

FOR INDEX OF SHEETS, SEE SHEET 3.

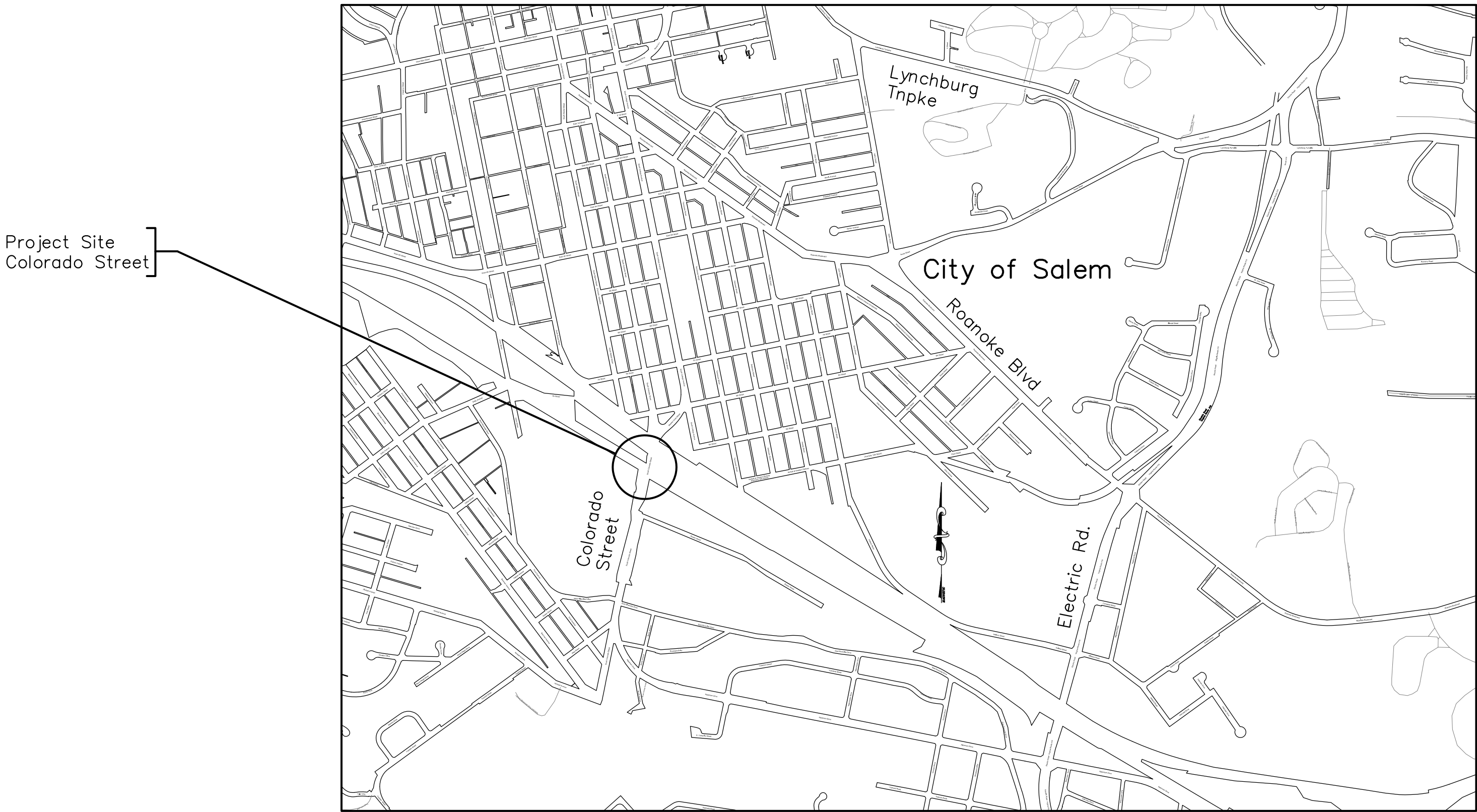
STATE		FEDERAL AID		STATE		SHEET
ROUTE		PROJECT		ROUTE	PROJECT	NO.
VA.	---	N/A		11	0011-129-247, P101, B606	1

UPC 110689



CITY OF SALEM, VIRGINIA

PROPOSED BRIDGE REPAIR OF COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY



General construction note:

This project shall be constructed in accordance with Supplemental Specifications, VDOT Road and Bridge Specifications dated 2020 and the VDOT Road and Bridge Standards, 2016.

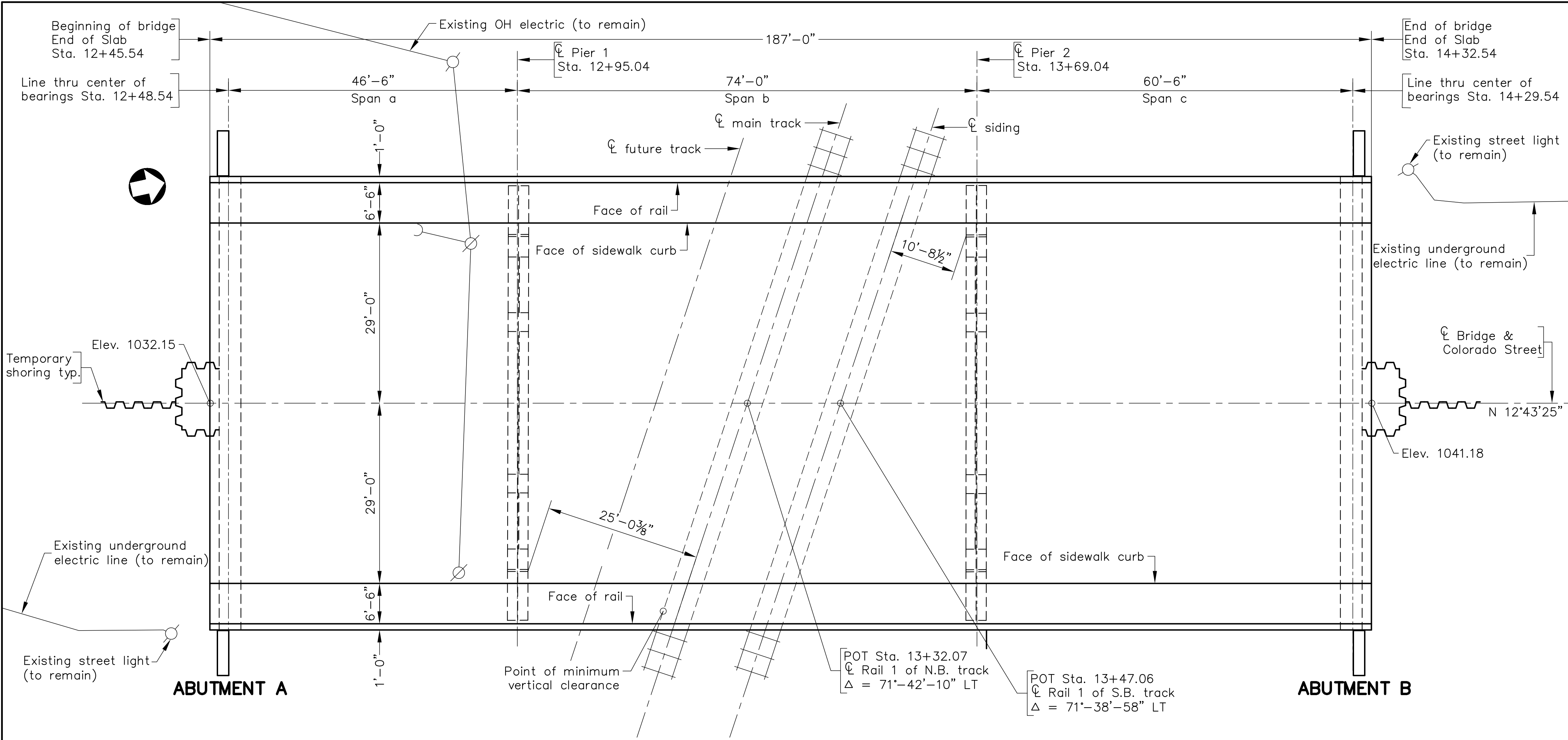
Legend:

- | | |
|-----------|-----------------------|
| — — — — — | Existing object lines |
| — — — — — | Proposed object lines |
| — — — — — | EXisting reinf. steel |
| — — — — — | Proposed reinf. steel |
| — — — — — | Cutting plane line |
| — — — — — | Center line |
| — — — — — | Hidden lines |

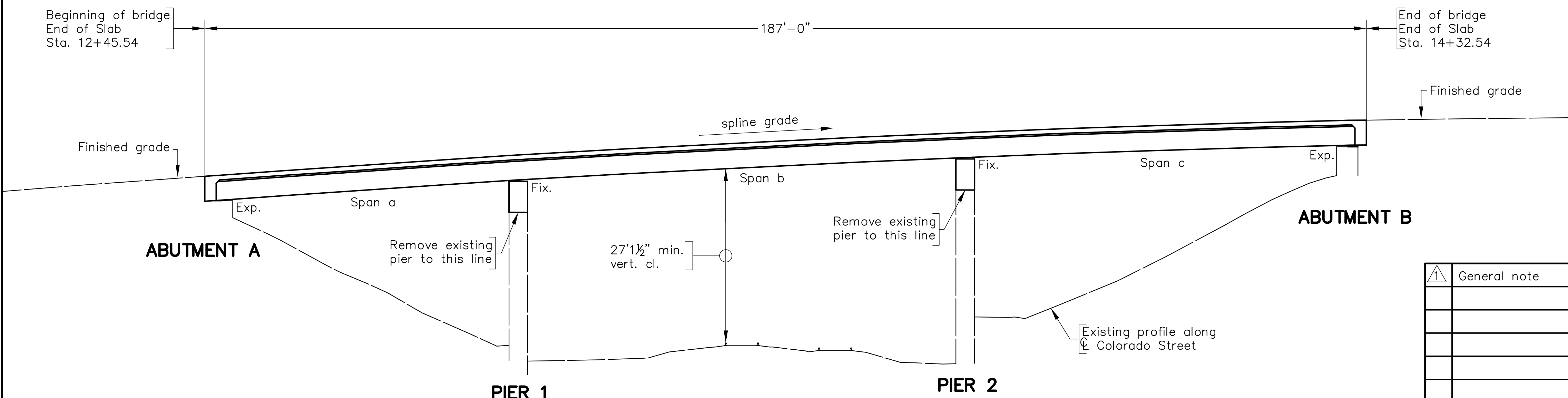
Location Map
Not to scale

PLANS		REVISED				SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
SHEET NO.	DATE:							
2,4,4a,5,6,7,8,11,13,25	5/23/23					COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY CITY OF SALEM, VA COVER		
DESIGNED BY: APS		DRAWN BY: APS		CHECKED BY: MBH				
SCALE: As shown		PLAN NO.: 094-02A		DATE: March 3, 2023		SHEET 1 OF 46		
COMM. NO. 19051								

CADD REFERENCE NO. COVER.dwg



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



DEVELOPED SECTION ALONG ϕ
Scale: 3/32" = 1'-0"

DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

Width: 2 - 29'-0" clear roadways, 2 - 6'-6" sidewalks, 2 - 1'-0" CPSR

Span layout: 46'-6" - 74'-0" - 60'-6" continuous steel plate girder

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, June 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, rail, sidewalks, median, integral backwall, and terminal walls shall be Low Shrinkage Class A4 Modified in accordance with Section 217.12(a); in pier caps and abutments Class A3.

All structural steel, including bearings, shall be ASTM A709 Grade 50W and shall be unpainted.

Spacing and height of stud shear connectors shall be shown on shop drawings (working drawings). The height of the stud shear connectors shall be 6" min.

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 one or more of the three Classes listed in Section 223 of the Specifications. The Class(es) of CRR steel(s) required on this project is/are noted on plan sheets and in the reinforcing steel schedule. CRR Steel, Class II or Class III, may be substituted for Class I. CRR Steel, Class III, may be substituted for Class II.

All substructure reinforcing steel shall have a minimum clear cover of 3".

Virginia Structure No. of existing bridge is 1804. Original plan number is 094-2.


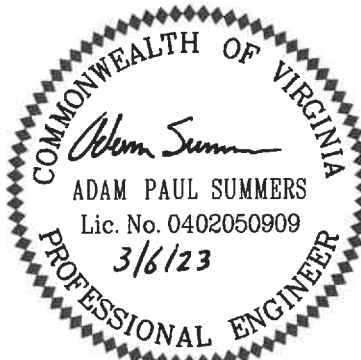
The existing structure is designated a Type B structure in accordance with Sec. 411.

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.

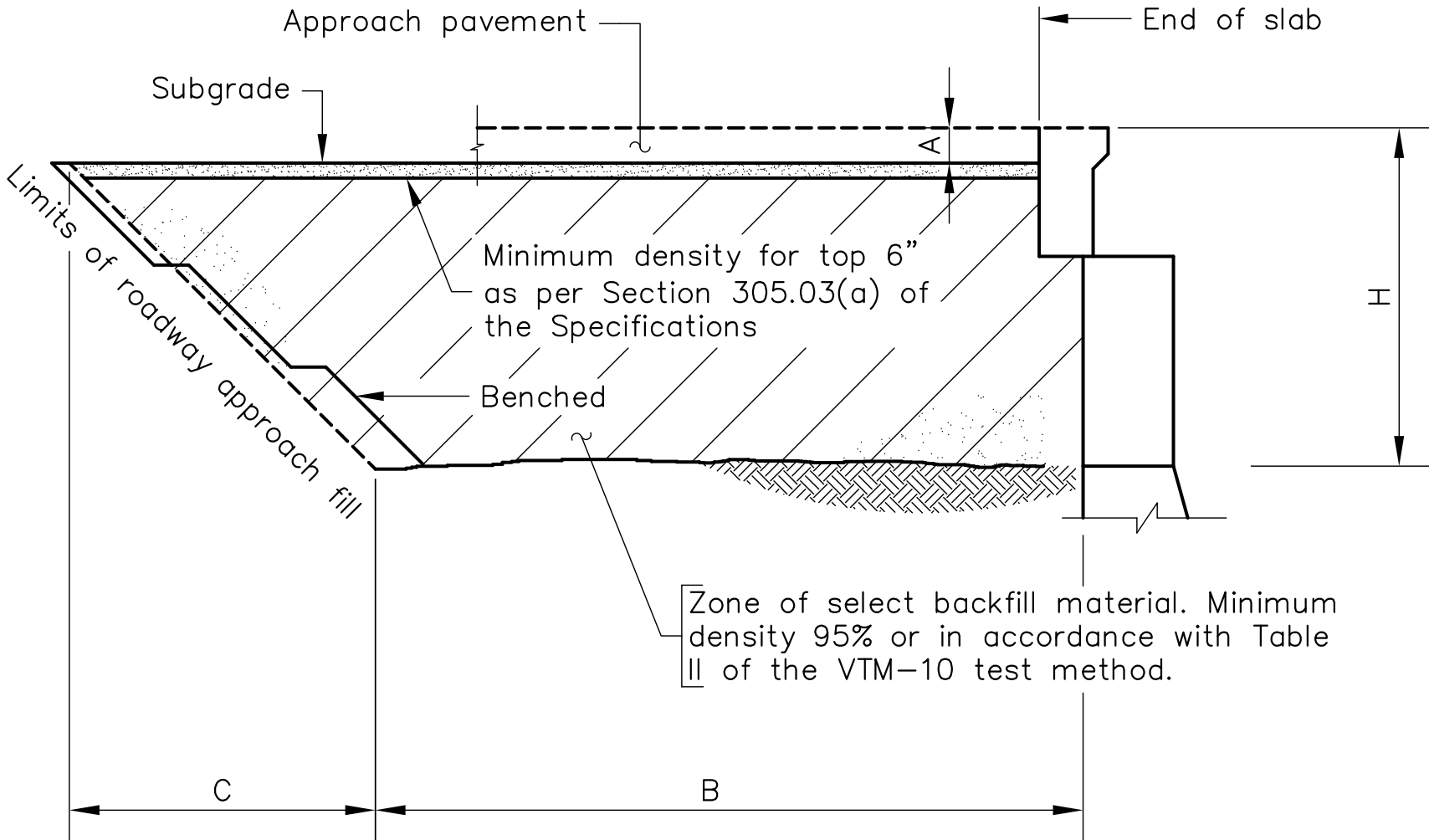
All areas disturbed in this project, not covered by other notes, shall be restored to its original or better conditions as directed by the Engineer. All costs for this work shall be included in other items.

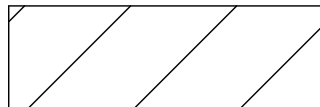
B.M.: City of Salem Control Monument in left sidewalk. Sta. 13+69.51 left 30.99 feet. Elevation = 1039.49

		General note	5/23/23		SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD		
					COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY PLAN, ELEVATION, & GENERAL NOTES		
					DESIGNED BY: APS		
					DRAWN BY: APS		
					CHECKED BY: MBH		
					SCALE: 3/32" = 1'-0"		
					PLAN NO.: 094-02A		
					DATE: March 3, 2023		
					SHEET: 2 OF 46		
NO.	DESCRIPTION	DATE	COMM. NO. 19051				

ESTIMATED QUANTITITES – SUBSTRUCTURE ONLY									
		Concrete Class A3	Corrosion Reistant Reinf. Steel, Class I	Structure Excav.	Select Material Type I Min. CBR–30	Concrete Substructure Surface Repair	Pipe Underdrain	Geo– Composite Wall Drain	Galvanic Anode
		CY	LB⊗	CY⊗	TONS⊗	SY	LF	SY	EA
Abutment A	Neat	56	6,966	390	430	–	91	58	–
	Footing	–	–	–	–	–	–	–	–
Pier 1	Neat	50	9,984	–	–	34	–	–	140
	Footing	–	–	–	–	–	–	–	–
Pier 2	Neat	50	9,984	–	–	10	–	–	80
	Footing	–	–	–	–	–	–	–	–
Abutment B	Neat	56	6,966	390	430	–	91	58	–
	Footing	–	–	–	–	–	–	–	–
Totals		212	33,900	780	860	44	182	116	220

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



 To be paid for as structural excavation

SECTION THROUGH ABUTMENT – CUT SECTION

Abutment drainage not shown
Not to scale

Material in the abutment select backfill zone shall be 21A, 21B or Select Material Type I, minimum CBR 30 and shall be compacted in accordance with Sections 303 and 305 of the Specifications.

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	C	H
Abutment A	1–04	1–06	16–5	12–03
Abutment B	1–04	1–06	17–11	13–03

ESTIMATED QUANTITIES – SUPERSTRUCTURE ONLY		
Item	Units	Quantity
Concrete Low Shrinkage Class A4 Modified	CY	487
Corrosion Resistant Reinf. Steel, Class III⊗	LB	102,927
Elastomeric Expansion Dam	LF	196
Bridge Parapet⊗	LF	383
Structural Steel Plate Girders⊗ ASTM A709 Grade 50W	LB	272,520*
Pedestrian Fence 9’⊗	LF	383
Bridge Deck Grooving⊗	SY	1,205
Cover Depth Survey	SY	1,517
NBIS Access Under Bridge	DAY	1

* Lump Sum – Weight shown is for estimation purposes only and includes bearing devices.

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

INDEX OF SHEETS	
Sheet No.	Description
1	Cover
2	Plan, Elevation, & General Notes
3	Estimated Quantities and General Notes, Continued
4	Sequence of Constrution
5	Temporary Shoring Details & Concrete Substructure Surface Repair
6	Temporary Substructure Supports
7	Abutment Plan & Elevation
8	Pier Plan & Elevation
9	Bearing Details
10	Transverse Section
11	Framing Plan and Girder Details
12	Girder Details (Sheet 1 of 2)
13	Girder Details (Sheet 2 of 2)
14	Cross Frame Details
15	Camber Diagram
16	Dead Load Deflections and Slab Elevations
17	Deck Slab Plan
18	Deck Slab Elevations and Longitudinal Joint Details
19	Integral Backwall
20	42”–CPSR Railing (CPSR–1)
21	CPSR Rail Connections and Notes (CPSR–3)
22	CPSR Rail Connections (CPSR–4)
23	42” CPSR Terminal Wall (CPSRT–3)
24	Pedestrian Fence with CPSR Railing (with Sidewalk) (BPF–5)
25	Reinforcing Steel Schedule

GENERAL NOTES CONT'D.

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 Sika Armetec 110 (or Engineer approved equivalent) 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 concrete where used.

All field connections shall be made with 7/8”Ø ASTM A325 high strength bolts, nuts, and washers.

ESTIMATED QUANTITY NOTES:

Areas of the structure to be removed under the bid item Dismantle and Remove Portion of Existing Structure Number 1804 shall include but are not limited to the following: Concrete deck, bridge rails, bridge curbs, bridge sidewalks, all structural steel including bearings devices, abutment backwalls, abutment breastwalls, and pier caps.

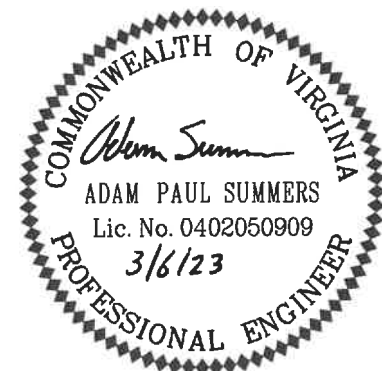
Price bid "Concrete Low Shrinkage Class A4 Modified" shall include geotextile fabric, waterproofing fabric, and EPS material required for integral backwall construction.

Price bid for "Temporary Support Existing Abutment & Pier Caps" shall include all materials and incidentals needed to complete the work including but not limited to concrete, reinforcing steel, structure excavation, structural steel, and anchors. Abutment cap supports shall be left in place.

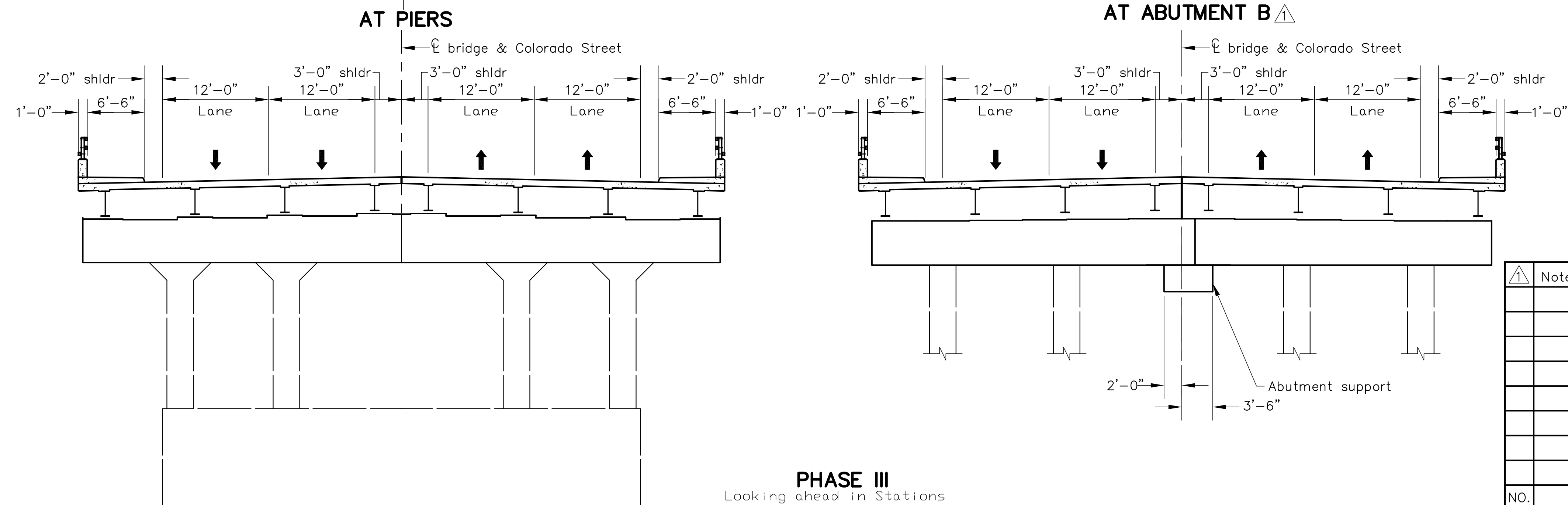
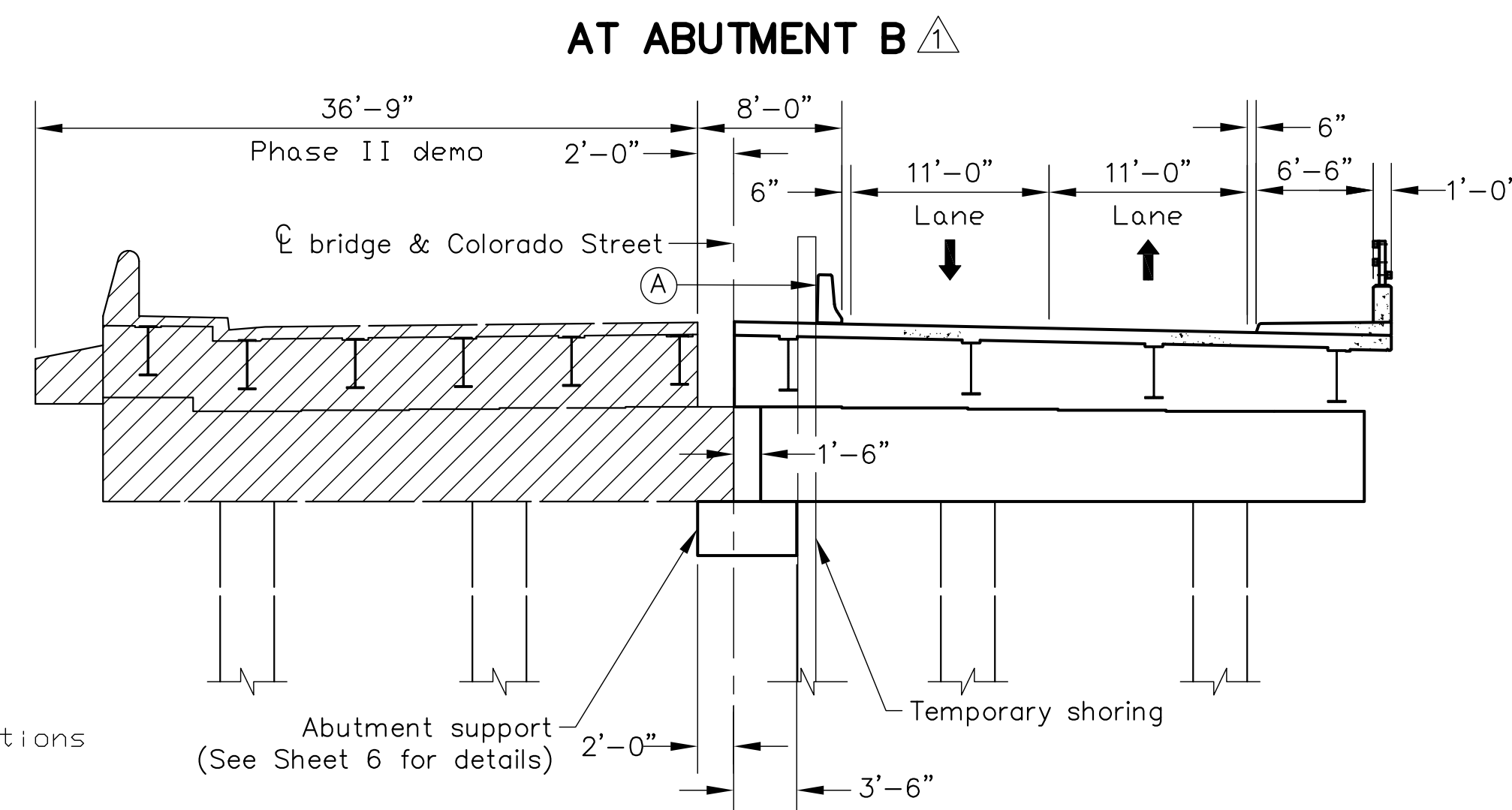
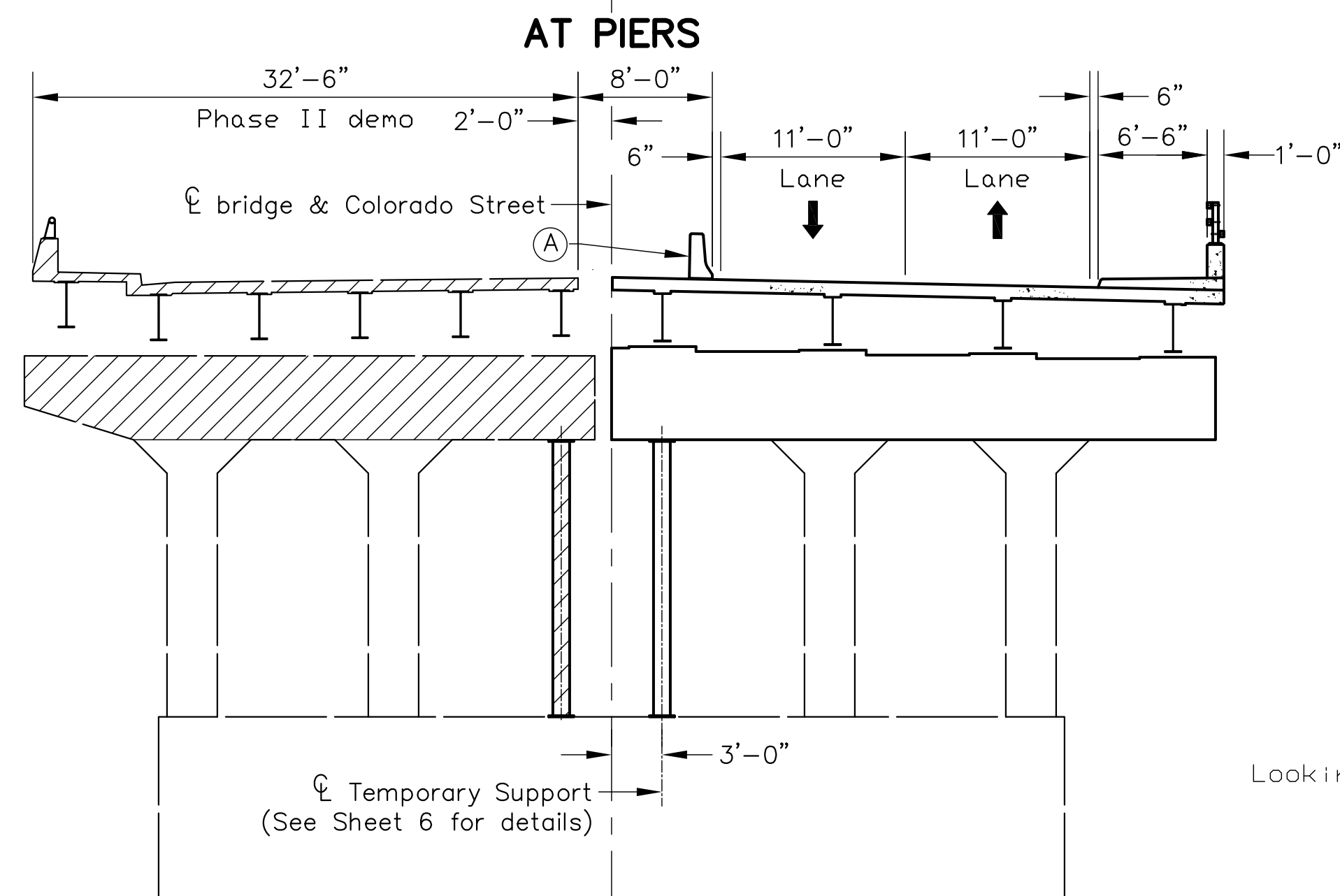
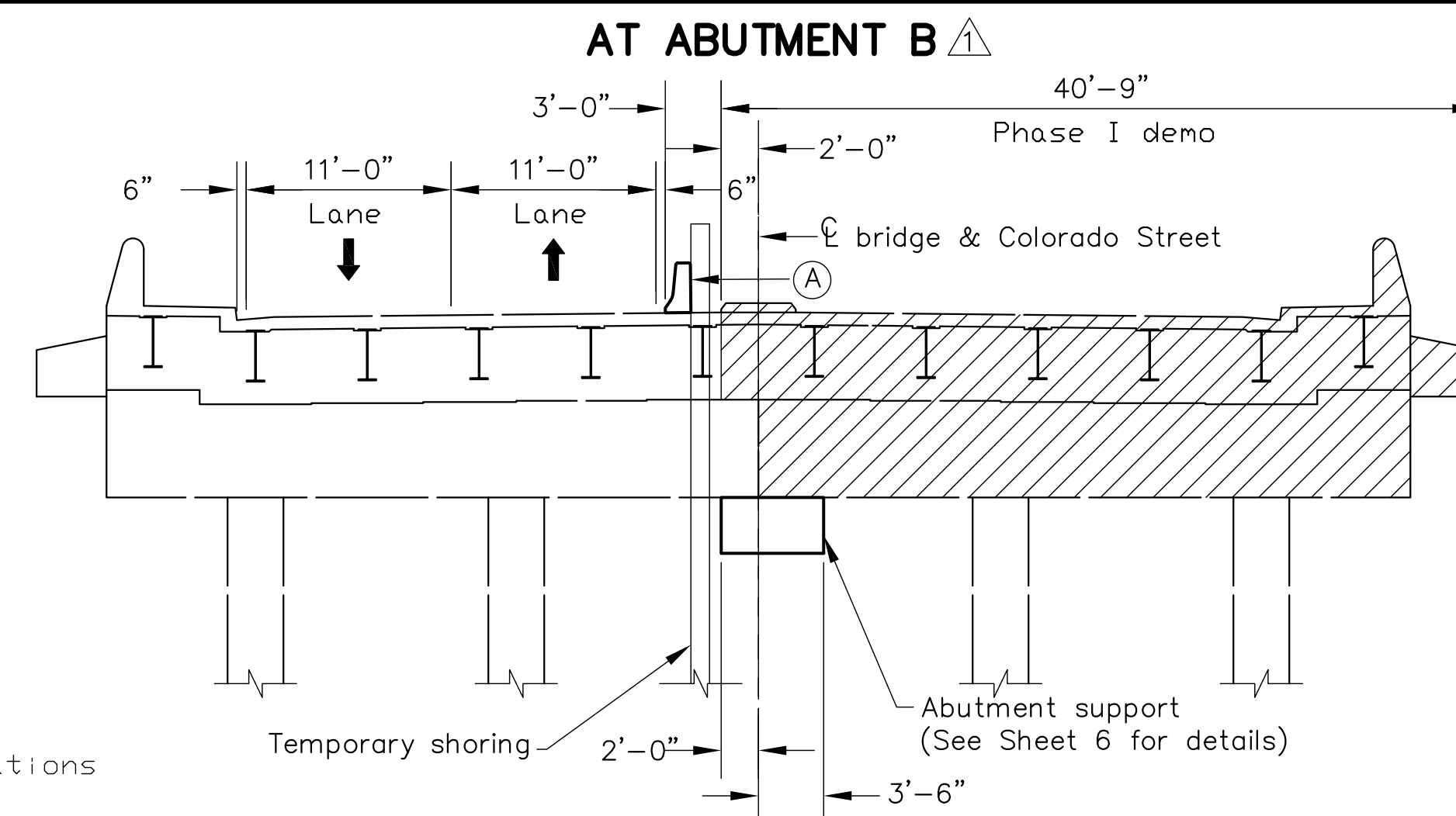
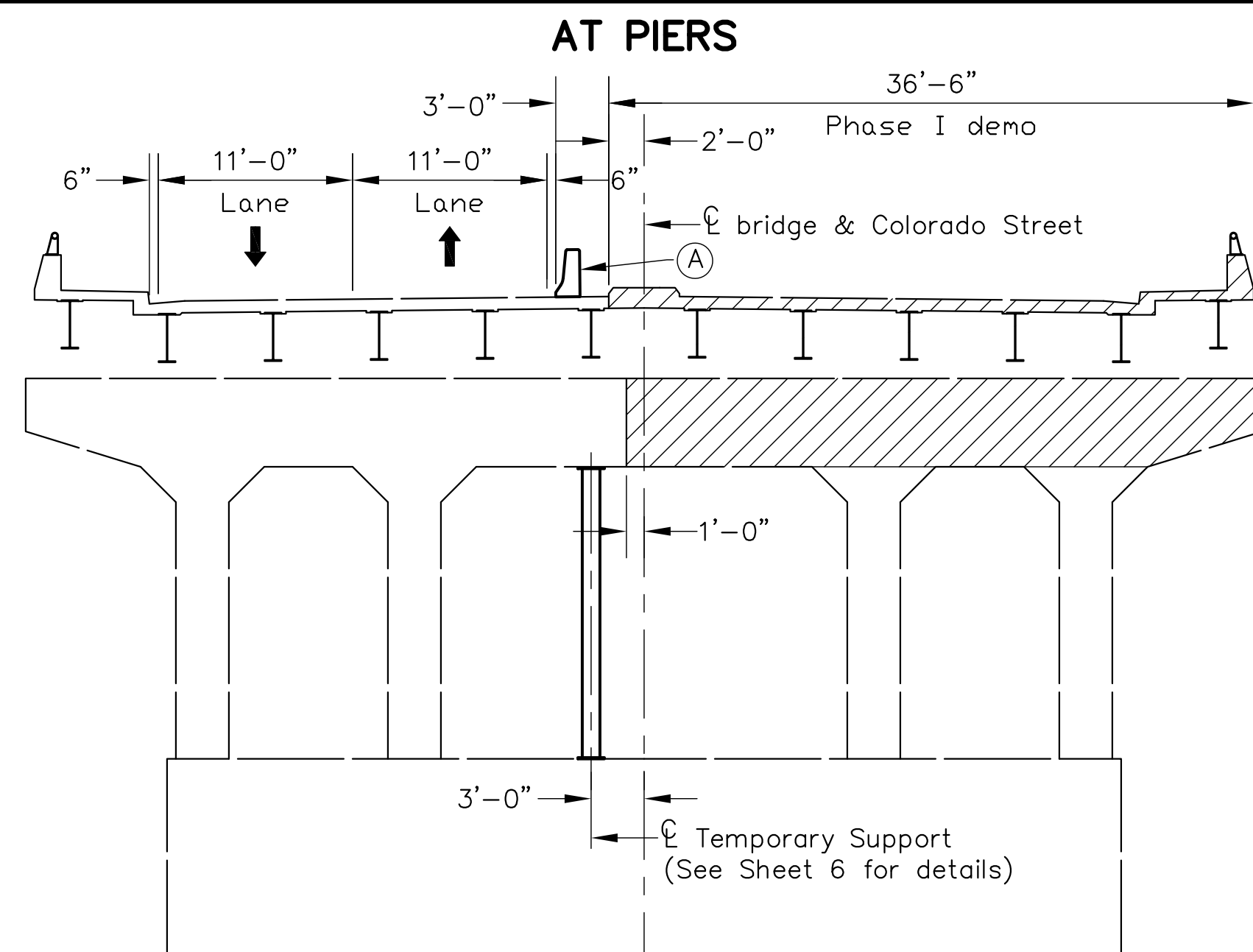
LUMP SUM BID ITEMS	
Mobilization	LS
Construction Surveying	LS
Dismantle and Remove Portion Existing Structure Number 1804	LS
Environmental and Worker Protection Structure Number 1804	LS
Material Disposal Structure Number 1804 (Type B)	LS
Temporary Shoring	LS
Temp. Support Existing Abut. & Pier Caps	LS

CADD REFERENCE NO.: 19051.DWG

NO.	DESCRIPTION	DATE

	VA. STR. NO.: 1804		NBIS NO.: 21774		
	SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.				
	COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY ESTIMATED QUANTITIES & GENERAL NOTES CONT'D.				
	DESIGNED BY: APS		DRAWN BY: APS		CHECKED BY: MBH
	SCALE: Not to Scale		PLAN NO.: 094-02A		
	DATE: March 3, 2023		SHEET: 3 OF 46		

COMM. NO. 19051



Note: Two-way traffic shall be maintained on Colorado Street at all times during construction. One sidewalk shall remain open at all times for pedestrian traffic. Short term closures of these lanes will require approval of the Engineer.

PHASE I

1. Install temporary barrier service on existing SBL.
2. Install temporary pier cap supports at piers 1 & 2 & abutment cap supports at Abutments A & B. All costs for these supports shall be included in price bid for Temp. Support Existing Abut. & Pier Caps.
3. Move all traffic to SBL Roadway.
4. Remove NBL portion of existing structure.

PHASE II

1. Construct NBL portion of new structure.
2. Install temporary pier cap supports at piers 1 & 2 before NBL deck is cast. All costs for these supports shall be included in price bid for Temp. Support Existing Abut. & Pier Caps.
3. Install temporary barrier service on new NBL side of structure.
4. Shift traffic to newly constructed portion of structure.
5. Remove SBL portion of existing structure including SBL temporary pier cap supports.



PHASE III

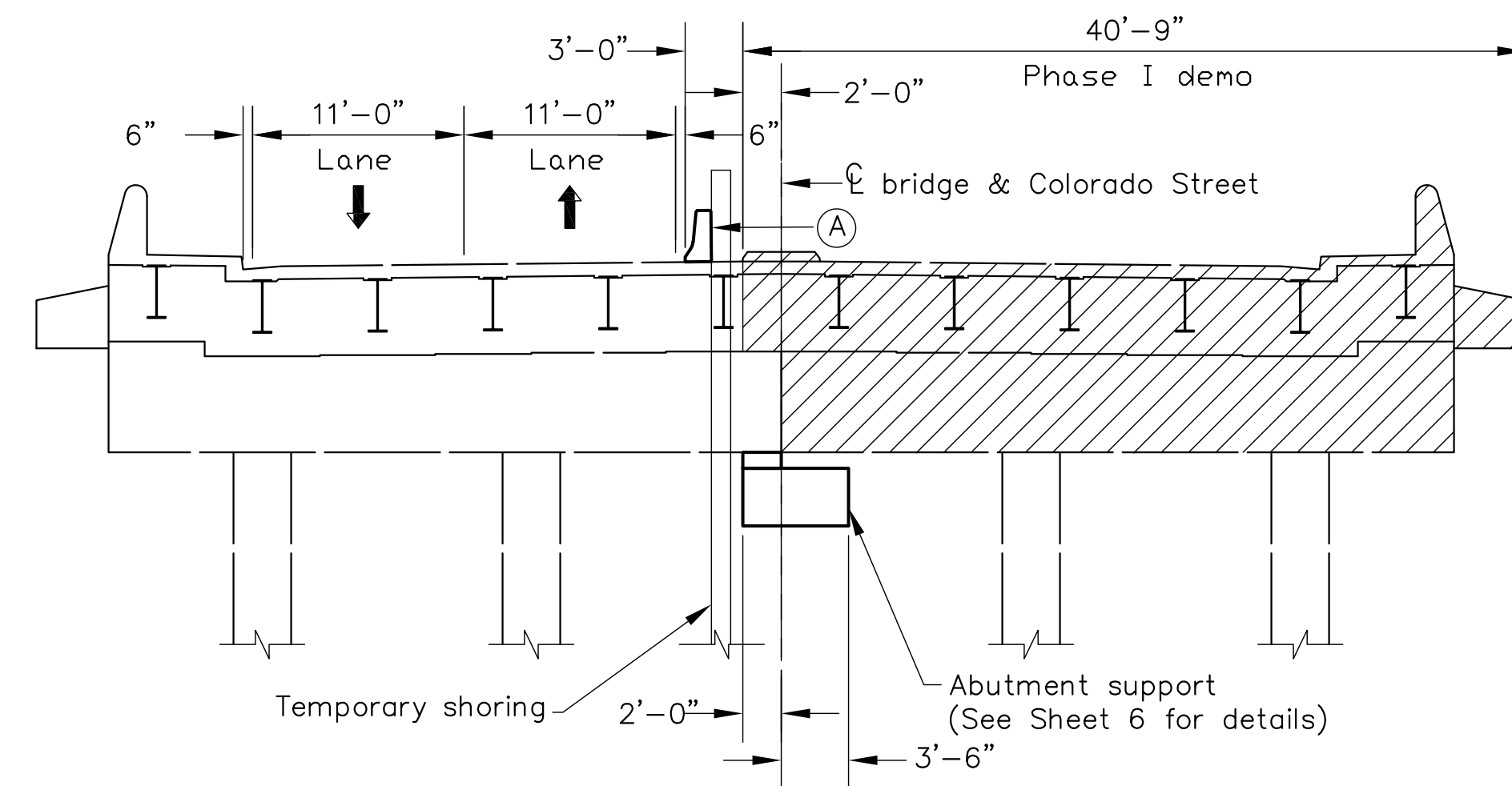
1. Construct SBL portion of new structure.
2. Remove temporary barrier service and open structure to full traffic.
3. Remove temporary pier cap supports.

(A) Traffic Barrier Service Concrete Parapet (Single Face) see VDOT Road and Bridge, Standard MB-10A

 - Denotes area to be removed under lump sum bid item
"Dismantle and Remove Portion Existing Structure Number 1804"

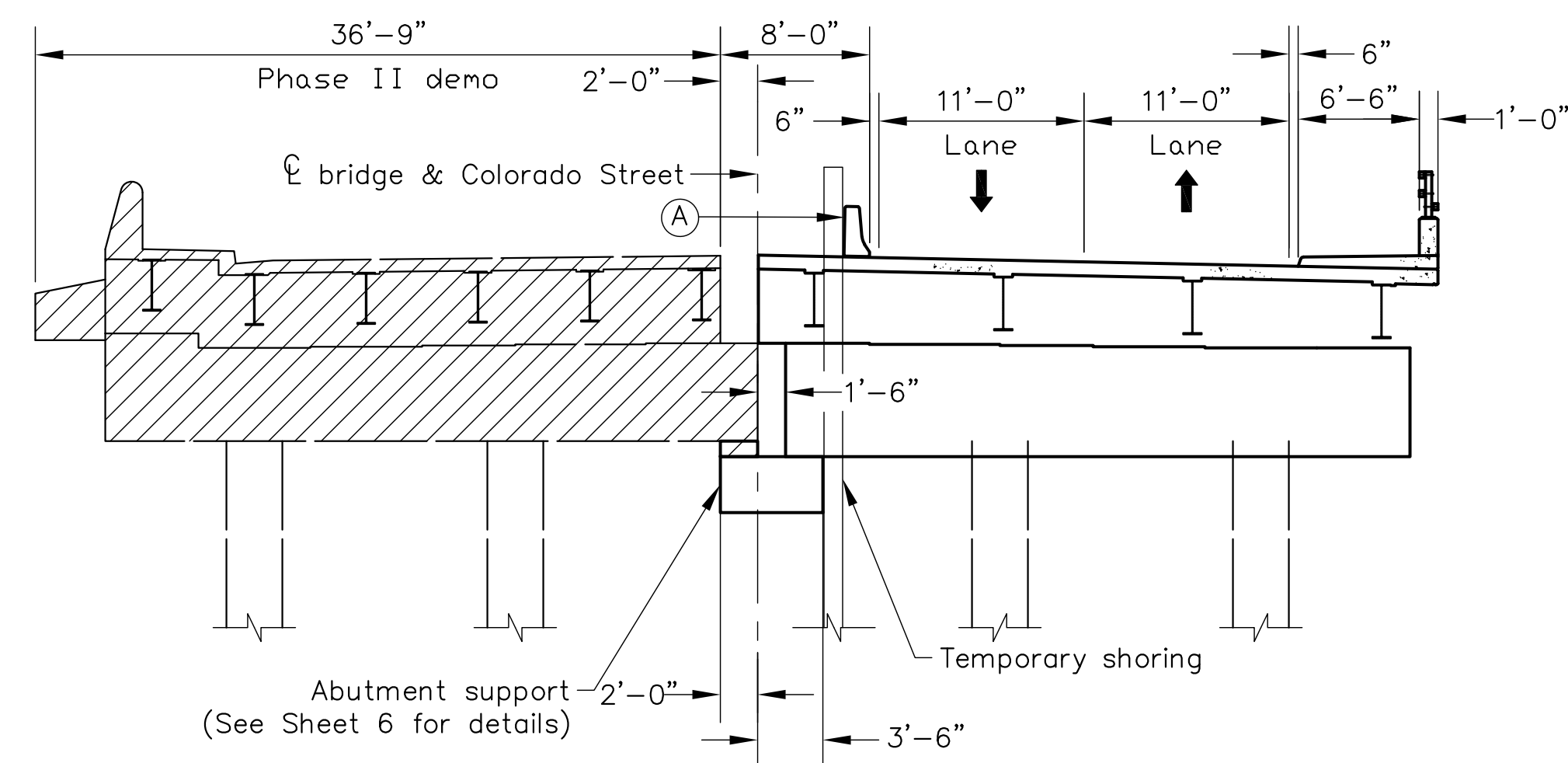
- ① Remove superstructure prior to cutting & removing Abutment & Pier cap.
① See Sheet 4a for Abutment A Sequence of Construction.

<div> <div>  Notes and Phases </div> <div> 5/23/23 </div> </div>			<div> <div> VA. STR. NO.: 1804 </div> <div> NBIS NO.: 21774 </div> </div>	
			<div> <div> SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA. </div> </div>	
			<div> <div> COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY SEQUENCE OF CONSTRUCTION </div> </div>	
			<div> <div> DESIGNED BY: APS </div> <div> DRAWN BY: APS </div> <div> CHECKED BY: MBH </div> </div>	
			<div> <div> SCALE: 1/8"=1'-0" </div> <div> PLAN NO.: 094-02A </div> </div>	
			<div> <div> DATE: March 3, 2023 </div> <div> SHEET: 4 OF 46 </div> </div>	
NO.	DESCRIPTION	DATE	COMM. NO.19051	



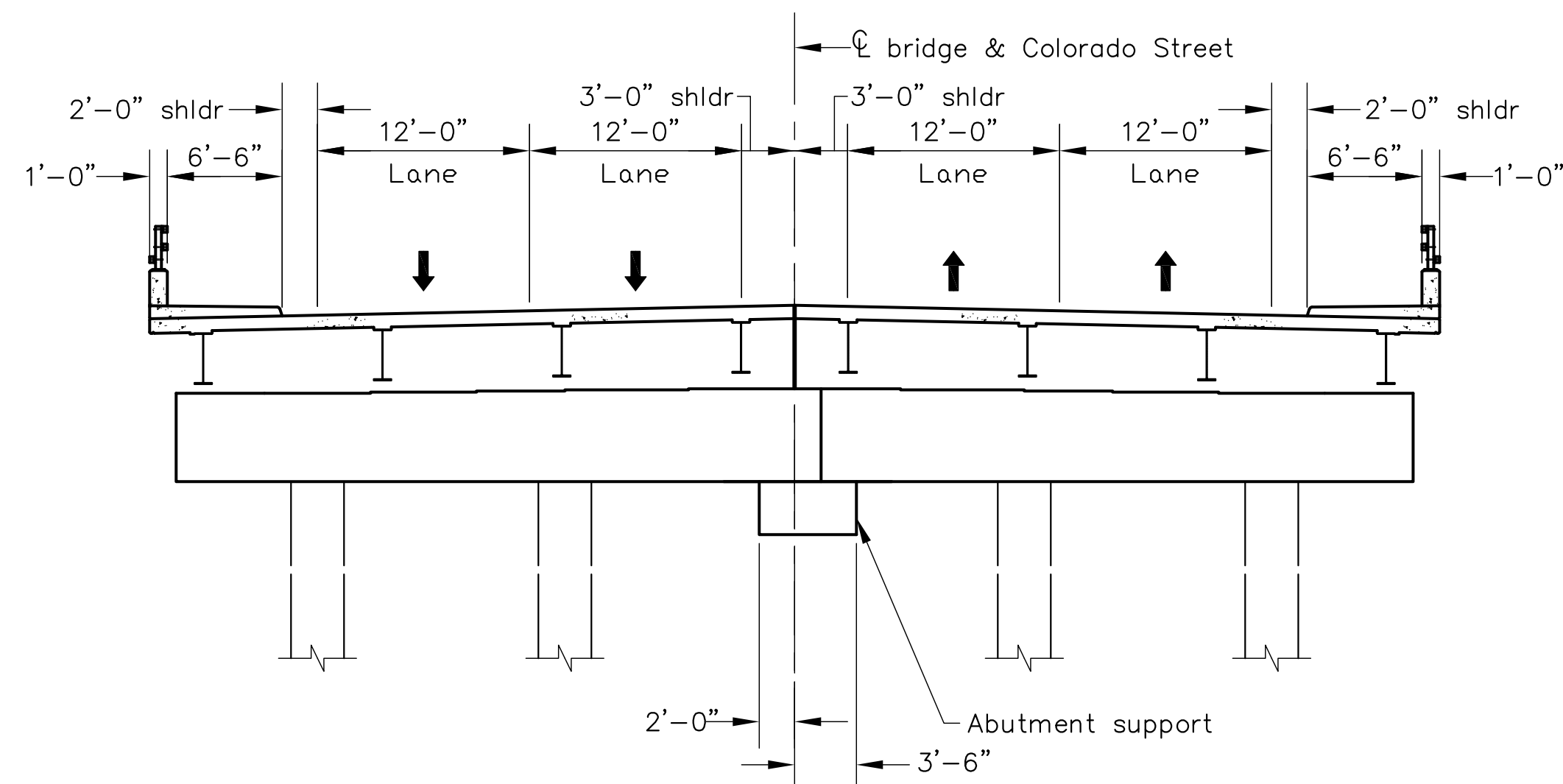
PHASE I – ABUTMENT A

Looking ahead in Stations



PHASE II – ABUTMENT A

Looking ahead in Stations





PHASE III – ABUTMENT A
Looking ahead in Stations

See Sheet 4 for construction sequence descriptions.

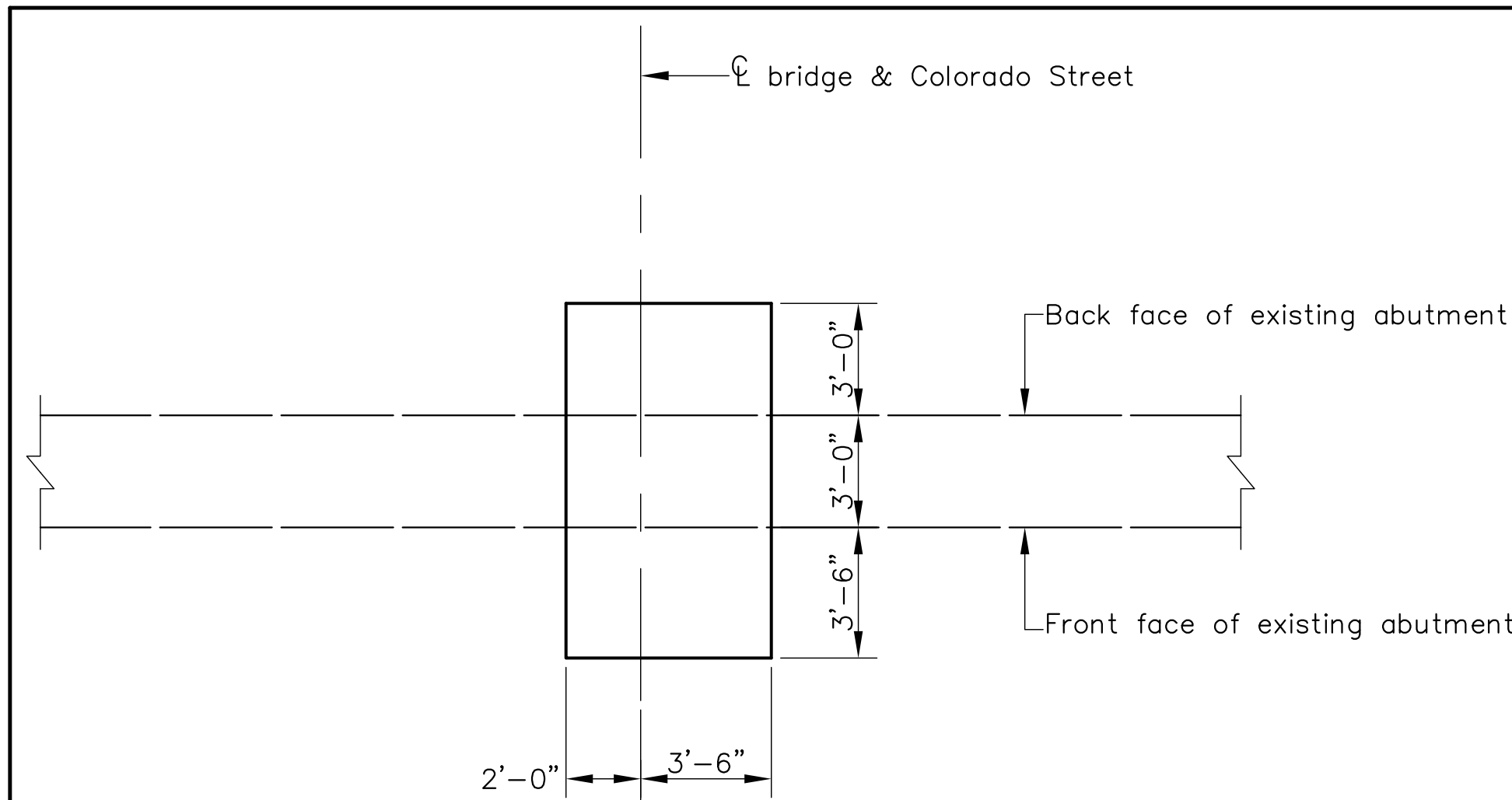
Remove superstructure prior to cutting & removing Abutment & Pier cap.

(A) Traffic Barrier Service Concrete Parapet (Single Face) see VDOT Road and Bridge, Standard MB-10A

 - Denotes area to be removed under lump sum bid item
"Dismantle and Remove Portion Existing Structure Number 1804"

			VA. STR. NO.: 1804		NBIS NO.: 21774	
	Added Sheet	5/23/23		<p>SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.</p>		
				<p>COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY SEQUENCE OF CONSTRUCTION</p>		
NO.	DESCRIPTION	DATE	COMM. NO.19051	DESIGNED BY: APS	DRAWN BY: APS	CHECKED BY: MBH
				SCALE: 1/8"=1'-0"		PLAN NO.: 094-02A
				DATE: March 3, 2023		SHEET: 4A OF 46

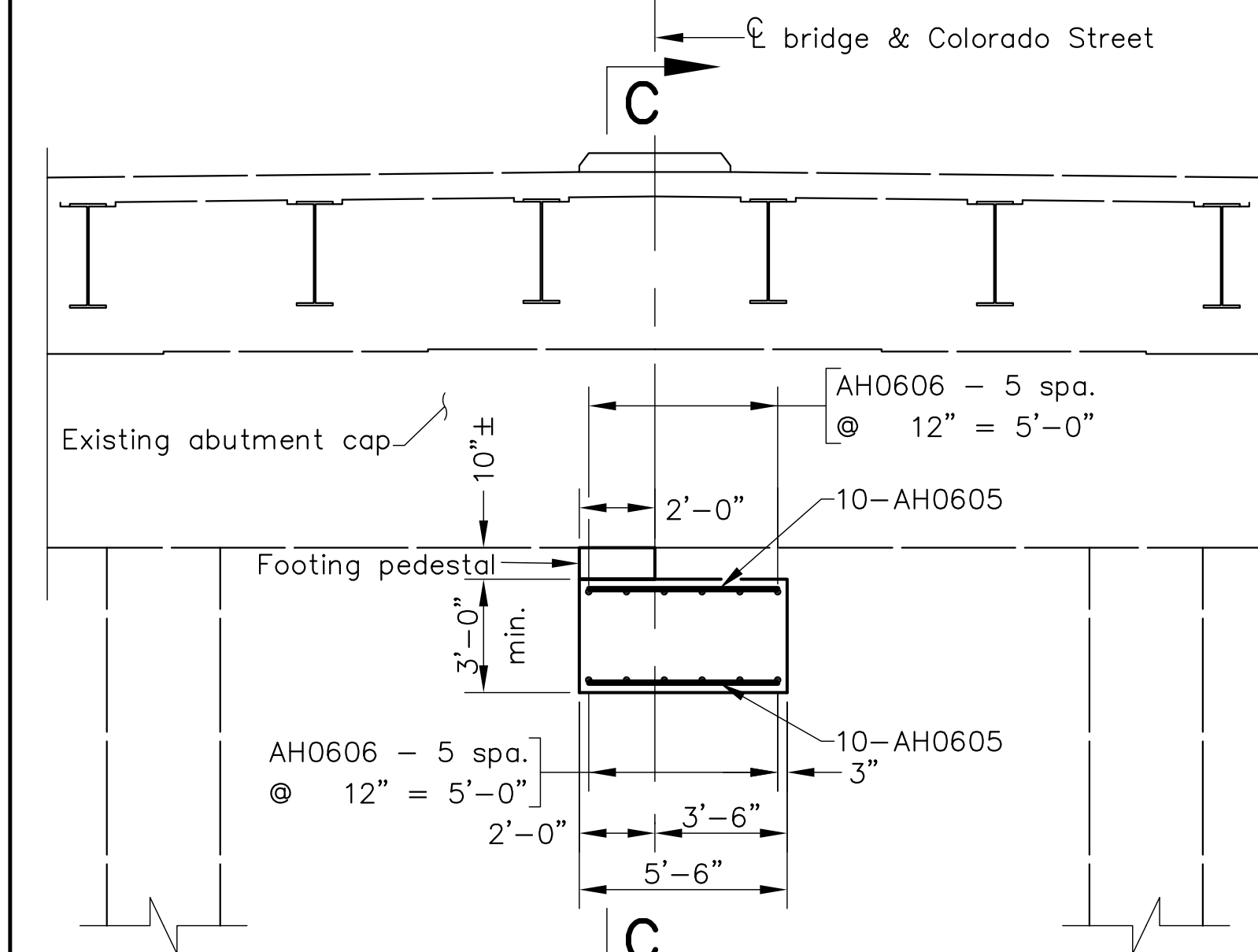
CADD REFERENCE NO.: 19051.DWG



TYPICAL ABUTMENT PLAN

Scale: $\frac{1}{4}"=1'-0"$

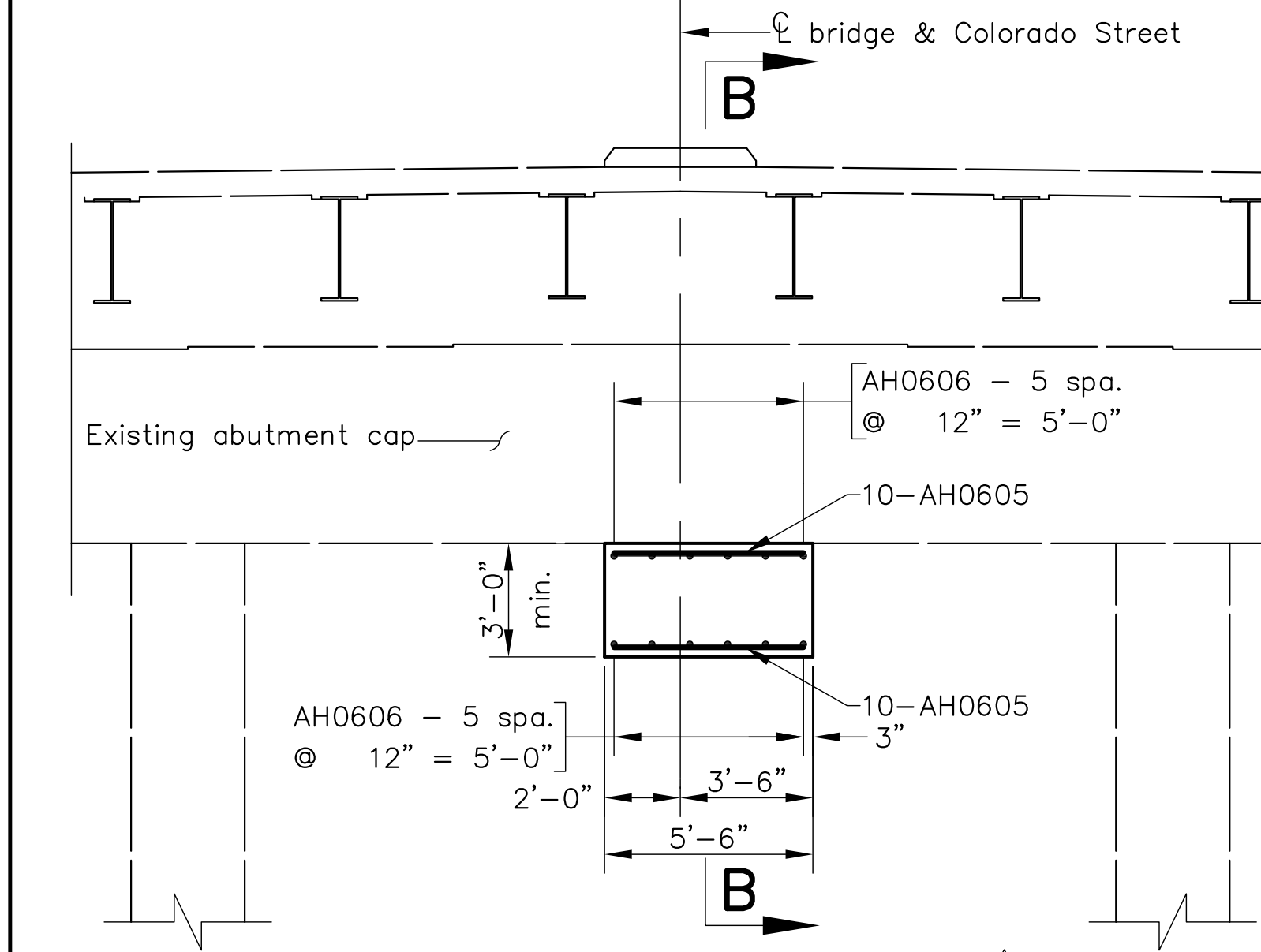
Abutment B shown. Abutment A similar but opposite hand.



ABUTMENT A ELEVATION

Looking ahead in stations

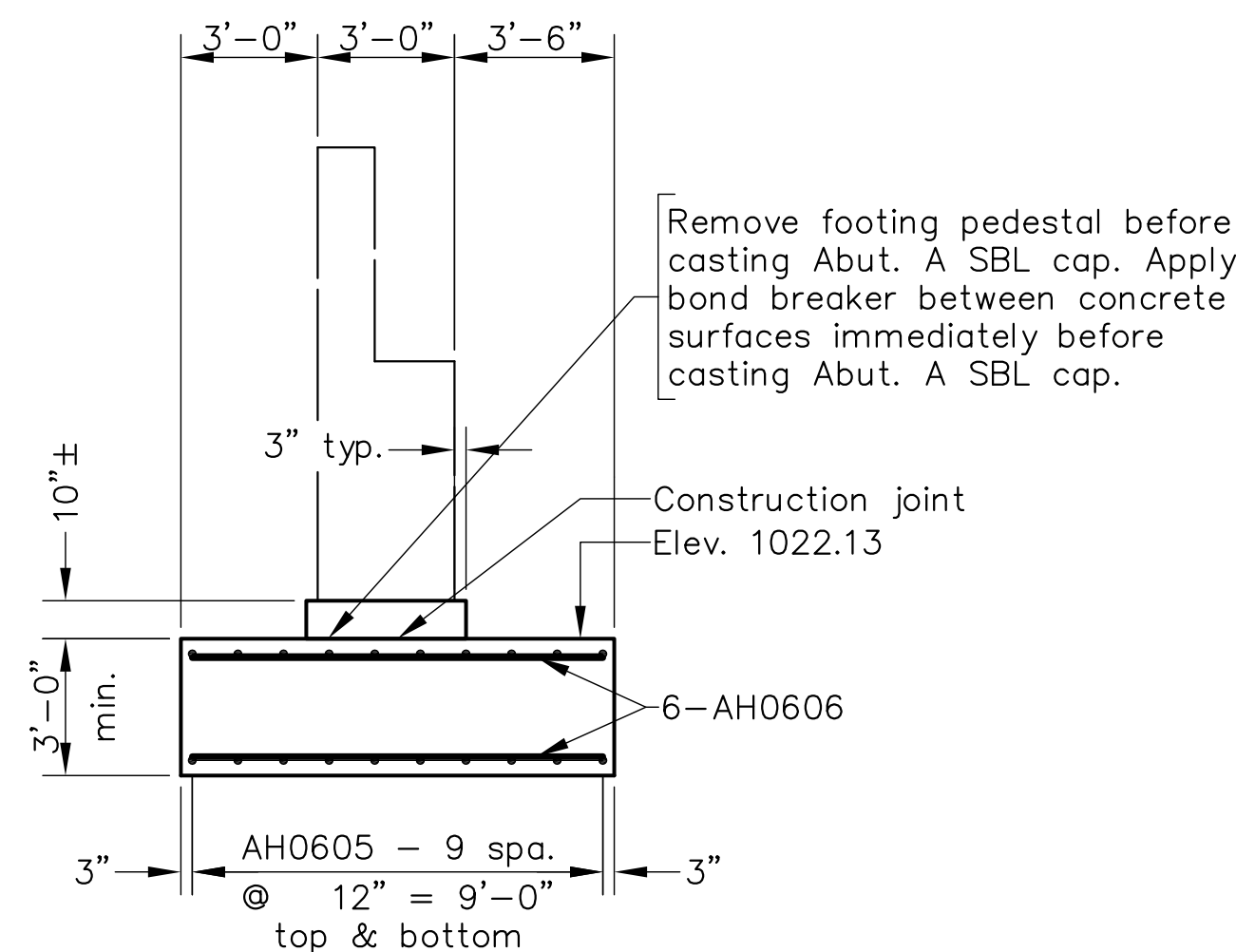
Scale: $\frac{1}{4}"=1'-0"$



ABUTMENT B ELEVATION

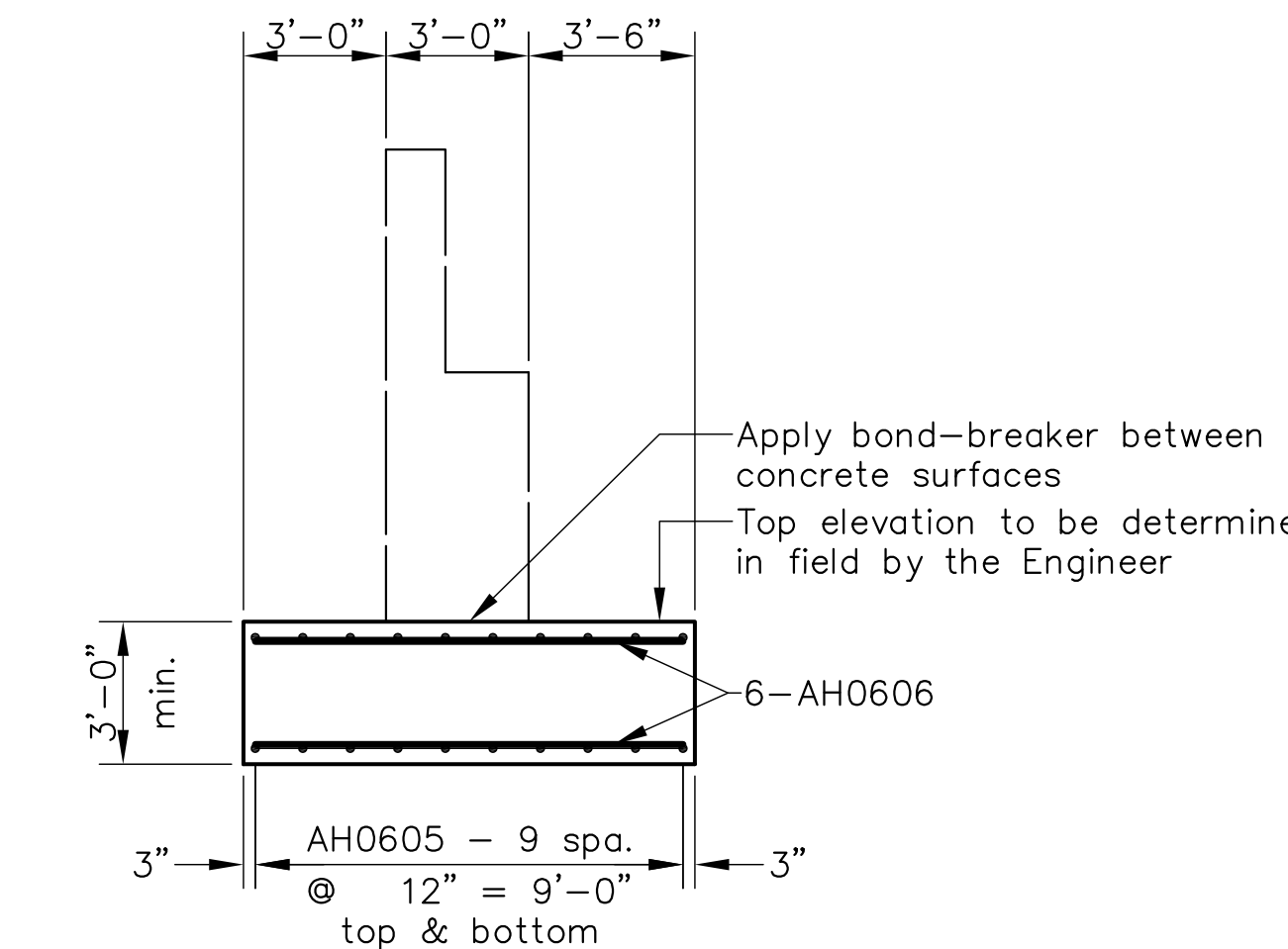
Looking ahead in stations

Scale: $\frac{1}{4}"=1'-0"$



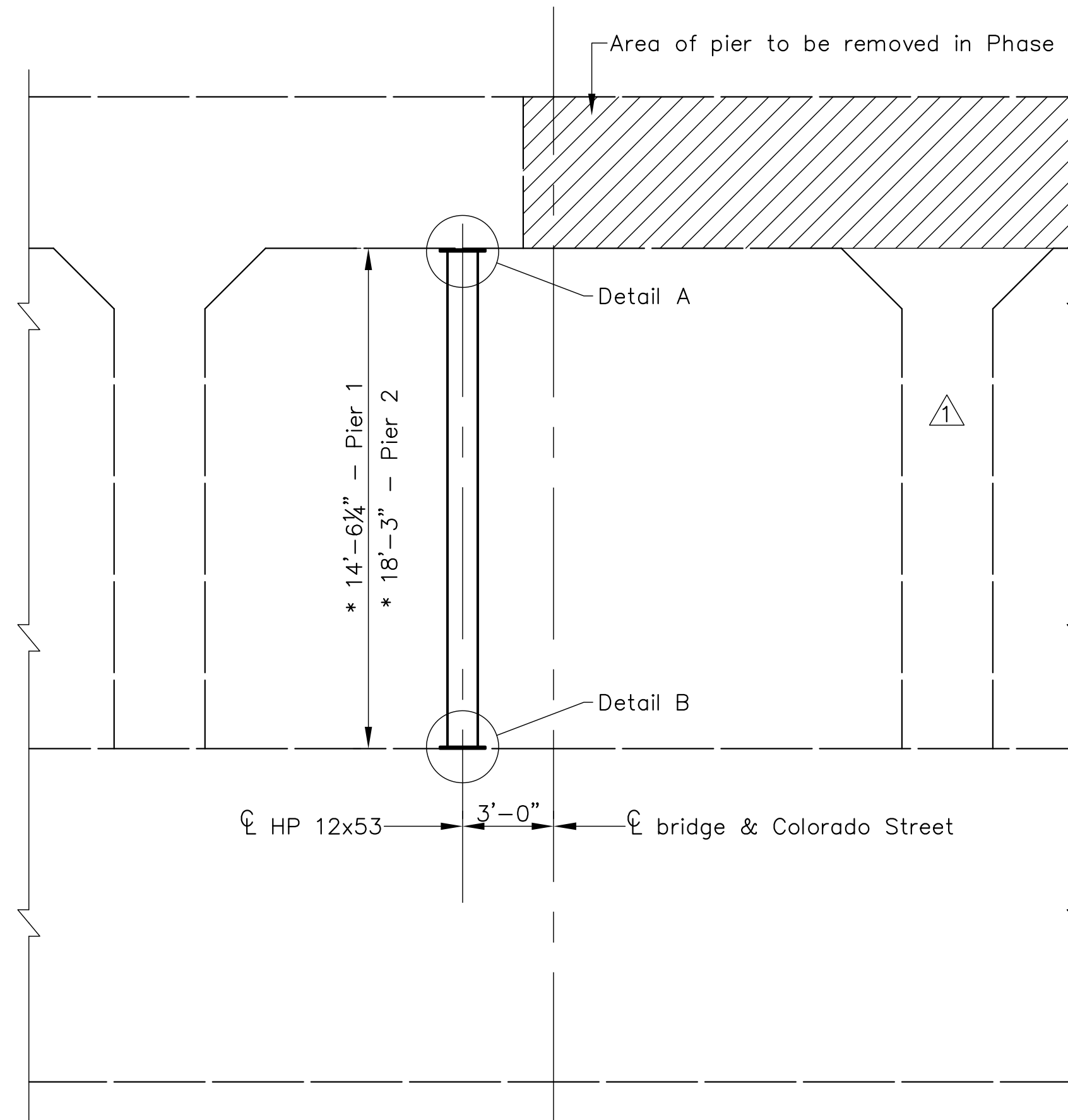
SECTION C-C

Scale: $\frac{1}{4}"=1'-0"$



SECTION B-B

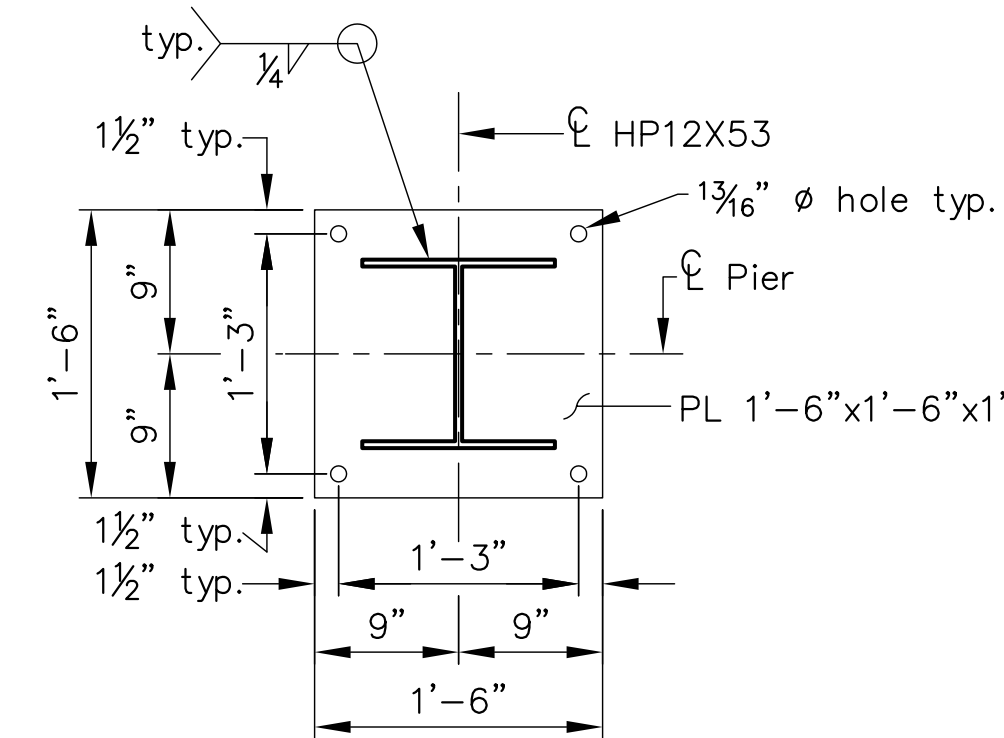
Scale: $\frac{1}{4}"=1'-0"$



TYPICAL PIER ELEVATION

Scale: $\frac{1}{4}"=1'-0"$

Looking ahead in Stations



SECTION A-A

Scale: $1"=1'-0"$

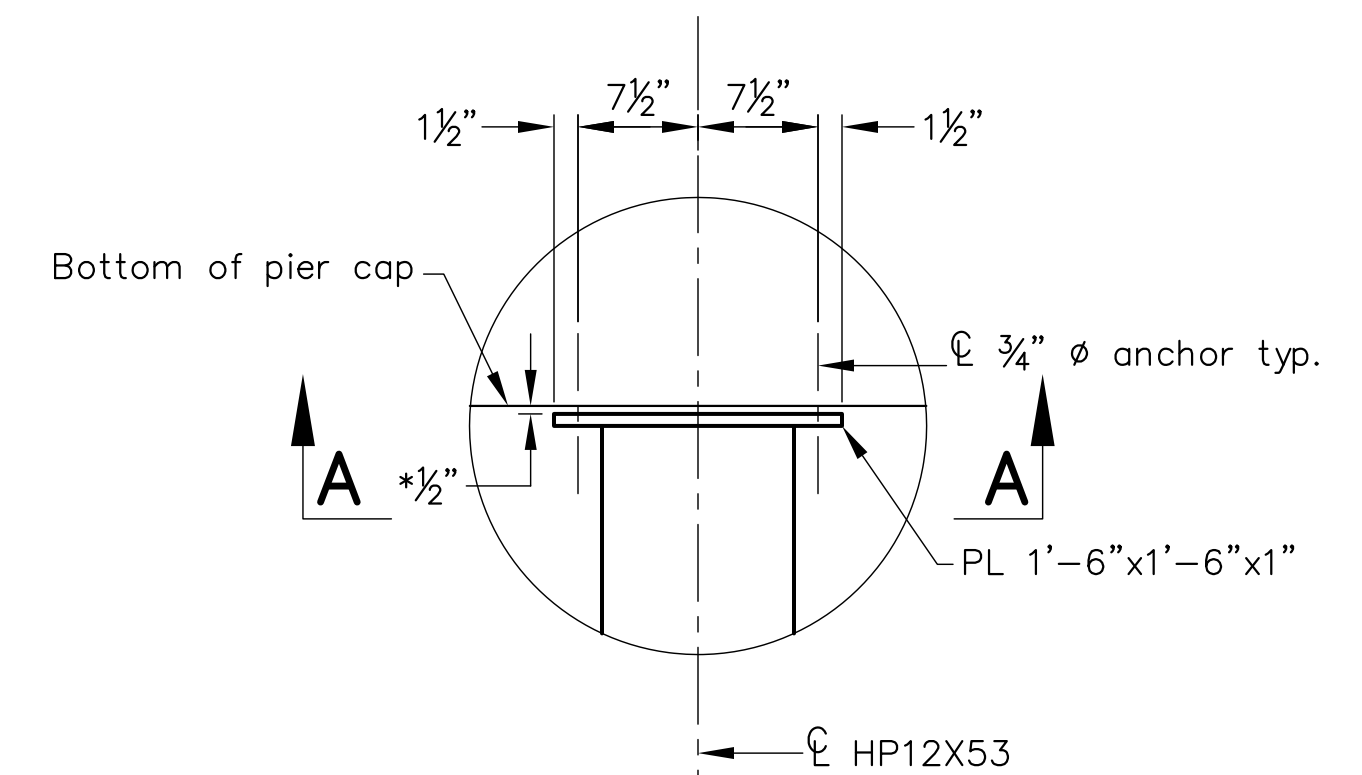
Notes:

HP12x53 shall be installed plumb and secured to bottom of pier cap and top of pier crash wall as shown prior to removing portion of existing pier cap.

Concrete anchors shall be a VDOT approved material.

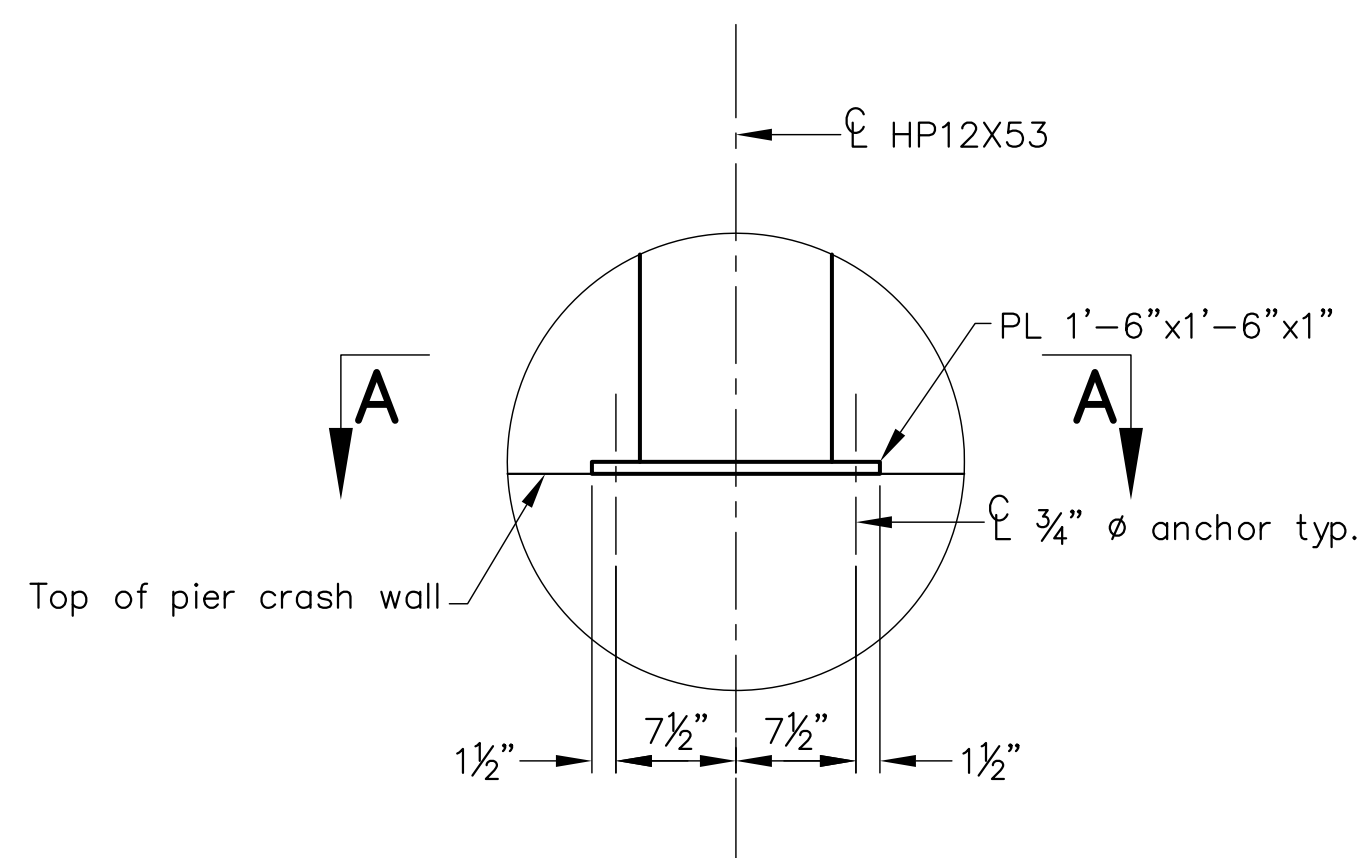
Mortar placed between top of HP12x53 and bottom of pier cap shall reach full strength prior to removing portion of existing pier cap.

Temporary abutment cap support shall bear on soil with a minimum bearing capacity of 3 tons/sf.



DETAIL A

Scale: $1"=1'-0"$

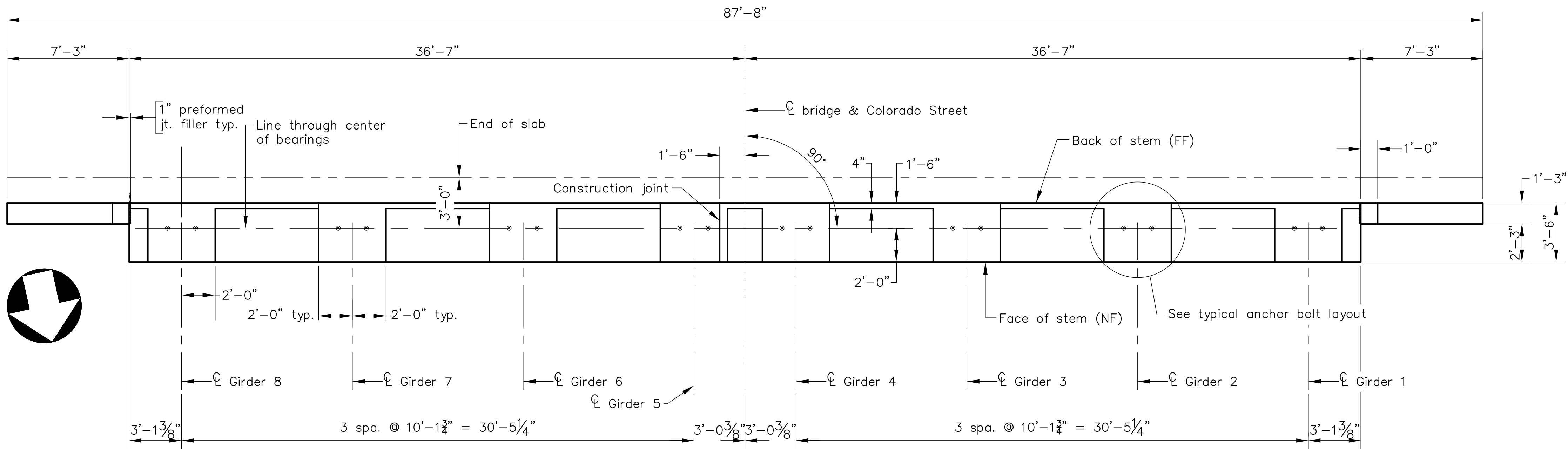


DETAIL B

Scale: $1"=1'-0"$

VA. STR. NO.: 1804			NBIS NO.: 21774		
Abutment A Support			5/23/23		
NO.			DESCRIPTION		
DATE			COMM. NO. 19051		
DESIGNED BY: APS			DRAWN BY: APS		
SCALE: 1/8"=1'-0"			PLAN NO.: 094-02A		
DATE: March 3, 2023			SHEET: 6 OF 46		

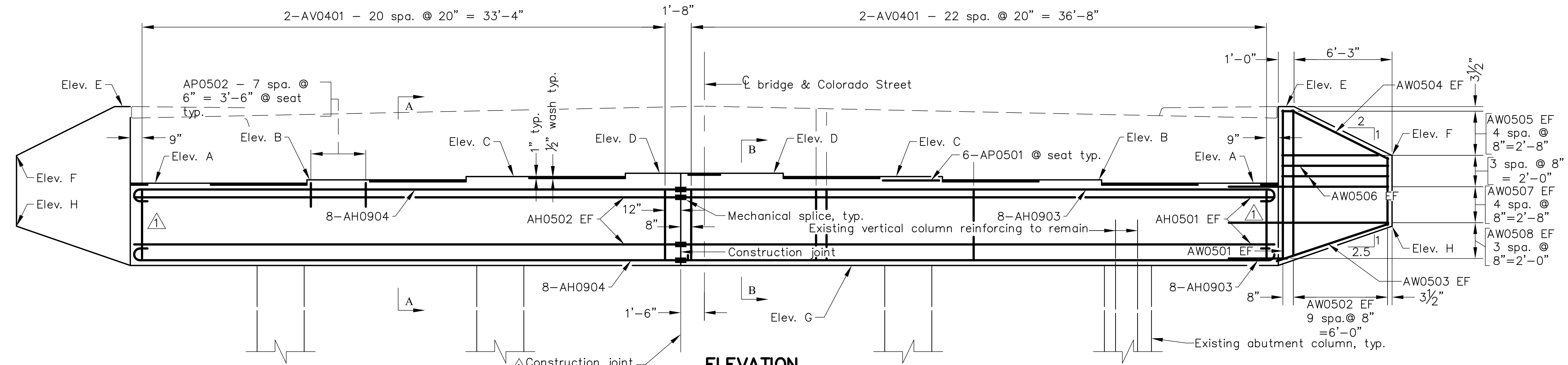
CADD REFERENCE NO.: 19051.DWG



PLAN

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

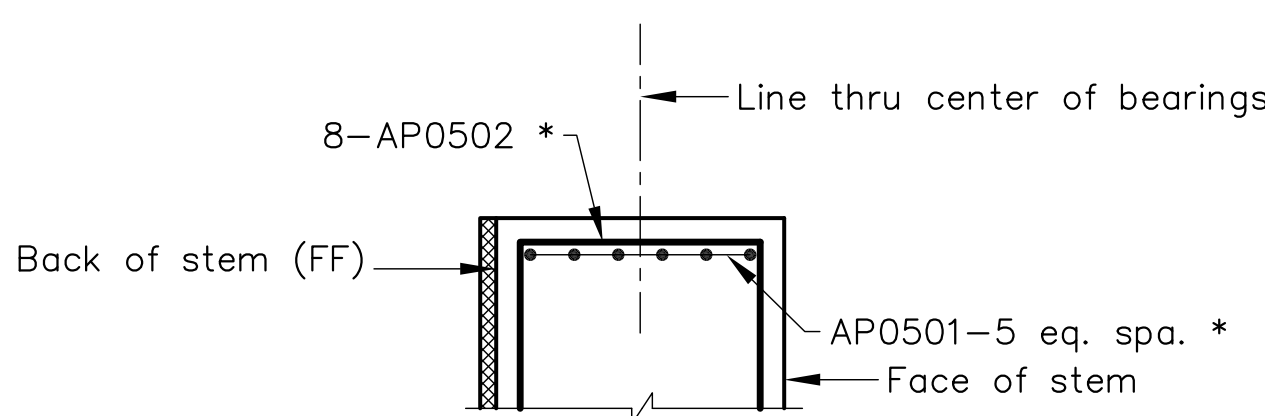
Abutment A shown. Abutment B similar but opposite hand except for construction joint location



ELEVATION

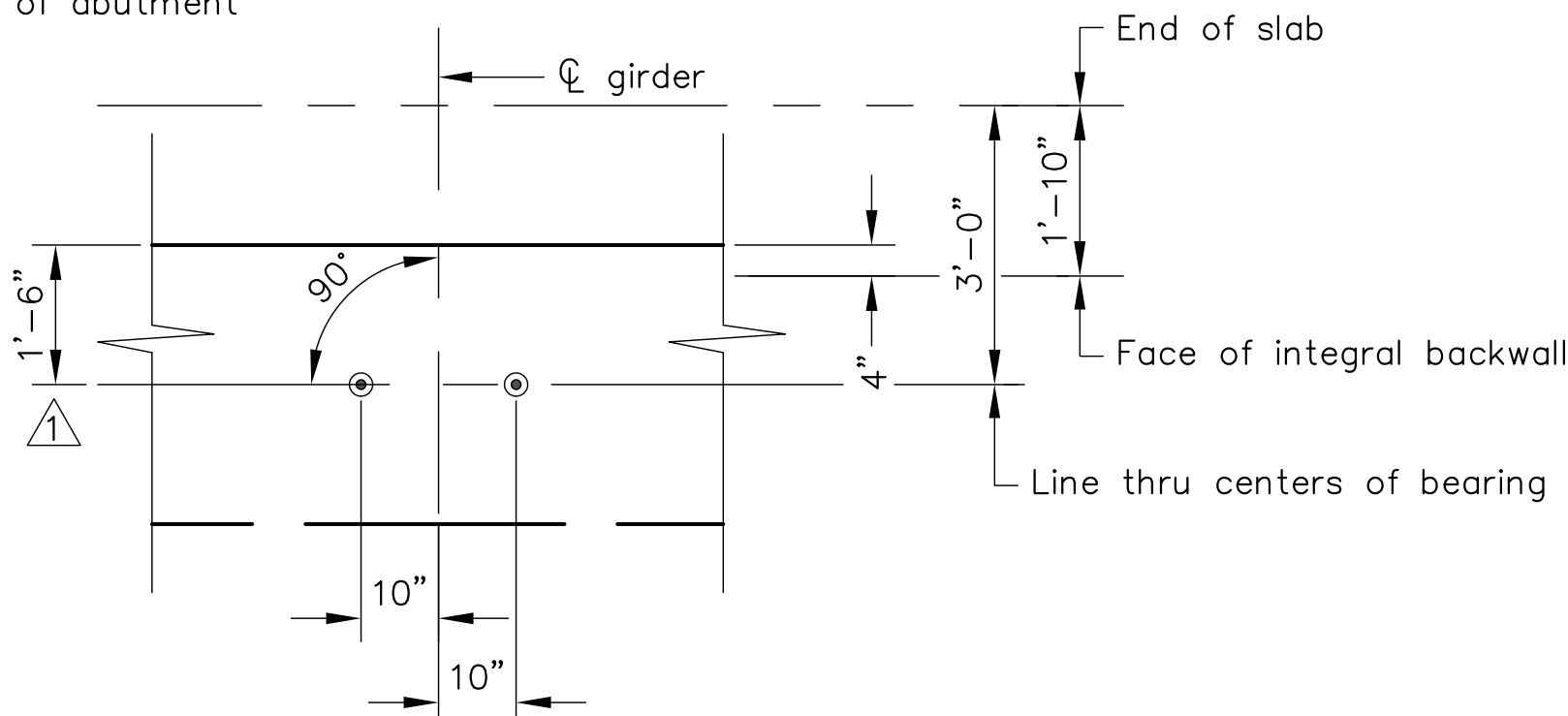
Scale: 1/4" = 1'-0"

Looking at front face of abutment



TYPICAL SECTION B-B

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



TYPICAL ANCHOR BOLT LAYOUT

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

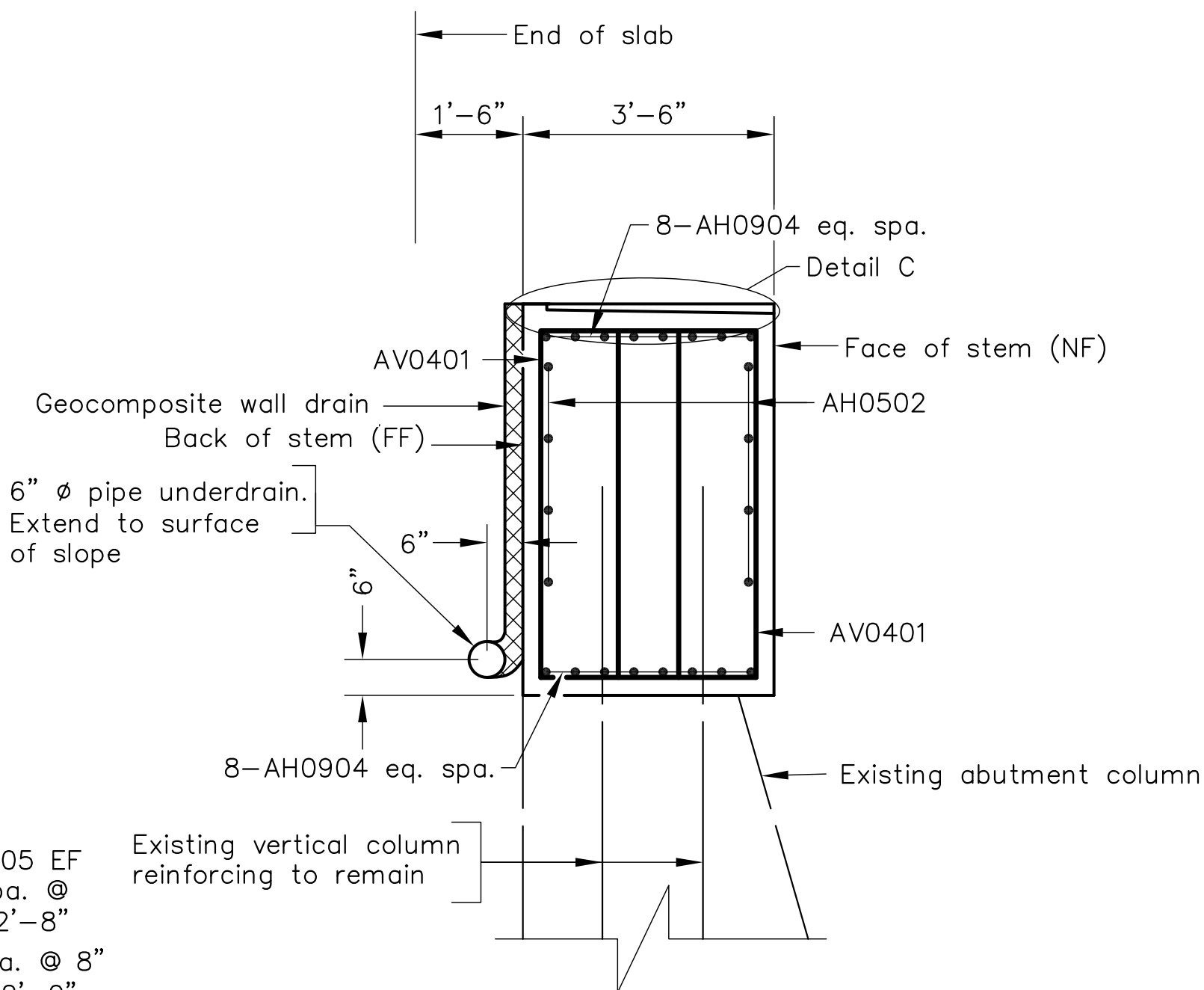
Notes:

Elevations shown are at line thru center of bearings.

For anchor bolt and sleeve details, see Sheet 9.

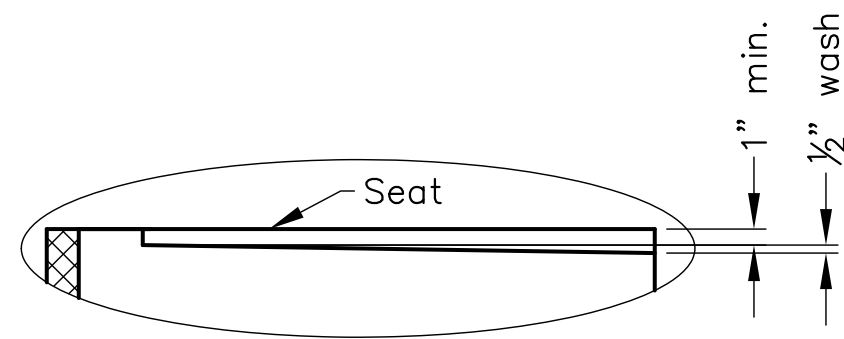
For integral backwall details, see sheet 19.

Elevation Table		
Elevation Designation	Abutment A	Abutment B
Elev. A	1027.46	1036.28
Elev. B	1027.68	1036.49
Elev. C	1027.89	1036.70
Elev. D	1028.10	1036.91
Elev. E	1032.25	1041.18
Elev. F	1029.13	1038.06
Elev. G	1022.13	1030.95
Elev. H	1024.63	1033.45



SECTION A-A

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



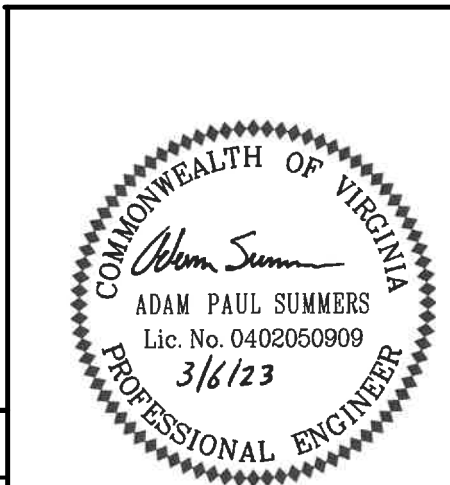
DETAIL C

Scale: 1" = 1'-0"

Legend:
NF - Near Face
FF - Far Face
EF - Each Face

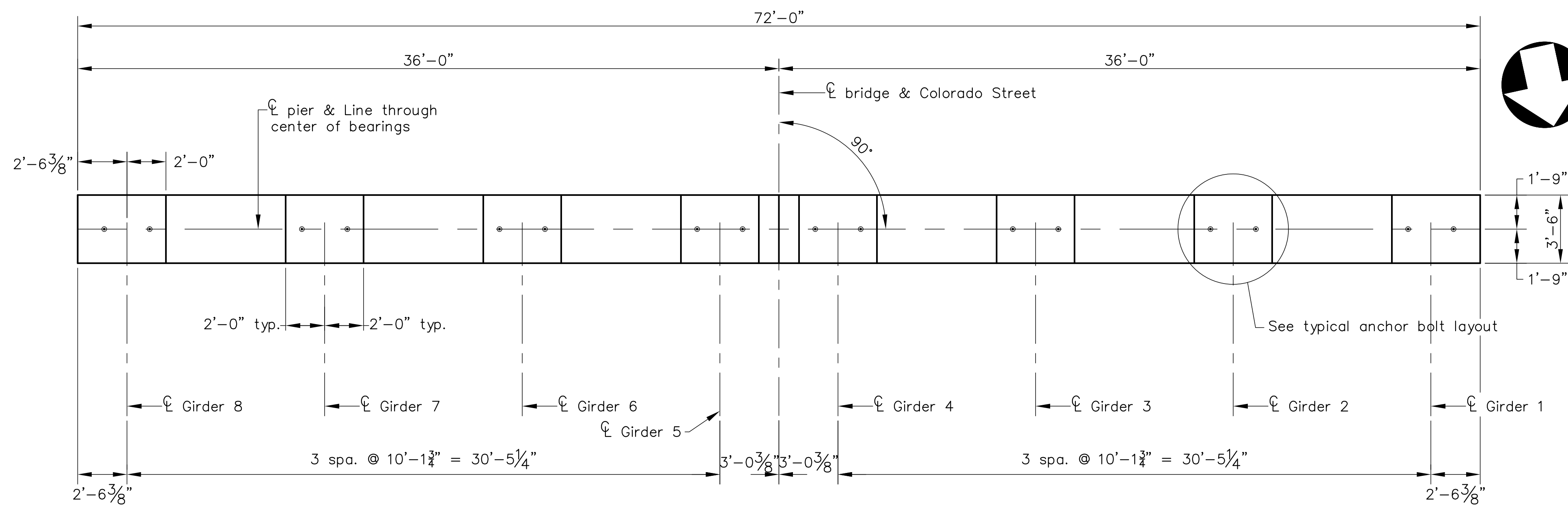
*-field adjust reinforcement to clear anchor bolt sleeves.

Detailing changes	5/23/23
NO.	DESCRIPTION
	DATE



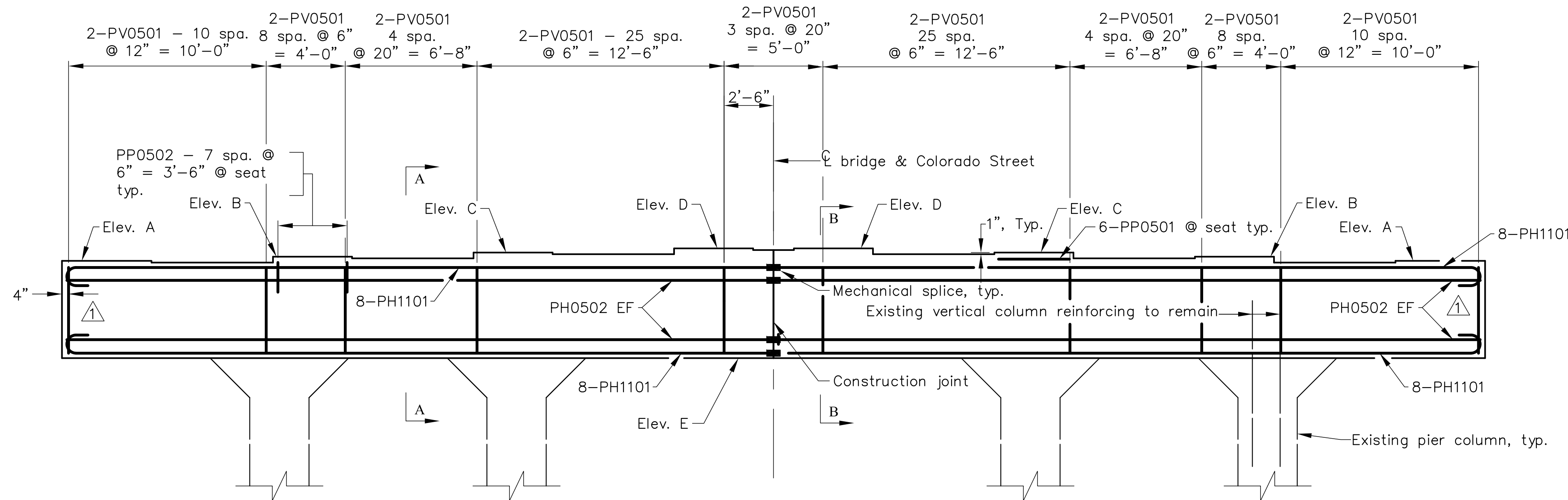
VA. STR. NO.: 1804	NBIS NO.: 21774
SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY ABUTMENT PLAN & ELEVATION	
DESIGNED BY: APS	DRAWN BY: APS
SCALE: AS NOTED	PLAN NO.: 094-02A
DATE: March 3, 2023	SHEET: 7 OF 46

CADD REFERENCE NO.: 19051.DWG



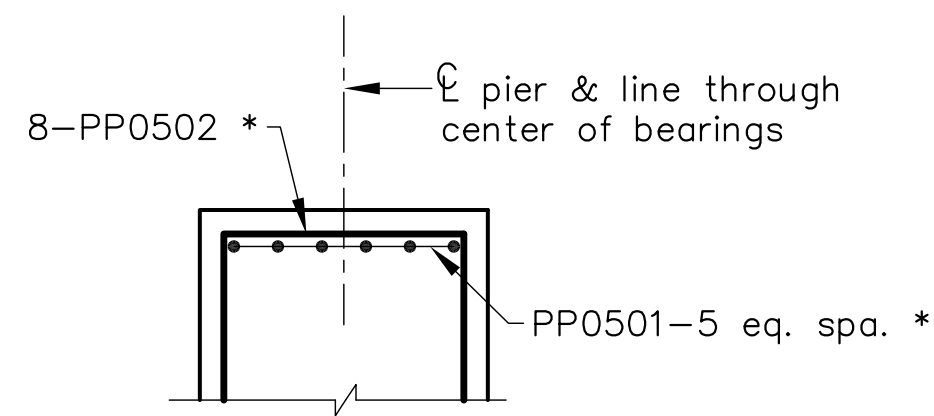
PLAN

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



ELEVATION

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

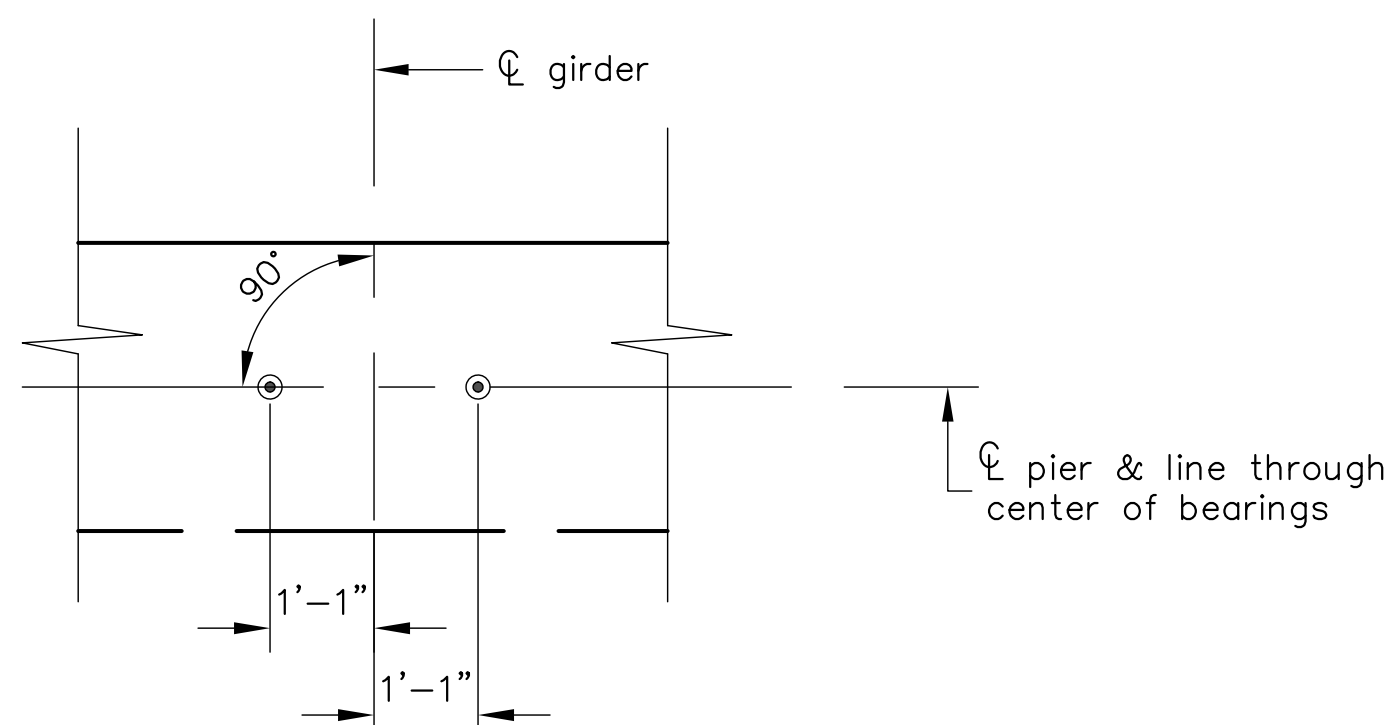


Complete reinforcement not shown for clarity

*-field adjust reinforcement to clear anchor bolt sleeves.

TYPICAL SECTION B-B

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



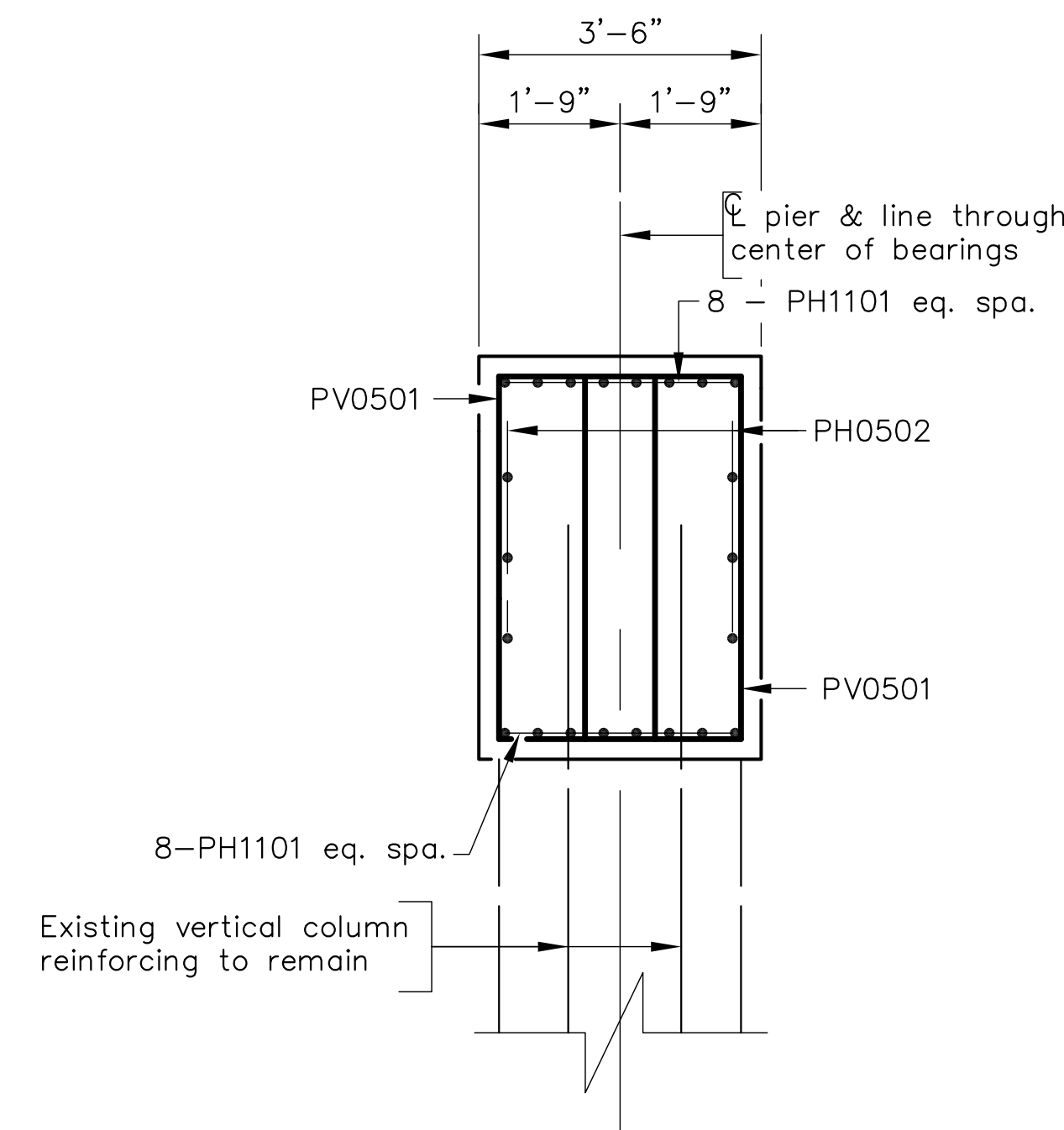
TYPICAL ANCHOR BOLT LAYOUT

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

Notes:

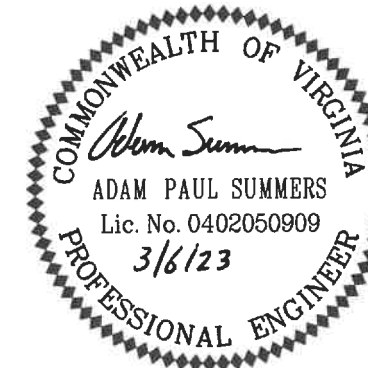
For anchor bolt and sleeve details, see Sheet 9.

Elevation Table		
Elevation Designation	Pier 1	Pier 2
Elev. A	1030.53	1034.18
Elev. B	1030.74	1034.39
Elev. C	1030.95	1034.60
Elev. D	1031.16	1034.81
Elev. E	1025.45	1029.10



SECTION A-A

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



VA. STR. NO.: 1804		NBIS NO.: 21774
SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY PIER PLAN & ELEVATION		
DESIGNED BY: APS	DRAWN BY: APS	CHECKED BY: MBH
SCALE: 1/4"=1'-0"	PLAN NO.: 094-02A	
DATE: March 3, 2023	SHEET: 8 OF 46	

Reinf. detailing	5/23/23
NO.	DESCRIPTION
	DATE

COMM. NO. 19051

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	NO.
VA.	—			9

Notes:

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

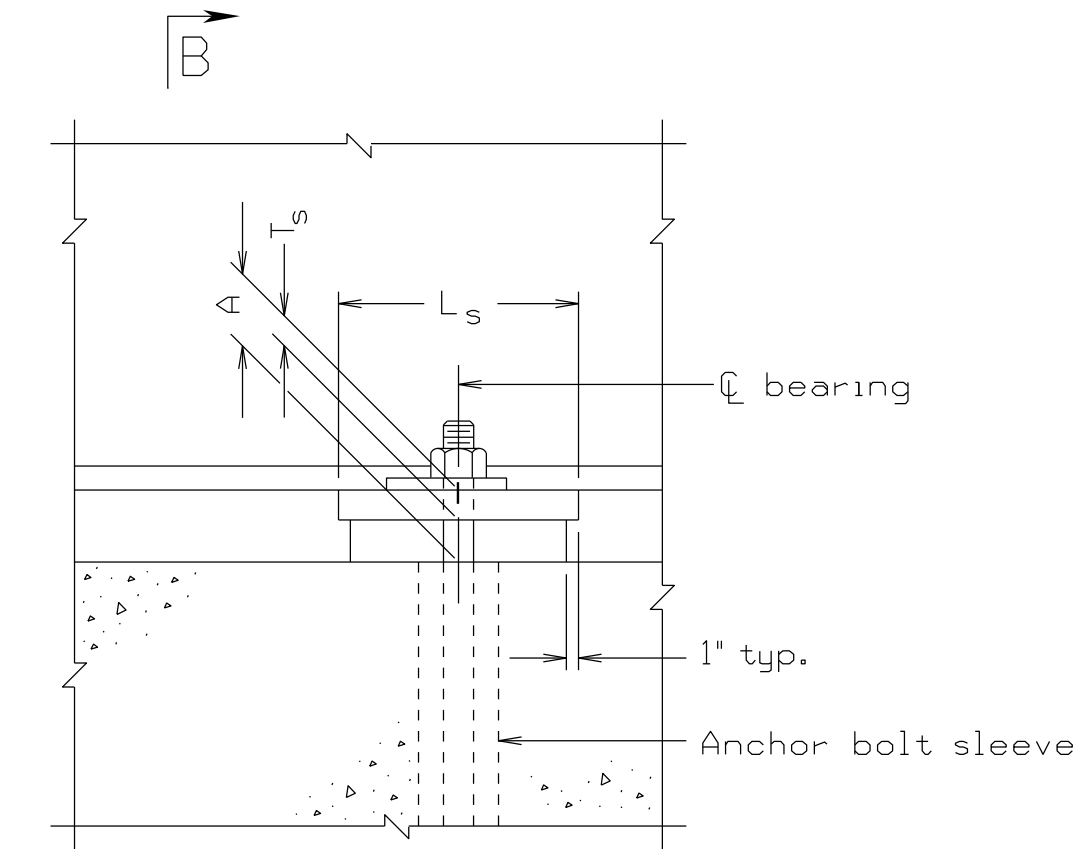
The Contractor may elect not to provide anchor bolt sleeves at any locations and cast the anchor bolts directly into concrete at their own risk and expense.

Bevel sole plates to grade shown. Plates shall not be painted on the surface in contact with the elastomeric bearing.

Elastomeric bearings shall be molded as a single unit.

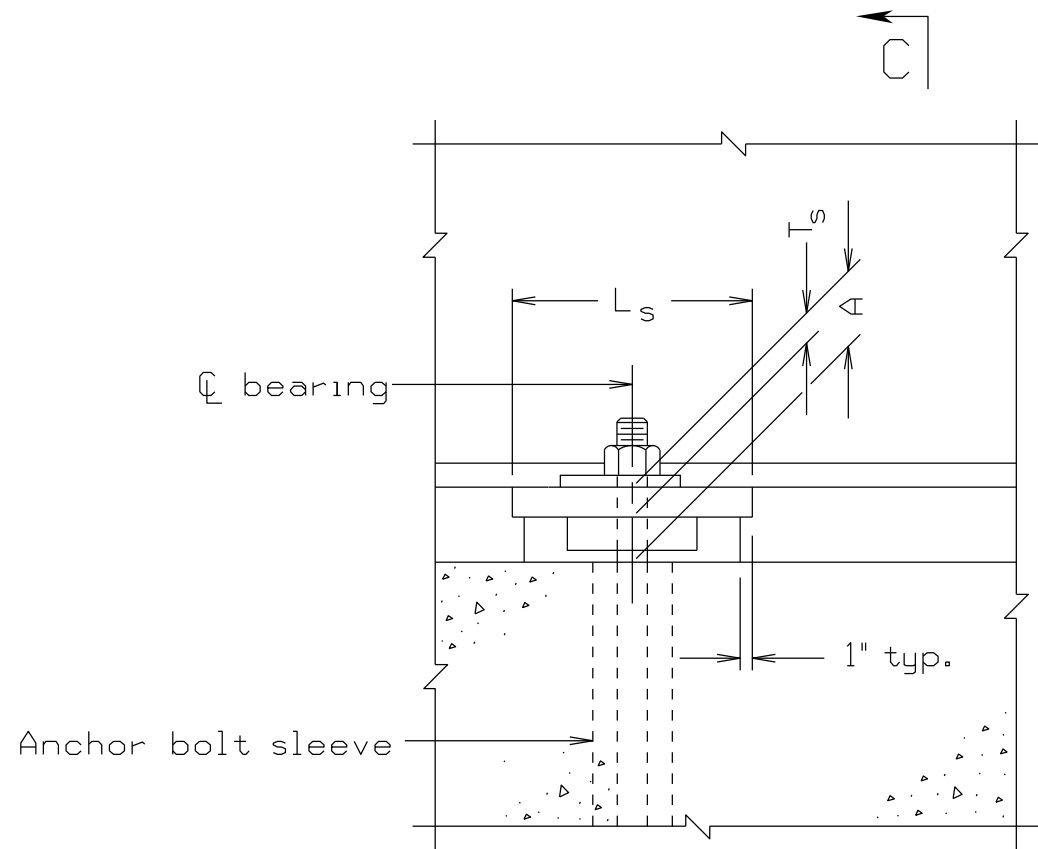
Max. horizontal movement is the maximum horizontal superstructure displacement. If the maximum shear deformation of the elastomeric pads exceeds 75% of Max. horizontal movement during construction of the bridge, the Contractor shall reset the bearings at no additional cost to the Department.

* Weld shall terminate 1/4' from edge of sole plate.
** Centerline of girder (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.



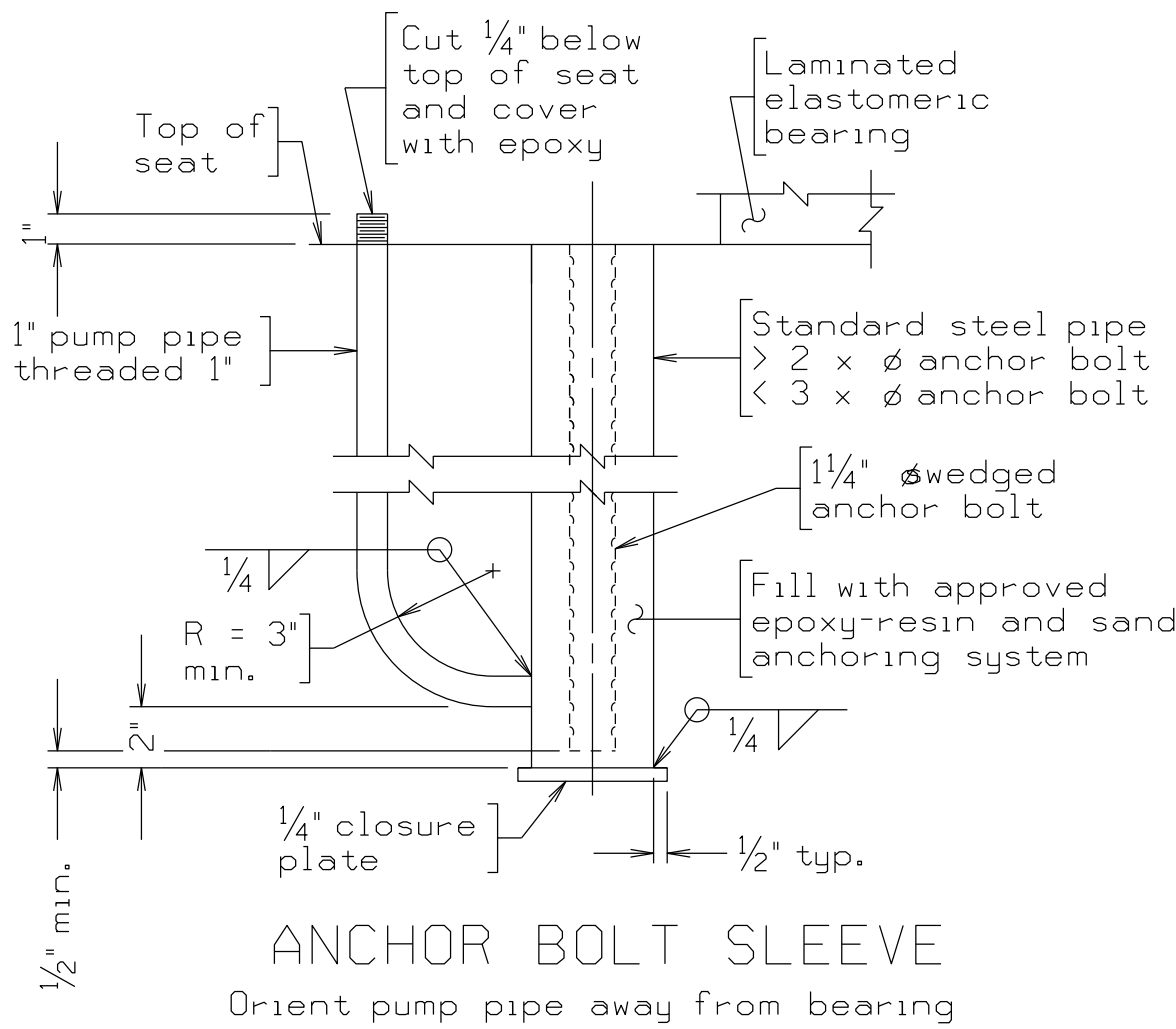
ELEVATION
EXPANSION ASSEMBLY

Bearing stiffener(s) not shown for clarity



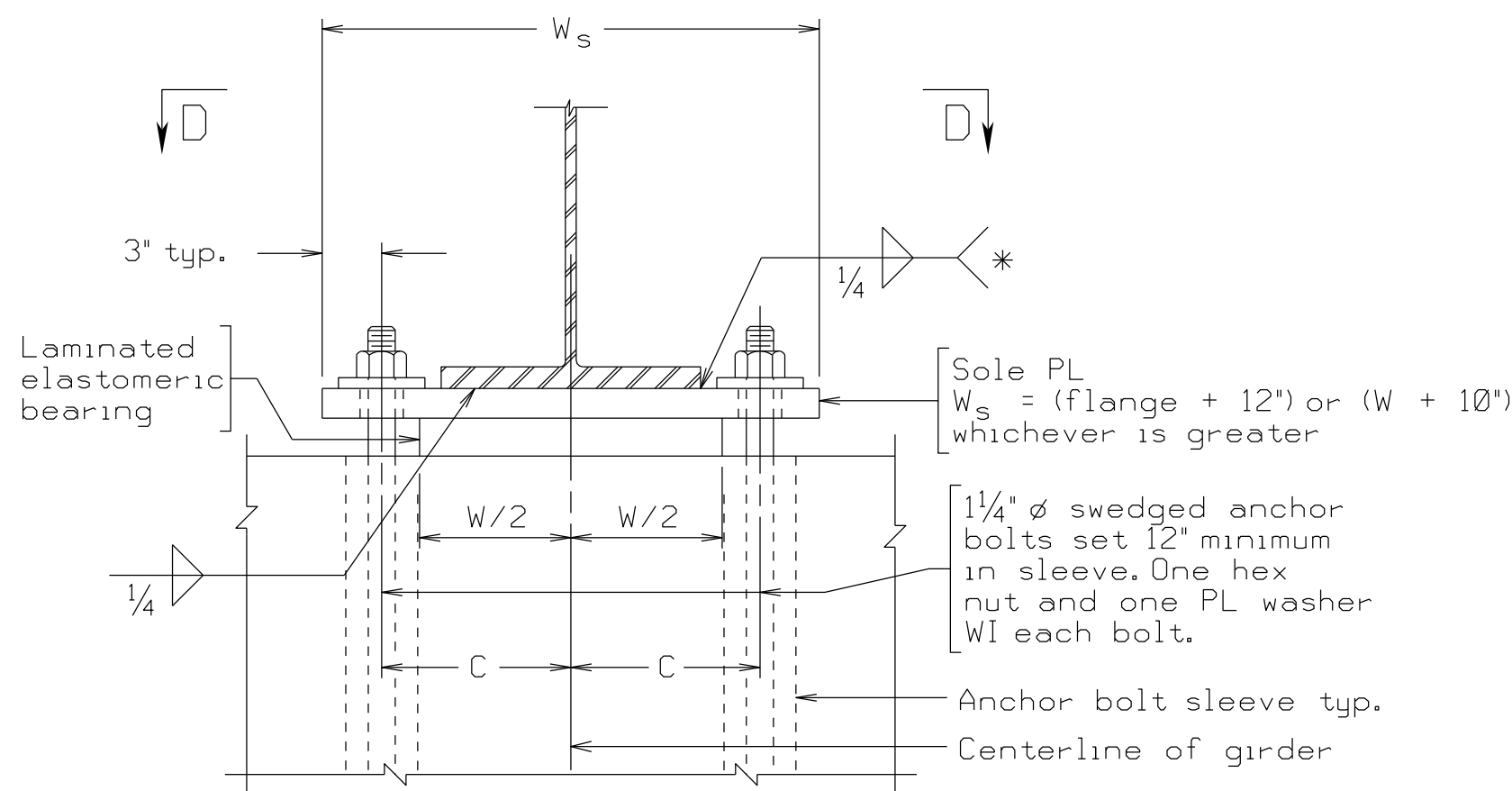
ELEVATION
FIXED ASSEMBLY

Bearing stiffener(s) not shown for clarity

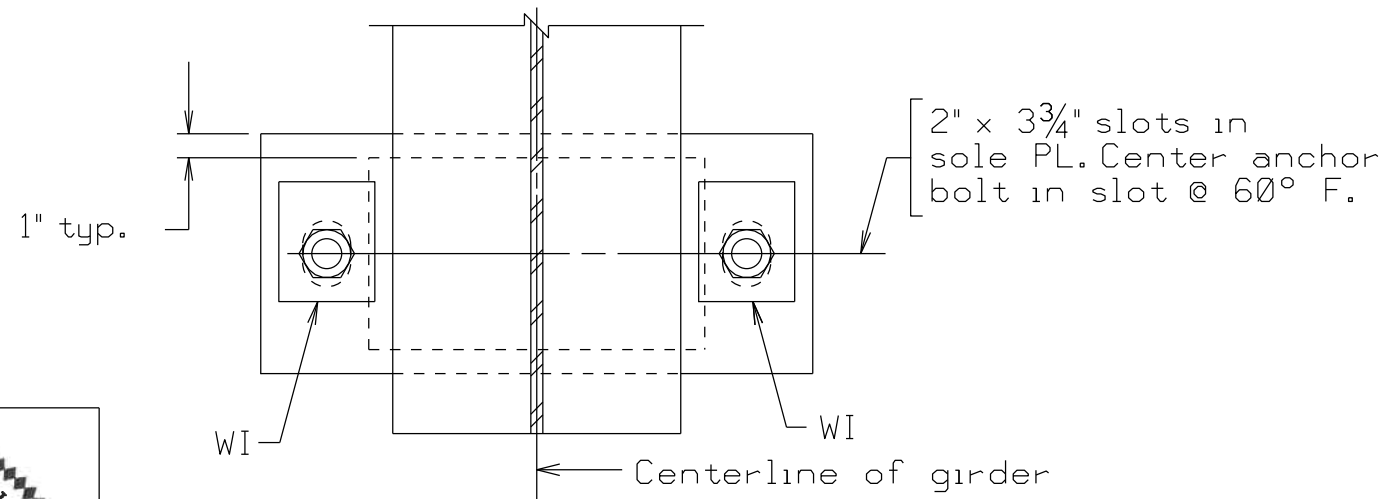


ANCHOR BOLT SLEEVE

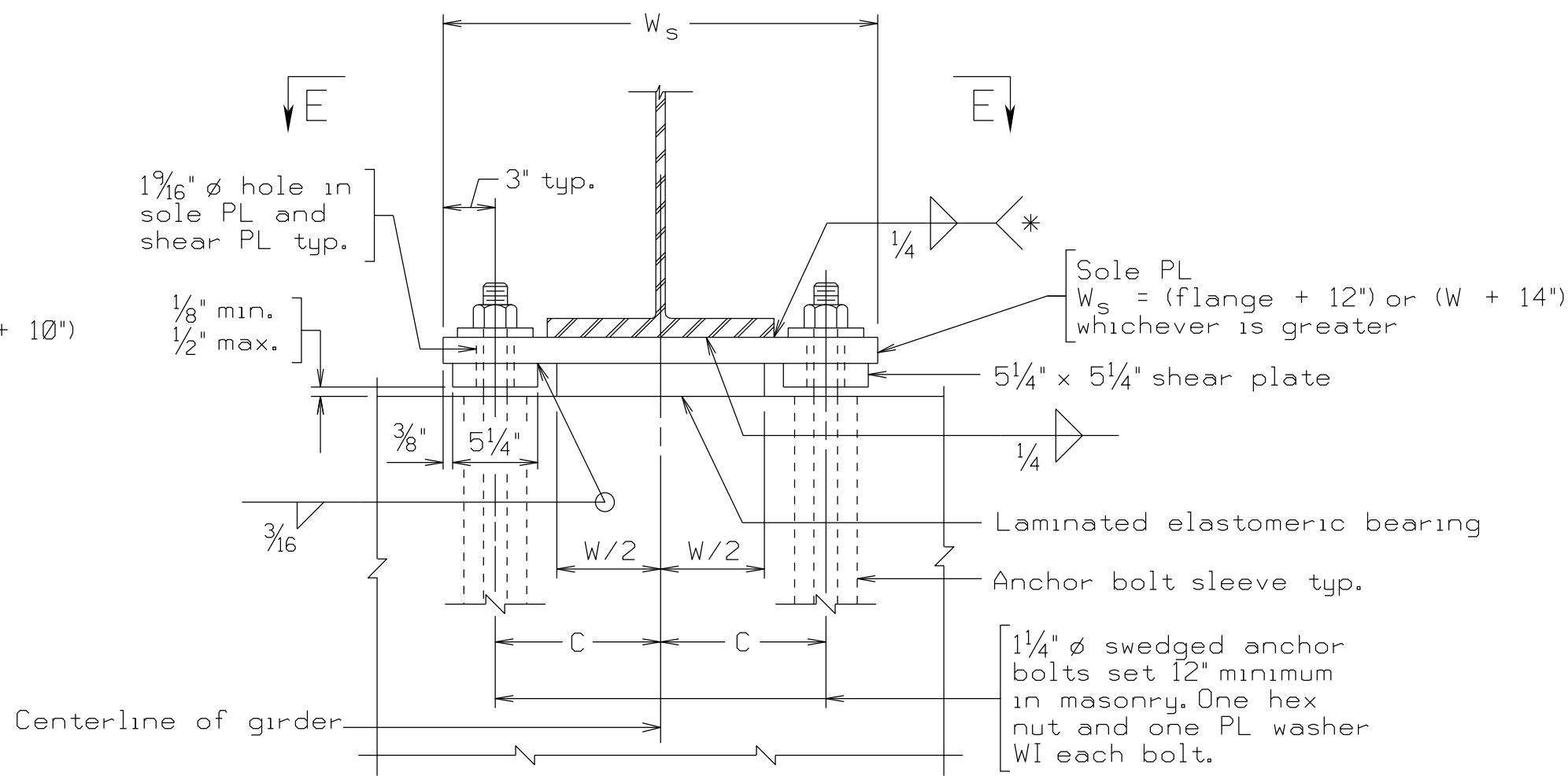
Orient pump pipe away from bearing



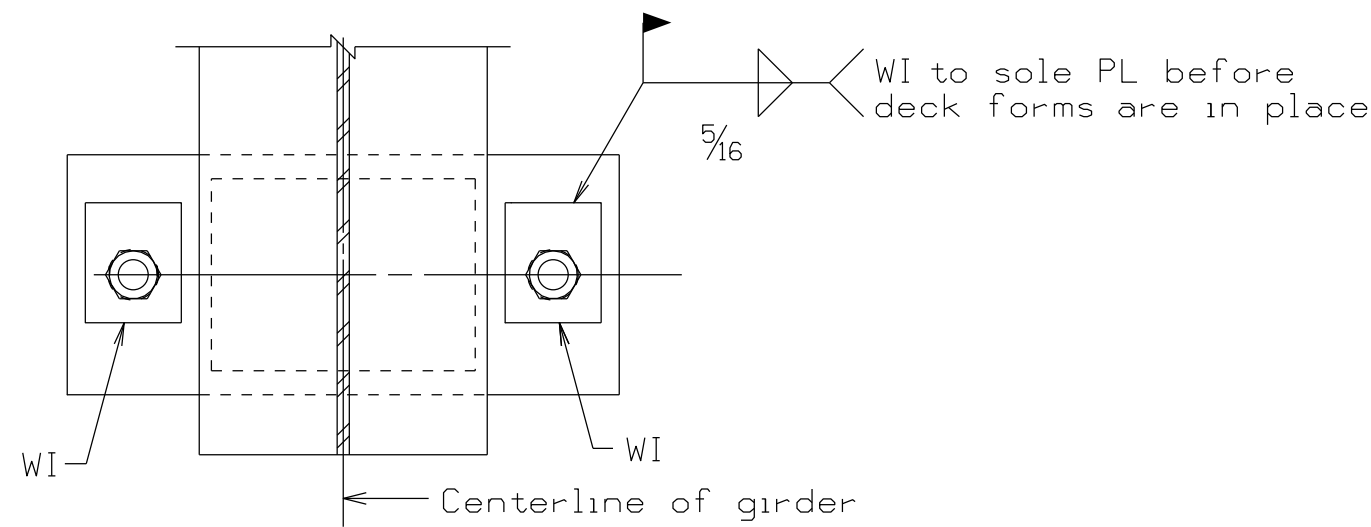
SECTION B-B



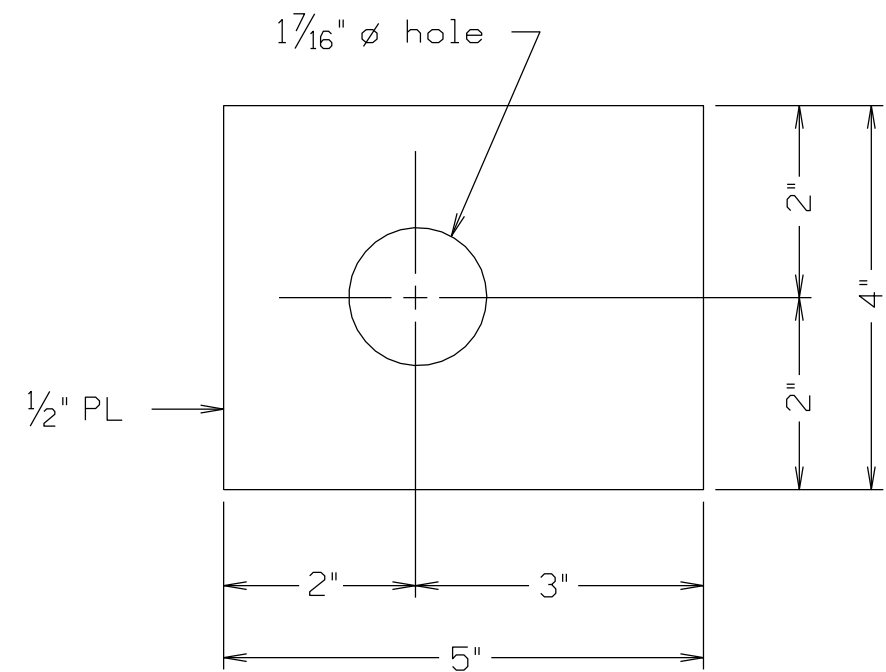
SECTION D-D



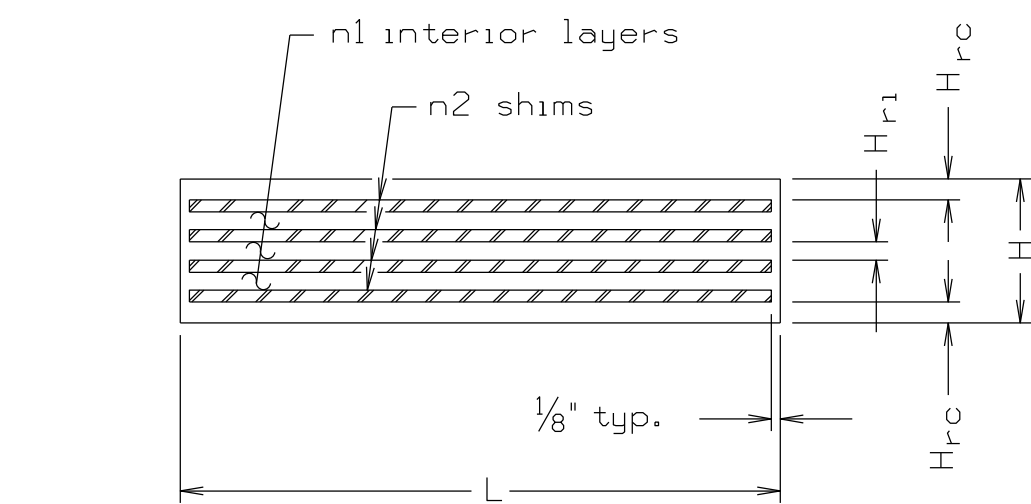
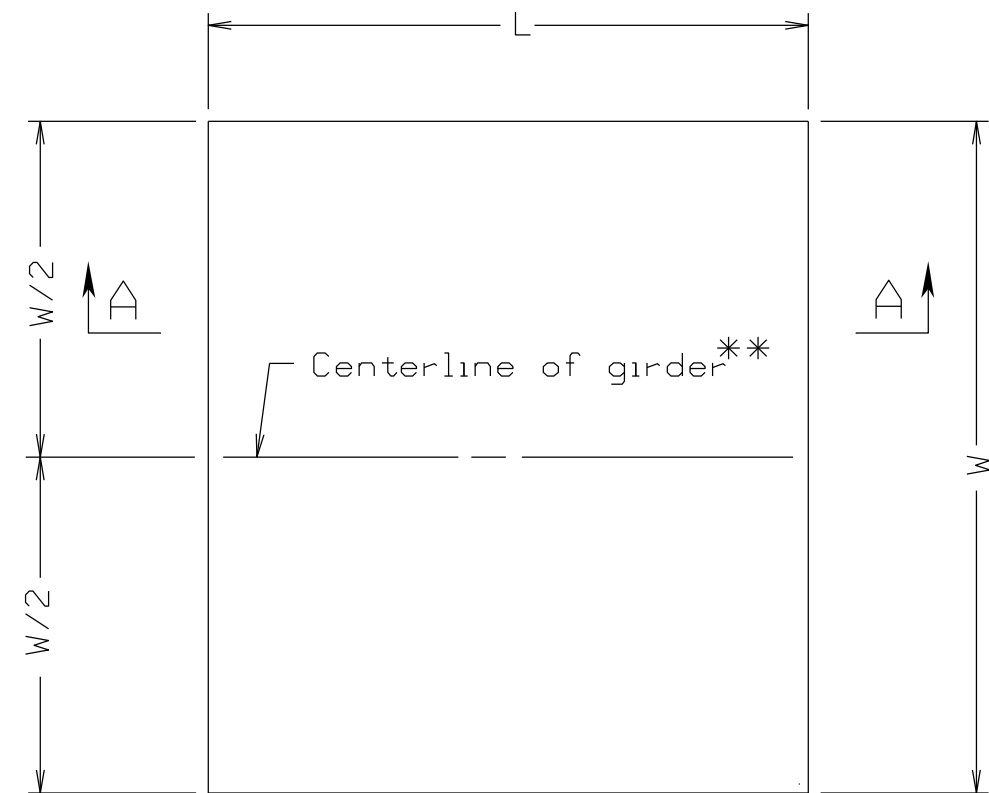
SECTION C-C



SECTION E-E



WASHER WI



SECTION A-A
LAMINATED ELASTOMERIC BEARING

Span	Abut.	Pier	Bearing type	A	C	Laminated Elastomeric Bearing						Sole Plate			Grade %	Max. Horizontal Movement inches	Vertical Load Service I kips
						W	L	H	H _{FC}	n1 @ H _{r1}	n2 @ H _s	Ws	Ls	Ts			
A	A		Exp.	4.4784	10	16	12	2.4784	0.25	3 @ 0.50	4 @ 0.1196	26	14	2	6.78	0.34	111.13
A/B		1	Fix.	5.0980	13	18	16	3.0980	0.25	4 @ 0.50	5 @ 0.1196	32	18	2	5.67	0	263.27
B/C		2	Fix.	5.0980	13	18	16	3.0980	0.25	4 @ 0.50	5 @ 0.1196	32	18	2	4.03	0	291.76
C	B		Exp.	4.4784	10	16	12	2.4784	0.25	3 @ 0.50	4 @ 0.1196	26	14	2	3.02	0.44	129.38

All dimensions in table are in inches.

Not to scale

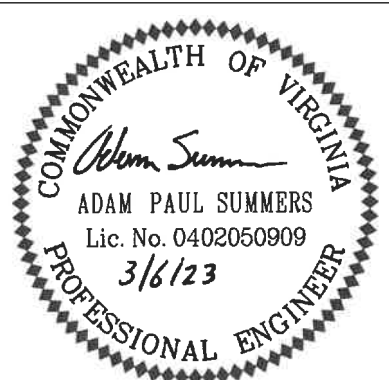
© 2022, Commonwealth of Virginia

			COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
			STRUCTURE AND BRIDGE DIVISION			
			BEARING DETAILS			
No.	Description	Date	Designed: APS....	Date	Plan No.	Sheet No.
			Drawn: APS....	Mar. 2023	094-02A	9 of 46
			Checked: APS....			
Revisions						

19051/bbd9.dgn

10-30-2020

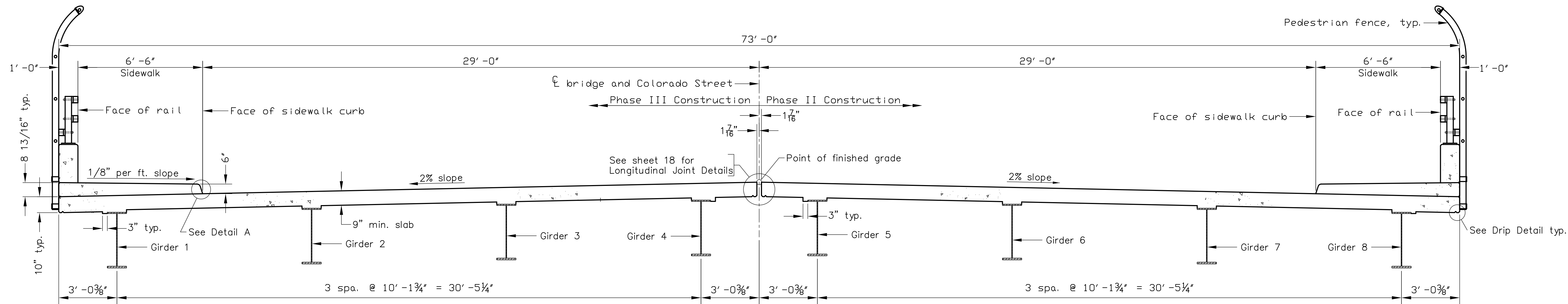
BBD-9



Schwartz & Assoc.
Lynchburg, VA
Structural Engineer
Sealed and Signed by:
Jung Meng
Lic. No. 033572
On the date of
October 30, 2020

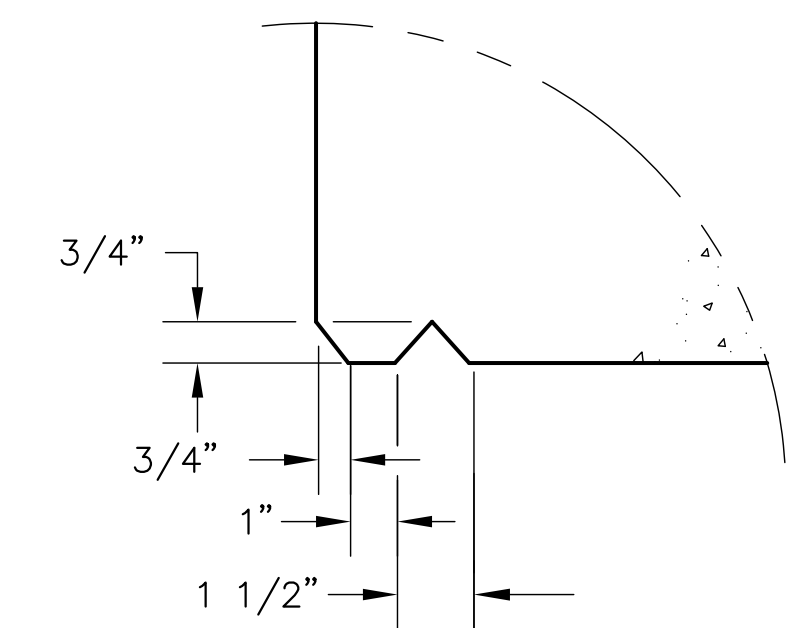
A copy of the original
sealed and signed
standard drawing
is on file in the
Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER



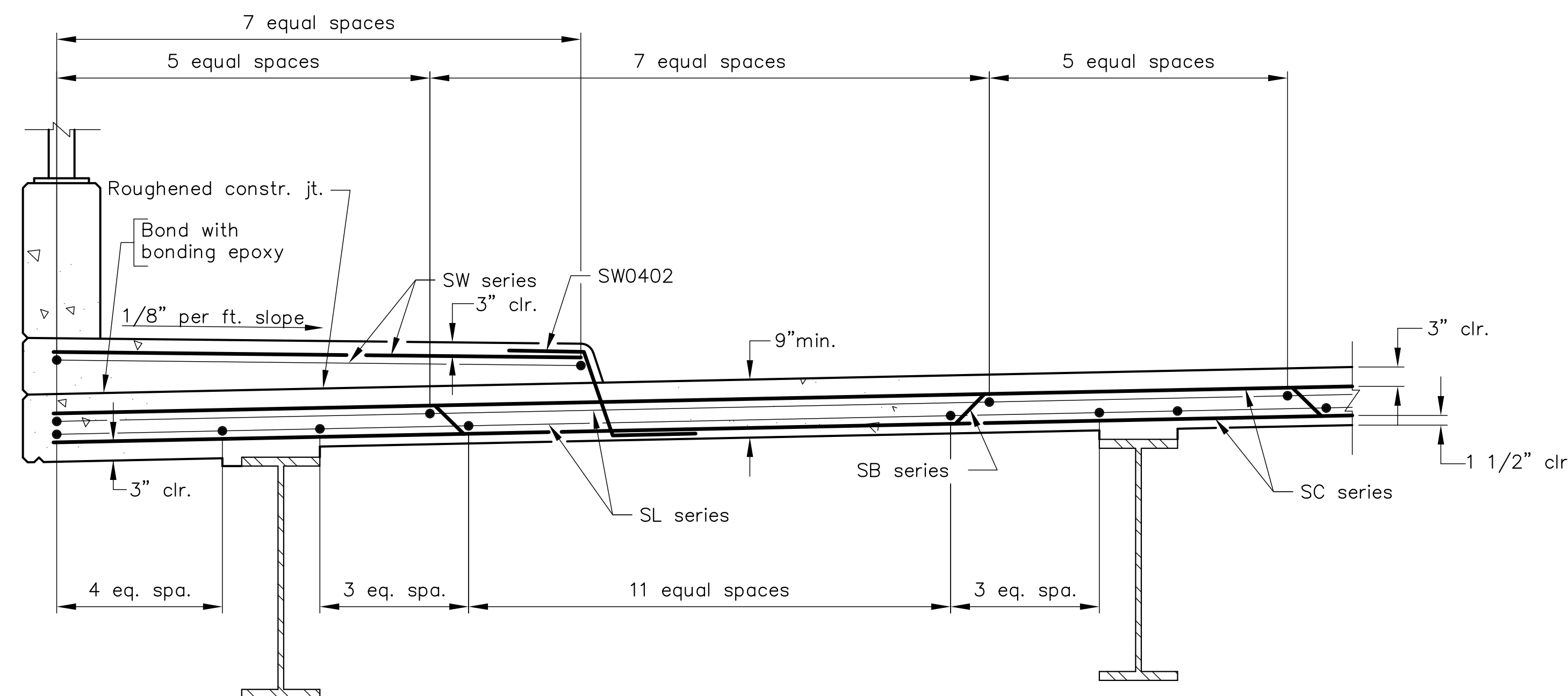
TRANSVERSE SECTION

Scale: $\frac{3}{8}" = 1'-0"$



DRIP DETAIL

Not to Scale



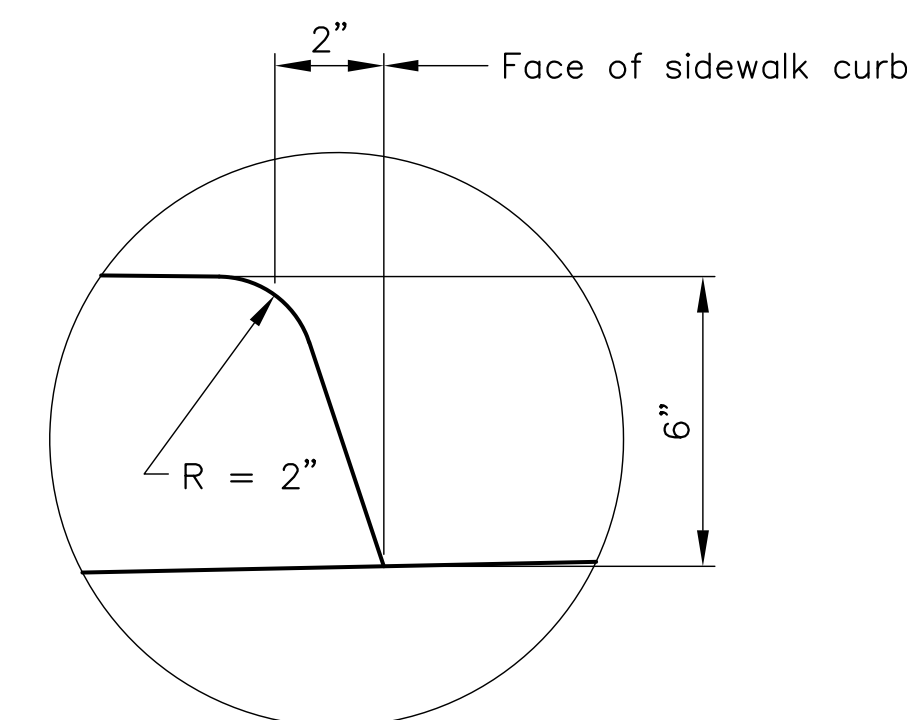
PART TRANSVERSE SECTION

Scale: $\frac{3}{4}" = 1'-0"$

(Parapet reinforcing not shown)

Notes:

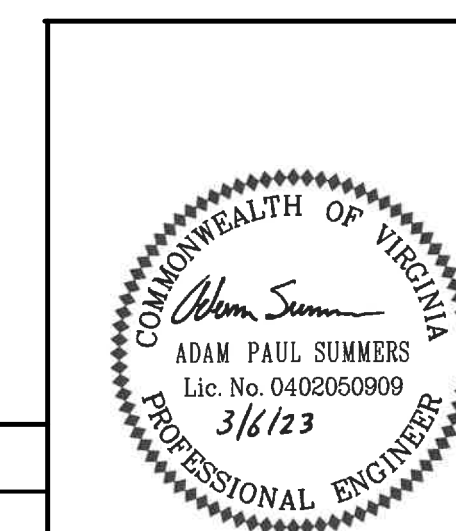
- For bridge railing details, see sheets 20-23.
- For deck slab plan, see sheet 17.
- For framing plan, see sheet 11.
- For girder details, see sheets 11-13.



DETAIL A

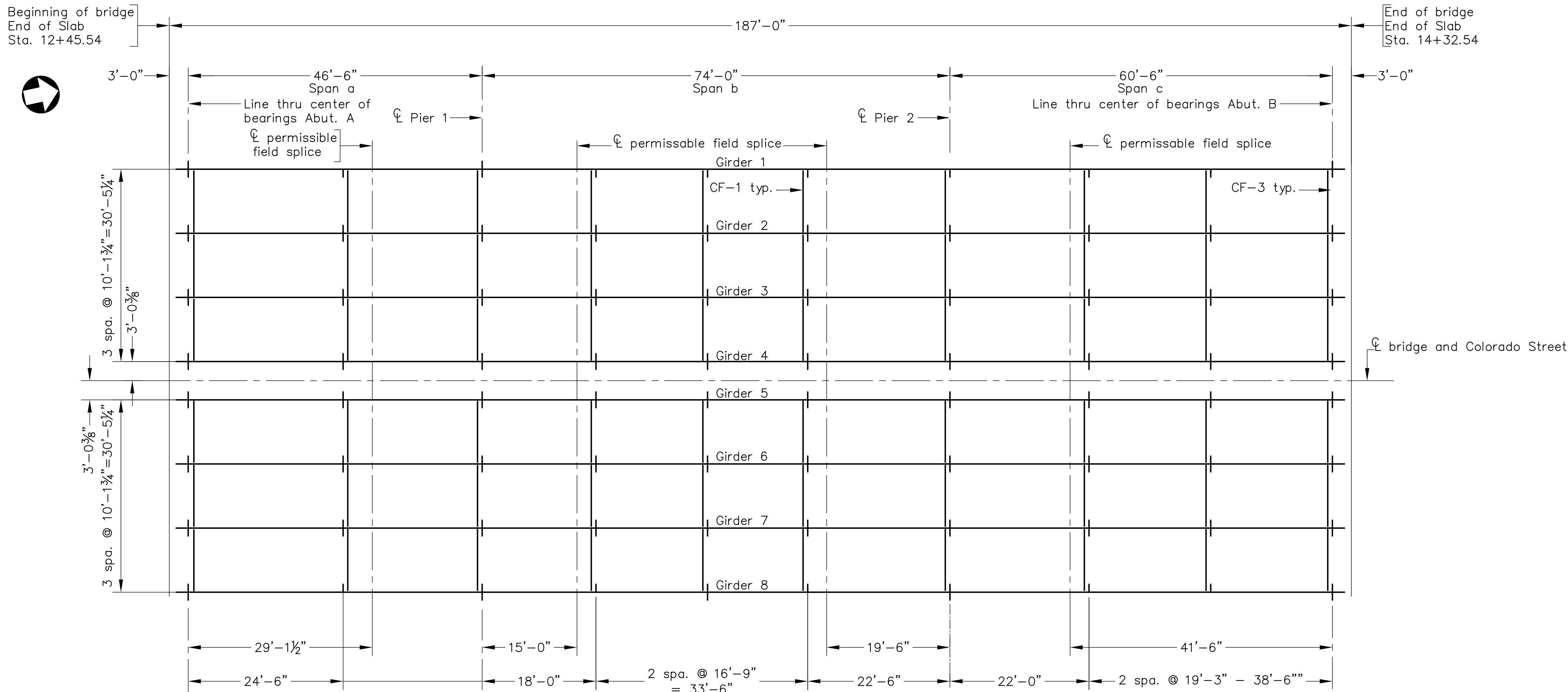
Scale: 3" = 1'-0"

NO.	DESCRIPTION	DATE

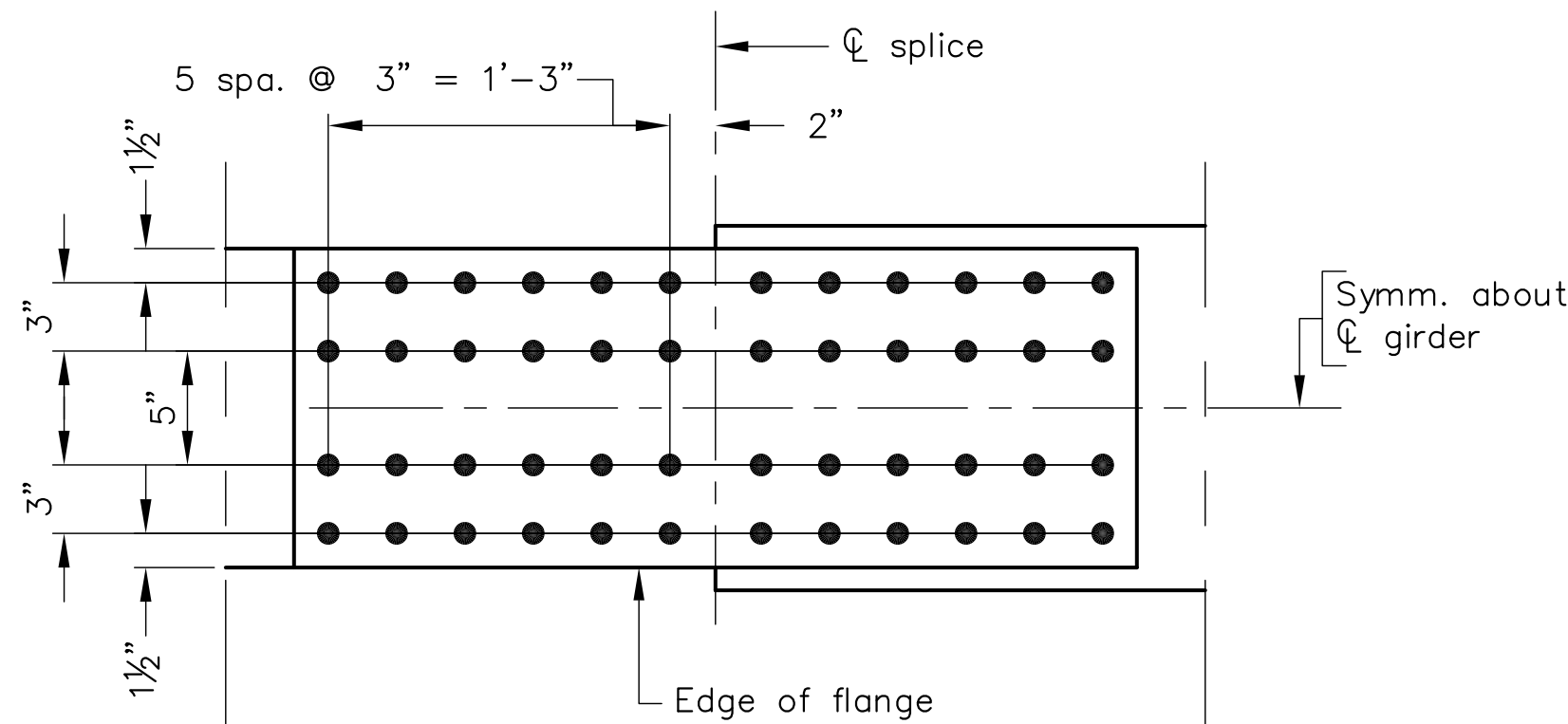


VA. STR. NO.: 1804	NBIS NO.: 21774
SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY TRANSVERSE SECTION	
DESIGNED BY: APS	DRAWN BY: APS
SCALE: AS NOTED	PLAN NO.: 094-02A
DATE: March 3, 2023	CHECKED BY: MBH
SHEET: 10	OF 46

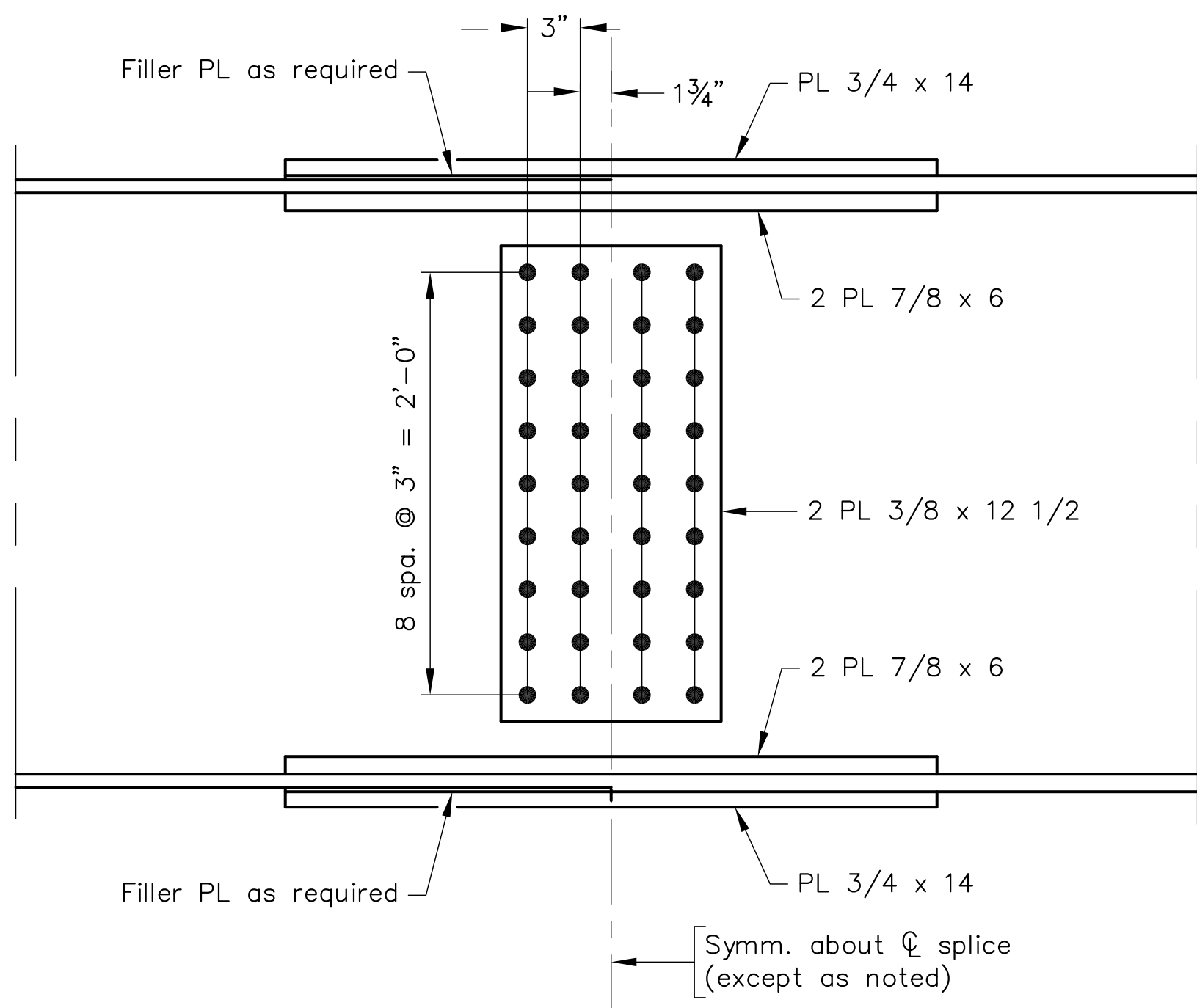
CADD REFERENCE NO.: 19051.DWG



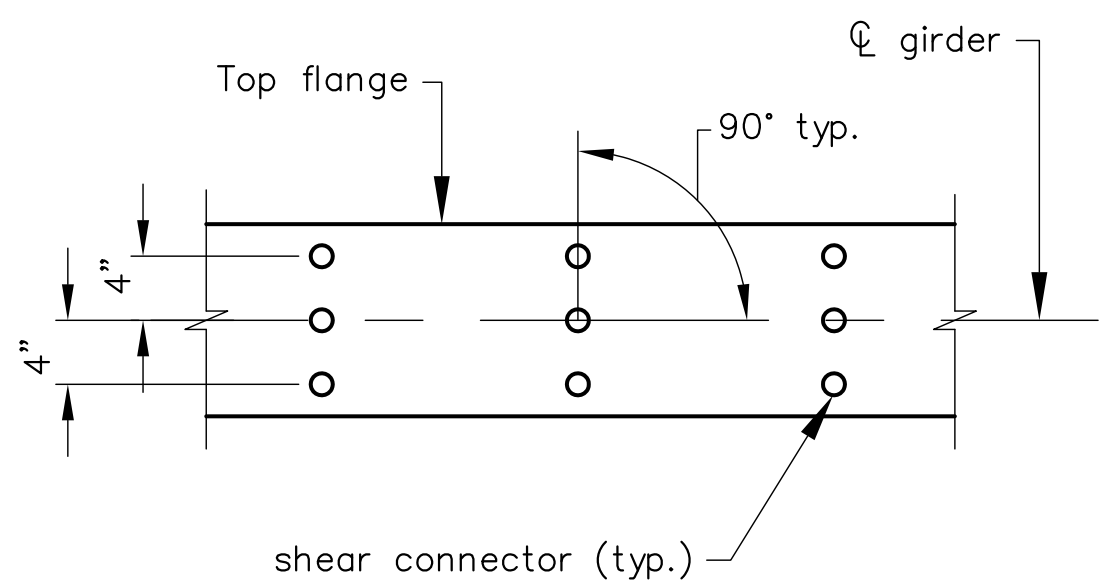
FRAMING PLAN
Scale: 3/32" = 1'-0"



TOP & BOTTOM VIEW
Not to scale

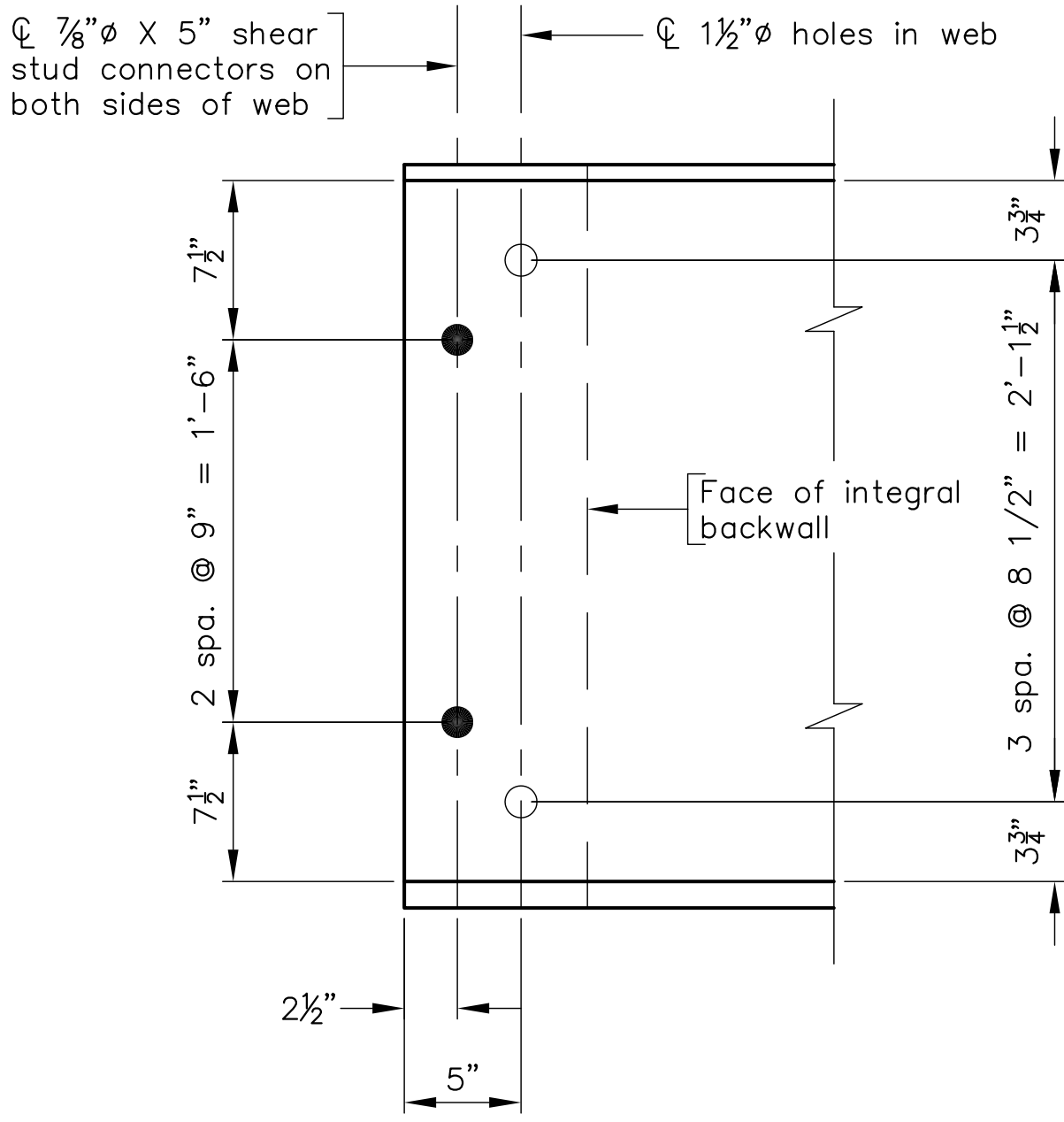


**ELEVATION
PERMISSIBLE SPLICE**
Not to scale

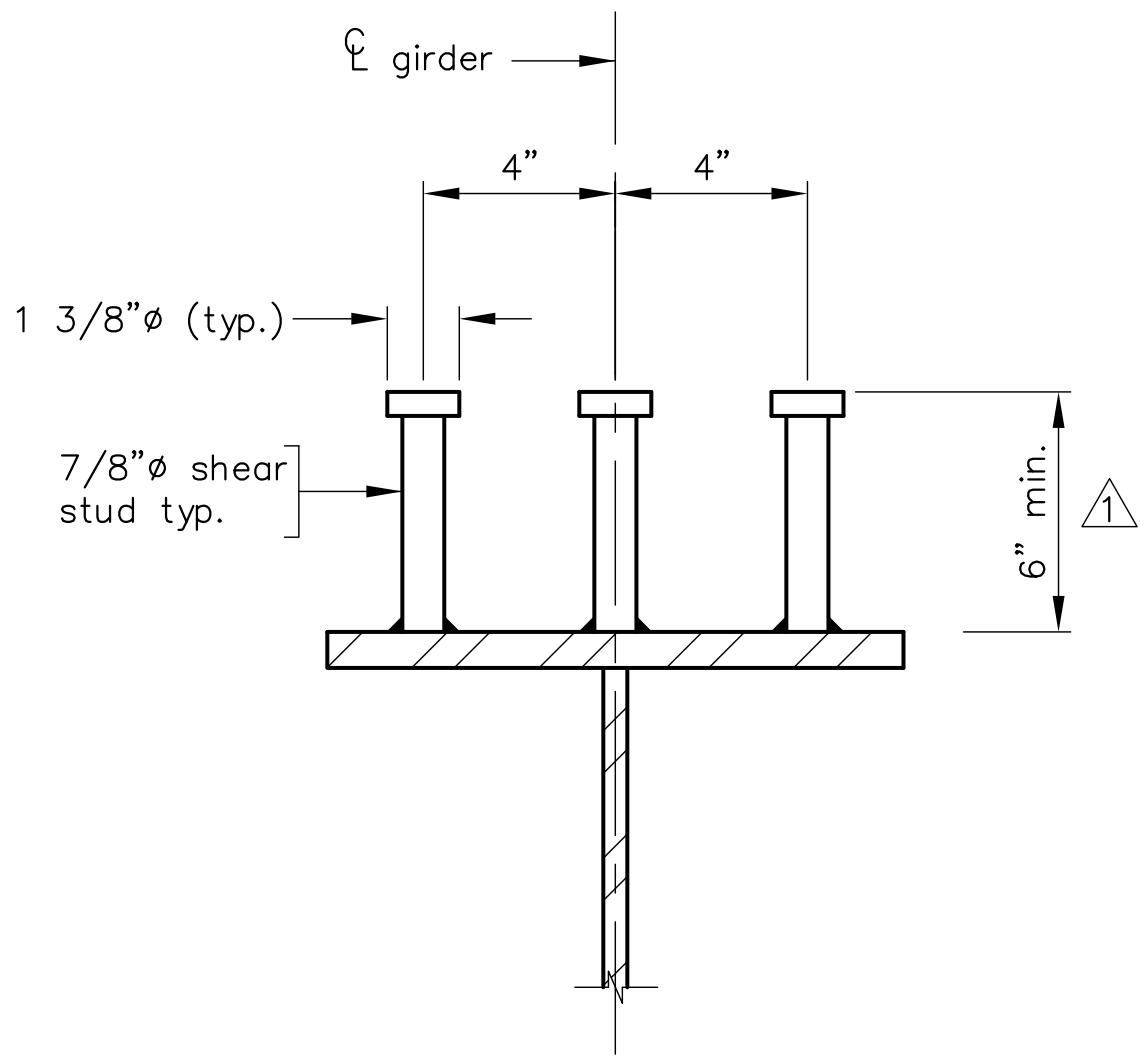


SHEAR STUD CONNECTOR PLAN
Scale: 1"=1'-0"

Notes:
All field connections shall be made with 7/8"Ø ASTM A325 high strength bolts, nuts, and washers.
See sheets 12-13 for girder details.

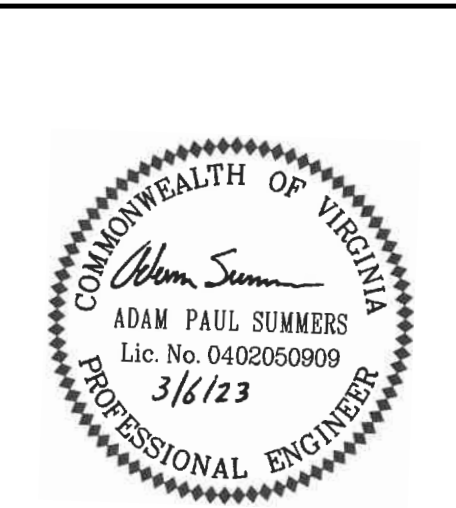


GIRDER END DETAIL
Scale: 1 1/2"=1'-0"



**TYPICAL STUD SHEAR
CONNECTOR DETAIL**
Not to scale

△	Bearing stiffeners	5/23/23
NO.	DESCRIPTION	DATE



VA. STR. NO.: 1804	NBIS NO.: 21774
SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY FRAMING PLAN AND GIRDER DETAILS	
DESIGNED BY: APS	DRAWN BY: APS
SCALE: AS NOTED	PLAN NO.: 094-02A
DATE: March 3, 2023	SHEET: 11 OF 46

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				12

For notes and details, see sheets 11&13.

Symbol ϕ = diameter.

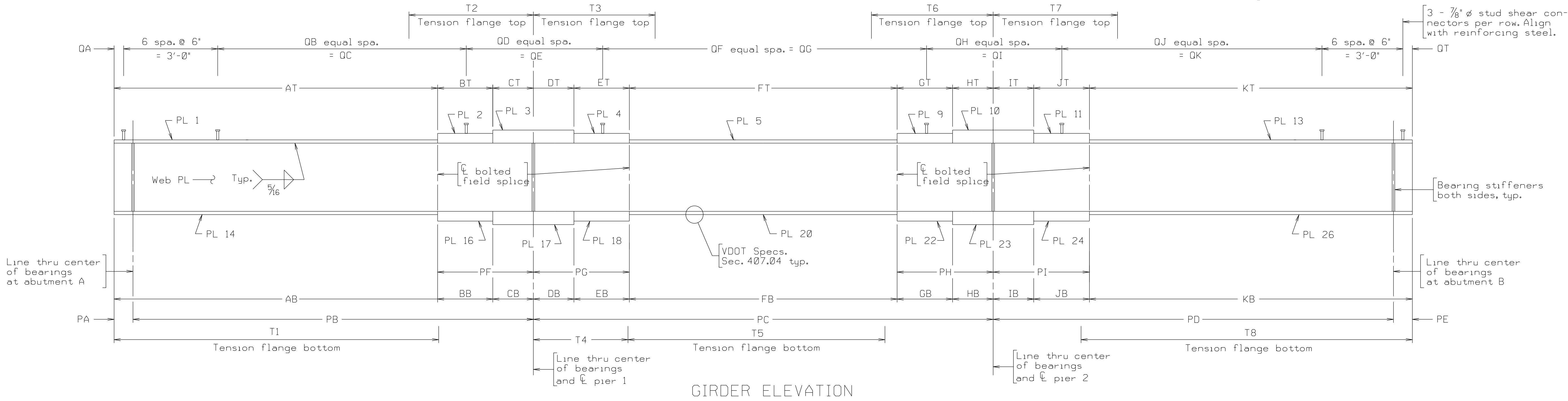


PLATE DIMENSION TABLE

Girder	Web PL	PL 1	PL 2	PL 3	PL 4	PL 5	PL 6	PL 7	PL 8	PL 9	PL 10	PL 11	PL 12	PL 13	PL 14	PL 15	PL 16	PL 17	PL 18	PL 19	PL 20	PL 21	PL 22	PL 23	PL 24	PL 25	PL 26
1-8	33x $\frac{7}{16}$	14x $\frac{3}{4}$	16x1	16x1 $\frac{1}{4}$	16x1	14x $\frac{3}{4}$	-	-	-	16x1	16x1 $\frac{1}{2}$	16x1	-	14x $\frac{3}{4}$	14x $\frac{3}{4}$	-	16x1	16x1 $\frac{1}{2}$	16x1	-	14x $\frac{3}{4}$	-	16x1 $\frac{1}{4}$	16x2	16x1 $\frac{1}{4}$	-	14x $\frac{3}{4}$

GIRDER DIMENSION TABLE

Girder	AB	AT	BB	BT	CB	CT	DB	DT	EB	ET	FB	FT	GB	GT	HB	HT	IB	IT	JB	JT	KB	KT
1-8	31'-0 $\frac{1}{2}$ "	31'-0 $\frac{1}{2}$ "	10'-0"	10'-0"	7'-4 $\frac{1}{2}$ "	7'-4 $\frac{1}{2}$ "	5'-0"	5'-0"	10'-0"	10'-0"	39'-6"	39'-6"	12'-0"	12'-0"	7'-6"	7'-6"	7'-6"	7'-6"	11'-6"	11'-6"	43'-5"	43'-5"

GIRDER DIMENSION TABLE

Girder	Radius	PA	PB	PC	PD	PE	PF	PG	PH	PI	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QT
1-8	-	1'-11"	46'-6"	74'-0"	60'-6"	1'-11"	17'-4 $\frac{1}{2}$ "	15'-0"	19'-6"	19'-0"	3"	61	45'-2"	6	10'-2"	62	50'-0"	14	26'-4"	56	46'-8"	3'

TENSION FLANGES

Girder	T1	T2	T3	T4	T5	T6	T7	T8
1-8	42'-0 $\frac{1}{2}$ "	48'-5"	25'-7 $\frac{1}{4}$ "	9'-2 $\frac{3}{4}$ "	53'-11 $\frac{1}{4}$ "	35'-5 $\frac{3}{4}$ "	36'-3 $\frac{1}{4}$ "	51'-5 $\frac{1}{8}$ "

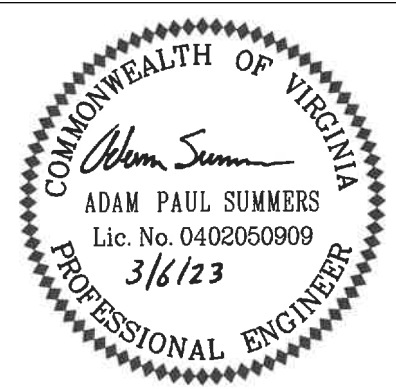
			COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
			STRUCTURE AND BRIDGE DIVISION			
			GIRDER DETAILS (SHEET 1 OF 2)			
No.	Description	Date	Designed: APS Drawn: APS Checked: APS	Date Mar. 2023	Plan No. 094-02A	Sheet No. 12 of 46
Revisions						

Not to scale unless otherwise noted

© 2022, Commonwealth of Virginia

SGDET3A.DGN

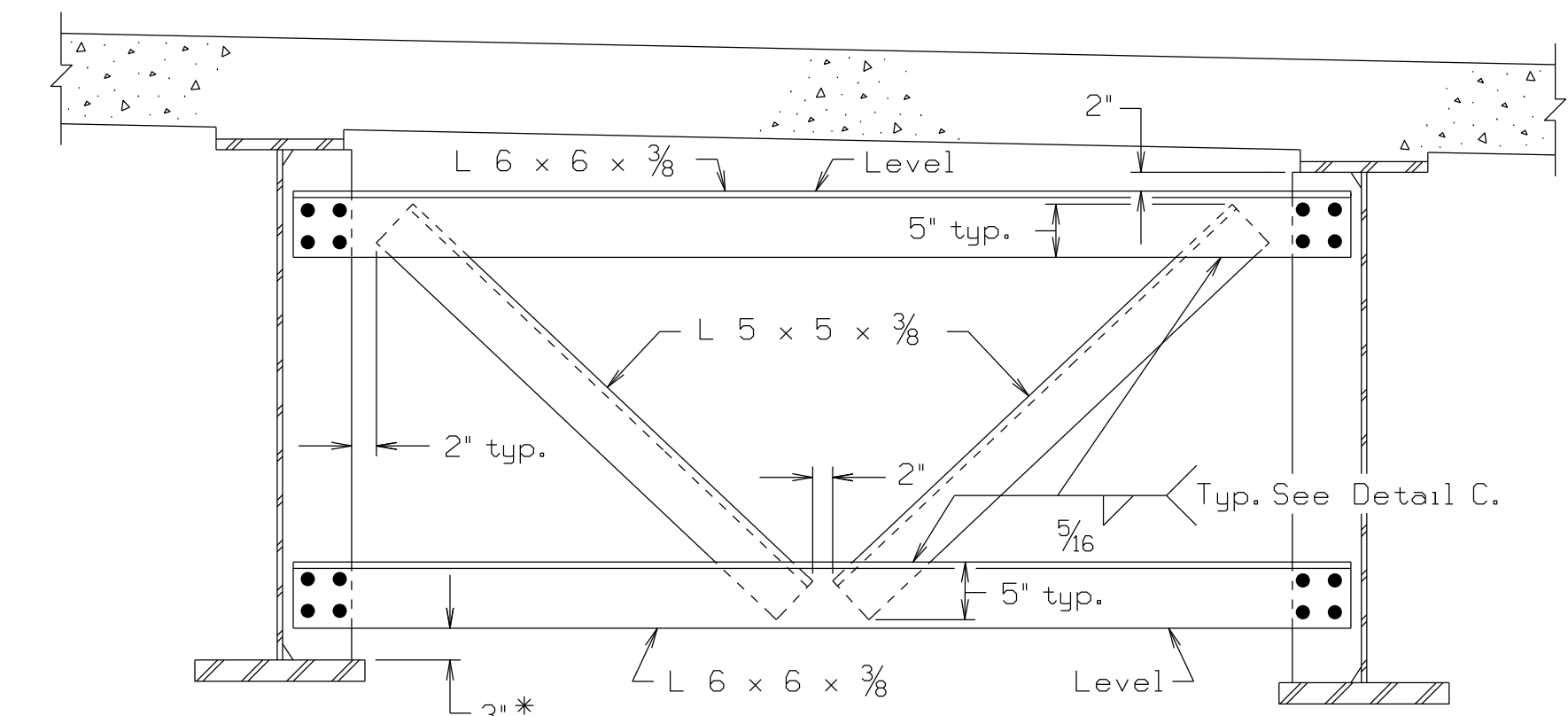
SGDET3A 04-30-2020



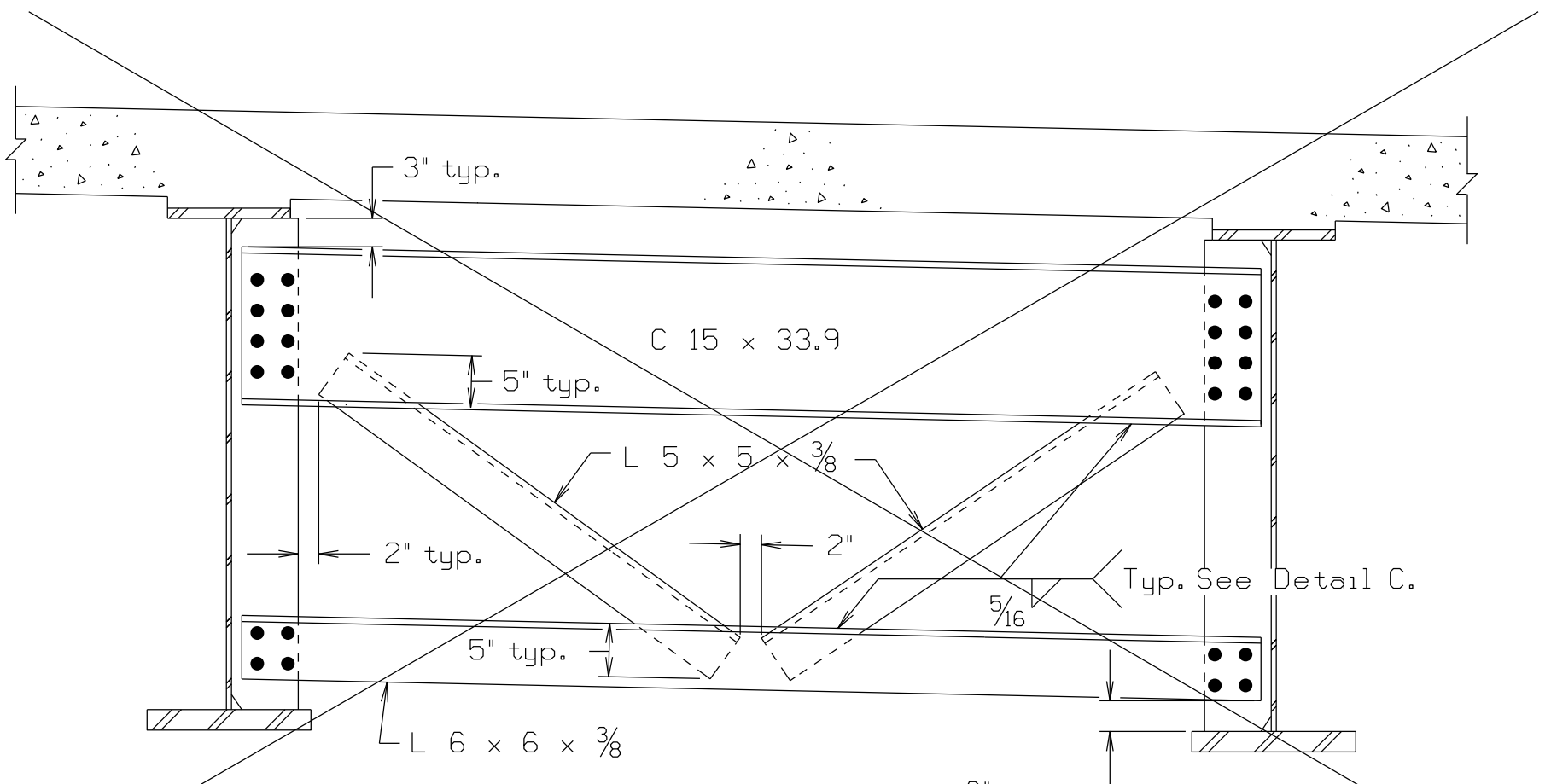
SCHWARTZ & ASSOC.
LYNCHBURG, VA
STRUCTURAL ENGINEER

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				14

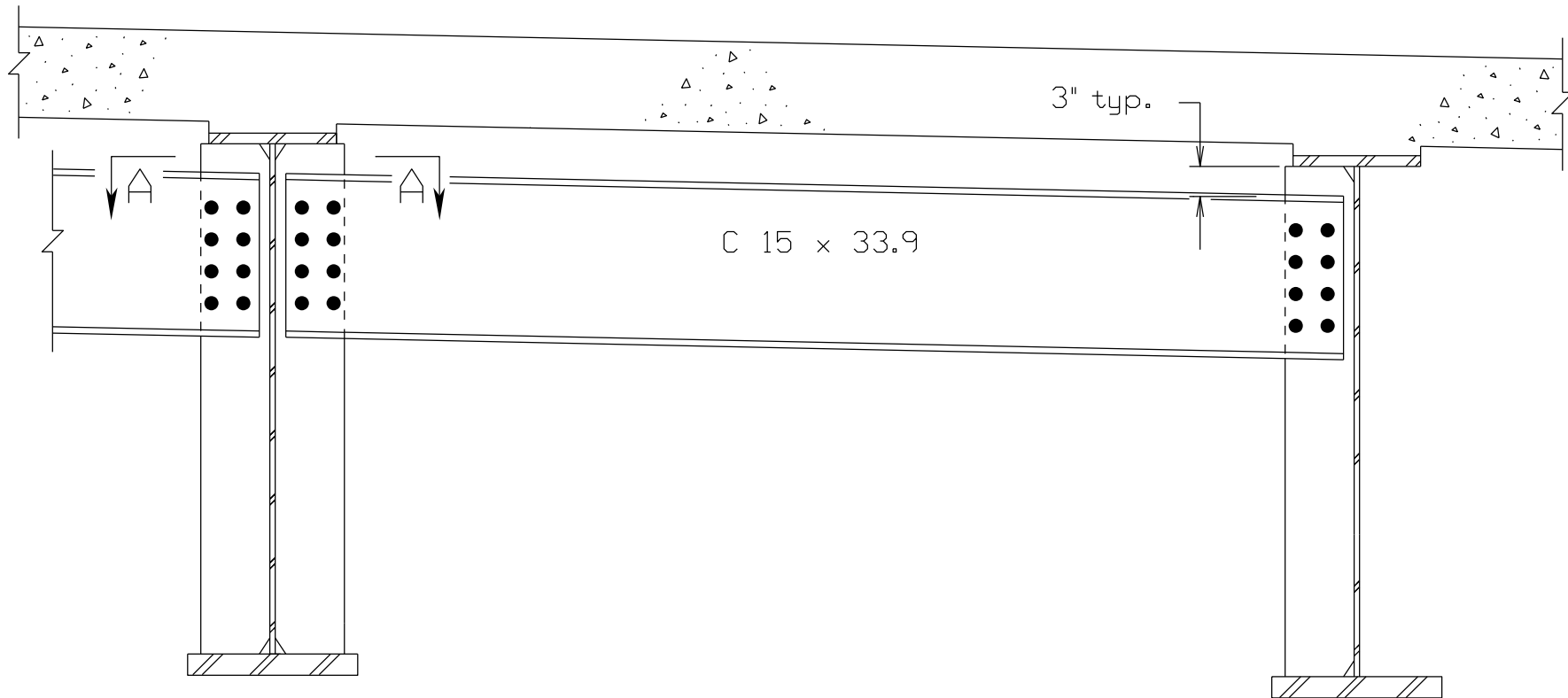
Note:
All welding of structural steel and quality control inspection of welds, including field welding and quality control inspection of field welding, shall be the responsibility of the Contractor in accordance with Section 407.04(l) of the Specifications.



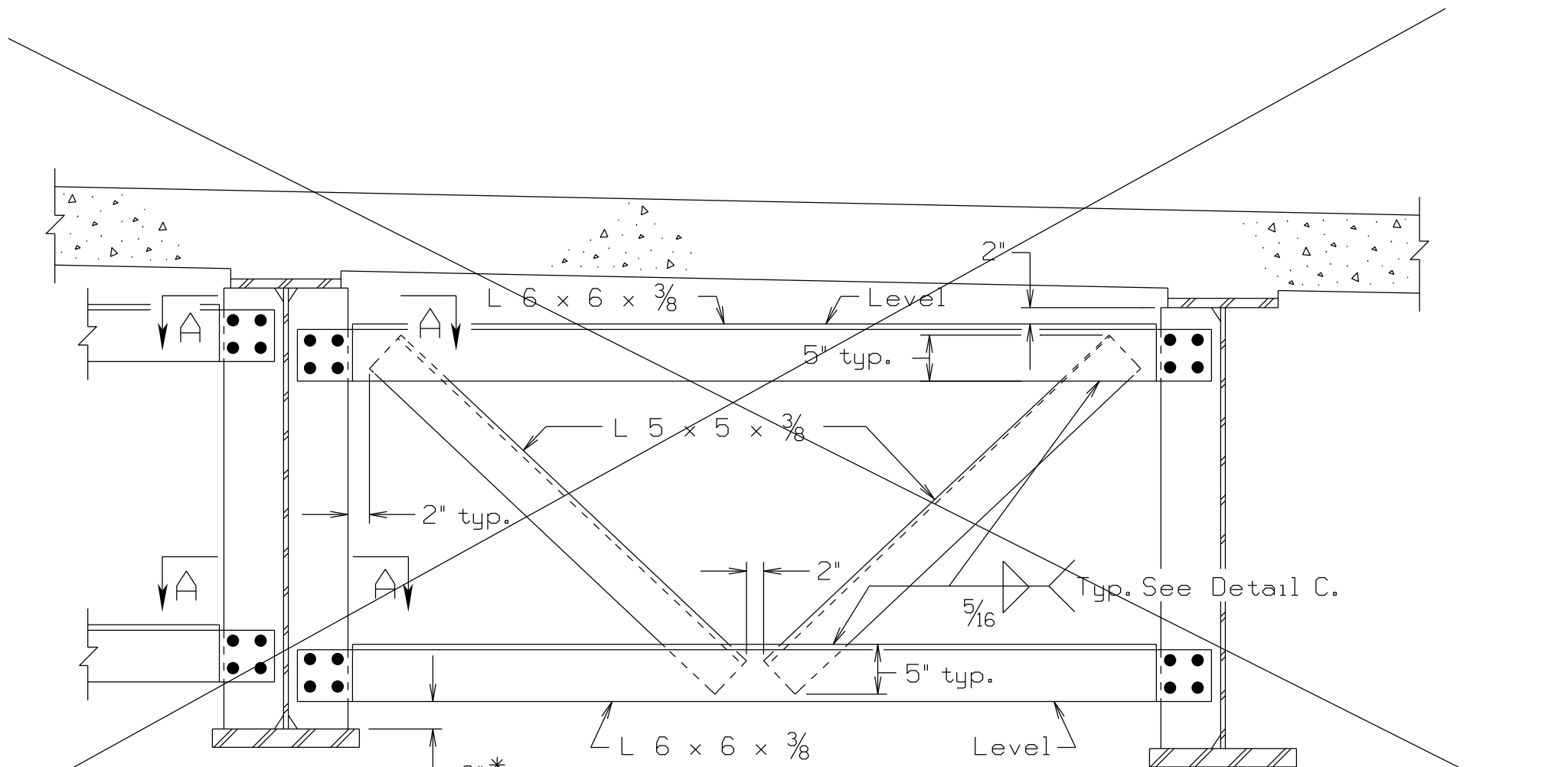
INTERMEDIATE CROSS FRAME - CF1
* Dimension shall be 6' at piers



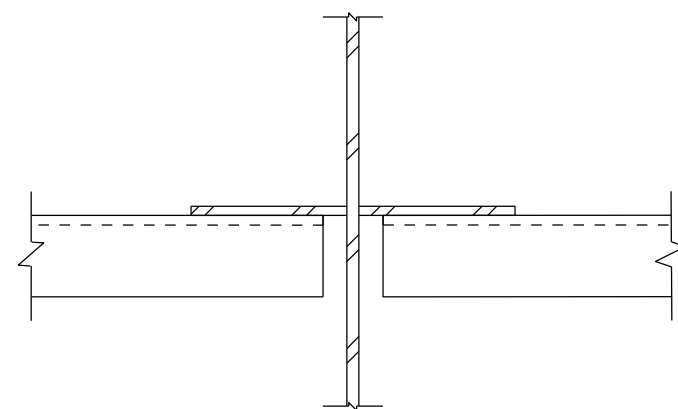
END CROSS FRAME - CF2



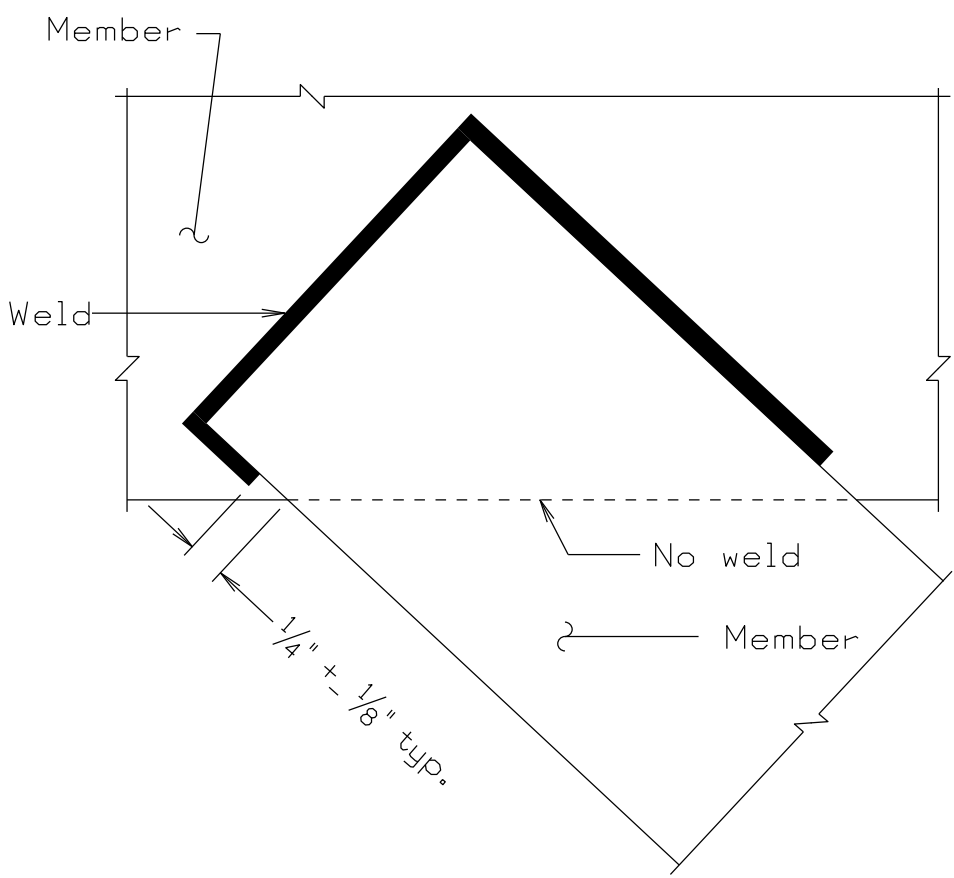
END CROSS FRAME - CF3



INTERMEDIATE CROSS FRAME - CF4
* Dimension shall be 6' at piers



SECTION A-A



DETAIL C

Not to scale

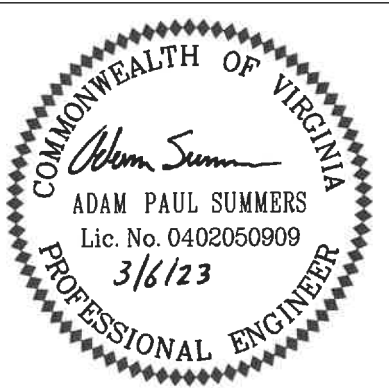
© 2022, Commonwealth of Virginia

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
CROSS FRAME DETAILS					
No.	Description	Date	Designed: APS.....	Date	Plan No.
			Drawn: APS.....	Mar. 2023	094-02A
			Checked: APS.....		14 of 46
Revisions					

bcf4.dgn

04-30-2020

BCF-4

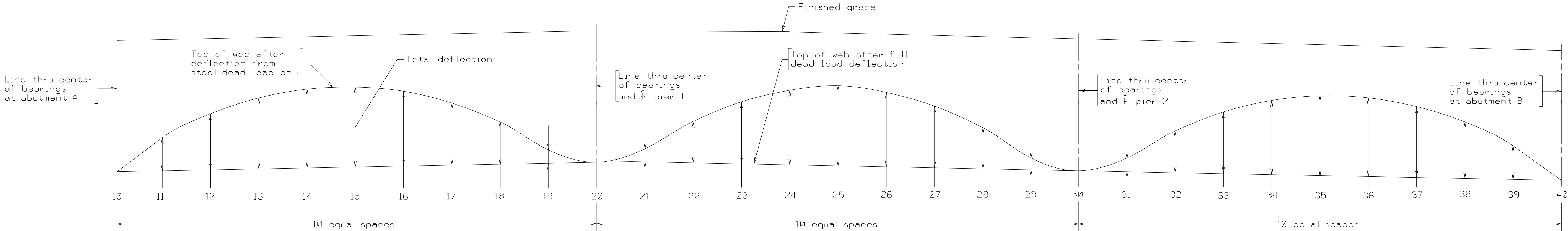


Schwartz & Assoc.
Lynchburg, VA
Structural Engineer
Sealed and Signed by:
Jung Meng
Lic. No. 033572
On the date of
April 30, 2020

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

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

STATE	FEDERAL AID		STATE	SHEET NO.
	ROUTE	PROJECT		
VA.	—			15a



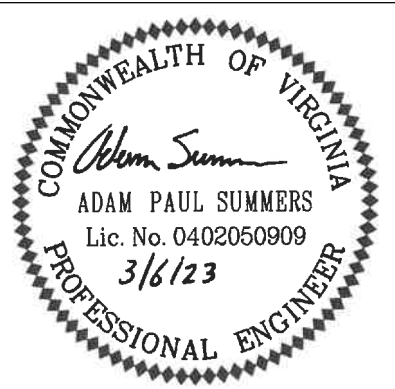
Girders 2,3,6,&7	Point	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	Δ_s	0	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	0	0	0	0	1/8"	1/4"	7/16"	9/16"	9/16"	1/2"	3/8"	3/16"	1/16"	0	0	1/8"	1/4"	3/8"	7/16"	1/2"	7/16"	3/8"	3/16"	0
	Δ_c	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0
Girders 1,4,5,&8	Total	0	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	0	0	0	0	1/8"	5/16"	1/2"	5/8"	5/8"	9/16"	7/16"	3/16"	1/16"	0	0	1/8"	1/4"	7/16"	1/2"	9/16"	1/2"	7/16"	3/16"	0
	Δ_s	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	0	0	0	1/8"	5/16"	9/16"	11/16"	11/16"	5/8"	7/16"	1/4"	1/16"	0	1/16"	1/8"	5/16"	7/16"	9/16"	5/8"	9/16"	7/16"	1/4"	0
	Δ_c	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0
Girders 2,3,6,&7	Total	0	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	0	0	0	0	1/8"	3/8"	5/8"	3/4"	3/4"	11/16"	1/2"	1/4"	1/16"	0	1/16"	1/8"	5/16"	1/2"	5/8"	11/16"	5/8"	1/2"	1/4"	0
	Δ_s	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	0	0	0	1/8"	5/16"	9/16"	11/16"	11/16"	5/8"	7/16"	1/4"	1/16"	0	1/16"	1/8"	5/16"	7/16"	9/16"	5/8"	9/16"	7/16"	1/4"	0
	Δ_c	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0
Girders 1,4,5,&8	Total	0	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	0	0	0	0	1/8"	3/8"	5/8"	3/4"	3/4"	11/16"	1/2"	1/4"	1/16"	0	1/16"	1/8"	5/16"	1/2"	5/8"	11/16"	5/8"	1/2"	1/4"	0
	Δ_s	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	0	0	0	1/8"	5/16"	9/16"	11/16"	11/16"	5/8"	7/16"	1/4"	1/16"	0	1/16"	1/8"	5/16"	7/16"	9/16"	5/8"	9/16"	7/16"	1/4"	0
	Δ_c	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0	0	0	0	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0	0

Δ_s = Deflection of girder from dead load of concrete deck slab, bolster and construction tolerance.
 Δ_c = Deflection of girder from permanent dead load added after deck slab is cast (e.g. parapet).

DEAD LOAD DEFLECTIONS

TOP OF DECK ELEVATIONS ALONG C GIRDER

Point	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Girder 1&8	1031.65	1031.99	1032.32	1032.64	1032.95	1033.27	1033.59	1033.91	1034.22	1034.52	1034.83	1035.25	1035.67	1036.06	1036.43	1036.81	1037.18	1037.54	1037.88	1038.20	1038.52	1038.76	1039.01	1039.23	1039.42	1039.62	1039.80	1039.99	1040.15	1040.30	1040.47
Girder 2&7	1031.87	1032.20	1032.53	1032.85	1033.16	1033.48	1033.80	1034.12	1034.43	1034.73	1035.04	1035.46	1035.88	1036.27	1036.65	1037.02	1037.39	1037.75	1038.10	1038.41	1038.73	1038.97	1039.22	1039.44	1039.63	1039.83	1040.01	1040.20	1040.37	1040.52	1040.68
Girder 3&6	1032.08	1032.41	1032.75	1033.06	1033.38	1033.69	1034.01	1034.33	1034.64	1034.95	1035.25	1035.67	1036.09	1036.48	1036.86	1037.23	1037.60	1037.97	1038.31	1038.62	1038.94	1039.18	1039.43	1039.65	1039.84	1040.04	1040.23	1040.41	1040.58	1040.73	1040.89
Girder 4&5	1032.29	1032.62	1032.96	1033.27	1033.59	1033.90	1034.22	1034.54	1034.85	1035.16	1035.46	1035.88	1036.30	1036.70	1037.07	1037.44	1037.81	1038.18	1038.52	1038.84	1039.15	1039.40	1039.64	1039.86	1040.06	1040.25	1040.44	1040.62	1040.79	1040.94	1041.10



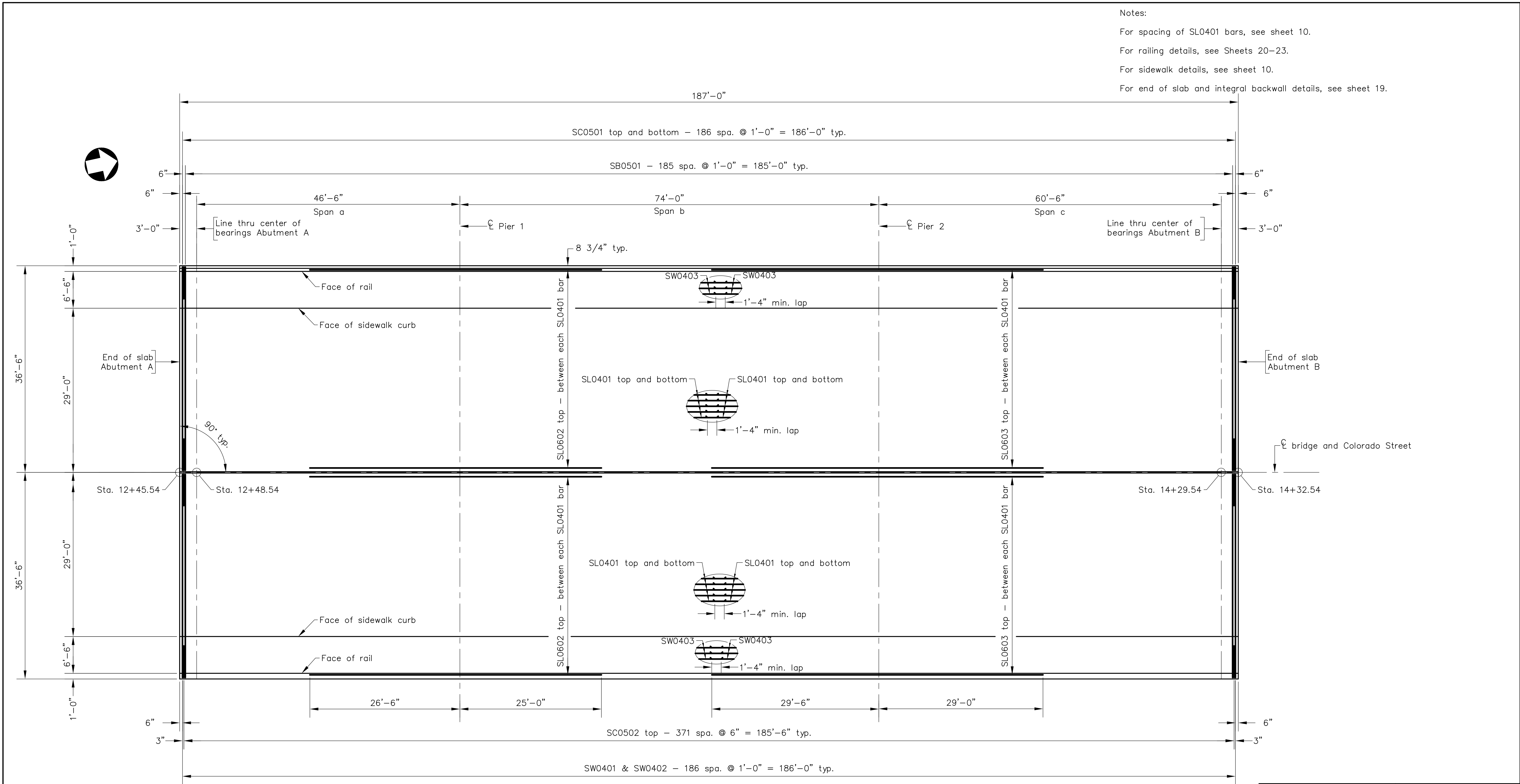
Schwartz & Assoc.
Lynchburg, VA
Structural Engineer

Not to scale

© 2022, Commonwealth of Virginia

			COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
			STRUCTURE AND BRIDGE DIVISION			
			DEAD LOAD DEFLECTIONS AND SLAB ELEVATIONS			
No.	Description	Date	Designed: APS...	Date	Plan No.	Sheet No.
			Drawn: APS...	Mar. 2023	094-02A	16 of 46
			Checked: APS...			
Revisions						

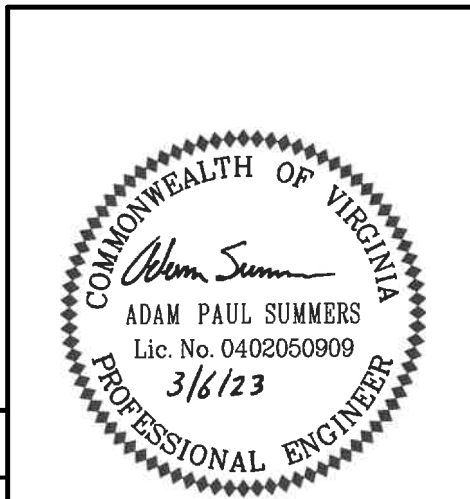
CADD REFERENCE NO.: 19051.DWG



DECK SLAB PLAN

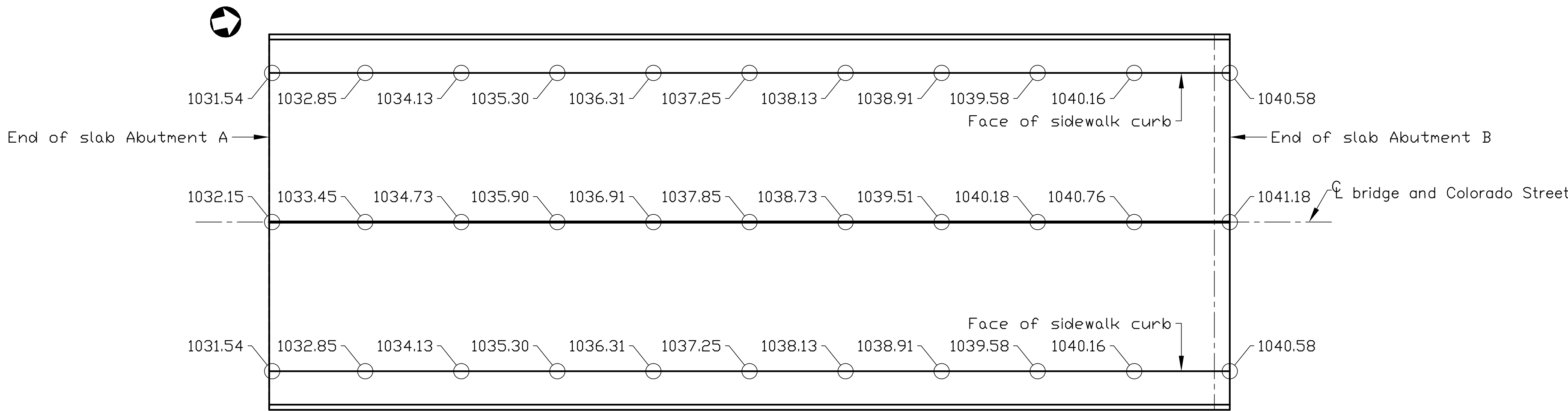
Scale: 1/8" = 1'-0"

NO.	DESCRIPTION	DATE



VA. STR. NO.: 1804	NBIS NO.: 21774
SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY DECK SLAB PLAN	
DESIGNED BY: APS	DRAWN BY: APS
SCALE: AS NOTED	PLAN NO.: 094-02A
DATE: March 3, 2023	SHEET: 17 OF 46

COMM. NO. 19051

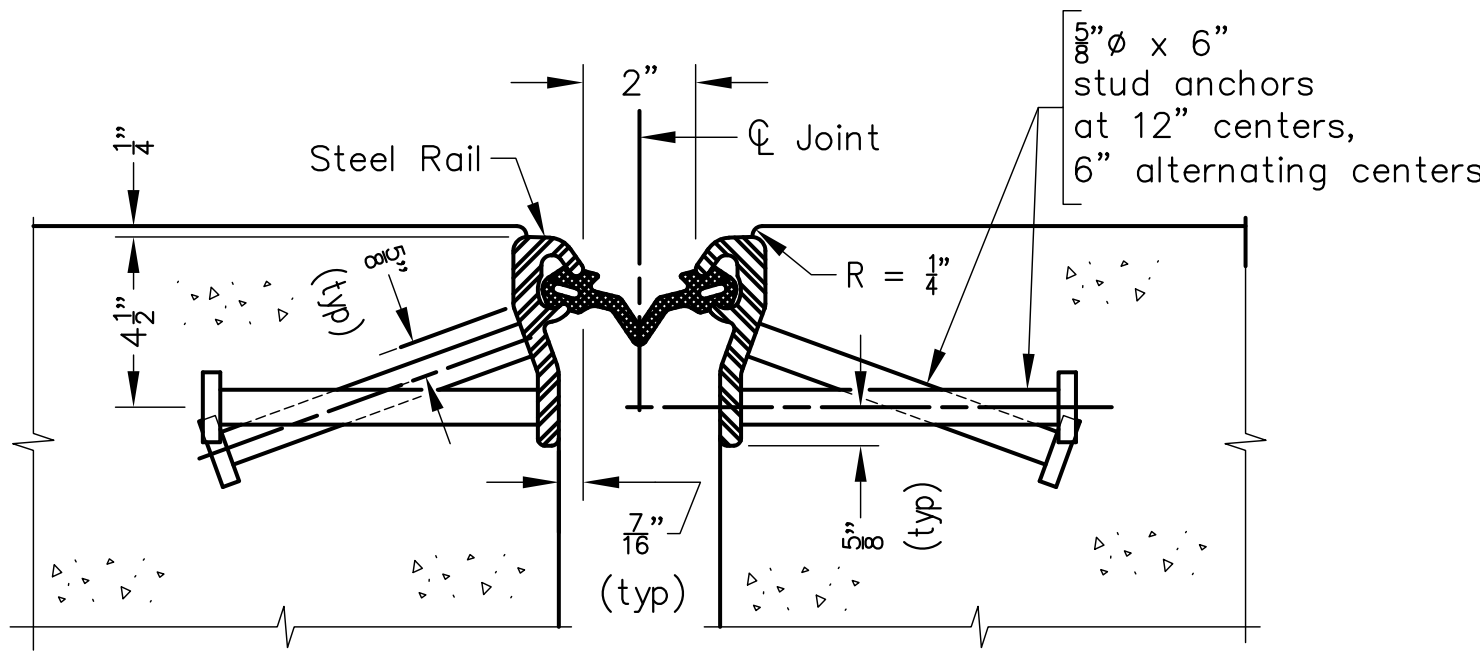


DECK SLAB ELEVATIONS
10 equal spaces

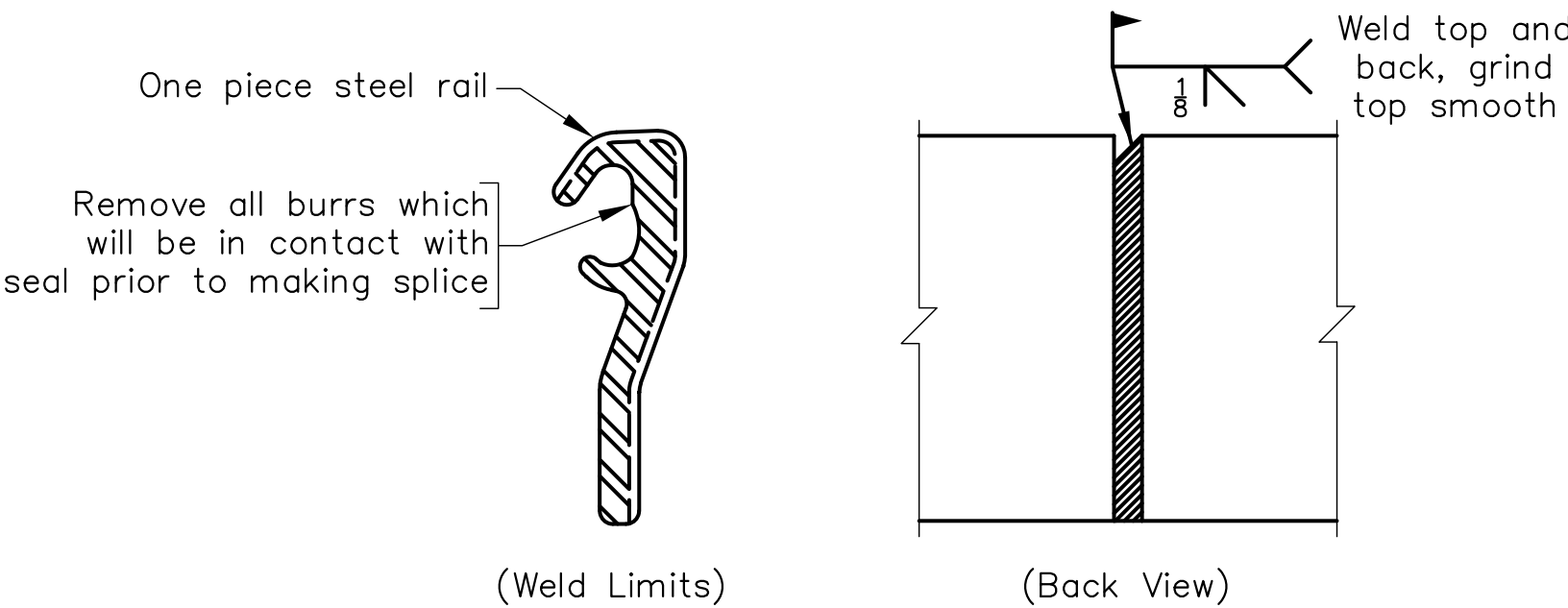
Notes:

Deck slab elevations are on top of finished roadway at face of curbs.

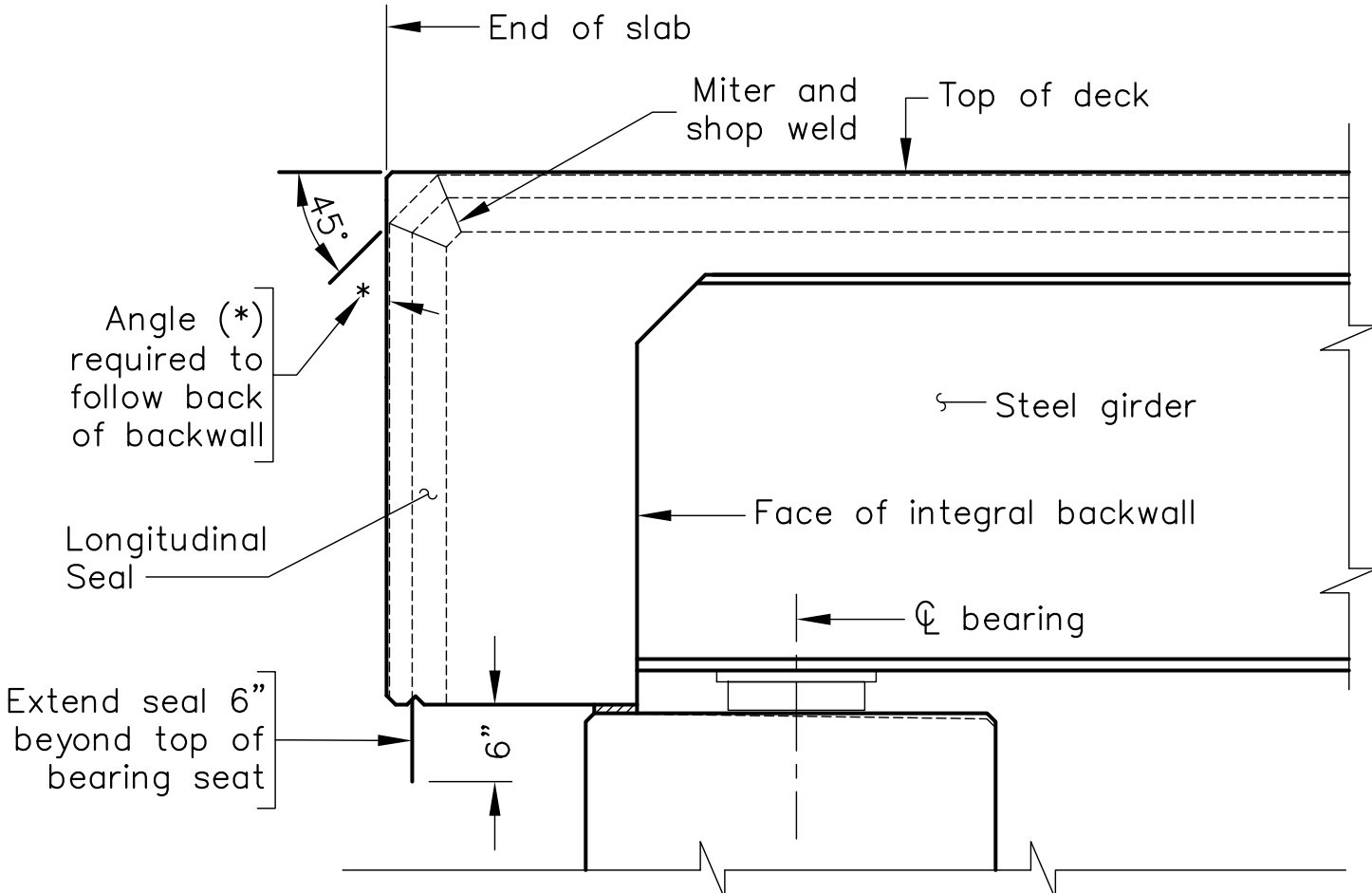
Straight line interpolation for Intermediate elevations on top of finished roadway may be made in any direction between any two adjacent points.



TYPICAL SECTION



FIELD SPLICE DETAIL



BDEJ4 INTEGRAL BACKWALL DETAILS

Notes:

Shop drawings of the dam and corresponding slab opening(s) and anchor details shall be submitted to the Engineer for review in accordance with Section 105.10 of the Specifications.

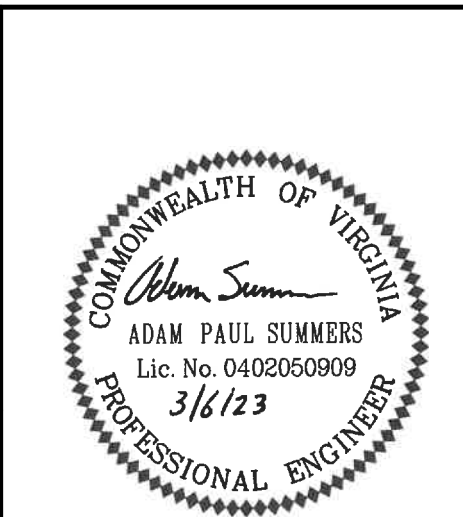
Non-stainless ferrous metal shall be ASTM A36 and shall be thermal spray coated in accordance with Section 411 of the Specifications.

All bolts, nuts, washers, and screws shall be ASTM A276, Type 304 stainless steel.

Steel sections shall be furnished in minimum lengths of 18' and shall be field welded into continuous sections. Welds shall be ground smooth in areas where they will be in contact with the elastomer.

CADD REFERENCE NO.: 19051.DWG

NO.	DESCRIPTION	DATE



VA. STR. NO.: 1804	NBIS NO.: 21774
SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY DECK SLAB ELEVATIONS AND LONGITUDINAL JOINT DETAILS	
DESIGNED BY: APS	DRAWN BY: APS
SCALE: AS NOTED	PLAN NO.: 094-02A
DATE: March 3, 2023	CHECKED BY: MBH
SHEET: 18 OF 46	

STATE	ROUTE	FEDERAL AID	ROUTE	STATE	SHEET NO.
VA.	—	PROJECT		PROJECT	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 $\frac{3}{4}$ ".

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

For details and reinforcing steel schedule of terminal wall, see sheet 23.

Posts and rail members shall be ASTM A500 Grade B steel. Plates shall be ASTM A36 steel. Steel pipe sleeves shall be ASTM A53.

Bolts for attaching rails to post are $\frac{3}{4}$ " diameter round head (with slot in head), ASTM A449. All other bolts shall be ASTM F3125 Grade A325 unless otherwise indicated in the details. Nuts shall be ASTM A563 Grade DH or ASTM A194 Grade 2H. Washers shall be ASTM F436.

For bolts attaching rails to posts, bolt extensions beyond nut shall be limited to the smaller of one and a half finishing turns or $\frac{1}{4}$ ". 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 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 $\frac{1}{8}$ " 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.

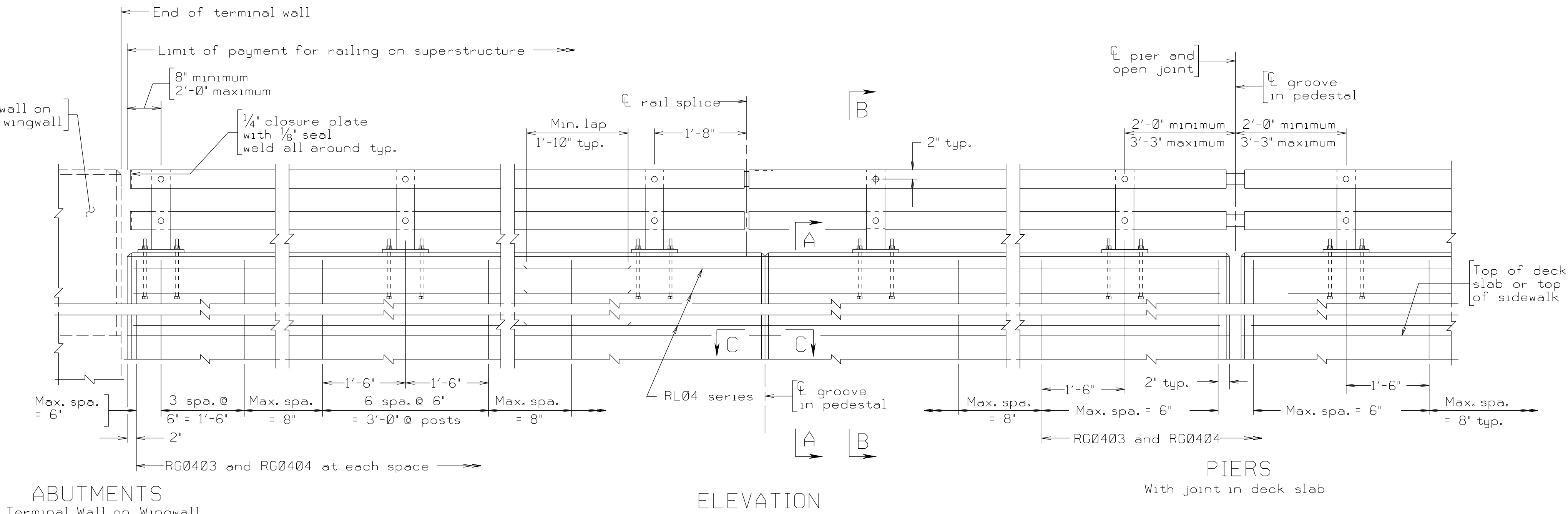
For additional notes, see sheet 21.

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

REINFORCING STEEL SCHEDULE						
RG0403	Mark	Size	No.	Length	Pin ϕ	Location
RG0403		#4		4'-10 $\frac{3}{4}$ "	3"	Parapet
RG0404		#4		4'-11 $\frac{3}{4}$ "	3"	Parapet
RL04		#4		—	—	Parapet

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

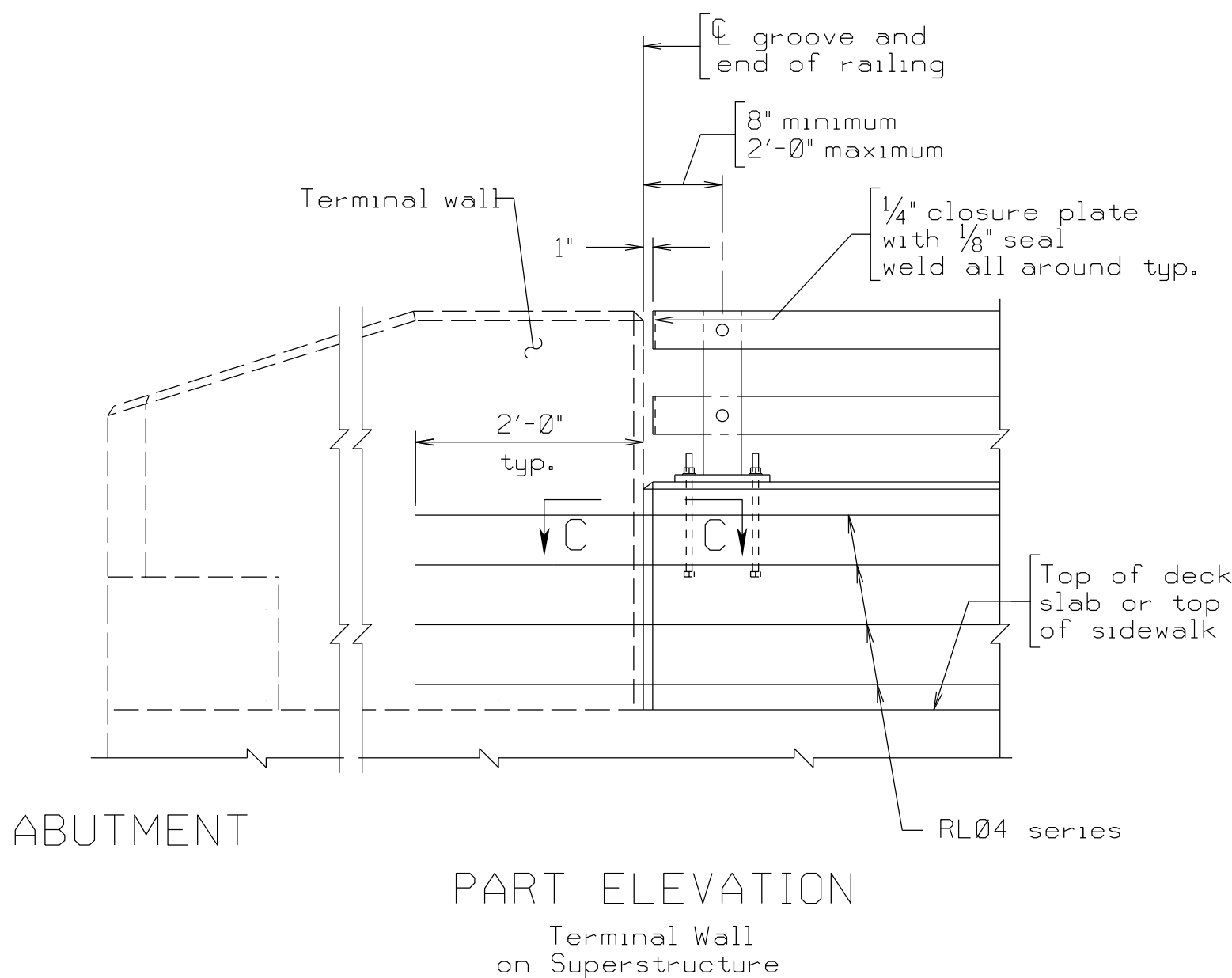
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION						
STRUCTURE AND BRIDGE DIVISION						
42"-CPSR RAILING (CPSR-1)						
No.	Description	Date	Designed: APS.....	Date	Plan No.	Sheet No.
Revisions			Drawn: APS.....	Mar. 2023	094-02A	20 of 46
			Checked: APS.....			



ABUTMENTS
Terminal Wall on Wingwall

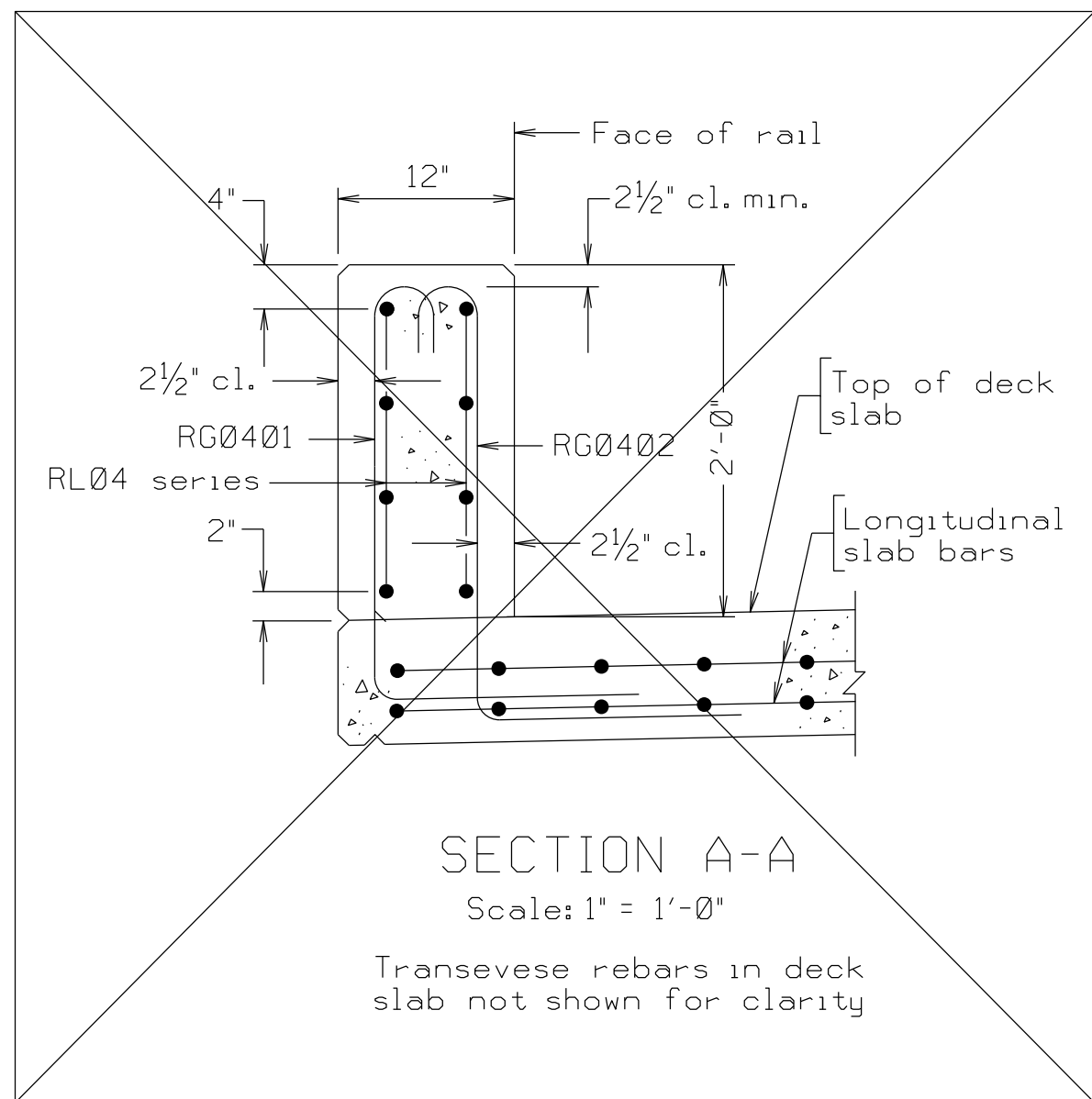
ELEVATION

PIERS
With joint in deck slab



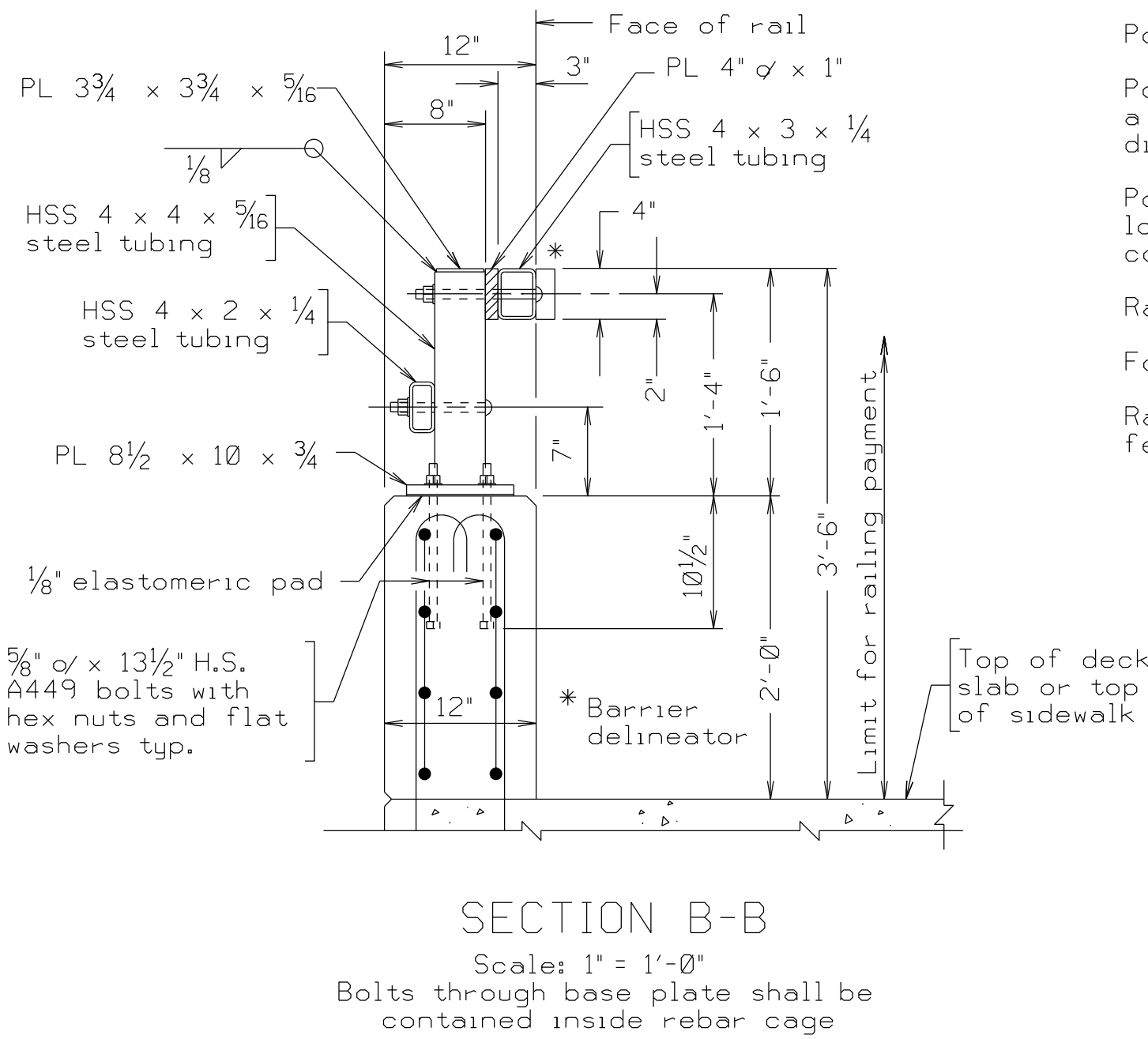
ABUTMENT

PART ELEVATION
Terminal Wall on Superstructure



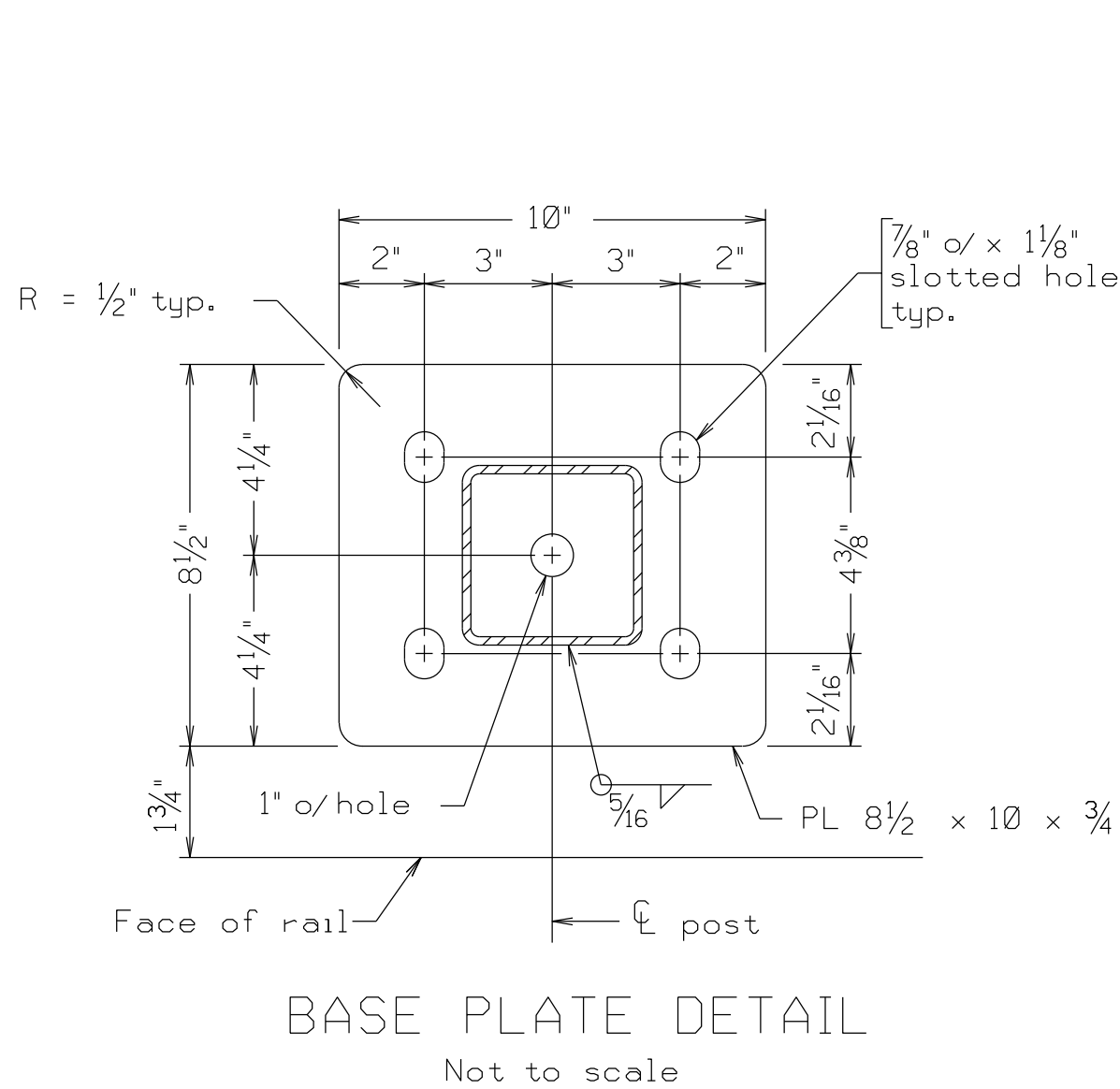
SECTION A-A
Scale: 1" = 1'-0"

Transeverse rebars in deck slab not shown for clarity

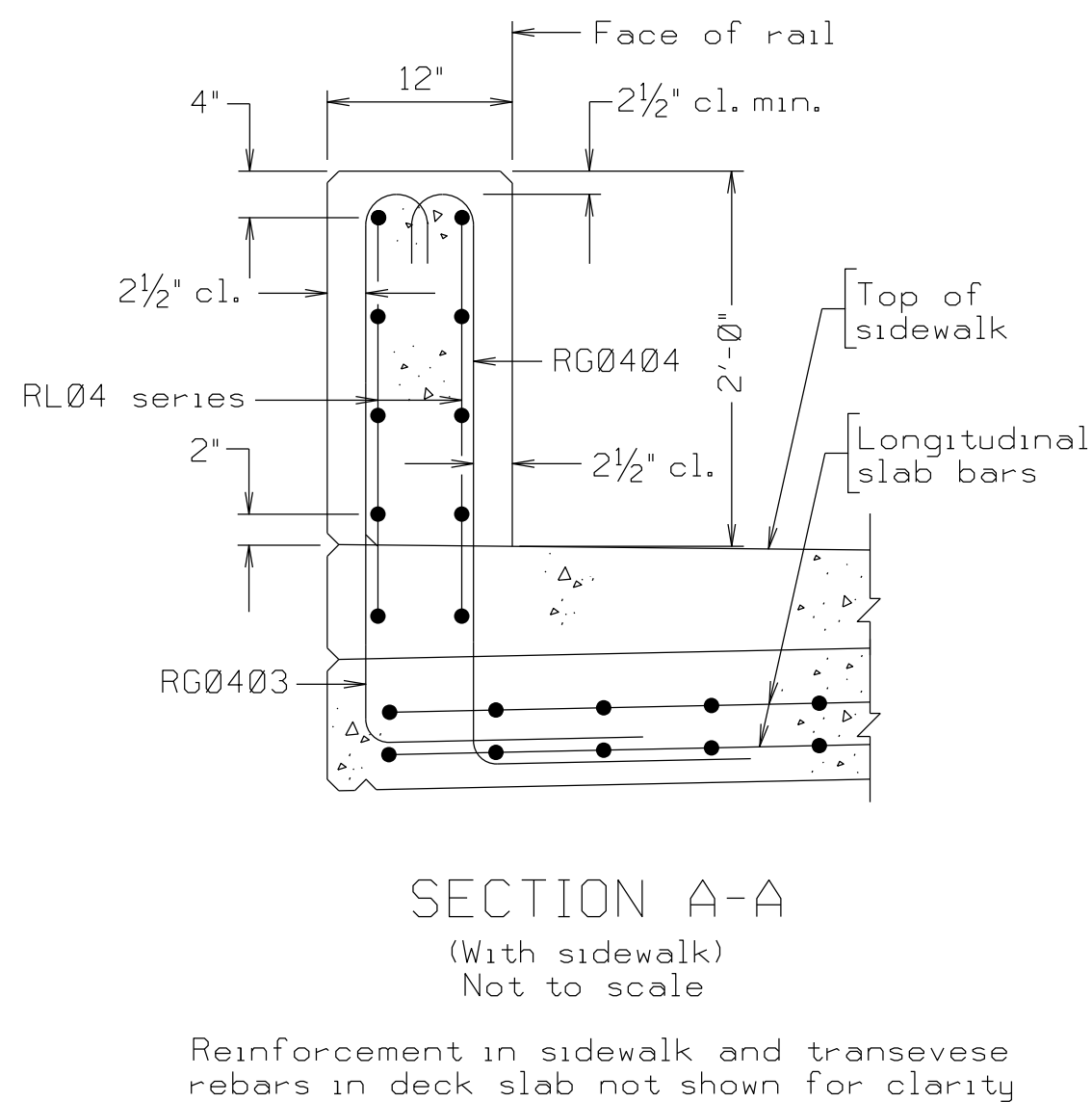


SECTION B-B

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

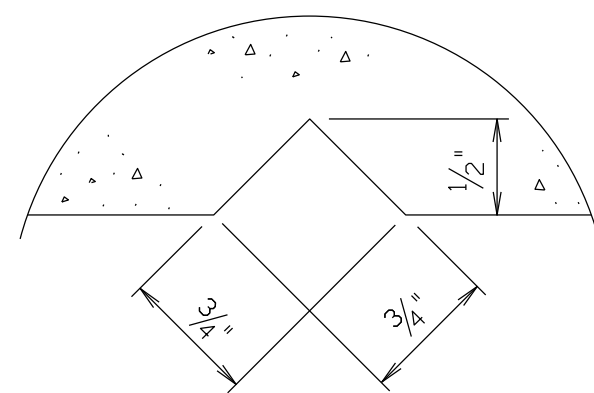


BASE PLATE DETAIL
Not to scale



SECTION A-A
(With sidewalk)
Not to scale

Reinforcement in sidewalk and transeverse rebars in deck slab not shown for clarity



SECTION C-C
Full scale

Groove detail for both sides of rail

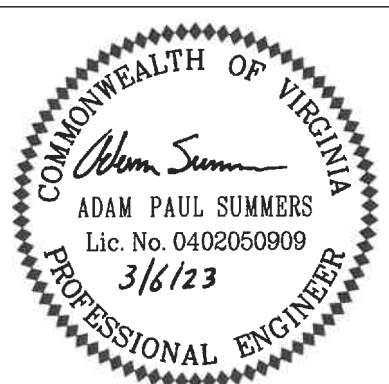
Scale: $\frac{3}{4}$ " = 1'-0" unless otherwise noted.

© 2022, Commonwealth of Virginia

10-31-2019

SDGNS

CPSR-1



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

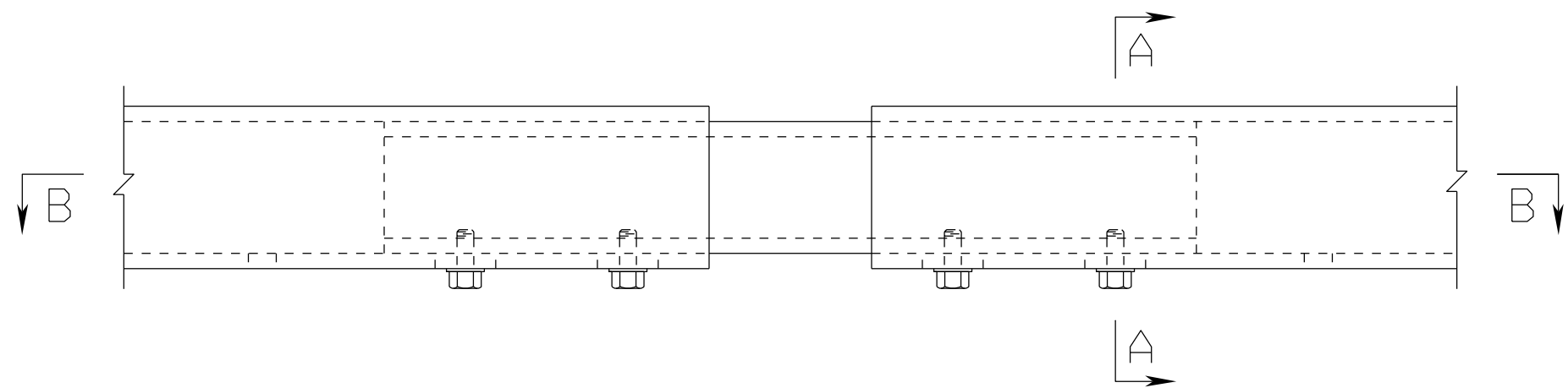
A copy of the original
sealed and signed
drawing is on file in the
Central Office.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

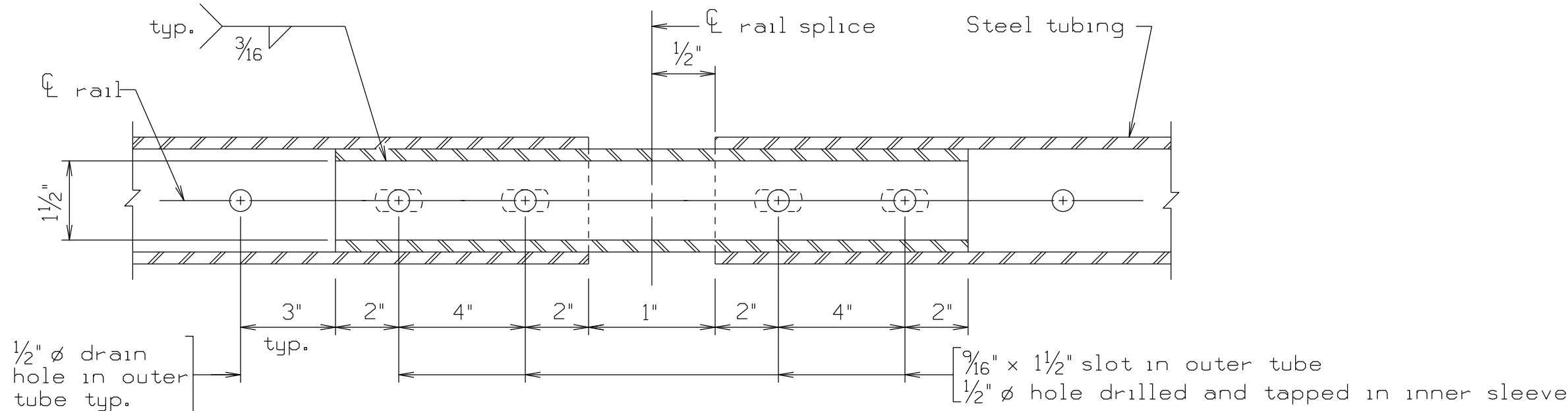
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				20

Notes (cont'd):

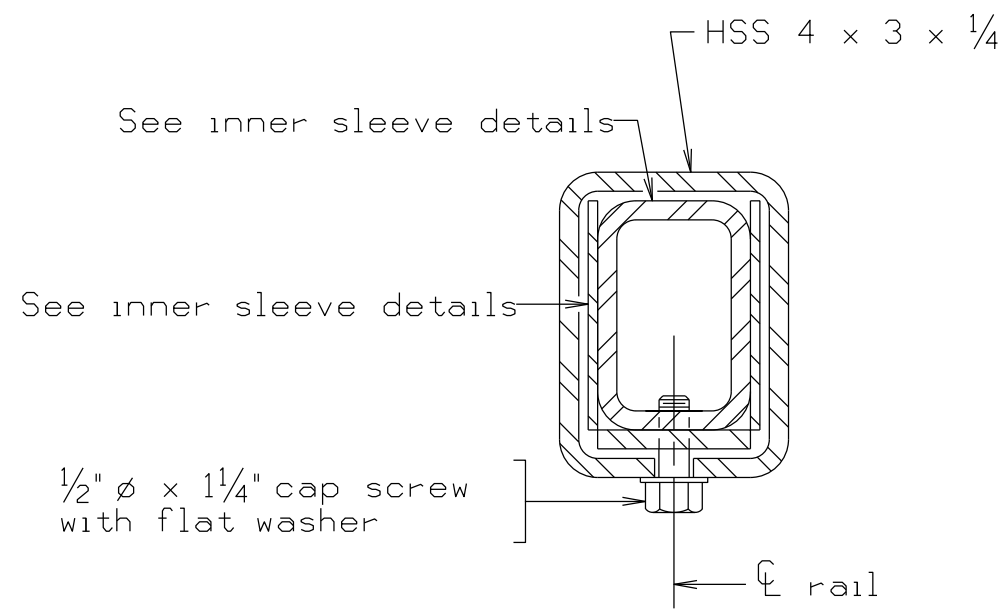
- Drain holes shall be 1/2" diameter and shall be provided in all rails approximately half-way between posts except at open joints near pier(s). Drain holes shall be provided at each end of rail.
- Barrier delineator size, color, and spacing shall be in accordance with the Specifications.
- Maximum spacing 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.



ELEVATION VIEW

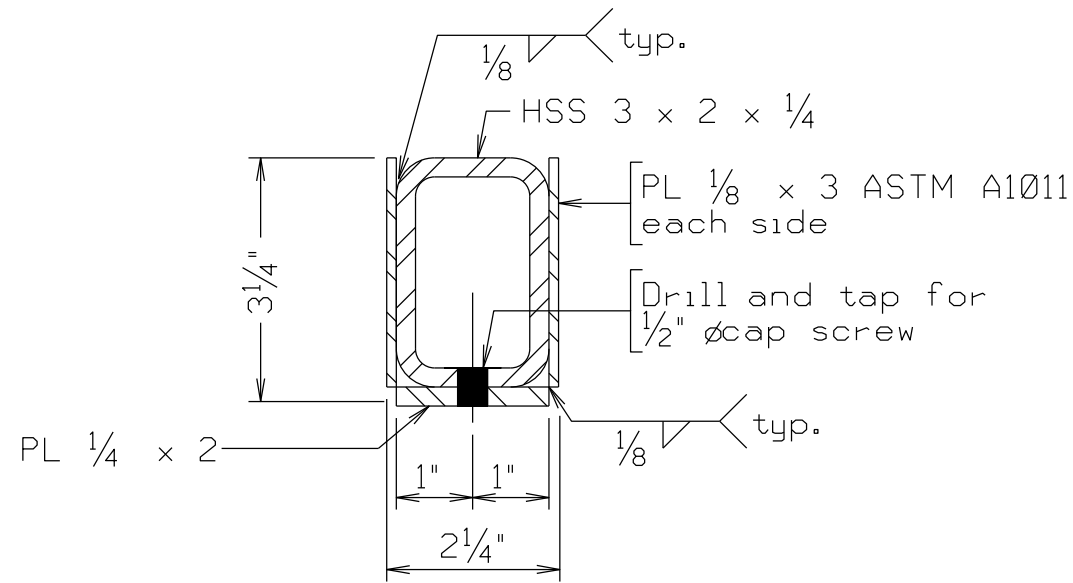


SECTION B-B

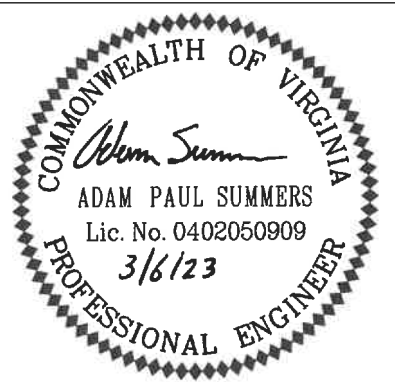


SECTION A-A
SECTION AT RAIL SPLICE

RAIL SPLICE DETAILS



INNER SLEEVE DETAILS



SCHWARTZ & ASSOC.
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Jung 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.

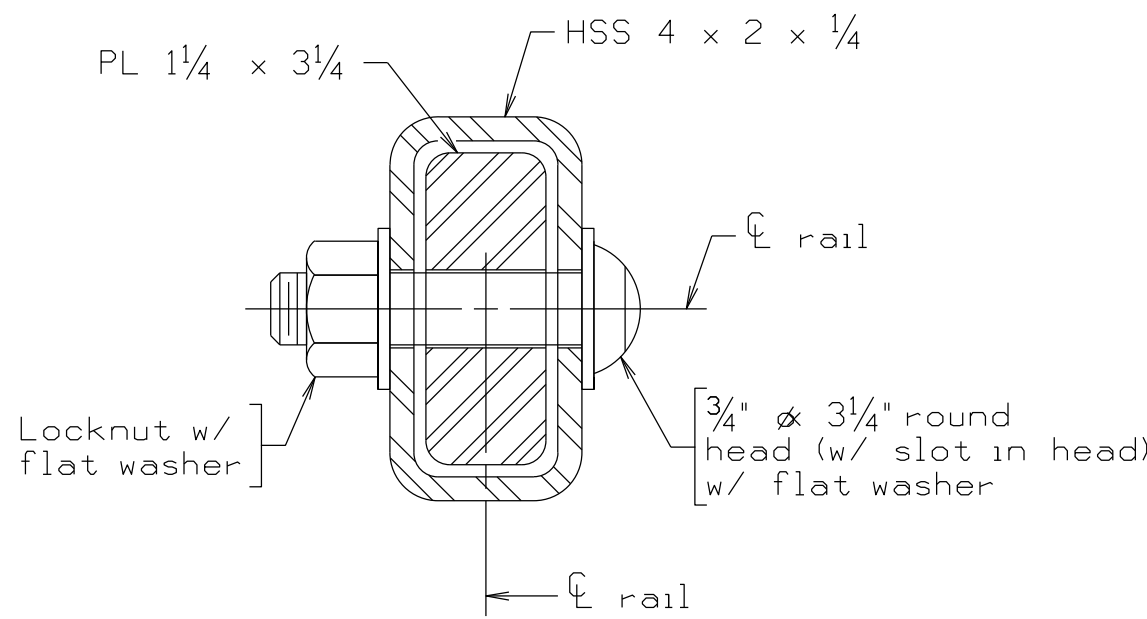
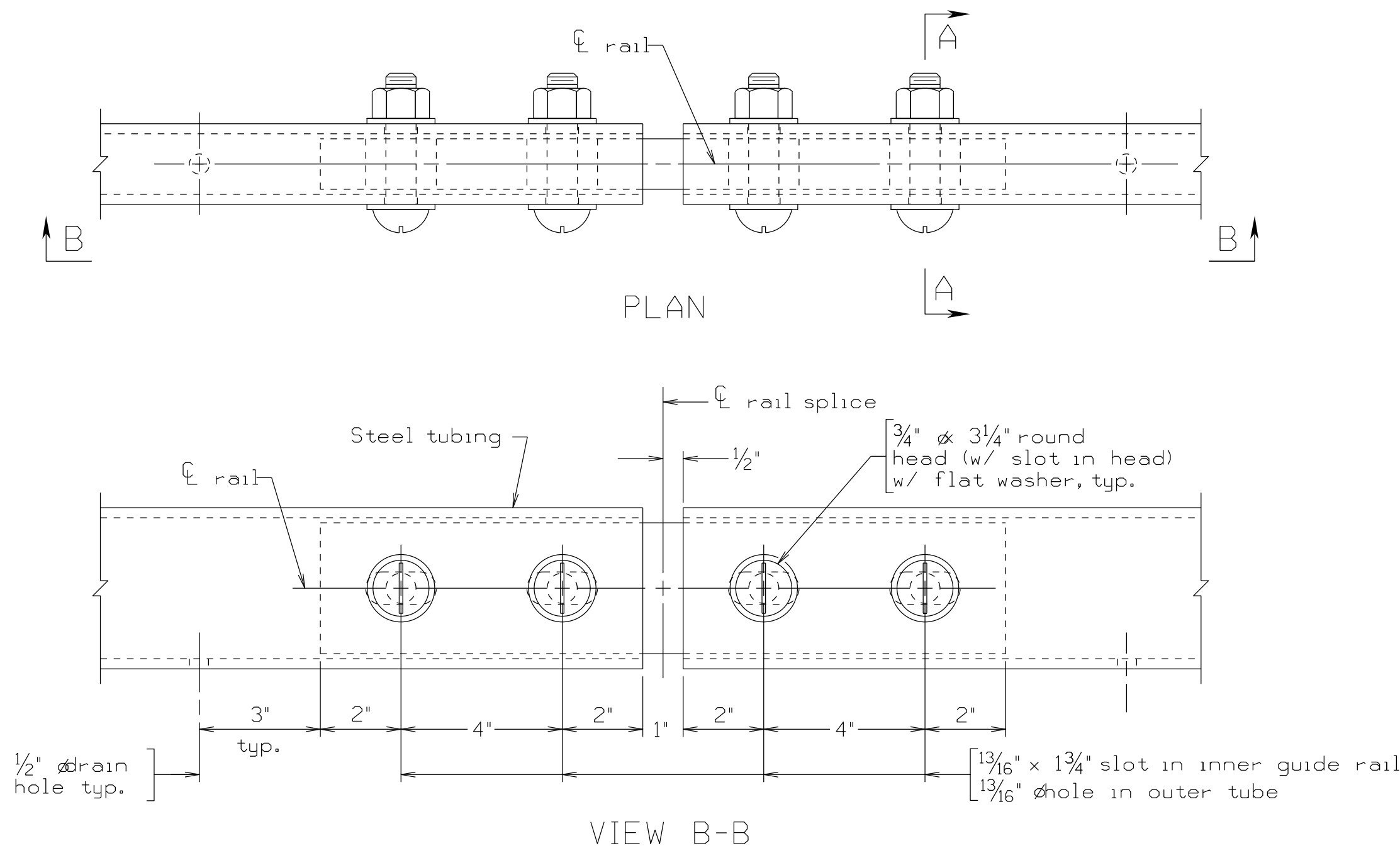
VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

Not to scale

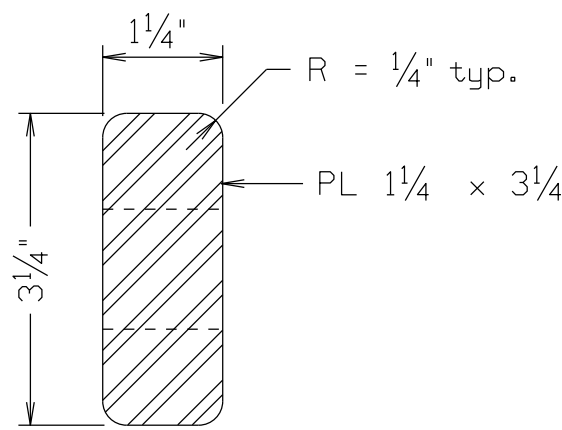
©2022, Commonwealth of Virginia

			COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
			STRUCTURE AND BRIDGE DIVISION			
			CPSR RAIL CONNECTIONS AND NOTES (CPSR-3)			
No.	Description	Date	Designed: APS..... Drawn: APS..... Checked: APS.....	Date Mar. 2023	Plan No. 094-02A	Sheet No. 21 of 46
Revisions						

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				21

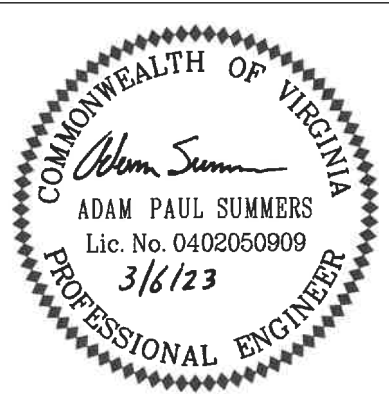


SECTION A-A
SECTION AT RAIL SPLICE
RAIL SPLICE DETAILS



FINISHED DIMENSIONS OF INNER GUIDE RAIL

05-03-2018
CPSR-4



SCHWARTZ & ASSOC.
LYNCHBURG, VA
STRUCTURAL ENGINEER

Sealed and Signed by:
Junyi Meng
Lic. No. 033572
On the date of
May 03, 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

			COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
			STRUCTURE AND BRIDGE DIVISION			
			CPSR RAIL CONNECTIONS (CPSR-4)			
No.	Description	Date	Designed: APS..... Drawn: APS..... Checked: APS.....	Date Mar. 2023	Plan No. 094-02A	Sheet No. 22 of 46
Revisions						

STATE	ROUTE	FEDERAL AID	ROUTE	STATE	SHEET
VA.	—	PROJECT	PROJECT	PROJECT	NO.
					22

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 $\frac{3}{4}$ ".

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 $1\frac{1}{4}$ " diameter nominal pipe.

REINFORCING STEEL SCHEDULE

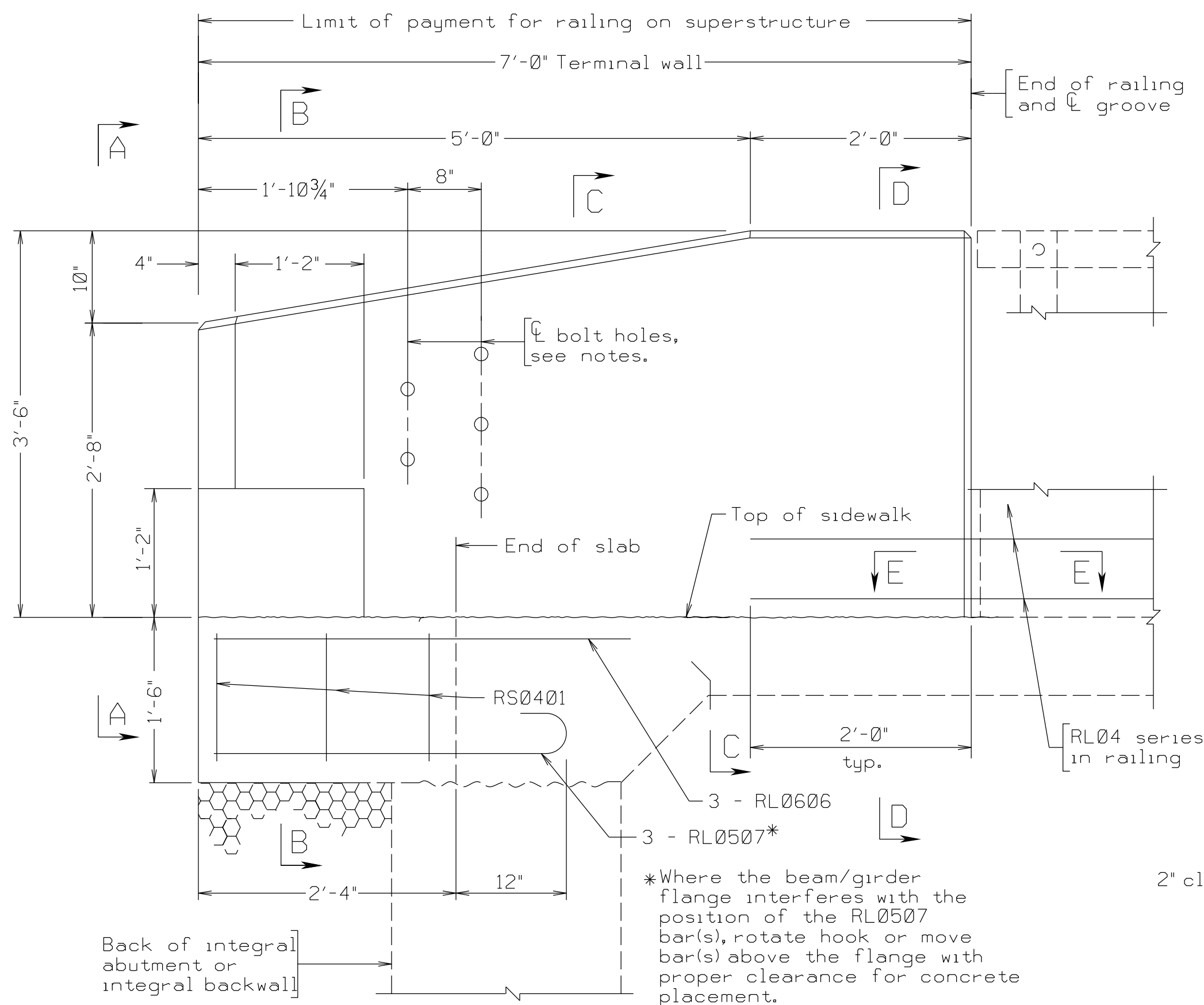
RL0401	RL0403		RV0401, RV0406		
RL0404	RL0507		RV0401, RV0406		
RV0402	RV0403	RV0404	RV0405	RS0401	
Mark	Size	No.	Pin ϕ	Length	Location
RL0401	#4	-	6"	7'-2"	Terminal wall
RL0402	#4	-	—	6'-8"	Terminal wall
RL0403	#4	-	3"	6'-8 1/2"	Terminal wall
RL0404	#4	-	3"	6'-9"	Terminal wall
RL0405	#4	-	—	5'-2"	Terminal 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'-10 1/4"	Terminal wall
RV0402	#4	-	3"	6'-11 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 5'-1 1/2" to 5'-4 1/4"	Terminal wall

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

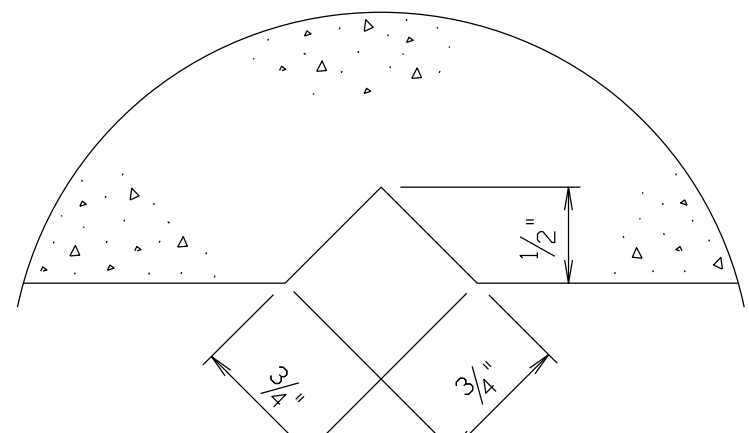
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

42" CPSR TERMINAL WALL
(CPSRT-3)

No.	Description	Date	Designed: APS	Date	Plan No.	Sheet No.
	Revisions		Drawn: APS	Mar. 2023	094-02A	23 of 46
			Checked: APS			

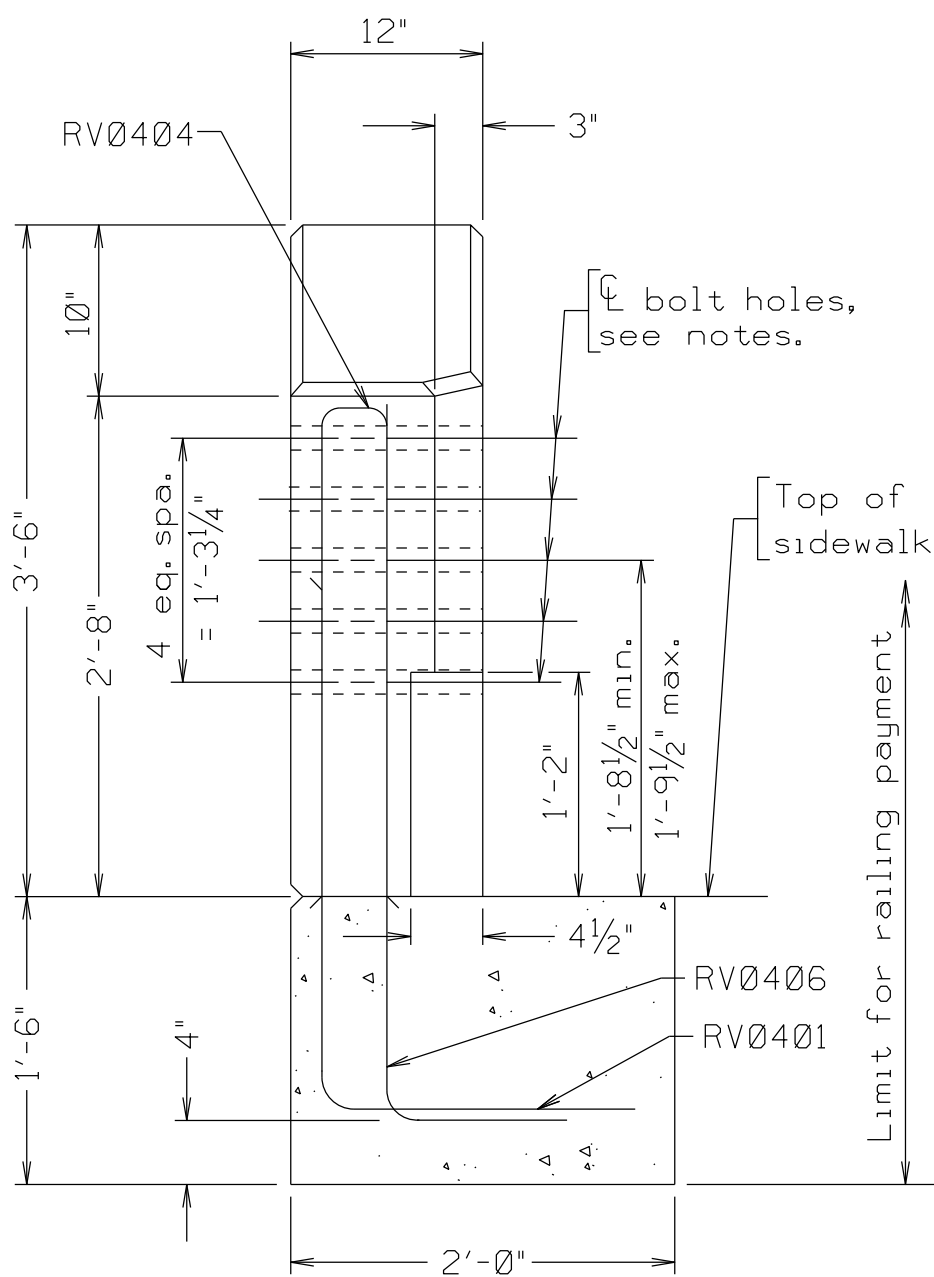


FULL INTEGRAL OR SEMI-INTTEGRAL ABUTMENT



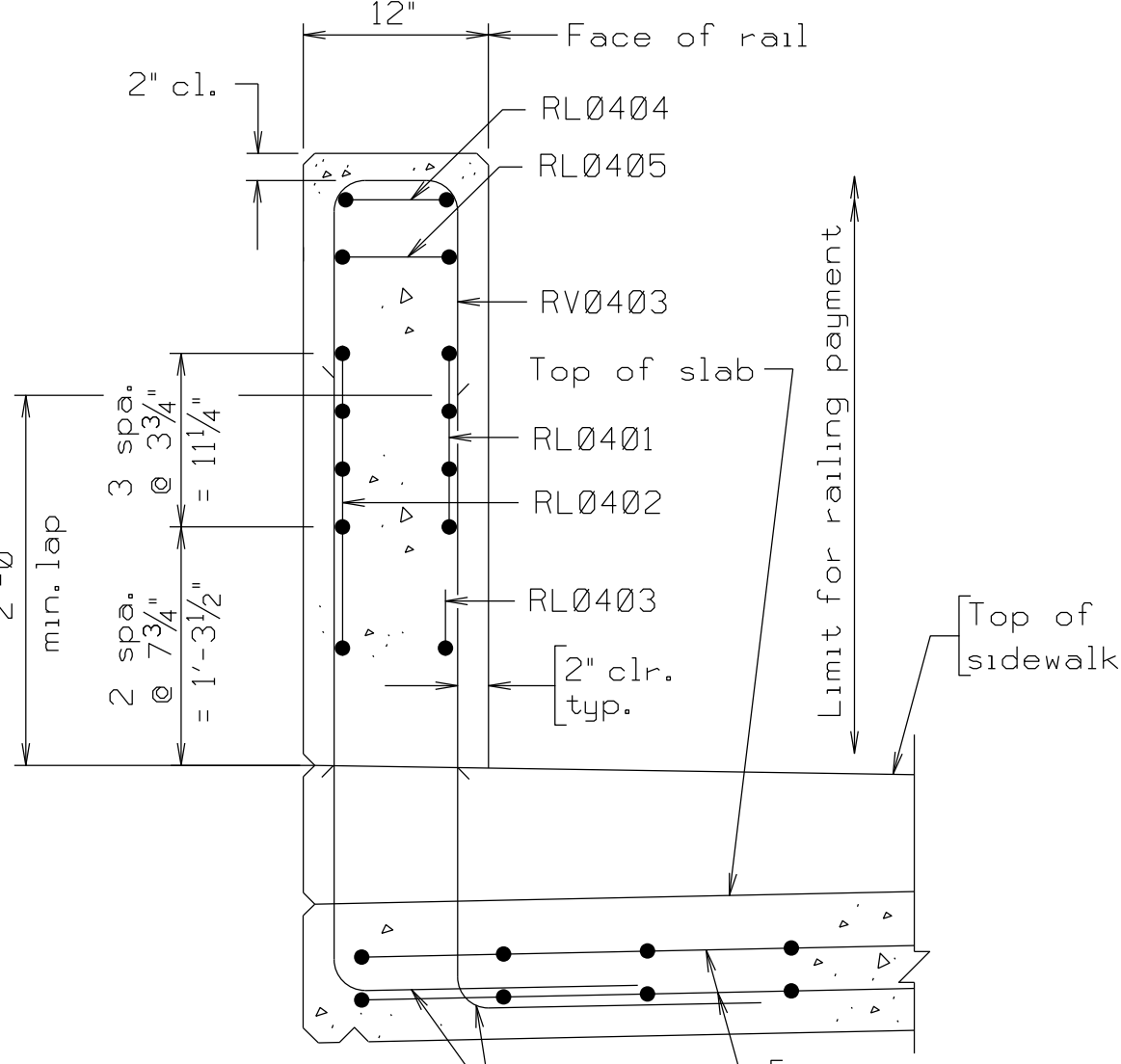
SECTION E-E
Full scale

Groove detail for both sides of rail



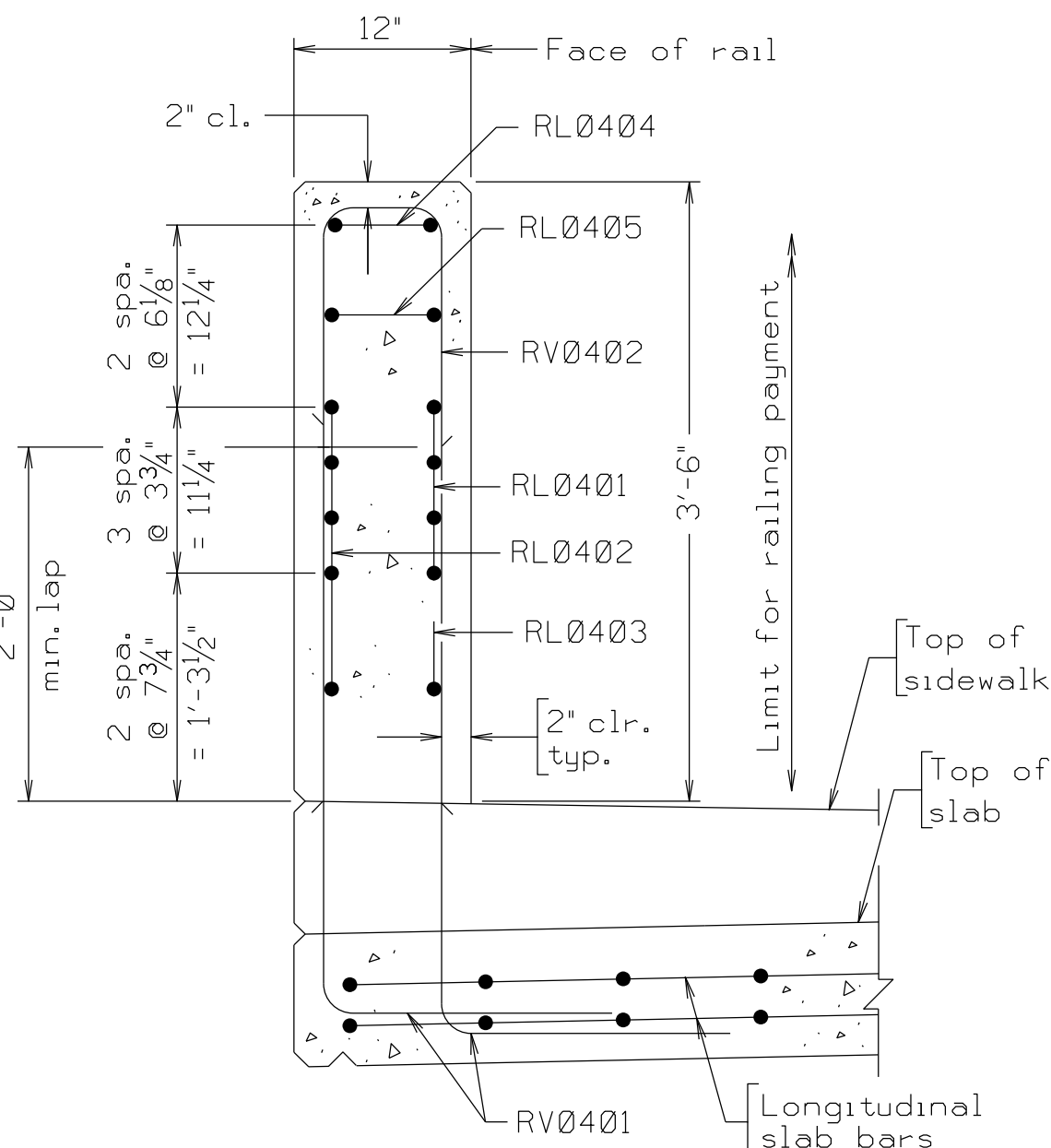
VIEW A-A

Showing RV04 bars only for clarity



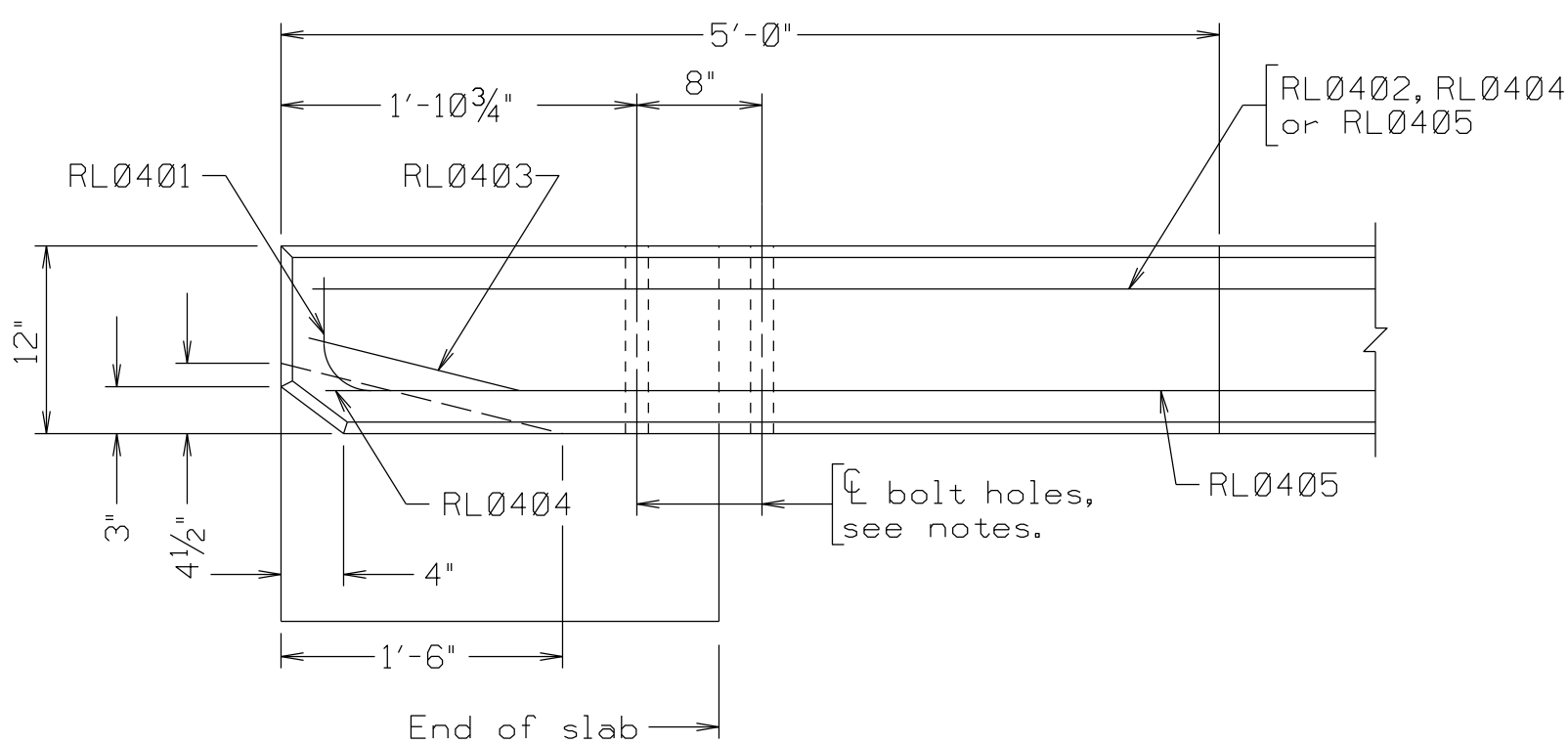
SECTION C-C

Transverse slab bar not shown for clarity

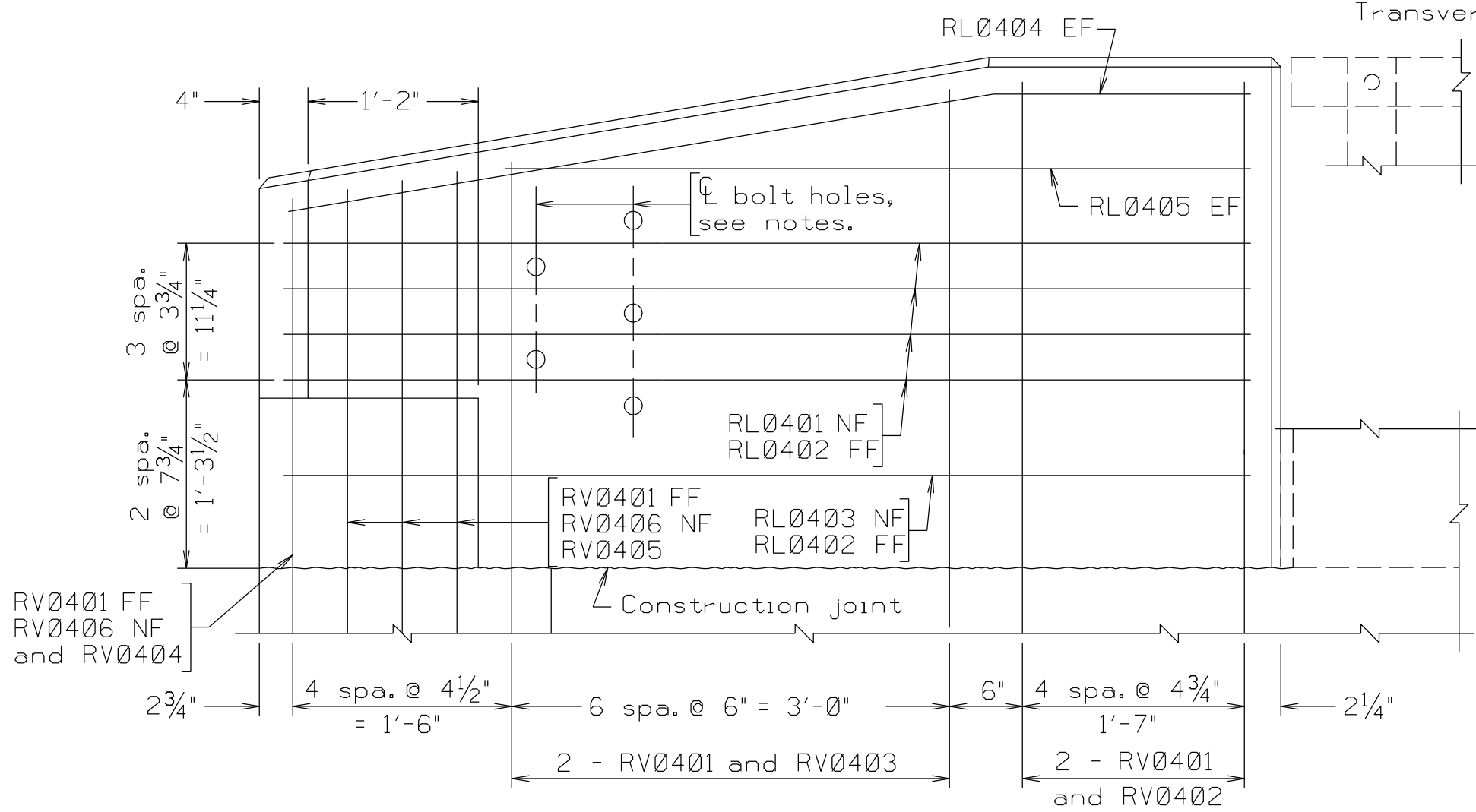


SECTION D-D

Transverse bars in deck slab and RL04 series extended from railing not shown for clarity



PART PLAN



TERMINAL WALL - ELEVATION

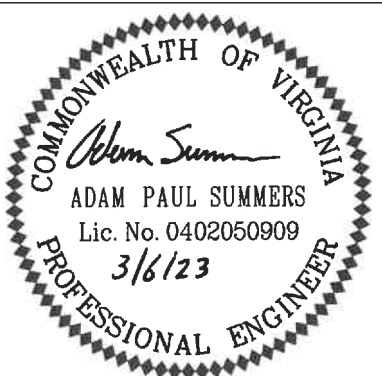
Scale: 1" = 1'-0" unless otherwise noted.

©2022, Commonwealth of Virginia

SDGNS

04-30-2021

CPSRT-3



SCHWARTZ & ASSOC.
LYNCHBURG, VA
STRUCTURAL ENGINEER

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

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

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.	—		23

Notes:

The fence shall be Type C as shown in Typical Section.

Posts shall be set vertical. Rails shall be set parallel to the top of base of railing.

Posts shall be equally spaced, not to exceed 10'-0".

Chain link fabric shall be placed on inside of posts and rails.

Chain link fabric, posts, rails and other associated hardware shall be galvanized steel.

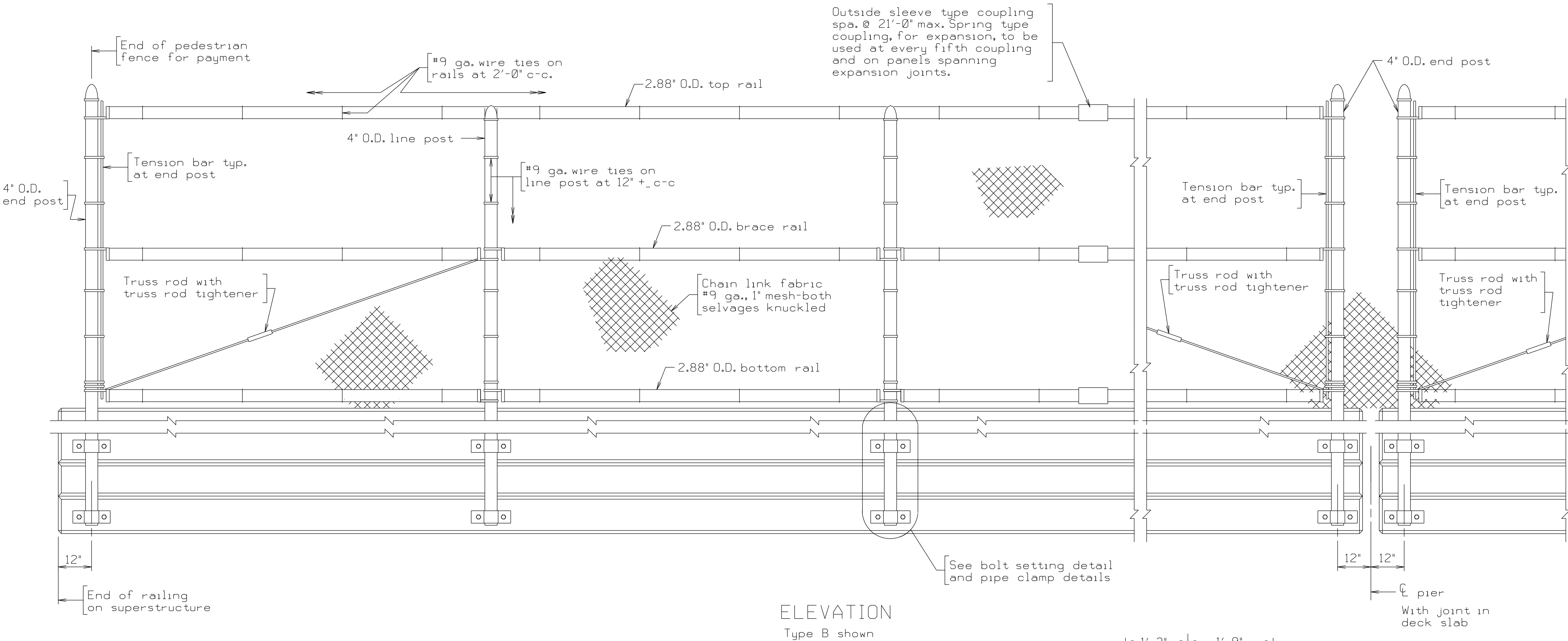
Ends of wire ties shall be turned to outside of fence to prevent injury to pedestrians.

Threaded inserts, when embedded as shown, shall develop full strength of threaded bolts. Embedment of insert per manufacturers recommendations or 5" whichever is greater.

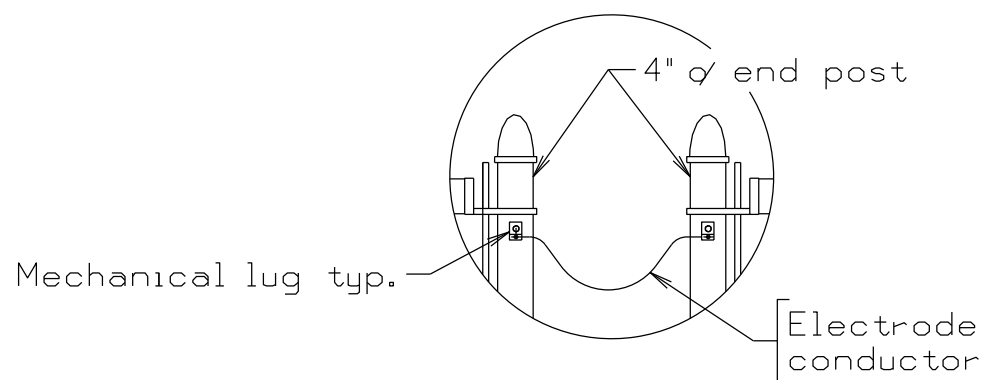
Bolts and washers in the Mechanical Lug Detail shall be ASTM A276, Type 304 Stainless Steel. All other bolts shall be high strength, ASTM F3125 Grade A325, Type 1.

All posts and rails shall be welded or seamless steel galvanized pipe conforming to ASTM F1083, Schedule 40.

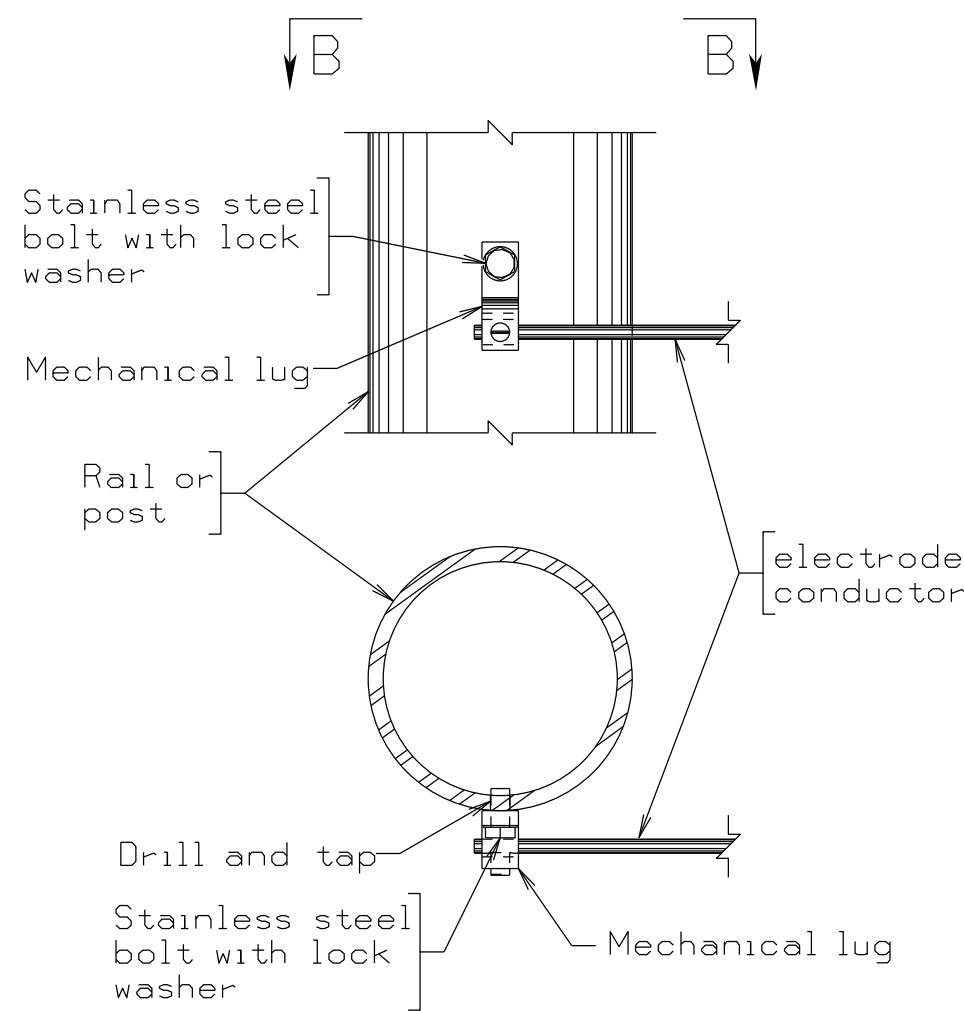
Fence framing (posts and railing) shall be grounded in accordance with Section 507.



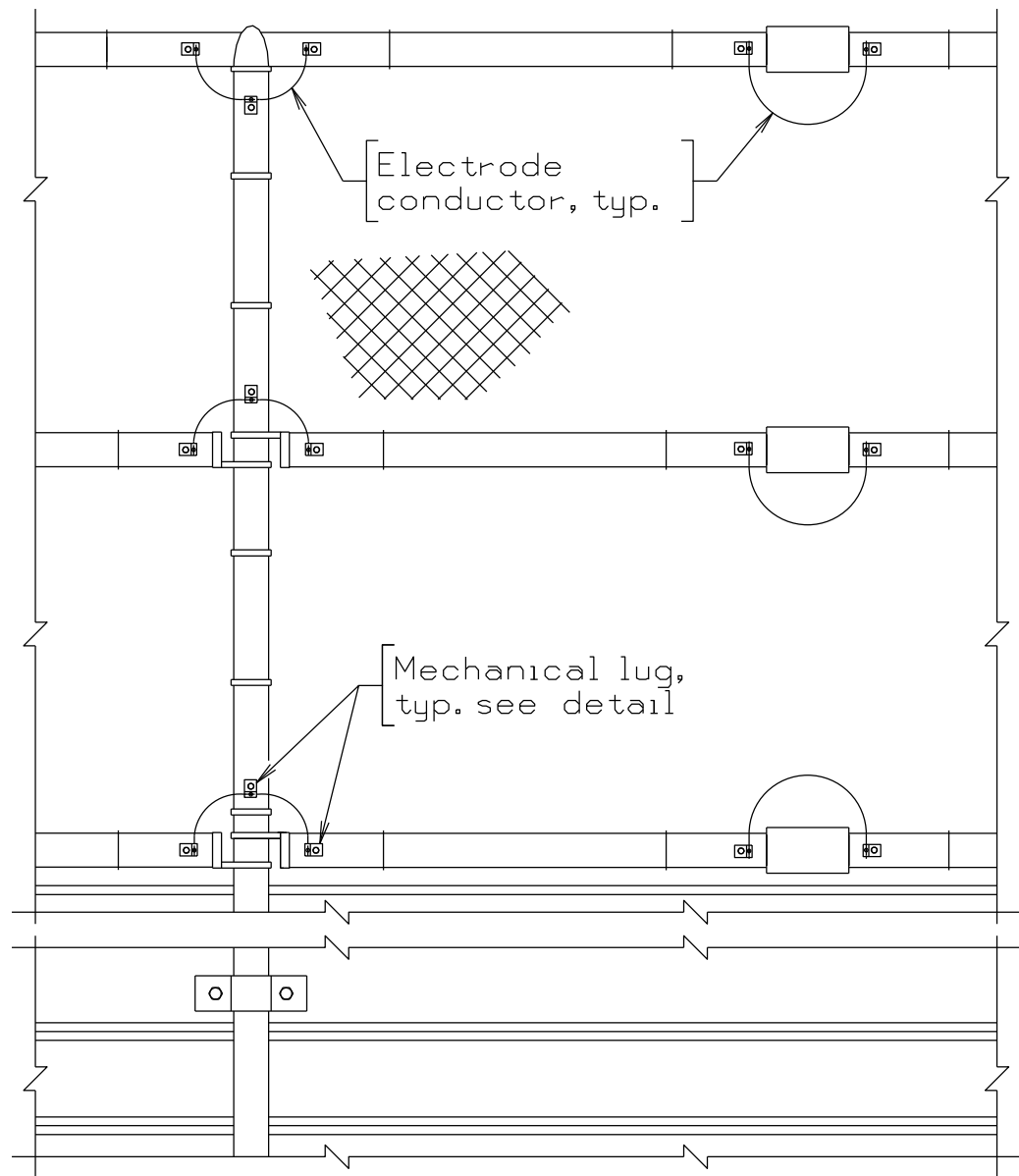
ELEVATION
Type B shown



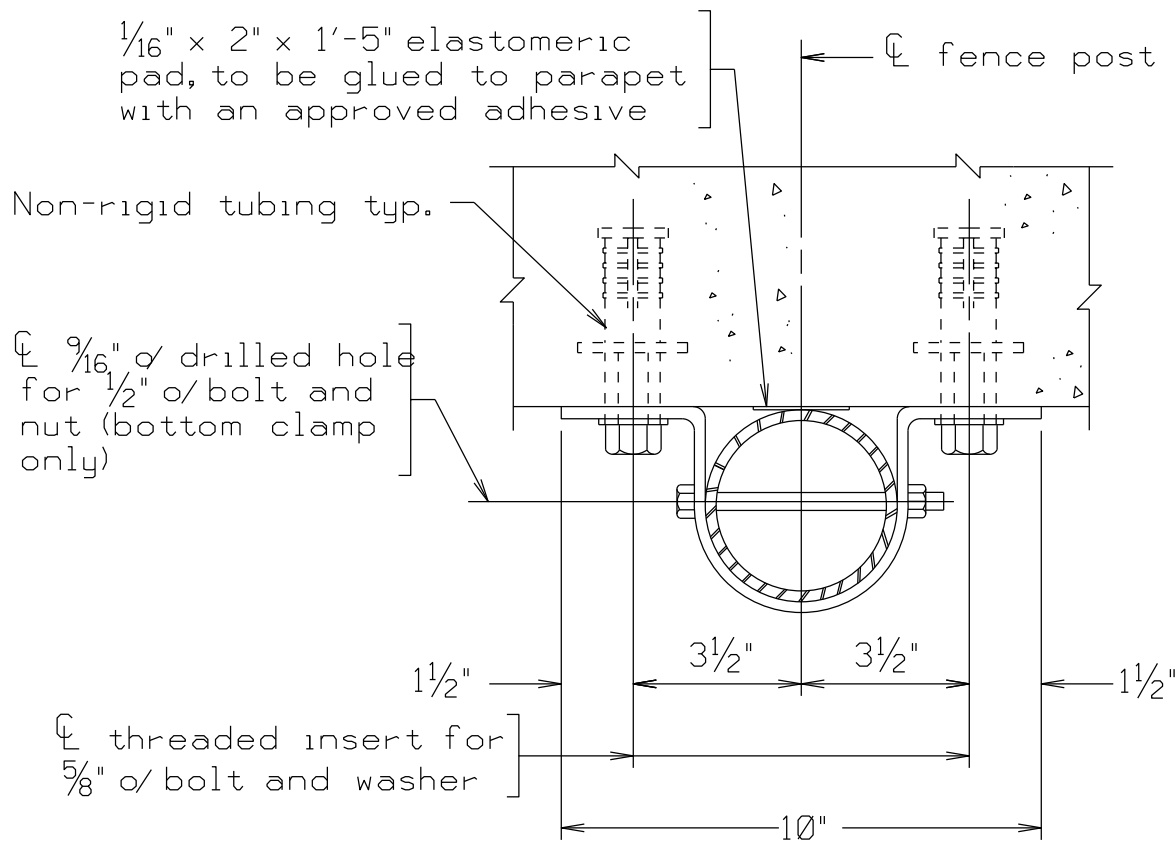
ELECTRICAL CONTINUITY
(On Open Joint)



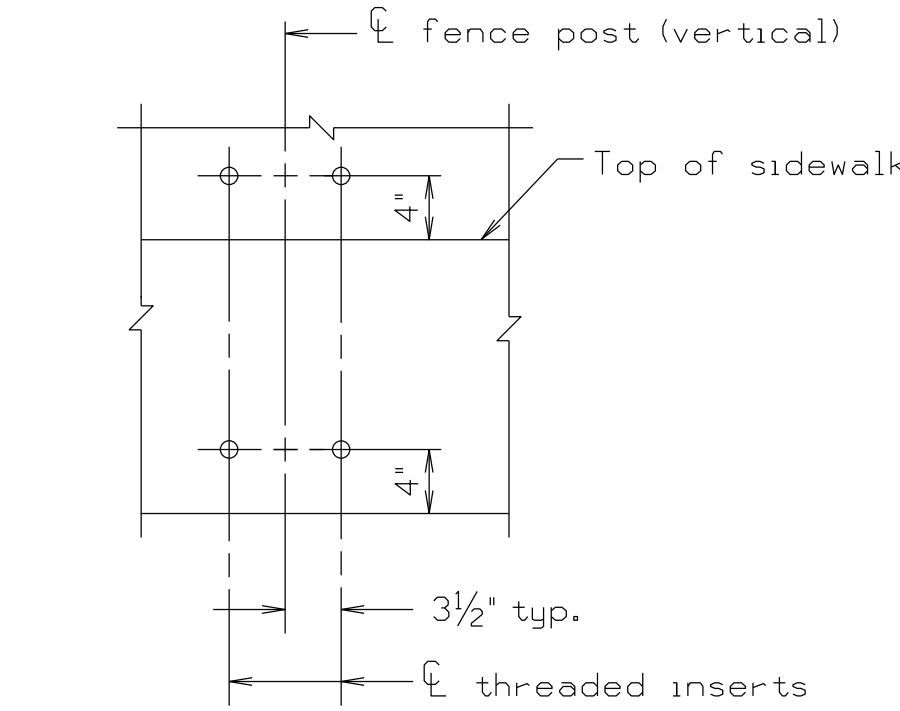
SECTION B-B
MECHANICAL LUG DETAIL



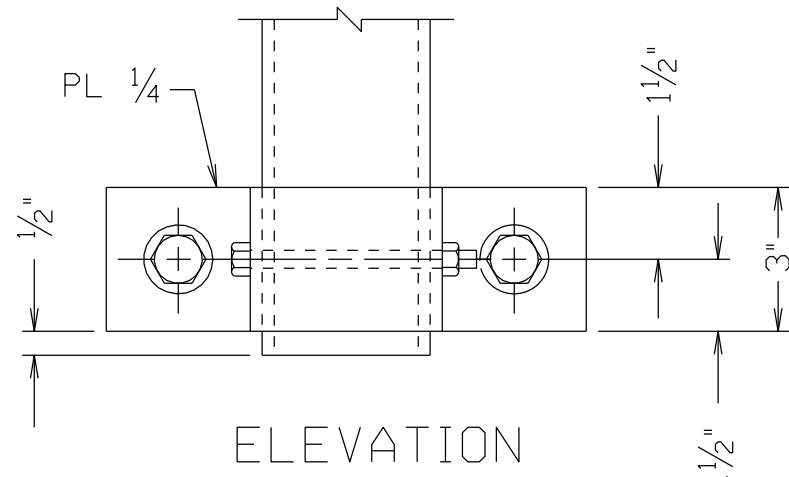
ELECTRICAL CONTINUITY
FOR VINYL COATED STEEL PEDESTRIAN FENCE
(Installed on the non-traffic side of the fence)



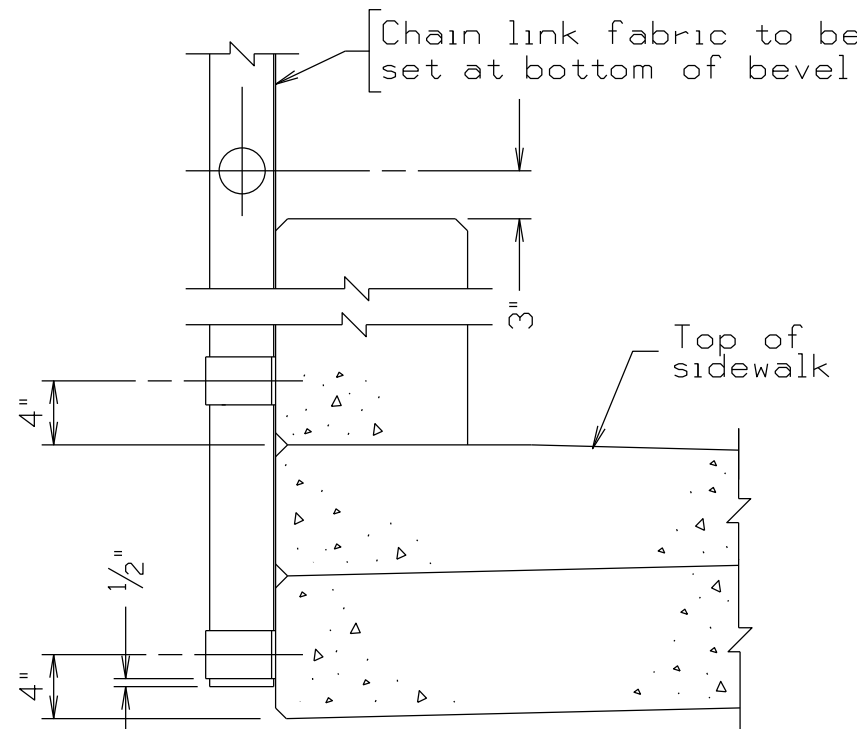
PLAN
Scale: 3" = 1'-0"



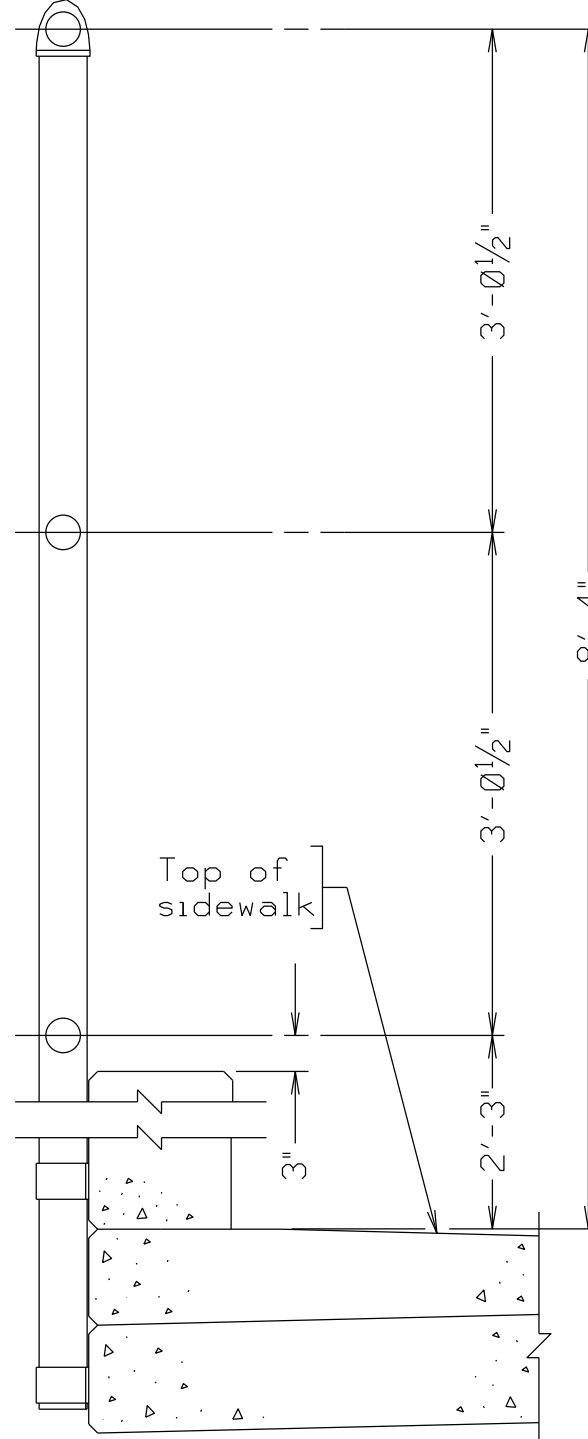
BOLT SETTING DETAIL
Scale: 1" = 1'-0"



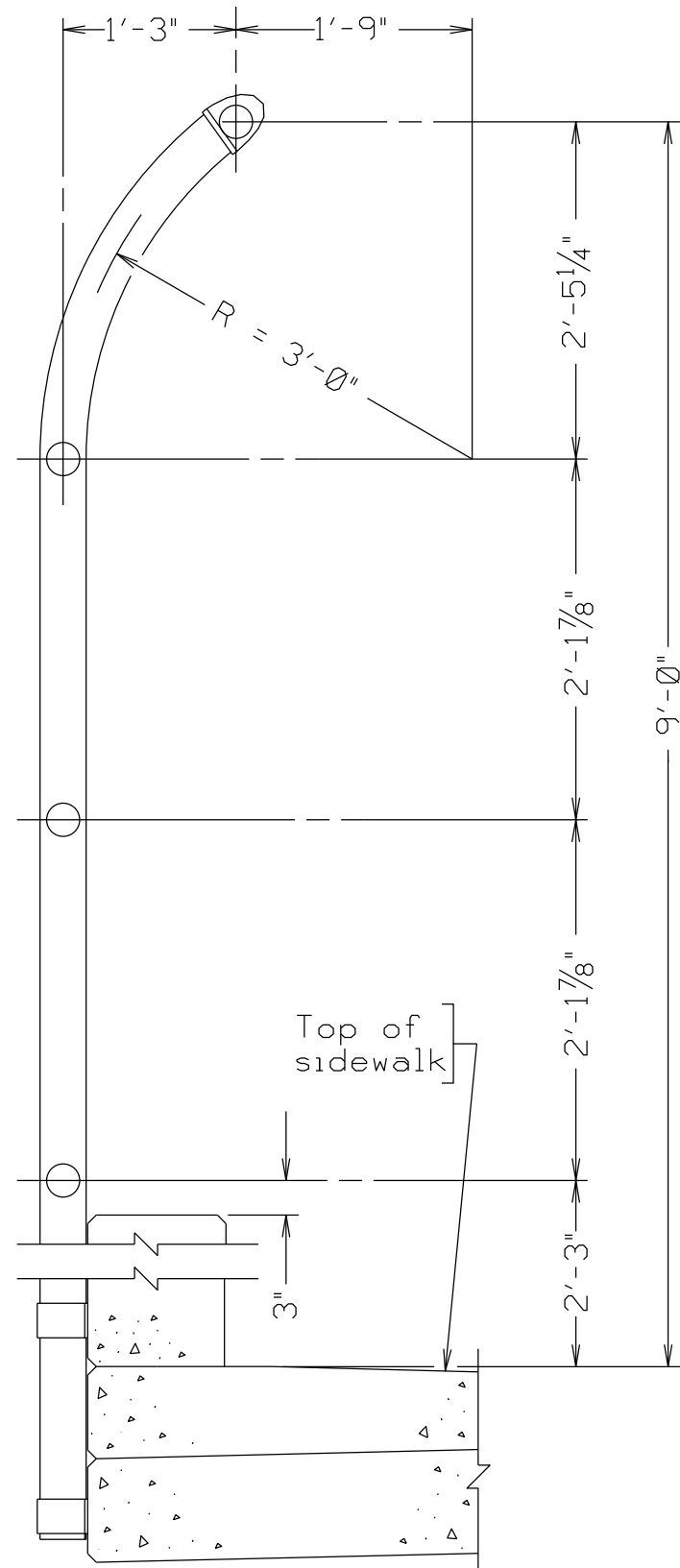
ELEVATION
PIPE CLAMP DETAILS
Scale: 3" = 1'-0"



TYPICAL PART SECTION
Scale: 1" = 1'-0"



TYPE B



TYPE C

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

Not to scale unless otherwise noted

©2022, Commonwealth of Virginia

SDGNS

04-30-2021

BPF-5

COMMONWEALTH OF VIRGINIA

Adam Sumner

ADAM PAUL SUMMERS

Lic. No. 0402050909

3/6/23

PROFESSIONAL ENGINEER

SCHWARTZ & ASSOC.

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

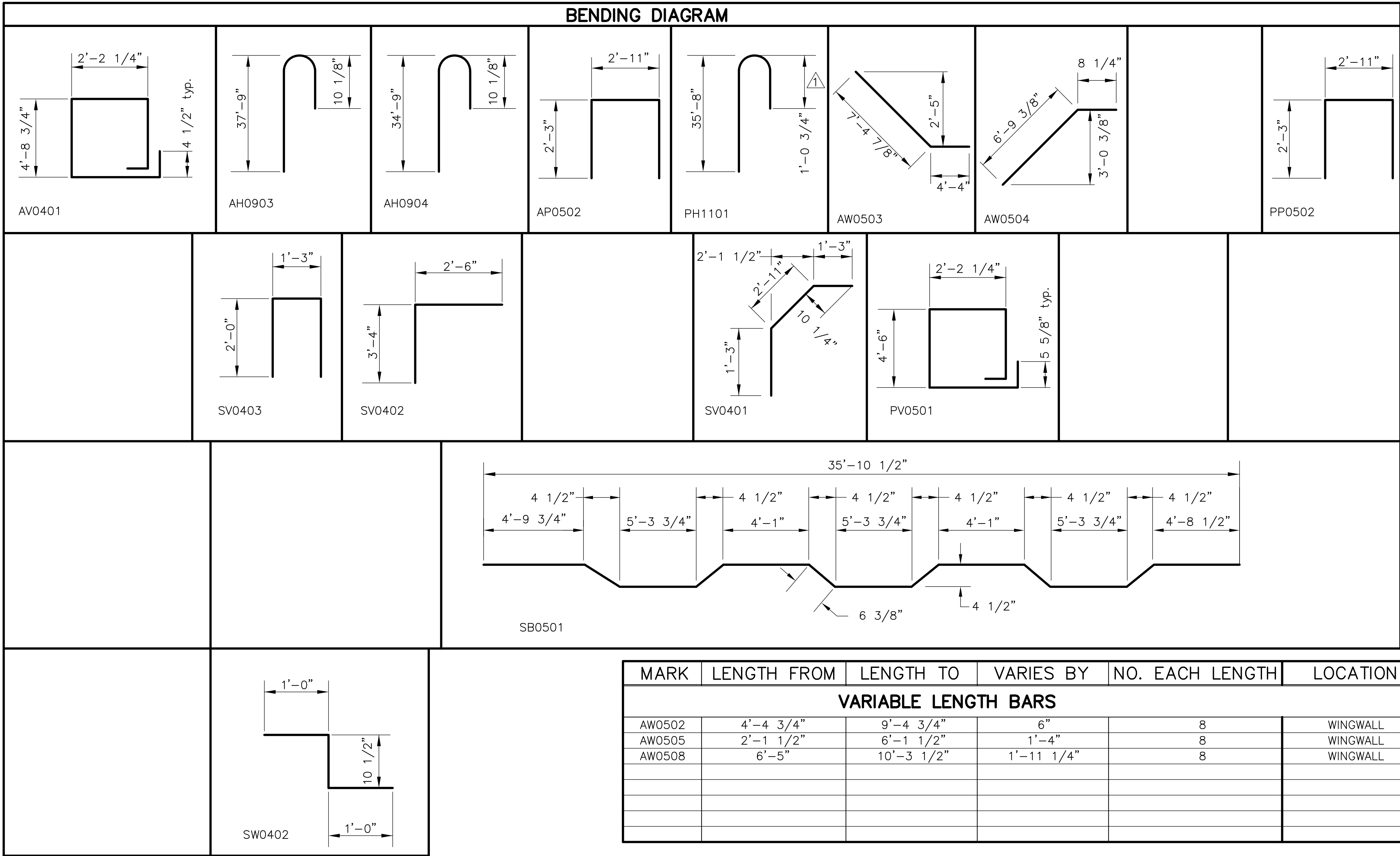
Central Office.

VDOT S&B DIVISION

RICHMOND, VA

STRUCTURAL ENGINEER

No.	Description	Date	Designed: APS	Date	Plan No.	Sheet No.	
			Drawn: APS	Mar, 2023	094-02A	24 of 46	
			Checked: APS				

[illegible]


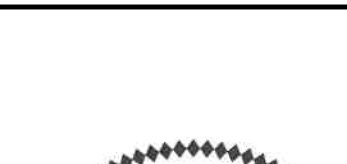
Notes:

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

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.

Straight bars (top and bottom) may be substituted for truss bars (SB series) in the deck superstructure at no extra costs to the City of Salem.

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

	Reinforcing steel	5/23/23		SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
				COLORADO STREET OVER NORFOLK SOUTHERN RAILWAY REINFORCING STEEL SCHEDULE		
NO.	DESCRIPTION	DATE		COMM. NO. 19051	DESIGNED BY: APS	DRAWN BY: APS
				SCALE: AS NOTED		PLAN NO.: 094-02A
				DATE: March 3, 2023		SHEET: 25 OF 46

GENERAL NOTE

SPECIFICATIONS:

CONSTRUCTION – VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, 2020 & REVISIONS.

STANDARDS: VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, 2016 & REVISIONS.

VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, MOST CURRENT EDITION AND REVISIONS.

1. GENERAL:

THESE PLANS ARE INCOMPLETE UNLESS ACCOMPANIED BY THE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDED IN THE PROJECT MANUAL.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION WORK AREA PROTECTION MANUAL, 2011 AND LATEST REVISIONS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER SAFE ACCESS TO ALL AREAS OF WORK THROUGHOUT THE COURSE OF CONSTRUCTION AND FOR FINAL INSPECTION AFTER ALL WORK IS COMPLETE.

CONTRACTOR SHALL TAKE EXTREME CAUTION IN HIS OPERATIONS SO THAT NO DAMAGE IS DONE TO UTILITES IN THE VICINITY OF THIS PROJECT.

CONTRACTOR IS TO SET A NEW BENCH MARK (BM) ON EACH END OF BRIDGE PRIOR TO CONSTRUCTION, AS DIRECTED BY THE ENGINEER. ALL COSTS SHALL BE INCLUDED IN LUMP SUM BID FOR "CONSTRUCTION SURVEYING".

BM – CITY OF SALEM CONTROL MONUMENT IN LEFT SIDEWALK.
STA. 13+69.51, 30.99' LT.
ELEVATION 1039.49

2. GRADING:

THE GRADE LINE DENOTES TOP OF FINISHED PAVEMENT UNLESS SHOWN OTHERWISE ON TYPICAL SECTIONS OR PLANS.

ALL COSTS FOR TOPSOIL REQUIRED SHALL BE INCLUDED IN OTHER BID ITEMS.

THE COST OF CUTTING, SAW CUTTING, REMOVAL AND DISPOSAL OF EXISTING AND NEW ITEMS SUCH AS THOSE LISTED BELOW SHALL BE INCLUDED IN THE PRICE BID FOR "DEMOLITION OF PAVEMENT":

ASPHALT, CONCRETE PAVEMENT, MEDIANS, CONCRETE MEDIANS, STONE, NEW MEDIAN PAVEMENT STRUCTURE, CURBS, SIDEWALKS, EXISTING LIGHT POLE FOUNDATIONS, CURB & GUTTER.

ALL COSTS FOR EXCAVATION AND DISPOSAL OF MATERIAL FOR PLACEMENT OF NEW CURBS, CURB & GUTTERS, MEDIANS, NEW MEDIAN PAVEMENT STRUCTURE, SIDEWALKS & NEW PAVEMENT STRUCTURE SHALL BE INCLUDED IN UNIT PRICE BID FOR "DEMOLITION OF PAVEMENT".

ALL COSTS FOR GRADING, SHAPING, SEEDING, TEMPORARY SEEDING, FERTILIZING, LIMING, OVER SEEDING, FURNISHING & PLACING TOPSOIL AND MULCHING, IN DISTURBED AREAS OF THE PROJECT SHALL BE PAID FOR UNDER PRICE BID "SEEDING," LUMP SUM. THIS BID ITEM SHALL ALSO INCLUDE ALL COSTS FOR REPLACING DAMAGED SHRUBS, FLOWERS, ETC. ANY DAMAGED SHRUBS OR FLOWERS SHALL BE REPLACED WITH THE ORIGINAL SIZE AND TYPE THAT WAS DAMAGED.

ALL AREA'S DISTURBED ON THIS PROJECT SHALL BE RESTORED BACK TO ITS ORIGINAL OR BETTER CONDITION AS DIRECTED BY THE ENGINEER. ALL COST FOR THIS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEMS.

ALL COSTS FOR BACK FILLING BEHIND SIDEWALKS, CURBS, CURB & GUTTER & MEDIANS, AS DIRECTED BY THE ENGINEER, SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM.

THERE IS NO ANTICIPATION FOR THE NEED OF UNDERCUT EXCAVATION BELOW THE NORMAL TRENCH SHOWN ON THE TYPICAL SECTIONS. IF DURING CONSTRUCTION THE ENGINEER DEEMS IT NECESSARY TO EXCAVATE BELOW THE NORMAL TRENCH SHOWN, THE CONTRACTOR WILL BE REQUIRED TO EXCAVATE TO THE ELEVATION AS REQUESTED AND BE PAID USING THE SAME PRICE BID FOR REGULAR EXCAVATION IN CUBIC YARDS. FILL MATERIAL SHALL BE BORROW EXCAVATION OR AGGREGATE BASE MATERIAL, AS DIRECTED BY THE ENGINEER, AND PAID FOR UNDER THE UNIT PRICE BID FOR MATERIAL USED.

ALL COSTS FOR GRADING DITCHES TO DRAIN SHALL BE INCLUDED IN OTHER ITEMS.

ALL REGULAR EXCAVATION, BORROW MATERIAL AND EMBANKMENT MATERIAL USED TO CONSTRUCT EMBANKMENTS FOR THIS PROJECT SHALL MEET A MINIMUM CBR VALUE OF 5 AS DETERMINED BY VTM-8.

3. DRAINAGE:

EXISTING DRAINAGE FACILITIES BEING UTILIZED AS A PART OF THE DRAINAGE SYSTEM SHALL BE CLEANED AS DIRECTED BY THE ENGINEER. THE COST INCIDENTAL TO THIS IS TO BE INCLUDED IN THE CONTRACT PRICE FOR OTHER ITEMS.

4. PAVEMENT:

THE PAVEMENT MATERIALS ON THIS PROJECT WILL BE PAID FOR ON A TONAGE BASIS. THE WEIGHT WILL VARY IN ACCORDANCE WITH THE SPECIFIC GRAVITY OF THE AGGREGATES AND THE ASPHALTIC CONTENT OF THE MIX ACTUALLY USED TO SECURE THE DESIGN DEPTH. THE WEIGHT OF THE ASPHALT CONCRETE IS BASED ON 95% OF THEORETICAL MAXIMUM DENSITY.

ASPHALT CONCRETE TYPE SM-12.5D @ 117.5 LBS. PER SQ. YD. PER INCH OF DEPTH.

ASPHALT CONCRETE TYPE SM-9.5D @ 117.5 LBS. PER SQ. YD. PER INCH OF DEPTH.

ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A @ 113 LBS. PER SQ. YD. PER INCH OF DEPTH.

AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A @ 150 LBS. PER CU. FT. (PLUS 6% MOISTURE CORRECTION).

ALL COSTS FOR LIQUID ASPHALT CEMENT SHALL BE INCLUDED IN UNIT PRICE BID FOR "ASPHALT CONCRETE."

THE FLEXIBLE PAVEMENT PLANING LOCATIONS HAVE BEEN APPROXIMATED AS SHOWN ON THE TYPICAL SECTIONS, PLANS AND SUMMARIES. THE FINAL LOCATION ARE TO BE AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION. THE CONTRACTOR WILL BE PAID PER SQUARE YARD (2" DEPTH).

ANY RIGID PAVEMENT PLANING ENCOUNTERED ON THIS PROJECT SHALL BE PAID FOR AS FLEXIBLE PAVEMENT PLANING.

5. INCIDENTALS:

ALL COSTS FOR COVERING OR REMOVING EXISTING SIGNS, DURING CONSTRUCTION, & UNCOVERING OR RE-ERECTING THE SIGNS @ THE COMPLETION OF THE PROJECT SHALL BE INCLUDED IN LUMP SUM BID "MAINTENANCE OF TRAFFIC".

ALL COSTS FOR REMOVING AND RELOCATING EXISTING SIGNS SHALL BE INCLUDED IN OTHER BID ITEMS.

ALL COSTS FOR REMOVAL OF EXIST. GUARDRAIL SHALL BE PAID FOR AS "REMOVAL OF EXISTING GUARDRAIL".

ALL COSTS FOR MAINTENANCE OF ALL EROSION & SILTATION CONTROL ITEMS, AS DIRECTED BY THE ENGINEER, SHALL BE INCLUDED IN THE APPROPRIATE BID ITEMS.

CONTRACTOR SHALL PLAN AND STAGE HIS WORK SO ACCESS SHALL BE MAINTAINED TO RESIDENTS AND BUSINESSES @ ALL TIMES THROUGHOUT THIS PROJECT. ALL COSTS FOR THIS SHALL BE INCLUDED IN OTHER ITEMS.

NO ADDITIONAL COMPENSATION SHALL BE MADE FOR ROCK EXCAVATION ON THIS PROJECT.

CONTRACTOR SHALL HAVE SURVEYOR PLACE ALL BASE LINE STATIONS ON THE GROUND IN THE FIELD FOR REFERENCE EVERY 25', CONTRACTOR SHALL ALSO HAVE THE SURVEYOR SET A NEW BENCH MARK ON EACH END OF THE BRIDGE. ALL COSTS SHALL BE INCLUDED IN "CONSTRUCTION SURVEYING".

THE UNIT PRICE BID FOR "CONCRETE FOUNDATION LF-1, TYPE A" SHALL INCLUDE ALL COSTS FOR REMOVAL AND DISPOSAL OF EXISTING LIGHT POLE BASES, FURNISHING AND INSTALLING NEW LIGHT POLE BASES, EXTENDING CONDUIT FROM EXISTING TO NEW LIGHT POLE BASES, INSTALLING A PULL WIRE IN NEW CONDUIT, ANCHOR BOLTS, NUTS, WASHERS, REINFORCING STEEL, GROUND RODS, CONDUITS, SWEEPS, ELBOWS AND ALL COSTS REQUIRED TO MAKE LIGHT POLE BASES FULLY FUNCTIONAL AND FOR FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

ALL COSTS FOR "2" DIA. SCHEDULE 40 PVC CONDUITS" SHALL INCLUDE REMOVAL AND DISPOSAL OF MATERIAL, EXCAVATION, BACKFILLING CONDUIT IN ACCORDANCE WITH ST'D. ECI-1, BEDDING MATERIAL, ½" DIA. PULL ROPE, LOCATOR TAPE, CONDUITS, SWEEPS, ELBOWS, GRADING, FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

ALL COSTS FOR "CONTROL MONUMENT PEDESTAL" SHALL INCLUDE EXCAVATION, REMOVAL AND DISPOSAL OF EXCESS MATERIAL, CONCRETE, REINFORCING STEEL, BACKFILLING, GRADING, REMOVAL AND INSTALLATION OF EXISTING CONTROL MONUMENT, SURVEYING, GIVING THE NEW ELEVATION TO THE ENGINEER, FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

6. UTILITIES:

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 (NEW OR EXISTING), THEY SHALL BE REPAIRED, AT HIS EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

ALL PROPERTY PINS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A CERTIFIED LAND SURVEYOR AND ALL COSTS SHALL BE INCLUDED IN LUMP SUM BID "CONSTRUCTION SURVEYING".

THE LOCATIONS & ELEVATIONS OF EXISTING UTILITIES, IF SHOWN, IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DATA IN THE FIELD AND LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS EXPENSE, ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL CALL MISS UTILITY. THE CONTRACTOR SHALL ALSO COORDINATE ALL OF HIS WORK WITH UTILITY COMPANIES AND GIVE ACCESS FOR UTILITY COMPANIES TO PERFORM THEIR WORK SO THERE WILL BE NO DELAYS. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SUPPORT OF UTILITY POLES ADJACENT TO TRENCH EXCAVATION.

7. 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.

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".

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	11	NA	11	0011-129-247, P101, B606	26

UPC 110689

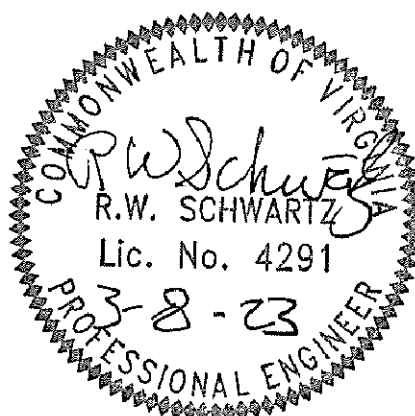

SEQUENCE OF CONSTRUCTION:

1. SETUP PCMS 10 DAYS PRIOR TO START OF STAGE 1 CONSTRUCTION. REMOVE PCMS AFTER 10 DAYS IS UP.
2. INSTALL WIDTH RESTRICTION SIGNS.
3. REMOVE APPROACH MEDIANS AND INSTALL ASPHALT IN MEDIAN CROSS OVER AREAS.
4. MILL STAGE APPROACHES.
5. INSTALL STAGE 1 TRAFFIC CONTROL.
6. INSTALL STAGE 1 SHEET PILING.
7. INSTALL EROSION CONTROL DEVICES.
8. COMPLETE ALL STAGE 1 BRIDGE WORK.
9. COMPLETE ALL STAGE 1 APPROACH WORK AND INSTALL STAGE 1 GUARDRAIL..
10. REMOVE STAGE 1 TRAFFIC CONTROL AND INSTALL STAGE 2 TRAFFIC CONTROL.
11. REPEAT ITEMS #7 – #9, EXCEPT ALL WORK WILL BE IN STAGE 2.
12. COMPLETE ALL STAGE 2 APPROACH WORK AND INSTALL STAGE 2 GUARDRAIL.
13. INSTALL NEW APPROACH MEDIANS.
14. COMPLETE ALL INCIDENTAL WORK.
15. INSTALL PERMANENT PAVEMENT LINE MARKINGS.
16. REMOVE ALL TRAFFIC CONTROL & WIDTH RESTRICTION SIGNS.

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

INDEX OF ROAD DRAWINGS	
SHEET NO.	DESCRIPTION
26	ROADWAY GENERAL NOTES & INDEX OF SHEETS
27	MAINTENANCE OF TRAFFIC NOTES & TEMPORARY PAVMENT WEDGE
28	TRAFFIC MANAGEMENT PLAN & ROAD SUMMARY
29	STAGE 1 – SIGN LAYOUT
30	STAGE 1 – TRAFFIC CONTROL
31	STAGE 1 – TRAFFIC CONTROL (CONT.)
32	STAGE 2 – SIGN LAYOUT
33	STAGE 2 – TRAFFIC CONTROL
34	STAGE 2 – TRAFFIC CONTROL (CONT.)
35	PERMANENT PAVEMENT LINE MARKINGS
36	TYPICAL SECTIONS, STA. 11+80.00 – 12+42.04
37	TYPICAL SECTIONS, STA. 13+24.21 – 15+02.00
38	ORIGINAL SURVEY PLAN
39	EROSION CONTROL PLAN
40	ROADSIDE DEVELOPMENT
41	ROAD PLAN
42	CROSS SECTION STA. 12+00.00
43	CROSS SECTION STA. 12+25.00
44	CROSS SECTION STA. 14+50.00
45	CROSS SECTION STA. 14+75.00
46	CROSS SECTION STA. 15+00.00

CADD REFERENCE NO.: GENERAL NOTES

	 SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.	
	COLORADO STREET OVER NORFOLK SOUTHERN RAILROAD CITY OF SALEM, VA ROADWAY GENERAL NOTES & INDEX OF SHEETS	
	DESIGNED BY: RES	DRAWN BY: RES
	SCALE: NOT TO SCALE	PROJECT NO.:
COMM. NO. 19051	DATE: MARCH 13, 2023	SHEET: 26 OF 46

MAINTENANCE OF TRAFFIC GENERAL NOTES

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	11	NA	11	0011-129-247, P101, B606	27

UPC 110689

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

FHWA Manual of Uniform Traffic Control Devices (2009), with Rev. 1, 2 & 3
Virginia Work Area Protection Manual, 2011 with Rev. 2.1
and current revisions.
VDOT Road and Bridge Standards (2016)
VDOT Road and Bridge Specifications (2020)

See drawing TTC-44.2, Virginia Work Area Protection Manual, 2011 for information not shown in these drawings.

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.

Contractor shall maintain two (2) 11'-0" travel lanes, one (1) in each direction.

Group 2 channeling Devices, Pavement Markings and Type III Barricade, shall be installed as directed by the Engineer. Temporary Pavement Markings (Type E) installed over existing pavement marking shall be performed as required in the VWAPM TTC-55.1.

Prior to any ground disturbance activities, the contractor shall contact Miss Utility.

Contractor shall install 10' width restriction signs prior to any lane closures on Colorado Street bridge (see sheet 29). Contractor shall contact DMV, Christi Gayne 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.

The contractor shall work around all utilities on this project.

One (1) sidewalk shall remain open to pedestrian traffic at all times during construction. Contractor shall submit a detailed sidewalk detour plan to the Engineer for review and approval prior to any sidewalk closures. All costs shall be included in Lump Sum bid "Maintenance of Traffic".

TRAFFIC BARRIER SERVICE

Traffic Barrier Service shall be installed and removed so as not to present any blunt end or hazard to the motoring public. The placement and removal of the traffic barrier service and barricades are to be done by the contractor and approved by the Work Zone Safety Officer. The Contractor shall lift traffic barrier service into place. Sliding traffic barrier service into place will not be permitted.

Traffic barrier service concrete shall conform with S't.d.
MB-10A & S't.d. MB-11A of the VDOT Road and Bridge Standards.

Traffic barrier service lateral support shall conform with S't.d.
MB-INS of the VDOT Road and Bridge Standards.

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.

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.

Covering of signs shall be in accordance with VDOT Road & Bridge Specifications, 2020, 701.03.

CONSTRUCTION PAVEMENT MARKINGS

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

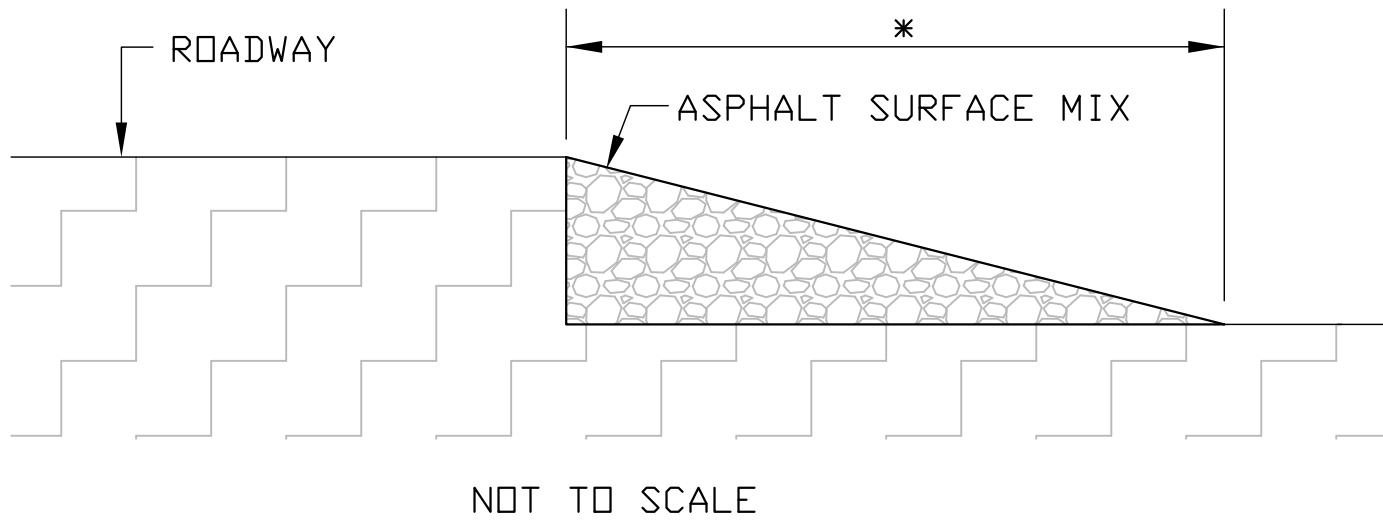
All temporary pavement markings shall be 'Type D, Class III' or 'Type E'.

Non-Reflective removable black construction pavement markings (Type E) shall be used to cover existing markings in lieu of eradication except existing pavement lines on concrete bridge deck shall be eradicated, as shown in traffic control drawings.

PERMENANT PAVEMENT MARKINGS

All permanent pavement markings shall be furnished and installed by the Contractor, as shown on sheet 35.

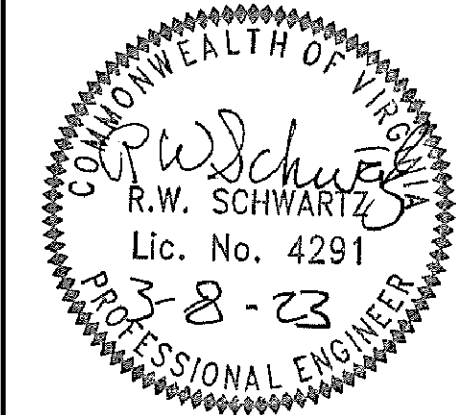
TEMPORARY PAVEMENT WEDGE DETAIL



All areas milled below existing pavement shall be backfilled with asphalt surface mix to form an approximate 6:1 wedge against the existing pavement surface for the safety and protection of vehicular traffic. All costs for furnishing, placement, maintaining and removal of the pavement wedge shall be included in Lump Sum bid for "Maintenance of Traffic" and no additional compensation will be allowed.

*—Minimum of three (3) feet per/inch of depth of pavement milling, "see VDOT Road and Bridge Standard, ACOT-1".

CADD REFERENCE NO.: 19051-MAINTENANCEOFTRAFFIC



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

**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
MAINTENANCE OF TRAFFIC NOTES &
TEMPORARY PAVEMENT WEDGE**

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH

SCALE: NOT TO SCALE | PLAN NO.:

DATE: MARCH 13, 2023 | SHEET: 27 OF 46

COMM. NO. 19051

CADD REFERENCE NO.: 19051--MAINTENANCEOFTRAFFIC

TRAFFIC MANAGEMENT PLAN

PROJECT DESCRIPTION

This project entails a Superstructure Replacement of Colorado Street over Norfolk Southern Railroad (Structure No. 1804) located in the City Of Salem, Virginia. Colorado Street is classified as an Urban Principal Arterial with a posted speed limit of 25 mph with 2 lanes going in each directions separated by a median (2020 ADT 13,000). The existing travel lanes will be affected by the project work. Travelers include Local Residents, Commuters, Trucks and through Vehicles.

The approach roadway improvements extend approximately 70' to the North and South of the Bridge Approaches. 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 29 - 34.

PUBLIC COMMUNICATIONS PLAN

NOTIFICATIONS:

The contractor shall provide advanced Notifications of all Lane Closures (72 hours minimum) to the City Engineer and Project Manager. The City 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:

Virginia State Police Division 6 Area 40, 540-375-9518

Salem Police Department, 540-375-3078

Station 3 Salem Fire-EMS, 540-375-3098

Emergency & Haz-Mat Center - 911



Brian Blevins VDOT Salem Resident Engineer, 540-387-5502

VDOT SW Traffic Operation Center, 540-375-0170
- 2) Procedures to respond to traffic incidents that may occur in the work zone:

a) Contractor to notify City Police and Inspector in charge.

b) Depending upon severity of incident, Contractor may have to shut down work.

c) Upon arrival on scene, City Police to determine response necessary to allow travelling public around incident.


d) Inspector to notify Construction Manager of incident.
- 3) Process of Notification of Incident to be followed is:
- Contractor to call:
- | |
|--|
| Project Inspector -
Inspector To Be Determined |
| Project Manager (Construction Manager) -
TBD |
| City Engineer City of Salem -
William L. Simpson, Jr., P.E. ---- 540-375-3032 |
- 4) The City Police will take control of the incident and direct its clearing and restoration to normal traffic conditions.
- 5) The City Police report of the incident will be reviewed by the Public Works Director 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, City project personnel, Engineer and City Police (if necessary) to discuss modification and implementation of an improved traffic control plan.
- | PAVEMENT SUMMARY | | | | | | |
|------------------|--|---|---|--|---|---|
| | ▲
ASPHALT
CONCRETE
TYPE
SM-12.5D | ▲
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 | TONS | S.Y. |
| TOTALS | 94 | 18 | 238 | 235 | 25 | 766 |
- ▲ - NON-POLISHING AGGREGATE
- | DRAINAGE SUMMARY | | |
|------------------|--|------------------------------------|
| | TEMPORARY
SILT
FENCE
(ST'D. EC-5) | SILTATION
CONTROL
EXCAVATION |
| | L.F. | C.Y. |
| TOTALS | 900 | 153 |
- | INCIDENTAL SUMMARY | | | | | | | | | | | | |
|--------------------|------------------------------|--|---|--|--|---|---|--|------------------------------------|--|--|------------------------------|
| | MAINTENANCE
OF
TRAFFIC | TRAFFIC BARRIER
SERVICE
CONCRETE,
SINGLE FACE
(MB-10A) | TRAFFIC BARRIER
SERVICE
CONCRETE,
LATERAL
SUPPORT | TRAFFIC BARRIER
SERVICE
CONCRETE,
DOUBLE FACE
(MB-11A) | TRAFFIC BARRIER
SERVICE
CONCRETE,
(MB-7D) | TEMPORARY
PAVEMENT
MARKING
(TYPE D,
CLASS III - 4') | TEMPORARY
PAVEMENT
MARKING
(TYPE D,
CLASS III - 8') | TEMPORARY
PAVEMENT
MARKING
(TYPE E) | GROUP 2
CHANNELIZING
DEVICES | TEMPORARY
PAVEMENT
MARKER -
1 WAY | TEMPORARY
PAVEMENT
MARKER -
2 WAY | ELECTRONIC
ARROW
BOARD |
| | LUMP SUM | L.F. | EACH | L.F. | L.F. | L.F. | L.F. | L.F. | DAY | EACH | EACH | HOURL |
| TOTALS | L.S. | 400 | 4 | 80 | 80 | 5,727 | 2,310 | 2,376 | 88,040 | 87 | 26 | 29,760 |
- | INCIDENTAL SUMMARY | | | | | | | | | | | | | | |
|--------------------|---|-----------------------|-----------------------------|-----------------------------|--------------------------------|---|------------------------------|----------|--------------------------------------|----------------------|---|------------------------|---|--|
| | PORTABLE
CHANGEABLE
MESSAGE
SIGN | CONSTRUCTION
SIGNS | TYPE III
BARRICADE
8' | TYPE III
BARRICADE
4' | FLEXIBLE
POST
DELINEATOR | IMPACT
ATTENUATOR
SERVICE,
TYPE 1,
TL-2 | DEMOLITION
OF
PAVEMENT | SEEDING | 2' DIA.
SCH. 40
PVC
CONDUIT | BORROW
EXCAVATION | COMBINATION
CURB &
GUTTER
ST'D. CG-6 | CURB,
ST'D.
CG-2 | HYDRAULIC
CEMENT
CONCRETE
SIDEWALK
4' | FIXED OBJECT
ATTACHMENT
GR-FDA-5 |
| | HOURL | S.F. | EACH | EACH | EACH | EACH | S.Y. | LUMP SUM | L.F. | C.Y. | L.F. | L.F. | S.Y. | EACH |
| TOTALS | 720 | 944 | 8 | 4 | 26 | 4 | 826 | L.S. | 100 | 85 | 202 | 23 | 86 | 4 |
- | INCIDENTAL SUMMARY | | | | | | | | | | | | | | |
|--------------------|---|-----------------------------------|-------------------------------|---------------------------|--------------------------|---|----------------------------------|---------------|------------------------------|---|---|--|------------------------------------|------------------------------|
| | GUARDRAIL
HEIGHT
TRANSITION,
GR-MGS4 | REMOVAL
OF EXIST.
GUARDRAIL | GUARDRAIL
ST'D.
GR-MGS1 | MEDIAN
STRIP,
MS-1A | MEDIAN
STRIP,
MS-2 | CONCRETE
FOUNDATION
LF-1,
TYPE A | CONCRETE
MONUMENT
PEDEDIAL | SIGN
PANEL | SIGN
POST
STP-1
2½' | SQUARE
TUBE POST
FOUNDATION
(TYPE E) | TYPE B, CLASS VI,
CONTRAST
PAVEMENT LINE
MARKING
4' | TYPE A
PAVEMENT LINE
MARKING
4' | PAINTED
MEDIAN
STRIP
NDSE | FIELD
OFFICE,
TYPE III |
| | EACH | L.F. | L.F. | S.Y. | L.F. | EACH | EACH | S.F. | L.F. | EACH | L.F. | L.F. | EACH | MONTH |
| TOTALS | 4 | 448 | 200 | 86 | 210 | 2 | 1 | 24 | 24 | 2 | 844 | 620 | 2 | 20 |
- ⊕ - DENOTES ITEMS TO BE PAID FOR ON A PLAN QUANTITY BASIS, ACCORDING TO THE CURRENT ROAD & BRIDGE SPECIFICATIONS.
- SEE SHEET 3 FOR ADDITIONAL BID ITEMS.
- | STATE | FEDERAL AID | | STATE | | SHEET
NO. |
|-------|-------------|---------|-------|--------------------------|--------------|
| | ROUTE | PROJECT | ROUTE | PROJECT | |
| VA. | 11 | NA | 11 | 0011-129-247, P101, B606 | 28 |
- UPC 110689
- | | | | |
|---|---|---------------|-----------------|
|  |  SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA. | | |
| | COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
TRAFFIC MANAGEMENT PLAN &
ROAD SUMMARY | | |
| | DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH |
| | SCALE: NOT TO SCALE | PLAN NO.: | |
| COMM. NO. 19051 | DATE: MARCH 13, 2023 | | SHEET: 28 OF 46 |


* - THIS SIGN SHALL BE DISPLAYED FOR 2 WEEKS AFTER STAGE 1 LANE CLOSURES HAVE BEEN INSTALLED. AFTER 2 WEEKS THIS SIGN SHALL BE COVERED.

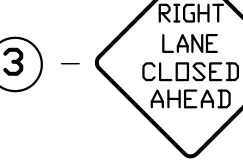
STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606		29

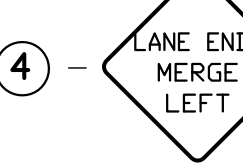
UPC 110689


TRAFFIC CONTROL SIGNS


① -  2 - ORANGE FLAGS
W20-1
48" X 48"

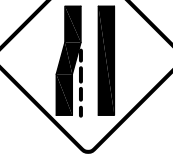
② -  W9-3L
48" X 48"

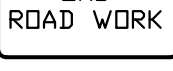
③ -  W9-3R
48" X 48"

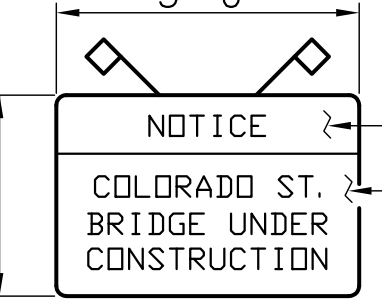
④ -  W9-2L
48" X 48"


⑤ -  W9-2R
48" X 48"

⑥ -  W4-2R
48" X 48"

⑦ -  W4-2L
48" X 48"


⑧ -  G20-2(V)
48" X 24"

⑨ -  ORANGE
WHITE
NOTICE - 6" LETTERS
ALL OTHERS - 5" LETTERS
ALL LETTERS SHALL BE BLACK
IN COLOR (TYPE D LETTERS)
2 ORANGE CONSTRUCTION
FLAGS PER SIGN

*⑩ -  W23-2
48" X 48"

⌋ - DENOTES SIGNS

NOTE: SEE SHEET 30 & 31 FOR ADDITIONAL REQUIRED SIGNS FOR STAGE 1.

Ⓐ -  PCMS PORTABLE CHANGEABLE MESSAGE SIGN
MESSAGES 10 DAYS PRIOR TO CONSTRUCTION:


1st MESSAGE: SOUTH COLORADO STREET

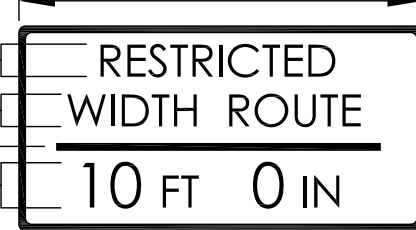
2nd MESSAGE: BRIDGE WORK


3rd MESSAGE: PROJECT STARTS
???/??/? ← Put Date

REMOVE PCMS AFTER 10 DAYS IS UP.

WIDTH RESTRICTION SIGN

 48"
18"
SPECIAL LETTERS & BORDER - BLACK (6"D)
BACKGROUND - ORANGE

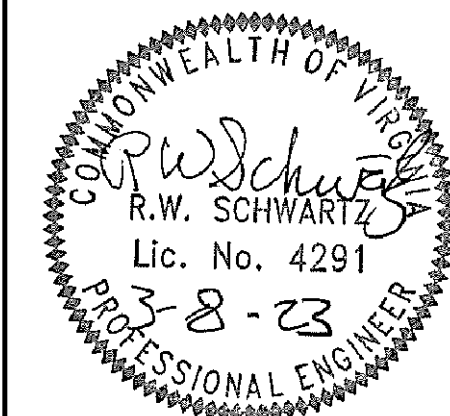
 66"
6"D
6"D
SOLID BAR, 1"
8"D NUMERALS
5"D CAPITALS
10 FT 0 IN
16"
LETTERS & BORDER - BLACK
BACKGROUND - WHITE
R5-V1


 66"
18"
G20-VP1
66" X 18"

- 1 - REQ'D. INT. ROANOKE BOULEVARD & COLLEGE STREET (XX = 0.8)
- 1 - REQ'D. INT. ROANOKE BOULEVARD & COLORADO STREET (XX = 0.7)
- 1 - REQ'D. INT. ELECTRIC ROAD & APPERSON DRIVE (XX = 1.3)
- 1 - REQ'D. INT. KIMBALL AVE. & S. COLORADO STREET (XX = 0.5)

NOTE: WIDTH RESTRICTION SIGNS SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF PERMANENT LANE CLOSURES.

WIDTH RESTRICTION SIGNS SHALL BE USED FOR STAGE 1 & 2 CONSTRUCTION.



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

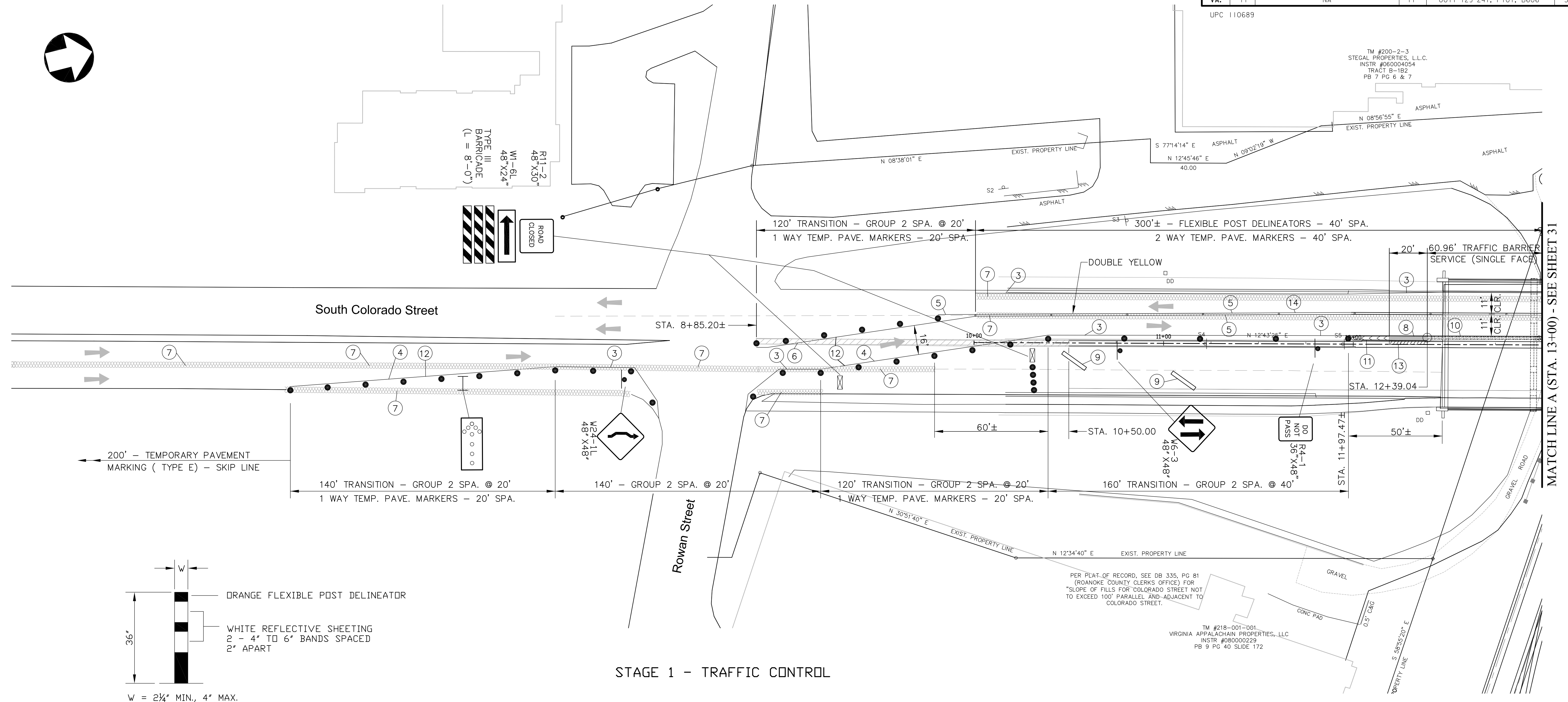
**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
STAGE 1 - SIGN LAYOUT**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: 1" = 25'	PROJECT NO.:	
DATE: MARCH 13, 2023	SHEET: 29 OF 46	

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	11	NA	11	0011-129-247, P101, B606	30











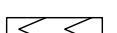


UPC 110689

TM #200-2-3
STEGAL PROPERTIES, L.L.C.
INSTR #060004054
TRACT B-1B2
PB 7 PG 6 & 7



FLEXIBLE POST DELINEATOR

LEGEND

-  - TYPE III BARRICADE (L=8')
-  - TEMPORARY CONSTRUCTION SIGN
-  - FLEXIBLE POST DELINEATOR
-  - GROUP 2 CHANNELIZING DEVICES
-  - ILLUMINATED FLASHING AMBER ARROW, TYPE C
-  - TEMPORARY PAVEMENT MARKING (TYPE E)
-  - TRAFFIC PATTERN
-  - TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE MB-11A
-  - IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
-  - TRAFFIC BARRIER SERVICE CONC. (MB-7D)
-  - TYPE III BARRICADE
-  - TRAFFIC BARRIER LATERAL SUPPORT
-  - TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE MB-10A

TEMPORARY CONSTRUCTION ITEMS


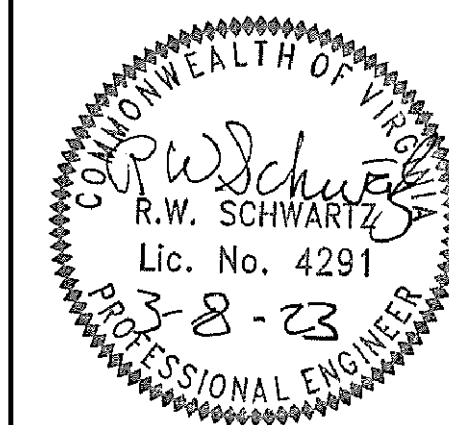
- ① GROUP 2 CHANNELIZING DEVICES AT 20' SPA.
- ② GROUP 2 CHANNELIZING DEVICES AT 40' SPA.
- ③ 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- ④ 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- ⑤ 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- ⑥ 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- ⑦ TEMPORARY PAVEMENT MARKING (TYPE E)
- ⑧ TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE (MB-11A)
- ⑨ TRAFFIC BARRIER SERVICE CONC. (MB-7D), BARRIER DELINEATORS & BARRIER PANELS (SEE VWAPM, TTC-48, NOTE 12) (10')
- ⑩ TRAFFIC BARRIER SERVICE CONCRETE (SINGLE FACE - MB-10A)
- ⑪ IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
- ⑫ 1 WAY TEMPORARY PAVEMENT MARKER (20' SPA.)
- ⑬ TRAFFIC BARRIER SERVICE LATERAL SUPPORT
- ⑭ 2 WAY TEMPORARY PAVEMENT MARKER (40' SPA.)

NOTE: TWO (2) 11'-0" MIN. CLR. ROADWAY SHALL BE MAINTAINED AT ALL TIMES.

PRIOR TO INSTALLING ANY TRAFFIC CONTROL, CONTRACTOR SHALL SAW CUT, REMOVE EXISTING MEDIAN AND BACKFILL WITH PAVEMENT STRUCTURE SHOWN ON SHEET 36, COMPACT IT FROM STA. 8+85.20± TO 10+50.00.

SEE SHEET 41, FOR MEDIAN REMOVAL LOCATIONS.

NON-REFLECTIVE REMOVABLE BLACK CONSTRUCTION PAVEMENT MARKINGS (TYPE E) SHALL BE USED TO COVER EXISTING MARKINGS IN LIEU OF ERADICATION EXCEPT EXISTING PAVEMENT LINES ON CONCRETE BRIDGE DECK SHALL BE ERADICATED. ERADICATION OF PAVEMENT LINES ON BRIDGE SHALL BE PAID FOR AS "TEMPRARY PAVEMENT MARKING (TYPE E)".



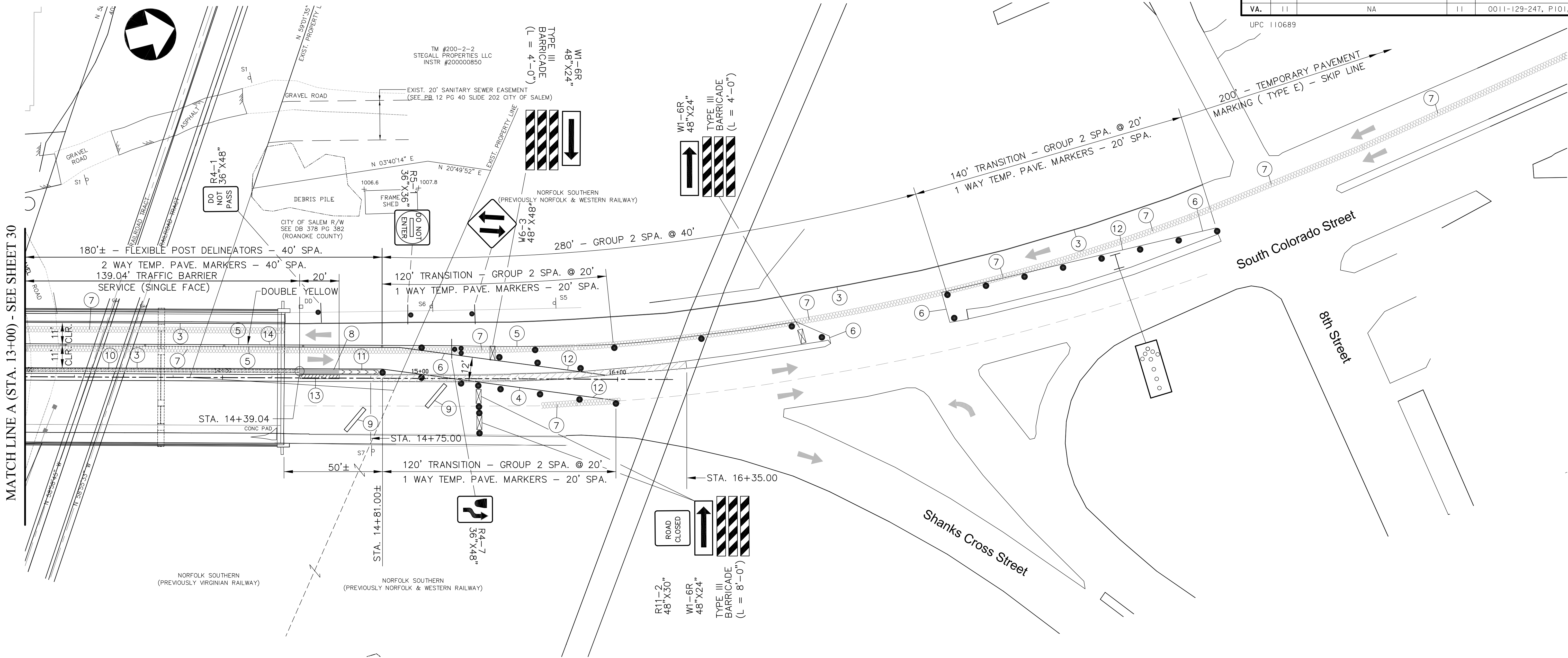
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
STAGE 1 - TRAFFIC CONTROL

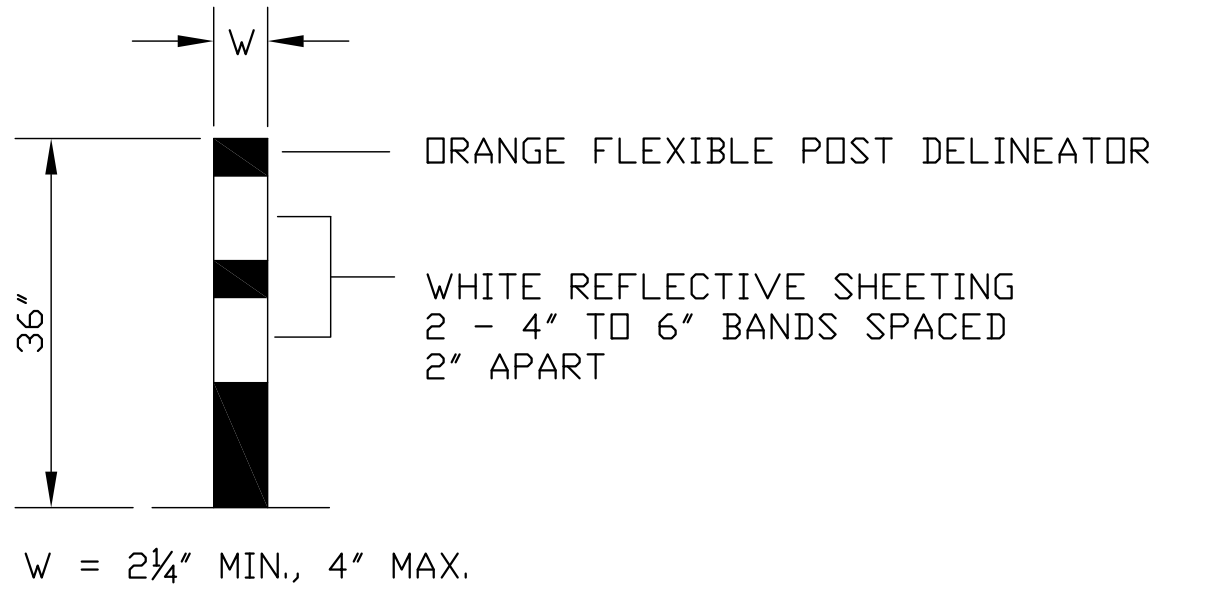
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: 1" = 25'		PROJECT NO.:
DATE: MARCH 13, 2023		SHEET: 30 OF 46

COMM. NO. 19051

STATE	ROUTE	FEDERAL AID	ROUTE	STATE	SHEET
VA.	11	PROJECT	11	PROJECT	NO.
		NA		0011-129-247, P101, B606	31



STAGE 1 - TRAFFIC CONTROL (CONT.)



FLEXIBLE POST DELINEATOR

LEGEND

- TYPE III BARRICADE (L=8')
- TEMPORARY CONSTRUCTION SIGN
- FLEXIBLE POST DELINEATOR
- GROUP 2 CHANNELIZING DEVICES
- ILLUMINATED FLASHING AMBER ARROW, TYPE C
- TEMPORARY PAVEMENT MARKING (TYPE E)
- TRAFFIC PATTERN
- TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE MB-11A
- IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
- TRAFFIC BARRIER SERVICE CONC. (MB-7D)
- TYPE III BARRICADE
- TRAFFIC BARRIER LATERAL SUPPORT
- TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE MB-10A

TEMPORARY CONSTRUCTION ITEMS

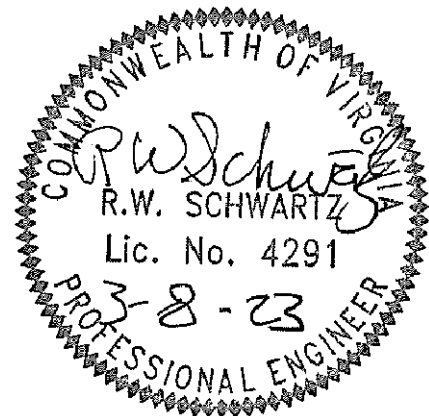
- GROUP 2 CHANNELIZING DEVICES AT 20' SPA.
- GROUP 2 CHANNELIZING DEVICES AT 40' SPA.
- 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- TEMPORARY PAVEMENT MARKING (TYPE E)
- TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE (MB-11A)
- TRAFFIC BARRIER SERVICE CONC. (MB-7D), BARRIER DELINEATORS & BARRIER PANELS (SEE VWAMP, TTC-48, NOTE 12) (10')
- TRAFFIC BARRIER SERVICE CONCRETE (SINGLE FACE - MB-10A)
- IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
- 1 WAY TEMPORARY PAVEMENT MARKER (20' SPA.)
- TRAFFIC BARRIER SERVICE LATERAL SUPPORT
- 2 WAY TEMPORARY PAVEMENT MARKER (40' SPA.)

NOTE: TWO (2) 11'-0" MIN. CLR. ROADWAY SHALL BE MAINTAINED AT ALL TIMES.

PRIOR TO INSTALLING ANY TRAFFIC CONTROL, CONTRACTOR SHALL SAW CUT, REMOVE EXISTING MEDIAN AND BACKFILL WITH PAVEMENT STRUCTURE SHOWN ON SHEET 36, COMPACT IT FROM STA. 14+75.00 TO 16+35.00.

SEE SHEET 41, FOR MEDIAN REMOVAL LOCATIONS.

NON-REFLECTIVE REMOVABLE BLACK CONSTRUCTION PAVEMENT MARKINGS (TYPE E) SHALL BE USED TO COVER EXISTING MARKINGS IN LIEU OF ERADICATION EXCEPT EXISTING PAVEMENT LINES ON CONCRETE BRIDGE DECK SHALL BE ERADICATED. ERADICATION OF PAVEMENT LINES ON BRIDGE SHALL BE PAID FOR AS "TEMPORARY PAVEMENT MARKING (TYPE E)".



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

**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
STAGE 1 - TRAFFIC CONTROL (CONT.)**

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH
SCALE: 1" = 25' | PROJECT NO.:
DATE: MARCH 13, 2023 | SHEET: 31 OF 46

COMM. NO. 19051

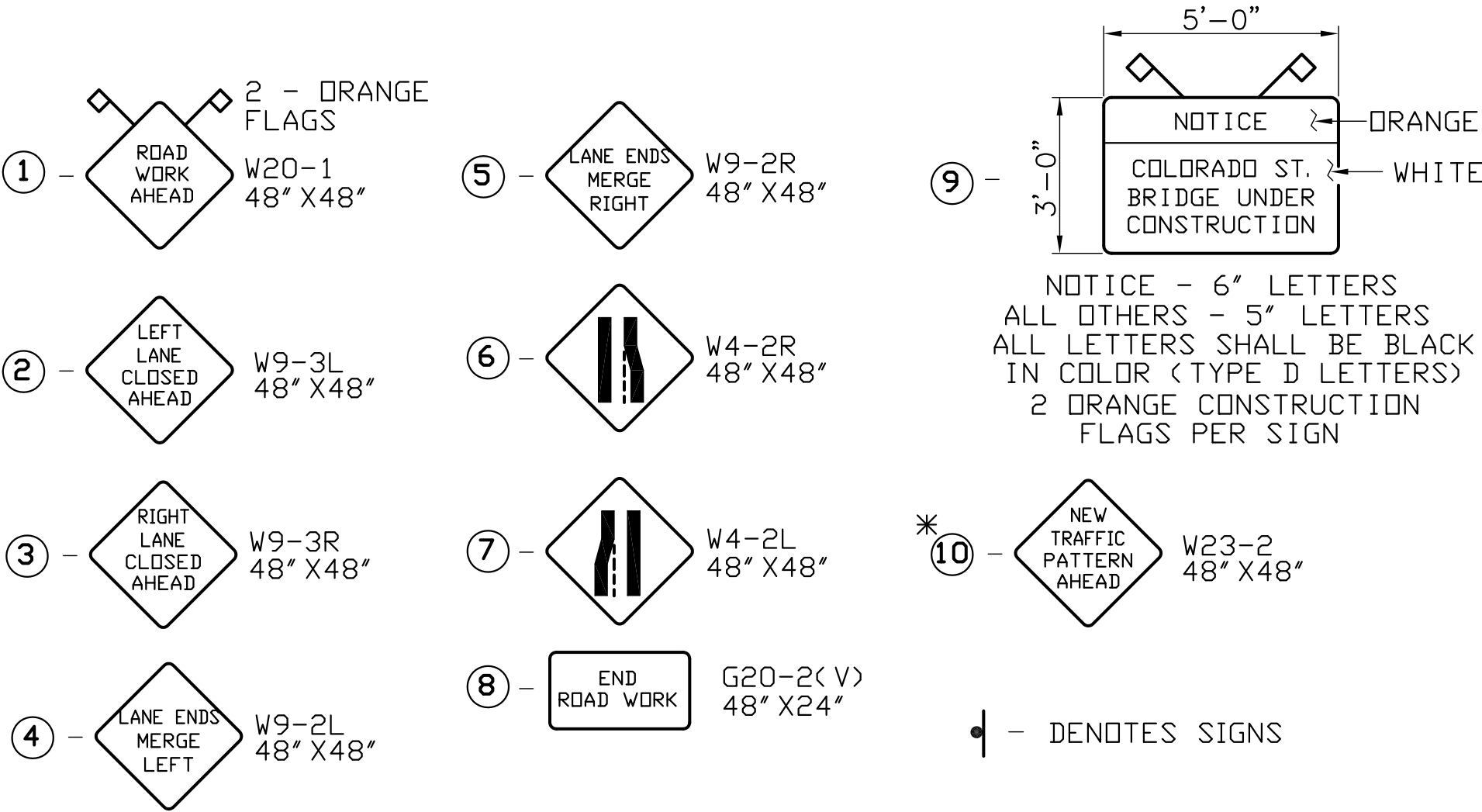
CADD REFERENCE NO.: 19051TRAFFICCONTROL

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	PROJECT	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606	32

UPC 110689

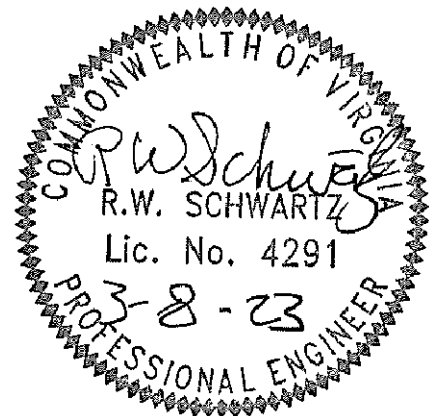
* - AFTER STAGE 2 LANE CLOSURES HAVE BEEN INSTALLED, THIS SIGN SHALL BE DISPLAYED FOR 2 WEEKS. AFTER 2 WEEKS THIS SIGN SHALL BE COVERED OR REMOVED.

TRAFFIC CONTROL SIGNS



NOTE: SEE SHEET 33 & 34 FOR ADDITIONAL REQUIRED SIGNS FOR STAGE 2.

CADD REFERENCE NO.: 19051TRAFFICCONTROL



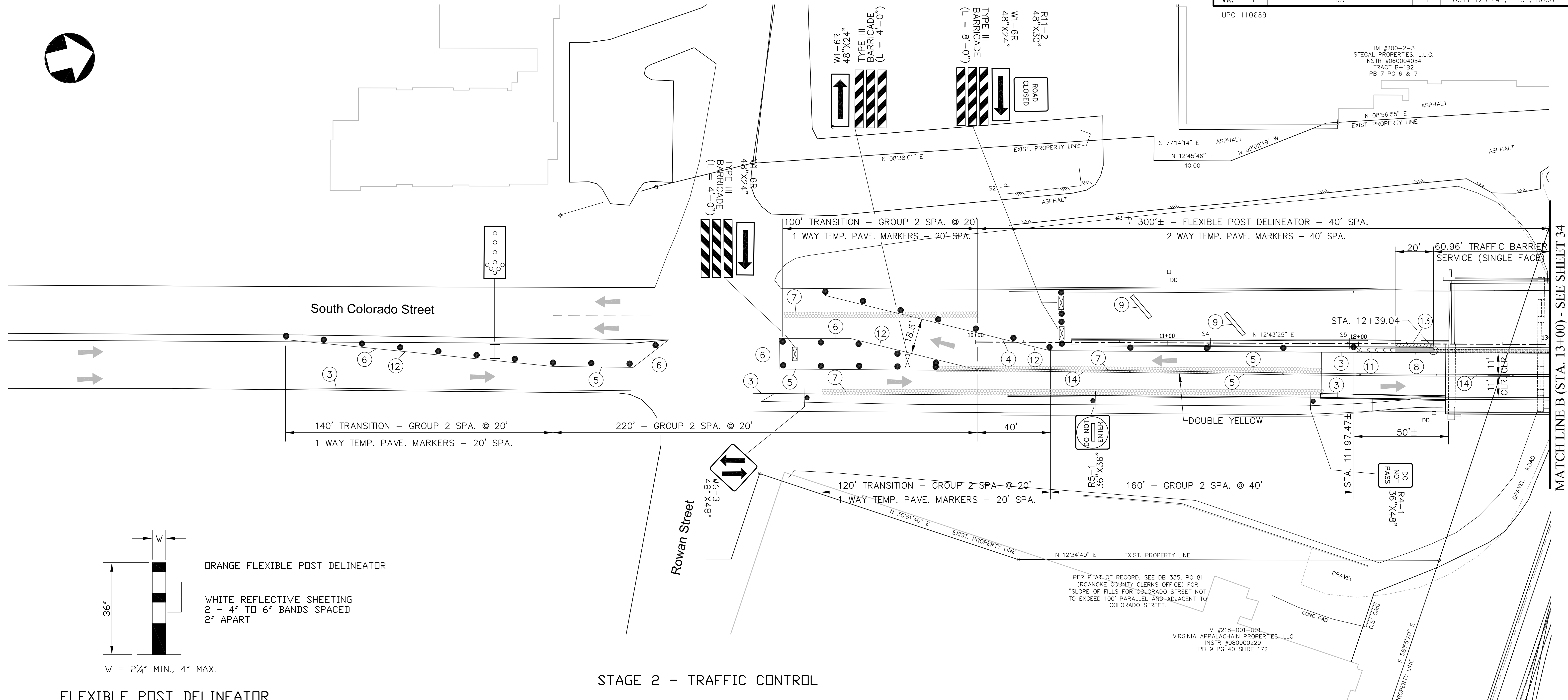
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
STAGE 2 - SIGN LAYOUT**

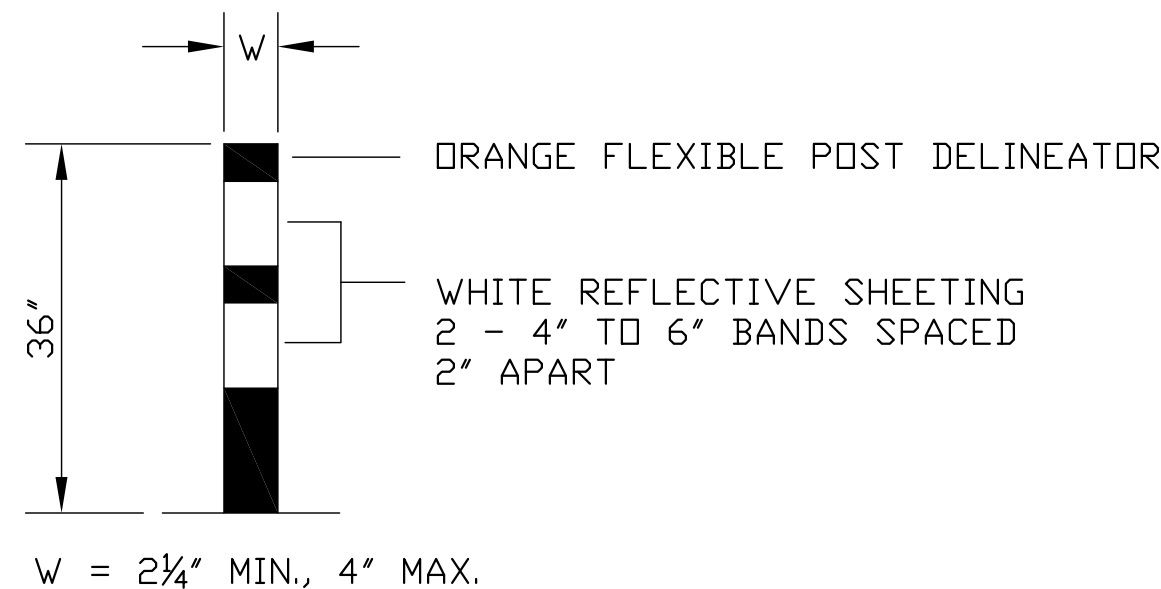
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: 1" = 25'	PROJECT NO.:	
DATE: MARCH 13, 2023	SHEET: 32 OF 46	

COMM. NO. 19051

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	11	NA	11	0011-129-247, P101, B606	33











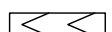
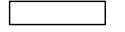
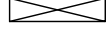
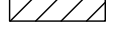
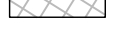
MATCH LINE B (STA. 13+00) - SEE SHEET 34



FLEXIBLE POST DELINEATOR

STAGE 2 - TRAFFIC CONTROL

LEGEND


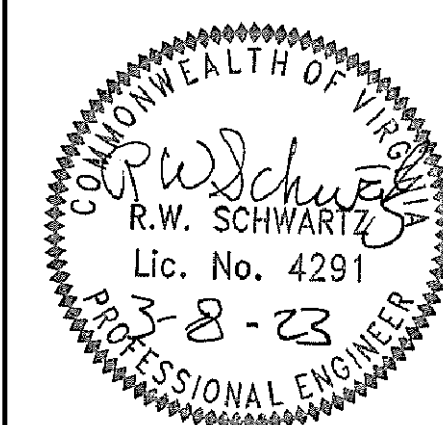
-  - TYPE III BARRICADE (L=8')
-  - TEMPORARY CONSTRUCTION SIGN
-  - FLEXIBLE POST DELINEATOR
-  - GROUP 2 CHANNELIZING DEVICES
-  - ILLUMINATED FLASHING AMBER ARROW, TYPE C
-  - TEMPORARY PAVEMENT MARKING (TYPE E)
-  - TRAFFIC PATTERN
-  - TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE MB-11A
-  - IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
-  - TRAFFIC BARRIER SERVICE CONC. (MB-7D)
-  - TYPE III BARRICADE
-  - TRAFFIC BARRIER LATERAL SUPPORT
-  - TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE MB-10A

TEMPORARY CONSTRUCTION ITEMS

- (1) GROUP 2 CHANNELIZING DEVICES AT 20' SPA.
- (2) GROUP 2 CHANNELIZING DEVICES AT 40' SPA.
- (3) 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- (4) 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- (5) 4" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- (6) 8" CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- (7) TEMPORARY PAVEMENT MARKING (TYPE E)
- (8) TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE (MB-11A)
- (9) TRAFFIC BARRIER SERVICE CONC. (MB-7D), BARRIER DELINEATORS & BARRIER PANELS (SEE VWAPM, TTC-48, NOTE 12) (10')
- (10) TRAFFIC BARRIER SERVICE CONCRETE (SINGLE FACE - MB-10A)
- (11) IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
- (12) 1 WAY TEMPORARY PAVEMENT MARKER (20' SPA.)
- (13) TRAFFIC BARRIER SERVICE LATERAL SUPPORT
- (14) 2 WAY TEMPORARY PAVEMENT MARKER (40' SPA.)

NOTE: TWO (2) 11'-0" MIN. CLR. ROADWAY SHALL BE MAINTAINED AT ALL TIMES.

NON-REFLECTIVE REMOVABLE BLACK CONSTRUCTION PAVEMENT MARKINGS (TYPE E) SHALL BE USED TO COVER EXISTING MARKINGS IN LIEU OF ERADICATION EXCEPT EXISTING PAVEMENT LINES ON CONCRETE BRIDGE DECK SHALL BE ERADICATED. ERADICATION OF PAVEMENT LINES ON BRIDGE SHALL BE PAID FOR AS "TEMPORARY PAVEMENT MARKING (TYPE E)".



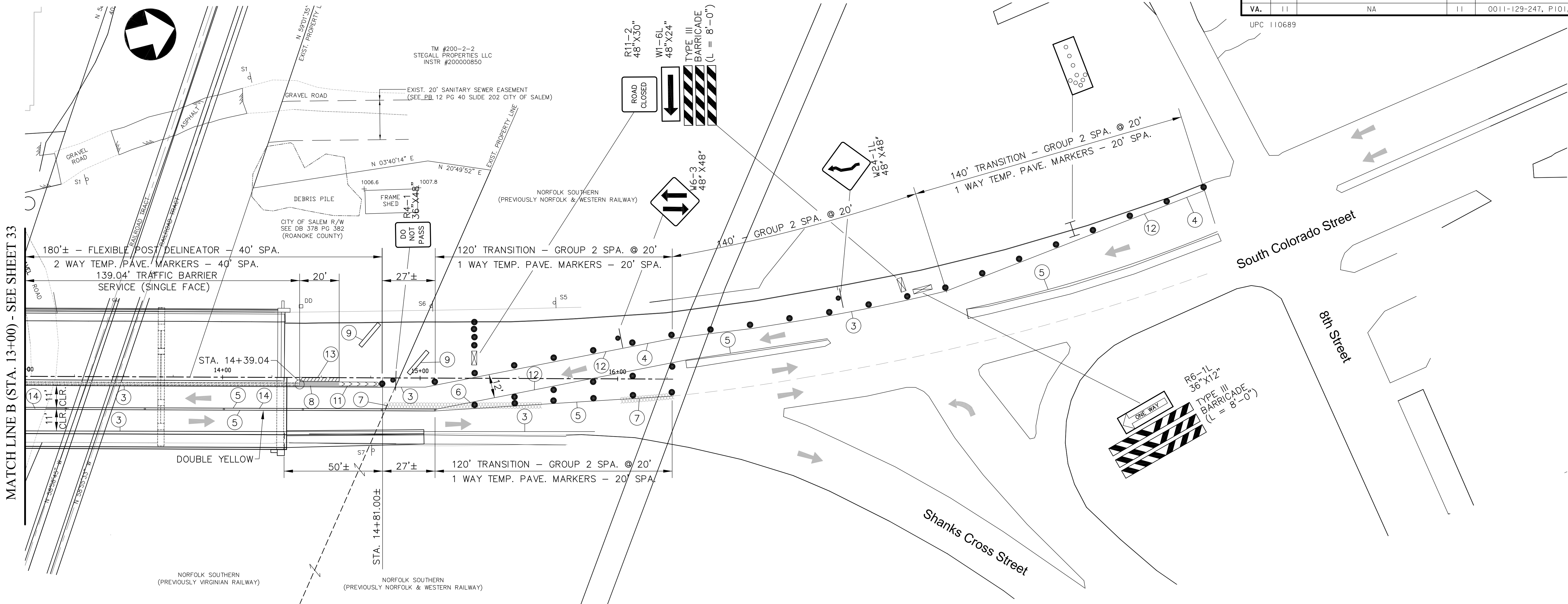
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
7331 TIMBERLAKE ROAD
LYNCHBURG, VA.

COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
STAGE 2 - TRAFFIC CONTROL

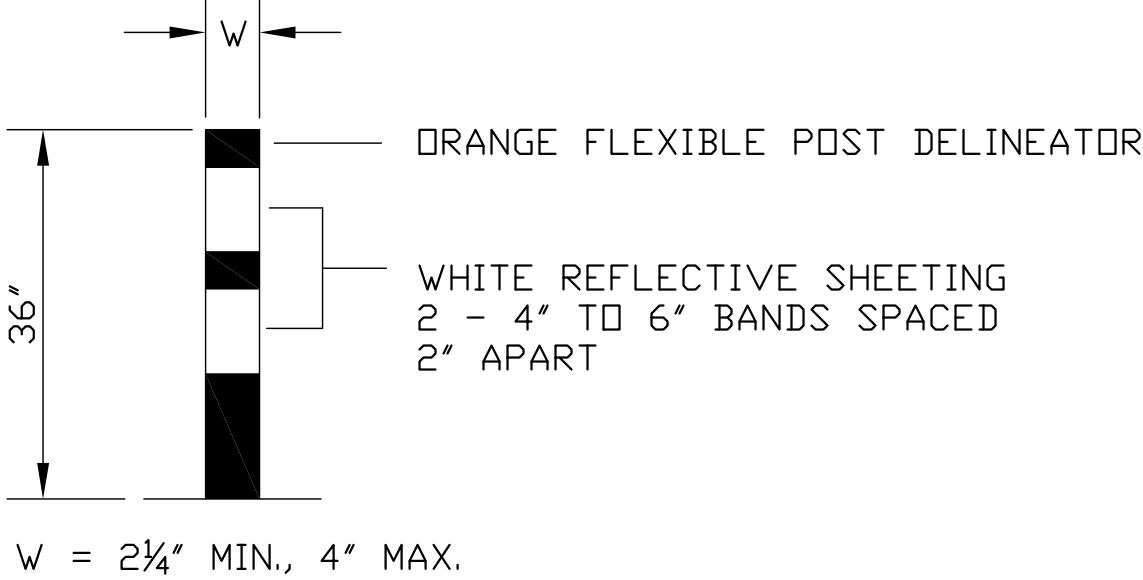
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: 1" = 25'		PROJECT NO.:
DATE: MARCH 13, 2023		SHEET: 33 OF 46

COMM. NO. 19051

STATE	ROUTE	FEDERAL AID	ROUTE	STATE	SHEET
VA.	11	PROJECT	11	PROJECT	NO.
		NA		0011-129-247, P101, B606	34



STAGE 2 - TRAFFIC CONTROL (CONT.)



FLEXIBLE POST DELINEATOR

LEGEND

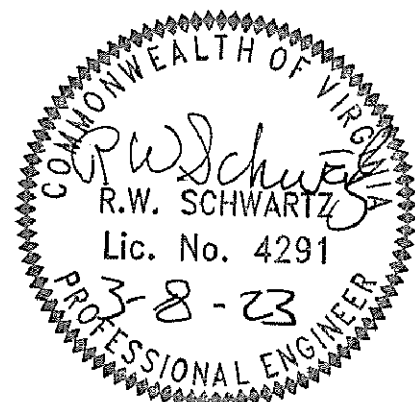
- TYPE III BARRICADE (L=8')
- TEMPORARY CONSTRUCTION SIGN
- FLEXIBLE POST DELINEATOR
- GROUP 2 CHANNELIZING DEVICES
- ILLUMINATED FLASHING AMBER ARROW, TYPE C
- TEMPORARY PAVEMENT MARKING (TYPE E)
- TRAFFIC PATTERN
- TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE MB-11A
- IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
- TRAFFIC BARRIER SERVICE CONC. (MB-7D)
- TYPE III BARRICADE
- TRAFFIC BARRIER LATERAL SUPPORT
- TRAFFIC BARRIER SERVICE CONCRETE, SINGLE FACE MB-10A

TEMPORARY CONSTRUCTION ITEMS

- GROUP 2 CHANNELIZING DEVICES AT 20' SPA.
- GROUP 2 CHANNELIZING DEVICES AT 40' SPA.
- 4' CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- 8' CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - WHITE)
- 4' CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- 8' CONSTRUCTION PAVEMENT MARKING (TYPE D, CLASS III - YELLOW)
- TEMPORARY PAVEMENT MARKING (TYPE E)
- TRAFFIC BARRIER SERVICE CONCRETE, DOUBLE FACE (MB-11A)
- TRAFFIC BARRIER SERVICE CONC. (MB-7D), BARRIER DELINEATORS & BARRIER PANELS (SEE VWPM, TTC-48, NOTE 12) (10')
- TRAFFIC BARRIER SERVICE CONCRETE (SINGLE FACE - MB-10A)
- IMPACT ATTENUATOR SERVICE, TYPE 1, TL-2 (40 MPH)
- 1 WAY TEMPORARY PAVEMENT MARKER (20' SPA.)
- TRAFFIC BARRIER SERVICE LATERAL SUPPORT
- 2 WAY TEMPORARY PAVEMENT MARKER (40' SPA.)

NOTE: TWO (2) 11'-0" MIN. CLR. ROADWAY SHALL BE MAINTAINED AT ALL TIMES.

NON-REFLECTIVE REMOVABLE BLACK CONSTRUCTION PAVEMENT MARKINGS (TYPE E) SHALL BE USED TO COVER EXISTING MARKINGS IN LIEU OF ERADICATION EXCEPT EXISTING PAVEMENT LINES ON CONCRETE BRIDGE DECK SHALL BE ERADICATED. ERADICATION OF PAVEMENT LINES ON BRIDGE SHALL BE PAID FOR AS "TEMPORARY PAVEMENT MARKING (TYPE E)".



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

COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
STAGE 2 - TRAFFIC CONTROL (CONT.)

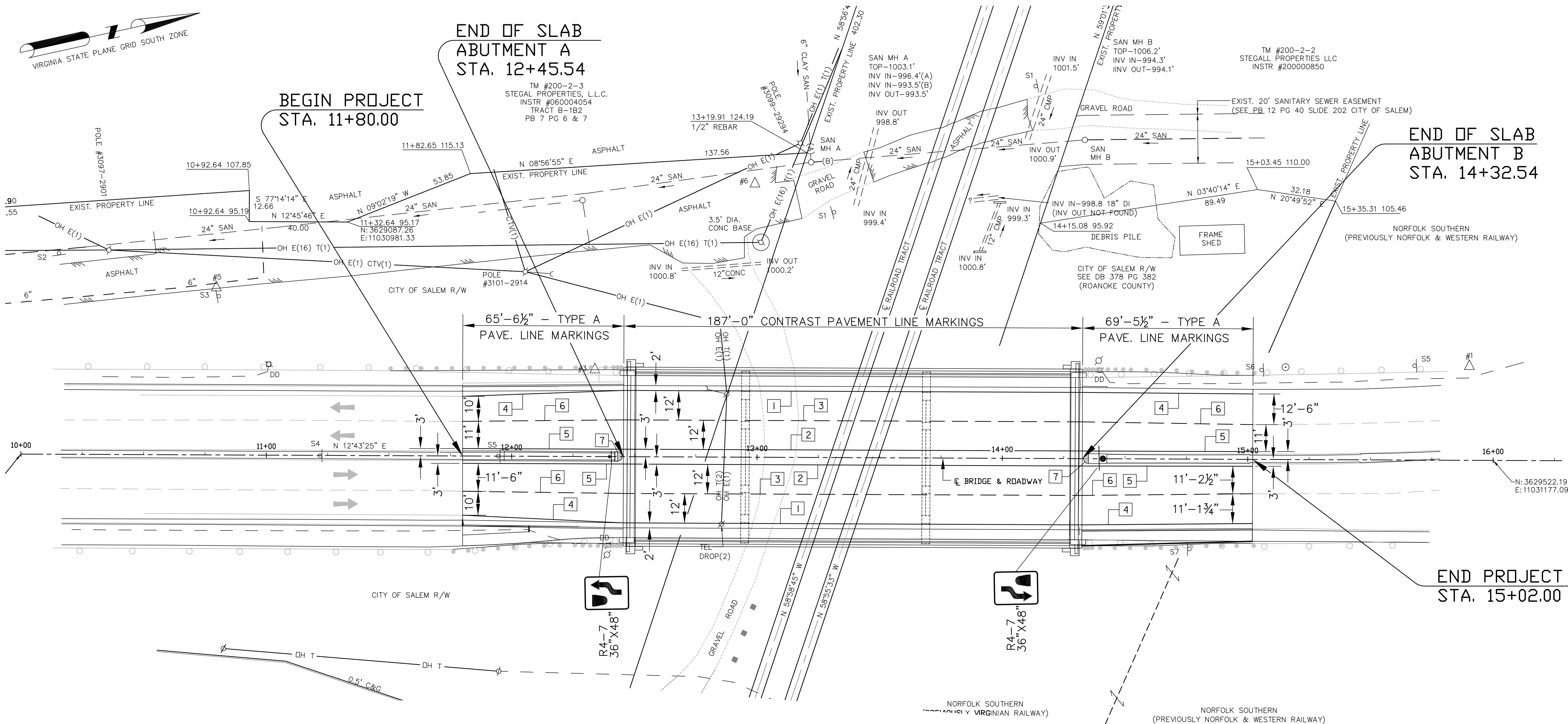
DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH
SCALE: 1" = 25' | PROJECT NO.:
DATE: MARCH 13, 2023 | SHEET: 34 OF 46

COMM. NO. 19051

CADD REFERENCE NO.: 19051TRAFFICCONTROL

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	PROJECT	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606	35

UPC 110689

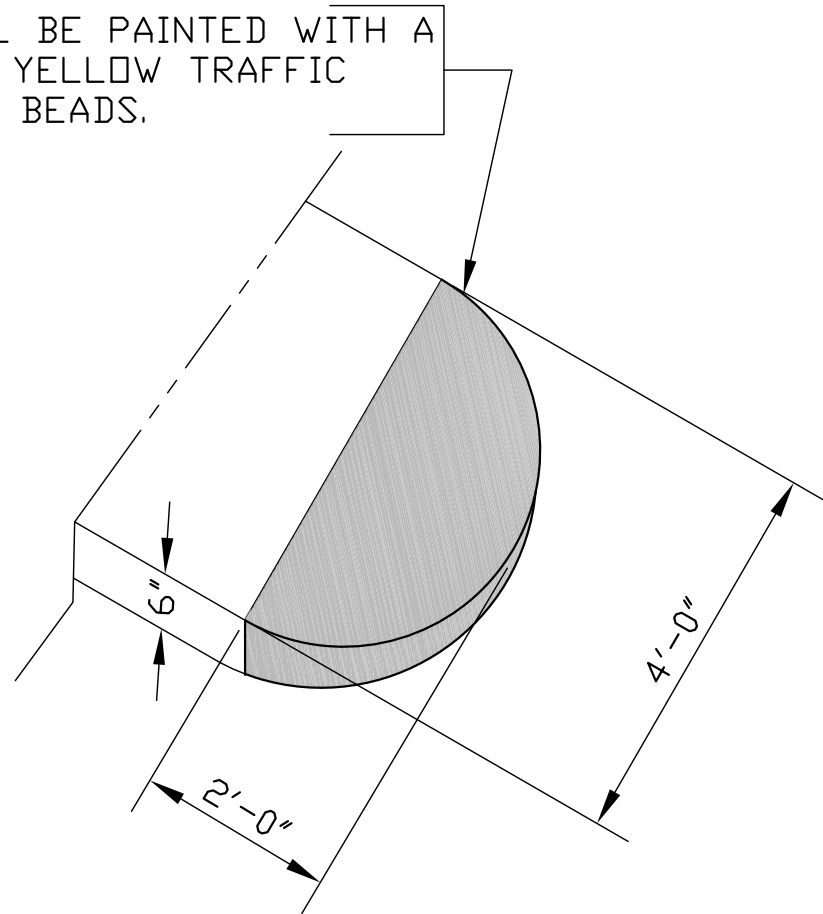


LEGEND

- 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 B, CLASS VI, CONTRAST SKIP PAVEMENT LINE MARKING (4" WHITE)
- 4 DENOTES TYPE A, SOLID PAVEMENT LINE MARKING (4" WHITE)
- 5 DENOTES TYPE A, SOLID PAVEMENT LINE MARKING (4" YELLOW)
- 6 DENOTES TYPE A, SKIP PAVEMENT LINE MARKING (4" WHITE)
- 7 DENOTES TRAFFIC PAINT WITH GLASS BEADS (YELLOW)

- PERMANENT CONSTRUCTION SIGN
- TRAFFIC PATTERN

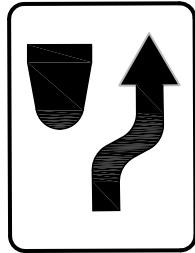
THIS AREA SHALL BE PAINTED WITH A VDOT APPROVED YELLOW TRAFFIC PAINT W/ GLASS BEADS.



DETAIL OF PAINTED MEDIAN STRIP NOSE

NOT TO SCALE

NOTE: ALL COSTS FOR PAINTING MEDIAN STRIP NOSE SHALL INCLUDE BLASTING CONCRETE SURFACE, REMOVAL AND DISPOSAL OF MATERIAL, FURNISHING AND APPLYING VDOT APPROVED TRAFFIC PAINT (YELLOW), GLASS BEADS, FURNISHING OF ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. PAYMENT WILL BE MADE UNDER THE CONTRACT PAY ITEM OF: "PAINTED MEDIAN STRIP NOSE" - PAY UNIT WILL BE ON A PER EACH BASIS, COMPLETE-IN-PLACE.



R4-7
36"X48"

POST
VDOT TYPE E
STP-1
2 1/2"

PERMANENT SIGN
NOT TO SCALE

CADD REFERENCE NO.: 19051PERMANENTPAVEMARKING

SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
COLORADO STREET OVER NORFOLK SOUTHERN RAILROAD CITY OF SALEM, VA PERMANENT PAVEMENT LINE MARKINGS		
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: 1" = 25'	PROJECT NO.:	
DATE: MARCH 13, 2023	SHEET: 35 OF 46	

CADD REFERENCE NO.: 19051ROADPLAN

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	PROJECT	STATE	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606	36	

UPC 110689

LEGEND

- ASPHALT CONCRETE, TYPE SM-12.5D (2") (235 LBS/SY) (NON-POLISHING AGGREGATE)
- ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (8" DEPTH)
- COMPACTED AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A (6" DEPTH)
- COMPACTED AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A (4" DEPTH)
- ASPHALT CONCRETE, TYPE SM-9.5D (2")
- ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (6" DEPTH)

FLEXIBLE PAVEMENT PLANING, 2" DEPTH

NOTE: SEE PLAN SHEET 41 FOR ST'D. CG-6, MEDIANS & CONCRETE SIDEWALK LOCATIONS.

CONTRACTOR SHALL PLACE 2" PRE-MOLDED ASPHALT FILLER BETWEEN END OF BRIDGE AND APPROACH SIDEWALK, CURB & GUTTER.

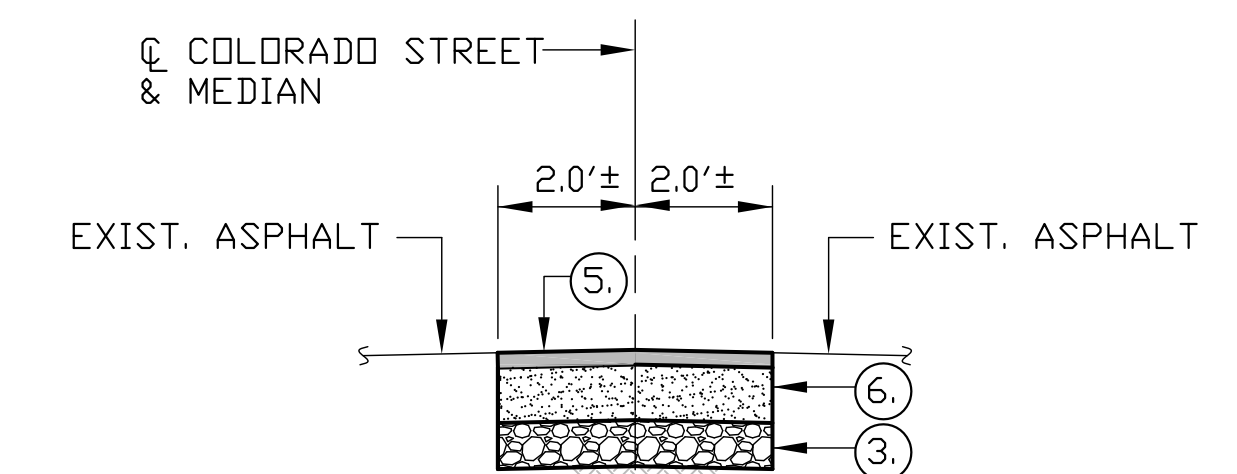
SEE CROSS SECTION SHEETS 42 - 46, FOR DIMENSIONS NOT SHOWN.

UNIT WEIGHT FOR ASPHALT CONCRETE, TYPE SM-9.5D USED IS APPROXIMATELY 235 LBS/SY.

*1 - VAR. 3.67' TO 2.61'

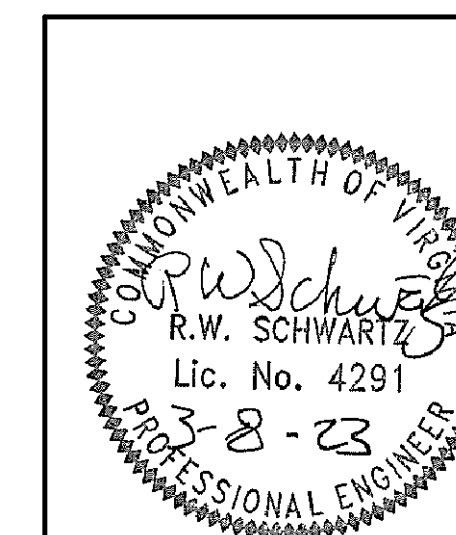
*2 - VAR. 2.61' TO 1.82'


PAVEMENT STRUCTURE TO BE USED IN STAGED CONSTRUCTION MEDIAN CROSS OVER



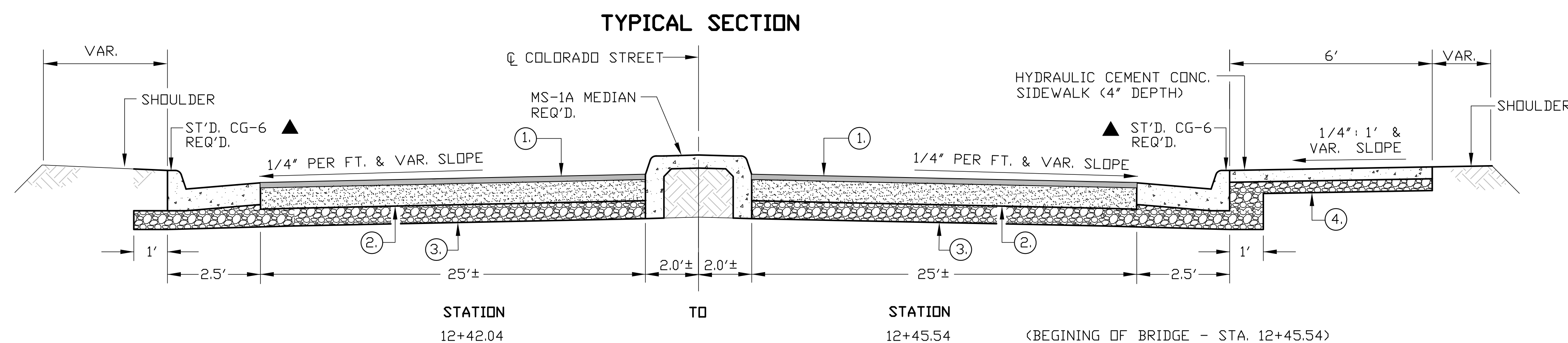
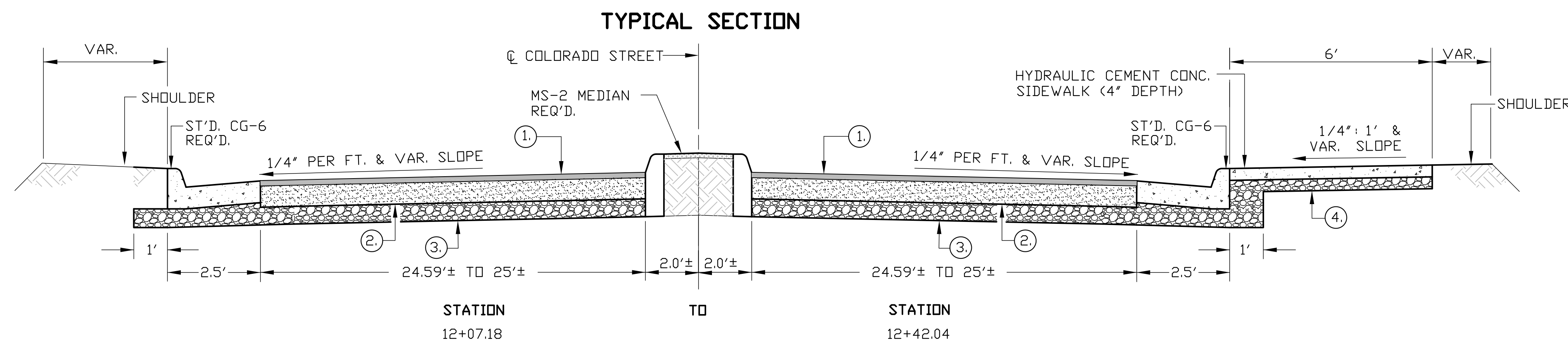
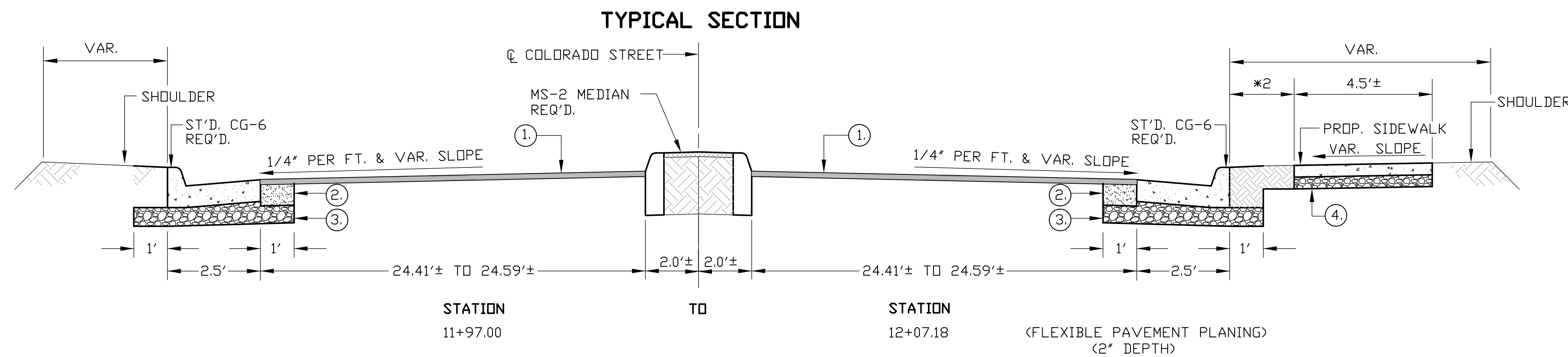
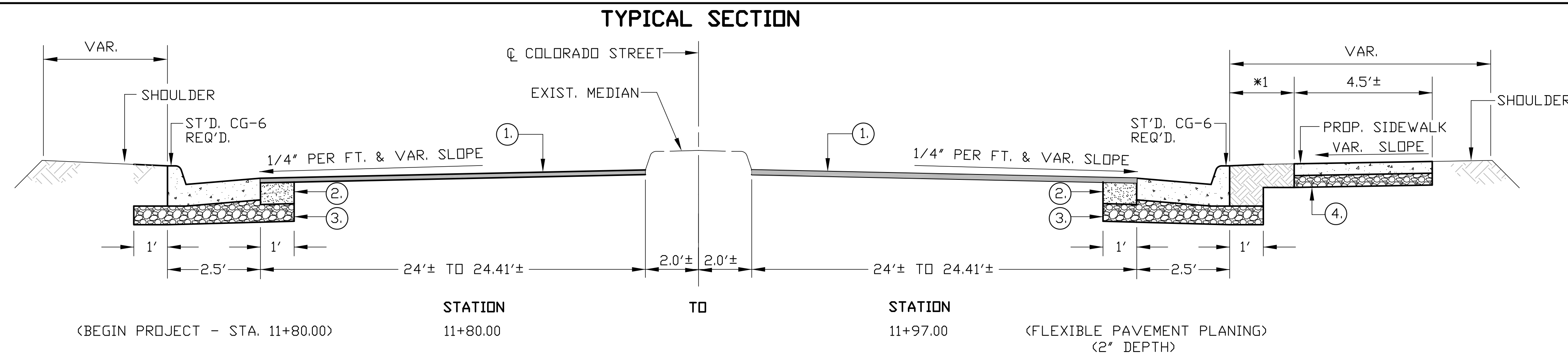
NOTE: SEE ROAD PLAN SHEET 41 FOR PAVEMENT STRUCTURE LOCATIONS.

▲ - ST'D. CG-6 SHALL TRANSITION TO MATCH CROSS SLOPE OF BRIDGE DECK.



	SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
	COLORADO STREET OVER NORFOLK SOUTHERN RAILROAD CITY OF SALEM, VA TYPICAL SECTIONS STA. 11+80.00 - 12+42.04		
	DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
	SCALE: NOT TO SCALE	PROJECT NO.:	SHEET: 36 OF 46

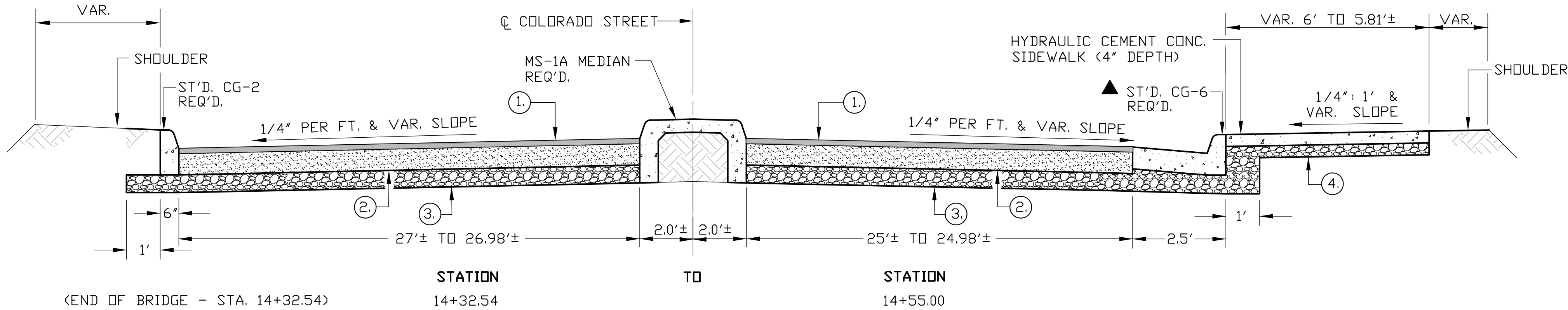
COMM. NO. 19051	DATE: MARCH 13, 2023
-----------------	----------------------



STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	PROJECT	STATE	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606	37	

UPC 110689

TYPICAL SECTION

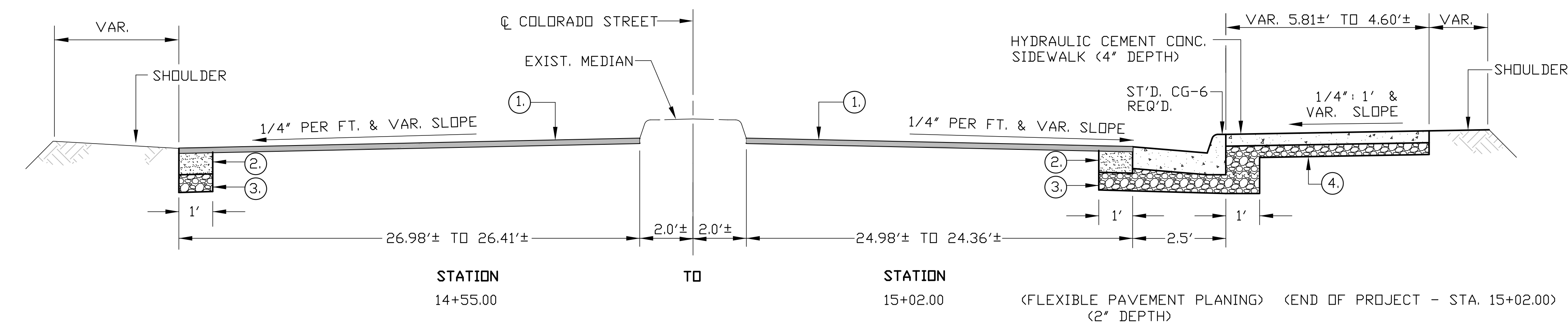


LEGEND

- ① ASPHALT CONCRETE, TYPE SM-12.5D (2") (235 LBS/SY) (NON-POLISHING AGGREGATE)
 - ② ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A (8" DEPTH)
 - ③ COMPACTED AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A (6" DEPTH)
 - ④ COMPACTED AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21-A (4" DEPTH)
- FLEXIBLE PAVEMENT PLANING, 2" DEPTH

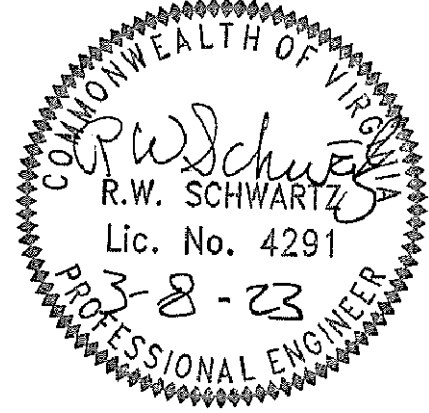
▲ -ST'D. CG-6 SHALL TRANSITION TO MATCH CROSS SLOPE OF BRIDGE DECK.

TYPICAL SECTION



(FLEXIBLE PAVEMENT PLANING) (2" DEPTH) (END OF PROJECT - STA. 15+02.00)

CADD REFERENCE NO.: 19051ROADPLAN



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

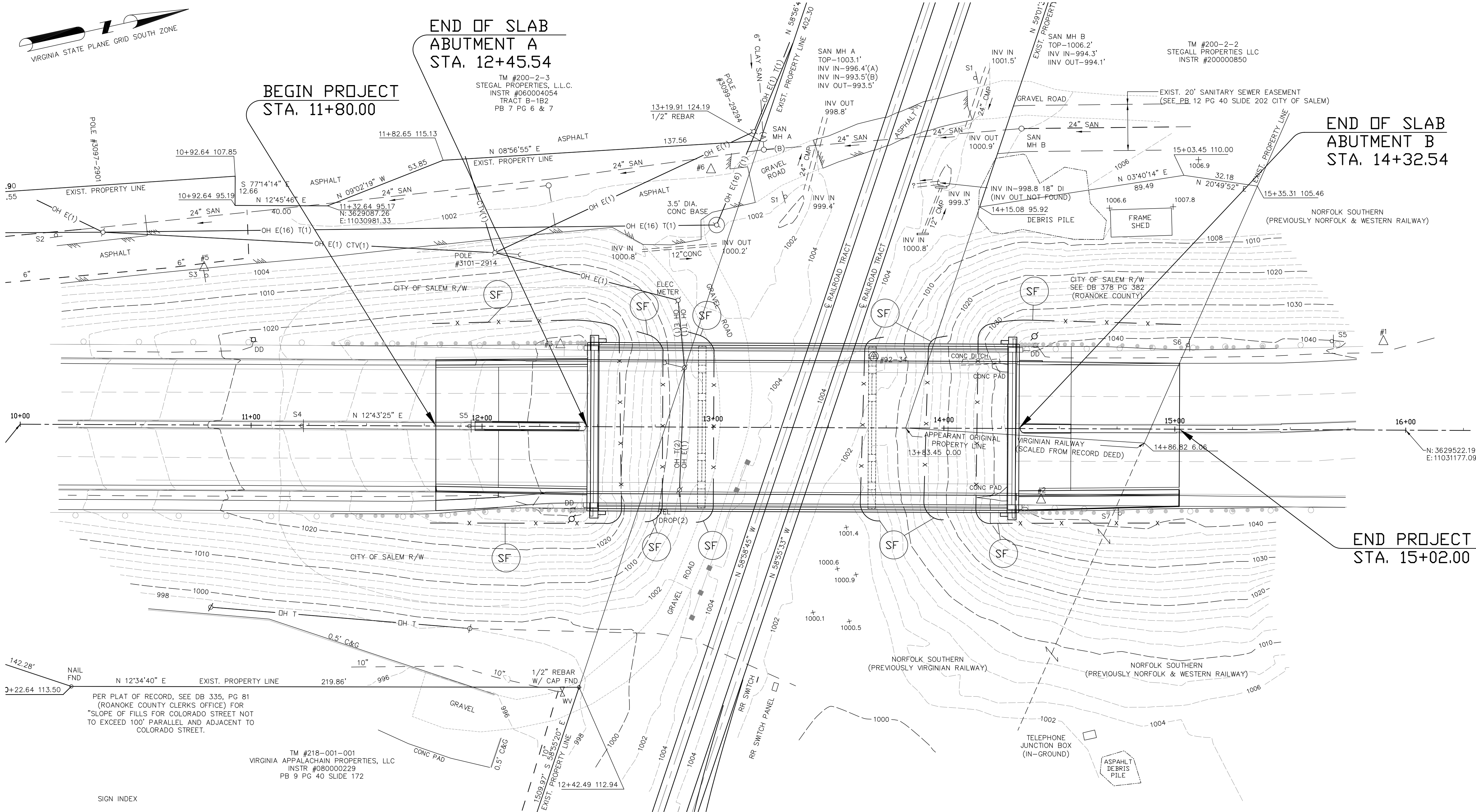
COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
TYPICAL SECTIONS
STA. 13+24.21 - 15+02.00

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH
SCALE: NOT TO SCALE | PROJECT NO.:
DATE: MARCH 13, 2023 | SHEET: 37 OF 46

COMM. NO. 19051

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	PROJECT	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606	39

UPC 110689



SIGN INDEX

- S1 STOP/RR XING
- S2 NO PARKING
- S3 10 MPH
- S4 ROWAN STREET NEXT LEFT
- S5 25 MPH
- S6 ROUTE 11 NORTH
- S7 ROUTE 11 SOUTH

LEGEND

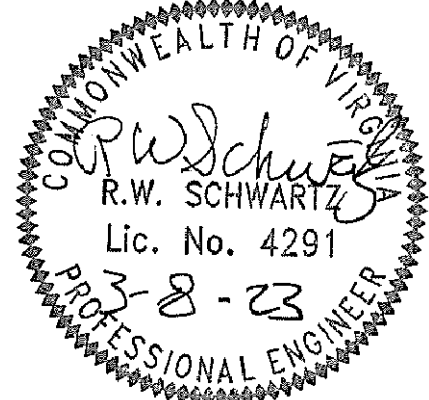
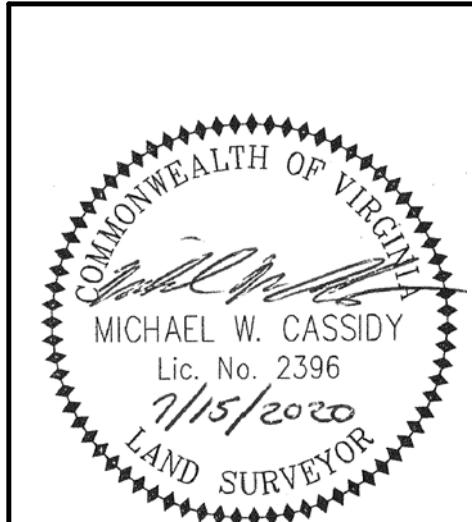
- ELECTRIC POLE
- GUY WIRE
- OH E/T/CTV OVERHEAD ELECTRIC/TELEPHONE/CABLE TV
- DD DUSK/DAWN LIGHT
- WV WATER VALVE
- W— WATER LINE
- GUARD RAIL
- SIGN (AS NOTED)
- T— UNDERGROUND TELEPHONE LINE

LEGEND

- X— (SF) — DENOTES TEMPORARY SILT FENCE. (VDOT ST'D. EC-5)

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

CADD REFERENCE NO.: 19051ROADPLAN



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

**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
EROSION CONTROL PLAN**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: 1" = 25'	PROJECT NO.:	
DATE: MARCH 13, 2023	SHEET: 39 OF 46	

SURVEY & BASE SHEET COMM. NO. 19051

SUPERVISED BY CITY OF SALEM, VA.
PROJECT MANAGER WAYNE SCHWARTZ, P.E. (434) 237-6584
SURVEYED BY N/A
DESIGNED BY BANDY SAUNDERS (434) 237-6584

ROADSIDE DEVELOPMENT

UPC 110689

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	11	0011-129-247,P101,B606	40

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 % CROWNVETCH (LEGUME)
F	5	100 % SERICEA LESPEDEZA (LEGUME)
G	8	100 % BIRDSFOOT TREFOIL (LEGUME)
H		
I		
J		
K		

NOTES:

APPROXIMATELY 0.14 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, CROWNVETCH, 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 RECOMENDATIONS.

EROSION CONTROL MULCH SHALL PROVIDE 100 PERCENT COVERAGE OF ALL DENUED 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 ENGINEER.

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.

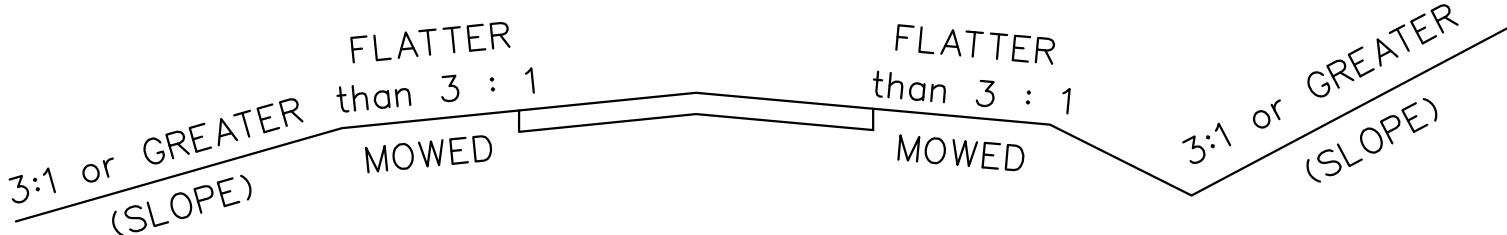
ALL SEED MUST BE IN CONFORMANCE WITH VDOT SEED SPECIFICATIONS FOR GRASSES & LEGUMES AND BE PROVIDED AT THE PROJECT SITE IN BAGS NOT OPENED AND LABELED FOR USE ON VDOT PROJECTS WITH A GREEN TAG CERTIFYING INSPECTION BY THE VIRGINIA CROP IMPROVEMENT ASSOCIATION.

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



SECTION OF SEED LOCATIONS

SEEDING SCHEDULE

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.
	0.12	24	14	2.0	2.0	5	3	12	

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			
	4/1 - 6/1	6/1 - 9/15	9/15 - 4/1	3, D	3, D	3, C
* SPECIFY KIND OF FINE FESCUE	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING	HARD OR CHEWING

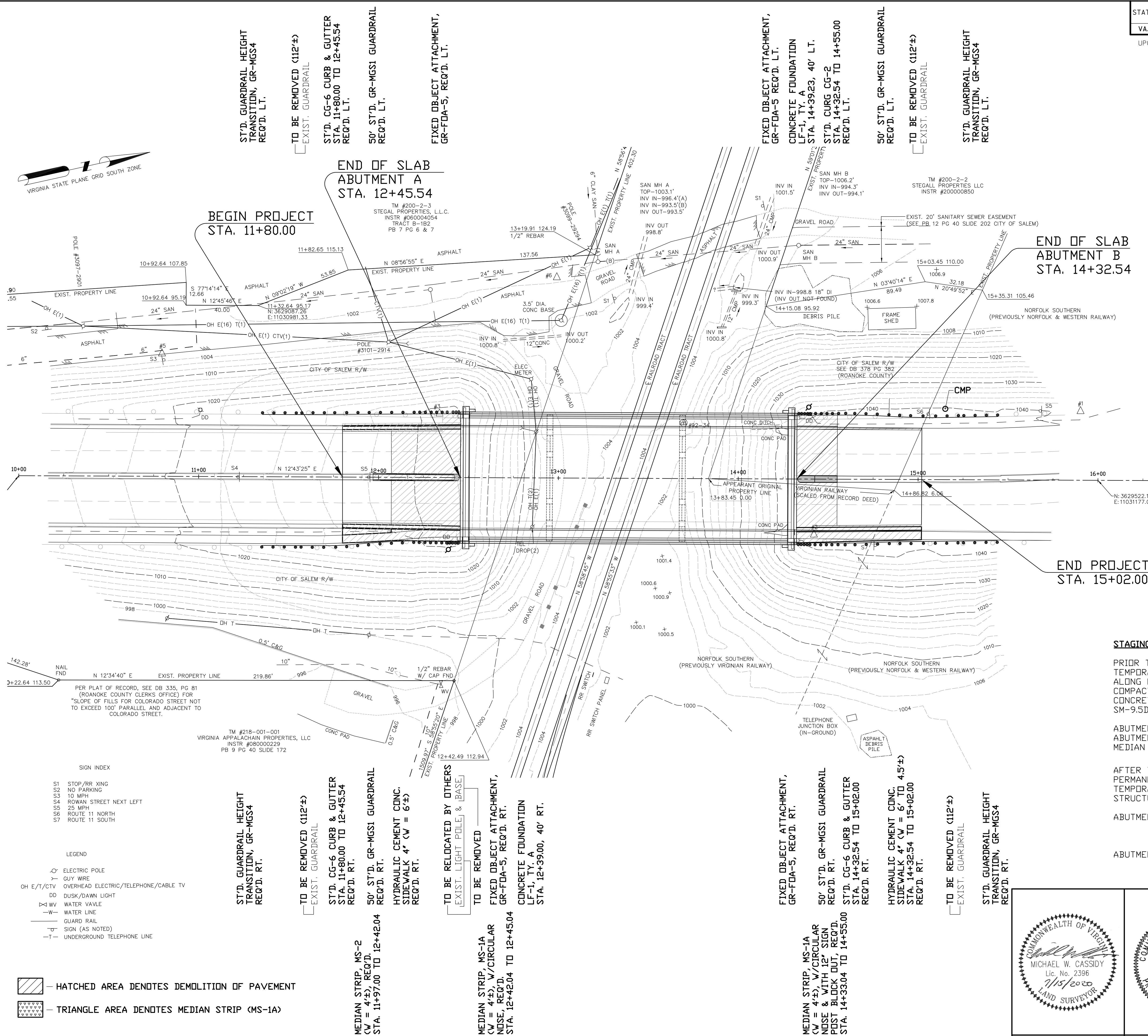
⊗ DENOTES ITEM(S) TO BE PAID FOR ON BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

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".

REVISED 4/16/19

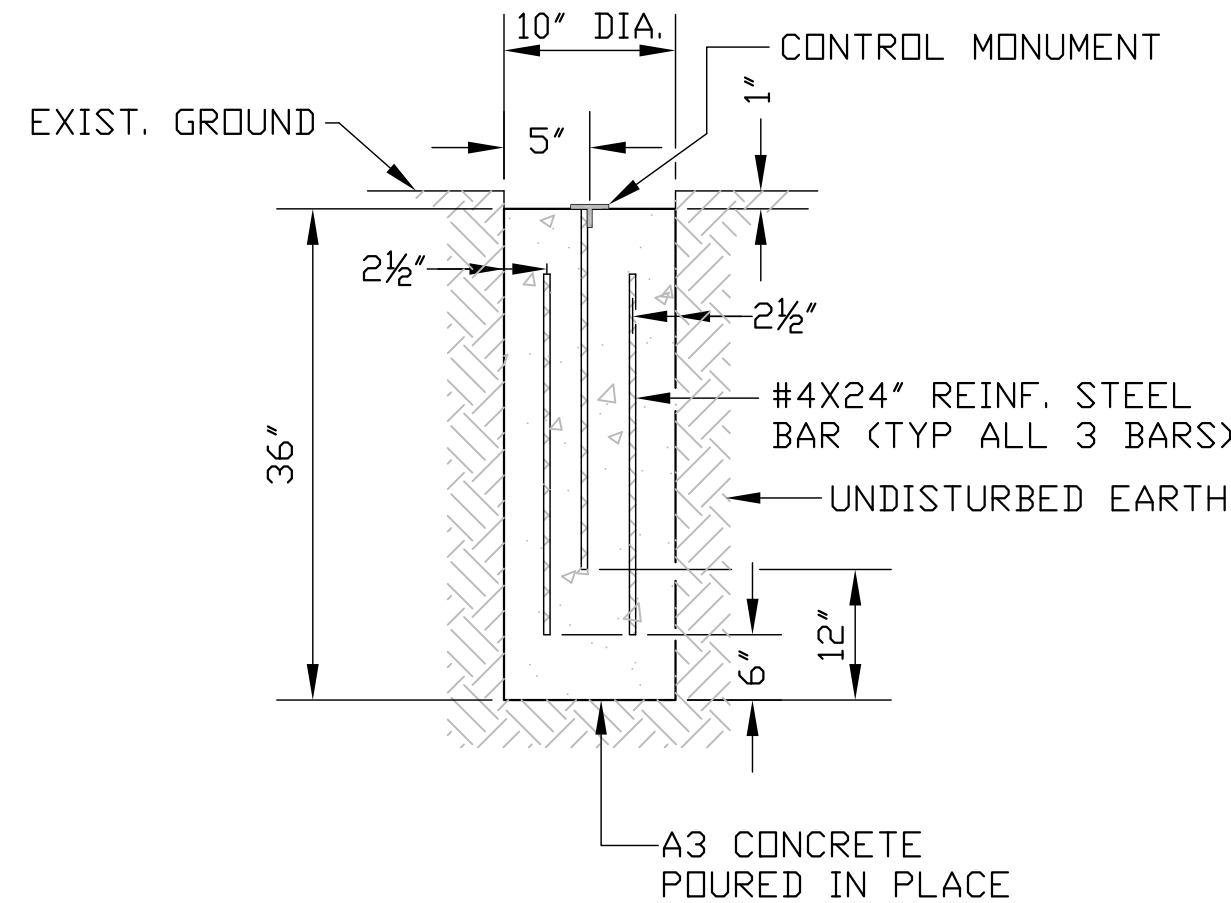
PROJECT	SHEET NO.
COLORADO STREET / NS RAILROAD	40 of 46

CADD REFERENCE NO.: 1905ROADPLAN



STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606		41

UPC 110689



CONTROL MONUMENT PEDESTAL
NOT TO SCALE

CMP — CONTRACTOR SHALL INSTALL A CONTROL MONUMENT PEDESTAL AND INSTALL THE EXISTING CITY CONTROL MONUMENT LOCATED IN THE TOP OF THE BRIDGE SIDEWALK, STA. 15+15.00, 39.5' LT. IN TOP OF NEW CONTROL MONUMENT PEDESTAL WHILE CONCRETE IS PLASTIC. ELEVATION SHALL BE TRANSFERRED BY A VIRGINIA STATE LICENSED SURVEYOR. ALL COSTS SHALL BE INCLUDED IN "CONTROL MONUMENT PEDESTAL".

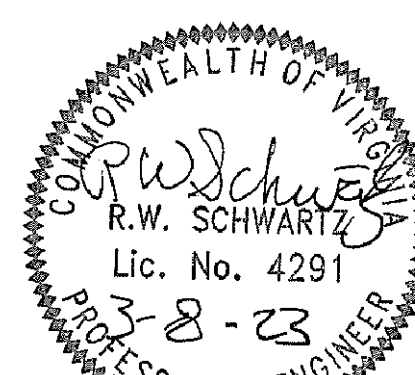
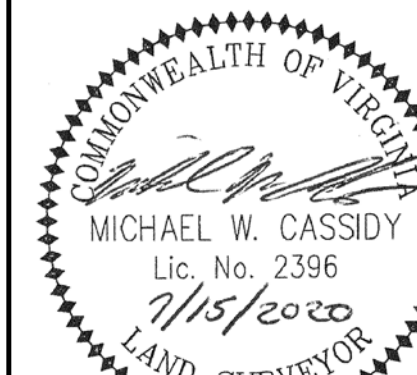
STAGING NOTES:

PRIOR TO INSTALLING STAGE 1 TRAFFIC CONTROL, CONTRACTOR SHALL INSTALL TEMPORARY LANE CLOSURES (INSIDE LANES), SAW CUT EXISTING ASPHALT ALONG MEDIAN CURB FACES, REMOVE EXISTING MEDIAN AND BACKFILL WITH 6" COMPACTED AGGREGATE BASE COURSE, TYPE I, SIZE NO. 21-A'S, 6" OF ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A & 2" ASPHALT CONCRETE, TYPE SM-9.5D AT THE FOLLOWING LOCATIONS:

ABUTMENT A APPROACH - STA. 8+85.20± TO 10+50.00
ABUTMENT B APPROACH - STA. 14+75.00 TO 16+35.00
MEDIAN WIDTH 4'±

AFTER THE PROJECT IS COMPLETED AND PRIOR TO THE INSTALLATION OF THE PERMANENT PAVEMENT LINE MARKINGS, THE CONTRACTOR SHALL INSTALL TEMPORARY LANE CLOSURES (INSIDE LANES), REMOVE MEDIAN PAVEMENT STRUCTURE AND INSTALL THE FOLLOWING:

ABUTMENT A APPROACH - MEDIAN STRIP, MS-1A (W = 4'±), STA. 8+85.20± TO 8+89.20
MEDIAN STRIP, MS-2 (W = 4'±), STA. 8+89.20 TO 10+50.00
ABUTMENT B APPROACH - MEDIAN STRIP, MS-1A (W = 4'±), STA. 14+75.00 TO 16+35.00





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

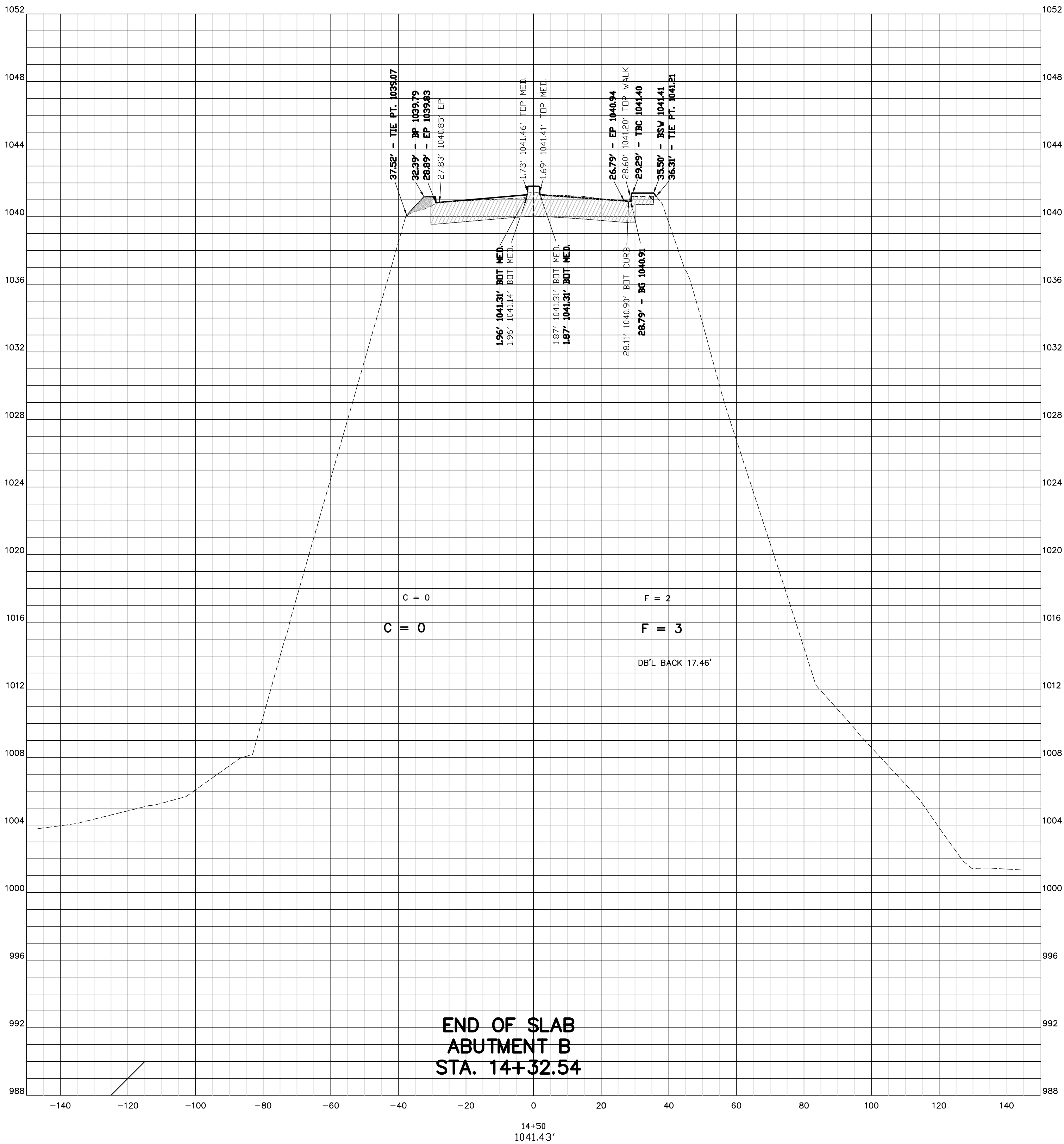
**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
ROAD PLAN**

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH
SCALE: 1" = 25' | PROJECT NO.:
DATE: MARCH 13, 2023 | SHEET: 41 OF 46

SURVEY & BASE SHEET | COMM. NO. 19051

STATE	ROUTE	FEDERAL AID	ROUTE	STATE	SHEET NO.
VA.	11	PROJECT	11	PROJECT	44
		NA		0011-129-247, P101, B606	

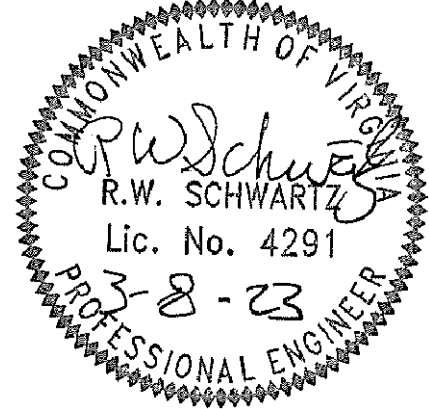
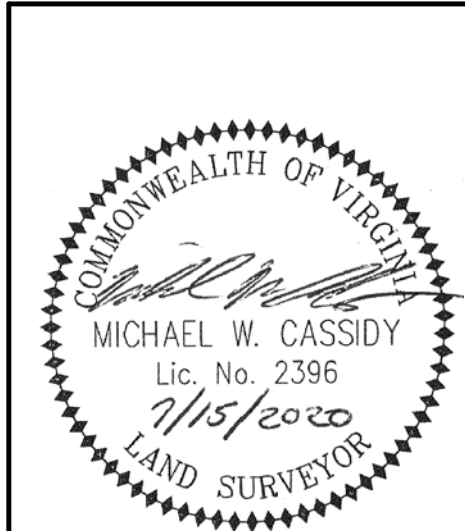
UPC 110689



CADD REFERENCE NO.: 19051ROADPLAN

—DENOTES DEMOLITION OF PAVEMENT

(F) —DENOTES FILL



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

**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
CROSS SECTION
STA. 14+50.00**

DESIGNED BY: RES | DRAWN BY: RES | CHECKED BY: MBH

SCALE: NOT TO SCALE | PROJECT NO.:

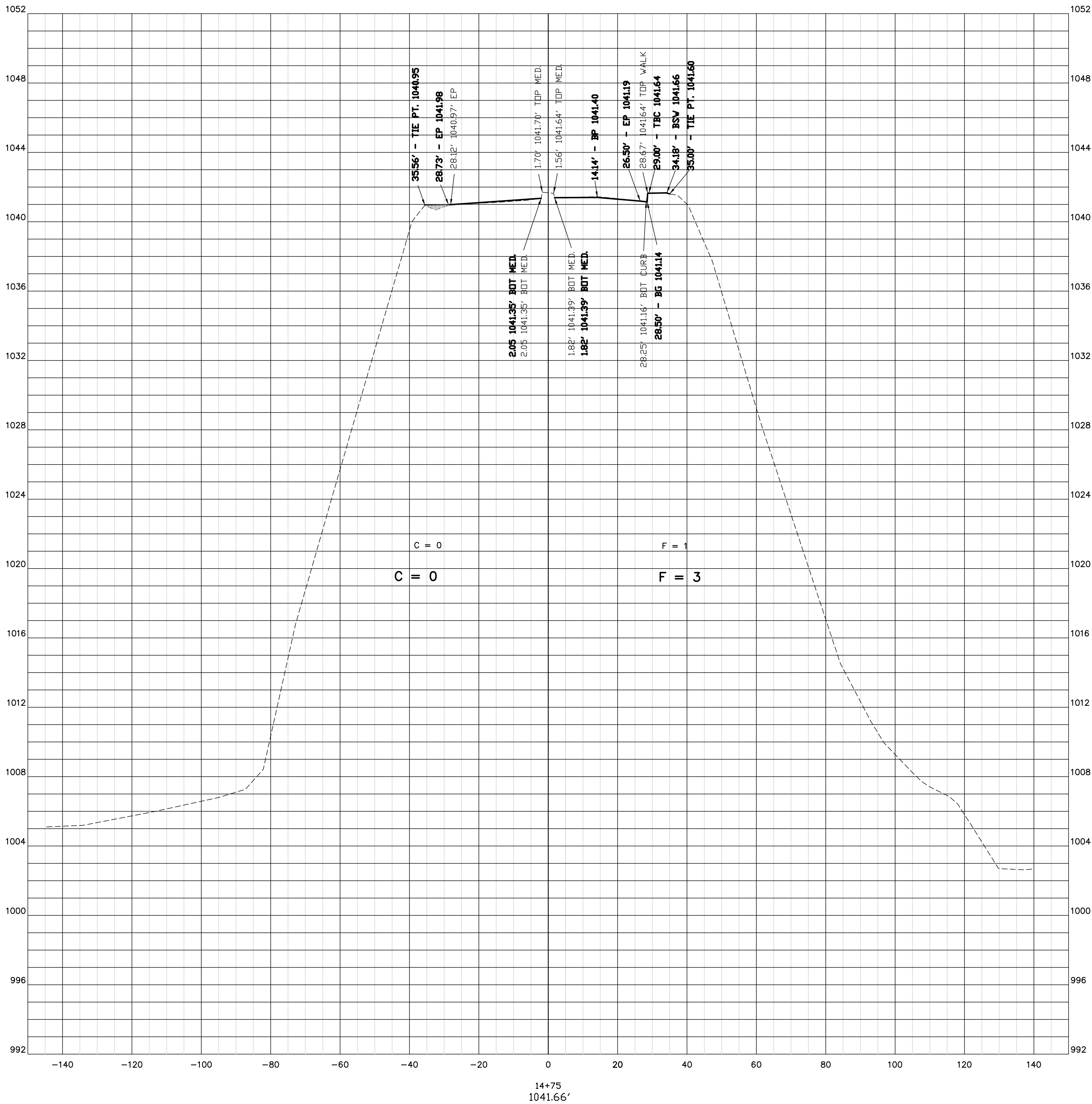
DATE: MARCH 13, 2023 | SHEET: 44 OF 46

SURVEY & BASE SHEET

COMM. NO. 19051

STATE	ROUTE	FEDERAL AID	ROUTE	STATE	SHEET NO.
VA.	11	PROJECT	11	PROJECT	45
		NA		0011-129-247, P101, B606	

UPC 110689



—DENOTES DEMOLITION OF PAVEMENT

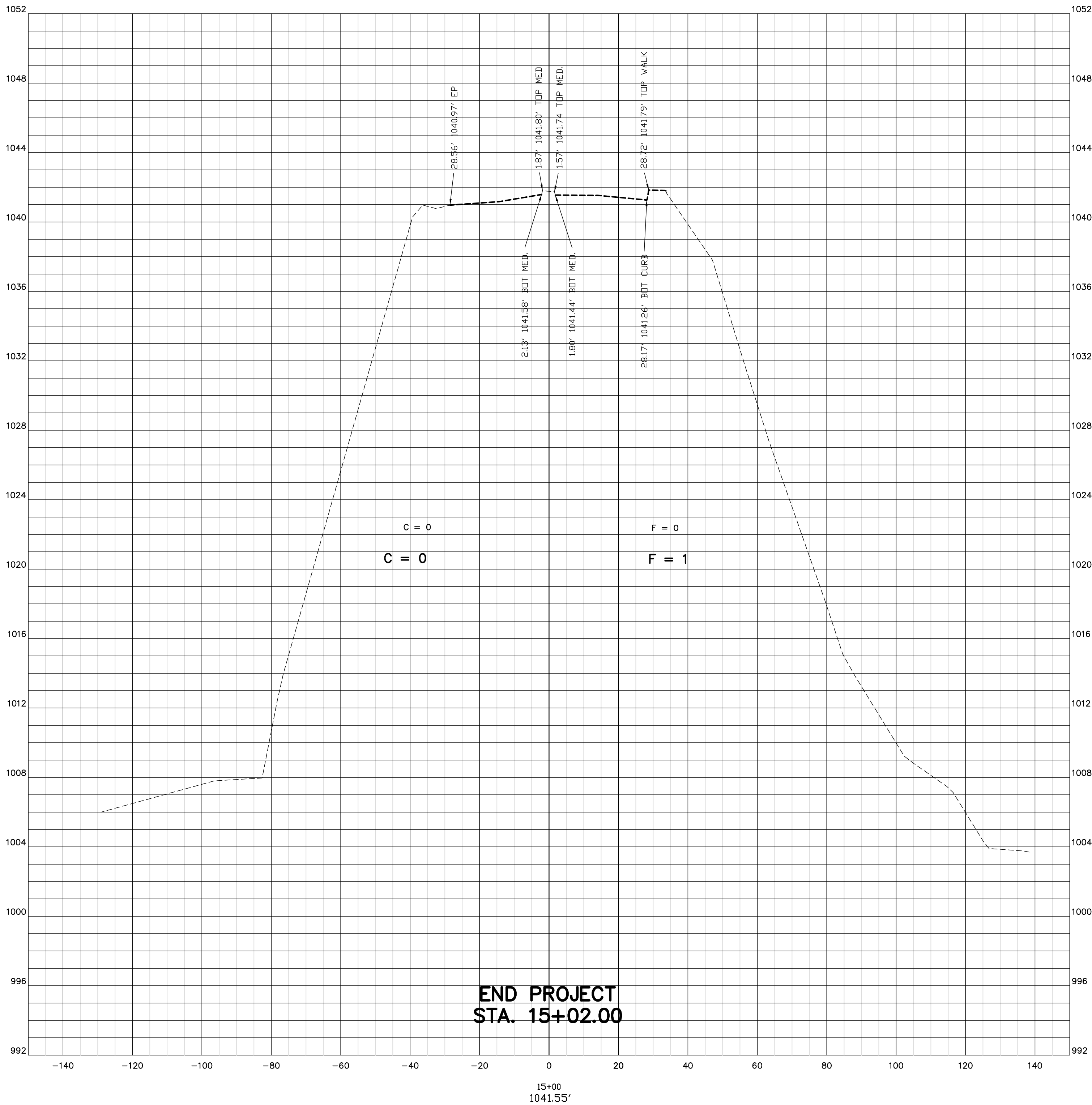
(F) —DENOTES FILL

SCHWARTZ & ASSOCIATES, INC. CONSULTING ENGINEERS 7331 TIMBERLAKE ROAD LYNCHBURG, VA.		
COLORADO STREET OVER NORFOLK SOUTHERN RAILROAD CITY OF SALEM, VA CROSS SECTION STA. 14+75.00		
DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: NOT TO SCALE	PROJECT NO.:	
DATE: MARCH 13, 2023	SHEET: 45 OF 46	

CADD REFERENCE NO.: 19051ROADPLAN

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	11	NA	NA	11	0011-129-247, P101, B606		46

UPC 110689



CADD REFERENCE NO.: 19051ROADPLAN

—DENOTES DEMOLITION OF PAVEMENT
F —DENOTES FILL

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

**COLORADO STREET OVER
NORFOLK SOUTHERN RAILROAD
CITY OF SALEM, VA
CROSS SECTION
STA. 15+00.00**

DESIGNED BY: RES	DRAWN BY: RES	CHECKED BY: MBH
SCALE: NOT TO SCALE	PROJECT NO.:	
DATE: MARCH 13, 2023	SHEET: 46 OF 46	

SURVEY & BASE SHEET

COMM. NO. 19051