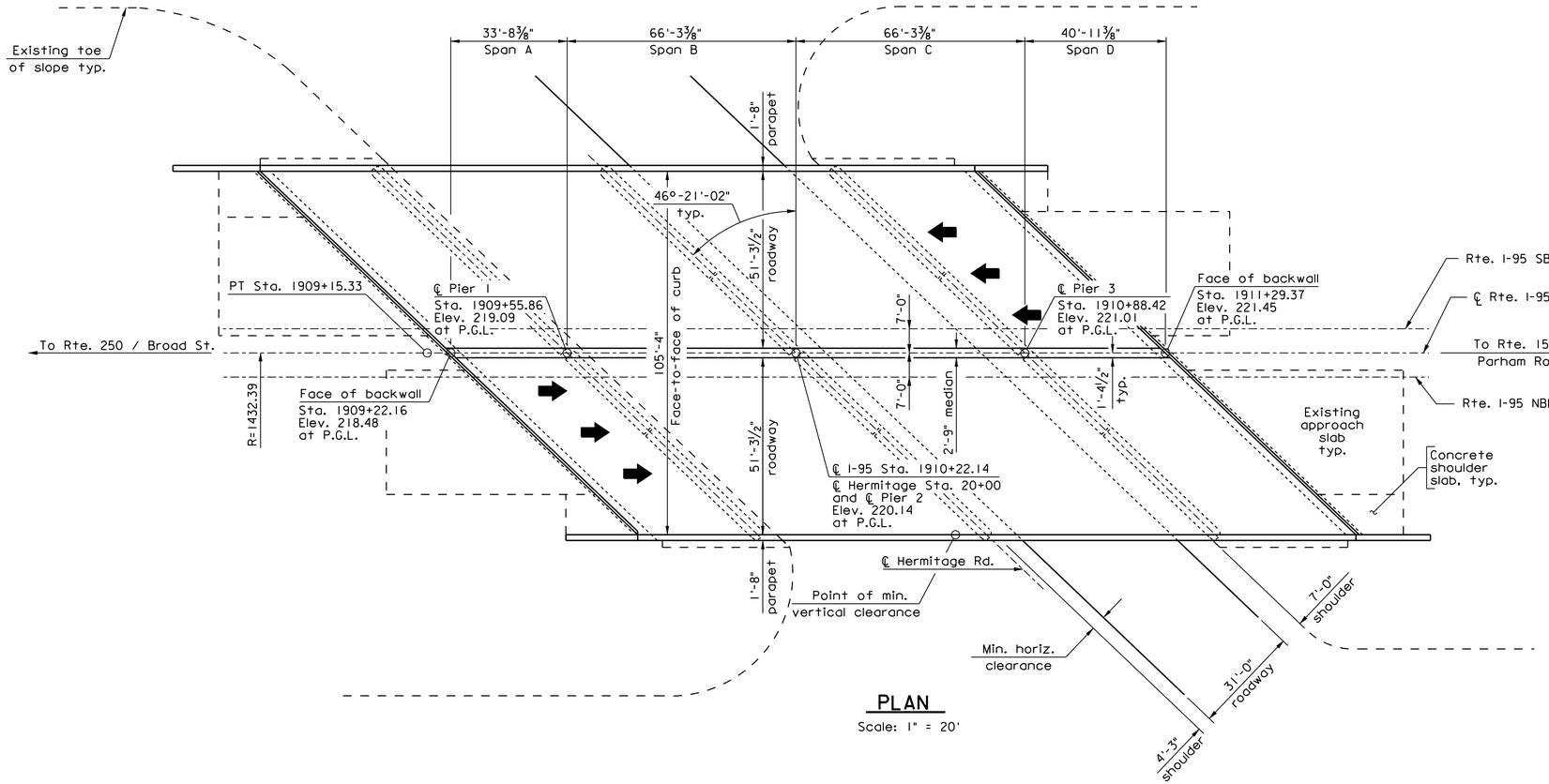
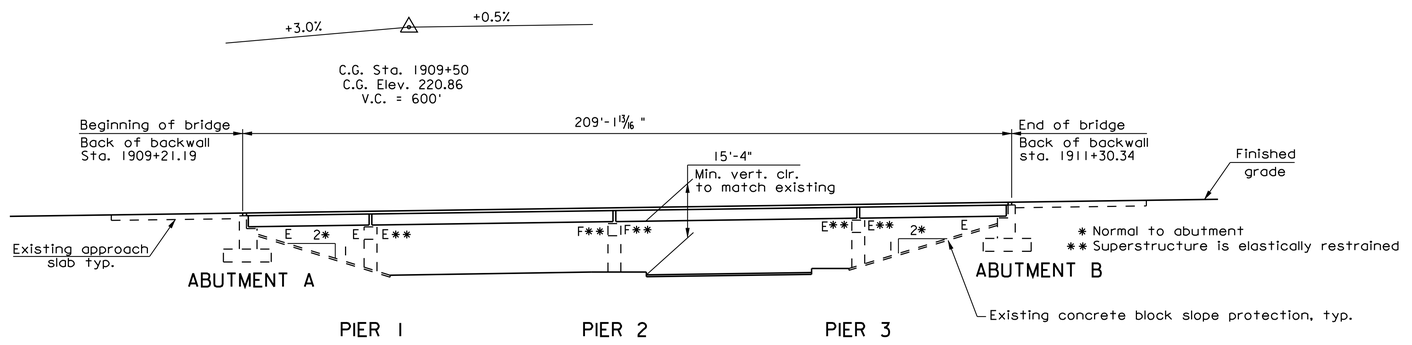
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.	I-95	NH-095-1(291)	95	7095-964-115, B696	27(1)
Federal Oversight Code: FO				UPC No. 18944		
				FHWA Construction and Scour Code: X271-SN		



PLAN

Scale: 1" = 20'



ELEVATION

Scale: 1" = 20'
developed along ℄ Rte. I-95

GENERAL NOTES:

The original approved sheet, including original signatures, is filed in the VDOT Central Office. Any misuse of electronic files is illegal. Violators will be prosecuted to the full extent of the applicable laws.

Widths: 1'-8" Parapet, 51'-3½" Roadway, 2'-9" Median, 51'-3½" Roadway, 1'-8" Parapet, overall width 105'-4" face-to-face of curbs; includes widening of 4" on each side.

Span Layout: 34', 66', 66', 41' steel plate girder spans continuous for live load.

Capacity: HS20-44 loading and alternate military loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.

Design: AASHTO Standard Specifications for Highway Bridges, 1996; 1997 and 1998 Interim Specifications; and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2008.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, May 2005 and latest revisions.

The use of metal stay-in-place forms will not be permitted.

The use of prestressed deck panels as stay-in-place forms will not be permitted.

All structural steel, except in bearing assemblies, shall be ASTM A709 Grade 50W and shall be unpainted except as required by Section 407 of the Specifications. Structural steel in bearing assemblies shall be ASTM A709 Grade 36 and shall be painted.

Finish paint color shall be brown, 595-20059.

Concrete in superstructure, except parapets and median barriers, shall be Class A5 (lightweight). Concrete in parapets and median barriers shall be Class A4. Concrete in substructure shall be Class A3.

Low permeability concrete shall be used in this project.

All reinforcing steel shall be deformed and shall conform to ASTM A615 Grade 60 except for reinforcing steel noted as CRR (corrosion resistant reinforcement) which shall conform to the applicable specifications noted in the special provision. All reinforcing bar dimensions on the detailed drawings are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

Reinforcing steel noted as epoxy coated or galvanized on sheets 19 and 20 shall be corrosion resistant reinforcement.

(continued on Sheet 2)

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

PROPOSED SUPERSTRUCTURE REPLACEMENT ON RTE. I-95 OVER HERMITAGE ROAD CITY OF RICHMOND - 2.63 MI. NORTH RTE. I-64 PROJECT 7095-964-115, PE101, B696

Recommended for Approval: Kendal R. Walus, State Structure and Bridge Engineer — 2/26/10 Date

Approved: Malcolm T. Kerley, Chief Engineer — 3/2/10 Date

ORIGINAL SIGNATURES ON TITLE SHEET OF ROAD PLANS

Date: October 2009

283-67

Sheet 1 of 68

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
Lic. No. 019609
PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

PLANS BY:	URS CORP.-C.O.
COORDINATED:	BGS
SUPERVISED:	JEH
DESIGNED:	ALC
DRAWN:	CJ
CHECKED:	JEH

No.	Description	Date
	REVISIONS	
	For Table of Revisions, see Sheet 2.	

Sheets 36 to 38 were prepared by Siva Venugopalan of SCS, Inc. who is a National Association of Corrosion Engineers certified CP Specialist.

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.	I-95	NH-095-1(291)	95	7095-964-115, PE101, B696	27(2)

ESTIMATED QUANTITIES - SUBSTRUCTURE ONLY

			Concrete Class A3 CY	Magnesium Phosphate Concrete CY	Galvanized Reinforcing Steel LB [3]	Concrete Parapet ⊗ LF	Concrete Substructure Surface Repair SY	Pressure Sealing Cracks Abutments LF	Pressure Sealing Cracks Piers LF	4" Concrete Block Slope Protection Repair SY	Flowable Backfill CY	Anchor Bolt Replacement EA
SBL	Abutment A	Neat	5.3	2.2	~~1080~~ 1090	26	8	16	---	7	14.6	14
		Footing	---	---	---	---	---	---	---	---	---	---
	Pier 1	Neat	---	---	---	---	24	---	47	---	---	28
		Footing	---	---	---	---	---	---	---	---	---	---
	Pier 2	Neat	---	---	---	---	29	---	74	---	---	28
		Footing	---	---	---	---	---	---	---	---	---	---
	Pier 3	Neat	---	---	---	---	27	---	58	---	---	28
		Footing	---	---	---	---	---	---	---	---	---	---
	Abutment B	Neat	4.3	2.2	1070	20	6	8	---	40	14.6	14
		Footing	---	---	---	---	---	---	---	---	---	---
	Total		9.6	4.4	~~2150~~ 2160	46	95	24	179	47	29.2	112
NBL	Abutment A	Neat	3.9	2.2	1090	18	6	16	---	13	14.6	14
		Footing	---	---	---	---	---	---	---	---	---	---
	Pier 1	Neat	---	---	---	---	21	---	47	---	---	28
		Footing	---	---	---	---	---	---	---	---	---	---
	Pier 2	Neat	---	---	---	---	31	---	74	---	---	28
		Footing	---	---	---	---	---	---	---	---	---	---
	Pier 3	Neat	---	---	---	---	37	---	58	---	---	28
		Footing	---	---	---	---	---	---	---	---	---	---
	Abutment B	Neat	5.1	2.2	~~1140~~ 1130	24	12	8	---	40	14.6	14
		Footing	---	---	---	---	---	---	---	---	---	---
	Total		9.0	4.4	~~2230~~ 2220	42	107	24	179	53	29.2	112
Grand total			18.6	8.8	4380	88	202	48	358	100	58.4	224

⊗ Denotes items to be paid for on the basis of plan quantities in accordance with current Road and Bridge Specifications.

For Maintenance of Traffic Estimated Quantities, see Sheet 46.

ESTIMATED QUANTITIES - SUPERSTRUCTURE ONLY

Item	Units	Quantities SBL	Quantities NBL	Grand total
Concrete Class A5 (lightweight)	CY	335.0	335.0	670.0
Magnesium Phosphate Concrete	CY	35.8	35.8	71.6
Corrosion Resistant Reinforcing Steel - Solid Stainless ⊗	LB	~~106,110~~ 111,640	~~106,110~~ 111,640	~~212,220~~ 223,280 [2]
Concrete Parapet ⊗	LF	207	207	414
Bridge Median Barrier Type MC(J) ⊗	LF	207	--	207
Structural Steel Plate Girder ASTM A709 Grade 50W	LB*	233,600	233,600	467,200
Silicone Joint Sealant ⊗	LF	~~158~~ 394 [3]	~~158~~ 394 [3]	~~316~~ 788 [3]
Bridge Deck Grooving ⊗	SY	1197	1197	2394
Type A Milling (¼" to ½") ⊗	SY	1197	1197	2394

*Lump Sum - Weight includes 20,750 lbs. of ASTM A709 Grade 36 steel

⊗ Denotes items to be paid for on the basis of plan quantities in accordance with current Road and Bridge Specifications.

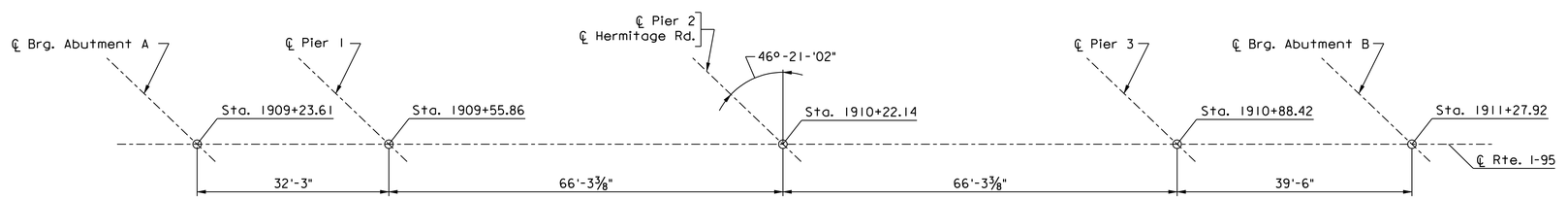
LUMP SUM BID ITEMS

Remove Portion of Existing Structure (Str. No. 2842)	LS
Material Disposal (Str. No. 2842)	LS
Electrochemical Chloride Extraction	LS
Cathodic Protection System (B696)	LS
Bridge Lighting System (B696)	LS
Hazmat Inspection (B696)	LS

INDEX OF SHEETS

Pay Item Notes:

Flowable Fill - Any approach slab or shoulder slab showing signs of settlement in the approach fill, as indicated by the results of the coring program, shall have the void beneath the approach slab filled by pressure-injecting flowable fill. The flowable fill shall attain 100% of its design strength prior to any construction load being placed on the approach slab. Flowable fill shall be paid for on a cubic yard basis and this price shall be considered full compensation for all labor, materials, tools, equipment, testing, and incidentals necessary to complete work. Flowable fill shall have 50 psi minimum design strength.



BRIDGE LAYOUT

Scale: 3/16" = 1'-0"

GENERAL NOTES: (continued)

Reinforcing steel designated as CRR in the superstructure reinforcing steel schedule and summarized in the superstructure table of Estimated Quantities shall be solid stainless. All other corrosion resistant reinforcing (CRR) steels shall conform to one or more of the three types (low carbon/chromium, stainless clad or solid stainless) listed in the special provision. The minimum yield strength shall be: 100 ksi for low carbon/chromium steel and 60 ksi for stainless steel clad or solid stainless steel.

Dimensions of the existing structure were taken from original plans and remain subject to field verification by the Contractor. Plans of the existing bridges are available at the Richmond District Bridge Office.

Bridge No. of existing structure is 2842. Plan Nos. are 195-09 and 195-09A.

All dimensions and elevations relating to existing conditions shall be verified by field survey. For quality control and to insure proper fit of the preconstructed composite units within the existing structure, two sets of independent field measurements shall be made and must be in agreement before proceeding with fabrication and construction. Any discrepancy between these plans and the existing structure shall be resolved by the Contractor and reported to the Engineer for approval. The Contractor shall be responsible for identifying critical dimensions and elevations that will be field verified and for developing a survey procedure that will be capable of producing duplicate results. The survey procedure and identified critical dimensions and elevations that will be field verified shall be submitted to the Engineer for approval before beginning survey work.

The existing structure is designated a Type B structure in accordance with Section 411 of the Specifications.

All spans shall consist of preconstructed composite units.

B.M.: Temporary bench mark to be established by the Contractor.

Rev No.	Sheets Revised	Date
[3]	2, 12, 13, 15, 16, 21, 32, 33, and 46	1-7-11
[2]	2, 5, 6, 7, 8, 17, 32 and 33	9-22-10
[1]	2 and 22	6-10-10

TABLE OF REVISIONS

No.	Description	Date
[3]	Estimated Quantities & Table of Revisions	1-7-11
[2]	Estimated Quantities & Table of Revisions	9-22-10
[1]	Table of Revisions	6-10-10

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

ESTIMATED QUANTITIES, BRIDGE GEOMETRY, AND INDEX OF SHEETS

Designed: ALC	Drawn: GEE	Checked: JAU	Date	Plan No.	Sheet No.
			October 2009	283-67	2 of 68

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
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Richmond, Va.
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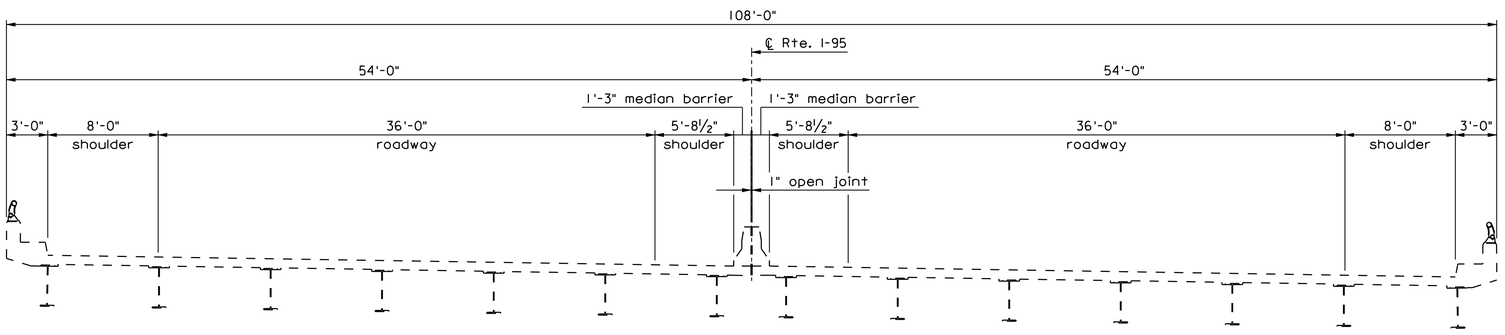
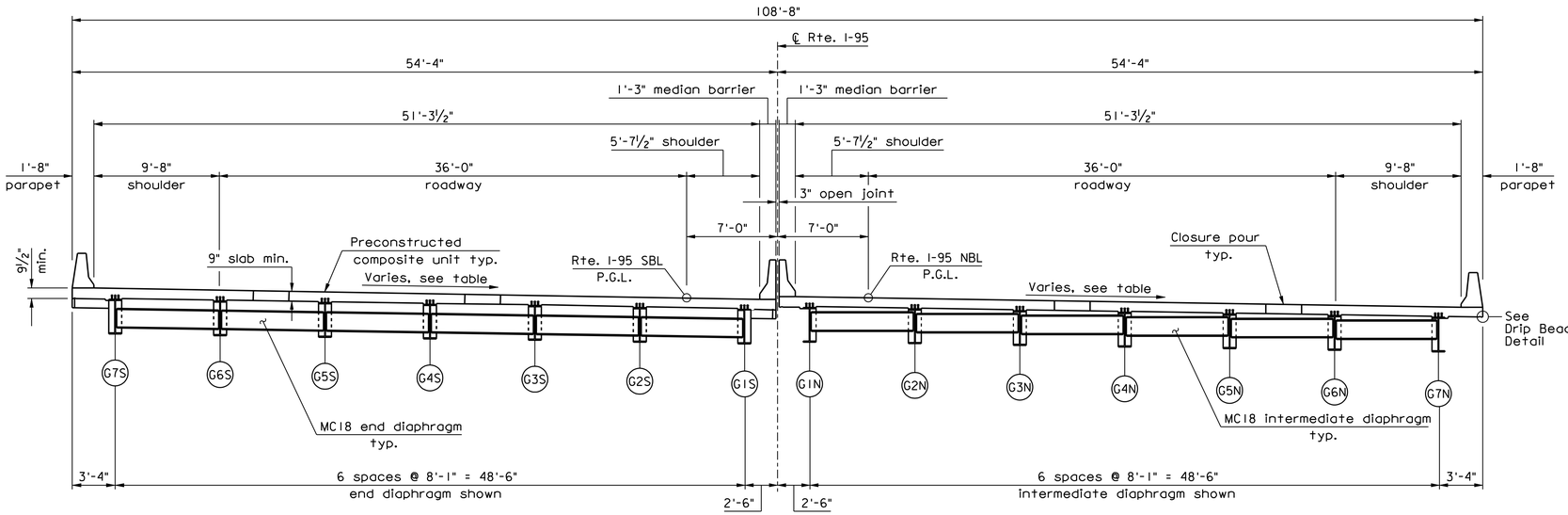
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(3)



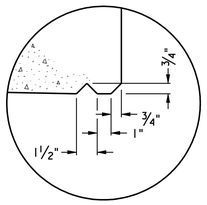
EXISTING TRANSVERSE SECTION

Scale: 3/16" = 1'-0"



TRANSVERSE SECTION

Scale: 3/16" = 1'-0"



DRIP BEAD DETAIL

Not to scale

Notes:

1. For General Notes, see Sheet 1.
2. For Suggested Sequence Plans, see Sheets 22 and 23.
3. For Deck Slab Plans, see Sheets 5 through 8.
4. For Deck Slab Elevations, see Sheet 4.
5. For concrete End Diaphragm Details, see Sheets 10, 11, and 12.
6. For Framing Plan and girder details, see Sheets 14, 15, and 16.
7. For concrete median barrier details, see Sheet 19.
8. For concrete parapet details, see Sheet 20.
9. All PCU section width dimensions shown are measured at the edges of concrete deck slabs normal to centerline of girder. Interior longitudinal joints shall be cast parallel to girders.
10. The preconstructed composite deck slab has a ½" milling allowance for correcting uneven roadway surfaces at longitudinal joints between PCU sections and end of slabs. Preconstructed composite units (PCU's) are to be cast using shored construction methods. For PCU section types, see Sheet 9.
11. The bridge deck shall be cast with a non-slip finish. A Class 6 bridge deck finish shall be provided after the deck slabs have been milled.
12. For Closure Pour Detail, see Sheet 12.
13. Steel diaphragms within a PCU shall be placed before the slab is cast.
14. Steel diaphragms under longitudinal joints shall be placed temporarily during the casting operation to insure proper alignment of the girders.
15. Preconstructed composite units shall be match cast longitudinally with the ES series bar in place to insure proper fit of the continuity joint.

SUPERELEVATION TRANSITION DATA

Station	Northbound lanes %	Southbound lanes %
1908+50	-4.44	+4.44
1909+00	-3.61	+3.61
1909+50	-2.78	+2.78
1910+00	-1.94	+1.94
1910+22	-1.56	+1.56
1910+50	-1.56	+1.11
1911+00	-1.56	+0.28
1911+50	-1.56	-0.56
1912+00	-1.56	-1.39

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
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PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: CH	October 2009	283-67	3 of 68
Checked: JAH			

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FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(4)

SBL TOP OF SLAB ELEVATION

Span	Girder No.	1	2	3	4	5
A	G1S	218.31	218.46	218.61	218.76	218.90
	G2S	218.42	218.57	218.71	218.85	218.98
	G3S	218.55	218.69	218.82	218.95	219.08
	G4S	218.71	218.83	218.95	219.08	219.20
	G5S	218.89	219.00	219.11	219.22	219.33
	G6S	219.09	219.19	219.29	219.39	219.49
	G7S	219.31	219.40	219.49	219.58	219.67
B	G1S	218.93	219.22	219.50	219.76	220.02
	G2S	219.01	219.28	219.54	219.79	220.03
	G3S	219.11	219.36	219.60	219.84	220.06
	G4S	219.22	219.46	219.69	219.90	220.11
	G5S	219.36	219.58	219.79	219.99	220.18
	G6S	219.51	219.72	219.91	220.10	220.27
	G7S	219.69	219.88	220.06	220.23	220.38
C	G1S	220.04	220.28	220.51	220.73	220.94
	G2S	220.05	220.28	220.49	220.70	220.89
	G3S	220.08	220.29	220.49	220.68	220.85
	G4S	220.13	220.32	220.51	220.68	220.84
	G5S	220.20	220.38	220.54	220.70	220.85
	G6S	220.29	220.45	220.60	220.74	220.87
	G7S	220.40	220.54	220.68	220.80	220.92
D	G1S	220.97	221.08	221.20	221.31	221.42
	G2S	220.91	221.02	221.12	221.23	221.33
	G3S	220.87	220.97	221.07	221.16	221.25
	G4S	220.86	220.95	221.03	221.12	221.20
	G5S	220.86	220.94	221.02	221.09	221.16
	G6S	220.88	220.95	221.02	221.09	221.15
	G7S	220.93	220.99	221.05	221.10	221.15

NBL TOP OF SLAB ELEVATION

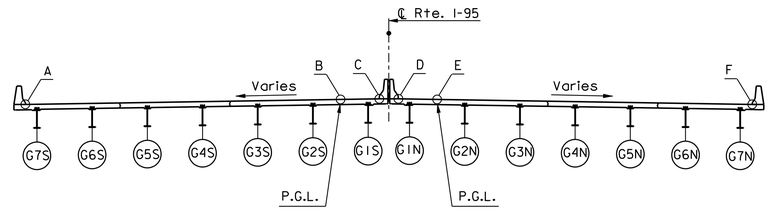
Span	Girder No.	1	2	3	4	5
A	G1N	218.70	218.84	218.97	219.11	219.24
	G2N	218.60	218.75	218.89	219.03	219.17
	G3N	218.53	218.68	218.83	218.98	219.13
	G4N	218.47	218.63	218.79	218.95	219.10
	G5N	218.44	218.60	218.77	218.94	219.10
	G6N	218.42	218.60	218.77	218.94	219.11
	G7N	218.42	218.61	218.79	218.97	219.15
B	G1N	219.26	219.52	219.77	220.01	220.24
	G2N	219.20	219.48	219.74	219.99	220.23
	G3N	219.16	219.45	219.73	219.99	220.22
	G4N	219.13	219.44	219.74	219.99	220.21
	G5N	219.13	219.46	219.75	219.98	220.20
	G6N	219.15	219.49	219.75	219.97	220.18
	G7N	219.19	219.51	219.74	219.95	220.16
C	G1N	220.26	220.49	220.70	220.91	221.10
	G2N	220.25	220.47	220.68	220.88	221.07
	G3N	220.24	220.46	220.66	220.86	221.04
	G4N	220.23	220.44	220.64	220.83	221.00
	G5N	220.22	220.42	220.61	220.80	220.97
	G6N	220.20	220.40	220.58	220.76	220.93
	G7N	220.18	220.37	220.55	220.72	220.88
D	G1N	221.12	221.23	221.34	221.44	221.54
	G2N	221.09	221.20	221.30	221.40	221.49
	G3N	221.06	221.16	221.26	221.36	221.45
	G4N	221.02	221.12	221.22	221.31	221.40
	G5N	220.98	221.08	221.17	221.26	221.35
	G6N	220.94	221.04	221.12	221.21	221.29
	G7N	220.90	220.99	221.07	221.16	221.23

Notes:

1. Straight line interpolations for intermediate elevations on top of finished roadway may be made in any direction between two adjacent points.
2. Elevations were computed using the curve data from the existing plans while allowing for a -1.01 foot adjustment in the datum from NGVD 1929 to NAVD 1988. Deck elevations were then adjusted by +0.17 feet to allow for a 2" asphalt concrete overlay on the approach roadways.
3. The Contractor shall mill 1/4" minimum and 1/2" maximum from the deck after all PCUs have been placed on the bridge and the deck construction has been completed. Elevations shown in the plans are finished grade after the 1/4" milling has been completed. The Contractor shall make the necessary adjustments in his process to account for the 1/4" minimum milling. Once the milling is completed, the deck shall be grooved.

DECK SLAB ELEVATIONS - PGL AND FACE OF BARRIER

Point	SPAN A					SPAN B					SPAN C					SPAN D				
	11	12	13	14	15	11	12	13	14	15	11	12	13	14	15	11	12	13	14	15
A	219.36	219.45	219.54	219.63	219.72	219.72	219.91	220.09	220.26	220.42	220.42	220.56	220.70	220.82	220.93	220.93	220.99	221.05	221.10	221.15
B	218.37	218.52	218.67	218.82	218.96	218.96	219.24	219.52	219.78	220.03	220.03	220.27	220.50	220.72	220.92	220.92	221.04	221.15	221.26	221.36
C	218.30	218.46	218.61	218.76	218.91	218.91	219.21	219.49	219.77	220.03	220.03	220.28	220.52	220.75	220.96	220.96	221.09	221.21	221.32	221.43
D	218.72	218.86	218.99	219.13	219.26	219.26	219.53	219.78	220.02	220.25	220.25	220.48	220.70	220.91	221.11	221.11	221.23	221.34	221.44	221.54
E	218.64	218.79	218.93	219.17	219.21	219.21	219.49	219.75	220.00	220.24	220.24	220.47	220.69	220.90	221.09	221.09	221.20	221.31	221.41	221.51
F	218.43	218.62	218.81	218.99	219.18	219.18	219.51	219.74	219.96	220.16	220.16	220.36	220.55	220.72	220.88	220.88	220.97	221.06	221.14	221.22



TYPICAL SECTION
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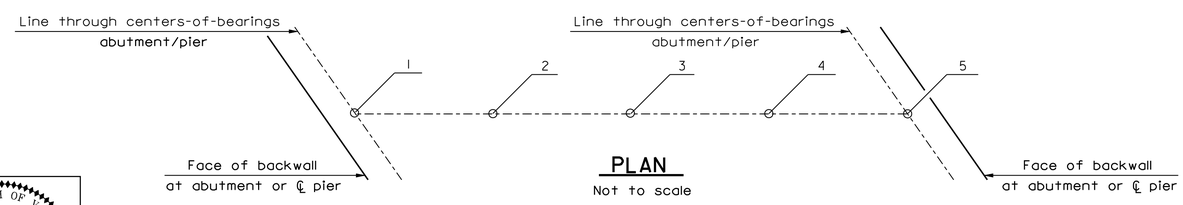

PLAN
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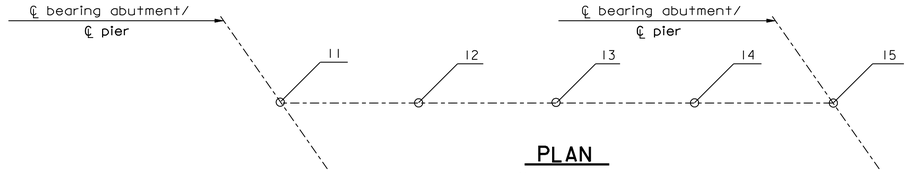

PLAN
Not to scale

JOSEPH E. HARDEE, JR.
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PROFESSIONAL ENGINEER

URS Corporation
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Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

DECK SLAB ELEVATIONS

Designed: BFH
Drawn: GSR
Checked: KWL

Date	Plan No.	Sheet No.
October 2009	283-67	4 of 68

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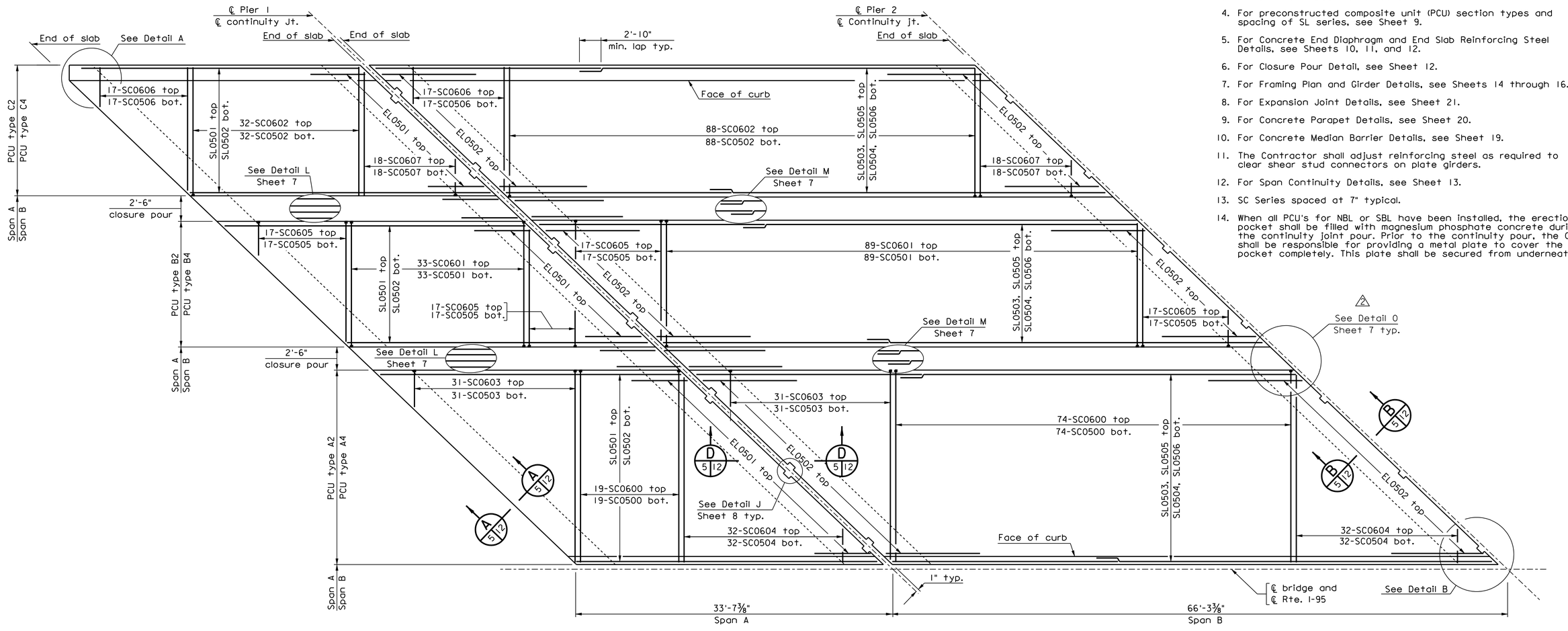
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(5)

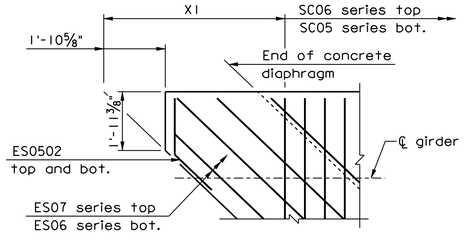
Notes:

1. For General Notes, see Sheet 1.
2. For Suggested Construction Sequence Plans, see Sheets 22 and 23.
3. For Deck Slab Elevations, see Sheet 4.
4. For preconstructed composite unit (PCU) section types and spacing of SL series, see Sheet 9.
5. For Concrete End Diaphragm and End Slab Reinforcing Steel Details, see Sheets 10, 11, and 12.
6. For Closure Pour Detail, see Sheet 12.
7. For Framing Plan and Girder Details, see Sheets 14 through 16.
8. For Expansion Joint Details, see Sheet 21.
9. For Concrete Parapet Details, see Sheet 20.
10. For Concrete Median Barrier Details, see Sheet 19.
11. The Contractor shall adjust reinforcing steel as required to clear shear stud connectors on plate girders.
12. For Span Continuity Details, see Sheet 13.
13. SC Series spaced at 7" typical.
14. When all PCU's for NBL or SBL have been installed, the erection pocket shall be filled with magnesium phosphate concrete during the continuity joint pour. Prior to the continuity pour, the Contractor shall be responsible for providing a metal plate to cover the erection pocket completely. This plate shall be secured from underneath.



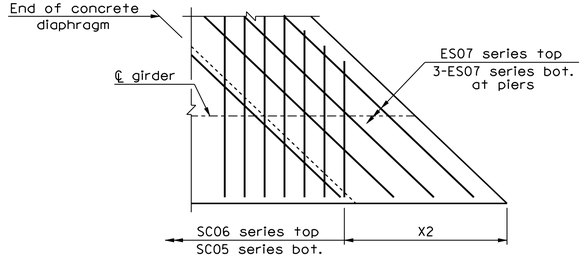
DECK SLAB PLAN

Scale: 3/16" = 1'-0"



DETAIL A

Not to scale



DETAIL B

Scale: 1/2" = 1'-0"

BAR TABLE			
Span	PCU	X1	X2
A	A2	4'-11"	4'-5 3/4"
	B2	4'-11"	4'-11"
	C2	5'-5 3/4"	4'-11"
B	A4	4'-11"	4'-5 3/4"
	B4	4'-11"	4'-11"
	C4	5'-5 3/4"	4'-11"

No.	Description	Date
	Revisions	
2	Revised Reinforcing	9-22-10

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

DECK SLAB PLAN SBL - SPANS A AND B

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: DWH	October 2009	283-67	5 of 68
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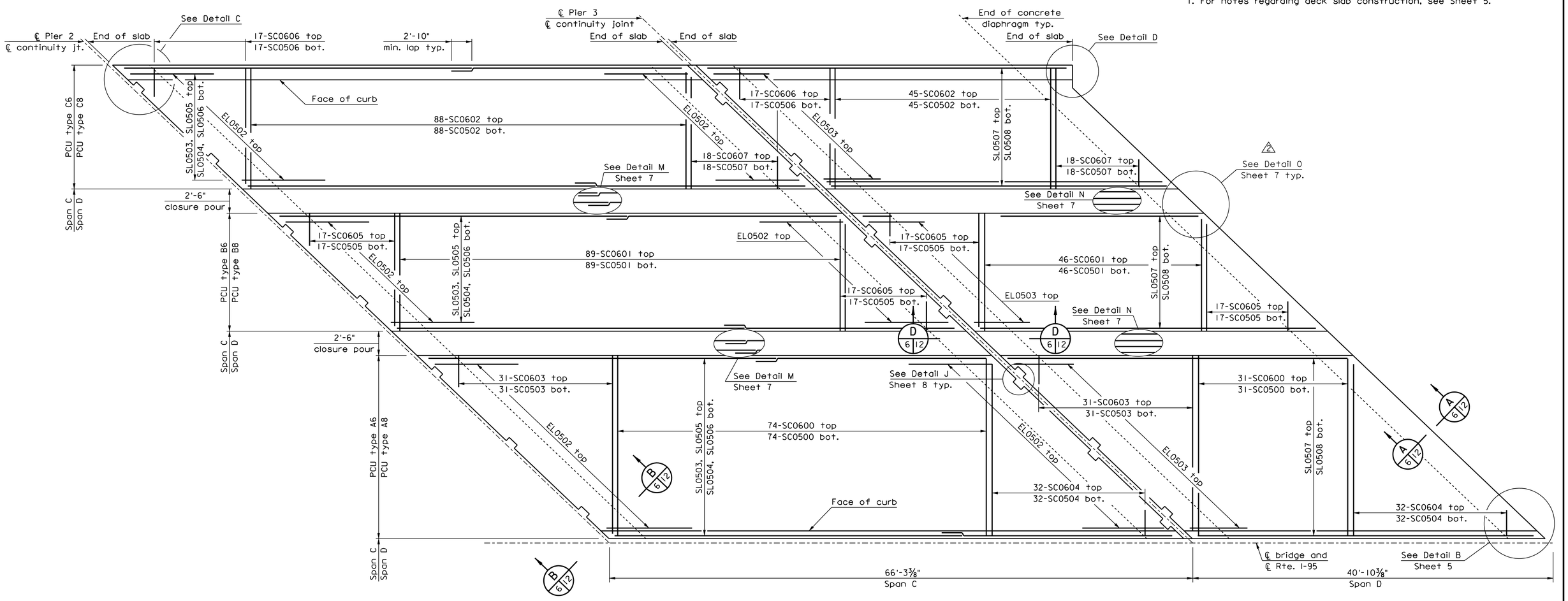
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(6)

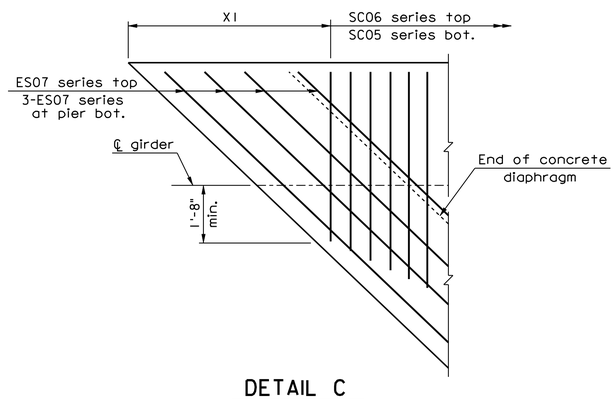
Note:

1. For notes regarding deck slab construction, see Sheet 5.



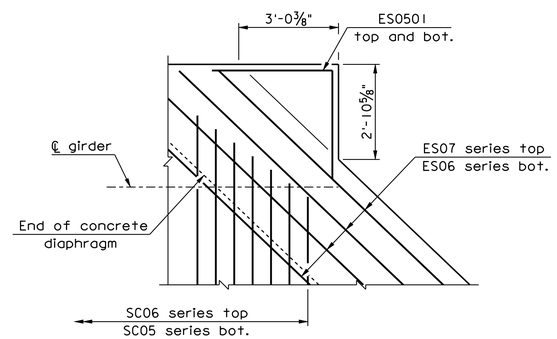
DECK SLAB PLAN

Scale: 3/16" = 1'-0"



DETAIL C

Scale: 1/2" = 1'-0"



DETAIL D

Scale: 1/2" = 1'-0"

BAR TABLE

Span	PCU	X1	X2
C	A6	4'-11"	4'-5¾"
	B6	4'-11"	4'-11"
	C6	5'-5¾"	4'-11"
D	A8	4'-11"	4'-5¾"
	B8	4'-11"	4'-11"
	C8	5'-5¾"	4'-11"

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No.	Description	Date
2	Revised Reinforcing	9-22-10

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

DECK SLAB PLAN
SBL - SPANS C AND D

Designed: ALC
Drawn: DWH
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Date	Plan No.	Sheet No.
October 2009	283-67	6 of 68

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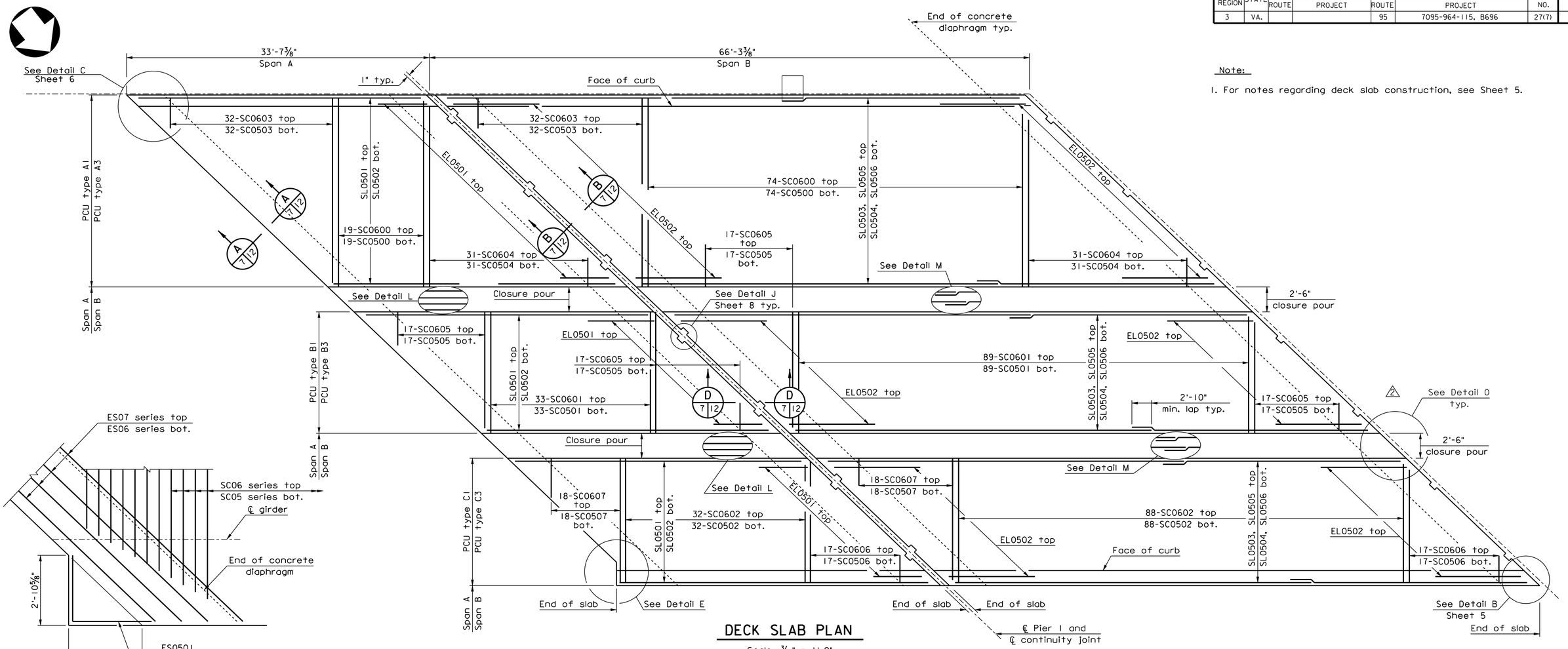
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(7)

Note:

1. For notes regarding deck slab construction, see Sheet 5.

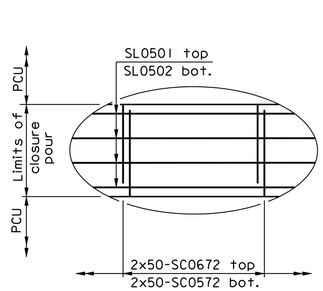


DECK SLAB PLAN

Scale: 3/16" = 1'-0"

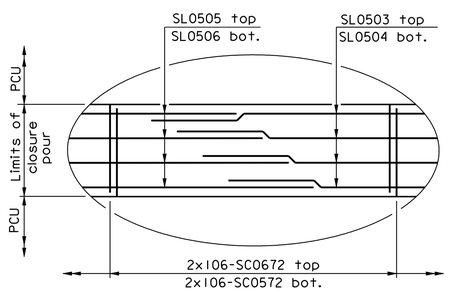
DETAIL E

Scale: ½" = 1'-0"



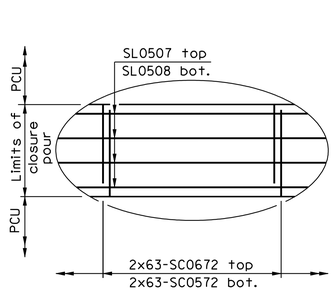
DETAIL L

Scale: ½" = 1'-0"



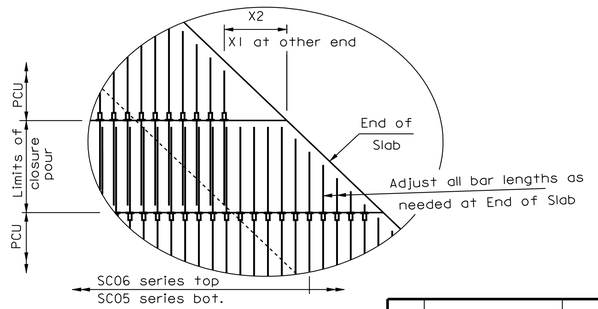
DETAIL M

Scale: ½" = 1'-0"



DETAIL N

Scale: ½" = 1'-0"



2 DETAIL O

Scale: ½" = 1'-0"

ES series bars not shown

BAR TABLE

Span	PCU	X1	X2
A	A1	4'-5¾"	4'-11"
	B1	4'-11"	4'-11"
	C1	4'-11"	5'-5¾"
B	A3	4'-5¾"	4'-11"
	B3	4'-11"	4'-11"
	C3	4'-11"	5-5¾"

No.	Description	Date
2	Revised Reinforcing	9-22-10

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

DECK SLAB PLAN
NBL - SPANS A AND B

Designed: ALC
Drawn: DWH
Checked: JAU

Date: October 2009

Plan No. 283-67

Sheet No. 7 of 68

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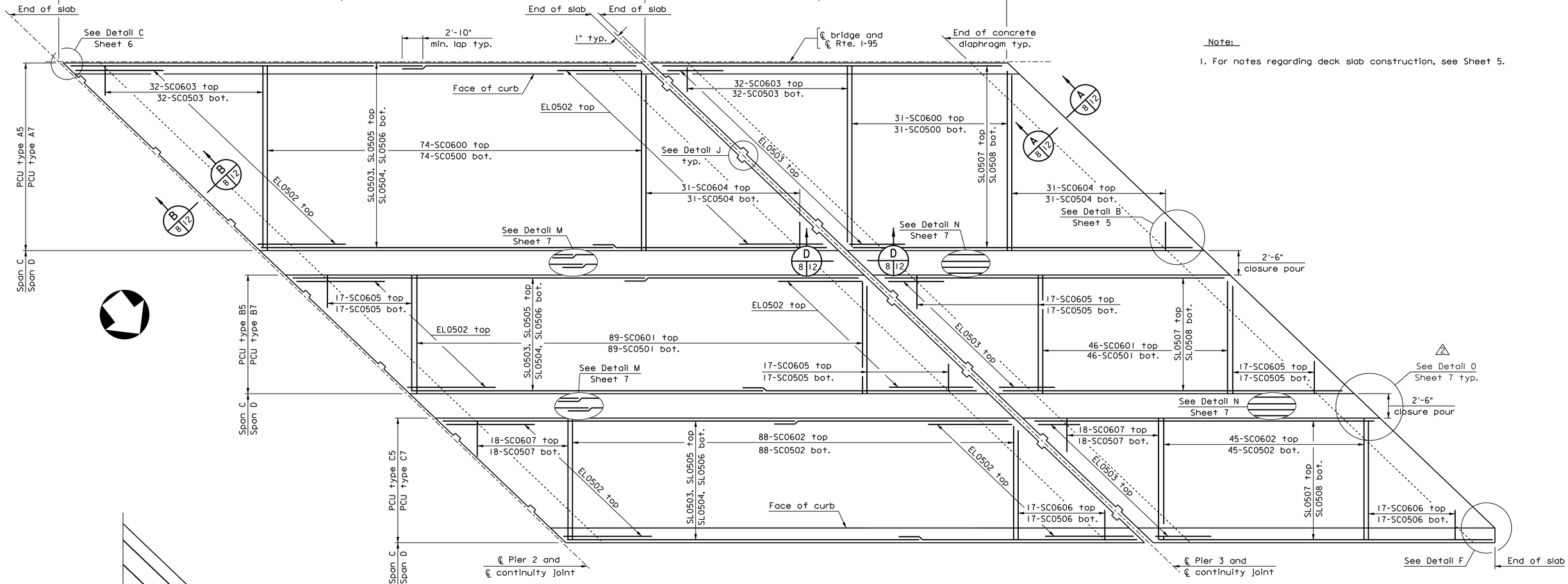
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(8)

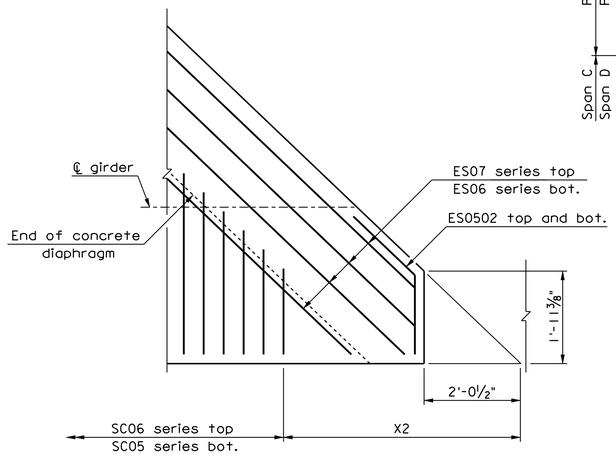


DECK SLAB PLAN

Scale: 3/16" = 1'-0"

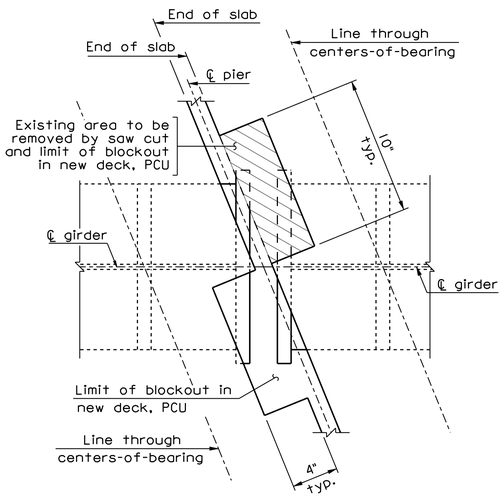
Note:

1. For notes regarding deck slab construction, see Sheet 5.



DETAIL F

Not to scale



DETAIL J

Not to scale

BAR TABLE

Span	PCU	X1	X2
C	A5	4'-5¾"	4'-11"
	B5	4'-11"	4'-11"
	C5	4'-11"	5'-5¾"
D	A7	4'-5¾"	4'-11"
	B7	4'-11"	4'-11"
	C7	4'-11"	5'-5¾"

No.	Description	Date
2	Revised Reinforcing	9-22-10
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

DECK SLAB PLAN NBL - SPANS C AND D

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: DWH	October 2009	283-67	8 of 68
Checked: JAU			

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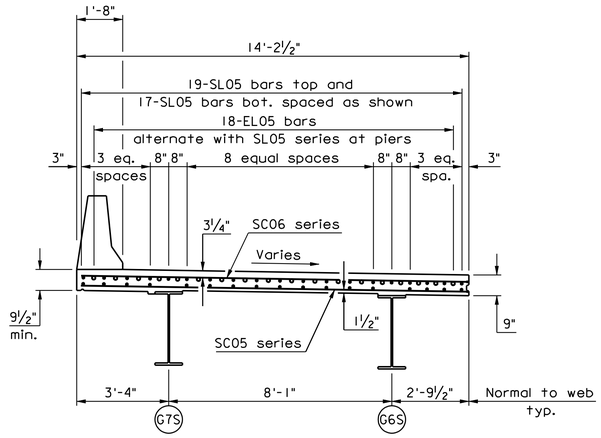
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(9)

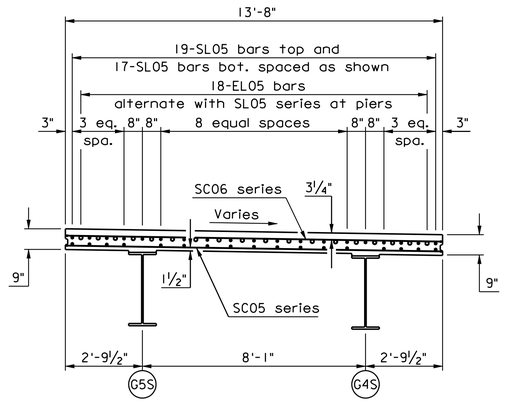
Notes:

1. All PCU section width dimensions shown are normal to centerline of girder.
2. Steel diaphragms not shown.



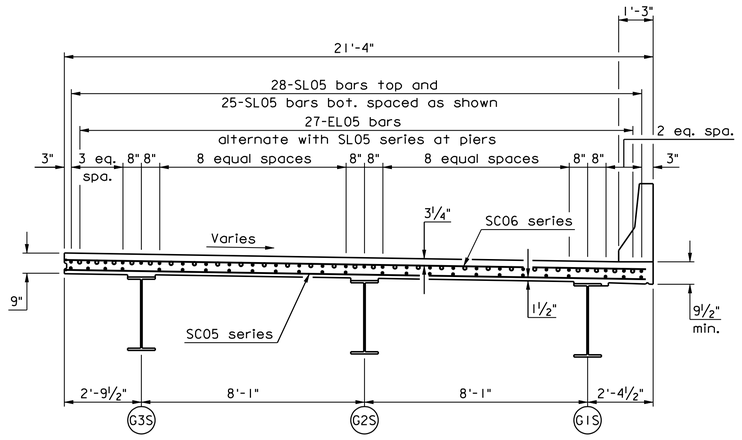
SECTION TYPE C - SBL

Scale: ⅜" = 1'-0"



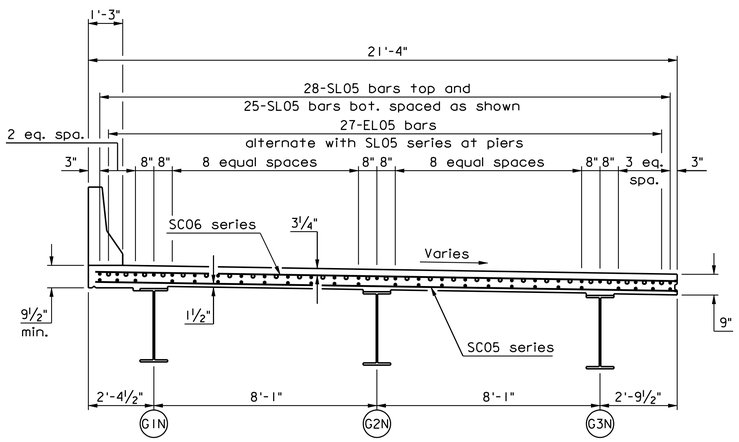
SECTION TYPE B - SBL

Scale: ⅜" = 1'-0"



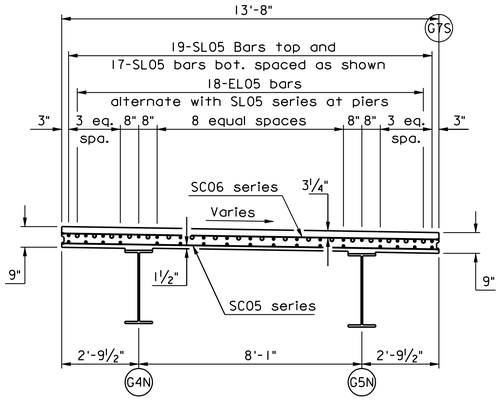
SECTION TYPE A - SBL

Scale: ⅜" = 1'-0"



SECTION TYPE A - NBL

Scale: ⅜" = 1'-0"



SECTION TYPE B - NBL

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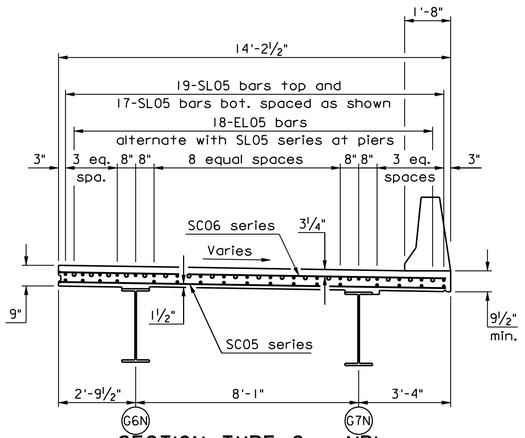

SECTION TYPE C - NBL

Scale: ⅜" = 1'-0"

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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

PRECONSTRUCTED COMPOSITE UNITS SBL AND NBL

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: DWH	October 2009	283-67	9 of 68
Checked: JAU			

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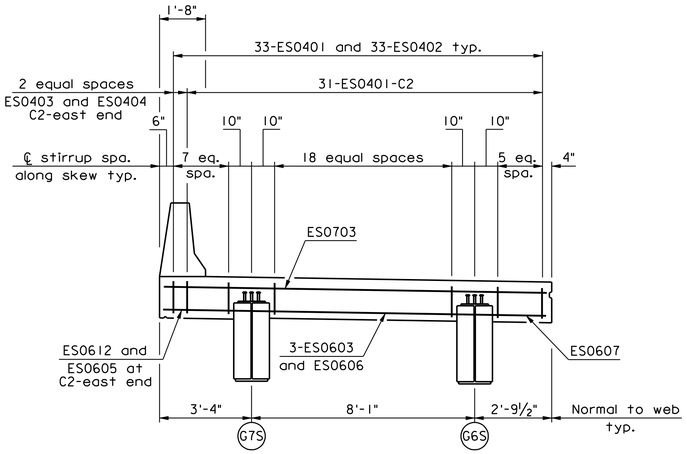
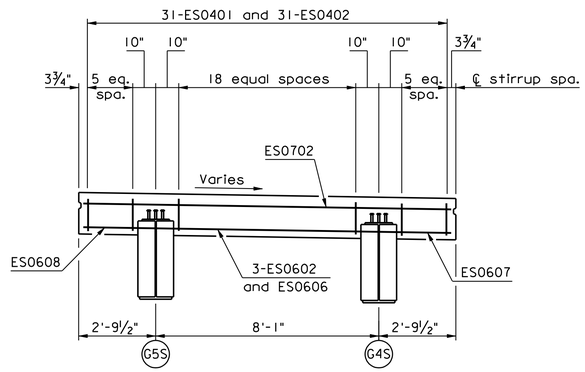
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(10)



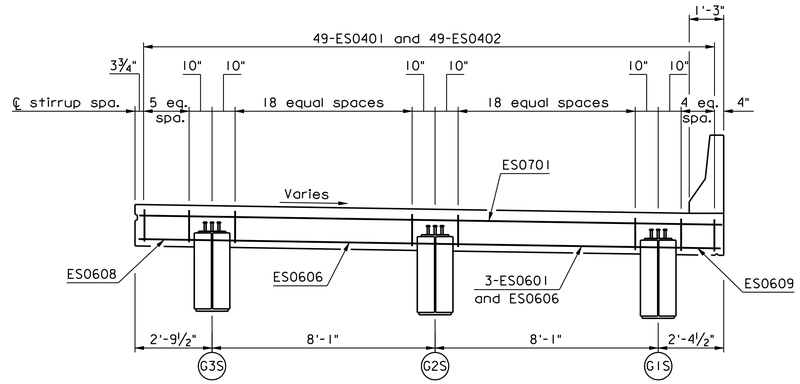
TYPICAL END DIAPHRAGM
TYPE C - SBL

Scale: ⅜" = 1'-0"



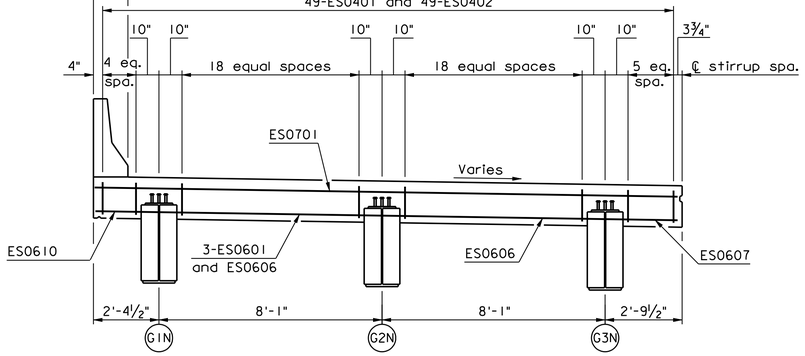
TYPICAL END DIAPHRAGM
TYPE B - SBL

Scale: ⅜" = 1'-0"



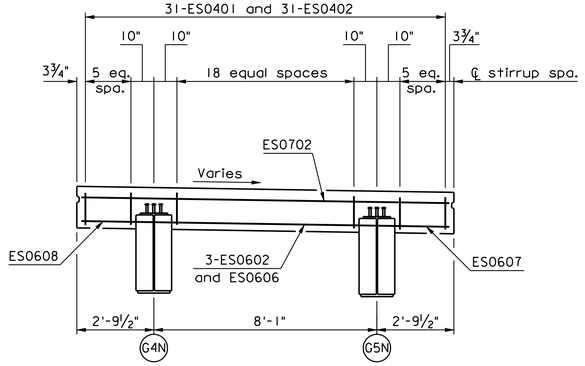
TYPICAL END DIAPHRAGM
TYPE A - SBL

Scale: ⅜" = 1'-0"



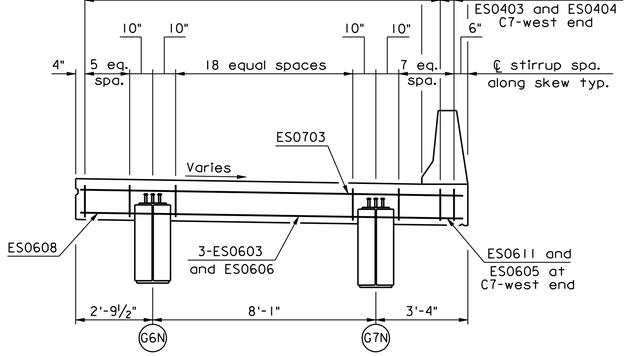
TYPICAL END DIAPHRAGM
TYPE A - NBL

Scale: ⅜" = 1'-0"



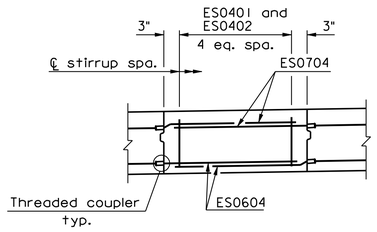
TYPICAL END DIAPHRAGM
TYPE B - NBL

Scale: ⅜" = 1'-0"



TYPICAL END DIAPHRAGM
TYPE C - NBL

Scale: ⅜" = 1'-0"



DIAPHRAGM CLOSURE POUR

Not to scale

Notes:

1. ES0605 through ES0612 are not continuous through girder web. See Sheet 12 for additional details.
2. Steel diaphragms not shown.

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

END DIAPHRAGM PCU'S AT ABUTMENTS - SBL AND NBL

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: GEE	October 2009	283-67	10 of 68
Checked: JAU			

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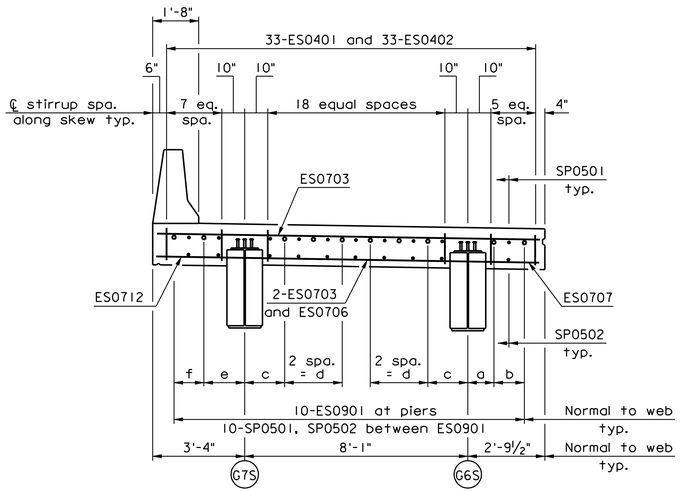
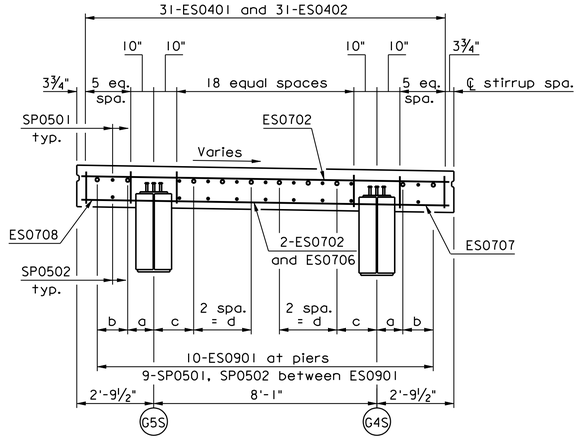
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(11)



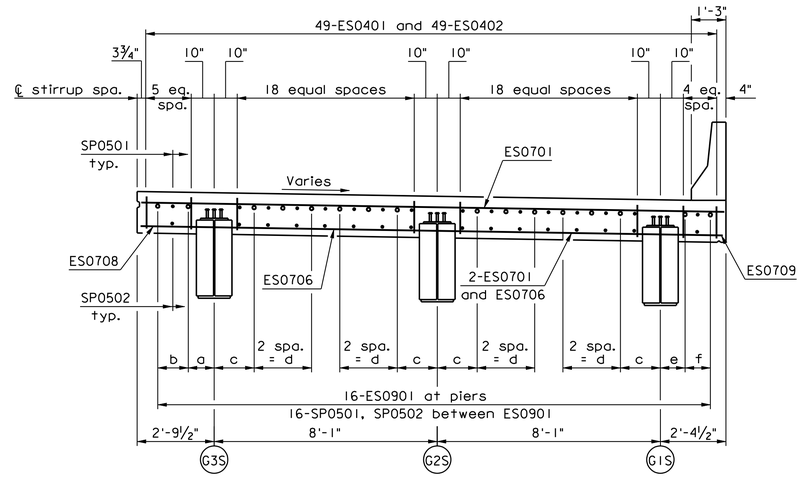
TYPICAL END DIAPHRAGM TYPE C - SBL

Scale: ⅜" = 1'-0"



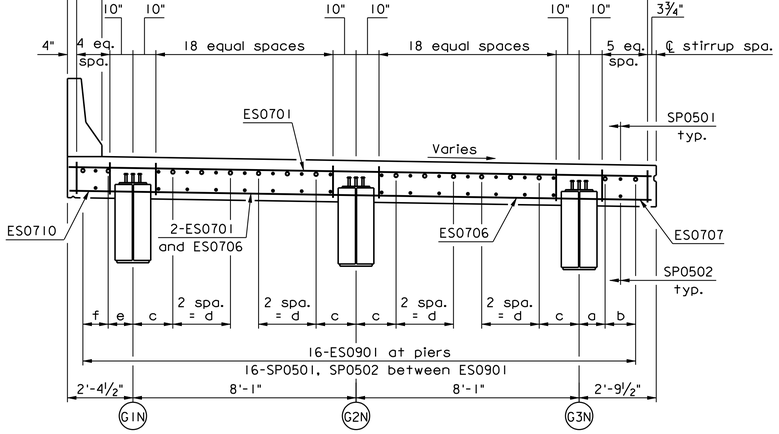
TYPICAL END DIAPHRAGM TYPE B - SBL

Scale: ⅜" = 1'-0"



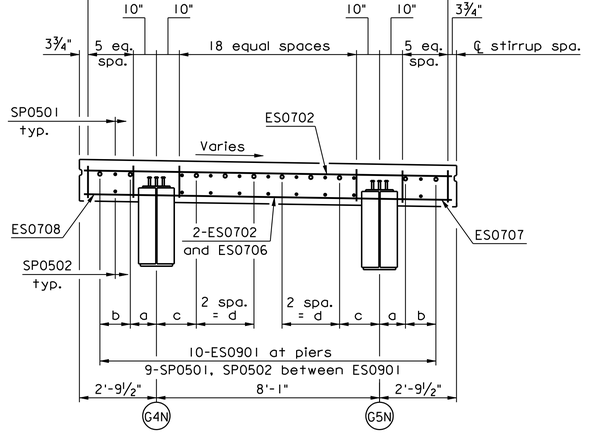
TYPICAL END DIAPHRAGM TYPE A - SBL

Scale: ⅜" = 1'-0"



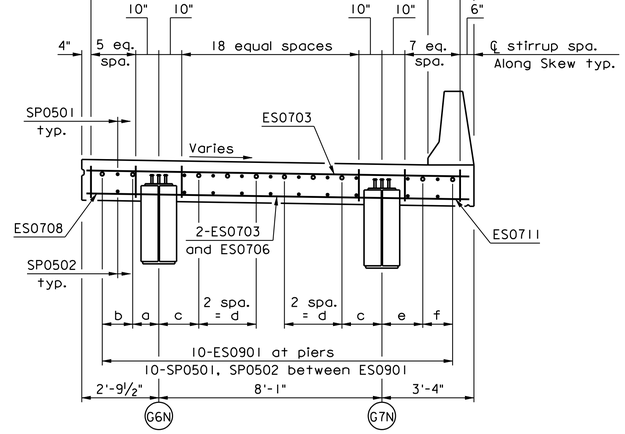
TYPICAL END DIAPHRAGM TYPE A - NBL

Scale: ⅜" = 1'-0"



TYPICAL END DIAPHRAGM TYPE B - NBL

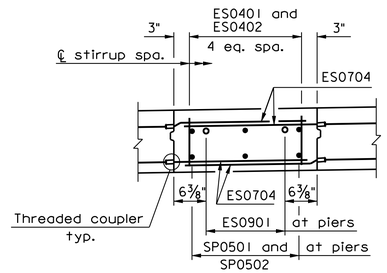
Scale: ⅜" = 1'-0"



TYPICAL END DIAPHRAGM TYPE C - NBL

Scale: ⅜" = 1'-0"

DIAPHRAGM REINFORCEMENT TABLE						
Section Type	a	b	c	d	e	f
C - SBL	0'-11⅜"	1'-1½"	1'-5⅜"	2'-1"	1'-5¾"	1'-1"
B - SBL	0'-11⅜"	1'-1½"	1'-5⅜"	2'-1"	--	--
A - SBL	0'-11⅜"	1'-1½"	1'-5⅜"	2'-1"	0'-10¾"	0'-11"
A - NBL	0'-11⅜"	1'-1½"	1'-5⅜"	2'-1"	0'-10¾"	0'-11"
B - NBL	0'-11⅜"	1'-1½"	1'-5⅜"	2'-1"	--	--
C - NBL	0'-11⅜"	1'-1½"	1'-5⅜"	2'-1"	1'-5¾"	1'-1"



DIAPHRAGM CLOSURE POUR

Not to scale

Notes:

1. ES0706 through ES0712 bars are not continuous through girder webs. See Sheet 12 for additional details.
2. Ducts for ES0901 bars shall be aligned as close as possible to be parallel with girders.
3. ES04 series may be adjusted at ES0901 bars if necessary.
4. Steel diaphragms not shown.

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No.	Description	Date
	Revisions	

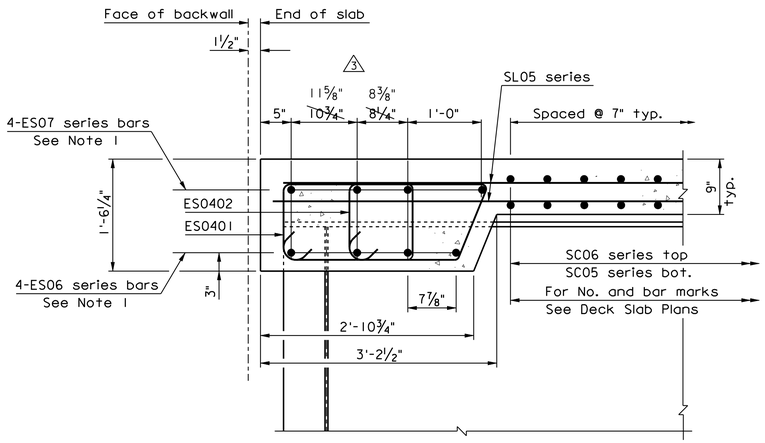
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

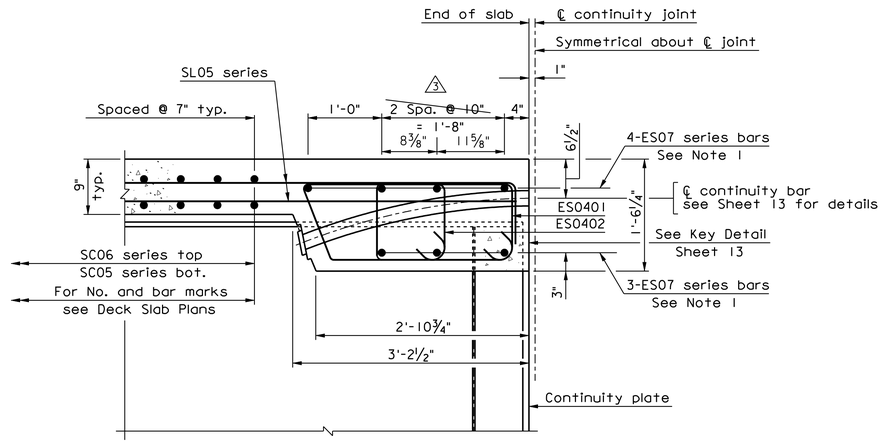
END DIAPHRAGM PCU'S AT PIERS - SBL AND NBL

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: DCE	October 2009	283-67	11 of 68
Checked: JAU			

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(12)



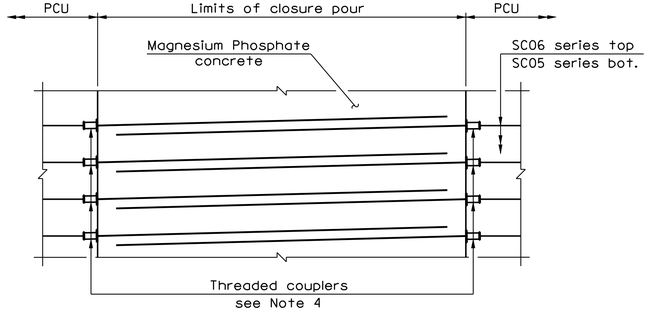
SECTION A
Scale: 1" = 1'-0" 5-8 12



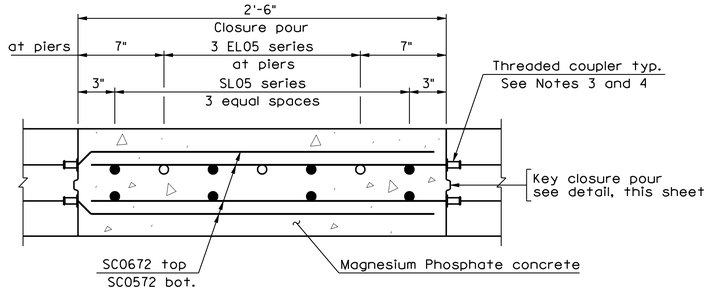
SECTION B
Scale: 1" = 1'-0" 5-8 12

Notes:

1. See Sheets 10 and 11 for additional details regarding ES06 and ES07 series.
2. For details of ES0901, see Span Continuity Details on Sheet 13.
3. Threaded couplers shall conform to the requirements of Section 406.03(e) of the VDOT Road and Bridge Specifications. Cost of threaded couplers shall be considered incidental to the price bid for Epoxy Coated Reinforcing Steel.
4. Prior to casting of PCUs that are to be connected by closure pours, threaded couplers shall be adjusted by no more than 1" to eliminate conflicts with threaded bars from neighboring PCUs.

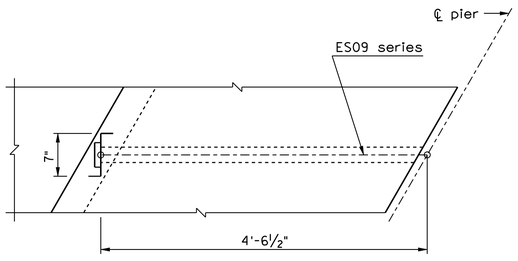


Plan

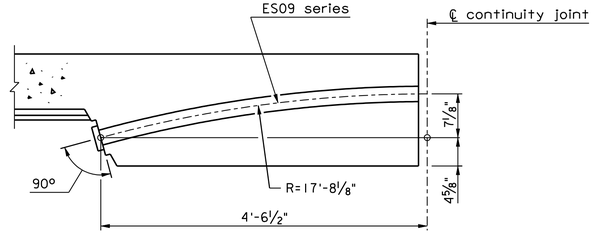


Section

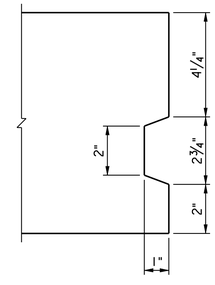
CLOSURE POUR DETAIL
Scale: ½" = 1'-0"



PLAN VIEW



SECTION D
Scale: 1" = 1'-0" 5,6,7,8 12



KEY CLOSURE POUR
Scale: 3" = 1'-0"

No.	Description	Date
3	Revise Detail	1-7-11

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

END DIAPHRAGM SECTIONS AND DETAILS

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: CJL	October 2009	283-67	12 of 68
Checked: JAU			

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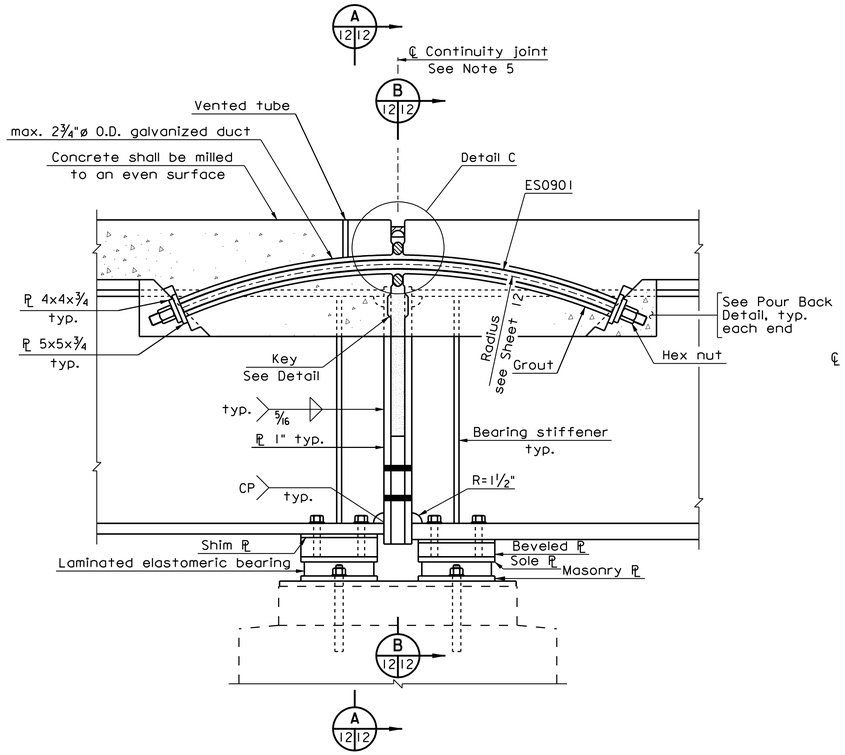
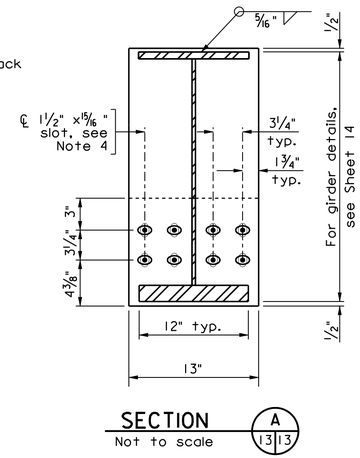
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	
3	VA.			95	7095-964-115, B696	27(13)	



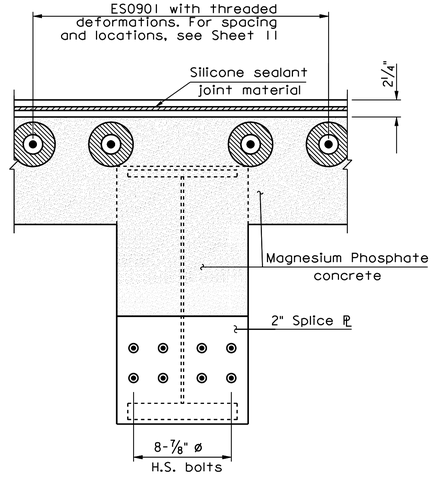
SPAN CONTINUITY DETAIL

Not to scale 3



SECTION

Not to scale A 13|13



SECTION

Not to scale B 12|12 3

Notes:

1. Deck reinforcing steel not shown for clarity.
2. Cost of galvanized duct, bearing plates, and hex nuts shall be considered incidental to and included in the unit cost of reinforcing steel.
3. Grout bars from injection ports located at the low points at each end. Vent ports shall be located at high point. Contractor shall submit grouting procedures for approval. Cost of grouting shall be included in the unit cost of A5 concrete.
4. Slotted holes in Continuity ℄ shall be oriented horizontally for girders in spans A and D. Slotted holes shall be oriented vertically for girders in Span B. In Span C, slotted holes shall be oriented horizontally at Pier 2 and vertically at Pier 3. Standard holes are to be cut or drilled in splice ℄ at all locations.
5. Spans shall be assembled longitudinally during the casting operation to insure proper fit of the continuity joint.
6. After the ES0901 Bars are installed and hex nuts are in place and snug, the pour-back portion of the diaphragm shall be placed. Pour-back concrete shall be of the same class and weight as the deck. For spacing of SP05 not shown on this sheet, see Sheets 10 and 11.
7. The cost for grouting the ES bars shall be considered incidental to and included in the unit cost of Concrete Class A5 (lightweight). Grouting procedures are the same as those for the post-tensioning bar tendons given in the Special Provisions for high strength post-tensioning bar tendons.
8. After the grout has cured for 4 to 8 hours, remove the ends of plastic inlets, vents, and grout material 1 inch below the surface of the concrete and fill the hole with freshly mixed post-tensioning grout or epoxy grout.

Sequence of continuity joint installation:

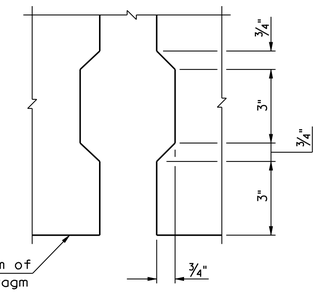
1. Complete the PCU placement and all closure pours of both spans at the joint.

First night:
2. Place backer rod caulking to seal ES bar duct.
3. Place ES bar, end bearing plates, hex nuts, and splice plate located at girder bottom flange.

Second night:
~~4. Prepare joint faces for magnesium phosphate concrete and place magnesium phosphate concrete.~~ 3
4. 3 Place pour backs across ends of diaphragms.

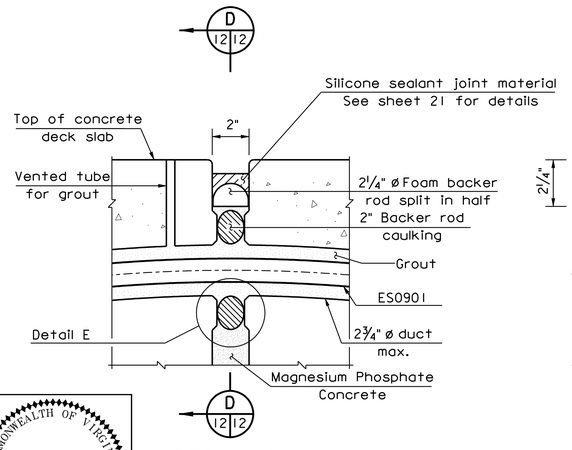
Third night:
5. Prepare joint faces for magnesium phosphate concrete and place magnesium phosphate concrete. 3
6. Grout the ES bars.

Each night's activities shall be completed full length of joint before opening to traffic.



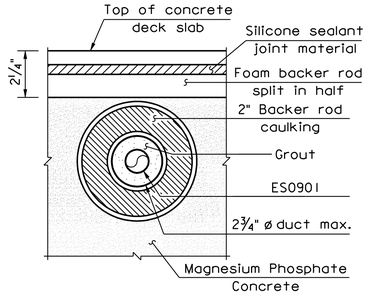
KEY DETAIL

Scale: 3" = 1'-0"



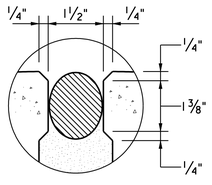
DETAIL C

Scale: 3" = 1'-0" 3



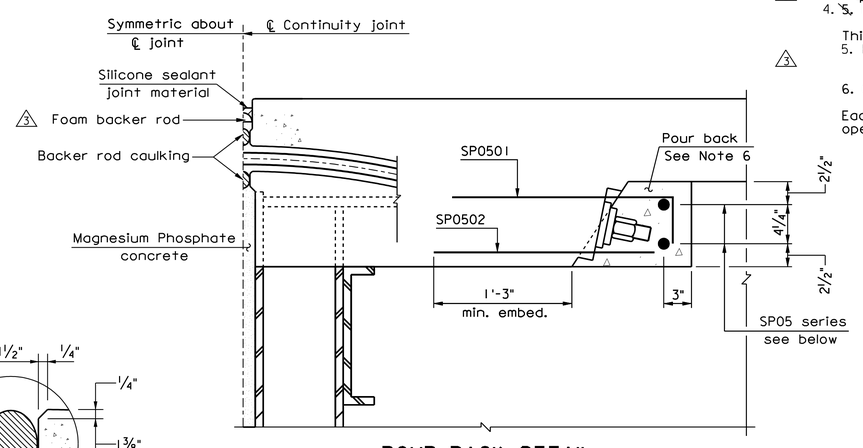
SECTION

Scale: 3" = 1'-0" D 12|12 3



DETAIL E

Scale: 6" = 1'-0" 3



POUR-BACK DETAIL

Scale: 1½" = 1'-0"

Notes: SP0503 - Median overhang
SP0504 - Typical girder
SP0505 - Temporary cantilevers
SP0506 - Parapet overhang
SP0507 - Closure pours

Note:

3 Snug is defined as snug tight as given in Section 407 of the Specifications.

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No.	Description	Date
3	Revised Details	1-7-11
Revisions		

COMMONWEALTH OF VIRGINIA
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STRUCTURE AND BRIDGE DIVISION

SPAN CONTINUITY JOINT AND DETAILS

Designed: GEE	Date	Plan No.	Sheet No.
Drawn: CJ	October 2009	283-67	13 of 68
Checked: JAH			

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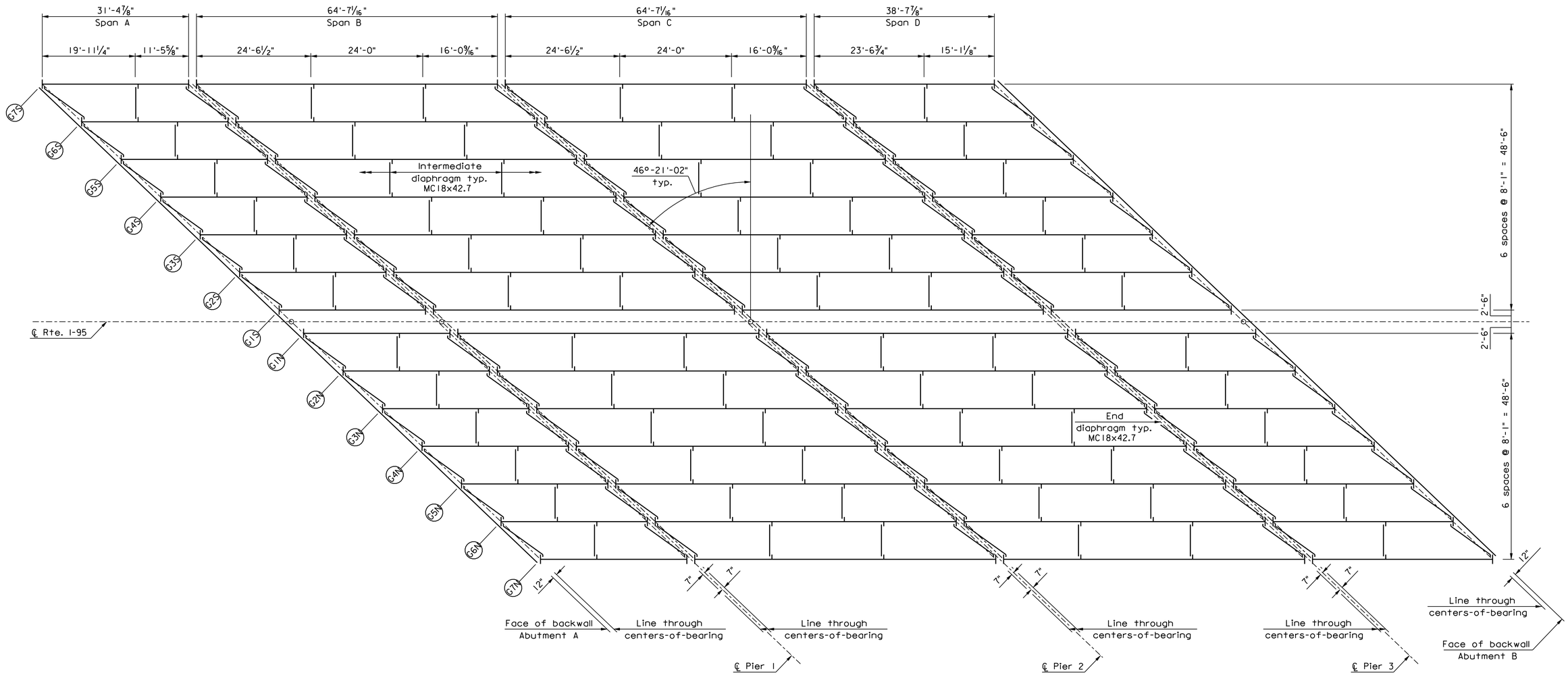
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(14)

Notes:

1. For girder elevations, see Sheet 15
2. For girder details, see Sheet 16.
3. Intermediate diaphragms shall be placed perpendicular to the girder. Distance to diaphragms is given along ℄ of girders.



FRAMING PLAN

Scale: 3/32 " = 1'-0"

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

FRAMING PLAN

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: GRE	October 2009	283-67	14 of 68
Checked: KWL			

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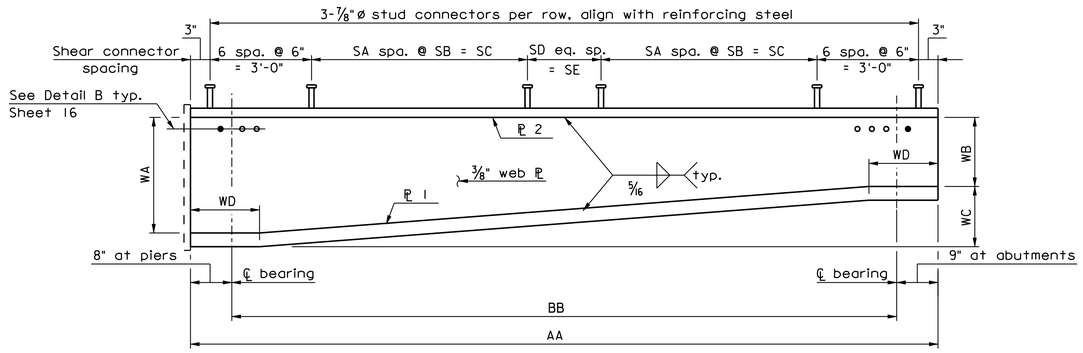
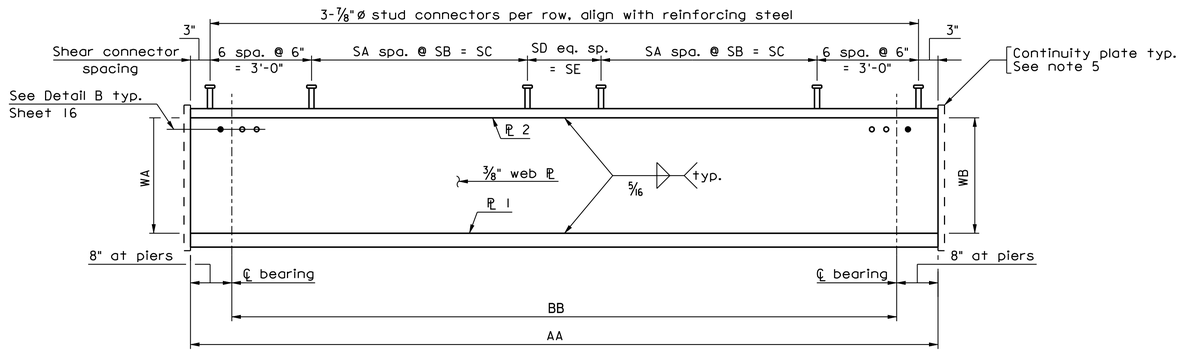
FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.
		ROUTE	PROJECT	ROUTE	PROJECT	
3	VA.			95	7095-964-115, B696	27(15)



GIRDER ELEVATION - SPANS A & D

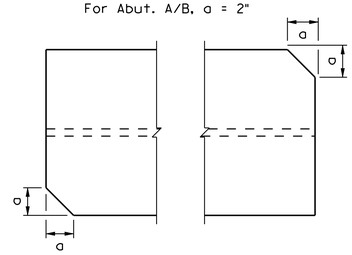
Not to scale



GIRDER ELEVATION - SPANS B & C

Not to scale

For Abut. A/B, a = 2"

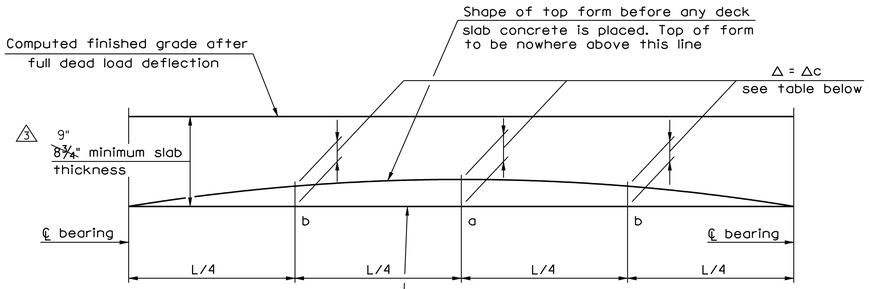


FLANGE CLIP AT ABUTMENTS

Not to scale

Notes:

1. The bottom flange and web are areas of tensile stress for charpy v-notch impact requirements.
2. The girders shall be supported at the ends and quarter points during the deck casting operation. The supports shall be kept in place until the concrete has attained a strength of 3800 psi.
3. Welding of structural steel shall be in accordance with VDOT Road & Bridge Specifications, Section 407.04.
4. For Stiffener Details, see Sheet 16.
5. Continuity plate to be shop welded to girder ends at all pier locations. See Sheet 13 for additional details.



DEAD LOAD DEFLECTIONS DIAGRAM

Not to scale

△c = Deflection of girder from dead load (e.g. concrete deck slab, bolsters, parapet and future wearing surface) on composite section.

△s = Deflection of girder from its own weight including diaphragms, connectors etc. at midspan.

C = The required upward camber for girders at midspan.

Camber note: girders shall be cambered up C at midspan, computed deflection at girder from its own weight, including struts (diaphragms), connectors, etc., △s at midspan.

Adjustment of deck slab forms to correct for dead load deflections shall be made by varying thickness of concrete bolster between slab and girder without alteration of slab thickness. Longitudinal screed should be set above final finished grade by amounts equal to △c.

Span	Girder	Girder Dimensions		Plate Dimension						Shear Connector Spacing				
				Web ℄				Flanges ℄						
		AA	BB	WA	WB	WC	WD	℄ 1	℄ 2	SA	SB	SC	SD	SE
A	G7S to G1S	32'-9⅞"	31'-4⅞"	32"	26"	6"	1'-4"	¾"x12"	¾"x12"	17	9"	12'-9"	1	0'-9⅞"
	G1N to G7N	32'-9⅞"	31'-4⅞"	32"	26"	6"	1'-4"	¾"x12"	¾"x12"	17	9"	12'-9"	1	0'-9⅞"
B	G7S to G1S	65'-11 1/16"	64'-7 1/16"	32"	32"	--	--	1⅜"x12"	¾"x12"	39	9"	29'-3"	1	0'-11 1/16"
	G1N to G7N	65'-11 1/16"	64'-7 1/16"	32"	32"	--	--	1⅜"x12"	¾"x12"	39	9"	29'-3"	1	0'-11 1/16"
C	G7S to G1S	65'-11 1/16"	64'-7 1/16"	32"	32"	--	--	1⅜"x12"	¾"x12"	39	9"	29'-3"	1	0'-11 1/16"
	G1N to G7N	65'-11 1/16"	64'-7 1/16"	32"	32"	--	--	1⅜"x12"	¾"x12"	39	9"	29'-3"	1	0'-11 1/16"
D	G7S to G1S	40'-0⅞"	38'-7⅞"	32"	29"	3"	1'-4"	¾"x12"	¾"x12"	21	9"	15'-9"	2	2'-0⅞"
	G1N to G7N	40'-0⅞"	38'-7⅞"	32"	29"	3"	1'-4"	¾"x12"	¾"x12"	21	9"	15'-9"	2	2'-0⅞"

Span	Girder	Dead Load Deflection at a	Dead Load Deflection at b	△s	C
		△c	△c		
A	G1S to G7S	1/16"	1/16"	0	1/16"
	G1N to G7N	1/16"	1/16"	0	1/16"
B	G1S to G7S	9/16"	3/8"	5/16"	7/8"
	G1N to G7N	9/16"	3/8"	5/16"	7/8"
C	G1S to G7S	9/16"	3/8"	5/16"	7/8"
	G1N to G7N	9/16"	3/8"	5/16"	7/8"
D	G1S to G7S	1/8"	1/16"	1/16"	3/16"
	G1N to G7N	1/8"	1/16"	1/16"	3/16"

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No.	Description	Date
3	Revise Detail	1-7-11

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

GIRDER ELEVATIONS AND DEAD LOAD DEFLECTION

Designed: GEE
Drawn: GJ
Checked: KWL

Date	Plan No.	Sheet No.
October 2009	283-67	15 of 68

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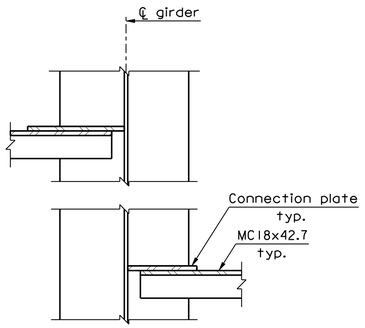
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(16)

SIMPLE SPAN STEEL PLATE GIRDERS		Midspan Section Properties		Moments		Shears			Reactions	Midspan stresses		
Spans A & D				¼ pt.	Midspan	End	¼ pt.	Midspan	End	Steel bot.	Steel top	Conc. top
		I (in4)	Y_{bot} (in)	(kip-ft)	(kip-ft)	(kips)	(kips)	(kips)	(kips)	(ksi)	(ksi)	(psi)
GIS to G7S and GIN to G7N	Non-Comp. D.L.	5213	16.00	18.30	24.30	2.50	1.30	0.00	2.50	0.89	-0.89	0
	Comp. D.L. (n=30)	11624	26.00	140.90	187.90	19.50	9.70	0.00	19.50	5.03	-1.17	-99
	L.L. + I (n=10)	15304	31.40	337.00	397.30	58.30	35.00	20.50	58.30	9.78	-0.19	-308

SIMPLE SPAN STEEL PLATE GIRDERS		Midspan section properties		Moments		Shears			Reactions	Midspan stresses		
Spans B & C				¼ pt.	Midspan	End	¼ pt.	Midspan	End	Steel bot.	Steel top	Conc. top
		I (in4)	Y_{bot} (in)	(kip-ft)	(kip-ft)	(kips)	(kips)	(kips)	(kips)	(ksi)	(ksi)	(psi)
GIS to G7S and GIN to G7N	Non-Comp. D.L.	7598	14.00	64.90	86.50	5.40	2.70	0.00	5.40	1.91	-2.75	0
	Comp. D.L. (n=30)	17615	24.40	393.40	524.60	32.40	16.20	0.00	32.40	8.70	-3.49	-227
	L.L. + I (n=10)	24301	31.10	651.10	819.60	63.10	41.30	24.40	63.10	12.58	-1.23	-497



SECTION D (16|16)
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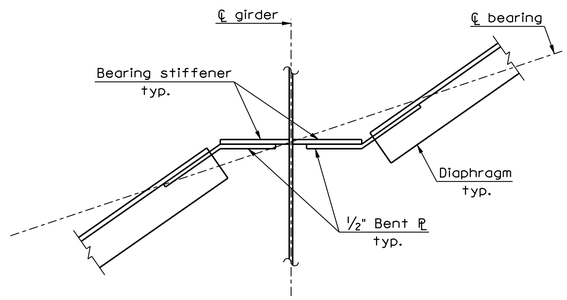

SECTION E (16|16)
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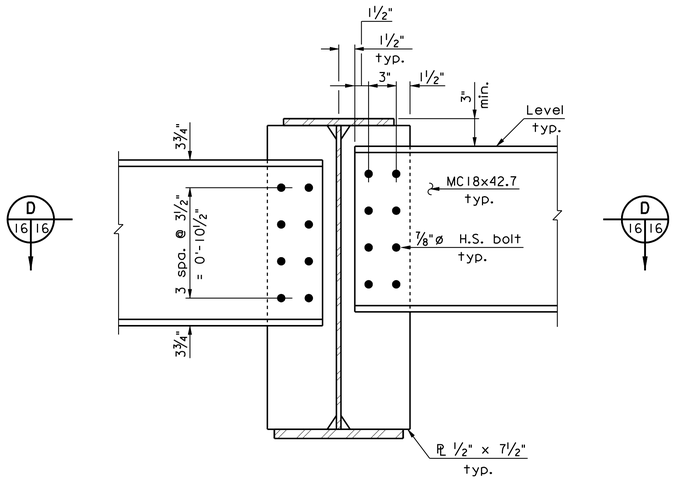
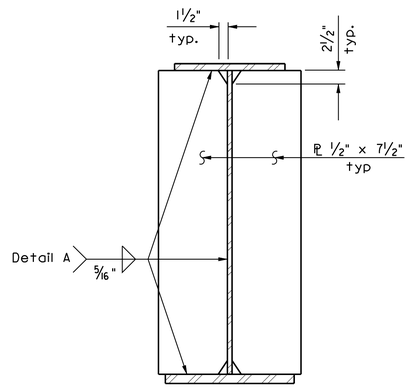
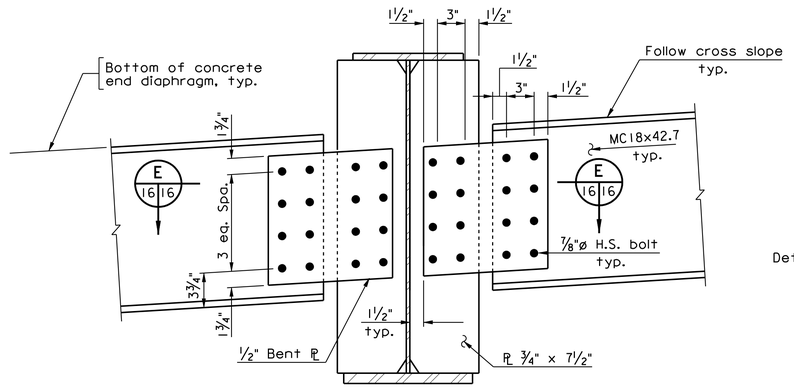


INTERMEDIATE DIAPHRAGM DETAIL
Scale: 1½" = 1'-0"



INTERMEDIATE DIAPHRAGM CONNECTION PLATE DETAIL
Scale: 1½" = 1'-0"



END DIAPHRAGM DETAIL
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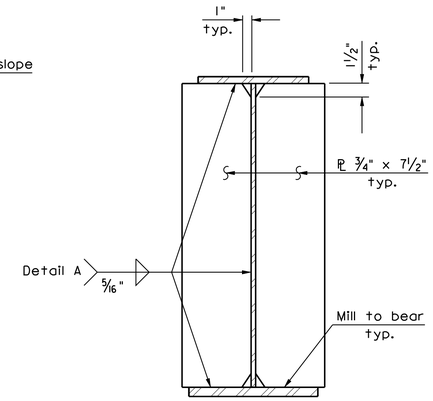
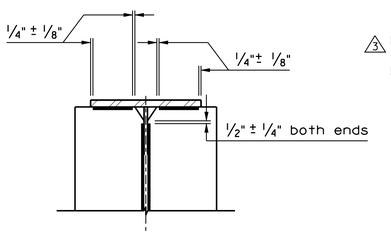
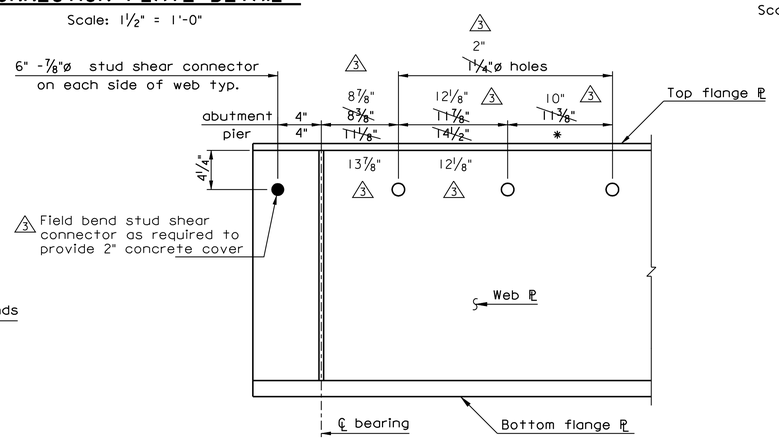


BEARING STIFFENER DETAIL
Scale: 1½" = 1'-0"



DETAIL A
Not to scale



DETAIL B
Scale: 1½" = 1'-0"
* Omit hole at piers.

No.	Description	Date
3	Revise Detail	1-7-11
Revisions		

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

TYPICAL GIRDER DETAILS AND DESIGN SUMMARY

Designed: CEF	Date	Plan No.	Sheet No.
Drawn: CJ	October 2009	283-67	16 of 68
Checked: KWL			

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Richmond, Va.
Structural Engineer

1/5/2011
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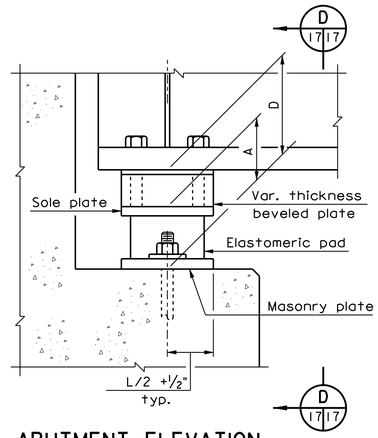
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(17)



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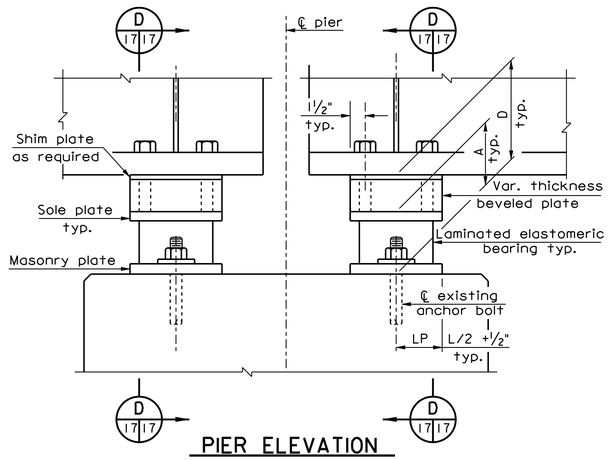
Not to scale



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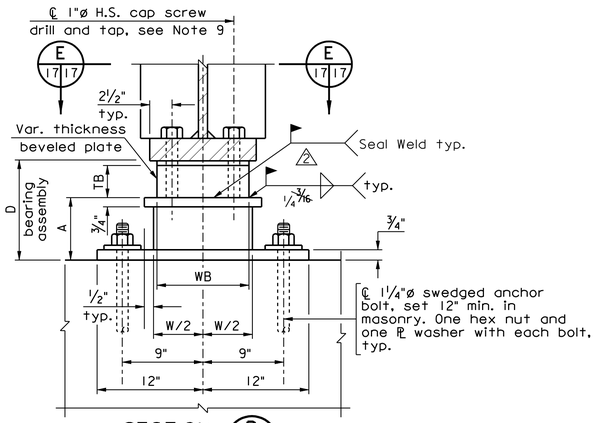
Not to scale



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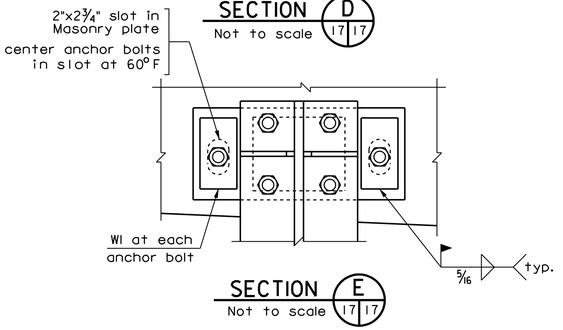
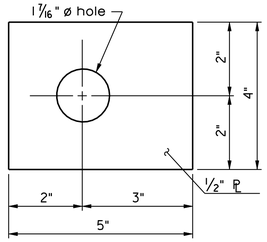


SECTION D
Not to scale

Notes:

1. Material: Elastomer - 60 durometer hardness.
   Shim - ASTM A36 or A570 mild steel.
2. Plates shall not be painted on the surface in contact with the elastomeric bearing.
3. Elastomeric bearings shall be molded as a single unit. Elastomeric bearings shall be factory heat vulcanized during the molding process to the sole plate and masonry plate.
4. Existing bearings to be removed.
5. The existing concrete masonry pad shall be repaired with polymer concrete and anchor bolts replaced.
6. When welding the beveled plate to the sole plate, ample time shall be allowed between weld passes to prevent damage to elastomeric pad. Elastomer shall not be subjected to temperatures higher than 400°F.
7. TB thicknesses in the Beveled Plate Dimemsions table shown on Sheet 18 were computed based on the bearing pad elevations given in the original bridge plans with a datum adjustment of -1.01 feet from NGVD 1929 to NAVD 1988 and a bolster thickness of 2¼" (distance from bottom of slab to top of girder web). Field verification of the bearing pad elevations is required before fabrication of bearing assemblies.
8. For TB ≤ 3", beveled plate shall be a single plate. For 3" < TB < 6", beveled plates shall be built up according to Detail C. (for TB > 6", see Details F and G).
9. For TB < 1", threaded studs shall be welded to the beveled plate instead of tapping and threading the beveled plate to receive cap screws.
10. The Contractor shall be required to submit to the Engineer for review, bearing analysis calculations showing specific equipment and it's location necessary to remove portions of the existing superstructure and to install the preconstucted composite units. This equipment shall include all cranes, haulers, and other equipment incidental to these operations. AASHTO Method B analysis will be permitted with a 25% allowance for temporary overstress.



WASHER WI
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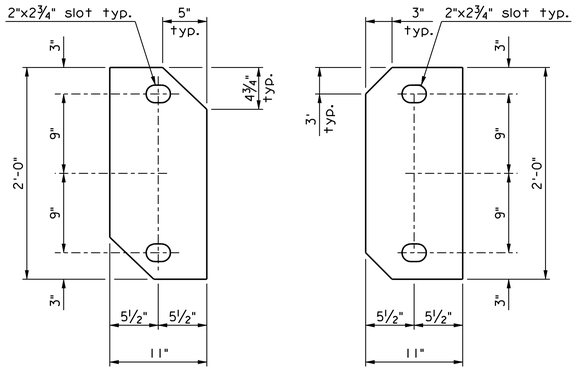
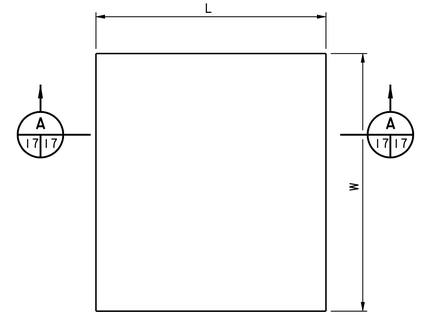
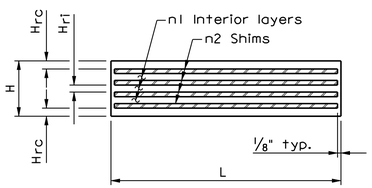


ABUTMENT PIER

MASONRY PLATE DETAIL
Not to scale



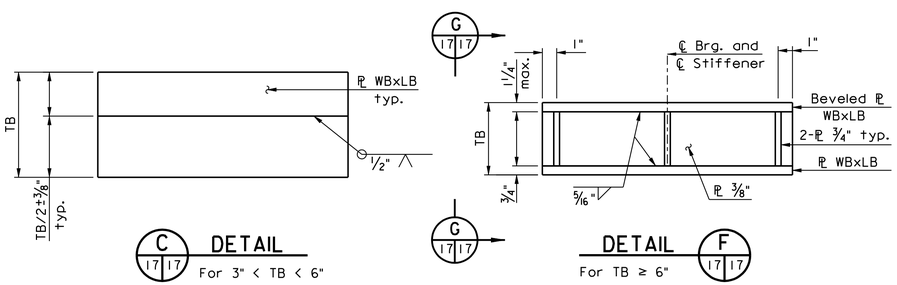


SECTION A
17|17

LAMINATED ELASTOMERIC BEARING
Not to scale

LAMINATED ELASTOMERIC BEARING PADS							
Type	W	L	H	H_{rc}	n1 @ H_{ri}	n2 @ H_s	Total Load (kips)
1	10.0	10.0	2.843	0.125	5 @ 0.375	6 @ 0.1196	70.0
2	10.0	12.0	2.843	0.125	5 @ 0.375	6 @ 0.1196	90.0

All dimensions in table are in inches.



BEVELED PLATE REPLACEMENT DETAIL
Not to scale

No.	Description	Date
2	Revised Weld	9-22-10

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

BEARING DETAILS I

Designed: CEE
Drawn: CJL
Checked: KWL

Date	Plan No.	Sheet No.
October 2009	283-67	17 of 68

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
Lic. No. 019609
PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

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BBD-9 (MOD.) 8-29-00 11:23:40 AM 9/22/2010

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(18)

BEVELED PLATE DIMENSIONS

SBL

BEARING ASSEMBLY				G1					G2					G3					G4					G5					G6					G7				
					Beveled plate					Beveled plate					Beveled plate					Beveled plate					Beveled plate					Beveled plate					Beveled plate			
LOCATION	TYPE	A	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade
Abut.A	-	1	4.343	6.05	11.00	10.00	1.250	1.9%	6.05	11.00	10.00	1.250	1.8%	6.05	11.00	10.00	1.250	1.7%	6.17	11.00	10.00	1.375	1.6%	6.41	11.00	10.00	1.625	1.4%	6.53	11.00	10.00	1.625	1.3%	12.77	11.00	10.00	7.875	1.2%
Pier 1	BACK	2	4.343	8.21	11.00	10.00	3.375	1.9%	8.21	11.00	10.00	3.375	1.8%	8.45	11.00	10.00	3.625	1.7%	8.57	11.00	10.00	3.750	1.6%	8.45	11.00	10.00	3.625	1.4%	8.57	11.00	10.00	3.750	1.3%	8.45	11.00	10.00	3.625	1.2%
	AHD	2	4.343	7.95	11.00	10.00	3.125	1.7%	7.94	11.00	10.00	3.125	1.6%	8.19	11.00	10.00	3.375	1.5%	8.18	11.00	10.00	3.375	1.4%	8.19	11.00	10.00	3.375	1.3%	8.18	11.00	10.00	3.375	1.2%	8.07	11.00	10.00	3.250	1.1%
Pier 2	BACK	2	4.343	6.26	11.00	10.00	1.375	1.7%	6.26	11.00	10.00	1.375	1.6%	6.38	11.00	10.00	1.500	1.5%	6.39	11.00	10.00	1.500	1.4%	6.26	11.00	10.00	1.375	1.3%	6.39	11.00	10.00	1.500	1.2%	6.14	11.00	10.00	1.250	1.1%
	AHD	2	4.343	6.50	11.00	10.00	1.625	1.4%	6.51	11.00	10.00	1.625	1.3%	6.63	11.00	10.00	1.750	1.2%	6.63	11.00	10.00	1.750	1.1%	6.51	11.00	10.00	1.625	1.0%	6.63	11.00	10.00	1.750	0.9%	6.38	11.00	10.00	1.500	0.8%
Pier 3	BACK	2	4.343	7.94	11.00	10.00	3.125	1.4%	7.95	11.00	10.00	3.125	1.3%	8.07	11.00	10.00	3.250	1.2%	8.07	11.00	10.00	3.250	1.1%	8.18	11.00	10.00	3.375	1.0%	8.07	11.00	10.00	3.250	0.9%	7.95	11.00	10.00	3.125	0.8%
	AHD	2	4.343	8.93	11.00	10.00	4.125	1.2%	8.81	11.00	10.00	4.000	1.1%	8.93	11.00	10.00	4.125	1.0%	8.93	11.00	10.00	4.125	0.9%	8.93	11.00	10.00	4.125	0.8%	8.81	11.00	10.00	4.000	0.7%	8.69	11.00	10.00	3.875	0.6%
Abut.B	-	1	4.343	6.41	11.00	10.00	1.625	1.2%	6.41	11.00	10.00	1.625	1.1%	6.41	11.00	10.00	1.625	1.0%	6.41	11.00	10.00	1.625	0.9%	6.41	11.00	10.00	1.625	0.8%	6.53	11.00	10.00	1.625	0.7%	9.17	11.00	10.00	4.375	0.6%

BEVELED PLATE DIMENSIONS

NBL

BEARING ASSEMBLY				G1					G2					G3					G4					G5					G6					G7				
					Beveled plate					Beveled plate					Beveled plate					Beveled plate					Beveled plate					Beveled plate					Beveled plate			
LOCATION	TYPE	A	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade	D	LB	WB	TB	Grade
Abut.A	-	1	4.343	6.05	11.00	10.00	1.250	1.7%	6.05	11.00	10.00	1.250	1.8%	6.05	11.00	10.00	1.250	1.9%	6.05	11.00	10.00	1.250	2.0%	6.17	11.00	10.00	1.375	2.1%	6.17	11.00	10.00	1.375	2.2%	12.17	11.00	10.00	7.375	2.3%
Pier 1	BACK	2	4.343	8.45	11.00	10.00	3.625	1.7%	8.33	11.00	10.00	3.500	1.8%	8.45	11.00	10.00	3.625	1.9%	8.33	11.00	10.00	3.500	2.0%	8.33	11.00	10.00	3.500	2.1%	8.33	11.00	10.00	3.500	2.2%	8.09	11.00	10.00	3.250	2.3%
	AHD	2	4.343	8.06	11.00	10.00	3.250	1.5%	8.07	11.00	10.00	3.250	1.6%	8.18	11.00	10.00	3.375	1.6%	8.07	11.00	10.00	3.250	1.7%	8.07	11.00	10.00	3.250	1.7%	8.18	11.00	10.00	3.375	1.6%	7.94	11.00	10.00	3.125	1.5%
Pier 2	BACK	2	4.343	6.39	11.00	10.00	1.500	1.5%	6.38	11.00	10.00	1.500	1.6%	6.38	11.00	10.00	1.500	1.6%	6.39	11.00	10.00	1.500	1.7%	6.39	11.00	10.00	1.500	1.7%	6.38	11.00	10.00	1.500	1.6%	6.14	11.00	10.00	1.250	1.5%
	AHD	2	4.343	6.63	11.00	10.00	1.750	1.3%	6.63	11.00	10.00	1.750	1.3%	6.63	11.00	10.00	1.750	1.2%	6.63	11.00	10.00	1.750	1.2%	6.63	11.00	10.00	1.750	1.2%	6.63	11.00	10.00	1.750	1.1%	6.38	11.00	10.00	1.500	1.1%
Pier 3	BACK	2	4.343	8.07	11.00	10.00	3.250	1.3%	8.06	11.00	10.00	3.250	1.3%	8.06	11.00	10.00	3.250	1.2%	8.07	11.00	10.00	3.250	1.2%	8.18	11.00	10.00	3.375	1.2%	8.18	11.00	10.00	3.375	1.1%	7.82	11.00	10.00	3.000	1.1%
	AHD	2	4.343	8.93	11.00	10.00	4.125	1.1%	8.93	11.00	10.00	4.125	1.0%	8.93	11.00	10.00	4.125	1.0%	8.93	11.00	10.00	4.125	1.0%	8.93	11.00	10.00	4.125	1.0%	8.93	11.00	10.00	4.125	0.9%	8.69	11.00	10.00	3.875	0.9%
Abut.B	-	1	4.343	6.41	11.00	10.00	1.625	1.1%	6.29	11.00	10.00	1.500	1.0%	6.53	11.00	10.00	1.625	1.0%	6.41	11.00	10.00	1.625	1.0%	6.41	11.00	10.00	1.625	1.0%	6.41	11.00	10.00	1.625	0.9%	12.77	11.00	10.00	7.875	0.9%

All dimensions in table are in inches. Dimension TB is given at centerline of bearing.

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
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URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

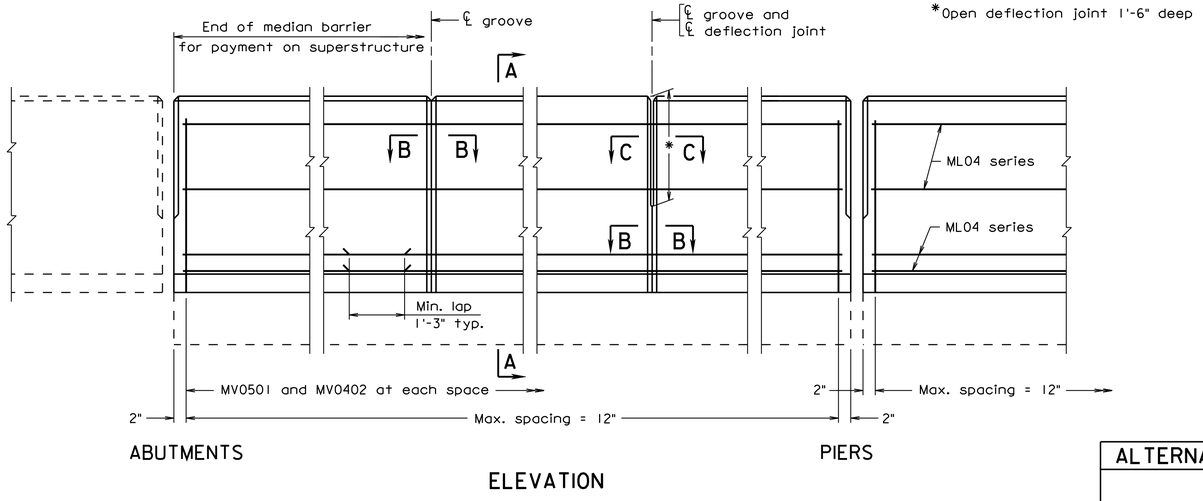
STRUCTURE AND BRIDGE DIVISION

BEARING DETAILS II

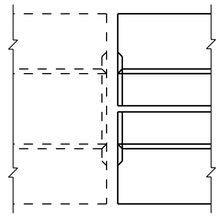
Designed: GEE.....
Drawn: .....GJ.....
Checked: .KWh.....

Date	Plan No.	Sheet No.
October 2009	283-67	18 of 68

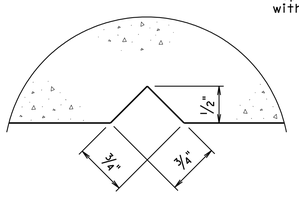
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.	—		95	7095-964-115, B696	27(19)



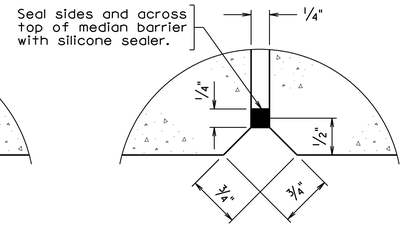
ELEVATION



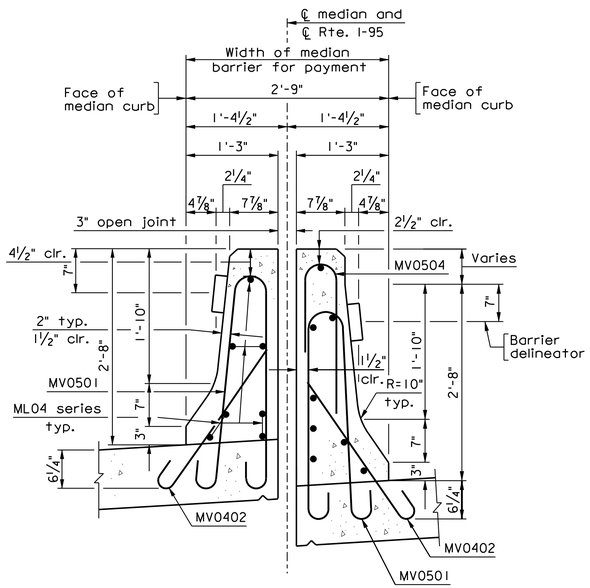
PART PLAN



SECTION B-B
Full scale

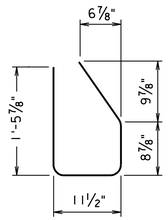


SECTION C-C
Full scale



SECTION A-A
Scale: 1" = 1'-0"

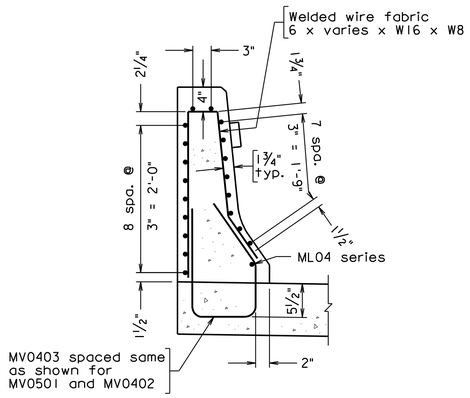
ALTERNATE REINFORCING STEEL SCHEDULE



MV0403

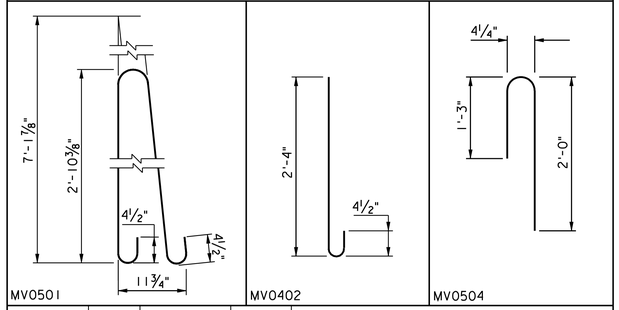
Mark	No.	Size	Pin ø	Length	Location
MV0403		#4	3"	4'-0"	Median barrier
ML04		#4	——		Median barrier

Dimensions in bending diagram are out-to-out of bars.



PART SECTION A-A
ALTERNATE REINFORCING STEEL

REINFORCING STEEL SCHEDULE



Mark	Size	Length	Pin ø	Location
MV0501	#5	6'-11"	*4¼"	Median barrier
MV0402	#4	2'-10"	2"	Median barrier
ML04	#4		——	Median barrier
MV0504	#5	3'-5"	3"	Median barrier

* Pin ø 2½" for hooks at ends

Dimensions in bending diagram are out-to-out of bars, except as shown.

Gross concrete quantities (C.Y.) = Lin. ft. x 0.182 for all concrete above roadway slab.

Notes:

Rounded edges with 1" radius may be used in lieu of bevels along top of median barrier.

Reinforcing bars MV0501, MV0402 and MV0403 shall be galvanized. All other reinforcing bars shall be epoxy coated.

Detail shown at Pier is applicable when joint is in slab. When slab is continuous over Pier, use groove and deflection joint.

Spacing of grooves to be approximately 8'-0". If lighting standard is used (see Bridge Concuit System), groove shall be located approximately 4'-0" from ℄ light standard. Spacing of deflection joints shall not exceed three groove spaces.

Joint sealer shall be a polysulfide or polyurethane sealer or an approved alternate sealant. Color of sealer shall be compatible with the concrete.

Barrier Delineator size, color, and spacing to be in accordance with the Specifications. Cost of Delineator to be included in the price bid for Median Barrier. Reflective surface of Barrier in all instances, to be facing oncoming traffic.

The Contractor shall determine all dimensions and details necessary for installation.

Plan dimensions shown are measured in the respective horizontal and vertical planes. The reinforcing shown has been detailed based on a standard ¼" per foot horizontal slope. The Contractor shall adjust the reinforcing steel as required for the plan horizontal slope and vertical gradient.

All concrete shall be Class A4.

Cost of drilling and dowelling into existing median barrier shall be included in price bid for median barrier.

Scale: 1" = 1'-0" unless otherwise shown.

BMB-5A(MOD.) 07-11-2008

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COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
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PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date
	Revisions	

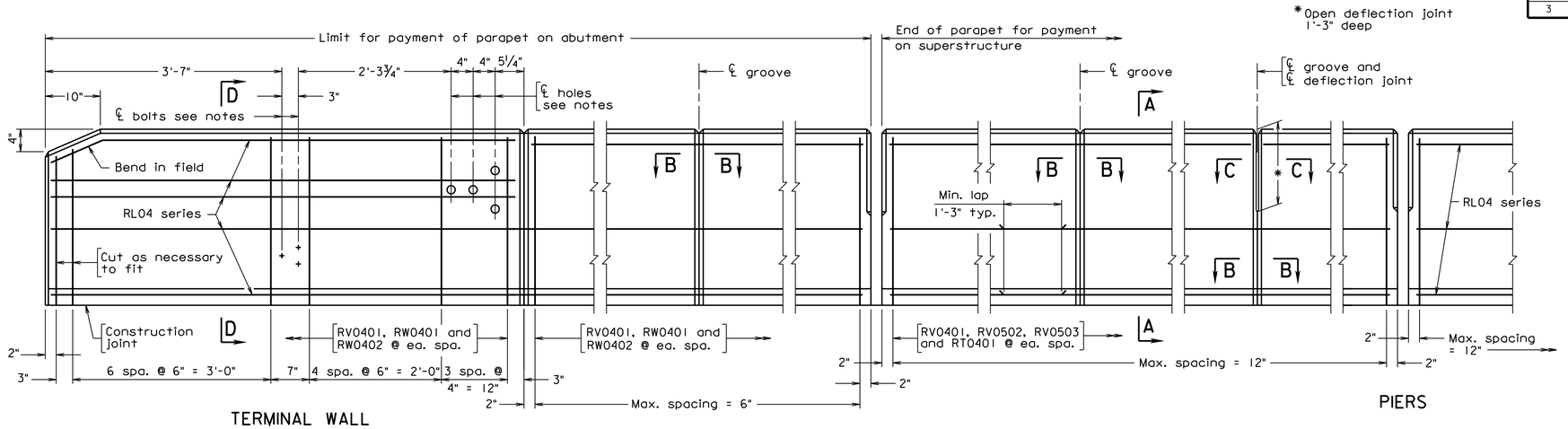
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

CAST-IN-PLACE CONCRETE MEDIAN BARRIER (F-SHAPE)

Designed: GEE	Date	Plan No.	Sheet No.
Drawn:	October 2009	283-67	19 of 68
Checked: JEH			

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.	——		95	7095-964-115, B696	27(20)

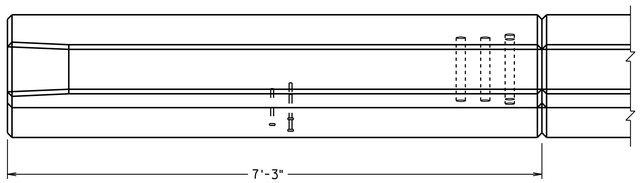


TERMINAL WALL

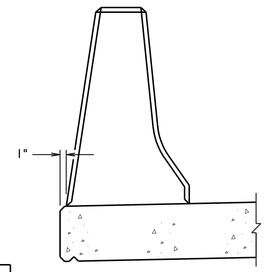
U-BACK WING ABUTMENTS

PIERS

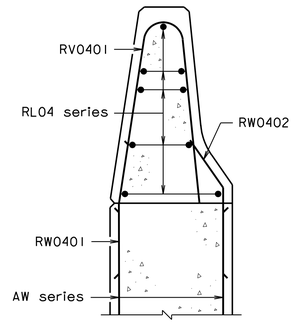
ELEVATION



PART PLAN

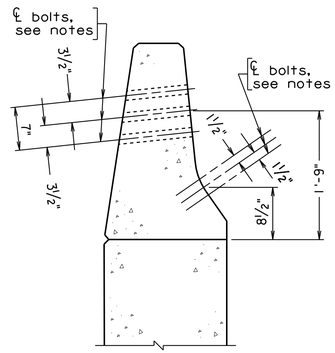


SECTION THRU JOINTS FOR EXTRUSION ONLY



SECTION D-D

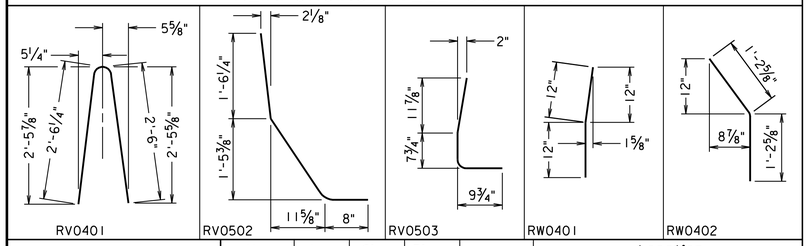
Holes and bolts not shown. For details not shown, see Section A-A.



SECTION D-D

Reinforcing steel not shown

REINFORCING STEEL SCHEDULE

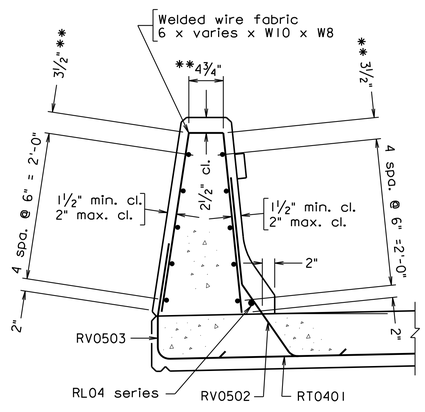


Mark	No.	Size	Pin ø	Length	Location
RT0401		#4	——	3'-0"	Slab
RV0401		#4	4½"	5'-2"	Parapet
RV0502		#5	3¾"	3'-10"	Parapet
RV0503		#5	3¾"	2'-4"	Parapet
RW0401		#4	3"	2'-0"	Terminal wall and wing
RW0402		#4	3"	2'-5"	Terminal wall and wing
RL04		#4	——		Parapet

Dimensions in bending diagram are out-to-out of bars, except as shown.

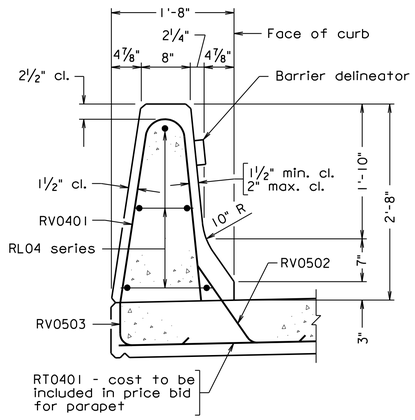
Cost of all bars listed in schedule to be included in price bid for parapet.

Gross concrete quantities (C.Y.) = Lin. Ft. x 0.105
All concrete above roadway slab

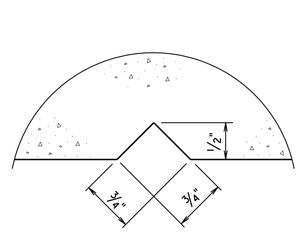


**Dimensions are out-to-out of wires.

SECTION A-A
ALTERNATE REINFORCING STEEL



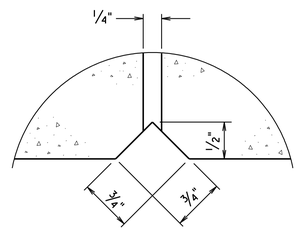
SECTION A-A



SECTION B-B

Full scale

Groove detail for both sides of parapet



SECTION C-C

Full scale

Deflection joint detail for both sides of parapet

Notes:

Rounded edges with 1" radius may be used in lieu of bevels along top of parapet.

Reinforcing bars RV0502 and RV0503 shall be galvanized. All other reinforcing bars shall be epoxy coated.

Detail shown at pier is applicable when joint is in slab. When slab is continuous over pier, use groove and deflection joint.

Spacing of grooves to be approximately 8'-0". If lighting standard is used (see Bridge Conduit System), groove shall be located approximately 4'-0" from ℄ light standard. Spacing of deflection joints shall not exceed three groove spaces.

Barrier delineator size, color, and spacing to be in accordance with the Specifications. Cost of delineator to be included in the price bid for parapet. Reflective surface of barrier delineator, in all instances, to be facing oncoming traffic.

The Contractor shall determine all dimensions and details necessary for installation.

All concrete shall be Class A4.

For details of wingwall below construction joint, see abutment sheet(s).

Terminal walls are detailed to take guardrail attachment GR-F0A-2.

Holes, where shown, shall be formed with sleeves of 1½" dia. nominal pipe.

Bolts, where shown, shall be ⅝" dia. expansion anchor bolts, 6" long to be drilled and installed when rub rail is attached.

For extruded parapets: During extrusion, open joints at abutments and piers shall be formed by the use of lubricated plates or other means so that uniformity of the opening and chamfers is maintained. Dimension of 1" (as shown in Section thru Joints for Extrusion Only) is additional deck slab that shall be cast at Contractor's expense. Dimension(s) to face of curb shall not be reduced.

Plan dimensions shown are measured in the respective horizontal and vertical planes. The reinforcing shown has been detailed based on a standard ¼" per foot horizontal slope. The Contractor shall adjust the reinforcing steel as required for the plan horizontal slope and vertical gradient.

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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

CAST-IN-PLACE CONCRETE PARAPET (F-SHAPE)

Designed: GEE
Drawn: CJ
Checked: JEH

Date	Plan No.	Sheet No.
October 2009	283-67	20 of 68

Scale: 1" = 1'-0" unless otherwise shown.

BPB-3A(MOD.) 07-11-2008

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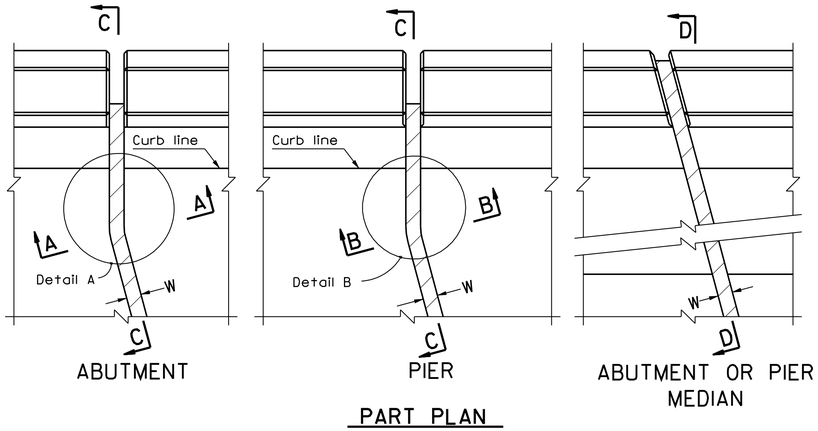
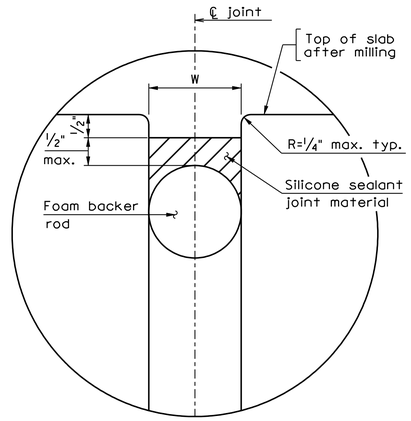
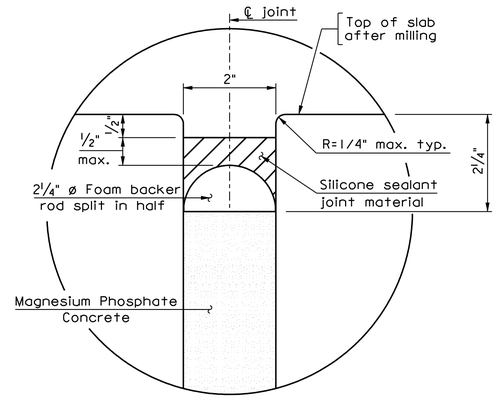
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(21)



PART PLAN



DETAIL C



DETAIL D △3

Notes:

Silicone joint sealant shall be Class D as described in the Department's Approved Products List.

As nearly as possible, sides of joints shall be straight, vertical, and parallel. The area of the installation shall be free from cracks and spalls.

Prior to applying the primer for the sealant, joints shall be free of cracked or spalled areas and their faces shall be free of all foreign matter, oils, greases, curing compounds, and dirt. All faces shall be abrasively blasted or brushed with a mechanical rotary wire brush. Just prior to installing primer for sealant, the joints shall be cleared with oil-free and water-free compressed air.

The manufacturer's requirements for installation of sealant shall be used if more strict than those indicated above, or if any requirements on this sheet conflicts with the manufacturer's requirements for proper installation with the approval of the engineer.

Joint width W is the final joint width of the cured concrete when placed at 60° F. The width W shall be increased or decreased for every 10° F temperature drop or rise respectively by t. When formed, joint width W shall be reduced by the amount Δ to compensate for the opening of the joint caused by the deflection of the beam when the deck concrete is placed. If the joint is formed so that the form material will not move and the joint will not open as the deck concrete is placed, then adjustment Δ shall not be made.

Fixed Bearing: $\Delta = \frac{4d\,\Delta c}{L}$

Expansion Bearing: $\Delta = \frac{d\,\Delta c}{L}$

d = Total rotation depth from top of slab to point of rotation on bearing.

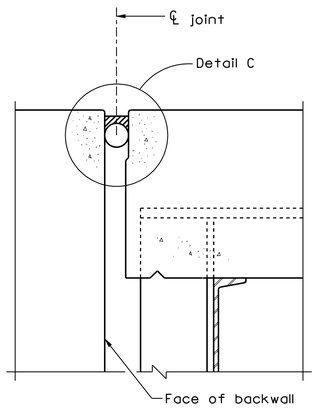
Δc = Deflection of beam at midspan from dead load of concrete deck slab and bolsters. See Dead Load Deflection Diagram.

L = Length of span.

Δ = Compensation for joint opening due to deflection of beam during placement of concrete deck slab and bolsters for the last span placed adjacent to the joint.

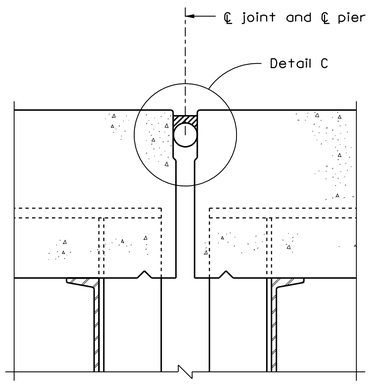
All the dimensions are in the same units.

Abutment	Pier	Joint Width W	t
A		1½"	1/16"
B		1½"	1/16"



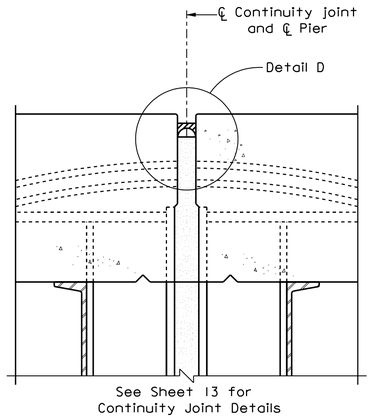
Abutment

SECTION A-A



Pier

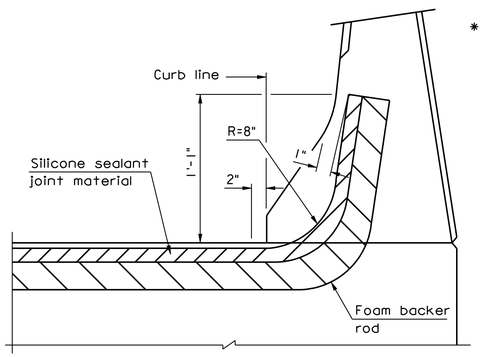
SECTION B-B



Pier △3

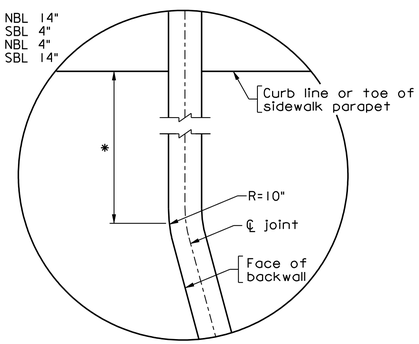
SECTION B-B

SECTION D-D

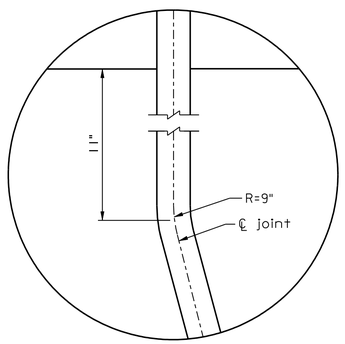


SECTION C-C

* Abutment A NBL 14"
Abutment A SBL 4"
Abutment B NBL 4"
Abutment B SBL 14"



DETAIL A



DETAIL B

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COMMONWEALTH OF VIRGINIA
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No.	Description	Date
△3	Revised Details	1-7-11

Revisions

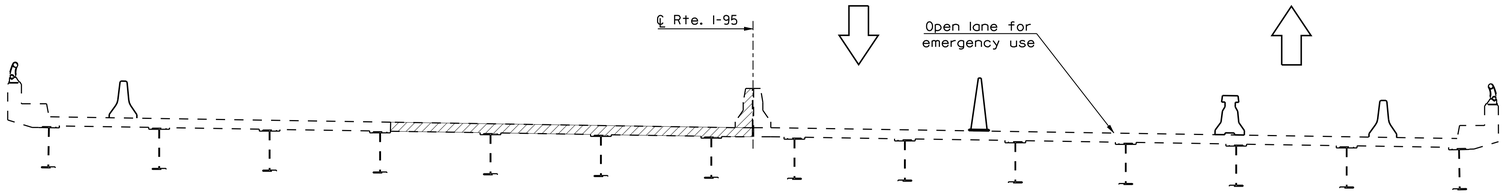
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

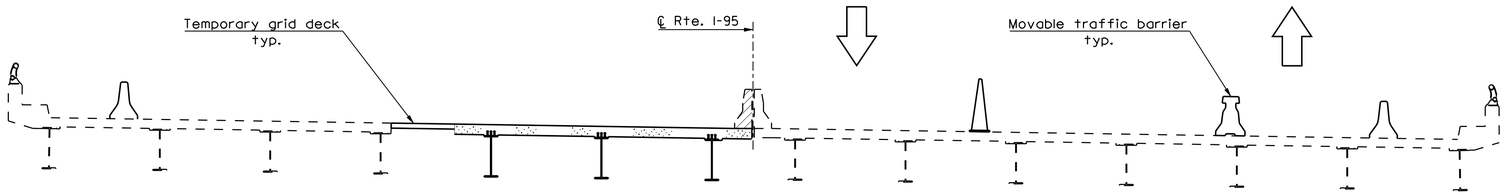
STRUCTURE AND BRIDGE DIVISION

SILICONE JOINT SEALANT DETAILS

Designed: KWI	Date	Plan No.	Sheet No.
Drawn: CJ	October 2009	283-67	21 of 68
Checked: JAU			

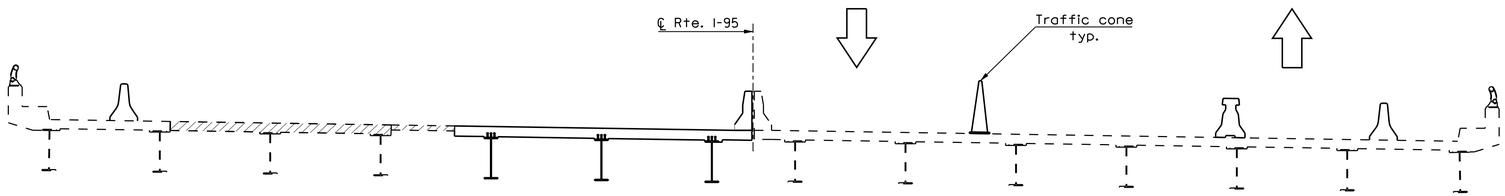
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.	I-95		95	7095-964-115, B696	27(22)

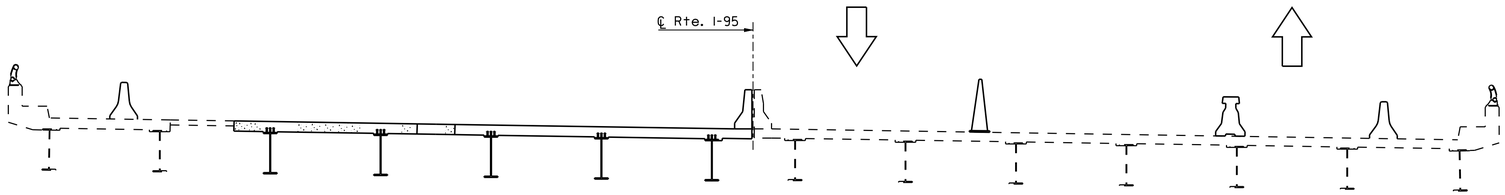




STAGE IA

Not to scale
looking north



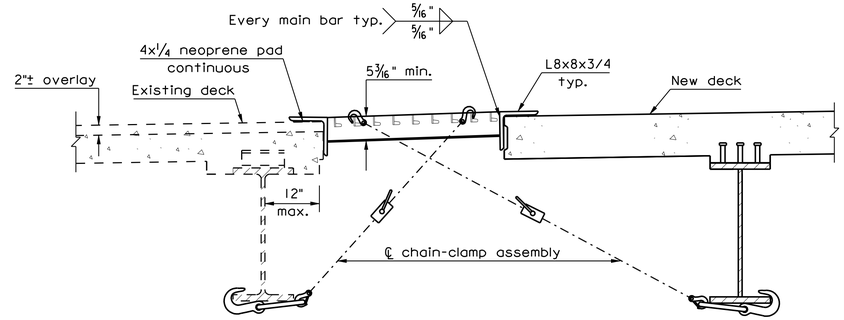


STAGE IB

Not to scale
looking north

Notes:

1. This Suggested Construction Sequence is for the southbound lanes. Northbound lanes are similar by rotation.
2. ~~The existing asphalt wearing surface on the superstructure shall be milled off prior to deck replacement.~~ ⚠1
3. Each construction stage shall be completed between the hours of 8:00 P.M. and 6:00 A.M. All travel lanes are to be open between 6:00 A.M. and 8:00 P.M.
4. Cost of temporary grid deck shall be considered incidental to and included in the lump sum bid price of the structural steel. Such cost shall be full compensation for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.
5. Steel grid deck shall have a minimum section modulus of 5.00 in. /ft. (A709, Grade 36) or 3.70 in. /ft. (A709, Grade 50).
6. The Contractor shall provide 2 chain-clamp assemblies at each end of a section of grid deck. 3
7. The Contractor's attention is called to the fact that the existing superstructure has been overlaid with multiple lifts of asphalt during its service life. Any expansion joints which have been filled with asphalt will need to be cleaned to facilitate removal of the existing superstructure. The Contractor should take this into consideration in the price bid for demolition.
8. A temporary grid deck for the closure pour shall be available in the event there is not enough time to complete Stage II and Stage III.
9. During Stage I, the Contractor shall be required to work from Abutment A to Abutment B. The Contractor will have the option to construct the bridge in a manner other than described above provided that he submits plans to the Engineer for approval. The Contractor must receive approval from the Engineer for these plans before removing any portion of the existing structure. No additional compensation will be allowed for any material, labor, tools, equipment, or incidentals necessary to accommodate the revisions to the proposed Sequence of Construction.
10. If closure pour between PCU Types A and B is not placed on the night PCU B is placed, provision shall be made for safety against uplift of the girders for PCU Type B. Temporary blocking shall be placed between the girders of PCU Types A and B at the ends of spans A and D. Cost of temporary blocking shall be considered incidental to and included into the cost of structural steel.
11. For all other notes concerning the construction sequence, see Sheet 23.



TEMPORARY GRID DECK

Not to scale

Denotes portion of existing superstructure to be removed

Denotes portion of new superstructure to be constructed

⚠1 Note:

The contractor shall be required to submit to the Engineer for review and approval all details of his Superstructure Replacement method, including its effect on all supporting members. Temporary overstresses at operating stress levels will be allowed for construction loading. Calculations shall be signed and sealed by a Professional Engineer registered in the Commonwealth of Virginia. The cost of this construction engineering shall be considered incidental to and included in the lump sum bid price of the structural steel.

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No.	Description	Date
⚠1	Revised Notes	6-10-10

Revisions

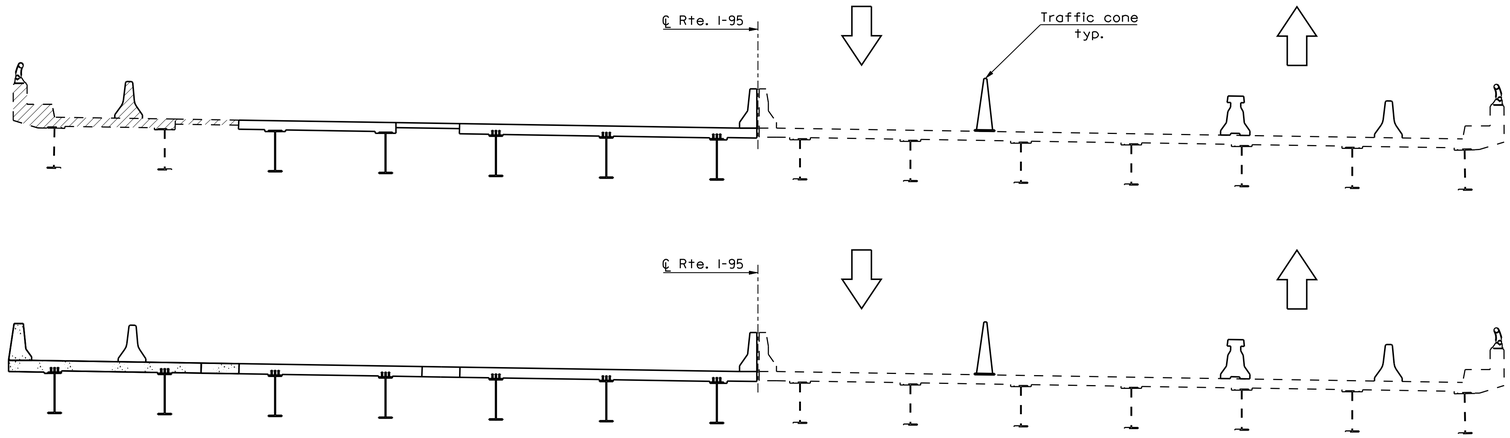
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

SUGGESTED CONSTRUCTION SEQUENCE I

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: GJ	October 2009	283-67	22 of 68
Checked: JAU			

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(23)

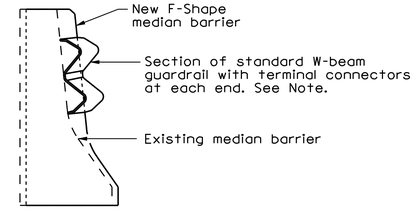


STAGE IC

Not to scale
looking north

Notes:

1. Once the Contractor has determined the equipment to be used in the installation of the PCU's, he will have the option to cast the concrete median barrier after installation to lower the pick weight of the PCU's. If the Contractor exercises this option, it will be his responsibility to revise the Sequence of Construction to accommodate this change. No additional compensation will be allowed for the temporary barrier necessary to construct the median barrier in the field.
2. The contractor is advised that the existing girders in Span B and C are composite with the deck by means of channel shear connectors. The existing girders in Spans A and D are non-composite.
3. For all other notes concerning the Construction Sequence and Grid Deck Details, see Sheet 22.



TEMPORARY MEDIAN BARRIER TRANSITION

Scale: 1" = 1'-0"

Notes:

At run-on-ends of the new barrier, a section of W-beam guardrail with terminal connectors shall be bolted to the existing median barrier and new median barrier to form a smooth transition between the existing and new barrier until construction is complete.

The cost for the W-beam and temporary installation shall be considered incidental to and included in the lump sum bid for Structural Steel and shall be considered complete compensation for all labor, tools, equipment, and incidentals necessary to complete the work.

Denotes portion of existing superstructure to be removed.

Denotes portion of new superstructure to be installed.

COMMONWEALTH OF VIRGINIA
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Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

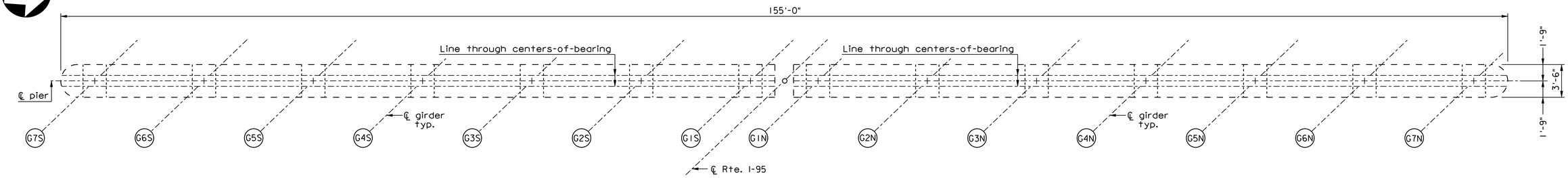
STRUCTURE AND BRIDGE DIVISION

SUGGESTED CONSTRUCTION SEQUENCE II

Designed: ALC.....
Drawn: .....CJ.....
Checked: .MAU.....

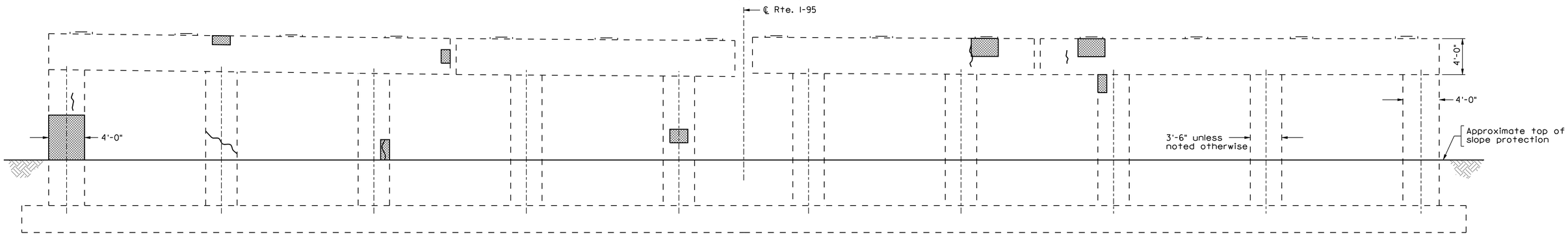
Date	Plan No.	Sheet No.
October 2009	283-67	23 of 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(24)



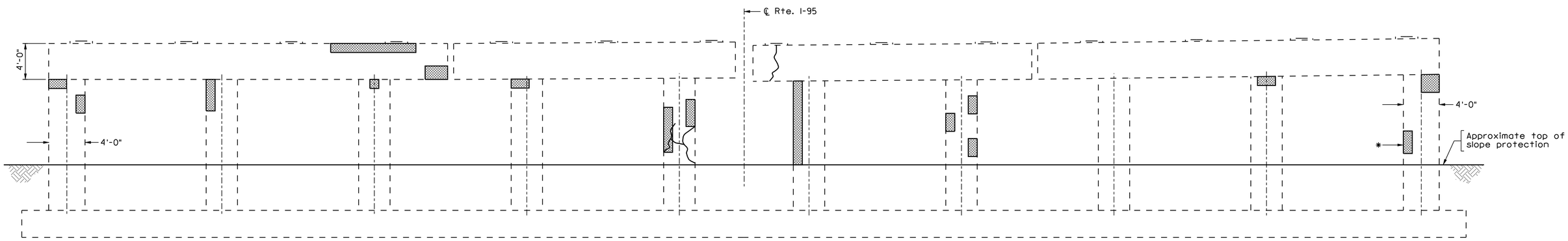
PLAN - PIER 1

Scale: 3/16" = 1'-0"



ELEVATION - PIER 1 SOUTH FACE

Scale: 3/16" = 1'-0"



ELEVATION - PIER 1 NORTH FACE

Scale: 3/16" = 1'-0"

* Repair delaminations and cracks on face not shown.

Notes:

1. All cracks wider than 1/32" shall be repaired. Areas of pier subject to spall or delamination shall be repaired prior to beginning any crack-sealing work.

LEGEND

- Substructure repair
- Crack to be repaired See Note 1

COMMONWEALTH OF VIRGINIA
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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

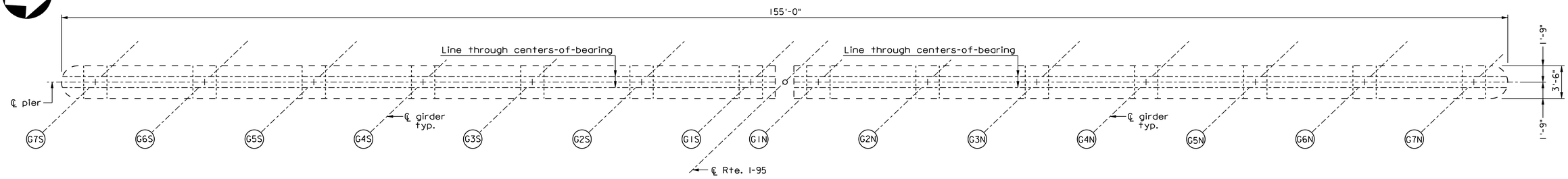
STRUCTURE AND BRIDGE DIVISION

EXISTING PIER 1 REPAIR

Designed: ALC
Drawn: CJ
Checked: KWL

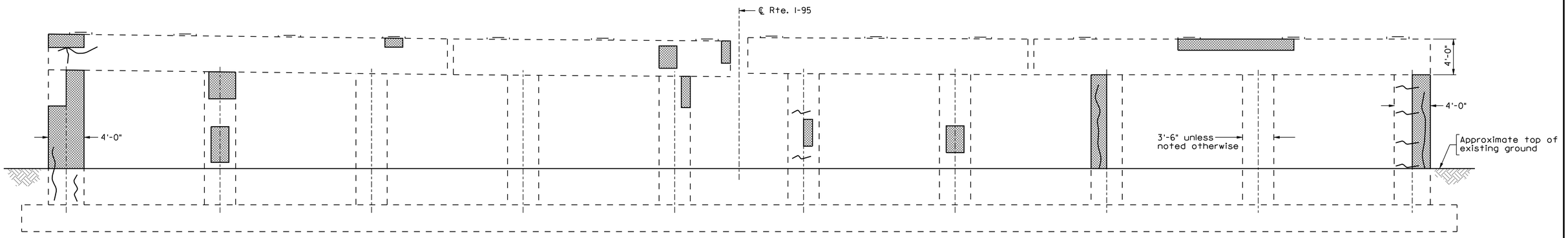
Date	Plan No.	Sheet No.
October 2009	283-67	24 of 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(25)



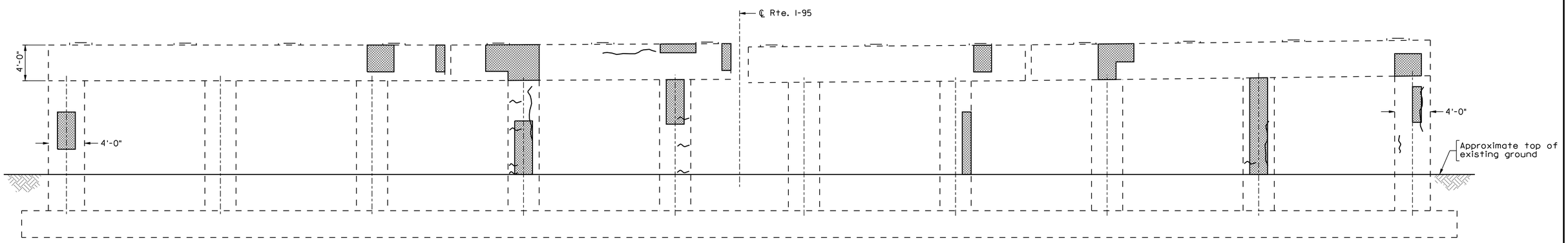
PLAN - PIER 2

Scale: 3/16" = 1'-0"



ELEVATION - PIER 2 SOUTH FACE

Scale: 3/16" = 1'-0"



ELEVATION - PIER 2 NORTH FACE

Scale: 3/16" = 1'-0"

Notes:

1. All cracks wider than 1/32" shall be repaired. Areas of pier subject to spall or delamination shall be repaired prior to beginning any crack-sealing work.

LEGEND

- Substructure repair
- Crack to be repaired See Note 1

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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

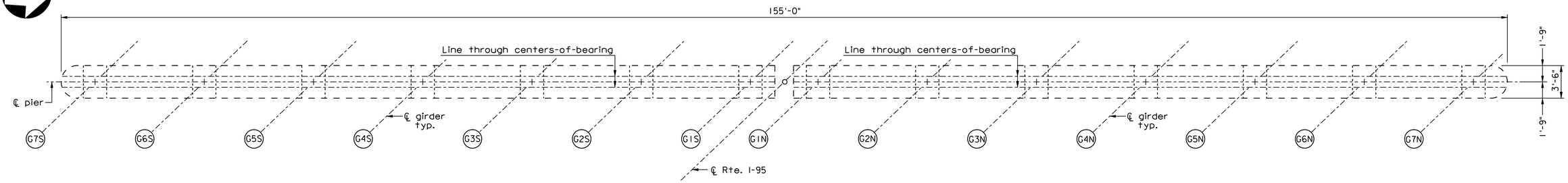
STRUCTURE AND BRIDGE DIVISION

EXISTING PIER 2 REPAIR

Designed: ALC
Drawn: CSJ
Checked: KWL

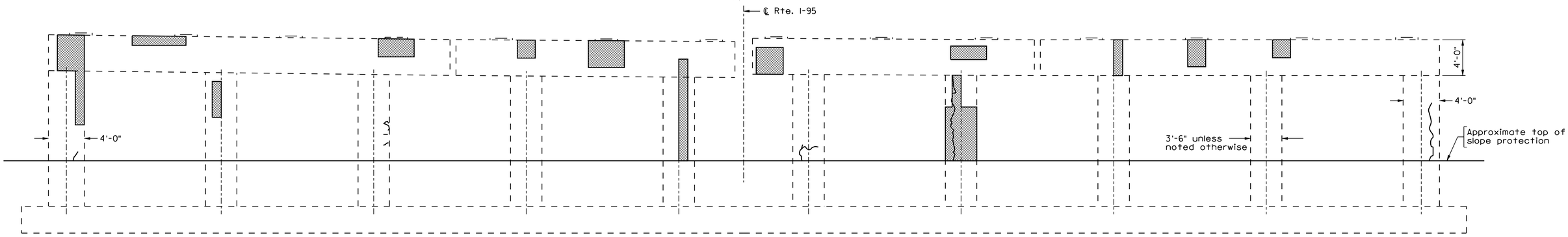
Date	Plan No.	Sheet No.
October 2009	283-67	25 of 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(26)



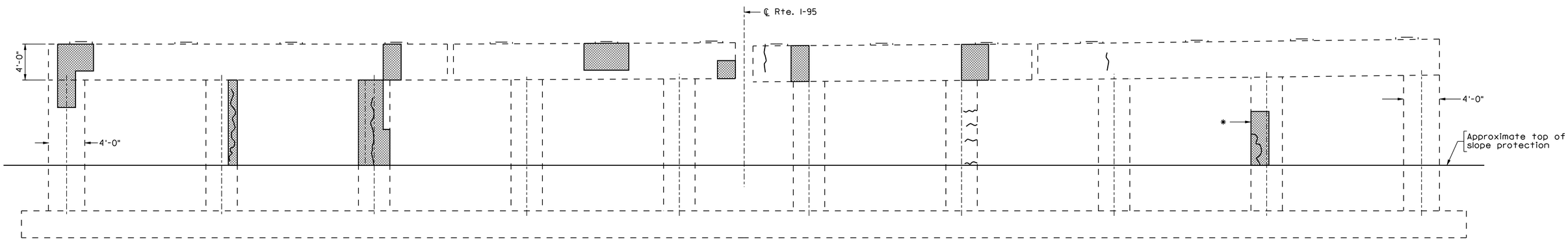
PLAN - PIER 3

Scale: 3/16" = 1'-0"



ELEVATION - PIER 3 SOUTH FACE

Scale: 3/16" = 1'-0"



ELEVATION - PIER 3 NORTH FACE

Scale: 3/16" = 1'-0"

Notes:

1. All cracks wider than 1/32" shall be repaired. Areas of pier subject to spall or delamination shall be repaired prior to beginning any crack-sealing work.

LEGEND

- Substructure repair
- Crack to be repaired See Note 1

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	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

EXISTING PIER 3 REPAIR

Designed: ALG	Date	Plan No.	Sheet No.
Drawn: CJJ	October 2009	283-67	26 of 68
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64
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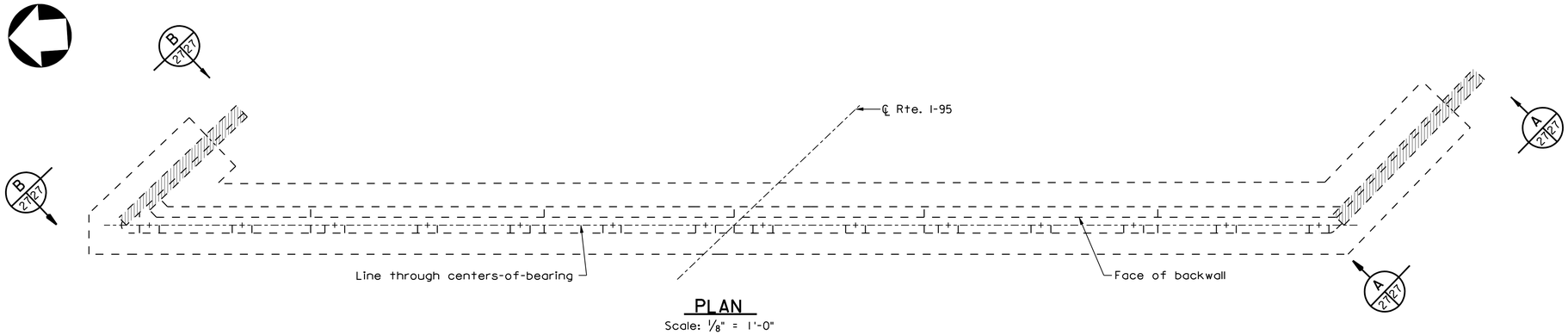
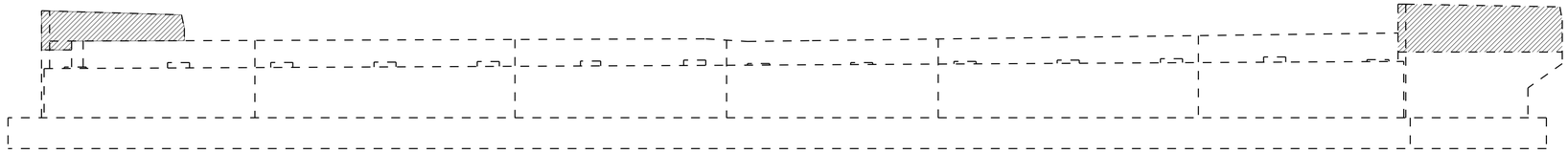
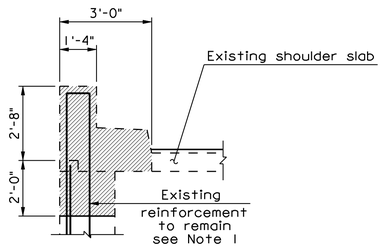
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	
3	VA.			95	7095-964-115, B696	27(27)	



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

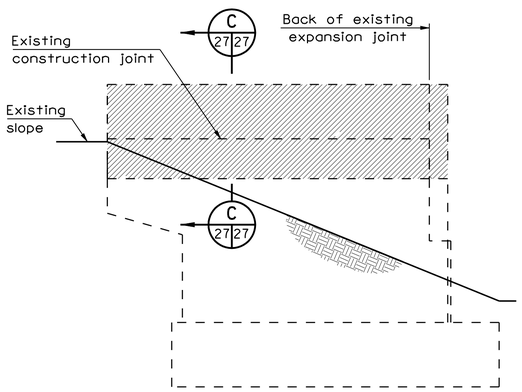


ELEVATION
Scale: 1/8" = 1'-0"

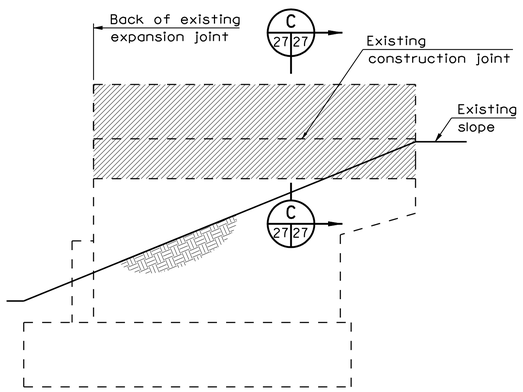


SECTION C 27 27
Not to scale

Safety walk not shown in plan or elevation.



VIEW B-B
Not to scale



VIEW A-A
Not to scale

LEGEND

- Indicates portion of abutment to be removed

COMMONWEALTH OF VIRGINIA
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	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

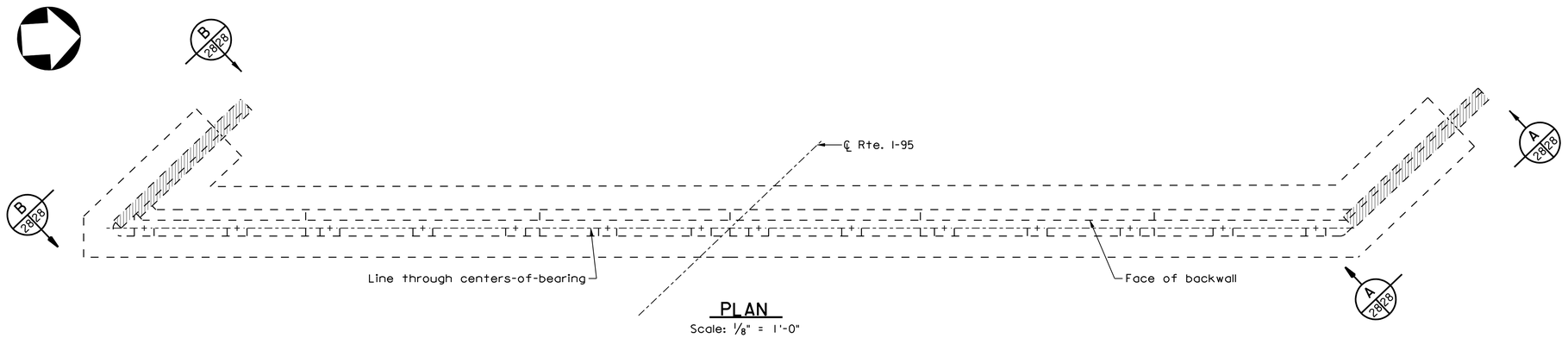
ABUTMENT A REMOVAL

Designed: REH
Drawn: CJ
Checked: KWI

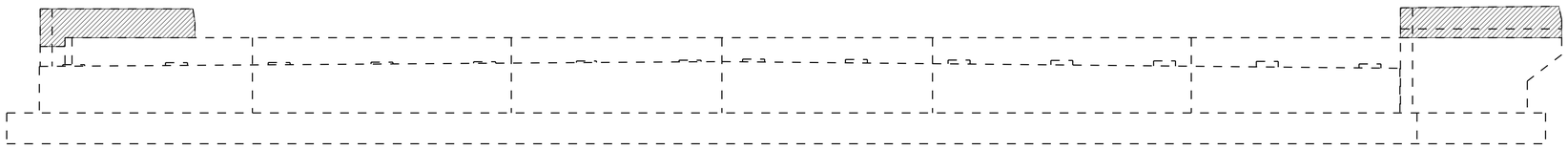
Date	Plan No.	Sheet No.
October 2009	283-67	27 of 68

10/22/2009 1:59:14 PM 96 O:\D300543.74\B28367027.DGN

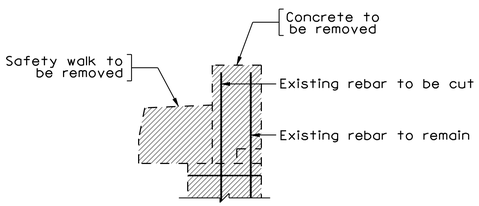
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(28)



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

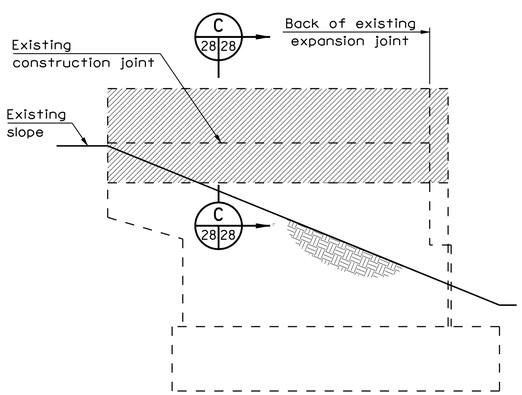


ELEVATION
Scale: 1/8" = 1'-0"

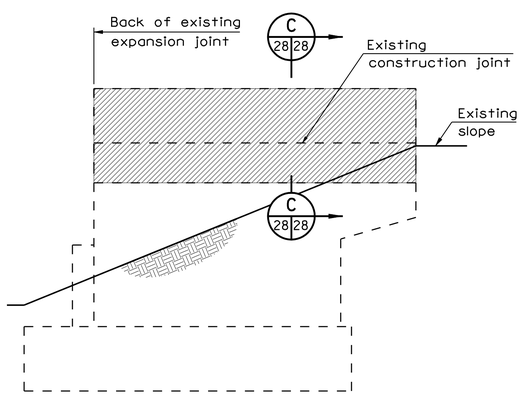


SECTION C 28/28
Not to scale

Safety walk not shown in plan or elevation.



VIEW B-B
Not to scale



VIEW A-A
Not to scale

LEGEND

- Indicates portion of abutment to be removed

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

ABUTMENT B REMOVAL

Designed: RFH	Date	Plan No.	Sheet No.
Drawn: DWH	October 2009	283-67	28 of 68
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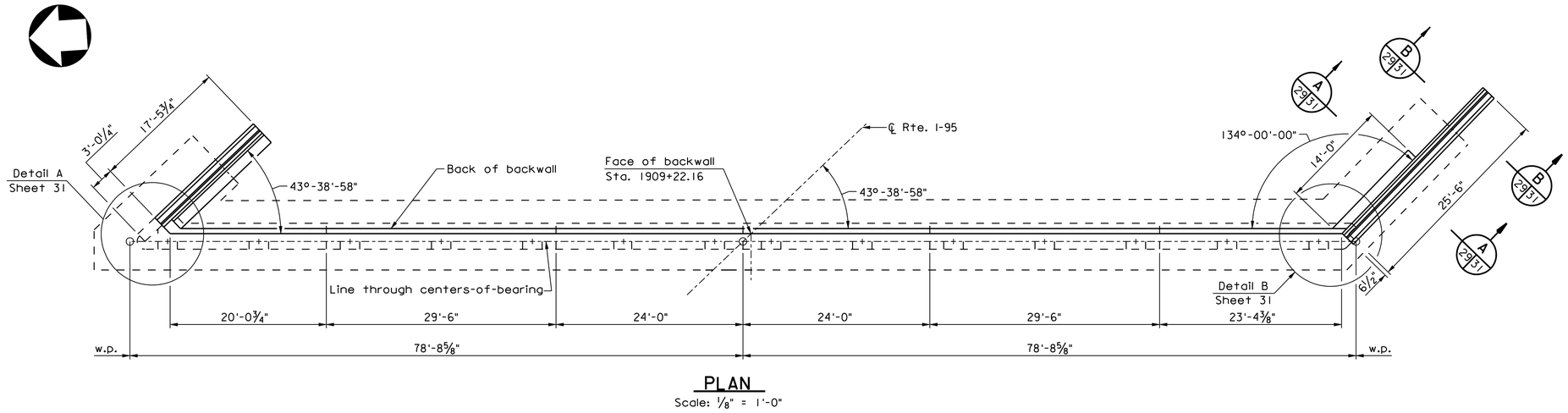
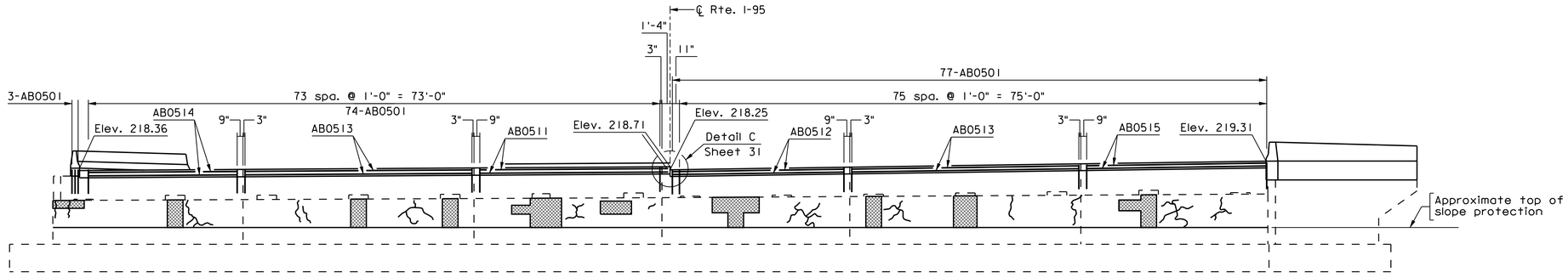
FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.	
		ROUTE	PROJECT	ROUTE	PROJECT		
3	VA.			95	7095-964-115, B696	27(29)	



PLAN
Scale: ⅛" = 1'-0"



ELEVATION
Scale: ⅛" = 1'-0"

Notes:

1. For reconstruction and repair notes, see Sheet 31.
2. Cost of 1½" joint material to be considered incidental to and included in the price bid for concrete.
3. For joint details at ℄ Rte. I-95, see Sheet 31.
4. 20 square yard of concrete block slab slope protection to be repaired

LEGEND

- Substructure repair
- Crack to be repaired

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COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

ABUTMENT A
RECONSTRUCTION AND REPAIR

Designed: BFH	Date	Plan No.	Sheet No.
Drawn: GJ	October 2009	283-67	29 of 68
Checked: KWL			

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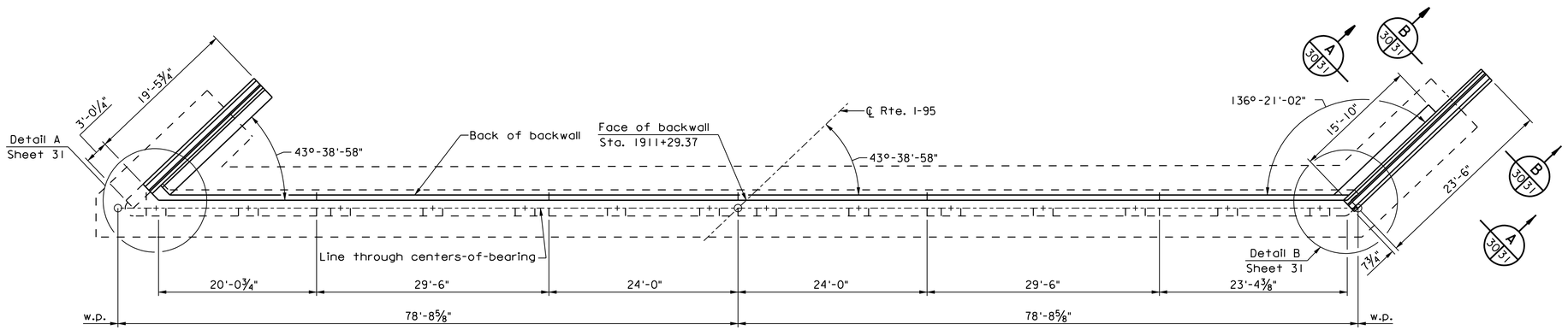
FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.	
		ROUTE	PROJECT	ROUTE	PROJECT		
3	VA.			95	7095-964-115, B696	27(30)	

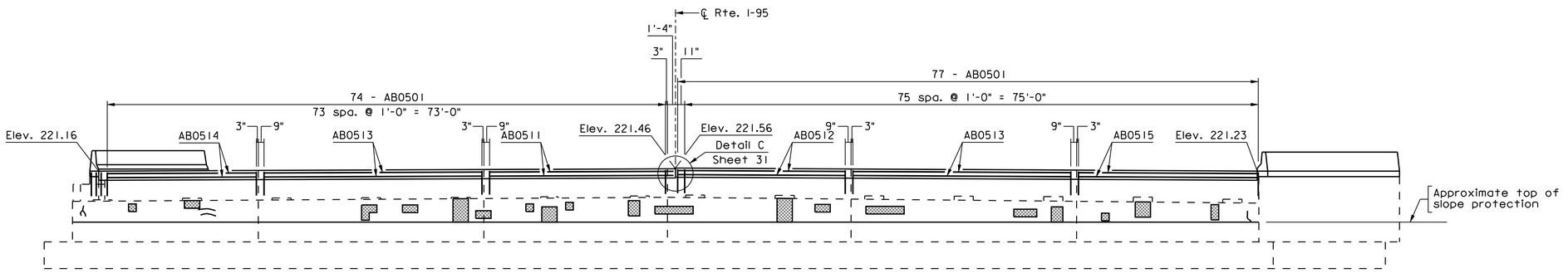
Notes:

1. For reconstruction and repair notes, see Sheet 31.
2. Cost of 1½" joint material to be considered incidental to and included in the price bid for concrete.
3. For Joint Details at ℄ Rte. I-95, see Sheet 31.
4. 79 square yard of concrete block slab slope protection to be repaired.



PLAN

Scale: ⅛" = 1'-0"



ELEVATION

Scale: ⅛" = 1'-0"

LEGEND

- Substructure repair
- Crack to be repaired

COMMONWEALTH OF VIRGINIA
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	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

ABUTMENT B
RECONSTRUCTION AND REPAIR

Designed: RFH	Date	Plan No.	Sheet No.
Drawn: DWH	October 2009	283-67	30 of 68
Checked: KWH			

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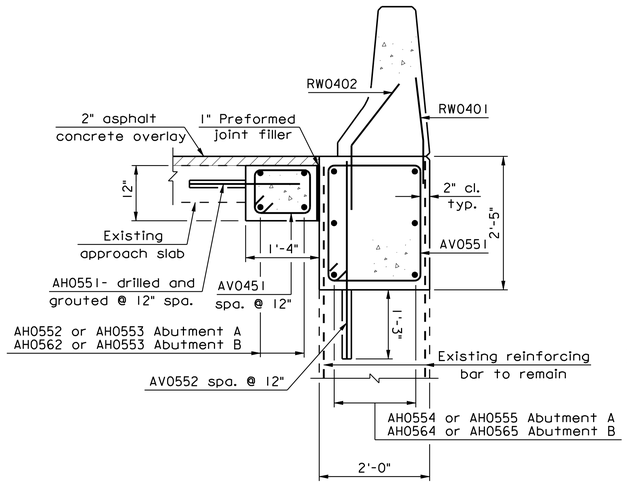
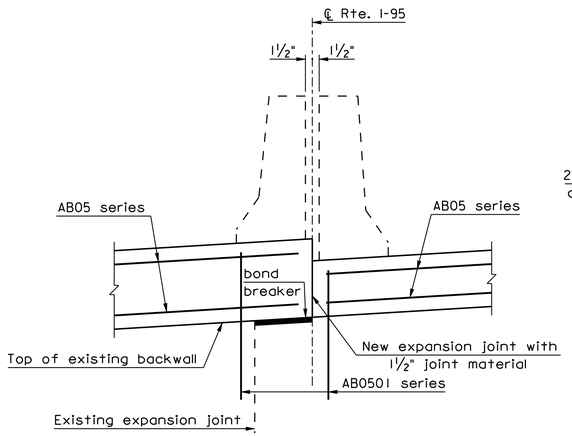
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(31)

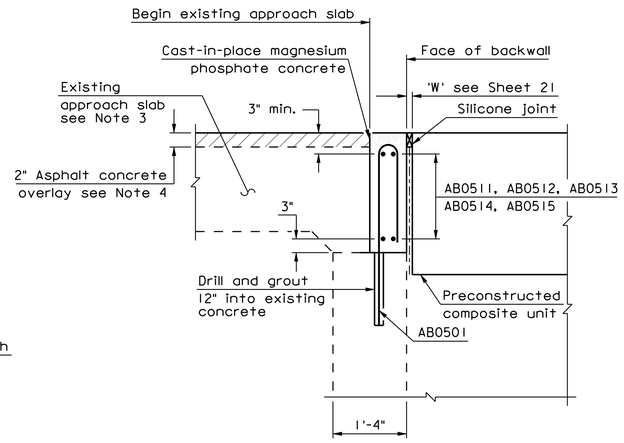


SECTION A
Scale: ¾" = 1'-0" (29|31, 30)

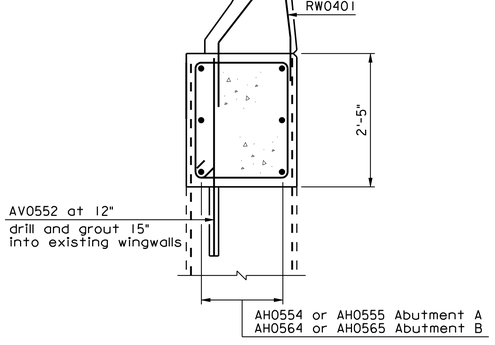


DETAIL C
Scale: ¾" = 1'-0" (29|31, 30)

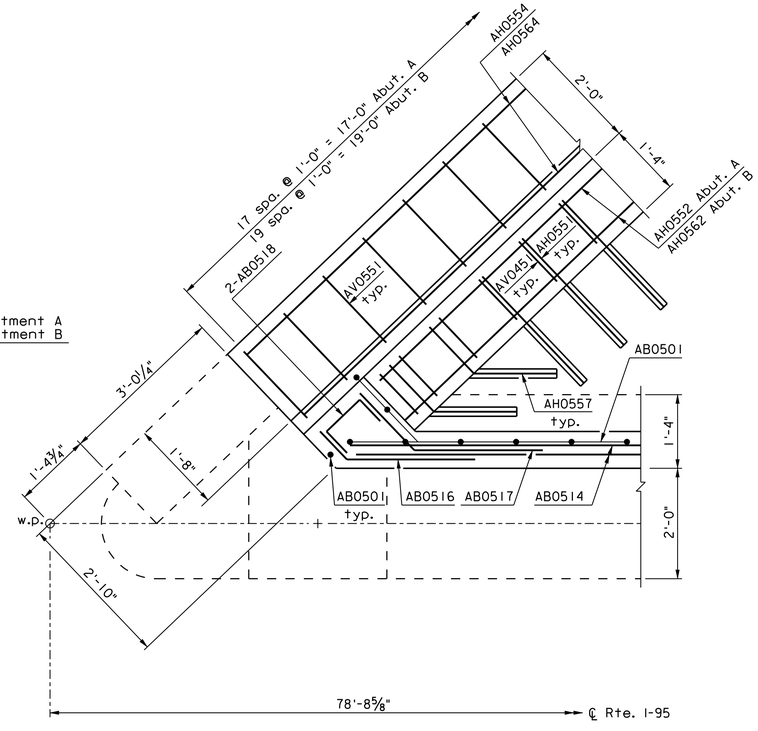
Abutment A shown, Abutment B similar



TYPICAL SECTION - BACKWALL
Scale: ¾" = 1'-0"

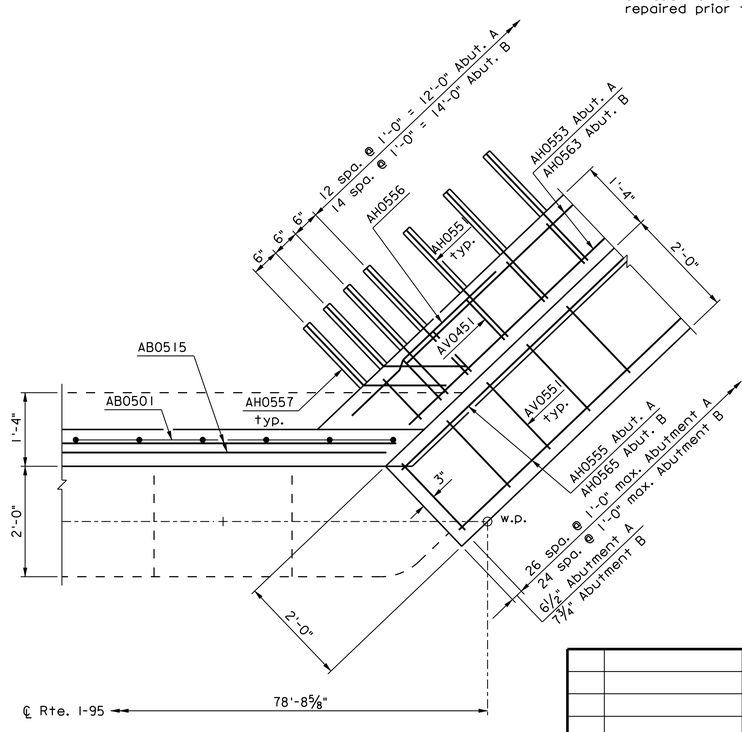


SECTION B
Scale: ¾" = 1'-0" (29|31, 30)



DETAIL A
¾" = 1'-0"

Note: RV0401 and RV0402 not shown for clarity.



DETAIL B
¾" = 1'-0"

Notes:

1. Unless otherwise noted, existing steel shall remain, be cleaned, and re-used in new portion of concrete. Additional reinforcing steel bars shall be spaced at 1 foot, and drilled and grouted into existing concrete, as noted.
2. Contractor shall field cut bars as necessary to meet existing field conditions.
3. Existing asphalt concrete overlay to be removed to expose top of approach slab at original grade.
4. Asphalt concrete overlay to be placed after casting concrete on top of backwall.
5. Cast-in-place magnesium phosphate concrete backwall shall be placed after preconstructed composite units are installed. Top of finished backwall to match top of post-tensioned deck slab.
6. Contractor shall extend existing median barrier over top of backwall. Contractor shall place ½" thick joint filler between top of backwall and bottom of median.
7. AV04 and AV05 series to be galvanized.
8. AH05 and AB05 series to be galvanized.
9. All new reinforcement placed in the reconstruction and repair of the existing abutments shall be electrically continuous so as to facilitate use of the cathodic protection system. Provisions should be made at each abutment to provide electrical connections to the existing backwall reinforcing at two different locations for both the NBL and SBL. See Sheets 36 and 37 for additional details.
10. The Contractor shall provide an Engineer approved plate after the removal of any portion of superstructure. The plate shall be secured underneath and shall remain in place until the magnesium phosphate concrete backwall is ready to be poured.
11. All cracks wider than 1/32" shall be repaired. Areas of abutments subject to spall or delamination shall be repaired prior to beginning any crack sealing work.

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COMMONWEALTH OF VIRGINIA
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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

ABUTMENT DETAILS

Designed: RFH	Date	Plan No.	Sheet No.
Drawn: CJ	October 2009	283-67	31 of 68
Checked: KWL			

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(32)

REINFORCING STEEL SCHEDULE

MARK	NO.	BAR SIZE	PIN DIA. in.	LENGTH ft-in.	WEIGHT lbs.	LOCATION
				SUPERSTRUCTURE		
				CORROSION RESISTANT REINFORCEMENT		
EL0501	138	5		5'-11"	852	SPAN A
EL0502	552	5		10'-0"	5758	SPAN B and C
EL0503	138	5		6'-10"	983	SPAN D
ES0401	1968	4	2"	7-11 ~~7-9~~	~~10142~~	END DIAPHRAGM
ES0402	1968	4	2"	7-10 ~~7-9~~	T0090	END DIAPHRAGM
ES0403	6	4	2"	6'-2"	24	END DIAPHRAGM
ES0404	6	4	2"	5'-1 3/4"	21	END DIAPHRAGM
ES0501	4	5	3 3/4"	6'-1 1/8"	25	END DIAPHRAGM
ES0502	4	5	3 3/4"	2'-10 3/8"	12	END DIAPHRAGM
+ ES0601	12	6		30'-9"	555	END DIAPHRAGM, PCU A
ES0602	12	6		19'-9"	356	END DIAPHRAGM, PCU B
+ ES0603	12	6		20'-4 1/2"	367	END DIAPHRAGM, PCU C
ES0604	64	6		3'-5 3/8"	332	END DIAPH. CLOS. POUR
ES0605	2	6		3'-9"	12	END DIAPH. ABUT. A & B
ES0606	16	6		10'-7"	255	END DIAPHRAGM, INT. GRD.
+ ES0607	8	6		3'-0"	36	END DIAPHRAGM, INT. OH.
+ ES0608	8	6		3'-9"	46	END DIAPHRAGM, INT. OH.
ES0609	2 ~~4~~	6		2'-4"	7 ~~14~~	END DIAPHRAGM, EXT OH.
ES0610	2 ~~4~~	6		3'-1"	9 ~~19~~	END DIAPHRAGM, EXT. OH.
ES0611	1 ~~4~~	6		3'-9"	6 ~~12~~ 23	END DIAPHRAGM, EXT. OH.
ES0612	1 ~~4~~	6		4'-6"	7 ~~14~~ 27	END DIAPHRAGM, EXT. OH.
+ ES0701	88	7		30'-9"	5532	END DIAPHRAGM, PCU A
= ES0702	88	7		19'-9"	3553	END DIAPHRAGM, PCU B
+ ES0703	88	7		20'-4"	3658	END DIAPHRAGM, PCU C
ES0704	400	7		3'-5 3/8"	2819	END DIAPH. CLOS. POUR
ES0706	48	7		10'-7"	1039	END DIAPHRAGM
+ ES0707	24	7		3'-0"	148	END DIAPHRAGM
+ ES0708	24	7		3'-9"	184	END DIAPHRAGM
ES0709	6	7		2'-4"	29	END DIAPH. PCU A-SBL
ES0710	6	7		3'-1"	38	END DIAPH. PCU A-NBL
ES0711	6	7		3'-9"	46	END DIAPH. PCU C-NBL
ES0712	6	7		4'-6"	56	END DIAPH. PCU C-SBL
ES0901	216	9		9'-7 1/4"	7053	CONTINUITY JOINT
+ SC0500	396	5		21'-2"	8742	PCU A, ALL SPANS
= SC0501	514	5		13'-8" ~~13'-4"~~	~~7148~~	PCU B, ALL SPANS
+ SC0502	506	5		14'-0 1/2" ~~13'-10 1/2"~~	~~7323~~ 7411	PCU C, ALL SPANS
+ SC0503	248	5		4'-5 1/2" TO 21'-0 1/4 ~~4'-5 7/8" TO 21'-2"~~	~~3305~~ 3295	PCU A, ALL SPANS
SC0504	256	5		3'-10 1/2" TO 21'-0"	3321	PCU A, ALL SPANS
+ SC0505	272	5		4'-5 1/2" TO 13'-3 1/2 ~~4'-5 7/8" TO 13'-6"~~	~~2551~~ 2518	PCU B, ALL SPANS
SC0506	136	5		4'-10" TO 13'-8" ~~4'-10" TO 13'-10 1/2"~~	~~1327~~ 1312	PCU C, ALL SPANS
+ SC0507	144	5		4'-5 1/2" TO 13'-10 1/2"	1377	PCU C, ALL SPANS
+ SC0600	396	6		21'-2"	12590	PCU A, ALL SPANS
= SC0601	514	6		13'-8" ~~13'-4"~~	~~294~~ 10551	PCU B, ALL SPANS
+ SC0602	506	6		14'-0 1/2" ~~13'-10 1/2"~~	~~T0545~~ 10672	PCU C, ALL SPANS
+ SC0603	248	6		4'-5 1/2" TO 21'-0 1/4 ~~4'-5 7/8" TO 21'-2"~~	~~4778~~ 4745	PCU A, ALL SPANS
SC0604	256	6		3'-10 1/2" TO 21'-0"	4782	PCU A, ALL SPANS
+ SC0605	272	6		4'-5 1/2" TO 13'-3 1/2 ~~4'-5 7/8" TO 13'-6"~~	~~3674~~ 3626	PCU B, ALL SPANS
SC0606	136	6		4'-10" TO 13'-8" ~~4'-10" TO 13'-10 1/2"~~	~~1911~~ 1890	PCU C, ALL SPANS
+ SC0607	144	6		4'-5 1/2" TO 13'-10 1/2"	1983	PCU C, ALL SPANS
SL0501	148	5	2 1/2"	34'-5 1/2"	5319	SLAB SPAN A
SL0502	134	5		33'-0"	4612	SLAB SPAN A
SL0503	296	5	2 1/2"	40'-0"	~~12124~~ 12349	SLAB SPAN B, C
SL0504	268	5		40'-0"	11181	SLAB PLAN B, C
SL0505	296	5	2 1/2"	30'-1 5/8"	9304	SLAB SPAN B, C
SL0506	268	5		28'-7"	7990	SLAB SPAN B, C
SL0507	148	5	2 1/2"	41'-5 1/2"	6400	SLAB SPAN D
SL0508	134	5		40'-0"	5590	SLAB SPAN D
SP0501	492	5	2 1/2"	2'-5" ~~2'-4 1/8"~~	~~1272~~ 1240	POUR BACK
SP0502	492	5		2'-2"	1112	POUR BACK
SP0503	24	5		3'-1"	77	POUR BACK
SP0504	96	5		11'-4"	1135	POUR BACK
SP0505	96	5		3'-8"	367	POUR BACK
SP0506	24	5		4'-6"	113	POUR BACK
SP0507	48	5		3'-3"	163	POUR BACK
SC0572	~~2600~~	5	2594	2'-4 5/8"	~~6468~~ 6453	CLOSURE POUR
SC0672	~~2600~~	6	2594	2'-4 3/8"	~~9235~~ 9214	CLOSURE POUR
			TOTAL WEIGHT IN PRECEDING GROUP		~~212217~~ ~~223274~~ 223284	

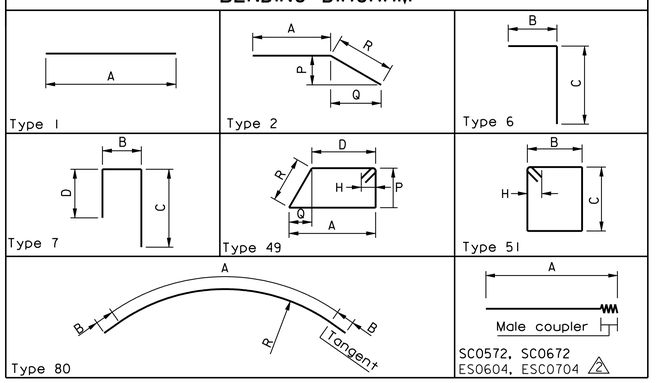
DIMENSION TABLE

MARK	TYPE	A ft-in.	B ft-in.	C ft-in.	D ft-in.	E P ft-in.	F Q ft-in.	G R ft-in.	H ft-in.	I S ft-in.	J T ft-in.	K U ft-in.	L ft-in.	V ft-in.	N
EL0501	1	5'-11"													
EL0502	1	10'-0"													
EL0503	1	6'-10"													
ES0401	51		2'-8"	1'-0 3/8"											
ES0402	49	2'-10 1/4"	1'-10 1/4"	1'-0 3/8"	2'-2 3/8"	1'- 0 3/8"	0'-6 1/8"	1'-2 3/8"	0'-2 7/8"						
ES0403	51								0'-2 7/8"						
ES0404	51		1'-3 1/2"	1'-0 3/8"					0'-2 7/8"						
ES0501	6		3'-3 1/4"	2'-11 1/2"											
ES0502	2	1'-6 1/2"				0'-11 3/8"	0'-11 3/4"	1'-4 1/4"							
ES0601	1	30'-9"													
ES0602	1	19'-9"													
ES0603	1	20'-4 1/2"													
ES0604	1	2'-11"													
ES0605	1	3'-9"													
ES0606	1	10'-7"													
ES0607	1	3'-0"													
ES0608	1	3'-9"													
ES0709	1	2'-4"													
ES0610	1	3'-1"													
ES0611	1	3'-9"													
ES0612	1	4'-6"													
ES0701	1	30'-9"													
ES0702	1	19'-9"													
ES0703	1	20'-4"													
ES0704	1	3'-5 3/8"													
ES0706	1	10'-7"													
ES0707	1	3'-0"													
ES0708	1	3'-9"													
ES0709	1	2'-4"													
ES0710	1	3'-1"													
ES0711	1	3'-9"													
ES0712	1	4'-6"													
ES0901	80	8'-10"	0'-4"					16'-9 1/8"							
SC0500	1	21'-2"													
SC0501	1	13'-4"													
SC0502	1	13'-10 1/2"													
SC0503	1	VARIES													
SC0504	1	VARIES													
SC0505	1	VARIES													
SC0506	1	VARIES													
SC0507	1	VARIES													
SC0600	1	21'-2"													
SC0601	1	13'-4"													
SC0602	1	13'-10 1/2"													
SC0603	1	VARIES													
SC0604	1	VARIES													
SC0605	1	VARIES													
SC0606	1	VARIES													
SC0607	1	VARIES													
SL0501	7		33'-0"	0'-10"	0'-10"										
SL0502	1	33'-0"													
SL0503	6		39'-3 1/4"	0'-10"											
SL0504	1	40'-0"													
SL0505	6		29'-5"	0'-10"											
SL0506	1	28'-7"													
SL0507	7		40'-0"	0'-10"	0'-10"										
SL0508	1	40'-0"													
SP0501	6		0'-4" ~~1'-2"~~	2'-2" ~~0'-7 1/2"~~	~~1'-5"~~										
SP0502	1	2'-2"													
SP0503	1	3'-1"													
SP0504	1	11'-4"													
SP0505	1	3'-8"													
SP0506	1	4'-6"													
SP0507	1	3'-3"													
SC0572	1	2'-4 5/8"													
SC0672	1	2'-4 3/8"													

DIMENSION VARIATION TABLE

MARK	NO. EA. LEN.	DIMEN-SION	FROM ft.-in.	TO ft.-in.	VARY BY ft.-in.	DIMEN-SION	FROM ft.-in.	TO ft.-in.	VARY BY ft.-in.
SC0503	8	A	4'-5 7/8"	21'-2"	0'-6 5/8"				
SC0504	8	A	3'-10 1/2"	21'-0"	0'-6 5/8"				
SC0505	16	A	4'-5 7/8"	13'-6"	0'-6 3/4"				
SC0506	8	A	4'-10"	14'-8"	0'-7 3/8"				
SC0507	8	A	4'-5 1/2"	14'-10"	0'-7 3/8"				
SC0603	8	A	4'-5 7/8"	21'-2"	0'-6 5/8"				
SC0604	8	A	3'-10 1/2"	21'-0"	0'-6 5/8"				
SC0605	16	A	4'-5 7/8"	13'-6"	0'-6 3/4"				
SC0606	8	A	4'-10"	14'-8"	0'-7 3/8"				
SC0607	8	A	4'-5 1/2"	14'-10"	0'-7 3/8"				
+ SC0503	8	A	4'-5 1/2"	21'-0 1/4"	0'-6 5/8"				
+ SC0504	8	A	3'-10 1/2"	21'-0"	0'-6 5/8"				
+ SC0505	16	A	4'-5 1/2"	13'-3 1/2"	0'-6 5/8"				
SC0506	8	A	4'-10"	13'-8"	0'-6 5/8"				
+ SC0507	8	A	4'-5 1/2"	13'-10 1/2"	0'-6 5/8"				
+ SC0603	8	A	4'-5 1/2"	21'-0 1/4"	0'-6 5/8"				
SC0604	8	A	3'-10 1/2"	21'-0"	0'-6 5/8"	2			
+ SC0605	16	A	4'-5 1/2"	13'-3 1/2"	0'-6 5/8"				
SC0606	8	A	4'-10"	13'-8"	0'-6 5/8"				
+ SC0607	8	A	4'-5 1/2"	13'-10 1/2"	0'-6 5/8"				

BENDING DIAGRAM



Notes:

1. Dimensions in Bending Diagram are out-to-out of bars.
2. If fabrication of deck slab bar is not possible for length detailed and multiple bars are required, bars shall have the least number of Class B splices possible. Splices shall be located approximately at points of contraflexure and splices in alternate bars shall be located in different bays.
3. Straight bars (top and bottom) may be substituted for truss bars (SB series) in the deck superstructure at no extra cost to the state.
4. Bar marks shown with a '+' character in the margin shall have a female coupler provided at one end. Dimensions given for these bars are from end of bar to end of coupler. Bars shown with a '=' character in margin shall have a female coupler provided at each end. Dimensions for these bars are from out-to-out of couplers. Contractors shall be responsible for adjusting bar dimensions for coupler lengths.

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
Lic. No. 019609
PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date
3	Revised Reinforcing	1-7-11
2	Revised Reinforcing	9-22-10

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

REINFORCING STEEL SCHEDULE 1

Designed: ALC	Date	Plan No.	Sheet No.
Drawn: CJ	October 2009	283-67	32 of 68
Checked: JAU			

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FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(33)

REINFORCING STEEL SCHEDULE

MARK	NO.	BAR SIZE	PIN DIA. in.	LENGTH ft-in.	WEIGHT lbs.	LOCATION
				GALVANIZED		
				ABUTMENT A		
AB0501	154	5	2 3/4"	2'-10 7/8"	468	BACKWALL
AB0511	4	5		24'-6"	102	BACKWALL
AB0512	4	5		22'-6"	94	BACKWALL
AB0513	8	5		29'-0"	242	BACKWALL
AB0514	4	5		19'-5"	81	BACKWALL
AB0515	4	5		22'-10"	95	BACKWALL
AB0516	2	5	3 3/4"	3'-6 3/4"	7	BACKWALL
AB0517	2	5	3 3/4"	3'-11 3/4"	8	BACKWALL
AB0518	2	5	2 1/2"	2'-4"	5	BACKWALL
AV0451	33	4	2"	3'-6"	77	WINGWALL
AV0551	45	5	2 1/2"	8'-1"	379	WINGWALL
AV0552	45	5		3'-5"	160	WINGWALL
AH0551	28	5		2'-0"	58	WINGWALL
AH0552	4	5		15'-5"	64	WINGWALL
AH0553	4	5		13'-0"	54	WINGWALL
AH0554	6	5		17'-1"	107	WINGWALL
AH0555	6	5		25'-6"	160	WINGWALL
AH0556	2	5		4'-0"	8	WINGWALL
AH0557	4	5	3 3/4"	2'-0"	8	WINGWALL
			Total weight in preceding group		~~2180~~ 2177	3
				ABUTMENT B		
AB0501	154	5	2 3/4"	2'-10 7/8"	468	BACKWALL
AB0511	4	5		24'-6"	102	BACKWALL
AB0512	4	5		22'-6"	94	BACKWALL
AB0513	8	5		29'-0"	242	BACKWALL
AB0514	4	5		19'-5"	81	BACKWALL
AB0515	4	5		22'-10"	95	BACKWALL
AB0516	2	5	3 3/4"	3'-6 3/4"	7	BACKWALL
AB0517	2	5	3 3/4"	3'-11 3/4"	8	BACKWALL
AB0518	2	5	2 1/2"	2'-4"	5	BACKWALL
AV0451	35	4	0'-2"	3'-6"	84	WINGWALL
AV0551	44	5	0'-2 1/2"	8'-1"	371 ~~379~~	WINGWALL
AV0552	45	5		3'-5"	160	WINGWALL
AH0551	32	5		2'-0"	66	WINGWALL
AH0562	4	5		17'-6"	73	WINGWALL
AH0563	4	5		14'-10"	62	WINGWALL
AH0564	6	5		19'-1"	119	WINGWALL
AH0565	6	5		23'-8"	148	WINGWALL
AH0556	2	5		4'-0"	8	WINGWALL
AH0557	4	5	0'-3 3/4"	2'-0"	8	WINGWALL
			Total weight in preceding group		~~2209~~ 2201	3

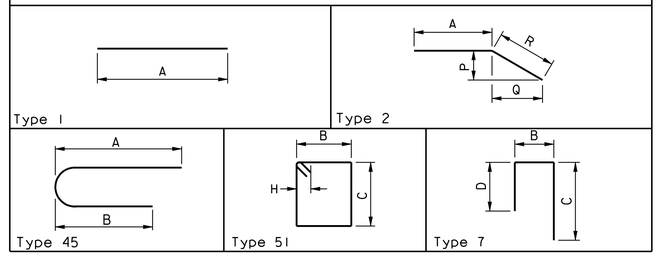
DIMENSION TABLE

MARK	TYPE	A ft-in.	B ft-in.	C ft-in.	D ft-in.	E P ft-in.	F Q ft-in.	G R ft-in.	H ft-in.	I S ft-in.	J T ft-in.	K U ft-in.	L ft-in.	V ft-in.	N
AB0501	45	2'-0"	0'-9"												
AB0511	1	24'-6"													
AB0512	1	22'-6"													
AB0513	1	29'-0"													
AB0514	1	19'-5"													
AB0515	1	22'-10"													
AB0516	2	3'-0"				0'-5"	0'-5"	0'-7"							
AB0517	2	3'-0"				0'-8 1/2"	0'-8 1/2"	1'-0"							
AB0518	7	1'-0"		1'-0"	1'-0"										
AV0451	51		0'-10"	0'-8"					0'-2 7/8"						
AV0551	51		1'-8"	2'-1"					0'-3 5/8"						
AV0552	1	3'-5"	3'-5"												
AH0551	1	2'-0"													
AH0552	1	15'-5"													
AH0553	1	13'-0"													
AH0554	1	17'-1"													
AH0555	1	25'-6"													
AH0556	1	4'-0"													
AH0557	2	1'-0"				0'-8 1/2"	0'-8 1/2"	1'-0"							
AB0501	45	2'-0"	0'-9"												
AB0511	1	24'-6"													
AB0512	1	22'-6"													
AB0513	1	29'-0"													
AB0514	1	19'-5"													
AB0515	1	22'-10"													
AB0516	2	3'-0"				0'-5"	0'-5"	0'-7"							
AB0517	2	3'-0"				0'-8 1/2"	0'-8 1/2"	1'-0"							
AB0518	7		1'-0"	1'-0"	0'-7"										
AV0451	51		0'-10"	0'-8"					0'-2 7/8"						
AV0551	51		1'-8"	2'-1"					0'-3 5/8"						
AV0552	1	3'-5"													
AH0551	1	2'-0"													
AH0562	1	17'-6"													
AH0563	1	14'-10"													
AH0564	1	19'-1"													
AH0565	1	23'-8"													
AH0556	1	4'-0"													
AH0557	2	1'-0"				0'-8 1/2"	0'-8 1/2"	1'-0"							

DIMENSION VARIATION TABLE

MARK	NO. EA. LEN.	DIMEN-SION	FROM ft.-in.	TO ft.-in.	VARY BY ft.-in.	DIMEN-SION	FROM ft.-in.	TO ft.-in.	VARY BY ft.-in.
2 ~~AB0502~~	~~22~~	~~A~~	~~2'-9 1/2"~~	~~3'-5 1/2"~~		~~H~~	~~1'-1 1/2"~~	~~1'-9 1/2"~~	~~2"~~

BENDING DIAGRAM



Notes:

1. Dimensions in Bending Diagram are out-to-out of bars.
2. If fabrication of deck slab bar is not possible for length detailed and multiple bars are required. Bars shall have the least number of Class B splices possible. Splices shall be located approximately at points of contraflexure and splices in alternate bars shall be located in different bays.
3. Straight bars (top and bottom) may be substituted for truss bars (SB series) in the deck superstructure at no extra cost to the state.

JOSEPH E. HARDEE, JR.
Lic. No. 019609
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date
3	Revised Reinforcing	1-7-11
2	Revised Reinforcing	9-22-10

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

REINFORCING STEEL SCHEDULE II

Designed: BFH	Date	Plan No.	Sheet No.
Drawn: KWL	October 2009	283-67	33 of 68
Checked: KWL			

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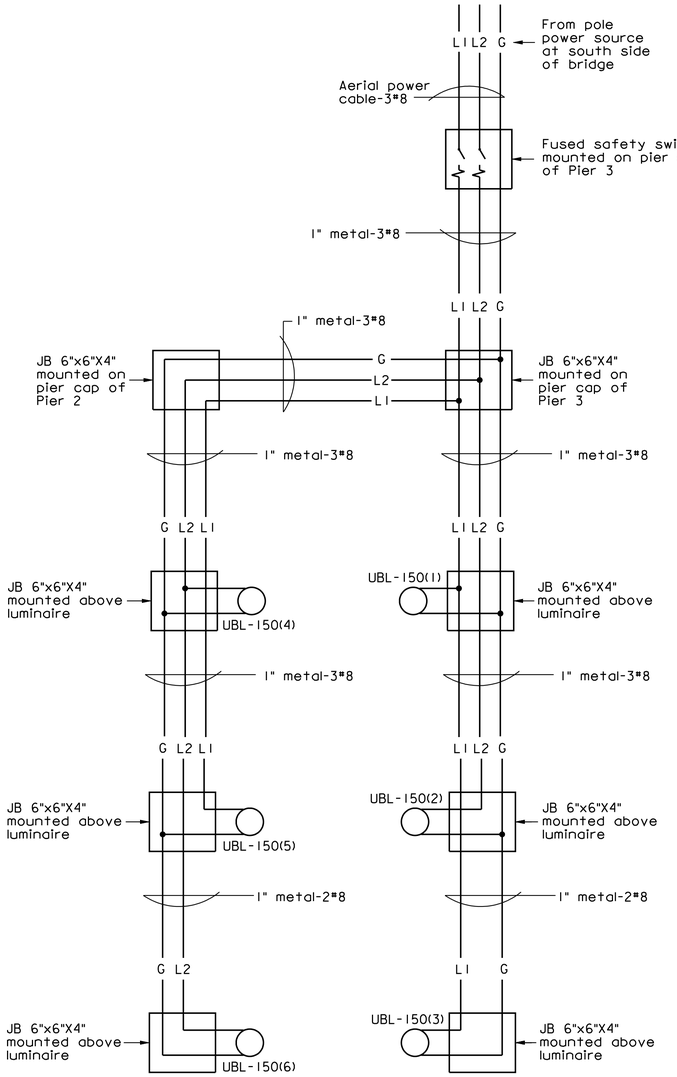
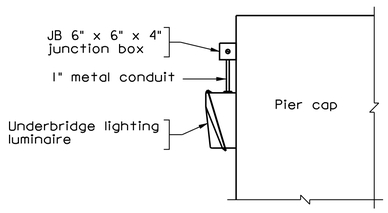
FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.
		ROUTE	PROJECT	ROUTE	PROJECT	
3	VA.	I-95	NH-095-1(247)	95	7095-964-115, B696	27(34)

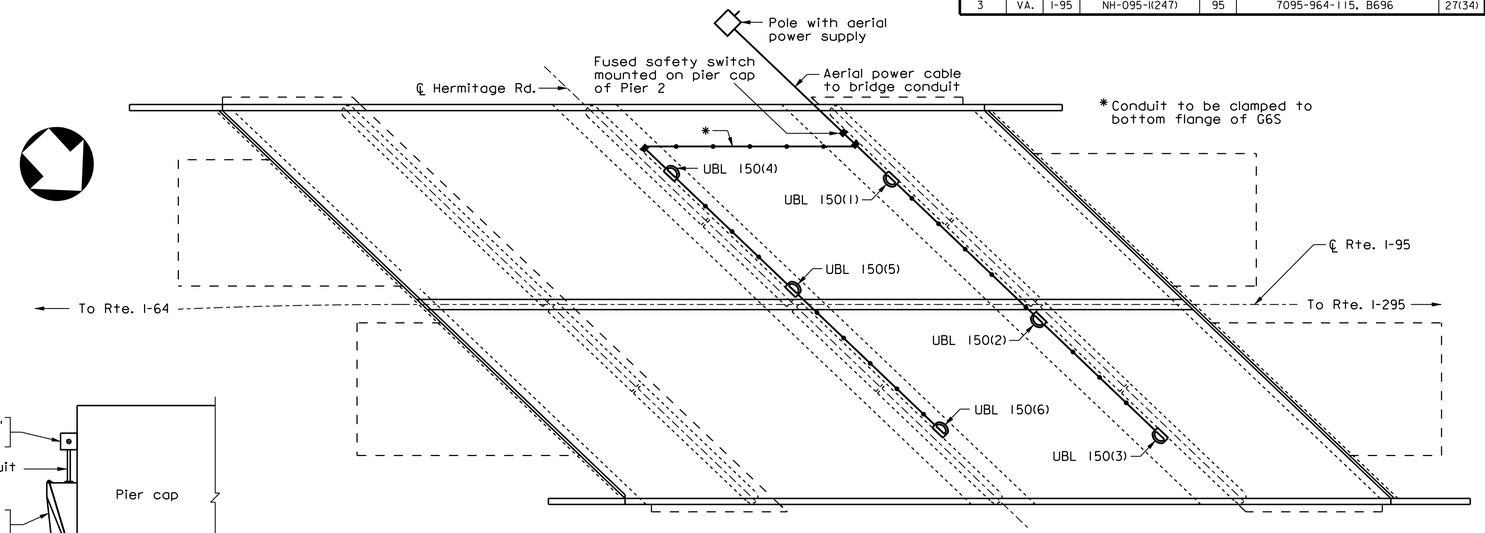


UNDERBRIDGE LIGHTING - WIRING DIAGRAM

Not to scale

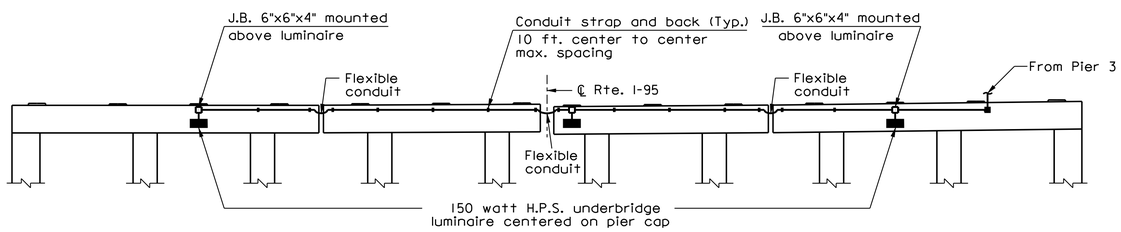


LUMINAIRE MOUNTING DETAIL



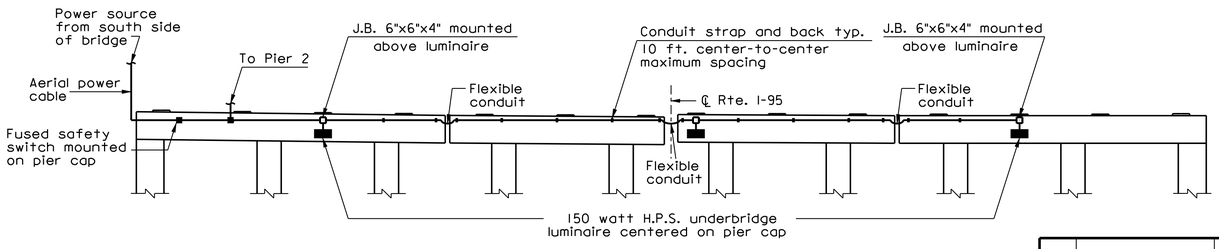
HERMITAGE ROAD

Scale: 1" = 20'



PIER 2 - NORTH FACE

Not to scale



PIER 3 - SOUTH FACE

Not to scale

Notes:

1. The cost of removing the existing conduit and lighting is to be considered incidental to the cost of demolition and removal of the superstructure.
2. Removal of the existing conduit and lighting is to be coordinated with the Contractor performing the substructure repairs.

COMMONWEALTH OF VIRGINIA
JAMES HARRINGTON
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PROFESSIONAL ENGINEER

URS Corporation
Virginia Beach, Va.
Electrical Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

UNDER BRIDGE LIGHTING

Designed: GEE
Drawn: GWJ
Checked: KMH

Date	Plan No.	Sheet No.
October 2009	283-67	34 of 68

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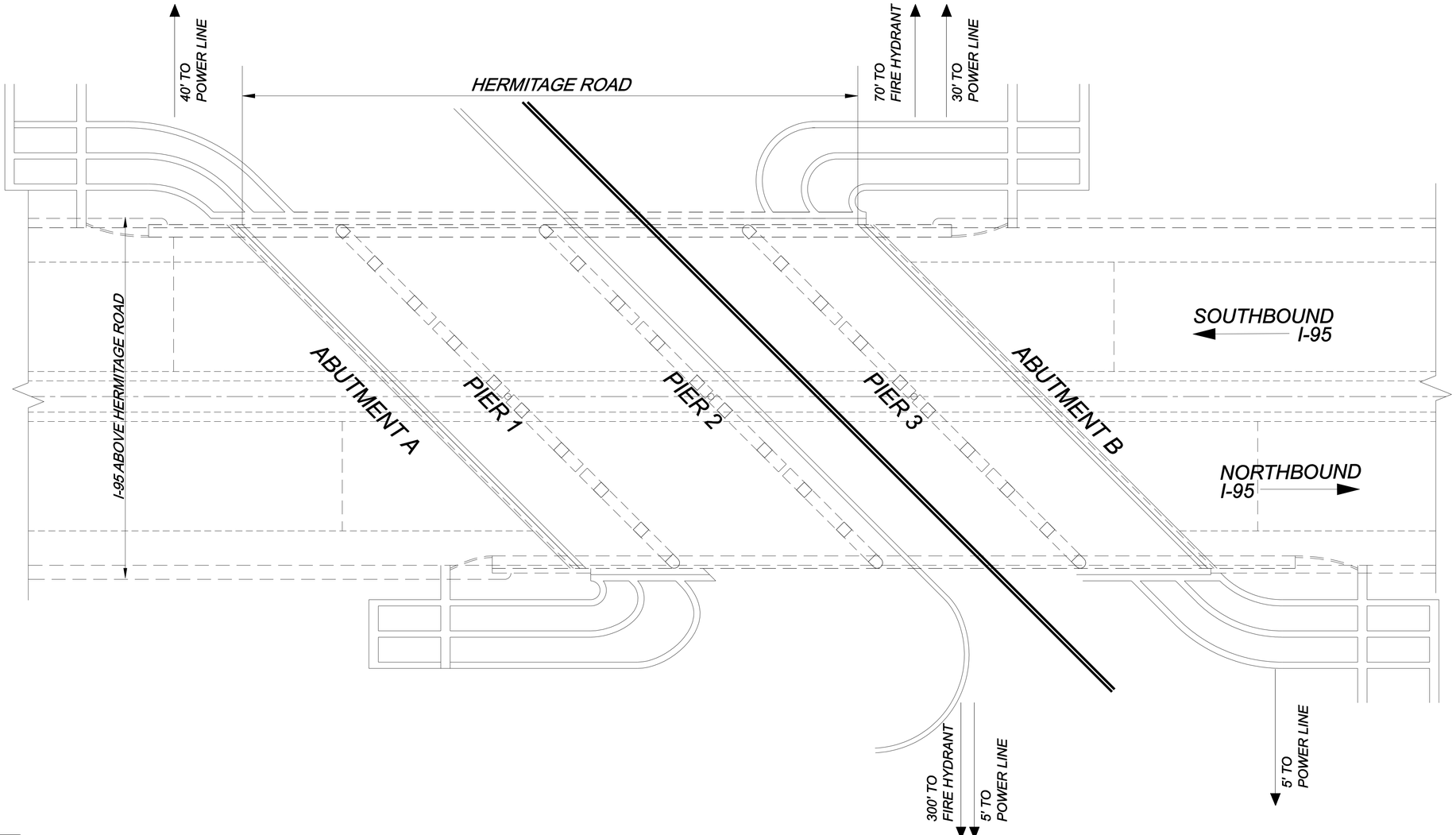
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36)

I-95 OVER HERMITAGE ROAD	
	TOTAL ECE (SQ/FT)
ABUTMENT A	1258
ABUTMENT B	1183
PIER 1	4290
PIER 2	4444
PIER 3	4524
TOTAL ECE	**15,699**



COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
Lic. No. 019609
PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

HERMITAGE ROAD ECE TREATMENT

Designed: S.V.
Drawn: B.J.
Checked: M.M.

Date	Plan No.	Sheet No.
October 2009	283-67	36 OF 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36a)

ELECTROCHEMICAL CHLORIDE EXTRACTION NOTES

1. The Contractor shall identify & mark all delaminated & spalled areas on the concrete surface.

2. The contractor shall remove (per the special provisions) all delaminated concrete & patch it with a VDOT approved material. The patch concrete shall be standard Portland Cement Concrete with resistivities 15,000 ohm-om or less. High resistivity additives such as letex, silica fume, flu ash or other similar materials are not allowed. This work is not a part of the Electrochemical Chloride Extraction (ECE) work.

3. Electrical continuity between all exposed rebars (during repairs) shall be measured by the Contractor, documented & submitted to the Engineer for approval prior to patching the structure.

4. All discontinuous metals shall be made continuous, by the contractor, by bonding it to the existing rebar. All bonding shall be checked & approved by the Engineer's Consultant prior to patching.

5. ECE contractor shall check continuity between reinforcements and metals (both exposed and embedded) and correct all discontinuitites prior to ECE treatment.

6. All metal drain pipes, embedded in bridge members, shall be made continuous with the reinforcement prior to ECE treatment.

7. All cracks 1/32" or more shall be repaired with an approved pressure-injected epoxy crack sealer prior to ECE treatment. Areas of pier subject to spall or delamination shall be repaired prior to beginning any crack-sealing work. This work is not part of the ECE work.

8. The pier shall be completely repaired & all repair material cured for 28 days prior to ECE treatment.

9. The Contractor shall perform half-cell potential survey to locate the two most anodic locations per zone.

10. The concrete surface shall be prepared by pressure washing &/or light sandblasting prior to spraying the Cellulose fiber. The Cellulose fiber shall completely cover the anode & shall be approximately 2" thick but at least 1" between the anode & the concrete surface.

11. The Cellulose fiber shall be kept wet at all times using a wetting system (irrigating at intervals to keep the electrolyte wet at all times). The ECE areas shall be wrapped tightly with plastic to prevent drying of electrolyte. The plastic wrapping shall have at least 1/2" width overlap.

12. The spacers between the anode & the concrete surface shall be about 1" thick. It shall be attached to the concrete surface using long plastic anchors of sufficient length. The spacers shall be placed at every 4 feet or less.

13. Each individual anode mesh panel within a sub zone shall be made continuous to the next one, within that subzone, by at least two connections.

14. Anode in each sub zone shall be isolated from adjacent sub zones.

15. The gap between zones shall not exceed 6"

16. The gap between the sub zones shall not exceed 3".

17. All bearing pads 6" or higher shall receive ECE on all sides of the bearing pads.

18. The anode on the sides of the bearing pads shall be made continuous with the anode on top surface of the pier cap (min. two connections per pad).

19. Each zone shall have a separate junction box, unless noted otherwise on plan (affixed on the structure as shown).

20. Steel anode shall be at least 6" from any exposed metal.

21. All electrolyte supply lines and anchors (if any) shall be plastic.

22. Each subzone shall have an electrolyte feed line.

23. Steel anode shall extend 1' (12") below grade or to existing concrete grade level where appropriate.

24. Any existing metal conduits (for lighting) shall be made continuous with the rebar.

25. Electrolyte flow shall be controlled in such a way that there is no apparent electrical short between the ECE anode and the rebar/exposed metal.

26. All wires from the junction box to the rectifier shall be black #4/4 SO & shall be clearly labeled at both ends.

27. All wiring from the junction box to the rectifier & from the rectifier to the pole shall conform to all local & other applicable code requirements.

28. All cables from the junction box to the anode subzones shall be red #10AWG THHN (or larger as required) & all cables to the rebar shall be black #6 AWG THHN. If there is only one anode zone in a junction box, the anode wire size shall be red #6 AWG THHN.

29. There shall be at least two anode connections per subzone. Anode wires to each subzone shall be clearly labeled at the junction box.

30. There shall be at least two rebar connections per subzone. All wires from the junction box to the rebars shall be clearly labeled at the junction box.

31. All exposed wires at connections to rebar and the anode shall be coated with epoxy.

32. No wire-splicing is allowed between the anode and the junction box or beetween the rebar and the junction box.

33. There shall be only one zone per rectifier circuit. Each circuit of the rectifier shall be capable of 40V, 100A. Rectifiers shall be rated to operate continuously at maximum output under site conditions of temperature and relative humidity.

34. The operating parameters (i.e. rectifier voltage, current and current to individual subzone) shall be recorded two times a day until the values stabilize. Subsequently, it shall be recorded once a day. All operating parameters shall be submitted to the Engineer. Any problems with current output shall be identified and corrected by the contractor immediately.

35. Any disruption to the ECE treatment shall be recorded by the Engineer's Consultant along with reason for such disruption.

36. At the start of the ECE process, the current density shall be kept between 1A/m^2 to 2A/m^2 but shall not exceed 4mA/m^2 at any time during the ECE process. The contractor shall not operate at or near the upper current limit of 0.36A/ft^2 (4A/m^2) for more than 2days during the entire treatment period.

37. ECE shall be performed until a total charge of 900 A-hr/m^2 is achieved. If the contractor is not able to achieve a total charge of 900 A-hr/m^2 in 60 days, he shall inform the Engineer & obtain the approval of the Engineer prior to terminating the ECE treatment. The Engineer's decision is final & binding.

38. Contractor will be responsible for maintaining a safe zone around all work areas & that all public is protected from the danger of high voltage/high current ECE operation.

39. Contractor shall be responsible for power & electrolyte required for ECE. He shall obtain any license and/or permits required from local authorities to get power and water to the job site. The contractor shall be responsible for removal of all such temporary connections after the completion of ECE treatment.

40. The ECE work shall be paid for at the contract lump sum price. This price shall include all Materials, Labor, Tools, Equipment, Installation, Data Collection, Removal, Disposal, and all incidentals necessary to complete the project.

41. The contractor is responsible for the removal and proper disposal of cellulose and anode material. The removal shall start only after the Engineer approves the end of ECE treatment.

42. Two 2" diameter window (made of gluing a 2" diameter PVC pipe, 4" long) shall be installed in each ECE Zone. This window shall be installed prior to installing steel anode mesh.

43. All measurements are approximates. Exact measurements are to be verified on-site by contractor.

44. ECE zoning measurements are calculated from top of structural element to 1' below grade level.

45. All excavation done at site for ECE treatment shall be returned to original appearance at end of treatment.

46. The ECE contractor is not allowed to combine ECE zones/subzones unless it is approved by the Engineer.

47. The contractor shall coordinate all ECE and CP work with the Engineer's Consultant. The contractor shall provide at least one week advance notice to the Engineer's Consultant.

48. The contractor shall coordinate and schedule all ECE and CP related work in concent with the Engineer's Consultant.

49. The contractor is resposible for any patent and associated costs for ECE treatment.

50. After completing the ECE treatment, the contractor shall apply graffiti resistant coating per the special provision, except at Hermitage Road.

COMMONWEALTH OF VIRGINIA
JOSEPH E. HARDEE, JR.
Lic. No. 019609
PROFESSIONAL ENGINEER

URS Corporation
Richmond, Va.
Structural Engineer

No.	Description	Date

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

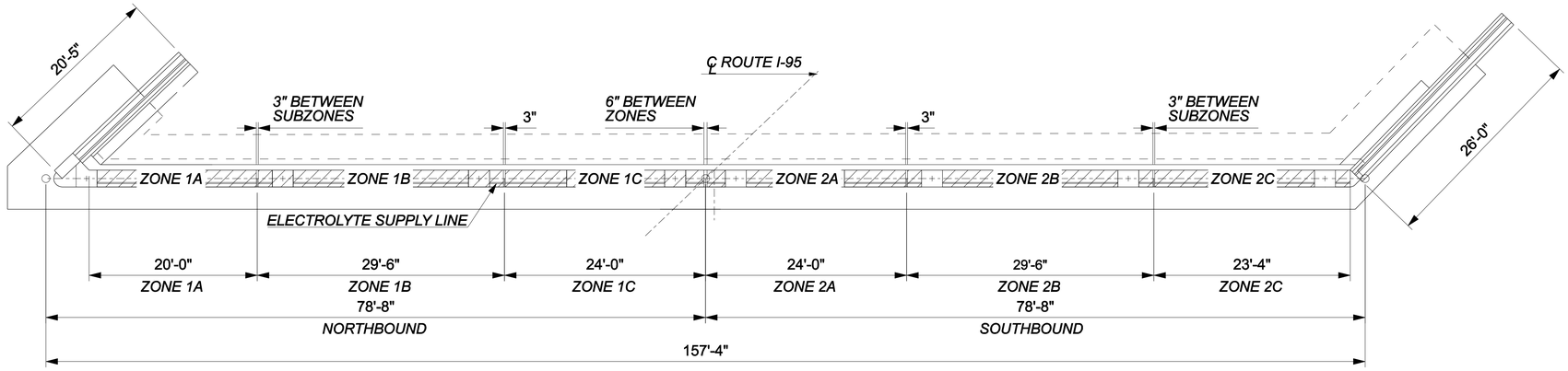
NOTES SHEET

Designed: SV.
Drawn: .....BJ
Checked: .MM.

Date	Plan No.	Sheet No.
October 2009	283-67	36a of 68

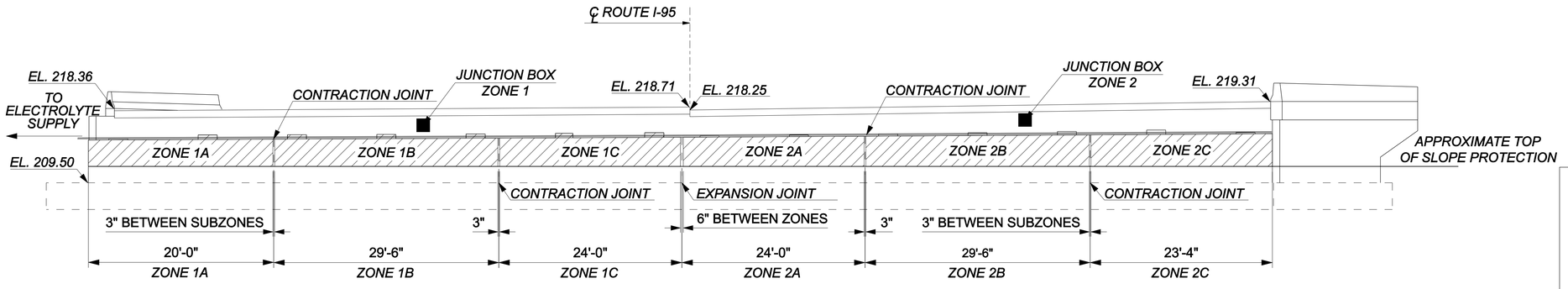
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36B)

ABUTMENT A ECE TREATMENT	
ABUTMENT A	1258 SQ/FT
ZONE #1	612 SQ/FT
ZONE #2	646 SQ/FT



ABUTMENT A PLAN

N.T.S.



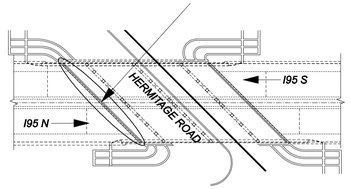
ABUTMENT A ELEVATION

N.T.S.

LEGEND

- JUNCTION BOX
- ECE TREATMENT
- ELECTROLYTE SUPPLY LINE

ABUTMENT A - HERMITAGE ROAD



* ALL MEASUREMENTS ARE APPROXIMATE. EXACT MEASUREMENTS ARE TO BE VARIFIED ON SITE.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

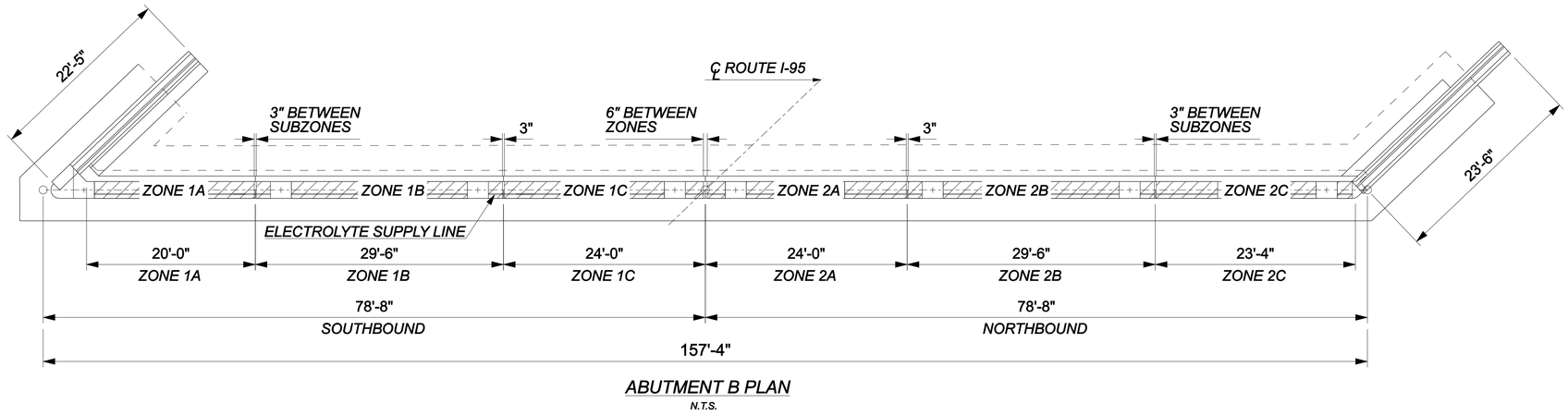
ABUTMENT A ECE TREATMENT

Designed: SV.
Drawn: ..... RJ
Checked: MM.

Date	Plan No.	Sheet No.
October 2009	283-67	36B OF 68

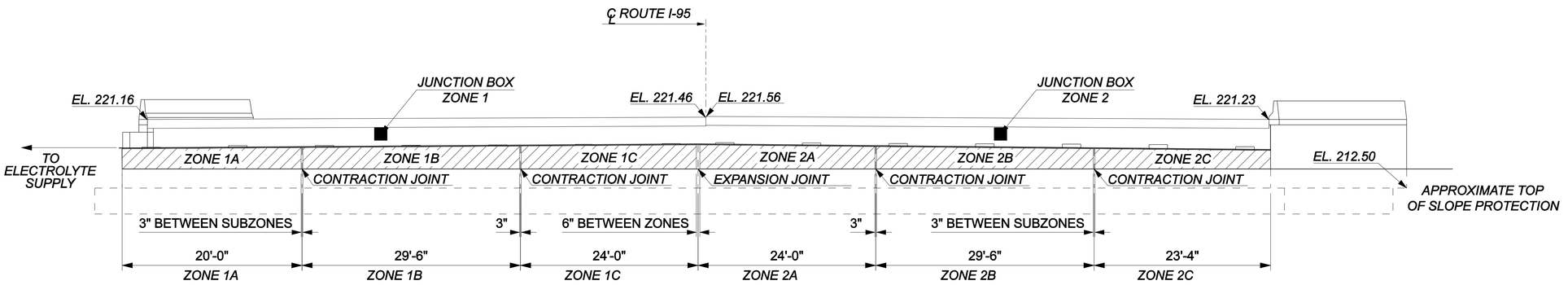
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36C)

ABUTMENT B ECE TREATMENT	
ABUTMENT B	1183 SQ/FT
ZONE #1	596 SQ/FT
ZONE #2	587 SQ/FT



ABUTMENT B PLAN

N.T.S.



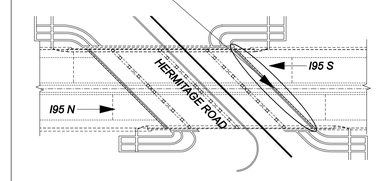
ABUTMENT B ELEVATION

N.T.S.

LEGEND

- JUNCTION BOX
- ECE TREATMENT
- ELECTROLYTE SUPPLY LINE

ABUTMENT B - HERMITAGE ROAD



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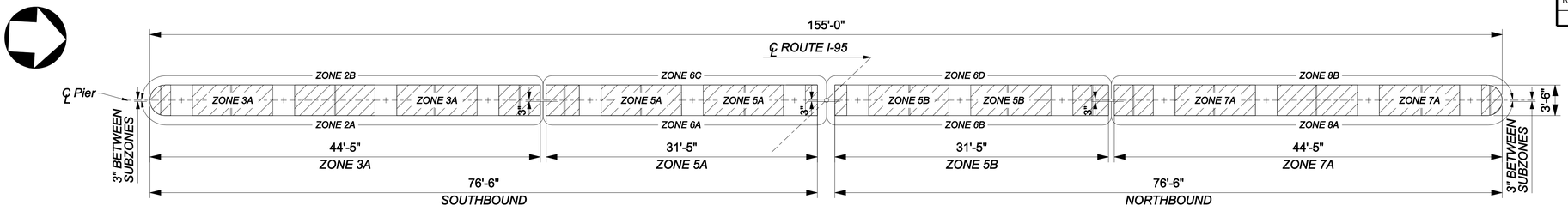
STRUCTURE AND BRIDGE DIVISION

ABUTMENT B ECE TREATMENT

Designed: SV.
Drawn: ..... RJ
Checked: MM.

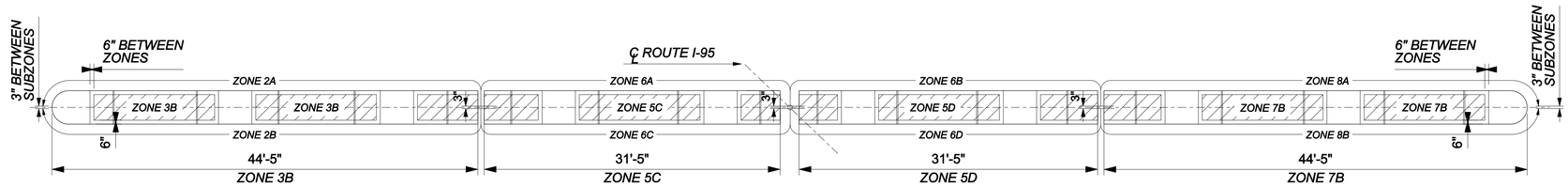
Date	Plan No.	Sheet No.
October 2009	283-67	36C OF 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36D)



PIERS 1 & 3 PLAN

N.T.S.



PIERS 1 & 3 CAP UNDERSIDE

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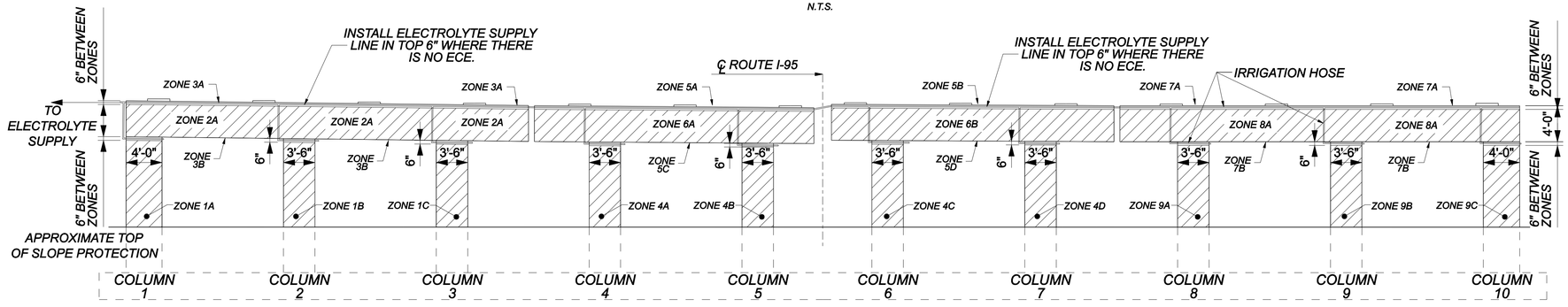

PIERS 1 & 3 SOUTH FACE

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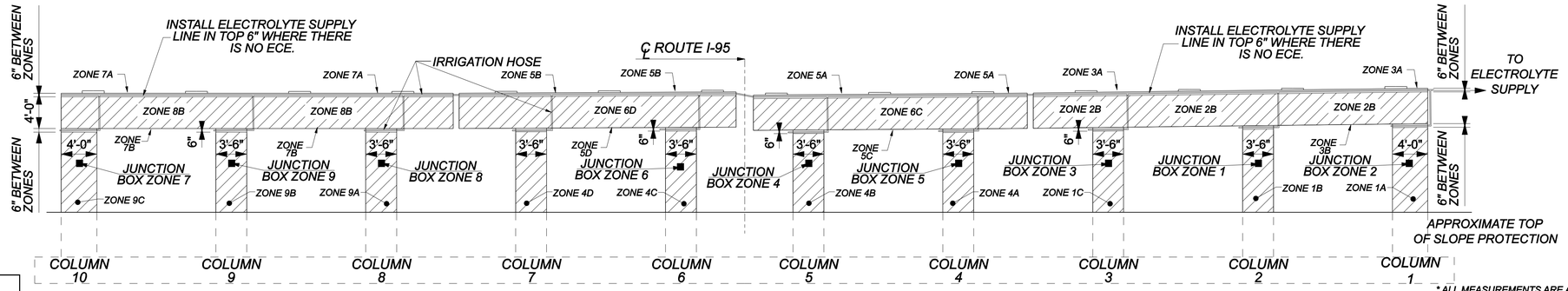


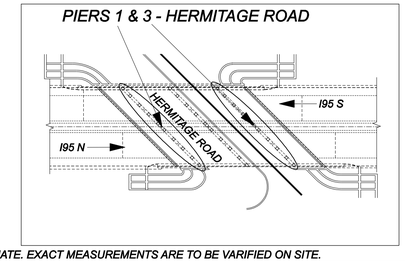
PIERS 1 & 3 NORTH FACE

N.T.S.

PIERS 1 & 3 ECE TREATMENT	
PIER 1	4290 SQ/FT
ZONE #1	609 SQ/FT
ZONE #2	378 SQ/FT
ZONE #3	272 SQ/FT
ZONE #4	822 SQ/FT
ZONE #5	391 SQ/FT
ZONE #6	559 SQ/FT
ZONE #7	272 SQ/FT
ZONE #8	378 SQ/FT
ZONE #9	609 SQ/FT
PIER 3	4524 SQ/FT
ZONE #1	679 SQ/FT
ZONE #2	378 SQ/FT
ZONE #3	272 SQ/FT
ZONE #4	916 SQ/FT
ZONE #5	391 SQ/FT
ZONE #6	559 SQ/FT
ZONE #7	272 SQ/FT
ZONE #8	378 SQ/FT
ZONE #9	679 SQ/FT

LEGEND

- JUNCTION BOX
- ECE TREATMENT
- ELECTROLYTE SUPPLY LINE



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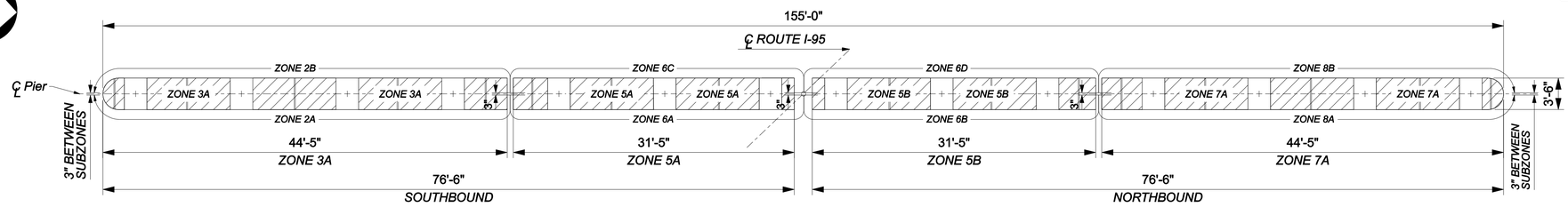
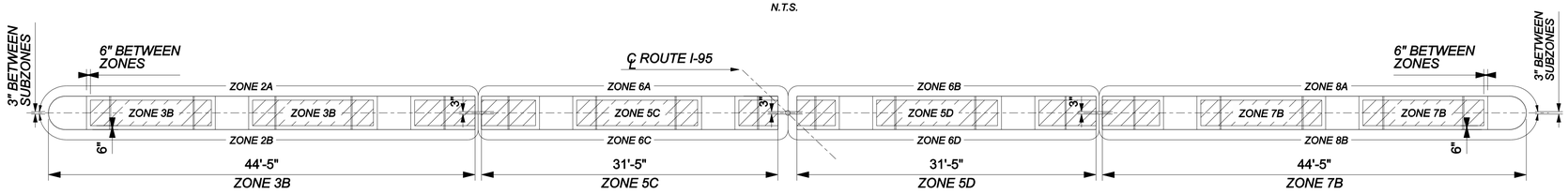
PIERS 1 & 3 ECE TREATMENT

Designed: SV. Drawn: ....BJ Checked: MM.	Date	Plan No.	Sheet No.
	October 2009	283-67	36D OF 68

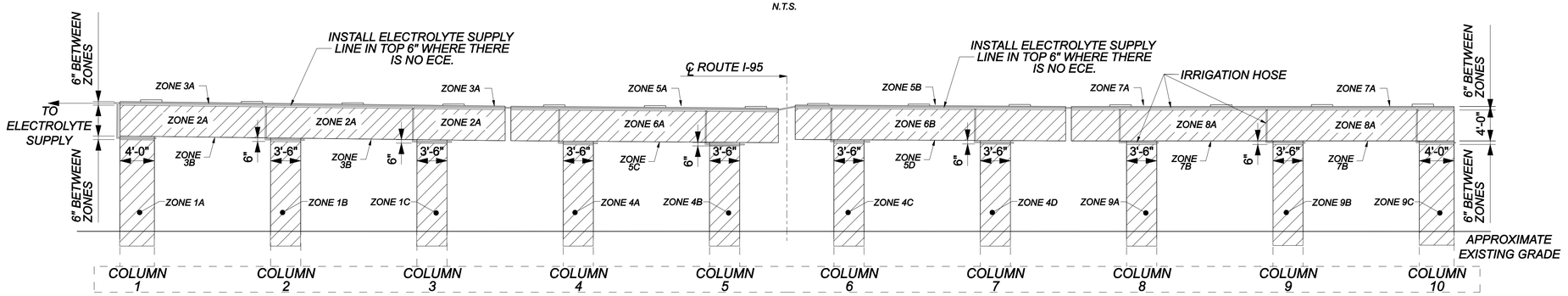
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36E)



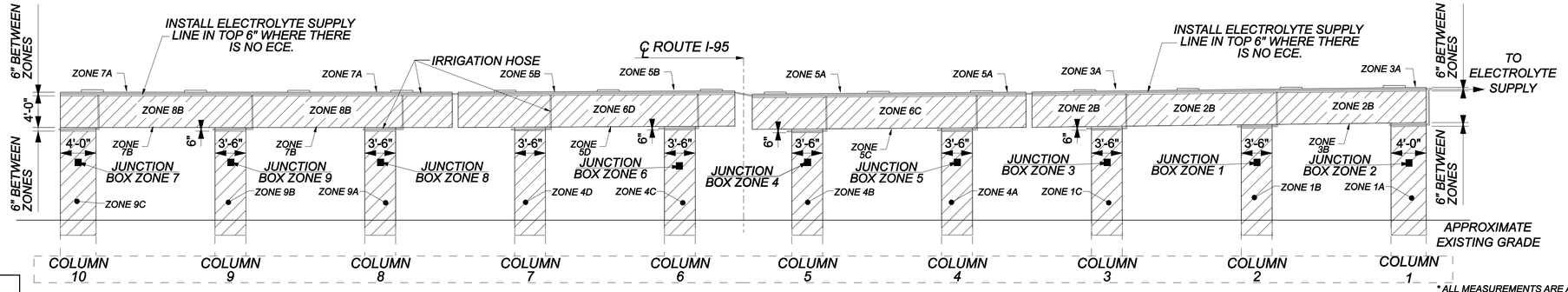
PIER 2 PLAN
N.T.S.



PIER 2 CAP UNDERSIDE
N.T.S.



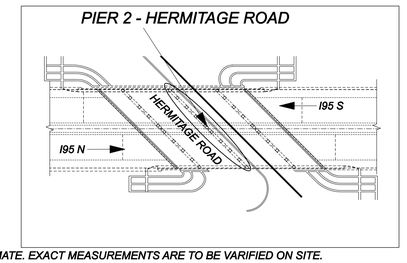
PIER 2 SOUTH FACE
N.T.S.



PIER 2 NORTH FACE
N.T.S.

PIER 2 ECE TREATMENT	
PIER 2	4444 SQ/FT
ZONE #1	655 SQ/FT
ZONE #2	378 SQ/FT
ZONE #3	272 SQ/FT
ZONE #4	884 SQ/FT
ZONE #5	391 SQ/FT
ZONE #6	559 SQ/FT
ZONE #7	272 SQ/FT
ZONE #8	378 SQ/FT
ZONE #9	655 SQ/FT

LEGEND
- JUNCTION BOX
- ECE TREATMENT
- ELECTROLYTE SUPPLY LINE



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PIER 2
ECE TREATMENT

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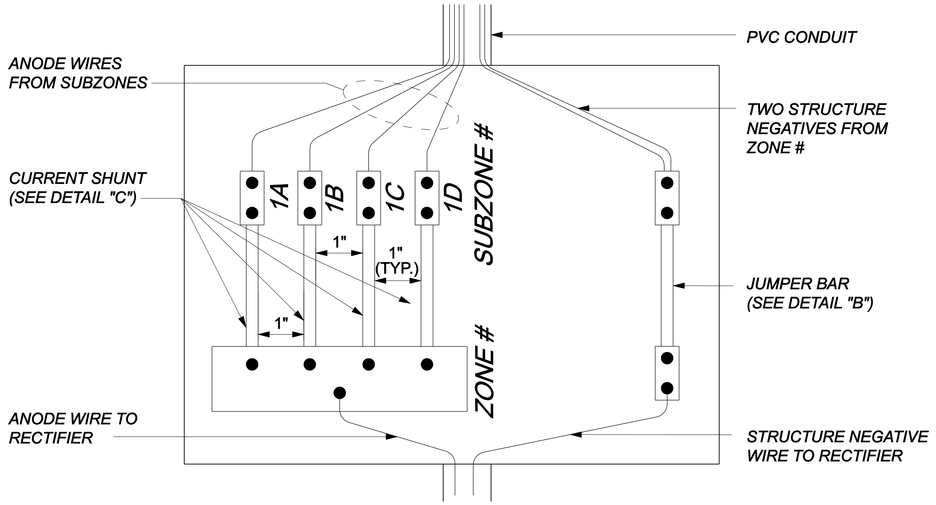
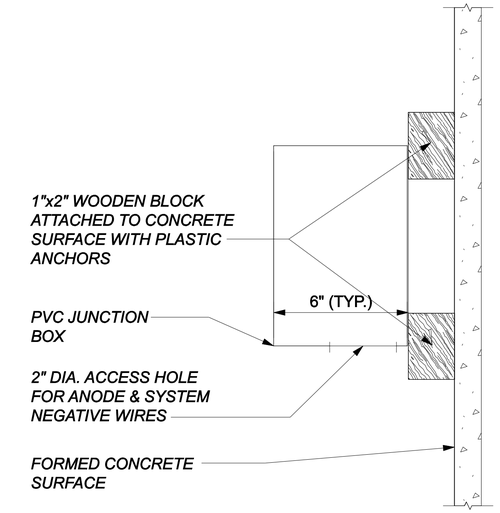
Checked: M.M.

Date	Plan No.	Sheet No.
October 2009	283-67	36E OF 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36f)



A/2 JUNCTION BOX DETAIL (TYP.)
SCALE: N.T.S.



D/2 JUNCTION BOX CONNECTION DETAIL (TYP.)
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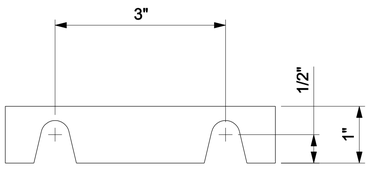
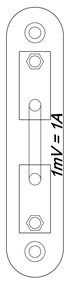


B/2 JUMPED BAR DETAIL
SCALE: N.T.S.



C/2 SHUNT DETAIL (TYP.)
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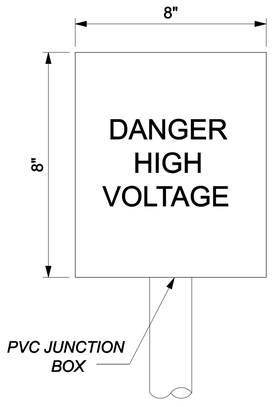

E/1 JUNCTION BOX DETAIL (TYP.)
SCALE: N.T.S.

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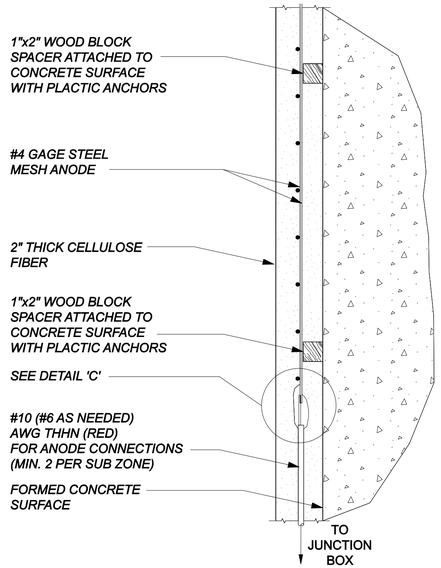
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

DETAIL SHEET I

Designed: S.V.
Drawn: B.J
Checked: M.M.

Date	Plan No.	Sheet No.
October 2009	283-67	36f of 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36g)



A 3 STEEL MESH CONNECTION TO JUNCTION BOX DETAIL
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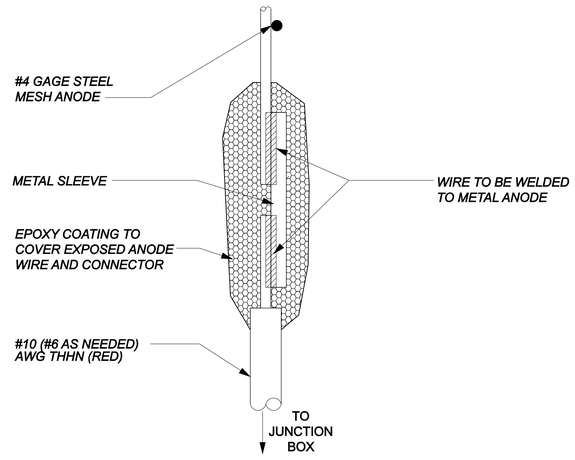
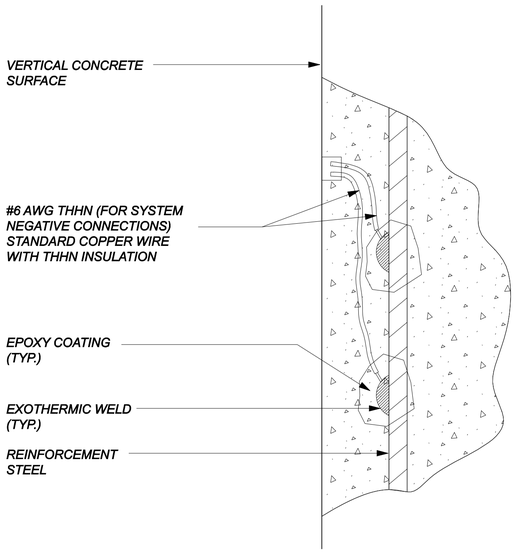
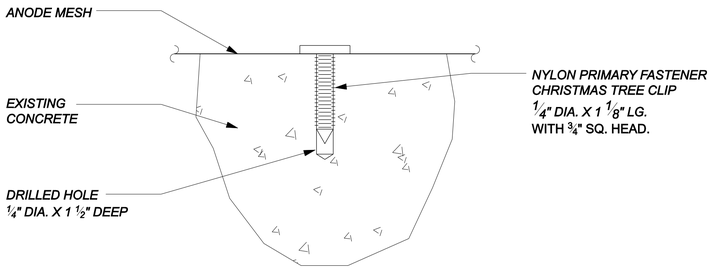


C 3 WIRE CONNECTION TO ANODE DETAIL
SCALE: N.T.S.



B 3 COPPER WIRE CONNECTION TO REBAR
SCALE: N.T.S.



D 3 ANODE FASTENER DETAIL (CHRISTMAS TREE CLIP)
SCALE: N.T.S.

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COMMONWEALTH OF VIRGINIA
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STRUCTURE AND BRIDGE DIVISION

DETAIL SHEET II

Designed: S.V.
Drawn: B.J
Checked: M.M.

Date	Plan No.	Sheet No.
October 2009	283-67	36g of 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(36h)

NOTES:
1. CONNECT INSULATED HOSE GOING FROM A WATER PRESSURE REGULATOR (P.R.) AT THE NEAREST ACCESSIBLE FIRE HYDRANT TO A P.R. AT THE TOP MOST POINT OF STRUCTURE (AS SEEN IN DIAGRAM).
2. SOAKER HOSE SHALL BE CONNECTED TO THE TOP P.R. AND BE FASTENED TO THE AREAS BETWEEN ZONES.
3. SOAKER HOSE SHALL BE CONNECTED TO THE SURFACE OF THE CONCRETE USING CHRISTMAS TREE CLIPS (SEE DETAIL).
4. SOAKER HOSE SHALL BE PLACED OVER THE ELECTROLYTE MEDIA AND ECE MESH, BUT UNDER PLASTIC WRAP (SEE DETAIL).
5. SOAKER HOSE SHALL BE PLACED BETWEEN BEARING PADS.

KEY:

WATER PRESSURE REGULATER — P.R.

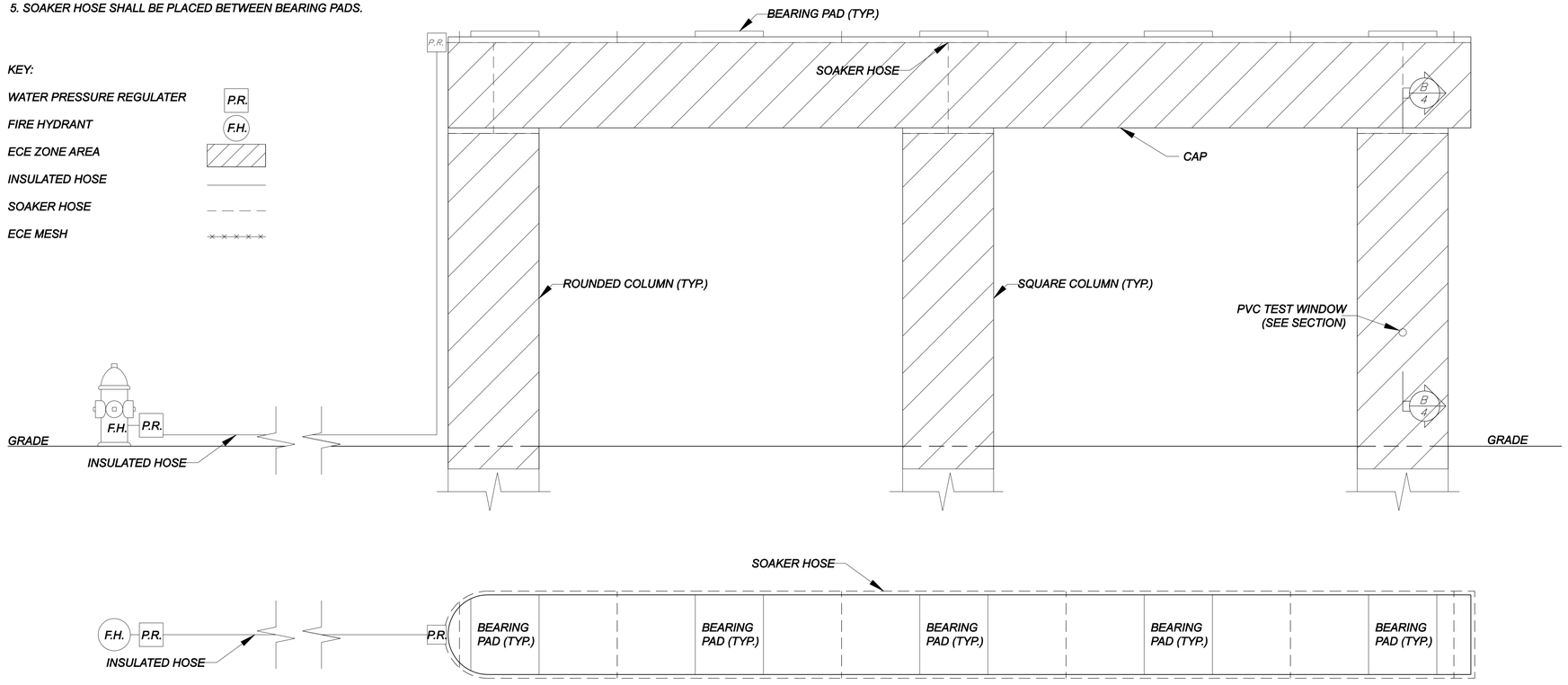
FIRE HYDRANT — F.H.

ECE ZONE AREA

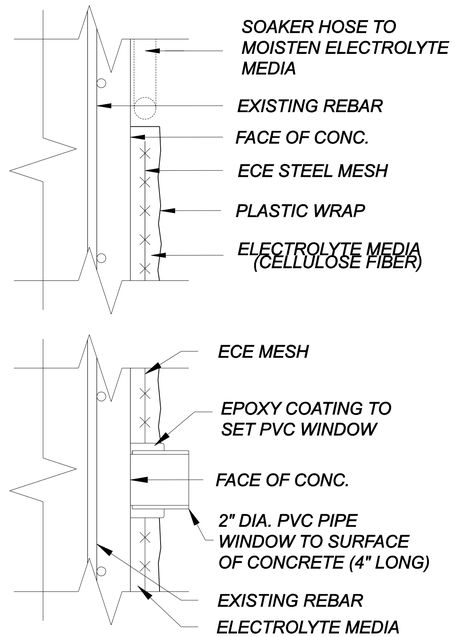
INSULATED HOSE

SOAKER HOSE

ECE MESH



A/3 FIRE HYDRANT TO STRUCTURE DIAGRAM
SCALE: N.T.S.



B/3 SECTION
SCALE: N.T.S.

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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

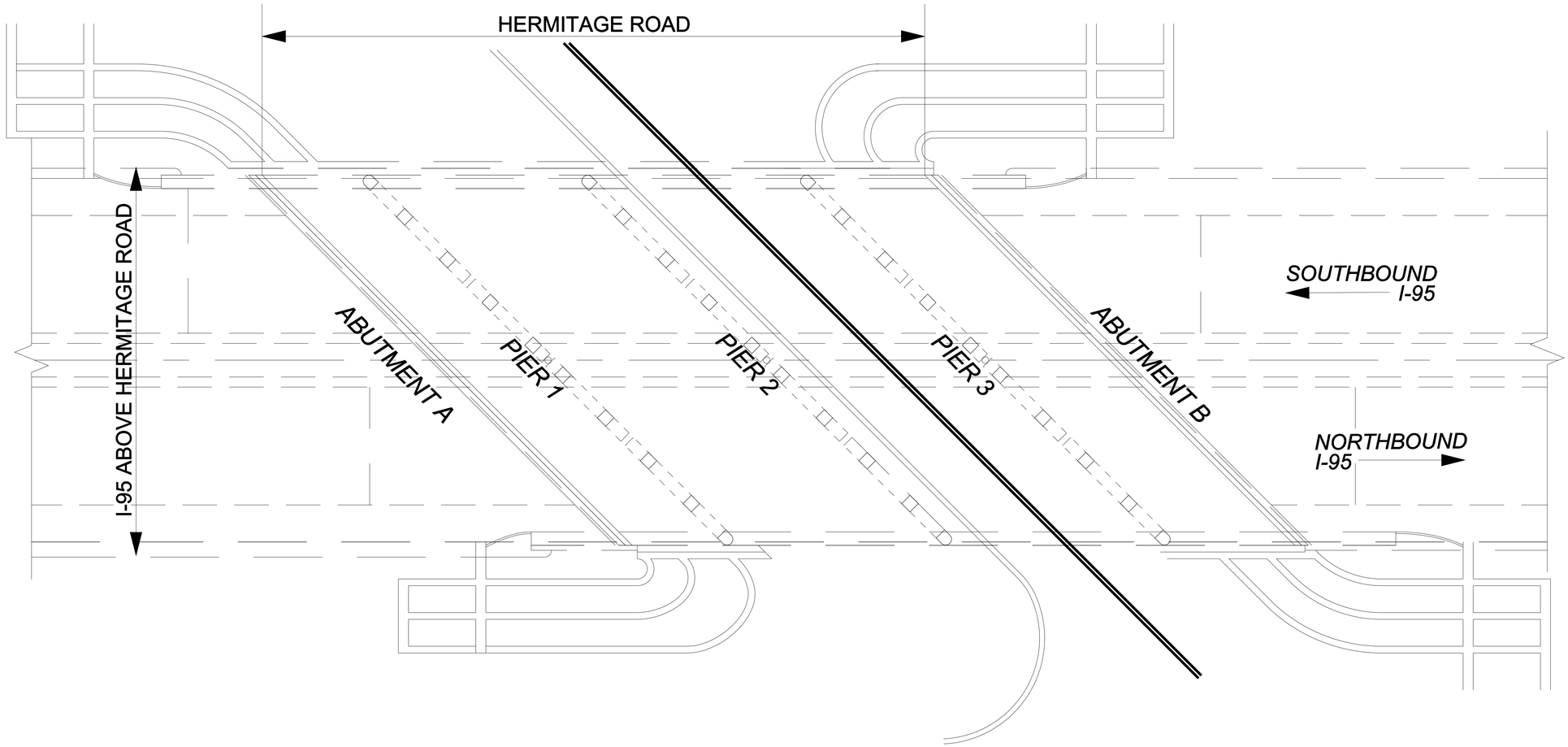
DETAIL SHEET III

Designed: S.V.
Drawn: B.J.
Checked: M.M.

Date	Plan No.	Sheet No.
October 2009	283-67	36h of 65

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(37)

I-95 OVER HERMITAGE ROAD	
	TOTAL CP (SQ/FT)
ABUTMENT A	1258
ABUTMENT B	1183
PIER 1	4290
PIER 2	4444
PIER 3	4524
TOTAL CP	**15,699**



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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

HERMITAGE ROAD CP TREATMENT

Designed: SV.
Drawn: .....BJJ
Checked: .MM.

Date	Plan No.	Sheet No.
October 2009	283-67	37 of 68

FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.
		ROUTE	PROJECT	ROUTE	PROJECT	
3	VA.			95	7095-964-115, B696	27(37A)

CATHODIC PROTECTION NOTES

1. The sacrificial CP system shall be applied within 12 weeks of the completion of ECE treatment.

2. Abrasive blasting shall not commence before concrete repairs are completed and patch materials are allowed to cure properly.

3. Surfaces shall be thoroughly cleaned (vacuum or dry air) within 15 minutes of the start of the thermal spray application. Any oil, grease, soil, water or other foreign matter that may have deposited on the surface after surface preparation has been completed shall be removed before the spray application.

4. Coating application shall only be performed when the concrete surface is clean and dry. Tests shall be performed prior to metalizing to determine the presence of moisture in the concrete. If significant moisture is present, a portable propane-powered weed burner may be used to achieve adequate low concrete moisture levels.

5. For monitoring sites, all metallic components or appurtenances such as drainpipes, conduits or bearing steel plates, shall be isolated from the anode and temporarily covered with suitable masking materials, which shall extend from the objects by at least one-half inch on the concrete surfaces.

6. Surfaces not intended to be metalized which are adjacent to, or in close proximity to the surface to be metalized, shall be protected during metalizing. The masked surfaces shall form straight horizontal and vertical lines.

7. Anode connector plates shall be installed per this specification. The spray application of the sacrificial anode shall begin by metalizing the concrete area where the anode connector plates are to be installed. Spray two passes of the anode coating, install the connector plate, fasten the anode connector plates to the concrete, clean the concrete surface, spray additional passes over the connector plate to achieve specified thickness and proceed toward the surrounding concrete.

8. There shall be at least two (2) anode connector plates per zone. At non-monitoring sites, each anode connector plate shall be directly attached to the reinforcing steel using a threaded galvanized rod (STUD).

9. The anode shall not be sprayed when the concrete surface temperature is less than 41°F (5°C), unless the concrete surface is preheated with a torch prior to the thermal spray application. The enclosure temperature and surfaces to be sprayed shall be at a minimum of 9°F (5°C) above dew point.

10. The metalizing shall extend one foot (1') beyond the line where the old and new concrete surfaces meet.

11. The coating should be applied in multiple passes and should overlap on each pass in a crosshatch pattern before the first layer of material cools down. The contractor shall use a minimum of four (4) passes. Uniform gun movement should be used to ensure a consistent thickness.

12. Metalized areas shall have uniform appearance, free of visible coating defects such as: cracking, burning, blistering, uncoated areas and other similar defects that will affect the functioning of the coating.

13. The contractor shall achieve a final anode thickness of 12 to 16mils. Material usage logs shall be used to document installation of the proper anode quantity. For confirmation of the material usage, the thickness of the coating shall be measured at a minimum of five (5) locations per 100ft^2(9.3m^2) using a reverse Eddy current thickness gage, such as the Defelsko Positector 6000.

14. Areas of low thickness shall be repaired as follows (at no additional cost to the state):
    - A. Clean the existing anode by lightly blasting the areas without exposing large aggregates.
    - B. Re-apply the sacrificial anode coating using the procedures outlined in this specification.
    - C. Inspect the sprayed anode for proper thickness and adhesion to the existing coating.

15. Adhesion strength between the anode coating and concrete substrate shall be measured with a Defelsko Positest AT-C Pull-Off Adhesion Tester, or equal. Adhesion strength tests shall be performed between 24hours and 72hours after metalizing. A minimum of three (3) adhesion tests shall be performed per 1000ft^2(93m^2) of concrete surface. The average of the three tests shall be used for that location.

16. The target adhesion strength of the sacrificial anode coating shall be greater that 75psi (518Kpa). The target adhesion strength value shall be verified prior to the start of the spraying operation. The contractor shall prepare, clean and spray three (3) horizontal and three (3) vertical two feet by two feet (2'x2') test areas in accordance with this special provision. The contractor shall remove and re-apply anode in all areas where the bond strength is less that 50psi or if the coating shows cracking, blistering or other visible defects.

17. If the anode coating fails in test area, the contractor shall remove all of the anode coating and reapply it.

FOR MONITORING SITES:

18. There shall be at least two (2) anode connector plates per zone at monitoring sites.

19. Two (2) silver-silver chloride reference electrodes shall be installed during the concrete repair stage in each area designated as monitoring site.

20. The reference electrode shall be situated at the same depth as the rebar/pre-stressing steel.

21. An identification tag shall be affixed to the end of the cable indicating the reference electrode location and number.

22. The reference electrode excavation shall be patched with approved Portland Cement Grout or concrete with 5905 OHM-IN (15,000 OHM-CM) resistivity or less. The reference electrode shall be fully encapsulated within cementitious backfill material. The backfill material shall completely fill the excavation and no voids or separation shall exist between the reference electrode and the backfill concrete.

23. The connection of each ground wire to the reinforcing steel shall be made using pin brazing or tack welding, in accordance with manufacturers' instructions. The connection of any exposed copper stranded wires in the excavated area shall be completely coated with a 100% solid epoxy.

24. The spray application of the sacrificial anode shall begin by metalizing the area(s) in which the anode connector plates are installed. Spray two (2) passes of the anode coating, install the connector plate, fasten the anode connector plate to the concrete, clean the concrete surface, spray additional passes over the connector plate to achieve specified thickness and proceed toward the surrounding concrete. If a short circuit is detected, all installation work shall stop until the short is identified and eliminated.

25. The perimeter of the junction boxes and test boxes shall be caulked with GE-All Outdoor Weather Caulk material. The caulking shall achieve water tightness to shelter the anode plate connector, wires, shunts and other metals housed inside.

26. All cathodic protection wires shall be identified in the junction boxes/test boxes using durable identification tags.

27. Route all lead wires from the embedded reference electrodes and their grounds, without splices, to the test box. All wiring shall be installed in PVC conduit.

28. The contractor is responsible for any patent and associated costs of the CP system.

29. After installing the CP anode, the contractor shall apply graffiti resistant coating per the special provision.

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Richmond, Va.
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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

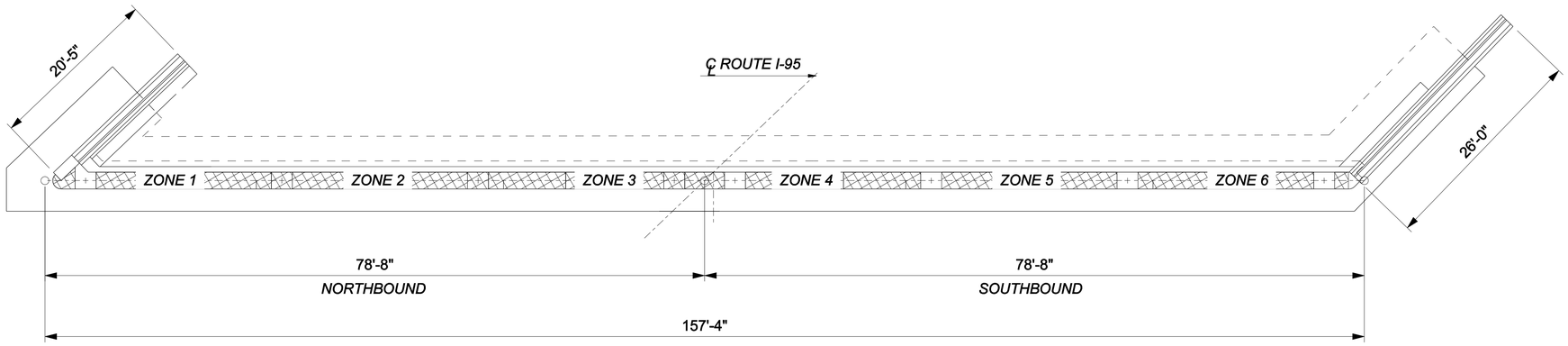
STRUCTURE AND BRIDGE DIVISION

NOTES SHEET

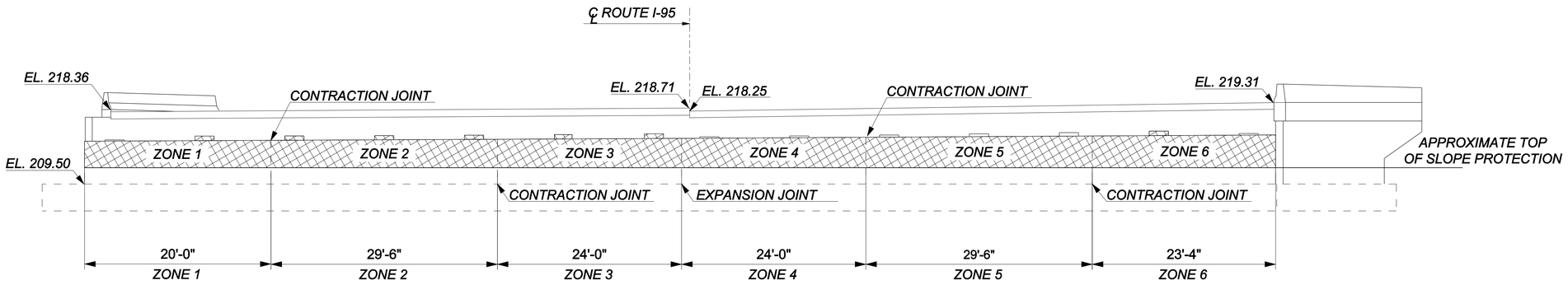
Designed: SV.
Drawn: ..... BJ
Checked: MM.

Date	Plan No.	Sheet No.
October 2009	283-67	37A of 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	
3	VA.			95	7095-964-115, B696	27(37B)	



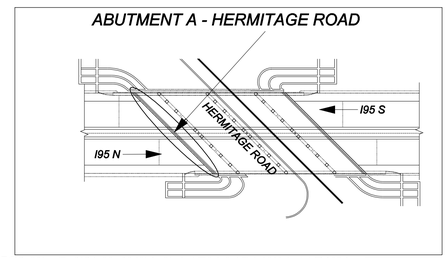
ABUTMENT A - PLAN
N.T.S.



ABUTMENT A - ELEVATION
N.T.S.

LEGEND

- CP TREATMENT



* ALL MEASUREMENTS ARE APPROXIMATE. EXACT MEASUREMENTS ARE TO BE VARIFIED ON SITE.

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Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

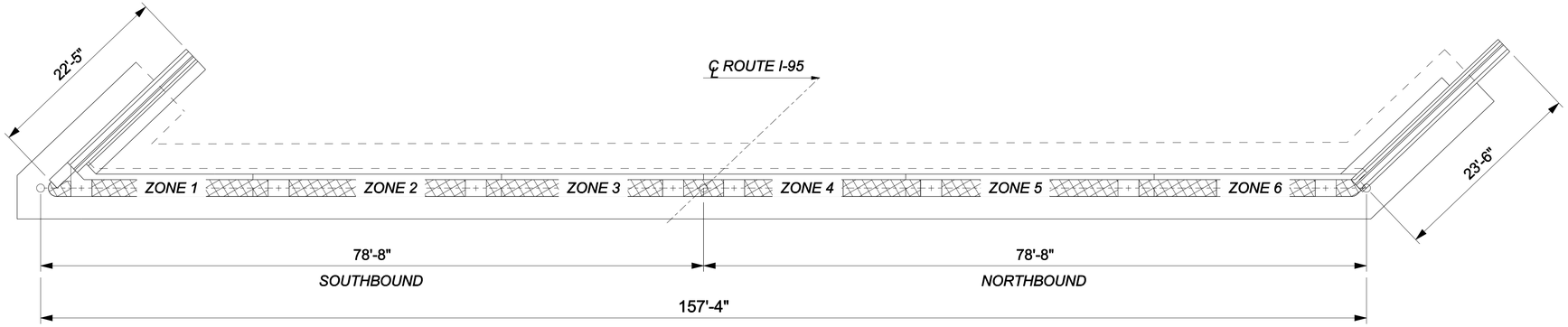
STRUCTURE AND BRIDGE DIVISION

ABUTMENT A
CP TREATMENT

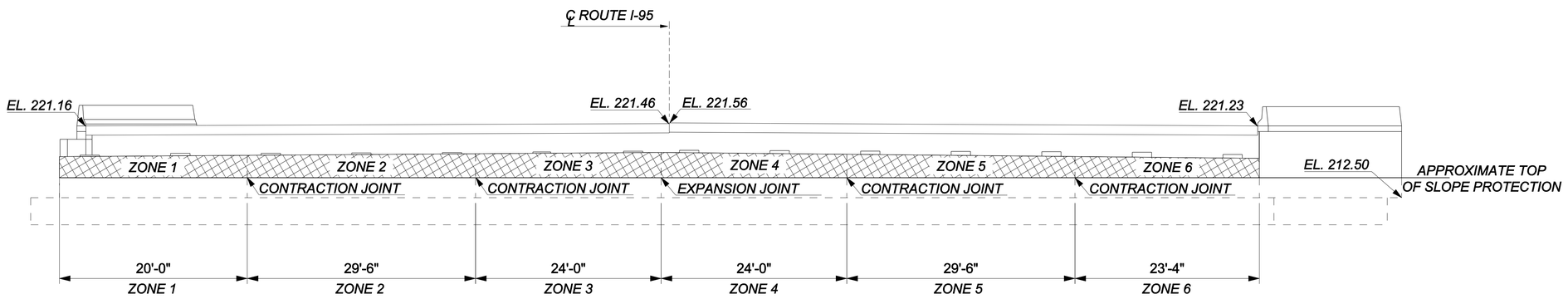
Designed: SV.
Drawn: ..... BJ
Checked: MM.

Date	Plan No.	Sheet No.
October 2009	283-67	37B OF 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	
3	VA.			95	7095-964-115, B696	27(37C)	



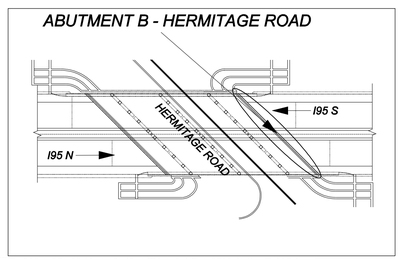
ABUTMENT B - PLAN
N.T.S.



ABUTMENT B - ELEVATION
N.T.S.

LEGEND

- CP TREATMENT



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No.	Description	Date

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

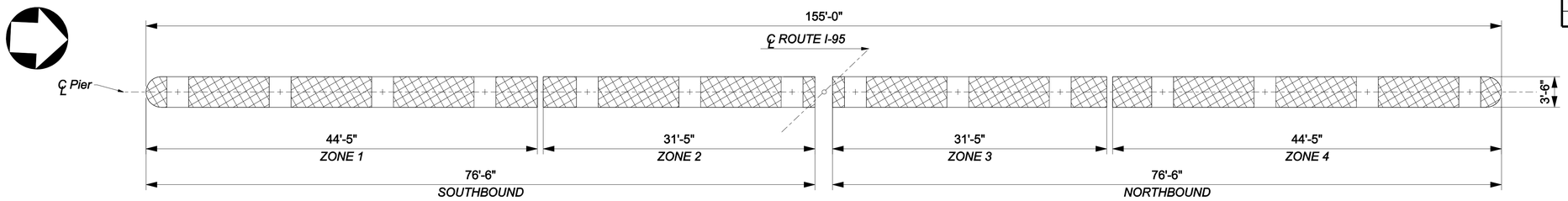
STRUCTURE AND BRIDGE DIVISION

ABUTMENT B
CP TREATMENT

Designed: SV.
Drawn: ..... BJ
Checked: MM.

Date	Plan No.	Sheet No.
October 2009	283-67	37C OF 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	
3	VA.			95	7095-964-115, B696	27(37D)	



PIERS 1 & 3 - PLAN

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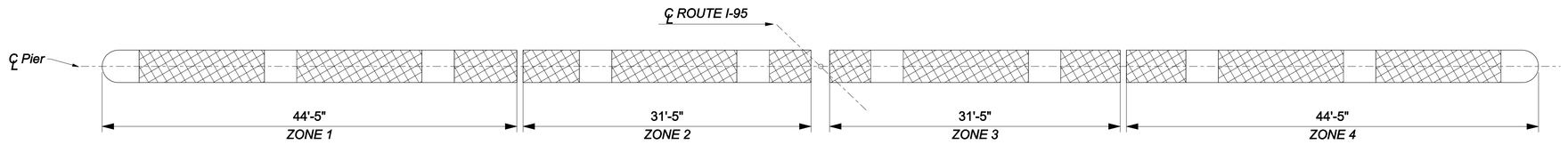

PIERS 1 & 3 CAP - UNDERSIDE

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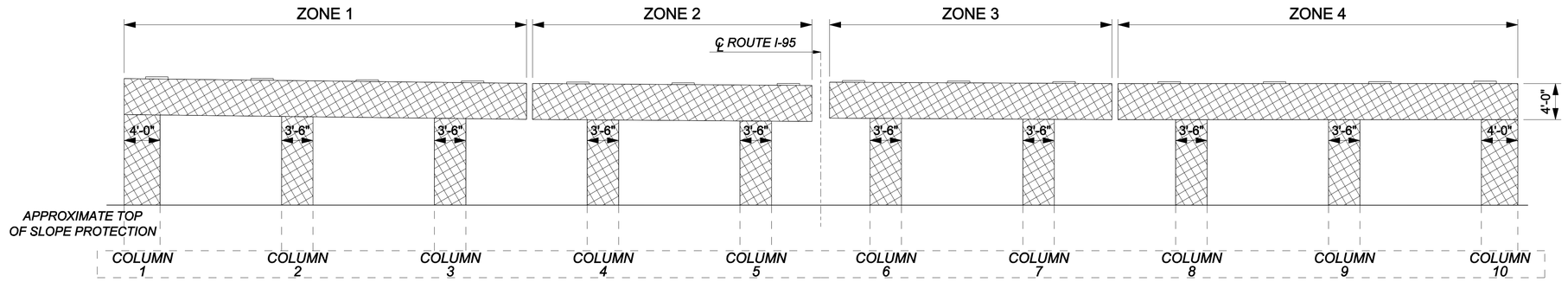

PIERS 1 & 3 - SOUTH FACE

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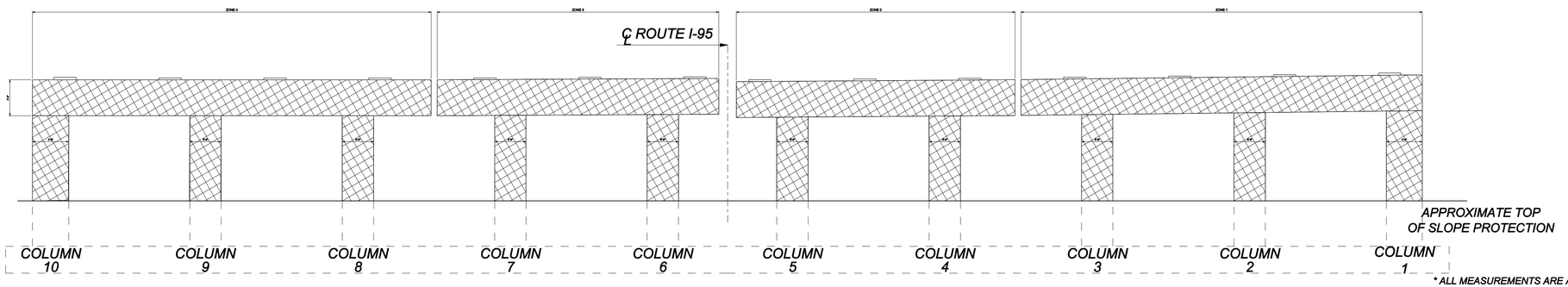
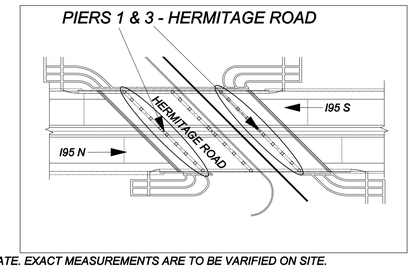


PIERS 1 & 3 - NORTH FACE

N.T.S.

LEGEND

- CP TREATMENT



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COMMONWEALTH OF VIRGINIA
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No.	Description	Date

Revisions

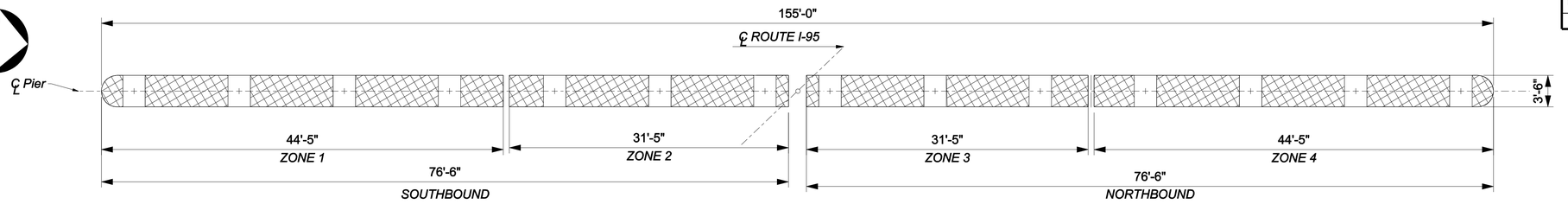
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

PIERS 1 & 3
CP TREATMENT

Designed: SV. Drawn: RJ Checked: MM	Date	Plan No.	Sheet No.
	October 2009	283-67	37D OF 68

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	
3	VA.			95	7095-964-115, B696	27(37E)	



PIER 2 - PLAN

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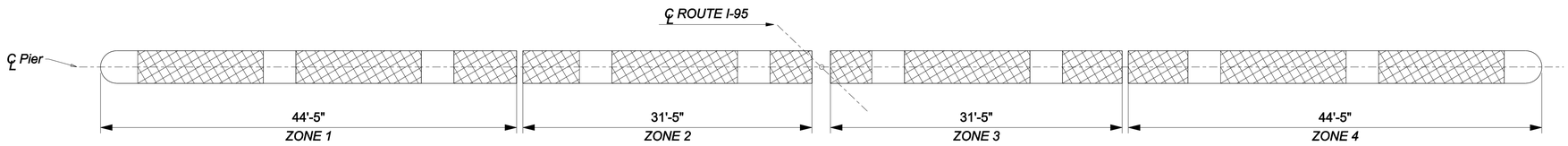

PIER 2 CAP - UNDERSIDE

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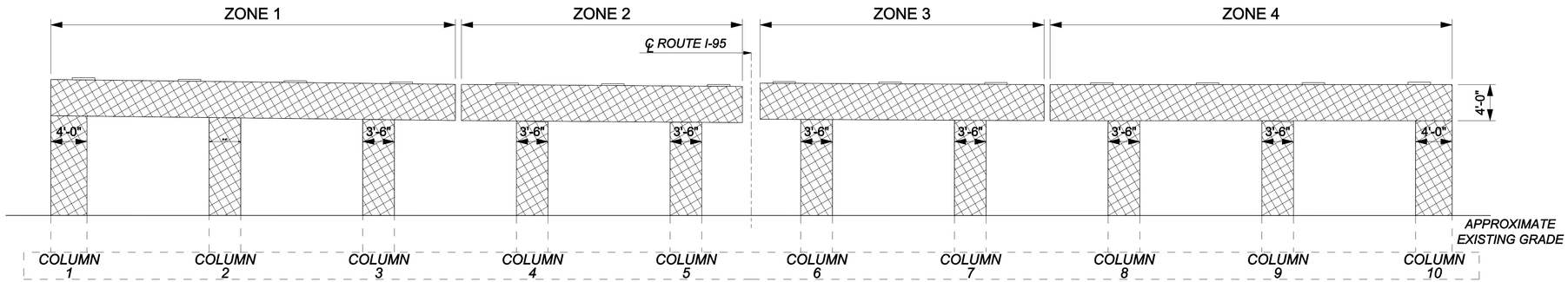

PIER 2 - SOUTH FACE

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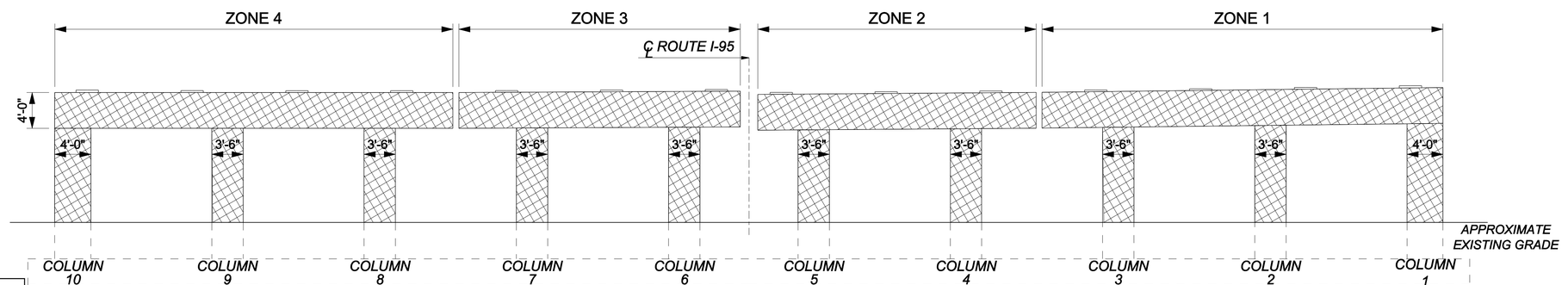


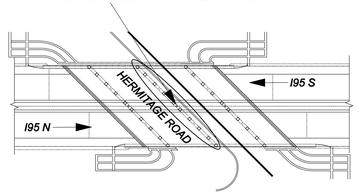
PIER 2 - NORTH FACE

N.T.S.

LEGEND

- CP TREATMENT

PIER 2 - HERMITAGE ROAD



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COMMONWEALTH OF VIRGINIA
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URS Corporation
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Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

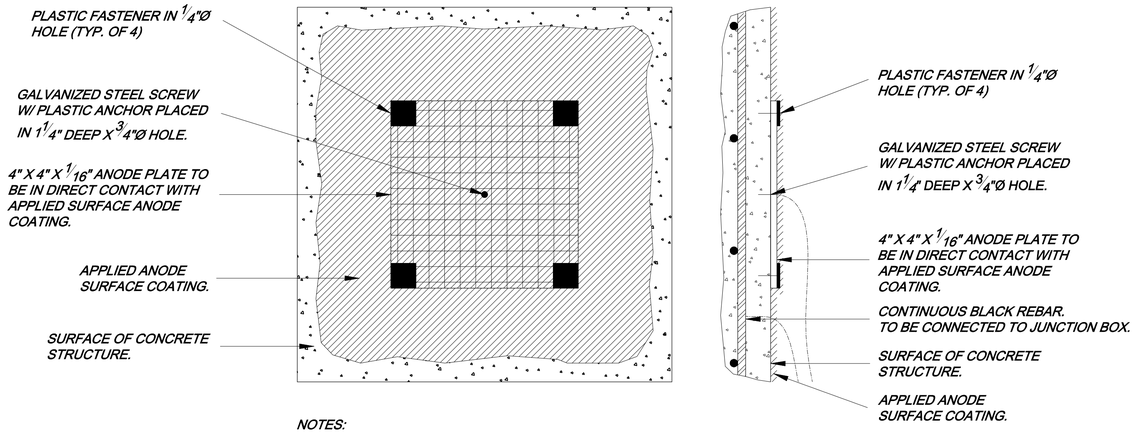
STRUCTURE AND BRIDGE DIVISION

PIER 2
CP TREATMENT

Designed: SV.
Drawn: .....BJ
Checked: .MM.

Date	Plan No.	Sheet No.
October 2009	283-67	37E OF 68

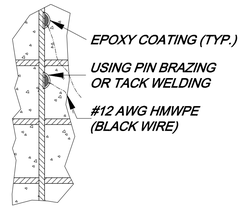
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			95	7095-964-115, B696	27(37F)



NOTES:
1. ANODE PLATE TO BE HOUSED INSIDE A JUNCTION BOX.

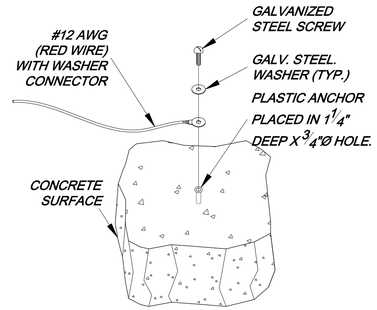
2. DRILL A 3/4" DIA. BY 1-1/4 IN. HOLE. COVER WITH DUCT TAPE AND APPLY TWO PASSES OF ANODE COATING. REMOVE DUCT TAPE AND INSTALL PLASTIC ANCHOR INTO THE HOLE. DRILL FOUR ¼ IN. HOLES IN EACH CORNER OF THE PLATE AND SECURE WITH FASTENERS. SECURE THE PLATE WITH A GALVANIZED STEEL SCREW, WASHER AND RING TERMINAL WITH WIRE ATTACHED(SEE DETAIL). APPLY ADDITIONAL PASSES OF ANODE COATING OVER THE PLATE TO ACHIEVE SPECIFIED THICKNESS AND THEN PROCEED TOWARDS THE SURROUNDING AREA.

A 1 ANODE PLATE DETAIL
SCALE: N.T.S.

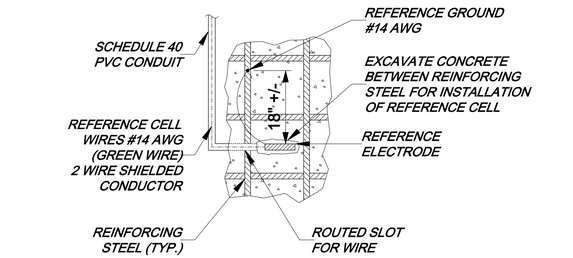


NOTE:
1. THE CONNECTION OF EACH GROUND WIRE TO THE REINFORCING STEEL SHALL BE MADE USING PIN BRAZING OR TACK WELDING, IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS. THE CONNECTION OF ANY EXPOSED COPPER STRANDED WIRES IN THE EXCAVATED AREA SHALL BE COMPLETELY COATED WITH A 100 PERCENT SOLID EPOXY.

B 1 REBAR WIRE CONNECTION DETAIL
SCALE: N.T.S.



C 1 ANODE WIRE CONNECTION DETAIL
SCALE: N.T.S.



NOTE:
1. EXISTING REINFORCEMENT SHALL NOT BE EXPOSED.

2. THE DEPTH OF EXCAVATED SLOT SHALL BE SUCH THAT THE REFERENCE ELECTRODE IS SITUATED AT THE SAME DEPTH AS THE REBAR/PRE-STRESSING STEEL.

3. TWO SILVER-SILVER CHLORIDE REFERENCE ELECTRODES SHALL BE INSTALLED DURING THE CONCRETE REPAIR STAGE IN EACH INSTRUMENTED SUBSTRUCTURE.

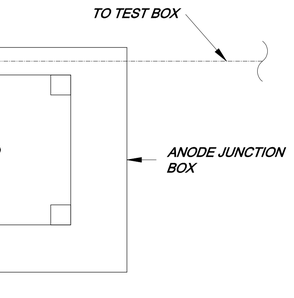
4. REFERENCE ELECTRODES SHALL BE INSTALLED IN AREAS OF SOUND CONCRETE HAVING HIGH ACTIVE HALF CELL POTENTIAL READINGS OR AS APPROVED BY ENGINEER'S CONSULTANT.

5. REFERENCE ELECTRODE EXCAVATIONS SHALL BE VISIBLY FREE OF DIRT, GREASE AND OTHER FOREIGN MATERIAL PRIOR TO PLACING THE REFERENCE ELECTROL AND THE BACK FILL MATERIAL.

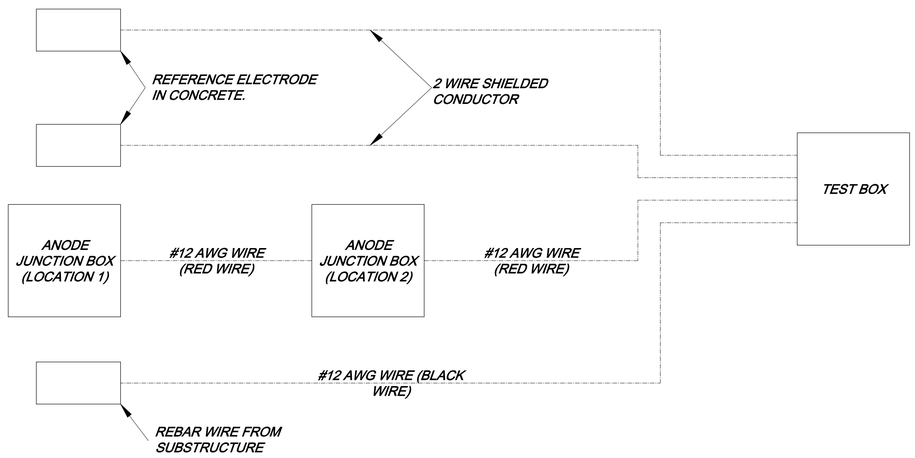
6. AN IDENTIFICATION TAG SHALL BE AFFIXED TO THE END OF THE CABLE INDICATING THE REFERENCE ELECTRODE LOCATION AND NUMBER.

7. THE REFERENCE ELECTRODE EXCAVATION SHALL BE PATCHED WITH APPROVED PORTLAND CEMENT GROUT OR CONCRETE WITH 15,000 OHM-CM RESISTIVITY OR LESS. THE REFERENCE ELECTRODE SHALL BE FULLY ENCAPSULATED WITH CEMENTITIOUS BACK FILL MATERIAL. THE BACK FILL MATERIAL SHALL COMPLETELY FILL THE EXCAVATION, AND NO VOIDS SHALL EXIST.

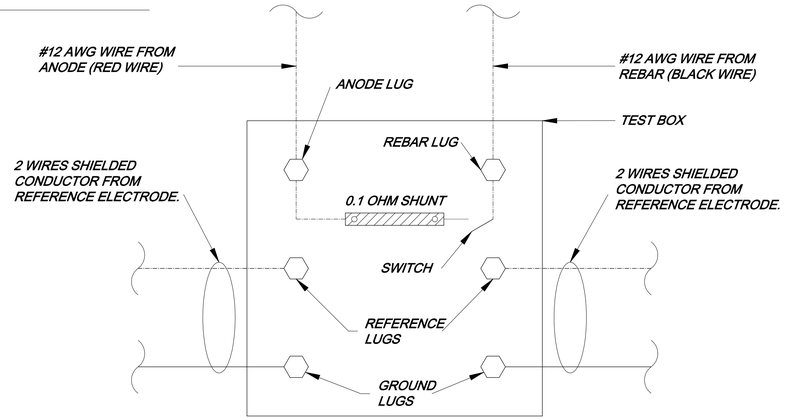
D 1 REFERENCE WIRE CONNECTION DETAIL
SCALE: N.T.S.



E 1 ANODE JUNCTION BOX DIAGRAM
SCALE: N.T.S.



F 1 TEST BOX LINE DIAGRAM
SCALE: N.T.S.



G 1 TEST BOX DIAGRAM
SCALE: N.T.S.

COMMONWEALTH OF VIRGINIA
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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

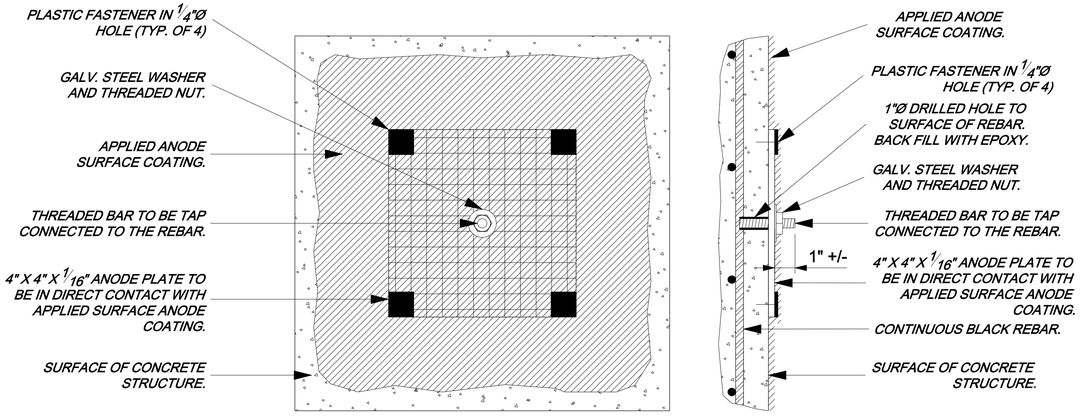
STRUCTURE AND BRIDGE DIVISION

DETAIL SHEET I FOR MONITORING SITES

Designed: SV
Drawn: BJ
Checked: MM

Date	Plan No.	Sheet No.
October 2009	283-67	37F OF 68

FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.	
		ROUTE	PROJECT	ROUTE	PROJECT		
3	VA.			95	7095-964-115, B696	27(38)	



NOTES:
1. ANODE PLATE TO BE HOUSED INSIDE A JUNCTION BOX.

2. DRILL A 1" Ø HOLE TO EXPOSTE THE REBAR. ATTACH A 1/4" THREADED GALVANIZED ROD TO THE EXPOSED REBAR AND BACKFILL THE HOLE WITH EPOXY.

3. AFTER BACK FILLING WITH EPOXY, DUCT TAPE THE EXPOSED THREADED ROD AND APPLY THE TWO PASSES OF ANODE COATING. REMOVE DUCT TAPE AND INSTALL THE ANODE CONNECTOR PLATE. DRILL FOUR ¼ IN. HOLES IN EACH CORNER OF THE PLATE AND SECURE WITH FASTENERS. SECURE THE ROD WITH WASHER AND NUT AND CUT OFF ANY EXCESS LENGTH OF THE THREADED ROD. APPLY ADDITIONAL PASSES OF ANODE COATING OVER THE PLATE TO ACHIEVE SPECIFIED THICKENESS AND THEN PROCEED TOWARDS THE SURROUNDING AREA.

A2 ANODE PLATE DETAIL
SCALE: N.T.S.

COMMONWEALTH OF VIRGINIA
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Structural Engineer

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

DETAIL SHEET II
FOR NON-MONITORING SITES

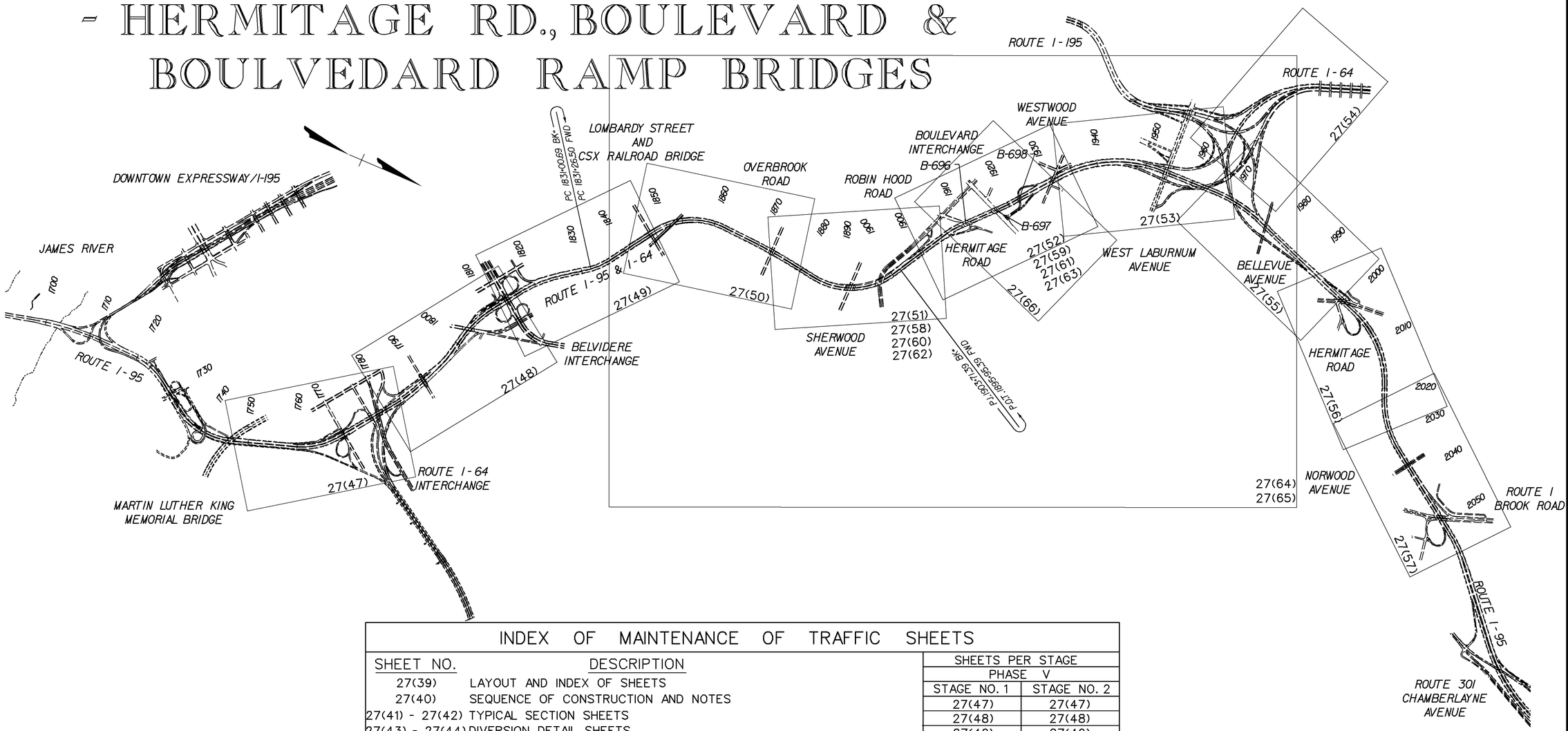
Designed: SV.
Drawn: BJ
Checked: MM.

Date	Plan No.	Sheet No.
October 2009	283-67	38 OF 68

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(39)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

I - 95 MAINTENANCE OF TRAFFIC PLANS PHASE V, STAGES I & II - HERMITAGE RD., BOULEVARD & BOULVEDARD RAMP BRIDGES



DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR MSA
REVISED BY

ENGINEERS ECONOMISTS SCIENTISTS
WilburSmith ASSOCIATES

INDEX OF MAINTENANCE OF TRAFFIC SHEETS

SHEET NO.	DESCRIPTION	SHEETS PER STAGE PHASE V	
		STAGE NO. 1	STAGE NO. 2
27(39)	LAYOUT AND INDEX OF SHEETS		
27(40)	SEQUENCE OF CONSTRUCTION AND NOTES	27(47)	27(47)
27(41) - 27(42)	TYPICAL SECTION SHEETS	27(48)	27(48)
27(43) - 27(44)	DIVERSION DETAIL SHEETS	27(49)	27(49)
27(45)	DETAIL SHEETS	27(50)	27(50)
27(46)	SUMMARY OF ESTIMATED QUANTITIES SHEET	27(51)&27(56)	27(60)&27(62)
27(47) - 27(63)	MAINTENANCE OF TRAFFIC PLAN SHEETS	27(52)&27(57)	27(61)&27(63)
	TRAILBLAZING SIGN LOCATIONS AND SIGN PANEL RECOMMENDATIONS	27(53)	27(53)
	INCIDENT MANAGEMENT / DETOUR LOCATIONS	27(54)	27(54)
27(64)	DETOUR - HERMITAGE ROAD	27(54)	27(54)
27(65)	DETOUR - BOULEVARD EXIT RAMP	27(55)	27(55)
27(66)	DIVERSION DETAIL - BOULEVARD	27(56)	27(56)
27(67)	SIGN SUMMARY	27(57)	27(57)
27(68)	SIGN DETAILS		

HERMITAGE RD., BOULEVARD, BOULEVARD RAMP BRIDGES

SCALE
0 1000' 2000'

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(39)

I-95
Maintenance of Traffic, PHASE V, Stage I
DIVERSION DETAIL

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(43)

Curve 301
PI = 1902+47.24
DELTA = 4° 28' 45.39" (RT)
D = 1° 00' 00"
T = 224.08'
L = 447.93'
R = 5729.58'
PC = 1900+23.16
PRC = 1904+71.09

Curve 302
PI = 1906+95.16
DELTA = 4° 28' 44.80" (LT)
D = 1° 00' 00"
T = 224.07'
L = 447.91'
R = 5729.58'
PRC = 1904+71.09
PT = 1909+19.00

Sta. 1900+00

ROBIN HOOD ROAD

200'
200'
150'
PT
PC
1900
STA. 1900+75
701' Crossover
STA. 1900+00
1900
ROBIN HOOD ROAD TO I-95 S.B.L.
In Pl. Std. DI-10B Type II, L=14'
I-95 S.B.L.
N 60° 30' 56" W
I-95 N.B.L.
N 60° 30' 56" W
Quickchange Moveable Barrier
PRC 1904+71.09
PT 1909+19.00
Quickchange Moveable Barrier

In Pl. Std. DI-10B Mod. Type II, L=8'
STA. 1900+75 BEGIN INSTALLATION OF TEMPORARY CROSSOVER PAVEMENT
TRUCK MOUNTED ATTENUATOR WITH TYPE C ARROW BOARDS OPERATING IN THE CAUTION MODE
STA. 1900+75 BEGIN REMOVAL OF EXISTING MEDIAN BARRIER
BEGIN INSTALLATION OF MOVEABLE QUICKCHANGE BARRIER SYSTEM
In Pl. Std. DI-10B Mod. Type II, L=8'
RECONSTRUCT EXISTING MEDIAN BARRIER DROP INLET STD. DI-10B, TYPE II, L=8'
STA. 1903+50 BEGIN FULL SHIFT OF QUICKCHANGE MOVEABLE BARRIER (29' SHIFT)
EQUATION: Sta 1903+71.39 BK = Sta 11.895+95.39 AH
In Pl. Std. DI-10B Type II, L=14'
RECONSTRUCT EXISTING MEDIAN BARRIER DROP INLET STD. DI-10B, TYPE II, L=14'
RECONSTRUCT EXISTING MEDIAN BARRIER DROP INLET STD. DI-10B, TYPE II, L=6'
In Pl. Std. DI-10C Type II, L=6'
STA. 11.900+00 END REMOVAL OF EXISTING MEDIAN BARRIER
In Pl. Std. DI-10B Type II, L=14'
STATIONARY ENERGY ATTENUATOR (TYPE I) REQUIRED

SCALE 0 50' 100'

LEGEND

- 10' Emergency Lane
- Temporary Pavement Area For Traffic Crossover
- Quickchange Moveable Barrier System
- Absorb 350TM Crash Cushion System
- Group I Channelizing Device (Cones) spaced @ 40'
- Group II Channelizing Device (Barrels) Spaced @ 40'

2 EACH TRUCK MOUNTED ATTENUATORS WITH TYPE C ARROW BOARDS OPERATING IN THE CAUTION MODE.

Curve 306
PI = 1924+93.52
DELTA = 7° 26' 19.13" (LT)
D = 2° 00' 00"
T = 186.23'
L = 371.93'
R = 2,864.79'
PC = 1923+07.29
PRC = 1926+79.22

Curve 307
PI = 1928+65.45
DELTA = 7° 26' 19.23" (RT)
D = 2° 00' 00"
T = 186.23'
L = 371.93'
R = 2,864.79'
PRC = 1926+79.22
PT = 1930+51.16

I-95 S.B.L. TO BOULEVARD
BRIDGE OVER RAMP "A" NEAR THE BOULEVARD
1920
PT 1920+91.93
STATIONARY ENERGY ATTENUATOR (TYPE I) REQD.
PC 1923+07.29
Exist. Light Pole
1925
Existing Light Base
Existing Guardrail
I-95 S.B.L.
I-95 N.B.L.
I - 95
N 52° 25' 16" W
N 52° 28' 16" W
Quickchange Moveable Barrier
Existing Guardrail
Existing Light Pole
In Pl. Std. DI-10B Type II, L=14'
In Pl. Std. DI-10B Type II, L=14'
BOULEVARD TO I-95 N.B.L.
480' Crossover
STA. 1923+25 BEGIN REMOVAL OF EXISTING MEDIAN BARRIER
PRC 1926+79.22
STA. 1928+50 END REMOVAL OF EXISTING MEDIAN BARRIER
STA. 1929+00 END INSTALLATION OF QUICKCHANGE MOVEABLE BARRIER
In Pl. Std. DI-10B Type II, L=10'
WESTWOOD AVENUE
STATIONARY ENERGY ATTENUATOR (TYPE I) REQD.
1930
150'
WESTWOOD AVENUE
TRUCK MOUNTED ATTENUATORS WITH TYPE C ARROW BOARDS OPERATING IN THE CAUTION MODE
1935
Sta. 1935+50
PT 1930+51.16
PC 1931+63.39
200'
500'
200'
LANYALE AVENUE
STA. 1931+00

Hermitage Road, Boulevard, & Boulevard Ramp Bridges

SCALE 0 50' 100'

DESIGNED BY: WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

ENGINEERS ARCHITECTS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(43)

I-95
Maintenance of Traffic, PHASE V, Stage II
DIVERSION DETAIL

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(44)

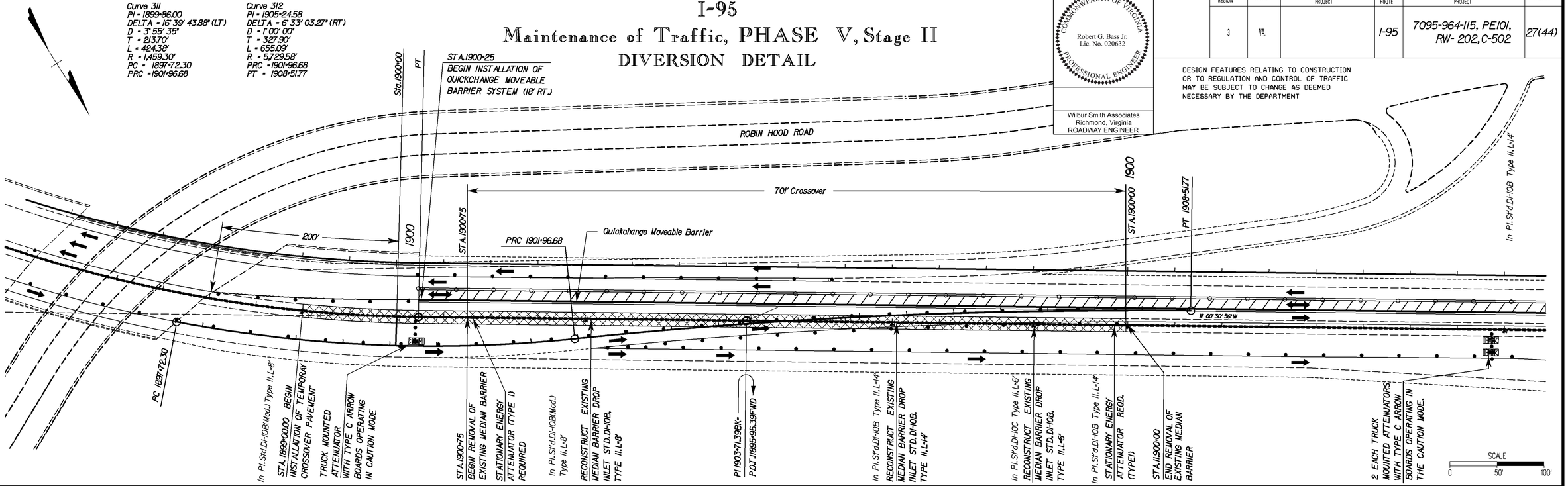
COMMONWEALTH OF VIRGINIA
Robert G. Bass Jr.
Lic. No. 020632
PROFESSIONAL ENGINEER

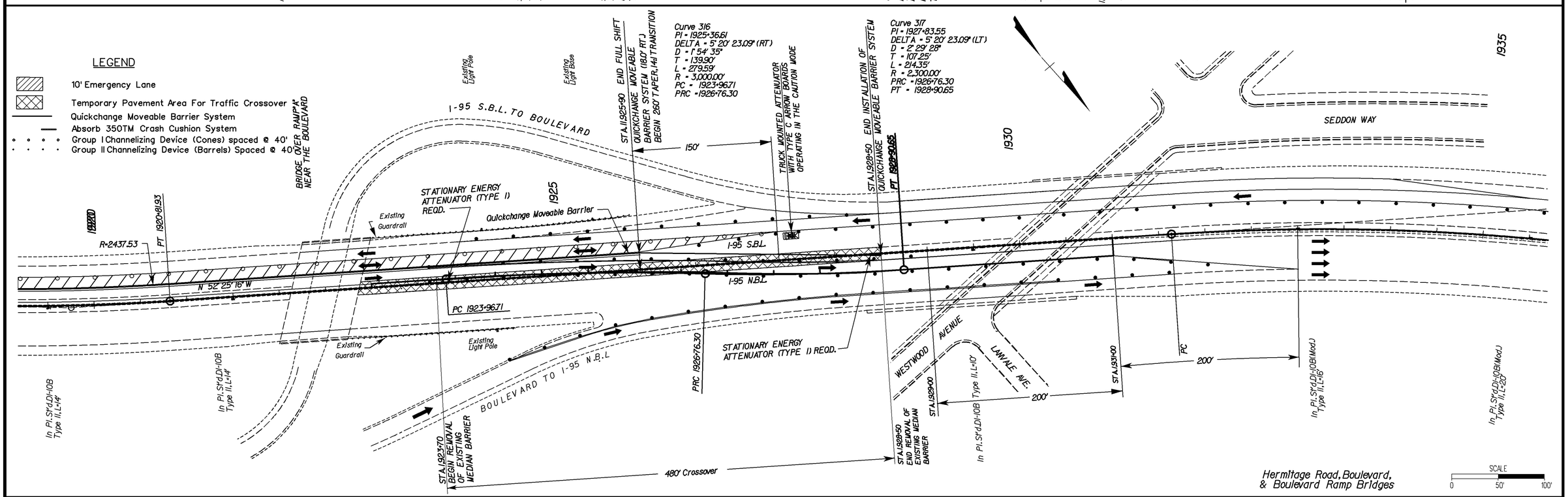
Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Curve 311
PI - 1899+86.00
DELTA - 16° 39' 43.88" (LT)
D - 3° 55' 35"
T - 213.70'
L - 424.38'
R - 1,459.30'
PC - 1897+72.30
PRC - 1901+96.68

Curve 312
PI - 1905+24.58
DELTA - 6° 33' 03.27" (RT)
D - 1° 00' 00"
T - 327.90'
L - 655.09'
R - 5,729.58'
PRC - 1901+96.68
PT - 1908+51.77





DESIGNED BY: WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

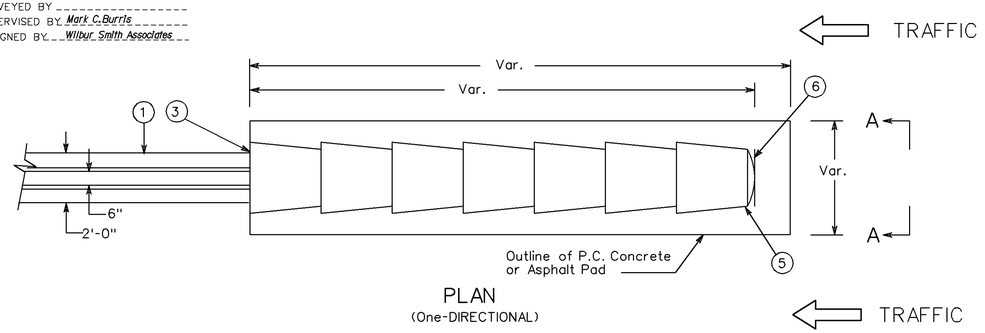
ENGINEERS ARCHITECTS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(44)

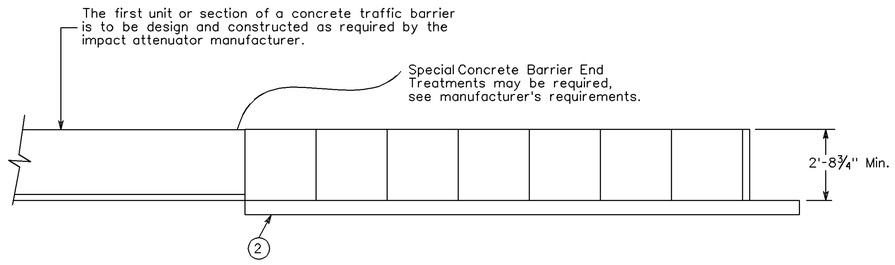
SURVEYED BY _____
SUPERVISED BY Mark C. Burris
DESIGNED BY Wilbur Smith Associates

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.		95	7095-964-115, PE101, RW- 202, C-502	27(45)



PLAN
(One-DIRECTIONAL)

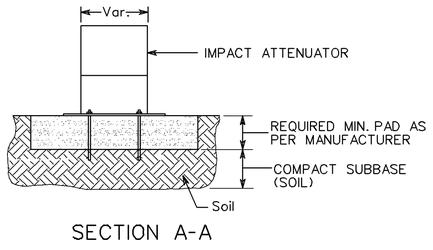


ELEVATION

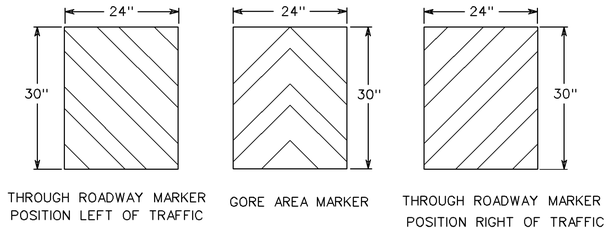
KEY

1. CONCRETE TRAFFIC BARRIER
2. PORTLAND CONCRETE OR ASPHALT PAD AS REQUIRED BY IMPACT ATTEN. MANUFACTURER.
3. CONSTRUCTION ZONE BACKUP
4. TRANSITION PANEL (4" OFFSET)
5. NOSE COVER (YELLOW)
6. MARKER

   Marker is to be attached using 20 gauge X1¼"X3'-0" galvanized metal straps 4-⅜"X1" hex head bolts with lock, washer and nut.



SECTION A-A



THROUGH ROADWAY MARKER POSITION LEFT OF TRAFFIC

GORE AREA MARKER

THROUGH ROADWAY MARKER POSITION RIGHT OF TRAFFIC

IMPACT ATTENUATOR
REFLECTIVE MARKERS

NOTES

1. BASIS OF PAYMENT: SHALL BE IMPACT ATTENUATOR SERVICE, TYPE 1 IN UNITS OF EACH PER LOCATION AND SHALL INCLUDE ALL SITE PREPARATION, MP-3 ANCHORS OR ANCHOR PINS, PAD, INSTALLATION, REFLECTIVE MARKER(S), MAINTENANCE, AND REMOVAL WHEN NO LONGER NEEDED.

   IMPACT ATTENUATORS USED WITH BARRIER OPENINGS FOR EQUIPMENT ACCESS WILL NOT BE SUMMERIZED FOR PAYMENT. REFERENCE ROAD AND BRIDGE SPECIFICATIONS, SECTION 512.

2. PORTABLE IMPACT ATTENUATOR SHALL BE AS SHOWN ON BELOW OR OTHER MANUFACTURER'S EQUAL AS APPROVED BY THE ENGINEER.

   THE 6 BAY QUADGUARD SYSTEM AS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. (MODEL NO. QZ3006Y).

   THE ADIEM 350 (II-30') AS MANUFACTURED BY SYRO STEEL COMPANY.

   THE REACT 350.9 REUSABLE ENERGY ABSORBING CRASH TERMINAL BY ROADWAY SAFETY SERVICE, INC.

   THE TRACC ATTENUATING CRASH CUSHION BY TRINITY INDUSTRIES, INC.

   THE 8 BAY TAU-11 SYSTEM AS MANUFACTURED BY BARRIER SYSTEMS INC.

   DESIGN SHOWN ON THIS SHEET IS FOR EXAMPLE PURPOSES ONLY AND DOES NOT PRECLUDE OTHER SYSTEM DESIGNS AS INDICATED IN THE NOTE ABOVE.

   SEE MANUFACTURE'S SPECIFICATIONS AND DRAWINGS FOR DIMENSIONS AND DETAILS NOT SHOWN.

   QUADGUARD UNIT OPERATION REQUIRES INSTALLATION THAT ENSURES 2'-6" OF UNRESTRICTED TRAVEL BY THE LAST BAY FENDER PANELS TO THE REAR OF THEIR PRE-IMPACT POSITION.

   REACT 350.9 UNITS REQUIRE W-BEAM TERMINAL CONNECTOR WHICH CONNECT THE UNITS BACKUP AND THE FIXED OBJECT BEING GUARDED.

   ALL UNITS MUST CONFORM TO NCHRP 350 TL-3 STANDARDS.

3. ALL STEEL HARDWARE COMPONENTS MUST BE GALVANIZED.

4. IMPACT ATTENUATOR MANUFACTURERS MUST FURNISH DETAILS FOR THE REQUIRED MINIMUM PAD LAYER DEPTH OR COMBINATION DEPTHS SHOWN FOR THE DIFFERENT TYPE OF MATERIALS (P.C. CONCRETE & ASPHALT). THE MANUFACTURER MUST ALSO FURNISH THE REQUIRED ANCHORING SYSTEM. COMPACTED SUBBASE (SOIL) SHALL NOT BE USED WITHOUT MINIMUM PAD LAYER(S) OF P.C. CONCRETE OR ASPHALT MATERIAL.

   FOR DIMENSIONS OF UNIT AND PAD SEE MANUFACTURE'S DRAWINGS AND SPECIFICATIONS.

   FOR INSTALLATION INSTRUCTION AND RESTRICTIONS SEE MANUFACTURE'S SPECIFICATIONS.

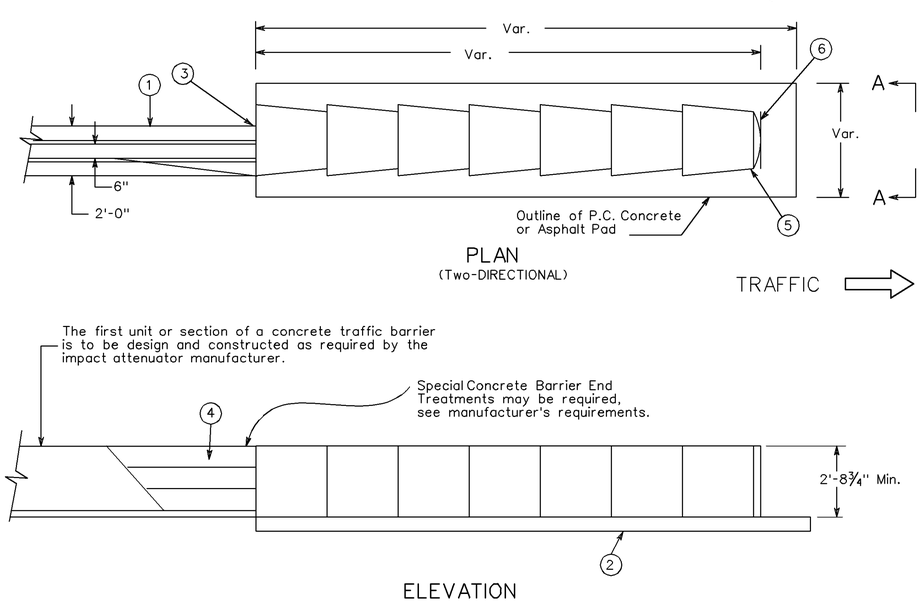
5. FLUORESCENT PRISMATIC LENS ORANGE SHEETING SHALL BE USED ON THE REFLECTIVE MARKERS. ALL REFLECTIVE SHEETING IS TO BE IN ACCORDANCE WITH SECTION 701 OF THE ROAD AND BRIDGE SPECIFICATIONS. STRIPES SHALL SLOPE DOWN TOWARD THE SIDE OF THE OBSTRUCTION ON WHICH TRAFFIC IS TO PASS.

   COLOR

   FIELD - ORANGE STRIPES (REFLECTORIZED) CONSTRUCTION/MAINTENANCE ZONES.

   MESSAGE - BLACK (NON-REFLECTORIZED) CONSTRUCTION/MAINTENANCE ZONES.

   FOR DETAILS OF UNIT AND CONCRETE PAD SEE MANUFACTURER'S INSTRUCTION.



PLAN
(Two-DIRECTIONAL)

ELEVATION

SPECIAL DESIGN PORTABLE IMPACT ATTENUATOR
(TEMPORARY USE ONLY)

(WHEN CALLED FOR ON PLANS AND SUMMARIZED AS IMPACT ATTENUATOR SERVICE.
THIS DEVICE SHALL BE DESIGNATED TYPE I)

TL-3 (>55 MPH DESIGN SPEED)
Item Code # 13604

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

Revised 4-2002

SPECIAL DESIGN SECTION
DRAWING NO. 799

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	7095-964-115		27(45)

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377 2300
SUPERVISED BY Robert Boss, P.E.
CADD OPERATOR WSA
REVISED BY _____

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
⚠3 1-7-11	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(46)

HERMITAGE RD., BOULEVARD,
BOULEVARD RAMP BRIDGES

MAINTENANCE OF TRAFFIC SUMMARY - PHASE V

	CLEARING AND GRUBBING	TYPE III BARRICADE	PORTABLE CHANGEABLE MESSAGE SIGN	(1) ELECTRONIC ARROW	TRUCK MOUNTED ATTENUATOR	GROUP 2 CHANNELIZING DEVICES	WARNING LIGHT, TYPE A	(3) IMPACT ATTENUATOR SERVICE, TYPE I	REMOVE EXISTING MEDIAN BARRIER	⊗ MEDIAN BARRIER (STD. MB-7D)	MODIFY EXISTING MEDIAN DROP INLET	RECONSTRUCT EXISTING MEDIAN BARRIER DROP INLET	ASPHALT CONCRETE TYPE SM-12.5D	ASPHALT CONCRETE BASE COURSE TYPE BM-25.0D	⊗ DEMOLITION OF PAVEMENT (FLEXIBLE)	(2) CONSTRUCTION SIGNS	TY A PAVEMENT LINE MARKING 4"	MEDIAN STRIP MS-1A	FLEXIBLE PAVEMENT PLANING
UNIT	LS	EA.	HR.	HR.	HR.	DAY	DAY	EA.	LF.	LF.	EA.	EA.	TON	TON	SY	SF	LF	SY	SY
STAGE I			1200	3600	1600	15,000	40	2	1,230		3		179	260		1,811			309
STAGE II			1200	2800	1600	15,912	40	2		1,230		3			~~1,997~~	1,811	2400	875	9,565
HERMITAGE ROAD		3												132		189			
BOULEVARD EX. RAMP		1														44			
BOULEVARD CROSSOVER		3		1600									1	8	105	133		25	
TOTALS	1	7	2400	8000	3200	30,527	80	2	1,230	1,230	3	3	180	400	~~2,012~~ 105 ⚠3	1,988	2400	900	9,874 ⚠3

FOOTNOTES:

(1) QUANTITY INCLUDES HOURS ESTIMATED FOR TEN (10) ILLUMINATED FLASHING AMBER ARROW TYPE C THAT ARE DESIGNATED FOR PLACEMENT BY THESE PLANS. THE ADDITIONAL EXTRA HOURS FOR TRUCK MOUNTED ATTENUATOR QUANTITIES ARE THE HOURS ESTIMATED FOR TYPE C ARROW BOARDS TO BE MOUNTED ON THE TRUCK MOUNTED ATTENUATORS (TMAs). QUANTITIES CALCULATED USING EIGHTY (80) NIGHTS AT TEN (10) HOURS PER NIGHT IN PHASE V.

(2) REFER TO TEMP. SIGN SUMMARY FOR ADDITIONAL DETAIL.

(3) IMPACT ATTENUATOR SERVICE IS IN ADDITION TO AND DOES NOT INCLUDE THE CRASH CUSHIONS REQUIRED WITH THE QUICK CHANGE BARRIERS.

⊗ Denotes Items to be paid for on basis of Plan Quantity In accordance with current Road And Bridge Specification.

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY:

WilburSmith ASSOCIATES ENGINEERS PLANNERS ECONOMISTS

HERMITAGE RD., BOULEVARD,
BOULEVARD RAMP BRIDGES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(46)

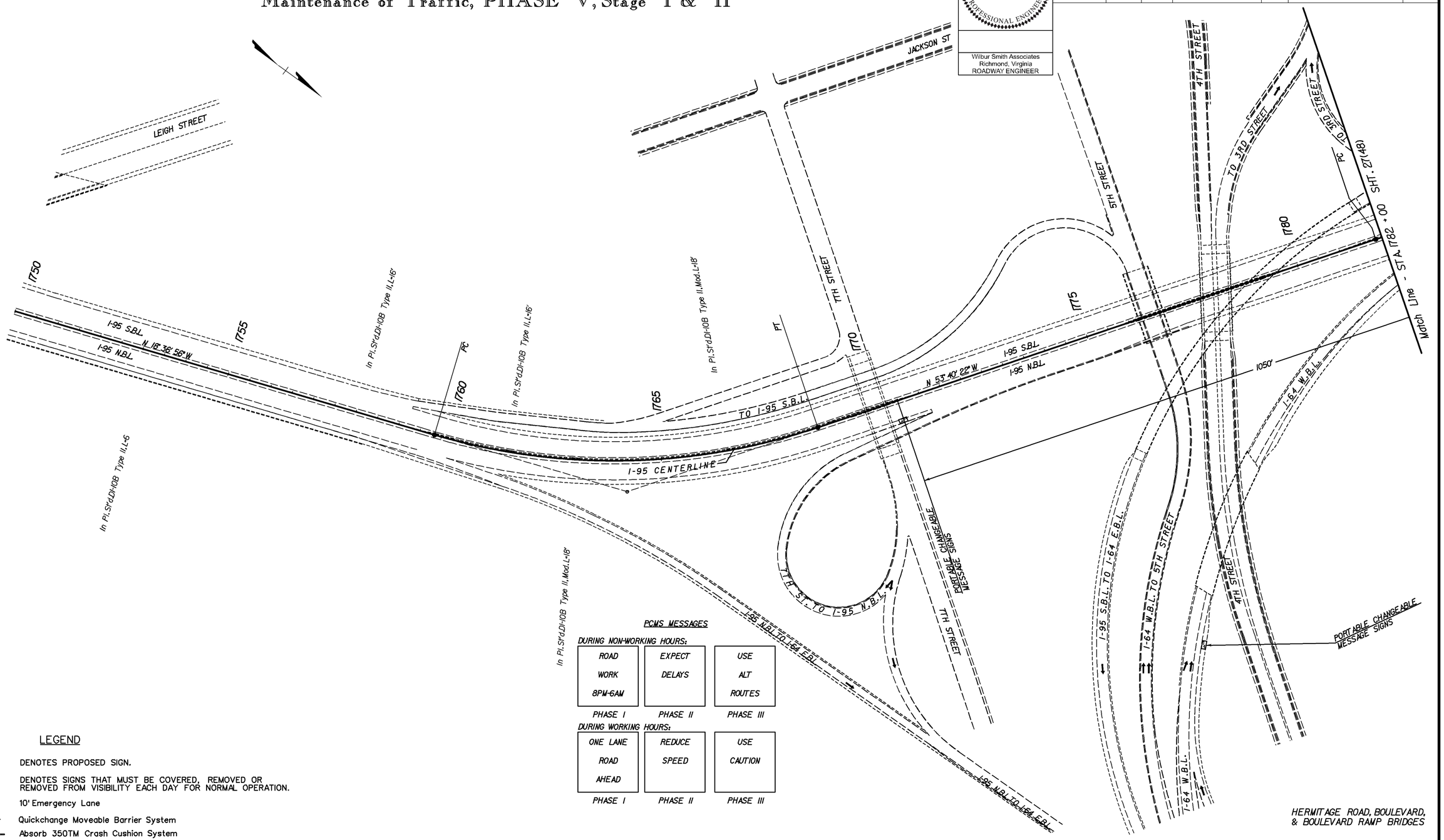
I-95
Maintenance of Traffic, PHASE V, Stage I & II

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
Robert G. Bass Jr.
Lic. No. 020632
PROFESSIONAL ENGINEER

Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(47)



PCMS MESSAGES

DURING NON-WORKING HOURS:

ROAD WORK 8PM-6AM	EXPECT DELAYS	USE ALT ROUTES
PHASE I	PHASE II	PHASE III

DURING WORKING HOURS:

ONE LANE ROAD AHEAD	REDUCE SPEED	USE CAUTION
PHASE I	PHASE II	PHASE III

LEGEND

- ⊢ DENOTES PROPOSED SIGN.
- ① DENOTES SIGNS THAT MUST BE COVERED, REMOVED OR REMOVED FROM VISIBILITY EACH DAY FOR NORMAL OPERATION.
- 10' Emergency Lane
- Quickchange Moveable Barrier System
- Absorb 350TM Crash Cushion System
- Group I Channelizing Device (Cones) spaced @ 40'
- Group II Channelizing Device (Barrels) Spaced @ 40'

SCALE
0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: MSA
REVISED BY:

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(47)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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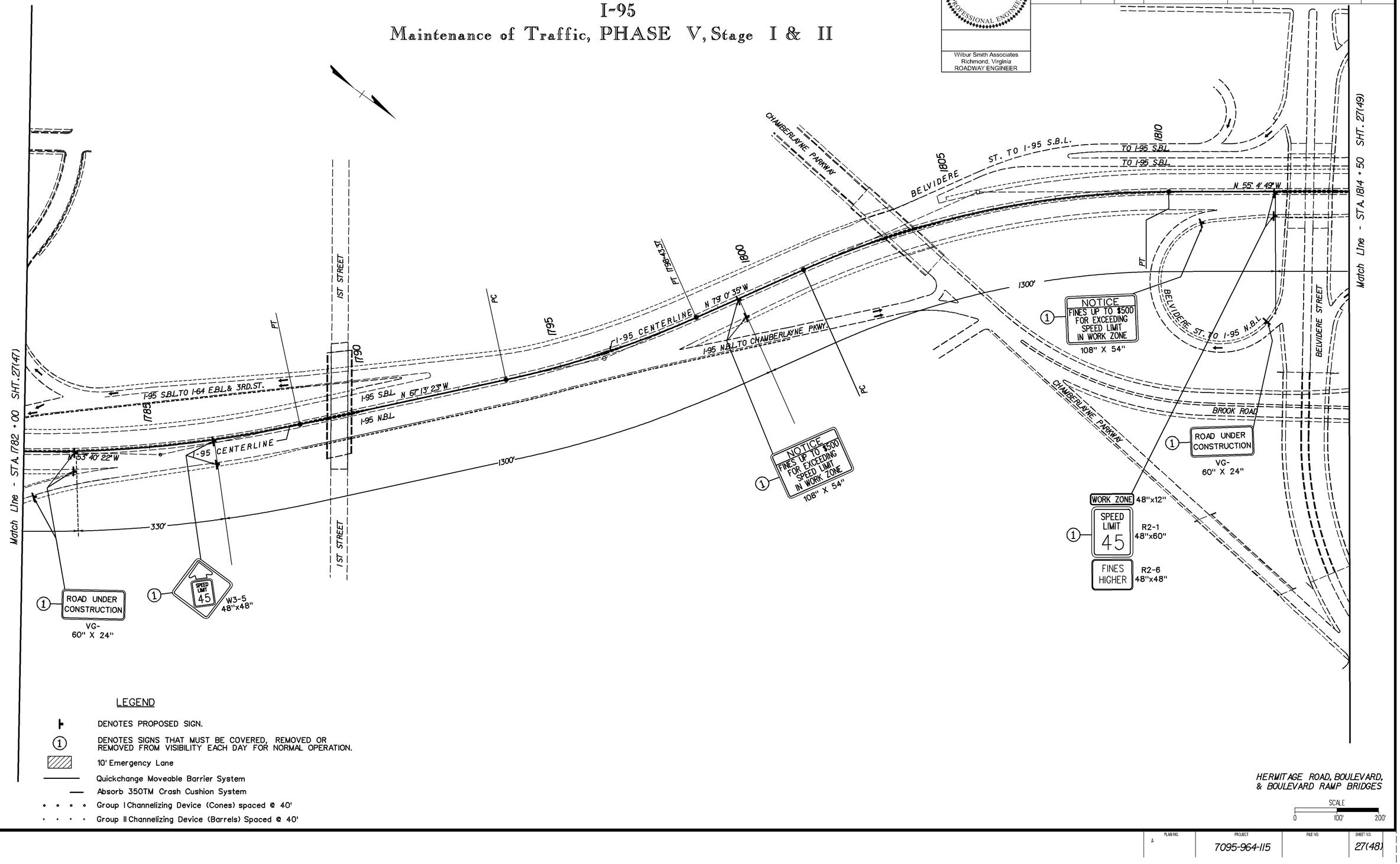
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(48)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



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- 10' Emergency Lane
- Quickchange Moveable Barrier System
- Absorb 350TM Crash Cushion System
- Group I Channelizing Device (Cones) spaced @ 40'
- Group II Channelizing Device (Barrels) Spaced @ 40'

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES (804) 377-2300
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PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(48)

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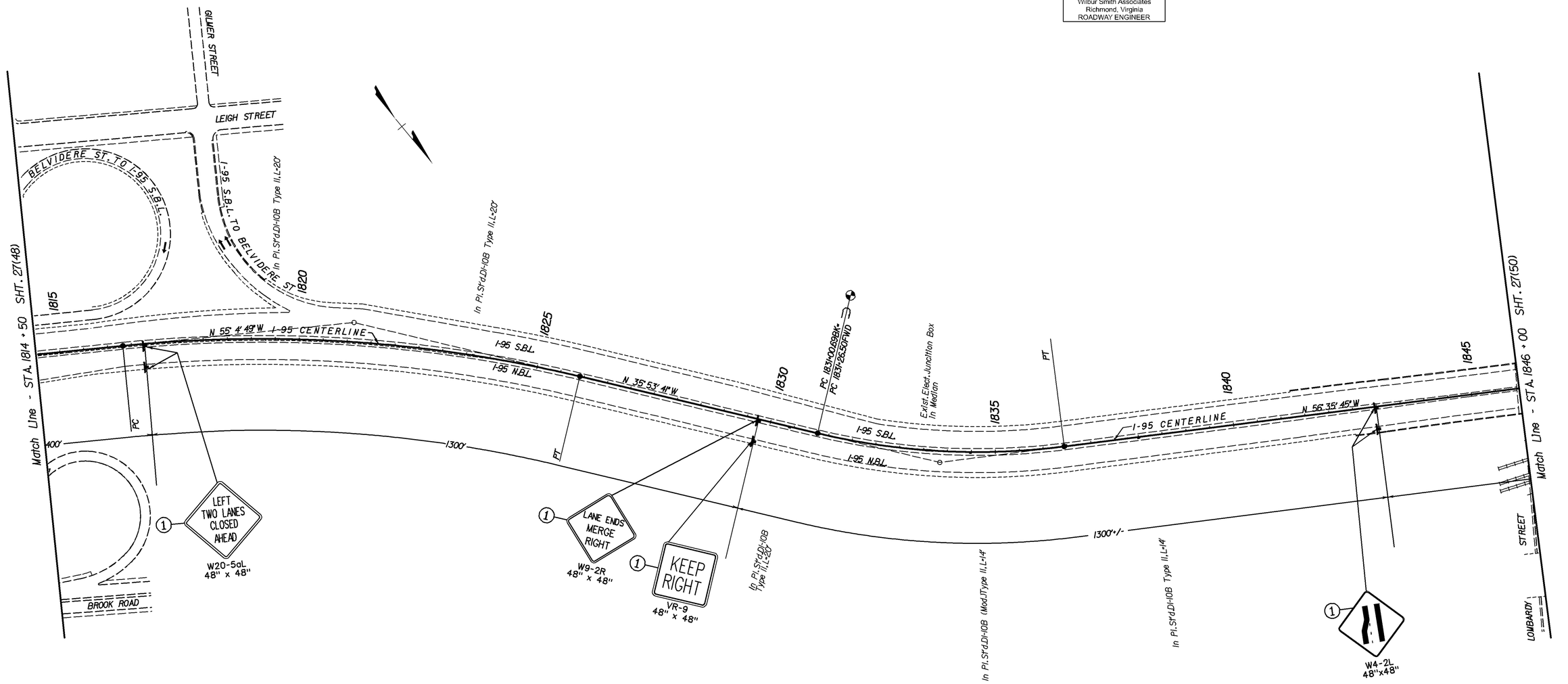
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(49)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE 0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377 2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY

WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(49)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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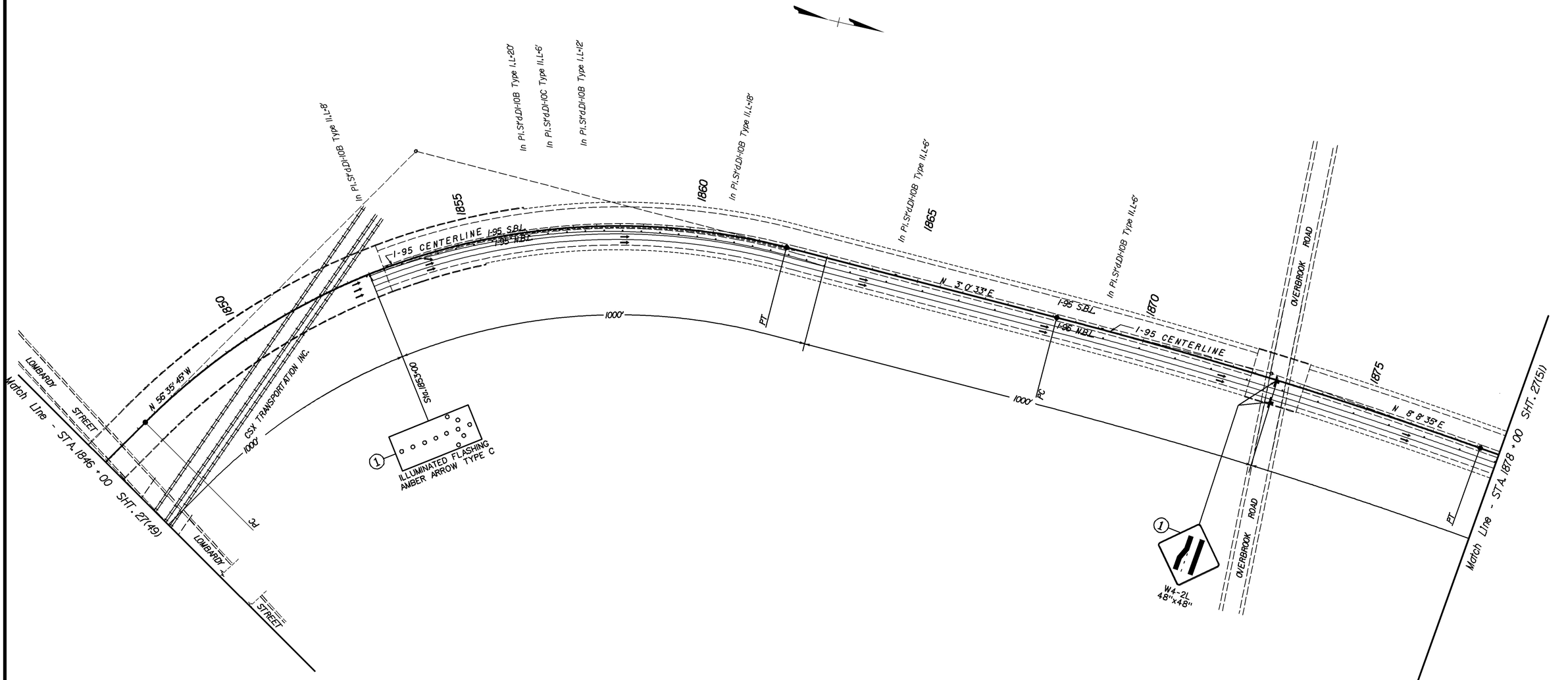
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(50)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE 0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377 2300
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CADD OPERATOR MSA
REVISED BY

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(50)

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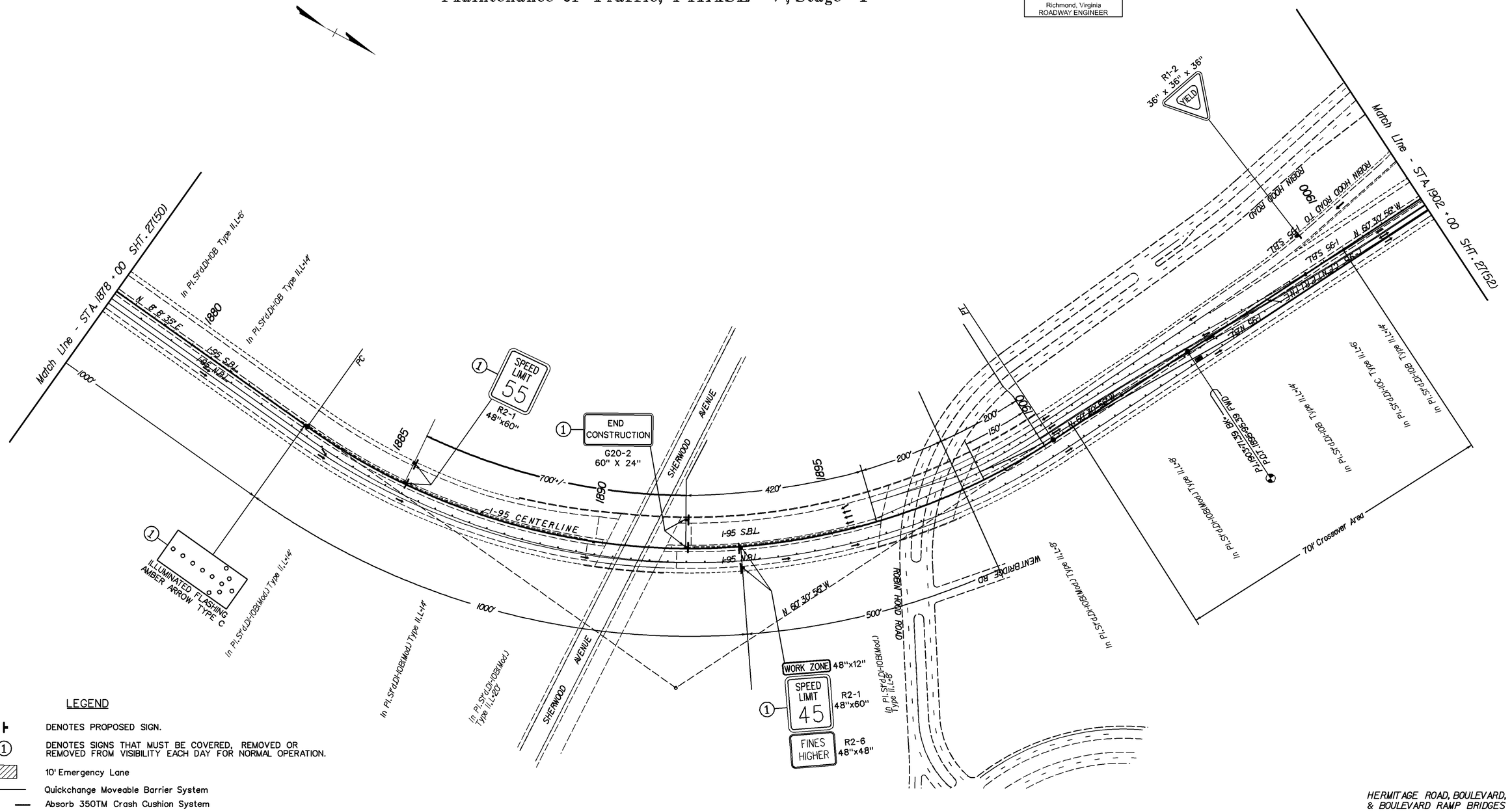
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(51)

I-95
Maintenance of Traffic, PHASE V, Stage I



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

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SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(51)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

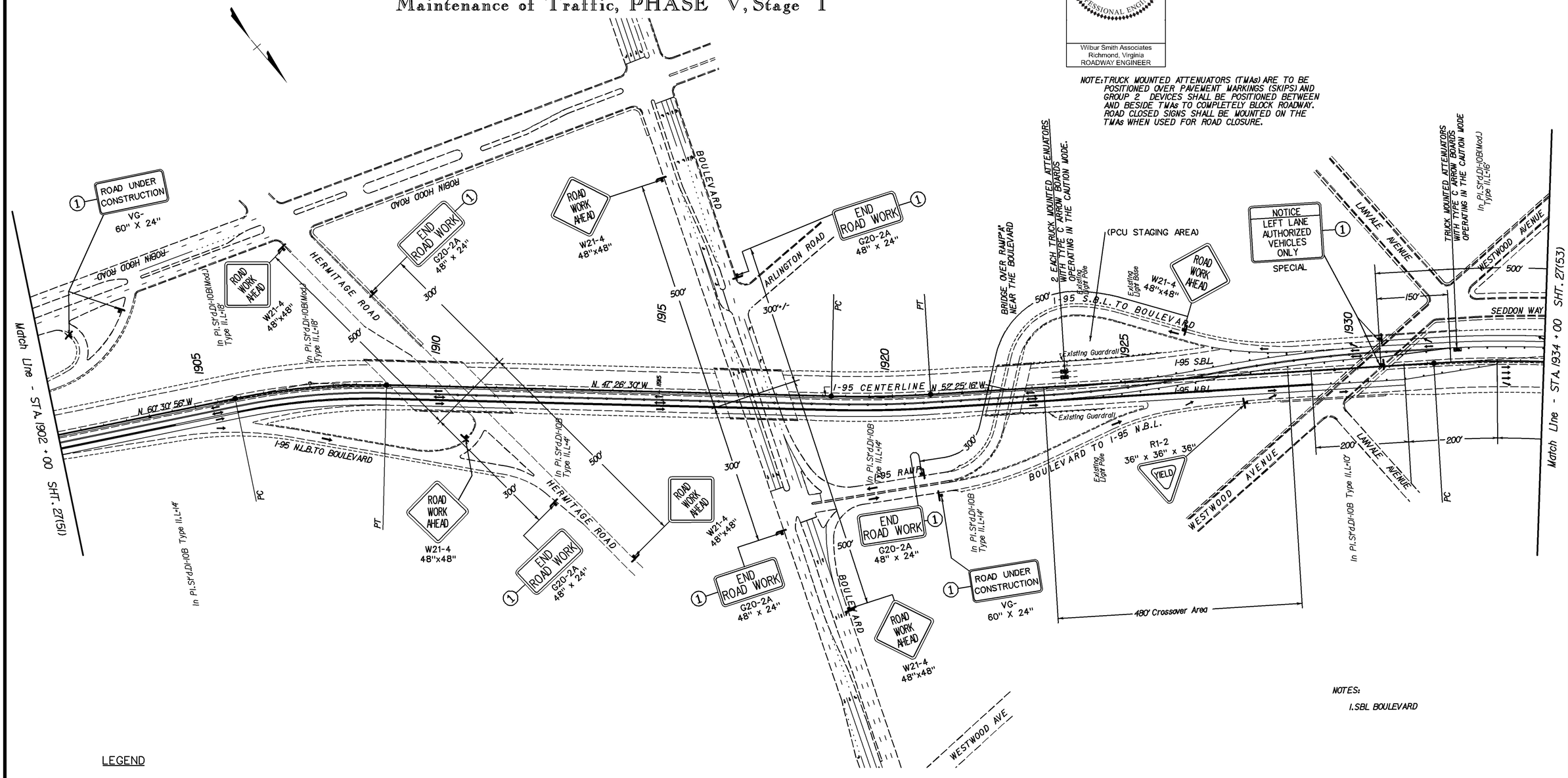
COMMONWEALTH OF VIRGINIA
Robert G. Bass Jr.
Lic. No. 020632
PROFESSIONAL ENGINEER

Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(52)

I-95
Maintenance of Traffic, PHASE V, Stage I

NOTE: TRUCK MOUNTED ATTENUATORS (TMAs) ARE TO BE POSITIONED OVER PAVEMENT MARKINGS (SKIPS) AND GROUP 2 DEVICES SHALL BE POSITIONED BETWEEN AND BESIDE TMAs TO COMPLETELY BLOCK ROADWAY. ROAD CLOSED SIGNS SHALL BE MOUNTED ON THE TMAs WHEN USED FOR ROAD CLOSURE.



NOTES:
1. SBL BOULEVARD

LEGEND

- DENOTES PROPOSED SIGN.
- (1) DENOTES SIGNS THAT MUST BE COVERED, REMOVED OR REMOVED FROM VISIBILITY EACH DAY FOR NORMAL OPERATION.
- 10' Emergency Lane
- Quickchange Moveable Barrier System
- Absorb 350TM Crash Cushion System
- Group I Channelizing Device (Cones) spaced @ 40'
- Group II Channelizing Device (Barrels) Spaced @ 40'

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES, (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(52)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
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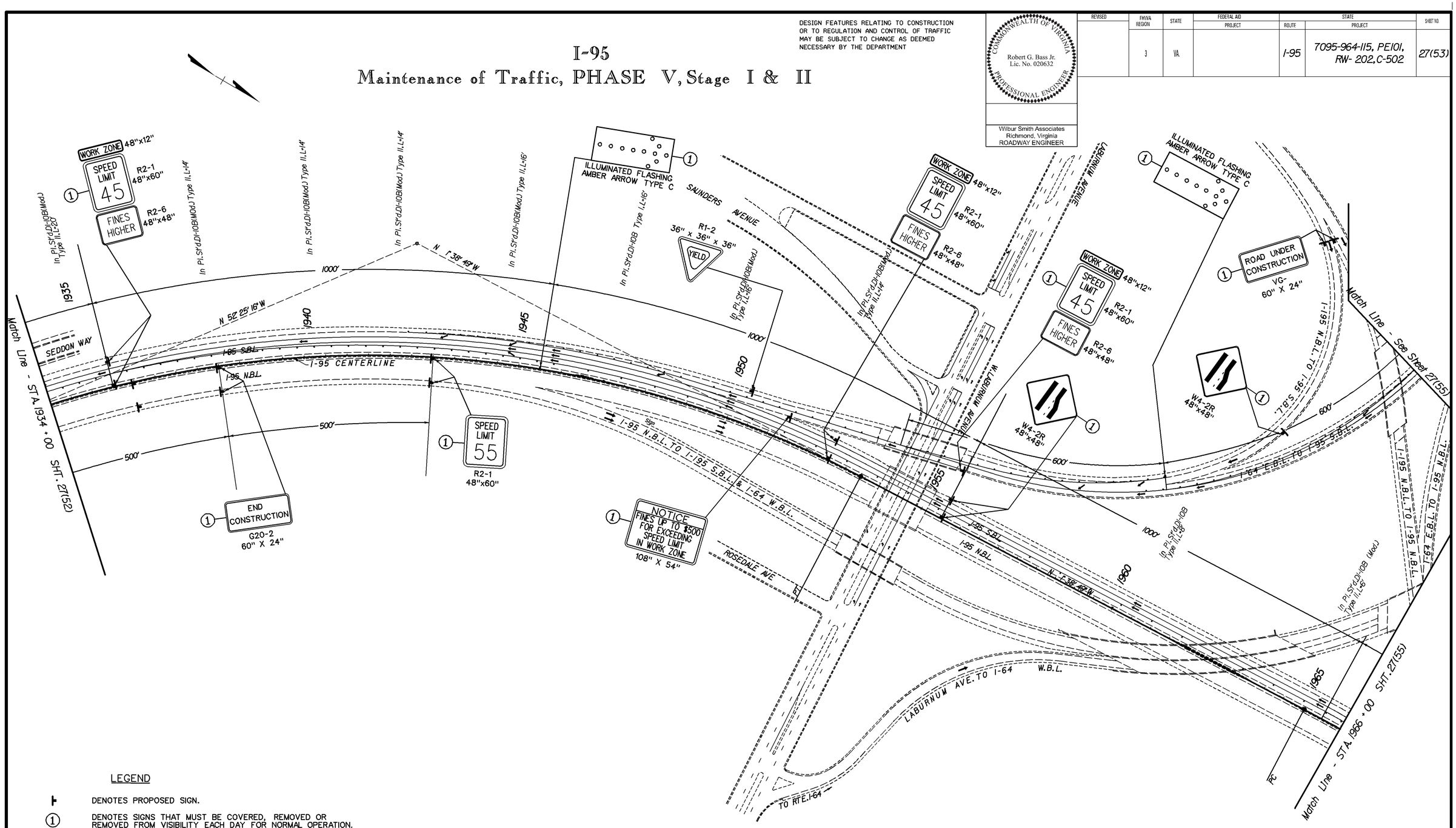
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(53)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

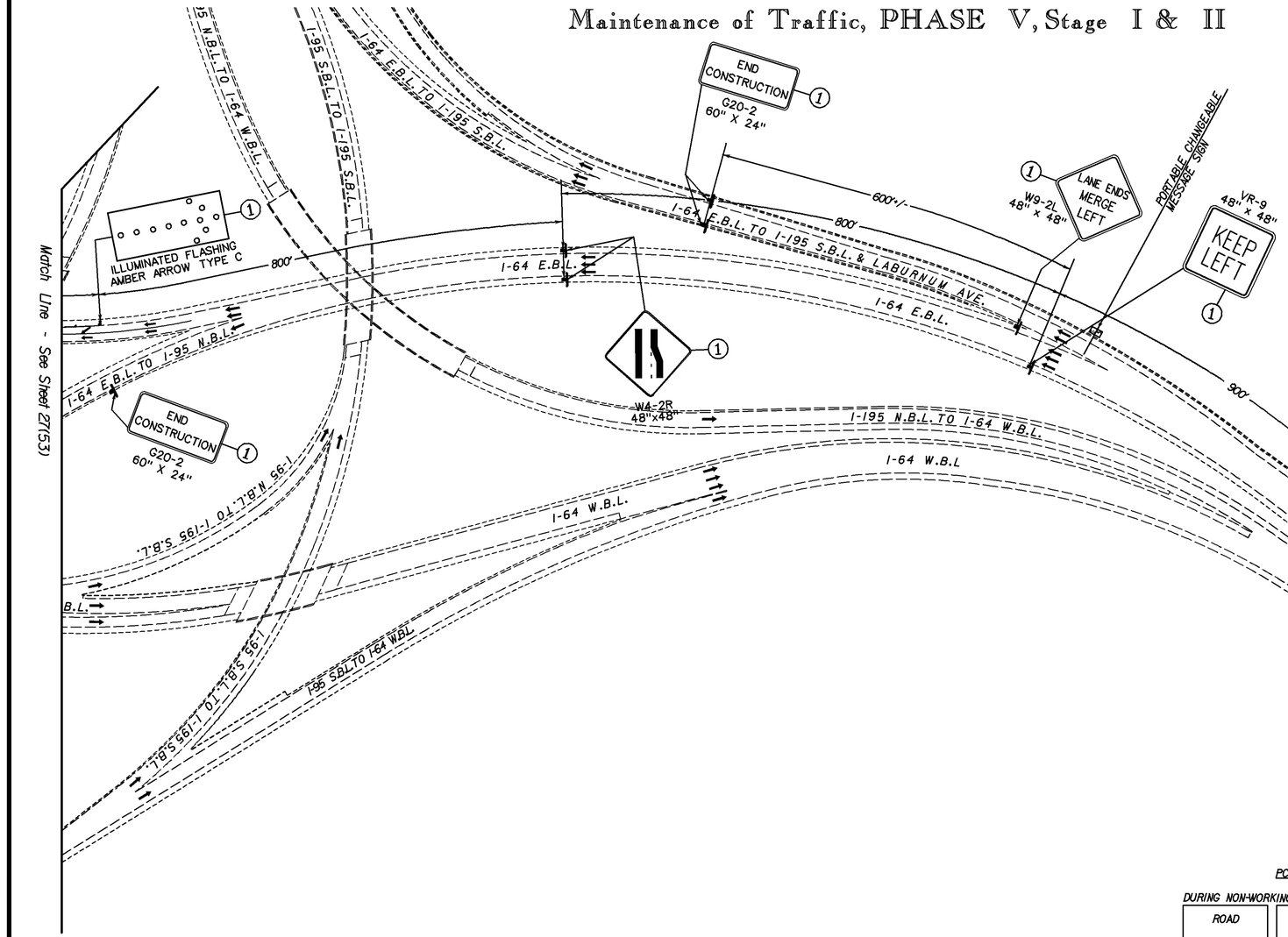
SCALE 0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377 2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(53)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



PCMS MESSAGES

DURING NON-WORKING HOURS:

PHASE I	PHASE II	PHASE III
ROAD WORK 8PM-6AM	EXPECT DELAYS	USE ALT ROUTES

DURING WORKING HOURS:

PHASE I	PHASE II	PHASE III
ONE LANE ROAD AHEAD	REDUCE SPEED	USE CAUTION

LEGEND

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COMMONWEALTH OF VIRGINIA
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Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(54)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

DESIGNED BY: WILBUR SMITH ASSOCIATES, (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(54)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
Robert G. Bass Jr.
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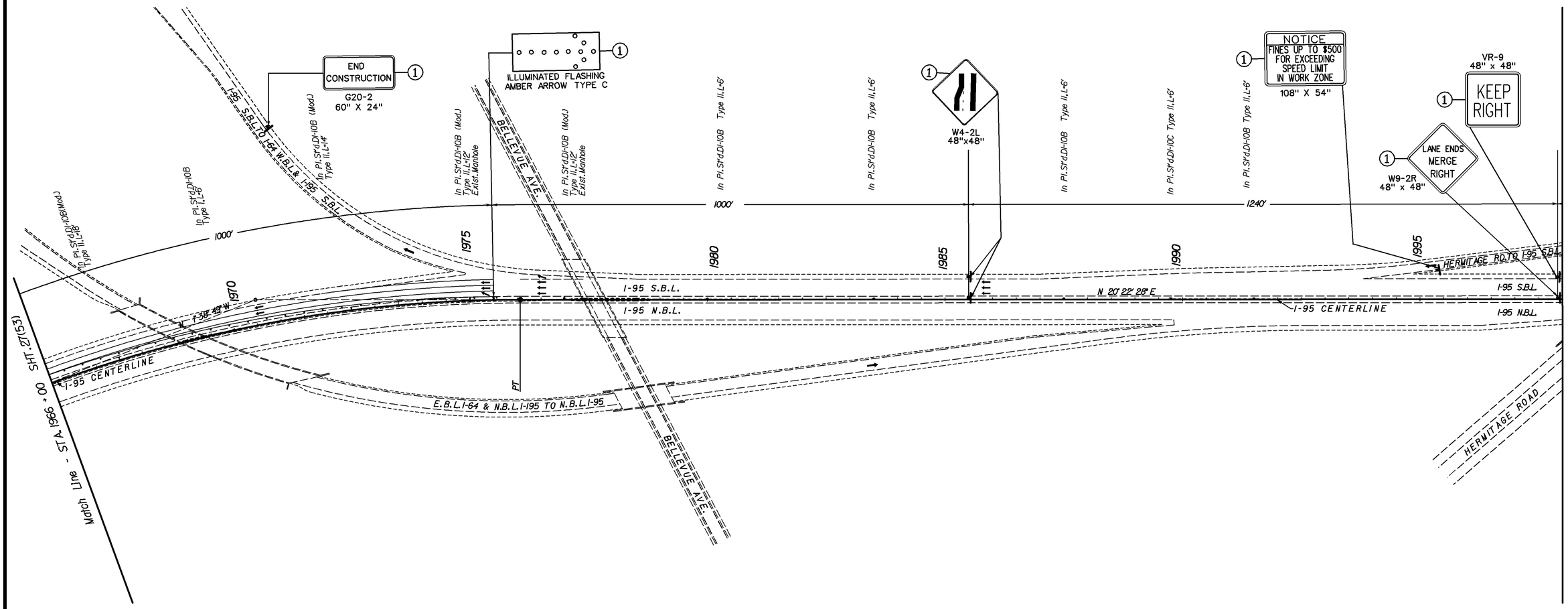
PROFESSIONAL ENGINEER

Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(55)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR MSA
REVISED BY

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(55)

I-95
Maintenance of Traffic, PHASE V, Stage I & II

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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Richmond, Virginia
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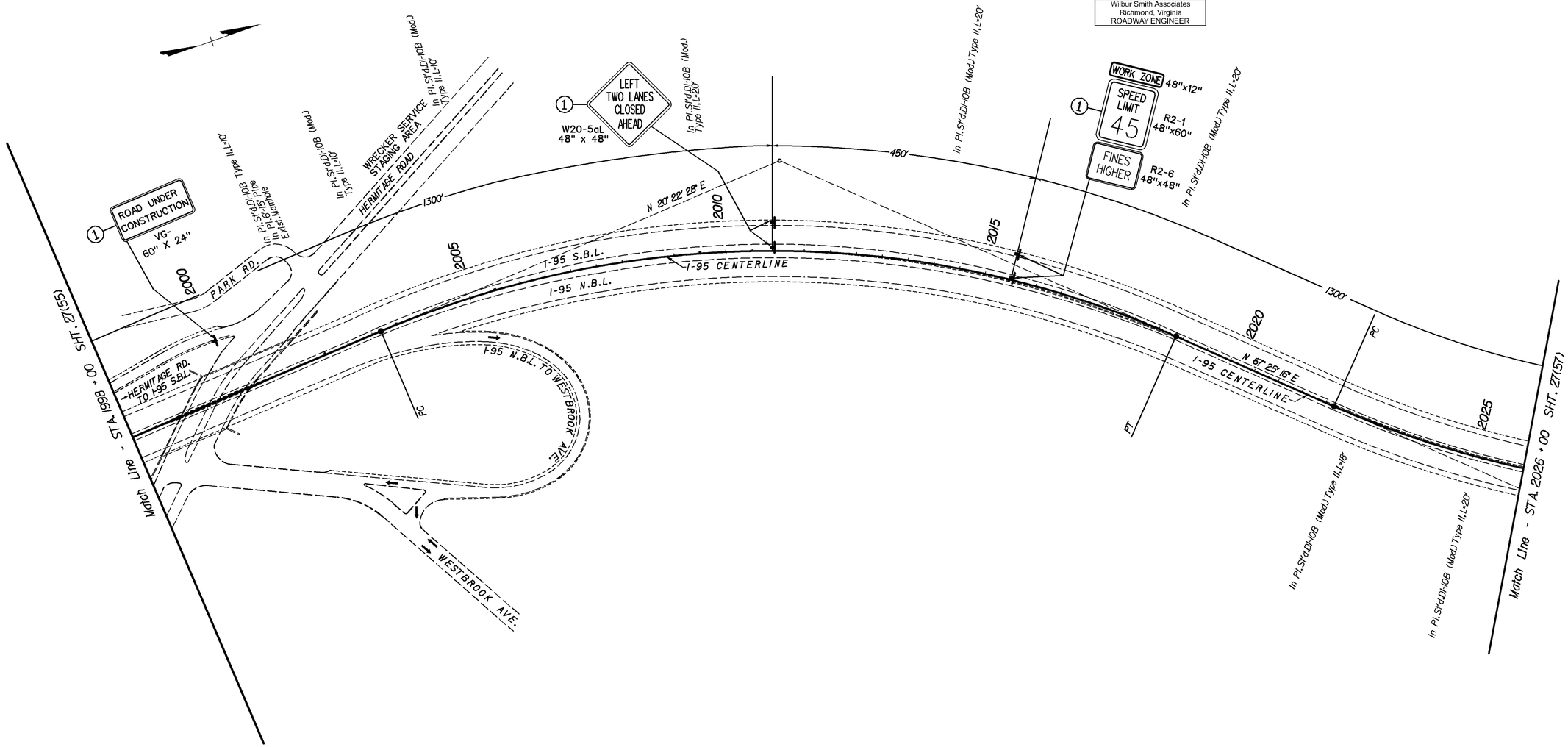
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(56)



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES, (804) 377-2390
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(56)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
Robert G. Bass Jr.
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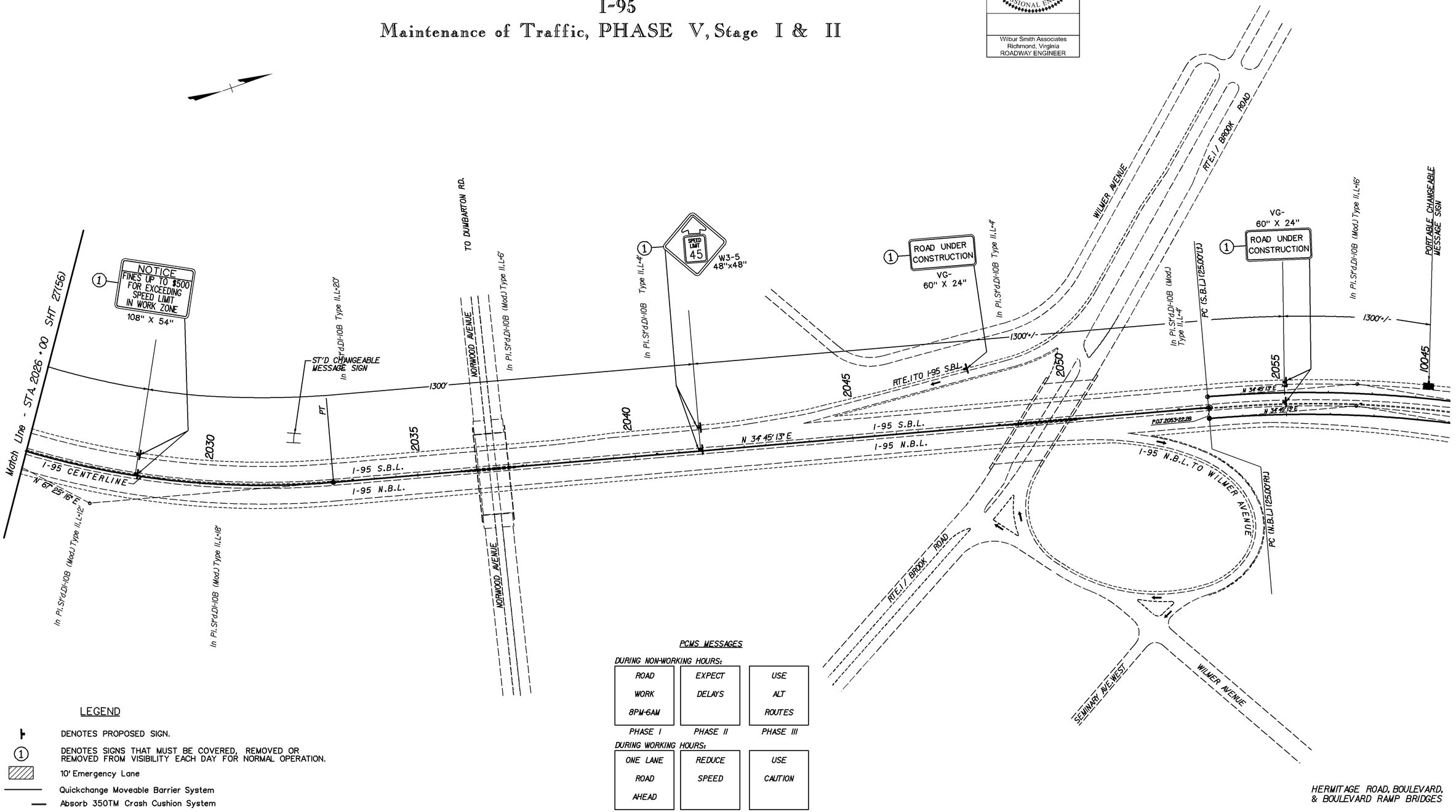
PROFESSIONAL ENGINEER

Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(57)

I-95
Maintenance of Traffic, PHASE V, Stage I & II



PCMS MESSAGES

DURING NON-WORKING HOURS:

ROAD WORK 8PM-6AM	EXPECT DELAYS	USE ALT ROUTES
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DURING WORKING HOURS:

ONE LANE ROAD AHEAD	REDUCE SPEED	USE CAUTION
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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE 0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377 2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR MSA
REVISED BY

WilburSmith ASSOCIATES ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(57)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(58)

I-95
Maintenance of Traffic, PHASE V, Stage I
UNDEPLOYED
(ALL LANES OPEN)

LEGEND

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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(58)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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Robert G. Bass Jr.
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Wilbur Smith Associates
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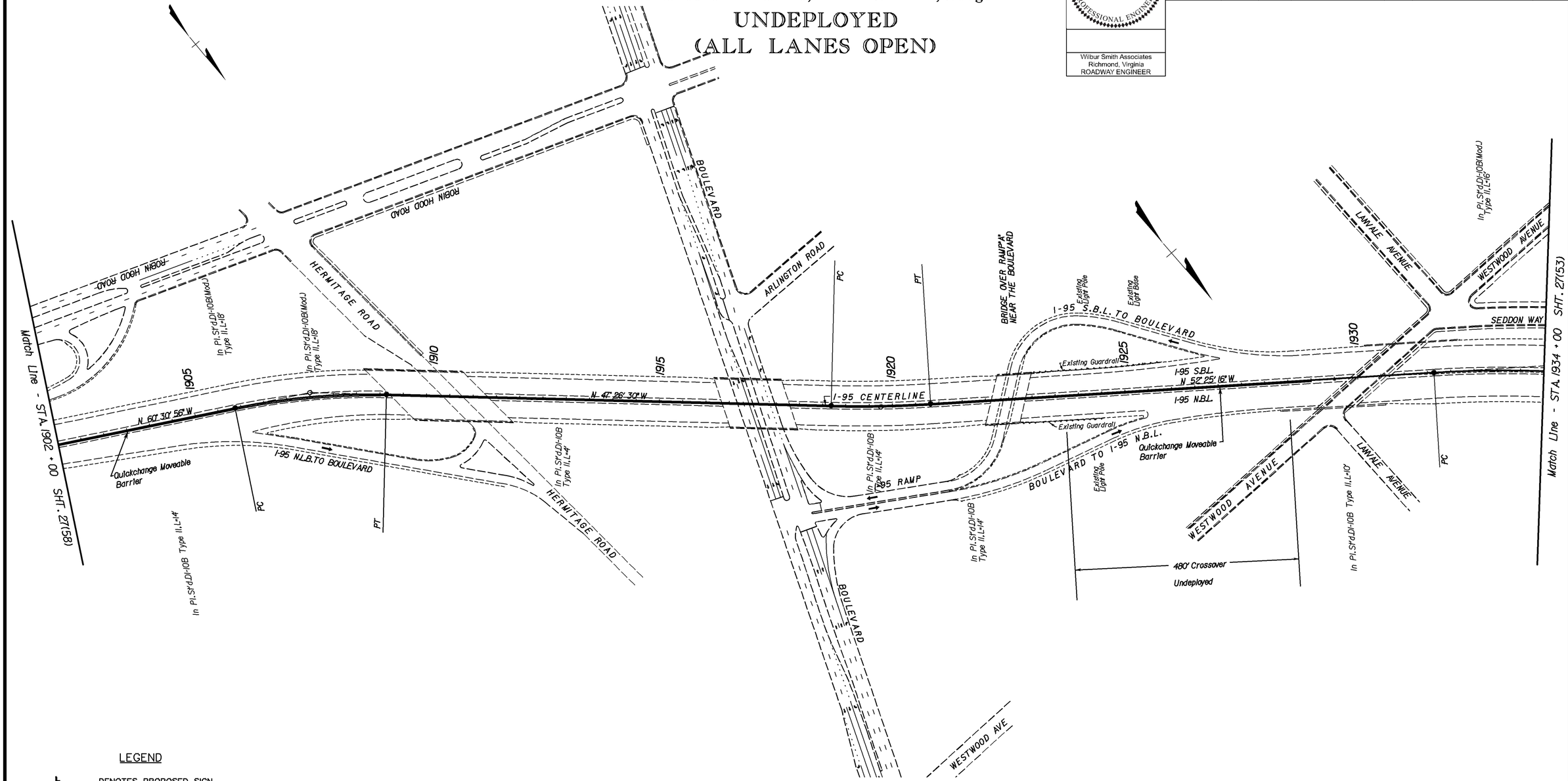
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(59)

I-95
Maintenance of Traffic, PHASE V, Stage I
UNDEPLOYED
(ALL LANES OPEN)



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES, (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: WSA
REVISED BY:

ENGINEERS PLANNERS CONSTRUCTION MANAGERS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(59)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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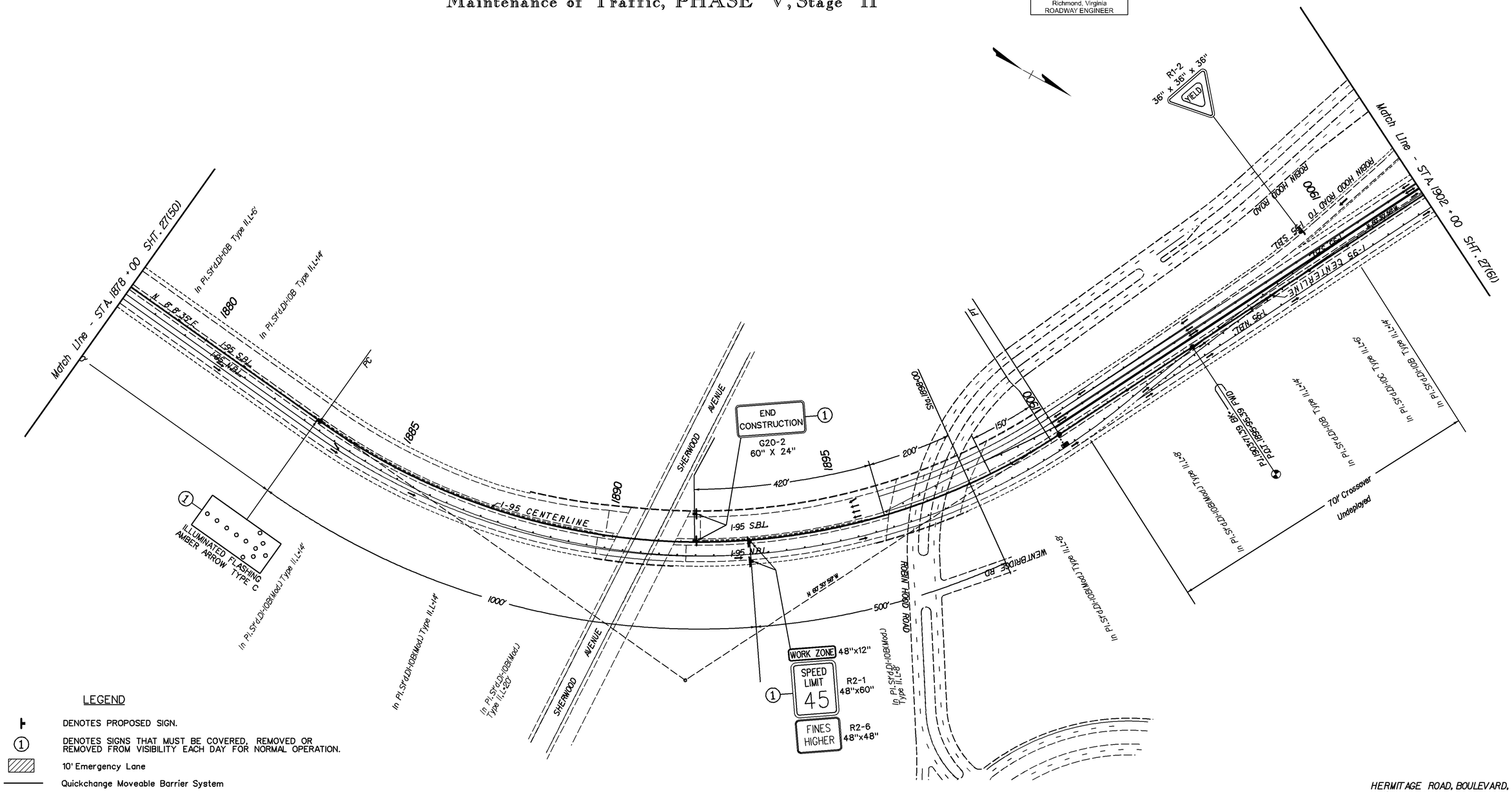
Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(60)

I-95
Maintenance of Traffic, PHASE V, Stage II



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
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DESIGNED BY: *WILBUR SMITH ASSOCIATES (804) 377-2300*
SUPERVISED BY: *Robert Bass, P.E.*
CADD OPERATOR: *WSA*
REVISED BY:

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(60)

I-95
Maintenance of Traffic, PHASE V, Stage II

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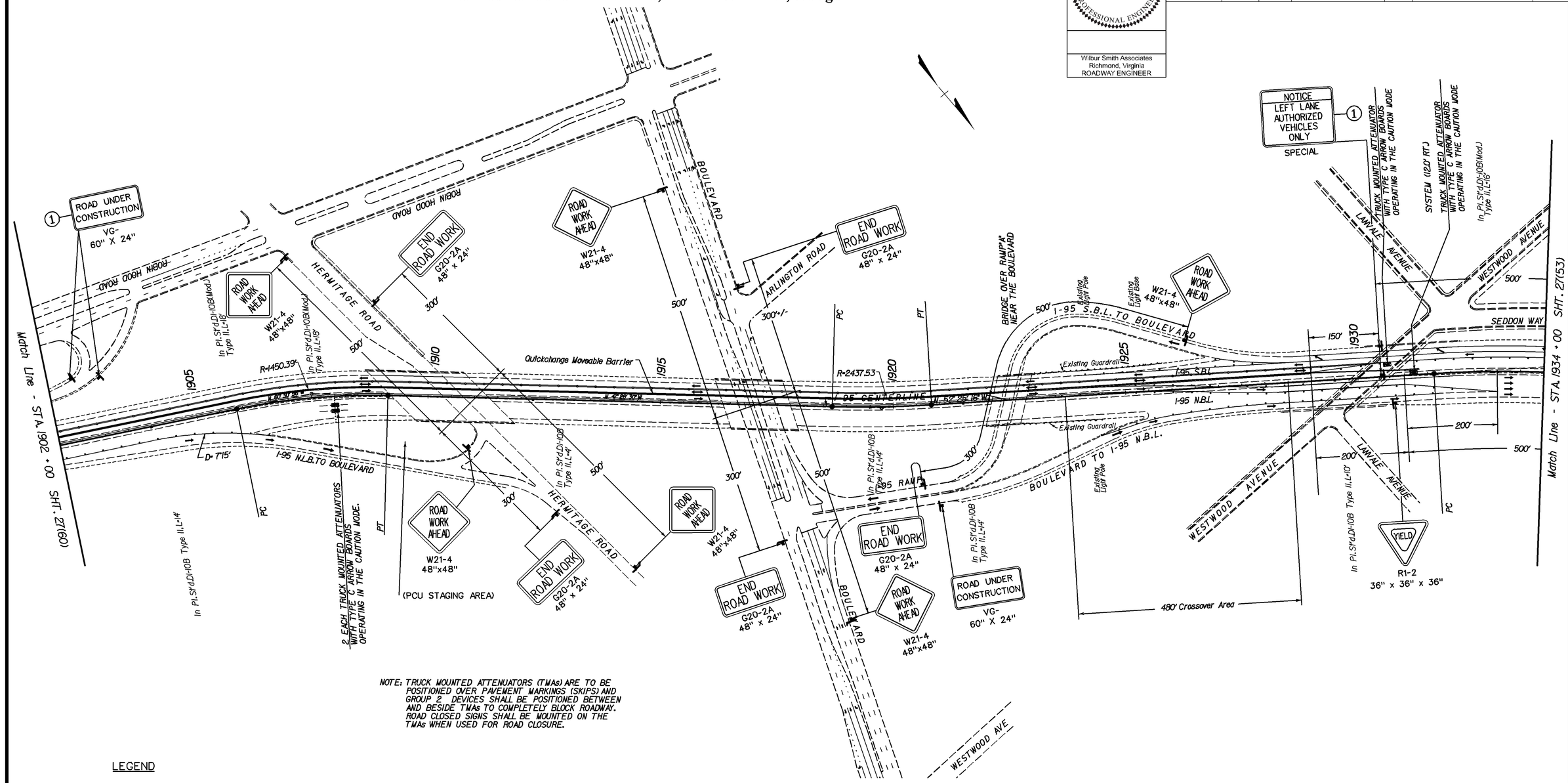
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(61)



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE 0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(61)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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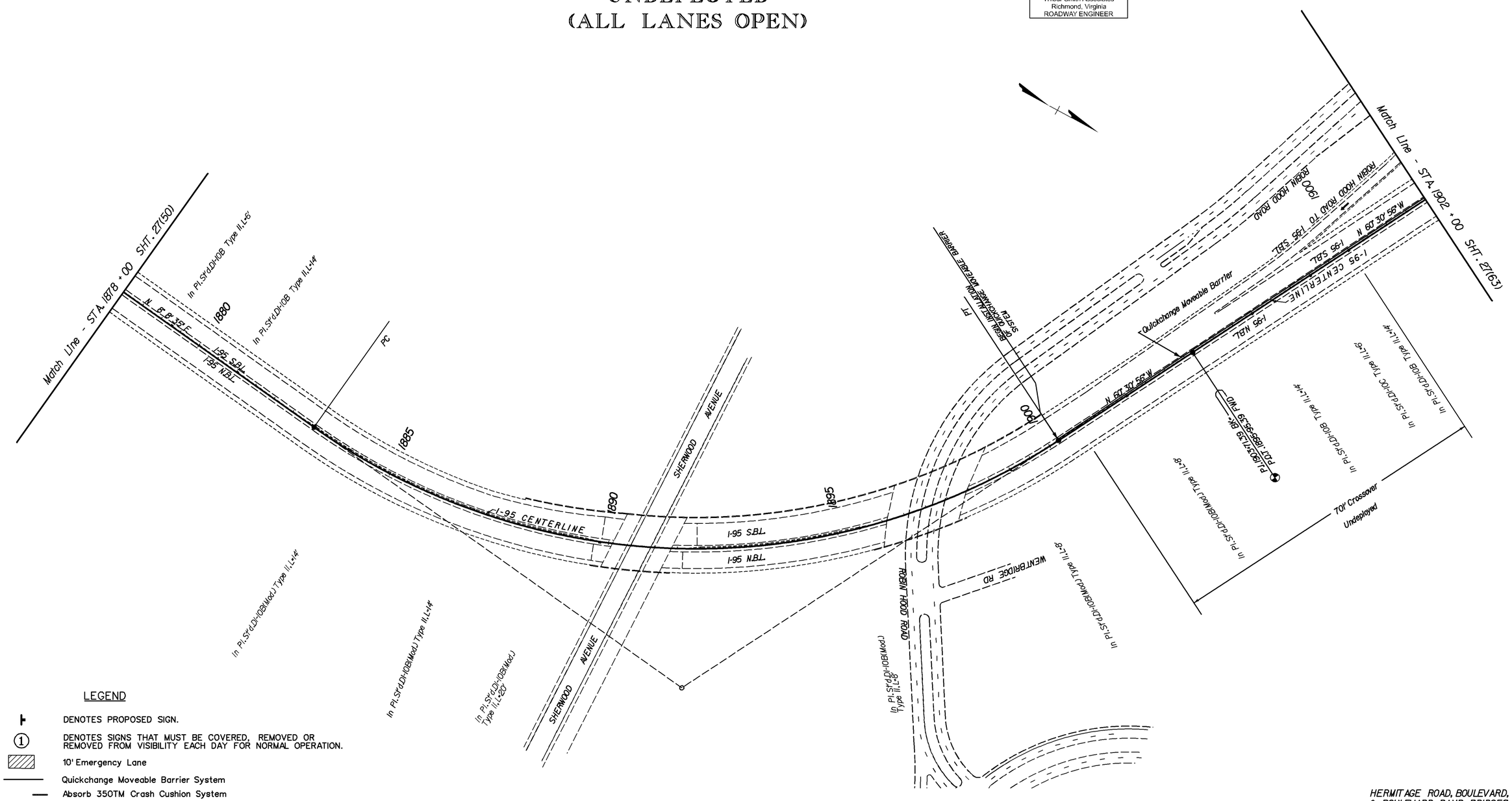
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(62)

I-95
Maintenance of Traffic, PHASE V, Stage II
UNDEPLOYED
(ALL LANES OPEN)



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE 0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR MSA
REVISED BY

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(62)

I-95
Maintenance of Traffic, PHASE V, Stage II
UNDEPLOYED
(ALL LANES OPEN)

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(63)

COMMONWEALTH OF VIRGINIA
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PROFESSIONAL ENGINEER

Wilbur Smith Associates
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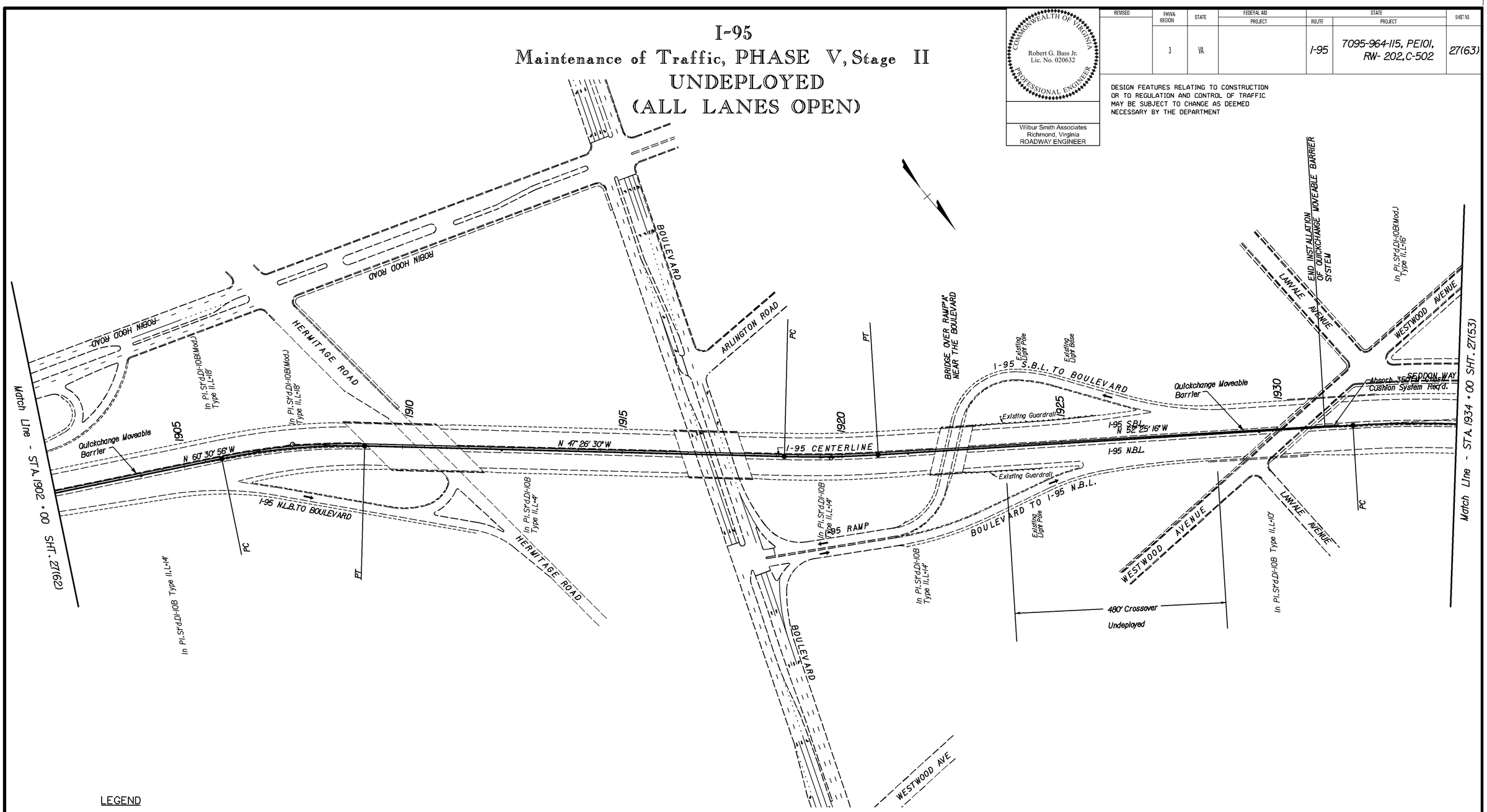
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



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HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE
0 100' 200'

DESIGNED BY WILBUR SMITH ASSOCIATES, (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
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REVISED BY

WilburSmith ASSOCIATES
ENGINEERS, PLANNERS, ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
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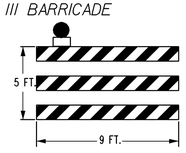
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(64)

I-95
Maintenance of Traffic, PHASE V, Stage I & II
Detour - Hermitage Road

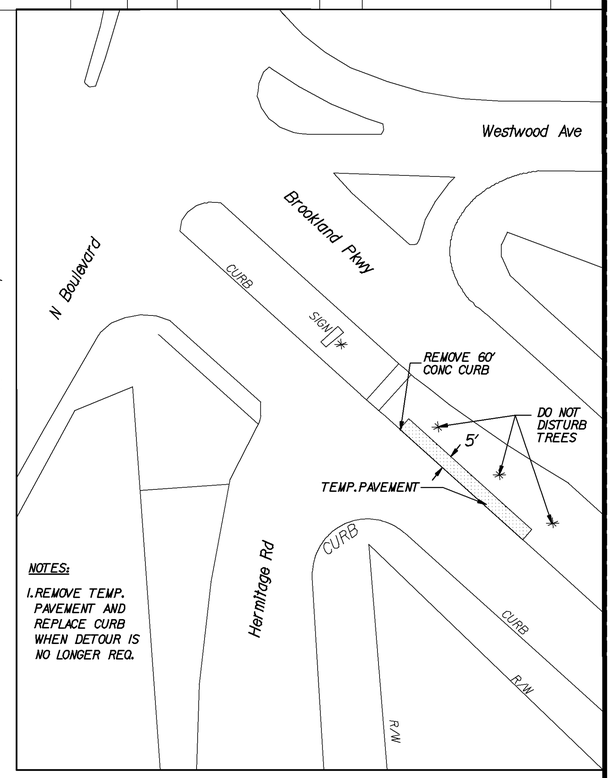
TYPE III BARRICADE



SIGN LEGEND

DETOUR M4-9R 30" x 24" S-1	DETOUR M4-9L 30" x 24" S-2	DETOUR M4-9 MOD S-5
END DETOUR VW-19 18" X 24" S-3	ROAD CLOSED R11-2 48" x 30" S-4	HERMITAGE RD CLOSED AT I-95 SPECIAL S-6

CLOSURE — DETOUR ROUTE



NOTES:

1. REMOVE TEMP. PAVEMENT AND REPLACE CURB WHEN DETOUR IS NO LONGER REQ.

INTERSECTION DETAIL

SCALE 0 25' 50'

TEMP. PAVEMENT - 8" ASPHALT CONCR. BASE COURSE TY BM-25.0

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

SCALE 0 400' 800'

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR MSA
REVISED BY

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(64)

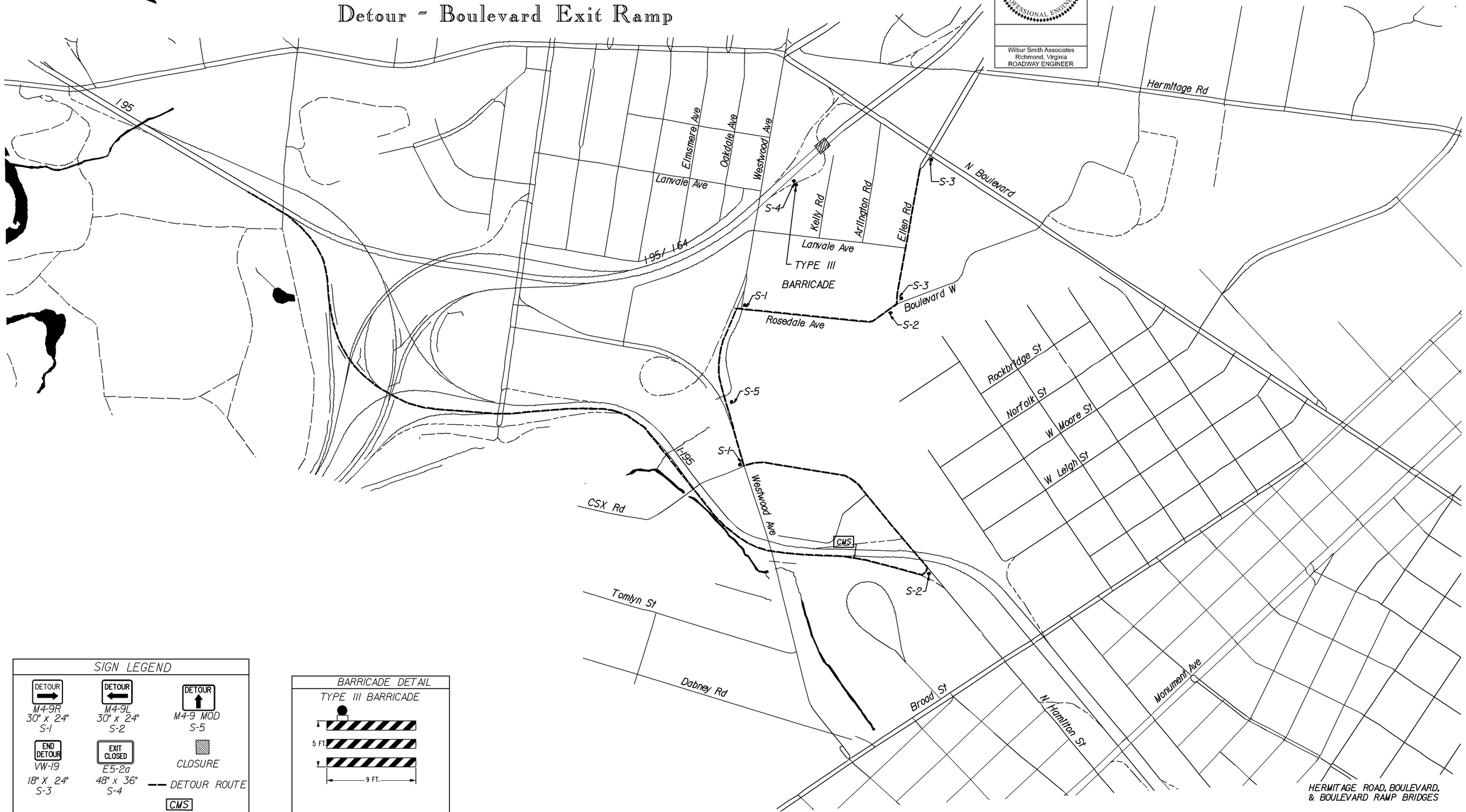
I-95
Maintenance of Traffic, PHASE V & VI
Detour - Boulevard Exit Ramp

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
Robert G. Bass Jr.
Lic. No. 020632
PROFESSIONAL ENGINEER

Wilbur Smith Associates
Richmond, Virginia
ROADWAY ENGINEER

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(65)



SCALE
0 400' 800'

SIGN LEGEND

DETOUR M4-9R 30" x 24" S-1	DETOUR M4-9L 30" x 24" S-2	DETOUR M4-9 MOD S-5
END DETOUR VW-19 18" X 24" S-3	EXIT CLOSED E5-2a 48" x 36" S-4	CLOSURE
		DETOUR ROUTE
		CMS CHANGEABLE MESSAGE SIGN

BARRICADE DETAIL

TYPE III BARRICADE

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 371 2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(65)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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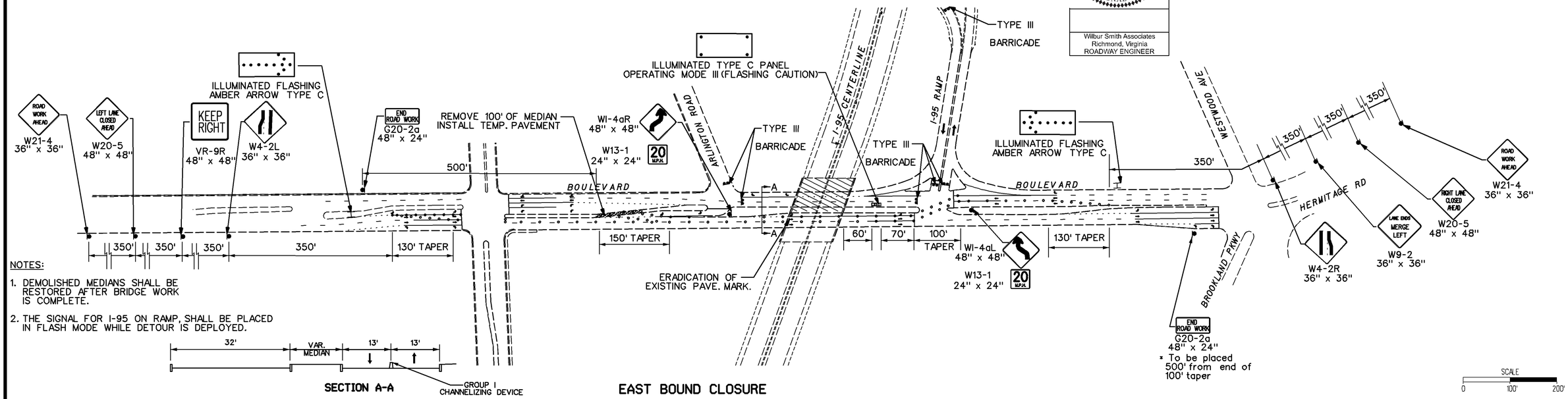
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202, C-502	27(66)

I-95

Maintenance of Traffic, PHASE V, Stage I & II
DIVERSION DETAIL



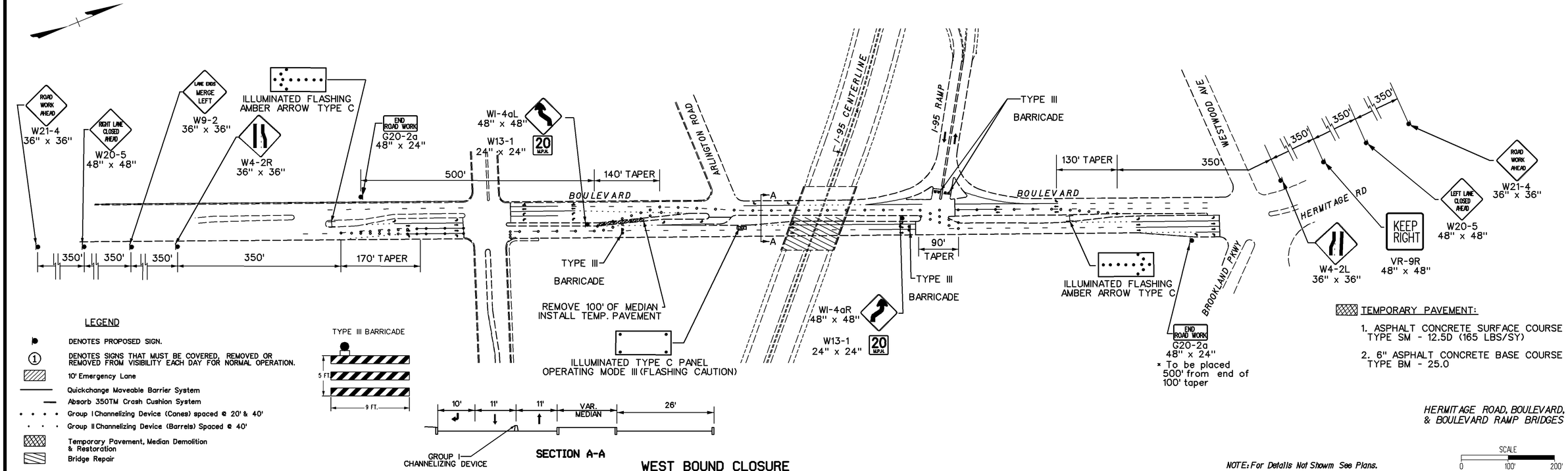
NOTES:

1. DEMOLISHED MEDIANS SHALL BE RESTORED AFTER BRIDGE WORK IS COMPLETE.
2. THE SIGNAL FOR I-95 ON RAMP, SHALL BE PLACED IN FLASH MODE WHILE DETOUR IS DEPLOYED.

SECTION A-A

EAST BOUND CLOSURE

SCALE 0 100' 200'



LEGEND

- DENOTES PROPOSED SIGN.
- ① DENOTES SIGNS THAT MUST BE COVERED, REMOVED OR REMOVED FROM VISIBILITY EACH DAY FOR NORMAL OPERATION.
- 10' Emergency Lane
- Quickchange Moveable Barrier System
- Absorb 350TM Crash Cushion System
- Group I Channelizing Device (Cones) spaced @ 20' & 40'
- Group II Channelizing Device (Barrels) Spaced @ 40'
- Temporary Pavement, Median Demolition & Restoration
- Bridge Repair

TYPE III BARRICADE

SECTION A-A

WEST BOUND CLOSURE

TEMPORARY PAVEMENT:

1. ASPHALT CONCRETE SURFACE COURSE TYPE SM - 12.5D (165 LBS/SY)
2. 6" ASPHALT CONCRETE BASE COURSE TYPE BM - 25.0

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

NOTE: For Details Not Shown See Plans.

SCALE 0 100' 200'

DESIGNED BY: WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY: Robert Bass, P.E.
CADD OPERATOR: MSA
REVISED BY:

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(66)

I - 95 MAINTENANCE OF TRAFFIC PLANS
PHASE V, STAGES I & II
CONSTRUCTION SIGN SUMMARY - MAINLINE

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(67)

PHASE	STAGE	TEXT	SIGN STD. NO.	PANEL SIZE W	PANEL SIZE H	QUANTITY	SIGN AREA S.F.	STAGE SUM	PHASE SUM
V	1					13	10	130	
V	2	ROAD UNDER CONSTRUCTION	VG-	60"	24"	13	10	130	130
V	1					6	16	96	
V	2	ROAD WORK AHEAD	W21-4	48"	48"	6	16	96	96
V	1					8	40.5	324	
V	2	NOTICE $500 MAXIMUM FINE FOR EXCEEDING SPEED LIMIT IN WORK ZONE	SPECIAL	120"	72"	8	40.5	324	324
V	1					17	20	340	
V	2	SPEED LIMIT 45 / SPEED LIMIT 55	R2-1	48"	60"	17	20	340	340
V	1					4	16	64	
V	2	LEFT TWO LANES CLOSED AHEAD	W20-5a	48"	48"	4	16	64	64
V	1					3	16	48	
V	2	KEEP RIGHT	VR-9R	48"	48"	3	16	48	48
V	1					3	16	48	
V	2	LANE ENDS MERGE RIGHT	W9-2R	48"	48"	3	16	48	48
V	1					6	8	48	
V	2	END ROAD WORK	G20-2A	48"	24"	6	8	48	48
V	1					6	10	60	
V	2	END CONSTRUCTION	G20-2	60"	24"	6	10	60	60

PHASE	STAGE		TEXT	SIGN STD. NO.	PANEL SIZE W	PANEL SIZE H	QUANTITY	SIGN AREA S.F. EA.	PHASE SUM	STAGE SUM
V	1						13	16	208	
V	2		FINES HIGHER	R2-6	48"	48"	13	16	208	208
V	1						3	9	27	
V	2		YIELD	R1-2	36"	36"	3	9	27	27
V	1						11	16	176	
V	2			W4-2	48"	48"	11	16	176	176
V	1						2	27.5	55	
V	2		NOTICE LEFT LANE AUTHORIZED VEHICLES ONLY	SPECIAL	60"	66"	2	27.5	55	55
V	1						13	4	52	
V	2		WORK ZONE	SPECIAL	48"	12"	13	4	52	52
V	1						2	16	32	
V	2		LEFT TWO LANES CLOSED AHEAD	W20-5a	48"	48"	2	16	32	32
V	1						6	16	96	
V	2		SPEED LIMIT 45	W3-5	48"	48"	6	16	96	96
								TOTAL	1811	

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

DESIGNED BY WILBUR SMITH ASSOCIATES (804) 377-2300
SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	7095-964-115		27(67)

I - 95 MAINTENANCE OF TRAFFIC PLANS
PHASE V, STAGES I & II
SIGN DETAILS

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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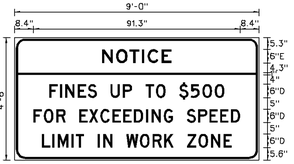
REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		I-95	7095-964-115, PE101, RW- 202,C-502	27(68)

SIGN DETAIL
1:25

BORDER
R=4"
TH=1"
IN=0.5"



ASSY. NO	
SIGN NO.	
LxH (AREA)	9'-X-4.5-(40.5)
MARGIN/BORD/RAD	0.5/1/4
MATERIAL	
BACKGROUND	REFLECTORIZED
TOP/BOTTOM...	COLOR: ORANGE/WHITE
LEGEND/BORDER	NON-REFLECTORIZED
	COLOR: BLACK

SYMBOL	ANGLE	X	Y	WID	HT

Dimensions are in inches.tenths

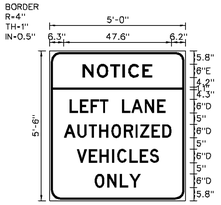
Letter spacings are to start of next letter

LETTER POSITIONS (X) — LENGTH SERIES / SIZE

	N	O	T	I	C	E																						E 2000
38.6	6.2	5.9	5.5	2.5	6.2	4.6	38.6																				30.9	6
	F	I	N	E	S		U	P		T	O		$	5	0	0												D 2000
15.4	4.6	2.4	5.5	4.3	4.1	6	5.5	4.1	6	4.5	4.3	6	5	5.3	5.5	4.3	15.4											77.3	6
	F	O	R		E	X	C	E	E	D	I	N	G		S	P	E	E	D									D 2000
8.4	4.5	5.6	4.1	6	4.3	5	5.4	4.7	4.7	5.4	2.4	5.4	4.1	6	5.1	5	4.7	4.7	4.1	8.4								91.3	6
	L	I	M	I	T		I	N		W	O	R	K		Z	O	N	E										D 2000
12	4.6	2.4	6.1	1.9	3.7	6	2.4	4.1	6	6.1	5.6	5.1	4.2	6	5	5.6	5.5	3.8	12									84.1	6

SIGN DETAIL
1:25

BORDER
R=4"
TH=1"
IN=0.5"



ASSY. NO	
SIGN NO.	
LxH (AREA)	5'-X-5.5-(27.5)
MARGIN/BORD/RAD	0.5/1/4
MATERIAL	
BACKGROUND	REFLECTORIZED
TOP/BOTTOM...	COLOR: ORANGE/WHITE
LEGEND/BORDER	NON-REFLECTORIZED
	COLOR: BLACK

SYMBOL	ANGLE	X	Y	WID	HT

Dimensions are in inches.tenths

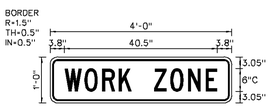
Letter spacings are to start of next letter

LETTER POSITIONS (X) — LENGTH SERIES / SIZE

	N	O	T	I	C	E																						E 2000
14.6	6.2	5.9	5.5	2.5	6.2	4.6	14.6																				30.9	6
	L	E	F	T		L	A	N	E																			D 2000
8.8	4.6	4.7	4.1	3.7	6	4.1	6	5.5	3.8	8.8																		42.5	6
	A	U	T	H	O	R	I	Z	E	D																		D 2000
6.3	6	5	4.6	5.4	5.6	5.1	2	5.1	4.7	4.1	6.2																	47.6	6
	V	E	H	I	C	L	E	S																				D 2000
11.8	5.5	4.7	5.5	2.3	5.4	4.6	4.3	4.1	11.8																			36.5	6
	O	N	L	Y																								D 2000
19.9	5.6	5.5	4.1	5.2	19.8																							20.4	6

SIGN DETAIL
1:15

BORDER
R=1.5"
TH=0.5"
IN=0.5"



ASSY. NO	
SIGN NO.	
LxH (AREA)	4'-X-1.(4)
MARGIN/BORD/RAD	0.5/0.5/1.5
MATERIAL	
BACKGROUND	REFLECTORIZED
	COLOR: ORANGE
LEGEND/BORDER	NON-REFLECTORIZED
	COLOR: BLACK

SYMBOL	ANGLE	X	Y	WID	HT

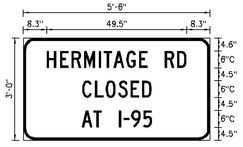
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X) — LENGTH SERIES / SIZE

	W	O	R	K		Z	O	N	E																			C 2000
3.8	5.3	4.7	4.4	3.4	6	4.3	4.7	4.7	3.1	3.8																	40.5	6

SIGN DETAIL
1:20



ASSY. NO	
SIGN NO.	
LxH (AREA)	5.5-x-3.-(16.5)
MARGIN/BORD/RAD	0/1/4
MATERIAL	
BACKGROUND	REFLECTORIZED
	COLOR: ORANGE
LEGEND/BORDER	NON-REFLECTORIZED
	COLOR: BLACK

SYMBOL	ANGLE	X	Y	WID	HT

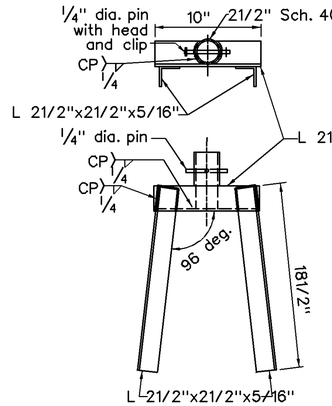
Dimensions are in inches.tenths

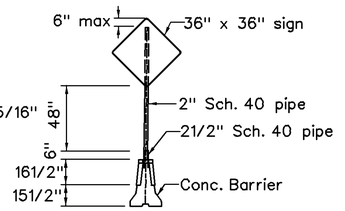
Letter spacings are to start of next letter

LETTER POSITIONS (X) — LENGTH SERIES / SIZE

	H	E	R	M	I	T	A	G	E		R	D															C 2000
8.3	4.7	4.1	4.4	5.3	1.7	3.4	4.6	4.6	3.1	6	4.4	3.4	8.3													49.5	6
	C	L	O	S	E	D																						C 2000
20.8	4.6	3.8	4.4	4.4	4.1	3.4	20.7																			24.6	6
	A	T		I	-	9	5																					C 2000
20.6	4.2	3.1	6	1.7	2.6	4.1	3.5	20.4																		25.1	6

CONCRETE BARRIER SIGN SUPPORT





NOTES:

- Drill additional holes so sign can be rotated 90 degrees and pinned when not in use.
- All structural steel shall conform to ASTM A36.
- Support fits both 32" and 42" tall "F" barrier.
- Use concrete barrier sign support for signs measuring 9sq. ft. or less.
- Place support at connection between two concrete barrier sections.
- Do not use clipped signs.

HERMITAGE ROAD, BOULEVARD, & BOULEVARD RAMP BRIDGES

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SUPERVISED BY Robert Bass, P.E.
CADD OPERATOR WSA
REVISED BY

ENGINEERS ARCHITECTS ECONOMISTS
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PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	7095-964-115		27(68)