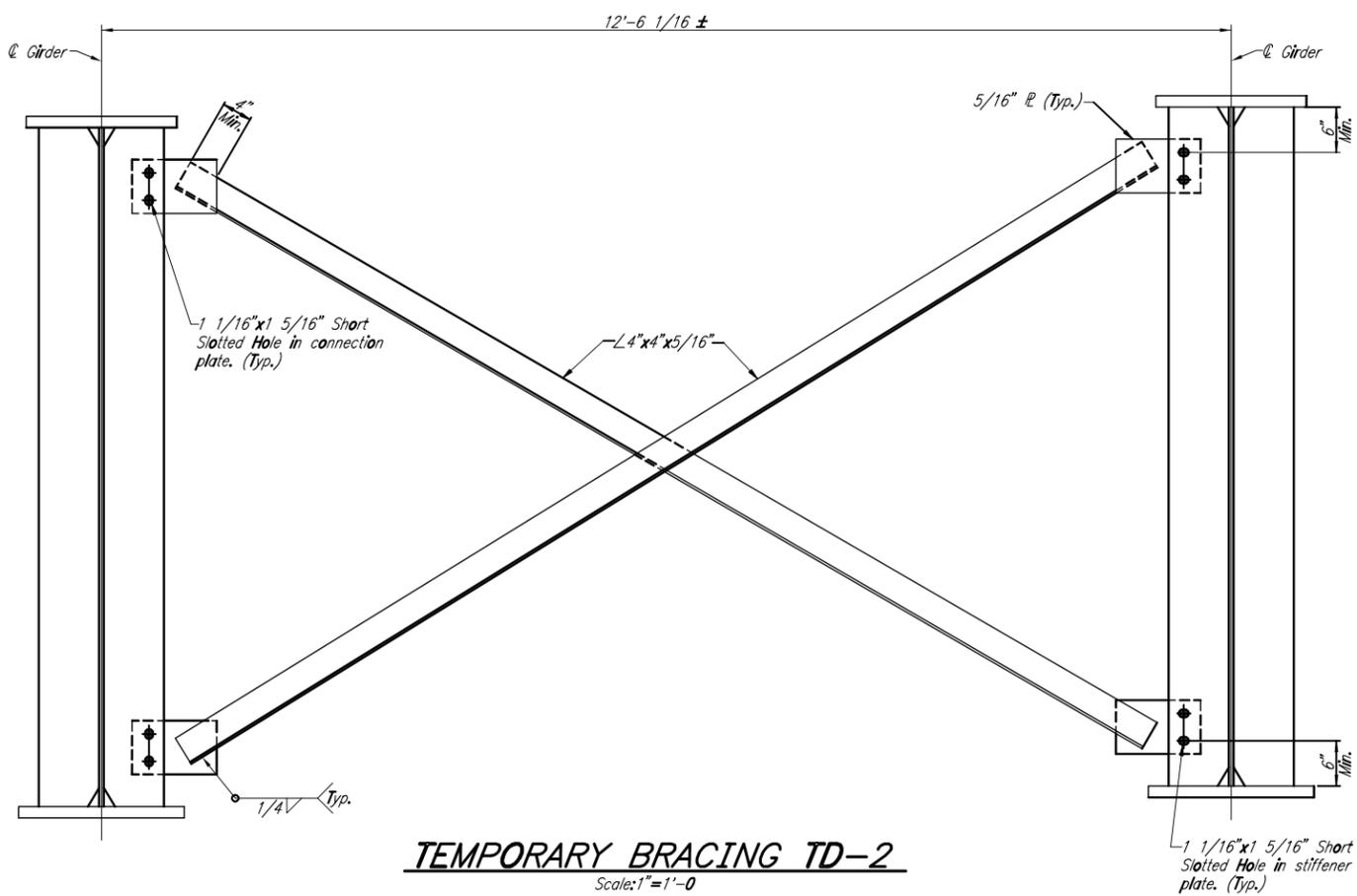
** For Weld Termination and Stiffener Clip Details, see End of Stiffener or Connection Plate Detail.

*** For Stiffener Clip Details, see End of Stiffener or Connection Plate Detail.



Note: Form supports to be positioned as required for fillet.
* The form supports shall not protrude into deck more than 1/2" above the top of the connection bar nor shall it interfere with the nominal slab thickness.

STAY-IN-PLACE FORM DETAILS
No Scale



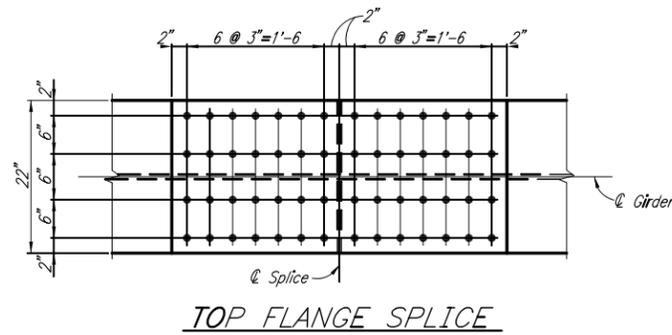
Typ. where stiffeners are narrower than flange
Typ. where stiffeners are wider than flange

"X" = 1/4" ± 1/8"
"Y" = 1/2" ± 1/4"
"Z" = 2 1/2"

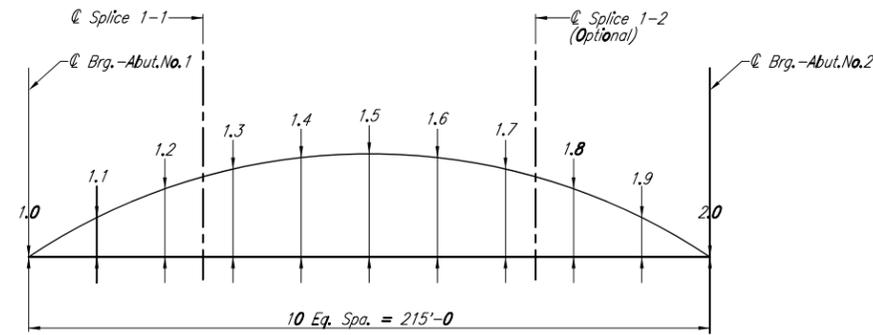
Notes:
For Framing Plan, see Dwg.11
For additional details, see Dwg.12 & 14
For Steelwork General Notes, see Dwg.3
All structural steel to be grade 50W unless noted.
All bolts listed on this sheet shall be 1" A325 Bolts, unless noted.

				WV DOT - DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				STEEL DETAILS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA.	
				CONSULTING ENGINEERS		INDIANAPOLIS, IND.	
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
DESIGNED BY JAP	CHECKED BY TWS	DATE 9/04			DATE 9/04	AS NOTED	10425
TRACED BY DAM	CHECKED BY CMS	DATE 9/04			DATE 9/04		13 of 27

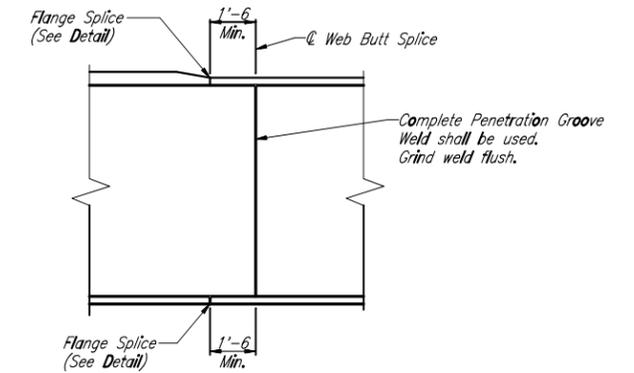
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	112	389



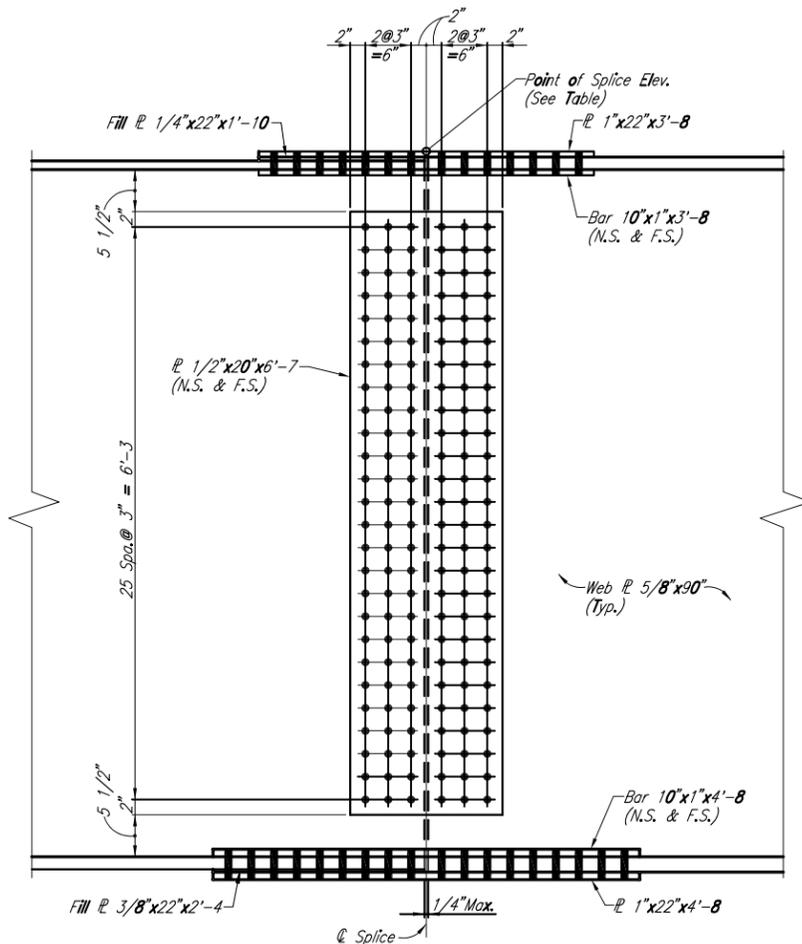
TOP FLANGE SPLICE



GIRDER CAMBER DIAGRAM
(Girders 1-5)
No Scale



ALTERNATE SPLICE DETAIL
No Scale



TYPICAL SPLICE DETAIL
Scale: 1" = 1'-0"

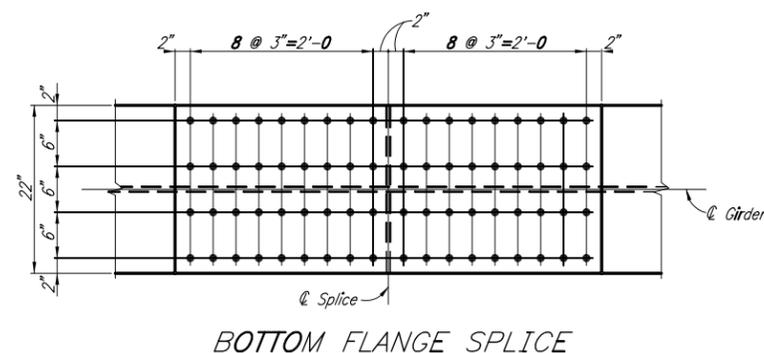
		SPAN 1										
GIRDER	CAMBER	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
G1	A	0.0	1.3	2.5	3.4	3.9	4.1	3.9	3.4	2.5	1.3	0.0
	B	0.0	0.2	0.4	0.6	0.6	0.7	0.6	0.6	0.4	0.2	0.0
	C	0.0	2.8	5.3	7.1	8.3	8.6	8.3	7.1	5.3	2.8	0.0
	D	0.0	0.3	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.3	0.0
	E	0.0	-1.5	-3.1	-4.6	-6.2	-7.7	-9.3	-10.8	-12.4	-14.2	-16.5
	F	0.0	3.1	5.6	7.2	7.4	6.5	4.3	1.0	-3.7	-9.6	-16.5
G2	A	0.0	1.3	2.5	3.4	3.9	4.1	3.9	3.4	2.5	1.3	0.0
	B	0.0	0.4	0.8	1.1	1.3	1.4	1.3	1.1	0.8	0.4	0.0
	C	0.0	3.0	5.6	7.6	8.8	9.1	8.8	7.6	5.6	3.0	0.0
	D	0.0	0.2	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.2	0.0
	E	0.0	-1.5	-3.1	-4.6	-6.2	-7.7	-9.3	-10.8	-12.4	-14.4	-16.7
	F	0.0	3.4	6.3	8.2	8.6	7.7	5.5	2.0	-3.0	-9.5	-16.7
G3	A	0.0	1.3	2.5	3.4	3.9	4.1	3.9	3.4	2.5	1.3	0.0
	B	0.0	0.4	0.8	1.1	1.3	1.4	1.3	1.1	0.8	0.4	0.0
	C	0.0	3.0	5.6	7.6	8.8	9.1	8.8	7.6	5.6	3.0	0.0
	D	0.0	0.2	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.2	0.0
	E	0.0	-1.5	-3.1	-4.6	-6.2	-7.7	-9.3	-10.8	-12.5	-14.5	-17.0
	F	0.0	3.4	6.3	8.3	8.6	7.7	5.4	1.9	-3.1	-9.6	-17.0
G4	A	0.0	1.3	2.5	3.4	3.9	4.1	3.9	3.4	2.5	1.3	0.0
	B	0.0	0.4	0.8	1.1	1.3	1.4	1.3	1.1	0.8	0.4	0.0
	C	0.0	3.0	5.6	7.6	8.8	9.1	8.8	7.6	5.6	3.0	0.0
	D	0.0	0.2	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.2	0.0
	E	0.0	-1.5	-3.1	-4.6	-6.2	-7.7	-9.3	-10.8	-12.6	-14.7	-17.3
	F	0.0	3.4	6.3	8.2	8.6	7.7	5.5	2.0	-3.2	-9.8	-17.3
G5	A	0.0	1.3	2.5	3.4	3.9	4.1	3.9	3.4	2.5	1.3	0.0
	B	0.0	0.2	0.4	0.6	0.6	0.7	0.6	0.6	0.4	0.2	0.0
	C	0.0	2.8	5.3	7.1	8.3	8.6	8.3	7.1	5.3	2.8	0.0
	D	0.0	0.3	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.3	0.0
	E	0.0	-1.5	-3.1	-4.6	-6.2	-7.7	-9.3	-10.8	-12.7	-14.9	-17.6
	F	0.0	3.1	5.6	7.2	7.4	6.5	4.3	1.0	-4.0	-10.3	-17.6

Note: Positive camber is upward.
All cambers are in inches.

CAMBER ORDINATES LEGEND

- A - Camber due to dead load of steel. (Including Diaphragms)
- B - Camber due to dead load of stay-in-place deck forms.
- C - Camber due to dead load of deck concrete.
- D - Camber due to superimposed dead load of concrete parapets.
- E - Geometric Camber
- F - Total Camber (A+B+C+D+E)

Notes:
For Framing Plan, see Dwg. 11
For additional details, see Dwg. 12 & 13
For Steelwork General Notes, see Dwg. 3
All structural steel to be grade 50W unless noted.
All bolts listed on this sheet shall be 1" A325 Bolts, unless noted.



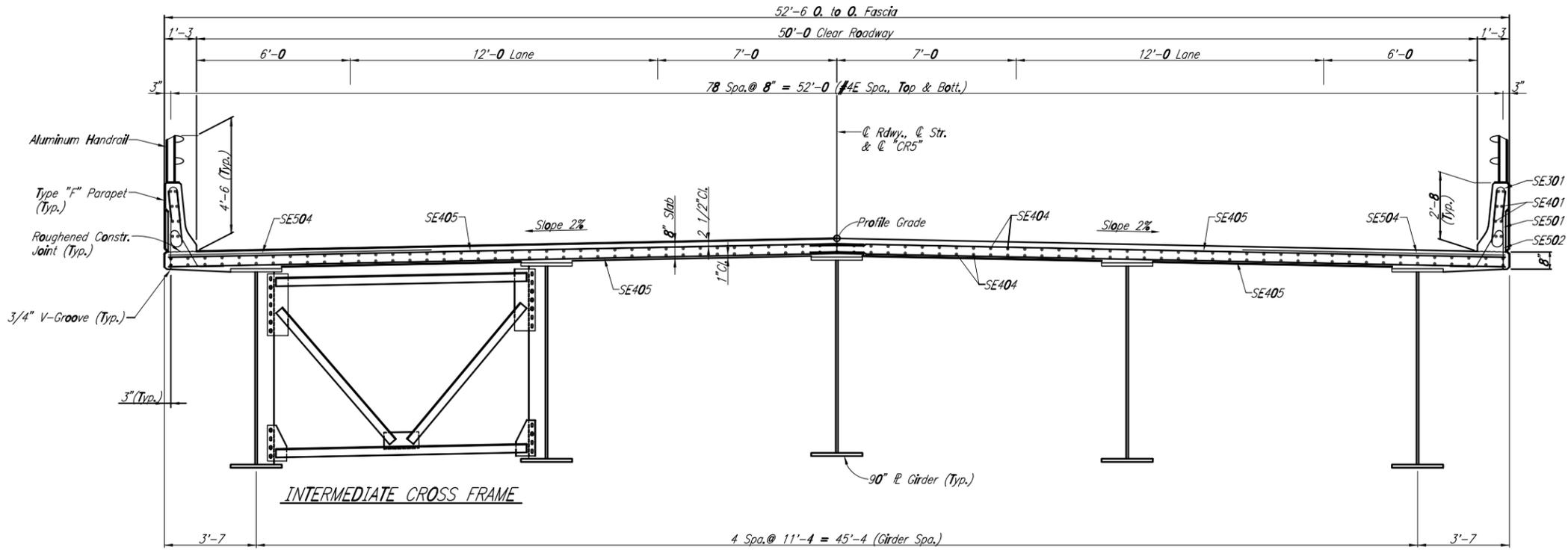
BOTTOM FLANGE SPLICE

TOP OF SPLICE ELEVATIONS		
Splice No.	1-1	1-2
Girder No. 1	1135.160	1134.530
Girder No. 2	1135.430	1134.800
Girder No. 3	1135.625	1134.995
Girder No. 4	1135.365	1134.735
Girder No. 5	1135.030	1134.395

NOTE: Elevations are before bolting field splice connections. These elevations are with falsework removed and carrying steel dead load only. If splice elevations vary at field condition, report to Engineer.

				WV DOT - DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				STEEL DETAILS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC. CONSULTING ENGINEERS			
				CHARLESTON, W. VA. INDIANAPOLIS, IND.			
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
DESIGNED BY JAP	CHECKED BY TSW	DATE 9/04				AS NOTED	10425
DETAILED BY DAM	CHECKED BY CMS	DATE 9/04					14 of 27
TRACED BY	CHECKED BY	DATE					

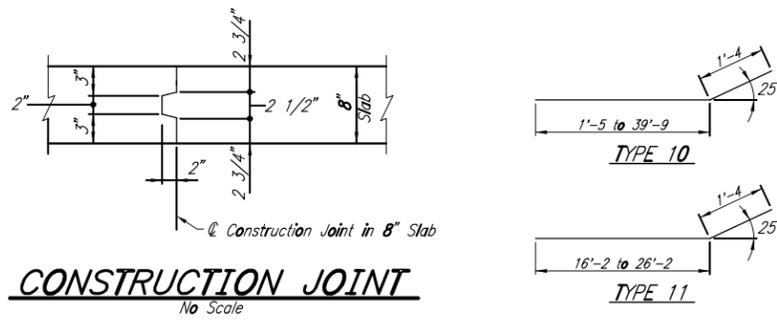
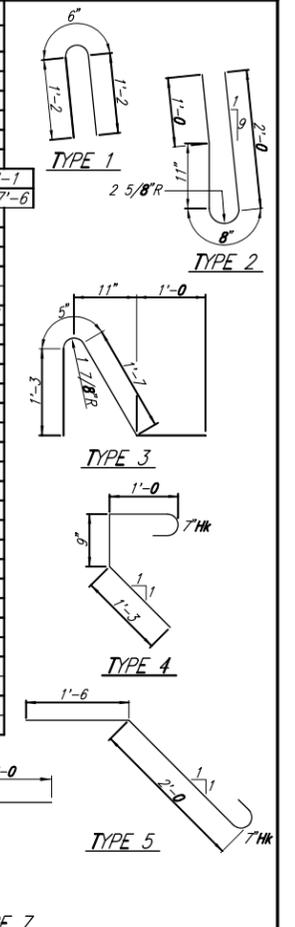
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	114	389



SECTION A-A
Scale: 3/8"=1'-0"

EPOXY COATED REINFORCING BAR BILL

MARK	TYPE	SIZE	NO.	LENGTH
SE301	1	#3	656	2'-10"
SE401	Str.	#4	96	38'-1"
SE404	Str.	#4	948	34'-3"
SE405	Str.	#4	1020	27'-2"
SE408	10	#4	112	2'-9" to 41'-1"
SE409	11	#4	32	17'-6" to 27'-8"
SE410	Str.	#4	72	10'-3"
SE501	2	#5	656	4'-7"
SE502	3	#5	656	4'-3"
SE503	Str.	#5	12	2'-1" to 9'-3"
SE504	Str.	#5	548	10'-3"
SE505	4	#5	106	3'-7"
SE506	5	#5	106	4'-1"
SE507	Str.	#5	18	15'-6"
SE508	Str.	#5	36	24'-0"
SE601	Str.	#6	36	31'-3"
SE602	7	#6	128	4'-6"
SE603	Str.	#6	172	30'-8"
SE604	6	#6	138	17'-2"
SE605	Str.	#6	158	13'-4"



CONSTRUCTION JOINT
No Scale

CUTTING INCREMENTS

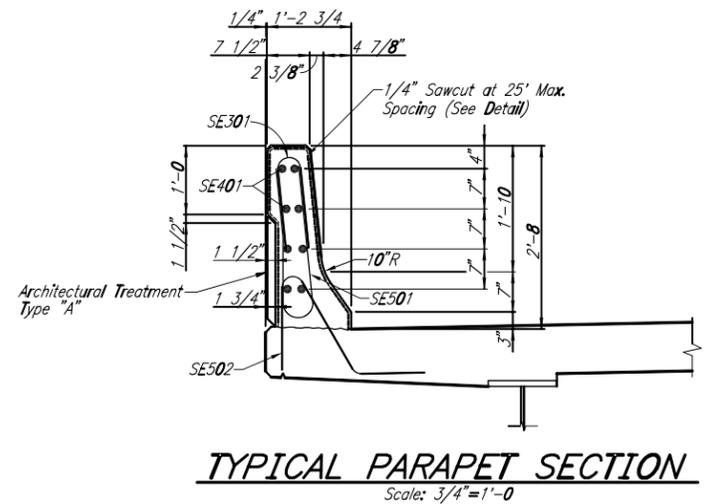
- ① 1'-5" ± Cutting Increment (4 Sets, 28 Ea.Set)
- ② 1'-5" ± Cutting Increment (4 Sets, 8 Ea.Set)
- ③ 1'-5 3/16" Cutting Increment (2 Set, 6 Ea.Set)

QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
601009-001	CONCRETE CLASS "H" IN SLAB		
	Pour No.1	CY.	276
	Pour No.2	CY.	76
	Pour No.3	CY.	76
601009-001	TOTAL CLASS "H" CONCRETE IN SUPERSTRUCTURE	CY.	428
601009-003	CONCRETE CLASS "H", ARCHITECTURAL IN PARAPET	CY.	35
602002-001	EPOXY COATED REINFORCING STEEL	LB.	77684
617003-001	ALUMINUM RAILING	LF.	437

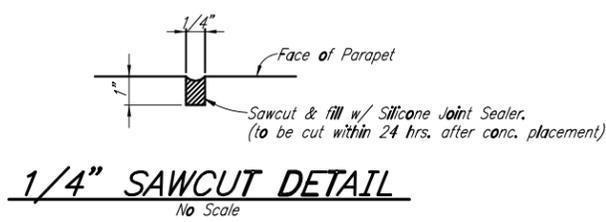
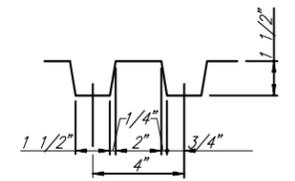
* For location of these bars, see Abutment Details, Dwg.5 & 6

Notes:
For Slab Plan, see Dwg.15
"E" denotes Epoxy Coated Reinforcing Steel.

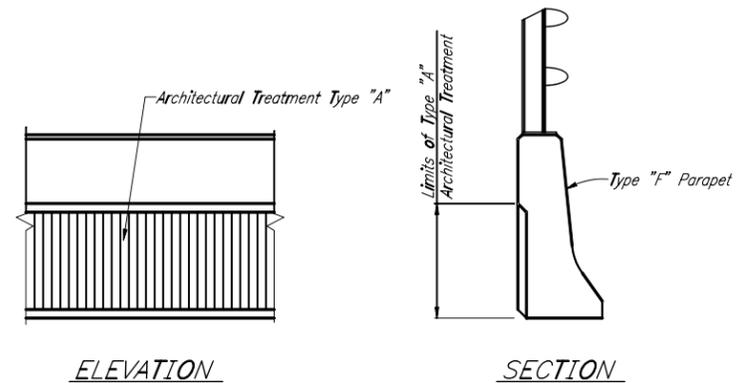


TYPICAL PARAPET SECTION
Scale: 3/4"=1'-0"

ARCHITECTURAL TREATMENT TYPE "A"
Scale: 3/4"=1'-0"



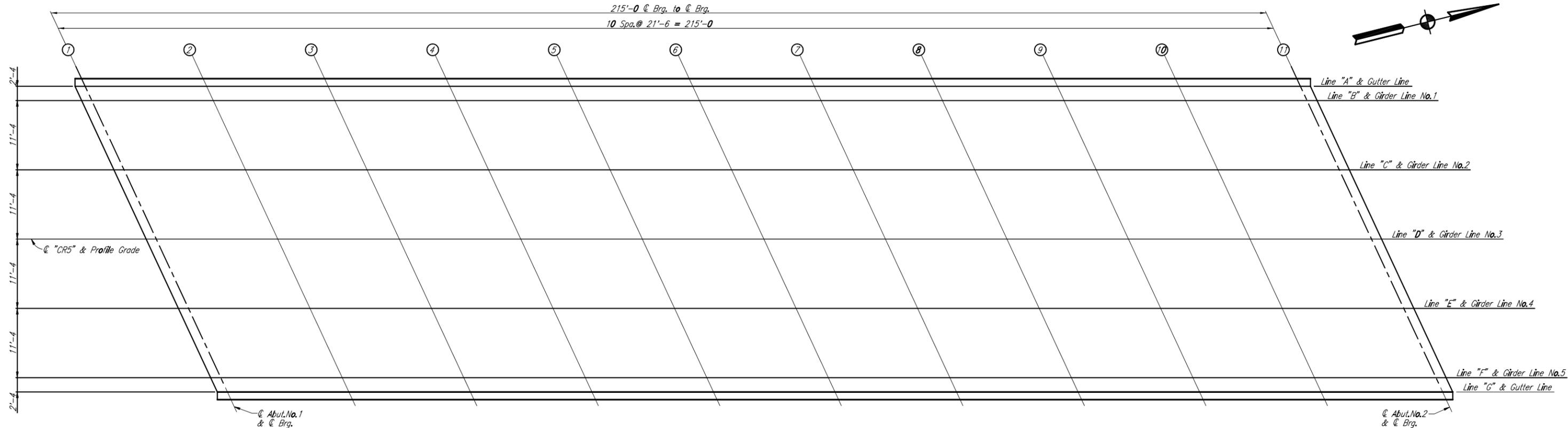
1/4" SAWCUT DETAIL
No Scale



RAILING DETAILS
Scale: 3/4"=1'-0"

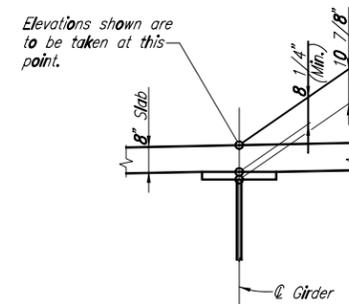
WV DOT - DIVISION OF HIGHWAYS			
COUNTY ROUTE 5 OVER CORRIDOR H			
SUPERSTRUCTURE DETAILS			
PROJECT NO. X312-H-93.37			
NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA.	
CONSULTING ENGINEERS		INDIANAPOLIS, IND.	
DESIGNED BY	CHECKED BY	DATE	BY
JAP	TSW	9/04	
DATE	CHECKED BY	DATE	BY
9/04	CMS	9/04	
TRACED BY	CHECKED BY	DATE	BY
DATE		SCALE	BRIDGE NO.
		AS NOTED	10425
		DRWG. NO.	16 of 27

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PLAN OF TOP OF ROADWAY ELEVATIONS

Scale: 1/8"=1'-0"



SECTION OVER GIRDER

No Scale

Notes:
Deflections shown in table due to concrete deck and parapets. (Future wearing surface not included.)
Positive deflection is downward.
For individual component DL Deflections, see girder camber table, Dwg.14

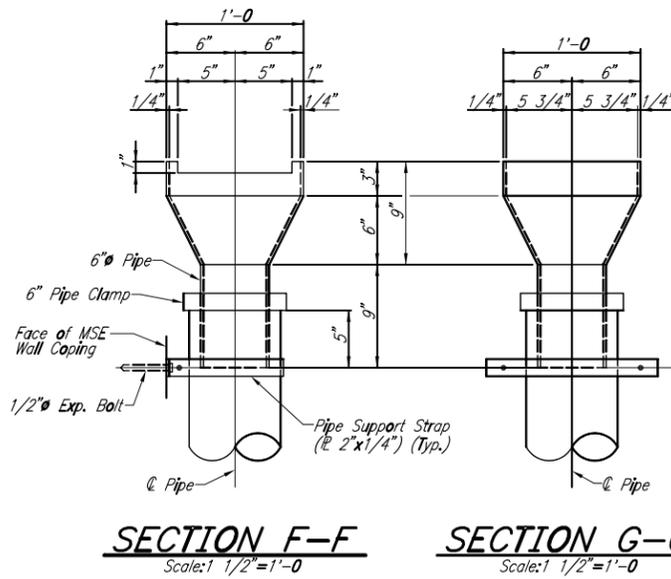
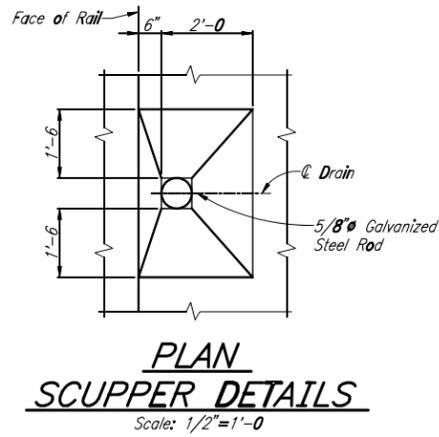
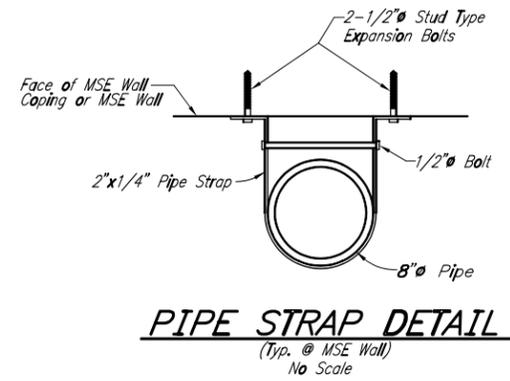
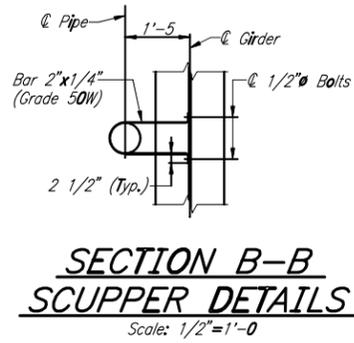
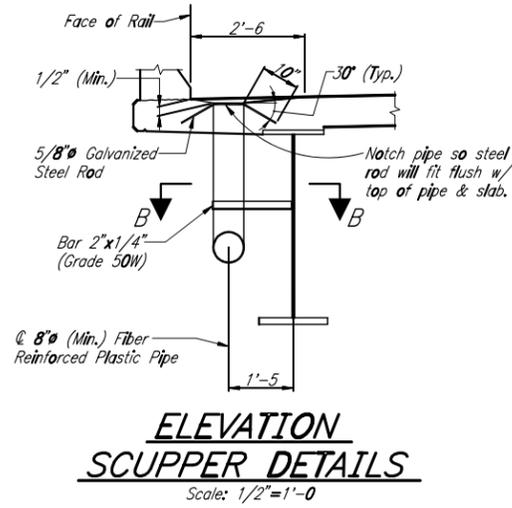
TOP OF ROADWAY ELEVATIONS AND CONCRETE DEAD LOAD DEFLECTIONS												
Line	Point	1	2	3	4	5	6	7	8	9	10	11
"A"	Elevation Top of Roadway	1135.520	1135.390	1135.260	1135.130	1135.000	1134.875	1134.745	1134.615	1134.485	1134.335	1134.150
	Concrete Dead Load Deflection	.000	.275	.515	.700	.810	.840	.810	.700	.515	.275	.000
"B"	Elevation Top of Roadway	1135.560	1135.430	1135.300	1135.170	1135.040	1134.915	1134.785	1134.655	1134.525	1134.375	1134.185
	Concrete Dead Load Deflection	.000	.275	.515	.700	.810	.840	.810	.700	.515	.275	.000
"C"	Elevation Top of Roadway	1135.755	1135.625	1135.495	1135.365	1135.235	1135.110	1134.980	1134.850	1134.720	1134.555	1134.360
	Concrete Dead Load Deflection	.000	.300	.575	.785	.910	.940	.910	.785	.575	.300	.000
"D"	Elevation Top of Roadway	1135.950	1135.820	1135.690	1135.560	1135.430	1135.305	1135.175	1135.045	1134.910	1134.740	1134.530
	Concrete Dead Load Deflection	.000	.00	.575	.785	.910	.940	.910	.785	.575	.300	.000
"E"	Elevation Top of Roadway	1135.690	1135.560	1135.430	1135.305	1135.175	1135.045	1134.915	1134.785	1134.645	1134.465	1134.250
	Concrete Dead Load Deflection	.000	.300	.575	.785	.910	.940	.910	.785	.575	.300	.000
"F"	Elevation Top of Roadway	1135.430	1135.300	1135.175	1135.045	1134.915	1134.785	1134.655	1134.530	1134.375	1134.190	1133.965
	Concrete Dead Load Deflection	.000	.275	.515	.700	.810	.840	.810	.700	.515	.275	.000
"G"	Elevation Top of Roadway	1135.380	1135.250	1135.120	1134.990	1134.860	1134.735	1134.605	1134.475	1134.320	1134.130	1133.905
	Concrete Dead Load Deflection	.000	.275	.515	.700	.810	.840	.810	.700	.515	.275	.000

NOTE:
After all the girders have been erected, the Engineer shall take elevations along the top of the girders at points where the elevations are given. The difference between these elevations and the given Top of Roadway Elevations plus the amount of deflection due to the dead load of the concrete will be the thickness of the slab over the girders at these points. The minimum thickness of the slab over the girders shall not be less than 8 1/4" at the centerline of the web. If the girder has excess camber and this minimum cannot be obtained, the gradeline shall be adjusted to obtain this minimum thickness.

Elevation at "Top of Roadway" are at centerline of girder.

				WVDOT - DIVISION OF HIGHWAYS COUNTY ROUTE 5 OVER CORRIDOR H			
				TOP OF SLAB ELEVATIONS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC. CONSULTING ENGINEERS		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
						AS NOTED	10425
DESIGNED BY TSW	CHECKED BY CMS	DATE 9/04					DRWG. NO.
TRACED BY DAM	CHECKED BY CMS	DATE 9/04					17 of 27

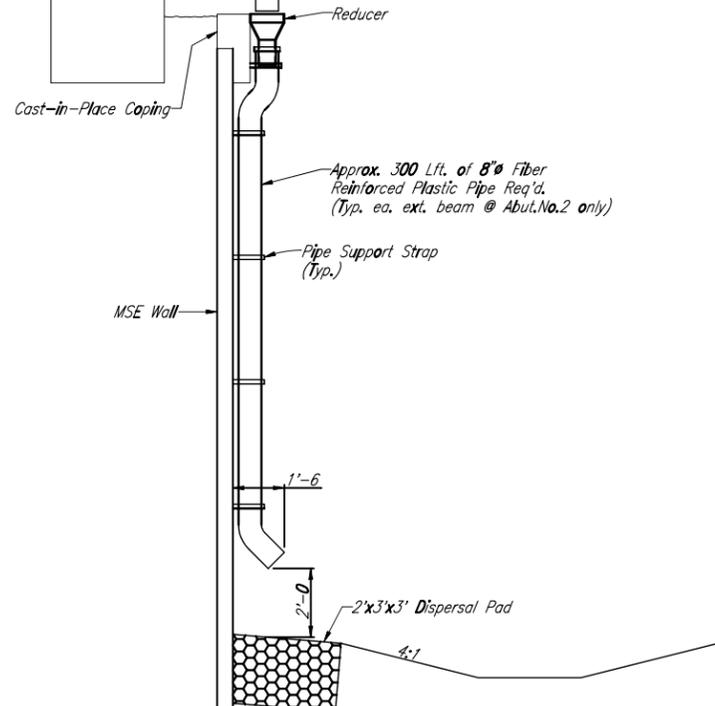
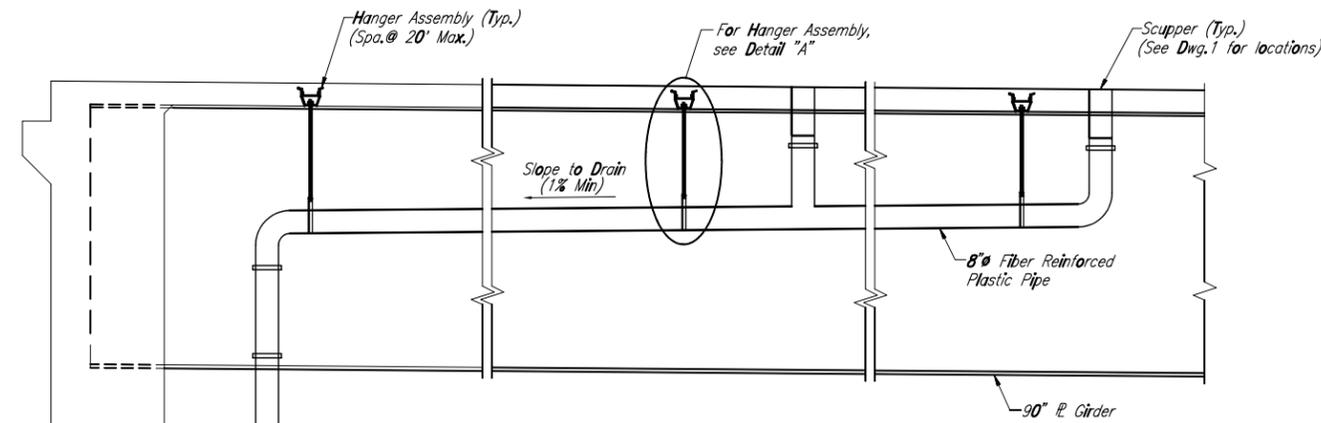
Public Roads Dist.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	116	389



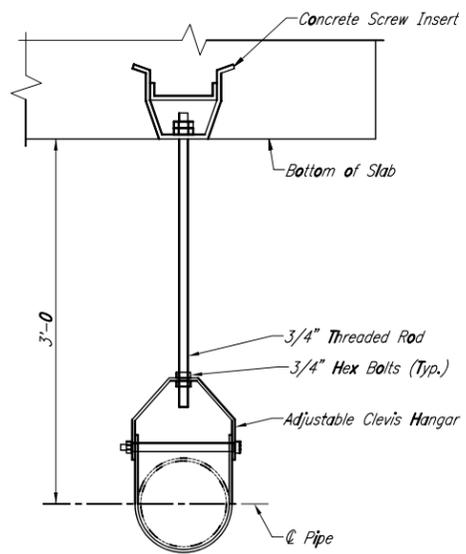
Notes:
 For Slab Plan, see Dwg.15
 All drain pipe shall be 8" Fiber Reinforced Plastic Pipe in accordance with Section 714.16.
 All bolts shall be galvanized in accordance with AASHTO M111. Material for scupper supports and pipe supports shall be AASHTO M270 Gr.50W Steel.
 All drain pipes, bolts, galvanized steel rods and steel plates to be included in cast of Class H Concrete, Item 601009-001. Fiber Reinforced Plastic Pipe color to be similar to weathering steel along girders and concrete along MSE Wall.
 For location of scuppers, see General Plan, Dwg.1
 For Steelwork General Notes, see Dwg.3
 For additional piping details, see Dwg.19
 For location of Sections F-F & G-G, see Dwg.8

				WVDOT — DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				SCUPPER DETAILS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
						AS NOTED	10425
DESIGNED BY	CMS	CHECKED BY	JAP	DATE	9/04		DRWG. NO.
DETAILED BY	DAM	CHECKED BY	CMS	DATE	9/04		18 of 27
TRACED BY		CHECKED BY		DATE			

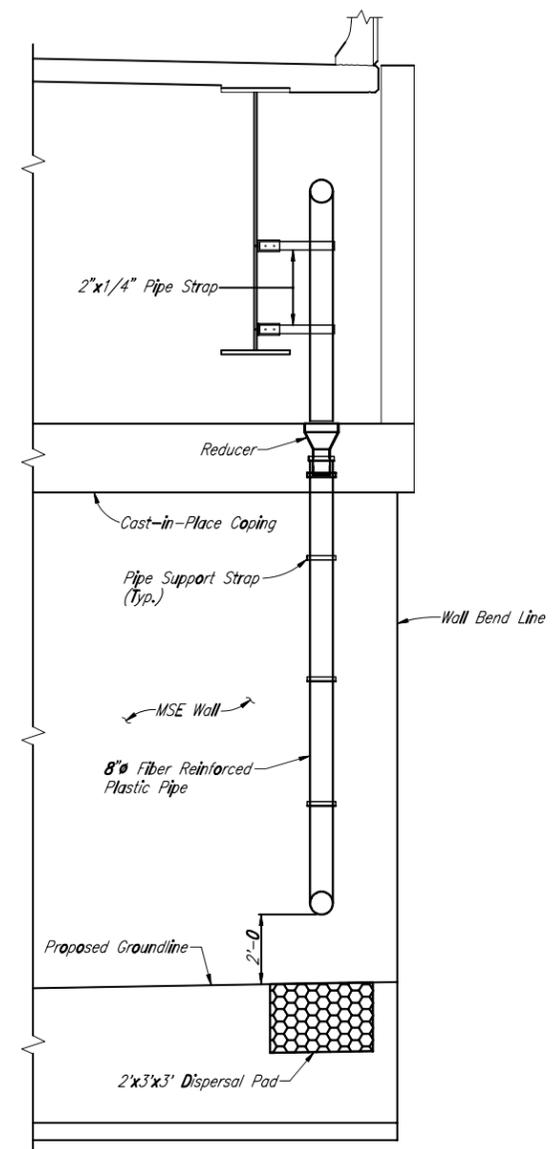
Public Roads Dist.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	117	389



PARTIAL SECTION (ABUT.NO.2)
Scale: 3/8"=1'-0



DETAIL "A"
No Scale

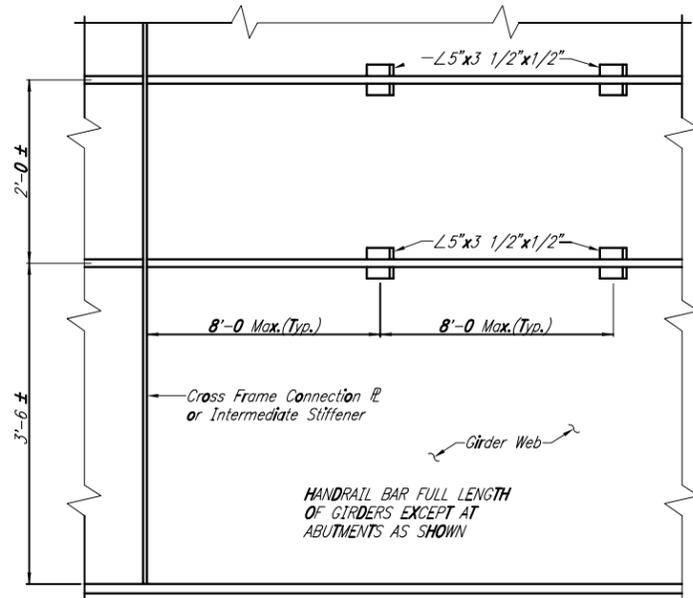


TYPICAL PIPE SUPPORT AT MSE WALL (ABUT.NO.2)
Scale: 3/8"=1'-0

Notes:
 For additional notes and details, see Dwg. 18
 For Pipe Strap Details, see Dwg. 18
 Fiber Reinforced Plastic Pipe to be by Westfall Company or approved equal.
 Pipe hanger assemblies to be by Anvil or approved equal.

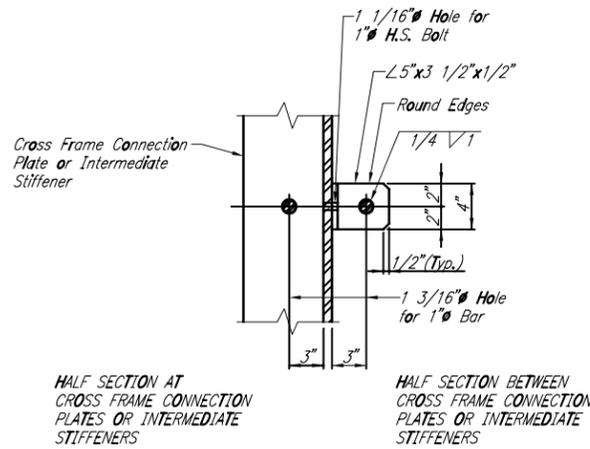
				WVDOT — DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				SCUPPER DETAILS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
				CONSULTING ENGINEERS			
DESIGNED BY	CMS	CHECKED BY	JAP	DATE	9/04	DATE	SCALE
DETAILED BY	DAM	CHECKED BY	CMS	DATE	9/04	BRIDGE NO.	DRWG. NO.
TRACED BY		CHECKED BY		DATE		AS NOTED	10425 19 of 27

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	05	X312-H-93.37	APD-0484 (236) C	2006	GRANT	118	389

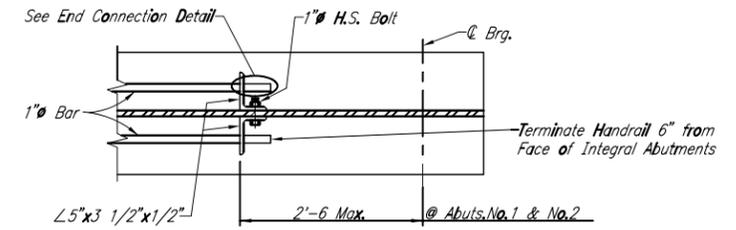


Note: Install Handrail on both sides of Interior Girders and on the inside of the Exterior Girders.

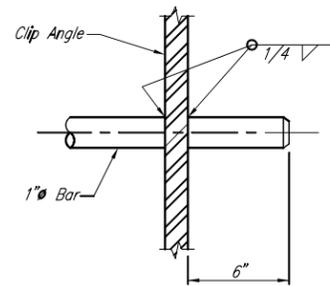
HANDRAIL ELEVATION FOR I GIRDERS
Scale: 1"=1'-0"



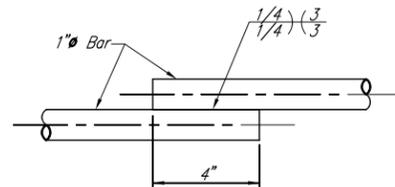
TYPICAL I GIRDER SECTION
Scale: 1 1/2"=1'-0"



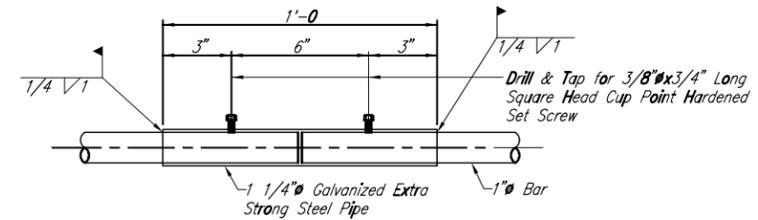
INSPECTION HANDRAIL PLAN @ ABUTMENTS.
Scale: 1"=1'-0"



END CONNECTION DETAIL
No Scale



WELDED SHOP SPLICE DETAIL
No Scale



BOLTED FIELD SPLICE DETAIL
No Scale

Notes:
All material listed on this sheet shall be Grade 50W, unless noted.
All bolts listed on this sheet shall be 1" A325 Bolts, unless noted.
Steel Pipe to be galvanized in accordance with AASHTO M111.

				WVDOT -- DIVISION OF HIGHWAYS			
				COUNTY ROUTE 5 OVER CORRIDOR H			
				HANDRAIL DETAILS			
				PROJECT NO. X312-H-93.37			
				NEFF, LONGEST & BEAM & ASSOC.		CHARLESTON, W. VA. INDIANAPOLIS, IND.	
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	DATE	SCALE	BRIDGE NO.
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	DAM	CMS	9/04				20 of 27
TRACED BY	CHECKED BY	DATE	DATE	DATE	DATE		