

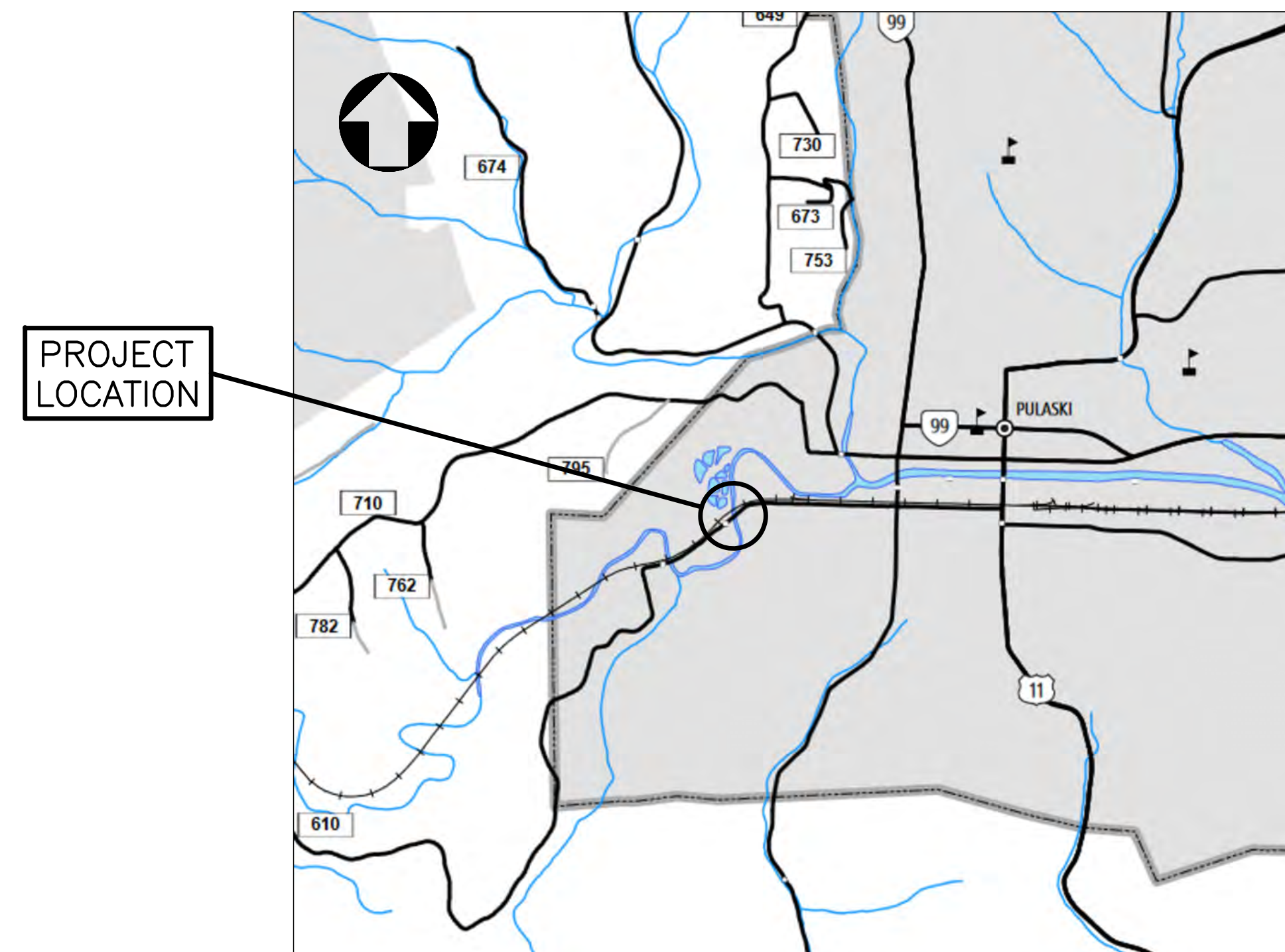
FHWA-534 DATA 26013
No additional Right-of-Way required

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	4602	STP-5125(127)	4602	4602-125-124, B608	1
Federal Structure No. 00000000021258			FHWA Construction and Scour Code: X081-S5		
Federal Stewardship and Oversight Code:			NFO	UPC No. 110931	



TOWN OF PULASKI, VIRGINIA

PROPOSED BRIDGE SUPERSTRUCTURE REPLACEMENT WEST COMMERCE STREET OVER PEAK CREEK



LOCATION MAP

GENERAL CONSTRUCTION NOTE:

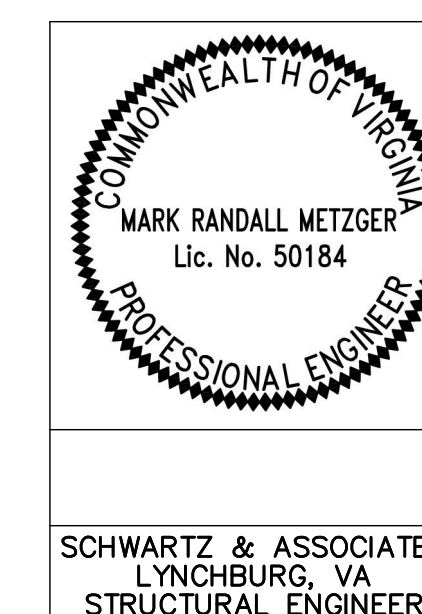
THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATIONS, VDOT ROAD AND BRIDGE SPECIFICATIONS DATED 2020 & CURRENT REVISIONS AND VDOT ROAD AND BRIDGE STANDARDS, 2016 & CURRENT REVISIONS.

	EXISTING OBJECT LINES
	PROPOSED OBJECT LINES
	EXISTING REINF. STEEL
	PROPOSED REINF. STEEL
	CUTTING PLANE LINE
	CENTER LINE
	HIDDEN LINES

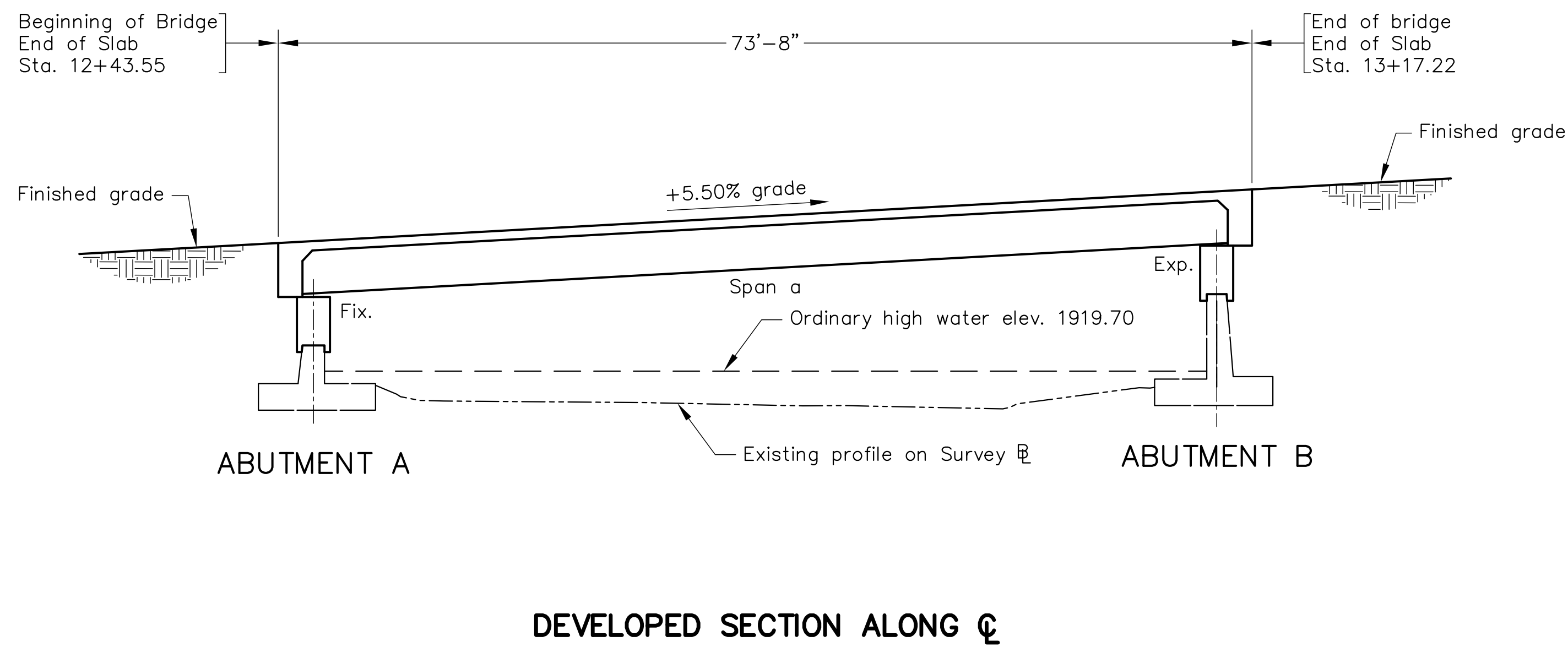
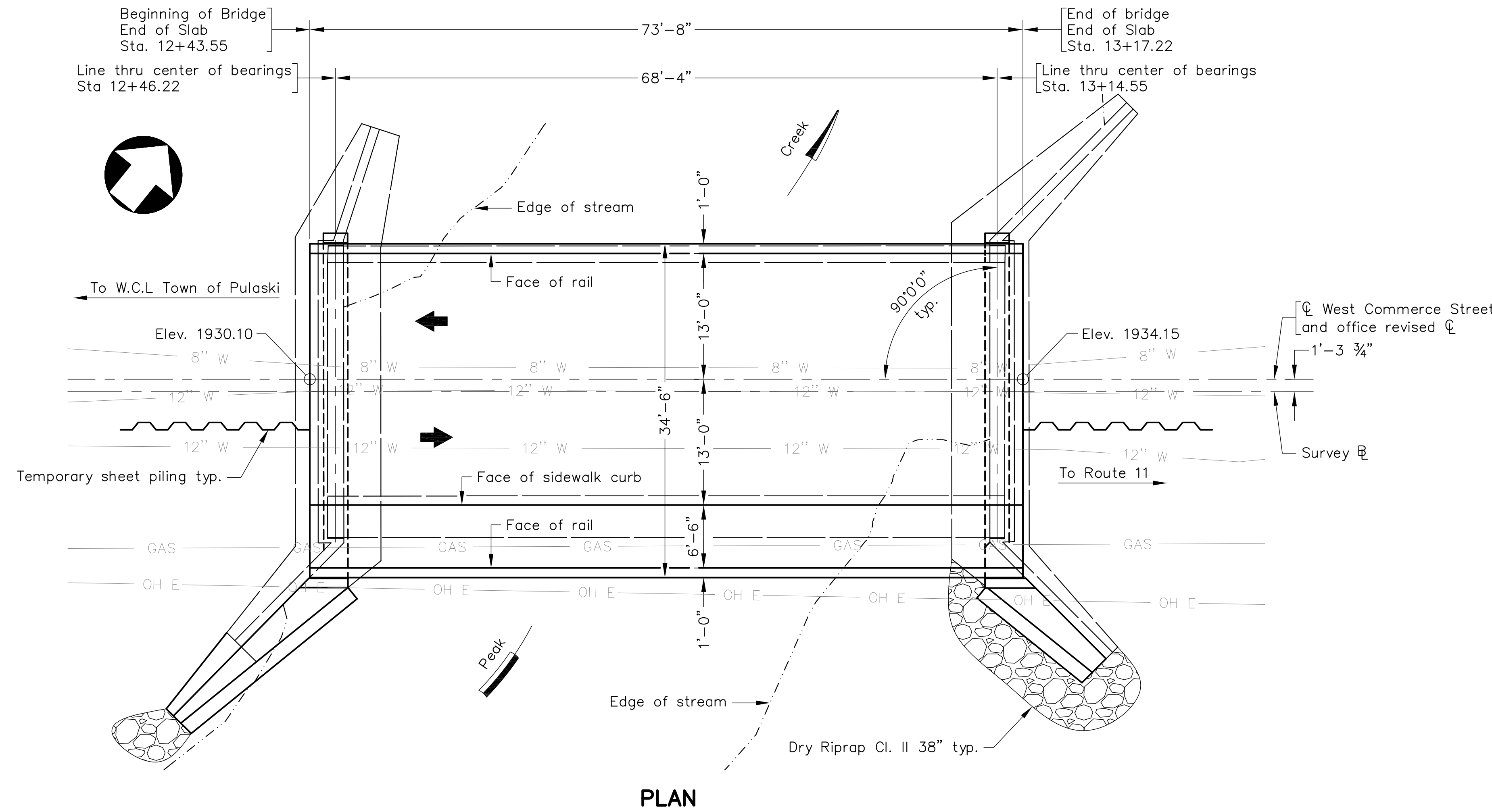
TIER 1 PROJECT

LOCALLY ADMINISTERED PROJECTS	
TOWN OF PULASKI, VA	
NAME OF LOCALITY	
(SIGNATURE)	
SCOTT AUST	
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
ENGINEERING MANAGER	
DATE	TITLE OF POSITION

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	DISTRICT PLANNING AND INVESTMENT MANAGER
DATE	DISTRICT PROJECT DEVELOPMENT ENGINEER
APPROVED FOR CONSTRUCTION	
DATE	DISTRICT ENGINEER/ADMINISTRATOR



STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT STP-5125(127)	ROUTE 4602 PROJECT 4602-125-124, B608	2



DESIGN EXCEPTION(S):

Modified CPSR-1 railing with sidewalk for use in phase construction, subject to conditions of the blanket design exception. Approved by the State Structure and Bridge Engineer on October 28, 2020.

Reduced width of bridge design exception. Approved by the Town Engineer on February 23, 2022.

GENERAL NOTES:

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

Width: 26'-0" clear roadway, 1 - 6'-6" sidewalk, 2 - 1'-0" (Mod.) CPSR
Span layout: 1 68'-4" prestressed concrete 37" deep bulb-T beam span.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th edition, 2017 and VDOT modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016 including all current revisions.

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, August 2011 and latest revisions.

Design loading includes 20 psf allowance for construction tolerances and construction methods.

Design loading includes 15 psf allowance for future wearing surface.

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

Concrete in superstructure including deck, rails, sidewalk, integral backwall, and terminal walls shall be Low Shrinkage Class A4 Modified in accordance with Section 217.12; in abutments Class A3.

Prestressed concrete in prestressed bulb-T shall be Class A5 having a minimum compressive cylinder strength at 28 days equal to 8,000 psi and a minimum compressive cylinder strength at time of release of strands equal to 6,400 psi.

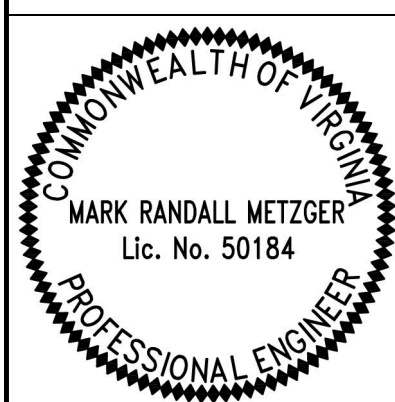
Low permeability concrete shall be used in this project.

General Notes continued on Sheet 3.



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE REHABILITATION ON
W. COMMERCE STREET OVER PEAK CREEK
TOWN OF PULASKI, VA.
PROJ. 4602-124-125, B608

CADD REFERENCE NO.: BRIDGE19100.DWG



SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

PLANS BY: Schwartz & Associates, Inc.
COORDINATED: Adam J. Czesnowski
SUPERVISED: R. Wayne Schwartz
DESIGNED: Mark R. Metzger
DRAWN: Mark R. Metzger
CHECKED: Adam P. Summers

No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 3		

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	4602	STP-5125(127)	4602	4602-125-124, B608	3

GENERAL NOTES CONT'D.

All reinforcing steel shall be deformed and shall conform to ASTM A615 Grade 60 except for steels noted as Corrosion Resistant Reinforcing (CRR) which shall conform to Section 223 of the Specifications. 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.

CRR steels shall conform to Class I as listed in Section 223 of the Specifications. CRR steel required on this project is noted on plan sheets and in the reinforcing steel schedule. Class II or Class III CRR Steel may be substituted for Class I CRR Steel.

Prestressing strands shall be uncoated, seven-wire, low relaxation steel strands conforming to ASTM A416 Grade 270.

Virginia Structure No. of existing bridge is 8008. Original plan number is 22-e.

The existing structure is designated a Type B structure in accordance with Sec. 411.

The contractor shall plan and execute the work such that no more than 10,000 square feet of land disturbance occurs at any given time.

The Contractor shall provide the Engineer safe access to all areas of work throughout course of construction and for final inspection after all work is complete.

All areas disturbed in this project, not covered by other notes, shall be restored to its original or better conditions as directed by the Engineer. All costs for this work shall be included in other items.

All temporary erosion and siltation control shall be in accordance with the Virginia Erosion and Sediment Control Handbook, these drawings, and Contract Documents.

All costs for maintenance of all erosion and siltation control items, as directed by the Engineer, shall be included in the appropriate bid items. The Contractor shall take extreme caution in his operations so that no damage is done to utilities in vicinity of the project limits. If any utilities are damaged by the Contractor, they shall be repaired at his expense and to the satisfaction of the Engineer.

All concrete shall have obtained full design strength before allowing traffic on structure.

The locations of existing utilities, including underground utilities, is indicated on the drawings insofar as their existences and location were known at the time of preparation of the drawings. However, nothing in these contract documents shall be construed as a guarantee that such utilities are in the locations indicated or that they actually exist, or that other utilities are not within the area of operations. The Contractor shall pay for any damage to and for maintenance and protection of existing utilities and structures.

All construction joints shall be bonded with bonding epoxy. All bonding epoxy used on structure shall be approved by the Engineer unless otherwise noted on plans.

All costs related to bonding construction joints, as shown on these contract drawings, shall be included in cost bid for Class A4 concrete where used.

BM.: BM1 - Magnetic nail set top of concrete wing wall sta. 12+45.5 58.7 Lt.; elevation 1925.36' (to be reset after abutment reconstruction), BM2 - Chisel square w/ drill hole found (unknown source) sta. 12+45 15.5' Lt.; elevation 1930.11' (this survey), BM3 - RR spike set base large triple maple sta. 13+89.82 22.94' Lt.; elevation 1936.84'

Concrete shall be prewetted with potable water for a minimum of 2 hrs to a saturated surface dry (SSD) condition prior to placement of new concrete. All cost shall be included in appropriate bid item.

ESTIMATED QUANTITIES - SUBSTRUCTURE ONLY										
		Concrete Class A3	Corrosion Resistant Reinf. Steel, Class I	Struct. Excav.	Select Backfill (Abutment Zone)	Dry Riprap Class II 38"	Cofferdam	Temporary Sheet Piling	Shotcrete Type A	Dewatering Basin
		CY	LB	CY ⊗	CY ⊗	TON	EA	SF	SF	EA
Abutment A	Neat	23.8	1,760	—	—	—	—	—	25	—
	Footing	8.0	1,410	128	82	10	1	125	—	1
Abutment B	Neat	24.6	1,860	—	—	—	—	—	25	—
	Footing	4.0	700	144	98	20	1	149	—	1
Total		60.4	5,730	272	180	30	2	274	50	2

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

LUMP SUM BID ITEMS	
Mobilization	LS
Construction Surveying	LS
Dismantle and Remove Portion of Existing Structure Number 8008	LS
Water Line System 8" Diameter	LS
Material Disposal (Type B, Str. No. 8008)	LS
Environmental & Worker Protection (Str. No. 8008)	LS

INDEX OF BRIDGE DRAWINGS	
SHEET NO.	DESCRIPTION
1	Cover Sheet
2	Plan and elevation
3	General Notes continued, index, and quantity table
4	Substructure layout and select backfill
5	Abutment demolition
6	Abutment A
7	Abutment B
8	Abutment wingwalls
9	Prestressed beam bearing details
10	Transverse section phase details
11	Transverse section
12	Framing plan
13	Prestressed concrete bulb-T
14	Miscellaneous beam details
15	Miscellaneous beam details
16	Intermediate diaphragm
17	Deck slab plan and deck slab elevations
18	Semi-Integral backwall
19	Railing
20	Terminal wall
21	Rail connections and notes
22	Rail connections
23	Water line system - insulated
24	Reinforcing steel schedule

ESTIMATED QUANTITIES - SUPERSTRUCTURE ONLY		
Item	Units	Quantity
Concrete Low Shrinkage Class A4 Modified	CY	102.9
Corrosion Resistant Reinf. Steel, Class I ⊗	LB	17,740
Prestressed Concrete Beam, Bulb-T 37" Depth +70'-80'	EA	4
Railing, CPSR 2 Rail ⊗	LF	155
Cover Depth Survey ⊗	SY	213
Bridge Deck Grooving ⊗	SY	213

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

ESTIMATED QUANTITY NOTES:


Areas of the structure to be removed under the bid item Dismantle and Remove Portion of Existing Structure Number 8008 shall include but are not limited to the following: Concrete deck, bridge rails, bridge curbs, all structural steel including bearings devices, abutment backwalls, portion of abutment wingwalls, portion of abutment breastwalls, and the removal and disposal of asbestos material (see asbestos report in Project Manual).

Price bid "Concrete Low Shrinkage Class A4 Mod." shall include geotextile fabric, waterproofing fabric, and EPS material required for integral backwall construction.


Rev. No.	Sheets Revised	Date

TABLE OF REVISIONS

No.	Description	Date



MARK RANDALL METZGER
Lic. No. 50184
PROFESSIONAL ENGINEER



SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

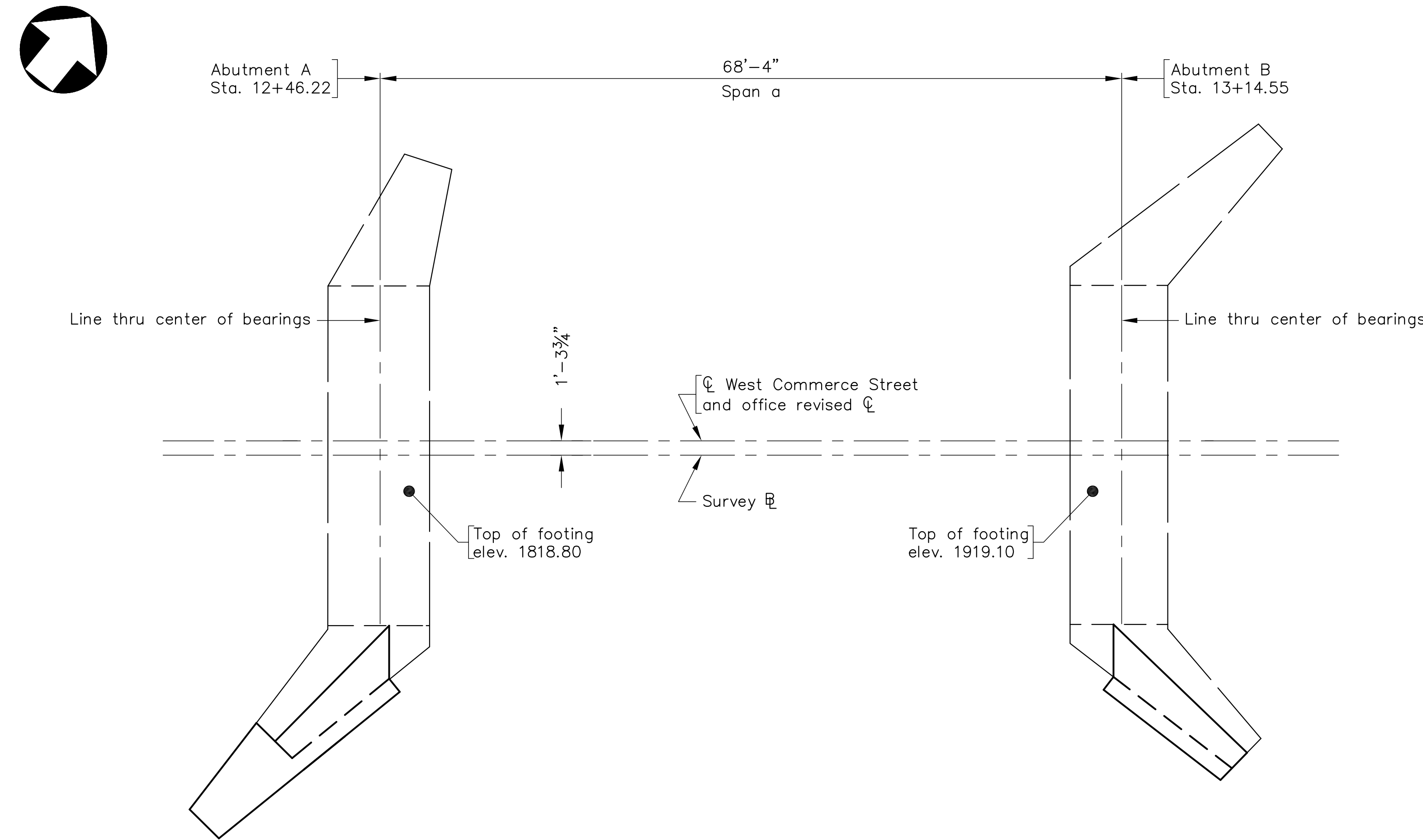
W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA		
GENERAL NOTES CONTINUED, INDEX, AND ESTIMATED QUANTITIES		
DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: APS
SCALE: 1/8" = 1'-0"	PLAN NO.: 307-39	
DATE: February 8, 2023	SHEET: 3 OF 44	

For Table of Revisions, see Sheet 3.

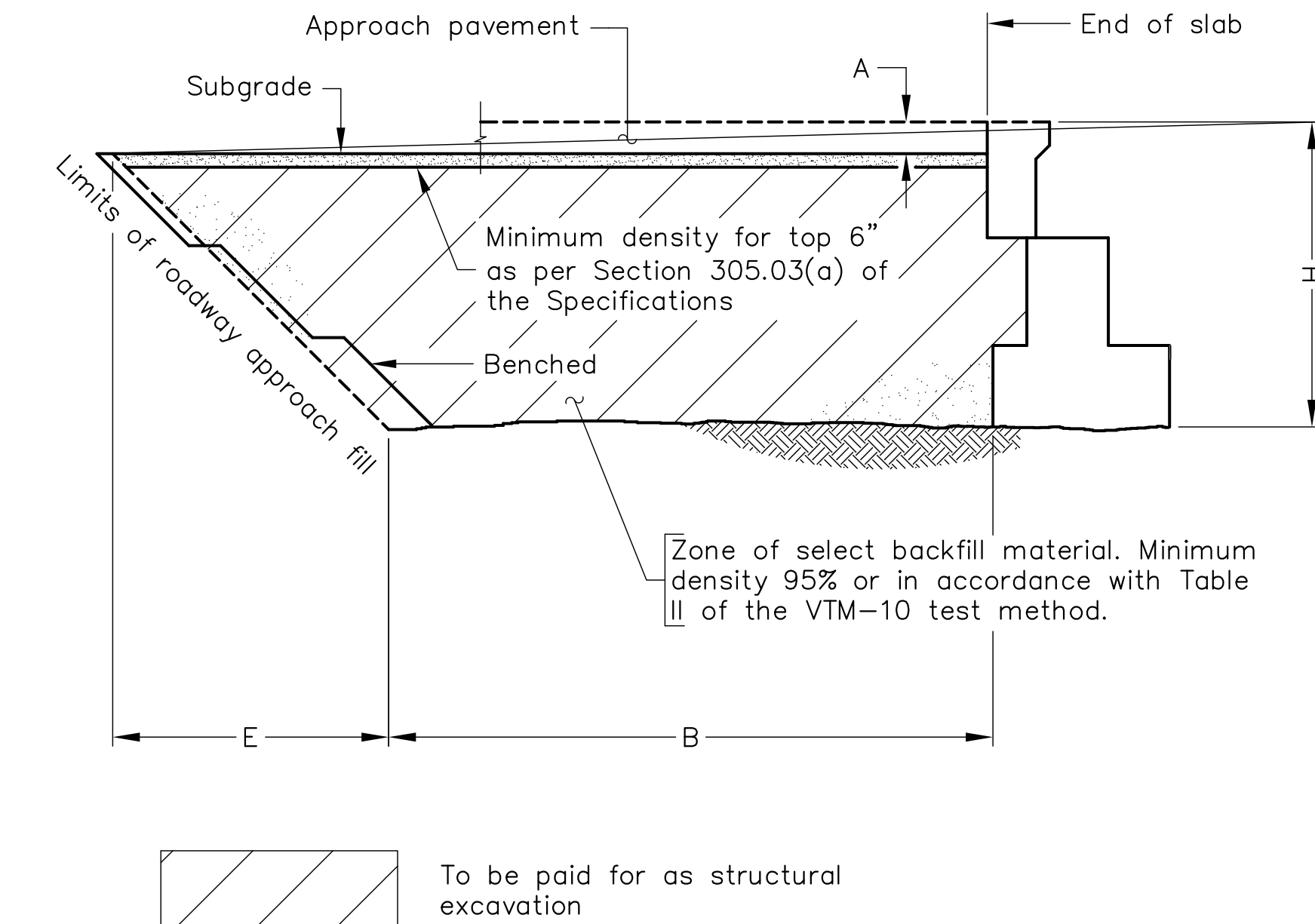
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	-	STP-5125(127)	4602	4602-125-124, B608	4

SUBSTRUCTURE LAYOUT NOTES

This layout is to be used for the purpose of locating centerline of the bridge and West Commerce Street based on the survey baseline.



SUBSTRUCTURE LAYOUT



SECTION THROUGH ABUTMENT – CUT SECTION

Abutment drainage not shown
Not to scale

Material in the abutment select backfill zone shall be Select Material Type 1, minimum CBR 30, and shall be compacted in accordance with Sections 303 and 305 of the VDOT Road and Bridge Specifications. 21A or 21B may be substituted for Select Material Type 1, minimum CBR 30, at no additional cost to the Department.

In cut situations, material with strength characteristics greater than the select backfill may be left in place.

The final depth A of the embankment side slopes shall be regular embankment material placed and finished as required.

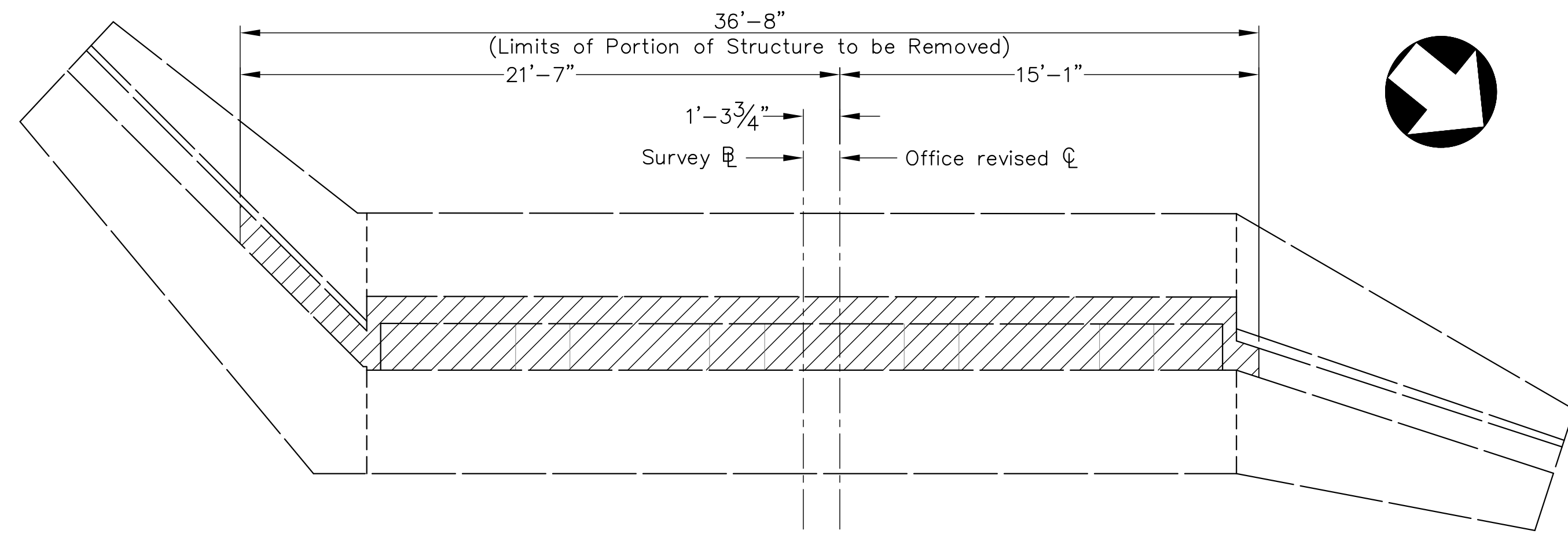
ABUTMENT CUT/FILL SECTION DIMENSIONS (ft-in)				
	A	B	E	H
Abutment A	1-04	1-06	10-09	8-06
Abutment B	1-04	1-06	23-06	17-00

CADD REFERENCE NO.: BRIDGE19100.DWG

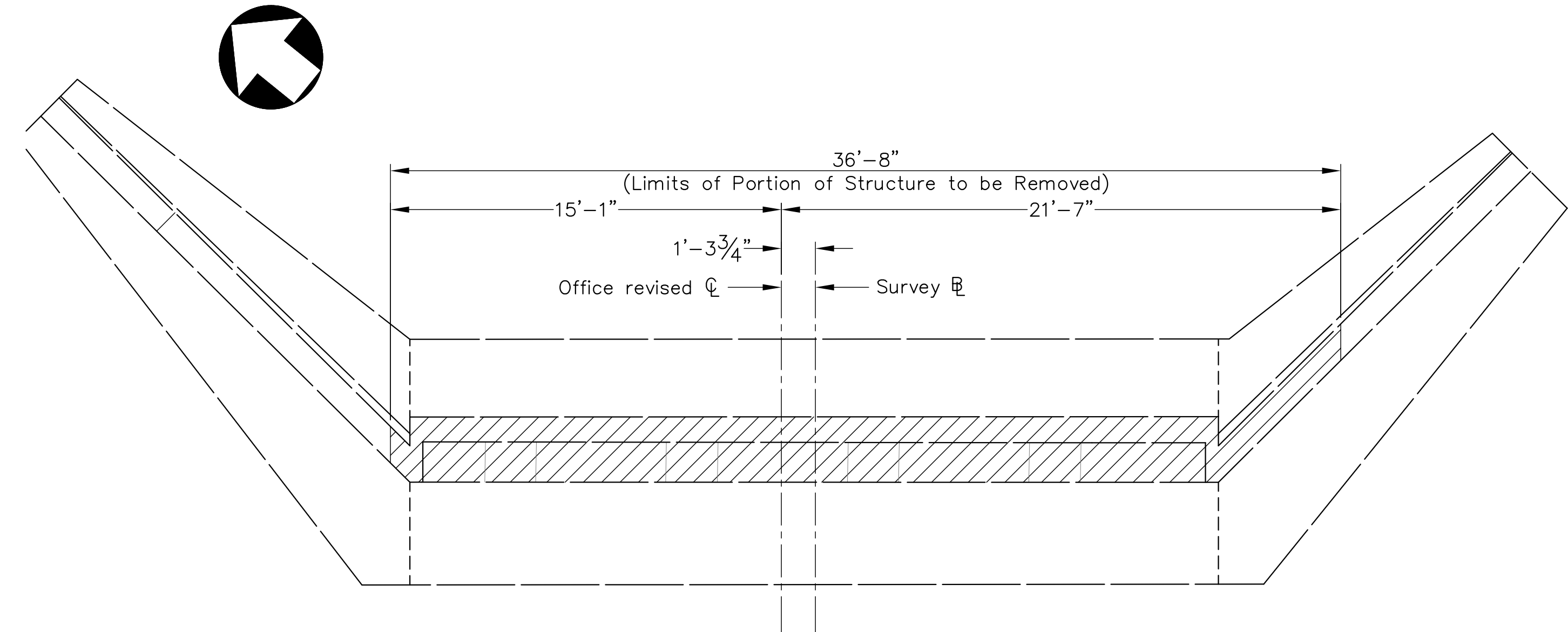
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	SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
	W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA SUBSTRUCTURE LAYOUT AND SELECT BACKFILL		
No. Description Date REVISIONS	DESIGNED BY: MRM SCALE: NOT TO SCALE DATE: February 8, 2023	DRAWN BY: MRM PLAN NO.: 307-39 SHEET: 4 OF 44	CHECKED BY: APS
For Table of Revisions, see Sheet 3.	SCHWARTZ & ASSOCIATES LYNCHBURG, VA STRUCTURAL ENGINEER COMM. NO. 19100		

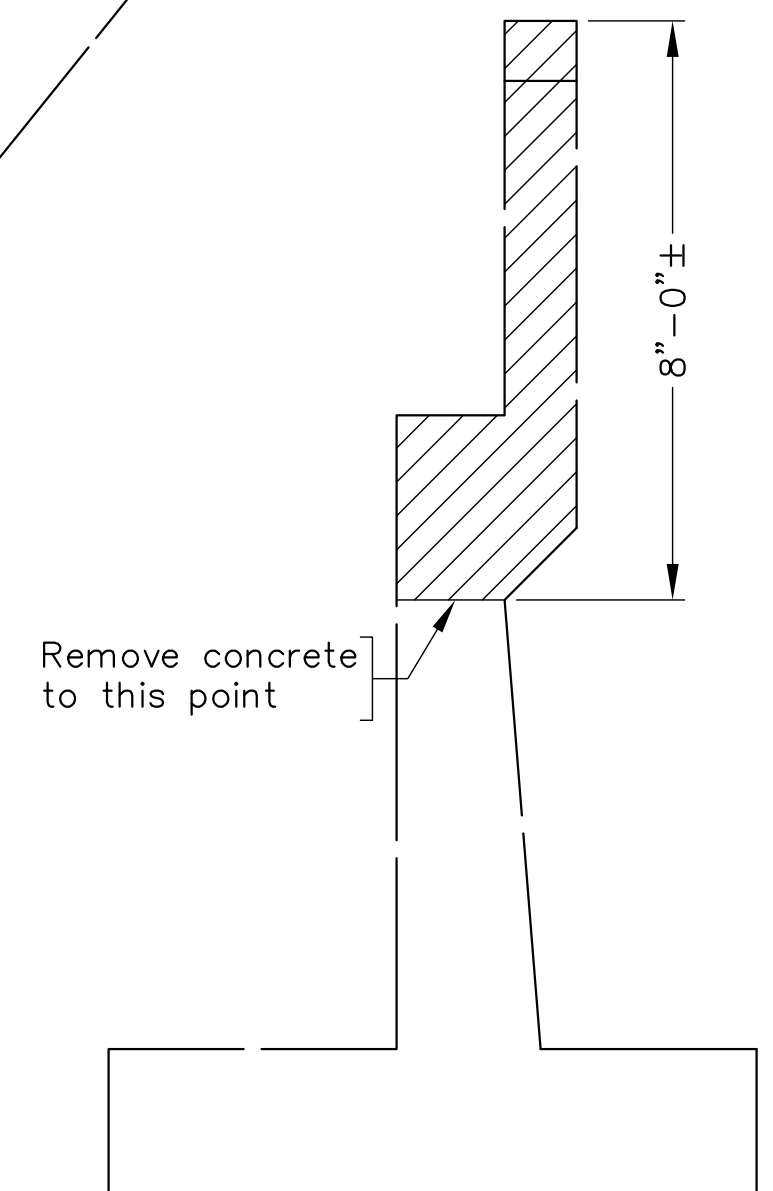
STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	NO.
VA.	-	STP-5125(127)	4602	4602-125-124, B608
				5



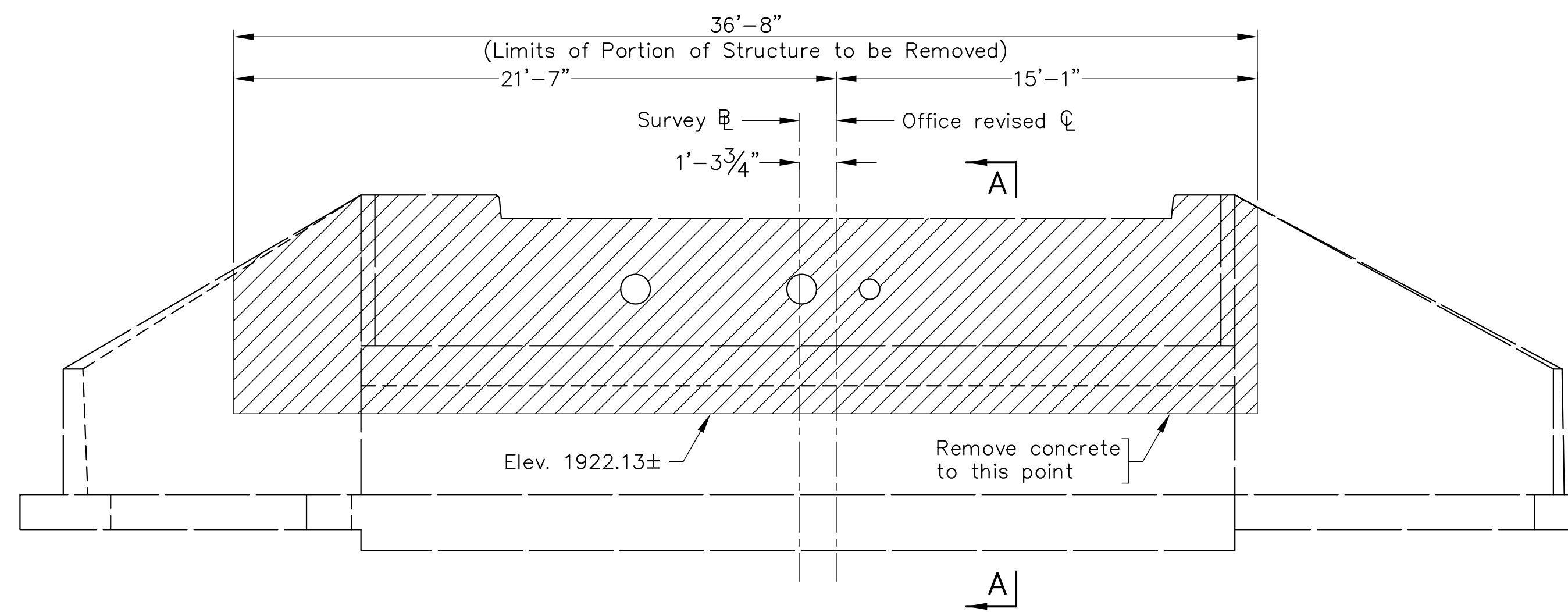
ABUTMENT A PLAN
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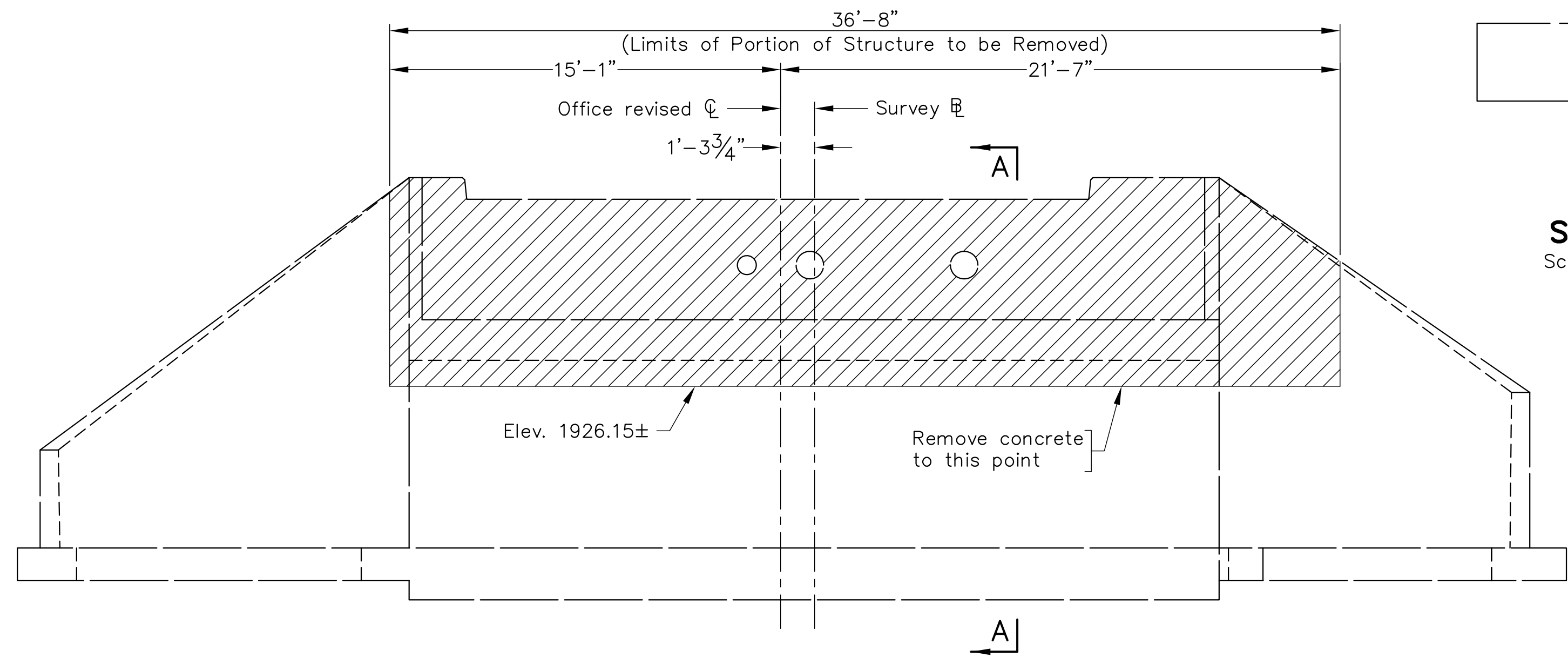
ABUTMENT B ELEVATION
Scale: 1/4" = 1'-0"



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



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



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

- Denotes limits of abutment demolition

CADD REFERENCE NO.: BRIDGE19100.DWG

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				<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA ABUTMENT DEMOLITION</p>	
No.	Description	Date	DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: APS
REVISIONS			SCALE: AS NOTED	PLAN NO.: 307-39	
For Table of Revisions, see Sheet 3.			DATE: February 8, 2023	SHEET: 5 OF 44	
		SCHWARTZ & ASSOCIATES LYNCHBURG, VA STRUCTURAL ENGINEER COMM. NO. 19100			

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	STP-5125(127)	4602	4602-125-124, B608
			6

Notes:

Use 3" minimum concrete cover from face of bar to face of concrete.

All costs associated with damp proofing shall be included in price bid for A3 concrete.

All costs associated with reinforcing steel splicers shall be included in bid price for corrosion resistant reinforcing steel, class I.

AS0601 and AV0402 may be shifted 1" max. to clear anchor bolts.

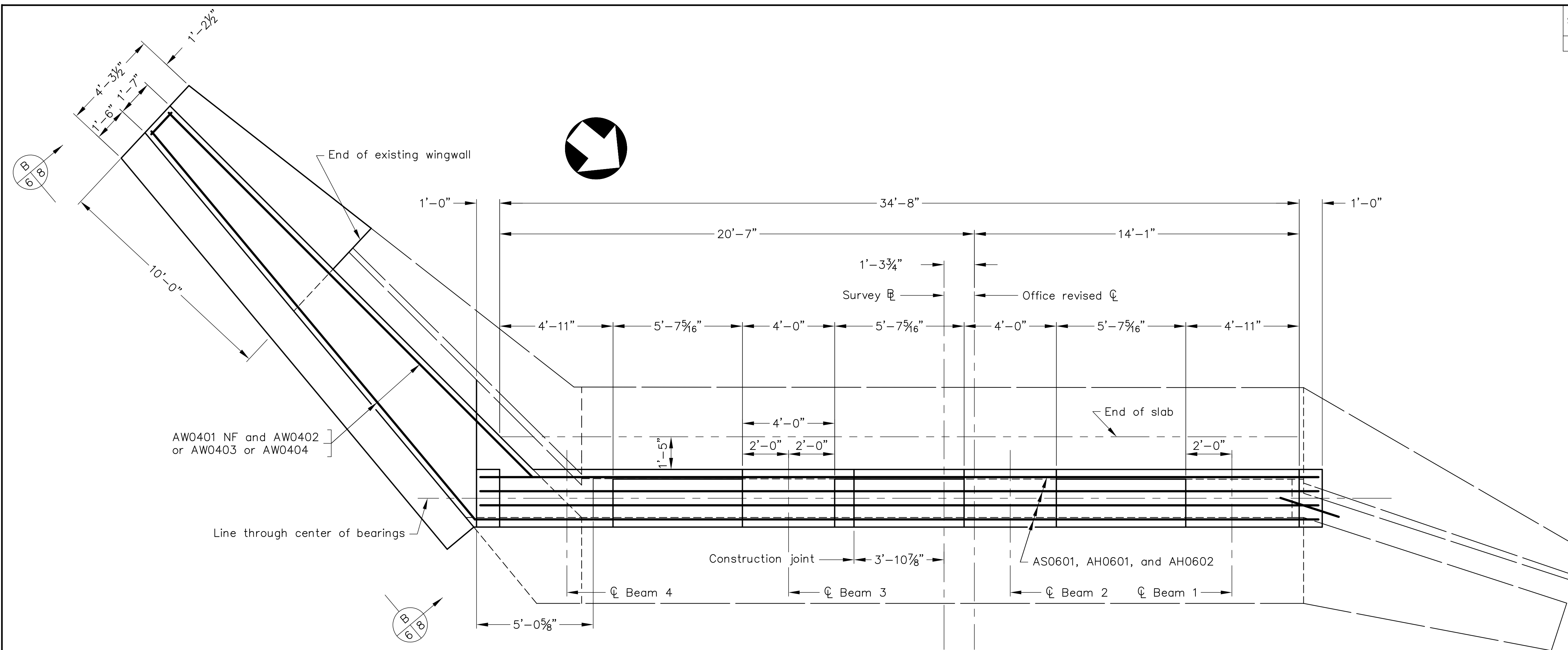
AV0402 shall be raised in pads to maintain 3" min. clear cover.

For abutment wing details see sheet 8.

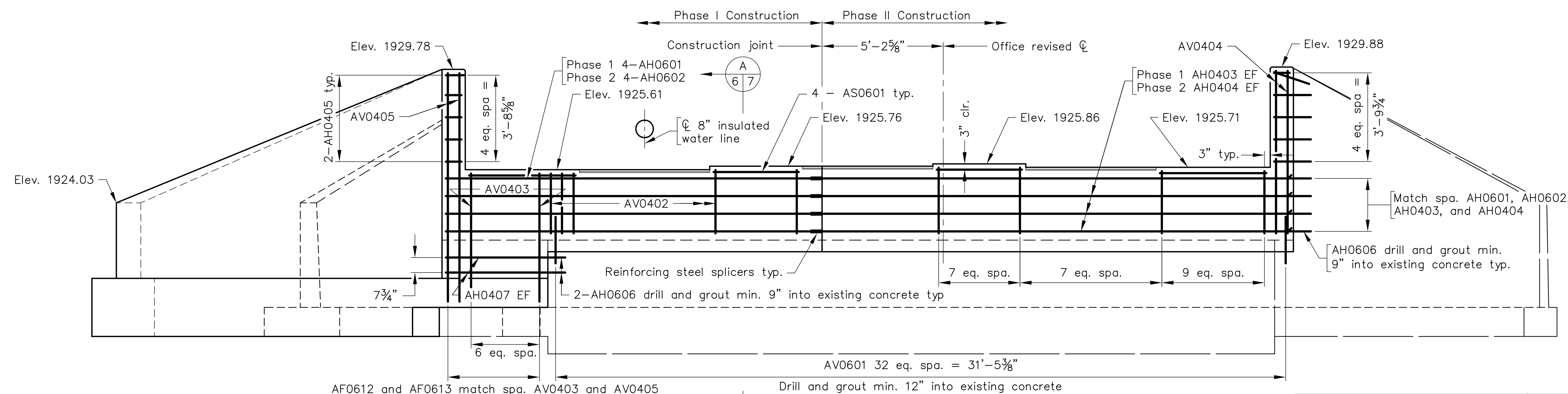
EF - Each Face

FF - Far Face

NF - Near Face



PLAN



ELEVATION

CADD REFERENCE NO.: BRIDGE19066.DWG

No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 3.		

COMMONWEALTH OF VIRGINIA
 MARK RANDALL METZGER
 Lic. No. 50184
 PROFESSIONAL ENGINEER

SCHWARTZ & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 7331 TIMBERLAKE ROAD
 LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
 TOWN OF PULASKI, VA
 ABUTMENT A**

DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: APS
SCALE: 3/8" = 1'-0"	PLAN NO.: 307-39	
DATE: February 8, 2023	SHEET: 6 OF 44	

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	-	STP-5125(127)	4602	4602-125-124, B608	7

Notes:

Use 3" minimum concrete cover from face of bar to face of concrete.

All costs associated with damp proofing shall be included in price bid for A3 concrete.

All costs associated with reinforcing steel splicers shall be included in bid price for corrosion resistant reinforcing steel, class I.

AS0601 and AV0402 may be shifted 1" max. to clear anchor bolts.

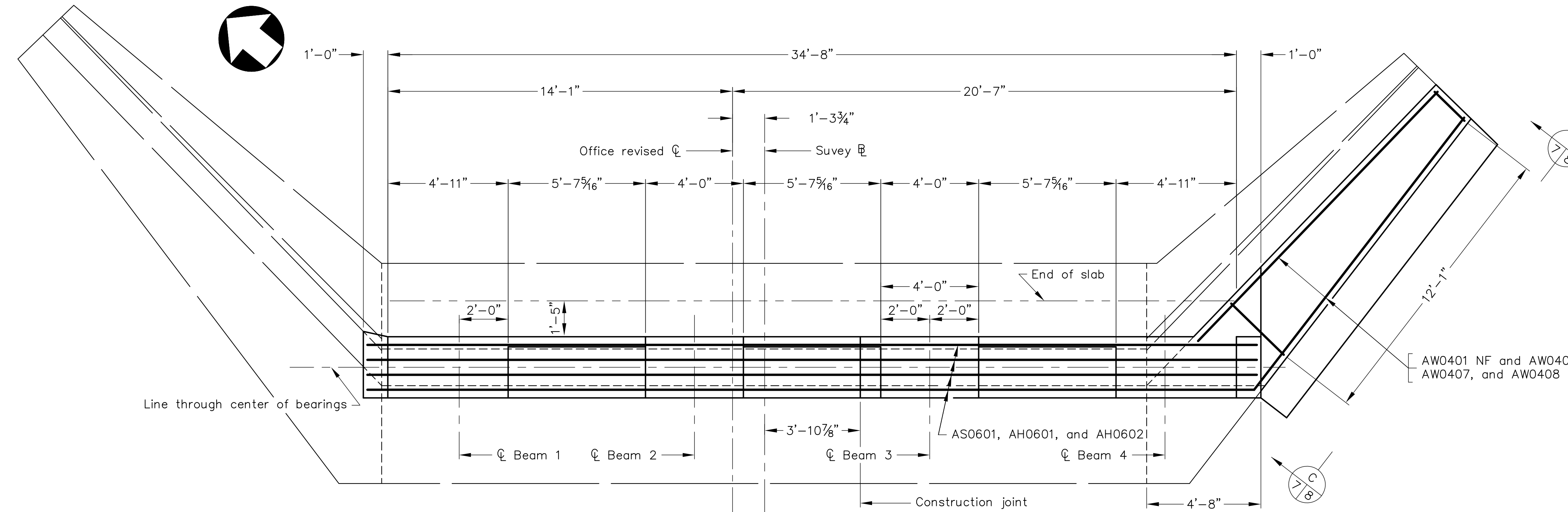
AV0402 shall be raised in pads to maintain 3" min. clear cover.

For abutment wing details see sheet 8.

EF - Each Face

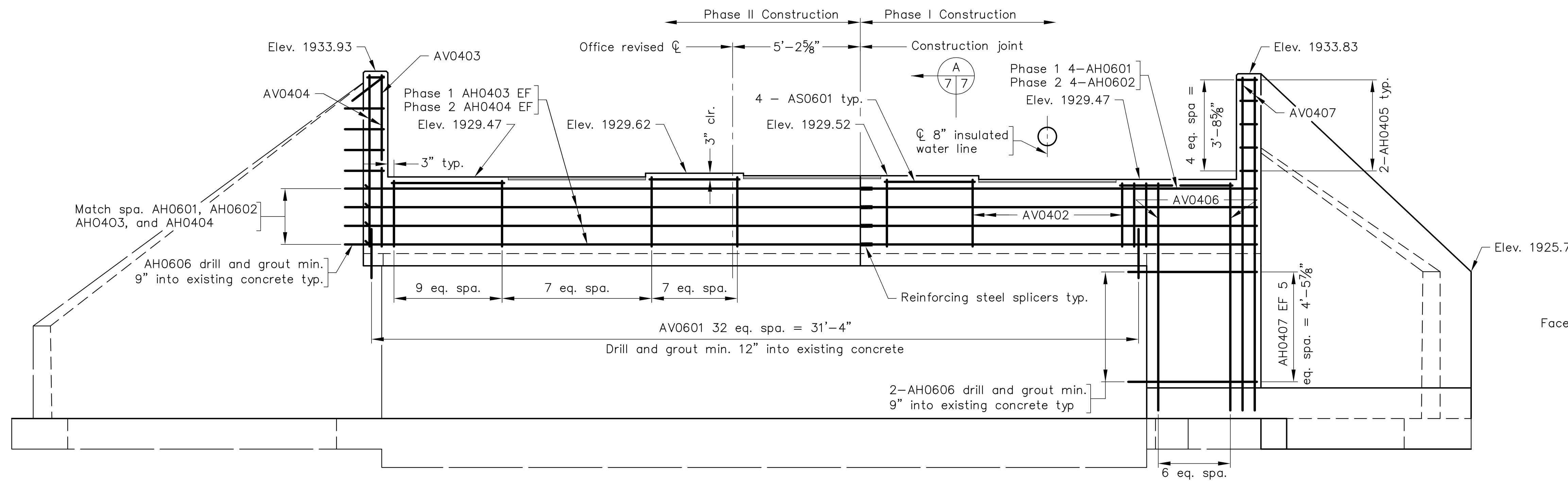
FF - Far Face

NF - Near Face



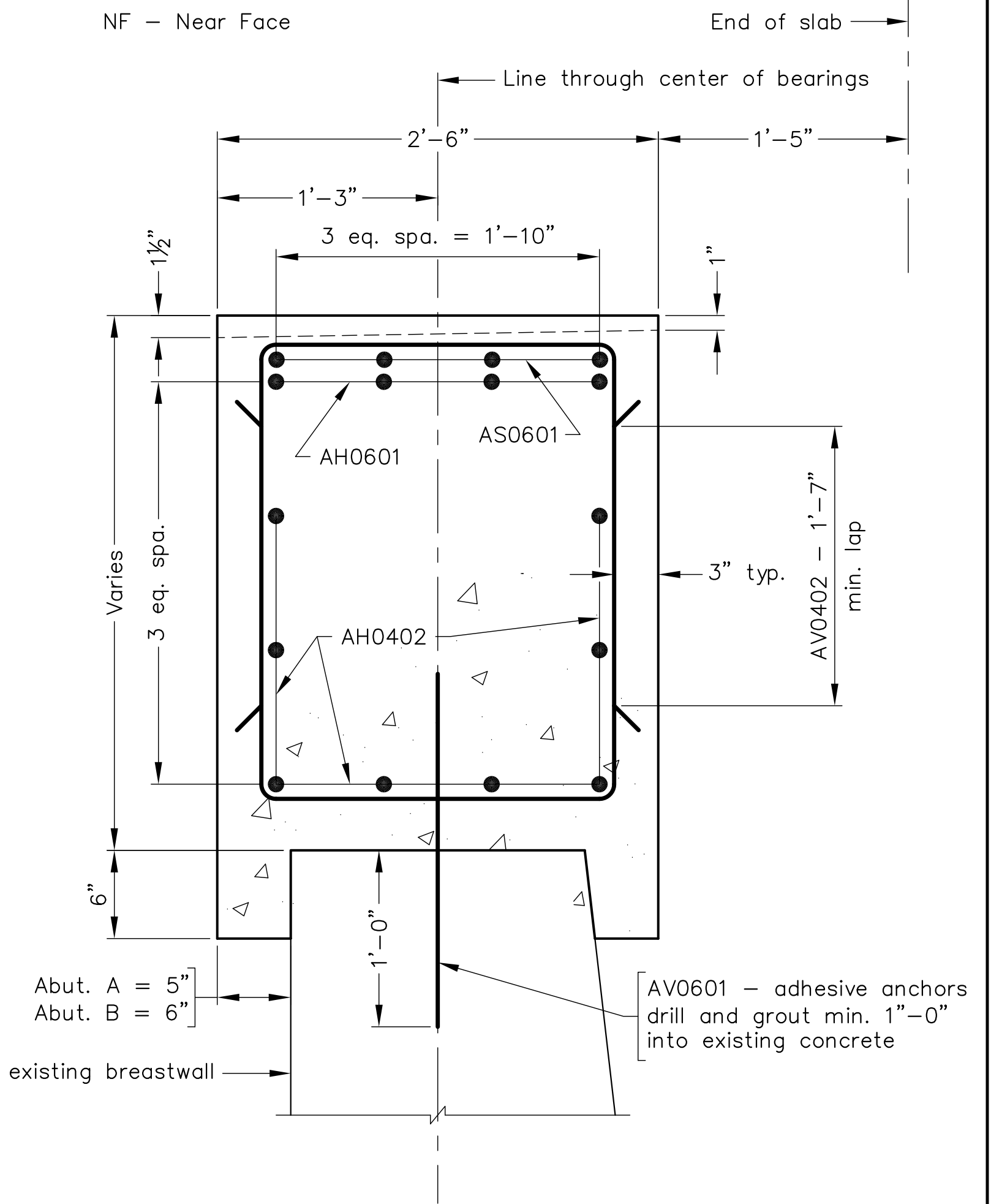
PLAN

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



ELEVATION

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



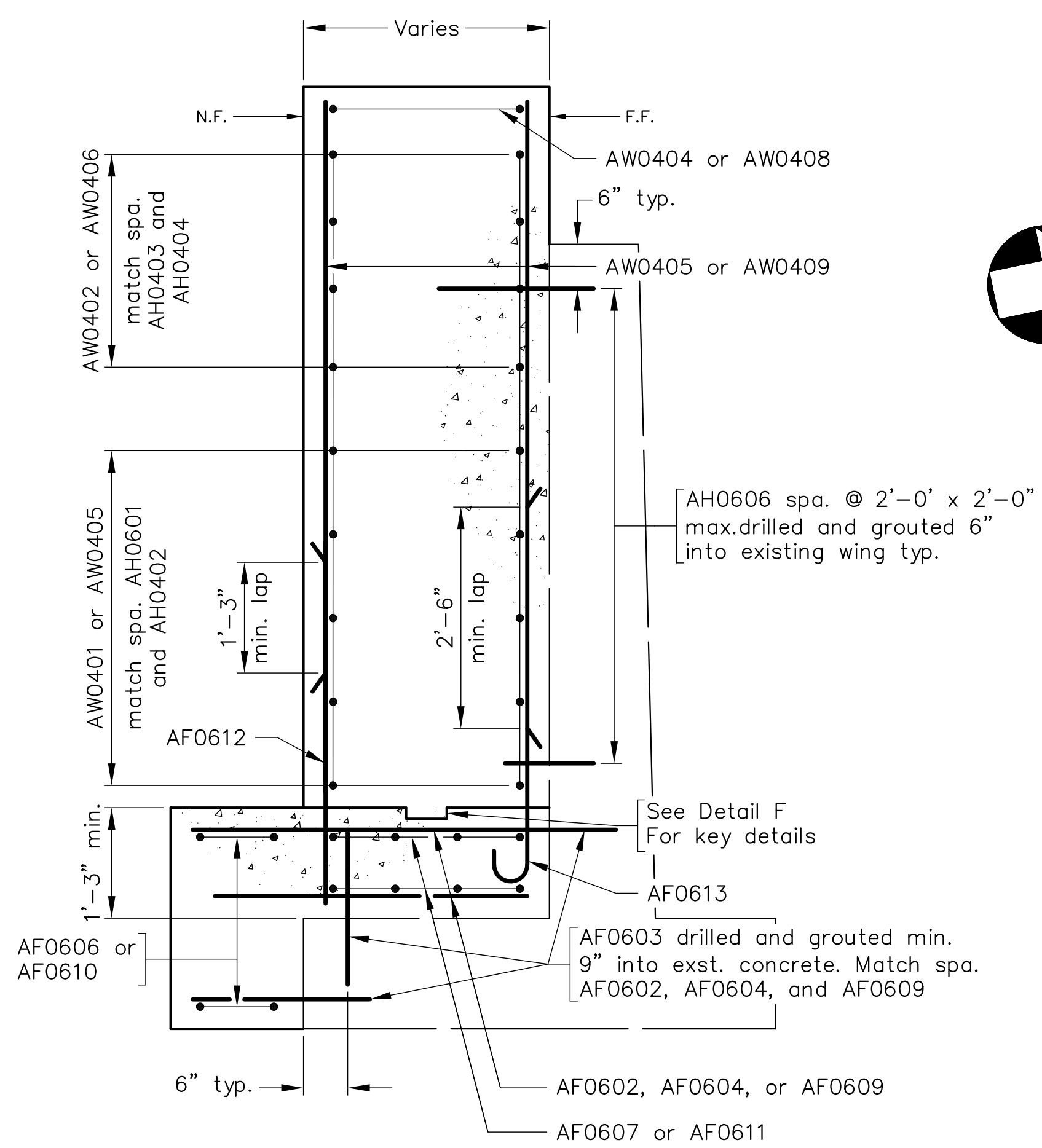
SECTION A-A

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

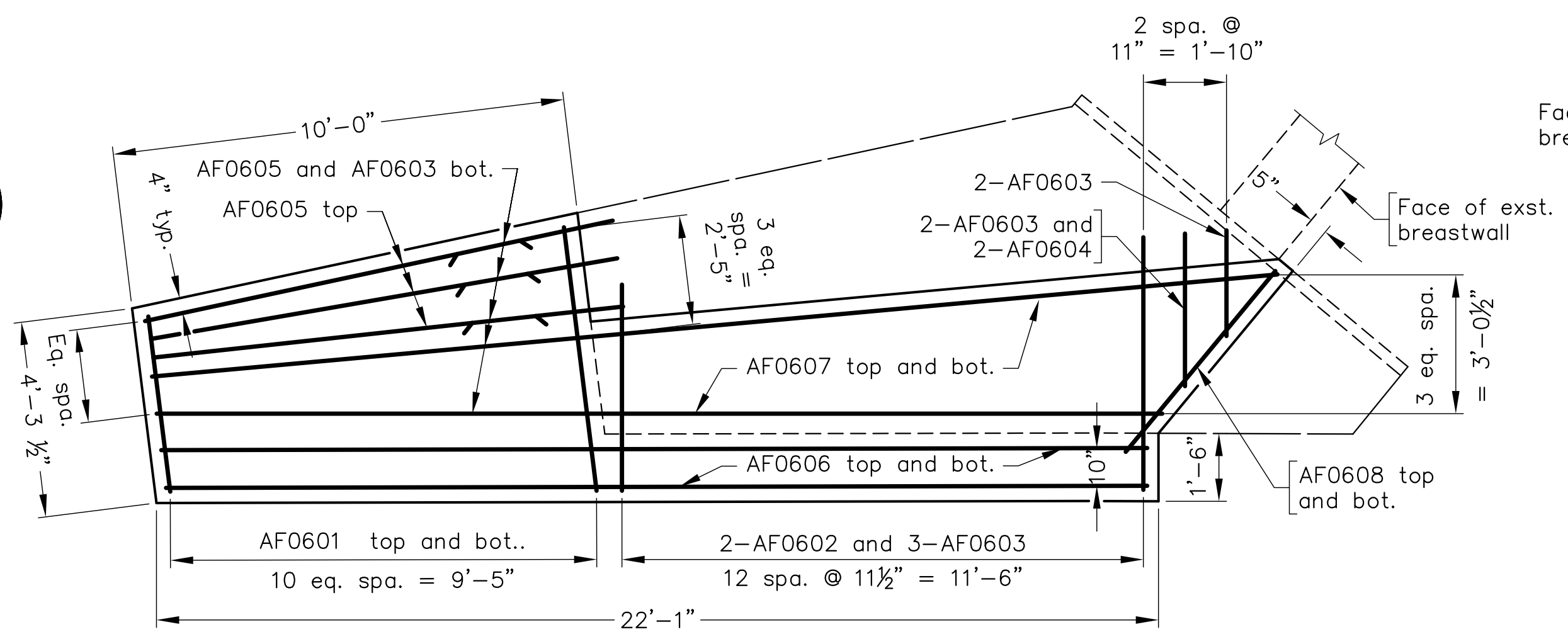
CADD REFERENCE NO.: BRIDGE19066.DWG

<p>MARK RANDALL METZGER Lic. No. 50184 PROFESSIONAL ENGINEER</p>		<p>SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.</p>	
<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA ABUTMENT B</p>			
<p>No. Description Date</p>		<p>DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS</p>	
<p>REVISIONS</p>		<p>SCALE: AS NOTED PLAN NO.: 307-39</p>	
<p>For Table of Revisions, see Sheet 3.</p>		<p>DATE: February 8, 2023 SHEET: 7 OF 44</p>	

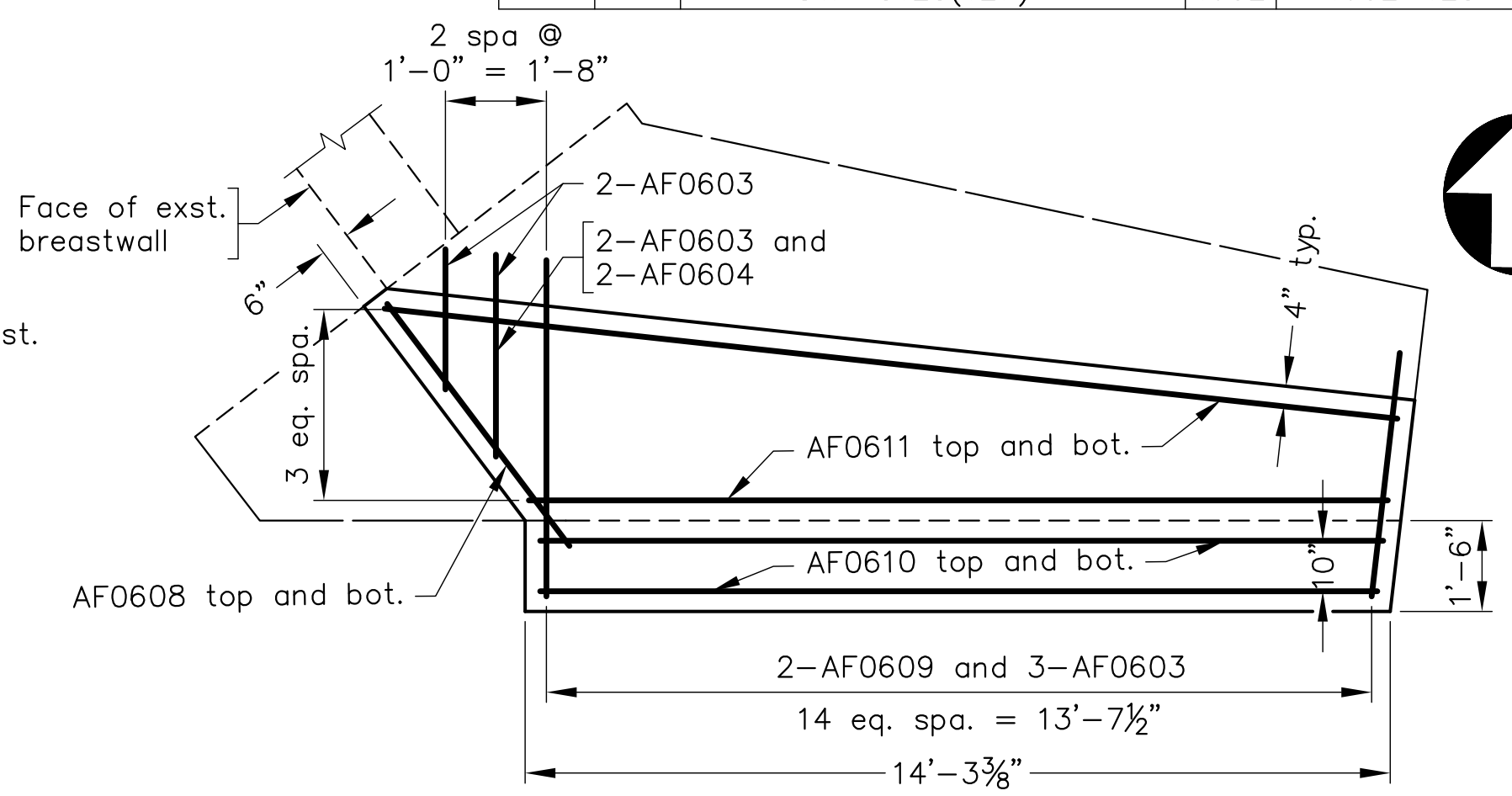
STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	-	STP-5125(127)	4602	4602-125-124, B608	8



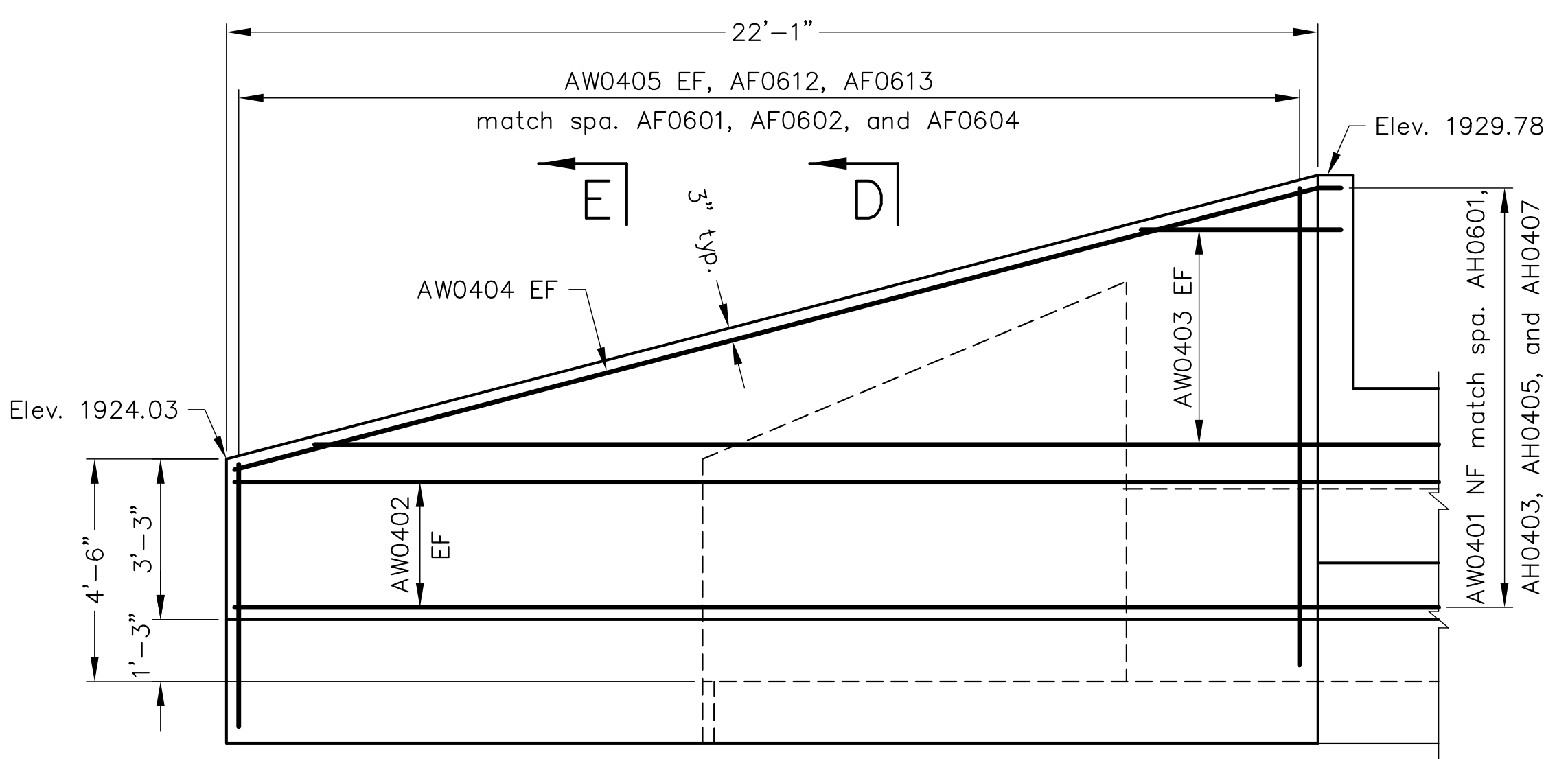
SECTION D-D
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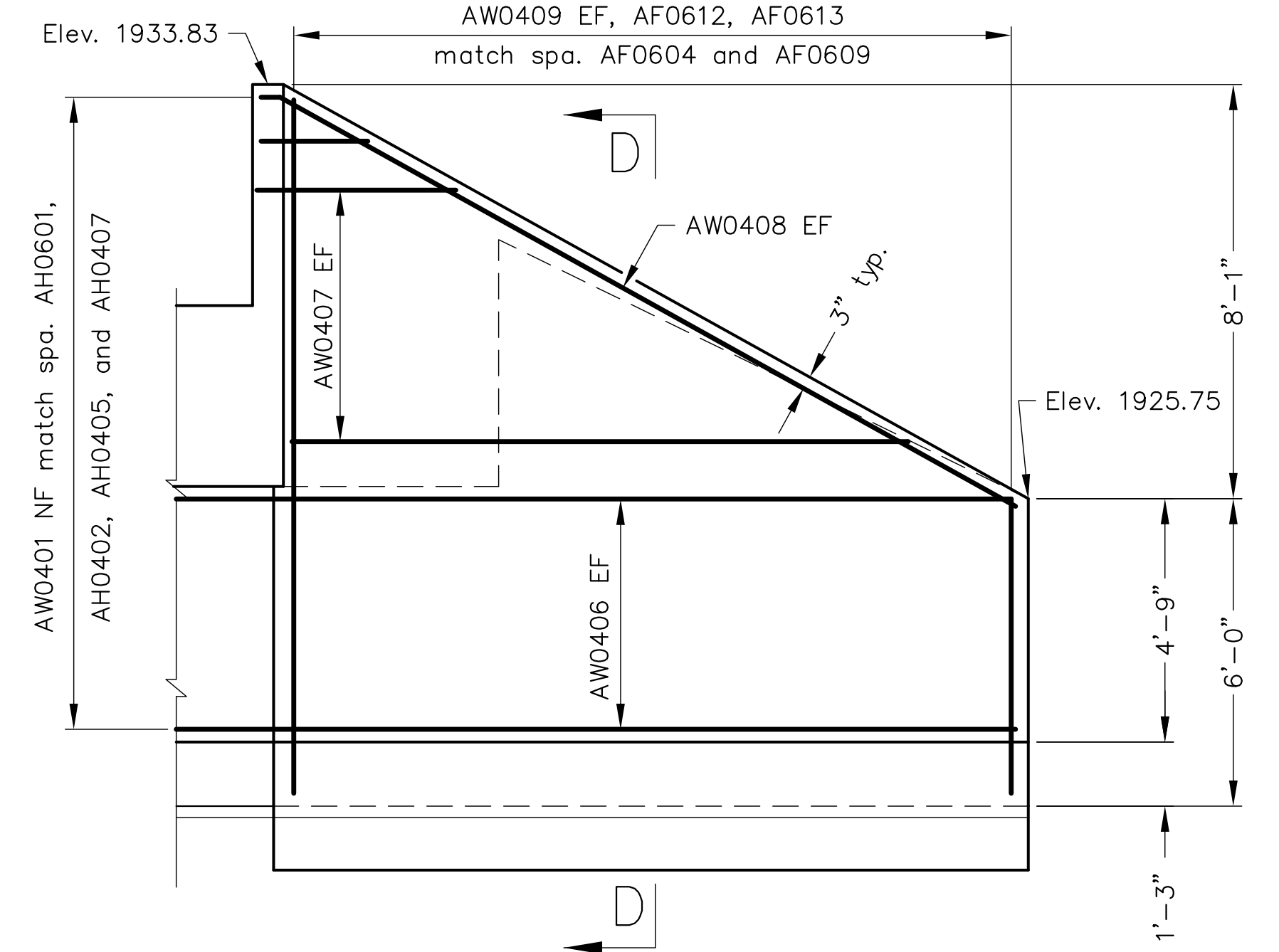
ABUTMENT A FOOTING
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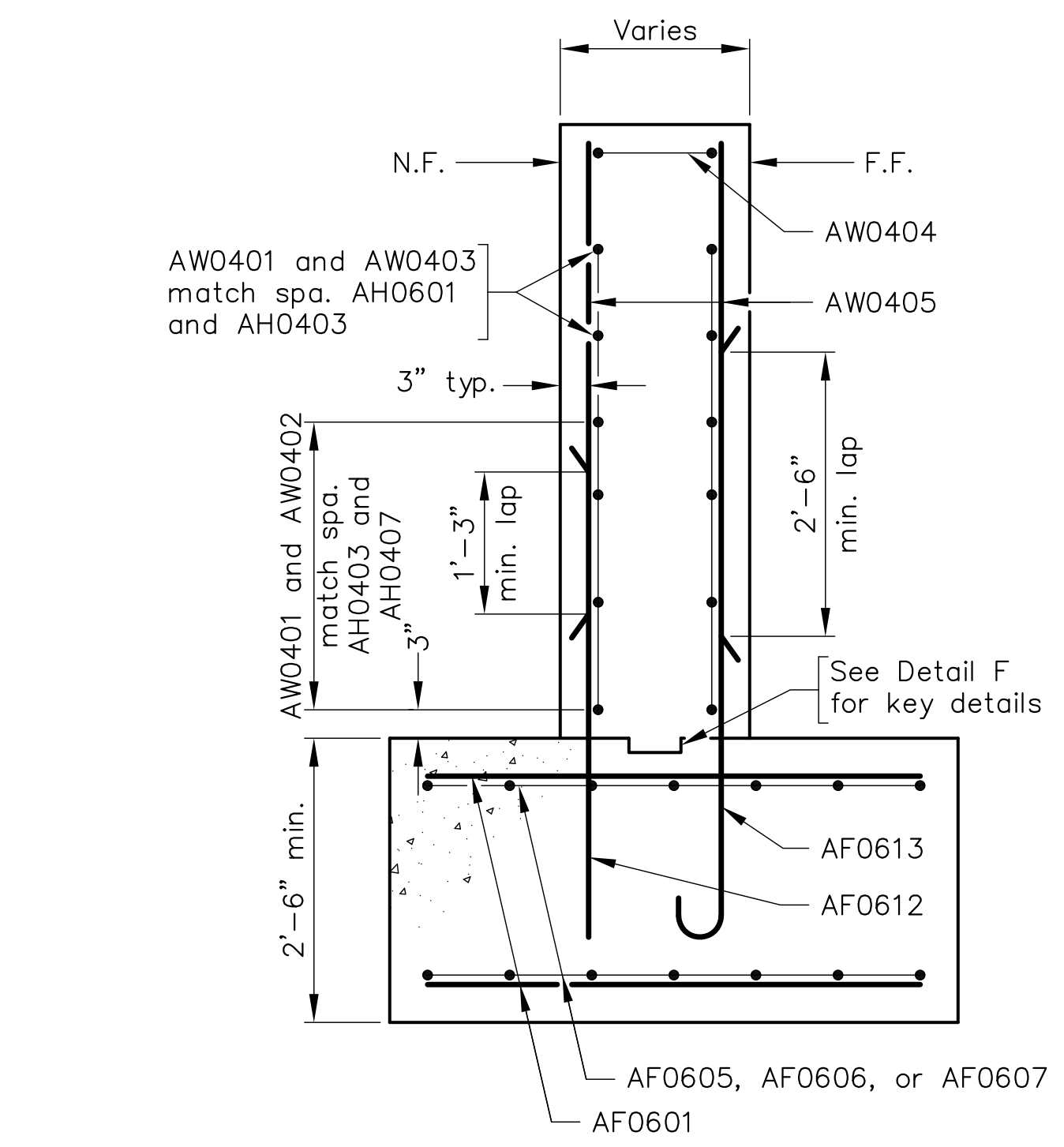
ABUTMENT B FOOTING
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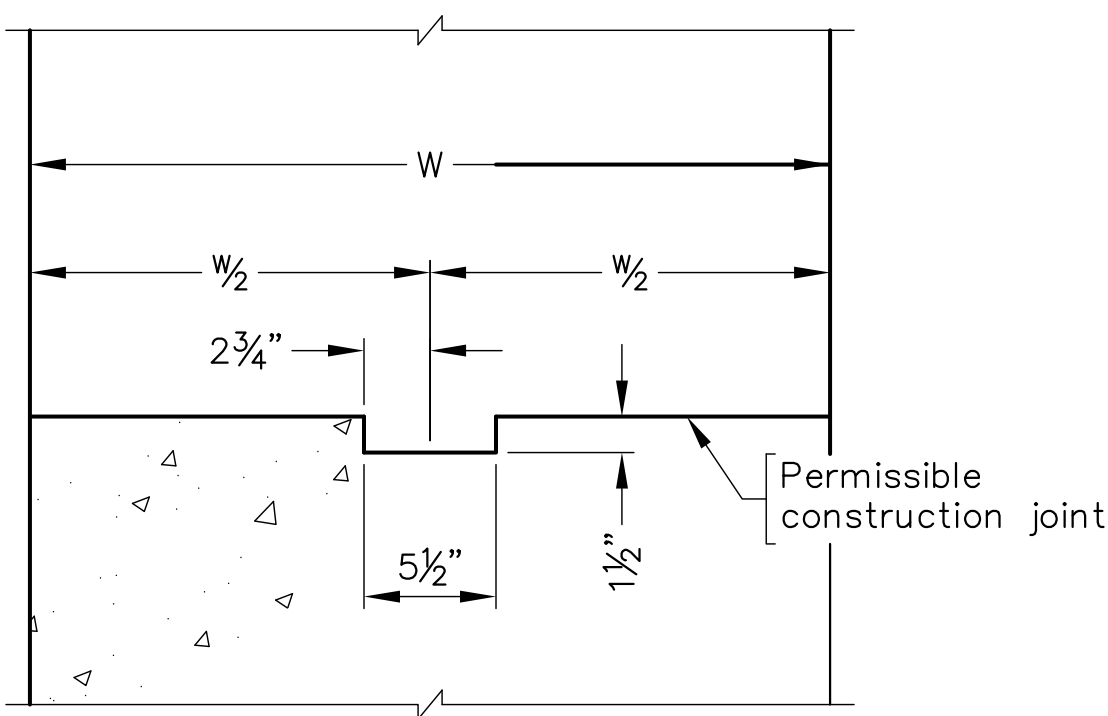
VIEW B
Scale: 3/8 = 1'-0"



VIEW C
Scale: 3/8 = 1'-0"



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

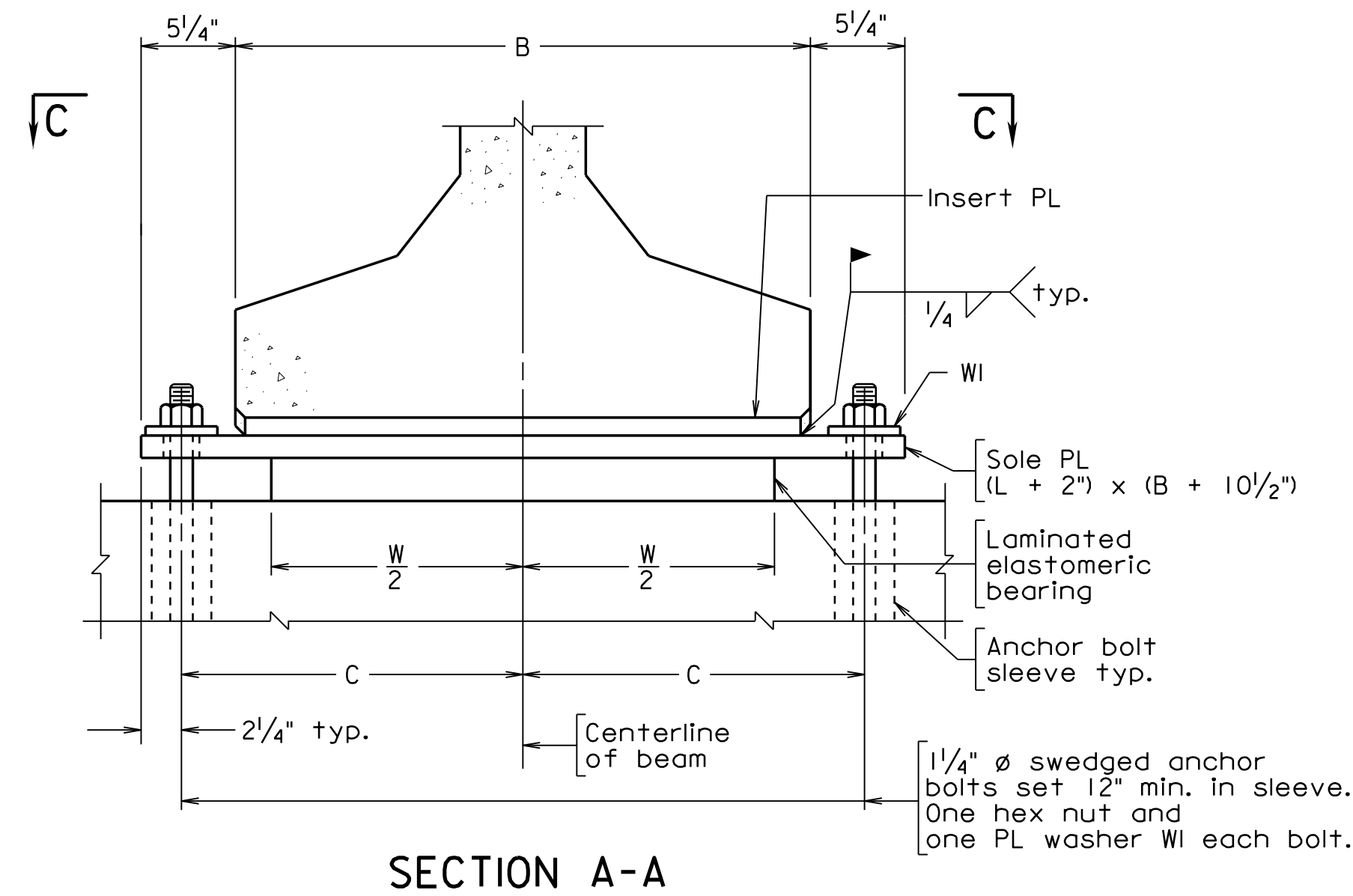


DETAIL F
Scale: 1 1/2" = 1'-0"

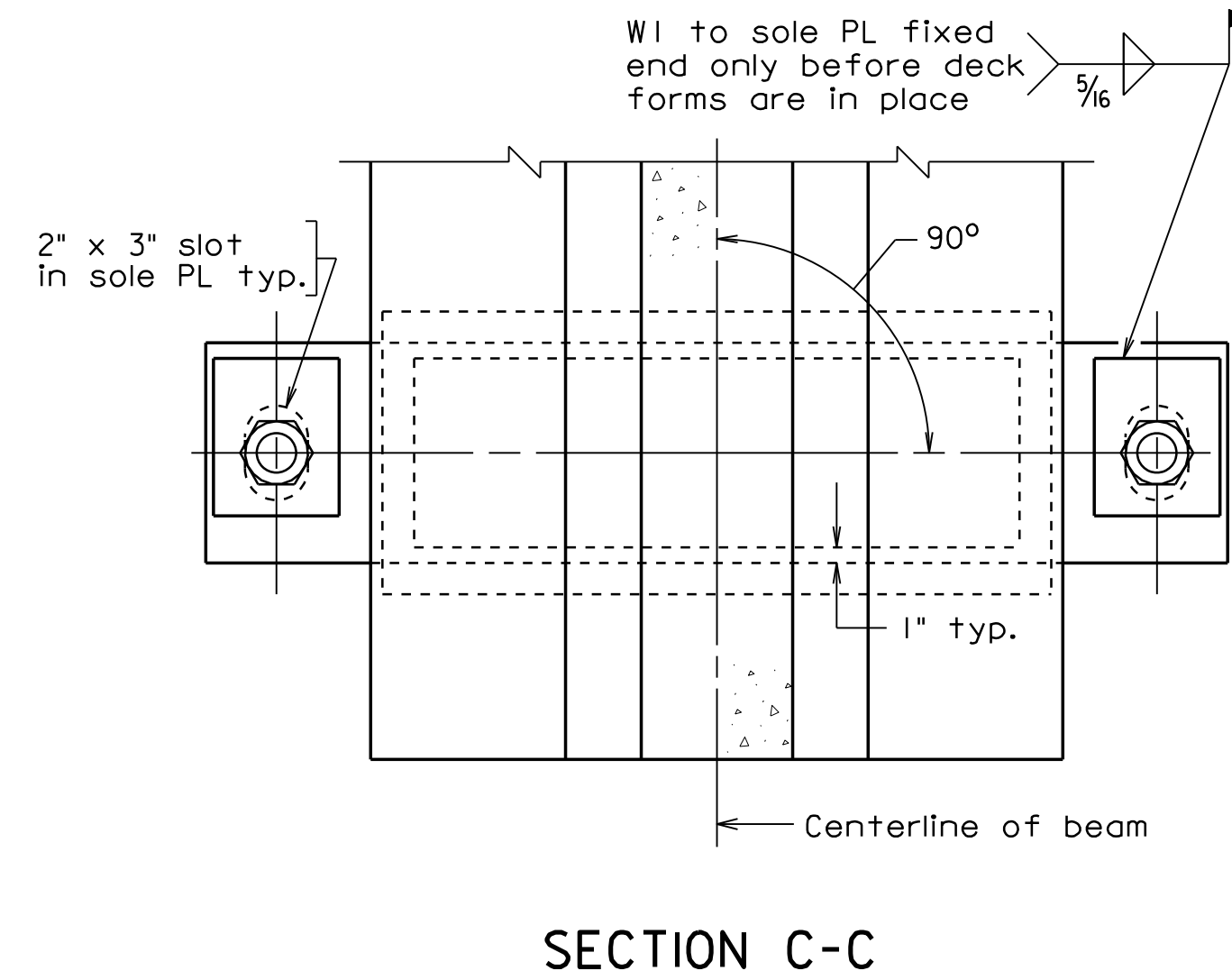
CADD REFERENCE NO.: BRIDGE19066.DWG

<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA ABUTMENT WINGWALLS</p>			<p>DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS SCALE: AS NOTED PLAN NO.: 307-39 DATE: February 8, 2023 SHEET: 8 OF 44</p>		
No.	Description	Date	REVISIONS		
For Table of Revisions, see Sheet 3.			<p>SCHWARTZ & ASSOCIATES LYNCHBURG, VA STRUCTURAL ENGINEER COMM. NO. 19100</p>		

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.		STP-5125(127)	4602	4602-125-124, B608	9



SECTION A-A



SECTION C-C

Notes:

Material: Elastomer - 50 durometer hardness
 Shim - ASTM A36 or A1011 mild steel
 Standard steel pipe - ASTM A53 grade B

The Contractor may elect not to provide anchor bolt sleeves at any locations and cast the anchor bolts directly into concrete at their own risk and expense.

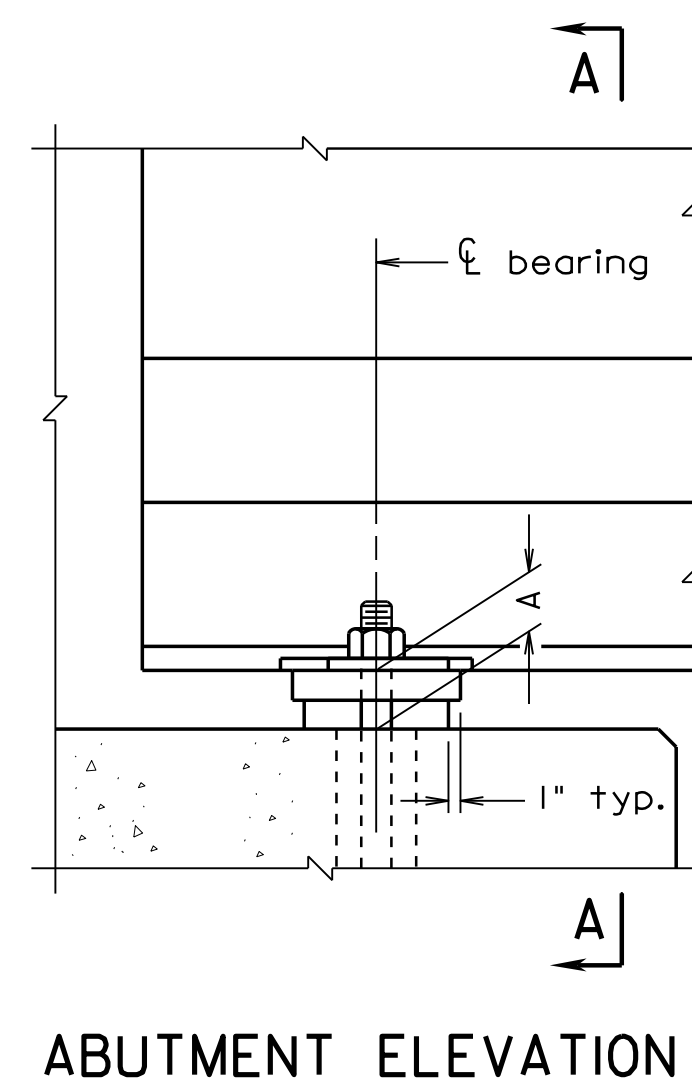
Elastomeric bearings shall be molded as a single unit.

Bevel sole plates to grade shown in table. Minimum 3/4 inch thickness.

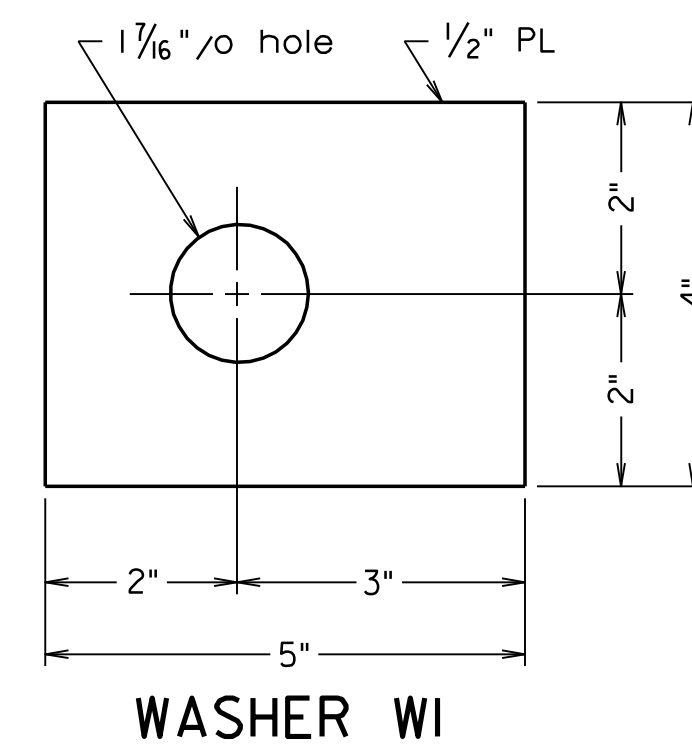
Insert plate shall provide uniform bearing over its entire contact area. For insert plate details, see sheet 14.

Sole plates, insert plates, anchor bolts, nuts and washers shall be galvanized.

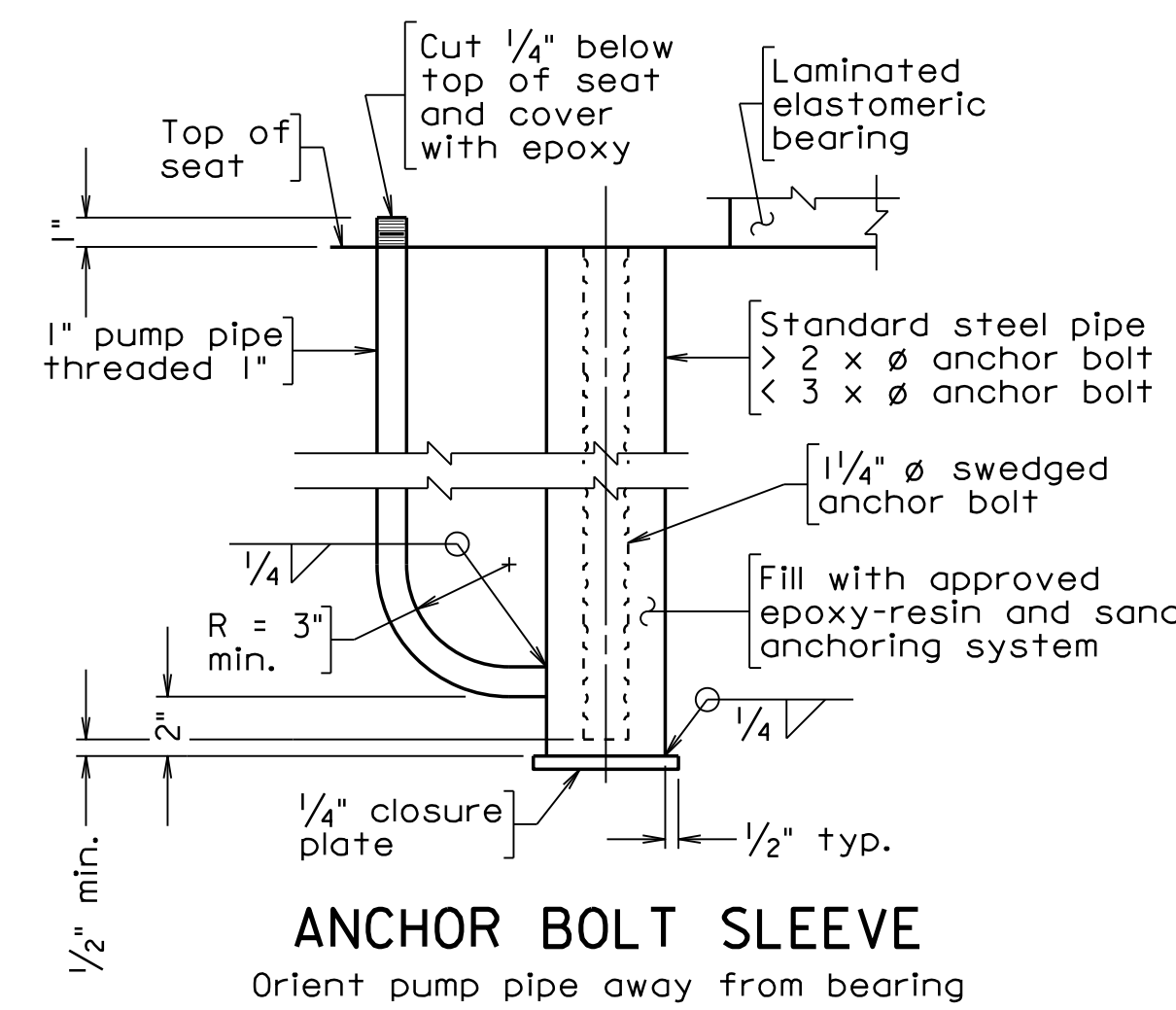
* Centerline of beam (including center line and text) shall be marked on the top, bottom and side surfaces of the laminated elastomeric bearing prior to shipping. The markings shall be done with an indelible ink or flexible paint of contrasting color.



ABUTMENT ELEVATION

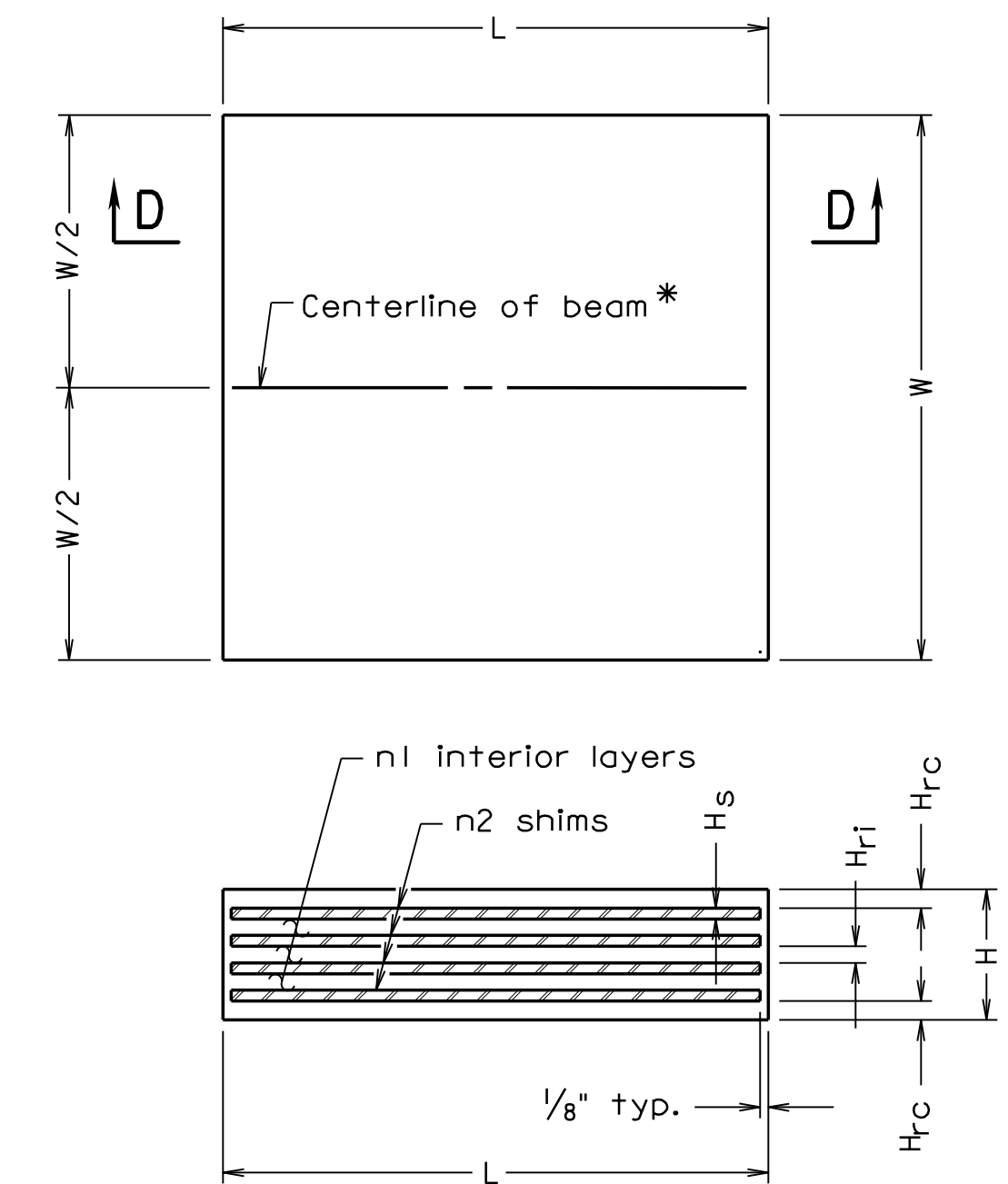


WASHER WI



ANCHOR BOLT SLEEVE

Orient pump pipe away from bearing



SECTION D-D
 LAMINATED ELASTOMERIC BEARING

Span	Abut.	Pier	Beam Type	Bearing Type	A	Laminated Elastomeric Bearing						Grade %	Total Load (kips)
						W	L	H	H _{RC}	n1 @ H _{R1}	n2 @ H _S		
1	A		pcbt	Fix	4 7/8"	20	14	3 3/8"	1/4"	5 @ 0.48	6 @ 0.1196	5.50%	181.87
1	B		pcbt	Exp.	4 7/8"	20	14	3 3/8"	1/4"	5 @ 0.48	6 @ 0.1196	5.50%	181.87

All dimensions in table are in inches.

Beam Type	B	C
II	1'-6"	12"
III	1'-10"	1'-2"
IV	2'-2"	1'-4"
V	2'-4"	1'-5"
VI	2'-4"	1'-5"
pcbt-series	2'-8"	1'-7"

Not to scale

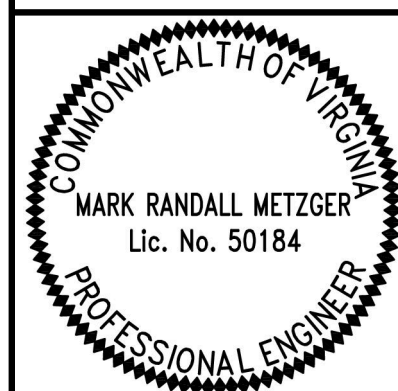
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STRUCTURE AND BRIDGE DIVISION			
PRESTRESSED BEAM BEARING DETAILS			
No.	Description	Date	Revisions
Designed: MRM	Drawn: MRM	Checked: AES	Date: Feb. 8, 2023
Plan No.			Sheet No.
307-39			9 of 44

19100_009-bb08.dgn

01-30-2018

BBD-8 (MOD.)

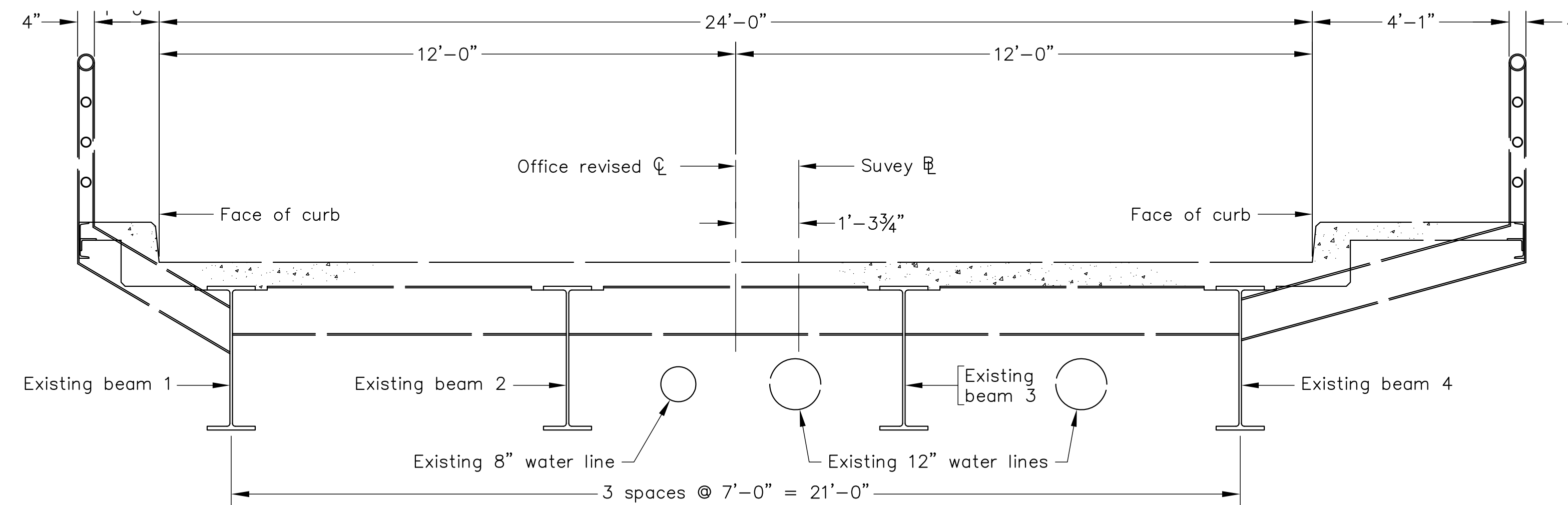


SCHWARTZ & ASSOCIATES
 LYNCHBURG, VA
 STRUCTURAL ENGINEER

Sealed and Signed by:
 Jung Meng
 Lic. No. 033572
 On the date of
 January 30, 2018

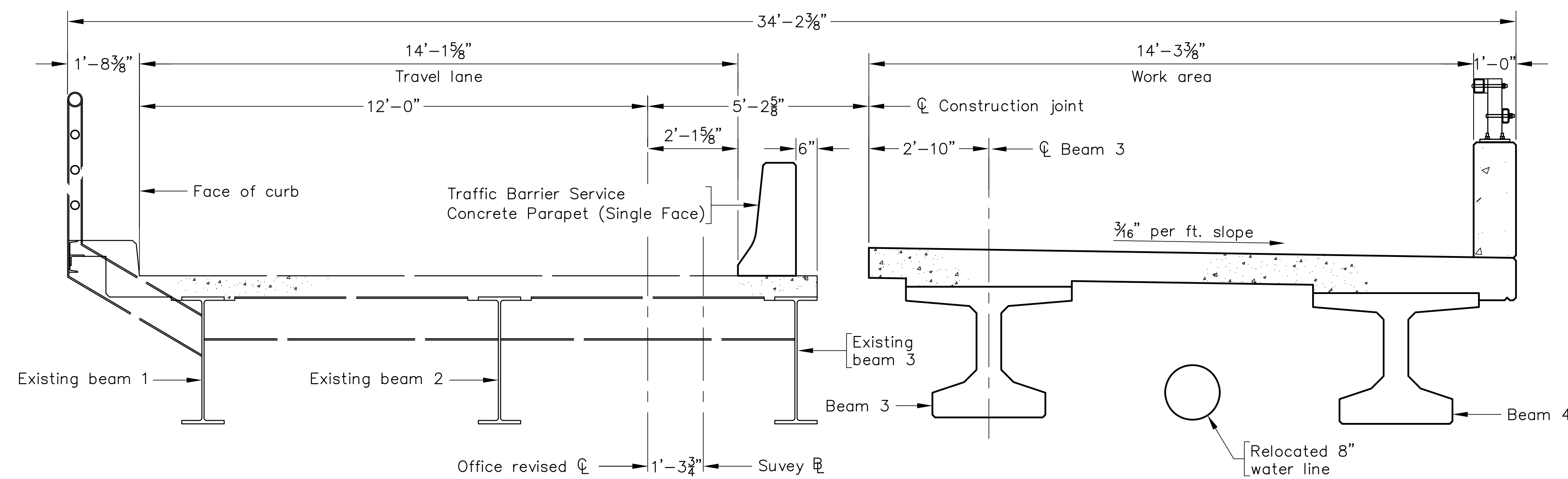
VDOT S&B DIVISION
 RICHMOND, VA
 STRUCTURAL ENGINEER

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	PROJECT
VA.	-	STP-5125(127)	4602	4602-125-124, B608
				10



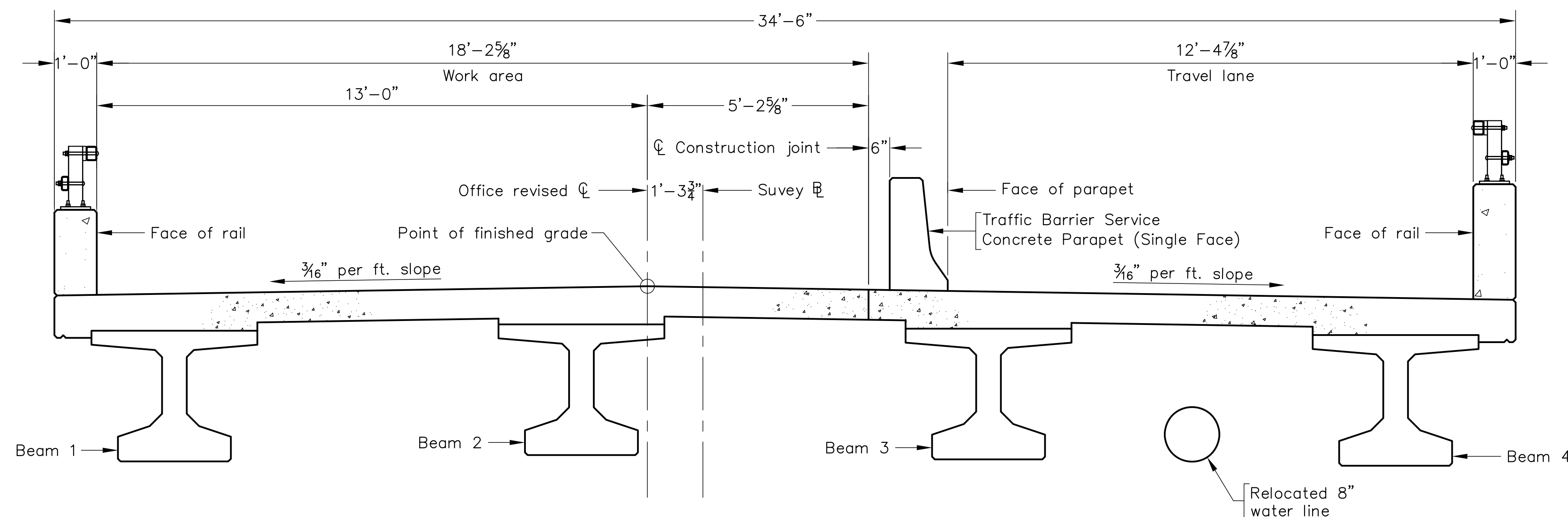
EXISTING TRANSVERSE SECTION

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



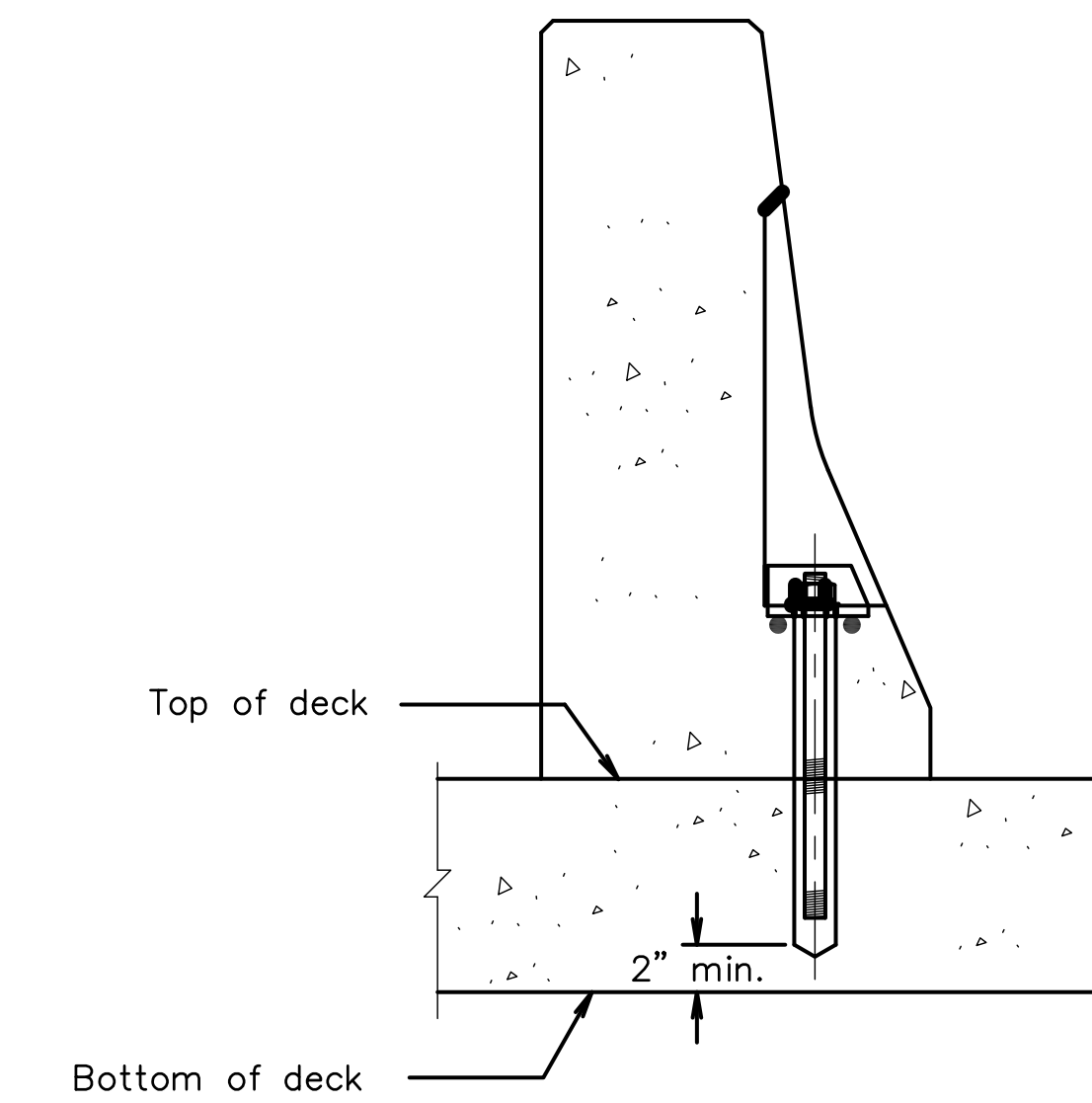
STAGE 1 TRANSVERSE SECTION

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



STAGE 2 TRANSVERSE SECTION

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



TRAFFIC BARRIER SERVICE CONCRETE PARAPET (SINGLE FACE)

NOTES:

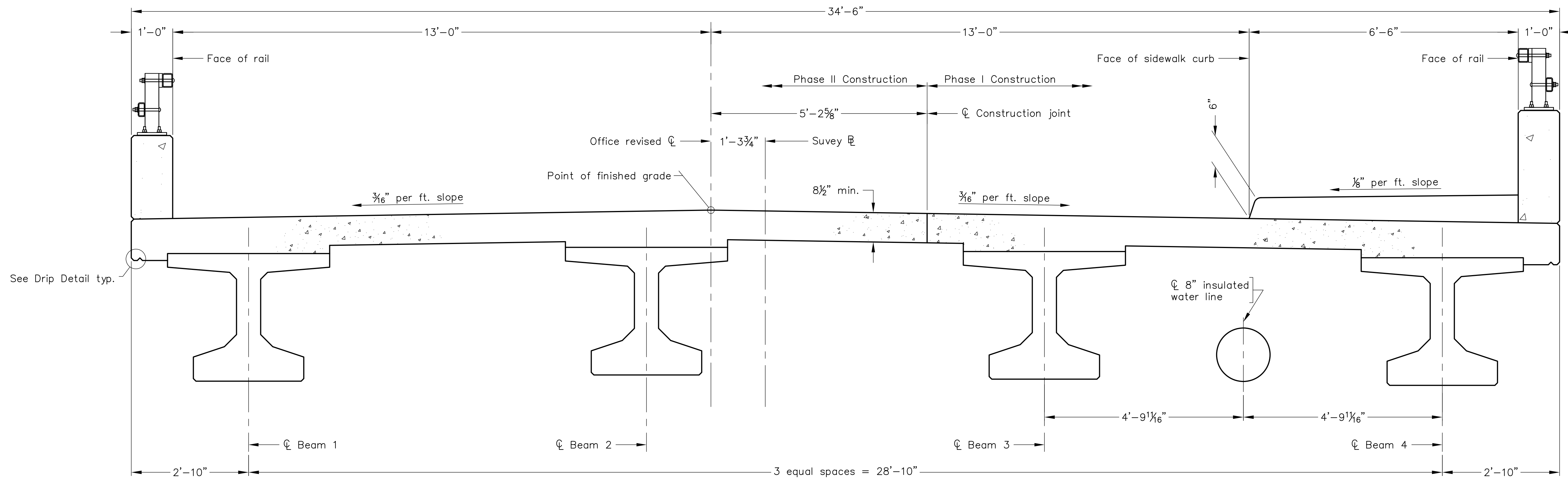
1. Bolt down side adjacent to traffic.
2. For details not shown, see VDOT Road and Bridge Standards MB-10A.
3. After removing Temporary barrier, cut 1/4" bolt or threaded rod as low as practical below roadway surface and fill recess with epoxy bonding compound EP-4.
4. Anchor system shall be tested to provide a minimum pullout of 32,000 lbs. and installed according to manufacturer's recommendations.

CADD REFERENCE NO.: BRIDGE19100.DWG

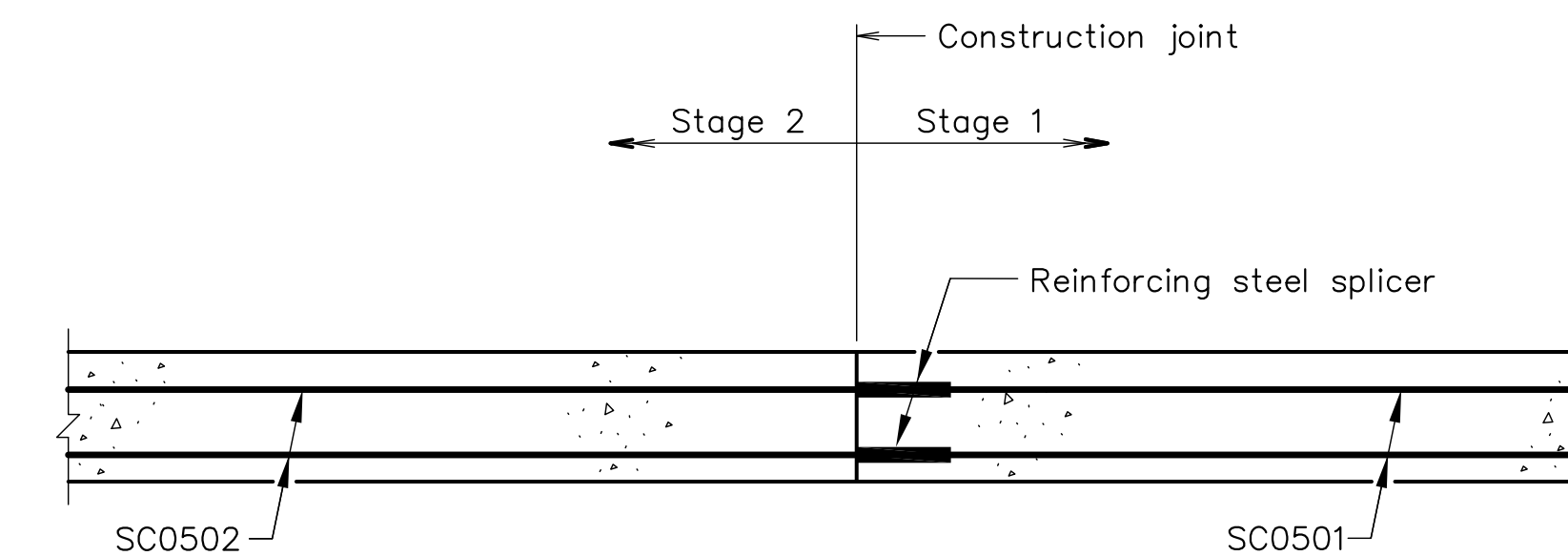
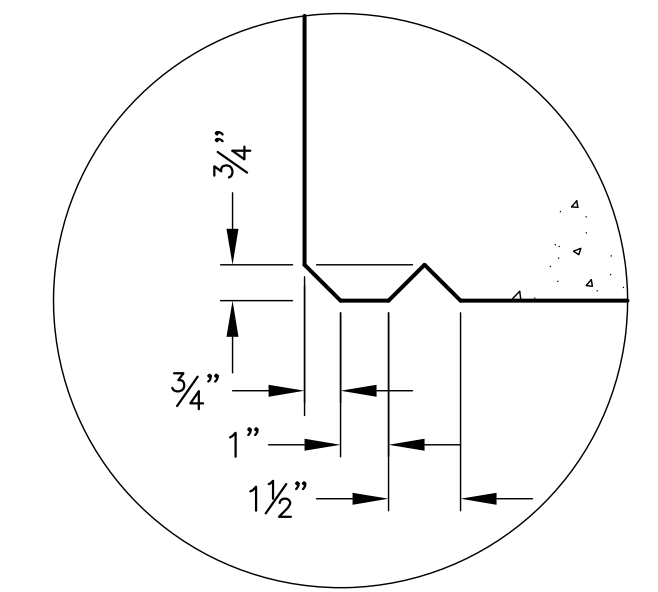
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<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA TRANSVERSE SECTION PHASE DETAILS</p>		<p>DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS SCALE: As Noted PLAN NO.: 307-39 DATE: February 8, 2023 SHEET: 10 OF 44</p>	
<p>No. Description Date</p>		<p>REVISIONS</p>	
<p>For Table of Revisions, see Sheet 3.</p>		<p>COMM. NO. 19100</p>	

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	PROJECT
VA.	-	STP-5125(127)	4602	4602-125-124, B608
				11

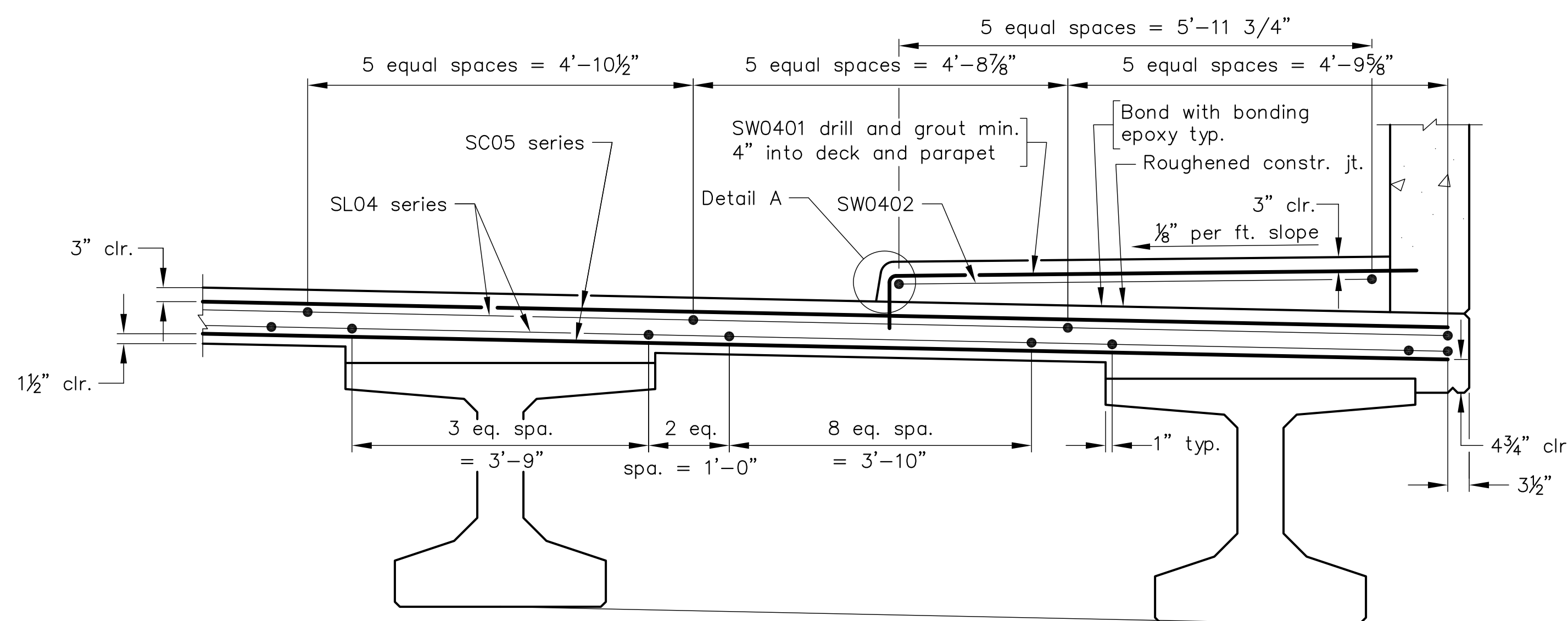
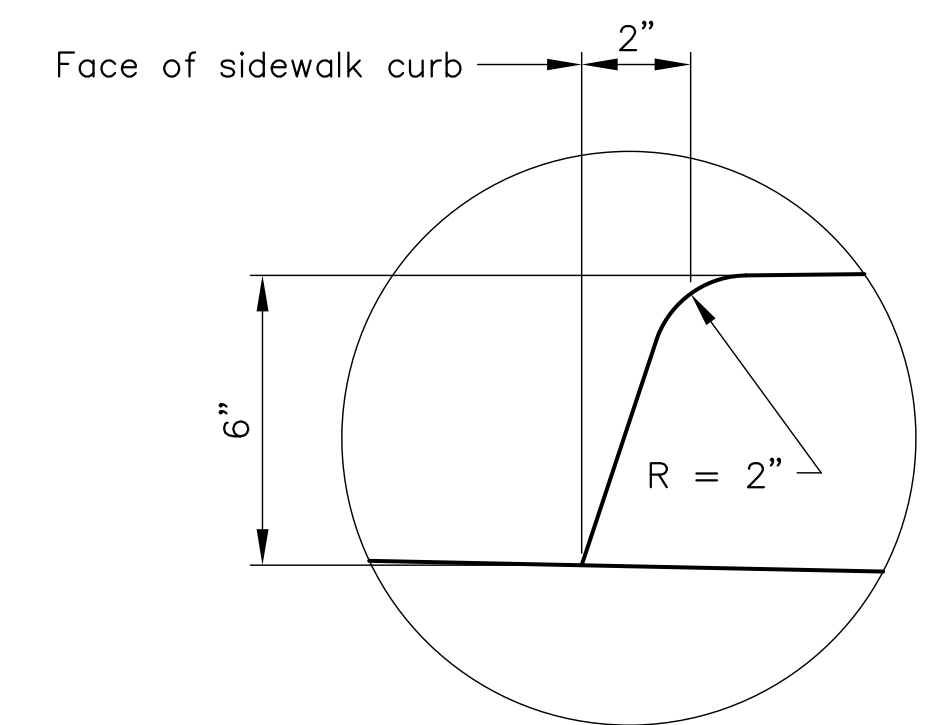


Note:
For deck slab and sidewalk reinforcement, see sheet 17.
For rail details see sheet 19.



PART SECTION AT CONSTRUCTION JOINT

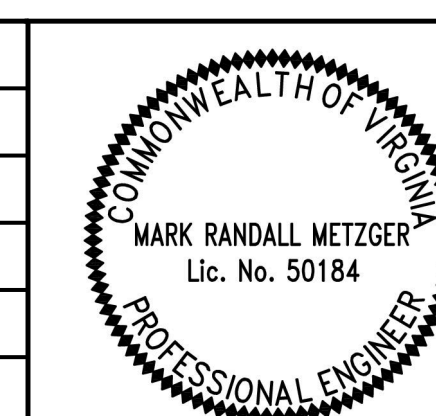
All costs associated with reinforcing steel splicers shall be included in bid price for corrosion resistant reinforcing steel, class I.



PART TRANSVERSE SECTION

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

No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 3.		



SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

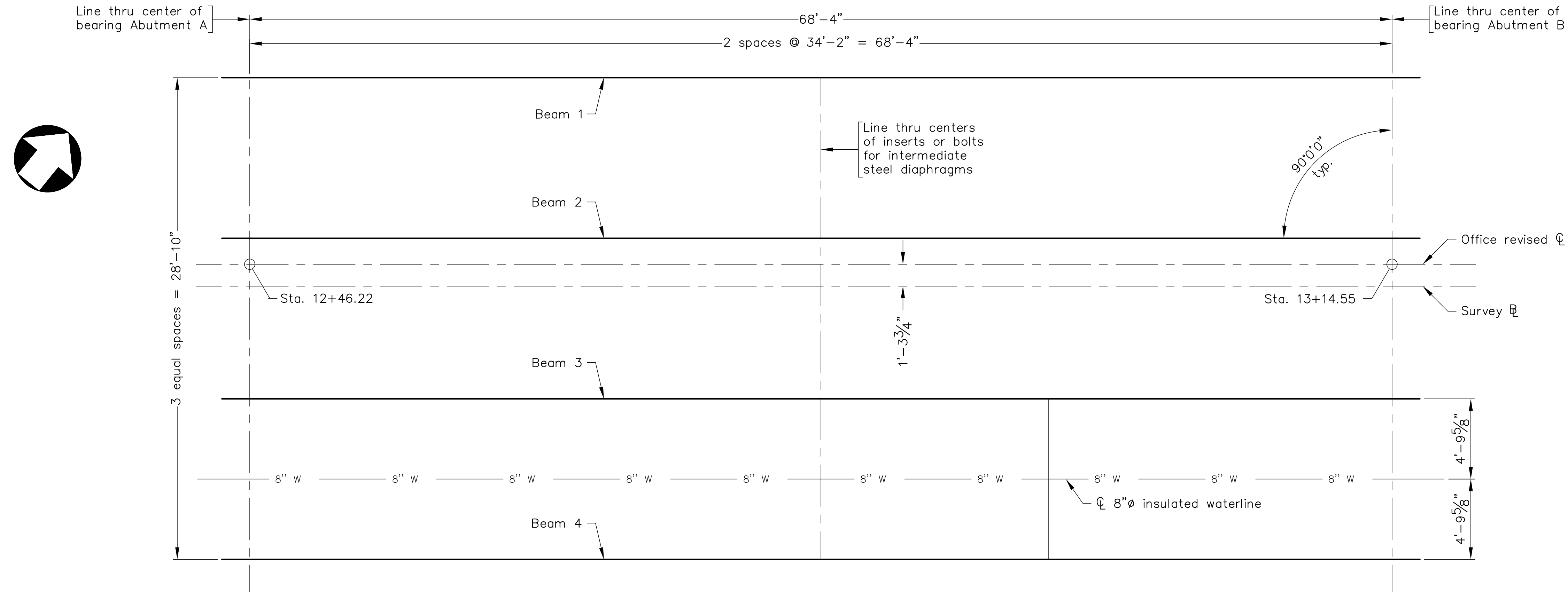
**W, COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA
TRANSVERSE SECTION**

SCHWARTZ & ASSOCIATES LYNCHBURG, VA STRUCTURAL ENGINEER COMM. NO. 19100	DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: APS
	SCALE: AS NOTED	PLAN NO.: 307-39	
	DATE: February 8, 2023	SHEET: 11	OF 44

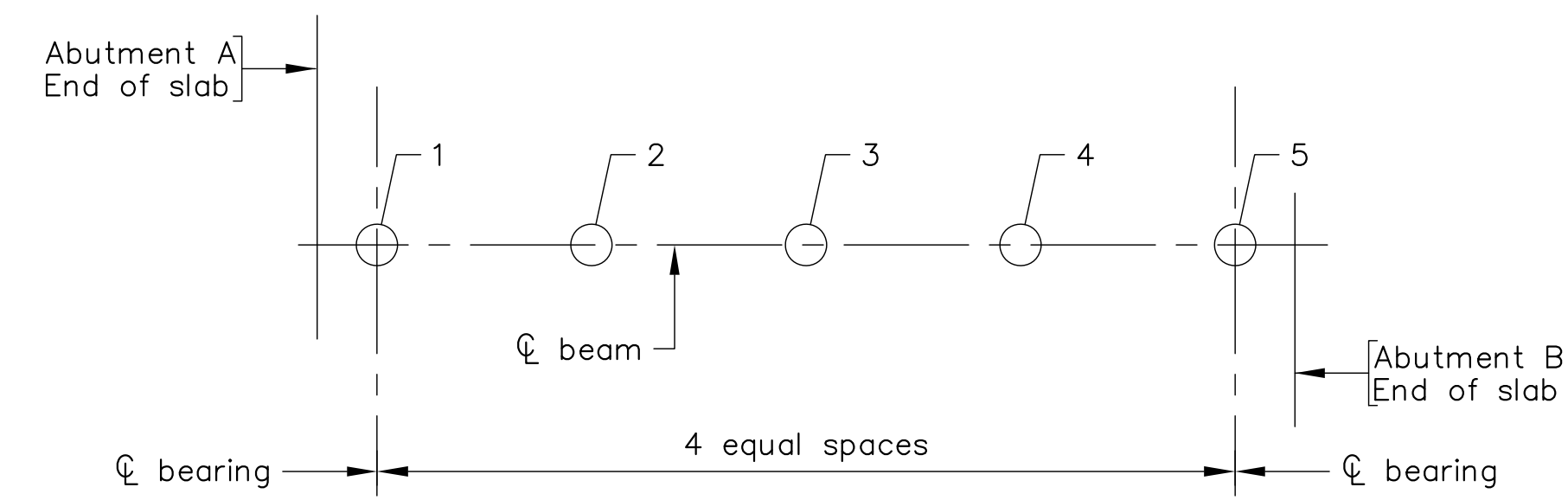
CADD REFERENCE NO.: BRIDGE19100.DWG

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	-	STP-5125(127)	4602	4602-125-124, B608	12

Notes:
 For prestressed concrete beam details, see sheet 13.
 For intermediate diaphragm details, see sheet 16.
 For integral backwall details, see sheet 18.





ERECTION DIAGRAM – SPAN a
 Scale: 1/4" = 1'-0"



PLAN
 Showing points of top of slab elevations

TOP OF SLAB ELEVATIONS ALONG ϕ BEAMS						
Span	Point	1	2	3	4	5
a	Beam 1	1930.07	1931.01	1931.95	1932.89	1933.83
	Beam 2	1930.22	1931.16	1932.10	1933.04	1933.98
	Beam 3	1930.12	1931.06	1932.00	1932.94	1933.88
	Beam 4	1929.97	1930.91	1931.85	1932.79	1933.73

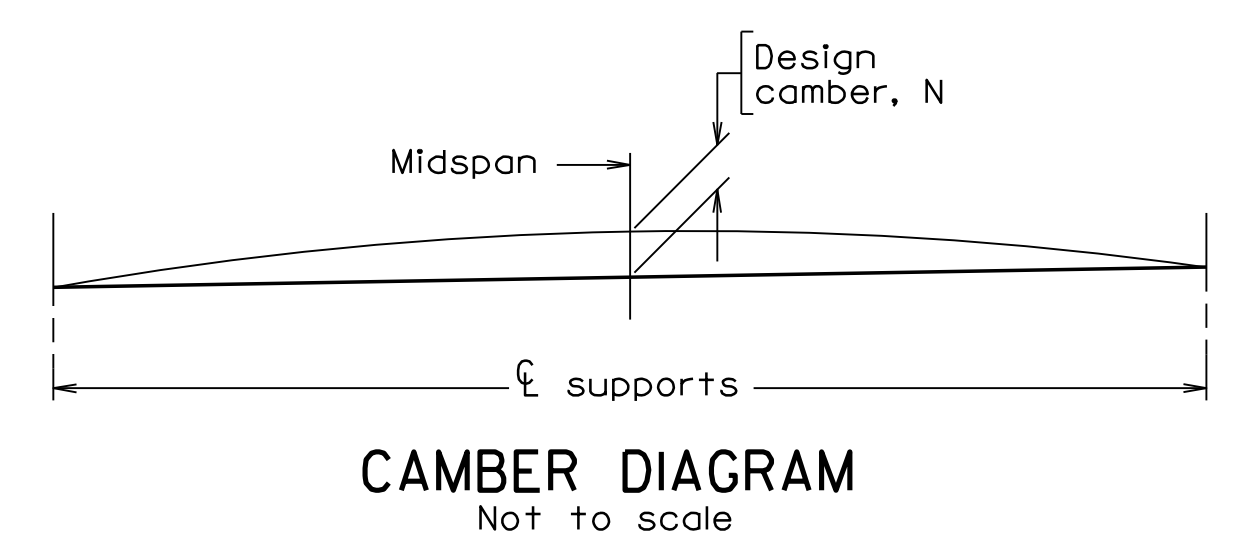
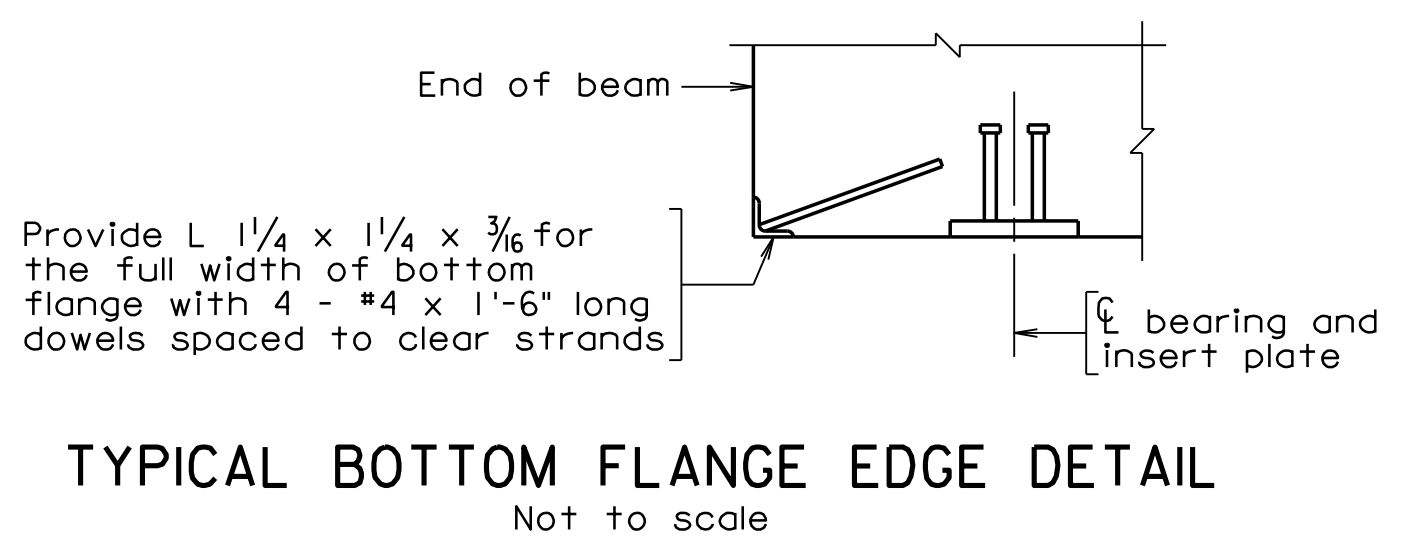
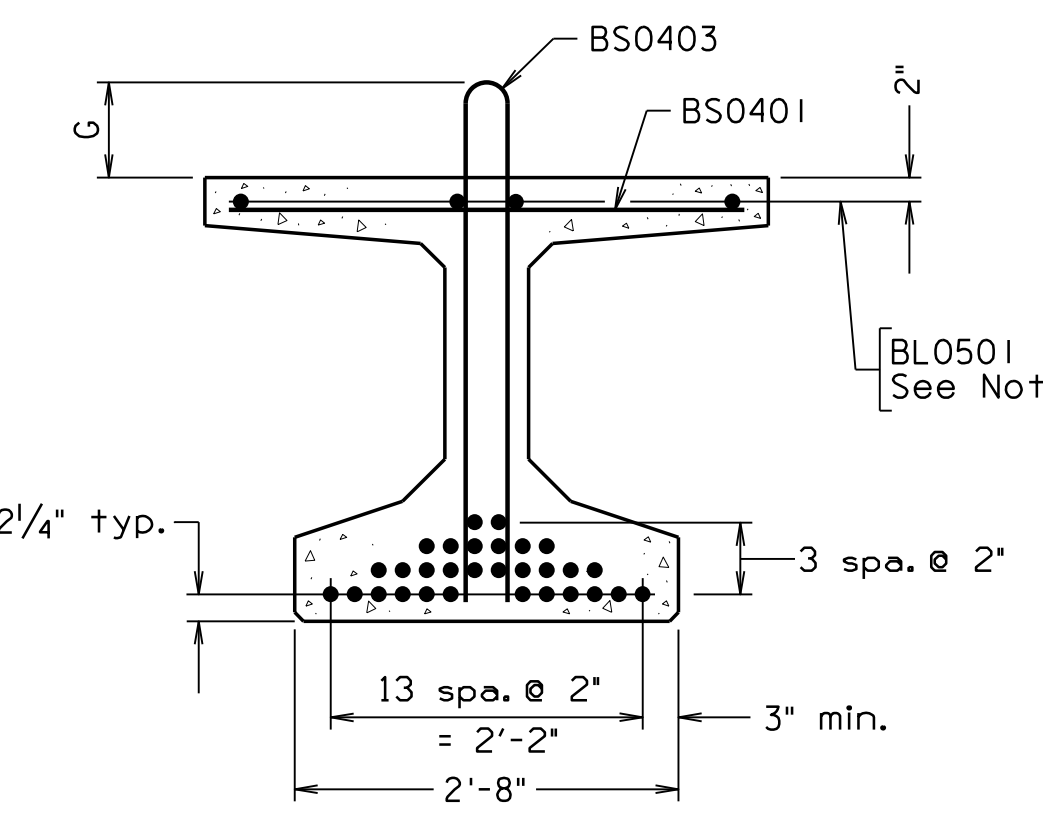
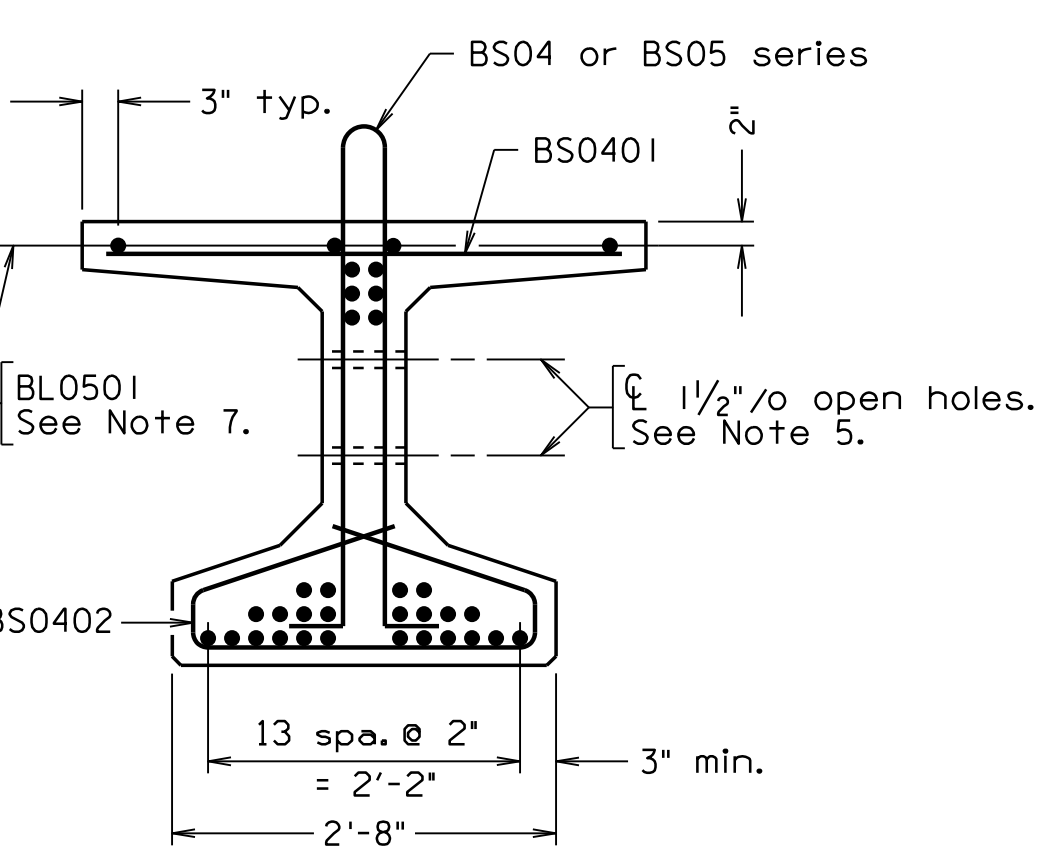
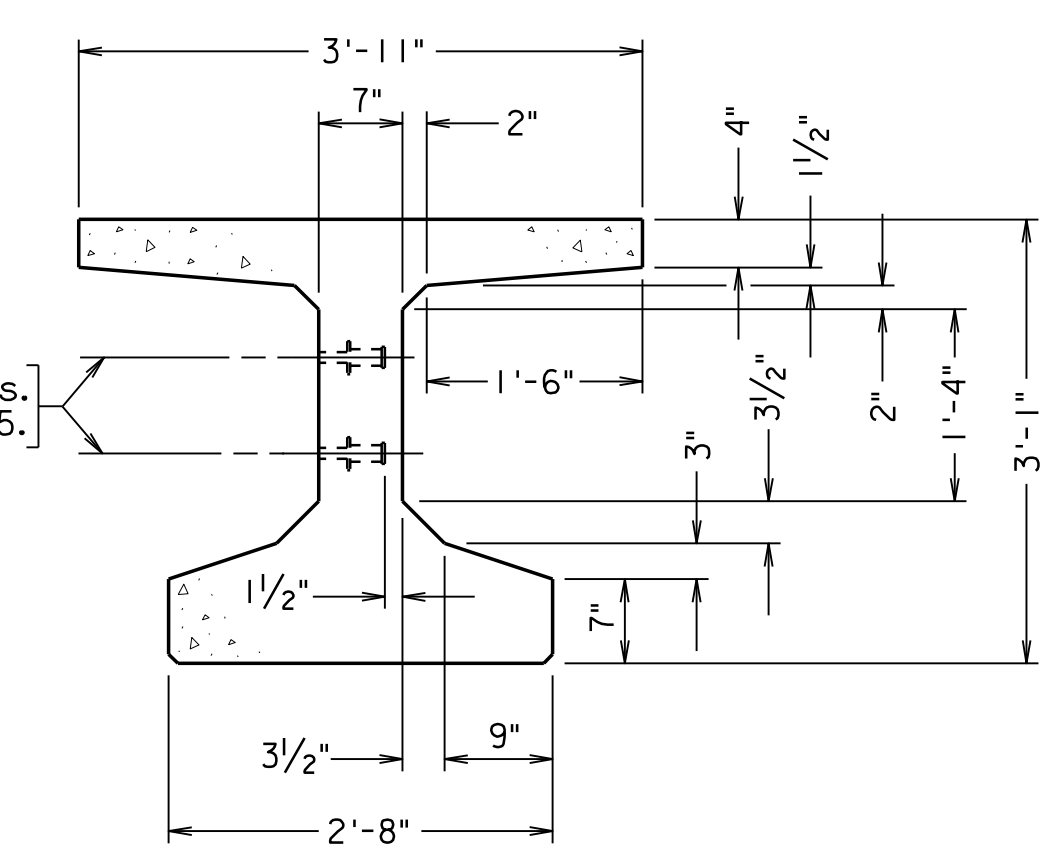
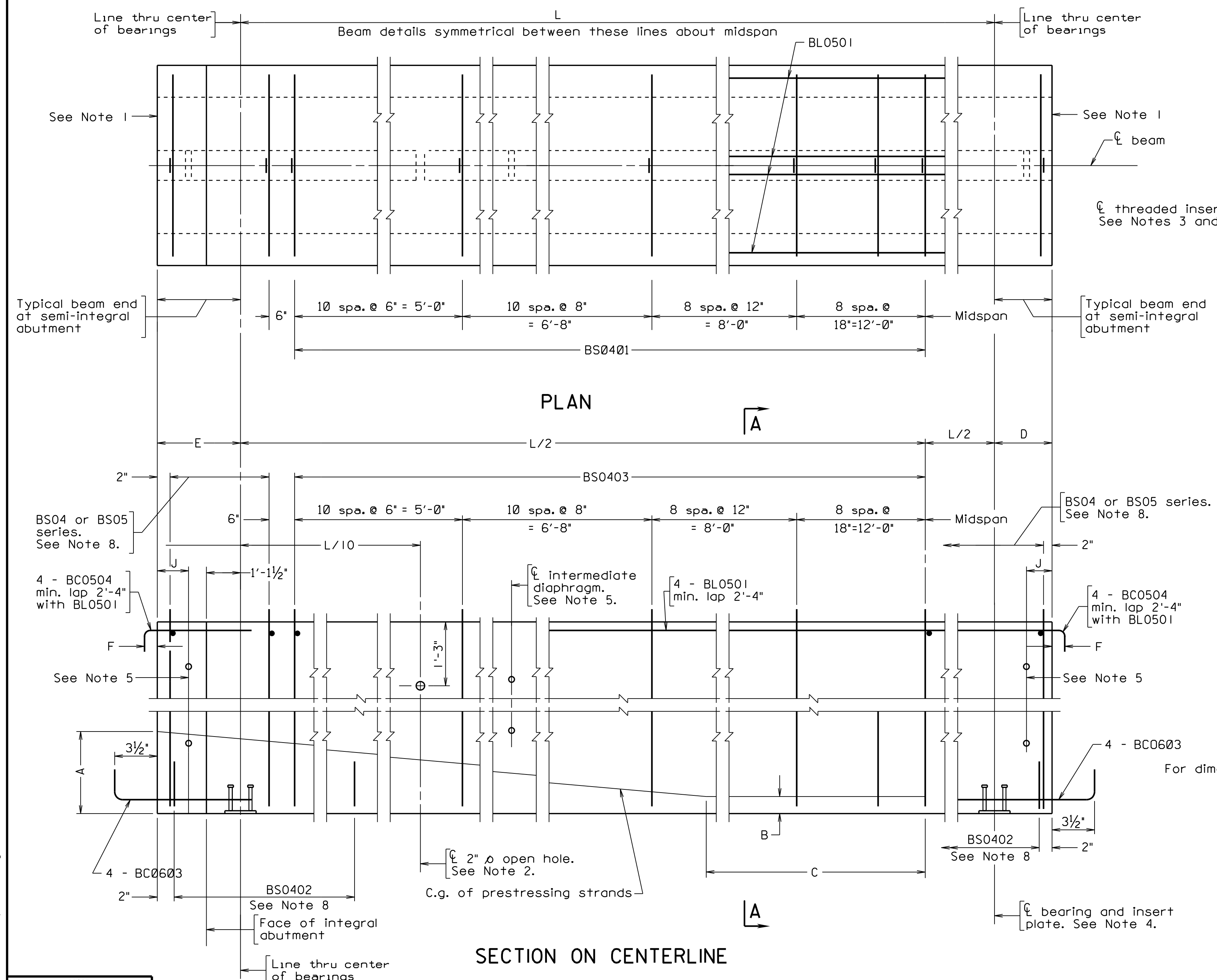
No.	Description	Date		 SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.
REVISIONS For Table of Revisions, see Sheet 3.			SCHWARTZ & ASSOCIATES LYNCHBURG, VA STRUCTURAL ENGINEER COMM. NO. 19100	DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS SCALE: AS NOTED PLAN NO.: 307-39 DATE: February 8, 2023 SHEET: 12 OF 44

CADD REFERENCE NO.: BRIDGE19100.DWG

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.		STP-5125(127)	4602	4602-125-124, B608	13

Notes:

- At full or semi-integral abutment, end strands may project 1' + from beam after clipping. End of beam shall be roughened in accordance with Section 405.05 of the Road and Bridge Specifications. End of beams at these locations shall not have epoxy applied.
- Beams shall have 2" ϕ open holes formed with nonrigid tubing only on stream crossings. Holes may be slightly shifted to clear reinforcing bars and strands.
- Threaded inserts shall be provided at all exterior beams and at interior beams where line of diaphragms is discontinued at an interior beam. Threaded inserts shall be $\frac{1}{8}$ " - 9 NC threaded plain ferrule inserts suitable for thin precast concrete elements having a minimum ultimate mechanical tensile strength of 8,000 pounds.
- For details of insert plate, see sheet 14.
- $1\frac{1}{2}$ " ϕ open holes shall be formed with non-rigid tubing. For location of end and intermediate diaphragms, see Erection Diagram on sheet 12. For location and number of holes or inserts required for end diaphragms and intermediate diaphragms and at integral abutments, see sheet 16.
- The Contractor, after written approval from the Engineer, may use different prestressing strand arrangement provided that the total prestressing force and c.g. are the same as shown on the plans.
- 4 - ϕ 6" strands stressed to 8,000 lbs. may be substituted for 4 - BL05 series bars. Maximum distance from the outside strands to the flange edge may be increased from 3" to no more than 4".
- For beam end reinforcing details, dead load deflection diagram see sheets 14 & 15.
- For beam ends that are exposed and will not be embedded into concrete, use 1' deep recesses around local strand groups with 2" minimum edge clearances and fill with pneumatically applied mortar immediately after clipping strands. An approved epoxy mortar covering the ends of strands with a minimum thickness of 1/8" may be used as an alternate. Allow strands to cool before mortar is applied. After mortar is allowed to cure, the entire end of beam shall be covered with epoxy type EP-3T.
- Design and detailing of these plans are based on the design cambers at erection (see Data and Dimension Table) and the maximum tolerance for camber differential from design camber at erection indicated in the Specifications. Design camber at erection is computed using Precast/Prestressed Concrete Institute (PCI) multipliers.



Span	Beam	Prestr. force at Release lb. per strand	No. and size of strands / beam	Design Camber, N		A	B	C	D	E	F	G	J	L	Assuming swivel hold-down device		
				At Release in.	At Erection in.										Anticipated uplift force per strand, Fv - kips	Anticipated total uplift force all strands, Σ Fv - kips	Anticipated number of hold-down devices per location
All	All	43,943	30 - ϕ 6"	1 3/4"	1 3/8"	0-9.07	4.12	6-10	1-8	1-8	2	7	5	68-4	3.333	20.000	1

19100.013-pcbt37s.dgn
10-31-2019
PCBT-37S



Schwartz & Associates
Lynchburg, VA
Structural Engineer
Sealed and Signed by:
Junyi Meng
Lic. No. 033572
On the date of
October 31, 2019

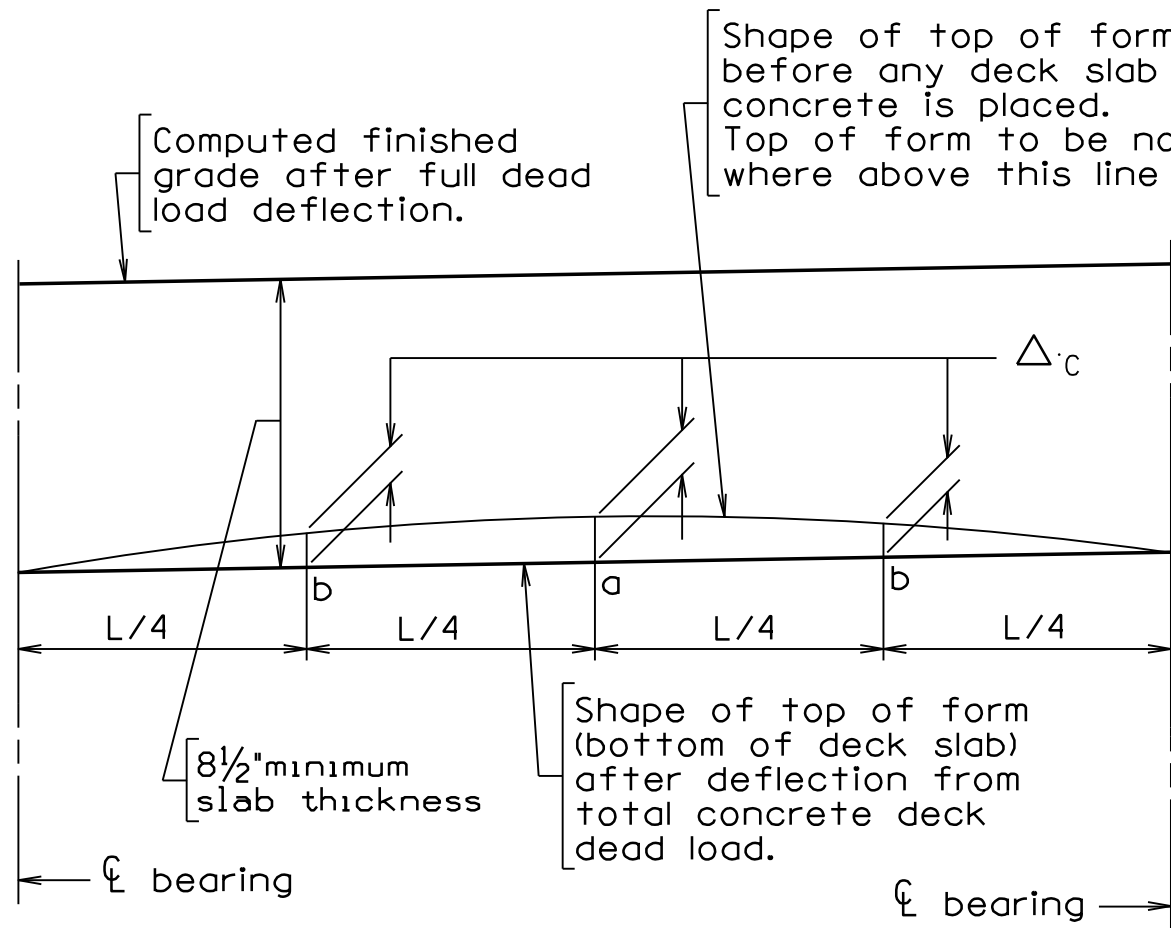
A copy of the original sealed and signed standard drawing is on file in the Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION				
PRESTRESSED CONCRETE BULB-T PCBT-37S				
No.	Description	Date	Designed: MRM Drawn: MRM Checked: APB	Sheet No. 13 of 44
Revisions		Date	Plan No. 307-39	Feb. 8, 2023

STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT		PROJECT		NO.
VA.	STP-5(25(127))		4602 4602-125-124, B608		14

Notes:
 Insert plate shall provide uniform bearing over its entire contact area.
 Insert plate is not required when utilizing on full integral abutment.
 For beam details and notes, see sheet 13.



Adjustment of deck slab forms to correct for dead load deflections shall be made by varying thickness of concrete bolster between slab and beam without alteration of slab thickness. Longitudinal screed should be set above final finished grade by amounts = Δ_{c2}

Δ_{c1} = Deflection of beam from dead load of concrete deck slab, bolsters and diaphragms and does not include the deflection of the beam from its own weight.

Δ_{c2} = Deflection of composite section from dead load (e.g. parapet and curb added after deck is cast).

$\Delta_c = \Delta_{c1} + \Delta_{c2}$

Beam	At a		At b	
	Δ_{c1}	Δ_{c2}	Δ_{c1}	Δ_{c2}
1 & 4	7/8	1/8	5/8	1/8
2 & 3	1	1/8	3/4	1/8

DEAD LOAD DEFLECTION DIAGRAM

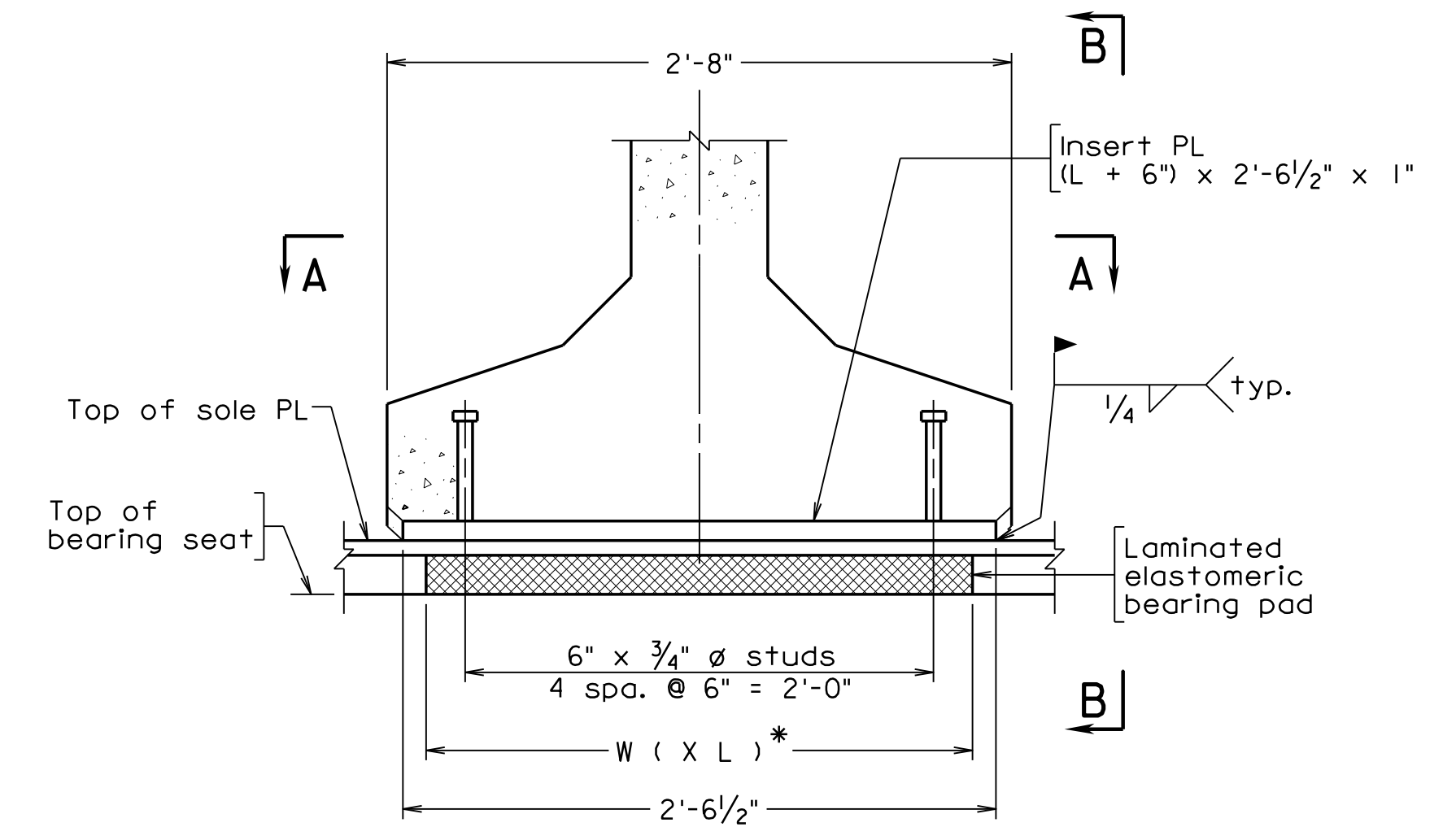
REINFORCING STEEL SCHEDULE						
Mark	Size	No.	Length	Pin ϕ	Location	
BS0402	#4	216	5'-9 3/4"	2"	Bottom flange - confinement	
BS0403	#4	216	6'-11 1/2"	2 1/2"	Stirrup outside anchorage zone	
BS0505	#5	88	10'-4"	2 1/2"	Anchorage zone stirrup	
BL0501	#5	32	37'-0"	---	Top flange longitudinal	
BC0501	#6	32	4'-7 1/2"	3 3/4"	Bott. flange - full or semi-integral	
BC0504	#5	32	3'-11 1/2"	2 1/2"	Top flange - full or semi-integral	
BC0603	#6	32	4'-7 1/2"	3 3/4"	Bott. flange - full or semi-integral	
BC0603	#5	32	3'-11 1/2"	2 1/2"	Top flange - full or semi-integral	

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

Reinforcing bars shown in the above schedule are for all beams shown on sheet 13.

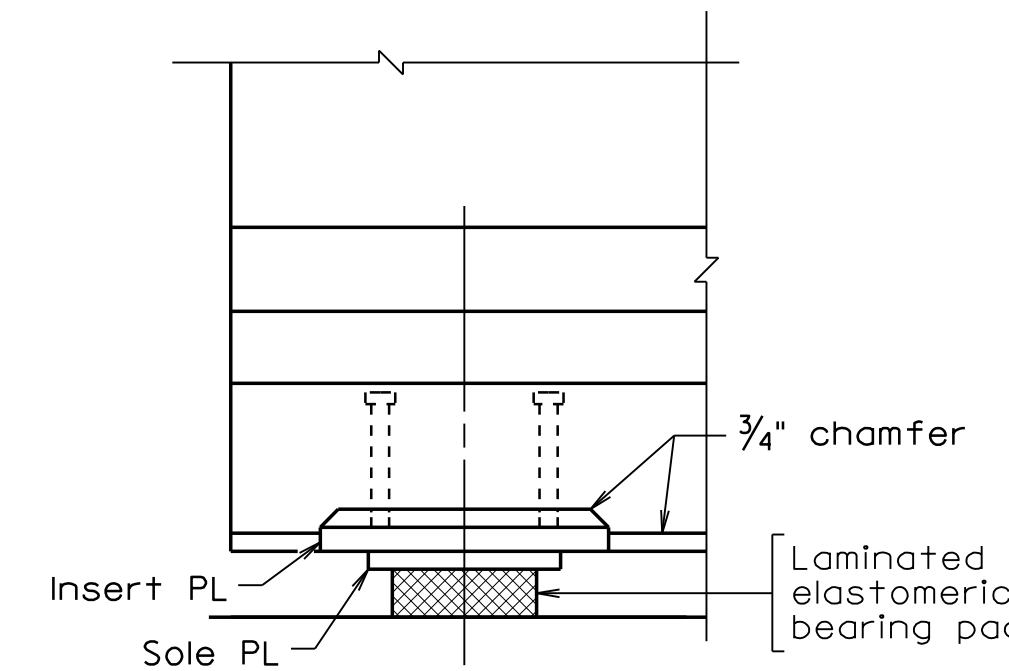
* Denotes reinforcing bars that shall be corrosion resistant reinforcing steel, Class III.

At the Contractor's option and at no additional cost, bar BS0402 and BS0408 may be fabricated as a two piece bar with a minimum 1'-4" lap.

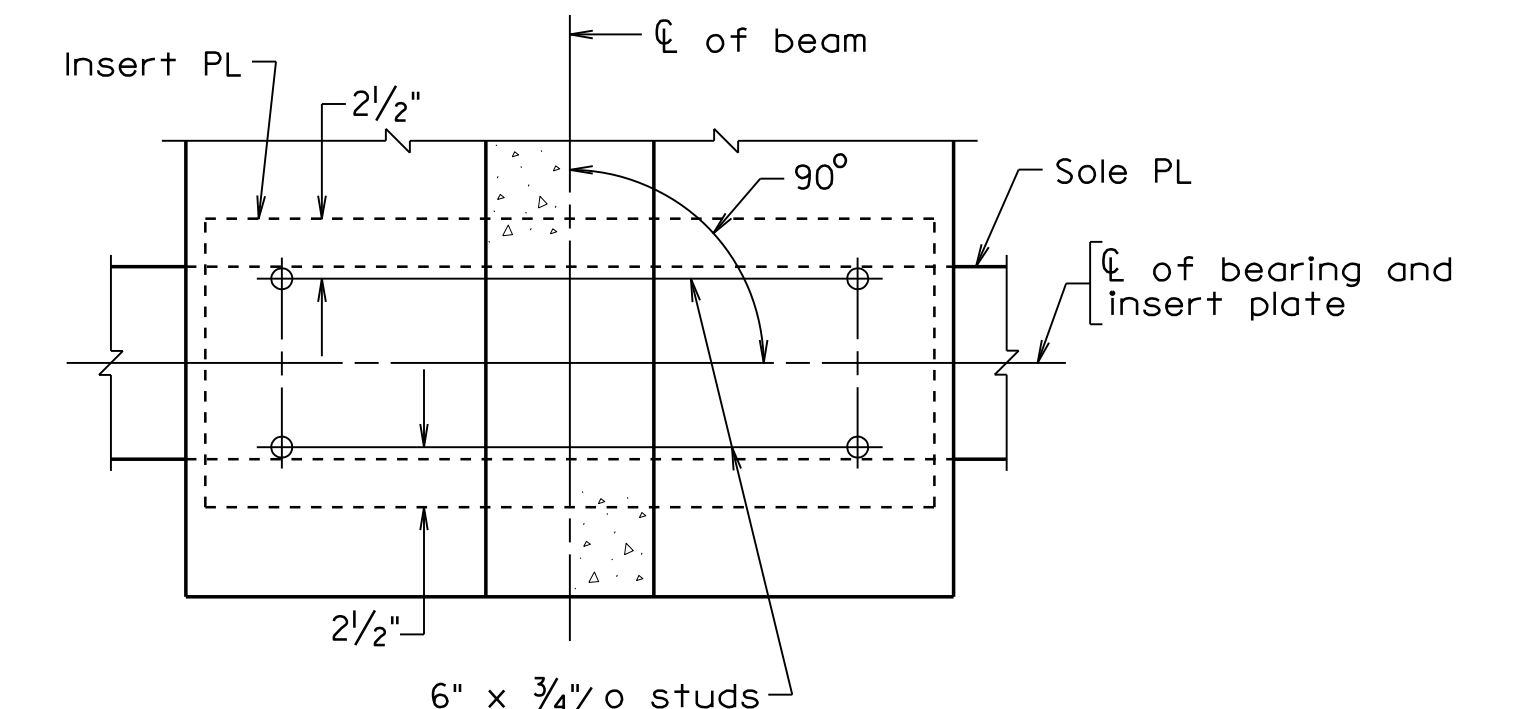


INSERT PLATE DETAILS

* For laminated elastomeric bearing pad dimensions, see sheet 10.



VIEW B-B

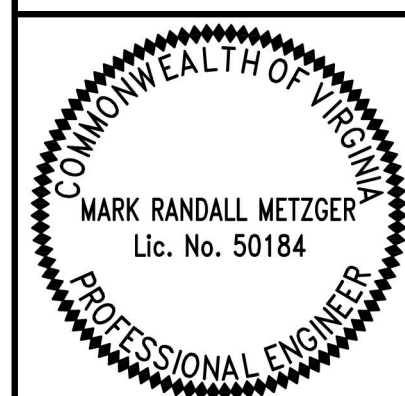


SECTION A-A

19100_014-pcbrmisc1.dgn

07-27-2017

PCBT-MISC1



SCHWARTZ & ASSOCIATES
 LYNCHBURG, VA
 STRUCTURAL ENGINEER
 Sealed and Signed by:
 Junyi Meng
 Lic. No. 033572
 On the date of
 June 27, 2017

A copy of the original sealed and signed standard drawing is on file in the Central Office.

VDOT S&B DIVISION
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 STRUCTURAL ENGINEER

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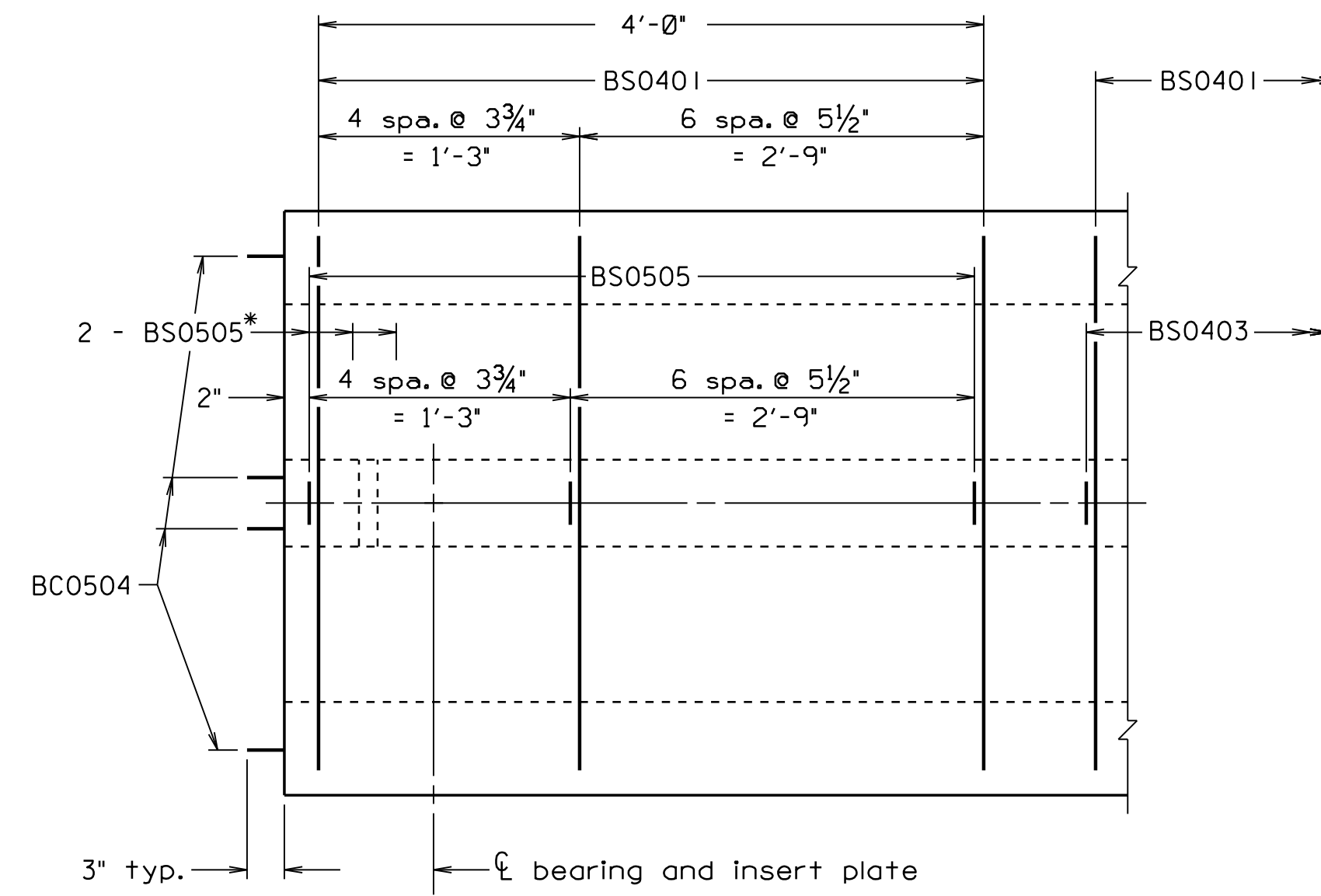
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
PRESTRESSED CONCRETE BULB-T MISCELLANEOUS BEAM DETAILS				
No.	Description	Date	Designed: MRM MBH	Plan No.
Revisions			Checked: APS	Sheet No.
			Feb. 8, 2023	307-39
				14 of 44

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5125(127)	4602	4602-125-124, B608	15

Notes:

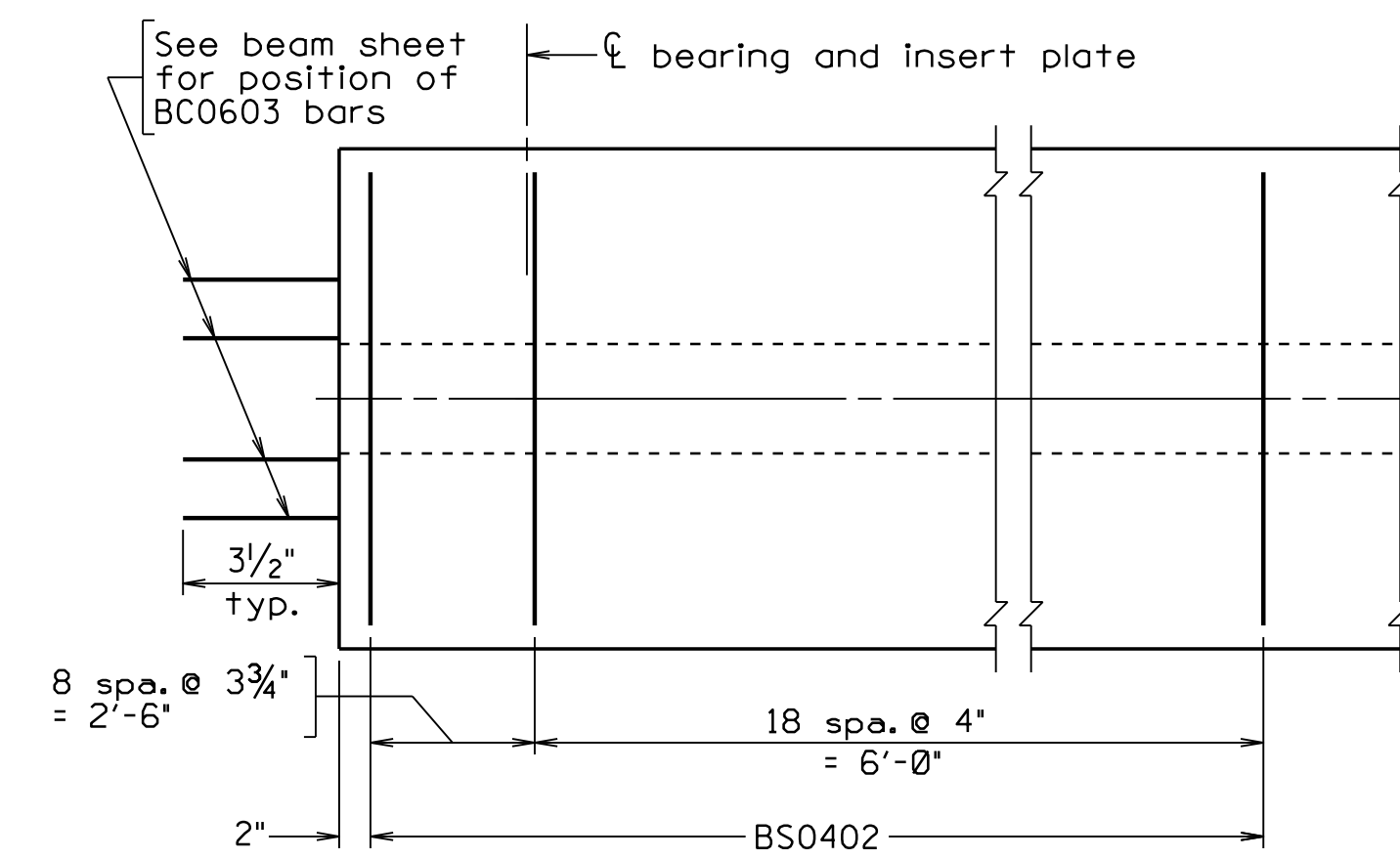
For beam details and notes, see sheet 13.

BS series bars may be shifted as directed by the Engineer to clear inserts, open holes and studs in insert plates.



*Indicates bundled bars at each location (e.g., 2 arrowheads, first two locations)

AT SEMI-INTEGRAL ABUTMENT
TOP FLANGE AND WEB REINFORCEMENT END DETAILS



AT SEMI-INTEGRAL ABUTMENT
BOTTOM FLANGE REINFORCEMENT END DETAILS

19100_015-pcbbtmisc2.dgn

PCBT-MISC2 10-31-2018



SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Jung Meng
Lic. No. 033572
On the date of
October 31, 2018

A copy of the original
sealed and signed
drawing is on file in the
Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
PRESTRESSED CONCRETE BULB-T MISCELLANEOUS BEAM DETAILS				
No.	Description	Date	Designed: MRM Drawn: MRM Checked: MRM	Date Feb. 8, 2023
Revisions			Plan No. 307-39	Sheet No. 15 of 44

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STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5125(127)	4602	4602-125-124, B608	16

DIMENSION TABLE				
BEAM TYPE	A	B	C	CHANNEL SIZE
PCBT-29	1'-3"	9"	8"	MC8x22.8
PCBT-37	1'-5"	11"	12"	C12x20.7
PCBT-45	1'-7 1/2"	1'-1 1/2"	1'-3"	C15x33.9
PCBT-53	1'-11 1/2"	1'-5 1/2"	1'-3"	C15x33.9

Notes:

All structural steel shall be ASTM A36.

All bolts shall be 7/8" ϕ H.S. bolts, ASTM A325.

All H.S. bolts used for steel-to-steel connections shall be tightened in accordance with Section 407 of the Specifications.

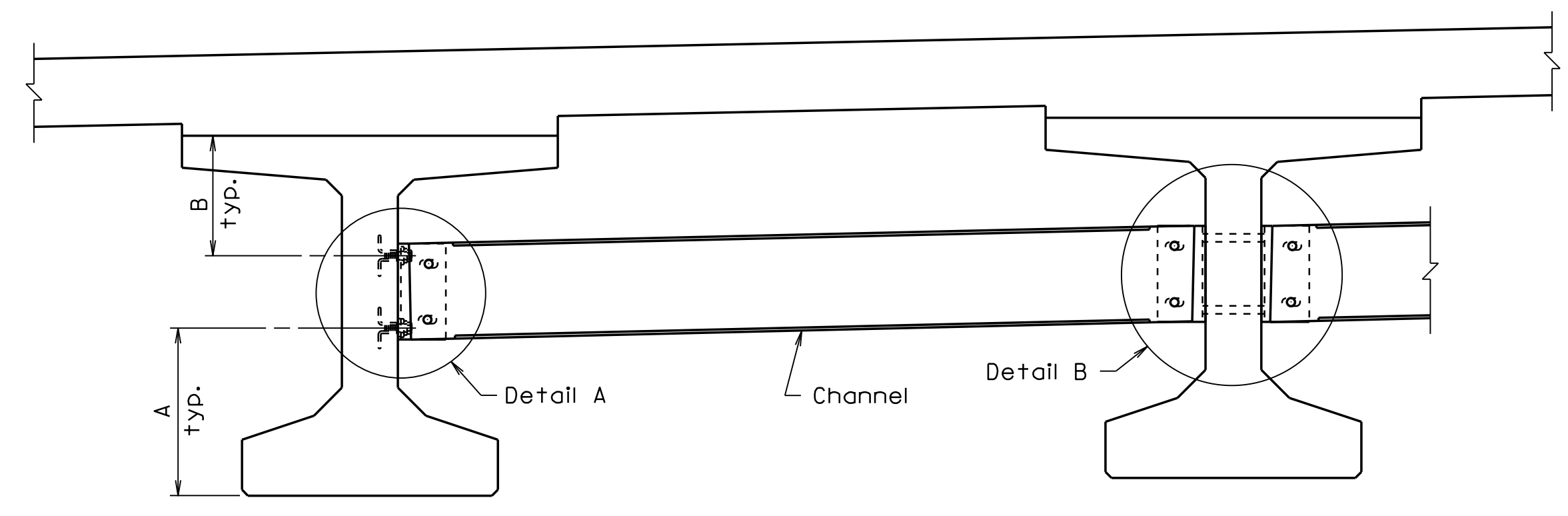
All H.S. bolts installed in threaded inserts shall be tightened to a snug tight condition. Rotational capacity test is not required.

All diaphragm materials including bolts, nuts and washers shall be galvanized.

All threaded inserts shall be 7/8" - 9 NC threaded plain ferrule inserts suitable for thin precast concrete elements having a minimum ultimate mechanical tensile strength of 8,000 pounds.

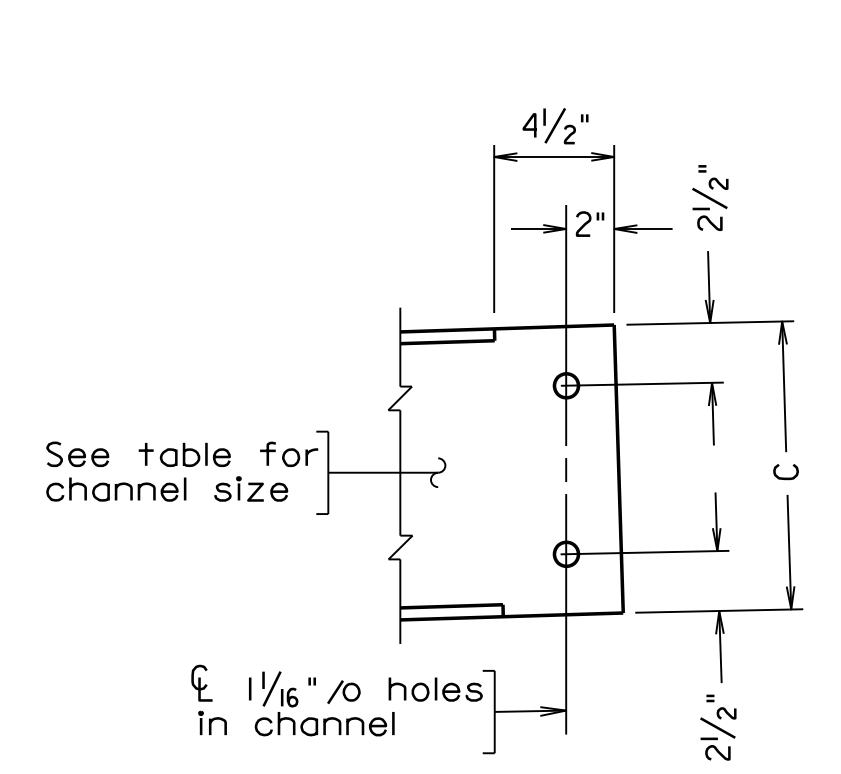
A 1/2" bent plate may be used in lieu of the L 6 x 6 x 1/2 connector plate shown for skew angles less than or equal to 20 degrees. The 1/2" plate shall be shop bent to conform with the line of diaphragms.

Payment for furnishing and installing steel intermediate diaphragms shall be included in the contract unit price for prestressed concrete members.

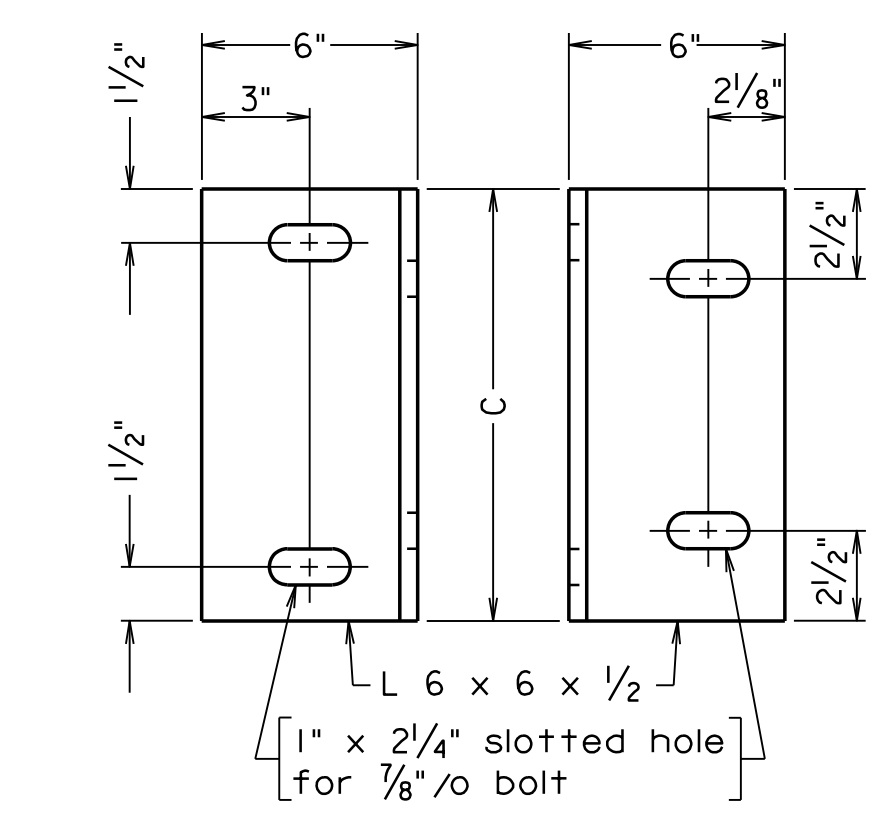


PART TRANSVERSE SECTION

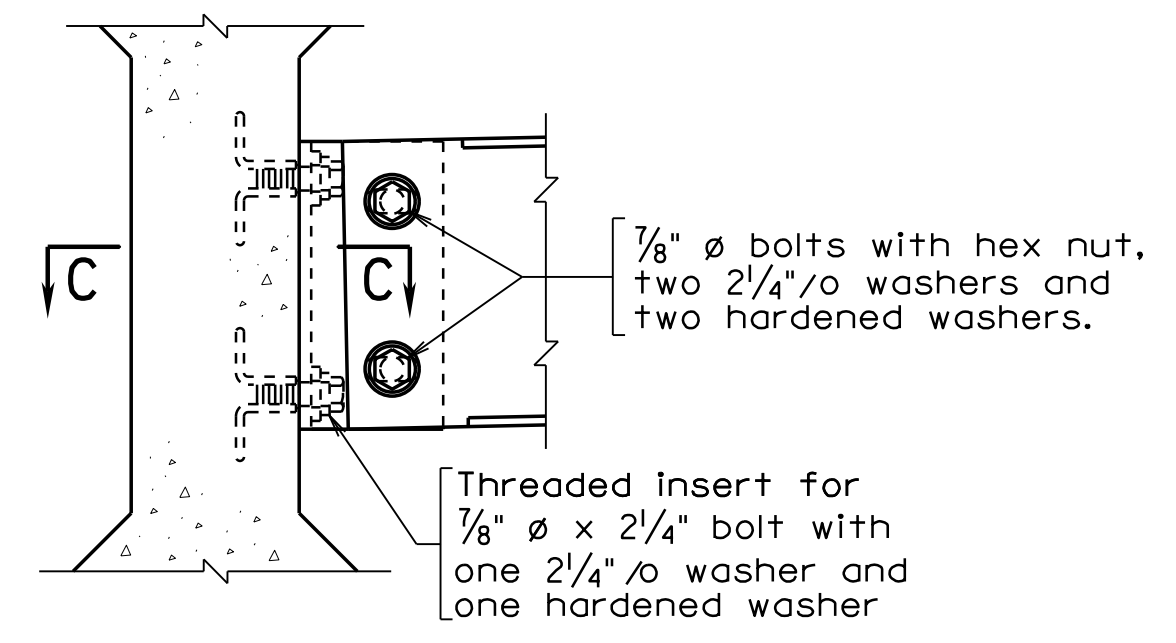
Use Detail A at exterior beams and interior beams where line of diaphragms is discontinued at interior beam. Use Detail B at interior beams where line of diaphragms is continuous across the structure.



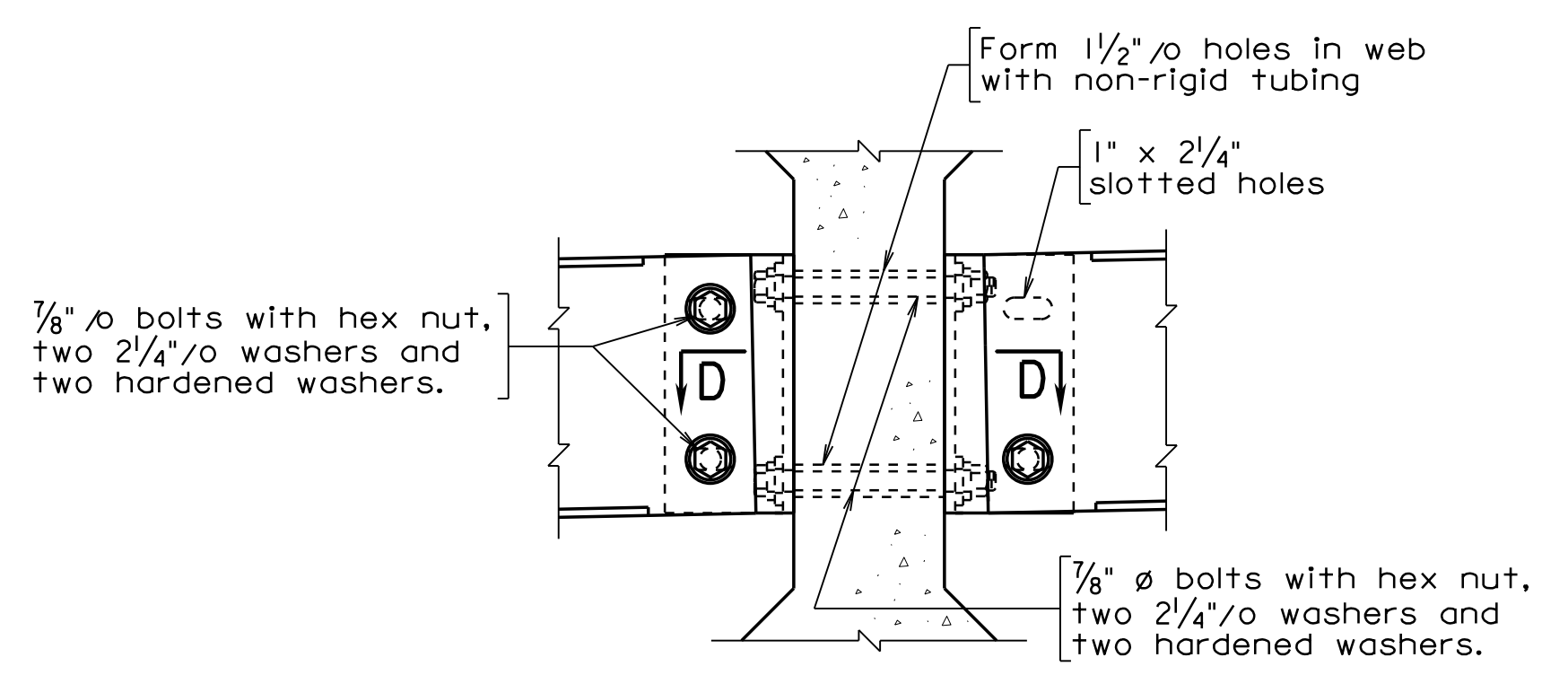
CHANNEL DETAIL



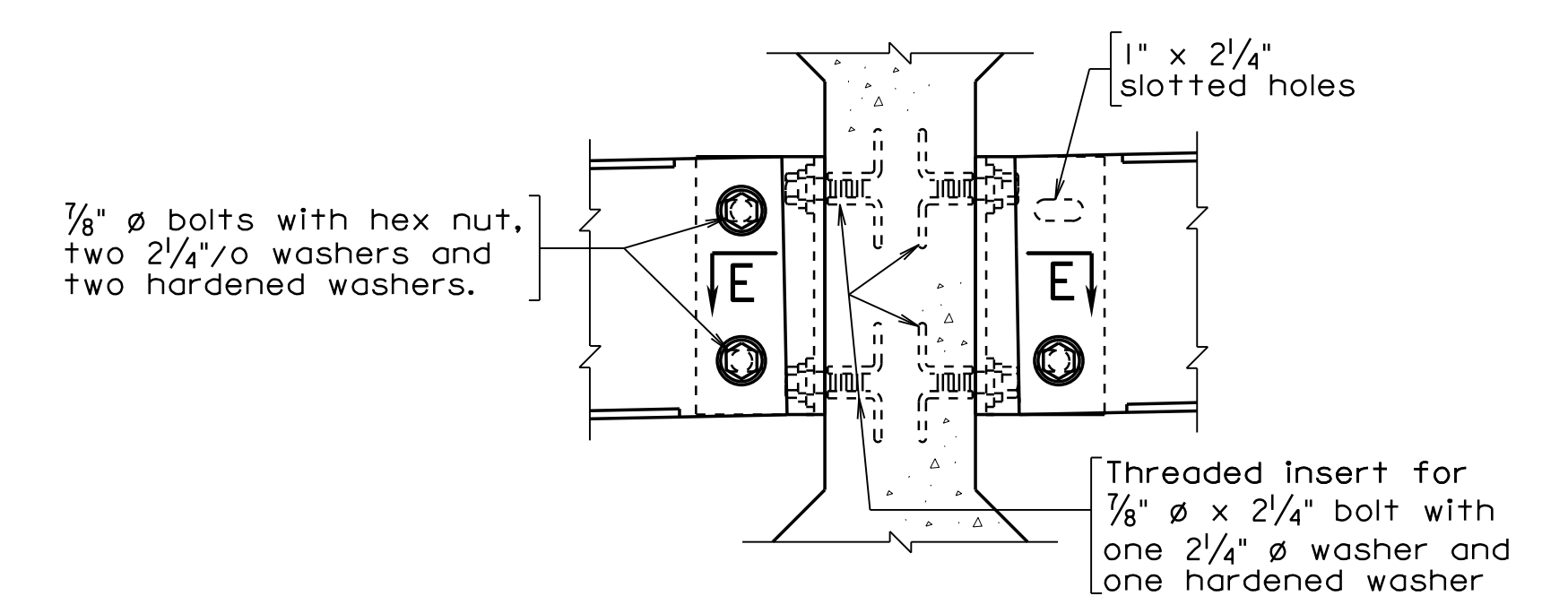
**BEAM FACE DIAPHRAGM FACE
CONNECTOR PLATE DETAIL**



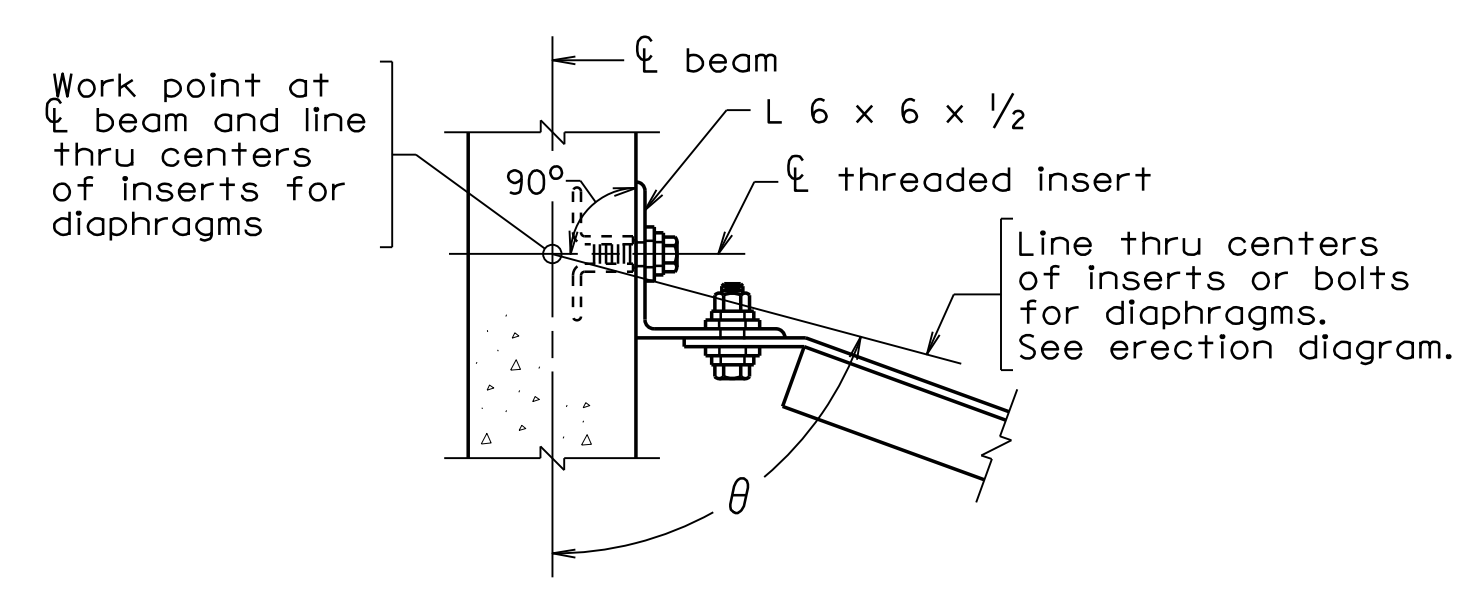
DETAIL A



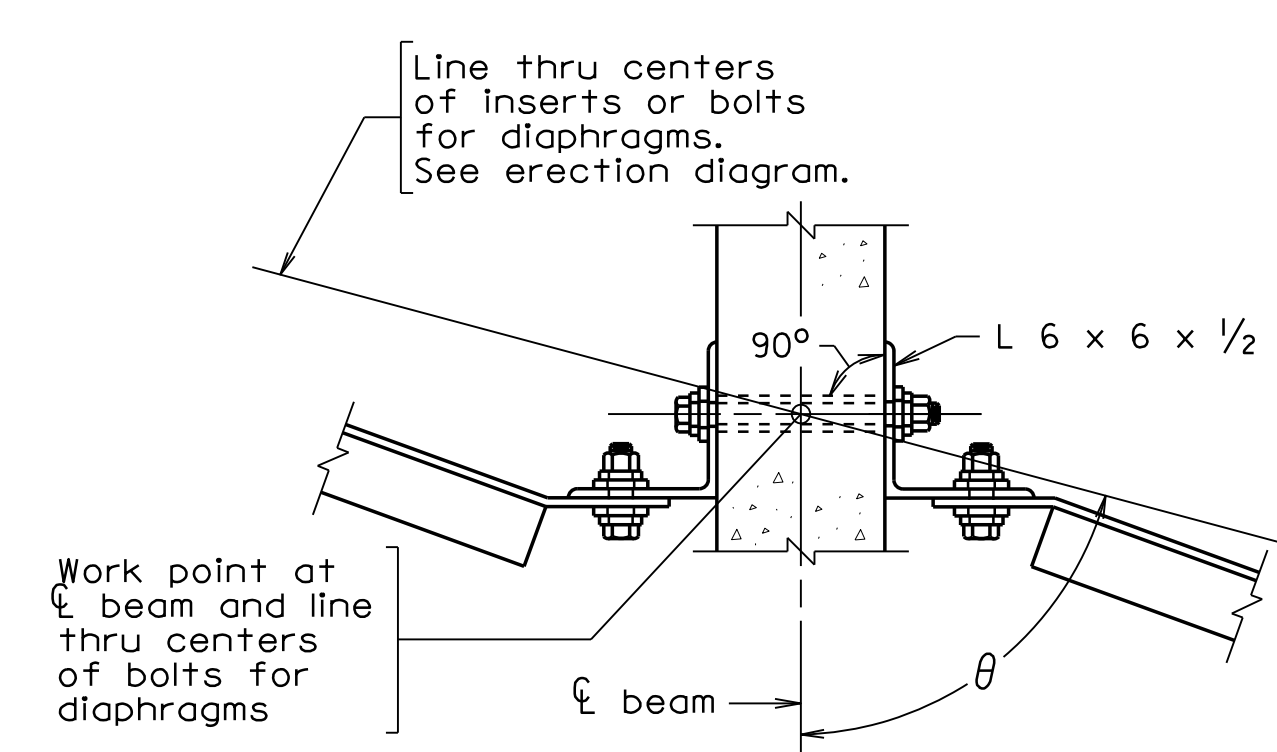
DETAIL B



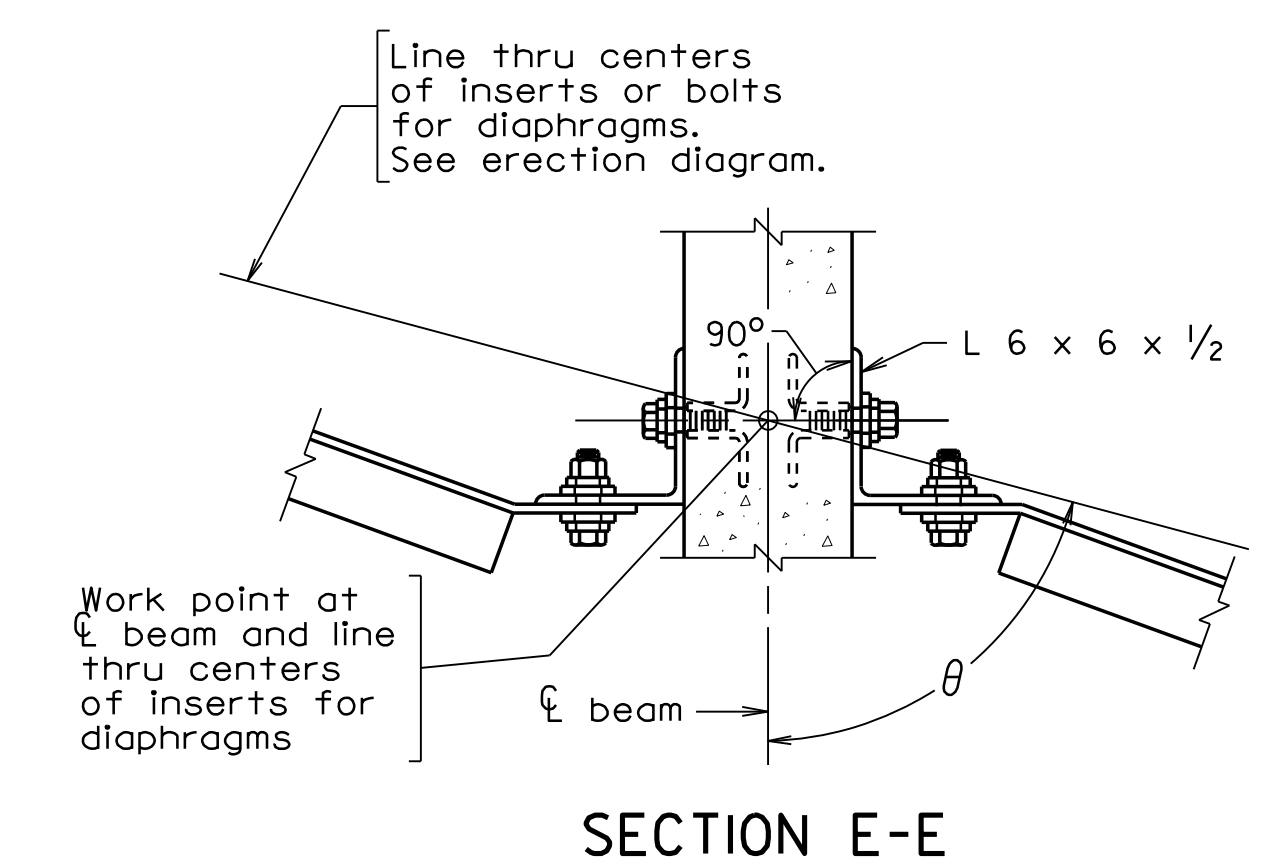
ALTERNATE DETAIL B



SECTION C-C



SECTION D-D



SECTION E-E

Skew angle	θ
$\leq 20^\circ$	90°- skew angle
$> 20^\circ$	90°

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
PRESTRESSED CONCRETE BEAM (BULB-T'S PCBT-29 THRU -53) INTERMEDIATE DIA. DETAILS					
No.	Description	Date	Designed: MRM Date Drawn: MRM Checked: MRM	Plan No. 307-39	Sheet No. 16 of 44
Revisions					

19100.016-pcbbtd1.dgn
08-08-2018
PCBT-D1

COMMONWEALTH OF VIRGINIA
MARK RANDALL METZGER
Lic. No. 50184
PROFESSIONAL ENGINEER

SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Juni Meng
Lic. No. 033572
On the date of
August 8, 2018

A copy of the original
sealed and signed
standard drawing
is on file in the
Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	-	STP-5125(127)	4602	4602-125-124, B608	17

Notes:

Deck slab elevations are on top of finished roadway at face of curbs. Those shown on ϕ bridge and West Commerce Street are at point of finished grade denoted on Transverse Section.

Straight line interpolation for Intermediate elevations on top of finished roadway may be made in any direction between any two adjacent points.

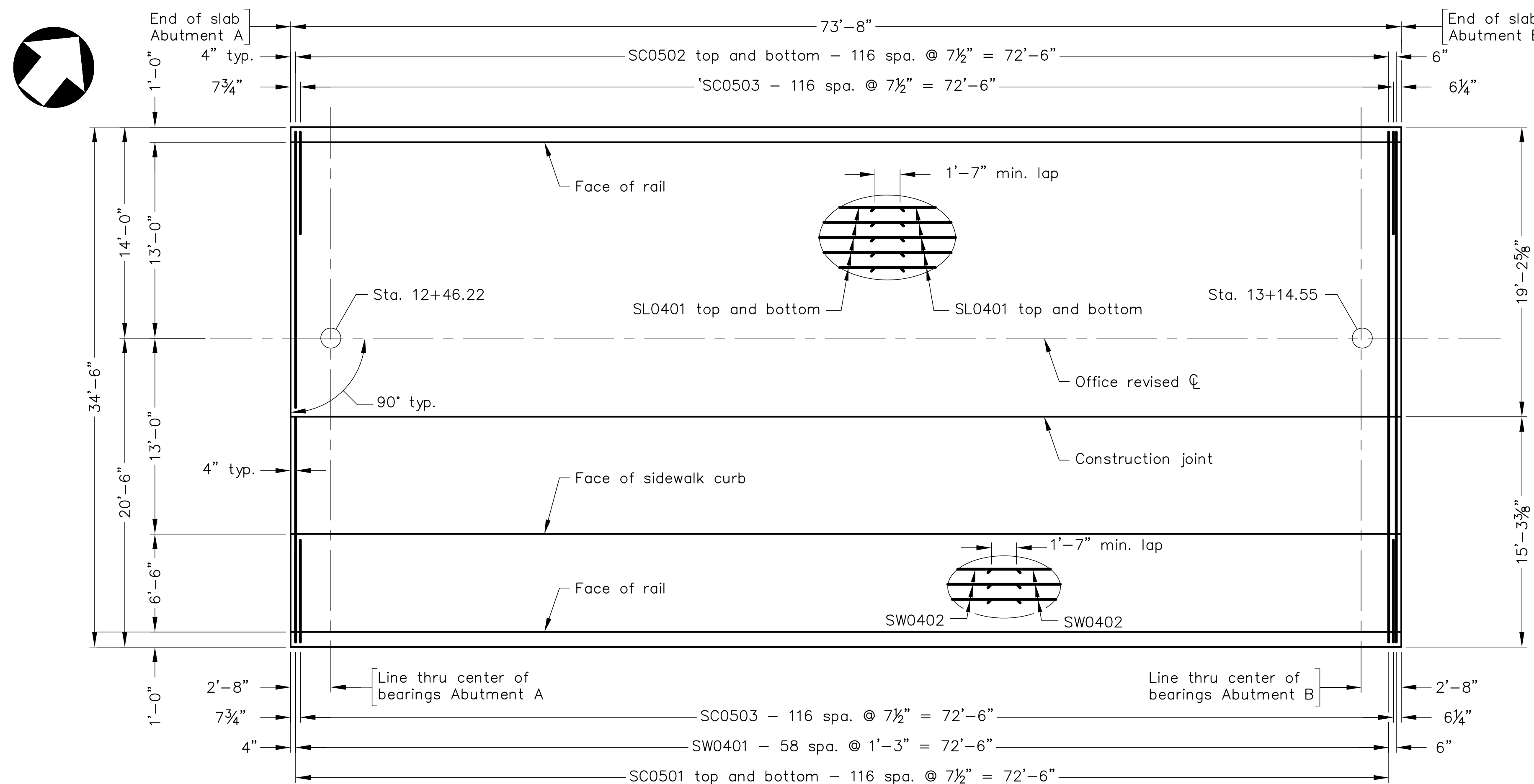
All costs associated with reinforcing steel splicers shall be included in bid price for corrosion resistant reinforcing steel, class I.

For spacing of SL0401 bars, see sheet 11.

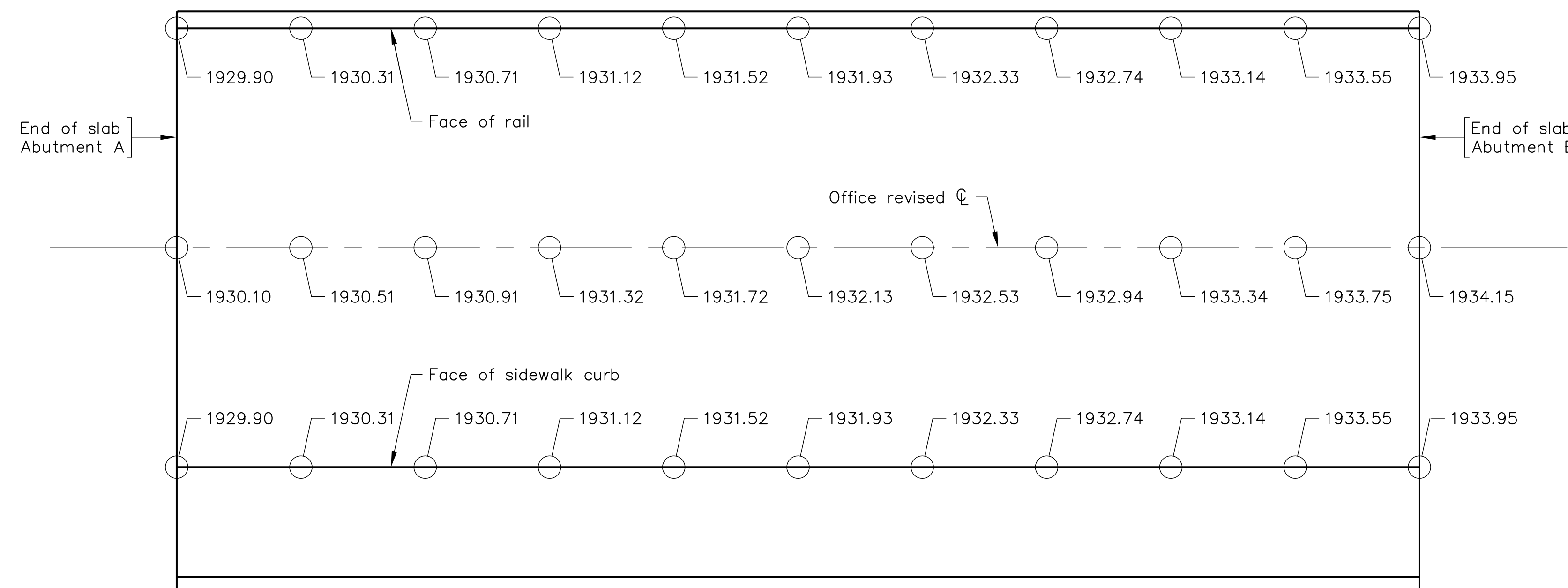
For railing details, see sheet 19.

For sidewalk details, see sheet 11.

For end of slab and integral backwall details, see sheet 18.



DECK SLAB PLAN



DECK SLAB ELEVATIONS
10 equal spaces

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<p>COMMERCER STREET OVER PEAK CREEK TOWN OF PULASKI, VA DECK SLAB PLAN AND DECK SLAB ELEVATIONS</p>			<p>DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS SCALE: 3/16" = 1'-0" PLAN NO.: 307-39 DATE: February 8, 2023 SHEET: 17 OF 44</p>		
<p>No. Description Date</p>			<p>REVISIONS</p>		
<p>For Table of Revisions, see Sheet 3.</p>			<p>COMM. NO. 19100</p>		

CADD REFERENCE NO.: BRIDGE19100.DWG

STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT		ROUTE	PROJECT	NO.
VA.	-	STP-5125(127)	4602	4602-125-124, B608	18

Notes:

Integral backwall concrete shall be placed and cured to a minimum compressive strength of 3000 psi prior to placement of deck concrete.

Backfill operations above seat level shall not be started until deck has been placed and cured to a minimum compressive strength of 3000 psi. Backfill shall be placed such that the differential in fill height between both abutments does not exceed 6" after compaction.

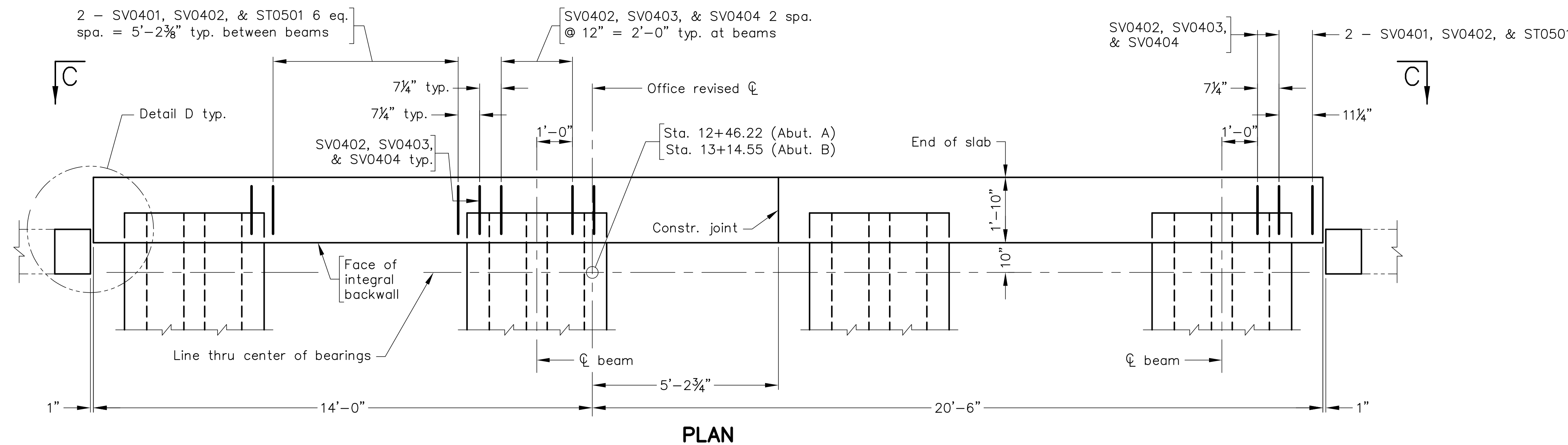
For details of holes through the web and location and number of BC series bars, see sheet 13.

The integral backwalls shall be cast when the least thermal movement of the superstructure can be expected during the period of initial set of the concrete in the backwall, e.g. at dusk or during an expected uniformly cloudy day.

Forms for the backwall shall be attached to the beams only; the forms shall not be attached to or blocked against the abutment stem. The backwall and forms must be free to move in relation to the abutment.

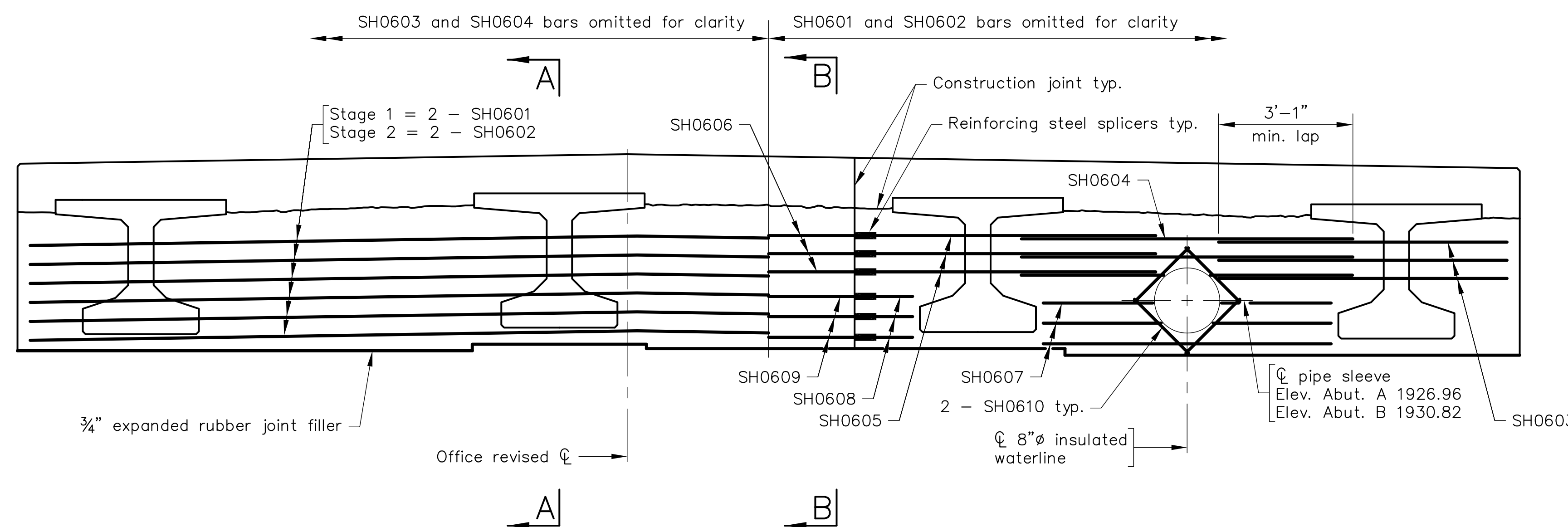
The Contractor shall install temporary blocking devices acceptable to the Engineer to prevent the superstructure from sliding during construction. Such devices are required at the lower end of each girder and shall be removed after construction is completed. The cost of the devices shall be included in cost of prestressed beams.

All costs associated with reinforcing steel splicers shall be included in bid price for corrosion resistant reinforcing steel, class I.



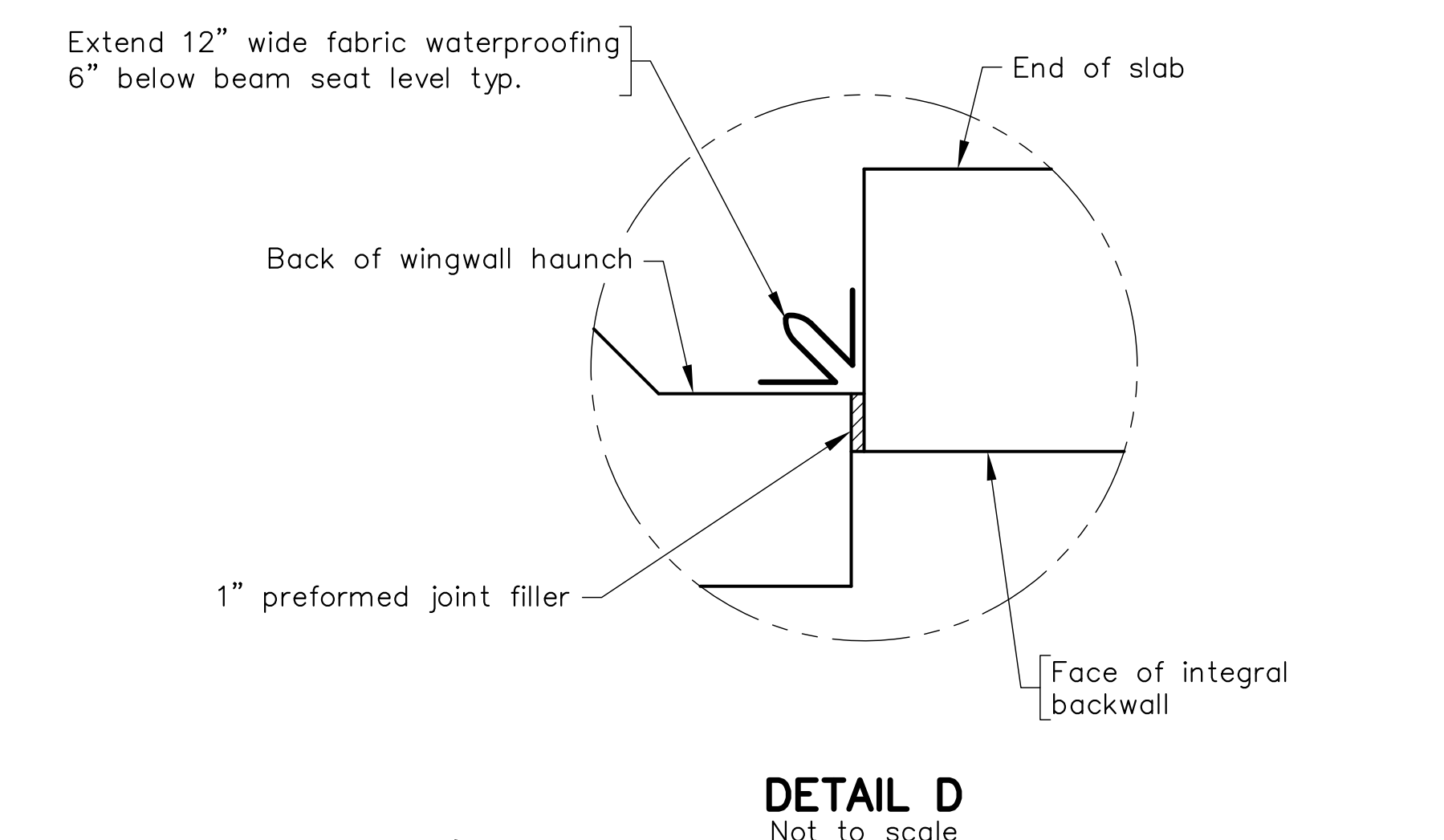
PLAN

(Abutment B shown, Abutment A opposite)
Scale: 1/2" = 1'-0"

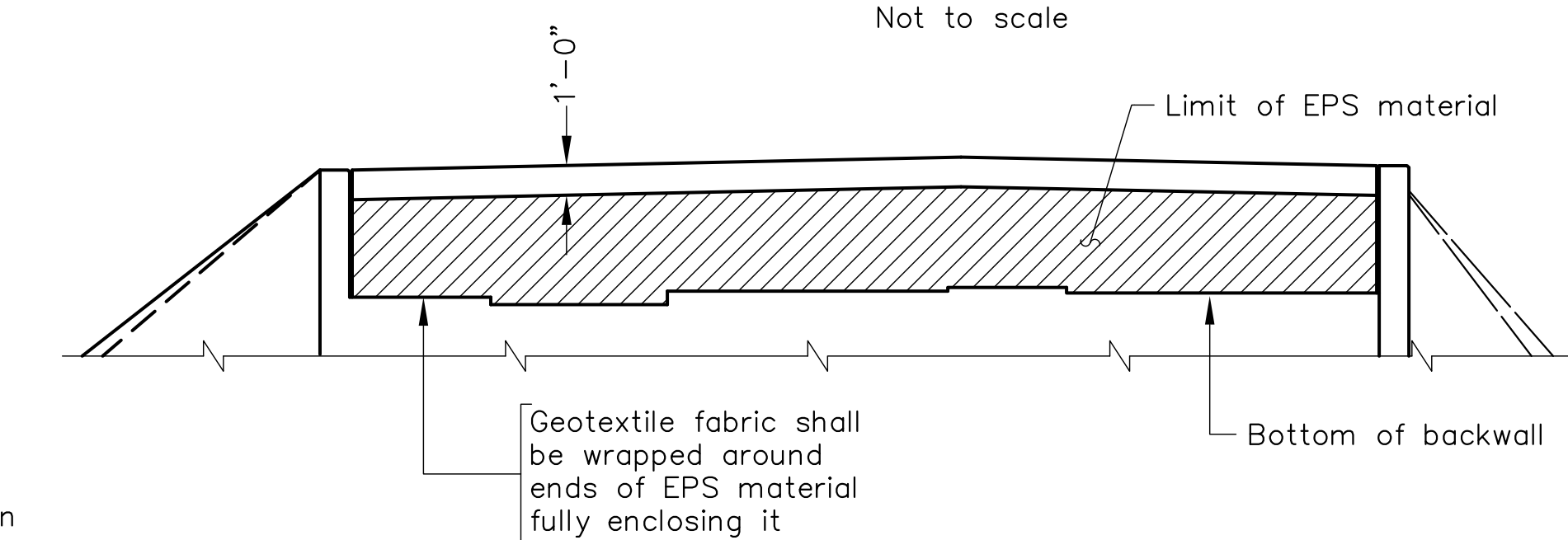


ELEVATION

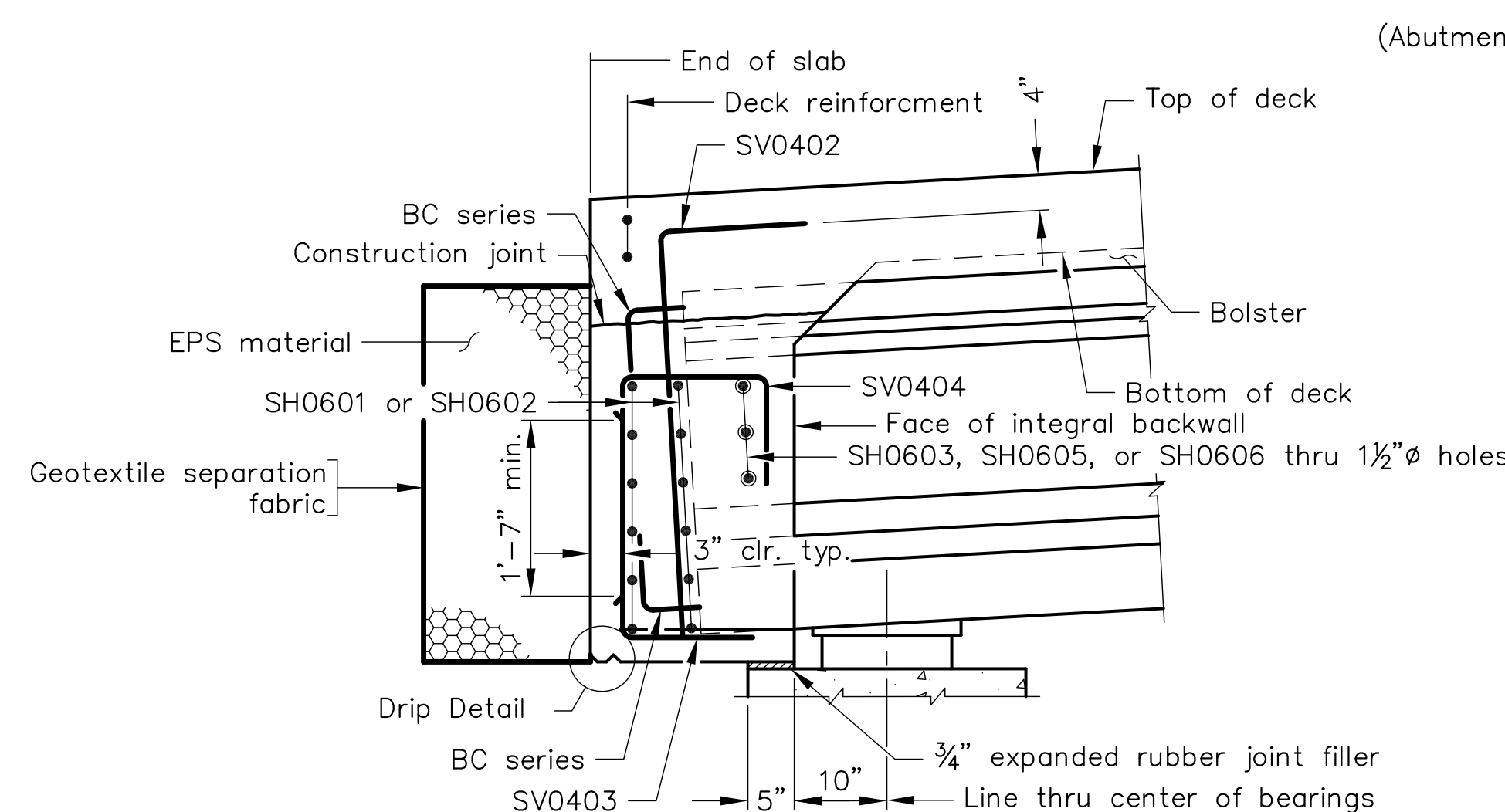
(Abutment B shown, Abutment A opposite)
Scale: 1/2" = 1'-0"



DETAIL D
Not to scale

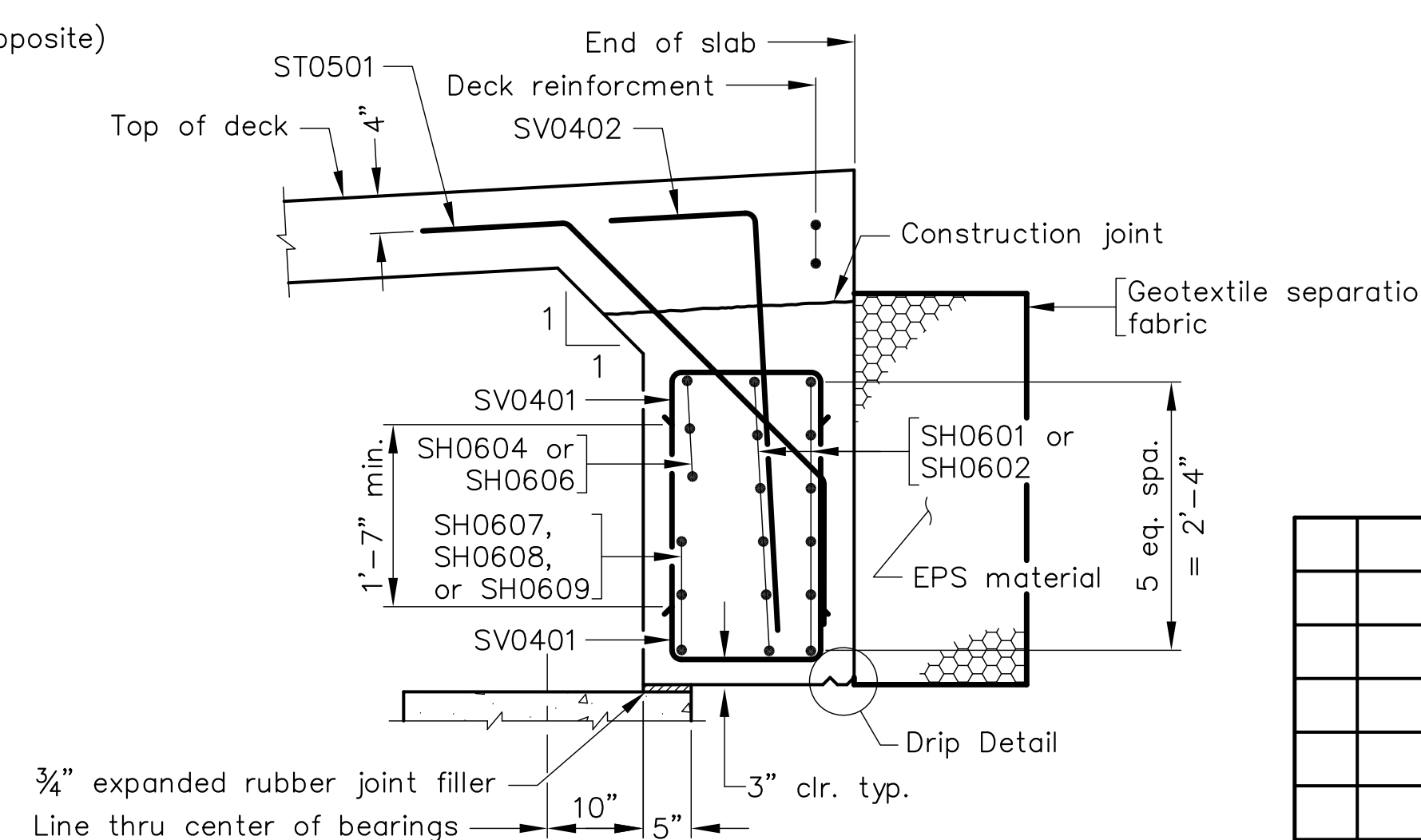


VIEW C-C
Not to scale



SECTION A-A

(Typical at each beam)
Scale: 3/4" = 1'-0"



SECTION B-B

(Typical between each beam)
Scale: 3/4" = 1'-0"

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CADD REFERENCE NO.: BRIDGE19100.DWG

<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA SEMI-INTEGRAL BACKWALL</p>			<p>DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS SCALE: AS NOTED PLAN NO.: 307-39 DATE: February 8, 2023 SHEET: 18 OF 44</p>		
No.	Description	Date	REVISIONS		
For Table of Revisions, see Sheet 3.					

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.	STP-5125(127)	4602	4602-125-124, B608	19

Notes:

Plan dimensions shown are measured in the respective horizontal and vertical planes.

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

All concrete shall be Low Shrinkage Class A4 Modified.

All bevels for concrete shall be 3/4".

All reinforcing steel shall be Corrosion Resistant Reinforcing Steel, Class III.

For details and reinforcing steel schedule of terminal wall, see sheet 20.

Posts and rail members, including pipe sleeves, shall be ASTM A500 Grade B steel. Plates shall be ASTM A36 steel.

Bolts for attaching rails to post are 3/4" diameter round head (with slot in head), ASTM A449.

For bolts attaching rails to posts, bolt extensions beyond nut shall be limited to the smaller of one and a half finishing turns or 1/4". If the extension is longer, excess shall be cut off and the edges of the bolt end ground so that no sharp edges remain. Cold galvanizing shall be applied to damaged galvanized areas.

All bolts shall be snug tightened.

All steel, including hardware, shall be hot dip galvanized.

Posts shall be equally spaced within a span. Maximum spacing is 6'-8".

Posts shall be seated on neoprene pads 1/8" minimum thickness, having a nominal durometer hardness of 60. Pads shall conform to post base dimensions.

Posts shall be vertical in transverse direction and normal to longitudinal profile grade. Cut bottom of posts to meet these configurations.

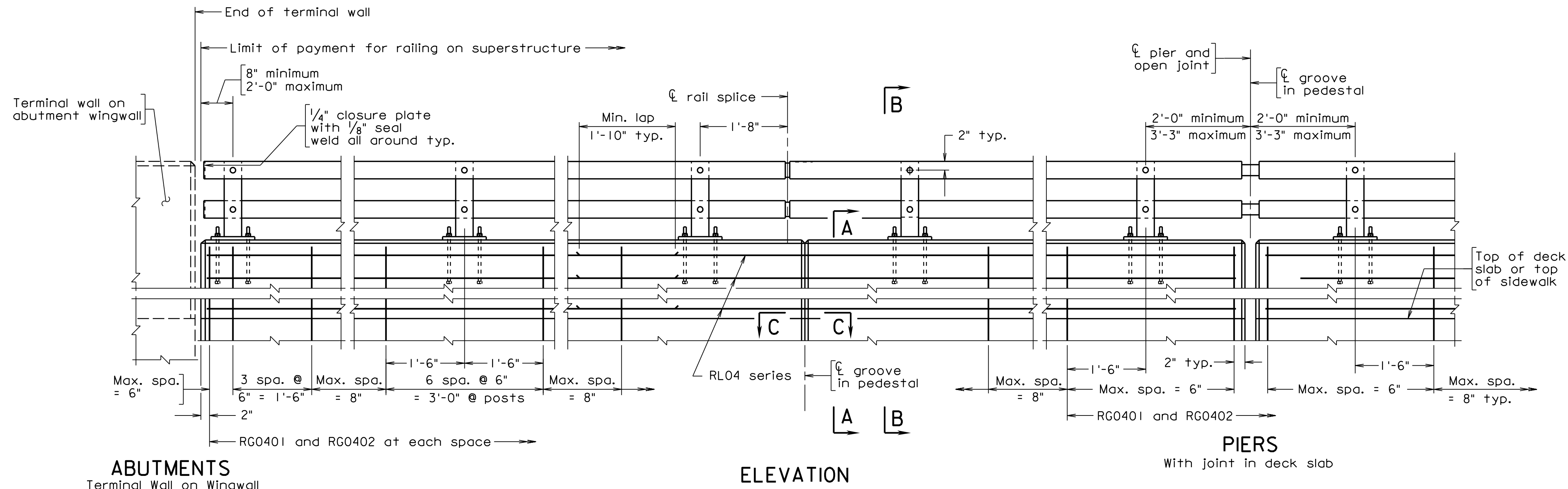
Rails to be continuous over a minimum of 3 posts before splicing.

Railing (including terminal wall) shall not be extruded if pedestrian fencing will be attached.

For additional notes, see sheet for the CPSR-3.

After galvanizing, all exposed surfaces, including all hardware (except hardware attaching the post base plates), shall be powder coated in accordance with the Special Provision for Powder Coated Galvanized Material. Finished color shall be brown, Federal Standard Color No. 595-20059.

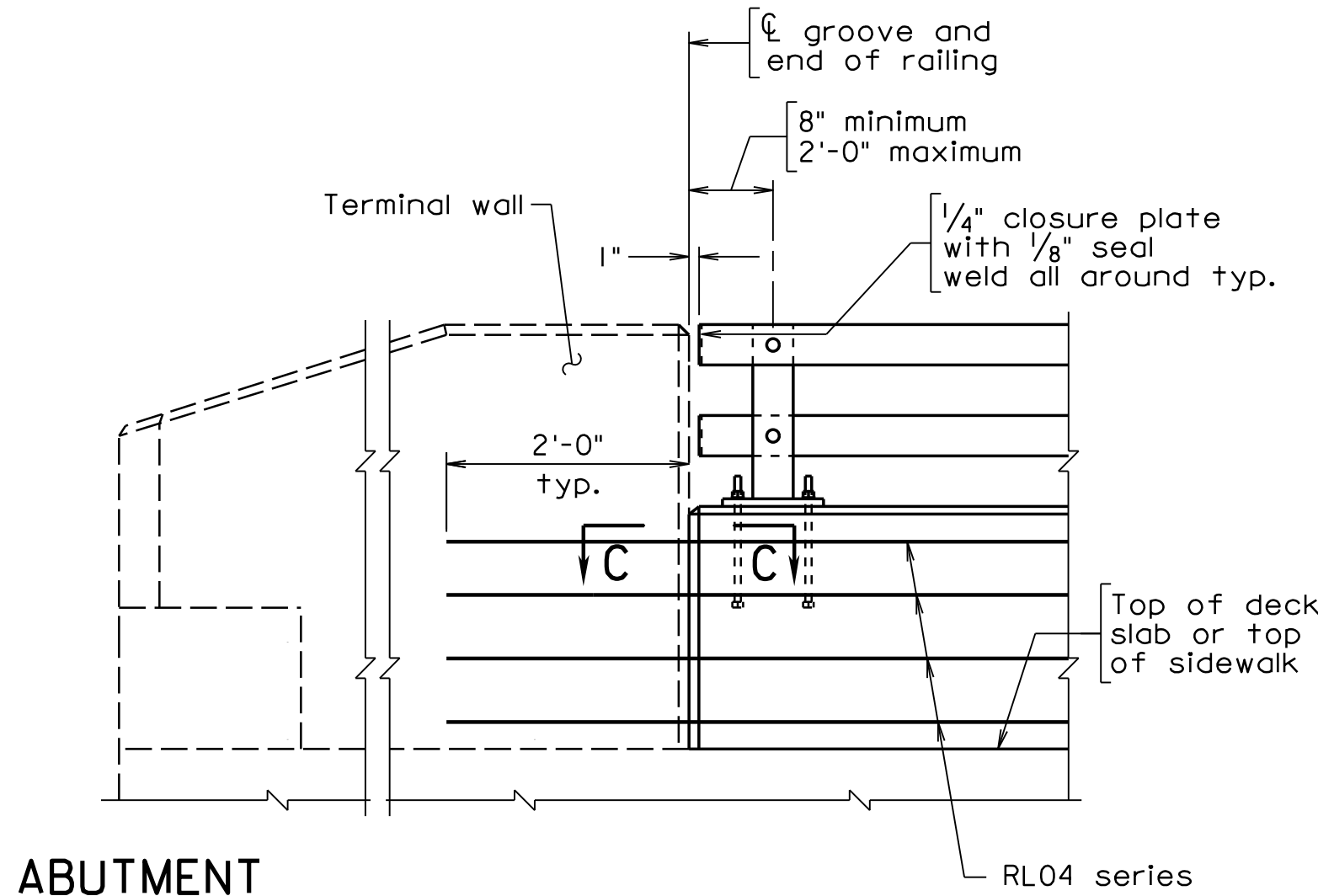
After railing installations are completed, galvanized hardware used in the attachment of post base plates shall be field coated using System F. The coating shall match the specified railing color.



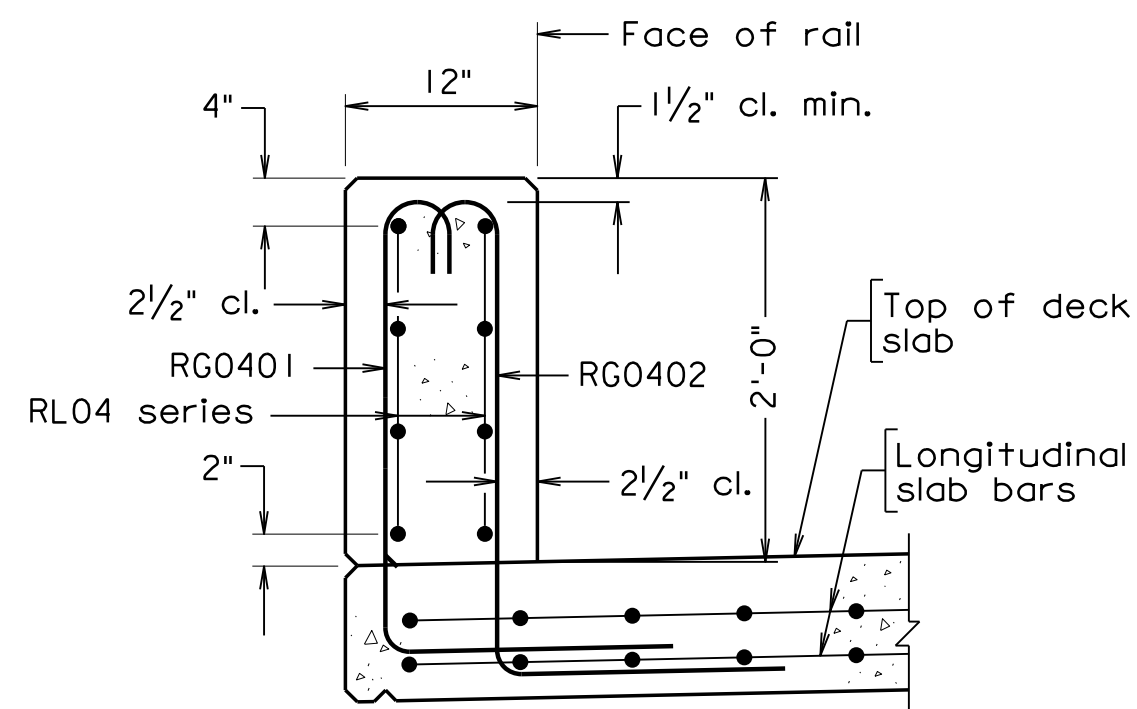
ABUTMENTS
Terminal Wall on Wingwall

ELEVATION

PIERS
With joint in deck slab

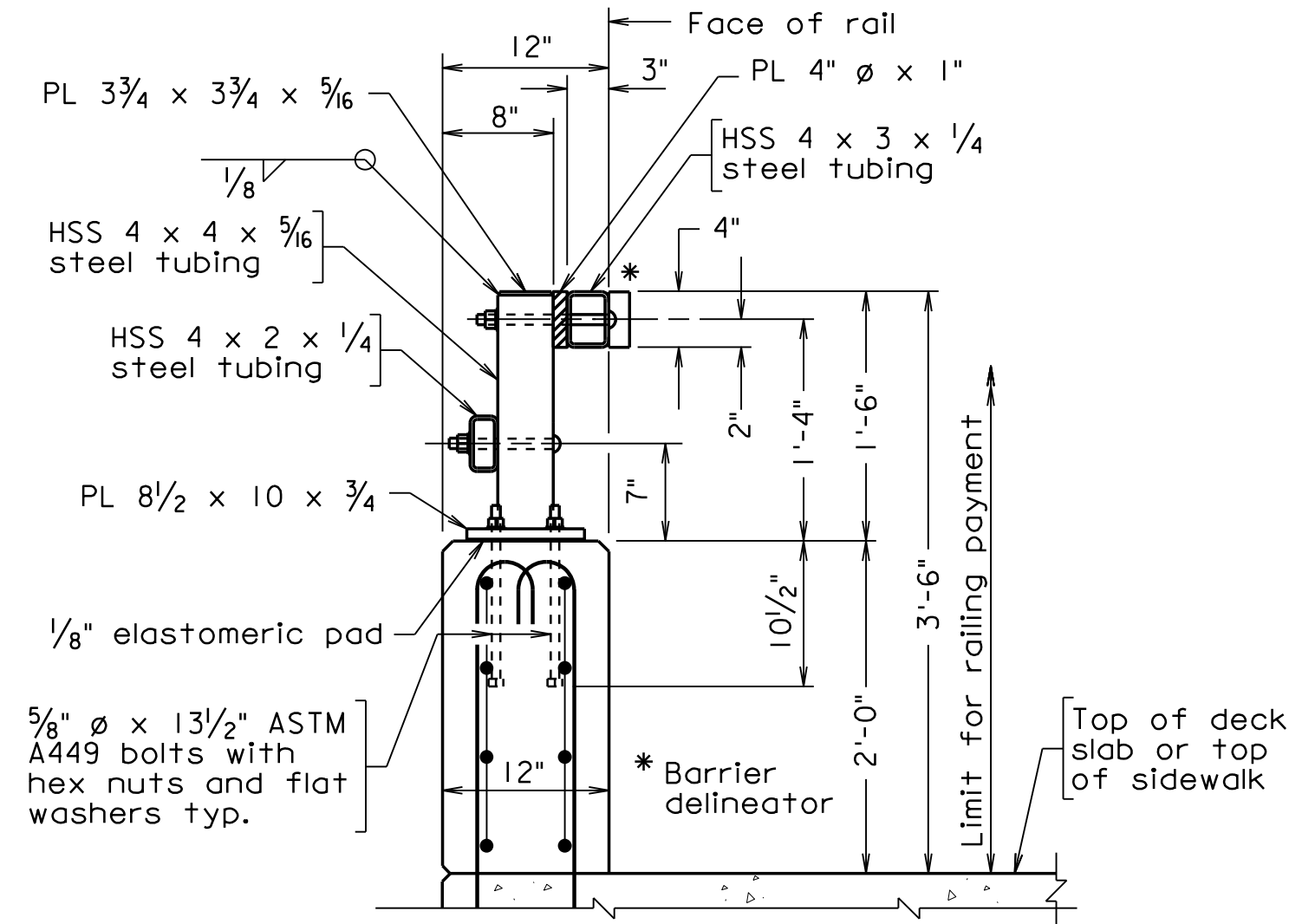


PART ELEVATION
Terminal Wall on Superstructure



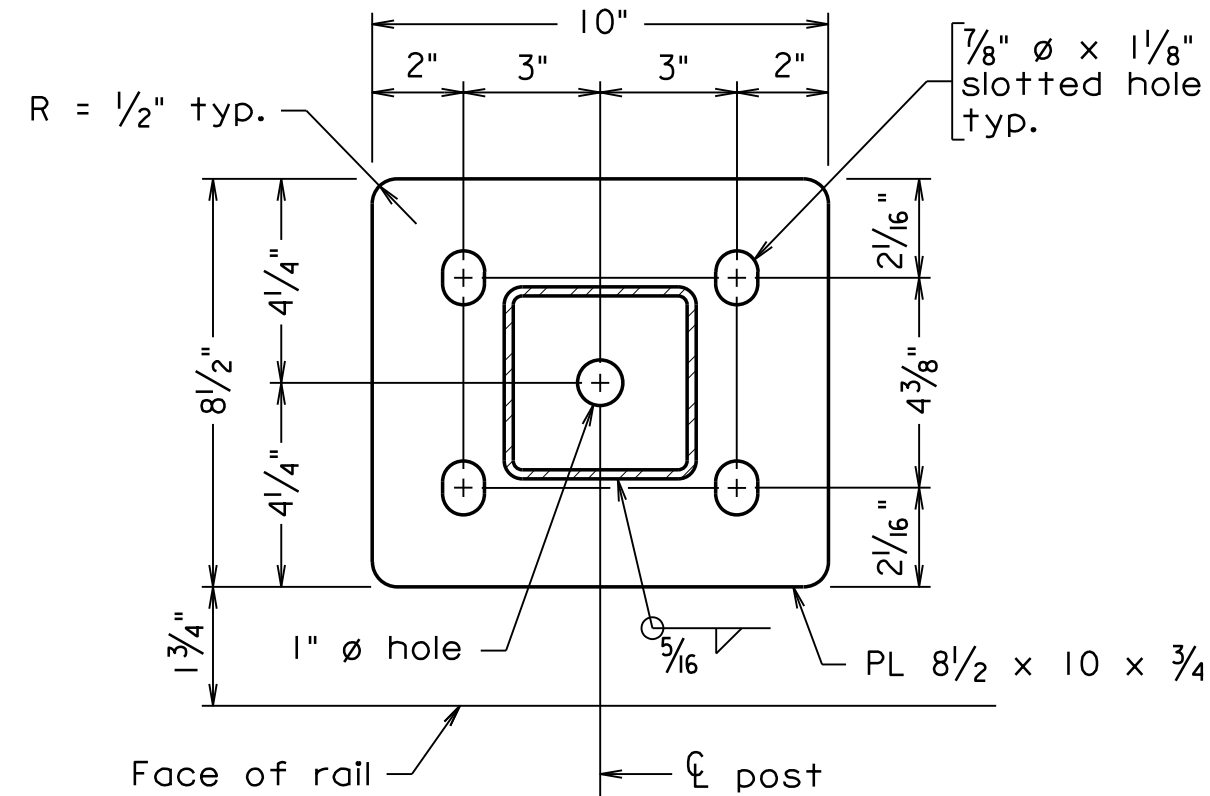
SECTION A-A
Scale: 1" = 1'-0"

Transverse rebars in deck slab not shown for clarity

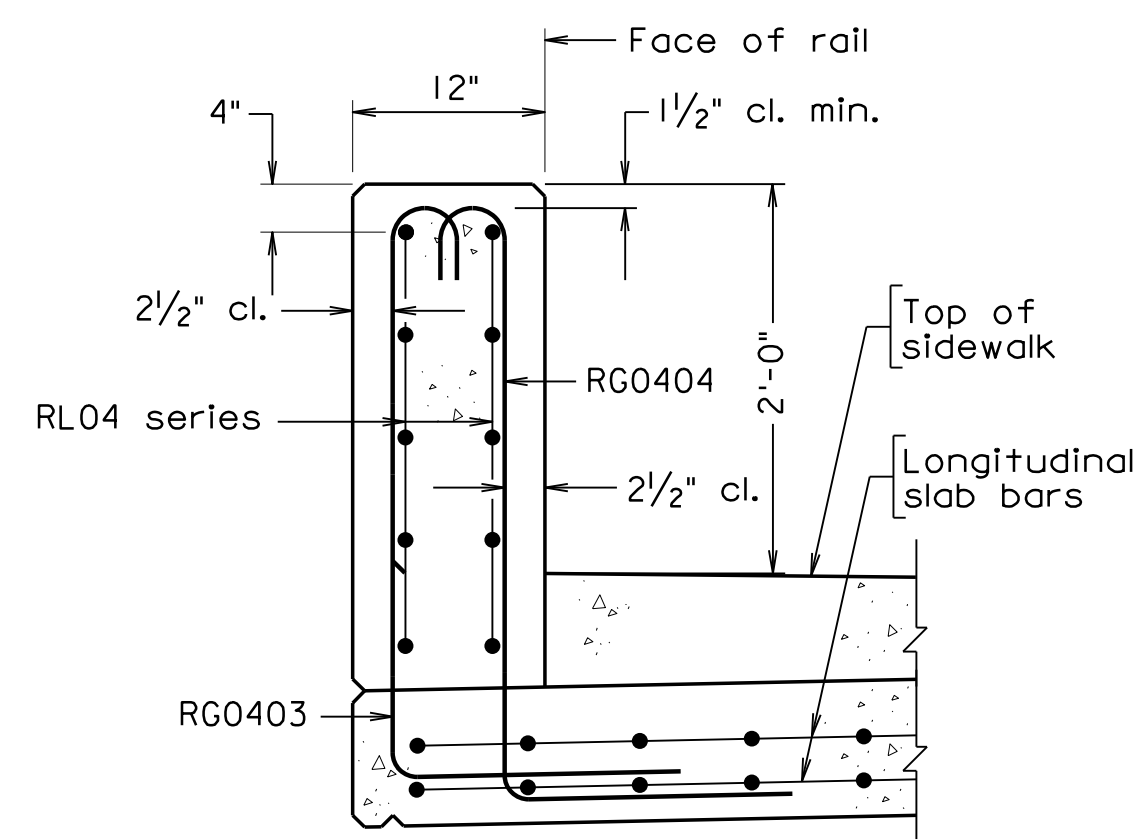


SECTION B-B

Scale: 1" = 1'-0"
Bolts through base plate shall be contained inside rebar cage

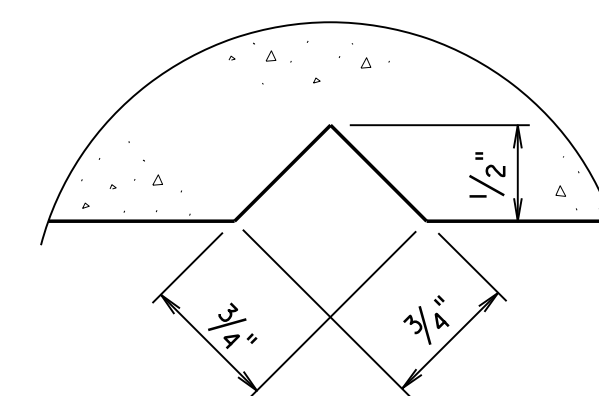


BASE PLATE DETAIL
Not to scale



SECTION A-A
(With sidewalk)

Not to scale
Reinforcement in sidewalk and transverse rebars in deck slab not shown for clarity



SECTION C-C
Full scale

Groove detail for both sides of rail

REINFORCING STEEL SCHEDULE					
Mark	Size	No.	Length	Pin ϕ	Location
RG0401, RG0403					
RG0401	#4		4'-2 3/4"	3"	Parapet
RG0402	#4		4'-3 3/4"	3"	Parapet
RG0403	#4		4'-10 3/4"	3"	Parapet
RG0404	#4		4'-11 3/4"	3"	Parapet
RL04	#4				Parapet

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

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
42"-CPSR RAILING (CPSR-1)					
No.	Description	Date	Designed: MRM.....	Date	Plan No.
			Drawn: MRM.....	Feb. 8, 2023	307-39
			Checked: ARS.....		19 of 44

Scale: 3/4" = 1'-0" unless otherwise noted

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19100.019-cpsr-1.dgn

04-28-2023

CPSR-1



SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Juryi Meng
Lic. No. 033572
On the date of
April 28, 2023

A copy of the original
sealed and signed
standard drawing
is on file in the
Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	STP-5125(127)	4602	4602-125-124, B608
			20

Notes:

Plan dimensions shown are measured in the respective horizontal and vertical planes.

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

All concrete shall be Low Shrinkage Class A4 Modified.

All levels for concrete shall be 3/4".

All reinforcing steel shall be Corrosion Resistant Reinforcing Steel, Class III.

For details and reinforcing steel schedule of railing, see sheet 19.

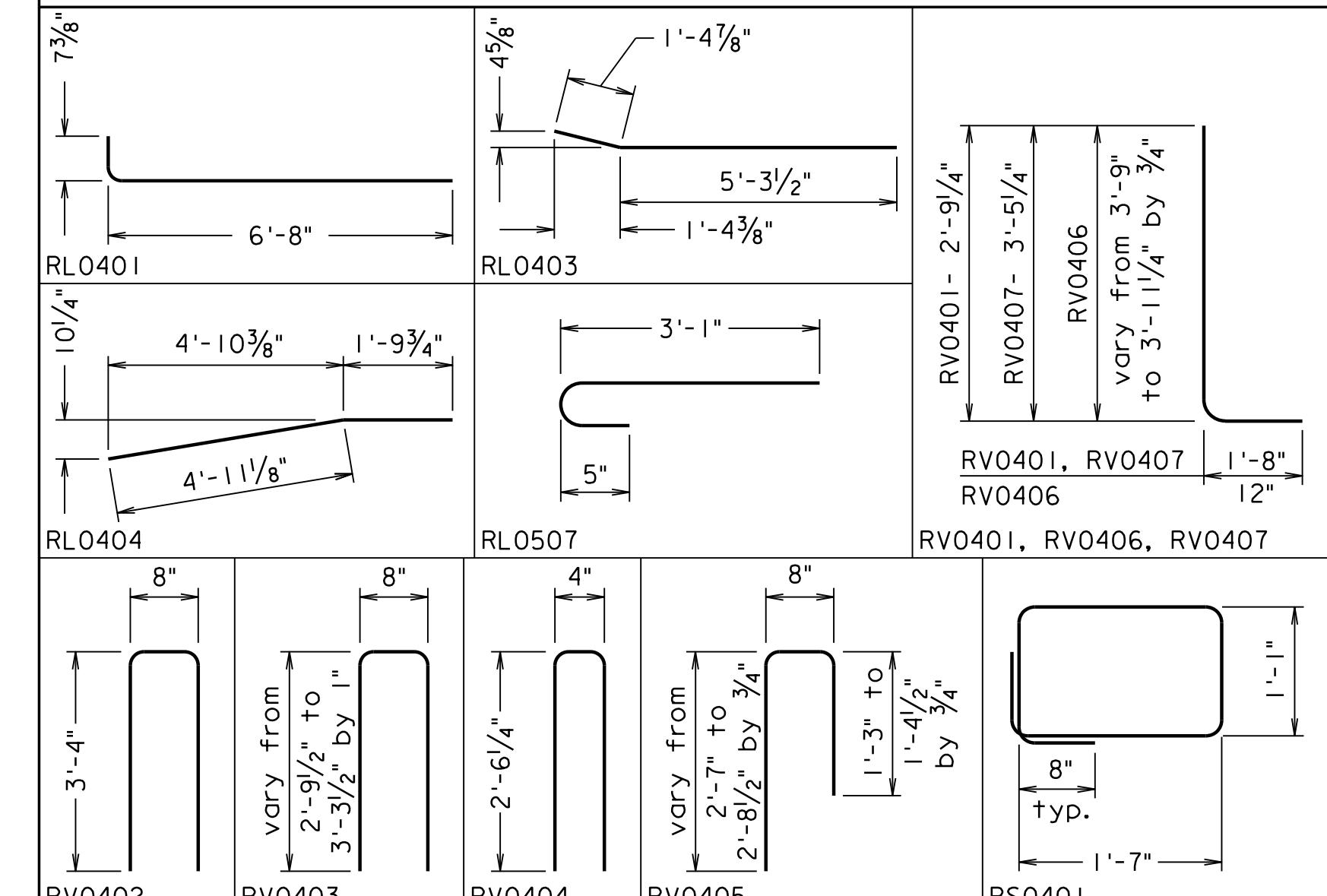
Each terminal wall shall be cast as one piece.

Terminal walls are detailed to take guardrail attachment for MGS.

Holes, where shown, shall be formed with sleeves of 1/4" diameter nominal pipe.

Bid item for terminal wall shall include concrete noted in plans and reinforcing steel indicated in Reinforcing Steel Schedule.

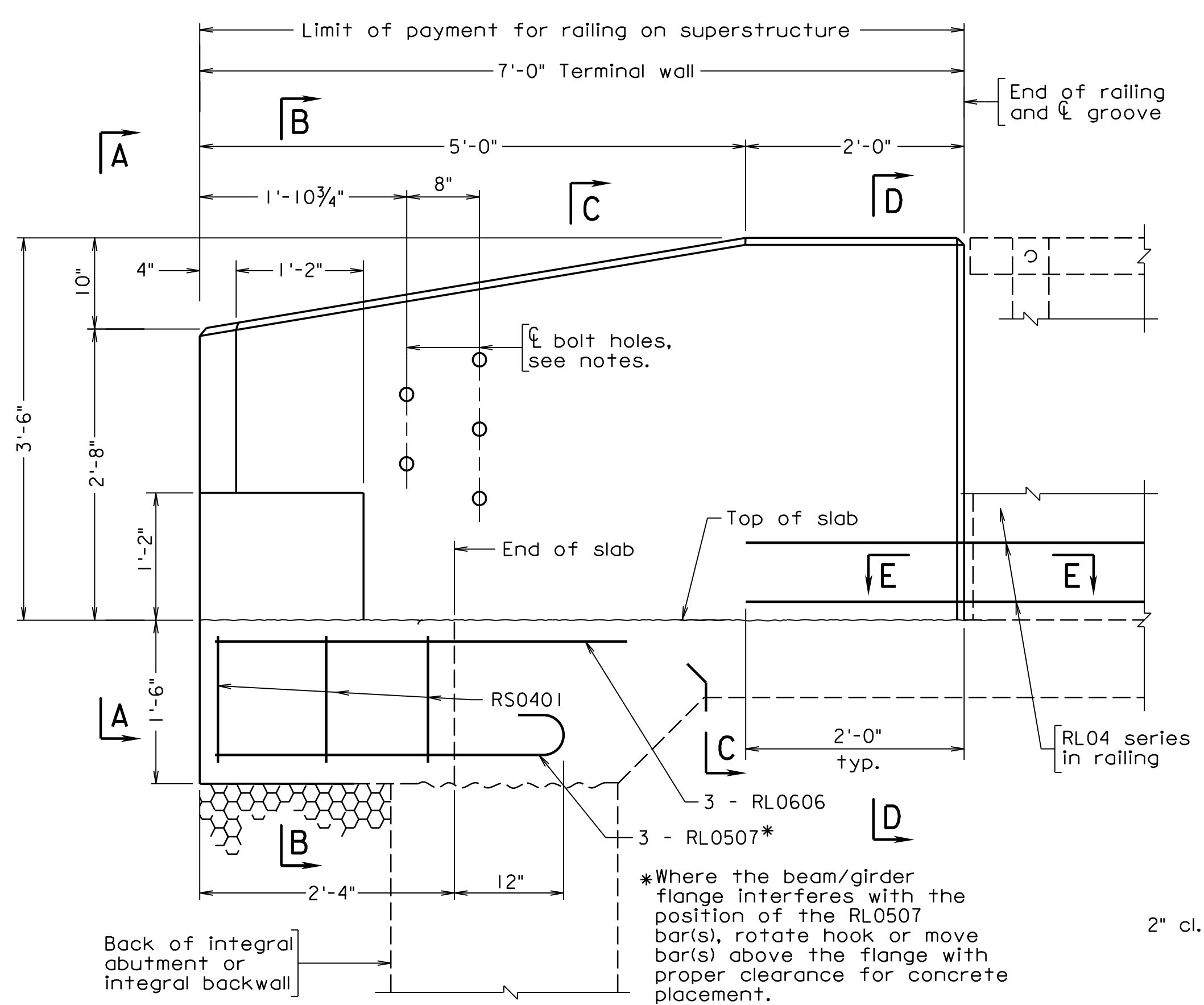
REINFORCING STEEL SCHEDULE



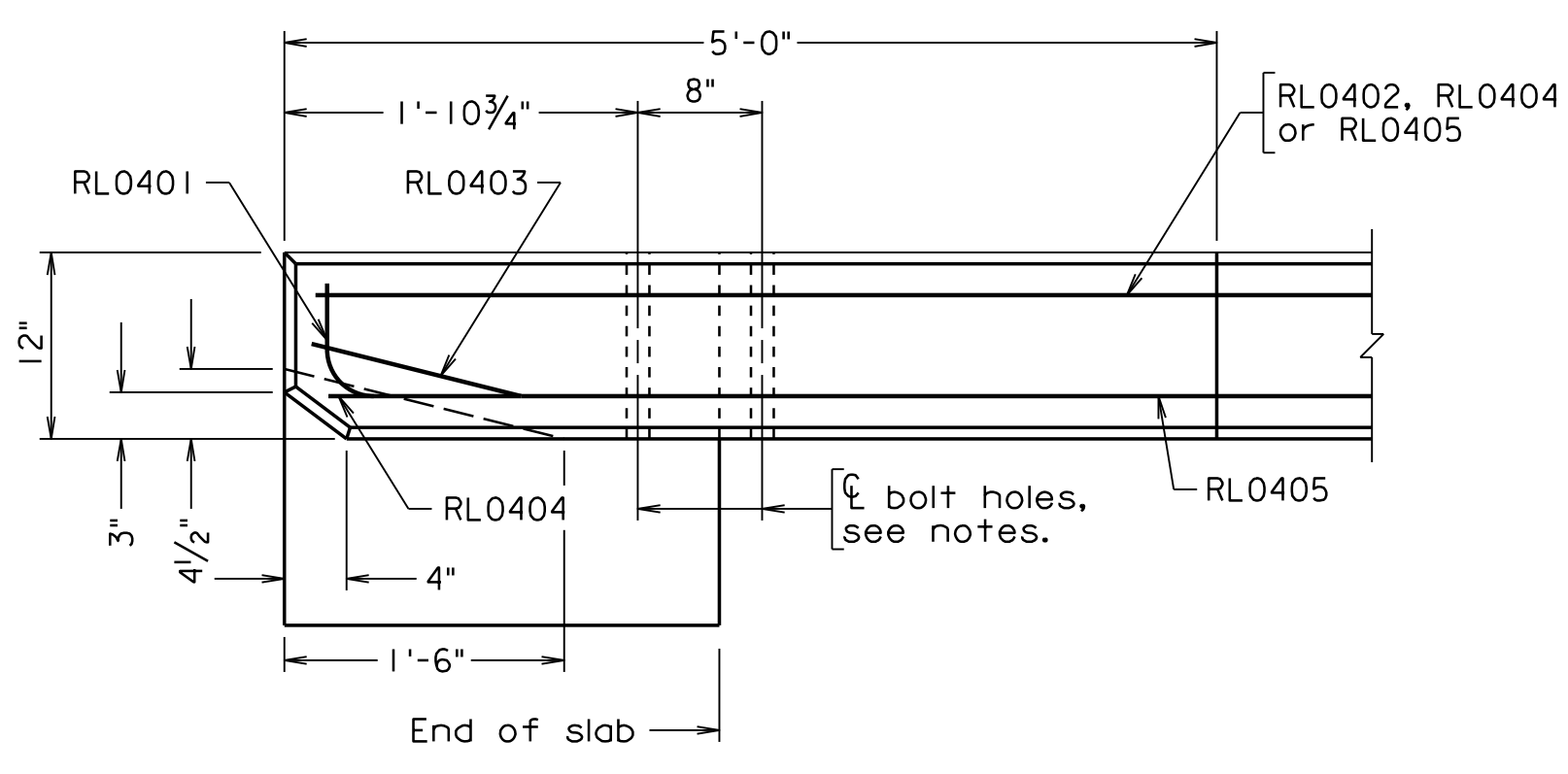
Mark	Size	No.	Pin ø	Length	Location
RL0401	#4	—	6"	7'-2"	Terminal wall
RL0402	#4	—	—	6'-8"	Terminal wall
RL0403	#4	—	3"	6'-8 1/2"	Terminal wall
RL0404	#4	—	3"	6'-9"	Terminal wall
RL0405	#4	—	—	5'-2"	Terminal wall
RL0606	#6	—	—	4'-4"	Terminal wall end support
RL0507	#5	—	3 3/4"	3'-8"	Terminal wall end support
RS0401	#4	—	3"	6'-2"	Terminal wall end support
RV0401	#4	—	3"	4'-4"	Terminal wall
RV0402	#4	—	3"	7'-1 1/2"	Terminal wall
RV0403	#4	—	3"	From 6'-0 1/2" to 7'-0 1/2"	Terminal wall
RV0404	#4	—	3"	5'-2"	Terminal wall
RV0405	#4	—	3"	From 4'-3 1/2" to 4'-6 1/2"	Terminal wall
RV0406	#4	—	3"	From 4'-7 3/4" to 4'-10"	Terminal wall
RV0407	#4	—	3"	5'-0"	Terminal wall

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

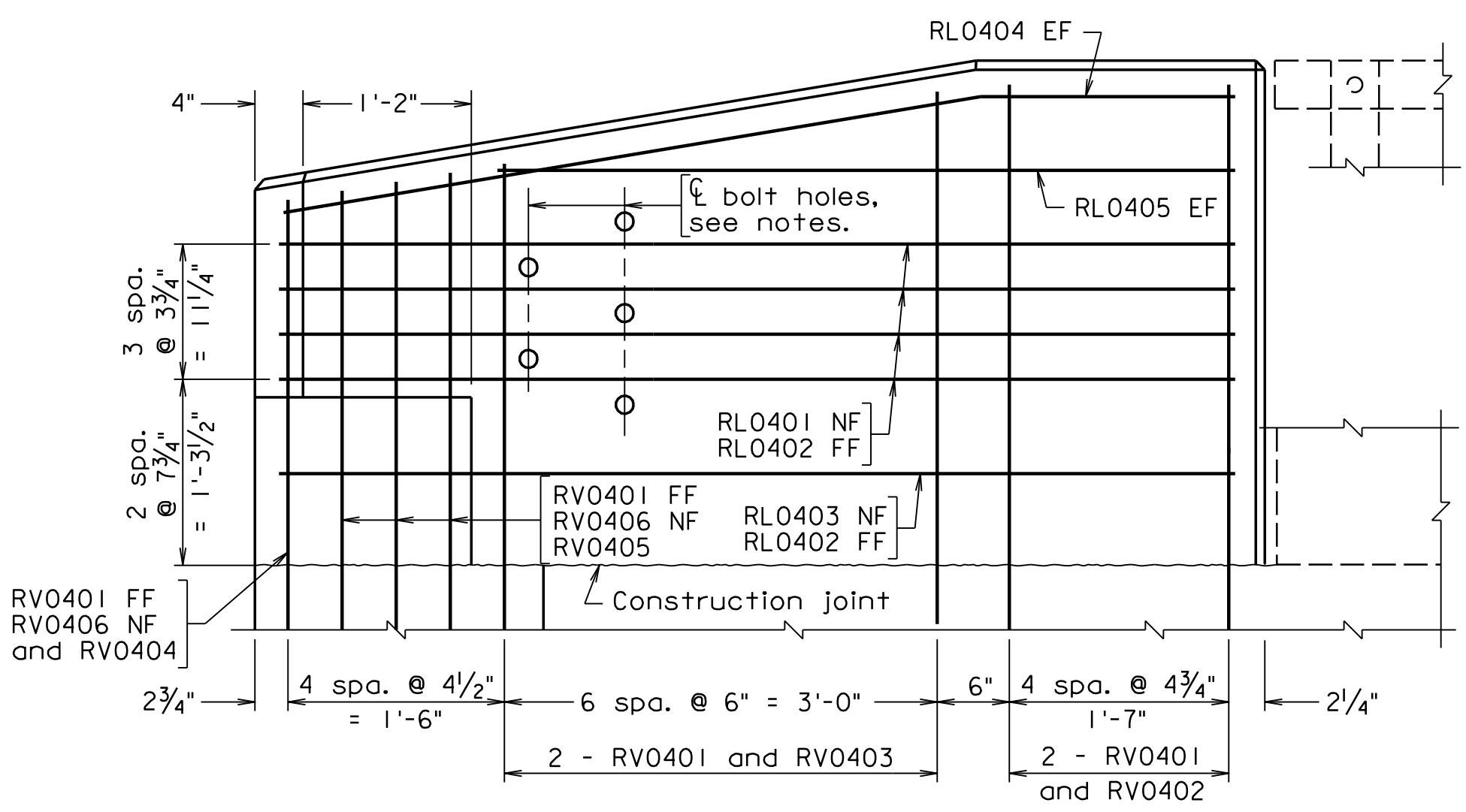
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
42" CPSR TERMINAL WALL (CPSRT-3)				
No.	Description	Date	Designed: MRM.....	Date
			Drawn: MRM.....	Feb. 8, 2023
			Checked: APZ.....	
Revisions			Plan No.	Sheet No.
			307-39	20 of 44



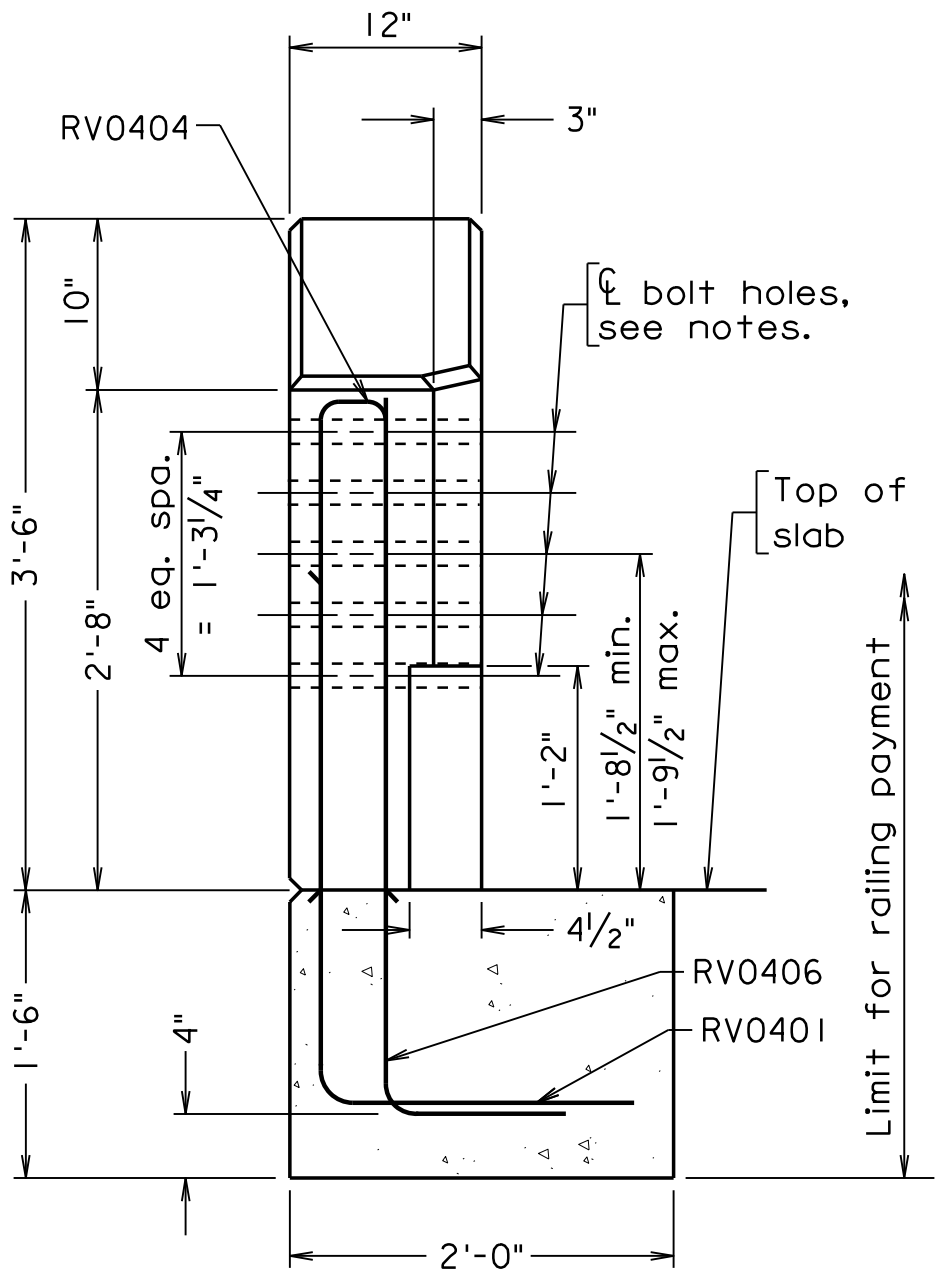
FULL INTEGRAL OR SEMI-INTegral ABUTMENT



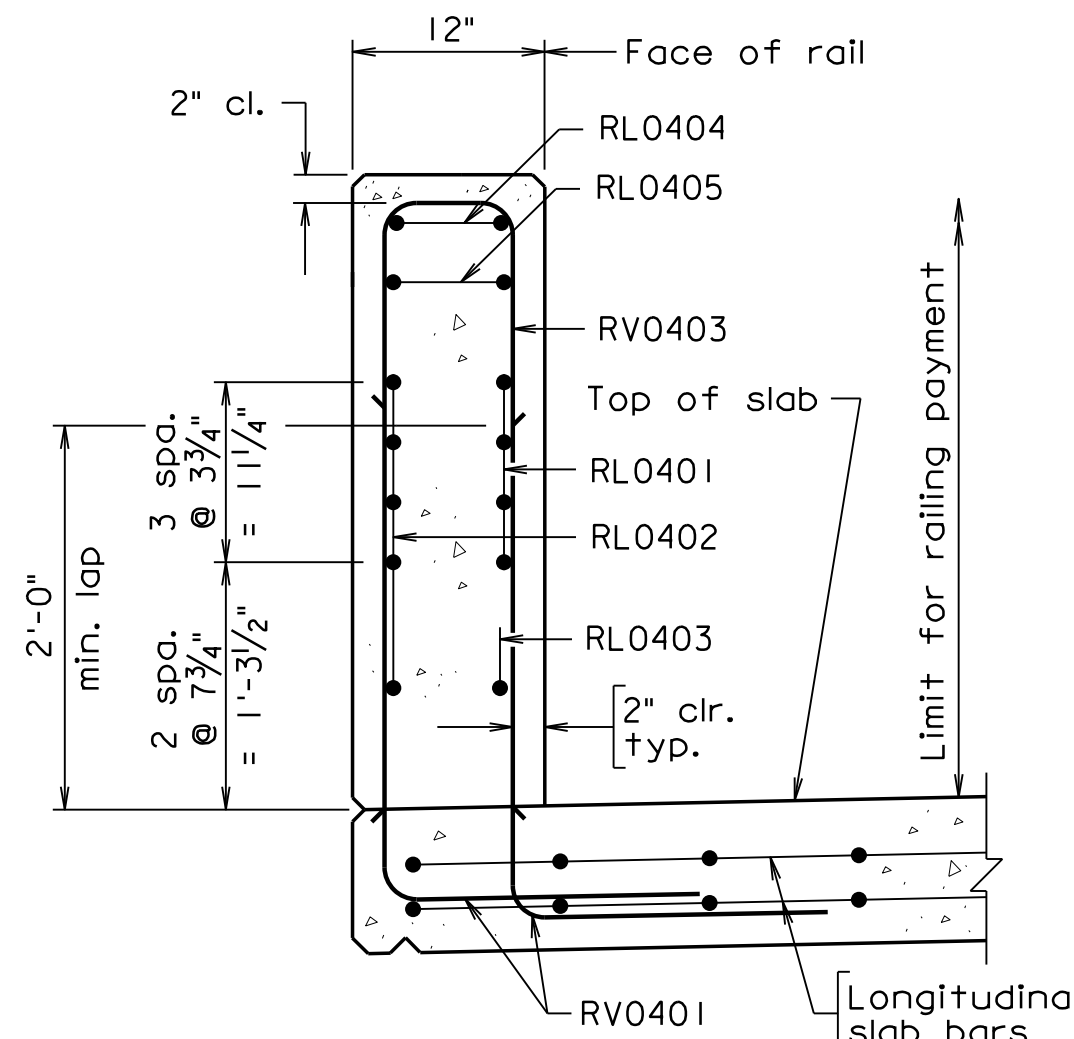
PART PLAN



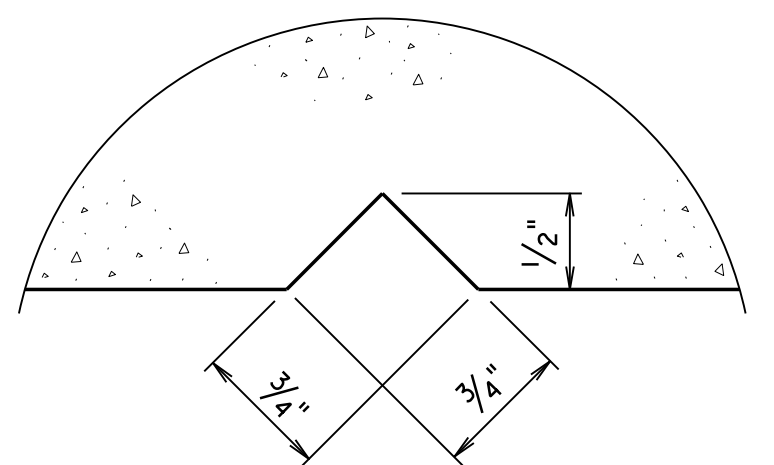
TERMINAL WALL - ELEVATION



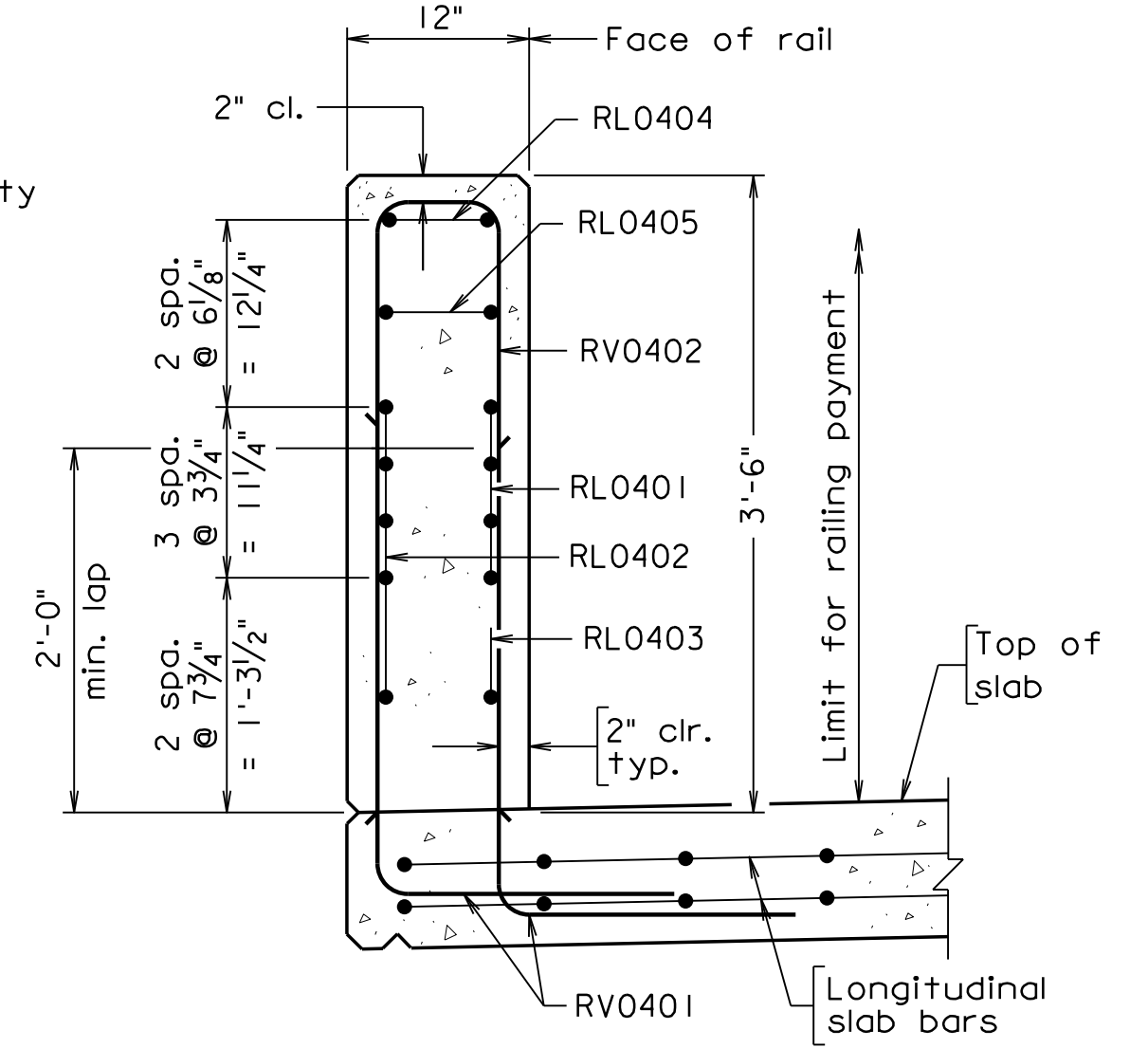
VIEW A-A
(section with sidewalk similar to SECTION D-D with sidewalk)
Showing RV04 bars only for clarity



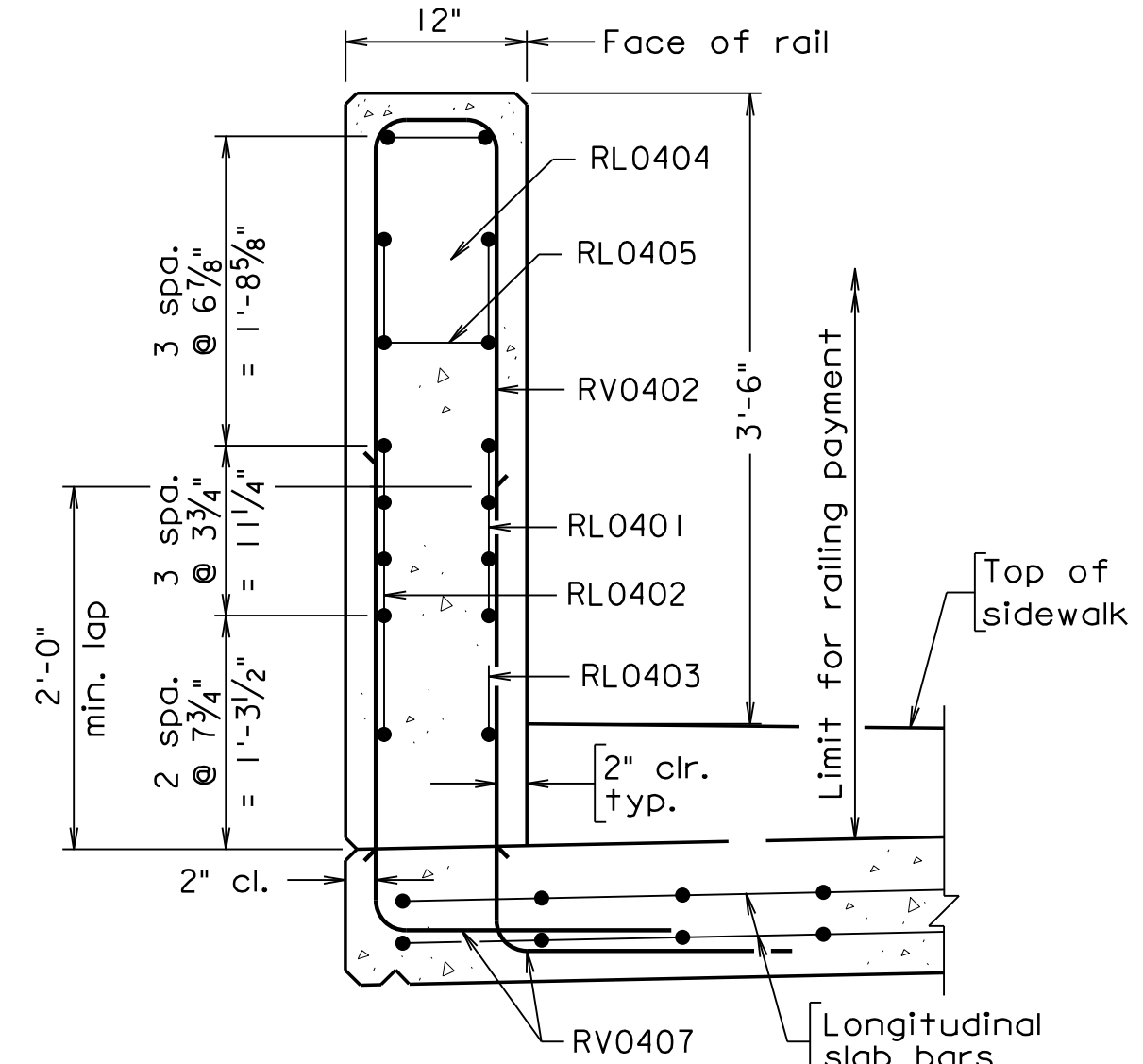
SECTION C-C
(section with sidewalk similar to SECTION D-D with sidewalk)
Transverse slab bar not shown for clarity



SECTION E-E
Full scale
Groove detail for both sides of rail



SECTION D-D
(Without sidewalk)
Transverse bars in deck slab and RL04 series extended from railing not shown for clarity



SECTION D-D
(With sidewalk)
Transverse bars in deck slab and RL04 series extended from railing not shown for clarity

Scale: 1" = 1'-0" unless otherwise noted. © 2023, Commonwealth of Virginia

CPSRT-3 04-30-2021 19100.020-cpsrt-3.dgn



SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Junyi Meng
Lic. No. 033572
On the date of
April 30, 2021

A copy of the original sealed and signed standard drawing is on file in the Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5125(127)	4602	4602-125-124, B608	21

Notes (cont'd):

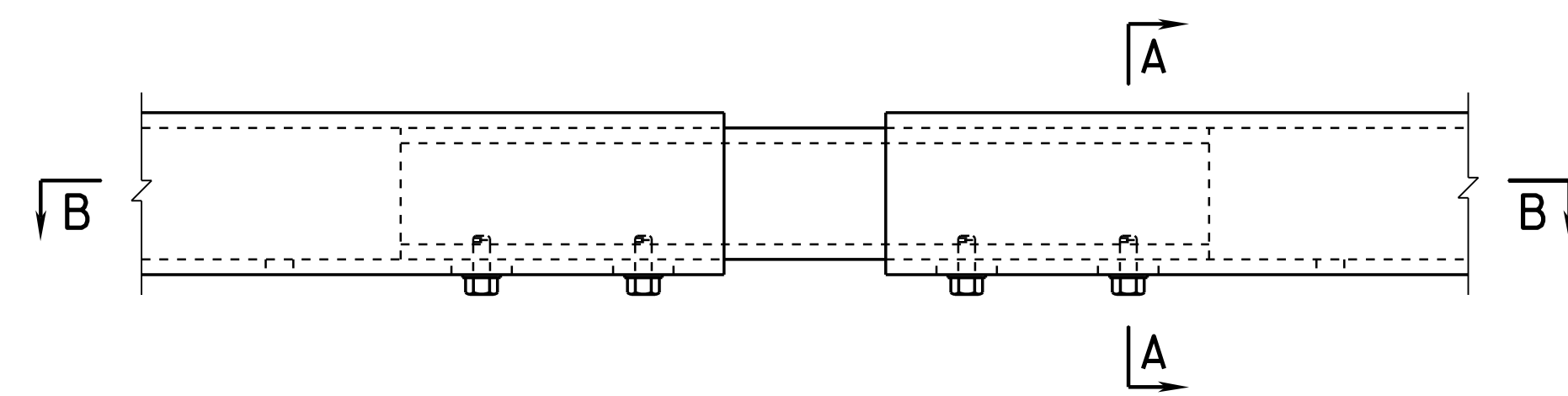
Drain holes shall be 1/2" diameter and shall be provided in all rails approximately half-way between posts except at open joints near pier(s). Drain holes shall be provided at each end of rail.

Barrier delineator size, color, and spacing shall be in accordance with the Specifications.

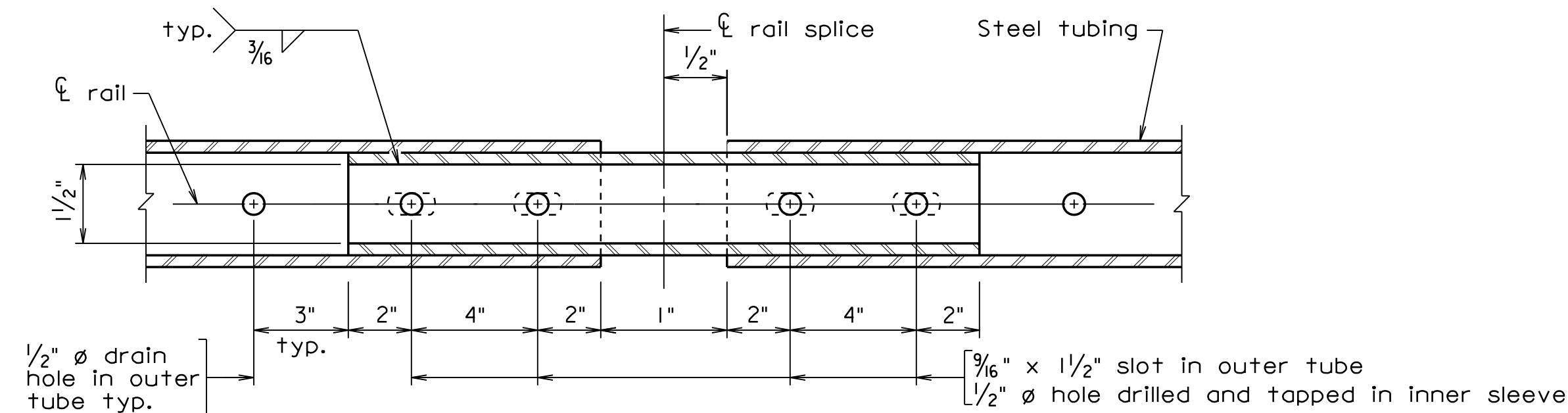
Maximum spacing of grooves in pedestal shall be limited to 3 x post spacing, shall be centered between posts and shall be no closer than 10'-0" to ends of pedestal. Where deck slab is continuous over a pier, a groove in pedestal shall be provided at the pier.

Alternate details for inner sleeve rail fabrication and bolted connection to outer tube may be submitted, but only used if approved by the Structure and Bridge Division Engineering Services Program Area. No thru-bolt connections will be approved.

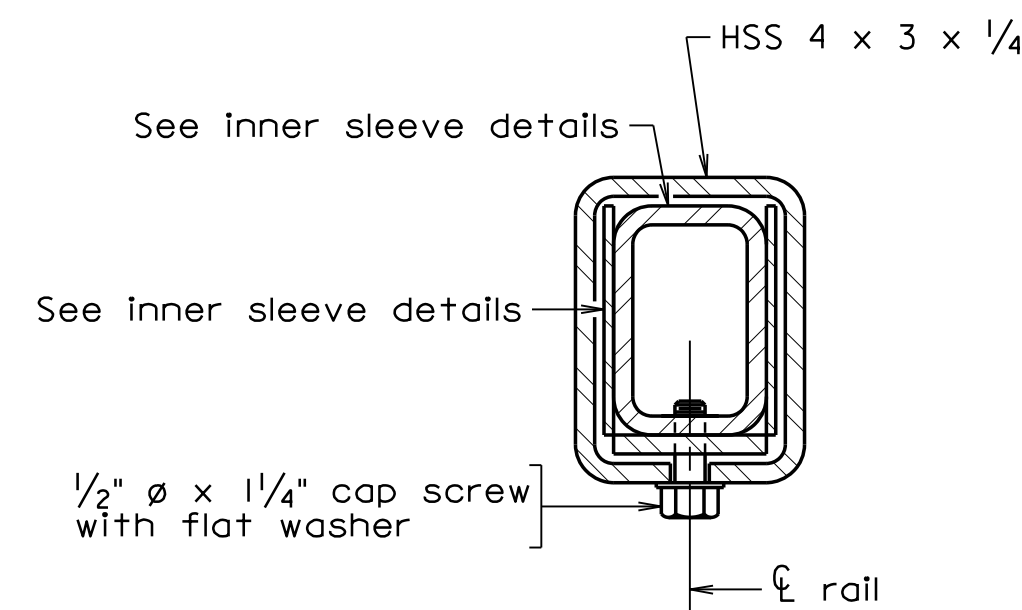
Bid item for railing shall include rails, rail posts, bearing pads, bolts, anchor assemblies, sleeves, barrier delineators, grounding materials and other associated metal parts as shown on the plans. Also included is concrete noted in the plans and reinforcing steel indicated in the reinforcing steel schedule.



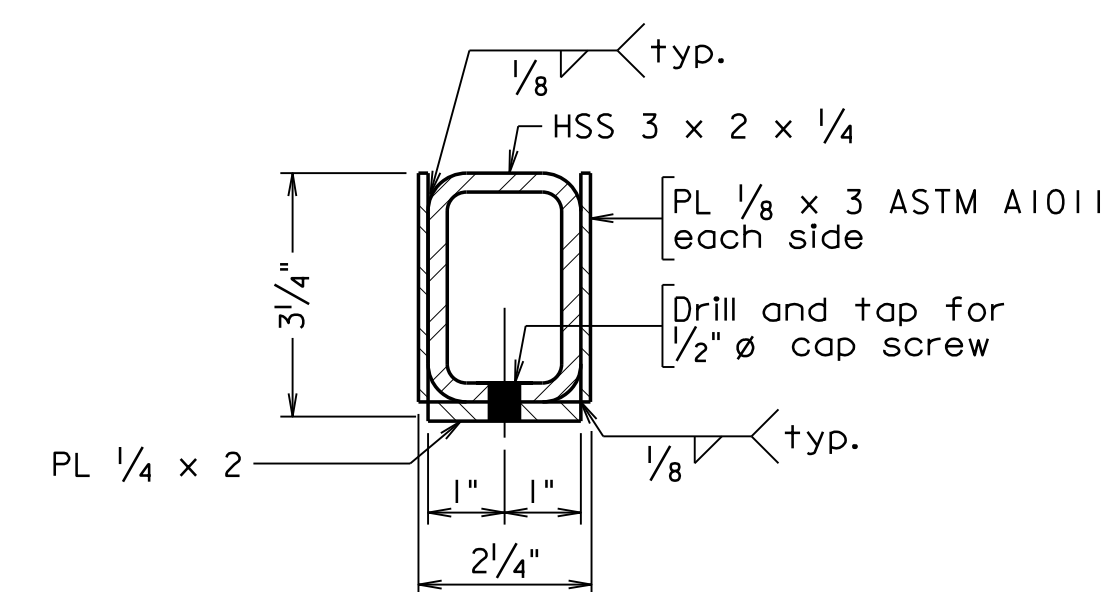
ELEVATION VIEW



SECTION B-B



SECTION A-A
SECTION AT RAIL SPLICE
RAIL SPLICE DETAILS



INNER SLEEVE DETAILS

19100.021-cpsr-3.dgn

04-30-2021

CPSR-3



SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Junyi Meng
Lic. No. 033572
On the date of
April 30, 2021

A copy of the original
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Central Office.

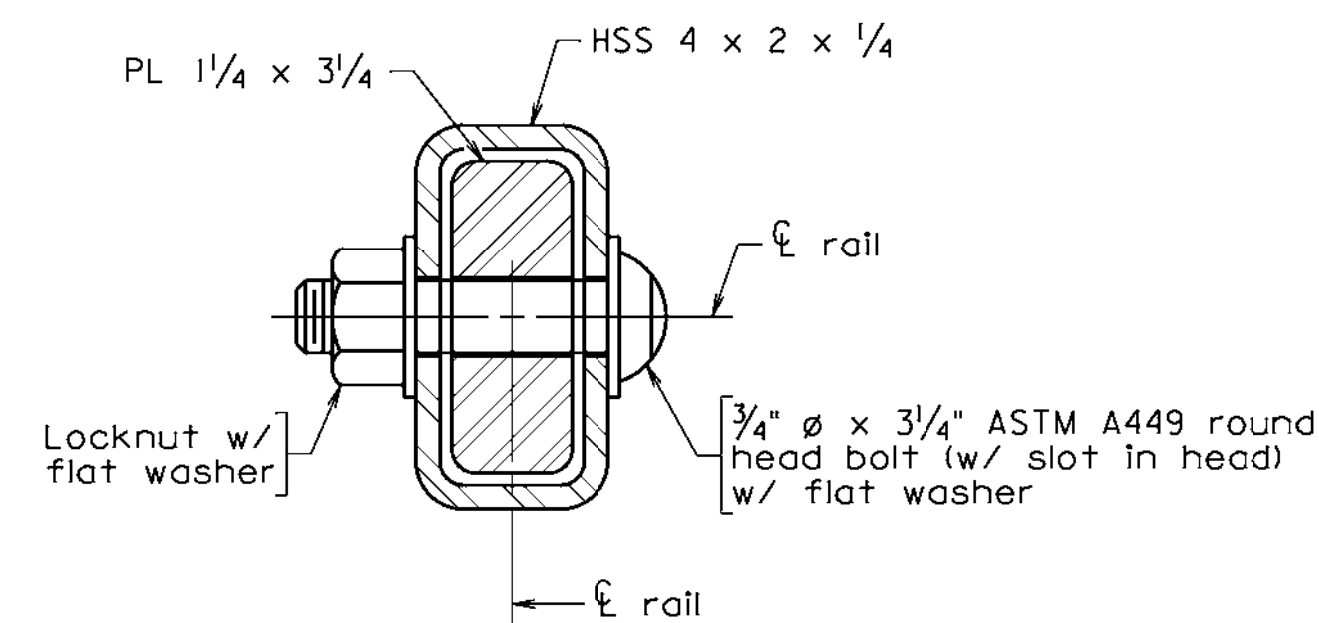
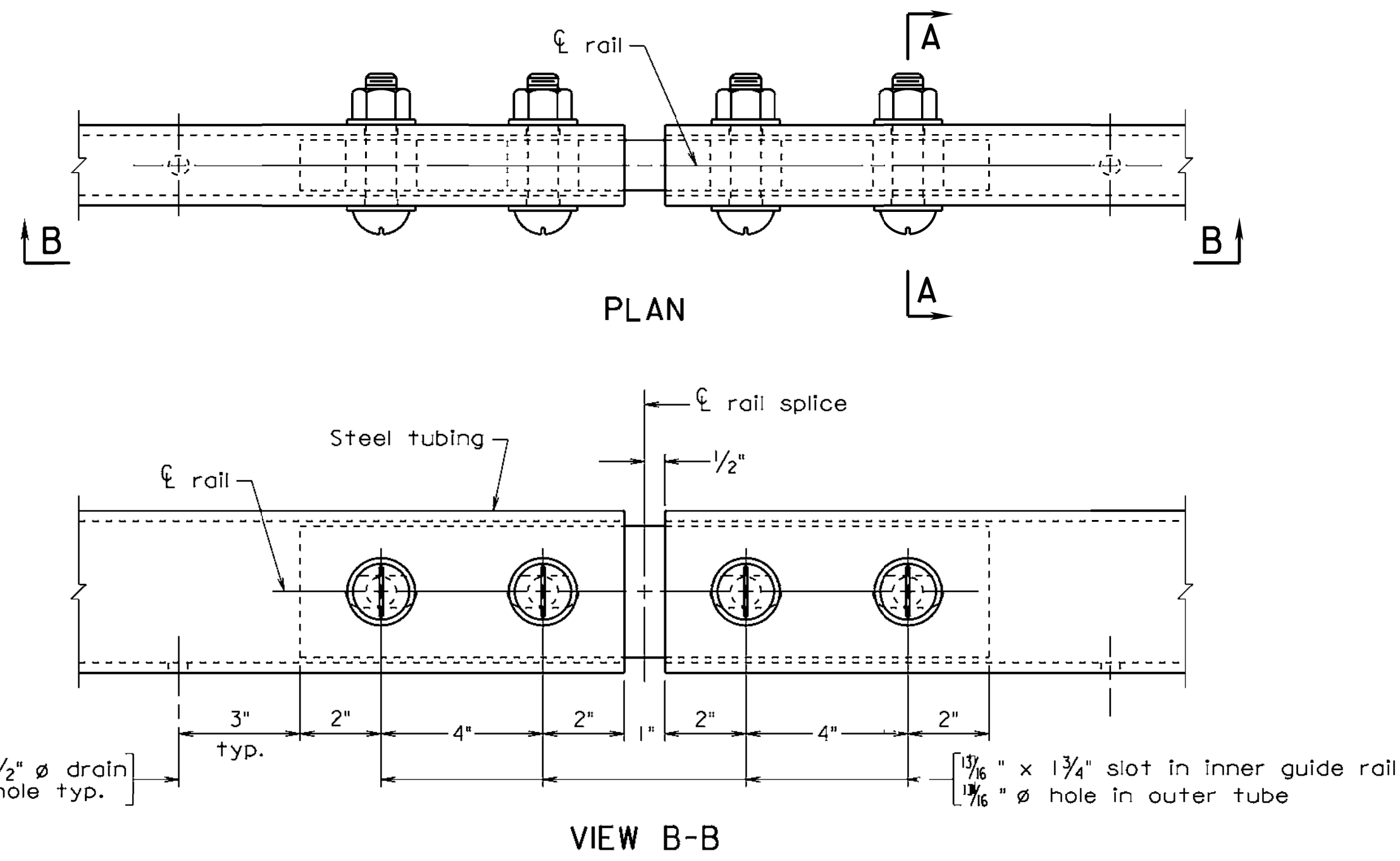
VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

Not to scale

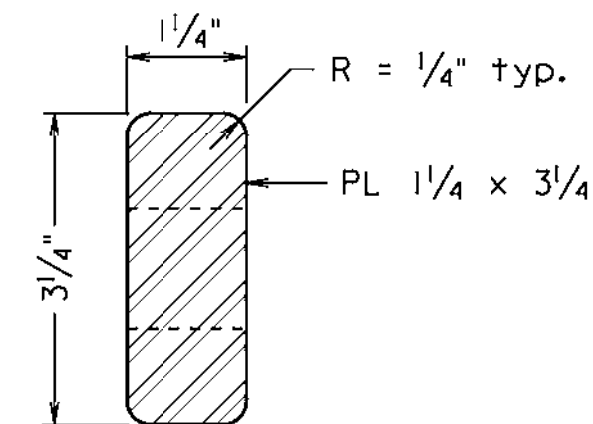
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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
CPSR RAIL CONNECTIONS AND NOTES (CPSR-3)					
No.	Description	Date	Designed: MRM	Date	Plan No.
			Drawn: MRM	Feb. 8, 2023	307-39
			Checked: APS		21 of 44
Revisions					

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	---	STP-5125(127)	4602	4602-125-124, B608	22



SECTION A-A
SECTION AT RAIL SPLICE
RAIL SPLICE DETAILS

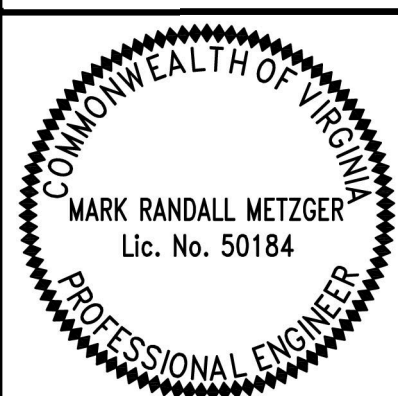


FINISHED DIMENSIONS OF INNER GUIDE RAIL

19100_022-cpsr-4.dgn

10-31-2022

CPSR-4



SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Junyi Meng
Lic. No. 033572
On the date of
October 24, 2022

A copy of the original
sealed and signed
drawing is on file in the
Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
CPSR RAIL CONNECTIONS (CPSR-4)					
No.	Description	Date	Designed: MRM.....	Date	Plan No.
			Drawn: MRM.....	Feb. 8, 2023	307-39
			Checked: APS.....		22 of 44
Revisions					

Not to scale

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STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	STP-5125(127)	4602	4602-125-124, B608
			NO.
			23

Notes:

Material - Ductile iron with restrained joint
 Minimum thickness - Class 52 (rated pressure 300 psi)
 Hydrostatic test pressure shall be 150 psi minimum
 Specification: ANSI/AWWA C151/A21.51
 Finish - Cement mortar lined; bituminous outer coat
 Sleeve A and B - API 5L-B 3/8" wall

Structural steel for angles shall be Grade A36 and shall be galvanized. H.S. bolts shall be ASTM F3125 Grade A325, Type 1.

Expansion Joint - Dresser Style 63 Type 3.

Protection saddle shall be ASTM A36 steel and tag welded to the steel sleeve. It shall carry at least 1.5 kips vertical load. Protection saddle shall be provided and centered at each bottom roller. Voids in the protection saddle shall be filled with spray foam.

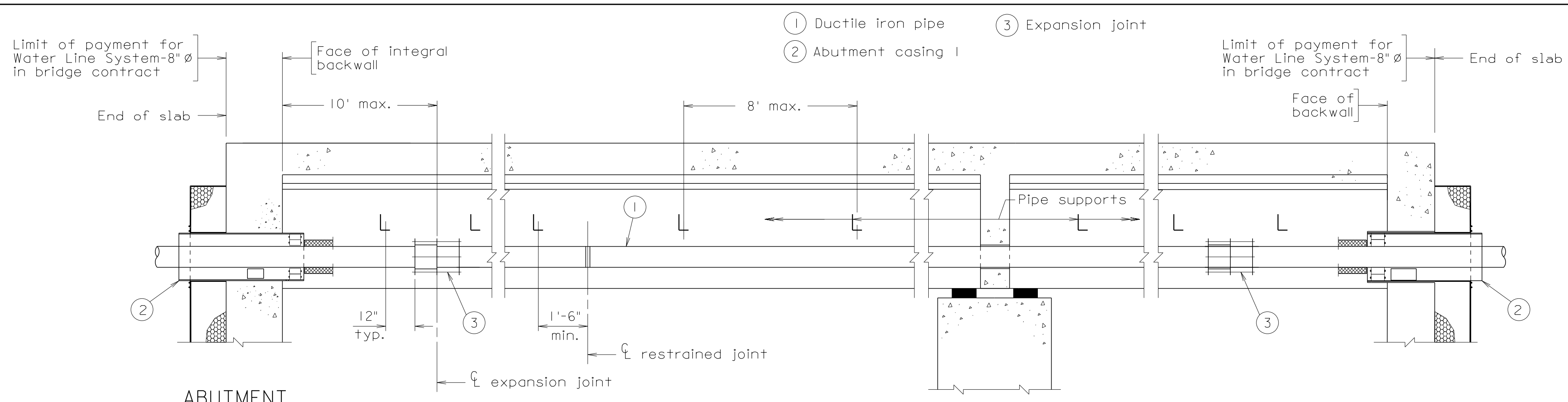
The geotextile separation fabric shall be installed in a manner that allows Sleeve A to move M inches.

Insulation - use 2" foam (urethane) insulation with white vinyl cover. Vinyl cover shall have a minimum thickness of 8 mil. Insulation shall be installed for all exposed areas including expansion joint.

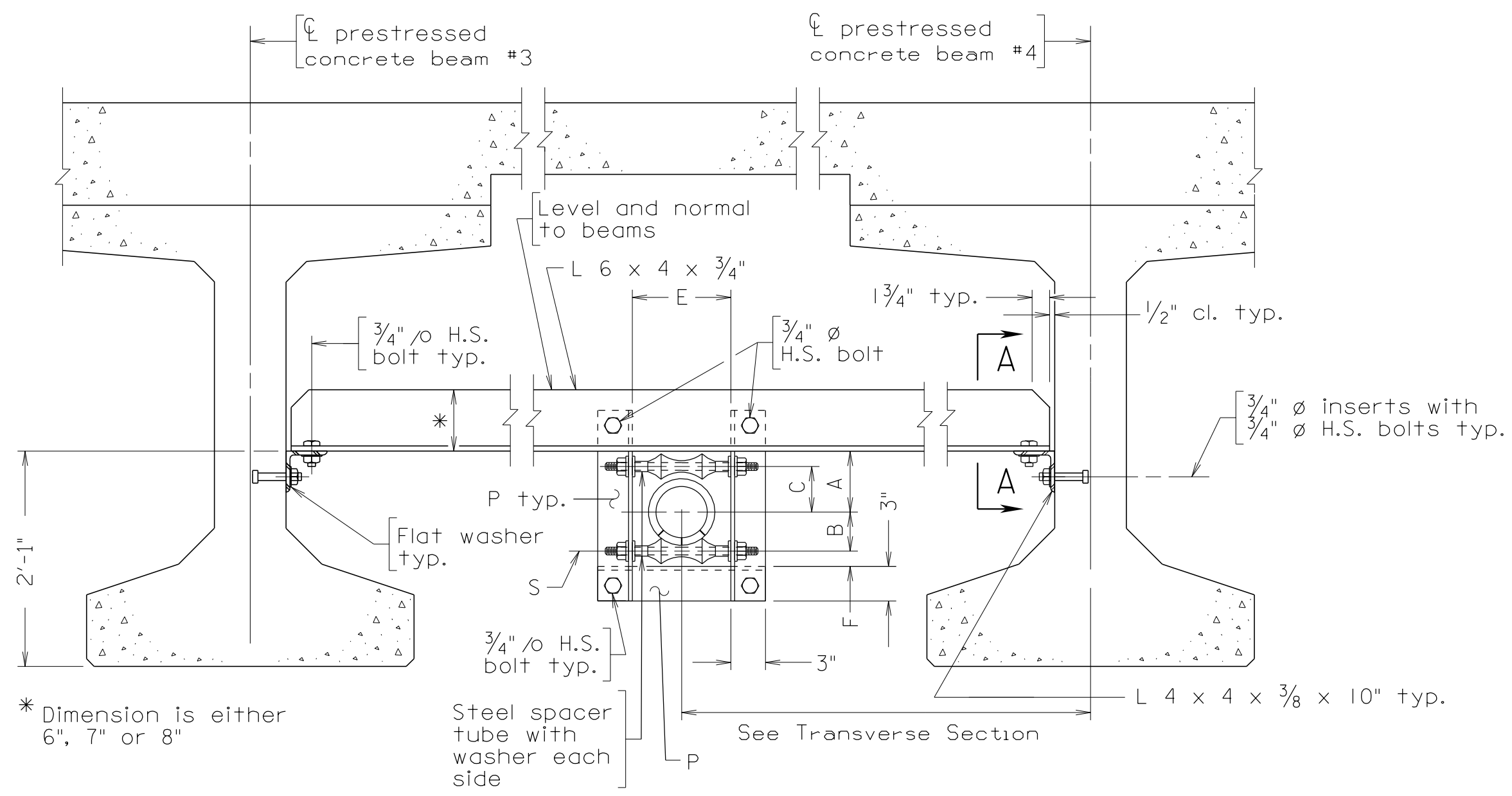
Abutment backfill shall be placed and compacted to the bottom elevation of Sleeve B. After Sleeve B is installed, backfill shall be carefully shoveled and worked under the lower portion of Sleeve B to provide compacted backfill for the sleeve.

Galvanization - Miscellaneous hardware: Rods, nuts, rollers, protection saddles, hardware in link seals, etc. shall be galvanized in accordance with ASTM A153. If the supporting angles to which the rods are attached are weathering steel, an elastomeric washer with a nominal durometer hardness of 50 shall be placed between the angle surface (on both sides) and the nut/washer to isolate the contact between the two surfaces.

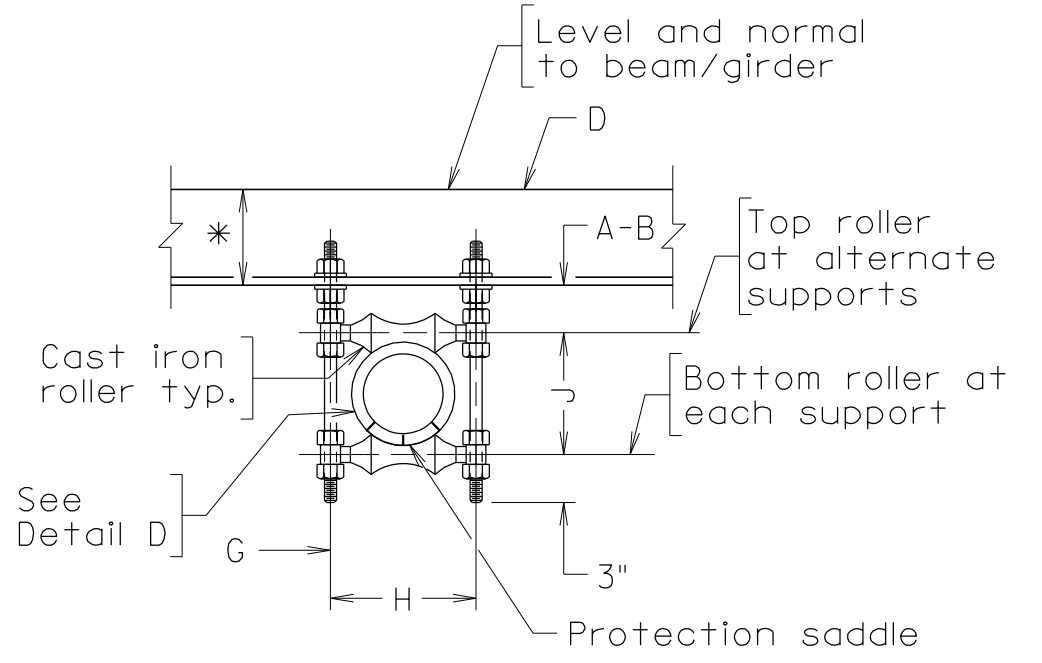
Payment - Water Line System-8" Diameter shall be paid for on a lump sum basis, wherein no measurement shall be made, and shall be paid for at the contract lump sum price, which price shall include furnishing and installing ductile iron water main, expansion joints, abutment sleeves, link seals, and miscellaneous hardware; all as detailed on the WaterLine System drawing included herein and within the pay limits shown thereon. Such price shall be full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.



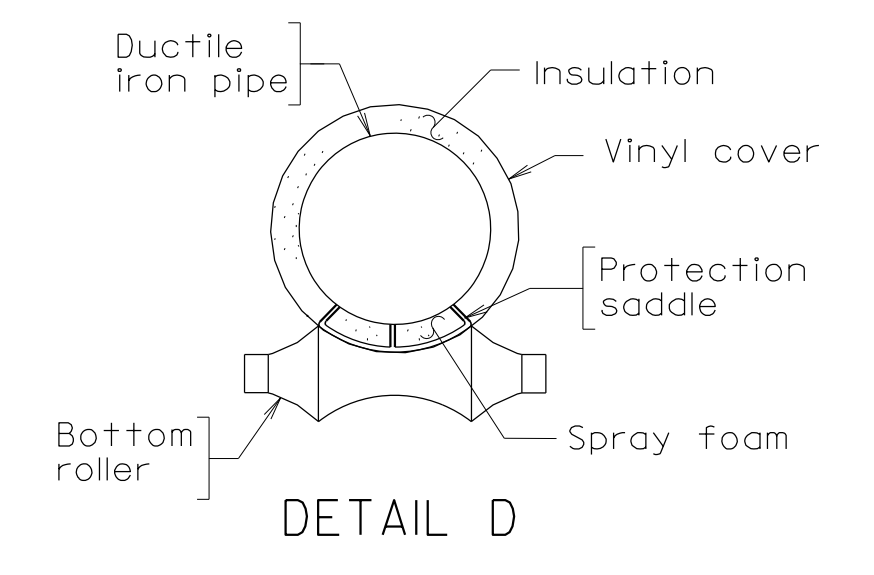
ABUTMENT ELEVATION PIER ABUTMENT



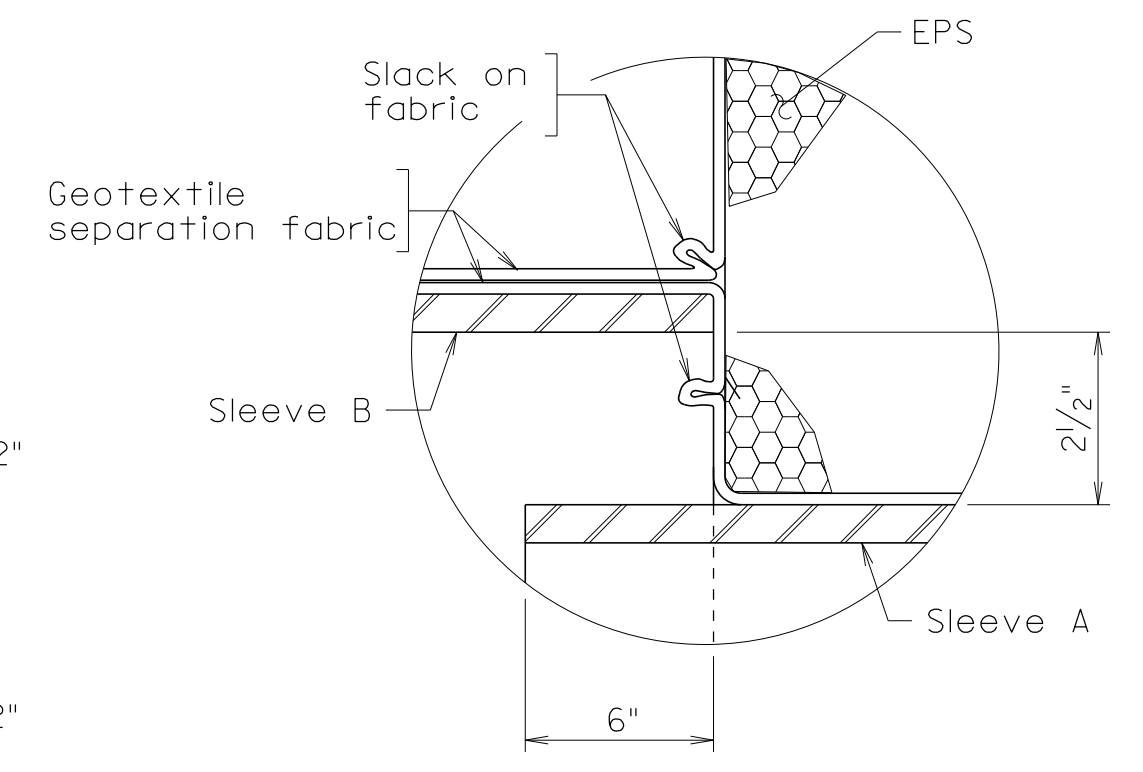
TYPICAL SUPPORT DETAIL AT EXPANSION JOINT
 Provide support detail on both sides of expansion joint.



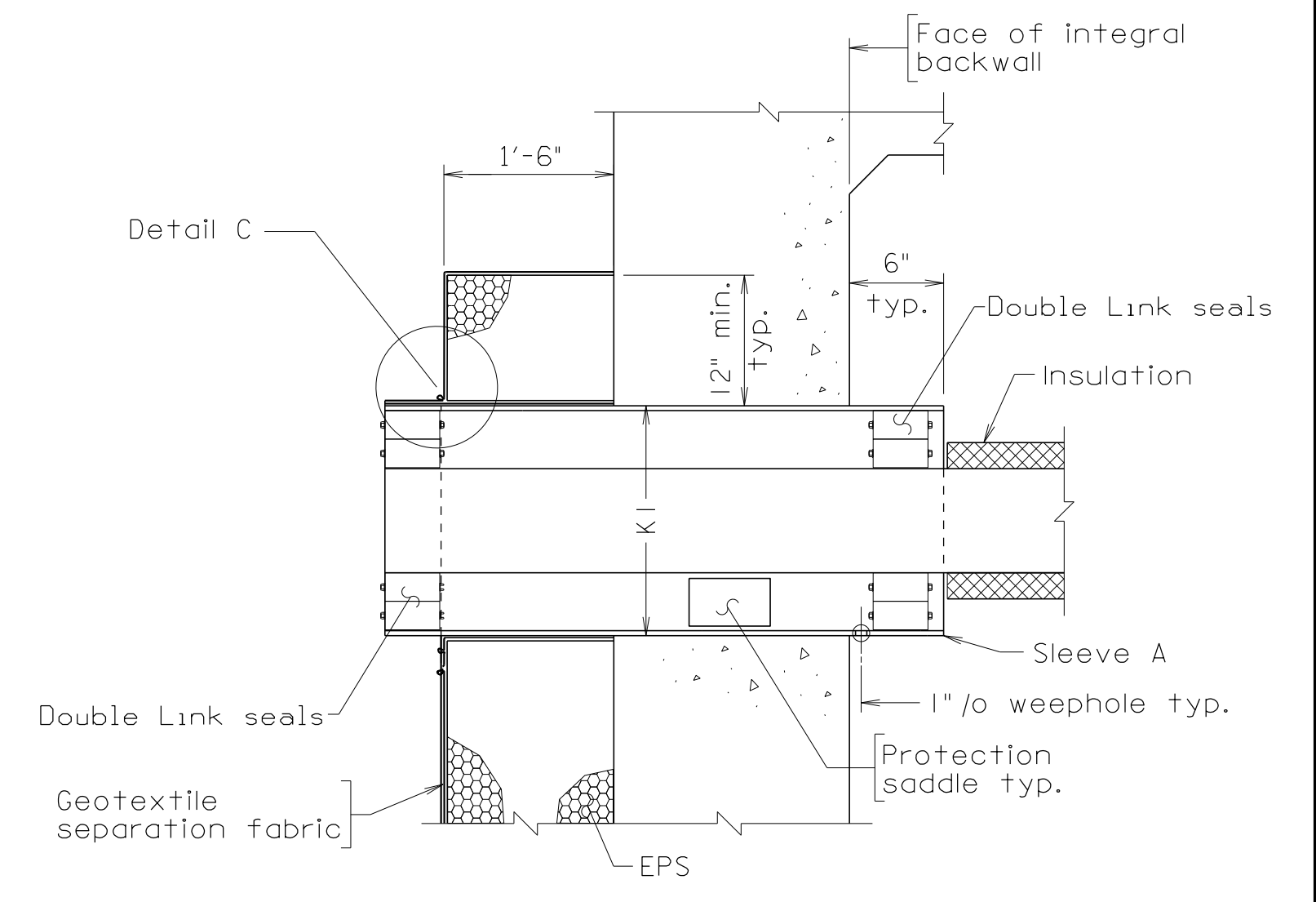
TYPICAL SUPPORT DETAIL
 For details not shown, see Typical Support Detail at Expansion Joint.



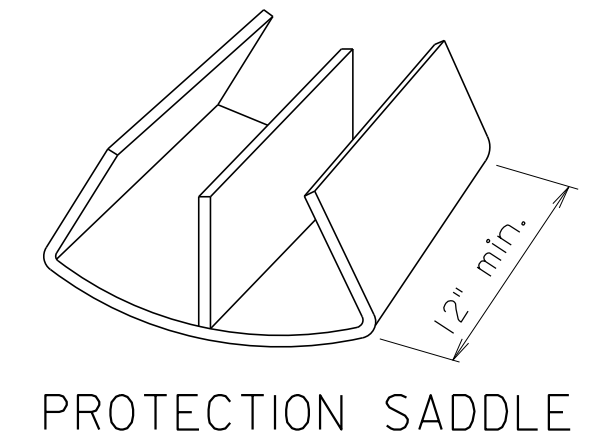
DETAIL D



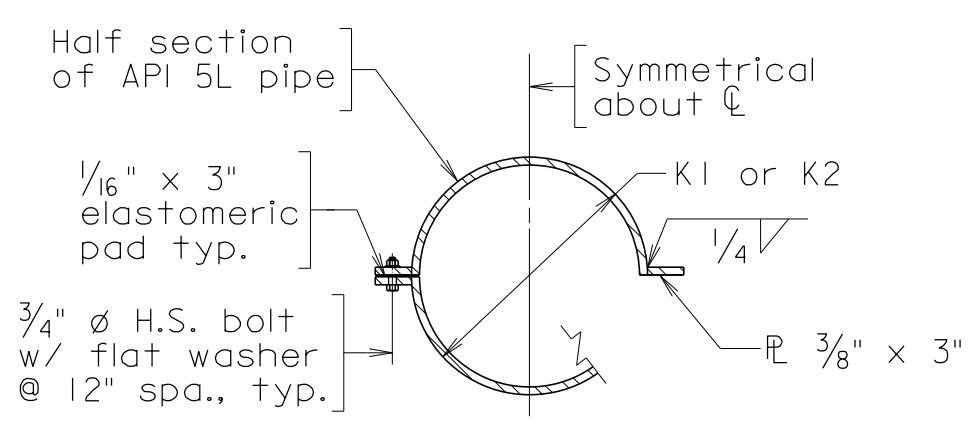
DETAIL C



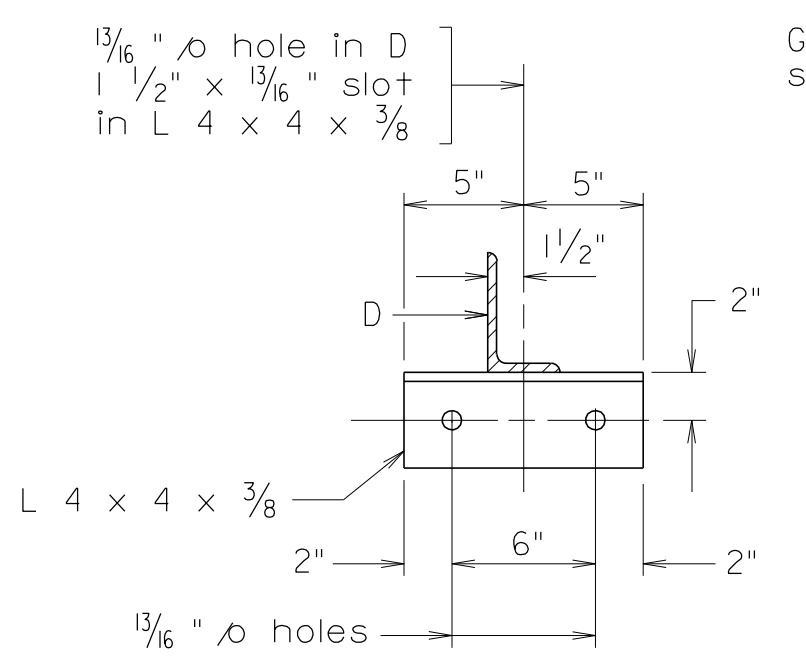
ABUTMENT CASING I



PROTECTION SADDLE



TYPICAL SECTION OF SLEEVE B
 Not under approach slab



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

Pipe ϕ	A**	B**	C**	D	E	F	G	H**	J**	K1	K2	M	P	S
6"	10 5/16"	7 1/16"	7 5/16"	L 6 x 4 x 1/2	1'-5"	2 3/4"	7/8"	1'-2 1/8"	1'-2 1/8"	1'-4"	1'-8"		L 3 x 3 x 3/8	7/8"
8"	1'-0 5/16"	9 1/16"	9 5/16"	L 6 x 4 x 1/2	1'-8"	2 3/4"	7/8"	1'-5 3/4"	1'-6 1/8"	1'-6"	1'-10"	3/8"	L 3 x 3 x 3/8	1"
10"	1'-1 1/16"	10 3/16"	10 7/16"	L 6 x 4 x 1/2	1'-10"	3"	1"	1'-7 3/4"	1'-8 3/8"	1'-8"	2'-0"		L 3 x 3 1/2 x 3/8	1 1/8"
12"	1'-2 1/8"	10 7/8"	11 1/8"	L 7 x 4 x 1/2	2'-1"	3 1/2"	1"	1'-10 7/8"	1'-9 3/4"	1'-10"	2'-4"		L 3 x 3 1/2 x 3/8	1 1/4"
14"	1'-3"	11 3/16"	11 7/16"	L 7 x 4 x 1/2	2'-3"	4"	1"	2'-0 1/4"	1'-10 3/8"	2'-0"	2'-6"		L 3 x 4 x 3/8	1 1/8"
16"	1'-5"	1'-0 7/8"	1'-1 1/8"	L 8 x 4 x 1/2	2'-4"	4"	1"	2'-2 1/8"	2'-1 3/4"	2'-2"	2'-8"		L 3 x 4 x 3/8	1 1/4"
18"	1'-6 1/2"	1'-2 1/8"	1'-2 3/8"	L 8 x 4 x 1/2	2'-7"	4"	1 1/8"	2'-4 7/8"	2'-4 1/4"	2'-4"	2'-9"		L 3 x 5 x 3/8	1 1/4"
20"	1'-9 1/2"	1'-4 7/8"	1'-5 1/8"	L 8 x 4 x 3/4	3'-2"	5"	1 1/4"	2'-11 1/2"	2'-9 3/4"	2'-6"	3'-2"		L 3 x 5 x 3/8	1 1/4"
24"	2'-2"	1'-8 1/4"	1'-8 1/2"	L 8 x 4 x 3/4	3'-10"	6"	1 1/2"	3'-7 3/8"	3'-4 1/2"	3'-0"	3'-6"		L 3 x 5 x 3/8	1 1/2"

G = diameter of rod
 S = diameter of shaft
 M = thermal movement of integral backwall (inches)
 N = rotation of integral backwall (radians)

**The Contractor shall verify and/or adjust these values based on the manufacturers' requirements at no additional cost to the Department.

Not to scale unless otherwise noted

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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
WATER LINE SYSTEM INSULATED					
No.	Description	Date	Designed: MRM	Date	Plan No.
			Drawn: MRM	Feb. 8, 2023	307-39
			Checked: APS		23 of 44
Revisions					

19100-023-BWL-6A.dgn 10-31-2019 BWL-6A



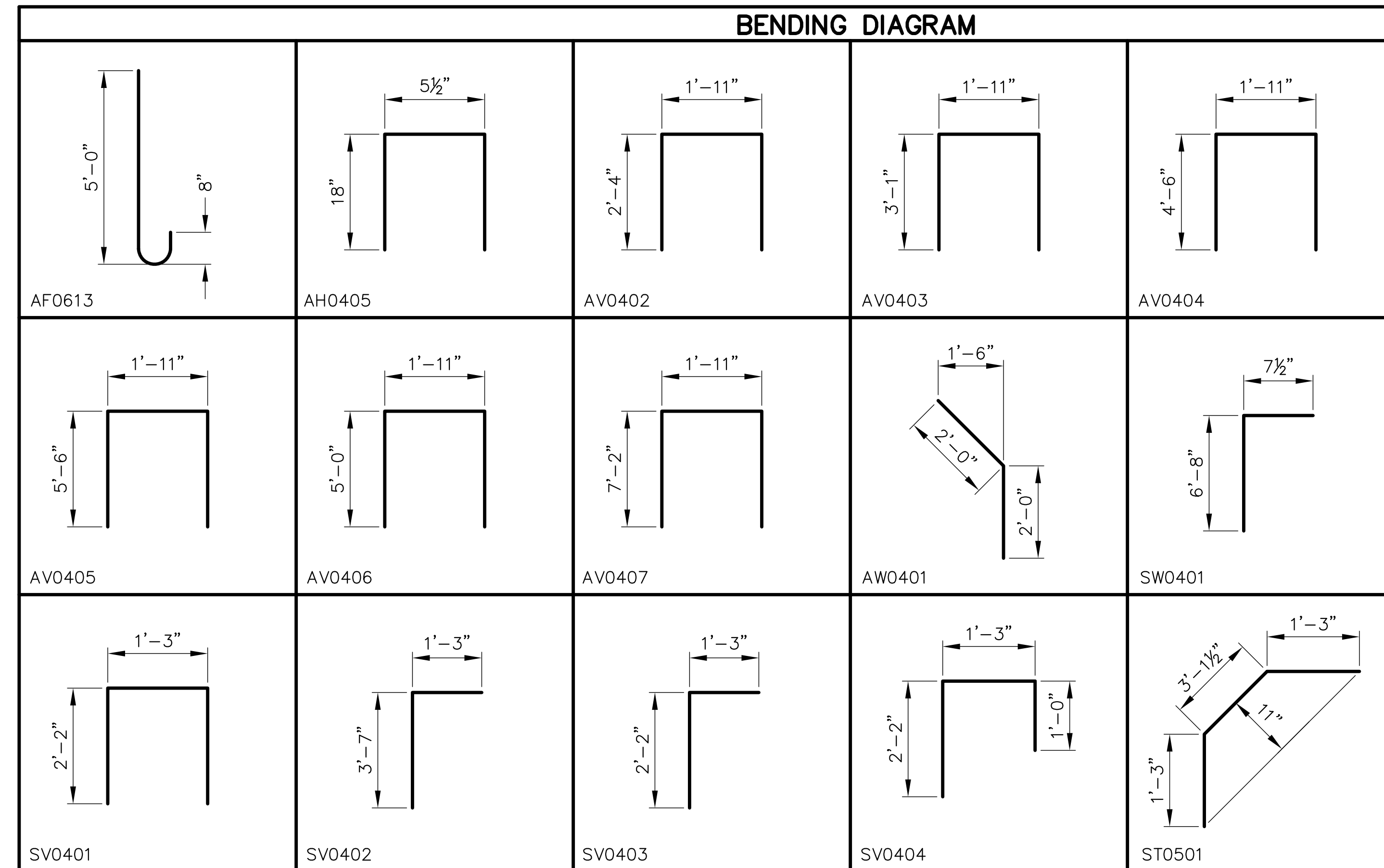
Schwartz & Associates
 Lynchburg, VA
 Structural Engineer

Sealed and Signed by:
 Junyi Meng
 Lic. No. 033572
 On the date of
 October 31, 2019

VDOT S&B DIVISION
 RICHMOND, VA
 STRUCTURAL ENGINEER

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	-	STP-5125(127)	4602	4602-125-124, B608	24

REINFORCING STEEL SCHEDULE				
MARK	NO.	LENGTH	PIN DIA.	LOCATION
SUBSTRUCTURE				
AF0601	22	VARIES	-	ABUTMENT FOOTING
AF0602	26	VARIES	-	ABUTMENT FOOTING
AF0603	99	2'-0"	-	ABUTMENT FOOTING
AF0604	4	2'-3"	-	ABUTMENT FOOTING
AF0605	10	9'-5"	-	ABUTMENT FOOTING
AF0606	4	21'-5 5/8"	-	ABUTMENT FOOTING
AF0607	8	VARIES	-	ABUTMENT FOOTING
AF0608	4	5'-2"	-	ABUTMENT FOOTING
AF0609	30	VARIES	-	ABUTMENT FOOTING
AF0610	4	13'-8 3/4"	-	ABUTMENT FOOTING
AF0611	8	VARIES	-	ABUTMENT FOOTING
AF0612	43	4'-0"	-	ABUTMENT FOOTING
AF0613	43	5'-8 1/4"	4 1/2"	ABUTMENT FOOTING
AH0601	8	16'-1"	-	ABUTMENT BREASTWALL
AH0602	8	20'-0"	-	ABUTMENT BREASTWALL
AH0403	16	16'-1"	-	ABUTMENT BREASTWALL
AH0404	16	20'-0"	-	ABUTMENT BREASTWALL
AH0405	40	3'-3 1/2"	2"	ABUTMENT BREASTWALL
AH0606	110	1'-6"	-	ABUTMENT BREASTWALL
AH0407	16	4'-1"	-	ABUTMENT BREASTWALL
AV0601	66	2'-6"	-	ABUTMENT BREASTWALL
AV0402	188	6'-5"	2"	ABUTMENT BREASTWALL
AV0403	14	7'-11"	2"	ABUTMENT BREASTWALL
AV0404	8	10'-9"	2"	ABUTMENT BREASTWALL
AV0405	4	12'-9"	2"	ABUTMENT BREASTWALL
AV0406	14	11'-9"	2"	ABUTMENT BREASTWALL
AV0407	4	16'-1"	2"	ABUTMENT BREASTWALL
AS0601	32	3'-6"	-	ABUTMENT SEATS
AW0401	26	3'-11 3/4"	3"	ABUTMENT WINGWALL
AW0402	8	21'-6"	-	ABUTMENT WINGWALL
AW0403	12	VARIES	-	ABUTMENT WINGWALL
AW0404	2	22'-2"	-	ABUTMENT WINGWALL
AW0405	52	VARIES	-	ABUTMENT WINGWALL
AW0406	12	14'-0"	-	ABUTMENT WINGWALL
AW0407	14	VARIES	-	ABUTMENT WINGWALL
AW0408	2	15'-10"	-	ABUTMENT WINGWALL
AW0409	34	VARIES	-	ABUTMENT WINGWALL
SUPERSTRUCTURE				
SW0401	60	7'-2 1/4"	3"	SIDEWALK
SW0402	12	37'-6"	-	SIDEWALK
SL0401	174	37'-6"	-	DECK
SC0501	234	14'-11 3/8"	-	DECK
SC0502	234	18'-10 5/8"	-	DECK
SC0503	234	6'-9"	-	DECK
SV0401	92	5'-5"	2"	INTEGRAL BACKWALL
SV0402	86	4'-8 3/4"	3"	INTEGRAL BACKWALL
SV0403	40	3'-4"	2"	INTEGRAL BACKWALL
SV0404	40	4'-3"	2"	INTEGRAL BACKWALL
ST0501	46	5'-7"	3 3/4"	INTEGRAL BACKWALL
SH0601	24	14'-11 3/8"	-	INTEGRAL BACKWALL
SH0602	24	18'-10 5/8"	-	INTEGRAL BACKWALL
SH0603	12	6'-8"	-	INTEGRAL BACKWALL
SH0604	12	7'-9"	-	INTEGRAL BACKWALL
SH0605	6	7'-0"	-	INTEGRAL BACKWALL
SH0606	6	5'-10"	-	INTEGRAL BACKWALL
SH0607	12	6'-5"	-	INTEGRAL BACKWALL
SH0608	6	1'-3"	-	INTEGRAL BACKWALL
SH0609	6	5'-2"	-	INTEGRAL BACKWALL
SH0610	16	2'-0"	-	INTEGRAL BACKWALL



VARIATION TABLE					
MARK	NO. EACH	LENGTH	BEGIN LENGTH	END LENGTH	VARIES BY
AF0601	2	3'-8 1/2"	5'-8 1/4"	2 3/8"	
AF0602	2	3'-5"	4'-5"	1"	
AF0607	2	21'-11 3/4"	24'-8 3/4"	11"	
AF0609	2	3'-0"	4'-5 1/2"	1 1/4"	
AF0611	2	14'-1 1/4"	16'-7 1/4"	10"	
AW0403	2	2'-10"	19'-6"	3'-4"	
AW0405	2	2'-8"	8'-2"	2 3/4"	
AW0407	2	3'-0"	11'-9"	1'-5 1/2"	
AW0409	2	4'-4"	12'-2"	5 7/8"	

Notes:

Dimensions in Bending Diagram are out-to-out of bars.

Weights in quantity table are based on density of 490 lb/ft³.

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 in different bays.

Corrosion resistant reinforcing (CRR) steel shall be Class I.

AV0403, AV0406, AND AW0401 shall be cut to fit as needed.

All costs associated with reinforcing steel splicers shall be included in bid price for corrosion resistant reinforcing steel, class I.

CADD REFERENCE NO.: BRIDGE19066.DWG

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<table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">REVISIONS</td> </tr> <tr> <td colspan="3" style="text-align: center;">For Table of Revisions, see Sheet 3.</td> </tr> </tbody> </table>		No.	Description	Date	REVISIONS			For Table of Revisions, see Sheet 3.			<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA REINFORCING STEEL SCHEDULE</p>	
No.	Description	Date										
REVISIONS												
For Table of Revisions, see Sheet 3.												
<p>SCHWARTZ & ASSOCIATES LYNCHBURG, VA STRUCTURAL ENGINEER COMM. NO. 19100</p>		<p>DESIGNED BY: MRM DRAWN BY: MRM CHECKED BY: APS SCALE: AS NOTED PLAN NO.: 307-39 DATE: February 8, 2023 SHEET: 24 OF 44</p>										

GENERAL NOTE CONT.

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	4602	STP-5125 (127)	4602	4602-125-124, B608	26

6. EROSION AND SEDIMENT (E&S) CONTROL:

THE TEMPORARY EROSION AND SILTATION CONTROL ITEMS SHOWN ON THE PLANS ARE INTENDED TO PROVIDE A GENERAL PLAN FOR CONTROLLING EROSION AND SILTATION WITHIN THE PROJECT LIMITS. E&S CONTROL IS BASED ON FIELD CONDITIONS AT THE TIME OF PLAN DEVELOPMENT AND AN ASSUMED SEQUENCE OF CONSTRUCTION. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL ADJUST THE LOCATION, QUANTITY AND TYPE OF EROSION AND SILTATION CONTROL ITEMS REQUIRED BASED ON THE ACTUAL FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION AND THE SELECTED SEQUENCE OF CONSTRUCTION.

THE AREA BEYOND THE PROJECT'S CONSTRUCTION AREA SHALL BE PROTECTED FROM SILTATION. PERIMETER CONTROLS SUCH AS FILTER BARRIER, SILT FENCE, DIVERSION DIKES, TURBIDITY CURTAINS, ETC. SHALL BE INSTALLED PRIOR TO ANY GRUBBING OPERATIONS OR OTHER EARTH MOVING ACTIVITIES. ALL COSTS SHALL BE INCLUDED IN OTHER BID ITEMS.

ALL COSTS FOR CONSTRUCTION ENTRANCES AND CONSTRUCTION ROAD STABILIZATION SHALL BE INCLUDED IN OTHER BID ITEMS.

A SOIL TEST IS REQUIRED, PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON SITE. CONTRACTOR MAY CONTACT VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM (WITH SOIL TESTING FACILITIES) TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION. ALL COSTS FOR THE ABOVE SHALL BE INCLUDED IN LUMP SUM BID "SEEDING".

7. UTILITY CONSTRUCTION NOTES

LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, ELEVATION AND SIZE OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OF THIS WORK.

CONTRACTOR SHALL RECORD ACTUAL GROUND AND TOP OF PIPE ELEVATIONS AT THE FITTINGS, VALVES AND CONNECTION POINTS AT THE TIME OF INSTALLATION AND PROVIDE RECORDS TO THE ENGINEER. CONTRACTOR SHALL ALSO PROVIDE ACTUAL CONSTRUCTION CENTERLINE STATION AND OFFSET. ALL COSTS SHALL BE INCLUDED IN OTHER BID ITEMS.

NO VALVES OR OTHER CONTROLS ON THE EXISTING WATER SYSTEMS SHALL BE OPERATED, FOR ANY PURPOSE, BY THE CONTRACTOR. TOWN PERSONNEL WILL OPERATE ALL VALVES, HYDRANTS, ETC.

CONTRACTOR SHALL VERIFY THAT THE EXISTING WATER VALVES ARE FUNCTIONAL PRIOR TO WATER LINE BEING SHUT OFF. ALL COSTS TO BE INCLUDED IN OTHER ITEMS.

8. SYSTEM SHUTDOWN OPERATION:

THE SEQUENCE OF UTILITY CONSTRUCTION SHALL BE DEVELOPED IN SUCH A MANNER THAT WATER SERVICE IS MAINTAINED AT ALL TIMES DURING CONSTRUCTION, EXCEPT DURING TIE-INS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN OF OPERATION FOR CONSTRUCTING THE WATER LINES 14 DAYS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION.

THE CONTRACTORS SUBMITTED SEQUENCE OF UTILITY CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF DATES FOR UTILITY TIE-INS, CONNECTION AND SHUTDOWNS.

PRIOR TO SYSTEM SHUTDOWN, THE CONTRACTOR SHALL HAVE CONSTRUCTED THE NEW UTILITY TO A POINT AS NEAR THE TIE IN POINT AS POSSIBLE, PRIOR TO CUTTING INTO ANY WATER OR SEWER. THE CONTRACTOR SHALL HAVE ALL FITTINGS, VALVES AND PIPE AT THE SITE AND SHALL VERIFY, IN THE PRESENCE OF THE ENGINEER AND CITY'S INSPECTOR, THROUGH FIELD MEASUREMENTS THAT ALL PIPING, FITTINGS AND VALVES WILL ALIGN AND FIT PROPERLY WITH THE EXISTING FACILITIES. FURTHERMORE, ALL NEWLY CONSTRUCTED PIPE AND APPURTENANCES SHALL HAVE PASSED ALL NECESSARY TESTS IN THE PRESENCE OF THE TOWNS INSPECTOR AND ENGINEER. CONNECTION TO EXISTING LINES SHALL BE MADE ONLY AFTER THE PROPOSED LINE IS INSTALLED, TESTED AND APPROVED BY THE ENGINEER.

9. TEMPORARY TRAFFIC CONTROL:

CONTRACTOR SHALL USE TEMPORARY TRAFFIC CONTROL, FURNISHING AND INSTALLATION OF TEMPORARY PORTABLE TRAFFIC SIGNALS AND/OR FLAGGING OPERATIONS TO PERFORM CLEARING AND GRUBBING AND WATER LINE RELOCATIONS. ALL COSTS SHALL BE INCLUDED IN "MAINTENANCE OF TRAFFIC".

10. MAINTENANCE OF TRAFFIC:

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A TEMPORARY TRAFFIC CONTROL SIGNAL PLAN DEPICTING THE CONTRACTOR'S DESIGN FOR MAINTAINING TRAFFIC FLOWS.

THE CONTRACTOR SHALL SUBMIT A TIMING PLAN TO THE ENGINEER FOR EACH LOCATION WHERE TEMPORARY CONTROL SIGNAL AND/OR MODIFICATIONS.

SIGNAL LAYOUT PLANS AND CHANGE AN CLEARANCE INTERVAL CALCULATIONS SHALL BE PREPARED BY OR PREPARED DIRECTLY UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE ENGINEERING IN THE COMMONWEALTH OF VIRGINIA.

THE TEMPORARY TRAFFIC CONTROL SIGNAL PLAN AND TIMING PLAN SHALL BE APPROVED BY THE PULASKI'S TRAFFIC ENGINEER.

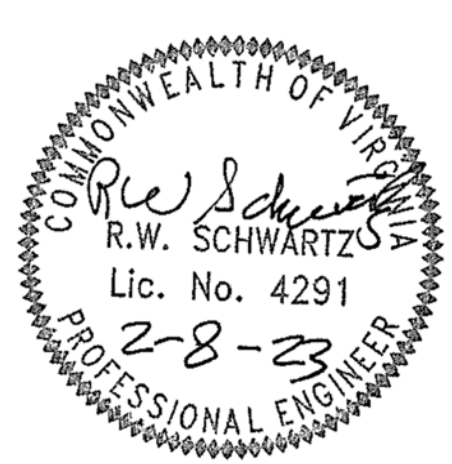

ALL COSTS FOR THE ABOVE MENTIONED SUBMITTALS AND PROFESSIONAL ENGINEER SERVICES SHALL BE INCLUDED IN BID ITEM "MAINTENANCE OF TRAFFIC".

SEQUENCE OF CONSTRUCTION:

1. SETUP PCMS 10 DAYS PRIOR TO START OF CONSTRUCTION AND REMOVE AFTER 10 DAYS
2. INSTALL EROSION CONTROL DEVICES.
3. PERFORM CLEARING AND GRUBBING.
4. PERFORM JACKING AND BORED PIPE AND INSTALL NEW 12", 16" AND 18" WATER LINES.
5. INSTALL 2 NEW BENCH MARKS.
6. MILL APPROACH PAVEMENT.
7. INSTALL TEMPORARY SHEET PILING.
8. INSTALL STAGE 1 TEMPORARY TRAFFIC CONTROL & PORTABLE TRAFFIC SIGNALS.
9. PERFORM STAGE 1 BRIDGE WORK & APPROACH WORK (DO NOT INSTALL UPSTREAM BRIDGE SIDEWALK).
10. RELOCATE 8" WATER LINE.
11. INSTALL STAGE 1 GUARDRAIL.
12. REMOVE STAGE 1 TEMPORARY TRAFFIC CONTROL AND INSTALL STAGE 2 TEMPORARY TRAFFIC CONTROL AND PORTABLE TRAFFIC SIGNALS.
13. PERFORM STAGE 2 BRIDGE & APPROACH WORK.
14. REMOVE TEMPORARY SHEET PILING.
15. INSTALL STAGE 2 GUARDRAIL.
16. REMOVE TRAFFIC CONTROL AND TRAFFIC CONTROL SIGNALS.
17. INSTALL UPSTREAM BRIDGE SIDEWALK & ASPHALT SIDEWALK RAMP AT EACH ABUTMENT WITH TEMPORARY TRAFFIC CONTROL.
18. COMPLETE ALL INCIDENTAL WORK.

THE ABOVE SEQUENCE OF CONSTRUCTION SHALL BE FOLLOWED, UNLESS OTHERWISE APPROVED, IN WRITING BY THE ENGINEER.

CADD REFERENCE NO.: GENERALNOTES

	 SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
	W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. GENERAL NOTES CONT. - ROADWAY	
DESIGNED BY: RES SCALE: NOT TO SCALE DATE: FEBRUARY 8, 2023	DRAWN BY: RES PROJECT NO.: 20028-BR SHEET: 26 OF 44	CHECKED BY: RWS
COMM. NO. 19100		

MAINTENANCE OF TRAFFIC GENERAL NOTES

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	4602	STP-5125	(127)	4602	4602-125-124,	B608	27

GENERAL

Unless otherwise approved or directed by the Engineer, the Contractor shall plan and execute the work in accordance with the Maintenance of Traffic Plans.

Traffic control devices and safety measures shall comply with

- Virginia Work Area Protection Manual (2011) and revision 2.1
- USDOT Manual of Uniform Traffic Control Devices (2009) and its latest revisions
- VDOT Road and Bridge Standards (2016) and Current Revisions
- VDOT Road and Bridge Specifications (2020) and Current Revisions

The suggested traffic control features depict the major traffic control items. Daily control of traffic including the placement, maintenance and removal of traffic control devices shall be the Contractor's responsibility.

It is not the intent of the traffic control features designated on the plans to enumerate every detail which must be considered during the construction, but only to indicate the general handling of traffic. The Contractor shall submit a detailed traffic control plan to the Engineer for approval prior to beginning construction.

The Engineer shall be notified at least 72 hours prior to any modifications to existing pavement markings.

The clear zone shall be maintained free of parked equipment and stored materials or otherwise protected in accordance with the Work Area Protection Manual.

All Signs, Group 2 Channelizing Devices, Traffic Barrier Services, Impact Attenuators, barricades, and any other devices used in the construction zone shall be furnished by the Contractor and shall be kept clean and properly aligned at all times.

All traffic signs required for this project shall be furnished, erected and maintained by the Contractor.

The work shall be performed in one lane at a time so that the other lane is kept open to traffic. Unless otherwise directed, a clear roadway width of no less than 11'-0" shall be maintained for traffic.

Group 2 channelizing Devices, Pavement Markings and Type III Barricade, shall be installed as directed by the Plans & VWAPM. Eradication of existing pavement marking shall be performed as directed by the Plans & VWAPM.

Prior to any ground disturbance activities, the contractor shall contact Miss Utility as well as VDOT Utility Markings at (800) 367-7623.

The contractor shall work around all utilities on this project.

Contractor shall install 11' width restriction signs prior to any lane closures on Commerce street bridge (see sheet 29). Contractor shall contact DMV, Christi Goynes (804) 497-7145, 10 days prior to implementing lane width restrictions and when lane width restrictions are removed. This will help avoid issues with over width vehicles typically allowed by permits.

Traffic Barrier Service Concrete, Lateral Support shall be in accordance with the Road & Bridge Standards 502.23 and 502.24.

LANE CLOSURES

Portable Traffic Control Signals shall be used for lane closures, see sheets 30 & 31 for locations.

SIGNS

Construction signs shall be furnished, installed and maintained by the Contractor.

Sign spacing and location shall be adjusted to fit field conditions as directed by the Engineer and documented.

All construction signs that govern traffic flow through the work zone shall be covered or removed and stored away from traffic when not in use.

The Contractor shall temporarily cover any existing signs that are contrary to construction signs and uncover these at the completion of the project as directed by the Engineer. Covered signs shall be delineated with ED-3, Type 2 delineators as specified in Figure 6F-1 of the Virginia Work Area Protection Manual at no additional costs to the Town of Pulaski, Virginia.

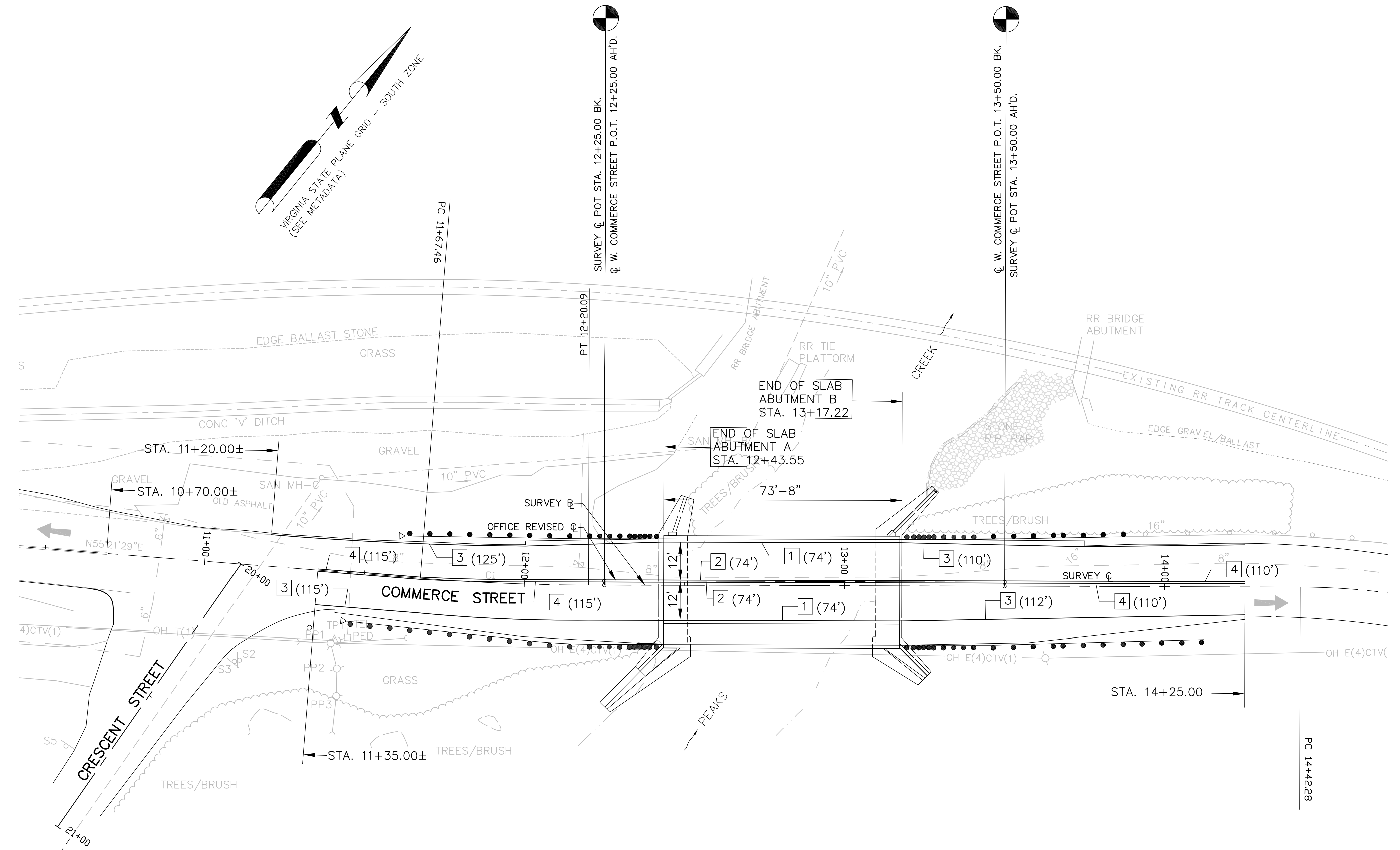
CONSTRUCTION PAVEMENT MARKINGS

All temporary pavement markings shall be furnished and installed by the Contractor.

All temporary pavement markings shall be 'Type D, Class III'.

PERMANENT PAVEMENT MARKINGS

All permanent pavement markings shall be furnished and installed by the Contractor as shown on this sheet.



PERMANENT PAVEMENT MARKING PLAN

LEGEND

- 1 Denotes Type B, Class VI, Contrast solid pavement line marking (4" white)
- 2 Denotes Type B, Class VI, Contrast solid pavement line marking (4" yellow)
- 3 Denotes Type A, solid pavement line marking (4" white)
- 4 Denotes Type A, solid pavement line marking (4" yellow)

Note: See sheet 28 for permanent pavement marking quantities.

CADD REFERENCE NO.: 19100/TRAFFICCONTROL

	SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.
	W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. MAINTENANCE OF TRAFFIC NOTES & PERMANENT PAVE. MARKING PLAN
DESIGNED BY: RES [] DRAWN BY: RES [] CHECKED BY: RES [] SCALE: NOT TO SCALE PROJECT NO.: DATE: FEBRUARY 8, 2023 SHEET: 27 OF 44	SURVEY & BASE SHEET

TRAFFIC MANAGEMENT PLAN

PROJECT DESCRIPTION

This project is a Superstructure Replacement of West Commerce Street over Peak Creek (Structure No. 8008) located in the Town of Pulaski, Virginia. West Commerce Street is classified as an Urban Collector with a posted speed limit of 25 mph with 1 lane going in each direction (2020 ADT 1,700). The existing travel lanes will be affected by the project work. Travelers include Local Residents & Commuters.

Speed limit is based on existing regulatory signs. Speed limit shall remain 25 mph during construction.

This project is a Type B, Category II project.

SPECIAL DETAILS

Special details for Maintenance of Traffic are shown on sheets 27 & 29 - 31.

PUBLIC COMMUNICATIONS PLAN

NOTIFICATIONS:

The contractor shall provide advanced Notifications of all Lane Closures (72 hours minimum) to the Town Project Engineer and Project Manager. The Town Engineer will communicate with all agencies and schools in close proximity, radio, television and emergency services, as determined appropriate.

TRANSPORTATION OPERATIONS PLAN:

1) The following is a list of local emergency contact agencies:

Town of Pulaski Police - (540) 994-8680
 Town of Pulaski Fire Department - (540) 994-8662
 911 Center - 911
 Haz-Mat Center (if spills involved) - 911
 Town of Pulaski Engineer - (540) 994-8618

2) Procedures to respond to traffic incidents that may occur in the work zone:

- Contractor to notify Town Police, Inspector in charge and VDOT Traffic Operations Center at (540) 375-0170.
- Depending upon severity of incident, Contractor may have to shut down work.
- Upon arrival on scene, Town Police to determine response necessary to allow traveling public around incident.
- Inspector to notify Construction Manager of incident and take pictures as necessary, especially pictures of Contractor's Work Zone to verify the proper setup.

3) Process of Notification of incident to be followed is:

Contractor to call:

Project Inspector - Inspector To Be Determined
Project Manager (Construction Manager) - TBD
Town Project Engineer - Scott Aust ----- (540) 994-8618

4) The Town Police or the Incident Commander will take control of the incident and direct its clearing and restoration to normal traffic conditions.

5) The Town Police report of the incident will be reviewed by the Public Works Director, VDOT traffic Engineering Western Construction Area Work Zone Safety Coordinator and Construction Engineer to determine if any modification to the Temporary Traffic Control Plan is necessary. If it is necessary to alter the plan, then a meeting will be called with the Contractor, Town project personnel, VDOT representatives and Town Police (if necessary) to discuss modification and implementation of an improved traffic control plan.

PAVEMENT SUMMARY					
	▲ ASPHALT CONCRETE TYPE SM-9.5D	ASPHALT CONC. BASE COURSE TYPE BM-25.0A	AGGR. BASE MATERIAL TYPE I, SIZE #21-A (6% MOIST. CORRECTION)	CRUSHER RUN AGGR. NO. 25 OR NO. 26	FLEXIBLE PAVEMENT PLANING (0-2' DEPTH)
	TONS	TONS	TONS	TONS	S.Y.
TOTALS	52	121	95	25	265

▲ - NON-POLISHING AGGREGATE

DRAINAGE & UTILITY SUMMARY											
	CHECK DAM ROCK, TYPE II, ST'D. EC-4	TEMPORARY SILT FENCE (ST'D. EC-5)	SILTATION CONTROL EXCAVATION	GRAUTED RIPRAP CLASS A1 (12" DEPTH)	PIPE ABANDONMENT (WATER LINE)	REMOVE EXIST. WATER LINE (8')	REMOVE EXIST. WATER LINE (12')	12' DIMJ WATER LINE	16' DIMJ WATER LINE	18' DIMJ WATER LINE	8' DIMJ WATER LINE
	EACH	L.F.	C.Y.	TONS	EACH	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TOTALS	4	350	60	8	2	39	76	51	5	78	69

UTILITY SUMMARY CONT.				
	8' GATE VALVE & BOX	12' GATE VALVE & BOX	16' GATE VALVE & BOX	JACKED & BORED PIPE (18')
	EACH	EACH	EACH	LUMP SUM
TOTALS	2	3	1	L.S.

INCIDENTAL SUMMARY												
	MAINTENANCE OF TRAFFIC	* CLEARING & GRUBBING	** SEEDING	DEMOLITION OF PAVEMENT	REGULAR EXCAVATION	BORROW EXCAVATION	REMOVAL OF EXISTING GUARDRAIL	FIXED OBJECT ATTACHMENT GR-FOA-5	GUARDRAIL HEIGHT TRANSITION, GR-MGS4	GUARDRAIL ST'D. GR-MGS1	RAD. GUARDRAIL ST'D. GR-MGS1	GUARDRAIL TERMINAL, GR-6
	LUMP SUM	LUMP SUM	LUMP SUM	S.Y.	C.Y.	C.Y.	L.F.	EACH	EACH	L.F.	L.F.	L.F.
TOTALS	L.S.	L.S.	L.S.	90	32	26	70	4	2	12.5	25	12.5

INCIDENTAL SUMMARY											
	ST'D. CG-3 CURB	GUARDRAIL TERMINAL, GR-MGS2 (50')	GUARDRAIL TERMINAL SITE PREPARATION	PORTABLE TRAFFIC CONTROL SIGNAL	TEMPORARY PAVEMENT MARKING (TYPE D, CLASS III - 4')	TEMPORARY PAVEMENT MARKING (TYPE D, CLASS III - 8')	TYPE III BARRICADE 4'	TYPE III BARRICADE 8'	GROUP 2 CHANNELIZING DEVICES	CONSTRUCTION SIGNS	TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE (MB-11A)
	L.F.	EACH	EACH	LUMP SUM	L.F.	L.F.	EACH	EACH	DAY	S.F.	L.F.
TOTALS	109	2	1	L.S.	1006	547	6	2	4620	495	192

INCIDENTAL SUMMARY								
	TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE (MB-10A)	TRAFFIC BARRIER SERVICE CONCRETE, LATERAL SUPPORT	TRAFFIC BARRIER SERVICE CONCRETE, MB-7D	PORTABLE CHANGEABLE MESSAGE SIGN	IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2	TYPE B, CLASS VI CONTRAST PAVEMENT LINE MARKING 4'	TYPE A PAVEMENT LINE MARKING 4'	FIELD OFFICE, TYPE II
	L.F.	EACH	L.F.	hour	EACH	L.F.	L.F.	MONTH
TOTALS	144	4	30	960	3	296	912	8

⊕ - DENOTES ITEMS TO BE PAID FOR ON A PLAN QUANTITY BASIS, ACCORDING TO THE CURRENT ROAD & BRIDGE SPECIFICATIONS (2020).

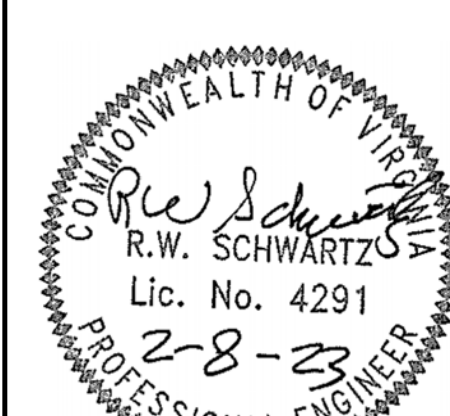
* - APPROXIMATELY 0.03 ACRE (FOR ESTIMATING PURPOSES ONLY) - CLEARING & GRUBBING
 ** - APPROXIMATELY 0.08 ACRE (FOR ESTIMATING PURPOSES ONLY) - SEEDING

NOTE: WHERE DEMOLITION OF PAVEMENT IS SHOWN, THERE WILL BE NO ADDITIONAL COMPENSATION FOR TRENCH OUT.
 DISPOSAL OF SURPLUS MATERIAL IS A NON-PAY ITEM.
 ANY DENUDING NECESSARY IS A NON-PAY ITEM.
 FILL IS NOT A PAY ITEM.

SEE SHEET 3 FOR ADDITIONAL BRIDGE SUMMARY.

STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA. 4602	STP-5125 (127)	4602	4602-125-124, B608
			28

CADD REFERENCE NO.: 19100/TRAFFICCONTROL



R.W. SCHWARTZ
Lic. No. 4291
2-8-23
PROFESSIONAL ENGINEER

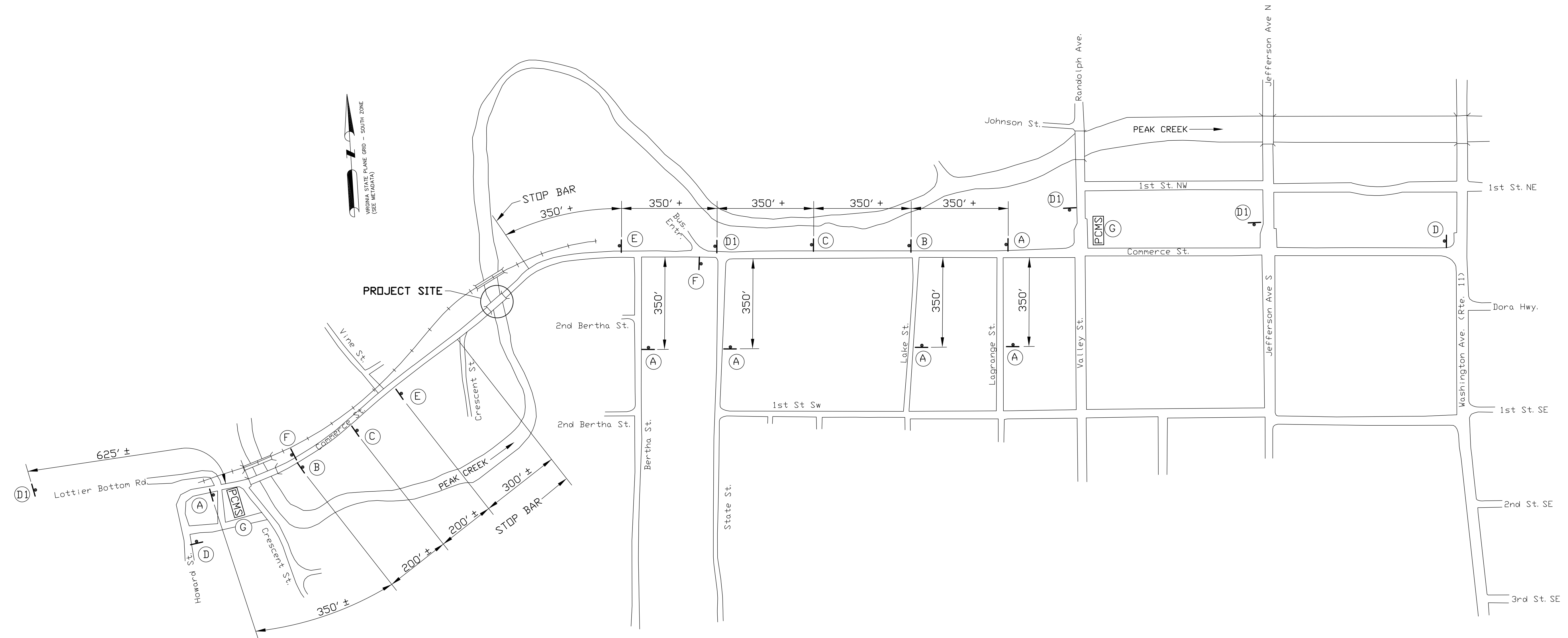


SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

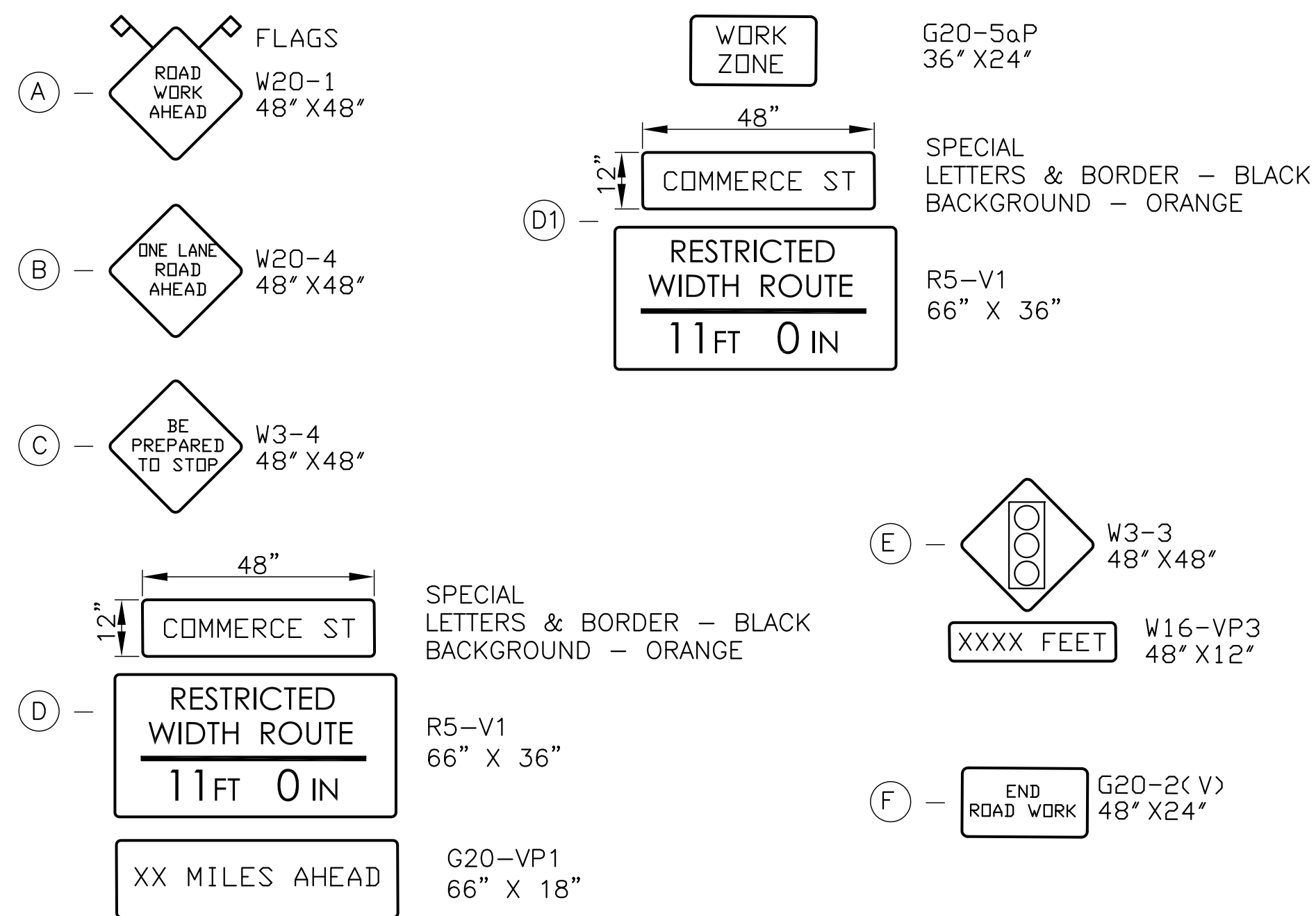
**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
TRAFFIC MANAGEMENT PLAN &
ROAD SUMMARY**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RWS
SCALE: NOT TO SCALE	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 28 OF 44	

SURVEY & BASE SHEET



TEMPORARY CONSTRUCTION SIGNS



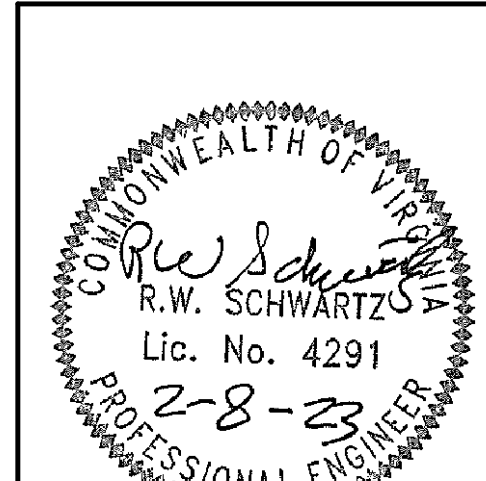
PCMS MESSAGES

G - PCMS PORTABLE CHANGEABLE MESSAGE SIGN
MESSAGES 10 DAYS PRIOR TO CONSTRUCTION:
 1st MESSAGE: BRIDGE REPAIR WORK
 2nd MESSAGE: PROJECT STARTS
 ???/??/? ← Put Date

PORTABLE CHANGEABLE MESSAGE SIGN
MESSAGES 10 DAYS AFTER TRAFFIC SIGNAL INSTALLATION:
 1st MESSAGE: TRAFFIC SIGNAL AHEAD
 2nd MESSAGE: EXPECT DELAYS
 REMOVE PCMS AFTER 10 DAYS IS UP.

LEGEND

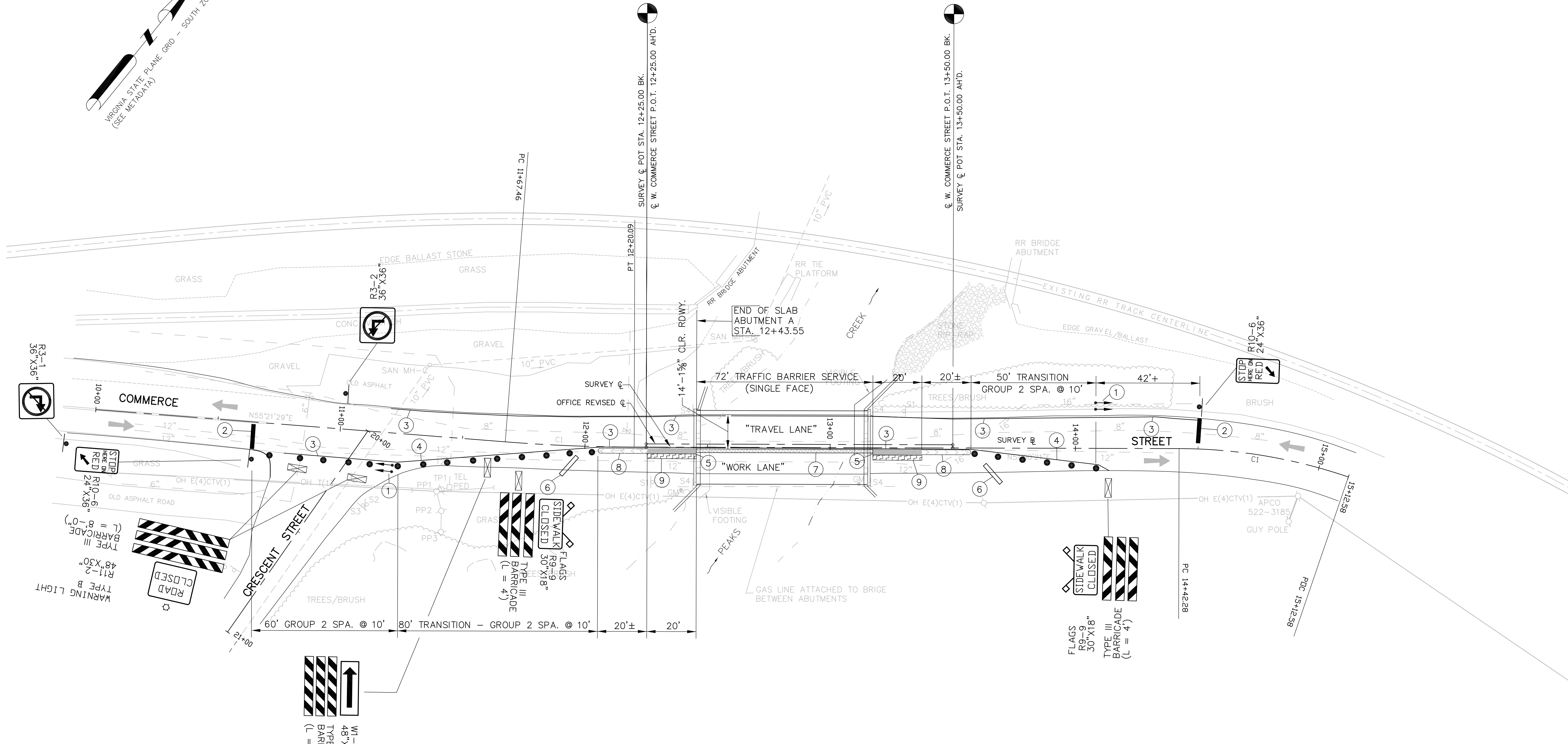
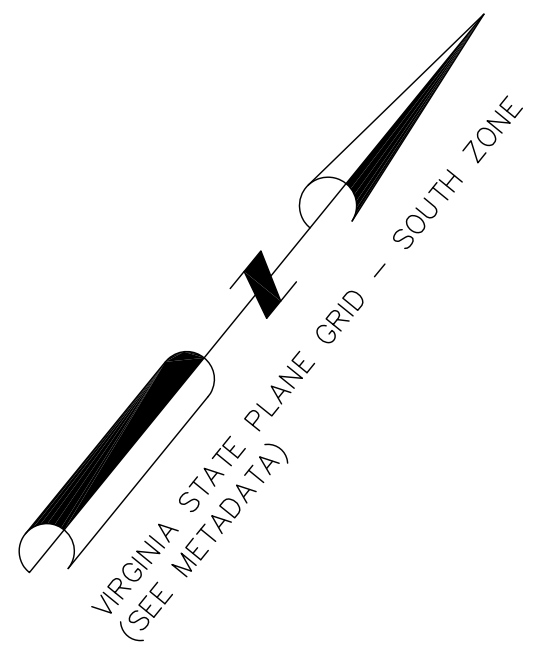
□ - TEMPORARY CONSTRUCTION SIGN



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 7331 TIMBERLAKE ROAD
 LYNCHBURG, VA.

W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
SIGN LAYOUT - STAGE 1 & 2

CADD REFERENCE NO.: 19100/TRAFFICCONTROL

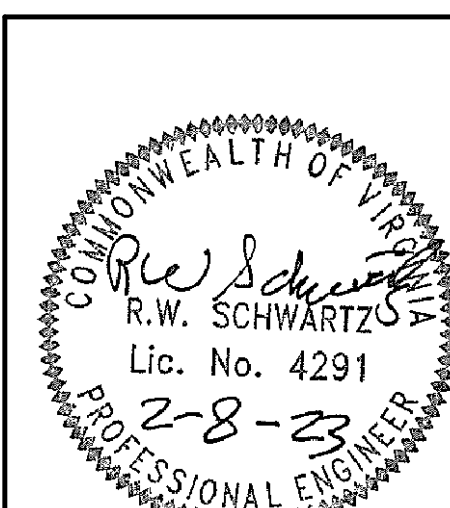
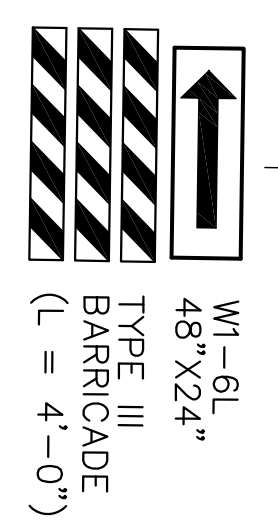


LEGEND

- TYPE III BARRICADE (L=8')
- TEMPORARY CONSTRUCTION SIGN
- GROUP 2 CHANNELIZING DEVICES
- PORTABLE TRAFFIC CONTROL SIGNAL
- TRAFFIC PATTERN
- TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE - MB-11A
- IMPACT ATTENUATOR SERVICE (35 MPH)
- TEMPORARY CONCRETE BARRIER, MB-7D
- TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE - MB-10A
- TRAFFIC BARRIER SERVICE CONCRETE, LATERAL SUPPORT

TEMPORARY CONSTRUCTION ITEMS

- 1 PORTABLE TRAFFIC CONTROL SIGNAL
- 2 24" STOP BAR (TYPE D, CLASS III - WHITE)
- 3 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- 4 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- 5 TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE - MB-11A
- 6 TEMPORARY CONCRETE BARRIER, MB-7D, BARRIER DELINEATORS & BARRIER PANELS (SEE VAWPM, TTC-48, NOTE 12) (10')
- 7 TRAFFIC BARRIER SERVICE CONCRETE (SINGLE FACE - MB-10A)
- 8 IMPACT ATTENUATOR SERVICE, TYPE 1 (35 MPH)
- 9 TRAFFIC BARRIER SERVICE CONCRETE, LATERAL SUPPORT



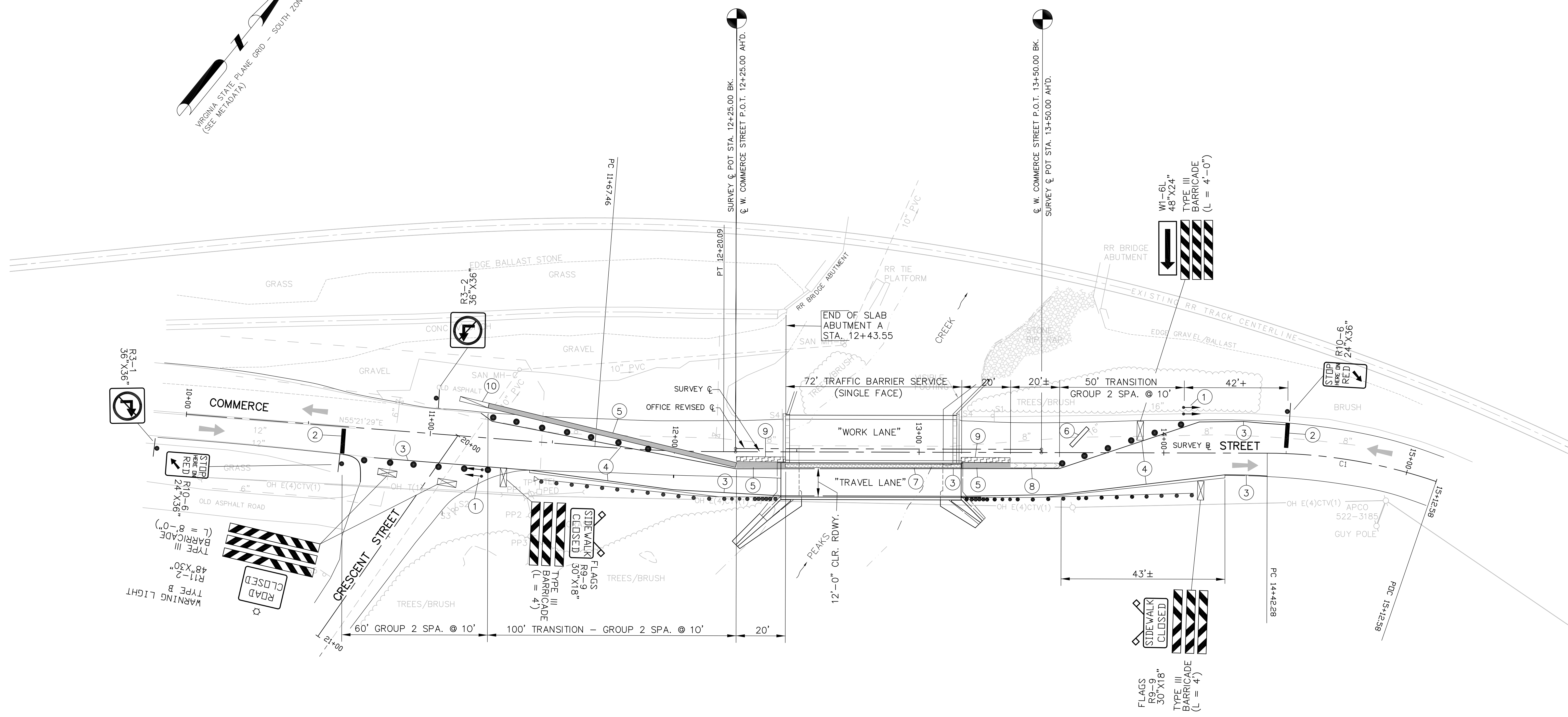
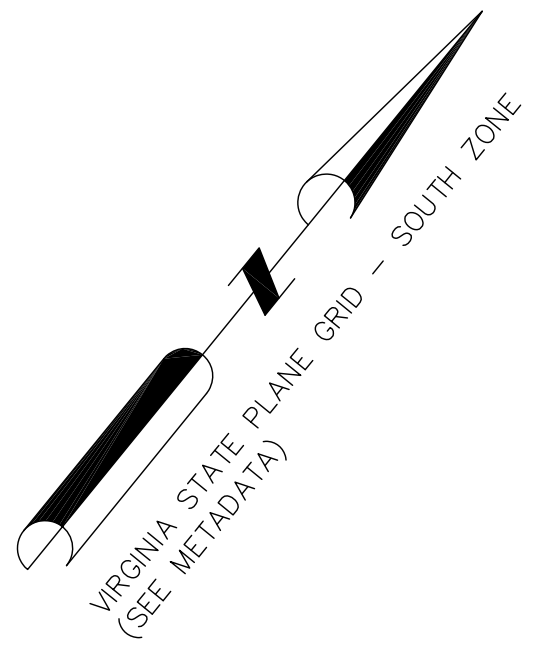
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
TRAFFIC CONTROL - STAGE 1**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RES
SCALE: 1" = 20'	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 30 OF 44	

CADD REFERENCE NO.: 19100/TRAFFICCONTROL

SURVEY & BASE SHEET



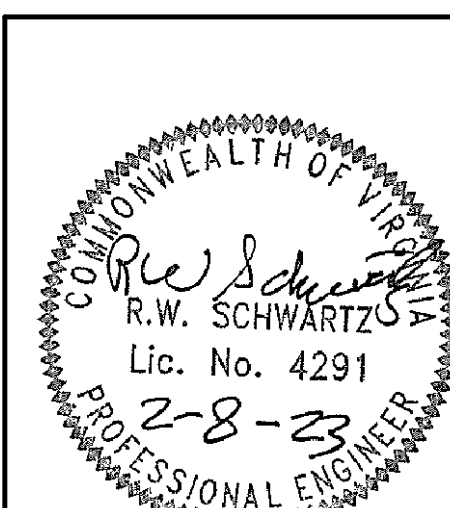
LEGEND

- ▨ - TYPE III BARRICADE (L=8')
- - TEMPORARY CONSTRUCTION SIGN
- - GROUP 2 CHANNELIZING DEVICES
- ⦿ - PORTABLE TRAFFIC CONTROL SIGNAL
- ← - TRAFFIC PATTERN
- ▬ - TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE - MB-11A
- ▭ - IMPACT ATTENUATOR SERVICE (35 MPH)
- ▭ - TEMPORARY CONCRETE BARRIER, MB-7D
- ▭ - TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE - MB-10A
- ▭ - TRAFFIC BARRIER SERVICE CONCRETE, LATERAL SUPPORT
- ▭ - PRECAST CONCRETE MEDIAN BARRIER, MB-9A PC

TEMPORARY CONSTRUCTION ITEMS

- ① PORTABLE TRAFFIC CONTROL SIGNAL
- ② 24" STOP BAR (TYPE D, CLASS III - WHITE)
- ③ 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- ④ 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- ⑤ TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE - MB-11A
- ⑥ TEMPORARY CONCRETE BARRIER, MB-7D, BARRIER DELINEATORS & BARRIER PANELS (SEE VWAPM, TTC-48, NOTE 12) (10')
- ⑦ TRAFFIC BARRIER SERVICE CONCRETE (SINGLE FACE - MB-10A)
- ⑧ IMPACT ATTENUATOR SERVICE, TYPE 1 (35 MPH)
- ⑨ TRAFFIC BARRIER SERVICE CONCRETE, LATERAL SUPPORT
- ⑩ PRECAST CONCRETE MEDIAN BARRIER, MB-9A PC

CADD REFERENCE NO.: 19100/TRAFFICCONTROL



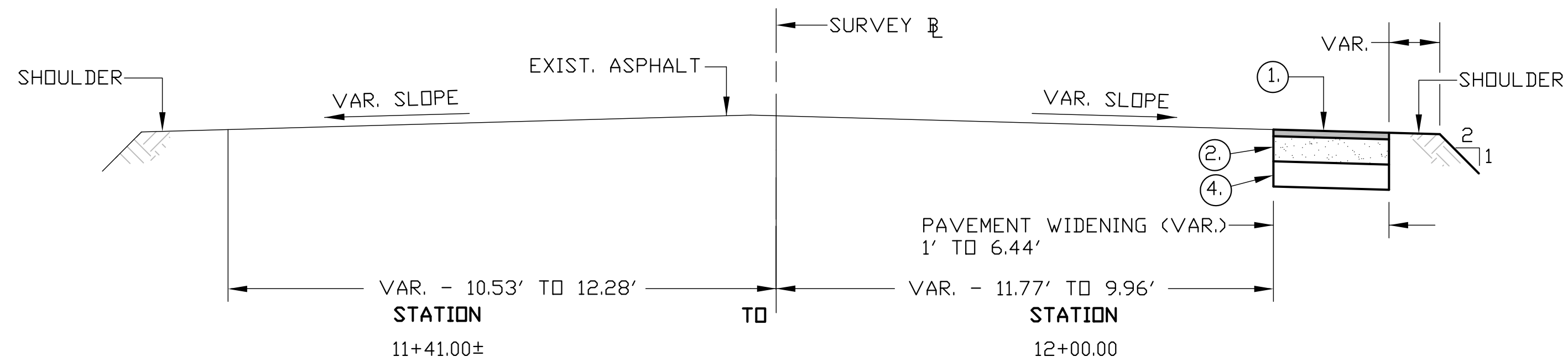
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
TRAFFIC CONTROL - STAGE 2**

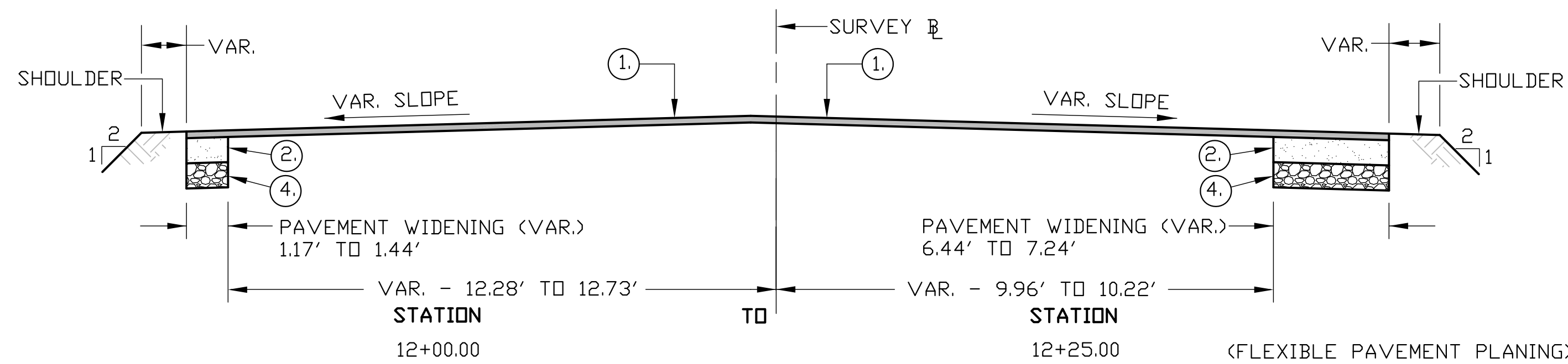
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RES
SCALE: 1" = 20'	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 31 OF 44	

SURVEY & BASE SHEET

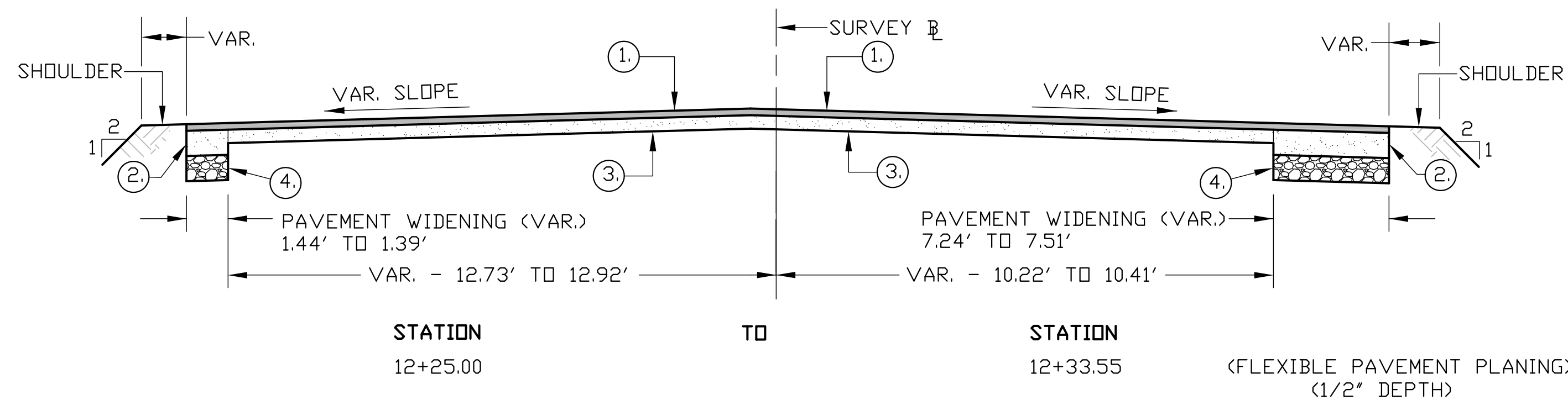
TYPICAL SECTION



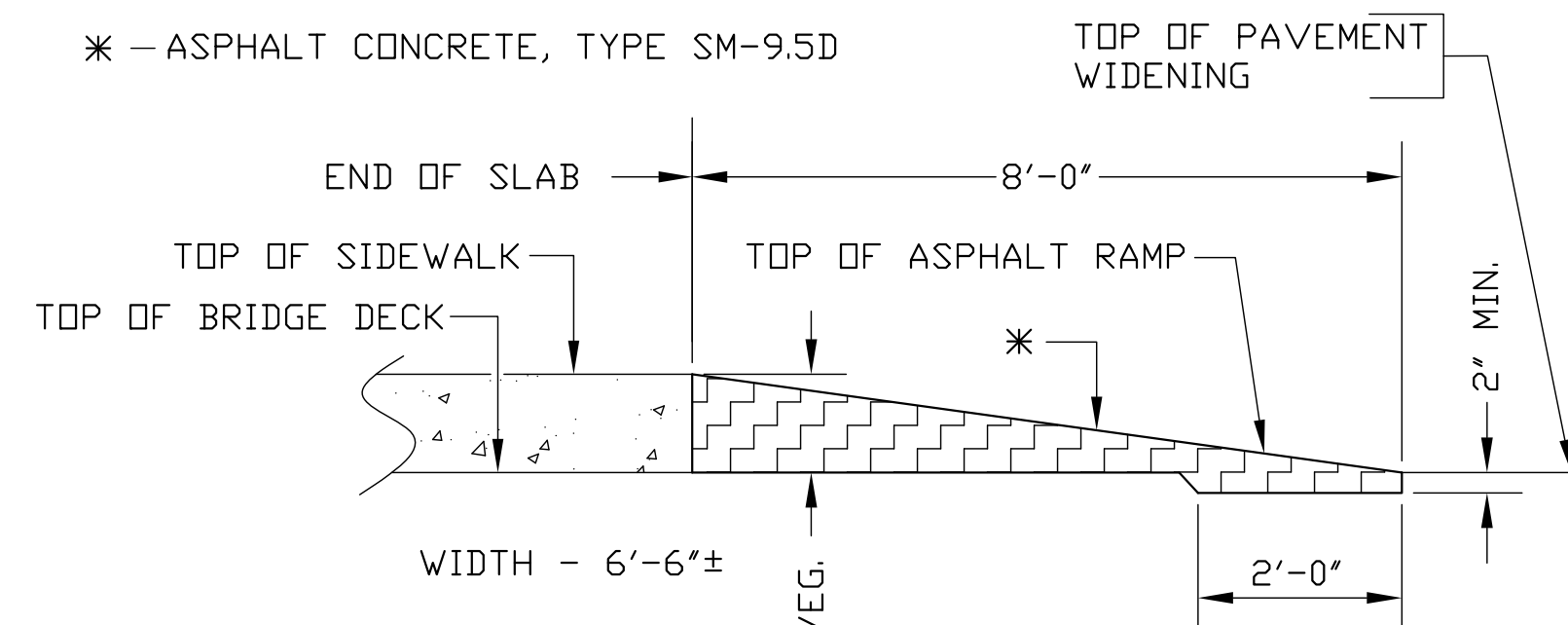
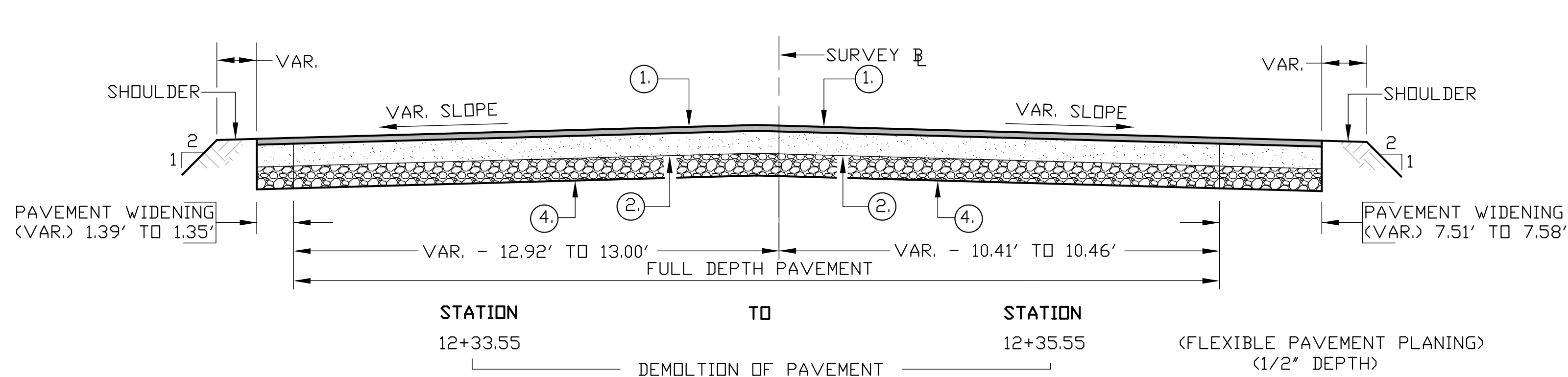
TYPICAL SECTION



TYPICAL SECTION



TYPICAL SECTION



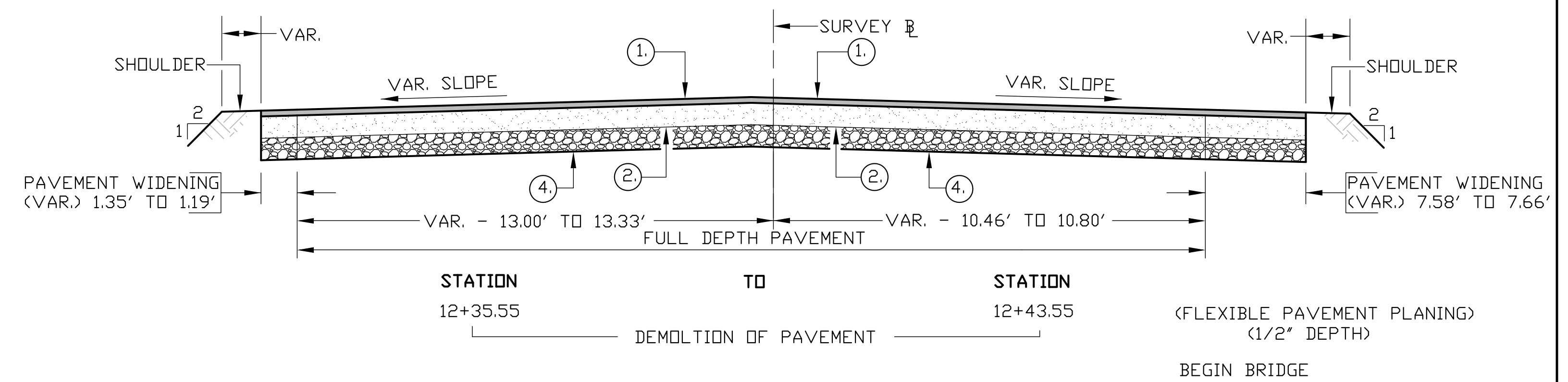
ASPHALT SIDEWALK RAMP DETAIL

LEGEND

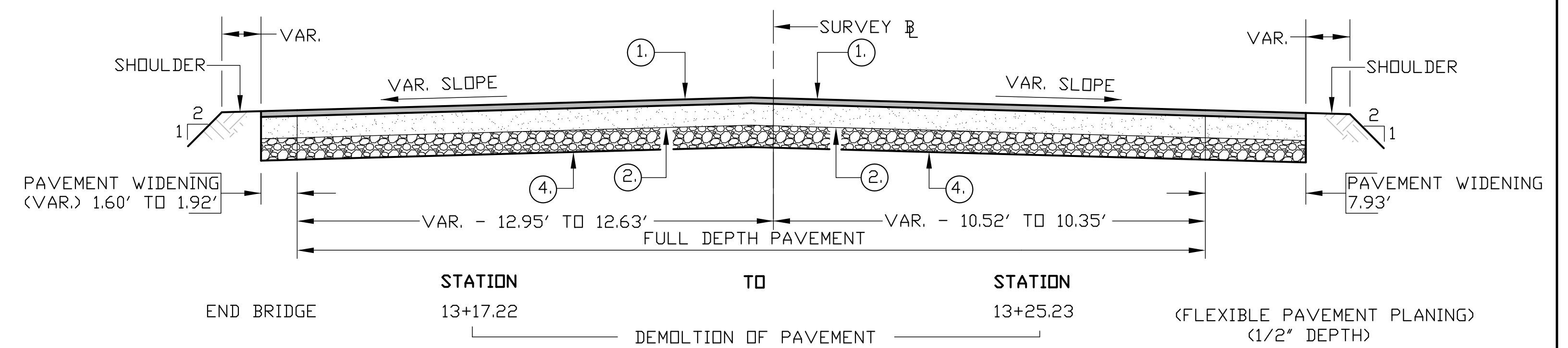
PAVEMENT WIDENING & FULL DEPTH PAVEMENT

- ① ASPHALT CONCRETE, TYPE SM-9.5D (NON-POLISHING AGGREGATE)
- ② ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (8" DEPTH)
- ③ ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (VAR. DEPTH)
- ④ COMPACTED AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A (6" DEPTH)
- ▲ - VARIABLE DEPTH BASE MIX SHALL BE A MINIMUM OF 2.5' PER LIFT.

TYPICAL SECTION

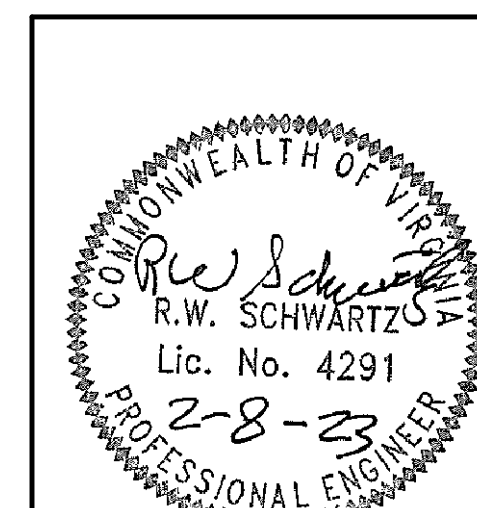


TYPICAL SECTION



CADD REFERENCE NO.: 19100/ROAD PLAN

NOTE: SEE CROSS SECTION SHEETS 43 & 44, FOR DIMENSIONS NOT SHOWN.



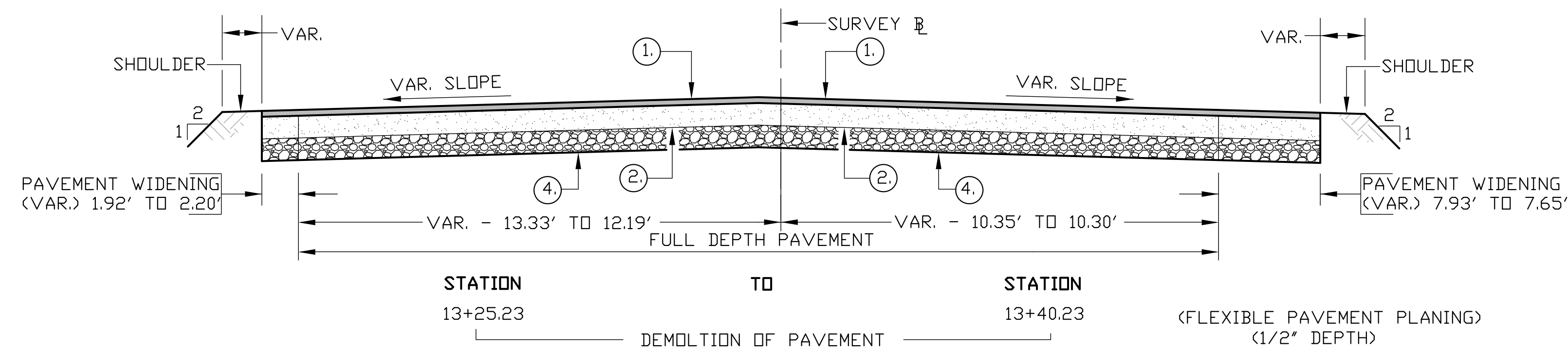
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
TYPICAL SECTIONS
STA. 11+41.00 - 13+25.23**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RES
SCALE: NOT TO SCALE	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 32 OF 44	

STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA. 4602	STP-5125 (127)	4602	4602-125-124, B608
			33

TYPICAL SECTION

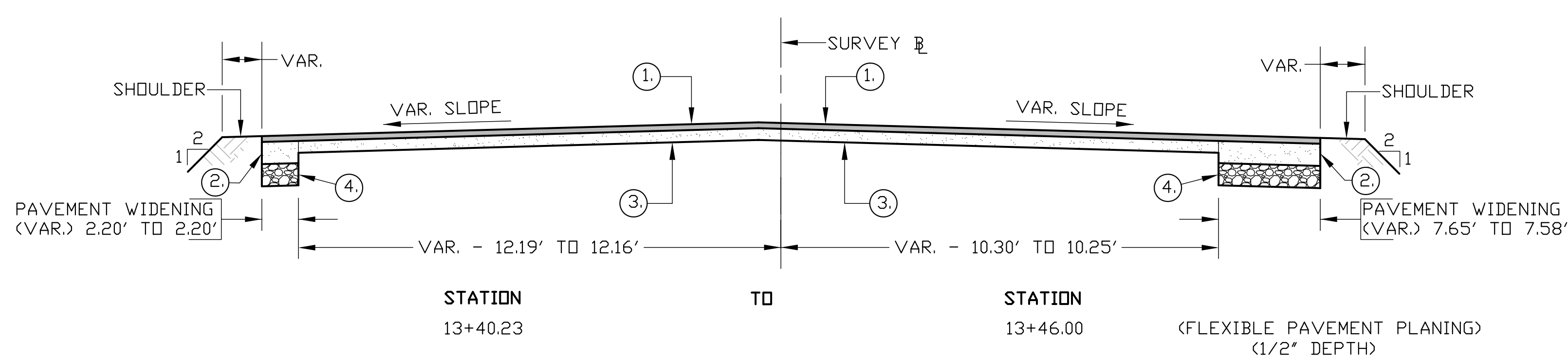


LEGEND

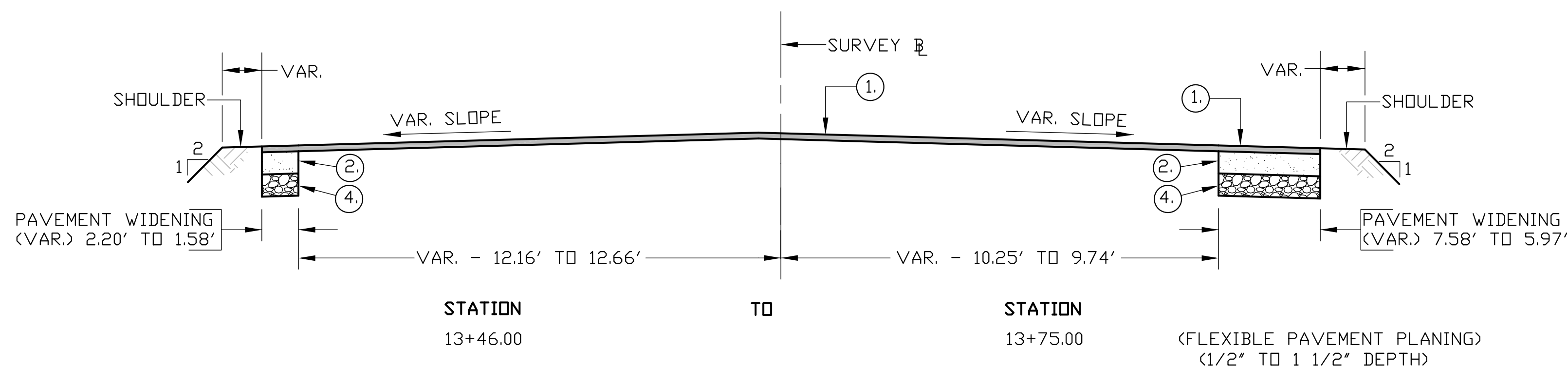
PAVEMENT WIDENING & FULL DEPTH PAVEMENT

- ① ASPHALT CONCRETE, TYPE SM-9.5D (1 1/2") (NON-POLISHING AGGREGATE)
 - ② ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (8" DEPTH)
 - ▲③ ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (VAR. DEPTH)
 - ④ COMPACTED AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A (6" DEPTH)
- ▲ - VARIABLE DEPTH BASE MIX SHALL BE A MINIMUM OF 2.5' PER LIFT.

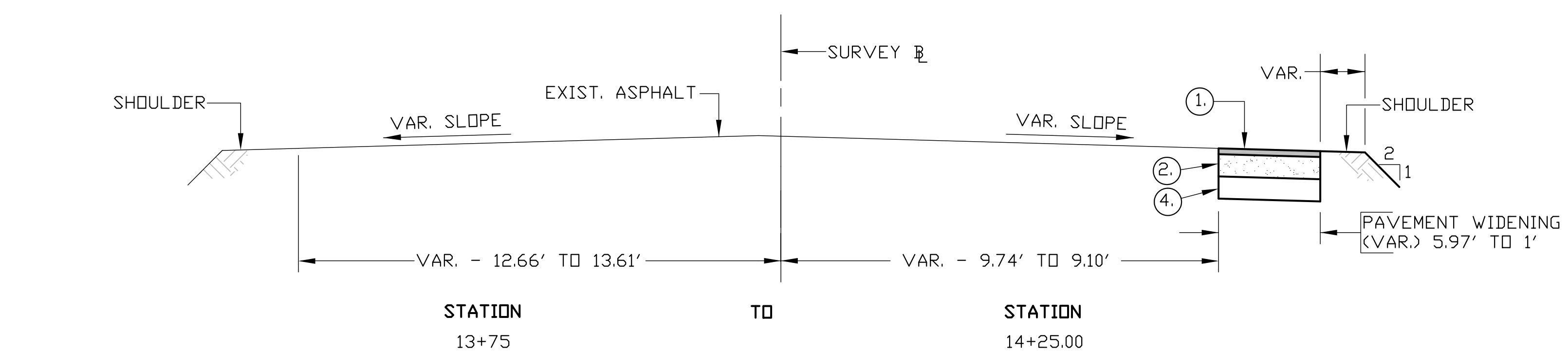
TYPICAL SECTION



TYPICAL SECTION



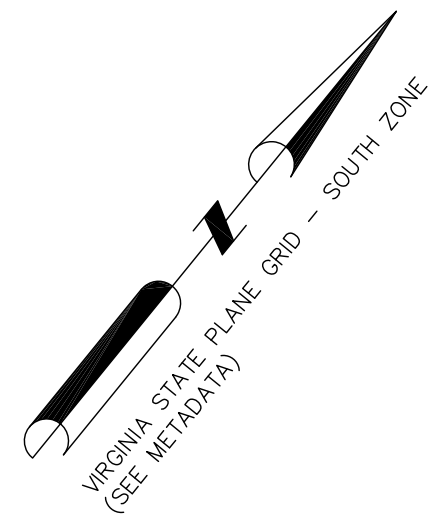
TYPICAL SECTION



CADD REFERENCE NO.: 19100/ROAD PLAN

NOTE: SEE CROSS SECTION SHEETS 43 & 44, FOR DIMENSIONS NOT SHOWN.

	<p>SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.</p>
	<p>W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. TYPICAL SECTIONS STA. 13+25.23 - 14+25.00</p>
<p>DESIGNED BY: RES DRAWN BY: RES CHECKED BY: RWS SCALE: NOT TO SCALE PROJECT NO.: DATE: FEBRUARY 8, 2023 SHEET: 33 OF 44</p>	<p>COMM. NO. 19100</p>



THIS BRIDGE SITUATION SURVEY FOR COMMERCE STREET OVER PEAKS CREEK -PULASKI, VIRGINIA WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, MICHAEL W. CASSIDY FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED AS OF NOVEMBER 12, 2020, AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

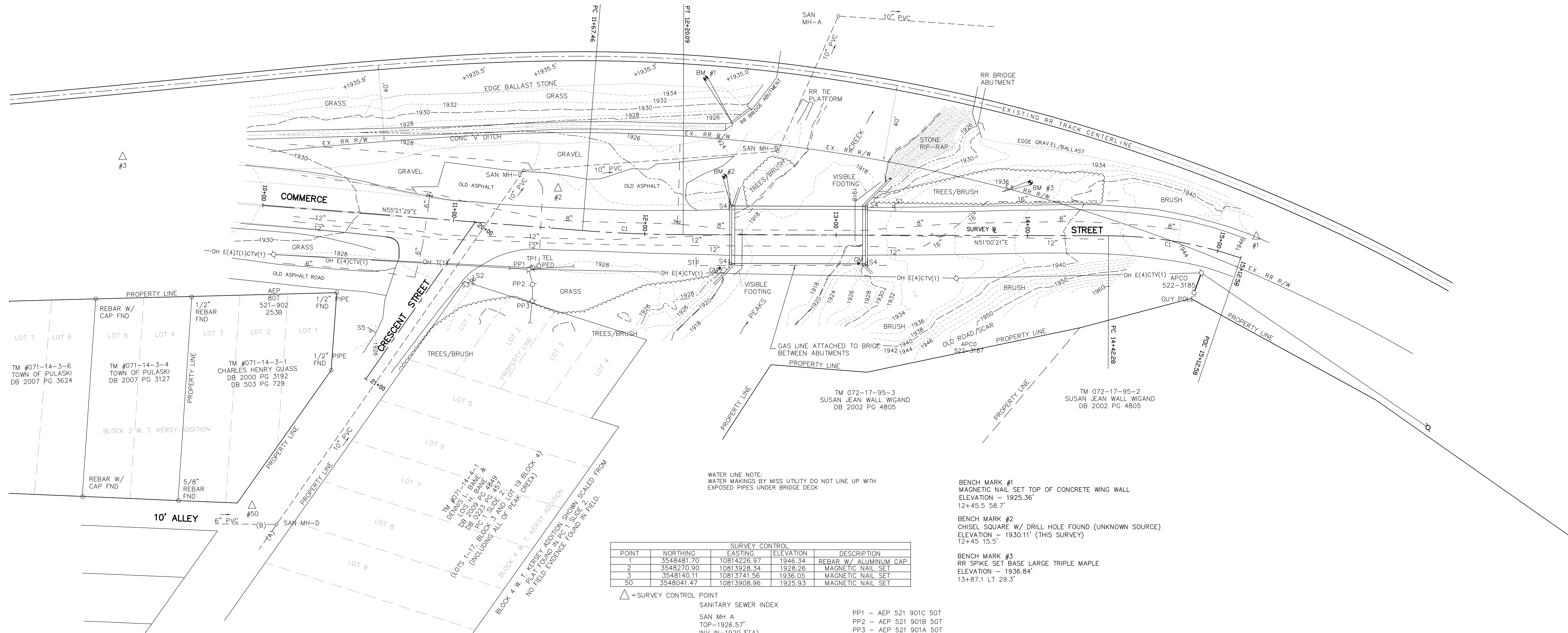
UTILITIES SHOWN ARE BASED ON VISIBLE EVIDENCE AND MISS UTILITY OF VIRGINIA DESIGN TICKET NUMBER A026700967-00A.
TICKET RESPONSE COMMENTS:

APPALACHIAN POWER - NO CONFLICT; UTILITY IS OUTSIDE OF STATED WORK AREA
TOWN OF PULASKI - MARKED
ATMOS ENERGY - MARKED
VERIZON - MARKED

THIS SURVEY DOES NOT GUARANTEE ACCURACY OF UTILITIES SHOWN OR THAT ALL UTILITIES ARE ACCOUNTED FOR, ANY PARTY INVOLVED IN EXCAVATION OF ANY TYPE IS REQUIRED TO CONTACT MISS UTILITY OF VIRGINIA AT 811 PRIOR TO START OF EXCAVATION.

PART OF THE AREA SHOWN IS LOCATED IN FLOOD HAZARD ZONE 'AE' (BASE FLOOD ELEVATIONS DETERMINED) AS INDICATED ON FLOOD INSURANCE RATE MAP BY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), COMMUNITY PANEL NUMBER 5115SC01410, DATED SEPTEMBER 26, 2008, USING PROFILE SHEET 14P ASSOCIATED WITH SAID PANEL. BASE FLOOD ELEVATION BETWEEN COMMERCE STREET BRIDGE AND RAILROAD BRIDGE IS 1927'. BASE FLOOD ELEVATION SOUTH OF COMMERCE STREET BRIDGE (FOR APPROXIMATELY 50') IS 1929'. BASED ON THESE TWO BASE ELEVATIONS AND EXISTING TOPOGRAPHY, IT APPEARS ELEVATION 1927' WOULD CONTROL WEST OF PEAK CREEK.
SURVEY METADATA:

VIRGINIA STATE PLANE COORDINATE-SOUTH ZONE
NAD_83(2011)(EPOCH:2010.000)
NAVD88(GEOD18B)
ESTABLISHED 9/26/2020
22:16 HOURS UTC
U.S. SURVEY FOOT
COORDINATES GENERATED USING TRIMBLE NETRS5 RECEIVER. DATA PROCESSED USING OPUS(NGS)
STATE PLANE COORDINATES FOR SURVEY CONTROL POINT #2 HELD.
ALL OTHER COORDINATES ARE GROUND VALUE.



POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	3548481.70	10814226.97	1946.34	REBAR W/ ALUMINUM CAP
2	3548270.90	10813928.34	1928.26	MAGNETIC NAIL SET
3	3548140.11	10813741.56	1936.05	MAGNETIC NAIL SET
50	3548041.47	10813908.96	1925.93	MAGNETIC NAIL SET

- △ = SURVEY CONTROL POINT
- SANITARY SEWER INDEX
- SAN MH-A
TOP-1926.57'
INV IN-1920.3'(A)
INV IN-1920.5'(B)
INV OUT-1920.1'
 - SAN MH-B
TOP-1927.32'
INV IN-1920.4'
INV OUT-1920.4'
 - SAN MH-C
TOP-1928.38'
INV IN-1920.7'
INV OUT-1920.7'
 - SAN MH-D
TOP-1926.04'
INV IN-1921.0'(A)
INV IN-1921.2'(B)
INV OUT-1921.0'

- PP1 - AEP 521 901C 50T
- PP2 - AEP 521 901B 50T
- PP3 - AEP 521 901A 50T
- TP1 - 253A

- SIGN INDEX
- S1 - WEIGHT LIMIT
 - S2 - STREET NAMES
 - S3 - STOP
 - S4 - DELINEATOR
 - S5 - STOP

- BENCH MARK #1
MAGNETIC NAIL SET TOP OF CONCRETE WING WALL
ELEVATION - 1925.36'
12+45.5 58.7'
- BENCH MARK #2
CHISEL SQUARE W/ DRILL HOLE FOUND (UNKNOWN SOURCE)
ELEVATION - 1930.11' (THIS SURVEY)
12+45 15.5'
- BENCH MARK #3
RR SPIKE SET BASE LARGE TRIPLE MAPLE
ELEVATION - 1936.84'
13+87.1 LT 29.3'

WATER LINE NOTE:
WATER MAKINGS BY MISS UTILITY DO NOT LINE UP WITH EXPOSED PIPES UNDER BRIDGE DECK

- LEGEND
- GM GAS MARKER
 - GUARD RAIL
 - WATER LINE
 - UNDERGROUND TELEPHONE LINE
 - GAS LINE
 - POWER POLE
 - TELEPHONE POLE
 - GUY WIRE
 - FLOOD CONTOUR

CADD REFERENCE NO.: 19100/ORIGINAL SURVEY

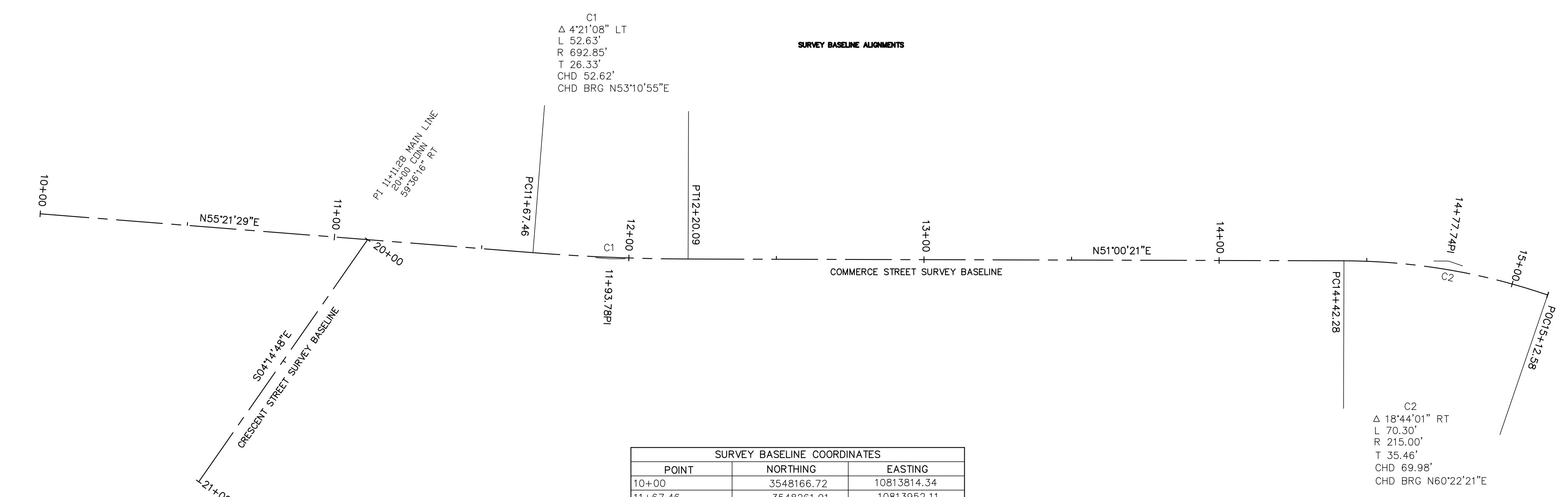
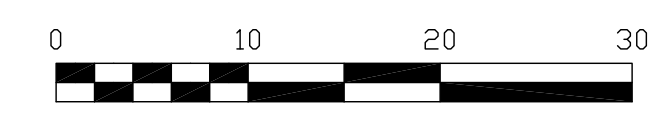
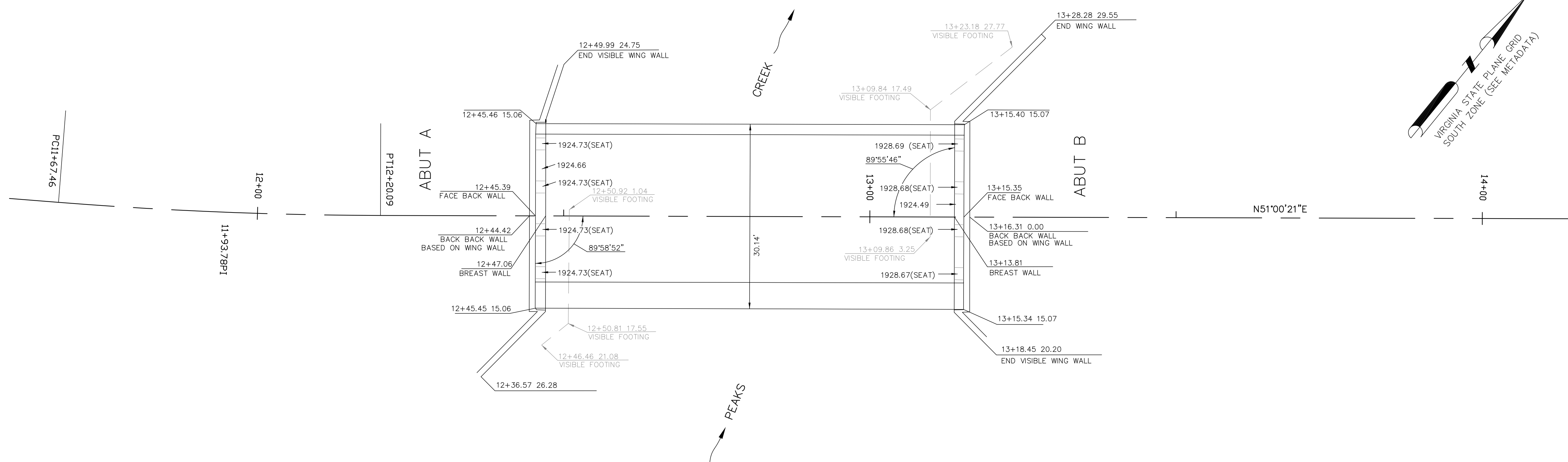
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
SURVEY PLAN

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RES
SCALE: 1" = 25'	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 34 OF 44	

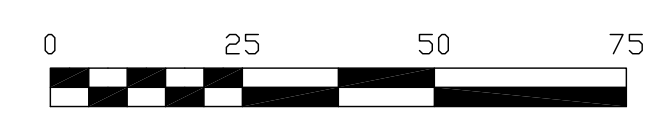
BRIDGE DETAILS

STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	4602	STP-5125 (127)	4602	4602-125-124, B608	35



SURVEY BASELINE COORDINATES		
POINT	NORTHING	EASTING
10+00	3548166.72	10813814.34
11+67.46	3548261.91	10813952.11
11+93.78 PI	3548276.87	10813973.77
12+20.09 PT	3548293.44	10813994.23
14+42.28 PC	3548433.25	10814166.92
14+77.74 PI	3548455.57	10814194.49
15+12.58 POC	3548467.85	10814227.76
20+00 PI	3548229.97	10813905.89
21+00 POT	3548130.25	10813913.30

SURVEY BASELINE NOT STAKED IN FIELD FOR THIS SURVEY

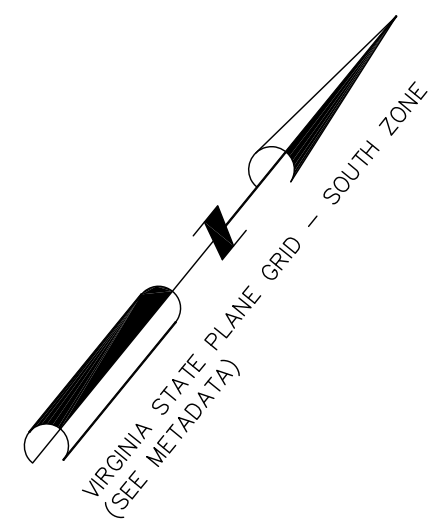


CADD REFERENCE NO.: 19100/ORIGINAL SURVEY

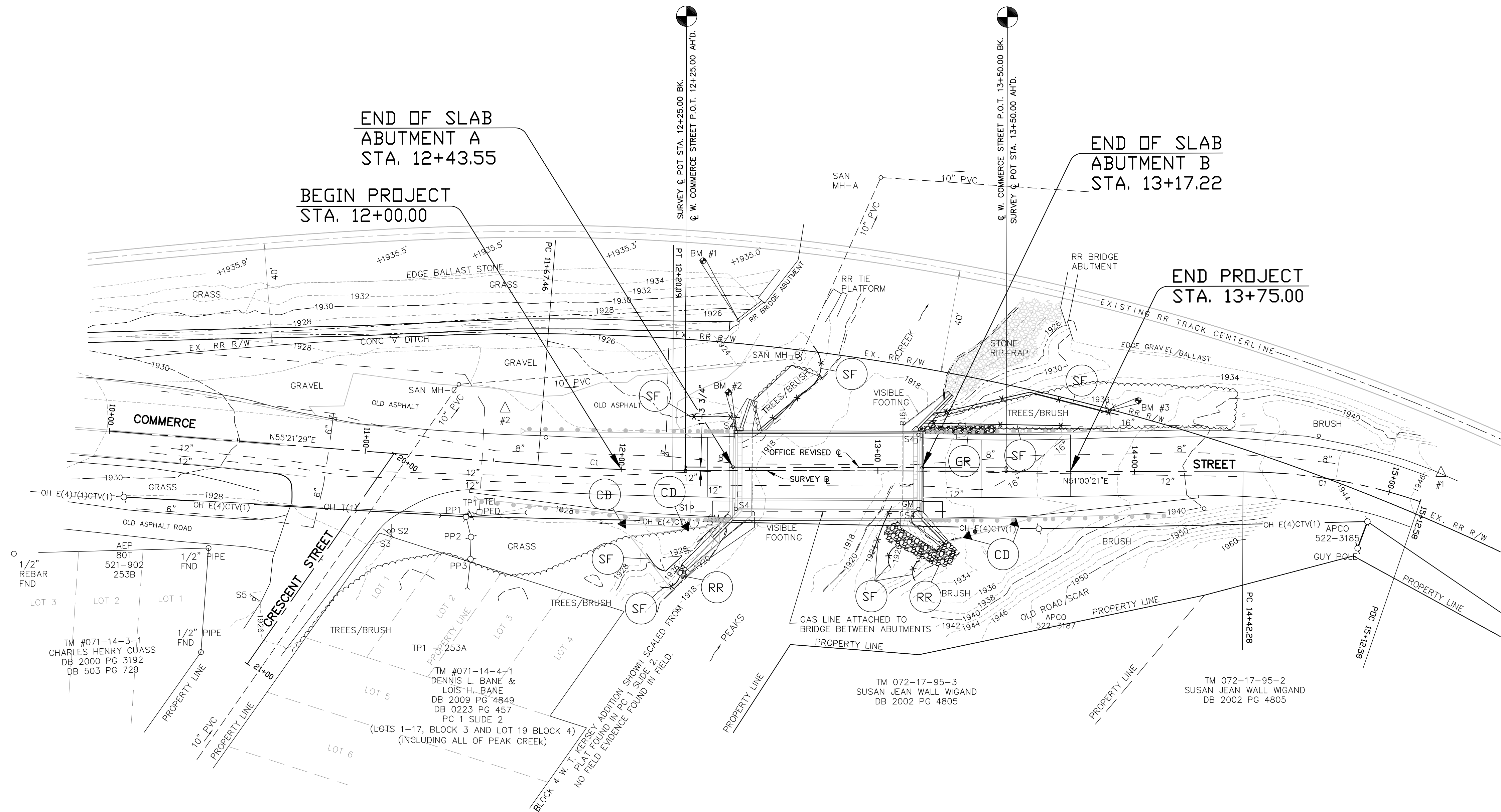
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
SURVEY ALIGNMENT**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RWS
SCALE: 1" = 25'	PROJECT NO.:	
DATE: FEBRUARY 8, 2023		SHEET: 35 OF 44



△ #3



LEGEND

- X— (SF) — DENOTES TEMPORARY SILT FENCE. (VDDOT ST'D. EC-5)
- ▶ (CD) — DENOTES TEMPORARY CHECK DAM ROCK, TYPE II (ST'D. EC-4)
- (GR) — DENOTES GROUTED RIPRAP, CLASS A1 (12" DEPTH)
- (RR) — DENOTES DRY RIPRAP, CLASS II (38" DEPTH)

NOTES: ALL TEMPORARY EROSION & SILTATION CONTROL SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK, THESE DRAWINGS & CONTRACT DOCUMENTS.

CADD REFERENCE NO.: 19100/EROSION CONTROL PLAN

		SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.
		W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. EROSION CONTROL PLAN
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RWS
SCALE: 1" = 25'	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 36 OF 44	

SUPERVISED BY TOWN OF BULASKI, VA.
 PROJECT MANAGER WAYNE SCHWARTZ, P.E. (434) 237-6584
 SURVEYED BY W/A
 DESIGNED BY RANDY SAUNDERS (434) 237-6584

ROADSIDE DEVELOPMENT

FHWA 534 No. 26013

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	4026	4026-125-124, B608	37

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

CORE MIX

MIX	LBS./ACRES	DESCRIPTION
1	100	* 100% CERTIFIED FINE FESCUE
2	100	100% CERTIFIED TALL FESCUE
3	50	50% CERTIFIED TALL FESCUE
	50	* 50% CERTIFIED FINE FESCUE
4		50% ORCHARDGRASS
		50% CERTIFIED KENTUCKY BLUEGRASS
5		100% BERMUDAGRASS
TEMPORARY		
3/1 - 5/16 and	50	50% CERTIFIED TALL FESCUE
8/16 - 3/1	50	50% BARLEY, WINTER RYE OR WINTER WHEAT
5/16 - 8/16	50	50% FOXTAIL MILLET
	50	50% CERTIFIED TALL FESCUE

ADDITIVES

TYPE	LBS./ACRES	DESCRIPTION
A	5	100% LOVEGRASS
B	22	100% BARLEY, WINTER RYE OR WINTER WHEAT
C	10	100% FOXTAIL MILLET
D	10	100% ANNUAL RYEGRASS
E	20	100% CROWN VETCH (LEGUME)
F	5	100% SERICEA LESPEDEZA (LEGUME)
G	8	100% BIRDSFOOT TREFOIL (LEGUME)
H		
I		
J		
K		

NOTES:

APPROXIMATELY 0.08 ACRES WILL BE DISTURBED ON THIS PROJECT AND WILL REQUIRE THE ESTABLISHMENT OF GRASSES AND/OR LEGUMES.

☆ NOTES FOR FIELD USE ONLY

OVERSEEDING RATES SHALL BE 100 PERCENT OF THE SEED MIXTURE SUPPLIED WITHOUT FERTILIZER.

THE ENGINEER WILL REQUIRE THE CONTRACTOR TO PERFORM SUPPLEMENTAL SEEDING WHEN LESS THAN 75 PERCENT UNIFORM STAND OF THE PERMANENT GRASS SPECIFIED IN THE MIXTURES IS OBTAINED. (ANNUAL SPECIES SUCH AS, RYE AND MILLET ARE TEMPORARY VARIETIES AND REQUIRE SUPPLEMENTAL SEEDING.)

NOTES APPLY TO SCHEDULE

LEGUME SEED MIXES (BIRDSFOOT TREFOIL, CROWN VETCH, AND SERICEA LESPEDEZA) AND WEEPING LOVEGRASS SHALL NOT BE USED ON SHOULDERS AND OTHER LOCATIONS FLATTER THAN 3:1 SLOPE.

LEGUME SEED SHALL BE INOCULATED WITH THE APPROPRIATE STRAIN AND RATE OF BACTERIA. FOR HYDROSEEDING, USE FIVE TIMES THE DRY SEEDING RATE OF INOCULATE.

A TEMPORARY MIX OR EROSION CONTROL MULCH, AS DIRECTED BY THE ENGINEER, IS TO BE USED ONLY ON AREAS THAT ARE TO BE REGRADED OR LATER DISTURBED, IF LEFT DORMANT FOR MORE THAN 15 DAYS.

EROSION CONTROL MULCH, AS DIRECTED BY THE ENGINEER, IS TO BE USED ON AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN 15 DAYS BETWEEN DECEMBER 1 AND FEBRUARY 28.

EROSION CONTROL MULCH, AS LISTED ON THE VDOT APPROVED PRODUCTS LIST, SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

EROSION CONTROL MULCH SHALL PROVIDE 100 PERCENT COVERAGE OF ALL DENUDED AREAS.

SPRING & SUMMER AND FALL & WINTER DEFINED FOR THE PURPOSE OF DETERMINING WHETHER HULLED OR UNHULLED BERMUDAGRASS AND SERICEA LESPEDEZA SEED IS REQUIRED:

SPRING & SUMMER 4/1 - 9/15 - USE HULLED SEED
 FALL & WINTER 9/15 - 4/1 - USE UNHULLED SEED

TYPE I MULCH (STRAW) TO BE USED ON NEWLY SEEDED AREAS ADJACENT TO ALL WATERWAYS, WETLANDS, SWAMPS, OR ANY AREA IN WHICH DRAINAGE FLOWS TOWARD AREAS UNDER THE JURISDICTION OF THE ENVIRONMENTAL REGULATORY AGENCIES.

TYPE I MULCH SHALL BE APPLIED TO PROVIDE A MINIMUM 90 PERCENT COVERAGE.

TYPE I MULCH SHALL BE TACKED WITH FIBER MULCH AT THE RATE OF 750 LBS. PER ACRE AND/OR MULCH TACKIFIER.

TYPE II MULCH (FIBER MULCH) MAY BE SUBSTITUTED FOR TYPE I MULCH AT THE RECOMMENDATION OF THE DISTRICT ROADSIDE MANAGER.

TYPE II MULCH SHALL BE APPLIED AT A RATE OF 1500 LBS. (NET DRY WEIGHT) PER ACRE TO PROVIDE A MINIMUM OF 90 PERCENT COVERAGE, AND SHALL BE APPLIED IN A SEPARATE APPLICATION.

ALL TOPSOIL IS TO BE FREE OF HARD LUMPS, CLODS, ROCKS AND FOREIGN DEBRIS AND IS TO BE HAND RAKED TO TIE INTO EXISTING LAWNS.

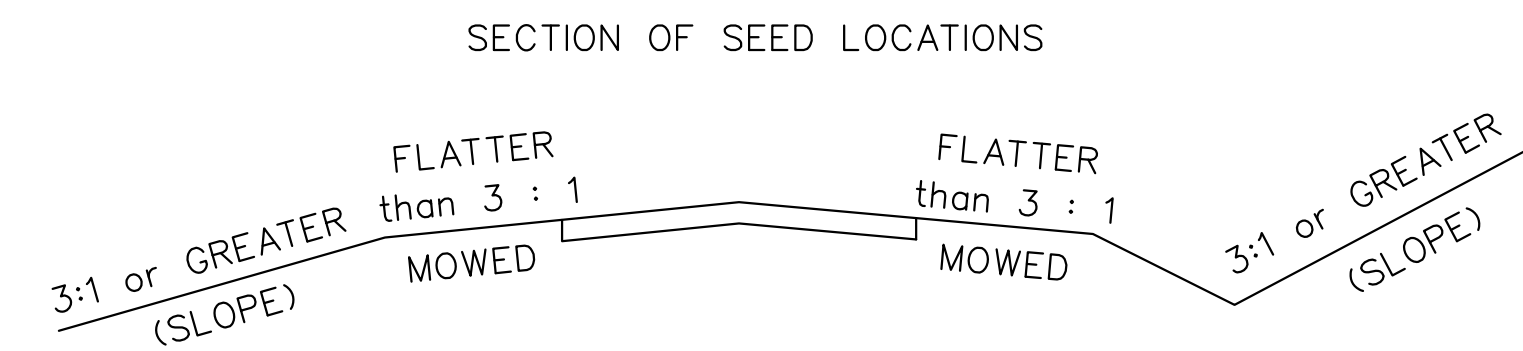
ALL SEED MUST BE IN CONFORMANCE WITH VDOT SEED SPECIFICATIONS FOR GRASSES & LEGUMES AND BE PROVIDED AT THE PROJECT SITE IN BAGS NOT OPENED AND LABELED FOR USE ON VDOT PROJECTS WITH A GREEN TAG CERTIFYING INSPECTION BY THE VIRGINIA CROP IMPROVEMENT ASSOCIATION.

MIX REQUIREMENTS THIS PROJECT

QUANTITIES SHOWN ON THIS SHEET ARE FOR ESTIMATING PURPOSES ONLY. ALL COSTS FOR THE ITEMS SHOWN ON THIS SHEET SHALL BE INCLUDED IN LUMP SUM BID "SEEDING".

UNLESS OTHERWISE NOTED ALL DISTURBED AREAS NOT PAVED SHALL BE TOP SOILED, SEEDED AND STD. EC-2 PROTECTIVE COVERING PLACED (JUTE MESH, SOIL RETENTION MATS, BIODEGRADABLE PRODUCTS FROM VDOT'S APPROVED PRODUCTS LIST).

* FINE FESCUES INCLUDE CHEWINGS, CREEPING RED, HARD, SHEEP



SEEDING SCHEDULE

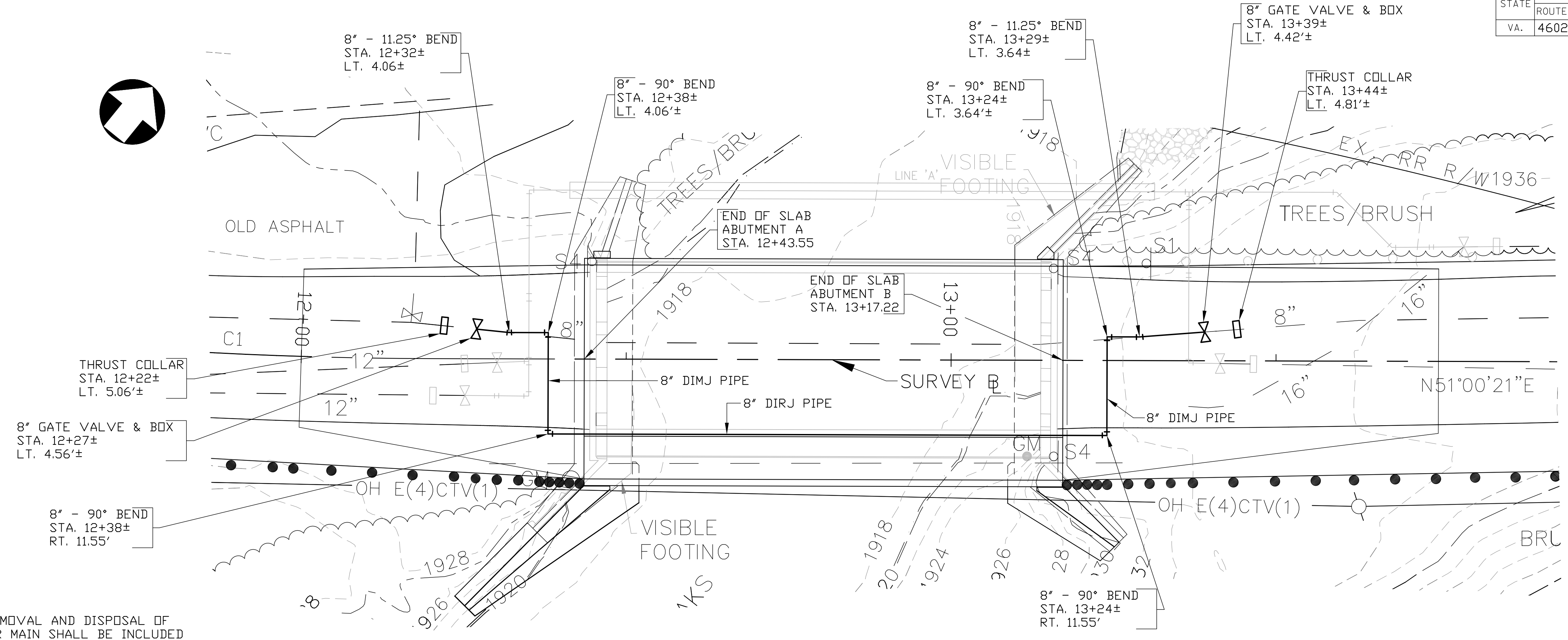
PROJECT NUMBERS	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE
	SPRING MONTH & DATE	SUMMER MONTH & DATE	FALL & WINTER MONTH & DATE	SPRING MONTH & DATE	SUMMER MONTH & DATE	FALL & WINTER MONTH & DATE
	4/1 - 6/1	6/1 - 9/15	9/15 - 4/1	4/1 - 6/1	6/1 - 9/15	9/15 - 4/1
	3, D	3, D	3, C	3, C	3, B	3, B
* SPECIFY KIND OF FINE FESCUE	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING

ROADSIDE DEVELOPMENT SUMMARY									
PROJECT NUMBERS	⊗ TOPSOIL 2" CLASS A B	REGULAR SEED	REGULAR OVER SEEDING	LIME	① FERT. 15-30-15	LEGUME SEED	LEGUME OVER SEEDING	TEMPORARY SEEDING	SOD
	ACRES	LBS.	LBS.	TONS	TONS	LBS.	LBS.	LBS.	S.Y.
	0.08	50	38	2.0	1.0	10	8	31	

⊗ DENOTES ITEM(S) TO BE PAID FOR ON BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

① A SOIL TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION. THE CONTRACTOR SHALL DETERMINE FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON THE SITE BY CONTACTING THE VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM (WITH SOIL TESTING FACILITIES) TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION. COST FOR SOIL TEST SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM FOR "SEEDING".

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	4602	STP-5125 (127)	4602	4602-125-124, B608	38



DIMJ = DUCTILE IRON MECHANICAL JOINT PIPE.
 DIRJ = DUCTILE RESTRAINED JOINT PIPE.

ALL FITTINGS, TEES, BENDS, VALVES ETC. SHALL BE DUCTILE IRON MECHANICAL JOINT & CEMENT LINED (350 MIN. PSI).
 8" PIPE, WATER MAIN = CLASS 50 MIN. PIPE (350 PSI MIN.).
 PRESSURE TEST - 150 PSI MIN.

ALL WATER MAINS SHALL HAVE A MIN. COVER OF 3'-0". ALL BENDS, TEES, VALVES AND PLUGS SHALL HAVE HORIZONTAL & VERTICAL REACTION BLOCKING.

NEW 8" WATER MAINS SHALL BE INSTALLED, PLUGGED, TESTED AND DISINFECTED PRIOR TO FINAL TIE-IN TO EXISTING WATER MAIN.

THRUST COLLARS SHALL HAVE THRUST RINGS AND THREADED RODS, SEE SHEET 40 FOR DETAILS.

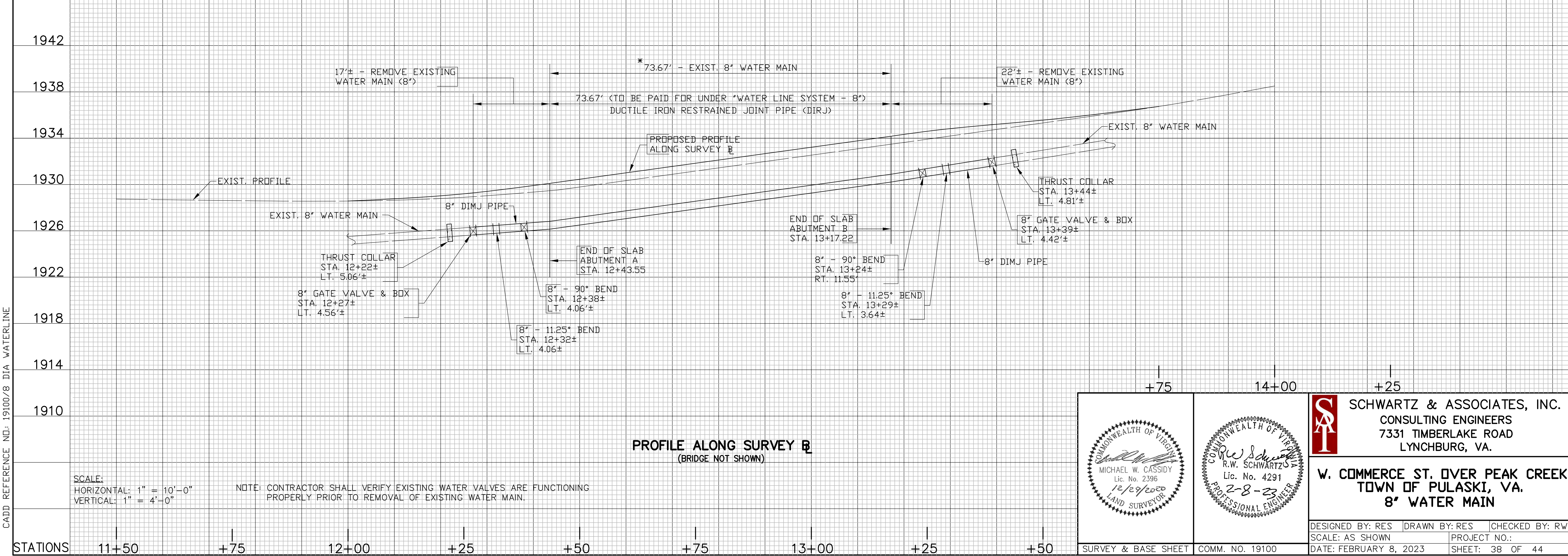
CONTRACTOR SHALL DETERMINE LOCATION, DEPTH AND TYPE OF EXISTING WATER MAIN PRIOR TO INSTALLING PROPOSED WATER MAIN.

EXISTING WATER MAIN DEPTH SHOWN ASSUMED, NO ACTUAL DEPTHS AVAILABLE.

VALVE BOXES SHALL BE TYPE A (SCREW TYPE).

* - ALL COSTS FOR REMOVAL AND DISPOSAL OF EXISTING 8" WATER MAIN SHALL BE INCLUDED IN LUMP SUM BID *REMOVE PORTION OF EXISTING STRUCTURE (NO. 8008).

W. COMMERCE STREET
 NOT TO SCALE



PROFILE ALONG SURVEY B
 (BRIDGE NOT SHOWN)

SCALE:
 HORIZONTAL: 1" = 10'-0"
 VERTICAL: 1" = 4'-0"

NOTE: CONTRACTOR SHALL VERIFY EXISTING WATER VALVES ARE FUNCTIONING PROPERLY PRIOR TO REMOVAL OF EXISTING WATER MAIN.

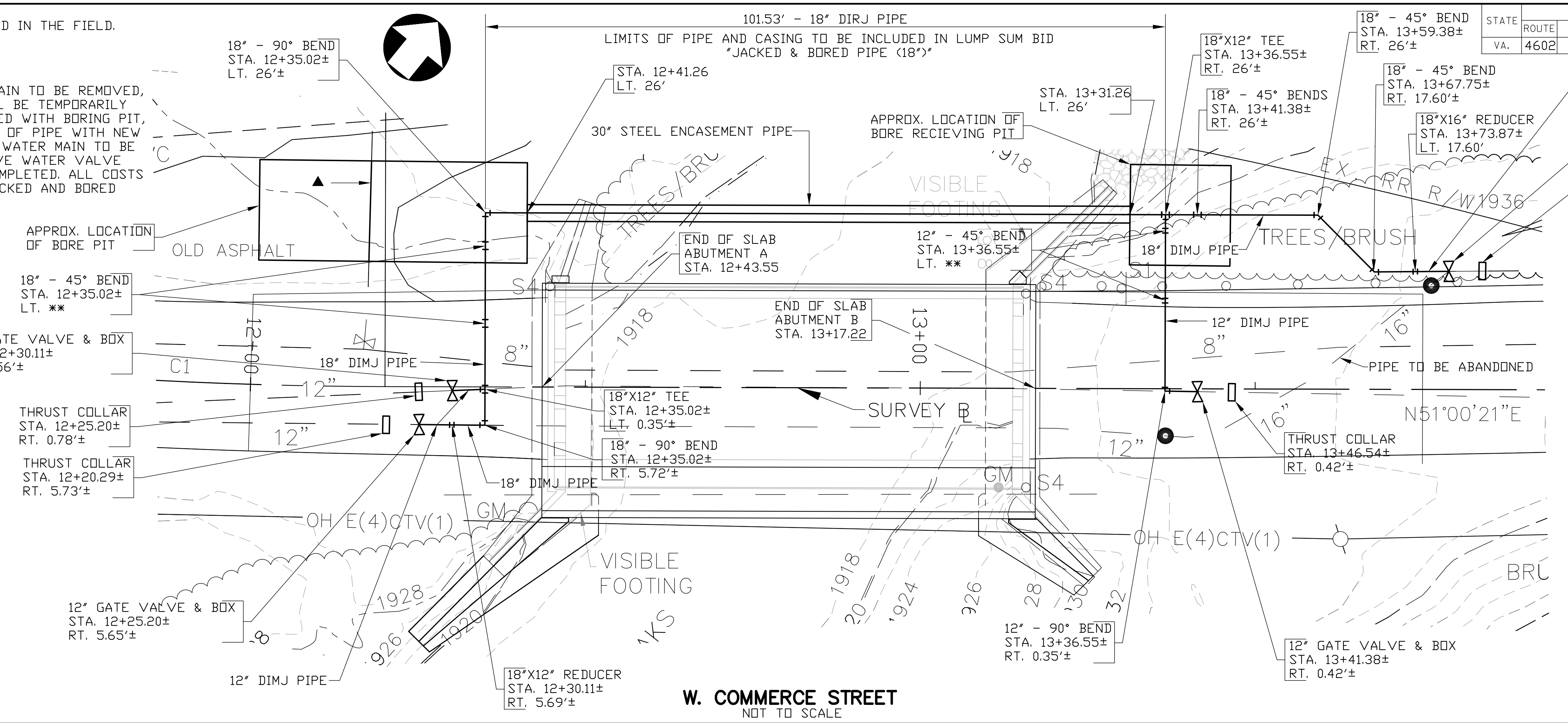
		SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.
W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. 8" WATER MAIN		
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RWS
SCALE: AS SHOWN	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 38 OF 44	

CADD REFERENCE NO: 19100/8 DIA WATERLINE

** - LOCATION TO BE DETERMINED IN THE FIELD.

● - PIPE TO BE ABANDONED.

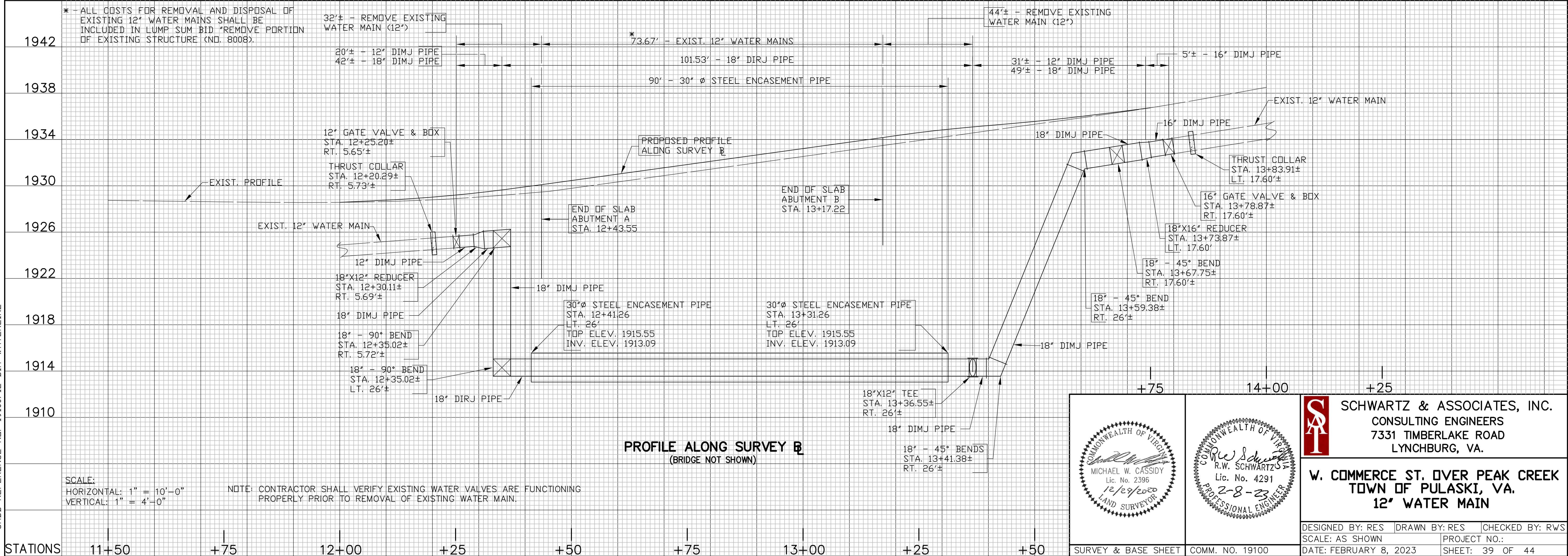
▲ - 15± OF EXISTING WATER MAIN TO BE REMOVED, END OF EXIST. PIPES SHALL BE TEMPORARILY PLUGGED AND WHEN FINISHED WITH BORING PIT, REPLACE REMOVED SECTION OF PIPE WITH NEW DIMJ PIPE. SIZE OF EXIST. WATER MAIN TO BE DETERMINED IN FIELD. LEAVE WATER VALVE CLOSED AFTER WORK IS COMPLETED. ALL COSTS SHALL BE INCLUDED IN "JACKED AND BORED PIPE (18")".



STATE	FEDERAL AID	STATE	SHEET
VA. 4602	STP-5125 (127)	4602	39

DIMJ = DUCTILE IRON MECHANICAL JOINT PIPE.
 DIRJ = DUCTILE IRON RESTRAINED JOINT PIPE.
 ALL FITTINGS, TEES, BENDS, VALVES ETC. SHALL BE DUCTILE IRON MECHANICAL JOINT & CEMENT LINED (350 MIN. PSI).
 12", 16" & 18" PIPE, WATER MAIN = CLASS 50 MIN. PIPE (350 PSI MIN).
 PRESSURE TEST - 150 PSI MIN.
 ALL WATER MAINS SHALL HAVE A MIN. COVER OF 3'-0". ALL BENDS, TEES, VALVES AND PLUGS SHALL HAVE HORIZONTAL & VERTICAL REACTION BLOCKING.
 NEW 12", 16" & 18" WATER MAINS SHALL BE INSTALLED, PLUGGED, TESTED AND DISINFECTED PRIOR TO FINAL TIE-IN TO EXISTING WATER MAIN.
 THRUST COLLARS SHALL HAVE THRUST RINGS AND THREADED RODS, SEE SHEET 40 FOR DETAILS.
 CONTRACTOR SHALL DETERMINE LOCATION, DEPTH AND TYPE OF EXISTING WATER MAIN PRIOR TO INSTALLING PROPOSED WATER MAIN.
 EXISTING WATER MAIN DEPTH SHOWN ASSUMED, NO ACTUAL DEPTHS AVAILABLE.
 CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 1/2".
 VALVE BOXES SHALL BE TYPE A (SCREW TYPE).
 FOR SIZING REACTION BLOCKS FOR 18" DIA. PIPE, CONTRACTOR SHALL USE 20" DIA. PIPE FROM REACTION BLOCK DETAILS.

W. COMMERCE STREET
 NOT TO SCALE



PROFILE ALONG SURVEY B
 (BRIDGE NOT SHOWN)

SCALE:
 HORIZONTAL: 1" = 10'-0"
 VERTICAL: 1" = 4'-0"

NOTE: CONTRACTOR SHALL VERIFY EXISTING WATER VALVES ARE FUNCTIONING PROPERLY PRIOR TO REMOVAL OF EXISTING WATER MAIN.

MICHAEL W. CASSIDY
 Lic. No. 2396
 12/29/2020
 LAND SURVEYOR

R.W. SCHWARTZ
 Lic. No. 4291
 2-8-23
 PROFESSIONAL ENGINEER

SCHWARTZ & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 7331 TIMBERLAKE ROAD
 LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
 TOWN OF PULASKI, VA.
 12" WATER MAIN**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RWS
SCALE: AS SHOWN		PROJECT NO.:
DATE: FEBRUARY 8, 2023		SHEET: 39 OF 44

CADD REFERENCE NO.: 19100/12 DIA WATERLINE

VDDOT ROAD & BRIDGE STANDARD REFERENCES:

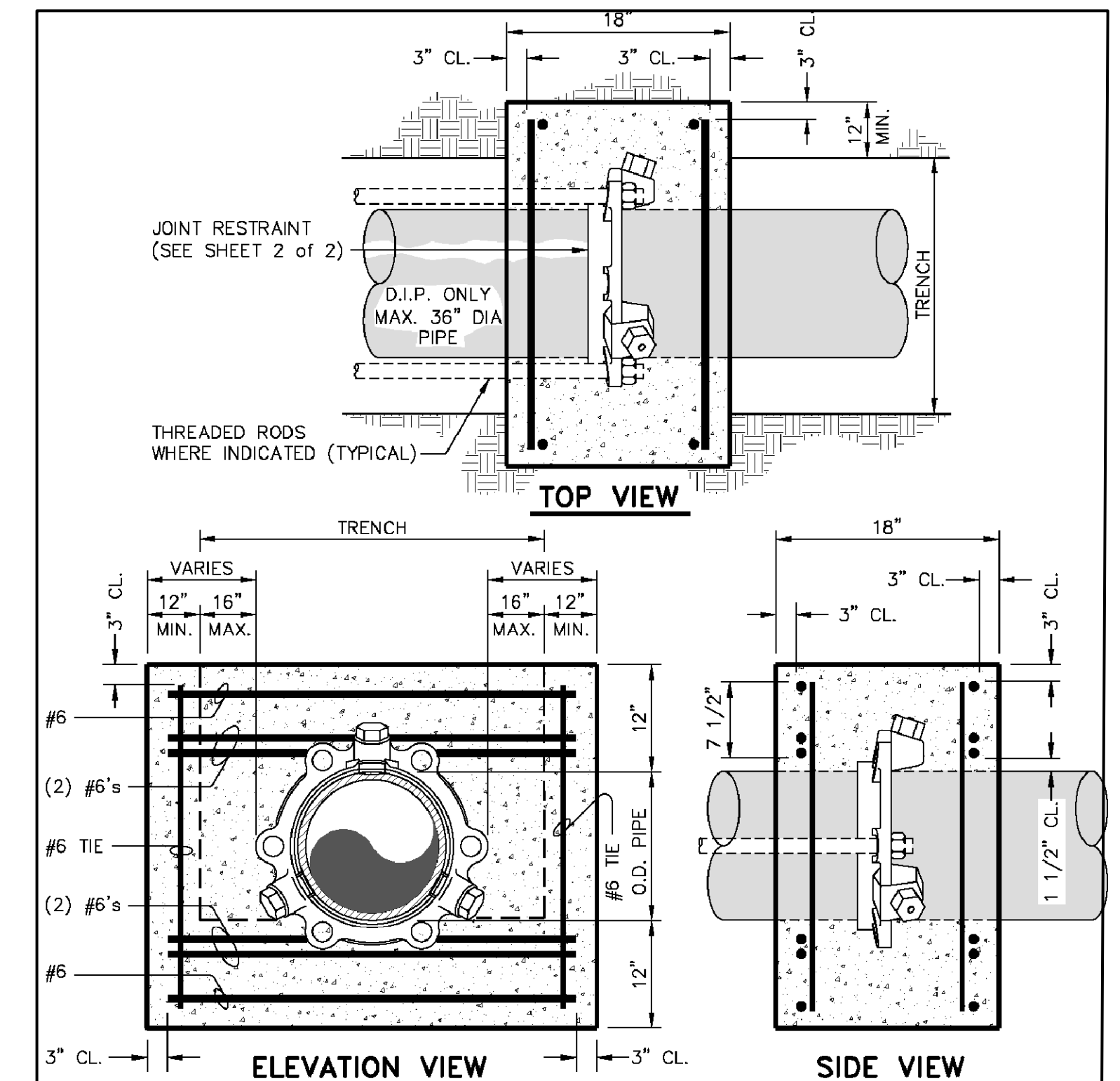
- UTILITY BEDDING AND PROTECTION, ST'D. UB-1
- REACTION BLOCKING, ST'D. RB-1 – SHEET 1 OF 3
- REACTION BLOCKING, ST'D. RB-1 – SHEET 2 OF 3
- REACTION BLOCKING, ST'D. RB-1 – SHEET 3 OF 3
- LEAK DETECTOR, ST'D. LD-1
- VALVE BOX AND VALVE MANHOLE, ST'D. VB-1 – SHEET 1 OF 2

TIE ROD ANCHORS DATUM		
PIPE SIZE (INCHES)	ROD DIAMETER (INCHES)	NUMBER OF A307 RODS REQUIRED
TEST PRESSURE = 150 P.S.I. & BELOW		
6	3/4	2
8	3/4	2
10	3/4	2
12	3/4	4
16	3/4	6
20	3/4	8
24	1	8
30	1	10
TEST PRESSURE = 151 P.S.I. to 200 PSI		
6	3/4	2
8	3/4	2
10	3/4	4
12	3/4	6
16	3/4	8
20	3/4	12
24	1	10
30	1	14
TEST PRESSURE = 201 P.S.I. to 250 P.S.I.		
6	3/4	4
8	3/4	4
10	3/4	4
12	3/4	6
16	3/4	12
20	3/4	14
24	1	16
30	1	20

RODS SHALL BE A307 ZINC COATED TIE RODS.

TIE ROD ANCHORS DATUM CHART

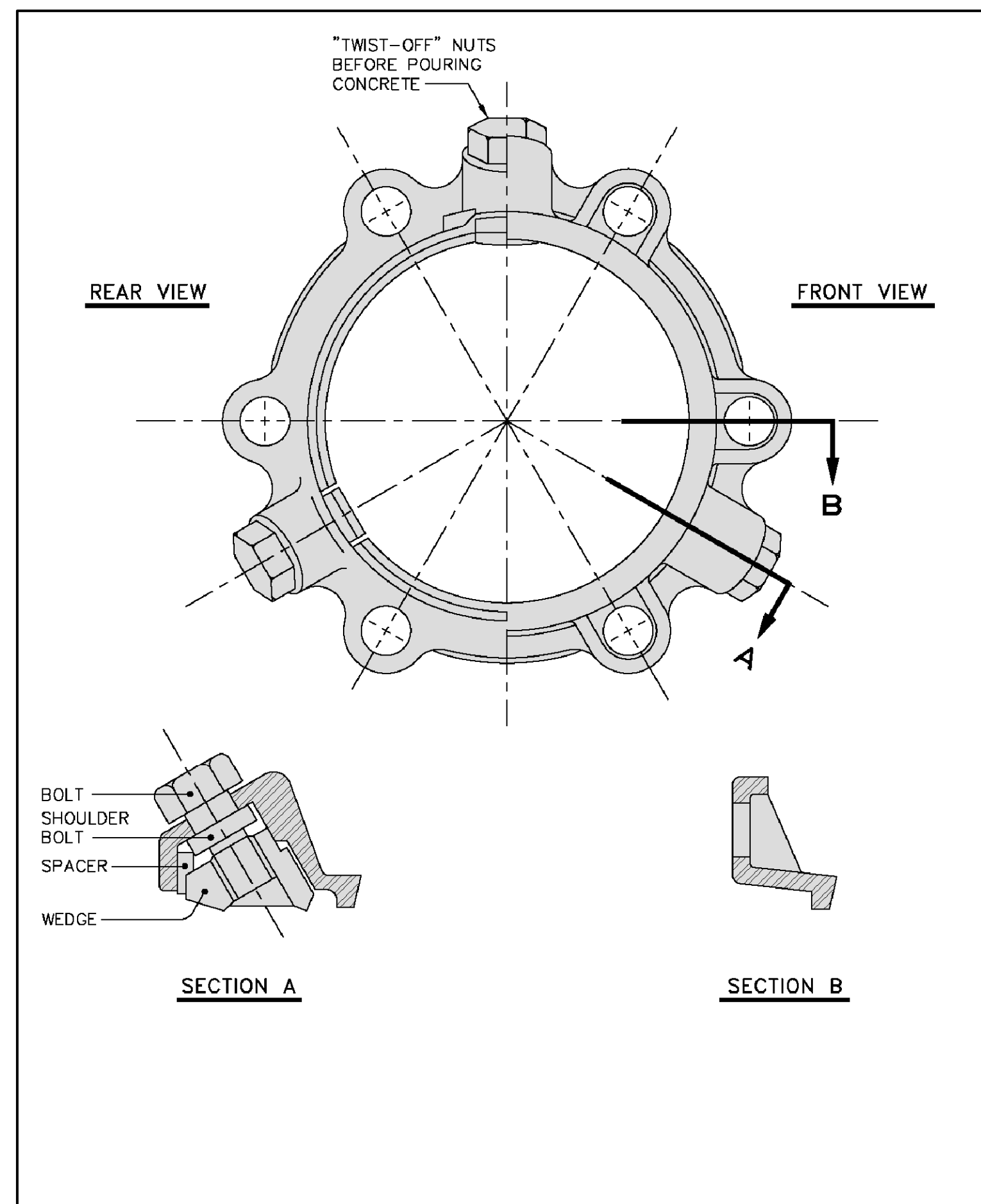
NOTE: FOR SIZING AND NUMBER OF TIE RODS FOR 18" DIA. PIPE, CONTRACTOR SHALL USE 20" DIA. PIPE FROM TIE ROD ANCHOR DATUM CHART.



NOTES:

1. CONCRETE SHALL BE 3000 P.S.I.
2. REINFORCING BARS SHALL BE DEFORMED, AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK(S) INSTALLATION SHALL BE THE MINIMUM WIDTH.
4. BACKFILL AND COMPACT IN 6" LAYERS.
5. PLACE THRUST COLLAR ON ONE FULL JOINT OF PIPE.
6. LAST JOINT OF PIPE WITH THRUST COLLAR TO BE MECHANICAL JOINT PIPE.
7. PLACE RESTRAINED JOINT THRUST RING 4' FROM PLUG END OF PIPE.

THRUST COLLAR & BLOCKING DETAIL



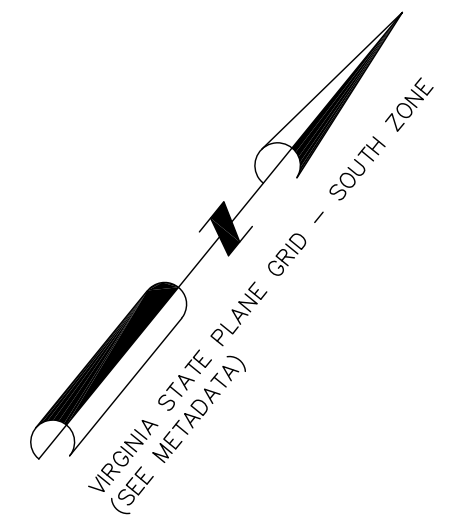
THRUST RING

CADD REFERENCE NO.: 19100/12 DIA WATERLINE

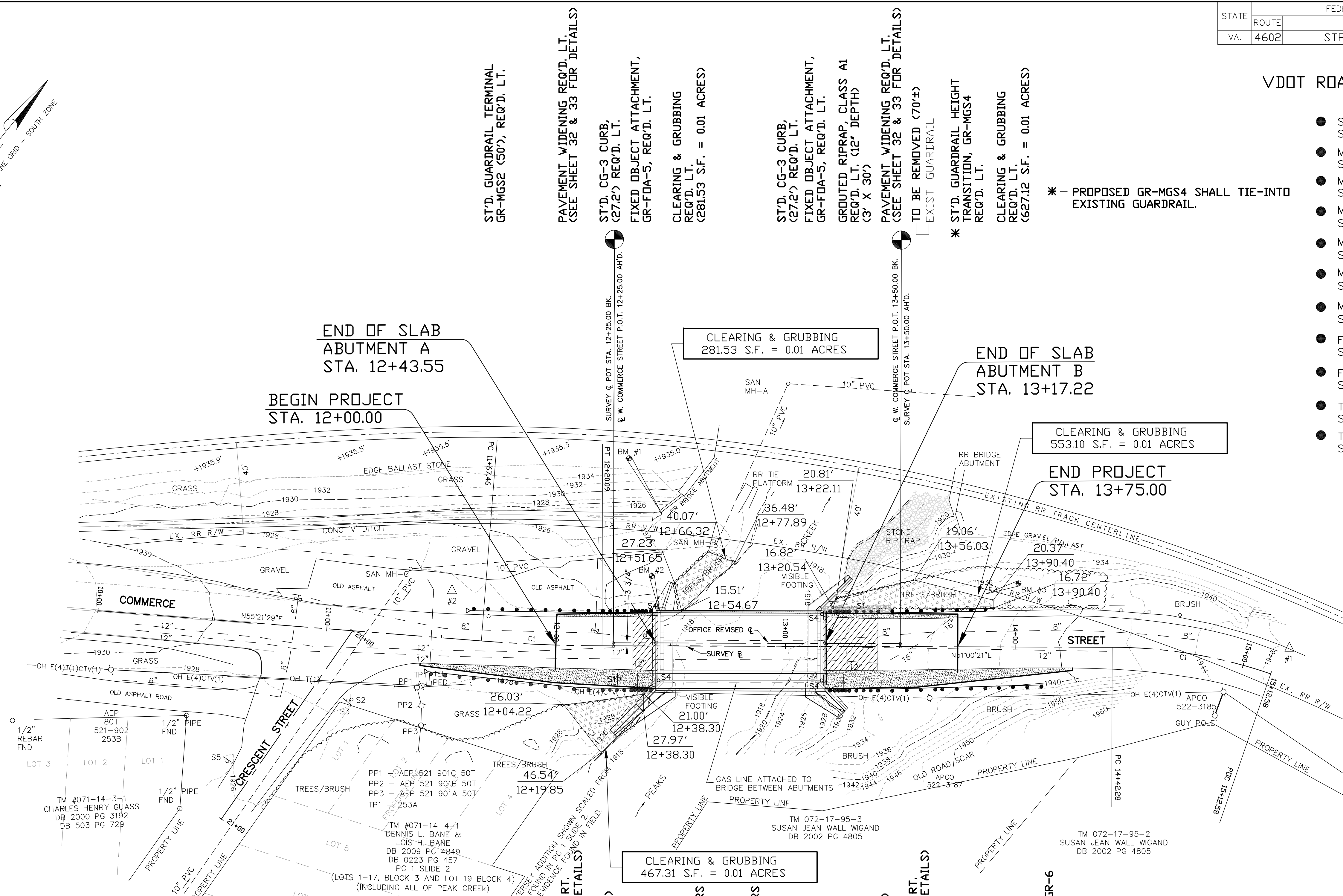
	SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.
	W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. WATER MAIN STANDARDS
DESIGNED BY: RES DRAWN BY: RES CHECKED BY: RWS SCALE: AS SHOWN PROJECT NO.: COMM. NO. 19100 DATE: FEBRUARY 8, 2023 SHEET: 40 OF 44	

VDOT ROAD & BRIDGE STANDARD REFERENCES:

- STANDARD 4" CURB, CG-3 SHEET 1 OF 1
- MIDWEST GUARDRAIL SYSTEM, ST'D. GR-MGS1 SHEET 1 OF 2
- MIDWEST GUARDRAIL SYSTEM, ST'D. GR-MGS1 SHEET 2 OF 2
- MIDWEST GUARDRAIL SYSTEM (TANGENT END TERMINAL) ST'D. GR-MGS2, SHEET 1 OF 3
- MIDWEST GUARDRAIL SYSTEM (TANGENT END TERMINAL) ST'D. GR-MGS2, SHEET 2 OF 3
- MIDWEST GUARDRAIL SYSTEM (TANGENT END TERMINAL) ST'D. GR-MGS2, SHEET 3 OF 3
- MIDWEST GUARDRAIL SYSTEM (TRANSITION) ST'D. GR-MGS4, SHEET 1 OF 1
- FIXED OBJECT ATTACHMENT, ST'D. GR-FOA- 5 SHEET 1 OF 2
- FIXED OBJECT ATTACHMENT, ST'D. GR-FOA- 5 SHEET 2 OF 2
- TERMINAL TREATMENT, ST'D. GR-6 SHEET 1 OF 2
- TERMINAL TREATMENT, ST'D. GR-6 SHEET 2 OF 2



△ #3



- STIPPLED AREA DENOTES PAVEMENT WIDENING
- ▨ HATCHED AREA DENOTES DEMOLITION OF PAVEMENT AND FULL DEPTH PAVEMENT
- ▽ DENOTES CLEARING & GRUBBING LIMITS.

NOTE: DENOTES OFFSETS & STATIONS, THESE ARE REFERENCED FROM SURVEY BASE LINE.

- LEGEND
- GM GAS MARKER
 - GUARD RAIL
 - WATER LINE
 - UNDERGROUND TELEPHONE LINE
 - GAS LINE
 - POWER POLE
 - TELEPHONE POLE
 - GUY WIRE
 - FLOOD CONTOUR

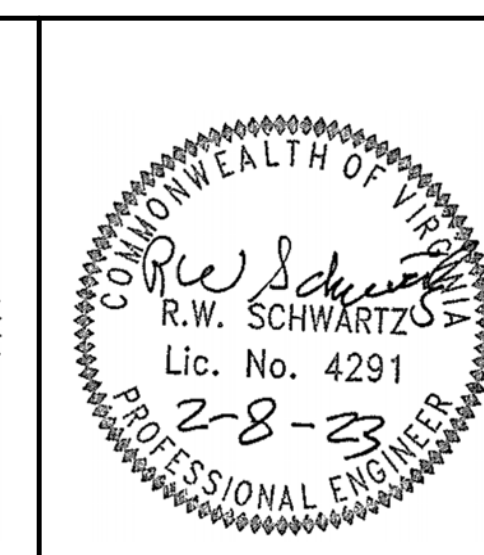
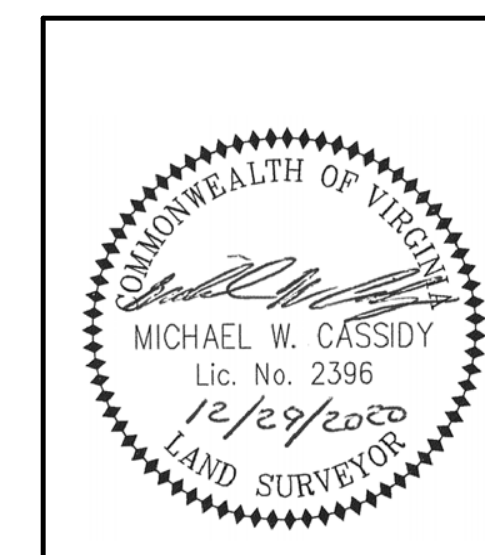
- SANITARY SEWER INDEX
- SAN MH A TOP-1926.57' INV IN-1920.3'(A) INV IN-1920.5'(B) INV OUT-1920.1
 - SAN MH-B TOP-1927.32' INV IN-1920.4' INV OUT-1920.4'
 - SAN MH-C TOP-1928.38' INV IN-1920.7' INV OUT-1920.7'
 - SAN MH-D TOP-1926.04' INV IN-1921.0'(A) INV IN-1921.2'(B) INV OUT-1921.0

- TO BE REMOVED & RELOCATED
- SIGN INDEX
- S1 - WEIGHT LIMIT (2 SIGNS)
 - S2 - STREET NAMES
 - S3 - STOP
 - S4 - DELINEATOR (4 SIGNS)
 - S5 - DEAD END

- BENCH MARK #1 MAGNETIC NAIL SET TOP OF CONCRETE WING WALL (RAILROAD BRIDGE) ELEVATION - 1925.36'
- BENCH MARK #2 CHISEL SQUARE W/ DRILL HOLE FOUND (UNKNOWN SOURCED) ELEVATION - 1930.11" (THIS SURVEY)
- BENCH MARK #3 RR SPIKE SET BASE LARGE TRIPLE MAPLE ELEVATION - 1936.84' 13+87.1 LT 29.3'

- PP1 - AEP 521 901C 50T
- PP2 - AEP 521 901B 50T
- PP3 - AEP 521 901A 50T
- TP1 - 253A

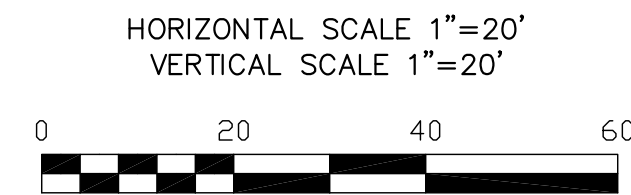
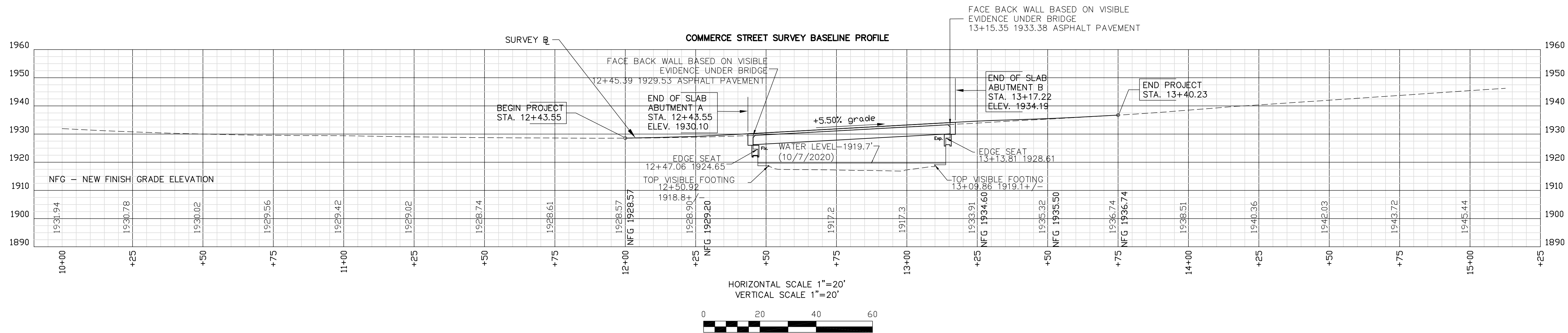
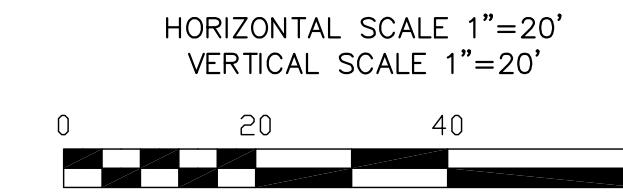
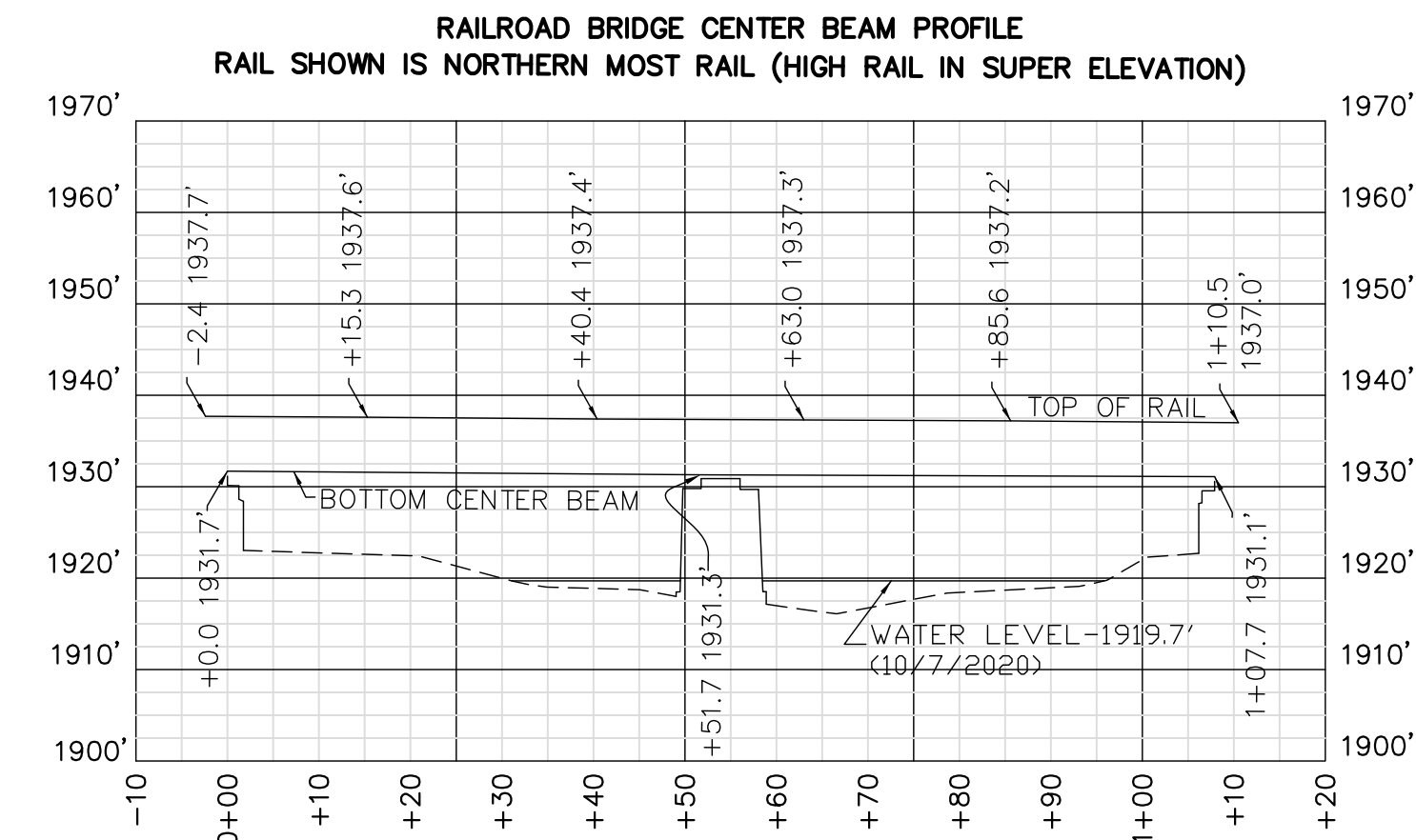
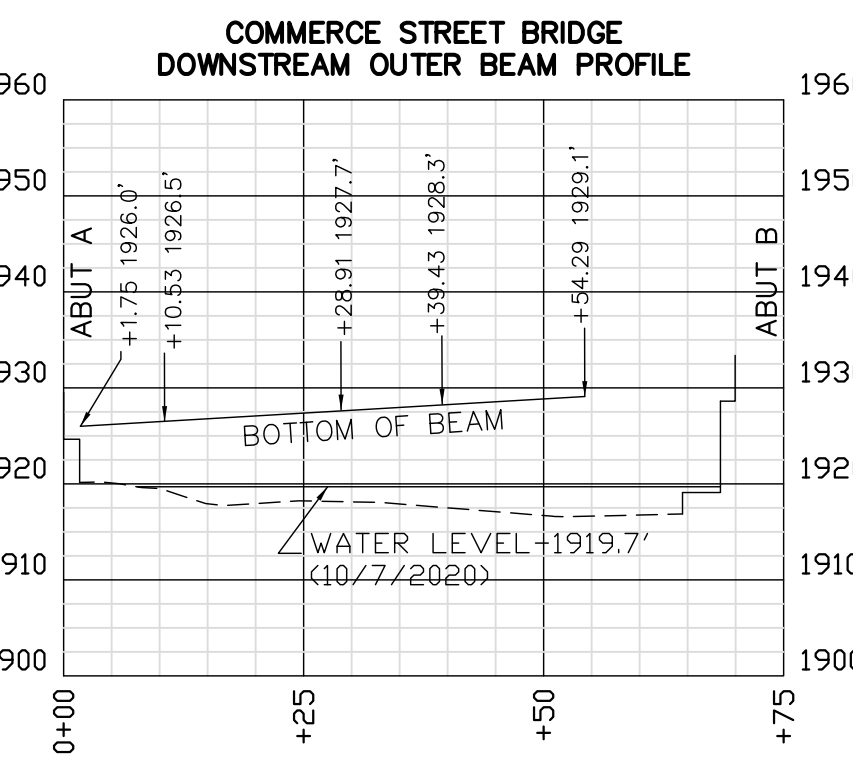
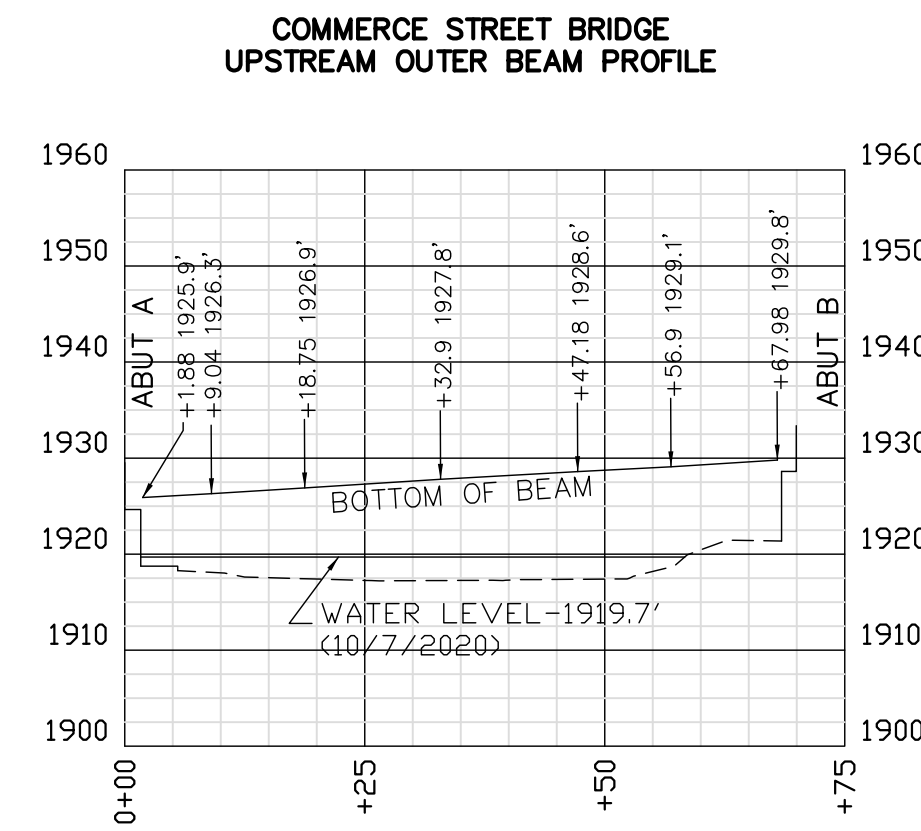
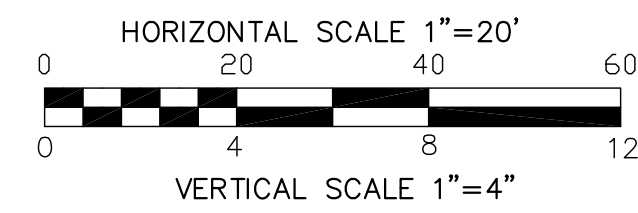
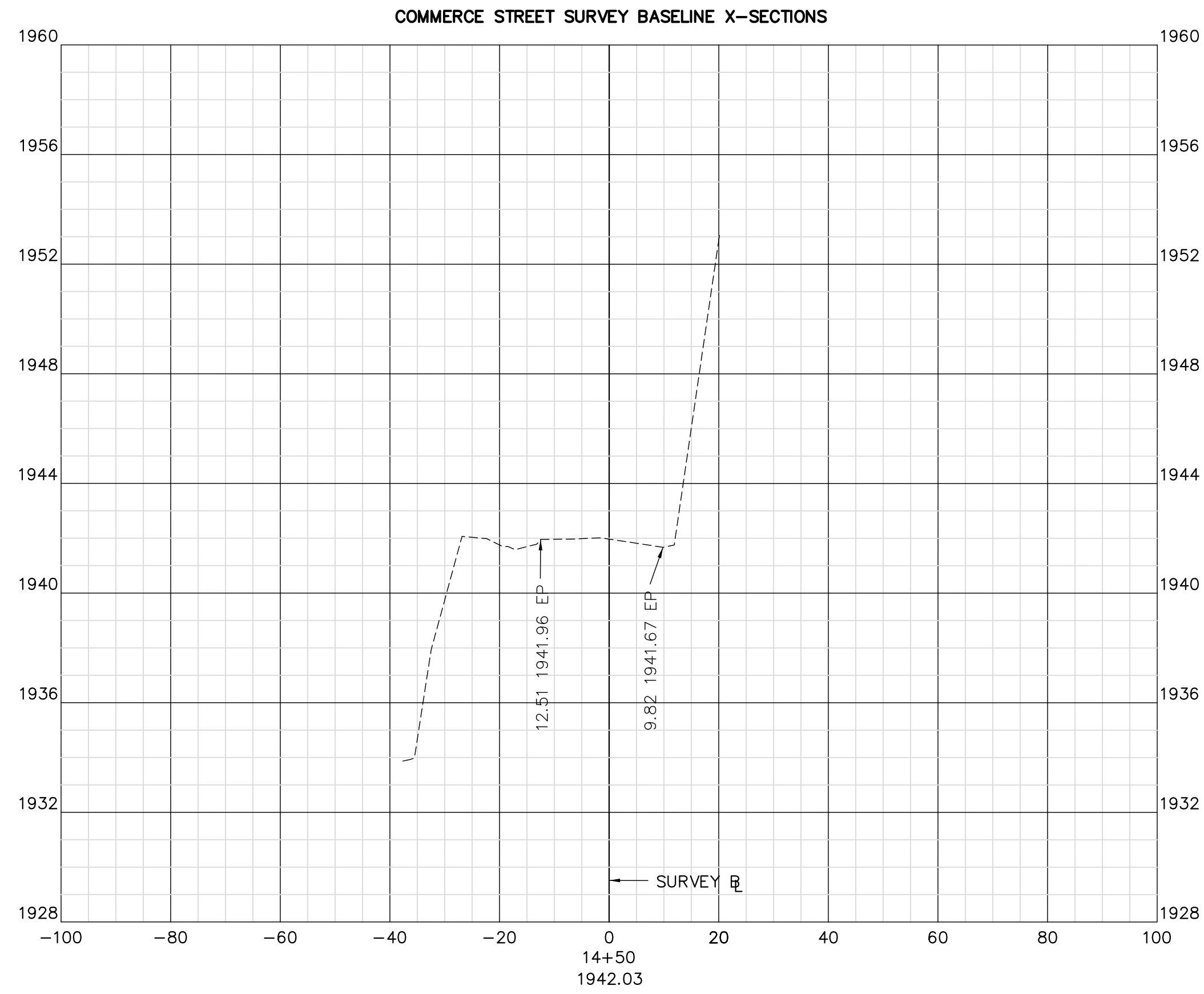
CADD REFERENCE NO.: 19100/ROAD PLAN



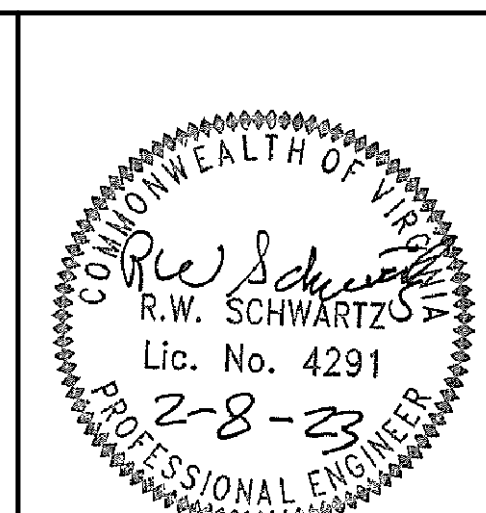
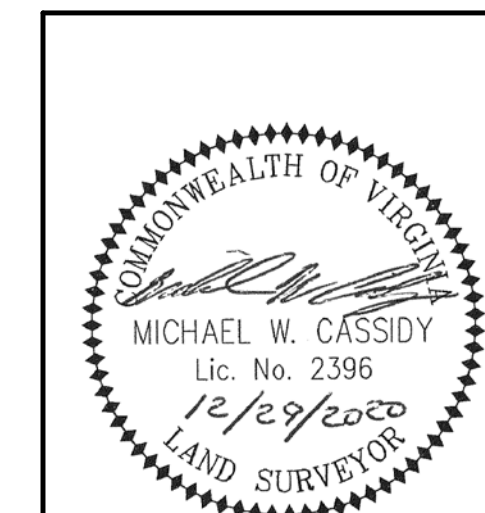
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

W. COMMERCE ST. OVER PEAK CREEK TOWN OF PULASKI, VA. ROAD PLAN

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: RES
SCALE: 1" = 25' | PROJECT NO.:
DATE: FEBRUARY 8, 2023 | SHEET: 41 OF 44



CADD REFERENCE NO.: 19100/ROAD PLAN



SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

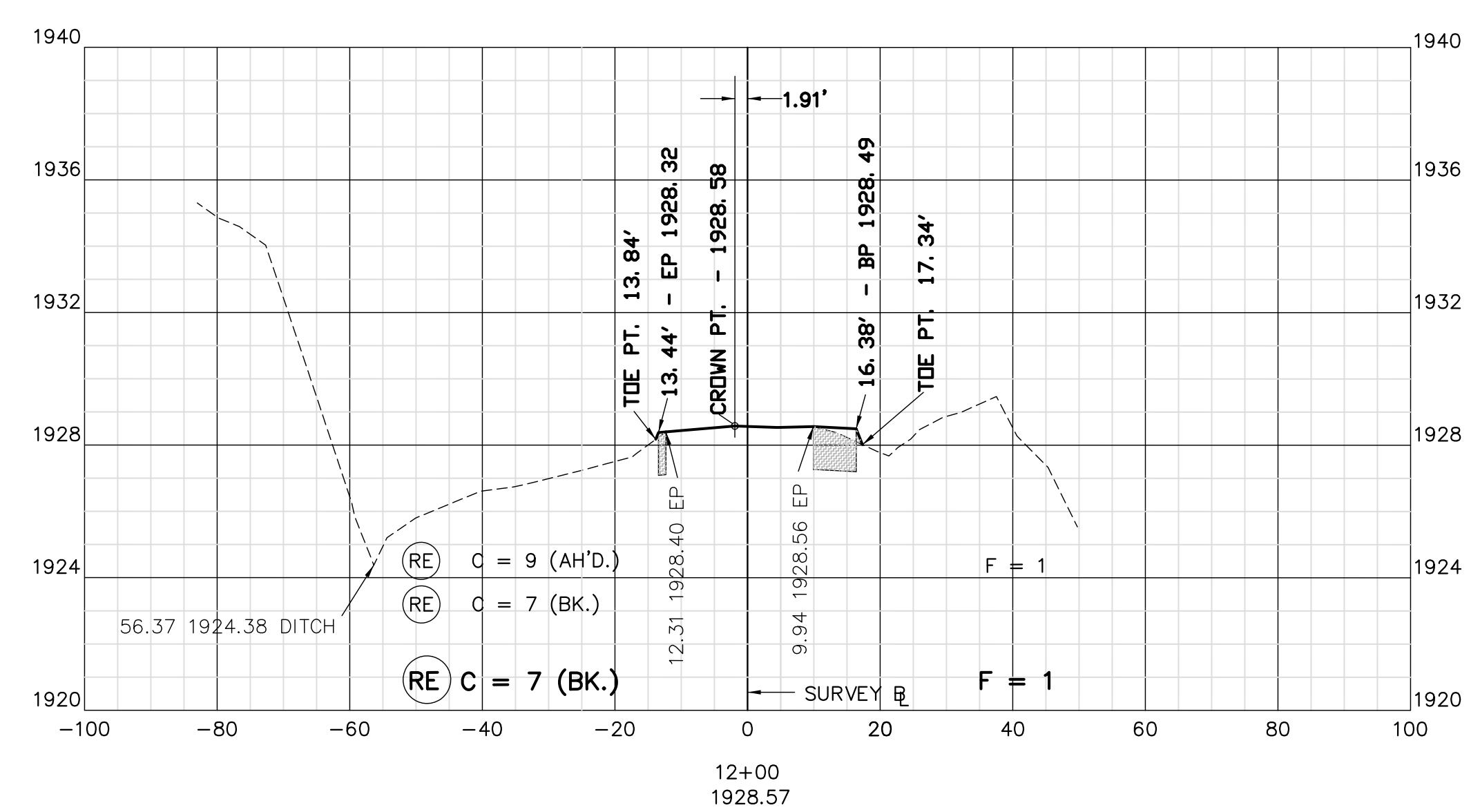
**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
PROFILES**

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: RWS
SCALE: 1" = 25' | PROJECT NO.:
DATE: FEBRUARY 8, 2023 | SHEET: 42 OF 44

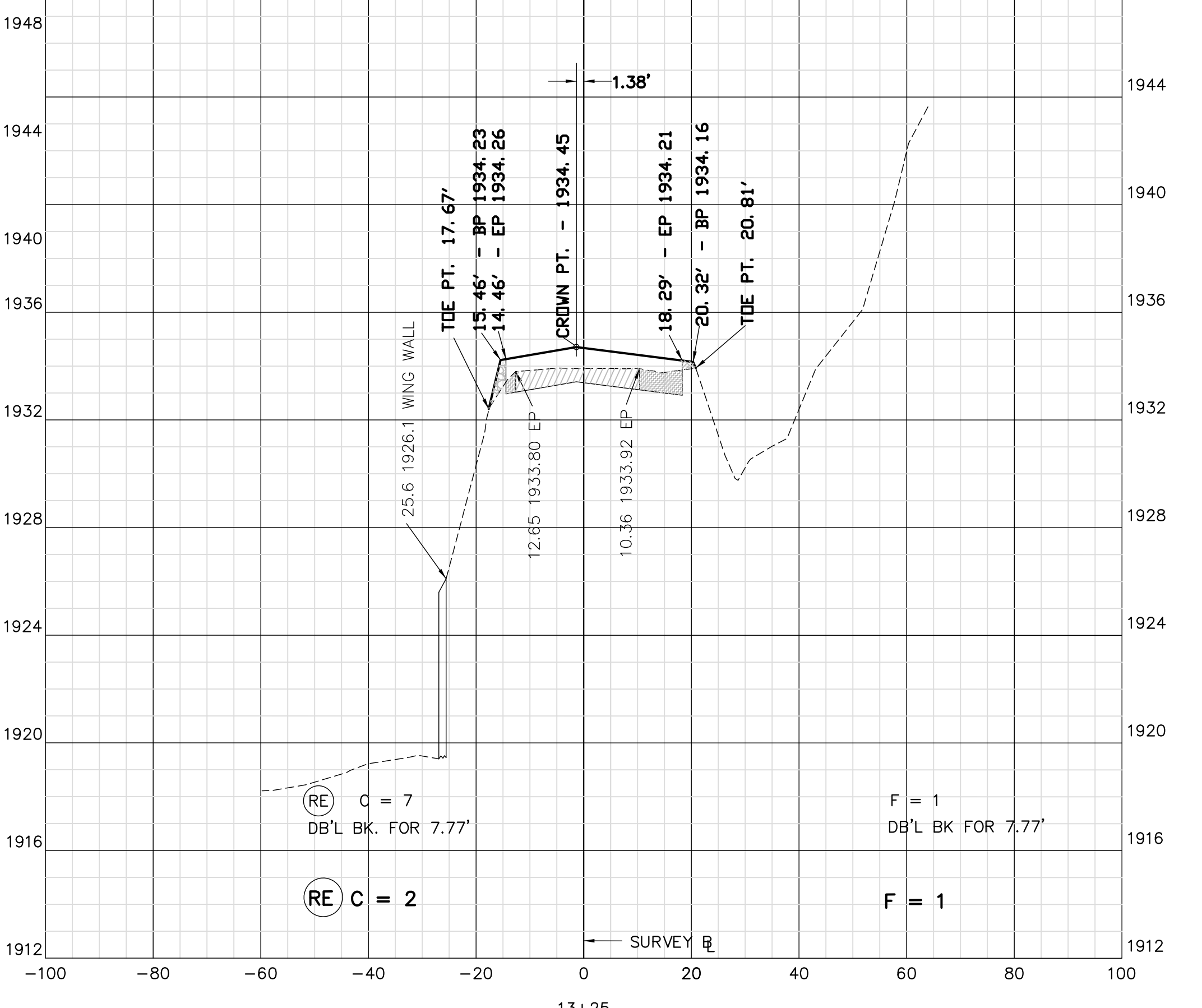
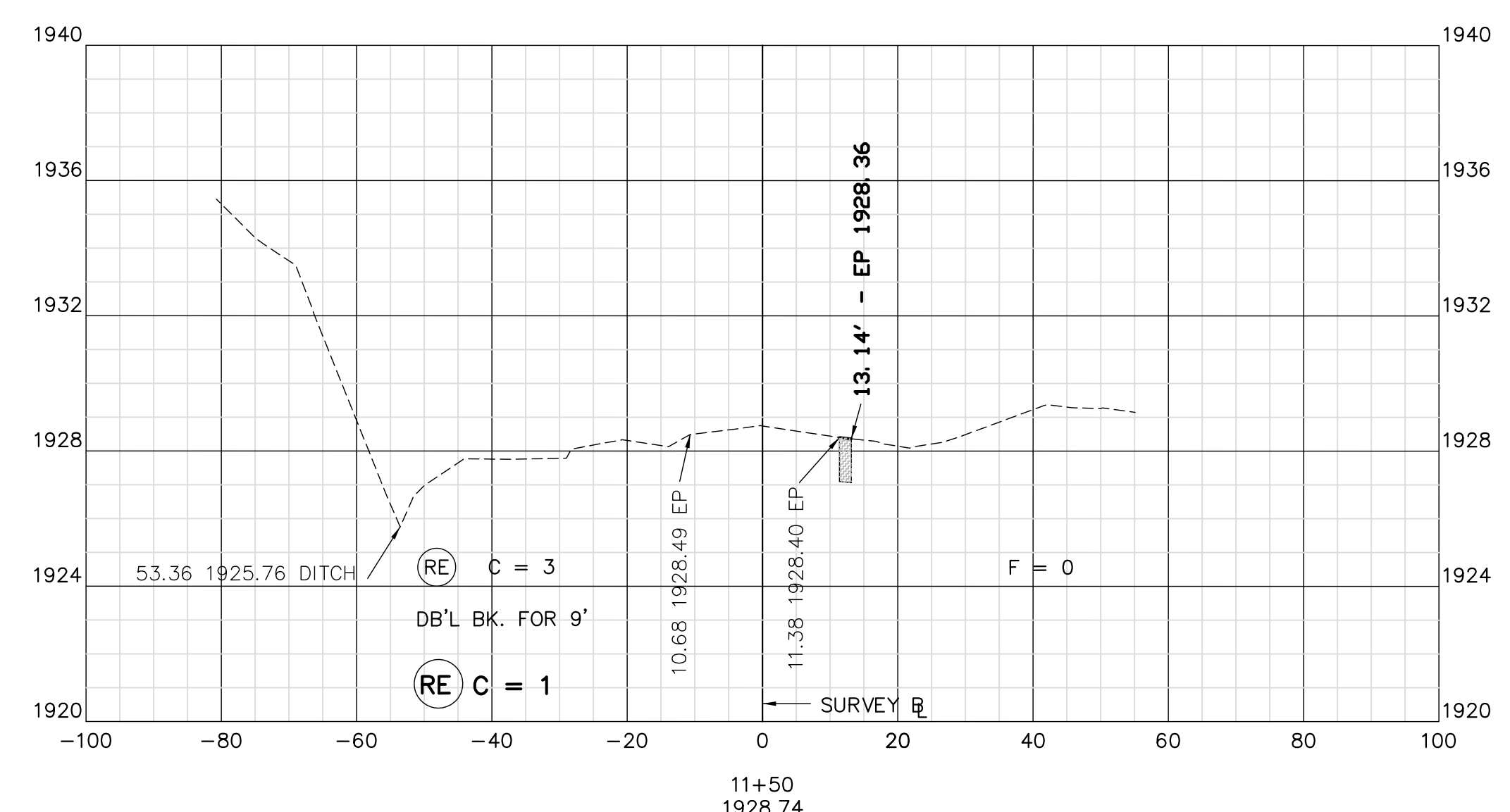
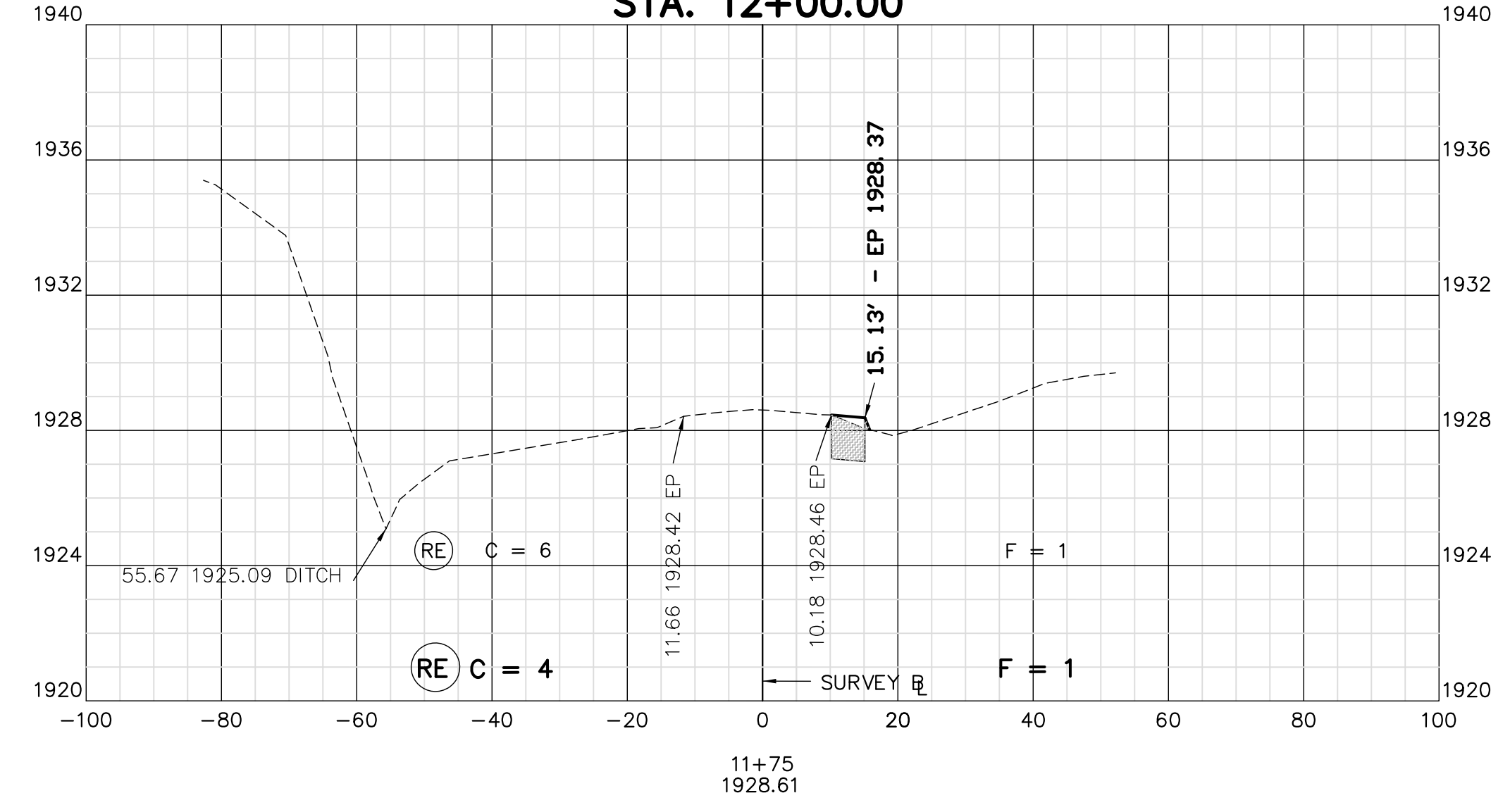
SURVEY & BASE SHEET

COMM. NO. 19100

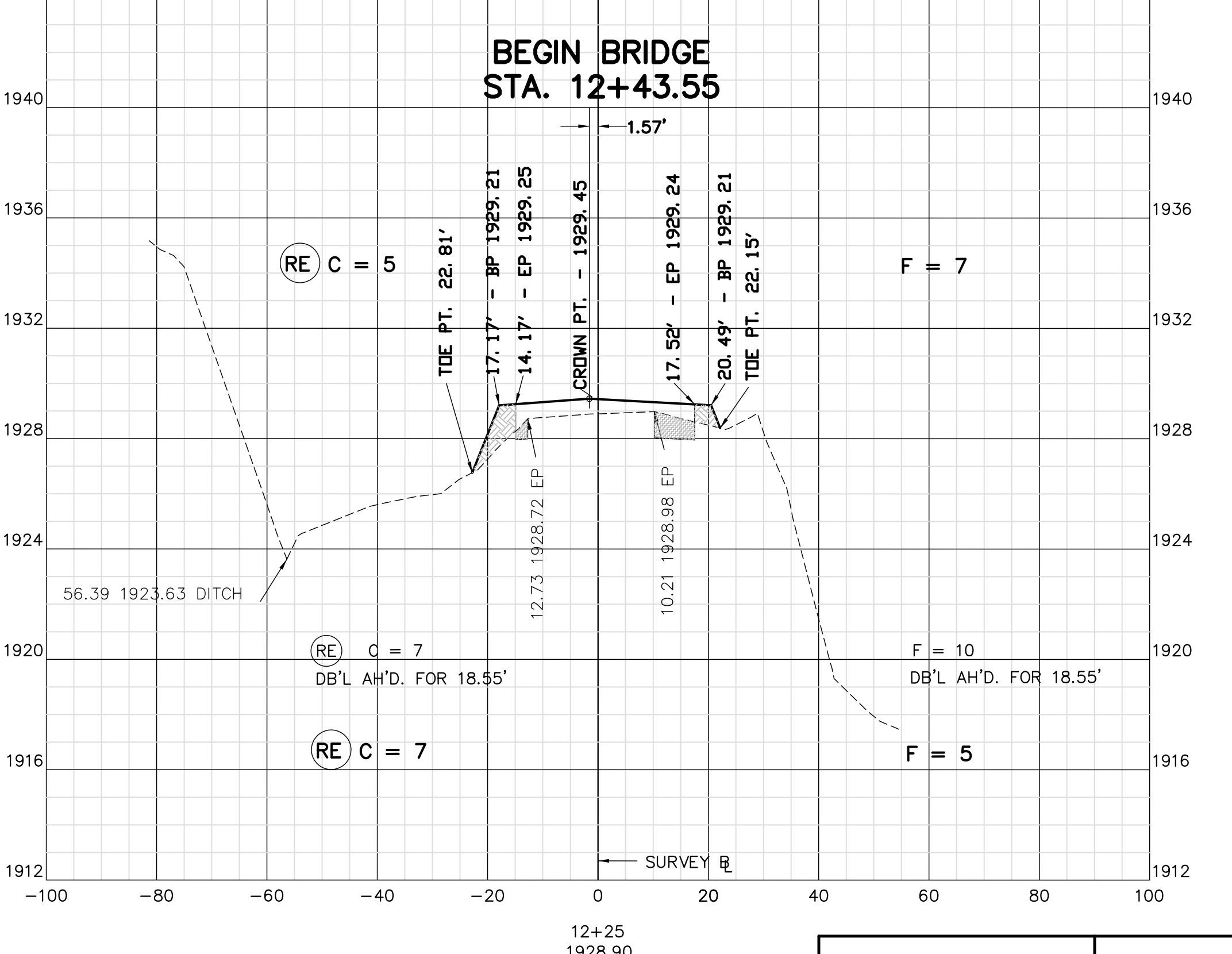
COMMERCE STREET SURVEY BASELINE X-SECTIONS



BEGIN PROJECT
STA. 12+00.00

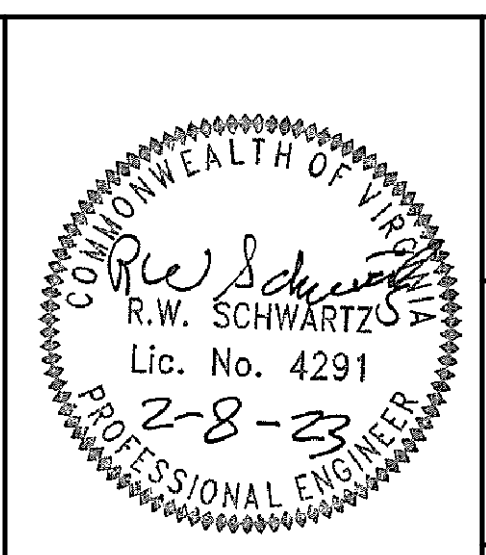
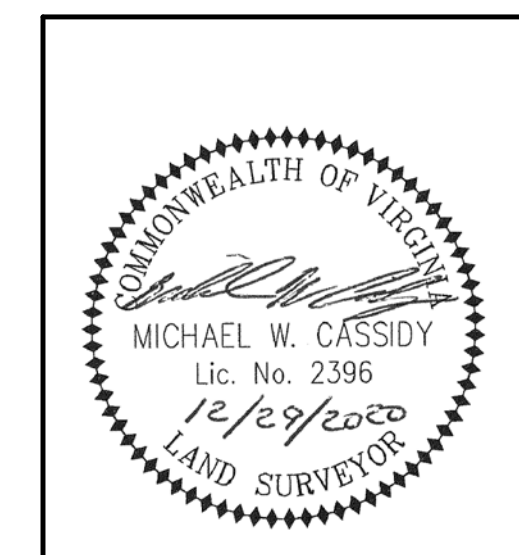
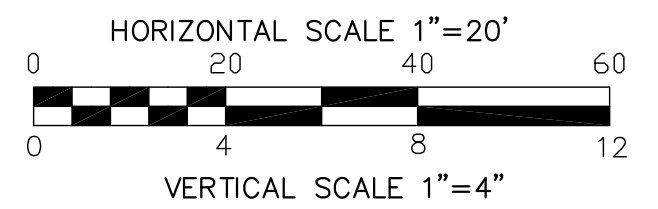


END BRIDGE
STA. 13+17.23



CADD REFERENCE NO.: 19100/ROAD PLAN

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES REGULAR EXCAVATION
- DENOTES FILL
- DENOTES GROUTED RIPRAP, CLASS A1

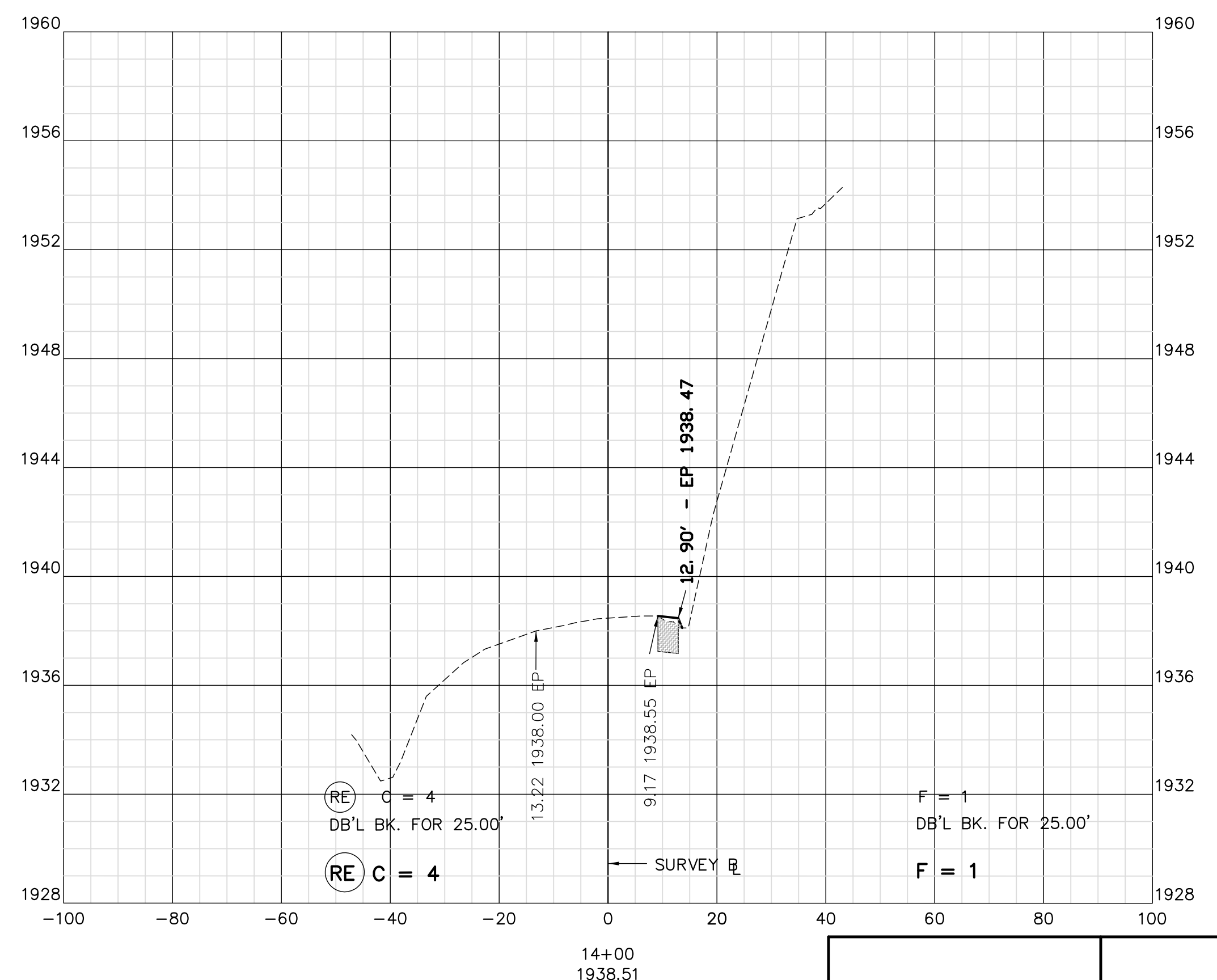
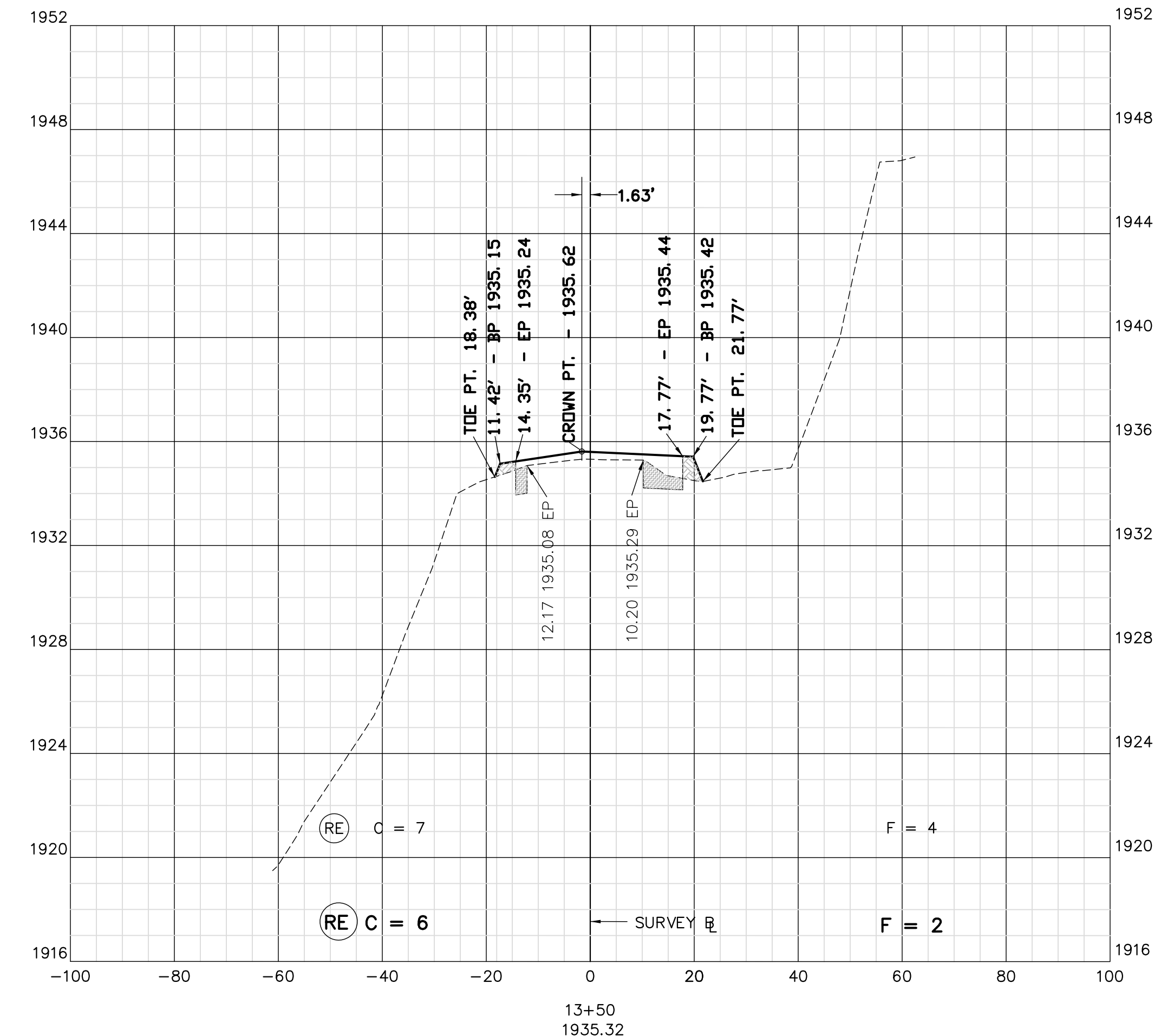
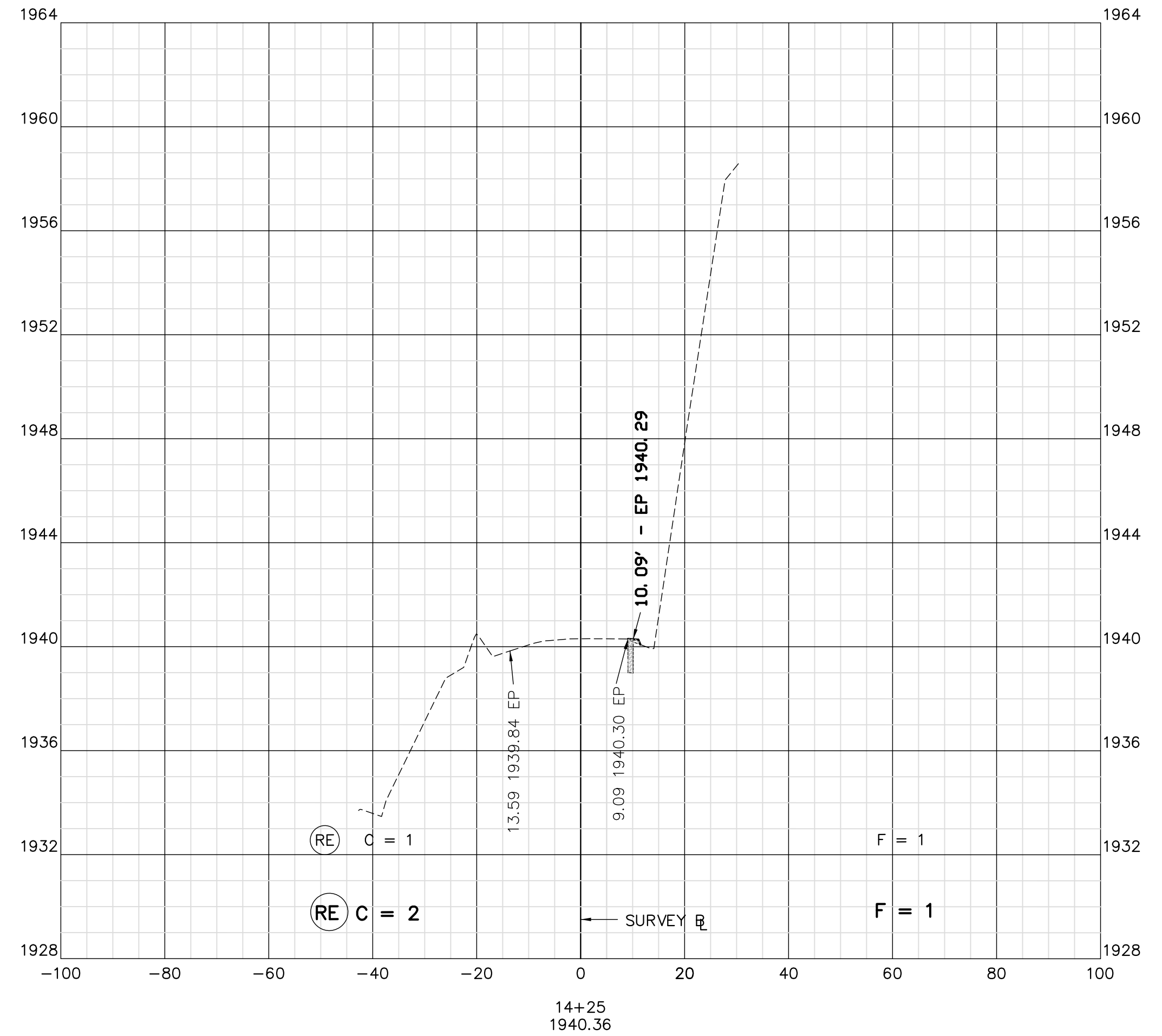
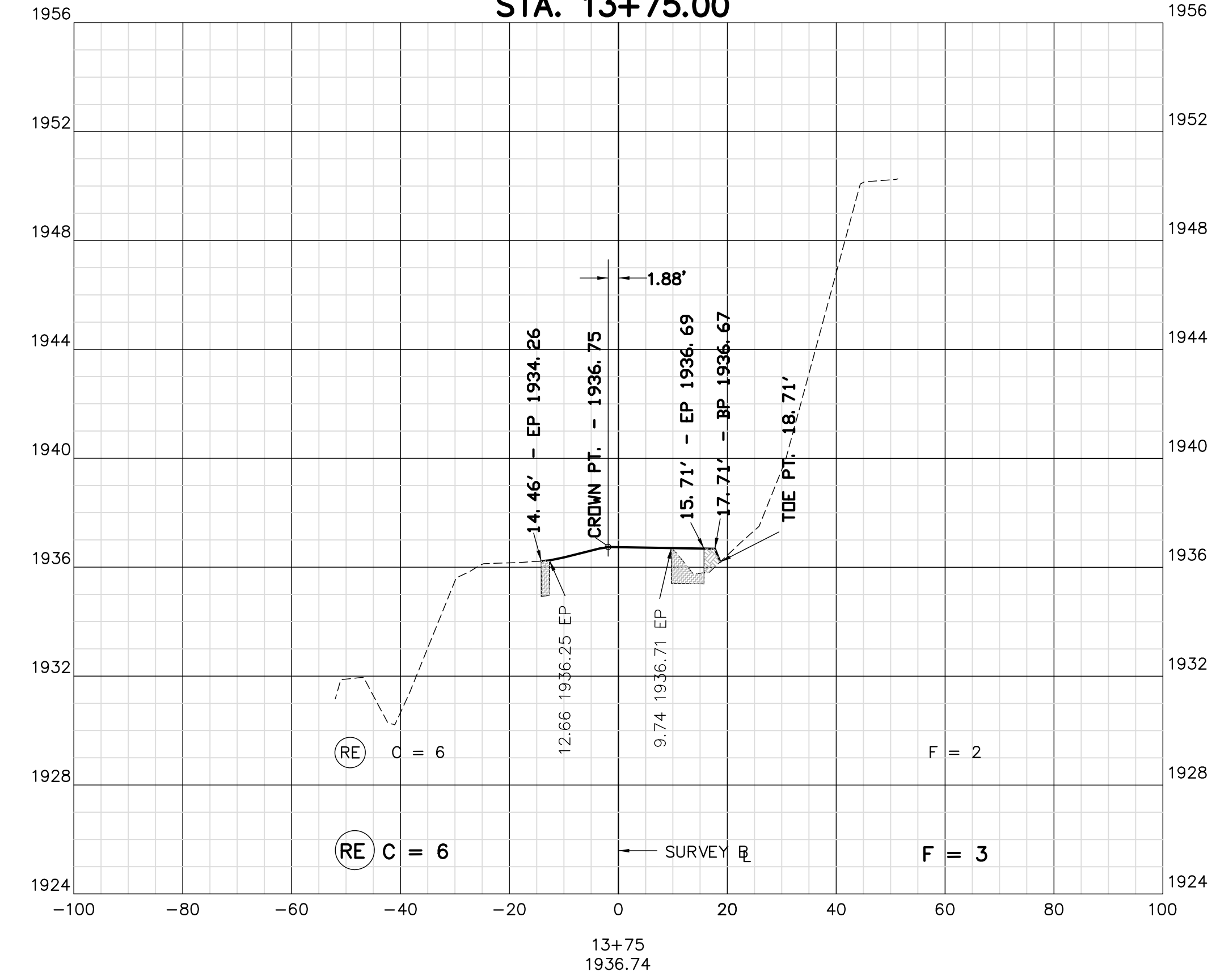


SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
CROSS SECTIONS
STA. 11+50.00 - 13+25.00**

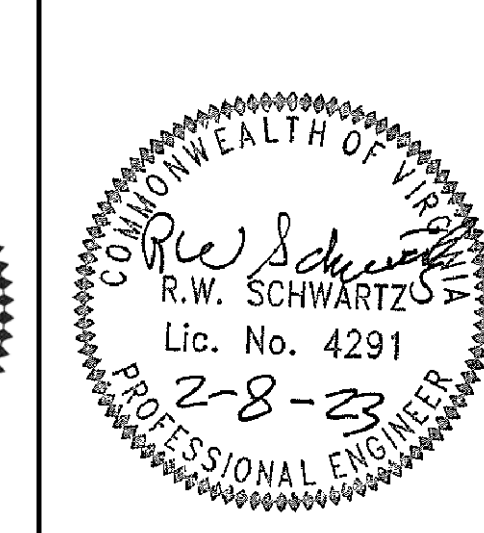
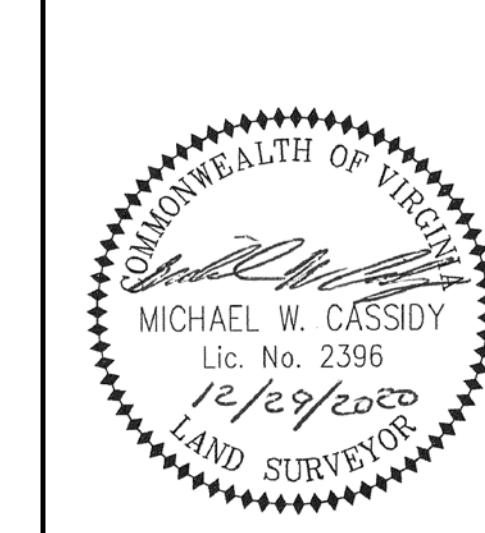
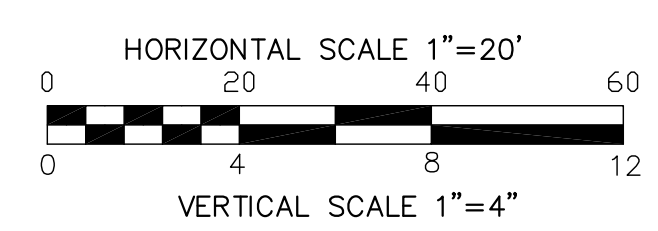
STATE	FEDERAL AID	ROUTE	STATE	SHEET NO.
VA.	PROJECT	4602	PROJECT	44
4602	STP-5125 (127)	4602	4602-125-124, B608	

END PROJECT STA. 13+75.00
COMMERCE STREET SURVEY BASELINE X-SECTIONS



CADD REFERENCE NO.: 19100/ROAD PLAN

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES REGULAR EXCAVATION
- DENOTES FILL



SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**W. COMMERCE ST. OVER PEAK CREEK
TOWN OF PULASKI, VA.
CROSS SECTIONS
STA. 13+50.00 - 14+25.00**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: RWS
SCALE: AS SHOWN	PROJECT NO.:	
DATE: FEBRUARY 8, 2023	SHEET: 44 OF 44	

SURVEY & BASE SHEET COMM. NO. 19100