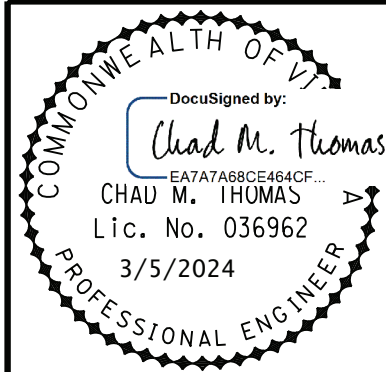


CITY OF SALEM

ENGINEERING DEPARTMENT

APPERSON DRIVE BRIDGE REPLACEMENT
OVER ROANOKE RIVER

[illegible]

Issue Date: 02/16/24	Drawn By: DKA Designed By: CTB	Checked By: TJT Date: 11/21/2023
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Mattern & Craig
ENGINEERS • SURVEYORS

701 FIRST STREET, S.W.
ROANOKE, VIRGINIA 24016
(540) 345-9342
FAX (540) 345-7691

APPPERSON DRIVE BRIDGE REPLACEMENT
TITLE SHEET, INDEX OF SHEETS,
AND TABLE OF REVISIONS
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
N/A

Commission Number:
3925B

Sheet No.:

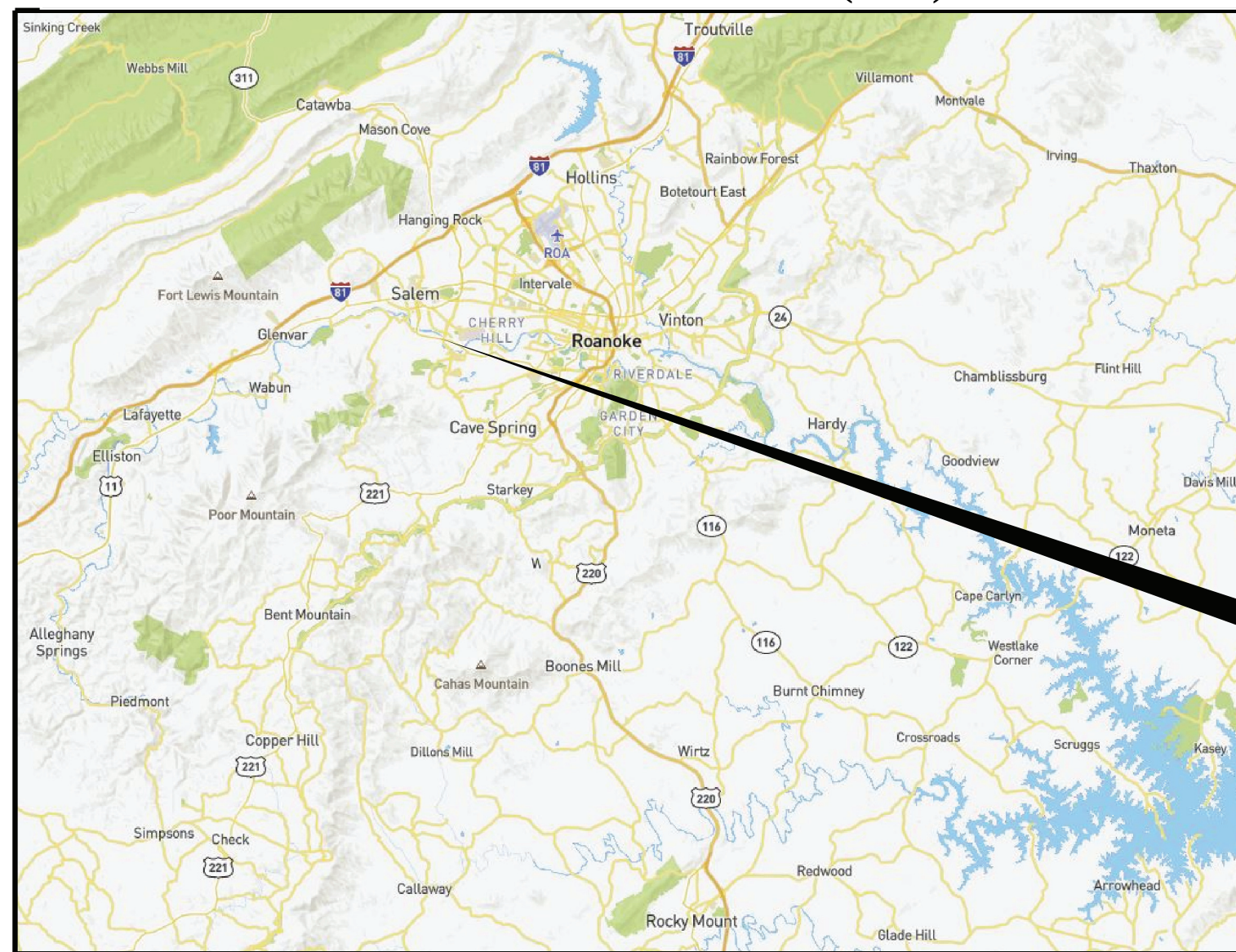
G-1

Sheet No.	Description
G-1	TITLE SHEET, INDEX OF SHEETS AND TABLE OF REVISIONS
C-1	SURVEY DATA SHEET
C-1A	EXISTING CONDITIONS
C-2	GENERAL NOTES FUNC. CLASS & TRAFFIC DATA
C-2A - C-2B	TYPICAL SECTIONS
C-2C	PLAN AND PROFILE DETAILS
C-3	PLAN SHEET
C-3A	PROFILE SHEETS
C-3B	STORMWATER & DRAINAGE DIVIDES
C-4	TRANSPORTATION MANAGEMENT PLAN
C-4A - C-4I	TEMPORARY TRAFFIC CONTROL PLAN
C-5 - C-5B	PAVEMENT MARKING AND SIGNING PLAN
U-1 - U-6	UTILITY PLANS
ES-1 - ES-2	EROSION AND SEDIMENT CONTROL NARRATIVE
ES-3A - ES-3B	EROSION AND SEDIMENT CONTROL PLAN SHEETS
XS-1 - XS-12	CROSS SECTIONS
B-1	BRIDGE PLAN, PROFILE, AND GENERAL NOTES
B-2	ESTIMATED QUANTITIES, INDEX OF SHEETS, ABBREVIATIONS, TABLE OF REVISIONS
B-3	SEQUENCE OF CONSTRUCTION PHASE I
B-4	SEQUENCE OF CONSTRUCTION PHASE II
B-5	SEQUENCE OF CONSTRUCTION PHASE III
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B-7	SUBSTRUCTURE LAYOUT, MISCELLANEOUS DETAILS
B-8	ABUTMENT A PLAN AND ELEVATION
B-9	ABUTMENT A FOOTING PLAN AND DETAILS
B-10	ABUTMENT B PLAN AND ELEVATION
B-11	ABUTMENT B FOOTING PLAN AND DETAILS
B-12	ABUTMENT B WINGWALLS AND DETAILS
B-13	PIER PLAN AND ELEVATION
B-14	PIER FOOTING PLAN AND SECTIONS
B-15	BEARING DETAILS
B-16	TRANSVERSE SECTION
B-17	FRAMING PLAN AND DIAPHRAGM DETAILS
B-18	BEAM DETAILS
B-19	CAMBER DIAGRAM
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B-22	DECK SLAB PLAN AND PLACEMENT SCHEDULE
B-23	ABUTMENT A SEMI-INTEGRAL BACKWALL PLAN AND ELEVATION
B-24	ABUTMENT A SEMI-INTEGRAL BACKWALL DETAILS AND NOTES
B-25	ABUTMENT B SEMI-INTEGRAL BACKWALL PLAN AND ELEVATION
B-26	ABUTMENT B SEMI-INTEGRAL BACKWALL DETAILS AND NOTES
B-27	42" CPSR RAILING (CPSR-1)
B-28	CPSR RAIL CONNECTIONS AND NOTES (CPSR-3)
B-29	CPSR RAIL CONNECTIONS (CPSR-4)
B-30	42" CPSR TERMINAL WALL (CPSRT-3)
B-31	ILLINOIS STEEL RAILING
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B-33	32" PEDESTRIAN RAILING (MOD. BPR-1)
B-34	WATER LINE SYSTEM - INSULATED
B-35 - B-37	REINFORCING STEEL SCHEDULES
B-38 - B-40	ENGINEERING GEOLOGY

UPC #110574

State PN: 0011-129-246, P101, B605

Federal PN: STP-5128(496)



VICINITY MAP
Not to scale



LOCATION MAP
Not to scale

Begin Construction: Sta. 37+27.34 (McVitty Road)
End Construction: Sta. 112+00.00 (Apperson Drive)

GENERAL CONSTRUCTION NOTES:

This project shall be constructed in accordance with:

1. VDOT Road and Bridge Specifications, 2020, and 2022 Supplement
2. VDOT Road and Bridge Standards, 2016
3. Virginia Work Area Protection Manual dated November 2020 and as amended by the Supplemental Specifications & contract documents for this project and these drawings.

LOCALLY ADMINISTERED PROJECTS	
CITY OF SALEM, VIRGINIA	
	
WILLIAM L. SIMPSON, JR., P.E.	
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
3-7-2024	Community Development Asst Director/City Engineer
DATE	TITLE OF POSITION

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION			
Anthony Ford, PE		Digitally signed by Anthony Ford, PE Date: 2024.07.01 15:22:05 -04'00'	
DATE	DISTRICT PLANNING	AND INVESTMENT	MANAGER
Thomas W. DiGiulian, PE		Digitally signed by Thomas W. DiGiulian, PE Date: 2024.07.02 08:48:52 -04'00'	
DATE	DISTRICT PROJECT	DEVELOPMENT	ENGINEER
Kenneth H King		Digitally signed by Kenneth H King Date: 2024.07.02 18:27:29 -04'00'	
DATE	DISTRICT	ADMINISTRATOR	

AN ADDENDUM IS REQUIRED, PRIOR TO THE ISSUANCE OF ANY LAND DISTURBANCE PERMIT, IDENTIFYING THE LOCATION, ADEQUATE STABILIZATION MEASURES AND AN APPROVED PERMIT FOR ANY OFF-SITE BORROW/FILL/WASTE SITE(S) THAT WILL BE USED IN CONJUNCTION WITH THIS PROJECT. THE ULTIMATE DESTINATION FOR DEBRIS FROM DEMOLITION MUST BE IDENTIFIED AT THE PRE-CONSTRUCTION CONFERENCE.

Rev. No.	Sheets Revised	Date
TABLE OF REVISIONS		

FEDERAL PROJECT NO.:	STP-5128(496)
STATE PROJECT NO.:	0011-129-246, P101, R201, B605
DATE:	FEB. 16, 2024
SHEET:	1 OF 86

SURVEY DATA SHEET

CONTROL STATION ID. COSM *09-09
ESTABLISHED BY: CALDWELL WHITE ASSOCIATES
VERTICAL DATUM BASED ON NAVD 88 ELEV. 999.84
HORIZONTAL DATUM BASED ON NAD 83

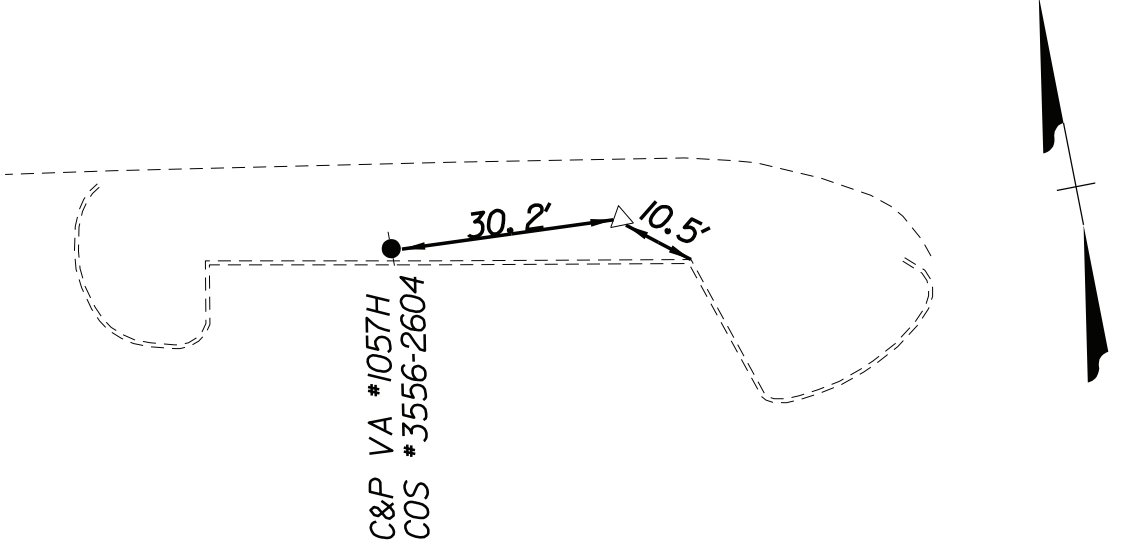
SALEM CITY CONTROL NETWORK
X (EAST) 11,035,598.6240
Y (NORTH) 3,626,043.6830

AZIMUTH TO STATION: COSM *09-10 IS 282° 21' 02"

DETAILED DESCRIPTION

To reach from the intersection of Apperson Drive and Electric Road (Route 419), go east on Apperson Drive +/- 200' to the monuments located in a grass strip in front of Wells Fargo Bank at 1432 Apperson Drive on the south side on Apperson Drive. The station is a brass disk in concrete flush with the ground and stamped COSM 09-09

For a detailed description see sketch below.



CONTROL STATION ID. COSM *09-10
ESTABLISHED BY: CALDWELL WHITE ASSOCIATES
VERTICAL DATUM BASED ON NAVD 88 ELEV. 1015.65
HORIZONTAL DATUM BASED ON NAD 83

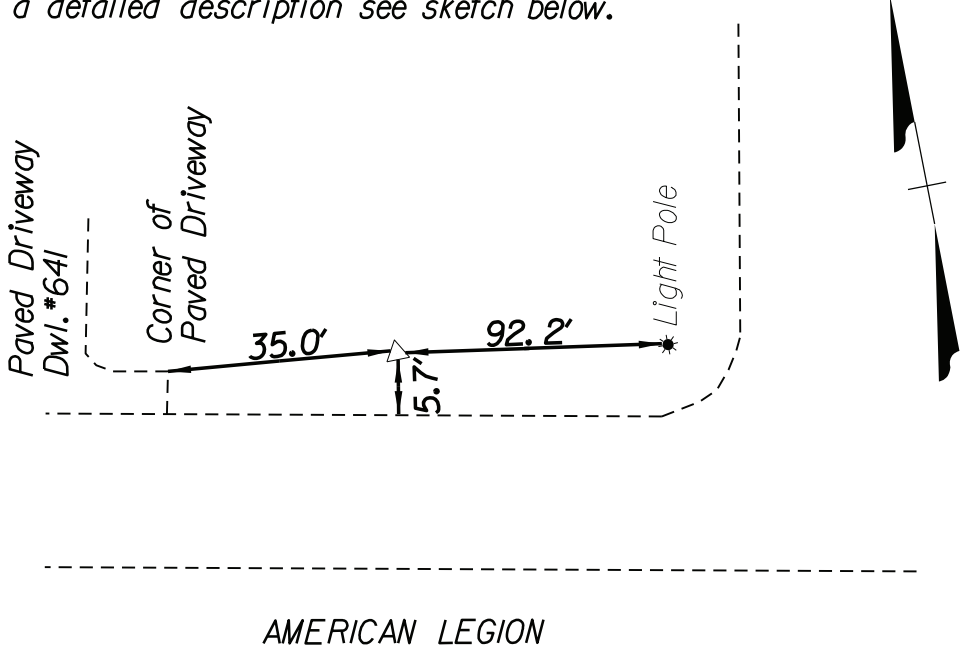
SALEM CITY CONTROL NETWORK
X (EAST) 11,033,125.0630
Y (NORTH) 3,626,585.2890

AZIMUTH TO STATION: COSM *09-09 IS 102° 21' 02"

DETAILED DESCRIPTION

To reach from the intersection of Apperson Drive and Electric Road (Route 419), go west on Apperson Drive to the intersection with Manchester Drive. The monument is 1/2-125' past the intersection of Apperson Drive and Manchester Drive and is on the north side of Apperson Drive. The station is a brass disk in concrete flush with the ground in front of 641 Apperson Drive and stamped COSM 09-10

For a detailed description see sketch below.



UTILITY LEGEND

	<i>Electric Box</i>		<i>Telephone Booth</i>
	<i>Electric Guy Pole</i>		<i>Telephone Guy Pole</i>
	<i>Electric Ground Light</i>		<i>Telephone Guy Wire</i>
	<i>Electric Guy Wire</i>		<i>Test Holes (All Utilities)</i>
	<i>Electric Hand Hole</i>		<i>Telephone Cell Tower</i>
	<i>Electric Meter</i>		<i>Telephone Hand Hole</i>
	<i>Electric Manhole</i>		<i>Telephone Manhole</i>
	<i>Electric Marker Post</i>		<i>Telephone Marker Post</i>
	<i>Electric Pedestal</i>		<i>Telephone Pole</i>
	<i>Electric Stub</i>		<i>Telephone Pedestal</i>
	<i>Electric Power Pole</i>		<i>Telephone Riser Pole</i>
	<i>Electric Power Riser Pole</i>		<i>Television Satellite Dish</i>
	<i>Electric Light Pole</i>		<i>Tower Anchor</i>
	<i>Electric Luminaire</i>		<i>Traffic Camera Pole</i>
	<i>End of Information (All Utilities)</i>		<i>Traffic Control Hand Hole</i>
	<i>Fire Hydrant</i>		<i>Traffic Control Manhole</i>
	<i>Fiber Optic Hand Hole</i>		<i>Traffic Control Guy Wire</i>
	<i>Fiber Optic Marker</i>		<i>Traffic Control Pedestal</i>
	<i>Fiber Optic Manhole</i>		<i>Traffic Signal Guy Pole</i>
	<i>Fiber Optic Pedestal</i>		<i>Traffic Signal Pole</i>
	<i>Gas Meter</i>		<i>Traffic Signal Pole w/Luminaire</i>
	<i>Gas Manhole</i>		<i>Telephone Stub</i>
	<i>Gas Marker Post</i>		<i>Television Hand Hole</i>
	<i>Gas Monitoring Well</i>		<i>Television Manhole</i>
	<i>Gas Stub</i>		<i>Television Marker Post</i>
	<i>Gas Test Station</i>		<i>Television Pedestal</i>
	<i>Gas Valve</i>		<i>Television Stub</i>
	<i>Gas Vent</i>		<i>Water Blow Off</i>
	<i>Gas Well</i>		<i>Water Well</i>
	<i>Sanitary Air Release Valve</i>		<i>Water Meter</i>
	<i>Sanitary Flow Arrow</i>		<i>Water Manhole</i>
	<i>Sanitary Stub</i>		<i>Water Marker Post</i>
	<i>Sewer Clean Out</i>		<i>Water Spigot</i>
	<i>Sanitary Force Main Valve</i>		<i>Water Slamese Connection</i>
	<i>Sanitary Marker Post</i>		<i>Water Stub</i>
	<i>Sanitary Manhole</i>		<i>Water Valve</i>
	<i>Sewer Vent Pipe</i>		<i>Water Post Inspection Valve</i>
	<i>Unknown Clean Out</i>		<i>Water Irrigation Valve</i>
	<i>Unknown Hand Hole</i>		<i>Water Steam Manhole</i>
	<i>Unknown Manhole</i>		<i>Water Steam Vent Pipe</i>

Fiber Optic Cable Television
 Chemical Line (above or below ground)
 Underground Fiber Optic Duct
 Fuel Line (above or below ground)
 Gas Line *
 Gas Line Duct
 Gravity Sewer *
 Sanitary Force Main *
 Traffic Control Fiber Optic
 Telephone Fiber Optic
 Underground Fiber Optic
 Unknown Utility Line
 Underground Power Cable
 Underground Power Cable Duct
 Underground Telephone Cable
 Underground Telephone Cable Duct
 Underground Traffic Control
 Underground Traffic Control Duct
 Underground Television Cable
 Underground Television Cable Duct
 Vacuum Sewer
 Water Line *
 Water Line Duct
 Depicted According To Utility Records **
 Abandoned According To Utility Records **
 According To Miss Utility Information **
 * Designate size (Variable from 0.75" to 54")
 ** Designate type (Unknown line is shown)

PLANIMETRIC LEGEND

	Advertising Sign
	Bore Hole
	Bench Mark
	Ballard Post
	Photo Control Point
	Control Station
	Drainage Flow Arrow (Storm Drainage)
	Filler Cap (Gas Stations)
	Flow Arrow (Streams & Rivers)
	Flag Pole
	Secondary Control Point
	Filler Pipe (Gas Stations)
	Gas Tank Access Manhole (Gas Stations)
	Gravesite Marker
	Guard Post
	Gas Vent Pipe (Gas Stations)
	Mail Box
	Mine Entrance
	Node Point
	Property Line Symbol
	Found Monumentation
	Property Monument
	Metal or Wooden Post
	Monitoring Well
	Road Arrow
	Reference
	Right of Way Monument
	VDOT Commission Monument
	Iron Right of Way Pin
	Railroad Mile Marker
	Railroad Right of Way Monument
	Railroad Signal Pole or Gate
	Railroad Telegraph Pole
	Railroad Telephone Pole
	Railroad Switch
	Shrub
	Storm Sewer Manhole
	Photogrammetric Target
	Tree
	Traffic Left Turn Arrow
	Traffic Left-Right Arrow
	Traffic Left-Thru Arrow
	Traffic Left-Thru-Right Arrow
	Traffic Right Turn Arrow
	Traffic Thru Arrow
	Traffic Thru-Right Arrow
	Traffic Springback Marker
	Wetland Flag Automatic
	Wetland Flag Manual
	Bridge Elevation
	Plan Elevation
	Water Elevation
	Elevation Tick Mark
	Connected Plat Symbol

Brush Line
 Pipe Culverts *
 City Line
 County Line
 Curb Only
 Curb and Gutter
 Fence Line
 Guardrail
 Hedge Row
 Jersey Barrier
 Obscure Areas
 Paved Ditches
 Railroad
 Right of Way
 State Line
 Edges of Water
 Sidewalks
 Wetlands
 Woods
 * Designate size of culverts
 (Variable from 12" to 120")

SURVEY NOTES:

1. THIS LOCATION SURVEY OF APPERSON BRIDGE REPLACEMENT WAS COMPLETED UNDER THE DIRECT RESPONSIBLE CHARGE OF TIMOTHY W. CALDWELL, LS FROM AN ACTUAL AIRBORNE AND GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED DURING AUGUST 3 - 21, 2020; AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
2. PROPERTY INFORMATION IS BASED ON DEEDS AND PLATS OF RECORD AND PHYSICAL EVIDENCE FOUND.
3. HORIZONTAL (NAD 83) AND VERTICAL (NAVD 88), BASED ON CITY OF SALEM CONTROL NETWORK.
4. UNDERGROUND UTILITY LOCATIONS BASED ON DESIGNATION BY MISS UTILITY TICKET NUMBER B01780206, 06/26/20, 04:39 PM

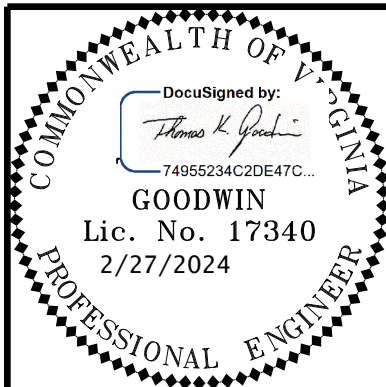
Ticket : B017802016 Rev: 00B Taken: 06/26/20 04:39 PM

State:VA Cnty:SALEM CITY Place:
Address : APPERSON DR
Responses due by:07/21/20 07:00 AM Expires:

When the member Marking Code is blue, click for additional information that may be provided by the Operator/Locator.

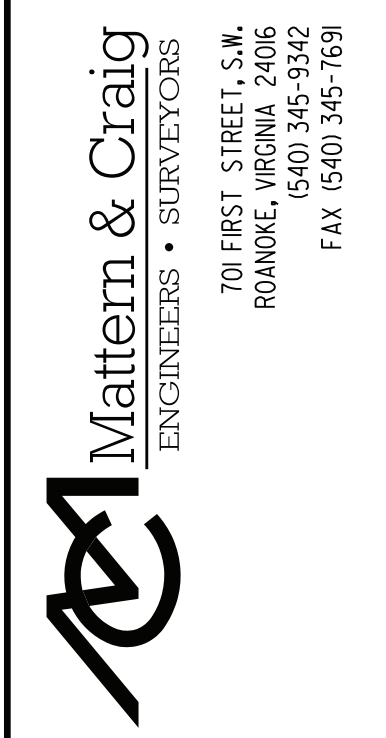
Marking Code	Description	Response
SLM	SALEM CITY-ELECTRIC (CISA65) Marked Field Contact: GEORGE TALTON (540)375-3030 In the event of damage to a facility call: (540)375-3030	07/02/20 12:4 PM 10
CMC	COMCAST (CMC503) Marked Field Contact: CABLE PROTECTION SERVICES (804)562-3861 In the event of damage to a facility call: (877)359-1821 ext opt 1	07/15/20 08:30 AM 10
SLM	SALEM CITY-WATER & SEWER (CWS65) Extraordinary circumstances exist Field Contact: LARRY GLE (540)375-3032 In the event of damage to a facility call: (540)375-3029	07/20/20 03:49 PM 97
RGC	ROANOKE GAS (RGC540) Marked Field Contact: ZACH BECKNER (540)655-0280 In the event of damage to a facility call: (540)777-4427	07/20/20 10:54 AM 10
VZN	VERIZON (VZN804) Marked Field Contact: UTILIQUEST (804)286-1721 In the event of damage to a facility call: (888)483-1233	07/17/20 02:35 PM 10

Project : 3925B - Apperson Drive Bridge Replacement
Client : City of Salem
Horizontal Datum Based On City of Salem Control Network
Vertical Datum Based On City of Salem Control Network
Survey By : T. W. Caldwell
Drawn By :
Check By : T. W. Caldwell
Date :
Scale : 1" = 25'



Revisions	Date

Issue Date:	02/16/2024
Drawn By:	MPF
Designed By:	MPF
Checked By:	TKG
Date:	02/16/2024



APPERSON DRIVE BRIDGE REPLACEMENT
SURVEY DATA SHEET
CITY OF SALEM, VA

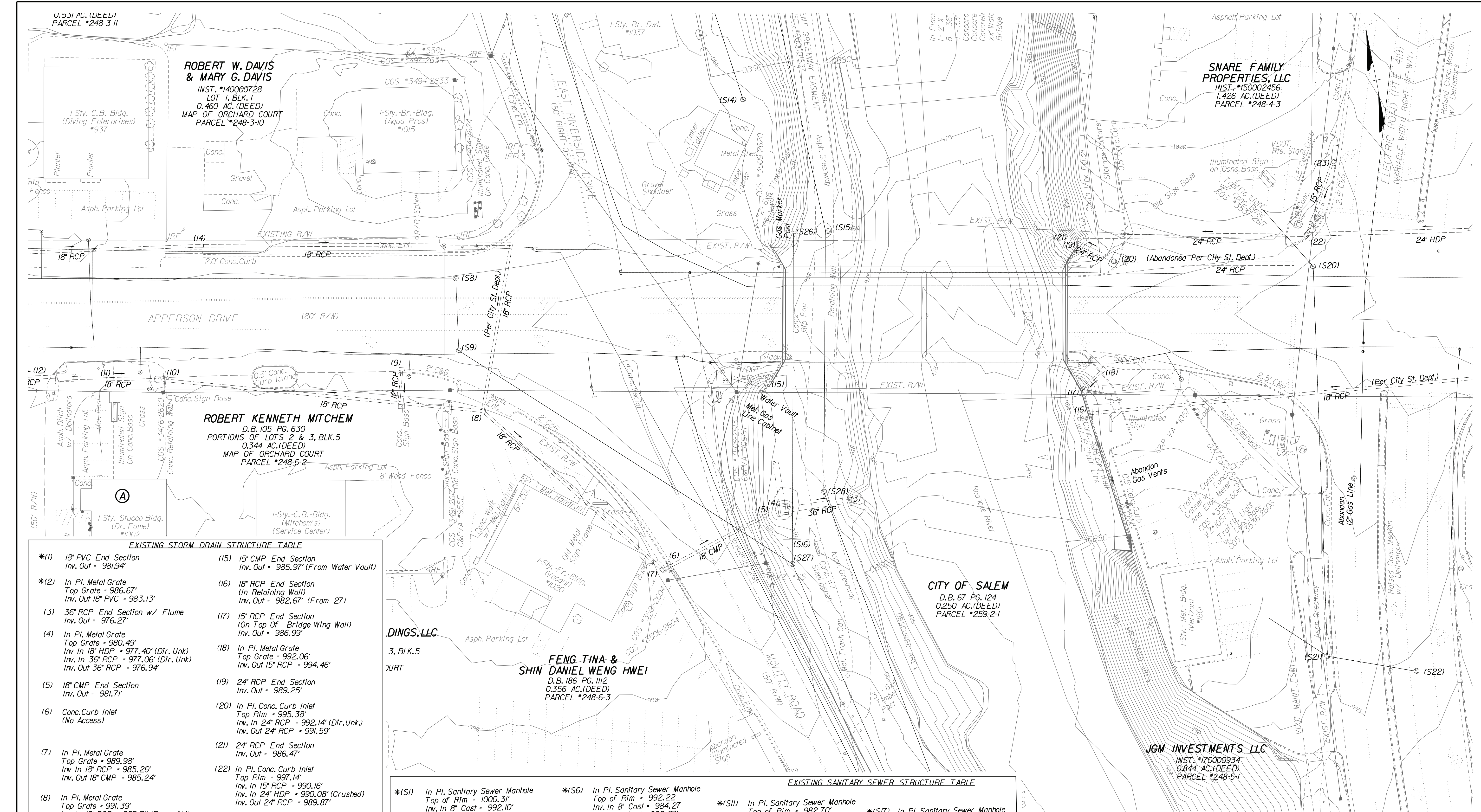
Vertical Scale:
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Horizontal Scale:
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Commission Number:
3925B

Sheet No.:

C-1

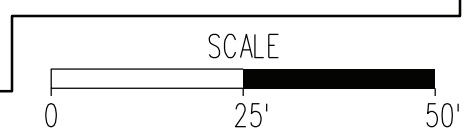


EXISTING STORM DRAIN STRUCTURE TABLE

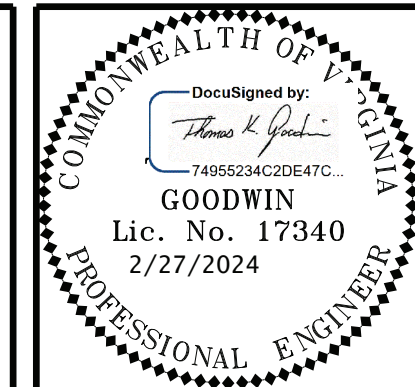
* (1) 18" PVC End Section Inv. Out = 981.94'	(15) 15" CMP End Section Inv. Out = 985.97' (From Water Vault)
* (2) In Pl. Metal Grate Top Grate = 986.67' Inv. Out 18" PVC = 983.13'	(16) 18" RCP End Section (In Retaining Wall) Inv. Out = 982.67' (From 27)
(3) 36" RCP End Section w/ Flume Inv. Out = 976.27'	(17) 15" RCP End Section (On Top Of Bridge Wing Wall) Inv. Out = 986.99'
(4) In Pl. Metal Grate Top Grate = 980.49' Inv. In 18" HDP = 977.40' (Dir. Unk.) Inv. In 36" RCP = 977.06' (Dir. Unk.) Inv. Out 36" RCP = 976.94'	(18) In Pl. Metal Grate Top Grate = 992.06' Inv. Out 15" RCP = 994.46'
(5) 18" CMP End Section Inv. Out = 981.71'	(19) 24" RCP End Section Inv. Out = 989.25'
(6) Conc. Curb Inlet (No Access)	(20) In Pl. Conc. Curb Inlet Top Rim = 995.38' Inv. In 24" RCP = 992.14' (Dir. Unk.) Inv. Out 24" RCP = 991.59'
(7) In Pl. Metal Grate Top Grate = 989.98' Inv. In 18" RCP = 985.26' Inv. Out 18" CMP = 985.24'	(21) 24" RCP End Section Inv. Out = 986.47'
(8) In Pl. Metal Grate Top Grate = 991.39' Inv. In 18" RCP = 985.71' (From *14) Inv. In 18" RCP = 985.89' Inv. Out 18" RCP = 985.66'	(22) In Pl. Conc. Curb Inlet Top Rim = 997.14' Inv. In 15" RCP = 990.16' Inv. In 24" HDP = 990.08' (Crushed) Inv. Out 24" RCP = 989.87'
(9) In Pl. Metal Grate Top Grate = 991.30' Inv. Out 12" RCP = 988.88' (Blind Tie Into 18" RCP)	(23) In Pl. Conc. Curb Inlet Top Rim = 998.41' Inv. Out 15" RCP = 994.69'
(10) 18" RCP Inv. Out = 989.74'	* (24) In Pl. Conc. Curb Inlet Top Rim = 999.18' Inv. Out 15" RCP = Full Trash
(11) 18" RCP Inv. In = 990.12' Inv. Out = 989.60'	* (25) In Pl. Conc. Curb Inlet Top Rim = 1000.24' (Could Not Access)
(12) 18" RCP Inv. In = 990.04' Inv. Out = 990.12'	* (26) In Pl. Conc. Curb Inlet Top Rim = 998.00' Inv. In 15" RCP = 991.48' Inv. In 20" RCP = 991.47' (Dir. Unk.) Inv. Out 24" HDP = 991.48' (Crushed)
* (13) 18" RCP Inv. Out = 988.52'	* (27) In Pl. Conc. Catch Basin Top Grate = 997.91' Inv. In 18" RCP = 994.13' Inv. In 18" RCP = 987.85' Inv. Out 18" RCP = 987.80'
(14) In Pl. Metal Grate Top Grate = 991.61' Inv. In 18" RCP = 987.85' Inv. Out 18" RCP = 987.80'	* Denotes Drainage Structures Outside Of The Project Limits

EXISTING SANITARY SEWER STRUCTURE TABLE

* (S1) In Pl. Sanitary Sewer Manhole Top of Rim = 992.31' Inv. In 8" Cast = 992.10' Inv. Out 8" Cast = 991.96'	* (S6) In Pl. Sanitary Sewer Manhole Top of Rim = 992.22' Inv. In 8" Cast = 984.27' Inv. In 8" Cast = 982.87' Inv. Out 8" Cast = 982.82'	* (S11) In Pl. Sanitary Sewer Manhole Top of Rim = 982.70' Inv. Flow 54" RCP = 970.60'	* (S17) In Pl. Sanitary Sewer Manhole Top of Rim = 987.08' Inv. In 4" Lateral = 981.18' Inv. In 36" RCP = 972.68' Inv. Out 36" RCP = 972.63'	(S22) In Pl. Sanitary Sewer Manhole Top of Rim = 994.63' Inv. In 8" Lateral = 989.88' (From Bank) Inv. In 10" PVC = 986.48' Inv. Out 10" PVC = 986.38'	(S26) In Pl. Sanitary Sewer Manhole Top of Rim = 980.63' Inv. Flow = +/- 973.60' (Full of Water)
* (S2) In Pl. Sanitary Sewer Manhole Top of Rim = 997.00' Inv. In 4" Lateral = 988.69' Inv. In 4" Lateral = 990.01' Inv. In 8" Cast = 987.68' Inv. Out 8" Cast = 987.58'	* (S7) In Pl. Sanitary Sewer Manhole Top of Rim = 991.75' Inv. In 4" Lateral = 987.25' Inv. In 6" Cast = 986.57' Inv. Out 6" Cast = 986.49'	* (S12) In Pl. Sanitary Sewer Manhole Top of Rim = 987.83' Inv. In 8" PVC = 982.40' Inv. Out 8" PVC = 982.40'	* (S18) In Pl. Sanitary Sewer Manhole Top of Rim = 985.06' Inv. Flow 54" RCP = 969.22'	* (S23) In Pl. Sanitary Sewer Manhole Top of Rim = 1000.14' Inv. In 6" PVC = 993.43' (From Sheetz) Inv. Out 10" 8" Cast = 993.34'	(S27) In Pl. Sanitary Sewer Manhole Top of Rim = 984.84' Inv. In 8" Cast = 974.30' Inv. Flow 36" = 972.94'
* (S3) In Pl. Sanitary Sewer Manhole Top of Rim = 994.58' Inv. In 8" PVC = 986.01' Inv. Out 8" Cast = 985.95'	(S8) Sanitary Sewer Manhole Top of Rim = 992.06' Inv. In 8" Cast = 982.56' Inv. Out 8" Cast = 982.54'	* (S13) In Pl. Sanitary Sewer Manhole Top of Rim = 982.26' Inv. 8" PVC = 975.30' Inv. Flow 54" RCP = 970.26'	* (S19) In Pl. Sanitary Sewer Manhole Top of Rim = 985.37' Inv. In 30" RCP = 972.42' Inv. Out 30" RCP = 972.38'	* (S24) In Pl. Sanitary Sewer Manhole Top of Rim = 1000.44' Inv. In 6" Lateral = 994.37' (From Long Johns) Inv. In 8" Cast = 993.24' (From S23) Inv. In 8" Cast = 989.29' Inv. In 8" Cast = 989.24' (Dir. Unk.) Inv. Out 8" Cast = 988.90'	(S28) In Pl. Sanitary Sewer Manhole Top of Rim = 983.00' (Paved Over Location Based) (On City Paint Mark)
* (S4) In Pl. Sanitary Sewer Manhole Top of Rim = 994.75' Inv. In 8" Cast = 987.94' (From S5) Inv. In 8" Cast = 986.01' (From S6) Inv. Out 8" Cast = 985.23'	(S9) In Pl. Sanitary Sewer Manhole Top of Rim = 992.38' Inv. In 4" PVC Lateral = 985.11' Inv. In 8" Cast = 981.41' (From S8) Inv. In 8" Cast = 981.41' (From S6) Inv. Out 8" Cast = 981.28' (Dir. Unk.)	(S14) In Pl. Sanitary Sewer Manhole Top of Rim = 990.56' Inv. Out 8" PVC = 981.81'	(S20) In Pl. Sanitary Sewer Manhole Top of Rim = 997.01' Inv. In 4" Lateral = 991.30' (From Tire Store) Inv. In 8" Cast = 989.06' Inv. Out 8" Cast = 989.04'	* (S25) In Pl. Sanitary Sewer Manhole Top of Rim = 1001.34' Inv. In 6" Lateral = 992.34' (Lat From Bank) Inv. In 8" Cast = 988.13' Inv. Out 8" Cast = 988.09'	* Denotes Sewer Structures Outside Of The Project Limits
* (S5) In Pl. Sanitary Sewer Manhole Top of Rim = 998.68' Inv. In 4" Lateral = 992.54' Inv. In 8" Cast = 992.64' Inv. Out 8" Cast = 992.16'	* (S10) In Pl. Sanitary Sewer Manhole Top of Rim = 984.91' Inv. Flow = 973.71' (Full of Water)	(S15) In Pl. Sanitary Sewer Manhole Top of Rim = 980.23' Inv. Flow 54" RCP = 970.03'	(S21) In Pl. Sanitary Sewer Manhole Top of Rim = 995.78' Inv. In 6" Lateral = 987.10' (From Verizon Store) Inv. In 8" Cast = 986.95' Inv. Out 10" PVC = 986.89'		
		(S16) In Pl. Sanitary Sewer Manhole Diverter Structure Top of Rim = 982.78' Bottom of Box = 973.58' 4' of Water in Bottom			



2/15/2024 6:04:24 PM



Date	
Revisions	

Issue Date:	02/16/2024
Drawn By:	MPF
Designed By:	MPF
Checked By:	TKG
Date:	02/16/2024

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APPERSON DRIVE BRIDGE REPLACEMENT
EXISTING CONDITIONS
CITY OF SALEM, VA

Vertical Scale:	N/A
Horizontal Scale:	AS NOTED
Commission Number:	3925B

Sheet No.:
C-1A

GENERAL NOTES

GRADING

- G-1 The grade line denotes top of finished pavement unless shown otherwise on typical sections or plans.
- G-2 Earthwork quantities on this project are based on anticipated settlement and may require adjusting during construction.
- G-4 The cost of removal of all existing concrete items located in the area to be graded shall be included in the price bid for "Earthwork".
- G-5 All grading (regular excavation, embankment, borrow and waste material, etc.) shall be considered as "Earthwork" and be paid for on a lump sum basis, unless included in payment for other bid items. Contractor shall secure any offsite areas required for borrow/waste site and submit documentation (E.&S.C Plans, etc.) for city approval.
- G-6 The borrow material for this project shall be a minimum CBR 7 or as approved by the City Engineer.

NOTE: Any material defined as unsuitable shall be defined by having any of the following properties as determined by lab tests: LL>50, PI>20, or CBR<5. If unsuitable material is determined onsite, payment will be made in accordance with VDOT Spec 303.06 for undercut excavation.

DRAINAGE

- D-1 The horizontal location of all drainage structures shown on these plans is approximate only, with the exception of structures showing specific stations, special design bridges and storm sewer systems.
- D-2 The horizontal location and invert elevations shown for proposed culverts and storm sewer outfall pipes are based on existing survey data and required design criteria. If during construction, it is found that the horizontal location or invert elevations shown on the plans differ significantly from the horizontal location or elevations of the stream or swale in which the culvert or storm sewer outfall pipe is to be placed, the Contractor shall confer with, and get approval from, the City Engineer before installing the culvert or storm sewer outfall pipe.
- D-3 The "H" dimensions shown on plans for drop inlets and junction boxes and the "L.F." dimensions shown for manholes are for estimating purposes and are based on the proposed invert elevations shown for the structure and the anticipated top (rim) elevation based on existing or proposed finished grade. The actual "H" or "L.F." dimensions are to be determined by the contractor from field conditions.
- D-7 All pipe on this project shall be concrete unless otherwise noted. For strength, sheet thickness, or class designation; available sizes; height of cover limitations; and other restrictions for a particular pipe type or height cover, see the applicable sections of the VDOT Road and Bridge Standards PC-1.
- D-10 The proposed riprap may be omitted if the slope designated for placement of riprap is found to be comprised of solid rock or closely consolidated boulders with soundness, size and weight equal to, or exceeding, the specifications for the proposed riprap with approval of the City Engineer.
- D-16 When CG-6 or CG-7 is specified on a radius (such as at a street intersection), the Engineer may approve a decrease in the cross slope of the gutter to facilitate proper drainage.

PAVEMENT

- P-2 The pavement materials on this project will be paid for on a tonnage 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 the theoretical maximum density.
- NOTE: Contractor shall match all existing pavement edges and pavement markings where new pavement/pavement markings meet existing pavement/pavement markings.

INCIDENTALS

- I-4 All trees located within the Clear Zone or within a minimum of 30 feet of the edge of pavement, within the limits of the right of way or construction easement, unless otherwise noted on plans or directed by the Engineer, shall be removed, as provided for a Section 301 of the applicable VDOT Road and Bridge Specifications.
- I-7 Where Standard slope roundoffs would damage trees, bushes or other desirable vegetation, they shall be omitted when so ordered by the City Engineer.
- I-9 When no centerline alignment is shown for a proposed entrance, the entrance shall be constructed in the same location as the existing entrance.
- I-14 Salvaged guardrail materials not used in the new construction shall become the property of the Contractor and shall be disposed of at a licensed landfill, recycled or be retained by the Contractor.
- I-18 All pavement markings and traffic flow arrows shown on the roadway construction plans are schematic only. The actual location and application of pavement markings shall be in accordance with Section 704 of the applicable VDOT Road and Bridge Specifications, MUTCD, sequence of construction/traffic control plans, pavement marking plan sheet C-5B and as directed by the Engineer.
- I-19 The following sources, under contract with The City of Salem, have provided information on this project:
- Hydraulic Design - Mattern & Craig

Roadway Design - Mattern & Craig

Utility Design - Mattern & Craig

Utility Designation - Miss Utility

Utility Location - N/A

Survey - Mattern & Craig

Bridge Design - Mattern & Craig
- If questions or problems arise during construction, please contact the City of Salem, Va. Department of Public Works.
- I-20 The Official Electronic .pdf Version of the plans will override the paper copies or prints of specific layers.
- Portions of this plan assembly have been CADD generated. To assist in the construction of the project electronic files will be available to the prime contractor during bids and after award of the contract.
- I-21 All electronic plan assemblies will include the construction plans in two formats: .pdf files and MicroStation format (.dgn) files. Only the .pdf files will be considered as part of the official plan assembly.
- The MicroStation format (.dgn) files are furnished only as information for the contractor. These plans are developed in layers (levels) to aid in readability. However, the construction items may or may not be in the proper layering scheme as described in the VDOT CADD Manual. The MicroStation files will only match the scanned files if all levels are turned on. A MicroStation Software license is required to be able to read these files.

EROSION AND SEDIMENT CONTROL (ESC)

- E-1 If the removal of Brush Silt Barrier is specified by the plans or required by the Engineer, the cost of removal and disposal of brush shall be in accordance with Section 109 of the applicable VDOT Road and Bridge Specifications.
- E-2 Rock for Check Dams, Inlet Protection, Erosion Control Stone and Riprap shall be in accordance with Section 203 and Section 414 of the applicable VDOT Road and Bridge Specifications.
- E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

	Denotes Rolled Erosion Control Product, Temporary, St'd. EC-2 Type 1, 2, 3 or 4
	Denotes Rolled Erosion Control Product, Permanent, St'd. EC-3 Type 1, 2 or 3
	Denotes Temporary Silt Fence, St'd EC-5 Type A or B
	Denotes Temporary Diversion Channel, St'd EC-12
	Denotes Temporary Diversion Dike, St'd EC-9
	Denotes Turbidity Curtain, Type - Impervious
	Denotes Turbidity Curtain, Type - Pervious
	Denotes Rock Check Dam, Type I: St'd EC-4
	Denotes Rock Check Dam, Type II: St'd EC-4
	Denotes Inlet Protection, Type A: St'd EC-6
	Denotes Inlet Protection, Type B: St'd EC-6
	Denotes Slope Interrupter: St'd EC-15
	Denotes Limit of Disturbance

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
Urban Principal Arterial - Level - 35 MPH Design Speed	
	Fr: 1.03 Mi. Colorado Street To: SR 419 Electric Road
ADT (2021)	20,000
D (%) (design hour)	57
T (%) (design hour)	1
V (MPH)	35



Date									
Revisions									

Issue Date:	02/16/2024	Drawn By: MPF	Designed By: MPF	Checked By: THG	Date: 02/16/2024
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APPERSON DRIVE BRIDGE REPLACEMENT

GENERAL NOTES

FUNC. CLASS. & TRAFFIC DATA

CITY OF SALEM, VA

Vertical Scale:
N/A

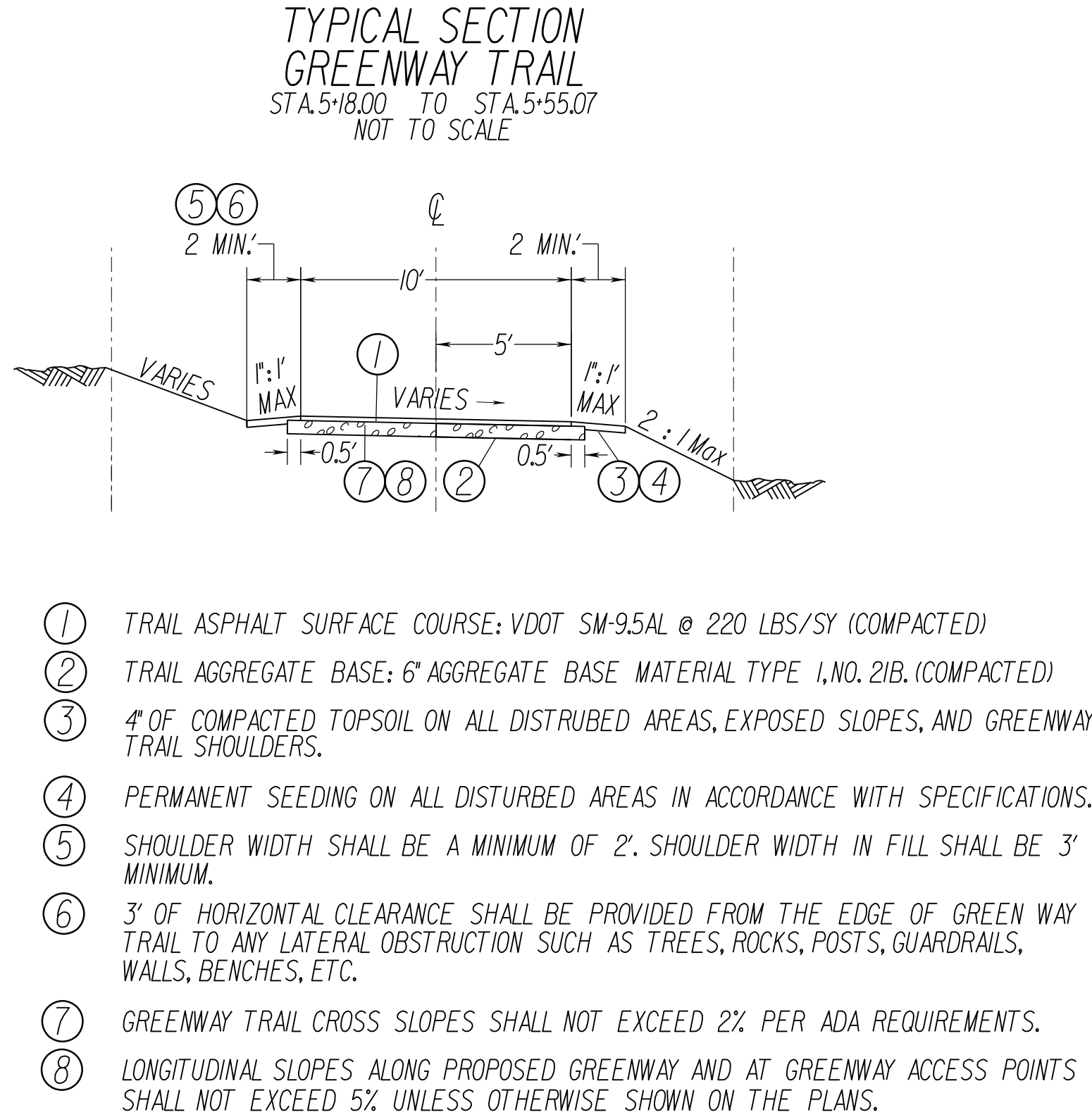
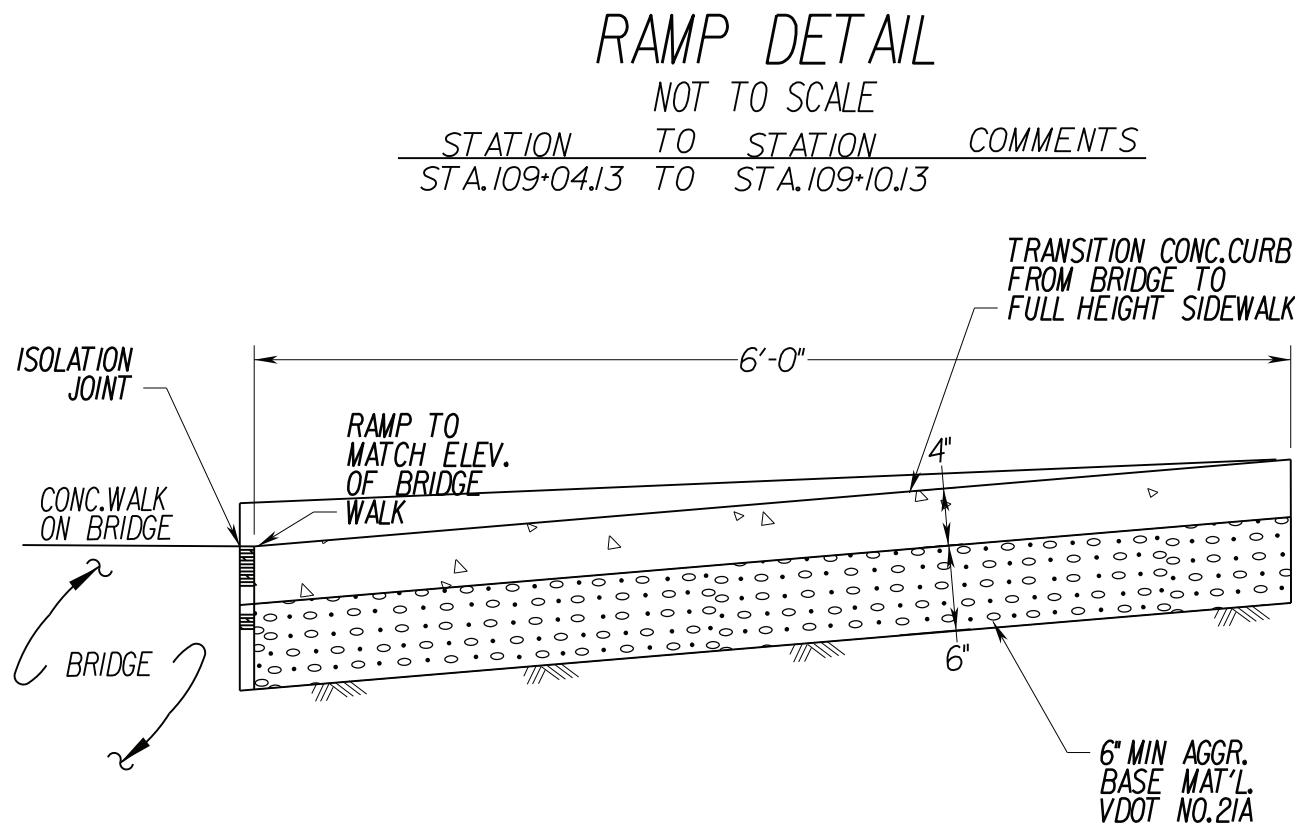
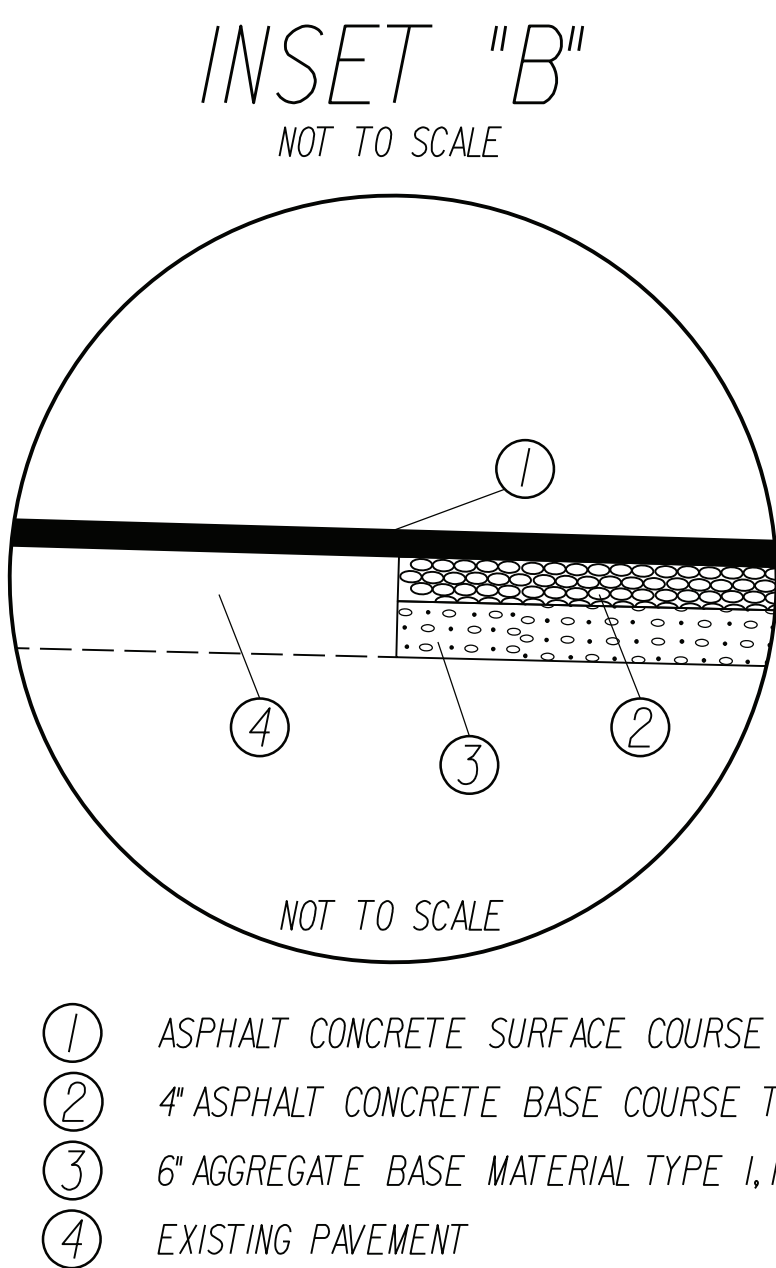
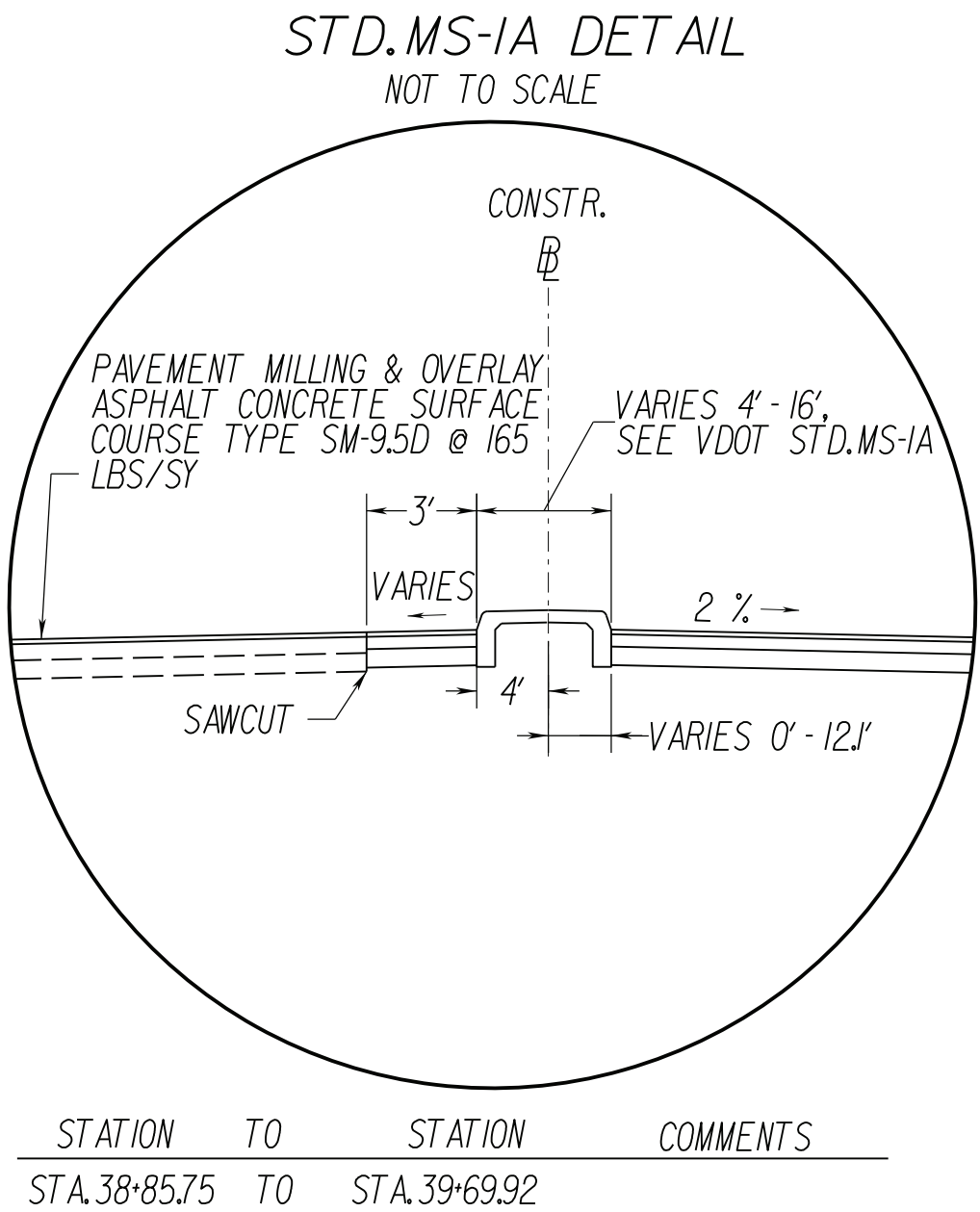
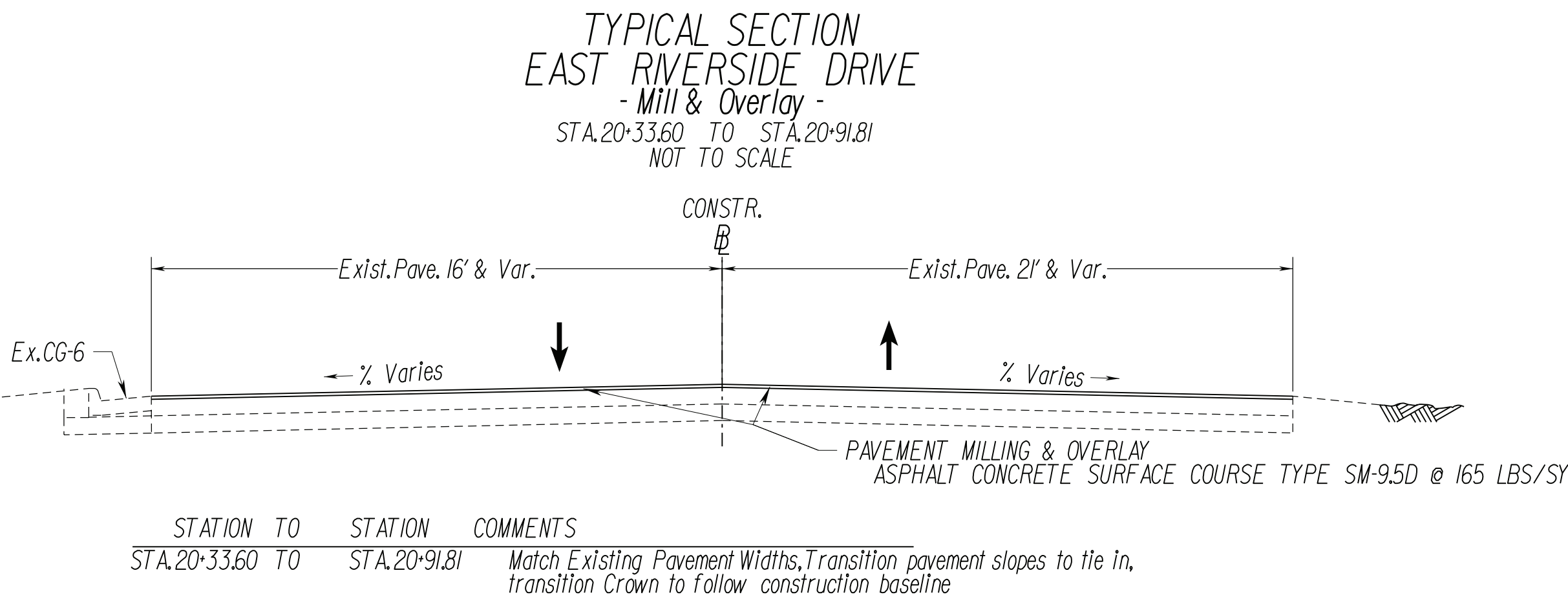
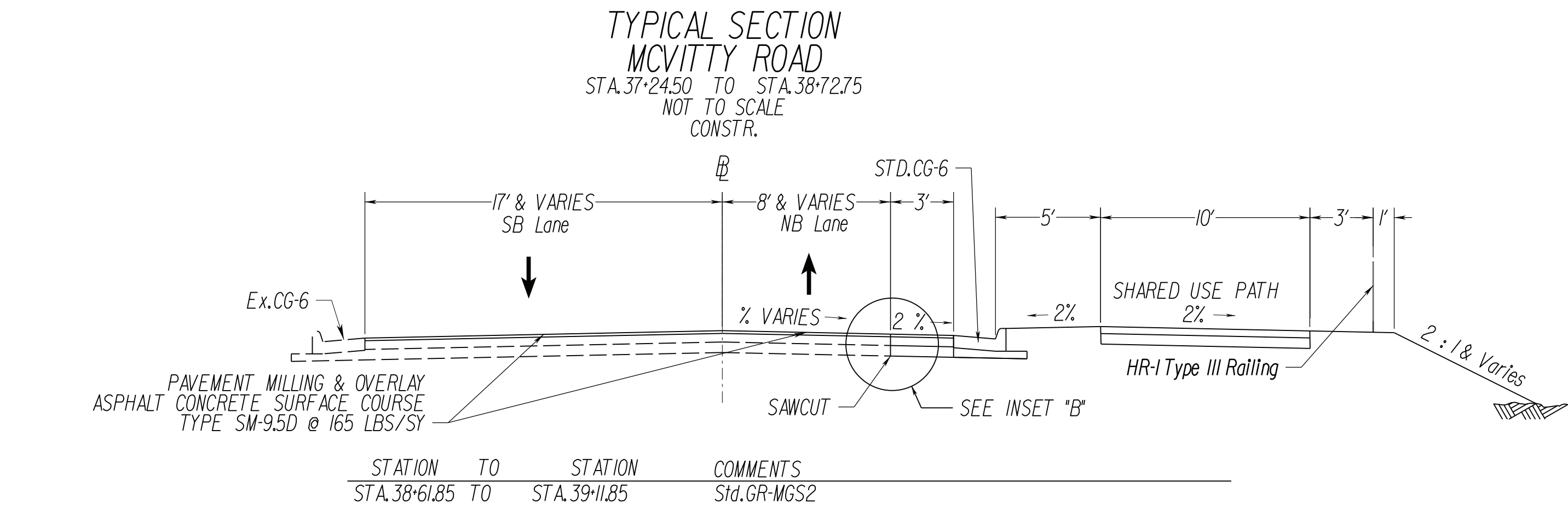
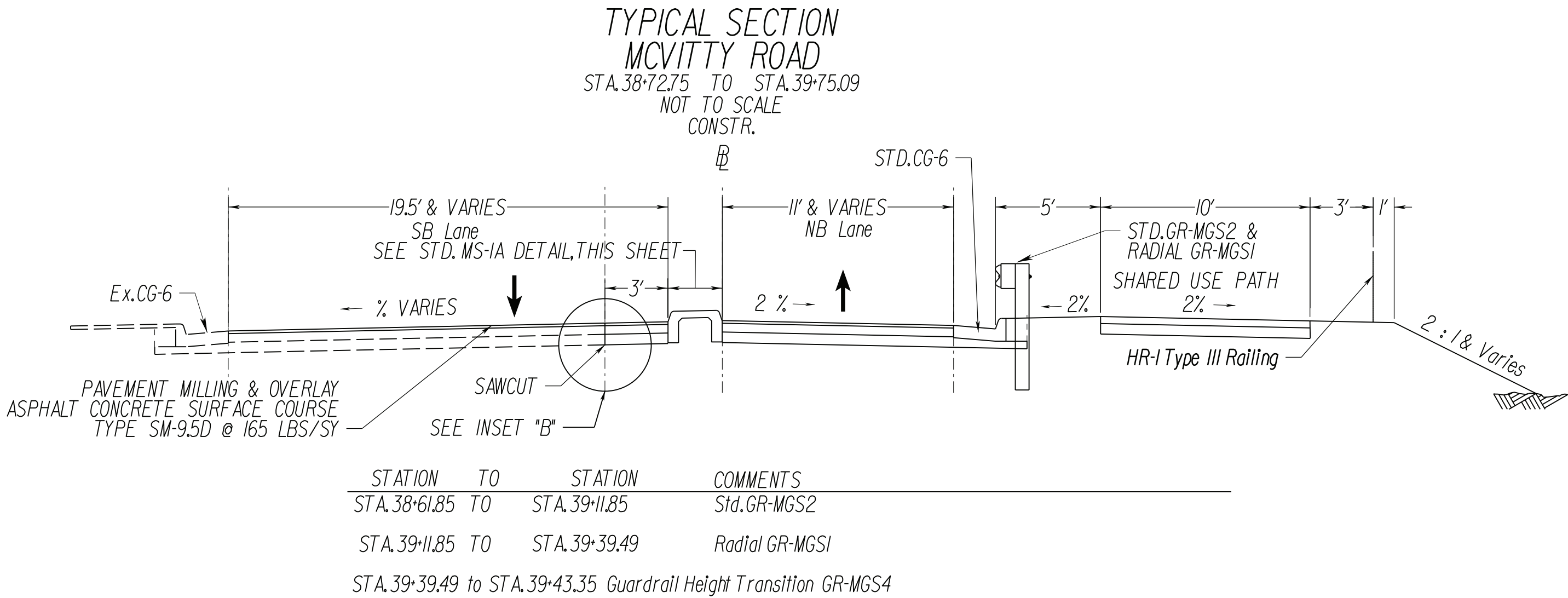
Horizontal Scale:
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Commission Number:
3925B

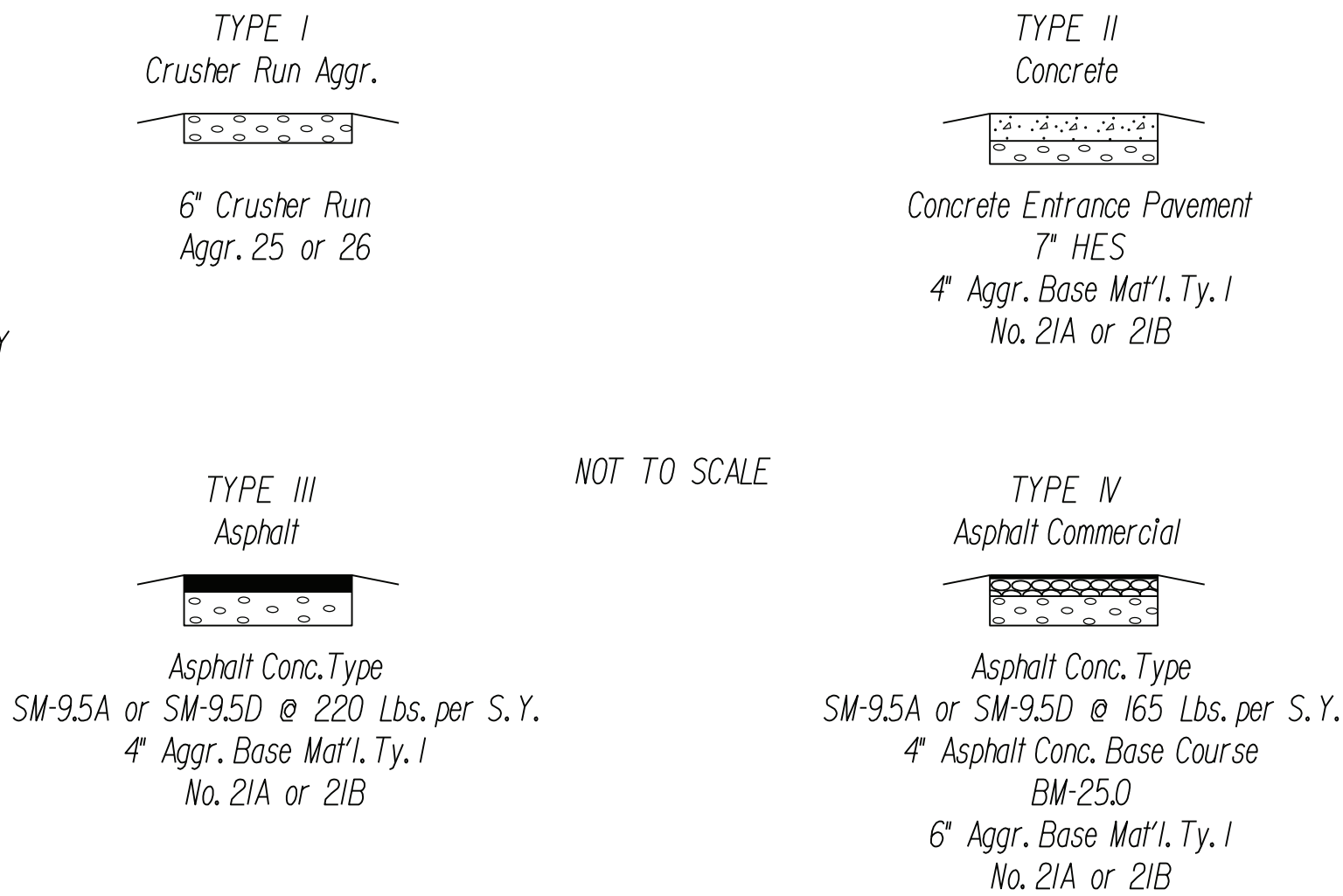
Sheet No.:

C-2

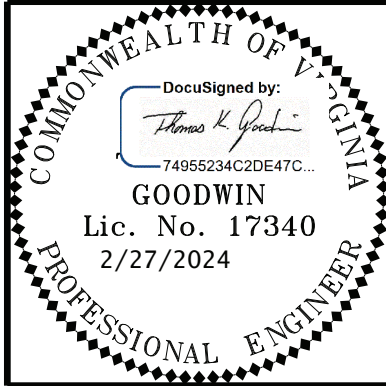
TYPICAL SECTIONS



PRIVATE AND COMMERCIAL ENTRANCES



The type of entrance (I, II, III, IV) to be constructed will be determined by the existing condition at the time of construction.



Date									
Revisions									

Issue Date:	02/16/2024	Drawn By:	MPF	Designed By:	MPF	Checked By:	TKG	Date:	02/16/2024
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APPERSON DRIVE BRIDGE REPLACEMENT
TYPICAL SECTIONS
CITY OF SALEM, VA

Vertical Scale:	N/A
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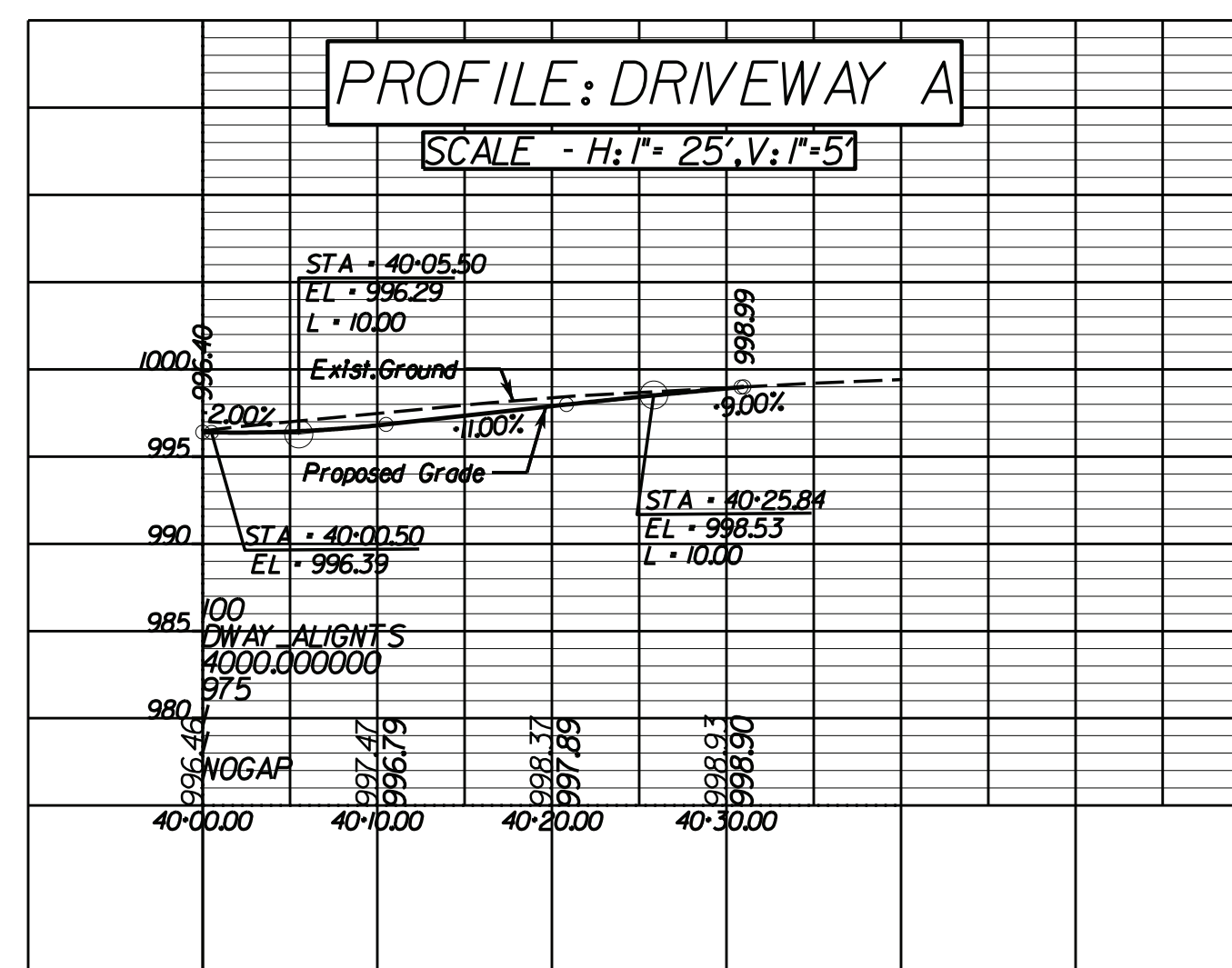
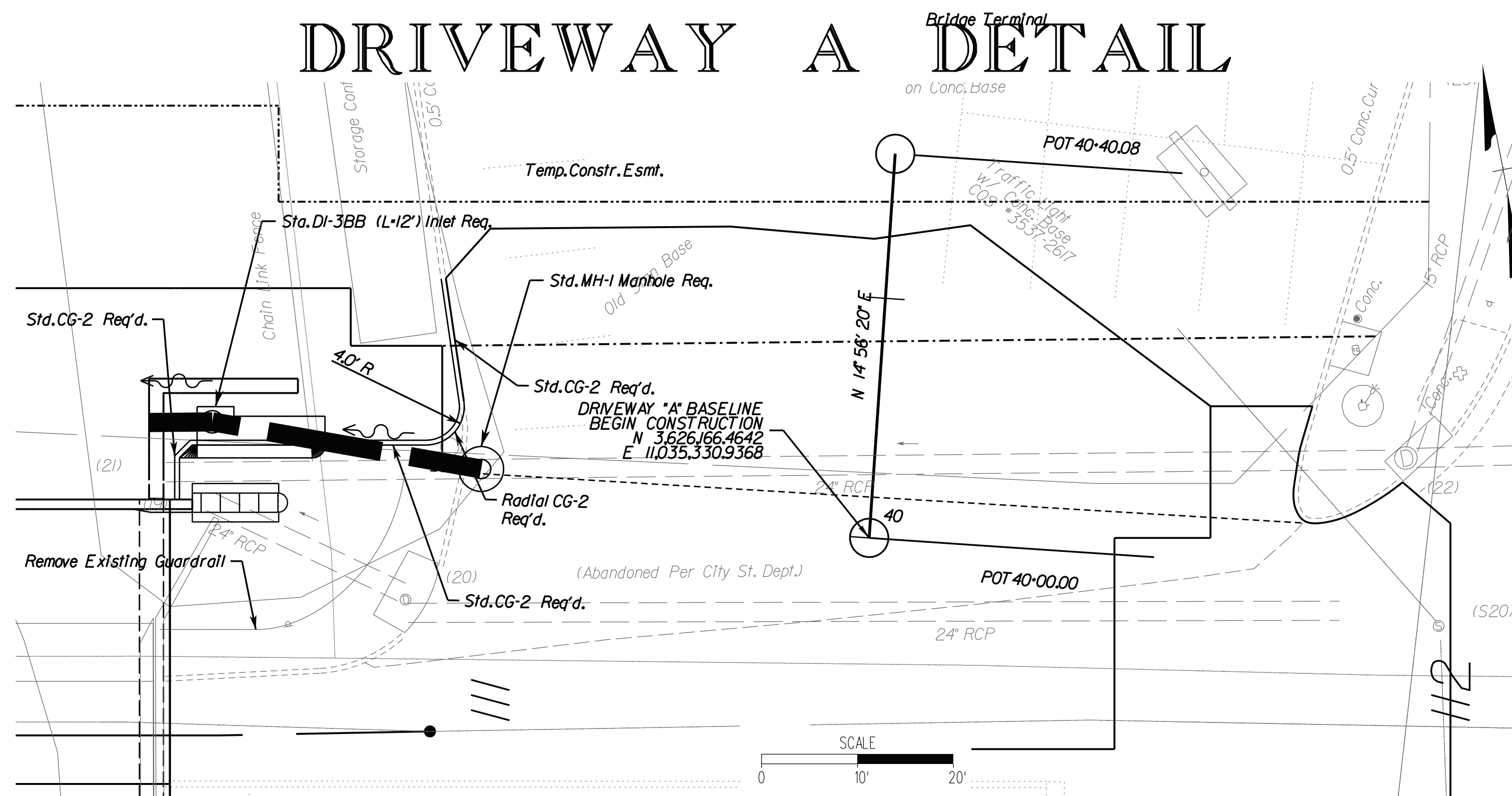
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Commission Number:	3925B
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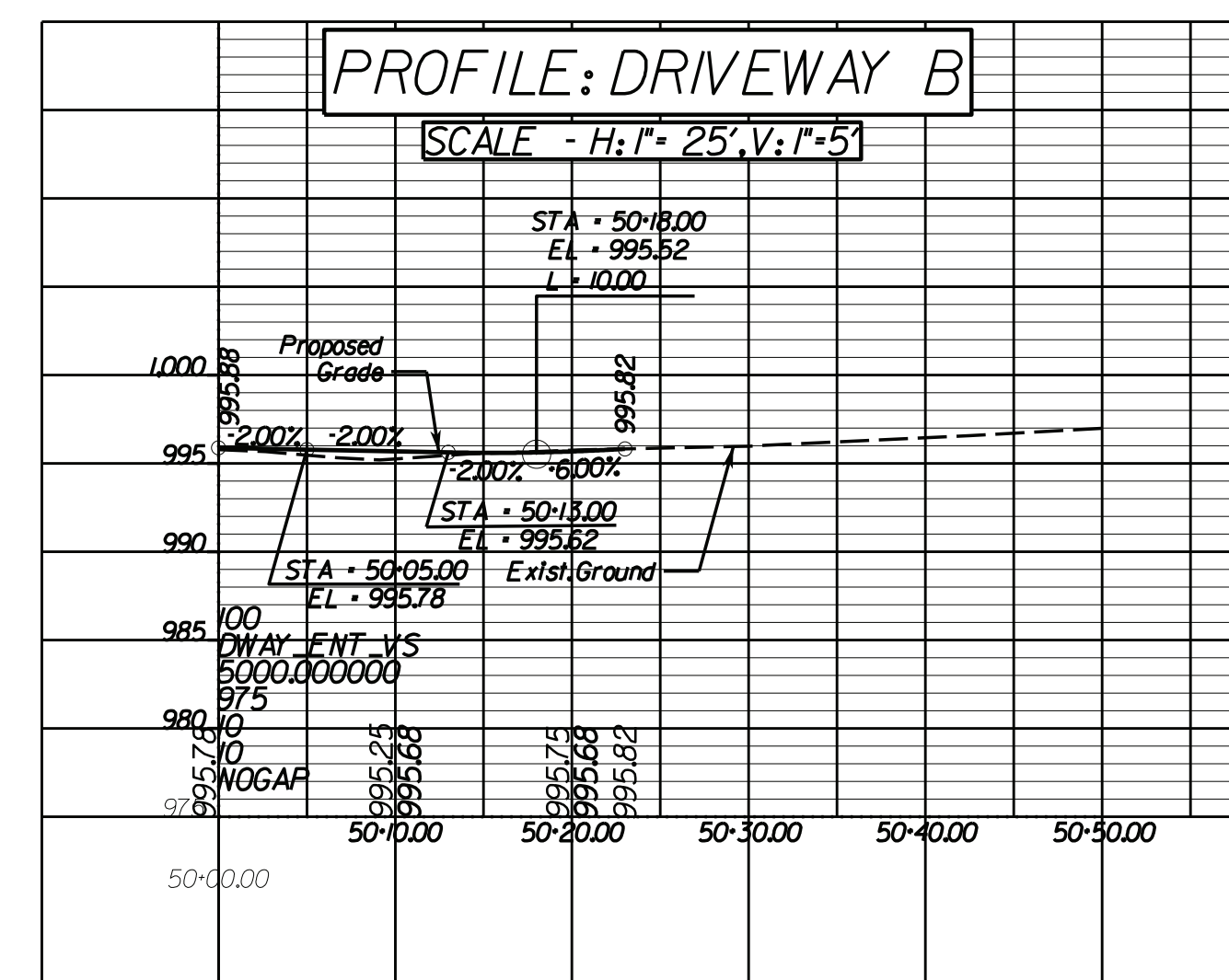
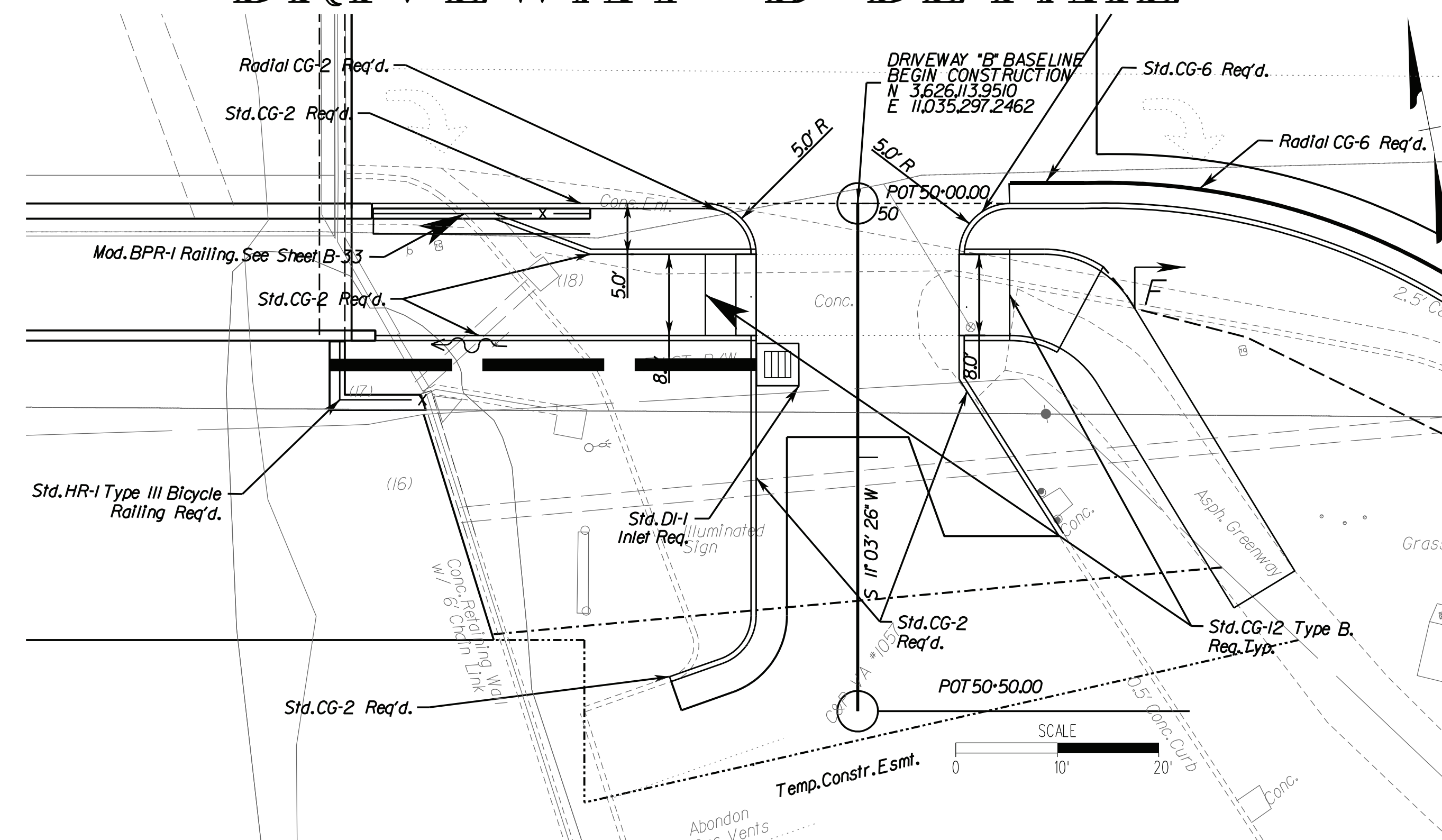
Sheet No.:
C-2B

PLAN AND PROFILE DETAILS

DRIVEWAY A ^{Bridge Terminal} DETAIL

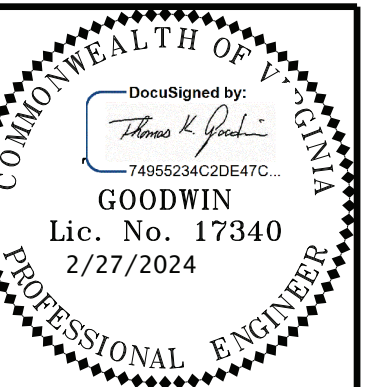
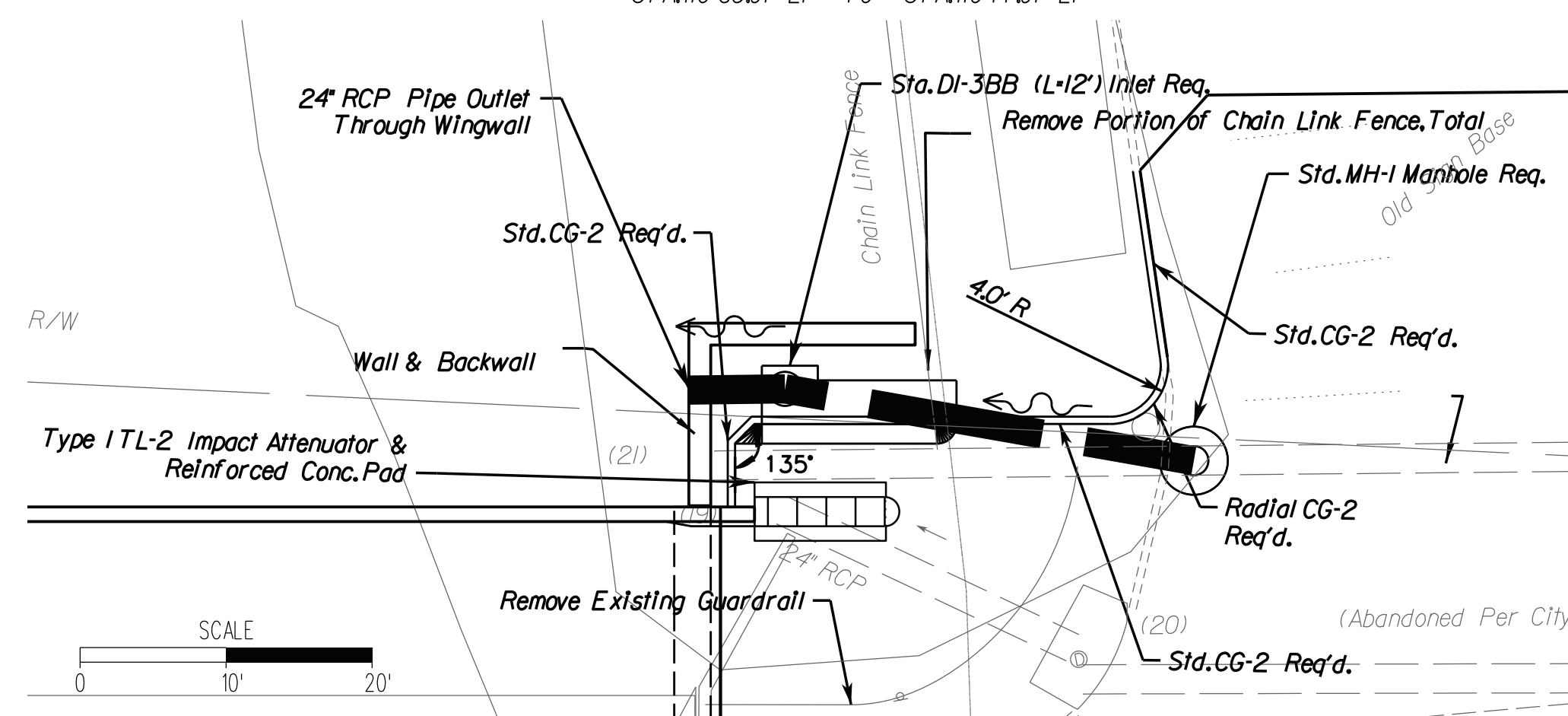


DRIVEWAY B DETAIL



IMPACT ATTENUATOR PLAN VIEW DETAIL

STA.110+68.97 LT TO STA.110+77.97 LT

[illegible]

Issue Date:	02/16/2024
Drawn By:	MPF
Designed By:	MPF
Checked By:	TKG
Date:	02/16/2024

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PLAN AND PROFILE DETAILS

APPENDIX A PERSON DRIVE BRIDGE REPLACEMENT

CITY OF SALEM, VA

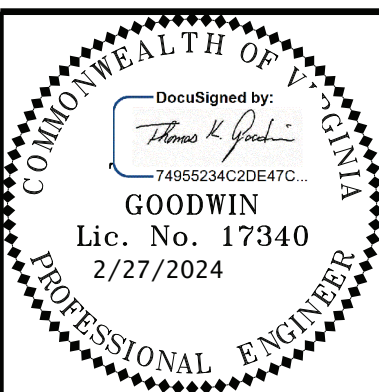
Vertical Scale:
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Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:

C-2C

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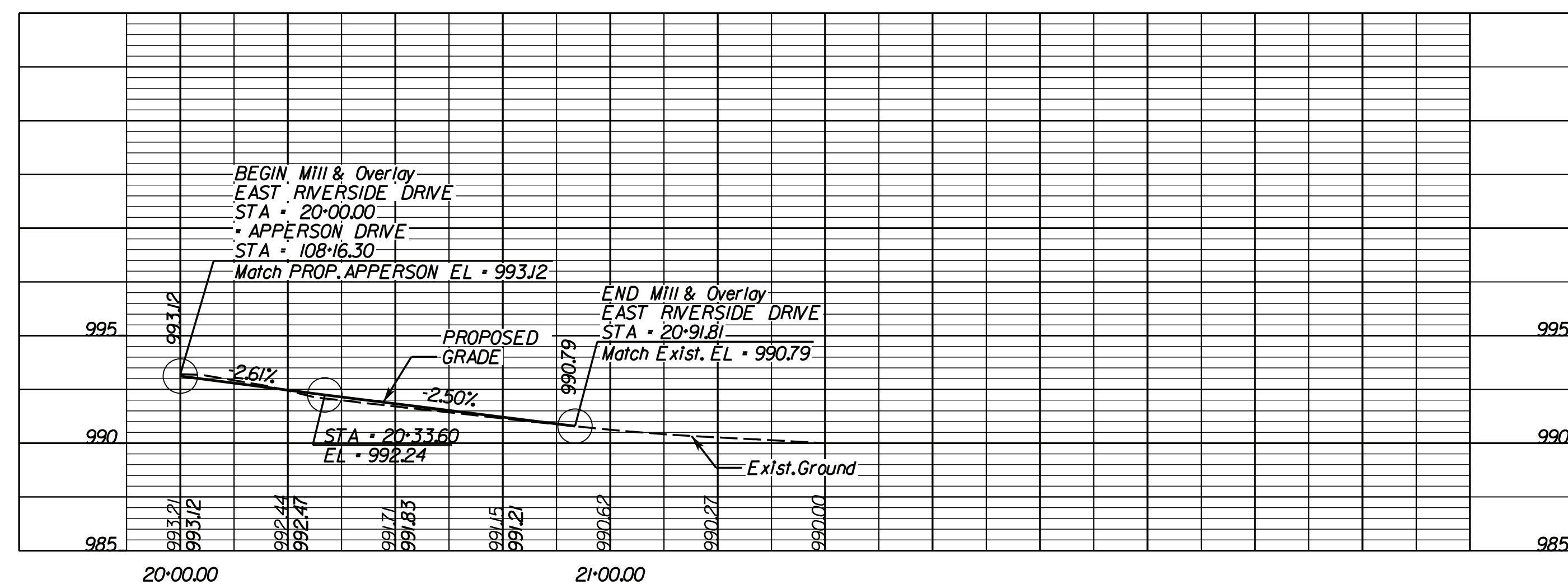
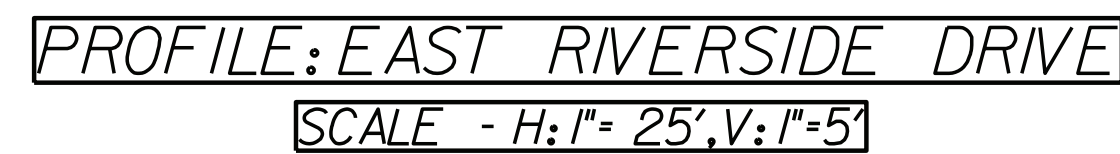
Issue Date: 02/16/2024

Drawn By: MPF

Drawn By: MPF

Checked By: TKG

Checked By: TKG



APPERSON DRIVE BRIDGE REPLACEMENT PROFILE SHEETS

CITY OF SALEM, VA

Vertical Scale:
AS NOTED

Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:

C-3A

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TRANSPORTATION MANAGEMENT PLAN

TEMPORARY TRAFFIC CONTROL PLAN

1. **PROJECT TMP TYPE:**
This project is a VDOT Type B, Category III Project.
2. **PROJECT LOCATION:**
U.S. Route 11 (Apperson Drive) over Roanoke River, City of Salem.
3. **LENGTH AND WIDTH OF WORK:**
Length of work is approximately 500'. Width of work varies.
4. **LANES AFFECTED BY THIS PROJECT:**
Both east and westbound lanes of U.S. Route 11 (Apperson Drive) will be affected. Lanes will mostly remain open, apart from a temporary short term closure. East Riverside Drive will have partial closures traveling North from Apperson Drive, and McVitty Road will have an extended closure with a detour. Both East Riverside Drive and McVitty Road will have turning restrictions implemented as well.
5. **HOURS THE WORK ZONE WILL BE ACTIVE:**
The time restrictions are provided on sheet C-4A General Note 13.
6. **LOCATION(S) WITHIN THE R/W FOR CONSTRUCTION EQUIPMENT AND STORAGE WITHIN APPROACH ROADWAY:**
The average Right-Of-Way width in the Apperson Drive Project Area is about 80'. There will be additional right-of-way acquired for the new bridge, as well as easements for construction and equipment.
7. **PROPOSED TRAFFIC CONTROL DEFINITION:**
See Temporary Traffic Control Plan Sheets C4A-C4I.
8. **AFFECTED ENTRANCES, INTERSECTIONS, OR PEDESTRIAN ACCESS:**
There are multiple business entrances affected by this work zone. Contractor will maintain access to entrances adjacent to the project site at all times during construction. All businesses affected by the work zone will have at least one entrance open during construction. Bicycle and pedestrian traffic on the greenway and sidewalk will be closed during construction.
9. **MAJOR TYPES OF TRAVELERS:**
Large volume of vehicular traffic, trucks, pedestrians and bicyclists who utilize the nearby shared-use path.
10. **THE WORK ZONE WILL BE MAINTAINED ACCORDING TO THE TRAFFIC CONTROL APPLICATIONS OF THE VAWAPM (REVISION 2.0) DATED 2020, INCLUDING BUT NOT LIMITED TO THE FOLLOWING FIGURES:**

TTC - 11, Page 6H-8 & 6H-9
TTC - 4.2, Page 6H-14 & 6H-15
TTC - 13.2, Page 6H-34 & 6H-35
TTC - 16.2, Page 6H-40 & 6H-41
TTC - 17.2, Page 6H-42 & 6H-43
TTC - 19.2, Page 6H-46 & 6H-47
TTC - 20.2, Page 6H-48 & 6H-49
TTC - 22.2, Page 6H-52 & 6H-53
TTC - 23.2, Page 6H-54 & 6H-55
TTC - 24.2, Page 6H-56 & 6H-57
TTC - 26.2, Page 6H-60 & 6H-61
TTC - 27.2, Page 6H-62 & 6H-63
TTC - 29.2, Page 6H-66 & 6H-67
TTC - 30.2, Page 6H-68 & 6H-69
TTC - 34.2, Page 6H-76 & 6H-77
TTC - 48.2, Page 6H-104 & 6H-105
TTC - 53.0, Page 6H-114 & 6H-115
TTC - 55.1, Page 6H-118 & 6H-119
TTC - 60.0, Page 6H-128 & 6H-129
TTC - 68.0, Page 6H-144 & 6H-145

TRANSPORTATION OPERATIONS PLAN

- A contact list of local emergency response agencies must be kept and maintained throughout the project life cycle.
- Traffic Backup Notification:**
Emergency contact for this project shall be 911. The project Inspector is to be immediately notified by the contractor of any traffic backup. The project Inspector shall notify the City Engineer's Office (540) 375-3032. The City Engineer shall be responsible for contacting any affected agencies.
- The Southwest Region Operations Center (540) 375-0170 (TOC) shall be notified of lane closures and traffic related to the work by the project staff. The TOC will utilize available systems (cameras, sensors, etc) to monitor the work area and all adjacent areas. The TOC will make all entries into systems that feed this information into 511. The TOC will utilize assets such as permanent and mobile variable message signs with CDMA modems to alert motorists of lane closures and other incidents that may impact travel.
- The City Engineer's Office will make notifications to department staff of any incidents and expected traffic delays. The staff notifications shall include but not be limited to the Duty Officer, Area Construction Engineer, Project Maintenance of Traffic Coordinator, Project Manager, Resident Engineer, Traffic Engineering Northern Area Work Zone Safety Coordinator, District Traffic Engineer, Regional Traffic Operations Manager, Regional Incident Management Coordinator, District Compliance/Safety Officer, and District Communications Manager Jason Bond - (540) 387-5493.
- The City Project Inspector shall be responsible for intra-agency notifications to entities such as, but not limited to, VSP, Local 911, and other affected agencies.
- A review of all major incidents, as determined by the Regional Incident Management Coordinator, shall be accomplished within 48 hours of clearance of the incident. VDOT Project Staff, Traffic Engineering Northern Area Work Zone Safety Coordinator, District Compliance/Safety Officer, Regional Operations Staff, Contractor Staff, and emergency responders shall be represented at these meetings.

PUBLIC COMMUNICATIONS PLAN

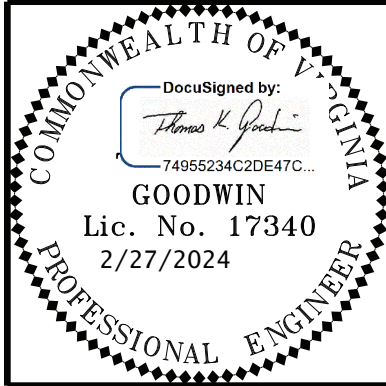
- Any scheduled work plans that will cause traffic delays shall be provided to the City Project Inspector at least 72 HOURS in advance of the change. This includes any changes to traffic patterns. This shall be the responsibility of the Contractor.
- In the event that any unscheduled traffic delays are experienced related to the work, the City Project Inspector shall be contacted by the Contractor. The City Project Inspector will notify the City Engineer's Office, who will then be responsible for making notifications to the appropriate agencies.

CRISIS COMMUNICATIONS PLAN:

- As with any crisis, emergency and hazmat responders (911) should be notified immediately if necessary.
- The City Engineer's Office or their designee should be notified immediately.
- If the emergency is traffic related, the City Project Inspector or their designee should immediately notify the Southwest Region Operations Center (540) 375-0170.
- The City Project Inspector, District Communications, and TOC will work together to inform the traveling public, emergency responders and the media about delays and unexpected changes in traffic patterns using the correct list and other resources if necessary.

TTCP SEQUENCE OF CONSTRUCTION, TTCP TYPICAL SECTIONS,
TTCP ADVANCED SIGNING DETAILS & TTC PLAN SHEETS
SEE SHEETS C4A-C4I

TARGET AUDIENCE	CONTACT METHOD	PHONE NUMBER, E-MAIL OR ADDRESS	RESPONSIBLE CHARGE
Motorists	News Releases, weekly traffic information	See District Communications news release distribution list (e-mail and fax)	Jason Bond: 540-387-5493
Salem City Police	Phone	Emergency 911 (540) 375-3078	City Project Inspector
Salem City Emergency Services	Phone	Emergency 911 (540) 375-3078	City Project Inspector
FIRE: Salem Fire Department	Phone	Emergency 911 (540) 375-3078	City Project Inspector
RESCUE: Volunteer Rescue Squad	Phone	Emergency 911 (540) 375-3078	City Project Inspector
Residential neighborhoods	Phone	(540) 375-3032	
CITY OFFICIALS:			
Salem City Schools	Phone	(540) 389-0130	City Project Inspector
Salem City Department of Community Development	Phone	(540) 375-3032	City Project Inspector
WATERLINE: City of Salem Water & Sewer Department	Phone	Emergency 911 (540) 375-3029	City Project Inspector
ELECTRIC: City of Salem Electric Department	Phone	Emergency 911 (540) 375-3030	City Project Inspector



Date									
Revisions									

Issue Date:	02/16/2024	Drawn By: MPF	Designed By: MPF	Checked By: TKG	Date:	02/16/2024
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APPERSON DRIVE BRIDGE REPLACEMENT

TRANSPORTATION
MANAGEMENT PLAN

CITY OF SALEM, VA

Vertical Scale:
N/A

Horizontal Scale:
N/A

Commission Number:
3925B

Sheet No.:
C-4

TEMPORARY TRAFFIC CONTROL PLAN GENERAL NOTES & SEQUENCE OF CONSTRUCTION

TEMPORARY TRAFFIC CONTROL NOTES

- GENERAL NOTES
1. ALL TRAFFIC CONTROL DEVICES AND SIGNS NECESSARY FOR MAINTENANCE OF TRAFFIC ARE TO BE PROVIDED, INSTALLED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.
 2. ALL SIGNS, SIGN LAYOUT, TEMPORARY PAVEMENT MARKINGS, WORK ZONES, AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITIONS OF THE VIRGINIA WORK AREA PROTECTION MANUAL (VAWAPM), FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), VIRGINIA SUPPLEMENT TO THE 2009 MUTCD (VASMUTCD), VDOT ROAD AND BRIDGE STANDARDS, AND VDOT ROAD AND BRIDGE SPECIFICATIONS, INCLUDING ANY VDOT SUPPLEMENT TO THE SPECIFICATIONS.
 3. THE CONTRACTOR SHALL SUBMIT A DETAILED SEQUENCE OF CONSTRUCTION (SOC) AND TEMPORARY TRAFFIC CONTROL (TTC) PLAN FOR THIS PROJECT FOR REVIEW AND APPROVAL BY THE CITY OF SALEM. THE SOC/TTC PLAN SHALL INCLUDE A TEMPORARY TRAFFIC SIGNAL PLAN FOR THE APPERSON DRIVE/ ELECTRIC ROAD INTERSECTION (SEE TRAFFIC SIGNAL NOTES, THIS SHEET).
- THE CONTRACTOR SHALL ALLOW A MINIMUM OF TWO WEEKS FOR REVIEW.
- ANY MAJOR CHANGES TO THE SOC/TTC PLAN WILL REQUIRE APPROVAL BY THE CITY OF SALEM. MINOR ADJUSTMENTS TO THE SOC/TTC PLAN SHALL BE REVIEWED BY THE CITY OF SALEM.
4. SEE "MAINTENANCE OF TRAFFIC & SEQUENCE OF CONSTRUCTION NARRATIVE", THIS SHEET, FOR CONSTRUCTION PHASING.
- ONCE CONSTRUCTION IS STARTED ON A PHASE, THE WORK WILL BE COMPLETED ON THAT PHASE BEFORE PROCEEDING TO THE NEXT PHASE, OR AS DIRECTED BY THE CITY OF SALEM.
5. THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC, WHO CAN BE CONTACTED AT ALL TIMES, 24 HOURS A DAY, 7 DAYS A WEEK IN CASE OF EMERGENCIES.
 6. ANY EQUIPMENT OR MATERIALS ACTIVELY BEING UTILIZED FOR A PARTICULAR CONSTRUCTION ACTIVITY MUST BE PLACED OR STORED OUTSIDE OF THE CLEAR ZONE SO AS NOT TO CREATE A FIXED-OBJECT HAZARD TO MOTORISTS.
 7. TEMPORARY TRAFFIC BARRIER SHALL BE BOLTED DOWN IN ACCORDANCE WITH THE VAWAPM AND SECTION 502J2 OF THE VDOT STANDARDS.
 8. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE TO PREVENT PONDING OF WATER ON THE ROADWAY AND ADJACENT PROPERTIES. ANY TEMPORARY DRAINAGE STRUCTURES INSTALLED ON THE PROJECT ARE THE CONTRACTOR'S RESPONSIBILITY. THE COST OF SUCH STRUCTURES IS TO BE INCLUDED IN THE COST OF OTHER RELEVANT PAY ITEMS.
 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL UTILITY AND STORM DRAINAGE WORK THROUGHOUT THE PROJECT UNLESS OTHERWISE NOTED IN THESE PLANS.
 10. THE CONTRACTOR SHALL CONTACT CITY OF SALEM ENGINEERING OFFICE 2 WEEKS BEFORE ANY LANES ARE TO BE CLOSED.
- UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CITY OF SALEM, THE CONTRACTOR IS TO MAINTAIN ACCESS TO ALL PROPERTIES DURING CONSTRUCTION. EMERGENCY VEHICLE ACCESS IS TO BE MAINTAINED AT ALL TIMES FOR LOCAL RESIDENTS AND BUSINESSES.
11. ALL FLAGGING OPERATIONS SHALL FOLLOW TTC-23.2 AND/OR TTC-24.2 OF THE VAWAPM. THE COST OF THE REQUIRED SHADOW VEHICLE SHALL BE INCLUDED IN THE LUMP SUM COST OF MAINTENANCE OF TRAFFIC.
 12. ELECTRIC ROAD TRUCK TRAFFIC TURNING ONTO APPERSON DRIVE TOWARD THE WORK ZONE SHALL BE DETOURED ALONG 8TH STREET AND ROANOKE BOULEVARD AS SHOWN ON THE PLANS TO AVOID WORK ZONE CONFLICTS.
- AT LEAST ONE LANE IN EACH DIRECTION ALONG APPERSON DRIVE SHALL REMAIN OPEN TO VEHICULAR TRAFFIC FOR THE DURATION OF CONSTRUCTION.
- PEDESTRIAN TRAFFIC THROUGH THE WORK ZONE SHALL BE EXPLICITLY PROHIBITED. TTC MEASURES SHALL BE PLACED AS SHOWN ON THE PLANS TO EMPHASIZE THE PROHIBITION OF PEDESTRIAN MOVEMENT THROUGH THE WORK ZONE UNLESS OTHERWISE APPROVED BY THE CITY OF SALEM.
- THE GREENWAY SHALL BE CLOSED TO ALL TRAFFIC, INCLUDING PEDESTRIAN AND BICYCLE TRAFFIC, FOR THE DURATION OF CONSTRUCTION BETWEEN THE FOLLOWING PARKING AREAS AS SHOWN ON THE PLANS:
- ALONG EAST RIVERSIDE DRIVE :500 FEET NORTH OF APPERSON DRIVE
 - ROTARY PARK
13. THE CONTRACTOR MAY WORK FROM 7:00AM TO 5:00PM, MONDAY THROUGH FRIDAY FROM THE COMMENCEMENT OF THE PROJECT TO FINAL ACCEPTANCE BY THE CITY, EXCEPT AS STATED BELOW AND AS NOTED ON THE PLANS. CONTRACTOR MAY WORK ADDITIONAL HOURS PER DAY AND ADDITIONAL DAYS PER WEEK ONLY AFTER RECEIVING WRITTEN AGREEMENT FROM THE CITY OF SALEM. ADDITIONAL COSTS INCURRED BY THE CONTRACTOR FOR THESE HOURS SHALL BE INCIDENTAL TO THE LUMP SUM COST OF MAINTENANCE OF TRAFFIC.
- MODIFICATION OF TRAFFIC CONTROL DEVICES REQUIRED WHEN MOVING FROM ONE PHASE OF CONSTRUCTION TO ANOTHER SHALL BE PERFORMED DURING NIGHTTIME HOURS, OR AS DIRECTED BY THE CITY OF SALEM.
14. GUARDRAIL AND IMPACT ATTENUATOR SHALL BE IN ACCORDANCE WITH MASH STANDARDS.
 15. WHERE OPEN CUT INSTALLATION OF PROPOSED UTILITY AND STORM DRAINAGE PIPES ACROSS VEHICULAR TRAVEL LANES IS REQUIRED, INSTALLATION SHALL BE CONSTRUCTED ONE LANE AT A TIME USING FLAGGERS IN ACCORDANCE WITH RELEVANT PORTIONS OF THE FOLLOWING VAWAPM TTC APPLICATIONS:
 - TTC-23.2 "LANE CLOSURE ON A TWO-LANE ROADWAY USING FLAGGERS"
 - TTC-24.2 "NON-STATIONARY OPERATION ON A TWO-LANE ROADWAY USING FLAGGERS"
 - TTC-30.2 "FLAGGING OPERATION AT A SIGNALIZED INTERSECTION"
 - TTC-68.0 "LANE CLOSURE OPERATION FOR FLAGGING OPERATION ON AN INTERSECTING ROADWAY"

- SIGNING NOTES
1. ALL CONSTRUCTION SIGNS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING FURNISHING, INSTALLING, ADJUSTING, MAINTAINING, AND REMOVING SIGNS AND POSTS PER THE PLANS, SPECIFICATIONS, AND STANDARD DETAILS.
 2. ALL SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE VAWAPM AND VDOT STANDARDS STP-1 AND WSP-1, UNLESS OTHERWISE NOTED.
 3. CONTRACTOR SHALL MAINTAIN ALL ROADWAY SIGNAGE THROUGHOUT THE PROJECT AREA. SIGNS NO LONGER APPLICABLE AND/OR IN CONFLICT WITH OTHER TRAFFIC CONTROL DEVICES SHALL BE REMOVED AND/OR COVERED WHEN NO LONGER NECESSARY. ALL OTHER SIGNS SHALL BE PROPERLY ALIGNED/ORIENTED AND MAINTAINED.
 4. ALL CONSTRUCTION SIGN LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE ACTUAL SIGN LOCATIONS IN ACCORDANCE WITH THE VAWAPM AND ADJUST LOCATIONS BASED UPON FIELD CONDITIONS TO ENSURE PROPER VISIBILITY BY DRIVERS.
 5. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE TEMPORARY SIGNAGE AND RESTORE EXISTING SIGNAGE, UNLESS OTHERWISE INDICATED ON THE SIGNING AND PAVEMENT MARKING PLANS.
- PAVEMENT MARKING NOTES
1. THE CONTRACTOR SHALL PROVIDE TEMPORARY PAVEMENT MARKINGS AS REQUIRED BY THE PLANS FOR STAGING TRAFFIC.
 2. ANY EXISTING PAVEMENT MARKINGS AND MARKERS THAT CONFLICT WITH THE TEMPORARY MARKINGS ARE TO BE ERADICATED IN ACCORDANCE WITH VAWAPM TTC-55J "ERADICATION OF PAVEMENT MARKINGS IN A WORK ZONE" AND VDOT SPECIFICATIONS. UPON COMPLETION OF CONSTRUCTION, REMOVED PAVEMENT MARKINGS AND MARKERS SHALL BE REPLACED UNLESS OTHERWISE NOTED ON THE PLANS.
 3. ANY TEMPORARY PAVEMENT MARKINGS THAT CONFLICT FROM ONE PHASE OF CONSTRUCTION TO ANOTHER SHALL BE ERADICATED AS REQUIRED, OR AS DIRECTED BY THE ENGINEER.
 4. CONTRACTOR SHALL INSTALL TEMPORARY RAISED PAVEMENT MARKERS IN ALL TRANSITION (LANE DROP) AND/OR LANE SHIFT TAPERS AT 20'-0" SPACING IN ACCORDANCE WITH VAWAPM TTC-60.0 "TEMPORARY PAVEMENT MARKING AND MARKER GUIDELINES".
 5. TEMPORARY AND PERMANENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRACTICES.
 6. SURFACE PAVEMENT AND FINAL PAVEMENT MARKINGS SHALL ONLY BE PLACED AFTER ALL OTHER WORK HAS BEEN COMPLETED.

- PAVEMENT NOTES
1. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL TEMPORARY PAVEMENT WITHIN THE WORK AREA. THE COST OF THIS WORK IS TO BE INCLUDED IN THE LUMP SUM COST OF MAINTENANCE OF TRAFFIC.
 2. ALL SURFACE PAVEMENT SHALL BE PLACED IN A CONTINUOUS OPERATION AS A LAST STEP OF PAVEMENT CONSTRUCTION. CLEAN BASE COURSE AND PLACE NO-TRACK TACK PRIOR TO PLACEMENT OF SURFACE PAVEMENT.
 3. EXISTING SURFACE, AGGREGATE BASE, AND SUBBASE MATERIAL WHICH WILL BE DEMOLISHED OR OBLITERATED DURING CONSTRUCTION AND WHICH IS SUITABLE FOR MAINTENANCE OF TRAFFIC, AS DETERMINED BY THE CITY, SHALL BE SALVAGED AND UTILIZED FOR MAINTENANCE OF TRAFFIC PRIOR TO THE USE OF COMMERCIAL MATERIAL. THE REMOVAL AND SALVAGING OF EXISTING SURFACES AND AGGREGATE BASE MATERIAL SHALL BE INCLUDED IN THE COST OF REGULAR EXCAVATION.
 4. THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT PATCHES OVER UTILITY AND DRAINAGE PIPE TRENCHES IN PAVED ROADWAY AND/OR SHOULDER AREAS TO MAINTAIN A SMOOTH, FIRM TRAVEL SURFACE. THE TEMPORARY SURFACE PATCH SHALL CONSIST OF ASPHALT CONCRETE BASE COURSE TYPE BM-25.0A INSTALLED AT A MINIMUM 4" THICKNESS.
- ALL UTILITY AND STORM DRAINAGE ASPHALT PATCHES SHALL BE PLACED PRIOR TO THE END OF THE WORK WEEK (FRIDAY).
5. NO OPEN TRENCH SHALL BE LEFT OPEN AT THE END OF EACH WORKDAY UNLESS OTHERWISE APPROVED BY THE CITY OF SALEM.
 6. AT THE END OF EACH WORK DAY, ALL AREAS IMMEDIATELY ADJACENT TO TRAFFIC THAT ARE EXCAVATED BELOW EXISTING SURFACE SHALL BE BACKFILLED TO FORM AN APPROXIMATE 4" MINIMUM, 6" DESIRED WEDGE AGAINST THE EXISTING PAVEMENT SURFACE FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC. THE COST OF PLACING AND REMOVING THE WEDGE WILL NOT BE MEASURED FOR SEPARATE PAYMENT AND SHALL BE INCLUDED IN THE COST OF OTHER ITEMS. SEE VAWAPM PAGE A-4 IN APPENDIX A.
 7. MAINTAIN TRAFFIC WITH AGGREGATE NO. 25 OR 26 FOR TEMPORARY TIES TO PRIVATE ENTRANCES OR WHERE SPECIFIED BY THE ENGINEER.
 8. TEMPORARY SHORING WORK WILL NOT BE MEASURED FOR SEPARATE PAYMENT BUT SHALL BE INCLUDED IN THE PRICE FOR REGULAR EXCAVATION.

- TRAFFIC SIGNAL NOTES
1. AS PART OF THE TTC/SOC PLANS, THE CONTRACTOR SHALL SUBMIT A TEMPORARY TRAFFIC SIGNAL PLAN FOR THE APPERSON DRIVE INTERSECTION WITH ELECTRIC ROAD FOR REVIEW AND APPROVAL BY VDOT AND THE CITY OF SALEM. THE TEMPORARY TRAFFIC SIGNAL PLAN SHALL INCLUDE, BUT NOT BE LIMITED TO, PROPOSED TEMPORARY TRAFFIC SIGNAL HEAD AND TRAFFIC SIGNAL SIGNAGE MODIFICATIONS (RELOCATION, COVERING, REMOVAL, ETC.), TEMPORARY SIGNAL PHASING AND TEMPORARY SIGNAL TIMING. THE CONTRACTOR SHALL ALLOW A MINIMUM OF 30 DAYS FOR REVIEW.
- ANY MAJOR CHANGES TO THE TEMPORARY SIGNAL PLAN WILL REQUIRE APPROVAL BY VDOT AND THE CITY OF SALEM. MINOR ADJUSTMENTS TO THE TEMPORARY SIGNAL PLAN SHALL BE REVIEWED BY THE CITY OF SALEM.
2. CONTRACTOR SHALL COORDINATE WITH VDOT AND THE CITY OF SALEM AT LEAST TWO WEEKS PRIOR TO IMPLEMENTING APPROVED TEMPORARY TRAFFIC SIGNAL PLANS.
 3. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE TEMPORARY SIGNALIZATION AND RESTORE PERMANENT SIGNALIZATION.

MAINTENANCE OF TRAFFIC & SEQUENCE OF CONSTRUCTION NARRATIVE

IT IS NOT THE INTENT OF THE TEMPORARY TRAFFIC CONTROL PLANS TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED DURING CONSTRUCTION BUT ONLY TO SHOW THE GENERAL HANDLING OF TRAFFIC, UNLESS OTHERWISE APPROVED BY THE ENGINEER AND THE CITY OF SALEM. THE CONTRACTOR SHALL PLAN AND PROSECUTE THE WORK IN ACCORDANCE WITH THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION AND MAINTENANCE OF TRAFFIC PLAN.

VAWAPM TEMPORARY TRAFFIC CONTROL APPLICATIONS
THE WORK ZONE WILL BE MAINTAINED ACCORDING TO THE FOLLOWING TEMPORARY TRAFFIC CONTROL APPLICATIONS OF THE VAWAPM (REVISION 2J):

TTC - 1J, Page 6H-8 & 6H-9
TTC - 4.2, Page 6H-14 & 6H-15
TTC - 13.2, Page 6H-34 & 6H-35
TTC - 16.2, Page 6H-40 & 6H-41
TTC - 17.2, Page 6H-42 & 6H-43
TTC - 19.2, Page 6H-46 & 6H-47
TTC - 20.2, Page 6H-48 & 6H-49
TTC - 22.2, Page 6H-52 & 6H-53
TTC - 23.2, Page 6H-54 & 6H-55
TTC - 24.2, Page 6H-56 & 6H-57
TTC - 26.2, Page 6H-60 & 6H-61
TTC - 27.2, Page 6H-62 & 6H-63
TTC - 29.2, Page 6H-66 & 6H-67
TTC - 30.2, Page 6H-68 & 6H-69
TTC - 34.2, Page 6H-76 & 6H-77
TTC - 48.2, Page 6H-104 & 6H-105
TTC - 53.0, Page 6H-114 & 6H-115
TTC - 55J, Page 6H-118 & 6H-119
TTC - 60.0, Page 6H-128 & 6H-129
TTC - 68.0, Page 6H-144 & 6H-145

PHASE 1

1. INSTALL SIGNS AND TEMPORARY TRAFFIC CONTROL DEVICES (TTCD) ACCORDING TO FIGURE TTC-53.0 "SIGNING FOR PROJECT LIMITS" ON ELECTRIC ROAD, APPERSON DRIVE, EAST RIVERSIDE DRIVE, AND MCVITTY ROAD AS SHOWN ON THE PLANS.

INSTALL SIGNS AND TTCD FOR GREENWAY CLOSURE AS SHOWN ON THE PLANS IN ACCORDANCE WITH RELEVANT PORTIONS OF FIGURE TTC-35J "SIDEWALK CLOSURE AND BYPASS SIDEWALK OPERATION" AS SHOWN ON THE PLANS.

INSTALL SIGNS AND TTCD FOR TRUCK DETOUR ACCORDING TO RELEVANT PORTIONS OF FIGURE TTC-48.2 "ROAD CLOSURE OPERATION WITH DETOUR" AS SHOWN ON THE PLANS AND SHIFT TRUCK TRAFFIC TO TRUCK DETOUR, SEE SHEET C-4C.

INSTALL SIGNS AND TTCD ACCORDING TO RELEVANT PORTIONS OF FIGURE TTC-26.2 "LANE CLOSURE OPERATION - NEAR SIDE OF AN INTERSECTION" AND FIGURE TTC-27.2 "LANE CLOSURE OPERATION - FAR SIDE OF AN INTERSECTION" TO CLOSE THE WESTBOUND (WB) LANES OF APPERSON DRIVE. ADJUST TRAFFIC SIGNALS AT ELECTRIC ROAD/APPERSON DRIVE INTERSECTION IN ACCORDANCE WITH APPROVED TEMPORARY SIGNAL PLAN (SEE "TRAFFIC SIGNAL NOTE 1, THIS SHEET") AND SHIFT TRAFFIC TO THE EASTBOUND (EB) LANES OF APPERSON DRIVE AS SHOWN ON THE TTC PLANS.

2. INSTALL E&S MEASURES AS NECESSARY PRIOR TO EXCAVATION OR DEMOLITION.

3. REMOVE UPSTREAM PORTIONS OF THE EXISTING BRIDGE AS SHOWN ON THE PLANS AND BEGIN CONSTRUCTION OF THE UPSTREAM PORTION OF THE ABUTMENTS AND PIER EXTENSIONS.

4. CONSTRUCT UPSTREAM PORTIONS OF THE BRIDGE, ROADWAY, CURB, DRAINAGE FACILITIES, GUARDRAIL/IMPACT ATTENUATORS, AND ALL INCIDENTAL CONSTRUCTION IN THE AREA INDICATED ON THE TTC PLANS.

PHASE 2

1. REMOVE AND/OR ADJUST SIGNS AND TTCD PREVIOUSLY INSTALLED IN PHASE 1 AS NECESSARY FOR PHASE 2.
2. INSTALL SIGNS AND TTCD ACCORDING TO RELEVANT PORTIONS OF FIGURE TTC-26.2 "LANE CLOSURE OPERATION - NEAR SIDE OF AN INTERSECTION" AND FIGURE TTC-27.2 "LANE CLOSURE OPERATION - FAR SIDE OF AN INTERSECTION" TO CLOSE THE EB LANES OF APPERSON DRIVE. ADJUST TRAFFIC SIGNALS AT ELECTRIC ROAD/APPERSON DRIVE INTERSECTION IN ACCORDANCE WITH APPROVED TEMPORARY SIGNAL PLAN (SEE "TRAFFIC SIGNAL NOTE 1, THIS SHEET") AND SHIFT TRAFFIC TO THE NEWLY CONSTRUCTED PORTION OF APPERSON DRIVE AS SHOWN ON THE TTC PLANS.

INSTALL SIGNS AND TTCD ACCORDING TO TTC-48.2 "ROAD CLOSURE OPERATION WITH A DETOUR" TO CLOSE A PORTION OF MCVITTY ROAD AND DETOUR TRAFFIC PER DETOUR PLAN ON SHEET C-4B.

3. INSTALL E&S MEASURES AS NECESSARY PRIOR TO EXCAVATION OR DEMOLITION.

4. REMOVE DOWNSTREAM PORTIONS OF THE EXISTING BRIDGE AND CONSTRUCT THE DOWNSTREAM ABUTMENT AND PIER EXTENSIONS IN THE AREA INDICATED ON THE TTC PLANS.

5. CONSTRUCT DOWNSTREAM PORTIONS OF THE BRIDGE, ROADWAY, CURB, SIDEWALK, DRAINAGE FACILITIES, GUARDRAIL/IMPACT ATTENUATORS, SHARED USE PATH, MCVITTY ROAD IMPROVEMENTS AND ALL INCIDENTAL CONSTRUCTION IN THE AREA INDICATED ON THE TTC PLANS.

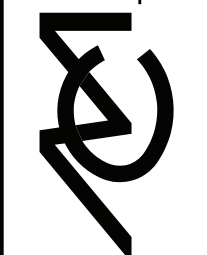
PHASE 3

1. REMOVE ALL PREVIOUSLY PLACED SIGNS AND TEMPORARY TRAFFIC CONTROL DEVICES FROM THE PREVIOUS PHASE 1.
2. INSTALL PROPOSED SIGNS AND FINAL PAVEMENT MARKINGS IN ACCORDANCE WITH TTC-13.2 "MOVING/MOBILE OPERATIONS ON A MULTI-LANE ROADWAY". RESTORE ANY PAVEMENT MARKING THAT WAS REMOVED IN PREVIOUS STAGES OUTSIDE OF THE WORK ZONE TO THE ORIGINAL CONDITIONS.
3. REMOVE TEMPORARY E&S CONTROL MEASURES.



Date									
Revisions									

Issue Date:	02/16/2024
Drawn By:	MPF
Designed By:	MPF
Checked By:	TKG
Date:	02/16/2024



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APPERSON DRIVE BRIDGE REPLACEMENT

TTCP GENERAL NOTES AND
SEQUENCE OF CONSTRUCTION

CITY OF SALEM, VA

Vertical Scale:
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Horizontal Scale:
N/A

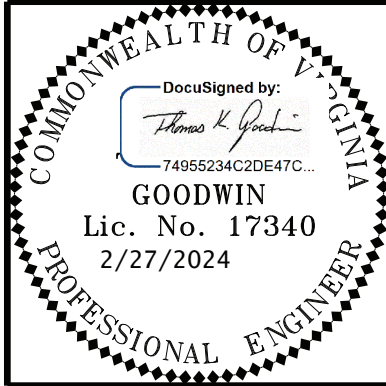
Commission Number:
3925B

Sheet No.:

C-4A

TEMPORARY TRAFFIC CONTROL

DETOUR PHASE 2



Revisions	Date

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APPERSON DRIVE BRIDGE REPLACEMENT TEMPORARY TRAFFIC CONTROL DETOUR PLAN PHASE 2

CITY OF SALEM, VA

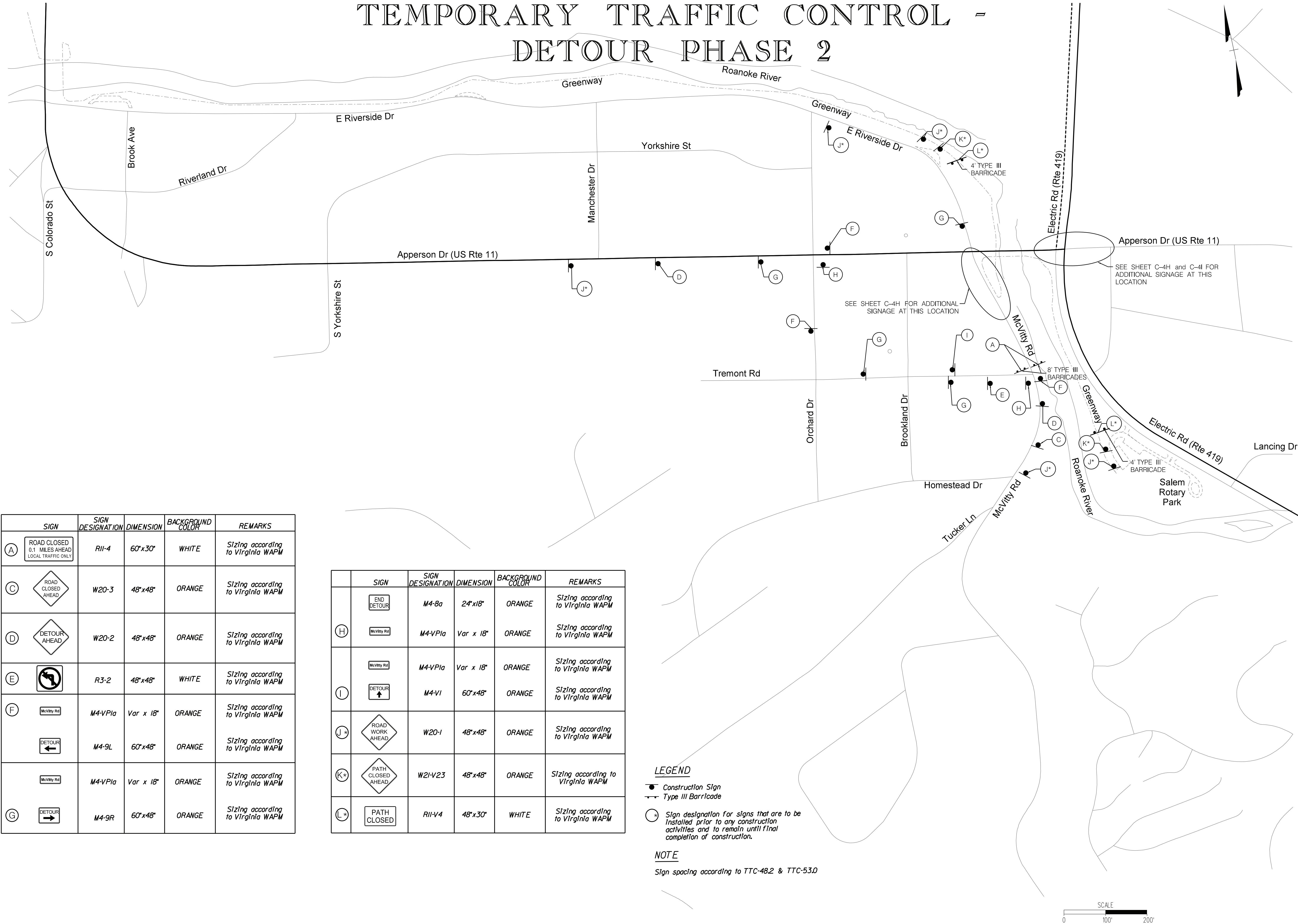
Vertical Scale:
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Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:

C-4B



SIGN	SIGN DESIGNATION	DIMENSION	BACKGROUND COLOR	REMARKS
	R11-4	60"x30"	WHITE	Sizing according to Virginia WAPM
	W20-3	48"x48"	ORANGE	Sizing according to Virginia WAPM
	W20-2	48"x48"	ORANGE	Sizing according to Virginia WAPM
	R3-2	48"x48"	WHITE	Sizing according to Virginia WAPM
	M4-VP1a	Var x 18"	ORANGE	Sizing according to Virginia WAPM
	M4-9L	60"x48"	ORANGE	Sizing according to Virginia WAPM
	M4-VP1a	Var x 18"	ORANGE	Sizing according to Virginia WAPM
	M4-9R	60"x48"	ORANGE	Sizing according to Virginia WAPM

	SIGN	SIGN DESIGNATION	DIMENSION	BACKGROUND COLOR	REMARKS
		M4-8a M4-VP1a	24"x18" Var x 18"	ORANGE	Sizing according to Virginia WAPM
		M4-VP1a M4-VI	Var x 18" 60"x48"	ORANGE	Sizing according to Virginia WAPM
		W20-1	48"x48"	ORANGE	Sizing according to Virginia WAPM
		W21-V23	48"x48"	ORANGE	Sizing according to Virginia WAPM
		R11-V4	48"x30"	WHITE	Sizing according to Virginia WAPM

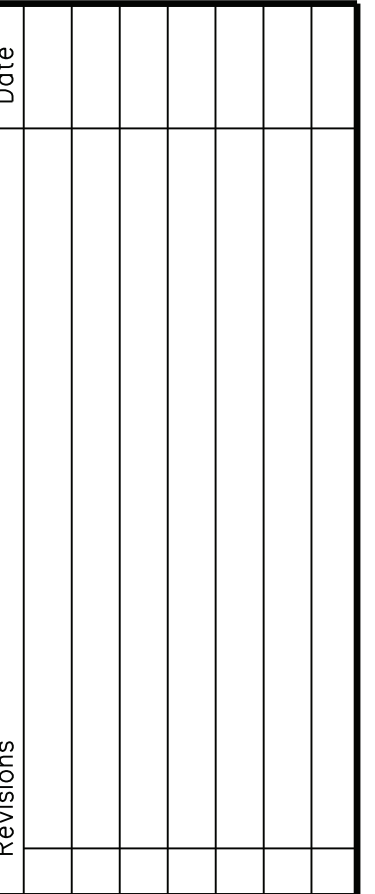
LEGEND

- Construction Sign
- Type III Barricade

○ Sign designation for signs that are to be installed prior to any construction activities and to remain until final completion of construction.

NOTE

Sign spacing according to TTC-4B.2 & TTC-53.0



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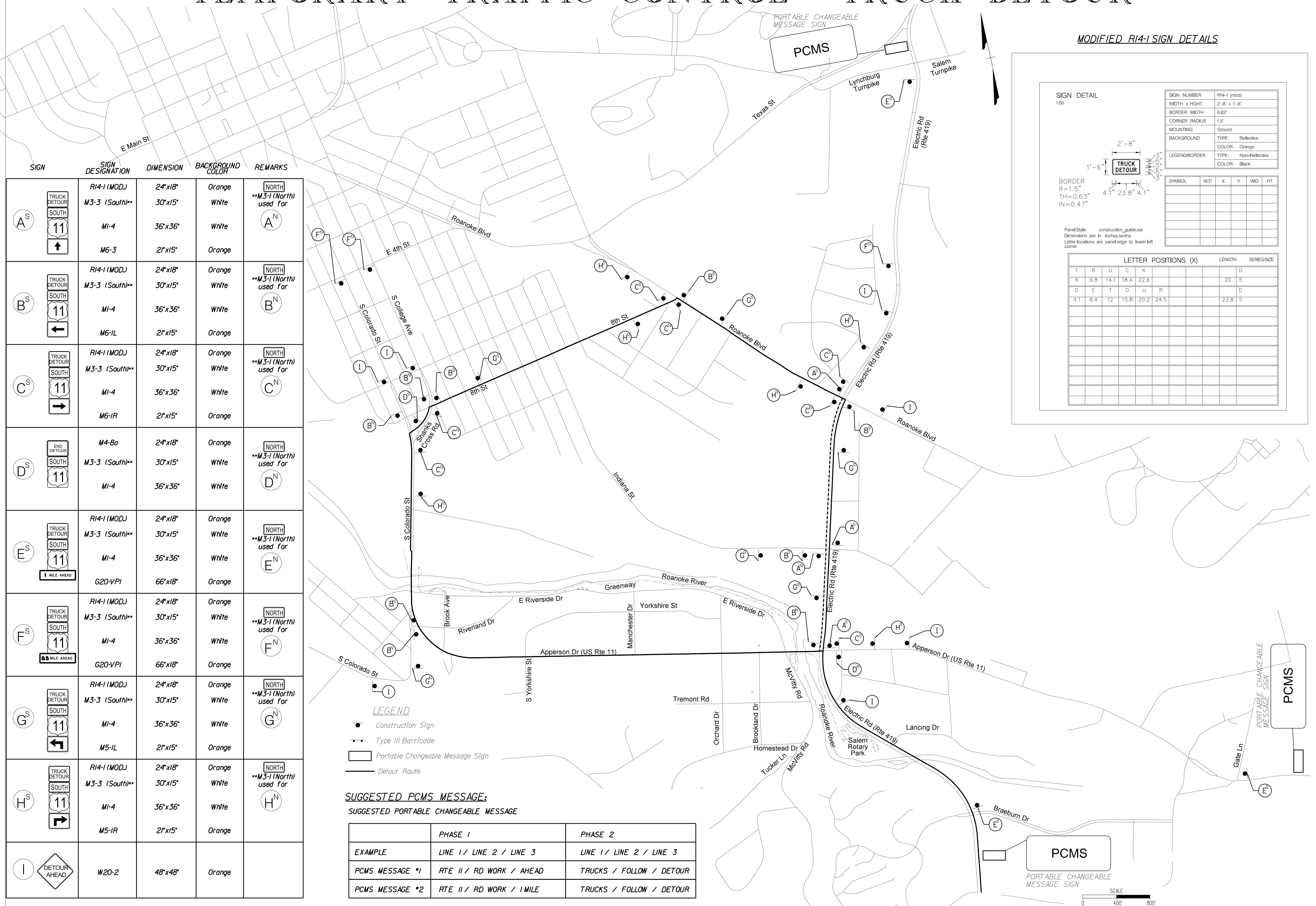
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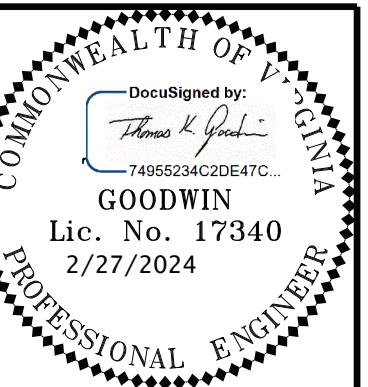
Commission Number:
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Sheet No.:

C-4C



TEMPORARY TRAFFIC CONTROL - PHASE 1



Date	
Revisions	

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APPERSON DRIVE BRIDGE REPLACEMENT TEMPORARY TRAFFIC CONTROL PLAN - PHASE 1 CITY OF SALEM, VA

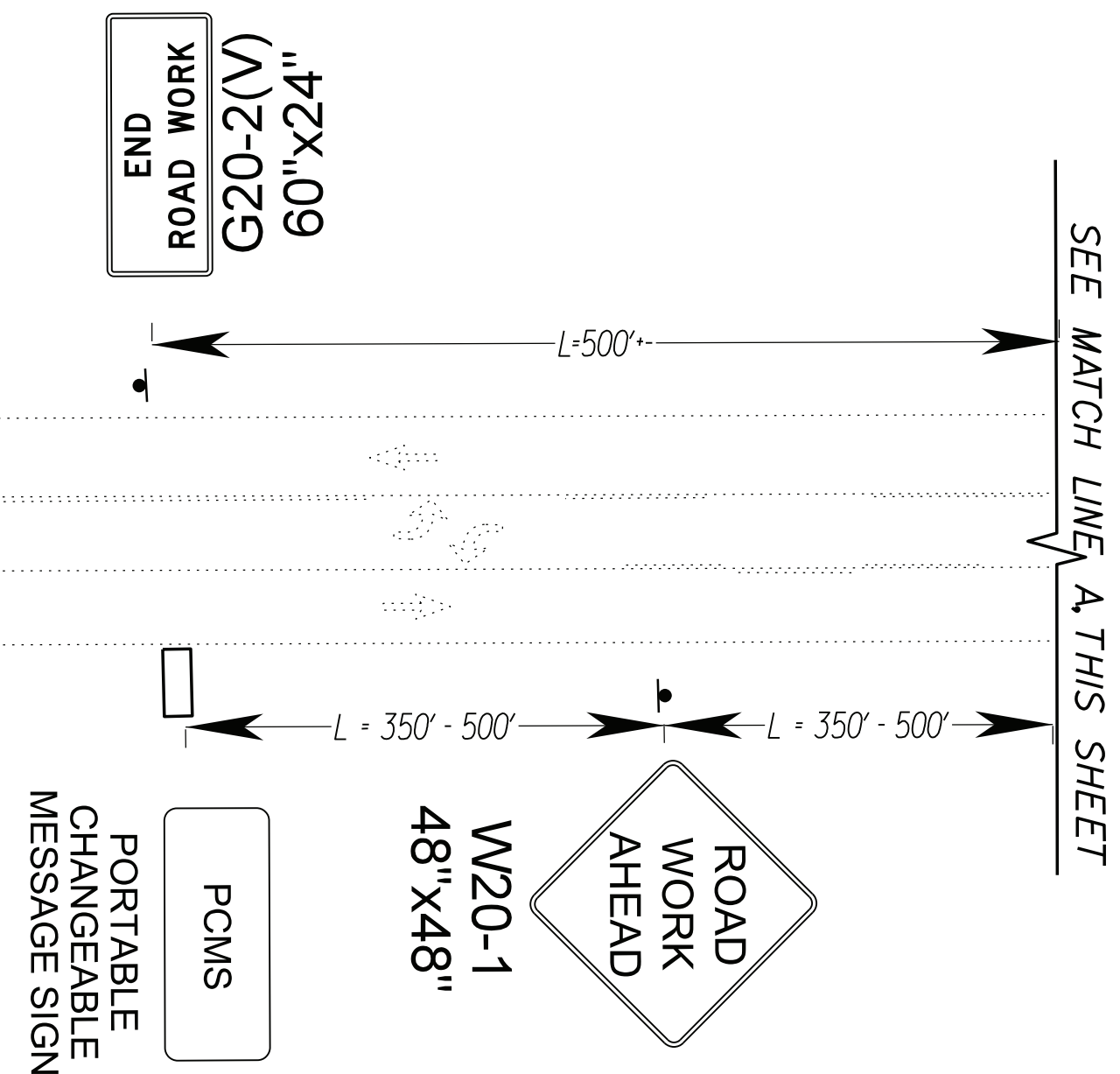
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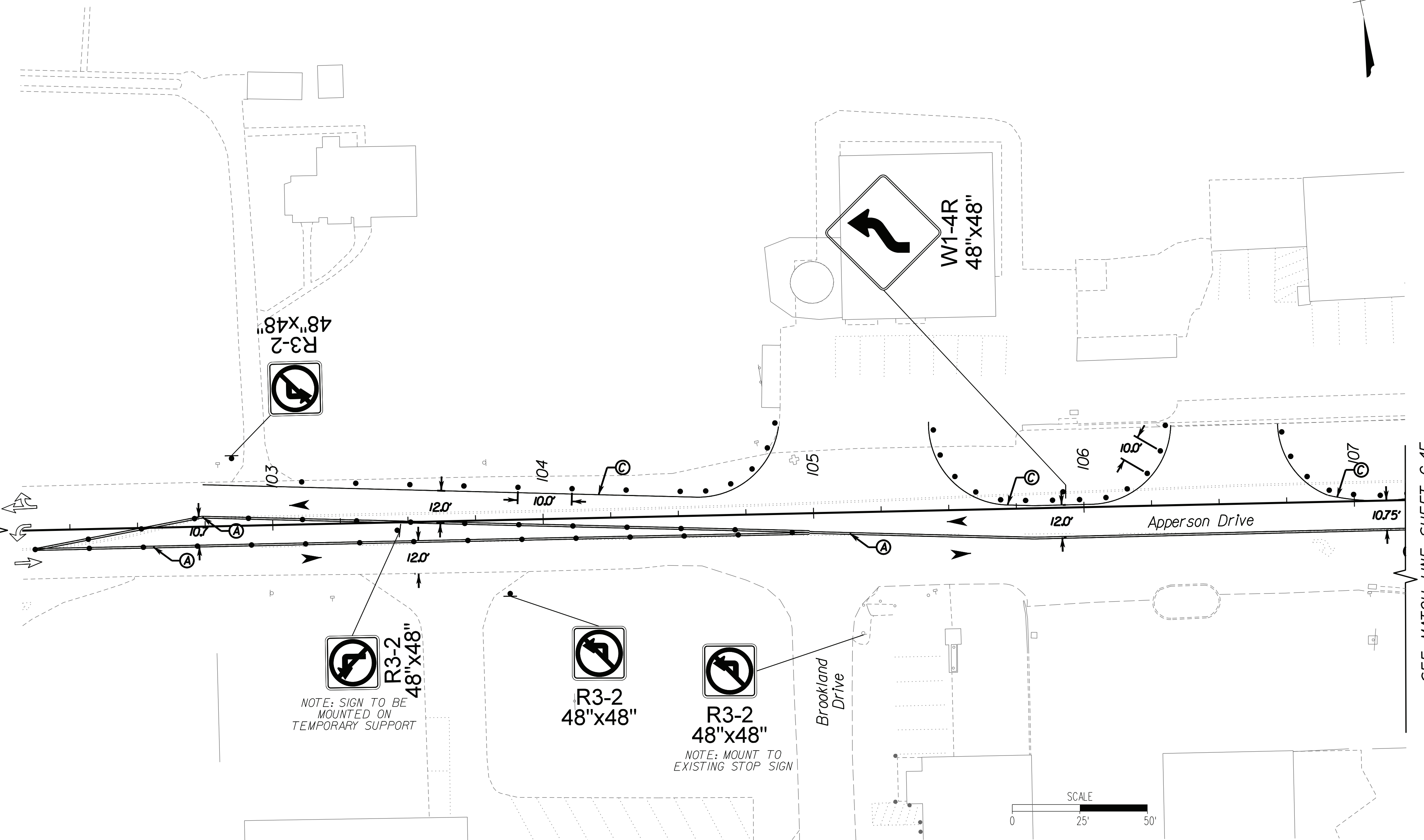
Commission Number:
3925B

Sheet No.:

C-4D



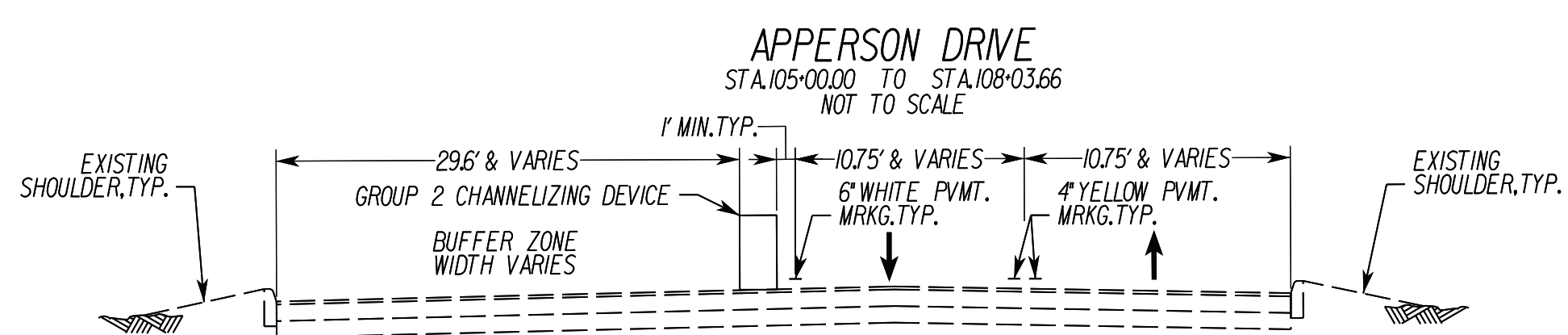
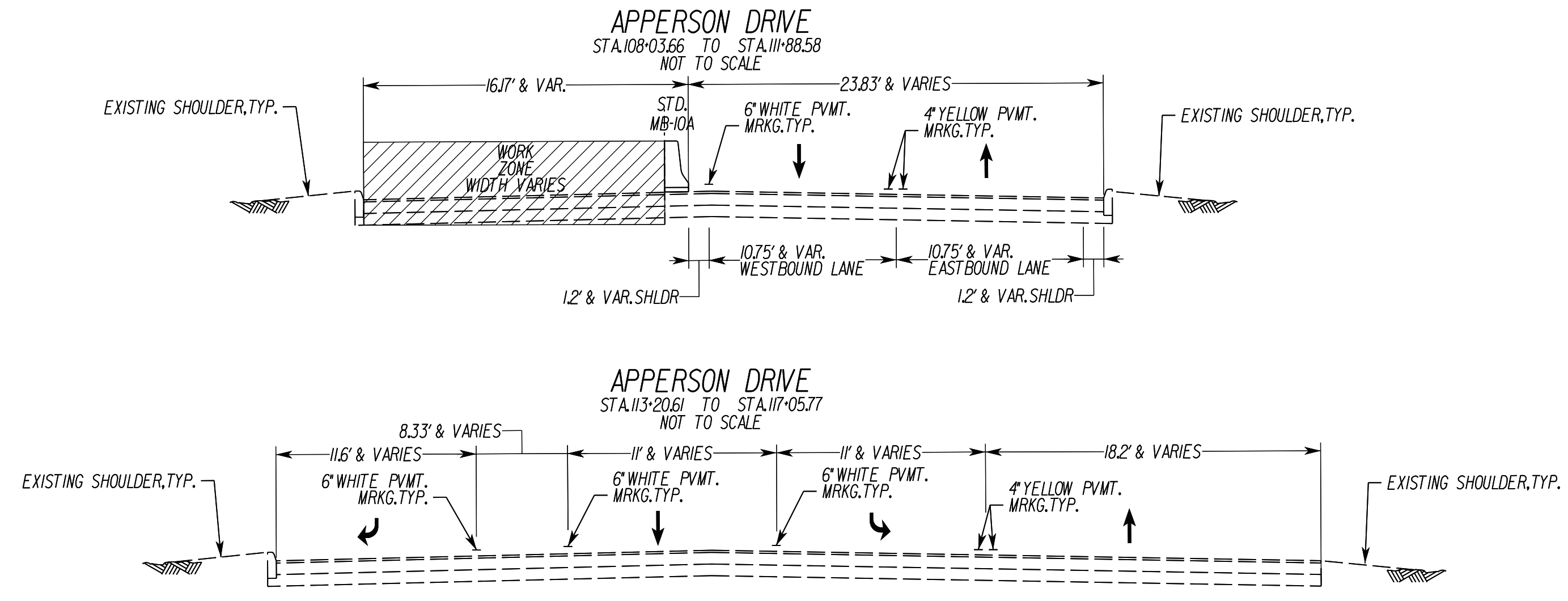
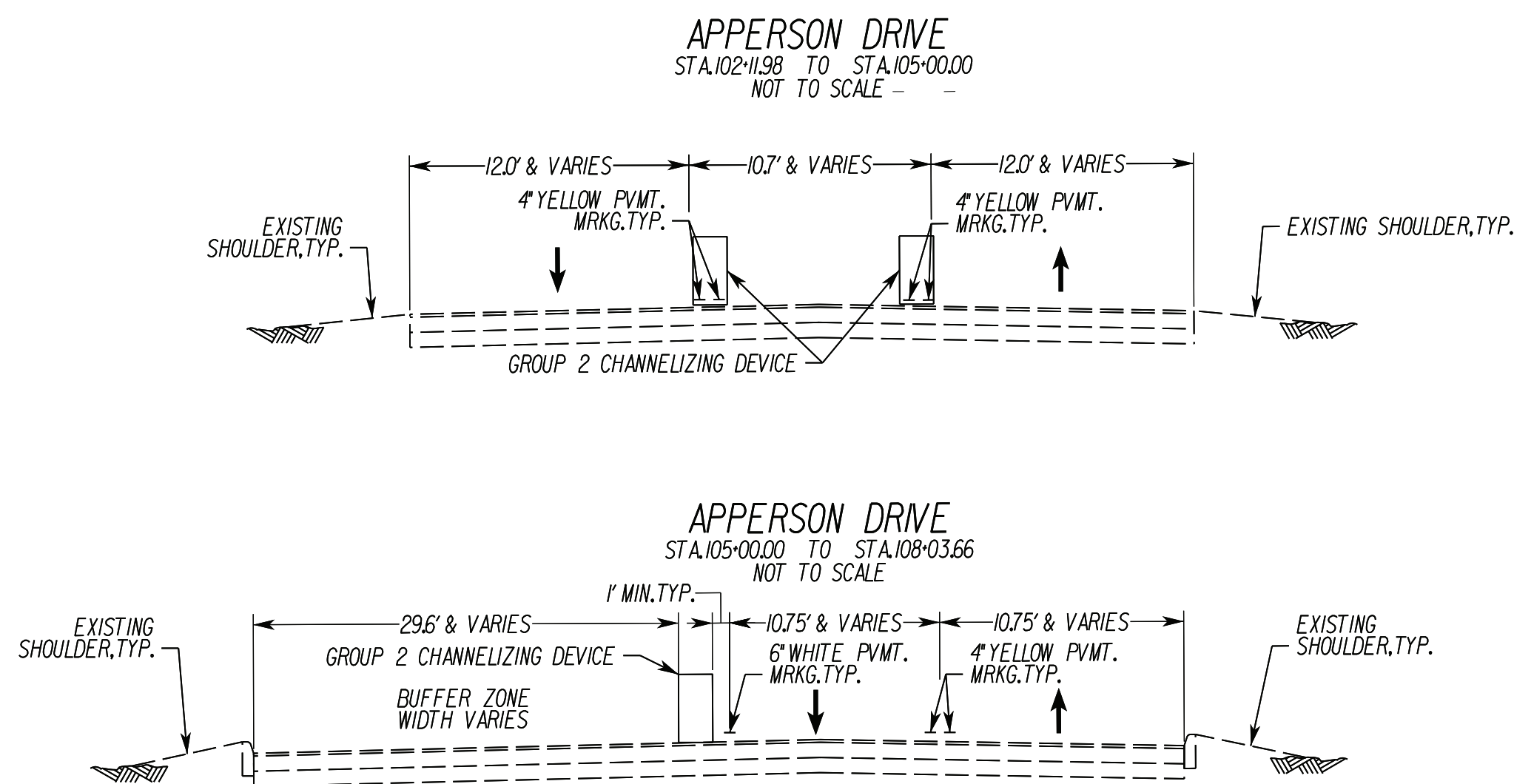
SEE MATCH LINE A THIS SHEET



SEE MATCH LINE SHEET C-4E

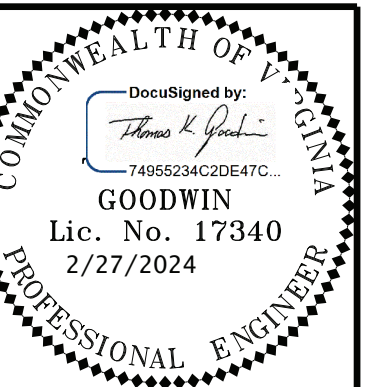
LEGEND

- (A) - Double Yellow 4" Temporary Pavement Marking, Type D, Class III
- (B) - White 8" Temporary Pavement Marking, Type D, Class III
- (C) - White 6" Temporary Pavement Marking, Type D, Class III
- (D) NOT USED
- (E) - White 24" Temporary Pavement Marking, Type D, Class III
- (F) - White 6" Dotted Extension Temporary Pavement Marking, 2' Line 6' Gap, Type D, Class III
- (G) - Yellow 4" Dotted Extension Temporary Pavement Marking, 2' Line 6' Gap, Type D, Class III
- (H) NOT USED
- (I) - White Turn Arrow Temporary Pavement Marking, Type A
- (J) - White Through Arrow Temporary Pavement Marking, Type A
- (K) - White Through and Turn Arrow Temporary Pavement Marking, Type A
- (L) - White Through and Double Turn Arrow Temporary Pavement Marking, Type A
- - Traffic Flow Arrow
- - Work Area
- ⊠ - Pavement Demolition
- - Group 2 Channelizing Devices, 20' Spacing Typ.
- - Proposed Sign
- - Proposed Type 3 Barricade
- ⏏ - Proposed Illuminated Flashing Arrow Type C



TYPICAL SECTIONS TEMPORARY TRAFFIC CONTROL PLAN PHASE 1

TEMPORARY TRAFFIC CONTROL - PHASE 1

[illegible]

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Designed By:	MPF
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TEMPORARY TRAFFIC CONTROL PLAN - PHASE 1

CITY OF SALEM, VA

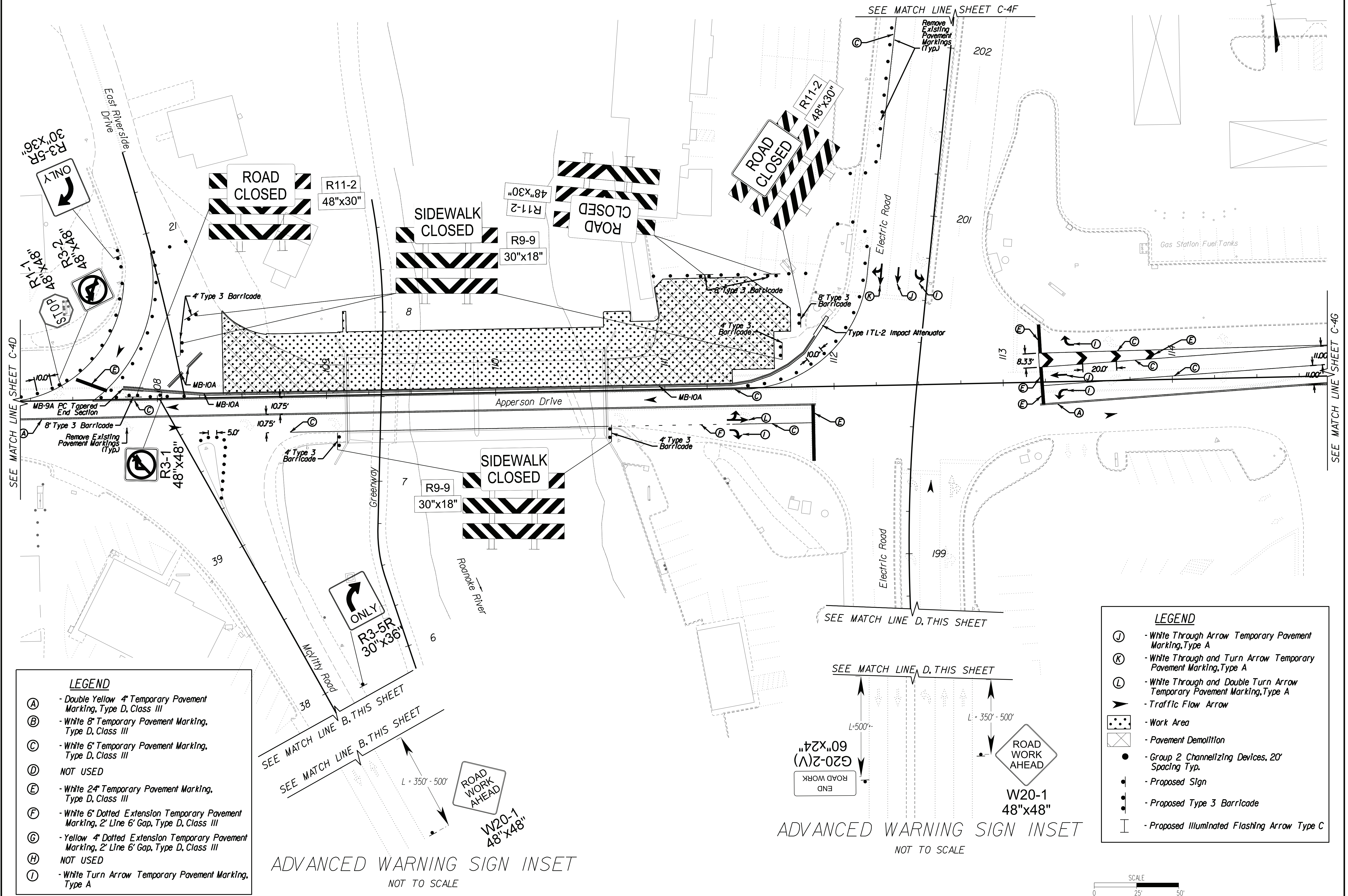
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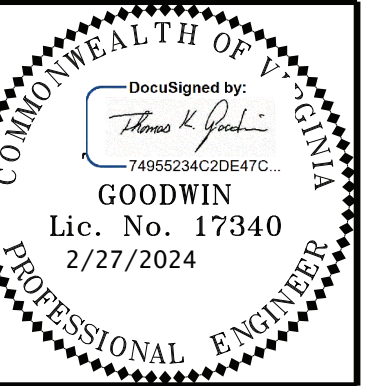
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Sheet No.:

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TEMPORARY TRAFFIC CONTROL - PHASE 1

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TEMPORARY TRAFFIC CONTROL
PLAN - PHASE 1
CITY OF SALEM, VA

Vertical Scale:
N/A

Horizontal Scale:
AS NOTED

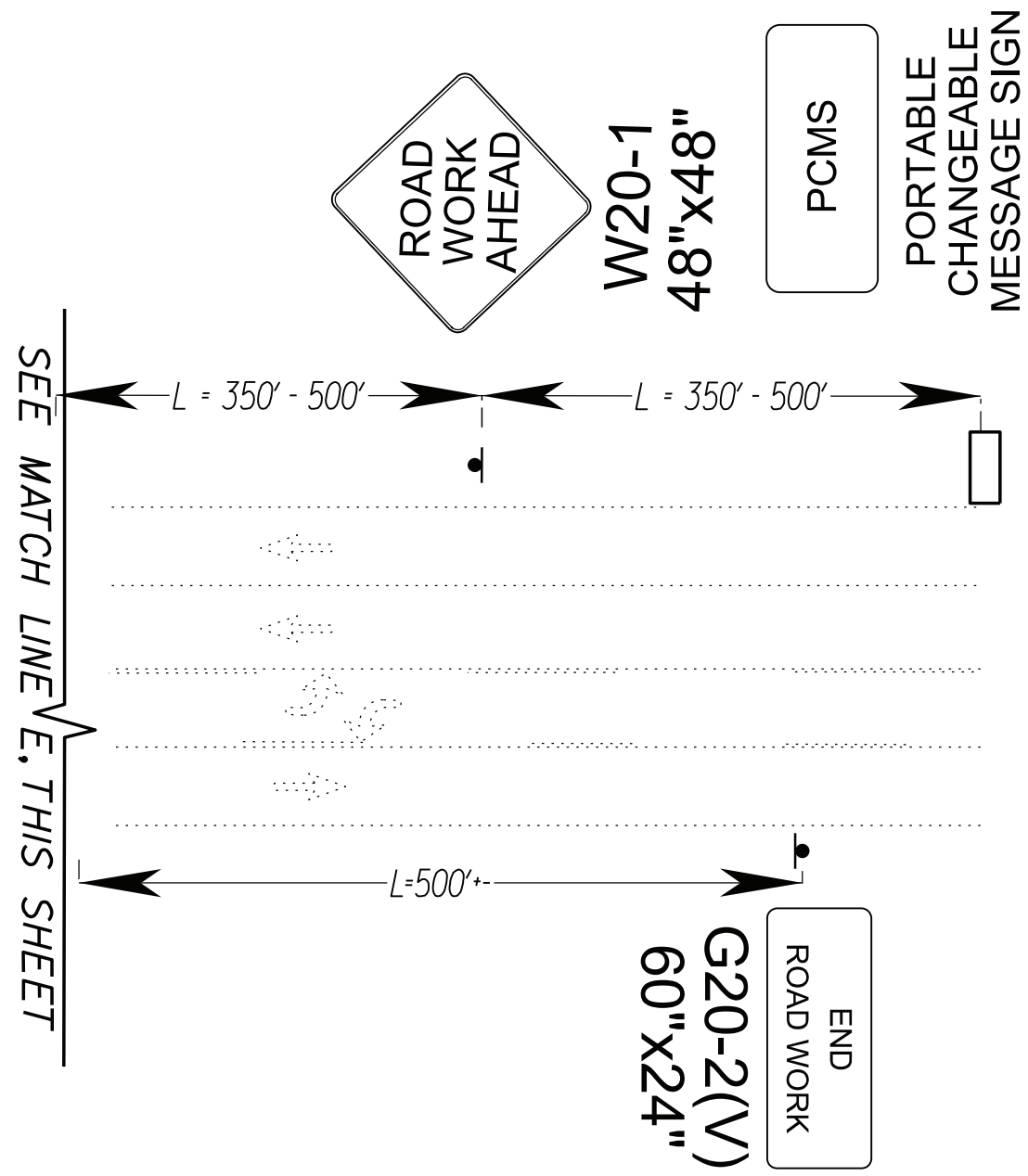
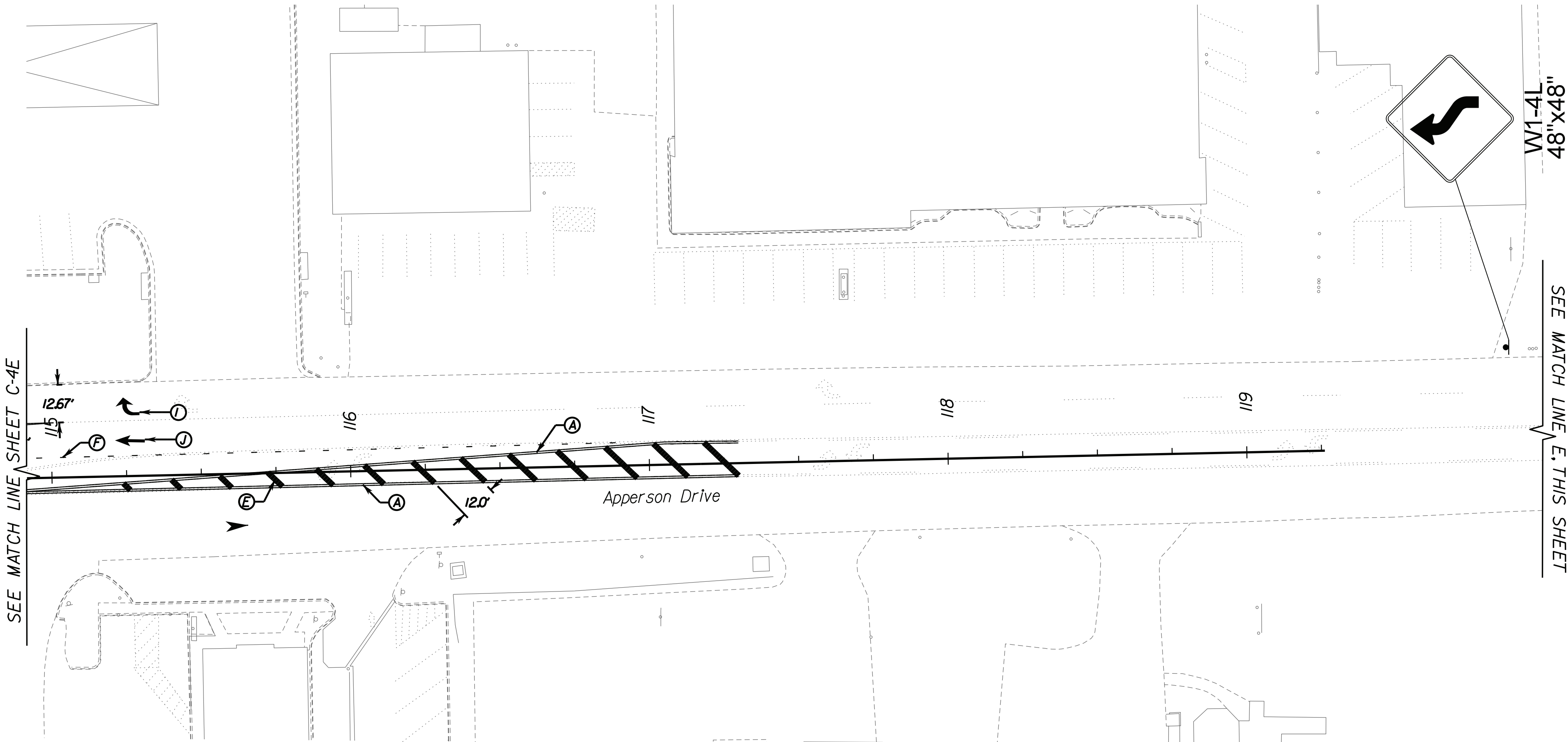
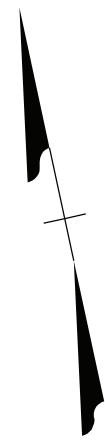
Commission Number:
3925B

Sheet No.:

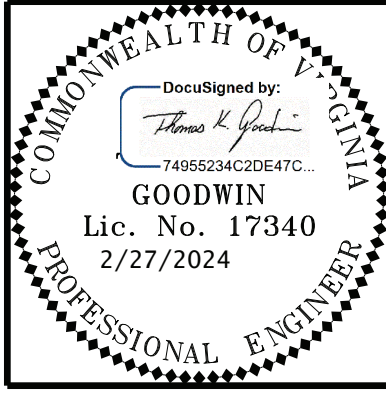
C-4F



TEMPORARY TRAFFIC CONTROL PLAN - PHASE 1



- LEGEND**
- (A) - Double Yellow 4" Temporary Pavement Marking, Type D, Class III
 - (B) - White 8" Temporary Pavement Marking, Type D, Class III
 - (C) - White 6" Temporary Pavement Marking, Type D, Class III
 - (D) NOT USED
 - (E) - White 24" Temporary Pavement Marking, Type D, Class III
 - (F) - White 6" Dotted Extension Temporary Pavement Marking, 2' Line 6' Gap, Type D, Class III
 - (G) - Yellow 4" Dotted Extension Temporary Pavement Marking, 2' Line 6' Gap, Type D, Class III
 - (H) NOT USED
 - (I) - White Turn Arrow Temporary Pavement Marking, Type A
 - (J) - White Through Arrow Temporary Pavement Marking, Type A
 - (K) - White Through and Turn Arrow Temporary Pavement Marking, Type A
 - (L) - White Through and Double Turn Arrow Temporary Pavement Marking, Type A
 - (M) - Traffic Flow Arrow
 - (N) - Work Area
 - (O) - Pavement Demolition
 - (P) - Group 2 Channelizing Devices, 20' Spacing Typ.
 - (Q) - Proposed Sign
 - (R) - Proposed Type 3 Barricade
 - (S) - Proposed Illuminated Flashing Arrow Type C



Revisions	Date

Issue Date:	02/16/2024
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APPERSON DRIVE BRIDGE REPLACEMENT
**TEMPORARY TRAFFIC CONTROL
PLAN - PHASE 1**
CITY OF SALEM, VA

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TEMPORARY TRAFFIC CONTROL - PHASE 2



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APPPERSON DRIVE BRIDGE REPLACEMENT
TEMPORARY TRAFFIC CONTROL
PLAN - PHASE 2
CITY OF SALEM, VA

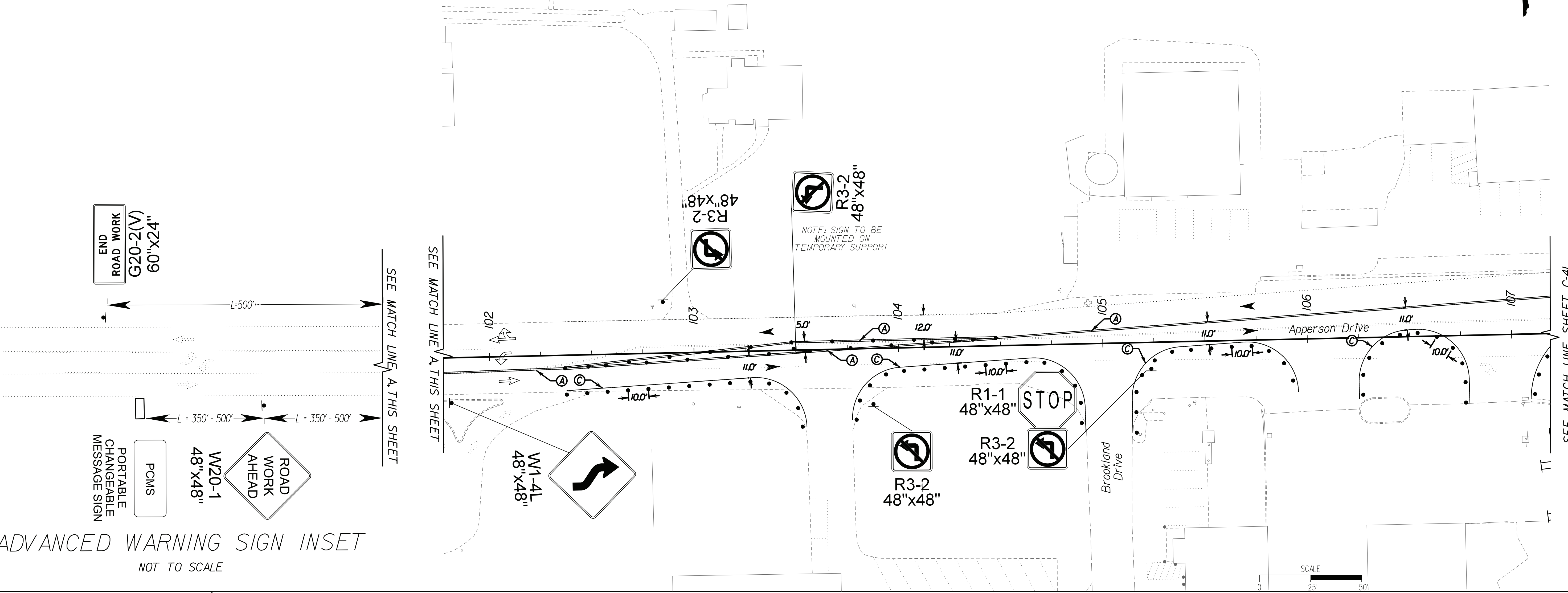
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3925B

Sheet No.:

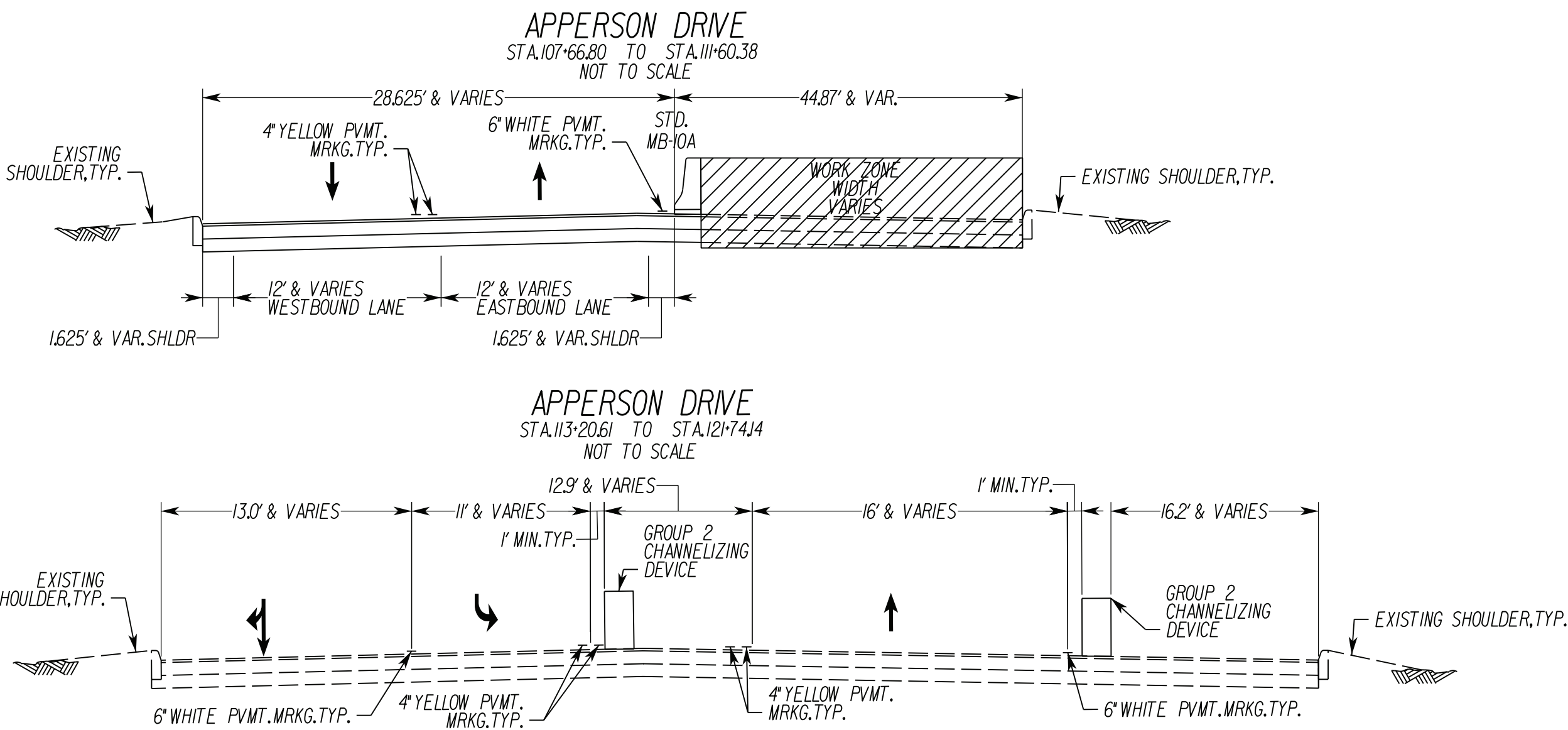
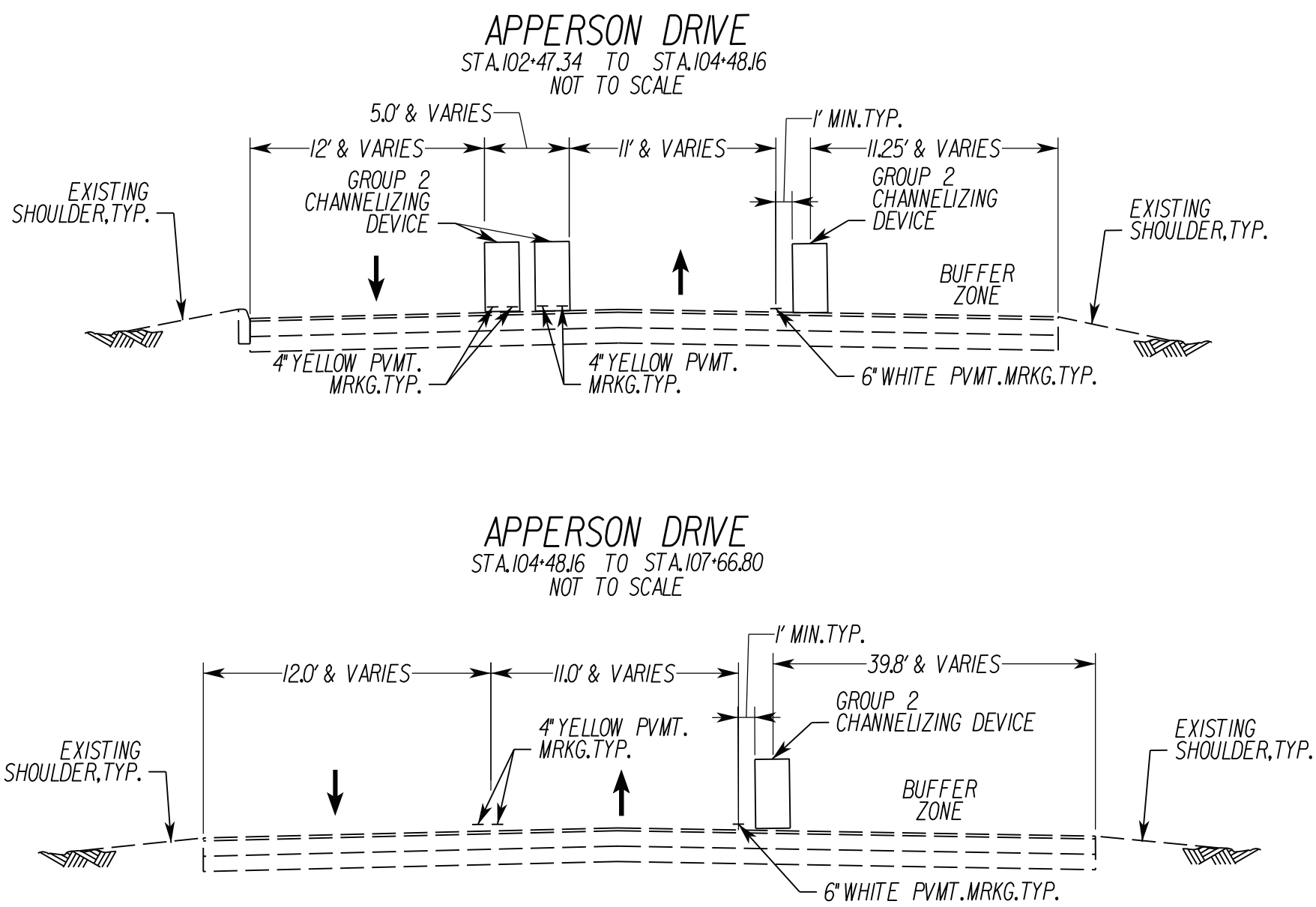
C-4H



ADVANCED WARNING SIGN INSET
NOT TO SCALE

LEGEND

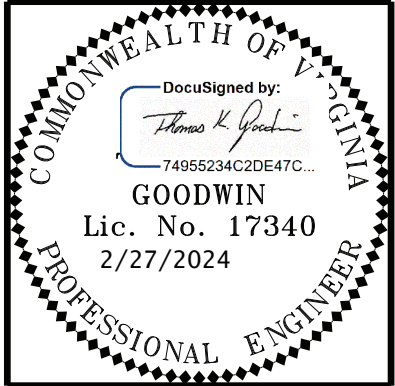
- Ⓐ - Double Yellow 4" Temporary Pavement Marking, Type D, Class III
- Ⓑ - White 8" Temporary Pavement Marking, Type D, Class III
- Ⓒ - White 6" Temporary Pavement Marking, Type D, Class III
- Ⓓ NOT USED
- Ⓔ - White 24" Temporary Pavement Marking, Type D, Class III
- Ⓕ - White 6" Dotted Extension Temporary Pavement Marking, 2' Line 6' Gap, Type D, Class III
- Ⓖ - Yellow 4" Dotted Extension Temporary Pavement Marking, 2' Line 6' Gap, Type D, Class III
- Ⓗ NOT USED
- Ⓘ - White Turn Arrow Temporary Pavement Marking, Type A
- Ⓢ - White Through Arrow Temporary Pavement Marking, Type A
- Ⓚ - White Through and Turn Arrow Temporary Pavement Marking, Type A
- Ⓛ - White Through and Double Turn Arrow Temporary Pavement Marking, Type A
- - Traffic Flow Arrow
- ▨ - Work Area
- ▩ - Pavement Demolition
- - Group 2 Channelizing Devices, 20' Spacing Typ.
- ▲ - Proposed Sign
- ▲— - Proposed Type 3 Barricade
- ⏏ - Proposed Illuminated Flashing Arrow Type C



TYPICAL SECTIONS TEMPORARY TRAFFIC CONTROL PLAN PHASE 2



TEMPORARY TRAFFIC CONTROL - PHASE 2



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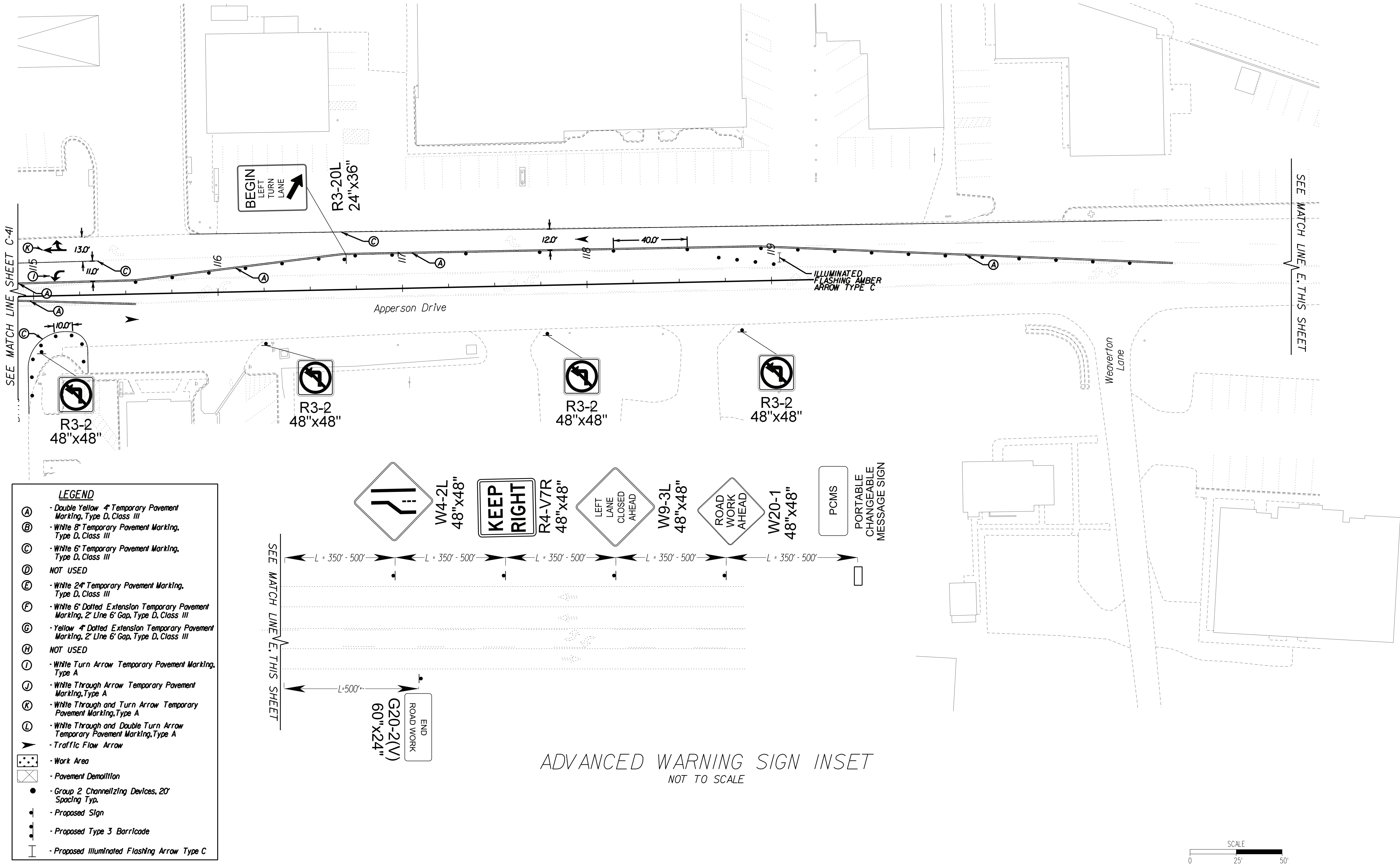
APPERSON DRIVE BRIDGE REPLACEMENT
TEMPORARY TRAFFIC CONTROL
PLAN - PHASE 2
CITY OF SALEM, VA

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25

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Sheet No.:
C-4J



PAVEMENT MARKING AND SIGNING PLAN

GENERAL NOTES & LEGEND

GENERAL NOTES - PAVEMENT MARKING

1. All proposed pavement markings and all proposed signs and sign layouts shall be in accordance with the most current edition of each of the following and any revisions/updates thereof:
- A) Manual of Uniform Traffic Control Devices (MUTCD)
 - B) The Virginia Supplement to the MUTCD
 - C) The Virginia Department of Transportation (VDOT) Road and Bridge Specifications
 - D) The VDOT Road and Bridge Standards
 - E) The discretion of the City of Salem

2. Any existing pavement markings which conflict with the proposed pavement markings as shown shall be completely eradicated.

3. Limits shown for the proposed pavement markings are approximate and shall be verified/modified in the field to ensure that proposed movement markings continue until existing pavement markings can be matched, if applicable.

4. Any changes to this plan shall be approved by the City of Salem Engineering Department.

5. Consistent with existing conditions upstream and downstream of the proposed improvements, no in-laid pavement markers are proposed with this project.

6. Signs noted on plans to be removed that do not have an accompanying sign label shall not be measured separately for payment. Removal and disposal for such signs shall be incidental to other contract items.

7. Contractor is responsible for storing any existing signs to be reinstalled for final condition. Any reused signs are to be stored in a manner to prevent deterioration. Payment will not be made separately and will be incidental to the cost of other items.

MANDATORY TURN MOVEMENT LANE ARROW SPACING

Turn arrows spacing:
1 Arrow located at beginning wide white solid lane line.
1 Arrow located 50' back from stop line.
1 Arrow located at midpoint of 8" white solid line.
Only word markings spacing:
Spaced midway between arrows.

TURN MOVEMENT LANE ARROW SPACING

Turn arrows spacing:
1 Arrow located at beginning of full width turn lane.
1 Arrow located 50' back from stop line or end of lane line.

See VDOT Standard PM-3 2016 Road & Bridge Standards latest edition for further information.

STANDARD SIGN LEGEND

PLAN ITEM	PLAN SYMBOL	
	PROPOSED	EXISTING
Single Post Sign Support		
Double Post Sign Support		
Triple Post Sign Support		
Flashing Beacon		
O/H Cantilever Sign Support		
O/H Span Sign Support		
SIGN CALL-OUTS		
Existing Sign to Remain or to be Relocated		
Existing Sign to be Removed		
Proposed Sign Panel		

SIGN LABELS	
Proposed Sign Assemblies denotes Sign Assembly No. denotes Text No.	Relocated Sign Assemblies denotes Sign Assembly No. denotes Text No.
Sign Relocation or Payable Sign Disposal/Salvage denotes Existing Sign Structure and/or Sign Panel Type STRUCTURE & SIGN PANEL SIGN PANEL GM - Ground Mounted SP-GM - Ground Mounted Sign Panel OM - Overhead Mounted SP-OM - Overhead Mounted Sign Panel CM - Cantilever Mounted STRUCTURE ONLY ST-GM - Ground Mounted denotes Action and Measurement & Payment Item A - Remove & Dispose B - Remove & Salvage C - Relocate D - Overlay Sign Panel	
Signs noted on plans to be removed that do not have an accompanying sign label shall not be measured separately for payment. Removal and disposal for such signs shall be incidental to other contract items.	

PAVEMENT MARKING LEGEND

- (A) Type B, Class I, White, 4" Width
- (B) Type B, Class I, White, 4" Width, 2' Long 6' Spacing
- (C) Not Used
- (D) Type B, Class I, White, 4" Width, 10' Long 30' Spacing
- (E) Type B, Class I, White, 8" Width
- (F) Type B, Class I, White, 8" Width, 3' Long 9' Spacing
- (G) Type B, Class I, Yellow, 4" Width, Double Line
- (H) Not Used
- (I) Type B, Class I, Yellow, 4" Width

- (J) Type B, Class II, Preformed Thermoplastic White, 24" Width
- (K) Type B, Class II, Preformed Thermoplastic White Turn Arrow, Left
- (L) Type B, Class II, Preformed Thermoplastic White Turn Arrow, Right
- (M) Type B, Class II, Preformed Thermoplastic White Pavement Word Markings, "ONLY"
- (N) Type B, Class VI, Contrast White, 4" Width
- (O) Type B, Class VI, Contrast White, 8" Width
- (P) Type B, Class VI, Contrast Yellow, 4" Width, Double Line



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Revisions									

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APPERSON DRIVE BRIDGE REPLACEMENT

PAVEMENT MARKING AND SIGNING
PLAN - GENERAL NOTES & LEGEND

CITY OF SALEM, VA

Vertical Scale:
N/A

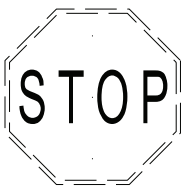
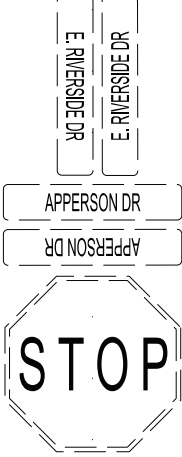
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Sheet No.:

C-5

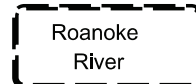
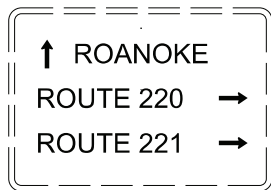
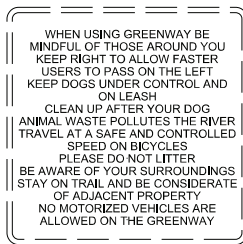
PAVEMENT MARKING AND SIGNING PLAN
SIGN SCHEDULE

TEXT NO.	SIGN ASSEMBLY NO(s).	TEXT	SIGN ASSEMBLY COMPONENTS			SIGN PANEL AREA (s/f.)		PROP. SIGN STRUCTURE ST'D.	REMARKS
			MUTCD ST'D.	PANEL SIZE		QTY.	PROP. ASSEMBLY		
				W	H				
1	502		EXIST. RI-1	-	-	1	-	-	
2	503		EXIST. D3-1	-	-	2	-	-	
			EXIST. D3-1	-	-	2	-		
			EXIST. RI-1	-	-	1	-		
3	501		R3-7R	36"	36"	1	9	10.5	STP-1 2 1/2" 12 GA. USE PROP. FOUNDATION STANDARD E
			RI0-31P	24"	9"	1	1.5		
4	504		EXIST. M3-1	-	-	1	-	-	
			EXIST. MI-Via	-	-	1	-		
			EXIST. M5-IL	-	-	1	-		
4	504		EXIST. M3-1	-	-	1	-	-	
			EXIST. MI-4	-	-	1	-		
			EXIST. MG-3	-	-	1	-		

NOTES:

- 1) ALL SIGNS SHALL BE ORIENTATED AS SHOWN ON THE PLANS.
2) SIGN COLOR COMBINATIONS SHALL BE IN ACCORDANCE WITH THE FHWA SHS BOOK AND THE 2011 VIRGINIA SHS BOOK OR AS NOTED IN THE PLANS.
3) ALL POSITIVE CONTRAST GUIDE AND SPECIFIC SERVICE SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-3 OR L-4 UNLESS OTHERWISE NOTED IN THE REMARKS. ALL OTHER SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-1 OR L-2 UNLESS OTHERWISE NOTED IN THE REMARKS.

- 4) ALL BLACK SHEETING SHALL BE NON-REFLECTIVE.
5) SIGN STRUCTURES SHALL BE INSTALLED PER THE NOTED SIGN ST'D.
6) ALL ST'D. STP-1 STRUCTURES TO BE SINGLE POST UNLESS OTHERWISE NOTED.

			SIGN ASSEMBLY COMPONENTS			SIGN PANEL AREA (s.f.)				
TEXT NO.	SIGN ASSEMBLY NO(s).	TEXT	MUTCD ST'D.	PANEL SIZE		QTY.	PER ASSEMBLY	ALL ASSEMBLIES	PROP. SIGN STRUCTURE ST'D.	REMARKS
				W	H					
4	504		EXIST. M3-3	-	-	1	-	-	-	
			EXIST. MH-Via	-	-	1	-			
			EXIST. M5-IR	-	-	1	-			
5	507		EXIST. HV9	-	-	1	-	-	-	
6	506		EXIST.	-	-	1	-			
7	505		EXIST.	-	-	1	-	-	-	



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APPERSON DRIVE BRIDGE REPLACEMENT

PAVEMENT MARKING AND SIGNING
PLAN - SIGN SCHEDULE

CITY OF SALEM, VA

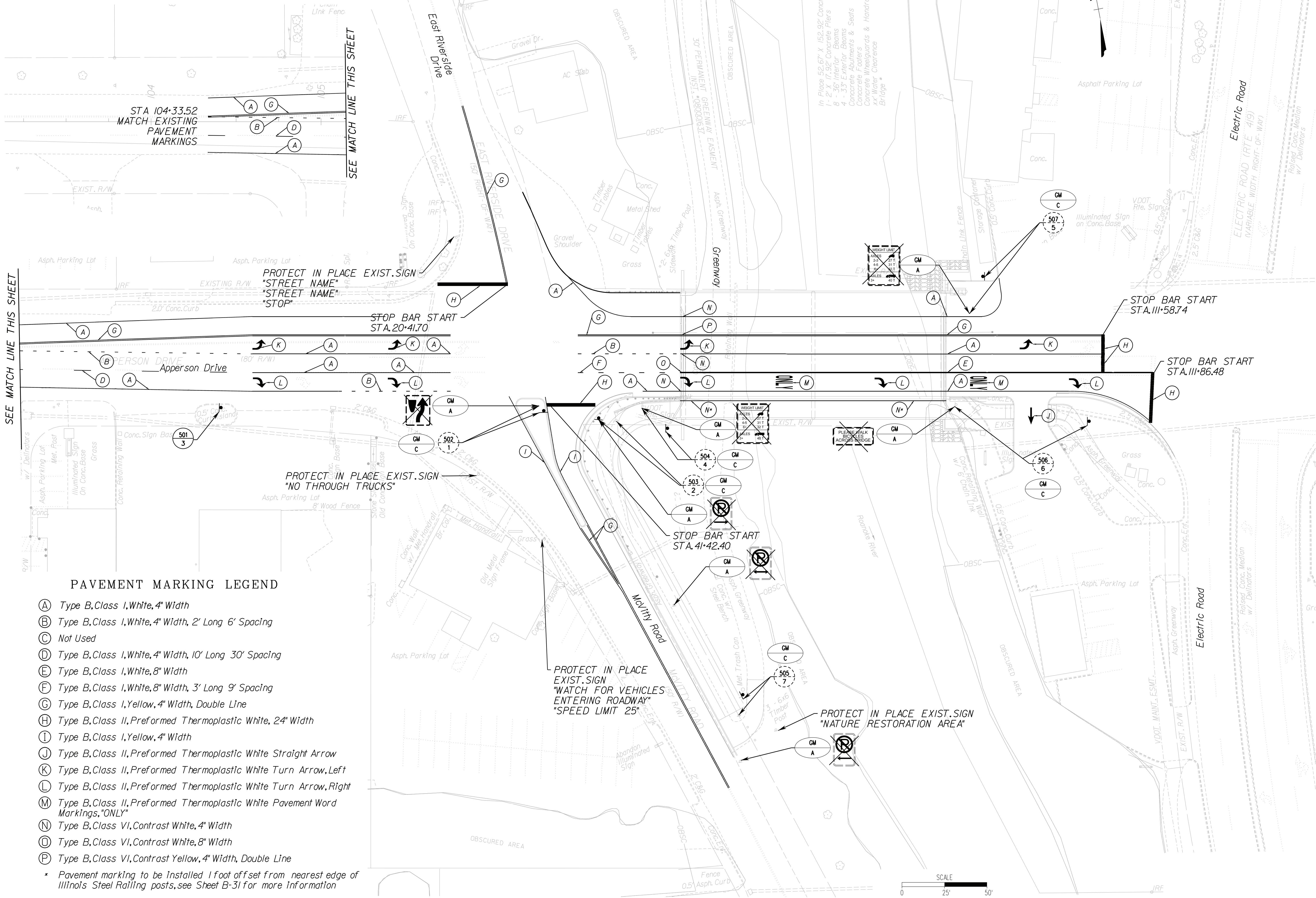
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C-5A

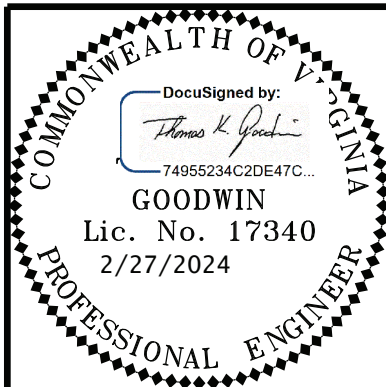
PAVEMENT MARKING AND SIGNING PLAN



PAVEMENT MARKING LEGEND

- (A) Type B, Class I, White, 4" Width
- (B) Type B, Class I, White, 4" Width, 2' Long 6' Spacing
- (C) Not Used
- (D) Type B, Class I, White, 4" Width, 10' Long 30' Spacing
- (E) Type B, Class I, White, 8" Width
- (F) Type B, Class I, White, 8" Width, 3' Long 9' Spacing
- (G) Type B, Class I, Yellow, 4" Width, Double Line
- (H) Type B, Class II, Preformed Thermoplastic White, 24" Width
- (I) Type B, Class I, Yellow, 4" Width
- (J) Type B, Class II, Preformed Thermoplastic White Straight Arrow
- (K) Type B, Class II, Preformed Thermoplastic White Turn Arrow, Left
- (L) Type B, Class II, Preformed Thermoplastic White Turn Arrow, Right
- (M) Type B, Class II, Preformed Thermoplastic White Pavement Word Markings, "ONLY"
- (N) Type B, Class VI, Contrast White, 4" Width
- (O) Type B, Class VI, Contrast White, 8" Width
- (P) Type B, Class VI, Contrast Yellow, 4" Width, Double Line

* Pavement marking to be installed 1 foot offset from nearest edge of Illinois Steel Railing posts, see Sheet B-31 for more information



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APPERSON DRIVE BRIDGE REPLACEMENT
PAVEMENT MARKING AND SIGNING PLAN
CITY OF SALEM, VA

Vertical Scale:
N/A

Horizontal Scale:
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Commission Number:
3925B

Sheet No.:

C-5B

SHEET NO.	WATER MAIN SUMMARY																
	WATER SERVICE LINE		DI WATER MAIN			GATE VALVE & BOX		BUTTERFLY VALVE & BOX	8" OFFSET EXIST. PIPE	8" X 8" TAPPING SLEEVE VALVE AND BOX	ADJUST EXIST. VALVE BOX	5/8" WATER METER BOX & YOKE	18" BEND	18" BRANCH (18" X 8" TEE)	18" PLUG OR CAP	18" SOLID SLEEVE	FIRE HYDRANT
	4				1		2	3					1		6	1	
	1"		6"	8"	18"	6"	8"	18"	1	7	2	5	1	1		1	9
	LF		LF	LF	LF	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA
U-3			56	10		1	2	24	1					1	2		
U-4	27		20		80	1				1	1	5				2	1
TOTAL	27		20	56	90	1	1	2	24	1	1	5		1	2	2	1

SHEET NO.	SANITARY SEWER SUMMARY	
	RECONST. EXIST. SANITARY MANHOLE	ADJUST EXIST. FRAME & COVER
	8	8
	LF	EA
U-3	2.0	1
U-4		
TOTAL	2.0	1

GENERAL NOTES

1. LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT.

THE CONTRACTOR SHALL NOTE THAT THE UTILITY PLAN SHEETS ARE FOR WATER AND SEWER RELOCATION/ADJUSTMENT/BETTERMENT WORK ONLY. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ROADWAY AND DRAINAGE DESIGN.

2. THE CONTRACTOR SHALL COORDINATE THE VALVE OPERATIONS, CHANGEOVER OR TAPPING OF WATER FACILITIES WITH THE CITY OF SALEM 48 HRS. PRIOR TO VALVE OPERATIONS, CHANGEOVER OR TAPPING. CITY OF SALEM EMPLOYEES WILL OPERATE ALL EXISTING VALVES IN CONNECTION WITH CHANGEOVER OF FACILITIES. TAPPING OF THE WATER MAINS SHALL BE PERFORMED BY THE CONTRACTOR UNDER CITY SUPERVISION USING PERSONNEL QUALIFIED TO PERFORM WET TAPS. CONTRACTOR SHALL CONTACT THE CITY OF SALEM 72 HRS. PRIOR TO CONSTRUCTION OR REQUIRING A CONNECTION. THE CONTRACTOR SHALL FURNISH ALL MATERIALS NEEDED FOR ANY TAPPINGS OF THE EXISTING WATER MAIN. THE CONTRACTOR SHALL NOTIFY: ANDY TRAIL, CITY OF SALEM WATER AND SEWER DEPARTMENT, (540) 375-3029.

3. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING WATER AND SEWER FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED WATER FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING WATER AND SEWER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE ENGINEER.

4. EXISTING MAINS, HYDRANTS AND WATER SERVICES SHALL REMAIN IN SERVICE UNTIL NEW MAINS AND HYDRANTS ARE PLACED IN SERVICE AND APPROVED BY THE ENGINEER. PROPOSED FIRE HYDRANTS SHALL REMAIN COVERED BY MEANS OF SECURELY ATTACHED BURLAP BAGS UNTIL TESTED AND PLACED IN SERVICE.

5. THE CONTRACTOR SHALL NOT INSTALL WATER MAIN JOINTS BENEATH PROPOSED OR EXISTING UTILITIES OR PROPOSED VDOT STORM DRAINAGE WHEN CROSSING UNDER THESE STRUCTURES. A MINIMUM OF 2 FEET BEYOND THE OUTSIDE OF THE FOREIGN PIPE OR UTILITY SHALL BE REQUIRED WHEN PLACING JOINTS AND A MINIMUM VERTICAL CLEARANCE OF 18" SHALL BE MAINTAINED BETWEEN STORM DRAINAGE FACILITIES AND WATER FACILITIES, UNLESS OTHERWISE SHOWN ON THE PLANS. ADDITIONAL MEASURES IN ACCORDANCE WITH CITY STANDARDS SHALL BE ENFORCED WHEN THIS CANNOT BE ACHIEVED.

6. INSTALL VALVES WITH OPERATOR STEMS IN THE VERTICAL PLANE THROUGH THE PIPE AXIS AND PERPENDICULAR TO THE PIPE AXIS. LOCATE VALVES AS SHOWN ON DRAWINGS.

VALVE STEM EXTENSIONS SHALL BE INSTALLED WHEN THE DISTANCE FROM THE OPERATING NUT TO TOP OF VALVE BOX FRAME IS GREATER THAN 36". CONTRACTOR SHALL PROVIDE VALVE OPERATOR EXTENSIONS, AS REQUIRED, TO BRING OPERATOR TO WITHIN A MINIMUM OF 12" OF PROPOSED GRADE, AND 3 FEET MAXIMUM OF PROPOSED GRADE FOR NEW VALVES. THE EXTENSION SHALL REPLACE, OR BE SECURELY ATTACHED TO THE NORMAL 2" SQUARE OPERATING NUT, SHALL BE AT LEAST AS STRONG AS THE VALVE STEM, AND SHALL BE COATED IN ACCORDANCE WITH AWWA C550.

7. WATER MAIN PIPE SHALL BE LAID WITH BELL ENDS FACING THE DIRECTION OF LAYING. WHERE GRADE IS 10 PERCENT OR GREATER, PIPE SHALL BE LAID UPHILL WITH BELL ENDS UPGRADE.

8. CONTRACTOR TO FIELD VERIFY LOCATIONS AND DEPTH OF ALL WATER FACILITIES PRIOR TO CONSTRUCTION OR ADJUSTMENT OF THE UTILITY SYSTEMS. CONTRACTOR IS RESPONSIBLE FOR RELOCATING ANY EXISTING CONFLICTS FOUND DURING CONSTRUCTION. CONTRACTOR TO SCHEDULE WATER SERVICE CONNECTIONS WITH THE PROPERTY OWNER, USER, AND CITY OF SALEM.

9. FOR EXISTING SERVICE TO BE REPLACED OR ABANDONED, THE CONTRACTOR SHALL ABANDON WATER SERVICE BY SHUTTING OFF THE CORPORATION STOP AT THE WATER MAIN AND REMOVE THE SERVICE LINE FROM THE WATER MAIN. CONTRACTOR SHALL NOT DISTURB WATER MAIN DURING THE TRANSFER OR ABANDONMENT OF SERVICES.

10. ALL EXISTING VALVE BOXES, FIRE HYDRANTS, AIR RELEASES, SANITARY SEWER MANHOLES AND CLEANOUTS SHALL BE RELOCATED AND/OR ADJUSTED TO FINISH GRADE AS REQUIRED, REGARDLESS IF THEY ARE SHOWN ON THE PLANS.
11. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIALS SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE ENGINEER, THAT ALL MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

12. ALL RESTRAINT SYSTEMS INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE ENGINEER. TEMPORARY BUTTBRESSING FOR TESTING SHALL BE PROVIDED BY THE CONTRACTOR. A JOINT RESTRAINT SYSTEM SHALL BE USED IN LIEU OF REACTION BLOCKING. THE JOINT RESTRAINTS SHALL BE A STANDARD PRODUCT OF A MANUFACTURER. THE JOINT RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL W-19 SHOWN ON SHEET U-5.

13. PRESSURE AND LEAKAGE TESTING (WATER MAINS AND ACCESSORIES) SHALL BE IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.

14. FLUSHING OF WATER MAINS SHALL BE IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.

15. DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C651 - LATEST REVISION, AND THE VDOT ROAD AND BRIDGE SPECIFICATIONS.

16. THE AUTHORITY DOES NOT GUARANTEE A 100 PERCENT SHUTDOWN OF THE WATER DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL ANTICIPATE CUT AND PLUG OPERATIONS UNDER PARTIAL PRESSURE.

17. THE CONTRACTOR SHALL COMPLY WITH "MISS UTILITY" (VA 811) REQUIREMENTS PRIOR TO PERFORMING ANY EXCAVATION.

18. ACCESS TO ALL PUBLIC AND PRIVATE FIRE HYDRANTS IN SERVICE WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. A MINIMUM CLEAR SPACE OF A 10 FOOT RADIUS AROUND THE HYDRANTS SHALL BE KEPT CLEAR OF ALL SOIL, STONE, MATERIALS, EQUIPMENT AND OTHER OBSTRUCTIONS. THE CONTRACTOR SHALL INFORM THE CITY 48 HOURS PRIOR TO ANY WORK ON EXISTING FIRE HYDRANTS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL SCHEDULE HYDRANT INSTALLATION SO THAT NO TWO HYDRANTS IN LINE WILL BE OUT OF SERVICE AT THE SAME TIME. THE CONTRACTOR SHALL ALSO SEQUENCE EACH HYDRANT INSTALLATION FOR MINIMAL AMOUNT OF INTERRUPTED SERVICE. ALL POSSIBLE TRENCHING AND ASSEMBLY REQUIRED FOR THE NEW HYDRANT SHALL BE DONE PRIOR TO TAKING THE OLD HYDRANT OFF LINE. PRIOR TO REMOVING EXISTING HYDRANT, VERIFY RESTRAINT OF EXISTING FIRE HYDRANT VALVE, WATER MAIN, AND PROVIDE RESTRAINT FROM THE EXISTING TEE TO THE EXISTING VALVE. RESTRAIN FROM THE EXISTING VALVE TO THE NEW HYDRANT DURING INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH THE CITY FOR TESTING AND PAINTING OF NEW HYDRANTS.

19. CONTRACTOR SHALL FURNISH ELECTRONIC COPIES OF ALL SHOP DRAWINGS TO THE ENGINEER PRIOR TO CONSTRUCTION AND/OR INSTALLATION OF CITY FACILITIES AND RELATED ITEMS. ANY ITEMS INSTALLED PRIOR TO APPROVAL OF SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S RISK AND MAY BE SUBJECT TO REMOVAL AND CORRECT INSTALLATION AT THE CONTRACTOR'S EXPENSE.

20. THE NUMBER AND TYPE OF FITTINGS REQUIRED FOR THE COMPLETION OF WATER RELOCATION/ADJUSTMENT WORK ARE NOT GUARANTEED AND THEREFORE, SHALL BE DETERMINED BY ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION. FITTINGS 12" IN SIZE AND LESS SHALL NOT BE MEASURED FOR SEPARATE PAYMENT. THE COST THEREOF SHALL BE INCLUDED IN THE BID PRICE FOR THE ITEM TO WHICH IT PERTAINS.

21. CONTRACTOR SHALL SALVAGE EXISTING FIRE HYDRANTS AND GATE VALVES, MATERIALS TO BE ABANDONED SHOULD BE LEFT IN A SECURE AREA, WITHIN THE PROJECT LIMITS, FOR THE CITY TO PICK UP.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF NEW GUARDRAILS WITH EXISTING AND PROPOSED CROSSINGS OF UNDERGROUND UTILITIES WITH THE LIMITS OF THE ROADWAY PROJECT.

23. CONTRACTOR SHALL MAINTAIN TWO (2) CLEAN RED-LINED SETS OF UTILITY PLANS TO SERVE AS A SET OF RECORD DRAWINGS FOR THE PROJECT. THE DRAWINGS SHOULD CLEARLY DEPICT CONSTRUCTION CHANGES THAT DIFFER FROM THE UTILITY PLANS, INCLUDING BOTH THE PLAN AND PROFILE VIEWS IN THE PLANS. THE RECORD DRAWINGS SHALL BE DELIVERED TO THE CITY OF SALEM UPON COMPLETION OF THE UTILITY PORTION OF THE PROJECT.

24. THE COST FOR ALL TEMPORARY CONNECTIONS TO THE EXISTING MAINS SHALL BE INCLUDED IN THE UNIT COST FOR THE WATER MAIN. NO SEPARATE PAYMENT SHALL BE MADE FOR THESE ITEMS (INCLUDING LABOR, EQUIPMENT AND MATERIALS FOR TEMPORARY WATER MAIN, VALVES, FITTINGS AND OTHER WATER APPURTENANCES NECESSARY TO MAKE THE TEMPORARY CONNECTION). TEMPORARY CONNECTIONS ARE NOT SHOWN ON THESE PLANS BECAUSE THESE ARE RELATED TO ROADWAY SEQUENCE OF CONSTRUCTION ISSUES THAT ARE ACHIEVED IN A NUMBER OF DIFFERENT WAYS.

25. CONTINUOUS WATER AND SEWER SERVICE SHALL BE MAINTAINED BY THE CONTRACTOR FOR ALL CITY OF SALEM CUSTOMERS THROUGHOUT CONSTRUCTION. BRIEF OUTAGES WILL BE ALLOWED FOR TRANSFER OF SERVICE FROM OLD TO NEW LINES FOLLOWING A MINIMUM 48 HOUR ADVANCE NOTICE TO THE CUSTOMER.

26. THE HYDRAULIC GRADE LINE ELEVATION FOR THE WATER SYSTEM IN THE PROJECT AREA IS 1279.

27. WHERE EXISTING VAULTS ARE BEING DEMOLISHED OR ABANDONED, CONTRACTOR SHALL REMOVE ALL METERS, VALVES, DETECTOR CHECK ASSEMBLIES AND SALVAGE THOSE COMPONENTS TO THE CITY BY LEAVING THESE COMPONENTS IN A SECURE AREA (WITHIN PROJECT LIMITS) FOR CITY TO PICKUP. EACH VAULT SHALL BE DEMOLISHED BY REMOVING ANY PART OF THE STRUCTURE WITHIN 24" OF FINISHED GRADE. THE REMAINDER OF THE STRUCTURE MAY BE LEFT IN PLACE IN NON-PAVED AREAS. IN PAVED AREAS, THE ENTIRE VAULT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR WHERE VAULTS ARE BEING ABANDONED. IN PLACE, CONTRACTOR SHALL BREAK UP (OR CORE DRILL) THE BOTTOM OF THE STRUCTURE TO ALLOW FOR DRAINAGE. THE REMAINING AREA SHALL BE FILLED WITH SUITABLE BACKFILL MATERIAL.

28. FOR WATER SERVICE LINE AND METER INSTALLATIONS, CONTRACTOR SHALL INSTALL ALL SERVICE LINE, THE METER BOX AND SETTER. THE CITY OF SALEM WILL FURNISH AND INSTALL THE NEW METER AND REMOVE THE EXISTING METER FROM THE EXISTING METER BOX. CONTRACTOR SHALL THEN DEMOLISH AND REMOVE THE EXISTING SETTER AND BOX. CONTRACTOR SHALL COORDINATE NEW METER INSTALLATION AND EXISTING METER REMOVAL WITH CITY AND SHALL MAKE EVERY EFFORT POSSIBLE TO MINIMIZE INTERRUPTION IN WATER SERVICE. CONTRACTOR SHALL ALLOW 3 BUSINESS DAYS ADVANCE NOTICE TO THE CITY PRIOR TO EACH INSTALLATION.

29. CONTRACTOR SHALL CAREFULLY COORDINATE STAKEOUT AND PLACEMENT OF NEW WATER AND SEWER FACILITIES WITH ALL EARTHWORK CUTS AND FILLS, STORM DRAINAGE DESIGN, AND CROSSINGS OF OTHER UTILITIES. THIS COORDINATION INCLUDES ASSURING THAT NEW WATER FACILITIES HAVE ADEQUATE COVER WITH EARTHWORK CUTS AT ENTRANCES. UTILITY CONTRACTOR SHALL REFER TO ENTRANCE PROFILES, AS THE ENTRANCE CUT/FILLS MAY NOT BE SHOWN ON THE WATER PROFILES.

30. CONTRACTOR SHALL VERIFY SIZES OF EXISTING METERS PRIOR TO PLACING NEW METER SETTER AND METER BOXES.

31. FOR THE PAY ITEM " 1" WATER METER BOX & YOKE," CONTRACTOR SHALL NOTE THAT THE EXACT SETTER SIZES SHALL BE COORDINATED IN THE FIELD PRIOR TO CONSTRUCTION. THE EXISTING METER SIZES MAY VARY FROM 7/4" TO 5/8" TO 1".

32. CONTRACTOR SHALL CAREFULLY COORDINATE WATER AND SEWER UTILITY CONSTRUCTION IN THE VICINITY OF UTILITY POLES WITH THE UTILITY COMPANY. ANY TEMPORARY REMOVAL OF EXISTING GUY WIRES OR TEMPORARY SUPPORT OF THE EXISTING POLES SHALL BE COORDINATED WITH THE UTILITY COMPANY, WITH AT LEAST 2 WEEKS ADVANCE NOTICE TO THE UTILITY COMPANY. THE COST OF THIS COORDINATION SHALL BE INCIDENTAL TO THE COST OF THE WATER MAIN CONSTRUCTION.

33. ALL WATER MAIN CONSTRUCTION TESTING SHALL BE IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL DESIGN & CONSTRUCTION STANDARDS. THESE CAN BE FOUND AT WWW.WESTERNVAWATER.ORG.

34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL E&S OR MOT/SOC ITEMS NECESSARY FOR THE CONSTRUCTION AND INSTALLATION OF THE UTILITIES SHOWN IN THESE PLANS.

35. ALL WATER WORK SHALL BE SUBJECT TO INSPECTION BY THE CITY OF SALEM.

36. FIELD MODIFICATIONS TO WATER PLANS SHALL BE APPROVED BY THE CITY OF SALEM.



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APPERSON DRIVE BRIDGE REPLACEMENT

UTILITY SUMMARY
AND GENERAL NOTES

CITY OF SALEM, VA

Vertical Scale:
N/A

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U-1

MATERIAL NOTES

NOTE: ALL MATERIALS REQUIRED TO COMPLETE THE CONSTRUCTION OF THE WATER AND SEWER FACILITIES AS SPECIFIED IN THE PLANS SHALL BE IN ACCORDANCE WITH "BUY AMERICA" REQUIREMENTS, WHICH REQUIRES ALL STEEL, IRON, AND MANUFACTURED PRODUCTS TO BE PRODUCED IN THE UNITED STATES.

1. DUCTILE IRON PIPE SHALL CONFORM WITH AWWA C 151/ANSI21.51 AND FITTINGS SHALL CONFORM WITH ANSI/AWWA C110 OR C153 (COMPACT FITTINGS). THE PIPE AND FITTINGS SHALL BE ASPHALT COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C104/ANSI21.40. THE PIPE THICKNESS SHALL CONFORM WITH AWWA C150/ANSI21.50 AND SHALL BE CLASS 350, AS A MINIMUM, THROUGH THE 12" SIZE. FITTINGS FOR WATER PIPE SHALL BE MECHANICAL OR PUSH-ON JOINT. FITTINGS SHALL BE EITHER DUCTILE IRON OR GRAY IRON. FOR THE LARGER DIAMETER PIPE, PIPE PRESSURE CLASS SHALL BE 250. DUCTILE IRON PIPE SHALL BE MANUFACTURED BY:

- 1. AMERICAN CAST IRON PIPE COMPANY
- 2. U.S. PIPE AND FOUNDRY COMPANY
- 3. MCWANE CAST IRON PIPE COMPANY

A. DUCTILE IRON PIPE AND FITTINGS FOR BURIED SERVICE SHALL BE EITHER MECHANICAL OR BELL AND SPIGOT TYPE JOINTS AS SPECIFIED OR INDICATED. JOINTS SHALL BE MADE WITH A SINGLE WATERTIGHT RUBBER GASKET MANUFACTURED IN ACCORDANCE WITH AWWA C111/ANSI 21.11. THE JOINTS SHALL BE MADE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER.

B. DEFLECTION: ALLOWABLE DEFLECTION SHALL BE 80% OF THE MAXIMUM DEFLECTION ALLOWED BY AWWA C600 TABLE 3 AND 4. MECHANICAL JOINTS WITH METAL TIE RODS WILL BE PROHIBITED IN AREAS WHERE PIPE IS DEFLECTED.

C. EXTERIOR COATING OF ALL DUCTILE IRON PIPE, JOINTS AND FITTINGS SHALL BE PROVIDED AS REQUIRED BY AWWA C110, C111, C115, C151 OR C153 AS APPLICABLE. ALL PIPES, JOINTS AND FITTINGS SHALL BE EXAMINED AFTER LAYING TO DETERMINE IF THE COATING HAS BEEN DAMAGED DURING INSTALLATION. ANY DAMAGED AREAS AND ALL JOINTS SHALL BE COATED WITH APPROXIMATELY 1 MIL. OF A BITUMINOUS COATING.

D. INTERIOR LINING FOR WATER MAINS SHALL BE CEMENT MORTAR LINED IN ACCORDANCE WITH AWWA C104, STANDARD THICKNESS INCLUDING ASPHALTIC SEAL.

E. RESTRAINED JOINTS:

- 1. MECHANICALLY RESTRAINED JOINTS SHALL BE A FOLLOWER GLAND TYPE, SUITABLE FOR A 250 PSIWORKING PRESSURE AND A 500 PSI WATER HAMMER (SURGE) PRESSURE. GLANDS SHALL BE A SINGLE PIECE, EXCEPT WHERE REQUIRED TO BE SPLIT FOR APPLICATION ON EXISTING PIPE. MATERIAL SHALL BE DUCTILE IRON. JOINT SHALL BE DESIGNED TO RESTRAIN STANDARD MECHANICAL JOINTS. THE RATED PRESSURE SHALL INCLUDE A 2:1 SAFETY FACTOR. ACCEPTABLE MECHANICAL RESTRAINT DEVICES ARE "MEGA-LUG" BY EBAA IRON, "UNI-FLANGE" BY FORD, "GRIP RING" BY ROMAC INDUSTRIES OR TUF GRIP BY TYLER UNION.
- 2. DUCTILE IRON PUSH-ON JOINT PIPE MAY BE RESTRAINED USING "FIELD LOK" GASKETS BY U.S. PIPE OR THE "FAST GRIP" BY AMERICAN DUCTILE IRON PIPE COMPANY.
- 3. RESTRAINED JOINT PIPE SHALL BE DUCTILE IRON. THE JOINT SHALL BE CAPABLE OF HANDLING A WORKING PRESSURE OF 350 PSI FOR SIZES 4" THROUGH 24". ACCEPTABLE RESTRAINED JOINT PIPE INCLUDES THE "TR FLEX" PIPE BY U.S. PIPE AND "FLEX RING" BY AMERICAN DUCTILE IRON PIPE COMPANY OR EQUAL.
- 4. MUELLER COMPANY'S "AQUAGRIP" SYSTEM MAY BE USED TO RESTRAIN VALVES OR HYDRANTS THAT ARE MANUFACTURED BY MUELLER COMPANY.
- 5. RESTRAINED JOINTS SHALL BE USED FOR ALL FITTINGS, VALVES AND TRANSITIONS.
- 6. MINIMUM RESTRAINED LENGTHS SHALL BE AS SPECIFIED BY DETAIL W-19 ON SHEET U-5.

F. CONNECTIONS: UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING MAINS SHALL BE MADE USING MJ SOLID SLEEVE FITTINGS. SLEEVES SHALL BE LONG PATTERN, SOLID TYPE MADE OF GRAY- IRON OR DUCTILE IRON WITH A MINIMUM PRESSURE RATING OF 250 PSI. SLEEVES SHALL HAVE MECHANICAL JOINT ENDS SUITABLE FOR USE WITH APPROVED RESTRAINING RETAINER GLANDS. SLEEVES SHALL BE MANUFACTURED BY THE DUCTILE IRON PIPE MANUFACTURER. THE CONTRACTOR IS REQUIRED TO VERIFY THE OUTSIDE DIAMETER OF THE EXISTING WATER AND SEWER MAINS AND COORDINATE REQUIRED MODIFICATIONS, IF ANY, TO THE SLEEVE AND GLAND (MACHINING AND OTHERWISE) WITH THE MANUFACTURER. CONTRACTOR SHALL HAVE ALL MATERIALS NEEDED TO MAKE CONNECTION ON SITE PRIOR TO COMMENCING WITH THE CONNECTION.

G. WATER MAIN OFFSETS OF EXISTING PIPE SHALL UTILIZE PIPE/FITTING MATERIALS INDICATED IN THIS NOTE.

2. GATE VALVES SHALL BE COMPRESSION RESILIENT SEATED VALVES CONFORMING TO AWWA C515. THE VALVE SHALL BE DESIGNED SO THAT NO SLIDING OR SHEAR ON THE RESILIENT SEATING SURFACE IS PRESENT WHEN COMPRESSED TO A DROP TIGHT SHUT OFF. VALVE SHALL SEAL EQUALLY WELL IN EITHER DIRECTION. VALVE SHALL PROVIDE FULLY OPEN WATERWAY. VALVE SHALL HAVE O-RING SEALING AND A FUSION BONDED EPOXY COATING INSIDE AND OUT. VALVE SHALL BE PERMANENTLY LUBRICATED. VALVE SHALL HAVE A MANGANESE BRONZE STEM AND NUT WITH ANTI-THRUST WASHERS. OPERATING NUT SHALL BE 2 INCH SQUARE. THE VALVES SHALL BE:

- 1. AFC-2500 BY AMERICAN FLOW CONTROL
- 2. FIG. 8571 BY KENNEDY VALVE
- 3. F-6100 BY CLOW CORPORATION
- 4. OR EQUAL

GATE VALVES SMALLER THAN 3 INCH SHALL BE BRONZE WITH ENDS TO SUIT PIPING AND SHALL BE 125 PSIWORKING PRESSURE. VALVES SHALL BE STOCKHAM FIGURE B103, B104, OR B109 OR EQUAL.

EACH MAINLINE GATE VALVE SHALL BE PROVIDED WITH A VALVE BOX IN ACCORDANCE WITH DETAIL W-17 SHOWN ON SHEET U-5. THE VALVE BOX SHALL BE THE SCREW TYPE WITH A FIVE INCH SHAFT AND THE COVER SHALL BE SLOTTED FOR EASY REMOVAL. COVERS SHALL HAVE THE WORD "WATER" CAST INTO THEM. THE VALVE BOX SHALL BE MUELLER COMPANY 10364, TYLER UNION 6850, OR SIMILAR MODELS.

3. BUTTERFLY VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 250 PSIG CONFORMING TO AWWA STANDARD C504, CLASS B, LATEST REVISION. VALVES SHALL BE OF ONE PIECE, POSITIVE DRIVE TYPE WITH MECHANICAL JOINT ENDS, RUBBER VALVE SEATS, AN IRON BODY, AND PERMANENT LUBRICATION. THERE SHALL BE MOUNTED ON EACH BUTTERFLY VALVE A SIDE MOUNTED MANUAL OPERATOR WITH TOTALLY ENCLOSED, PERMANENTLY LUBRICATED GEARING CONSTRUCTED SUCH THAT A MAXIMUM TORQUE OF 80 FT. - LB. IS REQUIRED ON THE OPERATOR TO DEVELOP THE SEATING AND UNSEATING TORQUES OF THE VALVE. THE VALVES SHALL OPEN LEFT (COUNTER-CLOCKWISE) BY A 2" SQUARE OPERATING NUT. BUTTERFLY VALVES SHALL BE GROUNDHOG BY PRATT, AMERICAN-BFV BY VAL-MATIC, LINESEAL III BY MUELLER, OR EQUAL. BUTTERFLY VALVE SHALL BE PROVIDED WITH A VALVE BOX IN ACCORDANCE WITH DETAIL W-17 ON SHEET U-5.

4. WATER SERVICE LINES SHALL BE EITHER POLYETHYLENE OR COPPER TUBING. POLYETHYLENE TUBING SHALL CONFORM TO AWWA C901 AND SHALL BE PE 4710 CODE DESIGNATION. POLYETHYLENE TUBING SHALL BE THE SIZE INDICATED WITH A DR OF 9 AND A PRESSURE RATING OF 200 PSI. COPPER TUBING SHALL BE TYPE "K" AND CONFORM TO AWWA C800. COPPER TUBING SHALL BE THE SIZE INDICATED, SUITABLE FOR 200 PSIWORKING PRESSURE. SERVICE LINE CONNECTIONS TO THE WATER MAIN SHALL BE MADE IN ACCORDANCE WITH DETAIL W-2 ON SHEET U-5.

5. WATER METERS WILL BE INSTALLED BY THE CITY OF SALEM. THE INSTALLATION OF THE WATER SERVICE LINE, BOX AND SETTER SHALL BE LOCATED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH DETAIL W-2 ON SHEET U-5.

6. PLUGS OR CAPS USED SHALL BE MANUFACTURED SPECIFICALLY FOR THE TYPE OF PIPE USED. THEY SHALL BE SECURED SUCH THAT THEY WILL BE WATERTIGHT AND WILL WITHSTAND THE INTERNAL PRESSURE APPLIED BY AIR OR EXFILTRATION TESTING.

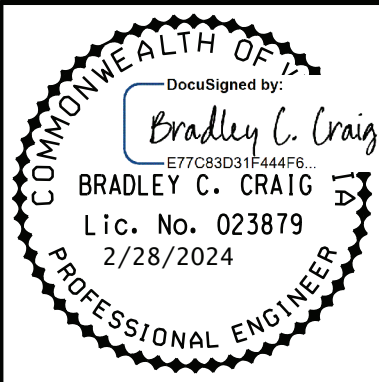
7. TAPPING SLEEVES SHALL BE STAINLESS STEEL (18-8 TYPE 304) STYLE FAST AS MANUFACTURED BY FORD METER BOX CO., MODEL 304DI BY MUELLER, OR EQUAL. TAPPING SLEEVES SHALL HAVE MECHANICAL JOINT ENDS AND FLANGED OUTLETS CONFORMING TO CLASS 125, ANSI B16.1. TAPPING VALVES SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C515. TAPPING VALVES SHALL BE MUELLER T-2360, AMERICAN SERIES 2500, OR FIG 8950 BY KENNEDY.

8. MANHOLES:

- A. MANHOLE BASE, RISER, TAPER, AND TOP OR SPACER UNITS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE WITH ASTM C478 AND VDOT SECTION 302, WITH O-RING JOINTS CONFORMING TO ASTM C443 OR WITH FLEXIBLE BUTYL GASKET, CS-302 BY CONCRETE SEALANTS, INC., E-Z STIK BY CONCRETE PRODUCTS SUPPLY OR EQUAL.
- B. EACH UNIT SHALL HAVE NO MORE THAN TWO (2) HOLES FOR INSTALLATION AND OR HANDLING. ALL HOLES SHALL BE PLUGGED WITH MORTAR OR RUBBER STOPPERS, UPON COMPLETION OF MANHOLE INSTALLATION.
- C. MANHOLE UNIT JOINTS SHALL BE MADE WITH EITHER FLEXIBLE BUTYL SEALANTS OR GASKETS, AT THE CONTRACTOR'S OPTION. FLEXIBLE BUTYL SEALANTS SHALL BE MANUFACTURED BY CONCRETE SEALANTS, INC. (CS-302) OR EQUAL AND FLEXIBLE BUTYL GASKETS SHALL BE MANUFACTURED BY CONCRETE PRODUCTS SUPPLY COMPANY (E-Z STIK) OR EQUAL. THE GASKETS OR SEALANTS SHALL BE INSTALLED AND THE JOINT MADE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER(S).
- D. BASE UNITS SHALL BE TUB OR MONOLITHIC TYPE WITH WALLS THAT EXTEND ABOVE THE TOP OF THE LARGEST INLET OR OUTLET PIPE. SANITARY SEWER MANHOLES SHALL HAVE AN INSIDE DIAMETER OF FOUR (4) FEET. MINIMUM WALL THICKNESS SHALL BE FIVE (5) INCHES. CONCRETE SHALL BE MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- E. MANHOLE TOP UNITS SHALL BE THE ECCENTRIC TAPER TYPE, AT LEAST THREE (3) FEET IN HEIGHT, OR FLAT TOP WHERE INDICATED.
- F. MANHOLES SHALL BE CONSTRUCTED TO THE REQUIRED HEIGHT TO INSURE THAT THE TOP OF THE FRAME AND COVER WILL BE SET AT THE FINISHED GRADE, UNLESS SPECIFIED OR INDICATED OTHERWISE. SPACER RINGS OR OTHER MEANS UP TO EIGHT (8) INCHES SHALL BE PROVIDED TO ALLOW ADJUSTMENTS TO FINAL PAVEMENT SURFACE, AS REQUIRED, AT THE TIME OF PAVING. MAXIMUM WALL THICKNESS SHALL BE FIVE (5) INCHES. CONCRETE SHALL BE MINIMUM COMPRESSION STRENGTH OF 4000 PSI AT 28 DAYS. BRACKETS AND ANCHOR BOLTS, WHEN INDICATED, TO BOLT SECTIONS OF MANHOLE SECTIONS TOGETHER SHALL BE STAINLESS STEEL. WATERTIGHT MANHOLES SHALL HAVE THE CONE BOLTED WITH THREE 8" x 2" x 3/4 SS STRAPS WITH 2 1/2 SS ANCHOR BOLTS (2) TO THE RISER BELOW.
- G. SANITARY SEWER PIPE CONNECTIONS TO SANITARY MANHOLES SHALL BE MADE WITH FLEXIBLE JOINTS AND SHALL CONFORM TO ASTM C923, LATEST REVISION. THE FLEXIBLE JOINTS SHALL BE A RUBBER GASKET CAST IN THE MANHOLE BASE AND A FIELD INSTALLED GASKET WEDGE EQUAL TO PS-10, PSX-SERIES 6, OR PRESS WEDGE II, MANUFACTURED BY PRESS-SEAL GASKET CORPORATION, OR THE FLEXIBLE MANHOLE SLEEVE AS MANUFACTURED BY LOCK JOINT PIPE, DIVISION OF INTERPACE, THE FERRO "CMA" CONCRETE MANHOLE ADAPTER AS MANUFACTURED BY THE GENERAL ENGINEERING COMPANY, FREDERICK, MARYLAND, A-LOK MANHOLE PIPE SEAL, OR KOR-N-SEAL SYSTEM BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. RIBBED PIPE SHALL BE CONNECTED TO MANHOLES WITH KOR-N-SEAL SYSTEMS, USING SECTION OF SMOOTH EXTERIOR WALL PIPE AT THE MANHOLE.
- H. MANHOLE SHALL BE IN ACCORDANCE WITH VDOT STANDARD SMH-1. MANHOLE FRAME AND COVER SHALL BE IN ACCORDANCE WITH VDOT STANDARD F&C-1. FRAME AND COVER SHALL BE SET FLUSH WITH PROPOSED GRADE INCLUDING CROSS SLOPES OF PAVEMENT.

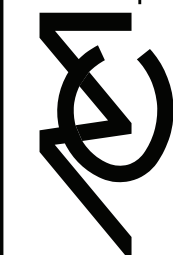
9. FIRE HYDRANTS SHALL CONFORM TO AWWA C502 (LATEST REVISION) AND SHALL BE DRY TOP, DRY BARREL, COMPRESSION TYPE WITH DOUBLE O-RING SEALS SUITABLE FOR 250 PSIWORKING PRESSURE. HYDRANTS SHALL BE DESIGNED FOR WATER MAINS HAVING THREE (3) FEET MINIMUM COVER; HOWEVER, EACH PROPOSED LOCATION SHALL BE COORDINATED BY THE CONTRACTOR AS TO THE EXACT SETTING DEPTH REQUIRED. HYDRANTS SHALL BE EQUIPPED WITH A 5/4 INCH VALVE OPENING, AND A 7 INCH MINIMUM INSIDE DIAMETER STANDPIPE. EACH HYDRANT SHALL HAVE A 6 INCH MECHANICAL JOINT SHOE, TWO (2) 2 1/2 INCH HOSE NOZZLES WITH NATIONAL STANDARD THREADS CONNECTION AND ONE (1) 4 1/2 INCH PUMPER NOZZLE WITH NATIONAL STANDARD THREADS CONNECTION. PRIOR TO ORDERING HYDRANTS, CONTRACTOR SHALL CONFIRM WITH LOCAL FIRE DEPARTMENT THAT NOZZLES, THREADS AND OPERATING NUT SUIT THEIR STANDARDS. EACH HYDRANT SHALL BE PROVIDED WITH ONE OPERATING WRENCH FOR ITS OPERATING STEM NUT. THE DIRECTION OF ROTATION SHALL BE COUNTERCLOCKWISE. THE OPERATING STEM NUT SHALL BE A FIVE-SIDED NUT WITH A FLAT TO POINT DIMENSION OF ONE AND ONE-HALF (1 1/2) INCHES. HYDRANTS SHALL BE COATED AND PAINTED IN ACCORDANCE WITH AWWA C502, WITH COLORS TO SUIT THE OWNER'S STANDARD. THE UPPER AND LOWER OPERATING STEMS SHALL BE JOINED BY A SAFTY COUPLING, LOCATED TO PREVENT DAMAGE TO HYDRANT VALVE WHEN UPPER STANDPIPE IS DAMAGED. FIRE HYDRANTS SHALL BE CONSTRUCTED IN ACCORDANCE TO WVWA DETAIL W-17 SHOWN ON SHEET U-5. THE FIRE HYDRANTS SHALL BE:

- 1. AFC MODEL B-84-B-5
- 2. MUELLER CENTURION A-423
- 3. AVK MODEL 2780
- 4. KENNEDY K81D OR APPROVED EQUAL



Revisions		Date

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APPERSON DRIVE BRIDGE REPLACEMENT

UTILITY MATERIAL NOTES

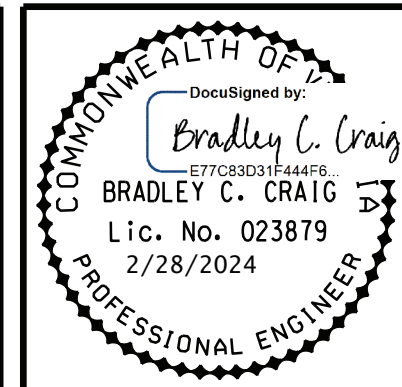
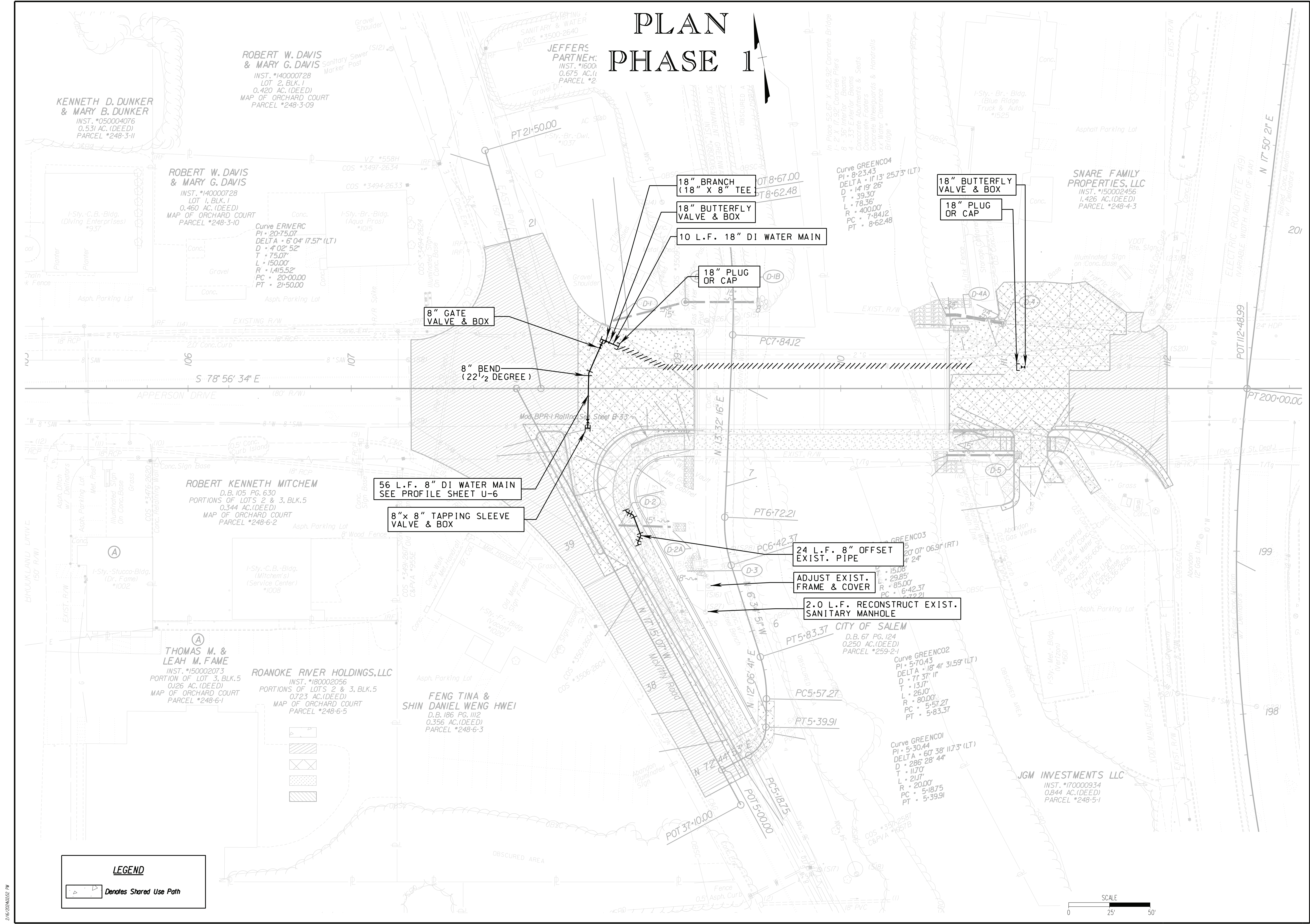
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APPERSON DRIVE BRIDGE REPLACEMENT
UTILITY PLAN SHEET - PHASE 1
CITY OF SALEM, VA

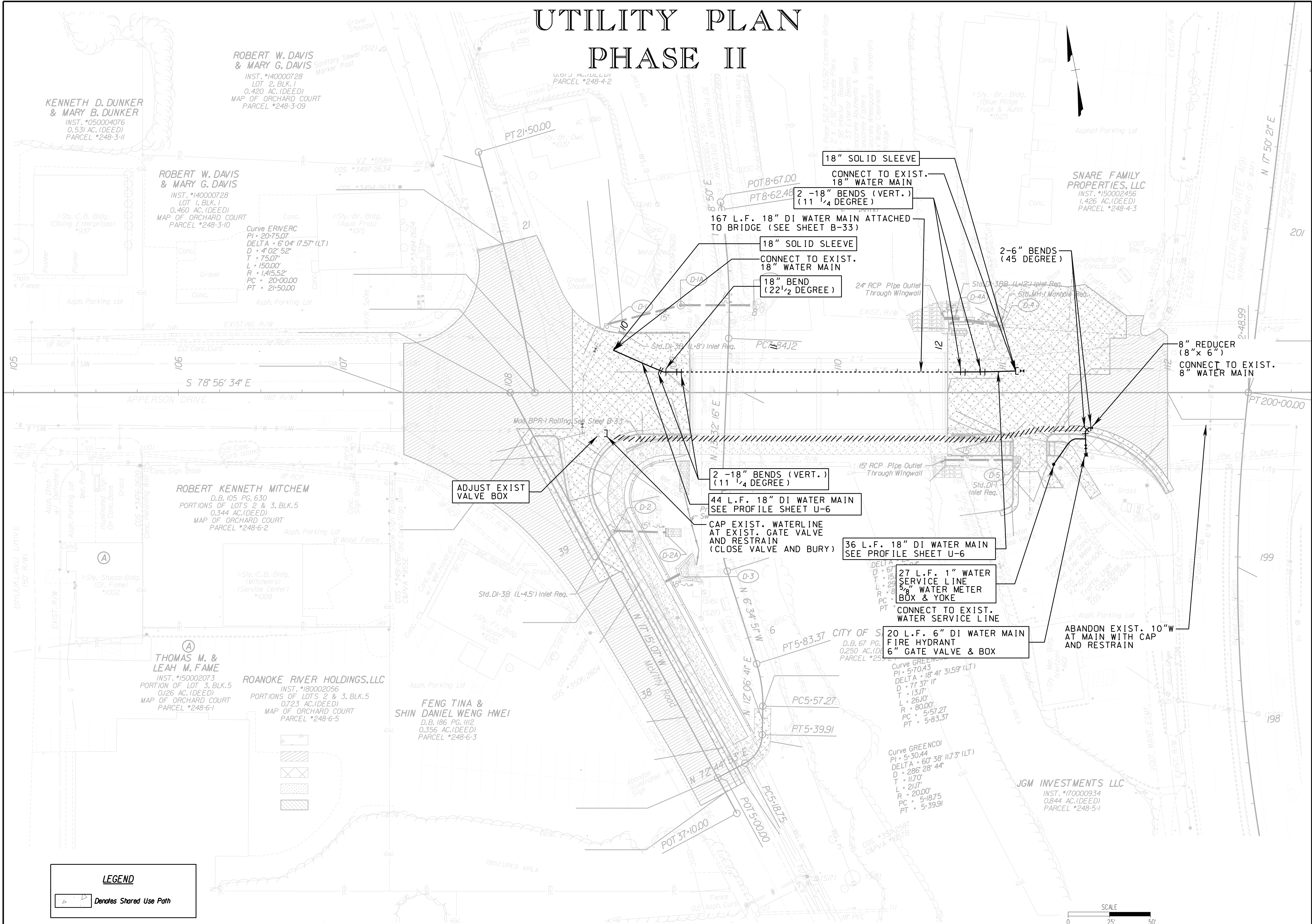
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Sheet No.:
U-3

UTILITY PLAN PHASE II



COMMONWEALTH OF VIRGINIA
Professional Engineer
Bradley C. Craig
Lic. No. 023879
2/28/2024

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UTILITY PLAN SHEET - PHASE II

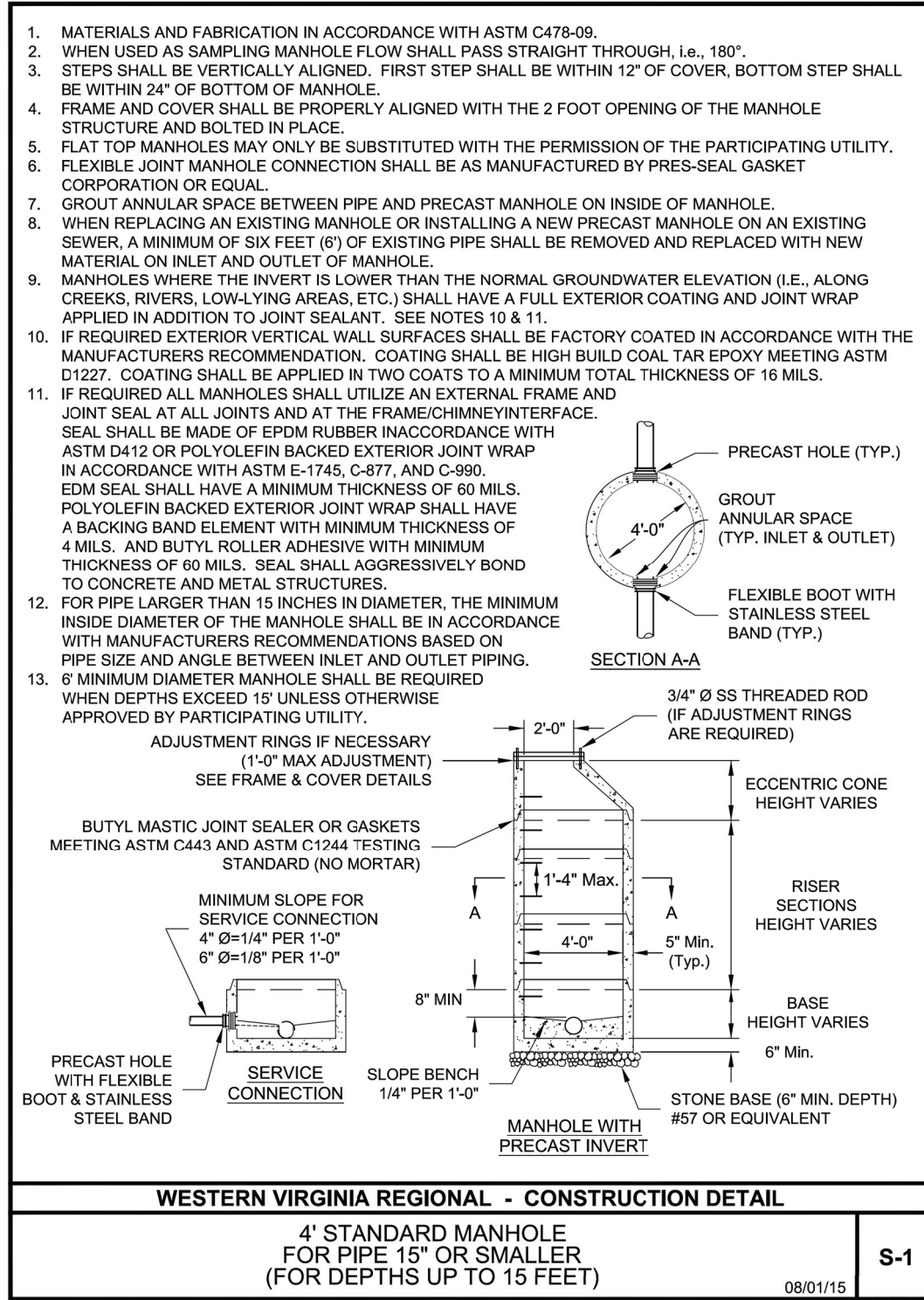
APPERSON DRIVE BRIDGE REPLACEMENT

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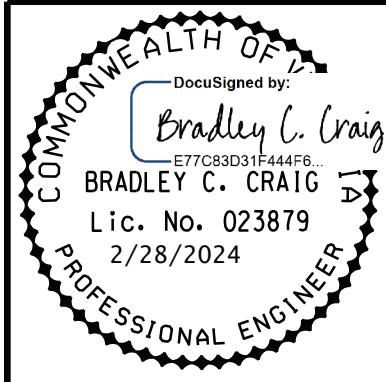
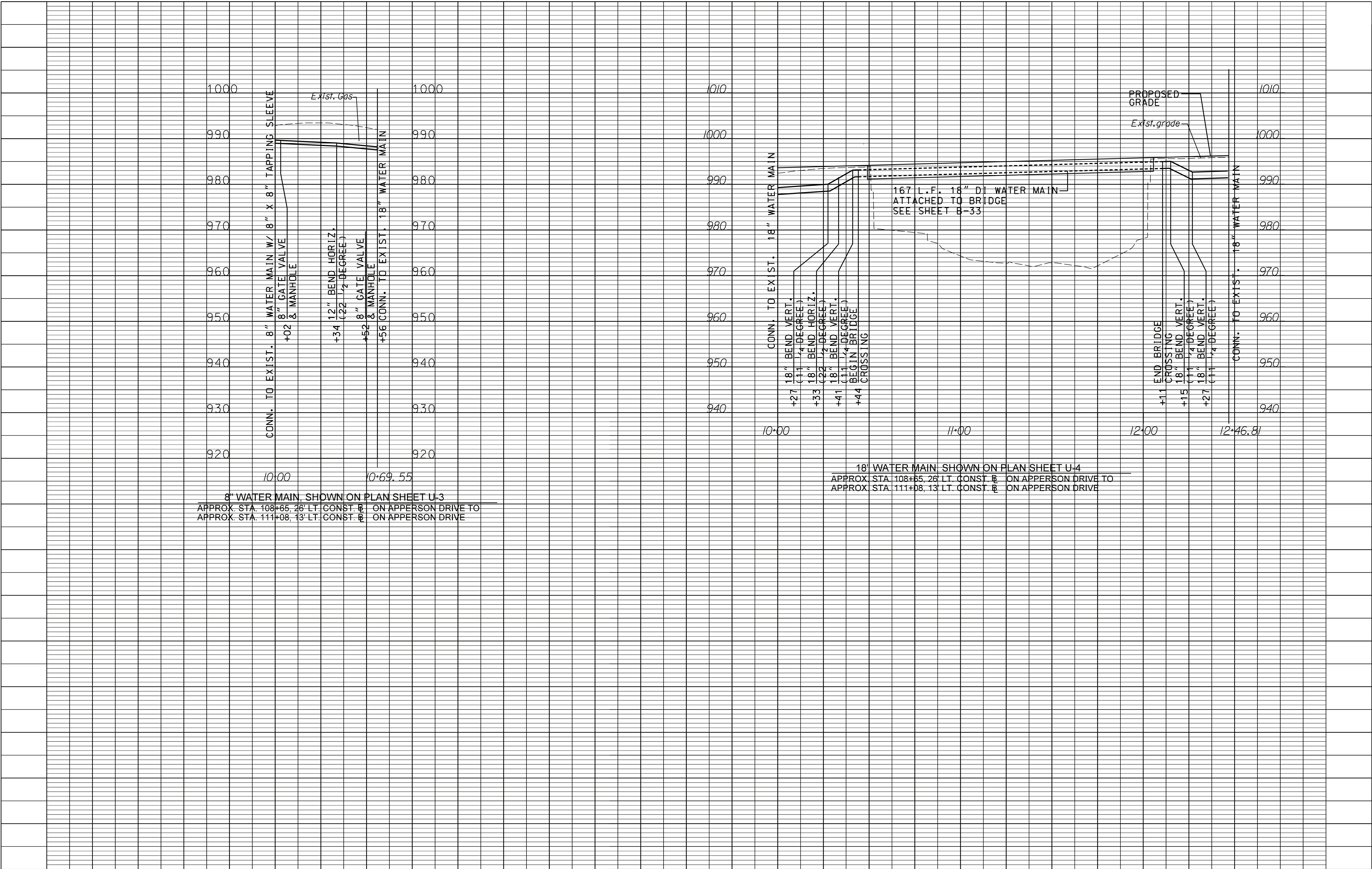
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APPERSON DRIVE BRIDGE REPLACEMENT
**WATER MAIN
PROFILES**
CITY OF SALEM, VA

Vertical Scale:
1"=10'

Horizontal Scale:
1"=25'

Commission Number:
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Sheet No.:
U-6

DocuSigned by:
Thomas K. Goodwin
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GOODWIN
Lic. No. 17340
2/27/2024

COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

Revisions	Date

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Drawn By:	MPF
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APPERSON DRIVE BRIDGE REPLACEMENT
EROSION AND SEDIMENT
CONTROL NARRATIVE
CITY OF SALEM, VA

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3925B

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ES-1

END OF GENERAL SEQUENCE OF WORK

STATEMENT OF COMPLIANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS – 9VAC25-840-40 – MINIMUM STANDARDS

THE LAND-DISTURBING ACTIVITIES OF THIS PROJECT MUST COMPLY WITH THE 19 "MINIMUM STANDARDS" (MS) SPECIFIED IN SECTION 4VAC50-30-40 OF THE REGULATIONS (VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS) THAT ARE APPLICABLE TO THE PROJECT. THIS SECTION PROVIDES A RECITATION OF THE FULL TEXT OF THE 19 MINIMUM STANDARDS AND FOLLOWS WITH A "METHOD OF COMPLIANCE" WITH EACH MINIMUM STANDARD. THESE EROSION AND SEDIMENT CONTROL PLANS WERE PREPARED IN A MANNER TO ENSURE COMPLIANCE WITH THE MINIMUM STANDARDS.

MS-1: THE CONTRACTOR AND THE CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) SHALL PERFORM THE WORK OF THE PROJECT IN THE MANNER STATED AND IN A MANNER AND SEQUENCE SUCH THAT THE INTENT AND REQUIREMENTS OF THE MINIMUM STANDARDS ARE MET. REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION.

MS-2: Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven (7) days to denuded areas that may not be at final grade but will remain dormant for longer than fourteen (14) days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.

METHOD OF COMPLIANCE – PERMANENT SEEDING AND TEMPORARY SEEDING MEASURES ARE SHOWN AND SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS. CONTRACTOR SHALL REFER TO SHEETS ES-3A & ES-3B AS WELL AS THE NARRATIVE AND DETAILS FOR SEEDING REQUIREMENTS AND SCHEDULES.

MS-2: During construction of the project, soil stock piles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.

METHOD OF COMPLIANCE – IT IS ANTICIPATED THAT TOPSOIL, EXCESS EXCAVATION MATERIAL, AND/OR UN-SUITABLE MATERIAL WILL NOT BE FOUND ON THE PROJECT SITE AND WILL NOT NEED TO BE STOCKPILED. IF TOPSOIL, EXCESS EXCAVATION, OR UN-SUITABLE MATERIAL IS REMOVED FROM THE SITE, IT SHALL BE DISPOSED OF IN A LEGAL MANNER AND AT A SITE THAT IS DULY PERMITTED FOR LAND DISTURBANCE ACTIVITIES.

MS-3: A permanent vegetative cover shall be established on denuded areas not otherwise permanently established. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.

METHOD OF COMPLIANCE – PERMANENT SEEDING (PS), ALONG WITH PERMANENT RIPRAP MEASURES ARE SHOWN AND SPECIFIED ON THE E&S PLAN (ES-3A & ES-3B) AND DETAIL SHEETS AS WELL AS THE NARRATIVE AND SEQUENCE OF WORK. RIPRAP IS SHOWN ON PLAN SHEETS B-1 AS PERMANENT STABILIZATION AROUND THE BRIDGE AND ADJACENT GRADED AREAS.

MS-4: Sediment basins and sediment traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.

METHOD OF COMPLIANCE – THESE PERIMETER SEDIMENT TRAPPING MEASURES ARE SHOWN ON THE E&S PLAN SHEETS AND ARE SPECIFIED TO BE INSTALLED PRIOR TO MAJOR LAND DISTURBANCE ACTIVITIES. REFER TO THE GENERAL NOTES, NARRATIVE, AND SEQUENCE OF WORK FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

MS-5: Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.

METHOD OF COMPLIANCE – NOT APPLICABLE. THERE ARE NO EARTHEN STRUCTURES REQUIRED FOR THE E&S CONTROLS ON THIS SITE.

MS-6: Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.

a. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.

b. Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a 25-year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.

METHOD OF COMPLIANCE – NOT APPLICABLE. NO SEDIMENT TRAP (ST) IS PROPOSED.

MS-7: Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.

METHOD OF COMPLIANCE – ALL NEWLY GRADED SLOPES ARE TO BE STABILIZED WITH TEMPORARY SEEDING OR RIPRAP AS SHOWN ON PLAN SHEETS B-1, ES-3A, AND ES-3B.

MS-8: Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.

METHOD OF COMPLIANCE – NOT APPLICABLE. NO TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE IS PROPOSED.

MS-9: Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

METHOD OF COMPLIANCE – BASED ON A REVIEW OF AVAILABLE SUBSURFACE INVESTIGATION REPORTS, PUBLIC DATA, AND KNOWLEDGE OF THE GROUNDWATER CONDITIONS AT THE SITE, THIS CONDITION IS NOT ANTICIPATED DURING THIS PROJECT. IF ENCOUNTERED DURING CONSTRUCTION IT WILL BE ADDRESSED WITH PLAN REVISION.

MS-10: All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

METHOD OF COMPLIANCE – INLET PROTECTION (IP) DEVICES ARE SPECIFIED AND SHOWN ON THE E&S PLAN SHEETS AND IN THE NARRATIVE. THE GENERAL WORK SEQUENCE SPECIFIES THE TIMING FOR INSTALLATION OF THESE MEASURES.

MS-11: Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.

METHOD OF COMPLIANCE – OUTLET PROTECTION (OP) IS SPECIFIED AT ALL NEW OUTLETS ON THE E&S PLANS AND IN THE NARRATIVE.

METHOD OF COMPLIANCE – NOT APPLICABLE. NO WORK IS PROPOSED IN A LIVE WATERCOURSE.

MS-13: When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided.

METHOD OF COMPLIANCE – NOT APPLICABLE. WORK DOES NOT INVOLVE THE CROSSING OF A LIVE WATERCOURSE.

MS-14: All applicable federal, state and local requirements pertaining to working in or crossing live watercourses shall be met.

METHOD OF COMPLIANCE – NOT APPLICABLE. WORK DOES NOT INVOLVE WORKING IN OR CROSSING OF A LIVE WATERCOURSE.

MS-15: The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

METHOD OF COMPLIANCE – NOT APPLICABLE. WORK DOES NOT INVOLVE WORKING IN OR CROSSING OF A LIVE WATERCOURSE.

MS-16: Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:

- a. No more than 500 linear feet of trench may be opened at one time.
- b. Excavated material shall be placed on the uphill side of trenches.
- c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
- d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
- e. Restabilization shall be accomplished in accordance with this chapter.
- f. Applicable safety requirements shall be complied with.

METHOD OF COMPLIANCE SPECIFIC REQUIREMENTS TO ADDRESS THIS MINIMUM STANDARD ARE INCORPORATED INTO AND IDENTIFIED IN THE SEQUENCE OF WORK AND THE E&SC NARRATIVE.

MS-17: Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities.

METHOD OF COMPLIANCE THE E&SC PLAN AND NARRATIVES PROVIDES THAT THE EXISTING ON-SITE PAVEMENT SHALL SERVE AS THE CONSTRUCTION ENTRANCE (CE). REFER TO THE NARRATIVE AND GENERAL SEQUENCE OF WORK FOR ADDITIONAL INFORMATION AND REQUIREMENTS. ALL CONSTRUCTION VEHICLES SHALL ENTER AND LEAVE THE SITE AT THE SPECIFIED LOCATION.

MS-18: All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the VESCP authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

METHOD OF COMPLIANCE REFER TO NARRATIVE AND WORK SEQUENCE ON THE E&SC PLAN SHEETS AND THE GENERAL NOTES FOR STATED REQUIREMENTS REGARDING THE PROVISIONS OF REMOVAL OF E&SC MEASURES.

MS-19: Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria. Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels:

- a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.
- b. Adequacy of all channels and pipes shall be verified in the following manner:
 - (1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or
 - (2) (a) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.
 - (b) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
 - (c) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.
- c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
 - (1) Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to the channel, the bed, or the banks; or
 - (2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the pipe/apertures;
 - (3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or
 - (4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.

- h. All on-site channels must be verified to be adequate.
- i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
- j. In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.

1. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § 62.1-44.15:54 or 62.1-44.15:65 of the Act.

n. Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) Regulations shall be deemed to satisfy the requirements of subdivision 19 of this subsection.

END OF STATEMENT OF COMPLIANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS -
9VAC25-840-40 - MINIMUM STANDARDS

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.
- ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
- ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CITY OF SALEM, VIRGINIA.
- ES-7: ALL DISTURBED AREAS (INCLUDING DISPOSAL AREAS) ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

	
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Designed By: MPF	
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Date: 02/16/2024	

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EROSION AND SEDIMENT CONTROL NARRATIVE APPERSON DRIVE BRIDGE REPLACEMENT	CITY OF SALEM, VA
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Vertical Scale:	N/A
Horizontal Scale:	N/A
Commission Number:	3925B

Sheet No.:	ES-2
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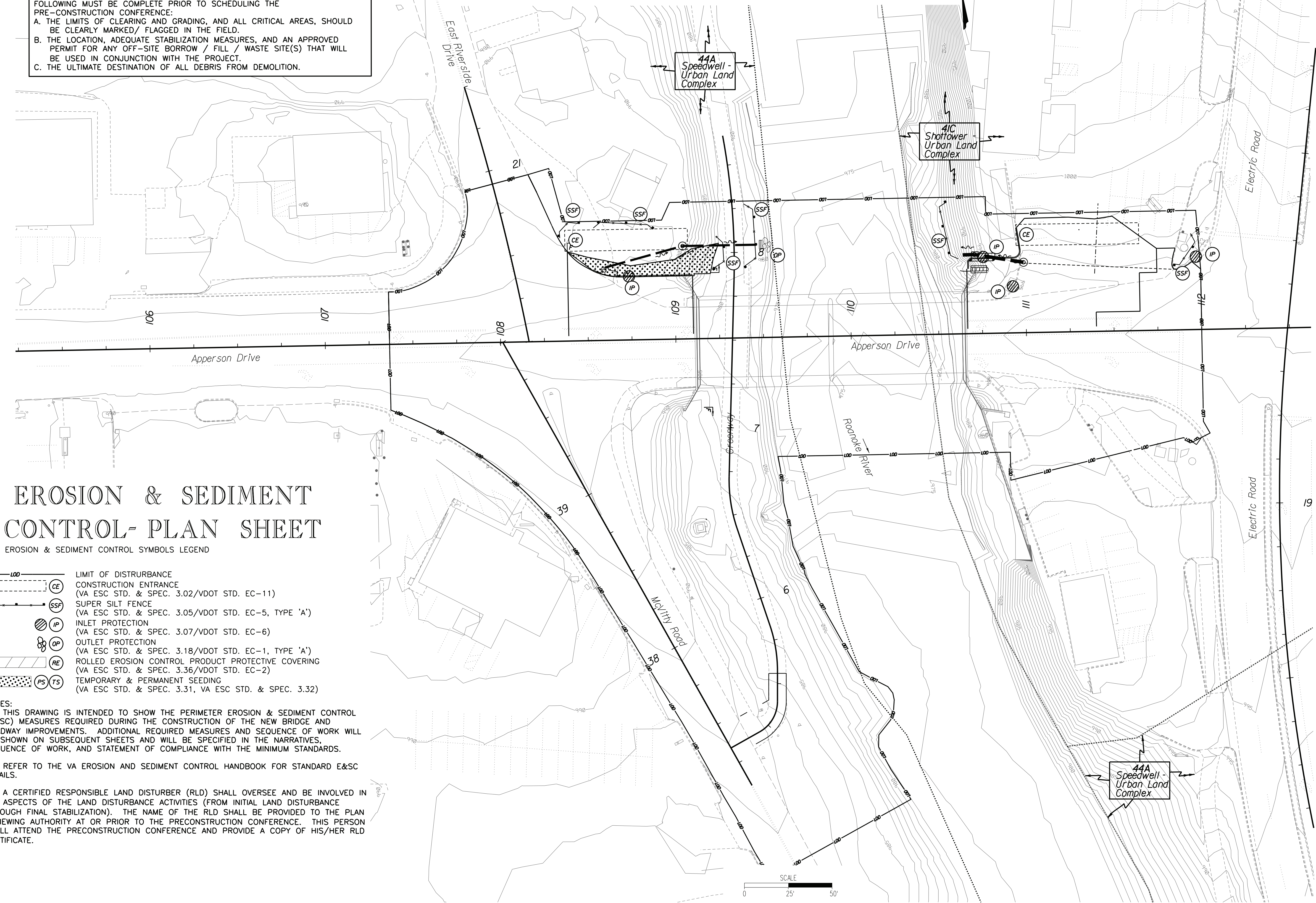
A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, CONTRACTOR'S VDEQ-CERTIFIED RESPONSIBLE LAND DISTURBER (RLD), PROJECT OWNER OR THEIR AGENT, AND THE PROJECT DESIGNER/ ENGINEER WILL BE REQUIRED PRIOR TO THE ISSUANCE OF THE LAND DISTURBANCE PERMIT. THE RLD SHOULD BE PREPARED TO PROVIDE THEIR CERTIFICATION NUMBER AT THIS MEETING. THE FOLLOWING MUST BE COMPLETE PRIOR TO SCHEDULING THE PRE-CONSTRUCTION CONFERENCE:

A. THE LIMITS OF CLEARING AND GRADING, AND ALL CRITICAL AREAS, SHOULD BE CLEARLY MARKED/ FLAGGED IN THE FIELD.

B. THE LOCATION, ADEQUATE STABILIZATION MEASURES, AND AN APPROVED PERMIT FOR ANY OFF-SITE BORROW / FILL / WASTE SITE(S) THAT WILL BE USED IN CONJUNCTION WITH THE PROJECT.

C. THE ULTIMATE DESTINATION OF ALL DEBRIS FROM DEMOLITION.

EROSION AND SEDIMENT CONTROL PLAN PHASE 1



EROSION & SEDIMENT CONTROL- PLAN SHEET

EROSION & SEDIMENT CONTROL SYMBOLS LEGEND

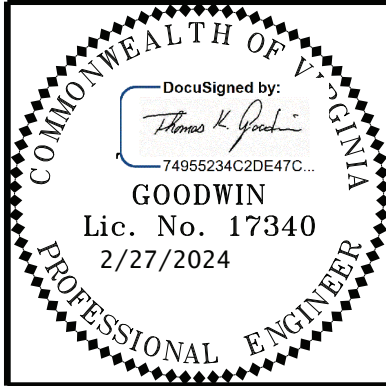
- 100 — LIMIT OF DISTURBANCE
- (CE) — CONSTRUCTION ENTRANCE (VA ESC STD. & SPEC. 3.02/VDOT STD. EC-11)
- (SSF) — SUPER SILT FENCE (VA ESC STD. & SPEC. 3.05/VDOT STD. EC-5, TYPE 'A')
- (IP) — INLET PROTECTION (VA ESC STD. & SPEC. 3.07/VDOT STD. EC-6)
- (OP) — OUTLET PROTECTION (VA ESC STD. & SPEC. 3.18/VDOT STD. EC-1, TYPE 'A')
- (RE) — ROLLED EROSION CONTROL PRODUCT PROTECTIVE COVERING (VA ESC STD. & SPEC. 3.36/VDOT STD. EC-2)
- (PS) (TS) — TEMPORARY & PERMANENT SEEDING (VA ESC STD. & SPEC. 3.31, VA ESC STD. & SPEC. 3.32)

NOTES:

1. THIS DRAWING IS INTENDED TO SHOW THE PERIMETER EROSION & SEDIMENT CONTROL (E&SC) MEASURES REQUIRED DURING THE CONSTRUCTION OF THE NEW BRIDGE AND ROADWAY IMPROVEMENTS. ADDITIONAL REQUIRED MEASURES AND SEQUENCE OF WORK WILL BE SHOWN ON SUBSEQUENT SHEETS AND WILL BE SPECIFIED IN THE NARRATIVES, SEQUENCE OF WORK, AND STATEMENT OF COMPLIANCE WITH THE MINIMUM STANDARDS.

2. REFER TO THE VA EROSION AND SEDIMENT CONTROL HANDBOOK FOR STANDARD E&SC DETAILS.

3. A CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) SHALL OVERSEE AND BE INVOLVED IN ALL ASPECTS OF THE LAND DISTURBANCE ACTIVITIES (FROM INITIAL LAND DISTURBANCE THROUGH FINAL STABILIZATION). THE NAME OF THE RLD SHALL BE PROVIDED TO THE PLAN REVIEWING AUTHORITY AT OR PRIOR TO THE PRECONSTRUCTION CONFERENCE. THIS PERSON SHALL ATTEND THE PRECONSTRUCTION CONFERENCE AND PROVIDE A COPY OF HIS/HER RLD CERTIFICATE.



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APPERSON DRIVE BRIDGE REPLACEMENT EROSION AND SEDIMENT CONTROL PLAN SHEET PHASE 1 CITY OF SALEM, VA

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Sheet No.:
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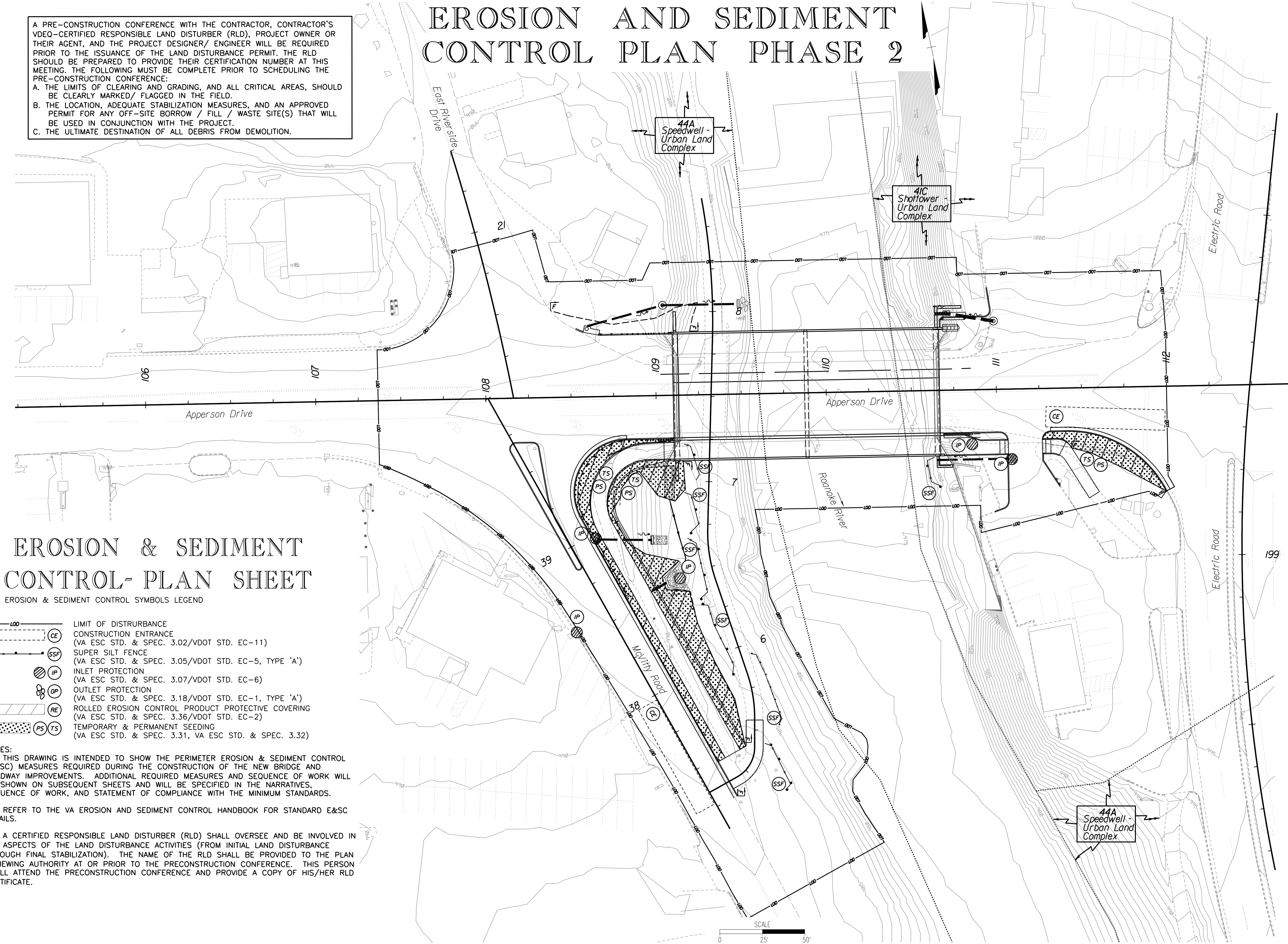
A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, CONTRACTOR'S VDEQ-CERTIFIED RESPONSIBLE LAND DISTURBER (RLD), PROJECT OWNER OR THEIR AGENT, AND THE PROJECT DESIGNER/ ENGINEER WILL BE REQUIRED PRIOR TO THE ISSUANCE OF THE LAND DISTURBANCE PERMIT. THE RLD SHOULD BE PREPARED TO PROVIDE THEIR CERTIFICATION NUMBER AT THIS MEETING. THE FOLLOWING MUST BE COMPLETE PRIOR TO SCHEDULING THE PRE-CONSTRUCTION CONFERENCE:

A. THE LIMITS OF CLEARING AND GRADING, AND ALL CRITICAL AREAS, SHOULD BE CLEARLY MARKED/ FLAGGED IN THE FIELD.

B. THE LOCATION, ADEQUATE STABILIZATION MEASURES, AND AN APPROVED PERMIT FOR ANY OFF-SITE BORROW / FILL / WASTE SITE(S) THAT WILL BE USED IN CONJUNCTION WITH THE PROJECT.

C. THE ULTIMATE DESTINATION OF ALL DEBRIS FROM DEMOLITION.

EROSION AND SEDIMENT CONTROL PLAN PHASE 2

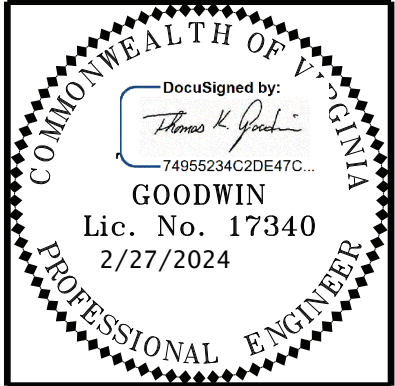


EROSION & SEDIMENT CONTROL- PLAN SHEET

EROSION & SEDIMENT CONTROL SYMBOLS LEGEND

- 100 — LIMIT OF DISTURBANCE
- CE CONSTRUCTION ENTRANCE (VA ESC STD. & SPEC. 3.02/VDOT STD. EC-11)
- SSF SUPER SILT FENCE (VA ESC STD. & SPEC. 3.05/VDOT STD. EC-5, TYPE 'A')
- IP INLET PROTECTION (VA ESC STD. & SPEC. 3.07/VDOT STD. EC-6)
- OP OUTLET PROTECTION (VA ESC STD. & SPEC. 3.18/VDOT STD. EC-1, TYPE 'A')
- RE ROLLED EROSION CONTROL PRODUCT PROTECTIVE COVERING (VA ESC STD. & SPEC. 3.36/VDOT STD. EC-2)
- PS TS TEMPORARY & PERMANENT SEEDING (VA ESC STD. & SPEC. 3.31, VA ESC STD. & SPEC. 3.32)

- NOTES:
1. THIS DRAWING IS INTENDED TO SHOW THE PERIMETER EROSION & SEDIMENT CONTROL (E&SC) MEASURES REQUIRED DURING THE CONSTRUCTION OF THE NEW BRIDGE AND ROADWAY IMPROVEMENTS. ADDITIONAL REQUIRED MEASURES AND SEQUENCE OF WORK WILL BE SHOWN ON SUBSEQUENT SHEETS AND WILL BE SPECIFIED IN THE NARRATIVES, SEQUENCE OF WORK, AND STATEMENT OF COMPLIANCE WITH THE MINIMUM STANDARDS.
2. REFER TO THE VA EROSION AND SEDIMENT CONTROL HANDBOOK FOR STANDARD E&SC DETAILS.
3. A CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) SHALL OVERSEE AND BE INVOLVED IN ALL ASPECTS OF THE LAND DISTURBANCE ACTIVITIES (FROM INITIAL LAND DISTURBANCE THROUGH FINAL STABILIZATION). THE NAME OF THE RLD SHALL BE PROVIDED TO THE PLAN REVIEWING AUTHORITY AT OR PRIOR TO THE PRECONSTRUCTION CONFERENCE. THIS PERSON SHALL ATTEND THE PRECONSTRUCTION CONFERENCE AND PROVIDE A COPY OF HIS/HER RLD CERTIFICATE.



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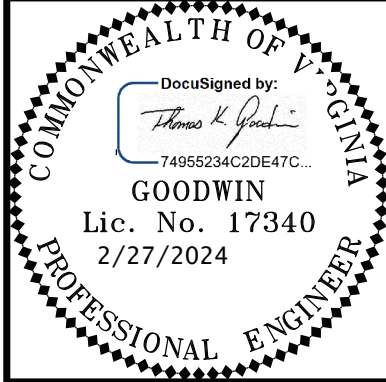
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APPERSON DRIVE BRIDGE REPLACEMENT EROSION AND SEDIMENT CONTROL PLAN SHEET PHASE 2 CITY OF SALEM, VA

Vertical Scale:	N/A
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Commission Number:	3925B

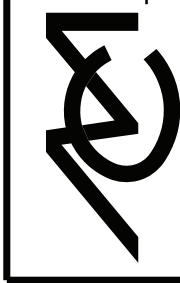
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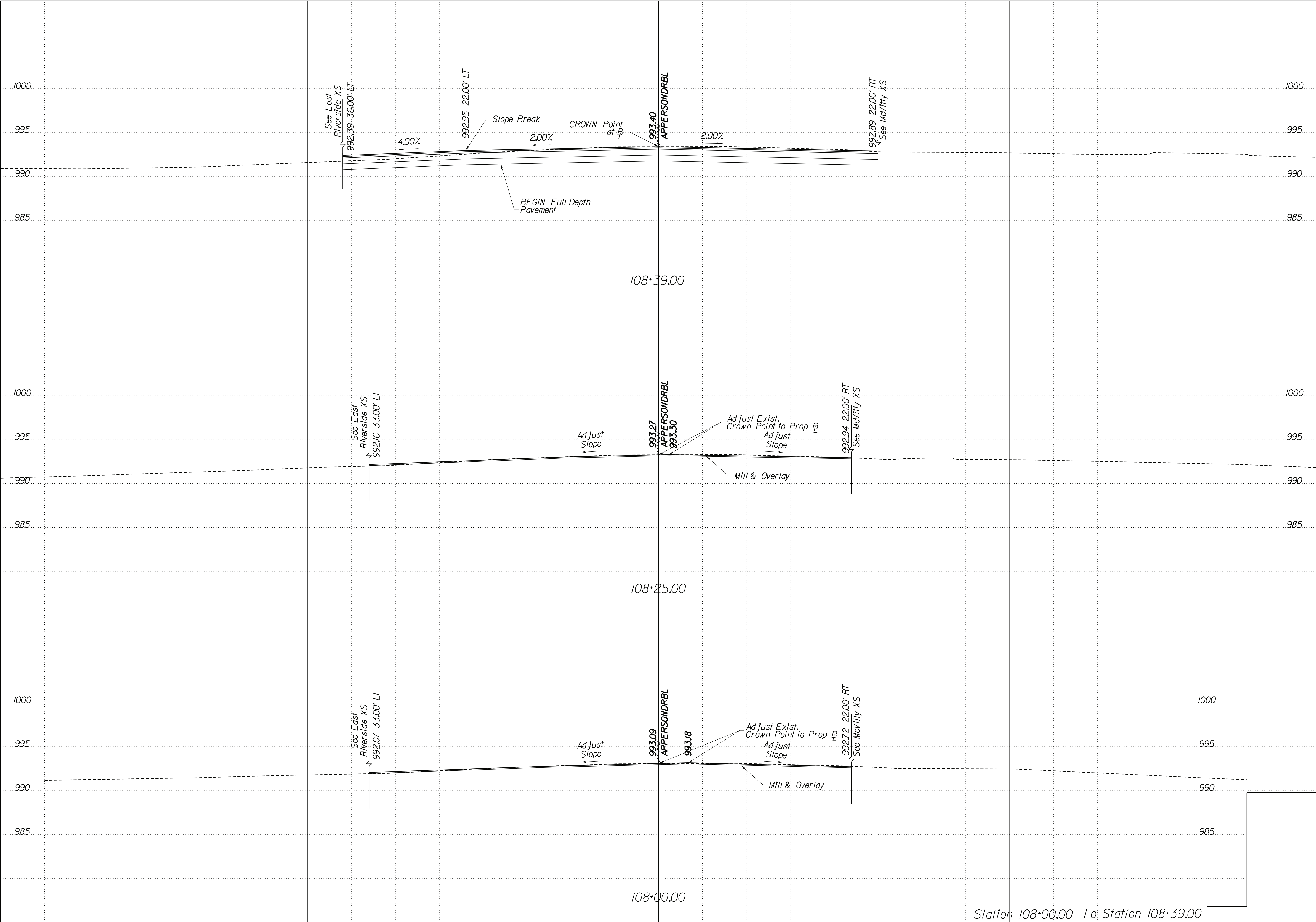
APPERSON DRIVE BRIDGE REPLACEMENT

CROSS SECTIONS:
APPERSON DRIVE

CITY OF SALEM, VA

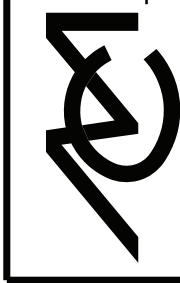
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APPERSON DRIVE BRIDGE REPLACEMENT

CROSS SECTIONS: APPERSON DRIVE

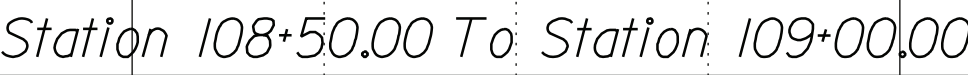
CITY OF SALEM, VA

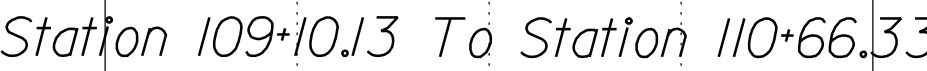
Vertical Scale:
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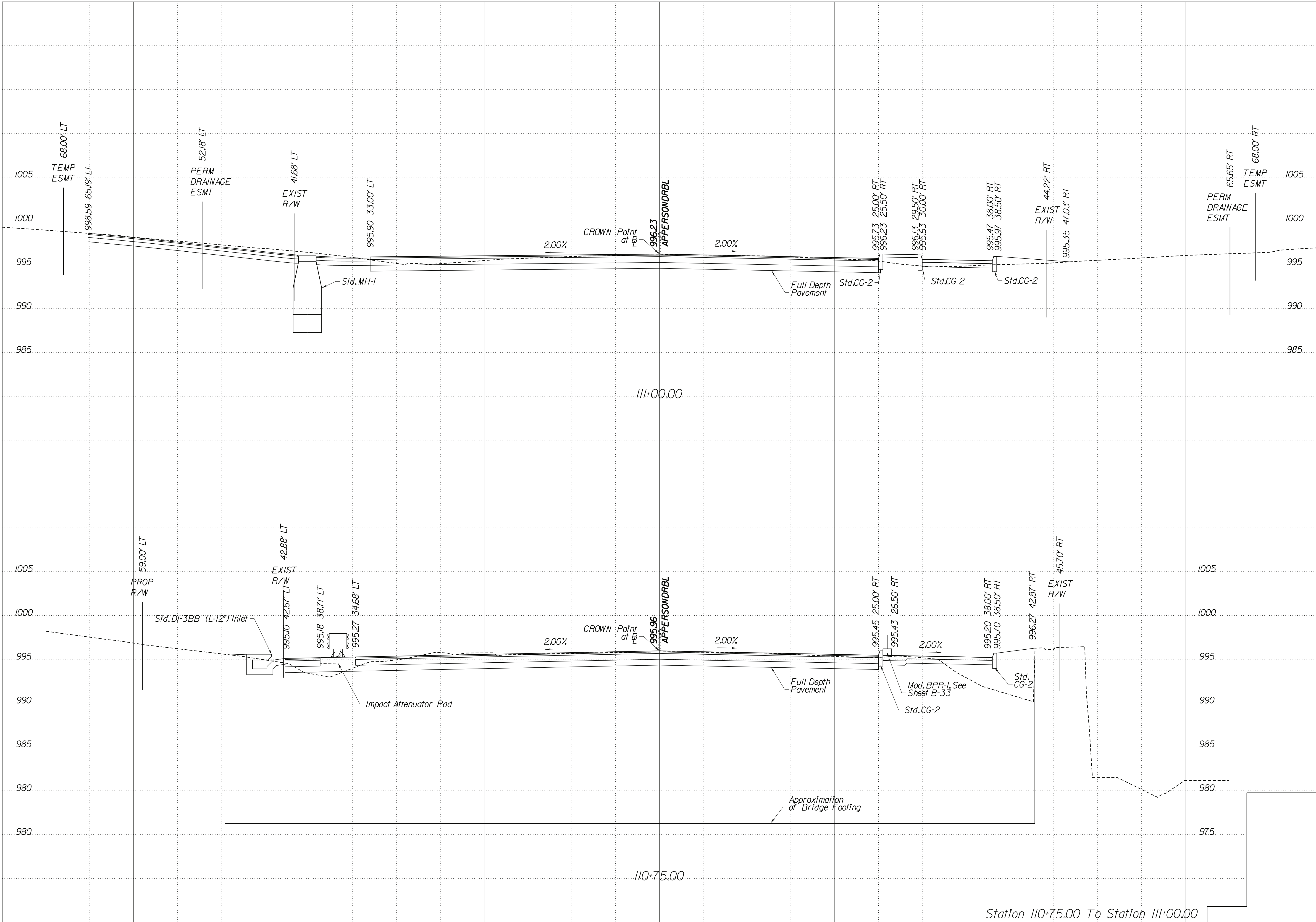
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3925B

Sheet No.:
XS-2





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Date	
Revisions	

Issue Date:	02/16/2024
Drawn By:	MPF
Designed By:	MPF
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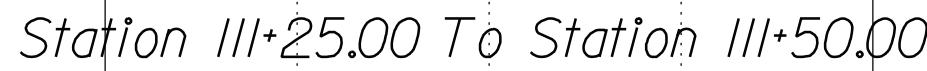
APPERSON DRIVE BRIDGE REPLACEMENT
CROSS SECTIONS:
APPERSON DRIVE
CITY OF SALEM, VA

Vertical Scale:
AS NOTED

Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:
XS-5

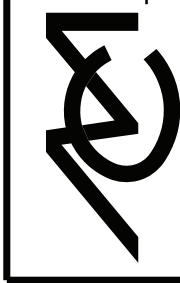


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Issue Date:	02/16/2024
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Designed By:	MPF
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APPERSON DRIVE BRIDGE REPLACEMENT

CROSS SECTIONS:
APPERSON DRIVE

CITY OF SALEM, VA

Vertical Scale:
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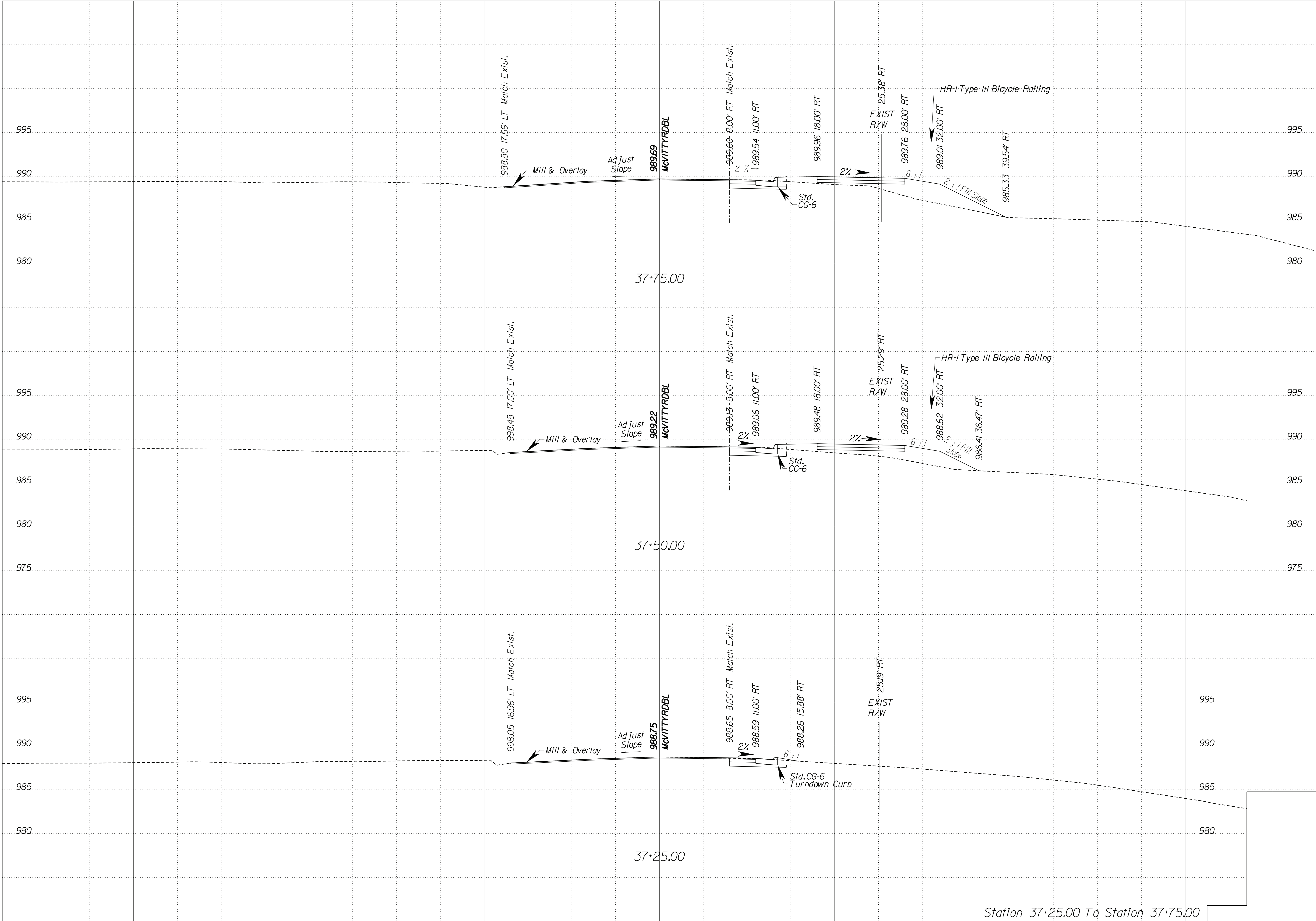
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Commission Number:
3925B

Sheet No.:

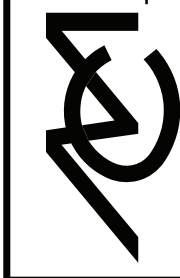
XS-7

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Revisions	Date

Issue Date:	02/16/2024
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APPERSON DRIVE BRIDGE REPLACEMENT
CROSS SECTIONS:
McVITTY ROAD
CITY OF SALEM, VA

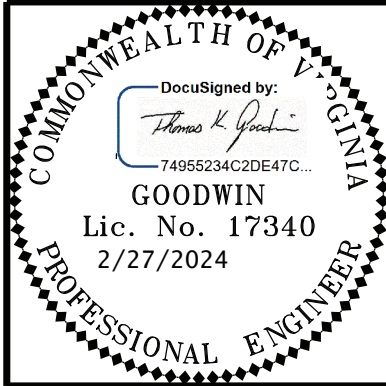
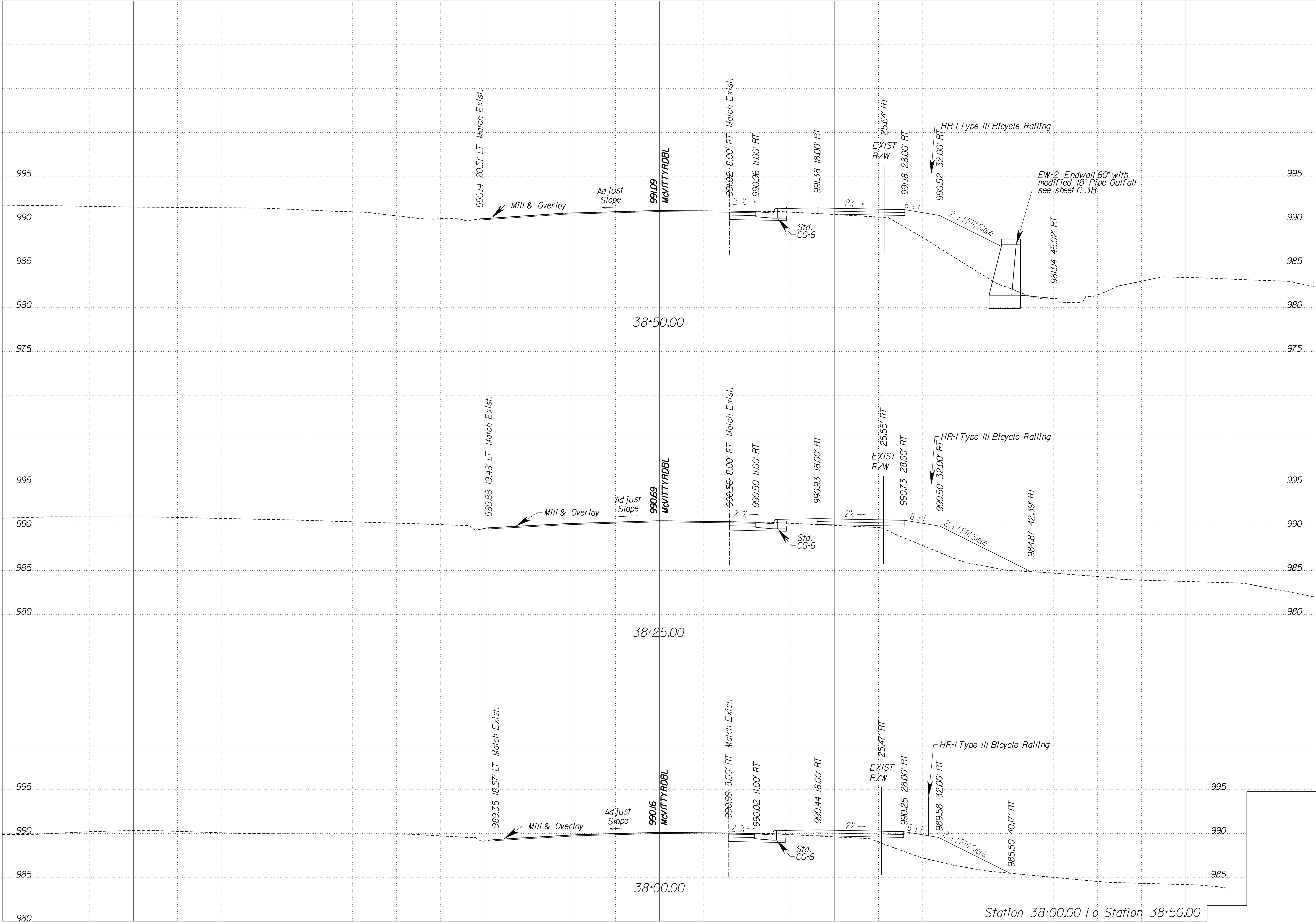
Vertical Scale:
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Horizontal Scale:
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Commission Number:
3925B

Sheet No.:
XS-8

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Revisions	Date

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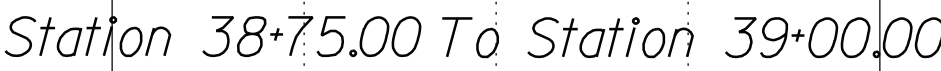
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CROSS SECTIONS:
McVITTY ROAD
CITY OF SALEM, VA

Vertical Scale:
AS NOTED

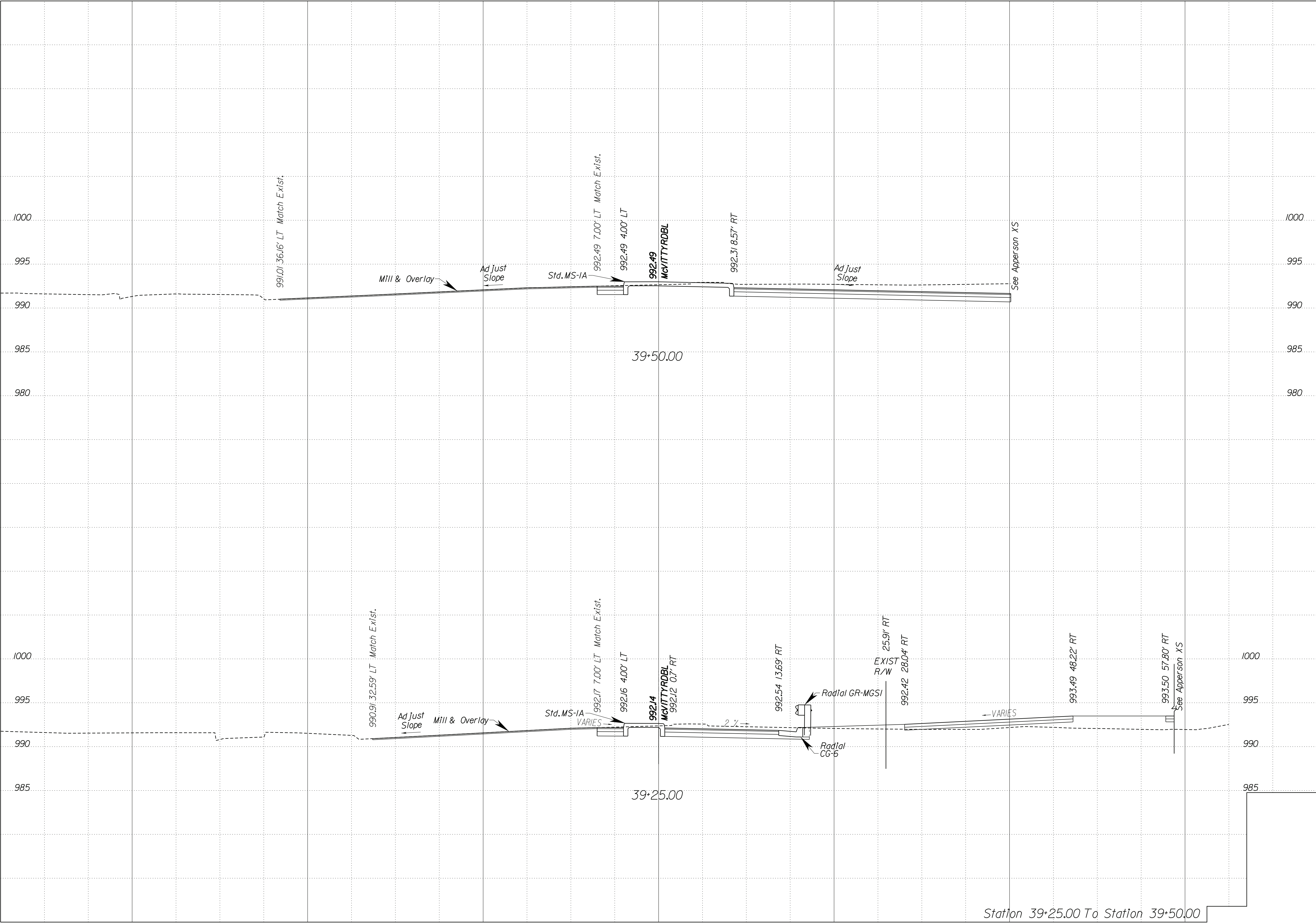
Horizontal Scale:
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Commission Number:
3925B

Sheet No.:
XS-9



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Revisions	Date

Issue Date:	02/16/2024
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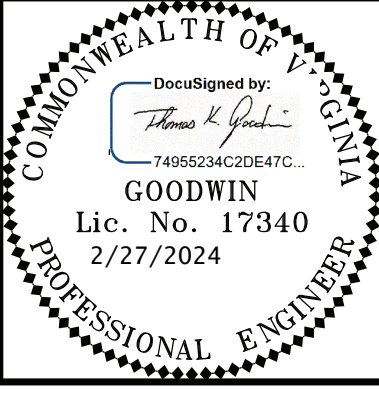
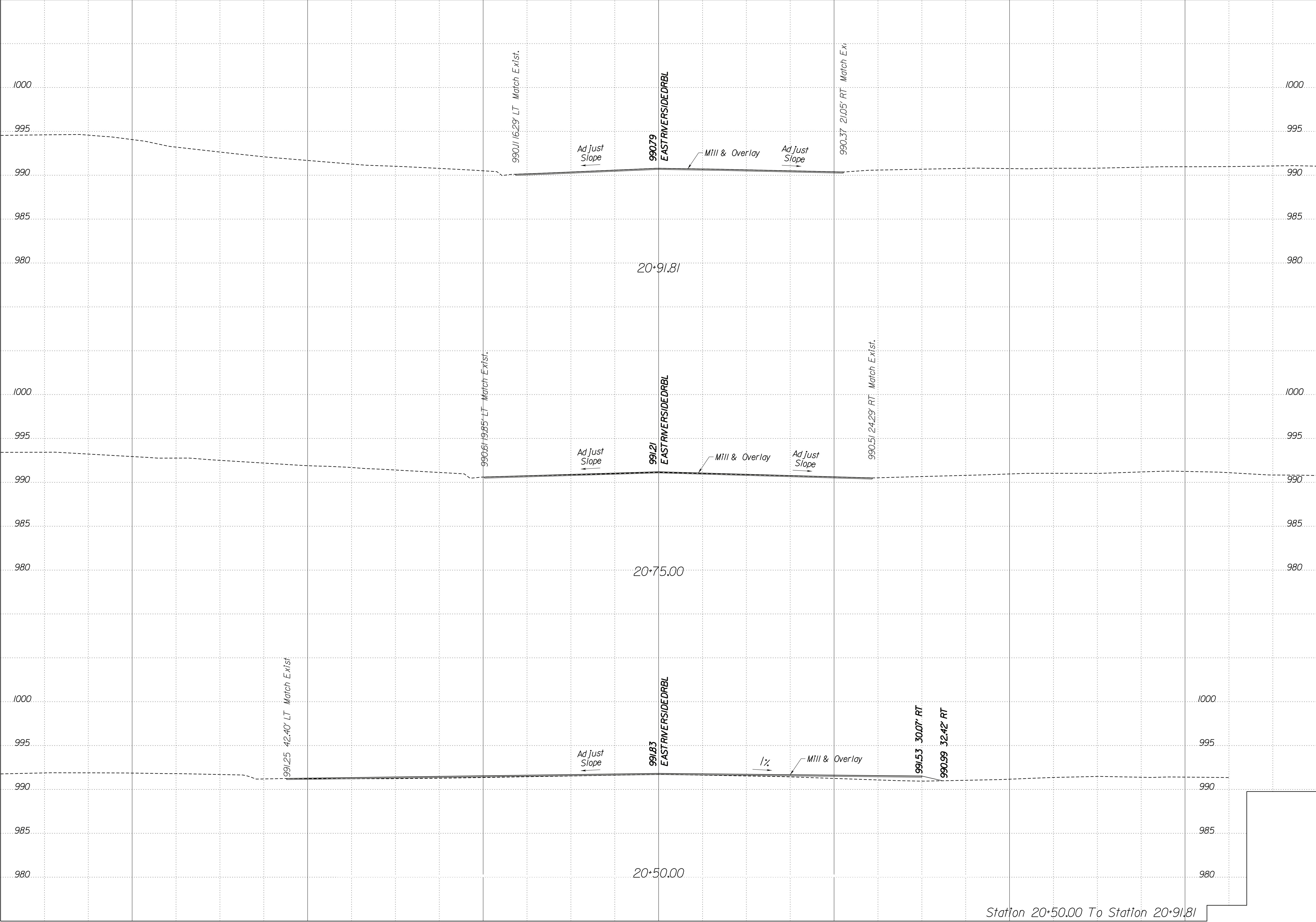
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APPERSON DRIVE BRIDGE REPLACEMENT
CROSS SECTIONS:
McVITTY ROAD
CITY OF SALEM, VA

Vertical Scale:	AS NOTED
Horizontal Scale:	AS NOTED
Commission Number:	3925B

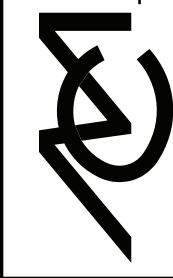
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XS-11

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Revisions	Date

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APPERSON DRIVE BRIDGE REPLACEMENT
CROSS SECTIONS:
EAST RIVERSIDE DRIVE
CITY OF SALEM, VA

Vertical Scale:
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Horizontal Scale:
AS NOTED
Commission Number:
3925B

Sheet No.:
XS-12

ESTIMATED QUANTITIES - SUBSTRUCTURE ONLY										
		Concrete Class A3	Reinforcing Steel	Corrosion Resistant Reinf. Steel, Class I	Structure Excavation	Cofferdam	Dry Riprap Class II 3/8"	Select Backfill Abutment Zone	Concrete Substr. Surface Repair	Concrete Surface Color Coating
		CY	LB	LB	CY $\otimes$	EA	TON	TON $\otimes$	SY	SY
Abutment A ***	Neat	77.3	_____	7,523	_____	_____	_____	1,740	10.0	115
	Footing	60.3	8,785	_____	500	_____	_____	_____	_____	_____
	Mud Slab	194.4	_____	_____	195	_____	_____	_____	_____	_____
Pier ***	Neat	55.3	_____	4,321	_____	_____	_____	_____	10.0	250
	Footing	21.7	2,572	_____	40	2	_____	_____	_____	_____
	Mud Slab	38.3	_____	_____	39	_____	_____	_____	_____	_____
Abutment B ***	Neat	98.9	_____	12,383	_____	_____	_____	2,000	10.0	155
	Footing	70.5	8,957	_____	547	1	310	_____	_____	_____
	Mud Slab	66.7	_____	_____	67	_____	_____	_____	_____	_____
Total		683.4	20,314	24,227	1,388	3	310	3,740	30.0	520

- $\otimes$ Denotes items to be paid for on the basis of plan quantities in accordance with current Road and Bridge Specifications.
- * Elevation used for bottom of Mud Slab to calculate quantities was 963.00' for Abutment A, 965.00' for Pier, and 971.00' for Abutment B
- ** Concrete Surface Color Coating shall be applied to the following surfaces: Pier wall and cap from the OHW elevation to the upper limits of the pier caps, but excluding the top of the cap; exposed surfaces of abutment walls from finished grade to and including the top of the wingwall, excluding bridge seats and portions of the backwall between limits of exterior structural members. Concrete Surface Color Coating shall be in accordance with VDOT Road and Bridge Specification Section 412.
- *** Cofferdams shall be constructed in Phases 1 and 2 on the upstream side of the structure, and in Phases 3 and 4 on the downstream side of the structure to facilitate construction for the extended portions of the Pier. Cofferdams shall be in accordance with VDOT Road and Bridge Specification Section 401.

ESTIMATED QUANTITIES - SUPERSTRUCTURE ONLY		
Item	Units	Quantity
Concrete Class A4 Modified Low Shrinkage	CY	363.6
NBIS Access, Under Bridge (Str. No. 1801)	DAY/PARTIAL DAY	1.0
Corrosion Resistant Reinf. Steel, Class I	$\otimes$ LB	87,788
Railing, CPSR 2 Rails	$\otimes$ LF	323
Railing, Illinois Steel Railing	$\otimes$ LF	161
Structural Steel Rolled Beam ASTM A709 Grade 50W	LB *	430,000
Cover Depth Survey	$\otimes$ SY	1,252
Bridge Deck Grooving	$\otimes$ SY	1,252

* Lump Sum - Weight includes 3,225 lbs. of ASTM A709 Grade 36 steel

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

ABBREVIATION LIST			
Type	Description	Type	Description
approx.	Approximate	ksi	Kips per
$\square$	Baseline		Square Inch
B.M.	Benchmark	LF	Linear Feet
—	Centerline	LS	Lump Sum
const.	Construction	max.	Maximum
cl.	Clearance	min.	Minimum
CY	Cubic Yards	N.F.	Near Face
$\varnothing$ or dia.	Diameter	No.	Number
E.F.	Each Face	PL	Plate
eq.	Equal	psf	Pounds per
elev.	Elevation		Square Foot
excav.	Existing	spa.	Spaces
exist.	Excavation	sq. ft.	Square Feet
oF	Degrees	SY	Square Yards
	Fahrenheit	Sta.	Station
F.F.	Far Face	symm.	Symmetrical
ft.	Feet	TON	Tons
H.S.	High Strength	typ.	Typical

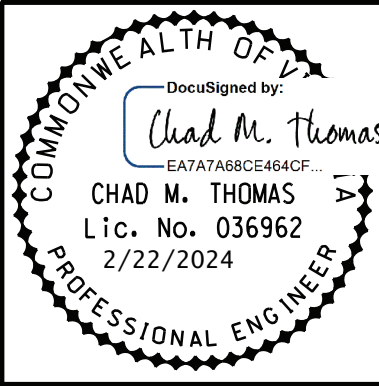
MISCELLANEOUS / ROAD ITEMS		
Item	Quantity	Units
Concrete Class A3 Misc.	10	CY
15" Pipe	164	LF
18" Pipe	10	LF
24" Pipe	35	LF
Drop Inlet DI-1	1	EACH
Drop Inlet DI-3B,L=4'	1	EACH
Drop Inlet DI-3B,L=8'	1	EACH
Drop Inlet DI-3BB,L=12'	1	EACH
Manhole MH-1	21	LF
Aggr.Base Mat.Ty. 1 No.21A Or 21B	733	TON
Asphalt Concrete Ty. IM-19.00	160	TON
Flexible Pave.Planning 0"-2"	2242	SY
Asphalt Conc.Ty. Sm-9.50	341	TON
Asphalt Conc.Ty. Sm-9.5AL	6	TON
Asphalt Concrete Ty. Bm-25.0A	689	TON
NS Saw-Cut Asph Conc	720	LF
Std. Curb CG-2	200	LF
Radial Curb CG-2	40	LF
Std. Curb CG-3	70	LF
Radial Curb CG-3	10	LF
Std. Comb. Curb & Gutter CG-6	200	LF
Rad. Comb. Curb & Gutter CG-6	140	LF
Hydr. Cement Conc. Sidewalk 4"	338	SY
Hydr. Cement Conc. Sidewalk 7"	10	SY
CG-12 Detectable Warning Surface	4	SY
Radial Guardrail GR-MGS1	38	LF
Guardrail Terminal GR-MGS2	1	EA
Guardrail End Anchorage GR-MGS3	1	EA
Guardrail Height Transition GR-MGS4	1	EA
Fixed Object Attach. GR-F0A-1 Ty. 1	1	EA
Fixed Object Attach. GR-F0A-5	1	EA
Traf. Barr. Ser. Conc. SGL FC Par. MB-10A	900	LF
Traffic Barrier Service Concrete	24	LF
Impact Atten.Ser.Ty.1 TI-2,<40 Mph	2	EA
Impct Atten. Std. IA-2 TI-2 <40 Mph	1	EA
Median Strip MS-1A	70	SY
Allaying Dust	150	HR
Type 3 Barricade 4'	11	EA
Type 3 Barricade 8'	12	EA
Temporary (Construction) Sign	1847	SF
Group 2 Channelizing Devices	75360	DAY
Electronic Arrow Board	5760	HR
Warning Light Ty. B	960	DAY
Demo. Of Pavement Rigid	92	SY
Demo. Of Pavement Flexible	2024	SY
Remove Existing Guardrail	145	LF
NS Remove Exist.	3	EA

LUMP SUM BID ITEMS	
Mobilization	LS
Construction Surveying	LS
Earthwork	LS
NS Remove Portion of Existing Structure (Str. No. 1801)	LS
NS Environmental and Worker Protection (Str. No. 1801)	LS
NS Material Disposal (Str. No. 1801 and Type B)	LS
NS Water Line - 1801	LS
NS Temporary Shoring	LS
NS Temporary Work Bridge	LS
NS Modify Signal At Apperson Drive And Electric Road	LS

MISCELLANEOUS / ROAD ITEMS		
Item	Quantity	Units
Handrail Hr-1 Type III	222	LF
32" Pedestrian Railing (Mod. BPR-1)	62	LF
Field Office Ty. 1	16	MO
Dry Riprap Cl.I 26"	45	TON
Temporary Seed	12	LB
Regular Seed	14	LB
Hydraulic Erosion Control Product Type 3	572	SY
Fertilizer Nitrogen -N	7	LB
Fertilizer Phosphorous -P	13	LB
Fertilizer Potassium -K	7	LB
Lime	0.4	TON
Rolled Erosion Ctrl Product EC-2 Type 1	572	SY
Inlet Protection, Type A	1	EACH
Temp. Silt Fence Type A	438	LF
Inlet Protection, Type B	8	EACH
Sign Panel	11	SF
Remove Existing 1 Post Sign Structure	2	EACH
Remove Existing 1 Post Sign Panel	5	EACH
Relocate Ex. 1 Post Grnd Mount Sgn Panel	18	EACH
Sign Post Stp-1, 2 1/2", 12 Gauge	15	LF
Conc. Sign Fdn. Stp-1 Ty.E	1	EA
Type B Class I Pvmt Line Mrkg 4"	4674	LF
Type B Class I Pvmt Line Mrkg 8"	140	LF
Ty.B Cl.I Pave. Line Mark. 24"	142	LF
Type B Class VI Contrast Pvmt Mrkg 4"	939	LF
NS Pavement Marking Type B Class VI Contrast Pvmt Mrkg 8"	157	LF
Eradicate Ex. Linear Pvmt Mrkg	5155	LF
Erad. Exist.Nonlinear Pvmt Mrkg	1224	SF
Pvmt Msg. Mark. "Only" Ty B, Cl. I, 8'	2	EA
Temp. Pvmt Mrkg, Ty. A, 4"	8442	LF
Temp. Pvmt Mrkg, Ty. A, 6"	4630	LF
Temp. Pvmt Mrkg, Ty. A, 24"	315	LF
Temp. Pvmt. Symbol Mrkg Thru Arrow Ty. A	3	EA
Temp. Pvmt Symb Mkg Sngl Turn Arrow Ty A	7	EA
Ns Temp. Pvmt Mrkg	5	EA
Pvmt. Symb Mrkg Sgl Turn Arr. Ty B Cl I	9	EA
Pvmt. Symb Mrkg Thru Arrow Ty B Cl I	1	EA
Portable Changeable Message Sign	57600	HR

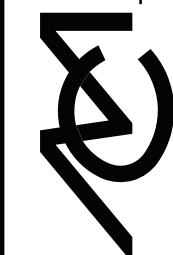
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B-2	Estimated Quantities, Index of Sheets, Abbreviations, Table of Revisions
B-3	Sequence of Construction Phase I
B-4	Sequence of Construction Phase II
B-5	Sequence of Construction Phase III
B-6	Sequence of Construction Phase IV
B-7	Substructure Layout, Miscellaneous Details
B-8	Abutment A Plan and Elevation
B-9	Abutment A Footing Plan and Details
B-10	Abutment B Plan and Elevation
B-11	Abutment B Footing Plan and Details
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B-13	Pier Plan and Elevation
B-14	Pier Footing Plan and Sections
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B-18	Beam Details
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B-20	Dead Load Deflections
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B-22	Deck Slab Plan and Placement Schedule
B-23	Abutment A Semi-Integral Backwall Plan and Elevation
B-24	Abutment A Semi-Integral Backwall Details and Notes
B-25	Abutment B Semi-Integral Backwall Plan and Elevation
B-26	Abutment B Semi-Integral Backwall Details and Notes
B-27	42" CPSR Railing (CPSR-1)
B-28	CPSR Rail Connections and Notes (CPSR-3)
B-29	CPSR Rail Connections (CPSR-4)
B-30	42" CPSR Terminal Wall (CPSRT-3)
B-31	Illinois Steel Railing
B-32	Illinois Steel Railing Misc. Details
B-33	32" Pedestrian Railing (Modified BPR-1)
B-34	Water Line System - Insulated
B-35	Reinforcing Steel Schedule - Superstructure
B-36	Reinforcing Steel Schedule - Abutment A and Pier
B-37	Reinforcing Steel Schedule - Abutment B
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Rev. No.	Sheets Revised	Date
TABLE OF REVISIONS		



Date									
Revisions									

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Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023



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APPERSON DRIVE BRIDGE REPLACEMENT

EST. QUANTITIES, INDEX OF SHEETS,
ABBREVIATIONS, TABLE OF REVISIONS

CITY OF SALEM, VIRGINIA

Vertical Scale:
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Horizontal Scale:
N/A

Commission Number:
3925B

Sheet No.:

B-2



PIER

ABUTMENT B

PLAN



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



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



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



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

1. For directions on traffic management, see Sheets C-4D thru C-4F.
2. Install temporary water services for the 18" diameter water line. Shut off services to the existing 18" diameter water line.
3. Saw cut the existing deck 1" deep minimum, 3'-3" left from the construction baseline of Apperson Drive, as shown in the Plan and Transverse Section.
4. Install safety barriers on existing structure adjacent to edge of deck at demolition line.
5. Remove the upstream portions of the existing deck, upstream curb and sidewalk, upstream railing, 18" diameter water line and attachments, 2" diameter gas line and attachments, and existing Beams 1 and 2 (upstream beams) in all spans to the limits shown.
6. Saw cut the existing abutments and pier 1" deep minimum, 3'-3" left from the construction baseline of Apperson Drive.
7. Remove all components of the upstream portions of the existing abutments and pier to the limits shown.

 Denotes limits of demolition[illegible]

Issue Date:
02/16/24

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Designed By: CTE

Date: 11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT SEQUENCE OF CONSTRUCTION PHASE I

CITY OF SALEM, VIRGINIA

Vertical Scale:

N/A

Horizontal Scale:

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Commission Number:

925B

Sheet No.:

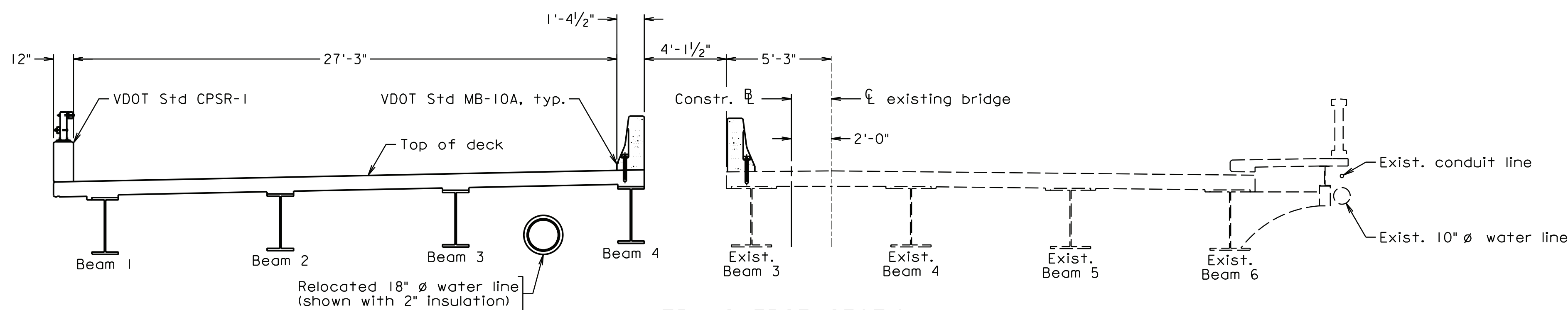
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PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



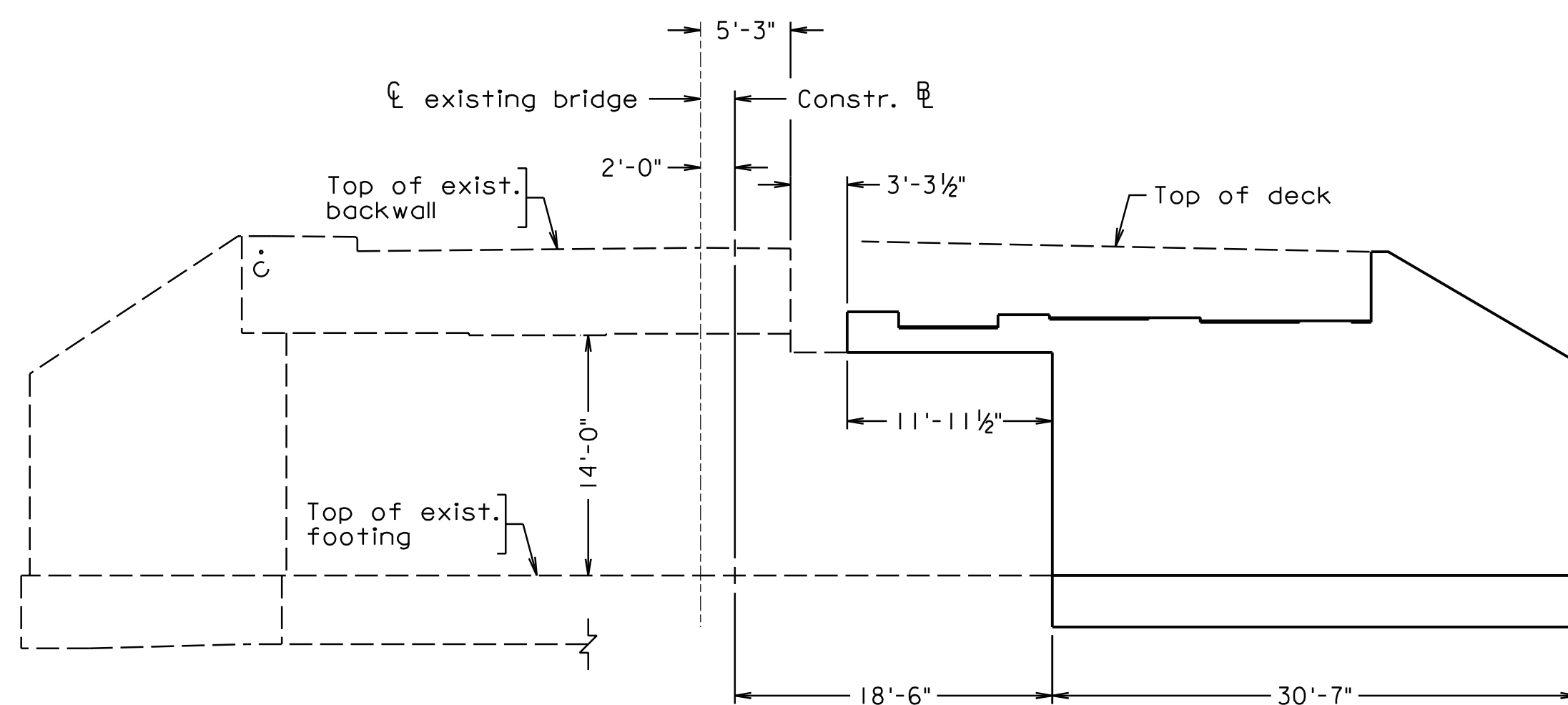
PLAN

Scale: $\frac{1}{16}'' = 1'-0''$



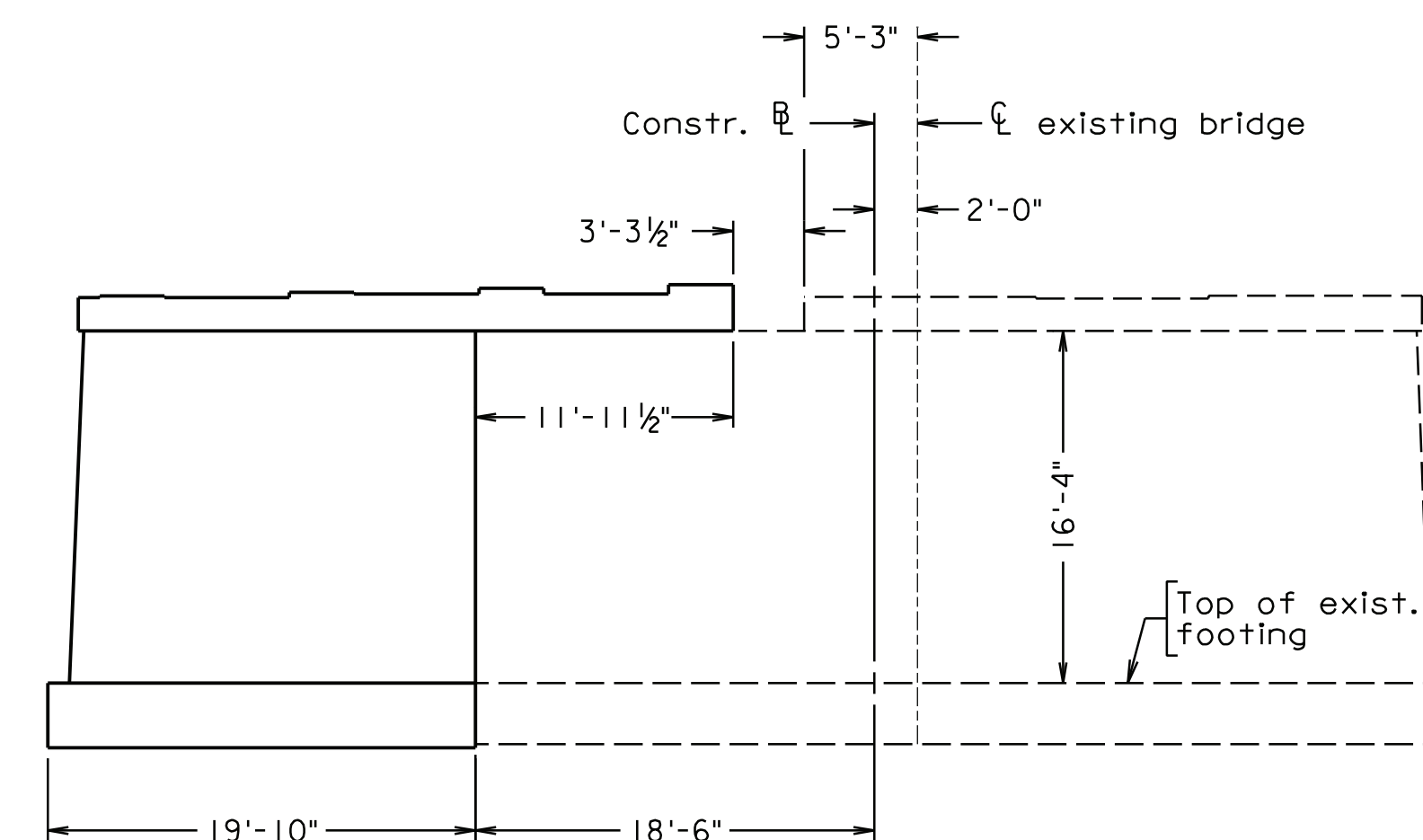
TRANSVERSE SECTION

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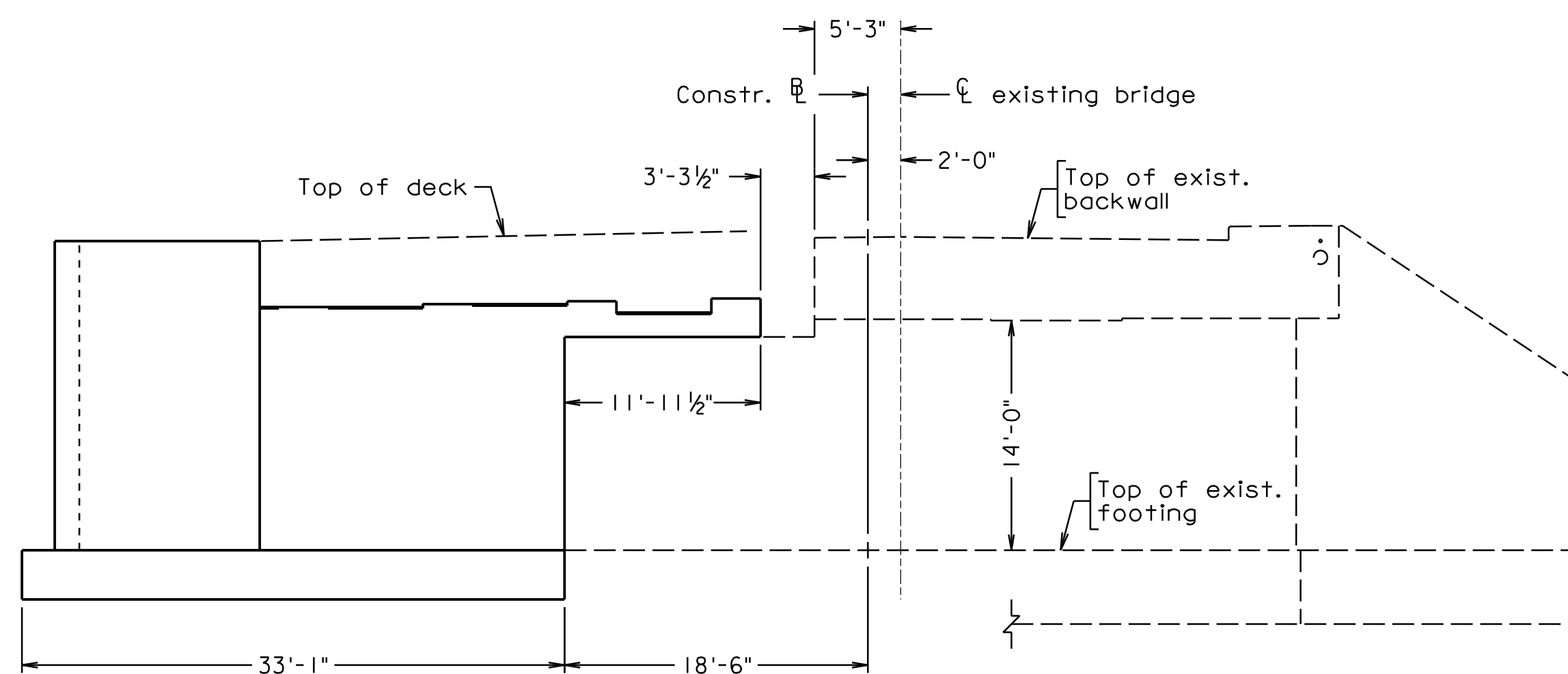
ABUTMENT A ELEVATION

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



PIER ELEVATION

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



ABUTMENT B ELEVATION

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

1. For directions on traffic management, see Sheets C-4D thru C-4F.
2. Construct the upstream extensions of the abutments and pier.
3. Erect Beams 1 through 4 in both spans. Secure beams to substructures at bearings, install steel diaphragms, and tighten all bolted splice and steel diaphragm connections. Construct the semi-integral backwalls at Abutment A and Abutment B.
4. Install the proposed 18" diameter water line and water line attachments between Beams 3 and 4. Connect the proposed water line to the existing water line as noted in the civil drawings. Switch water services from the temporary line to the relocated 18" diameter line.
5. Place the deck.
6. Place the upstream bridge railing.
7. Install temporary traffic barriers along the edge of the deck at the location of the construction joint.
8. Groove the new deck.
9. Place temporary striping on the new deck.
10. Switch traffic from existing bridge to portion of new bridge.

[illegible]

Issue Date:	02/16/24
Drawn By: DKA	Designed By: CTB
Checked By: TJT	Date: 11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT SEQUENCE OF CONSTRUCTION PHASE II

CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
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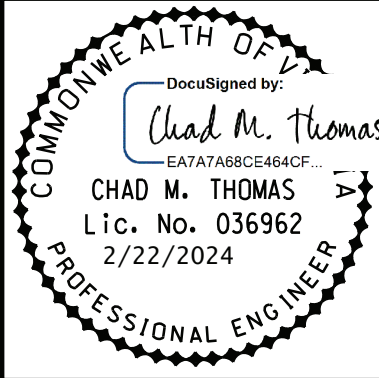
Commission Number:
3925B

Sheet No.:

B-4

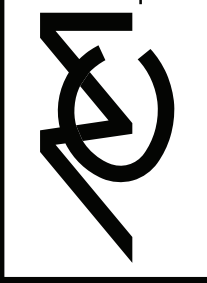
- SEQUENCE OF CONSTRUCTION, PHASE III, NOTES:
- For directions on traffic management, see Sheets C-4G thru C-4I.
 - Remove the remaining existing deck, downstream curb and sidewalk, downstream railing, 10" diameter water line, conduit, beams and bearings.
 - Remove remaining downstream components of the abutments and pier to the limits shown.

 Denotes limits of demolition



Date	
Revisions	

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Drawn By:	DKA
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Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT

SEQUENCE OF CONSTRUCTION

PHASE III

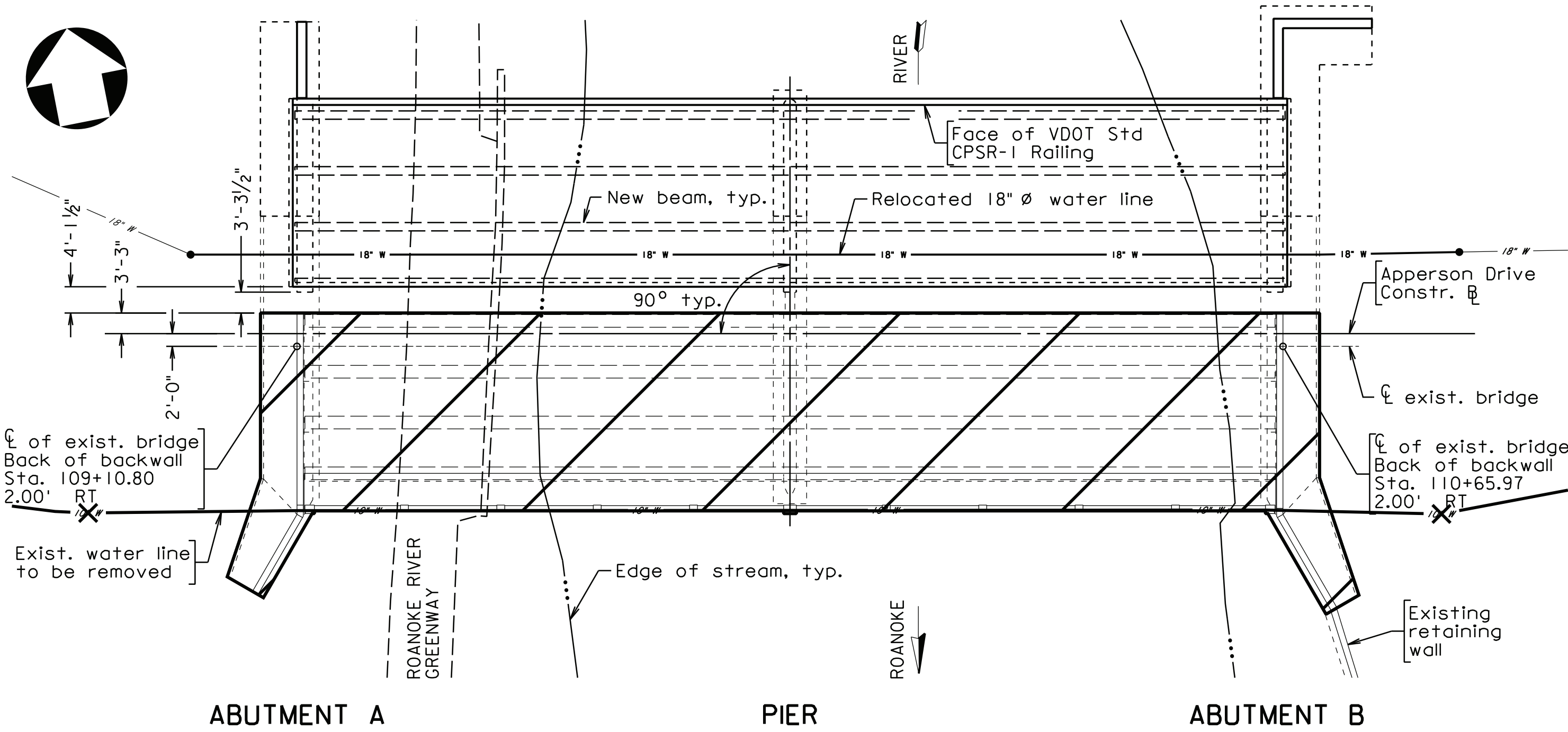
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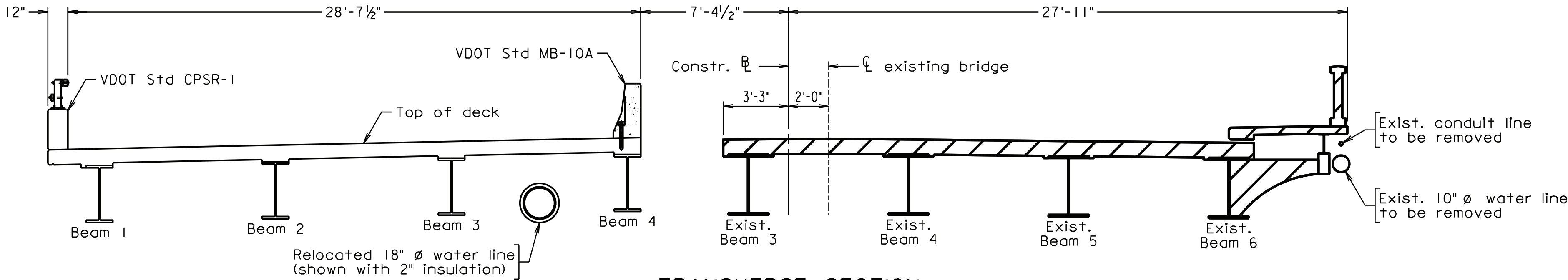
Horizontal Scale:
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Commission Number:
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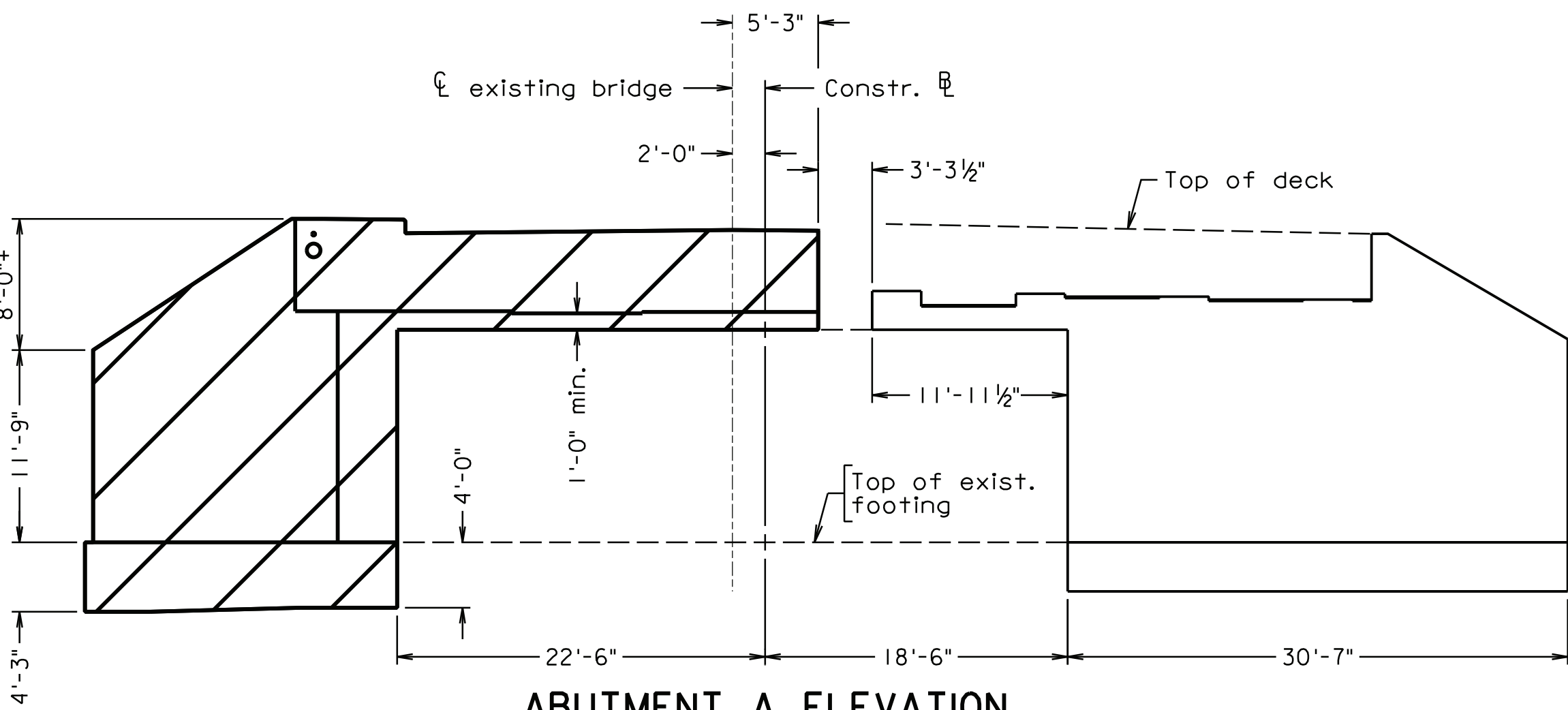
Sheet No.:
B-5



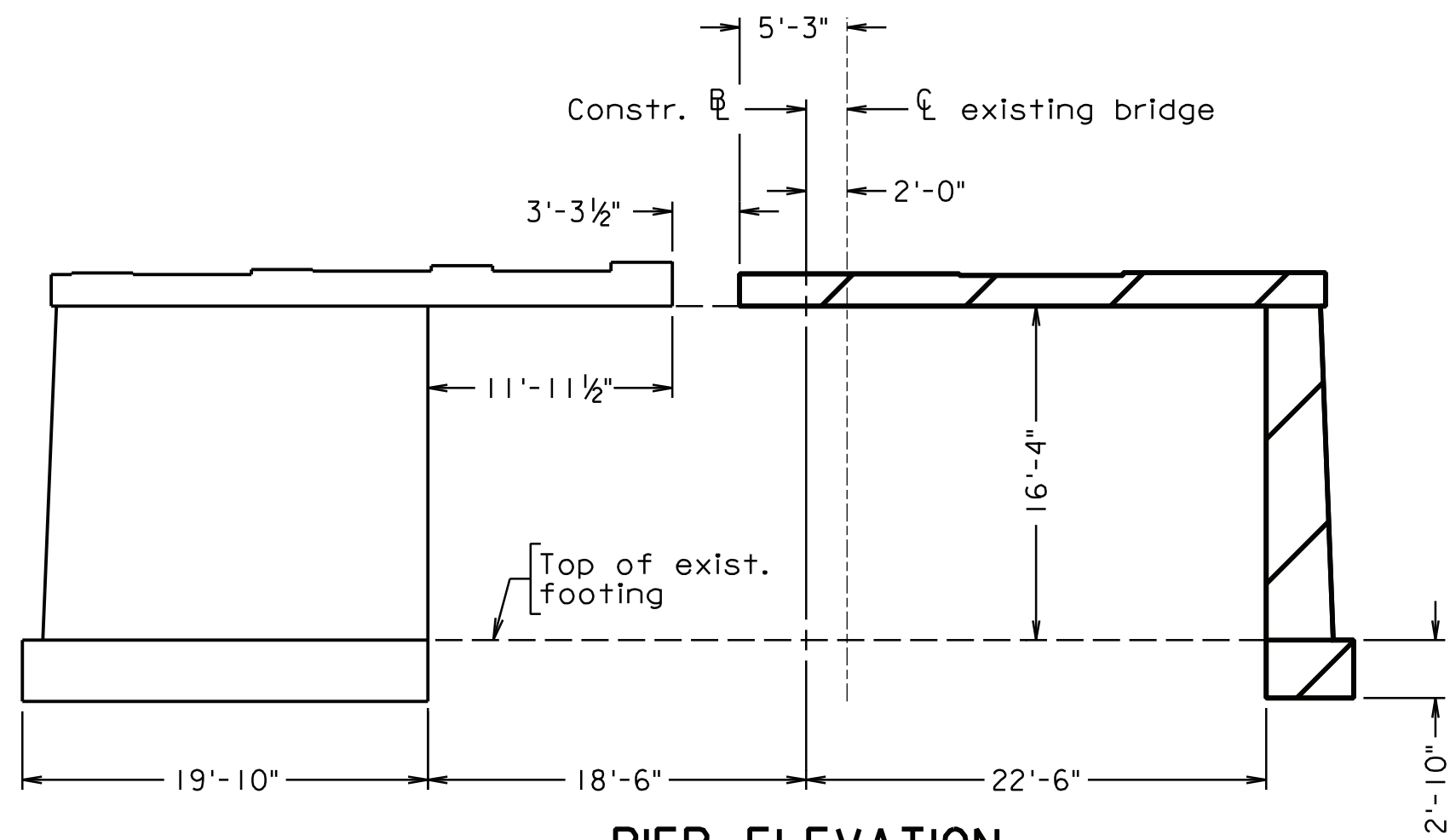
PLAN
Scale: 1/16" = 1'-0"



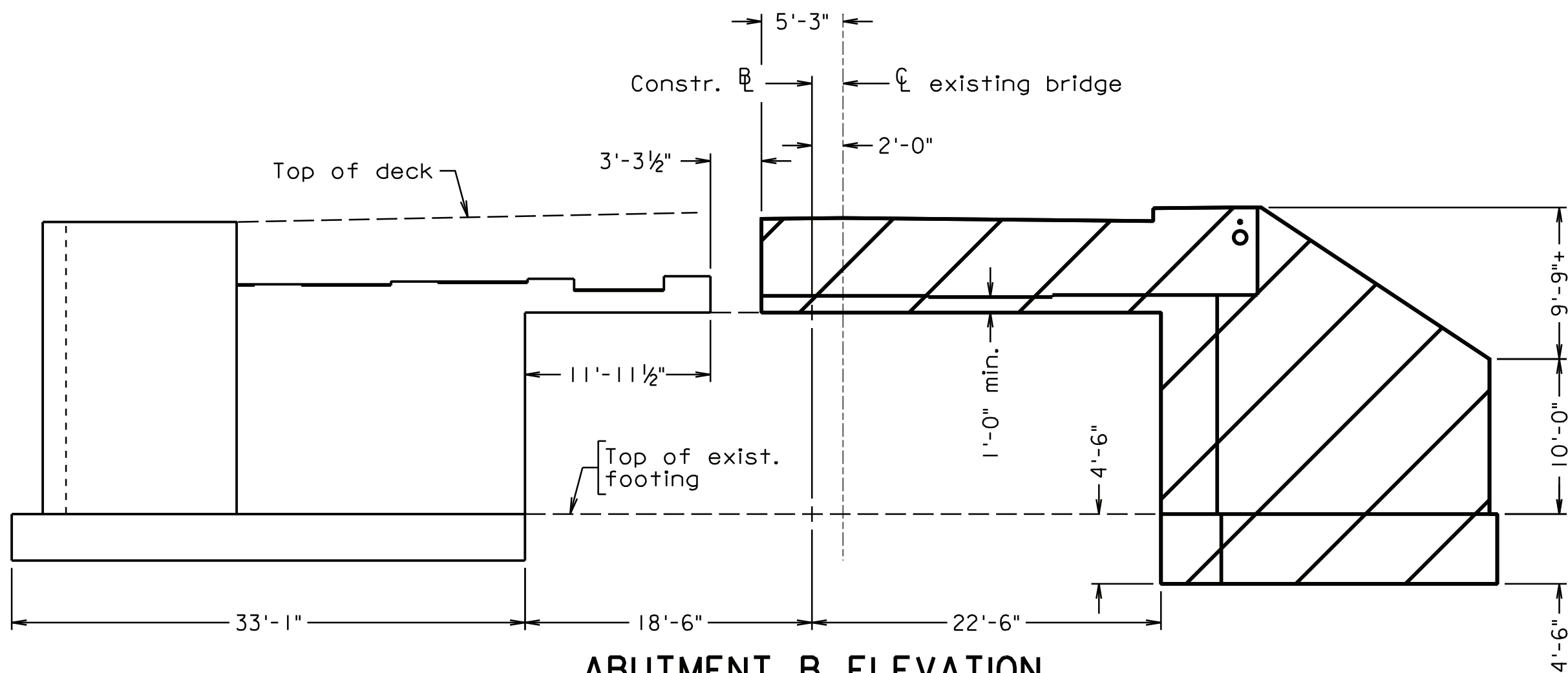
TRANSVERSE SECTION
Scale: 1/4" = 1'-0"



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



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



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



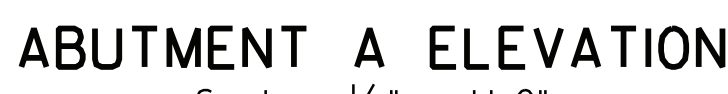
PIER

ABUTMENT B

Scale: $\frac{1}{16}'' = 1'-0''$



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



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



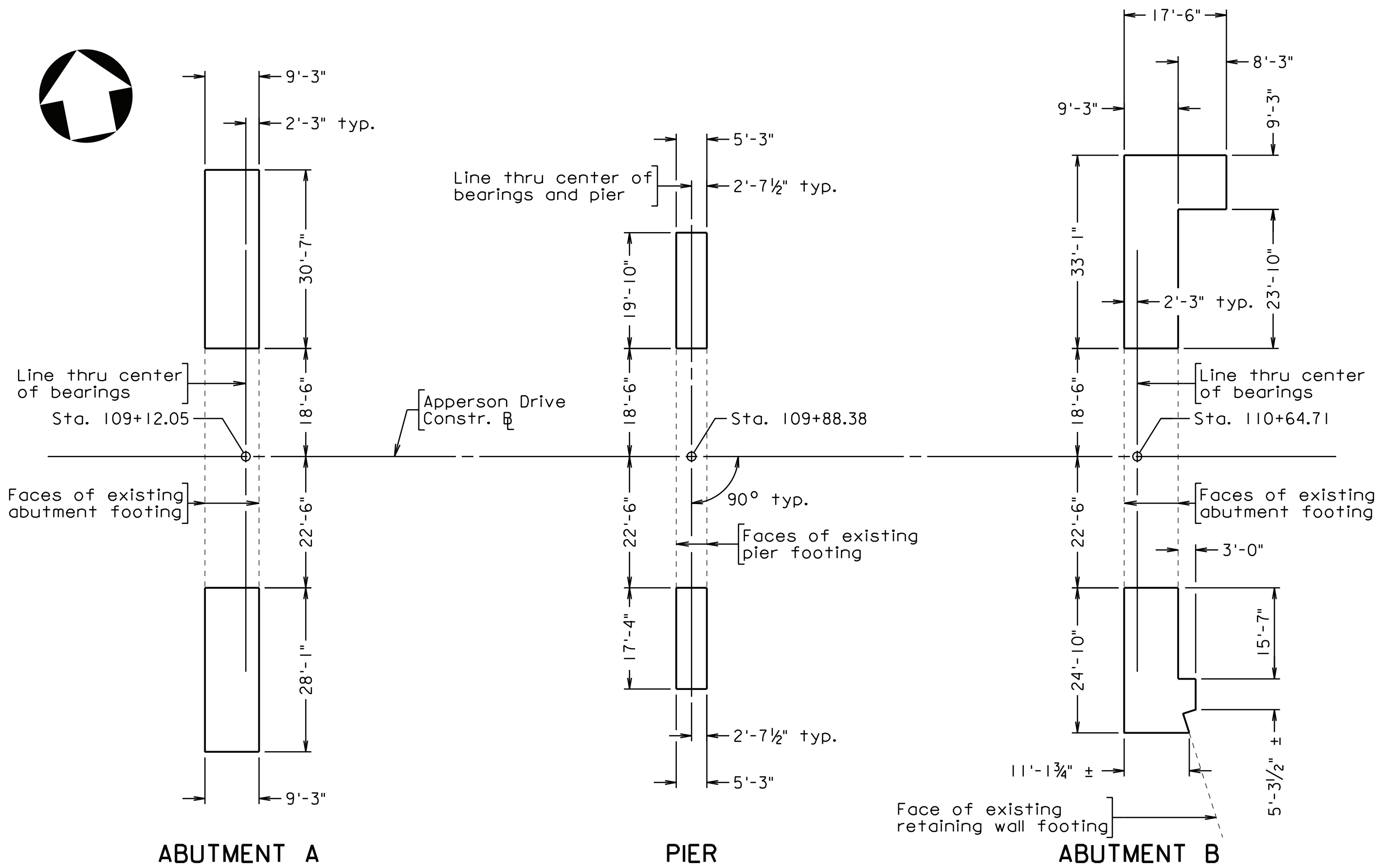
Scale: $\frac{1}{8}" = 1'-0"$



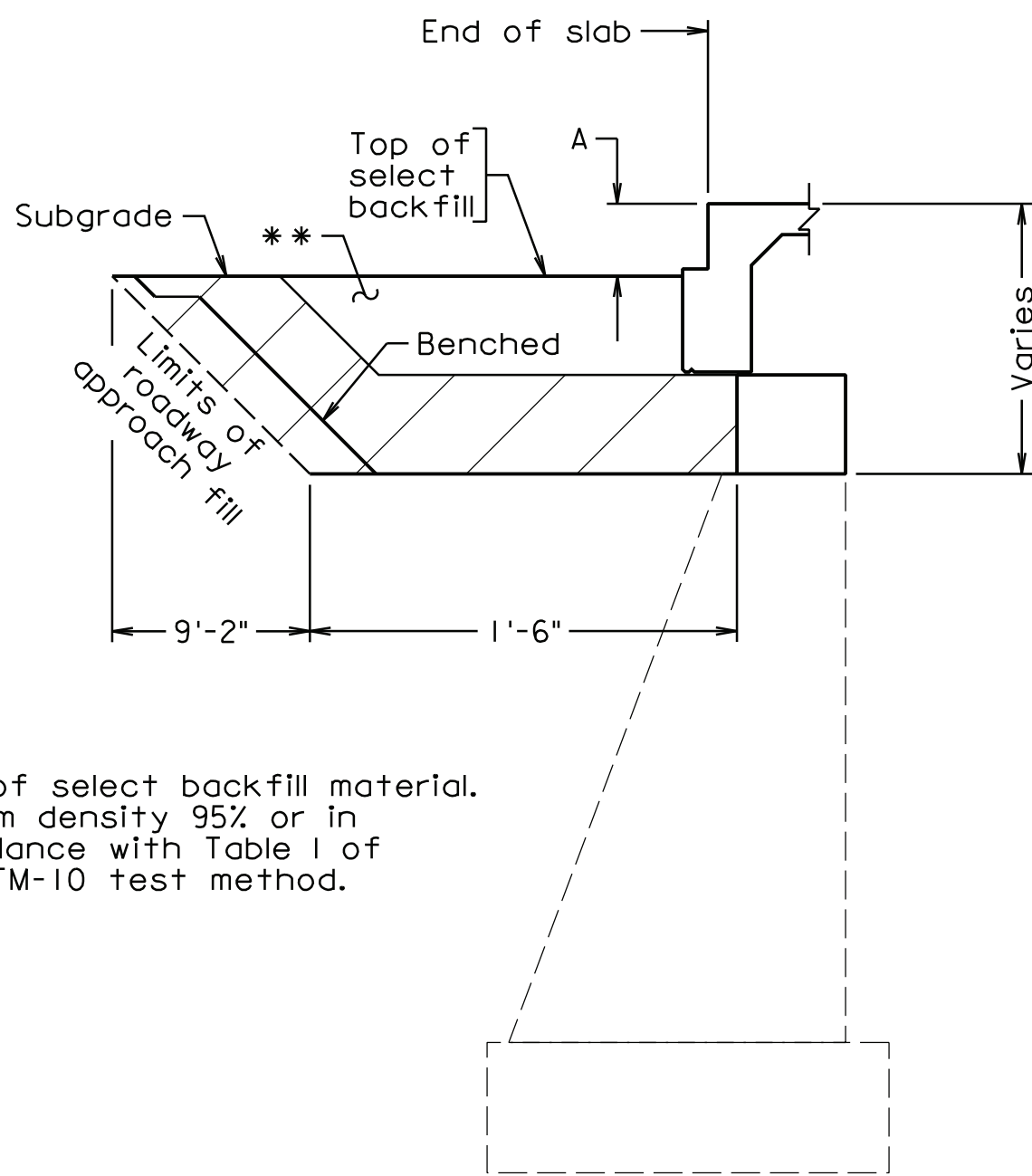
Scale: $\frac{1}{8}" = 1'-0"$

1. For directions on traffic management, see Sheets C-4G thru C-4I.
2. Construct remainder of the abutments and pier.
3. Erect remaining beams in both spans. Secure beams to substructures at bearings, install steel diaphragms, and tighten all bolted splice and steel diaphragm connections. Construct the semi-integral backwall at Abutment A and Abutment B.
4. Place remainder of the concrete deck.
5. Place the downstream shared use path.
6. Place the downstream bridge railing.
7. Groove the remainder of the deck.
8. Remove the temporary traffic barriers.
9. Remove temporary striping and install final striping as noted in Sheet C-5B.

Sheet No.:
B-6



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

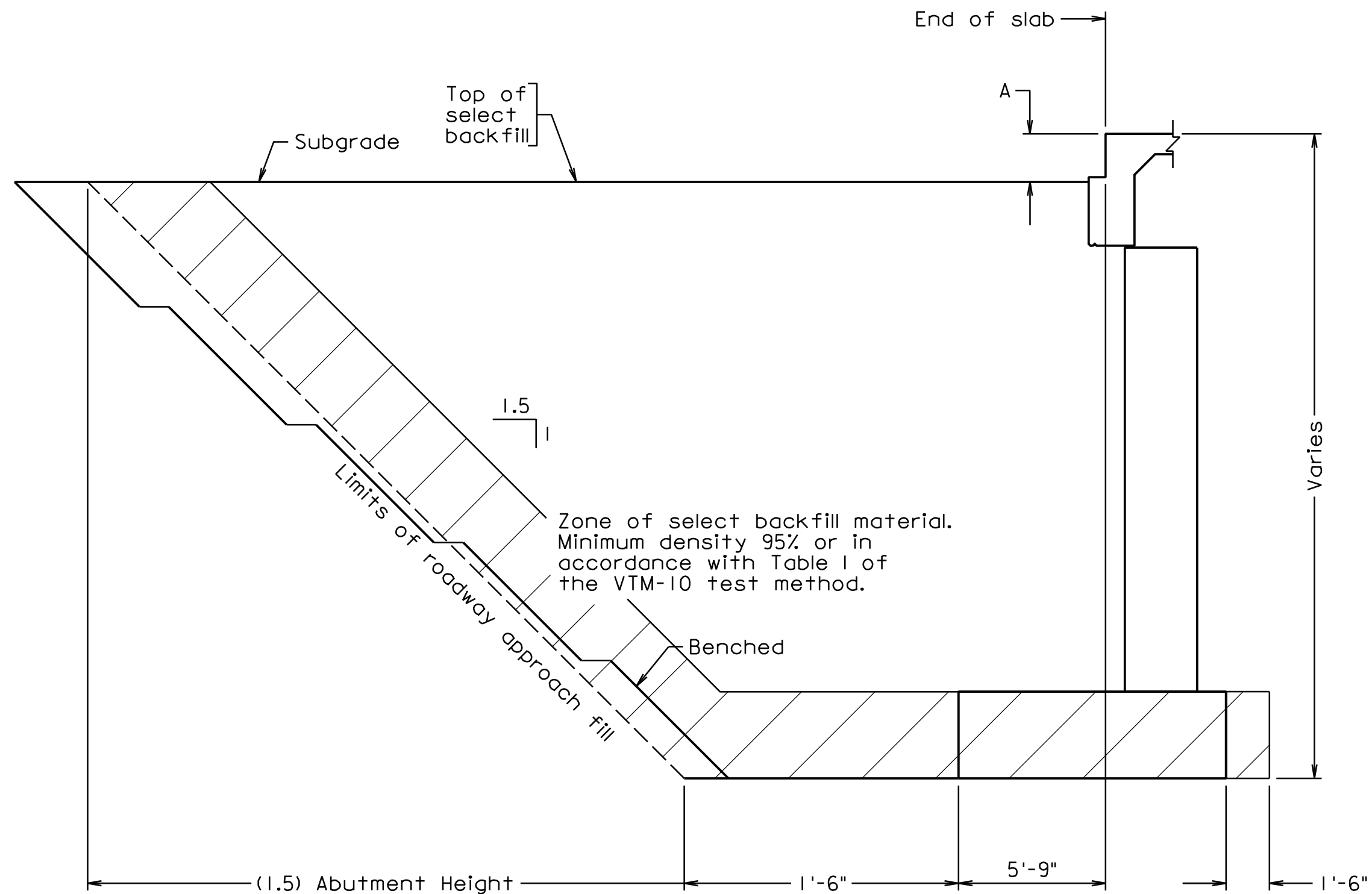


SECTION THROUGH EXISTING ABUTMENT
Abutment drainage not shown
Not to scale

Material in the abutment select backfill zone shall be compacted in accordance with Sections 303 and 305 of the VDOT Road and Bridge 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.



SECTION THROUGH NEW ABUTMENT
Abutment drainage not shown
Not to scale

Material in the abutment select backfill zone shall be compacted in accordance with Sections 303 and 305 of the VDOT Road and Bridge 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.

SPREAD FOOTING DATA TABLE					
Substructure Unit	Anticipated Bearing Material	SERVICE LIMIT STATE		STRENGTH LIMIT STATE	
		Tolerable Settlement (Inches)	Maximum Applied Bearing Pressure (tsf) *	Maximum Factored Bearing Pressure (tsf) *	Required Nominal Bearing Resistance (tsf)
Abutment A	Rock	< 0.1	5.51	7.60	16.89
Pier	Rock	< 0.1	7.52	8.72	19.37
Abutment B	Rock	< 0.1	5.51	7.60	16.89

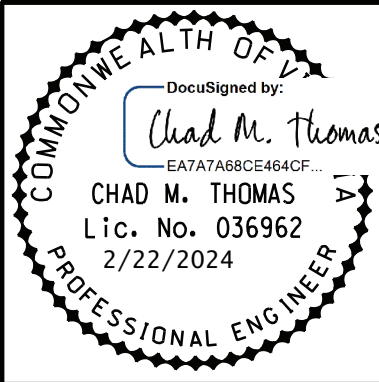
* The larger of these two values, as well as the Anticipated Bearing Material, shall be verified by the Inspector or Engineer-of-Record prior to placing the footing concrete. The Geotechnical Engineer shall confirm that adequate bearing material is reached during excavation, prior to the construction of the substructure units.

Notes:

For details of Abutment A, see Sheets B-8 and B-9.

For details of Abutment B, see Sheets B-10 thru B-12.

For details of the pier, see Sheets B-13 and B-14.



Date									
Revisions									

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
SUBSTRUCTURE LAYOUT AND
MISCELLANEOUS DETAILS
CITY OF SALEM, VIRGINIA

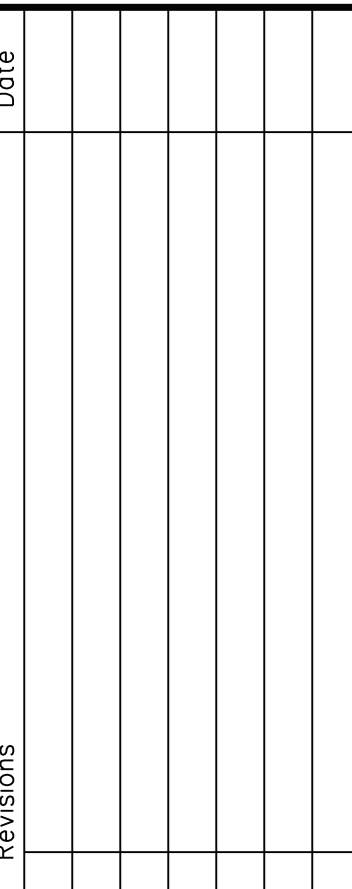
Vertical Scale:
N/A

Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:
B-7

For details of semi-integral backwall, see Sheets B-23 and B-24.



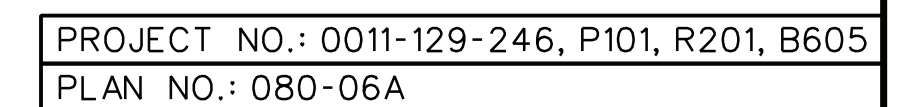
Checked By: TJT

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APPERSON DRIVE BRIDGE REPLACEMENT
ABUTMENT A
PLAN AND ELEVATION
CITY OF SALEM, VIRGINIA

B-8



MUD SLAB DETAIL
Not to scale

WEEPHOLE DETAIL
Not to scale

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

SECTION B-B
Scale: $\frac{1}{2}" = 1'-0"$

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

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

Revisions	Date

Issue Date: 02/16/24	Drown By: DKA Designed By: CTB	Checked By: TJT Date: 11/21/2023
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APPERSON DRIVE BRIDGE REPLACEMENT
ABUTMENT A
FOOTING PLAN AND DETAILS
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
AS NOTED

Commission Number:
3925B

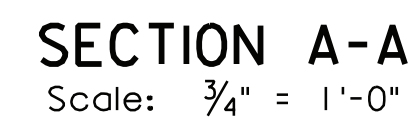
Sheet No.:

B-9

For details of semi-integral backwall, see Sheets B-25 and B-26.



PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



AA: 11-AF0627 (top & bot)
10 eq. spa. = 4'-9"
BB: 7-AF0629 (top & bot)
6 eq. spa. = 2'-10"
CC: 3 spa. @ 5" = 1'-3"
DD: 5-AF0630 (top & bot)
4 eq. spa. = 1'-9"
EE: AF0631 (top & bot)
GG: AF0632 (top & bot)

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A

[illegible]

Issue Date: 02/16/24
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Designed By: CTE
Checked By: TJT
Date: 11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT ABUTMENT B FOOTING PLAN AND DETAILS

CITY OF SALEM, VIRGINIA

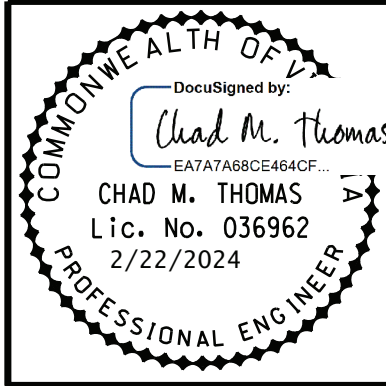
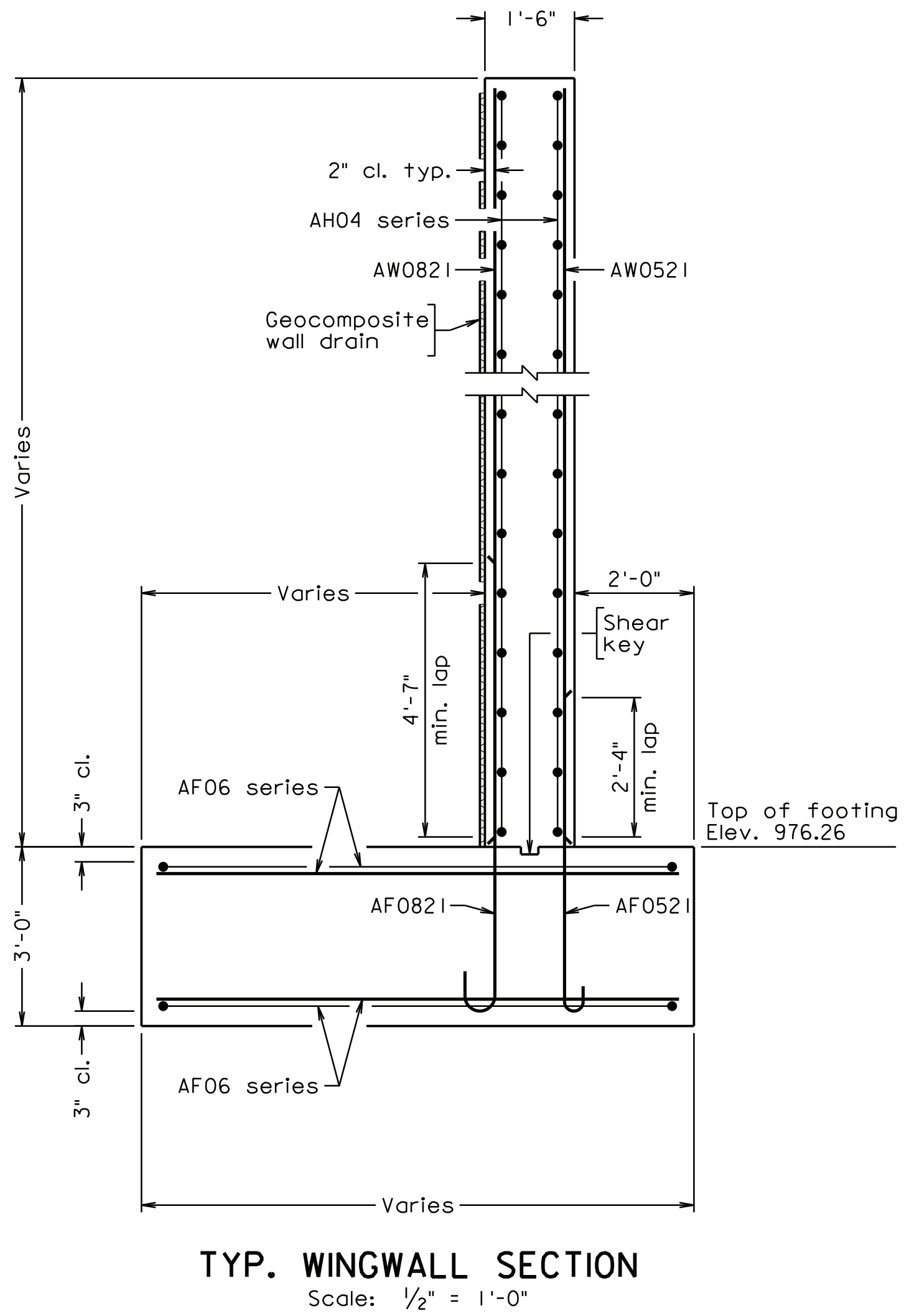
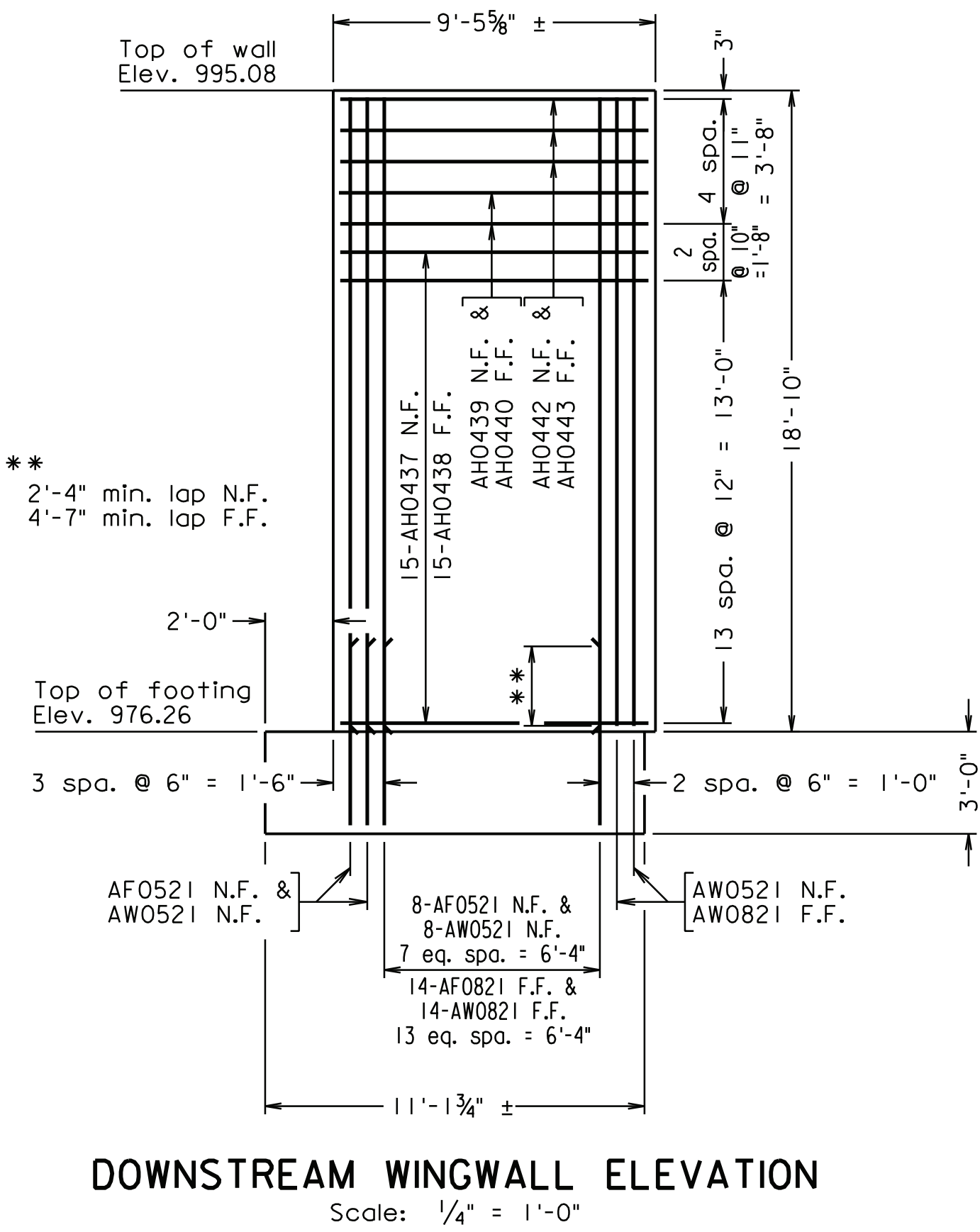
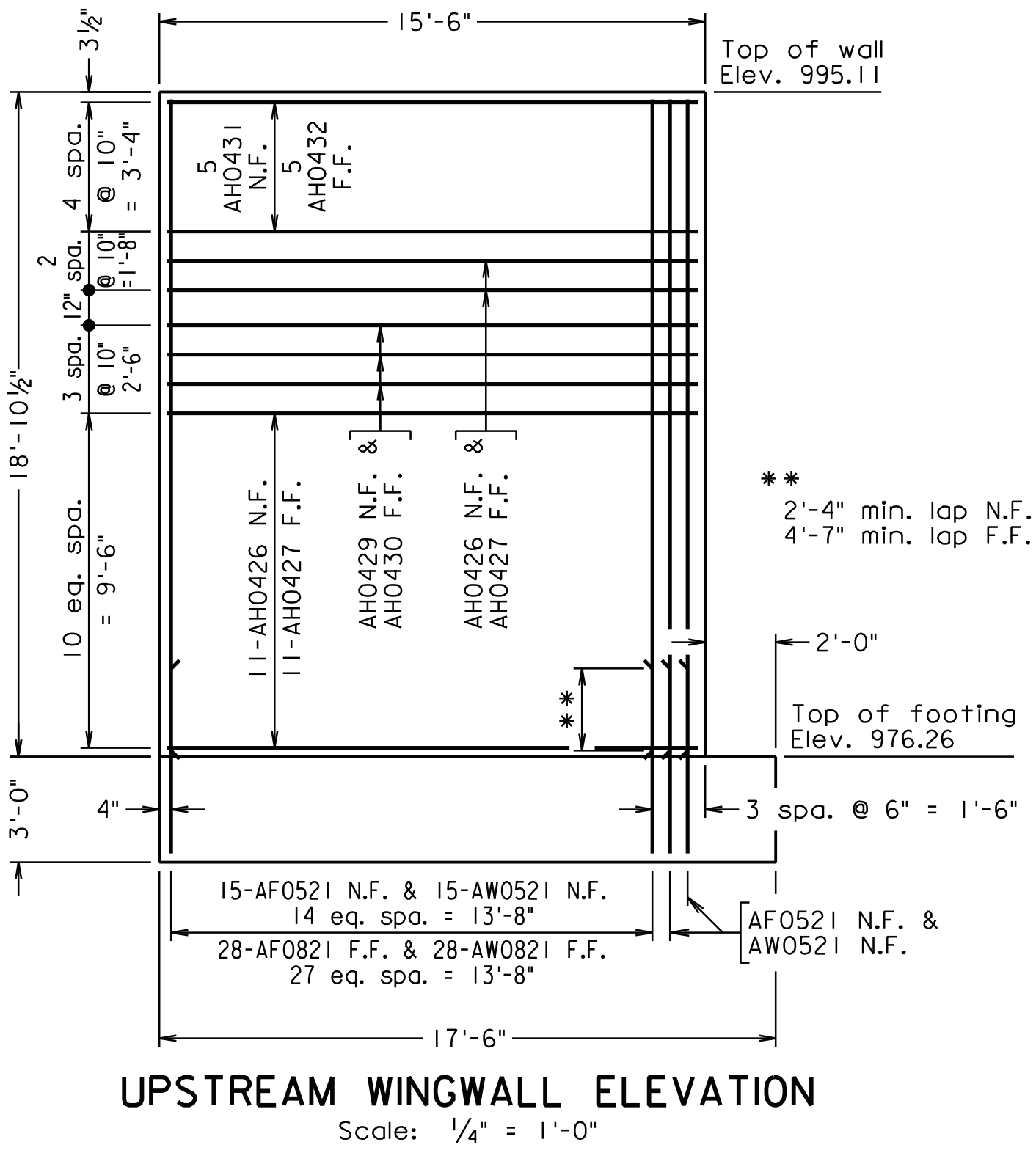
Vertical Scale:
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Horizontal Scale:
AS NOTED

Commission Number:
3925B

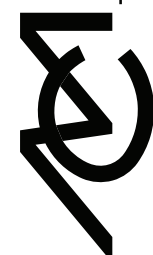
Sheet No.:

B-11



Revisions	Date

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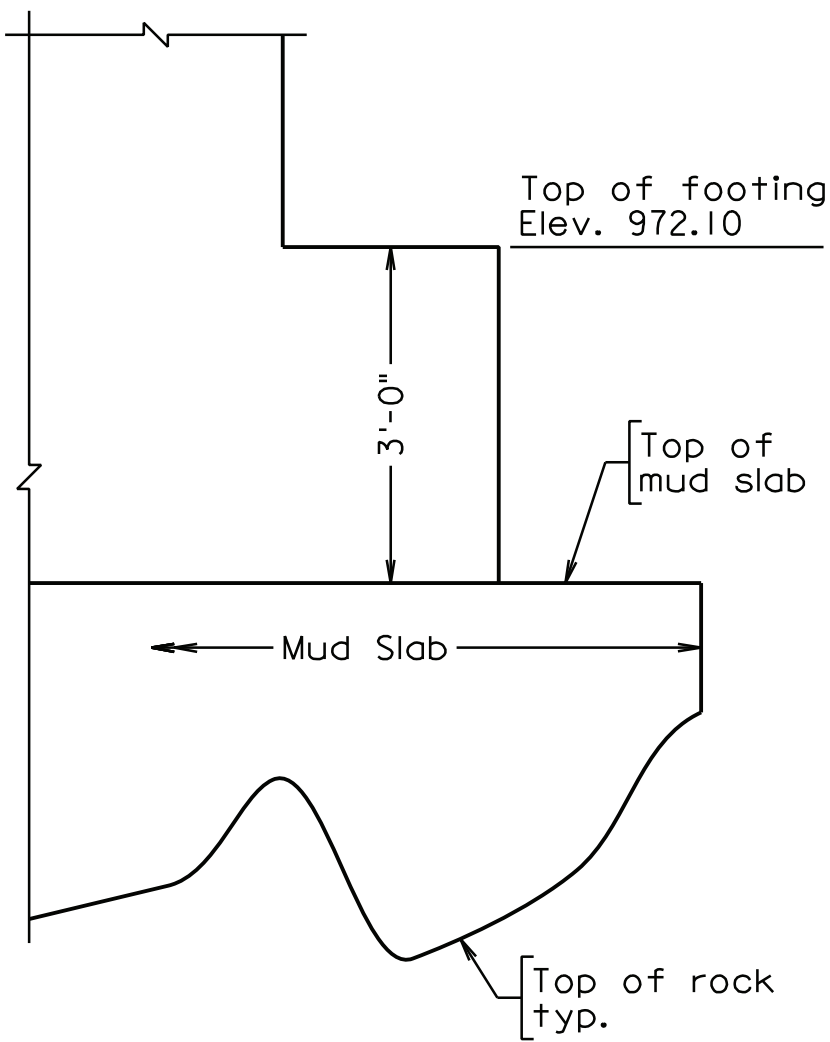
APPERSON DRIVE BRIDGE REPLACEMENT
ABUTMENT B
WINGWALLS AND DETAILS
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

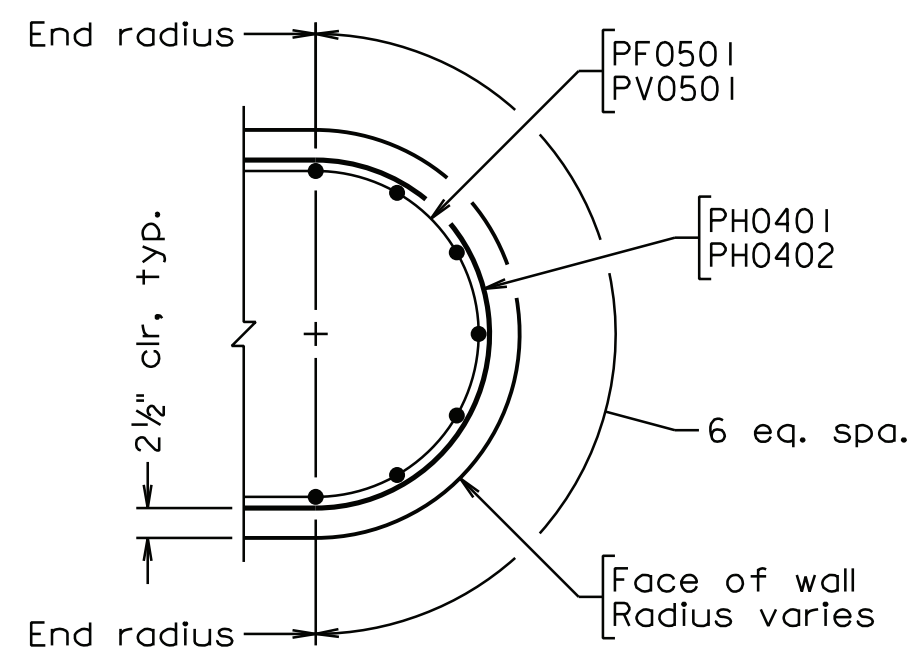
Horizontal Scale:
AS NOTED

Commission Number:
3925B

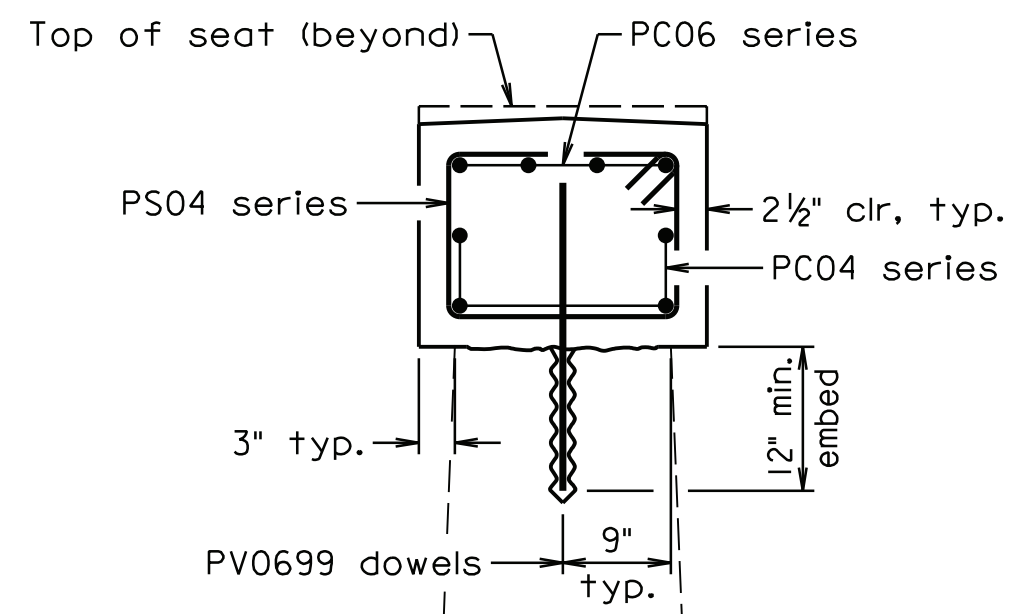
Sheet No.:
B-12



MUD SLAB DETAIL
Not to scale



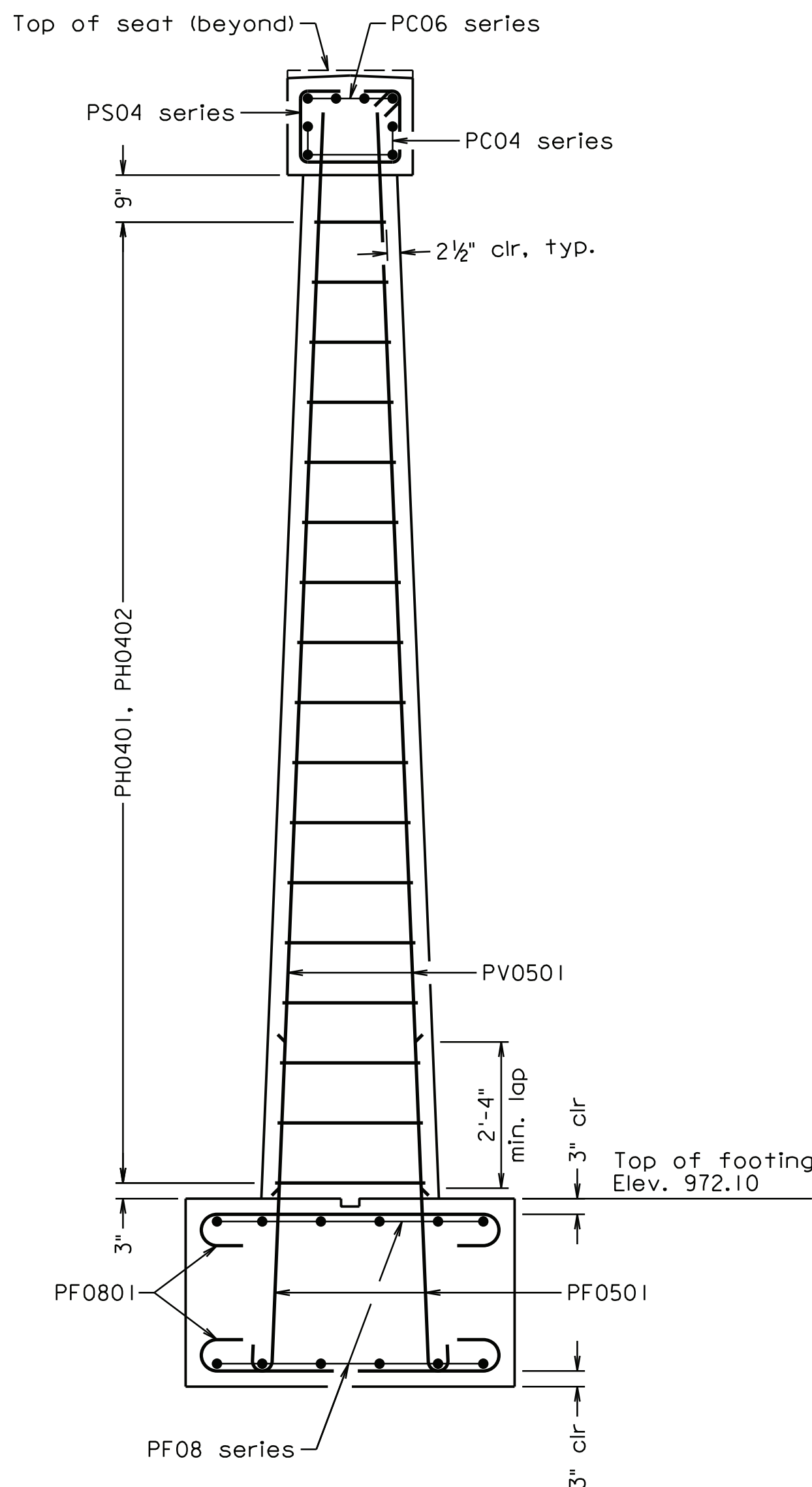
DETAIL A
Not to scale



SECTION A-A

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

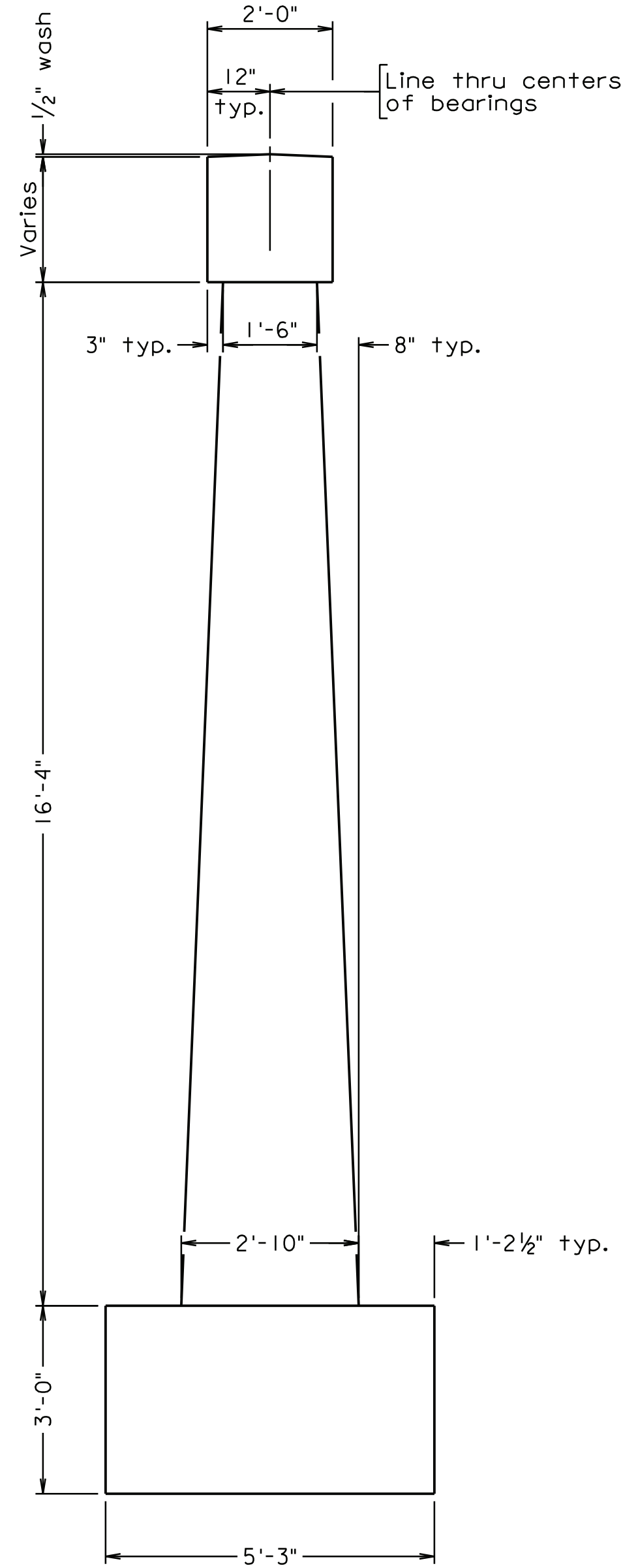
For dimensions not shown, see "Typical End View"



SECTION B-B

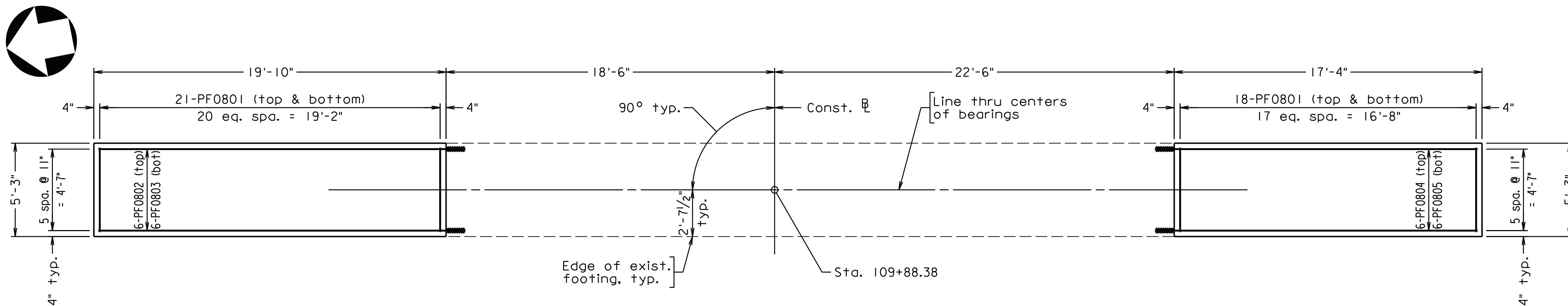
Scale: $\frac{1}{2}" = 1'-0"$

For dimensions not shown, see "Typical End View"

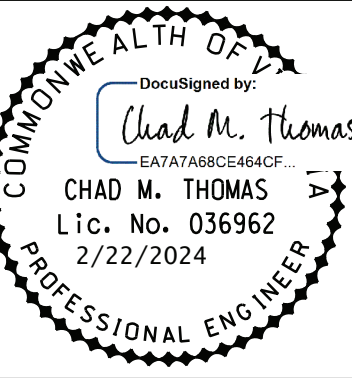


TYPICAL END VIEW

Scale: $\frac{1}{2}" = 1'-0"$



FOOTING PLAN

[illegible]

Issue Date:	02/16/24
Drawn By: DKA	Designed By: CTB
Checked By: TJT	Date: 11/21/2023



APPERSON DRIVE BRIDGE REPLACEMENT
PIER
FOOTING PLAN AND DETAILS
CITY OF SALEM, VIRGINIA

Vertical Scale:

N/A

Horizontal Scal

AS NOTED

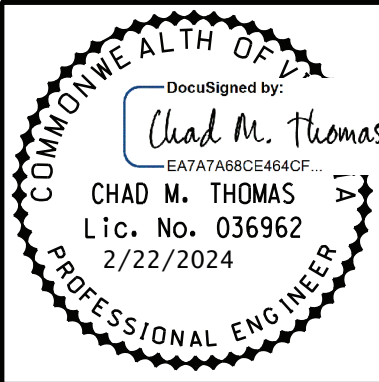
Commission Number

3925B

Sheet No.

B-14

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



Revisions	Date

Issue Date:	02/16/24
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APPERSON DRIVE BRIDGE REPLACEMENT

BEARING DETAILS

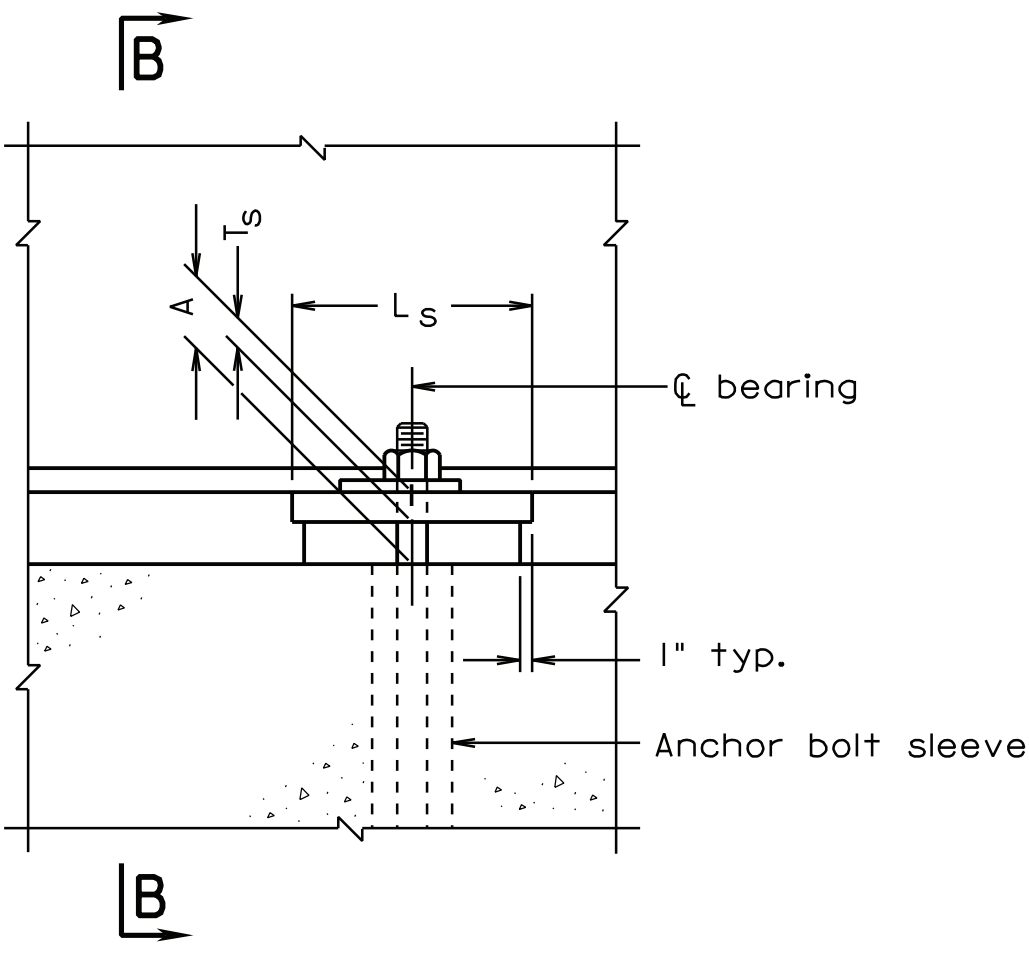
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
NOT TO SCALE

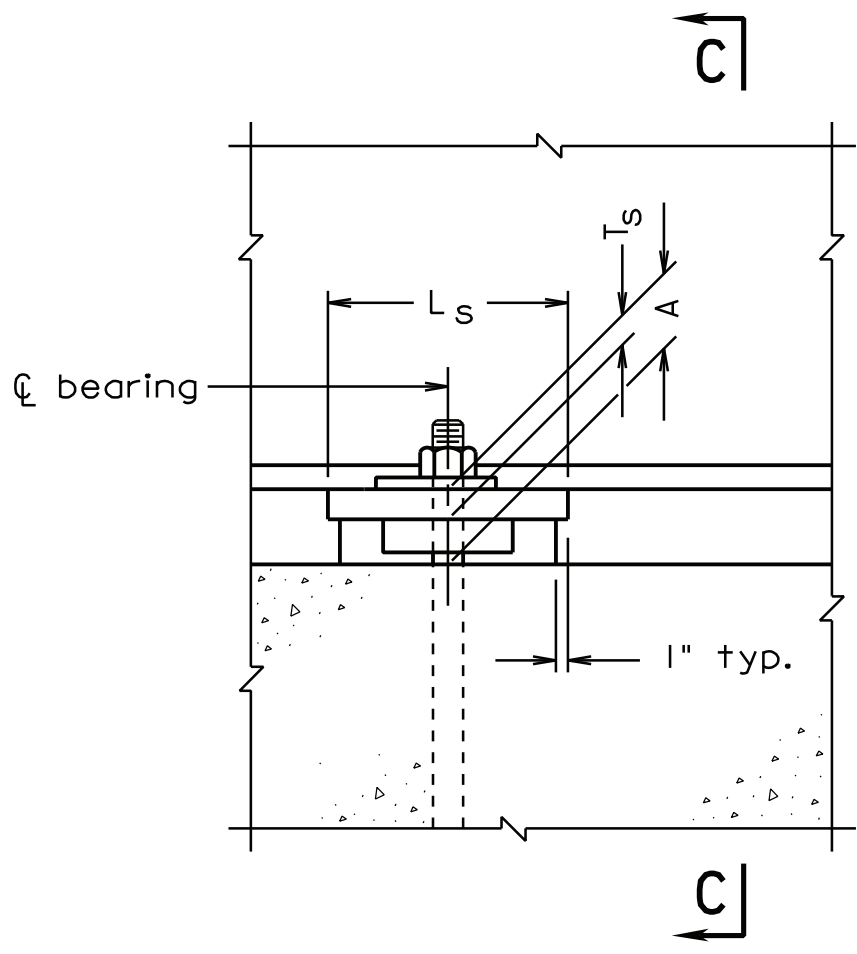
Commission Number:
3925B

Sheet No.:
B-15



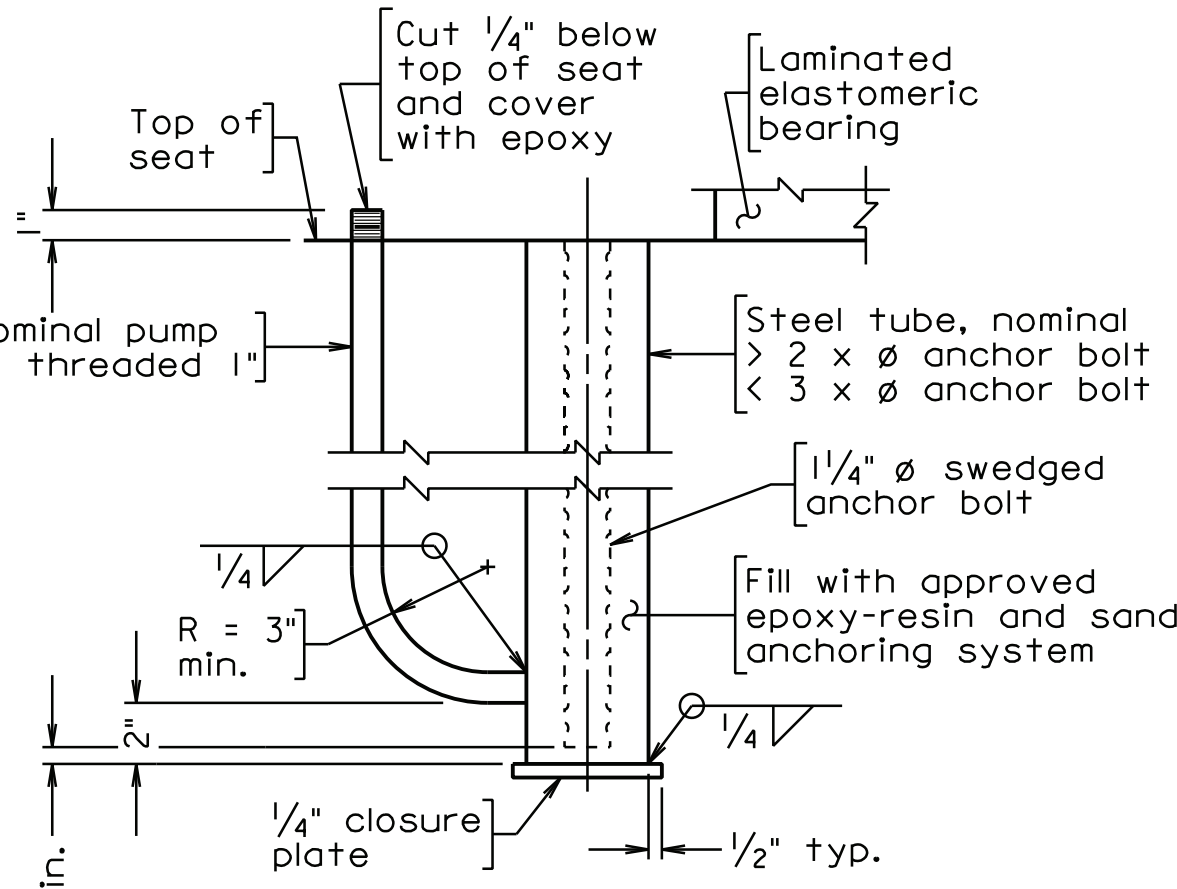
ELEVATION
EXPANSION ASSEMBLY

Bearing stiffener(s) not shown for clarity



ELEVATION
FIXED ASSEMBLY

Bearing stiffener(s) not shown for clarity



ANCHOR BOLT SLEEVE

Orient pump tube away from bearing

Notes:

Material: Elastomer - 50 durometer hardness
Shim - ASTM A36 or A1011 mild steel
Steel tube and pump tube - ASTM A500

Anchor bolt sleeve assembly shall be galvanized.

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.

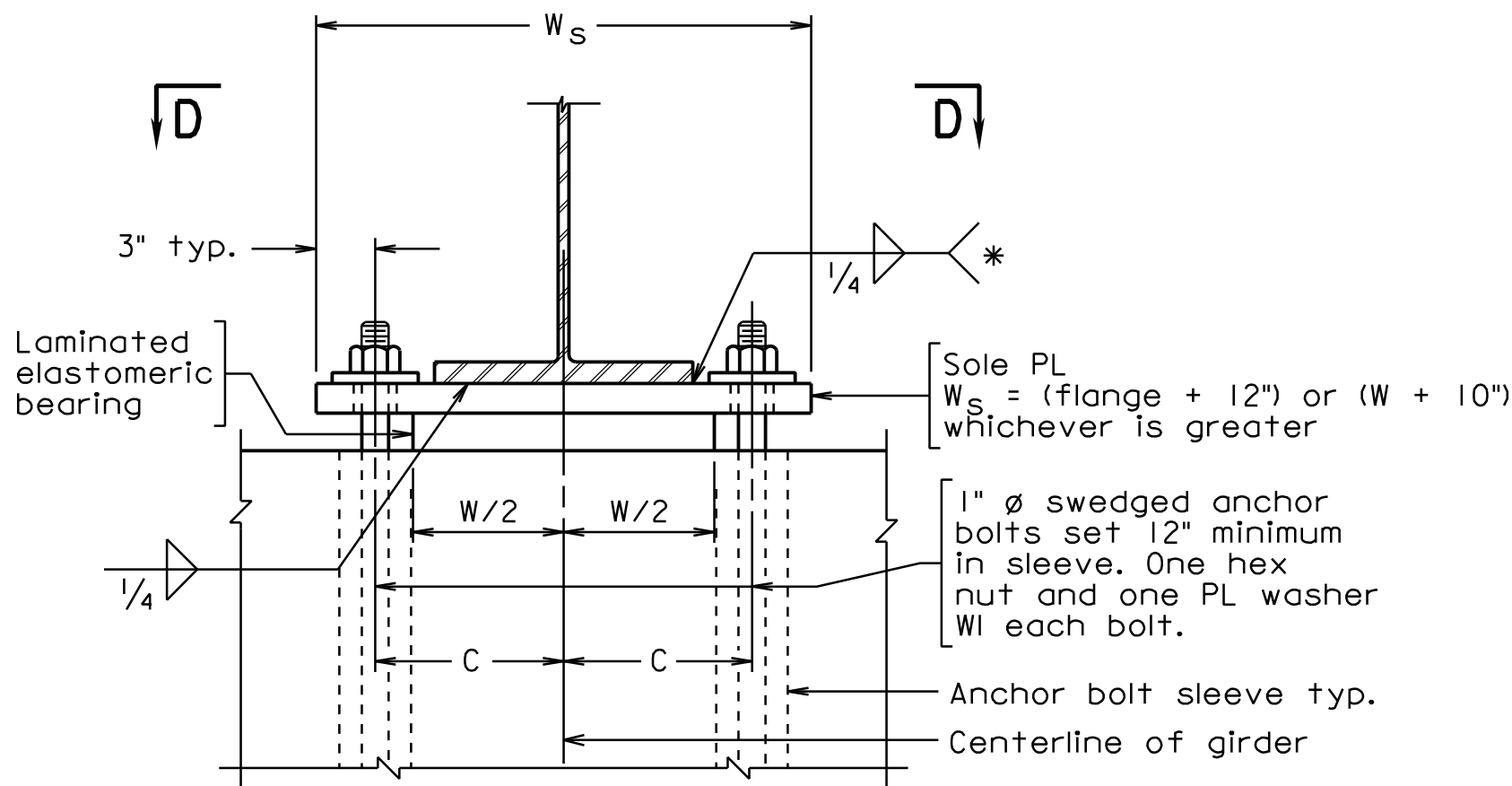
Bevel sole plates to grade shown. Plates shall not be painted on the surface in contact with the elastomeric bearing.

Elastomeric bearings shall be molded as a single unit.

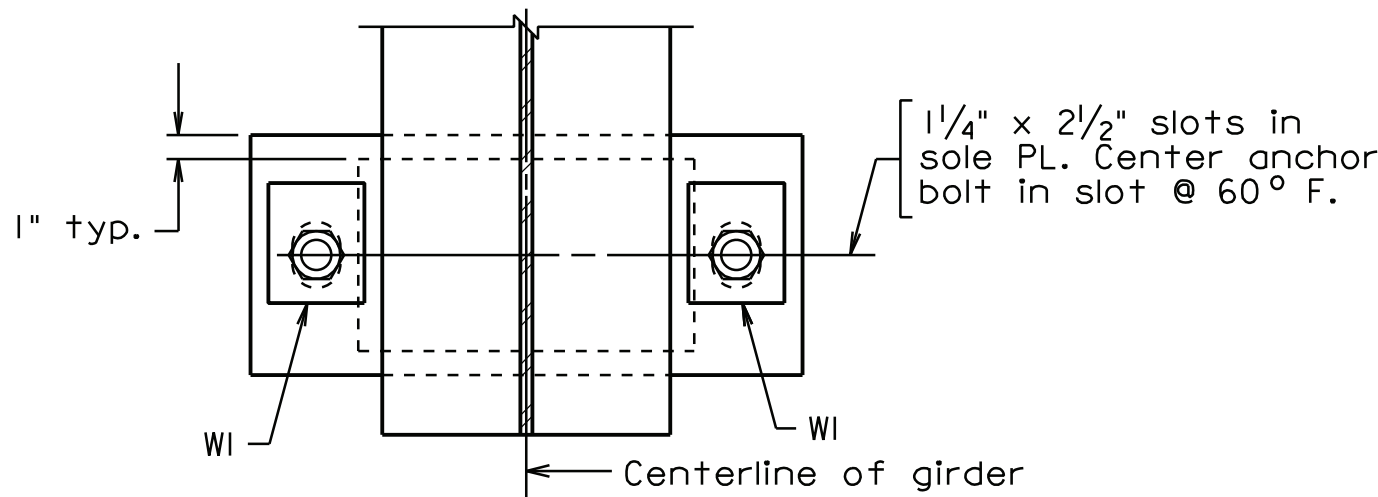
Max. horizontal movement is the maximum horizontal superstructure displacement. If the maximum shear deformation of the elastomeric pads exceeds 75% of Max. horizontal movement during construction of the bridge, the Contractor shall reset the bearings at no additional cost to the Department.

*Weld shall terminate 1/4" from edge of sole plate.

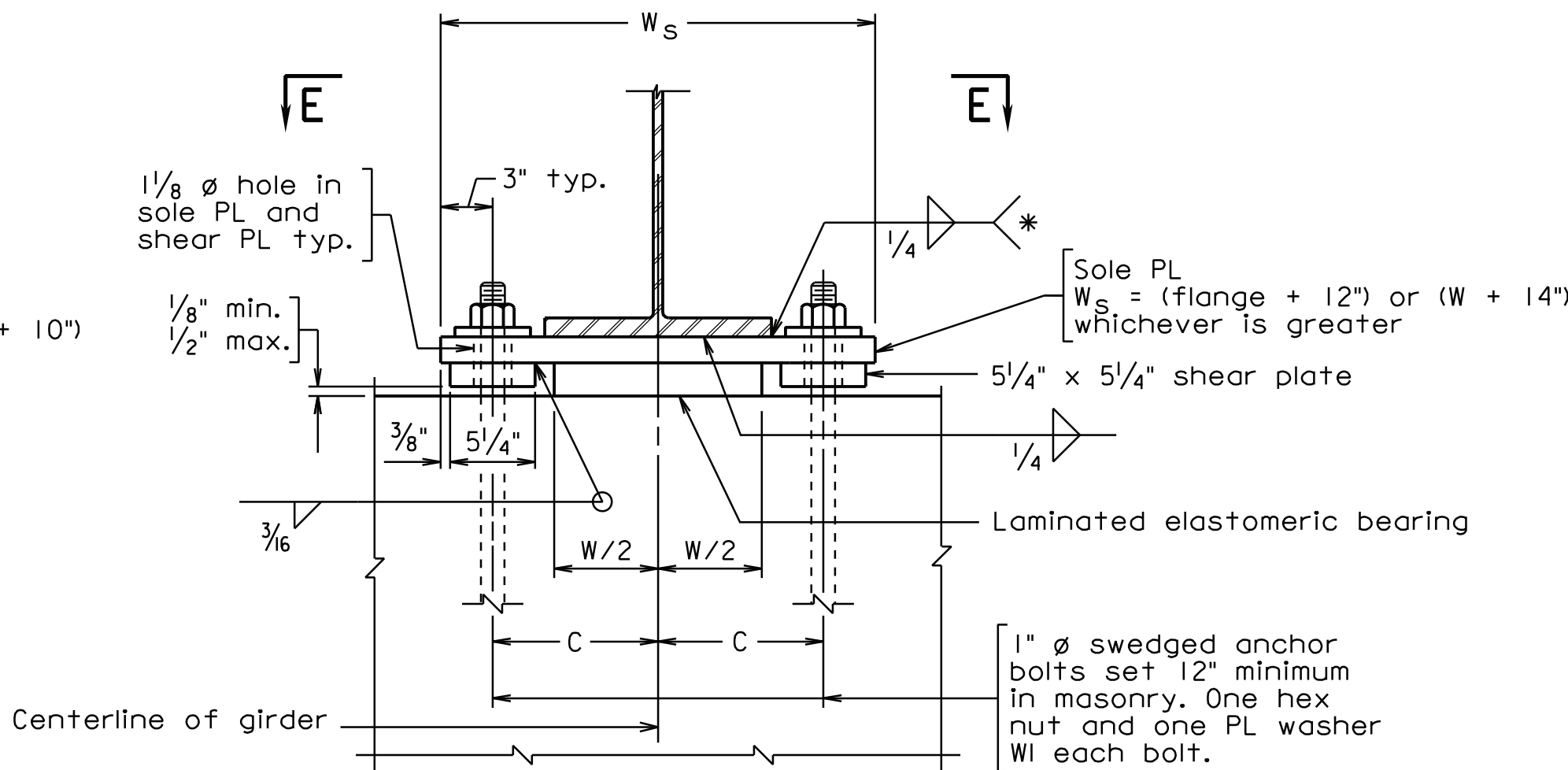
**Centerline of girder (including center line and text) shall be marked on the top, bottom and side surfaces of the laminated elastomeric bearing prior to shipping. The markings shall be done with an indelible ink or flexible paint of contrasting color.



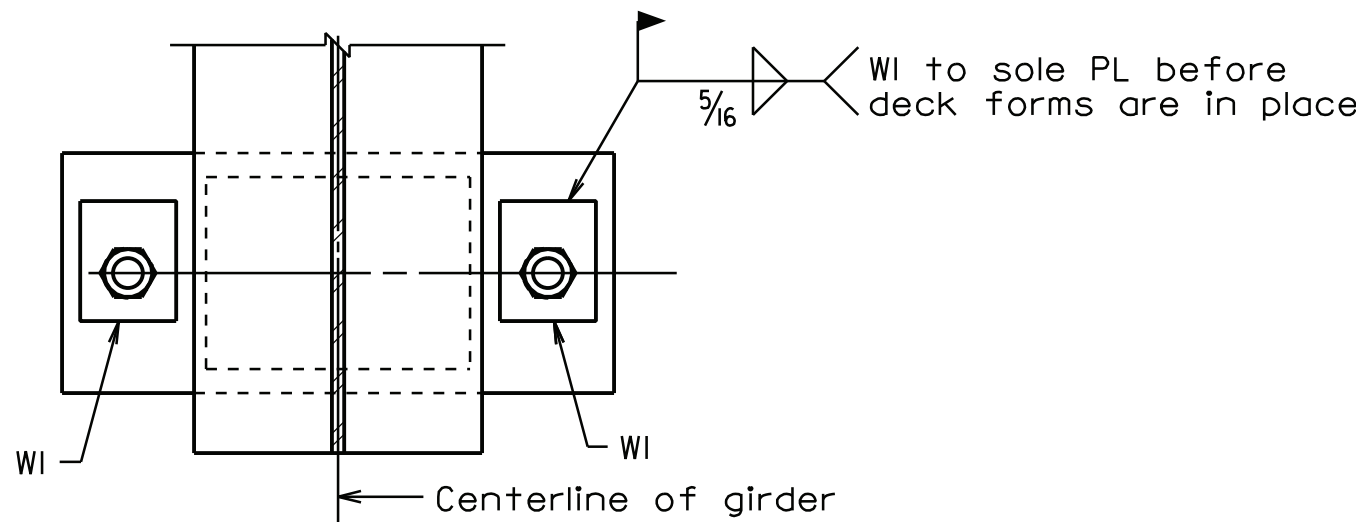
SECTION B-B



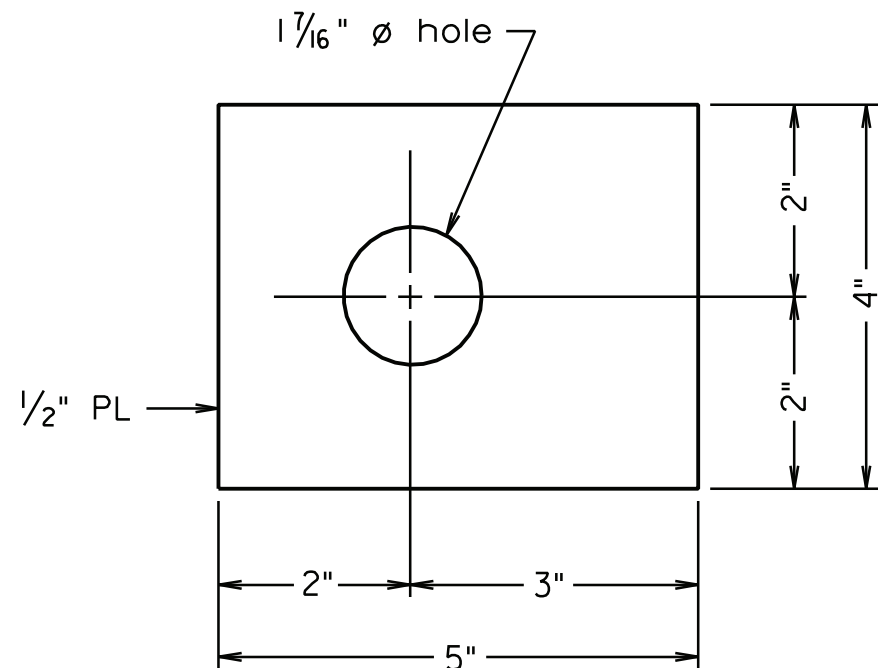
SECTION D-D



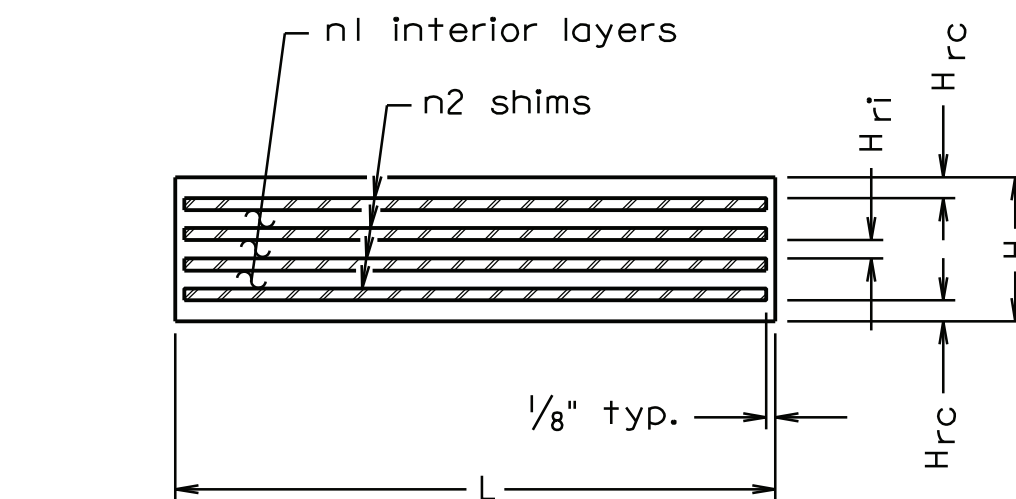
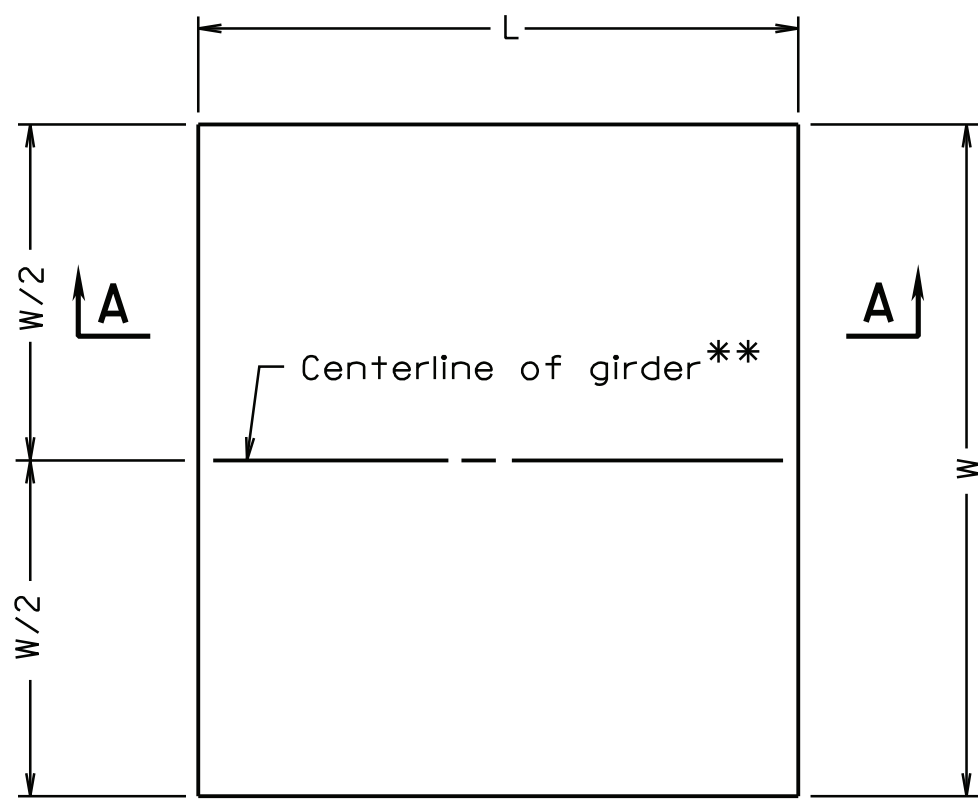
SECTION C-C



SECTION E-E



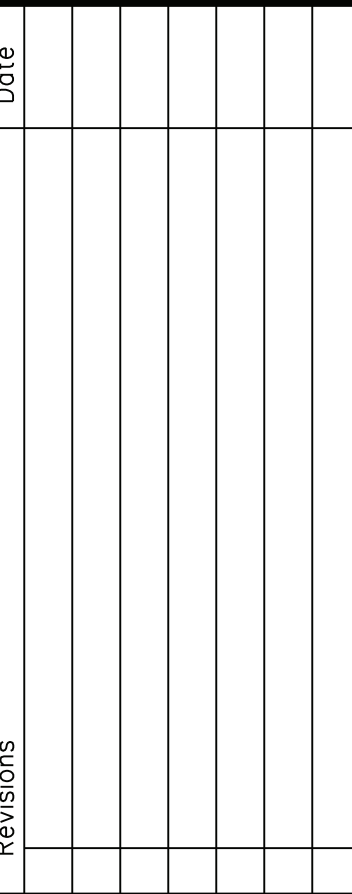
WASHER WI



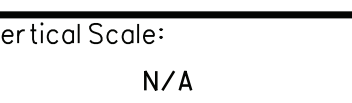
SECTION A-A
LAMINATED ELASTOMERIC BEARING

BEARING DIMENSIONS AND LOADS															
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 _{RC}	n1 @ H _{rl}	n2 @ H _s	W _s	L _s	T _s		
A		Exp.	3.25	11	16	12	2.375	0.418	2 @ 0.5905	3 @ 0.1196	28	14	0.875	1.09	124.4
	I	Fix.	3.625	12	16	20	2.75	0.25	3 @ 0.5905	4 @ 0.1196	30	22	0.875	1.09	291.9
B		Exp.	3.25	11	16	12	2.375	0.418	2 @ 0.5905	3 @ 0.1196	28	14	0.875	1.09	124.4

All dimensions in table are in inches unless noted otherwise.



Issue Date:	02/16/24
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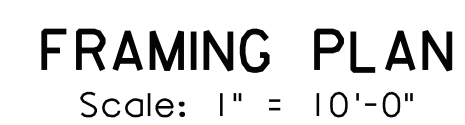
Horizontal Scale:
AS NOTED

Commission Number:
3925B

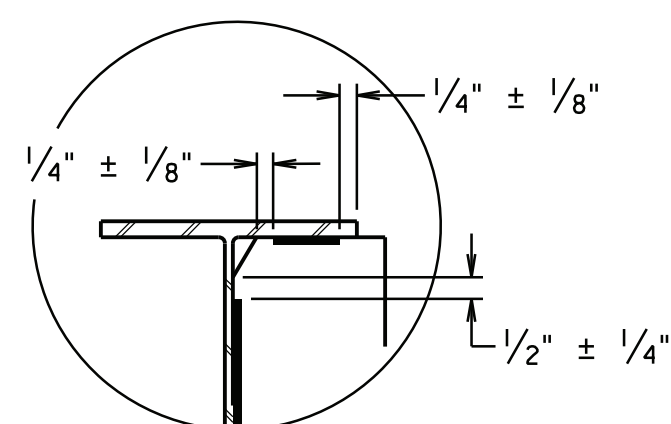
Sheet No.:

B-16

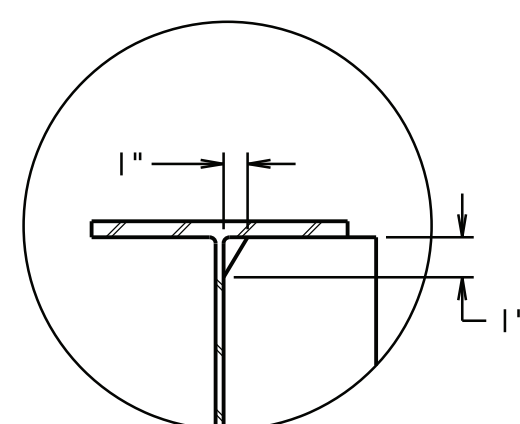
PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



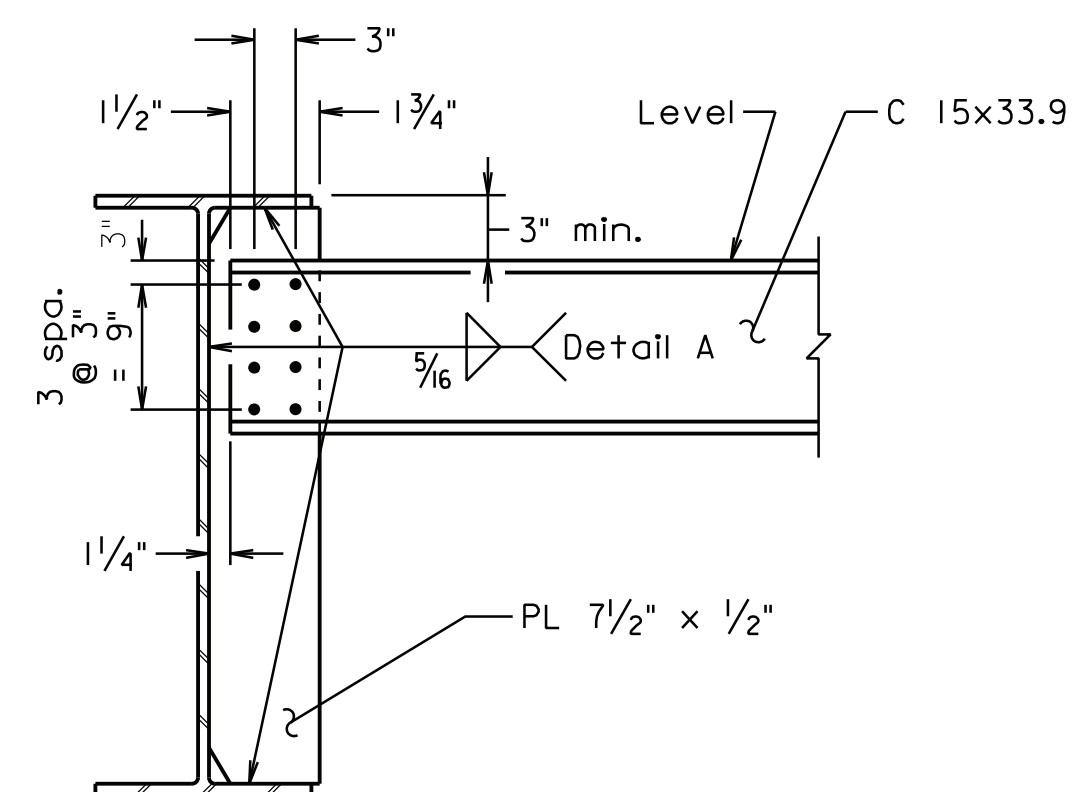
Scale: 1" = 10'-0"



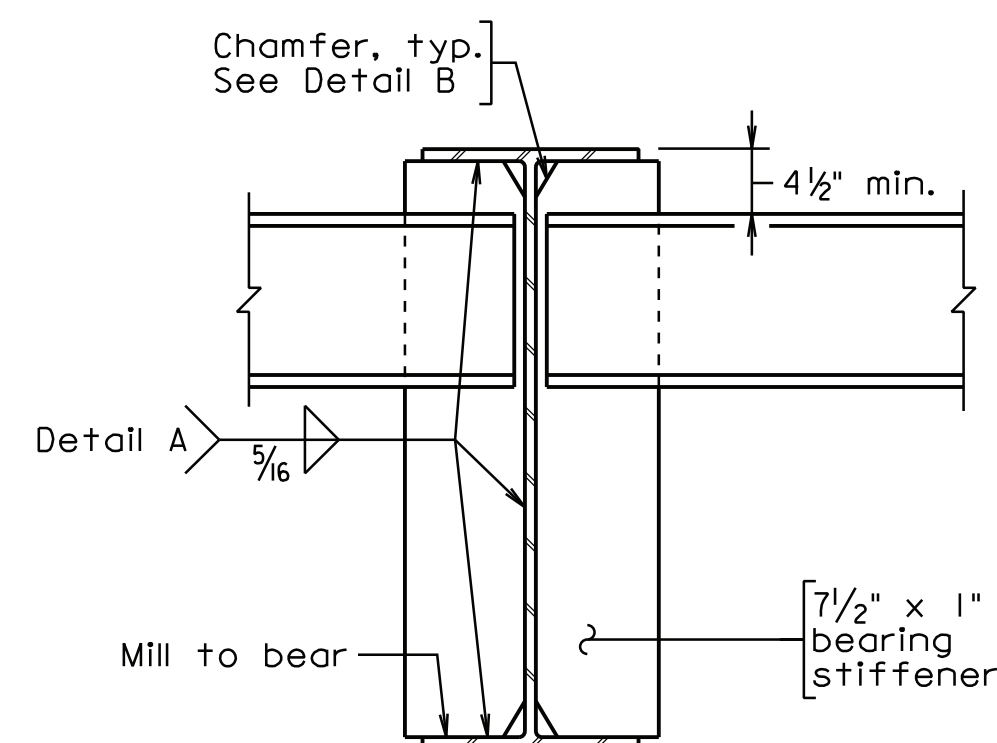
DETAIL A
Not to scale



DETAIL B
Not to scale

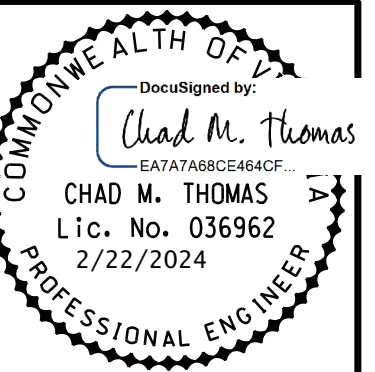


INTERMEDIATE DIAPHRAGM DETAIL
Not to scale



END DIAPHRAGM CONNECTOR DETAIL
Not to scale

For water line details, see Sheet B-34.

[illegible]

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
FRAMING PLAN AND
DIAPHRAGM DETAILS
CITY OF SALEM, VIRGINIA

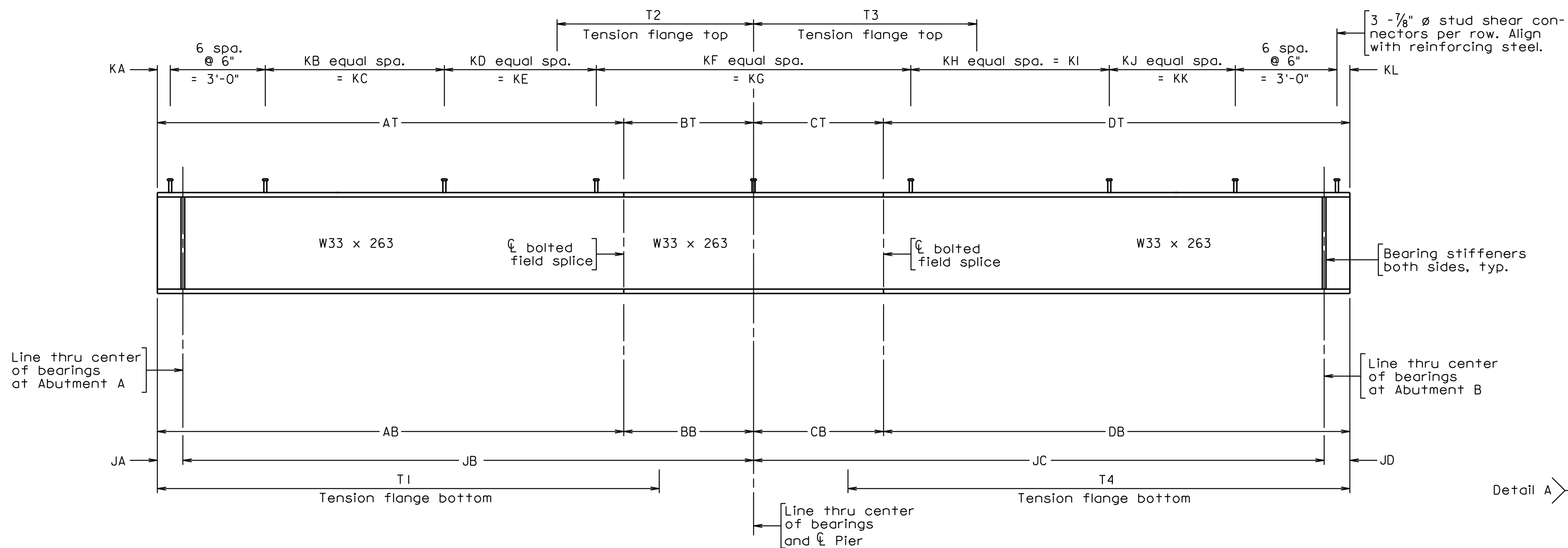
Vertical Scale:
N/A

Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:

B-17

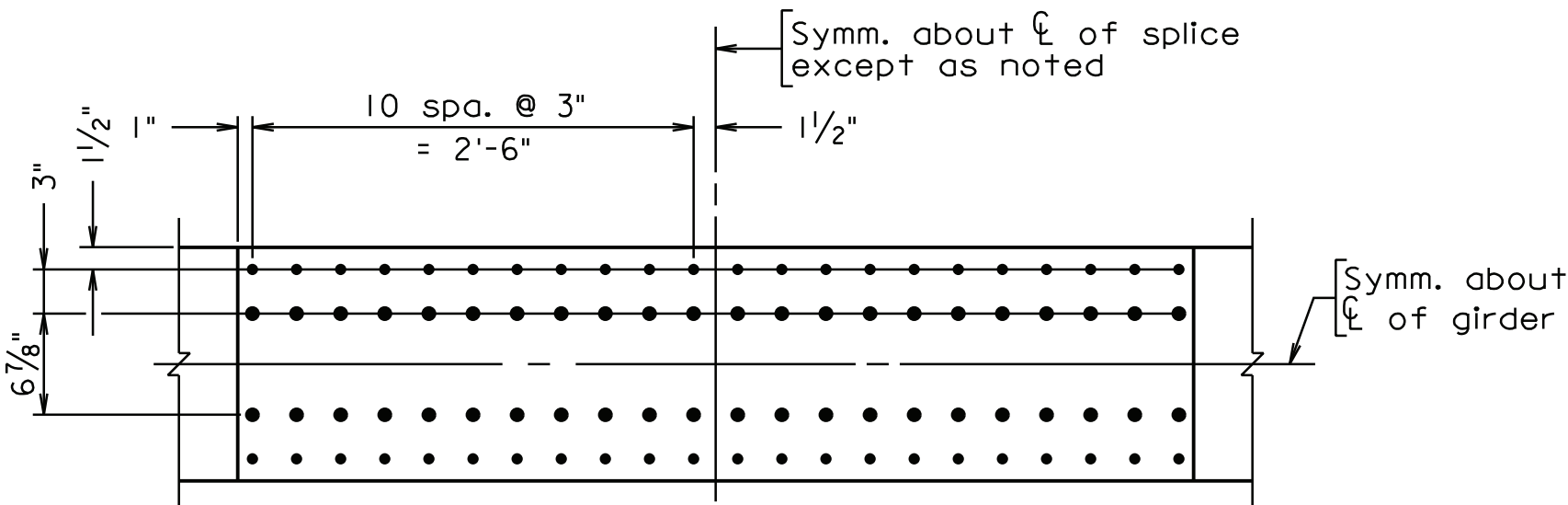


BEAM ELEVATION

Beam	AB	AT	BB	BT	CB	CT	DB	DT
1 - 9	49'-4"	49'-4"	28'-7"	28'-7"	28'-7"	28'-7"	49'-4"	49'-4"

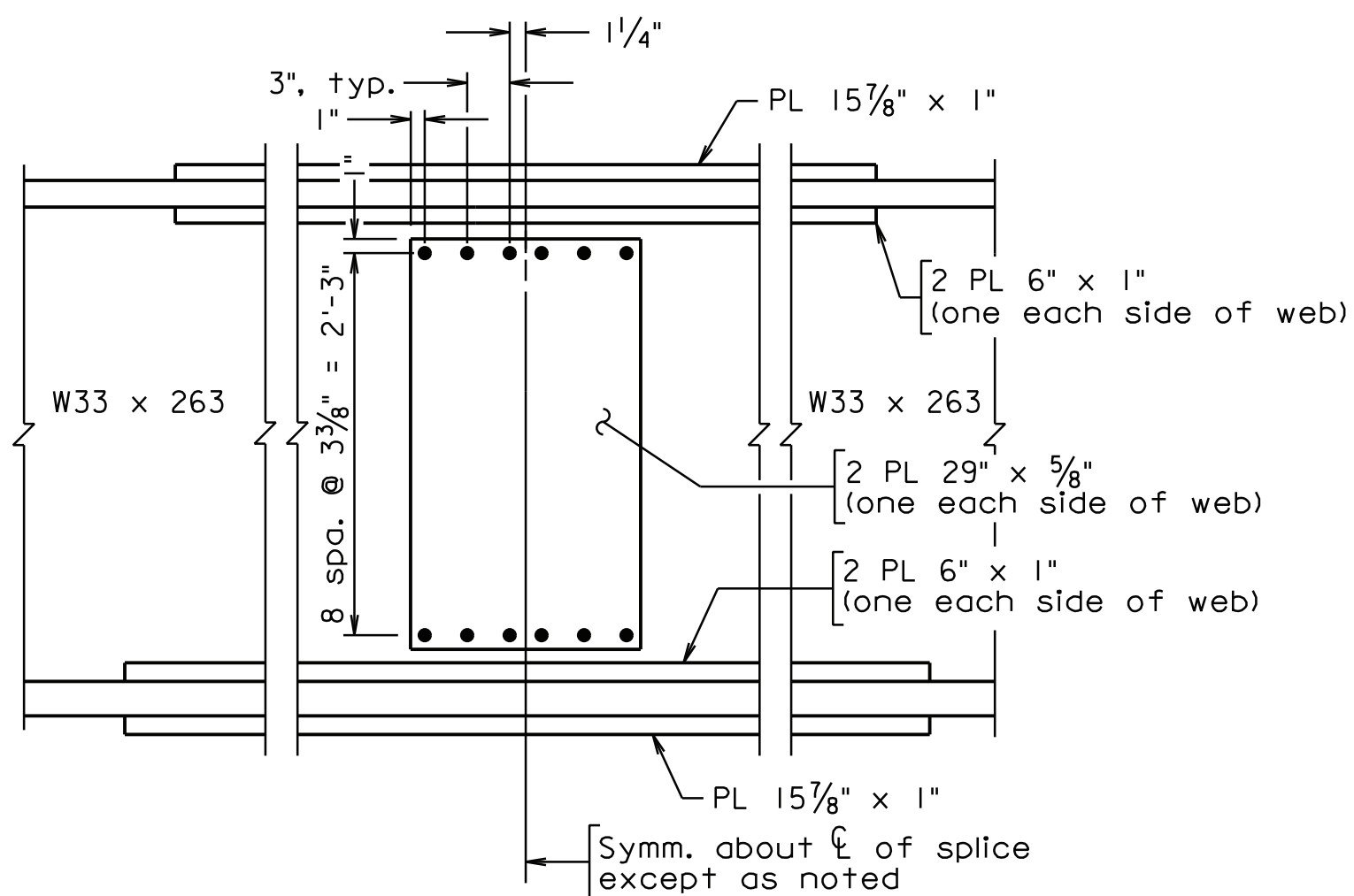
BEAM DIMENSION TABLE																
Beam	JA	JB	JC	JD	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KK	KL
1 - 9	1'-7"	76'-4"	76'-4"	1'-7"	0'-6"	50	28'-7"	40	26'-9"	20	38'-2"	40	26'-9"	50	28'-7"	0'-6"

BEAM FLANGES				
Beam	T1	T2	T3	T4
1 & 9	56'-1"	10'-6"	10'-6"	56'-1"
2 - 8	57'-1"	11'-6"	11'-6"	57'-1"



TOP AND BOTTOM
FLANGE SPLICE

Note:
Shear studs not shown for clarity



WEB

Notes:

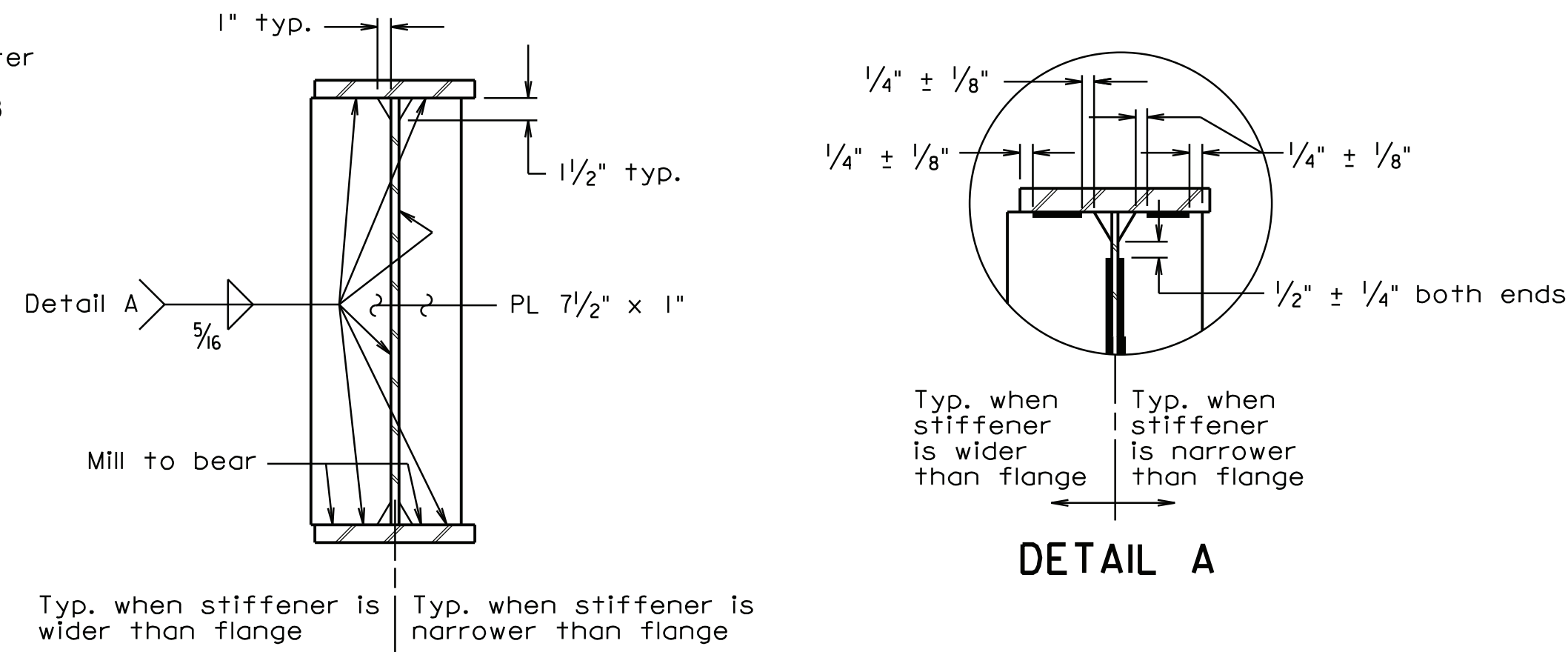
For spacing of intermediate diaphragm connector plates, see Framing Plan, Sheet B-17.

For spacing of stud shear connectors in vicinity of bolted field splice, see Bolted Splice Details, this sheet.

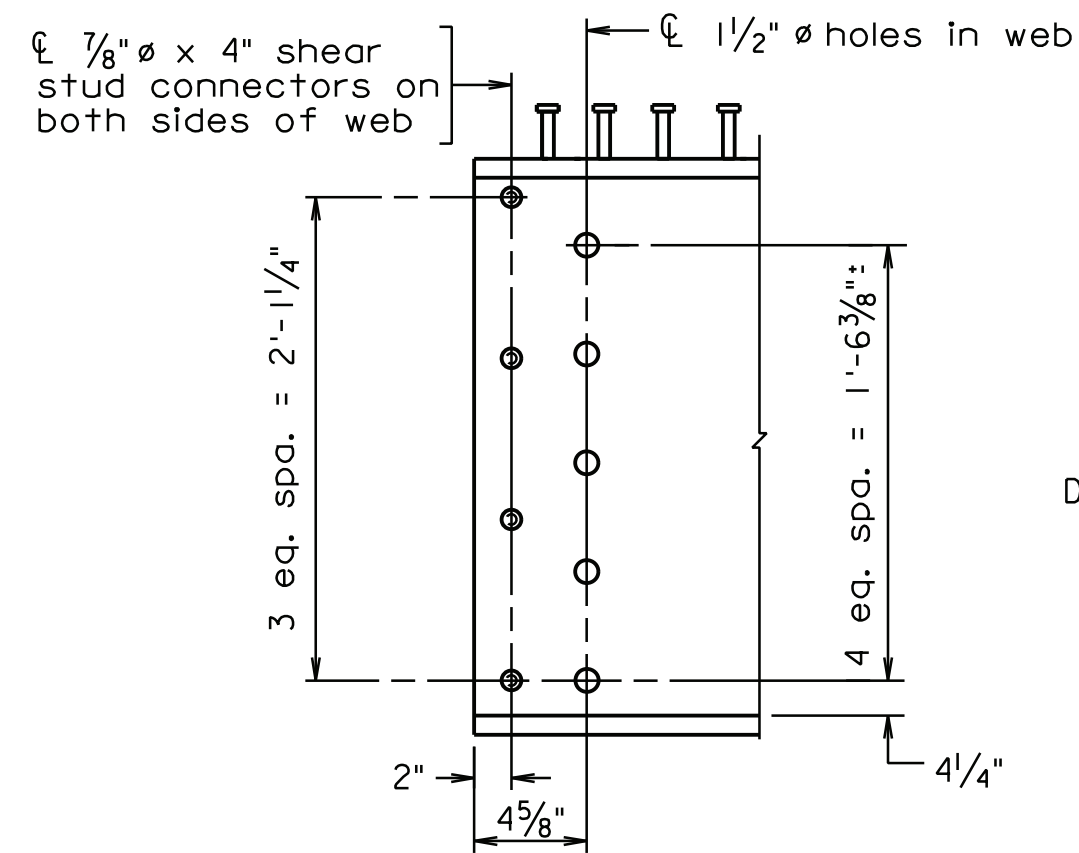
The top and bottom flanges as shown in Beam Elevation, the web and all splice plates are areas of tensile stress for Charpy V-Notch impact requirements.

If the Contractor chooses to eliminate one or more bolted field splice(s), the Contractor shall submit their shipping and erection plans along with the shop drawings to the City for review and approval. The shipping and erection plans shall be signed and sealed by a Professional Engineer, holding a valid license to practice engineering in the Commonwealth of Virginia. Approval for eliminating of a bolted field splice does not imply issuance of a hauling permit.

Symbol $\varnothing$ = diameter.

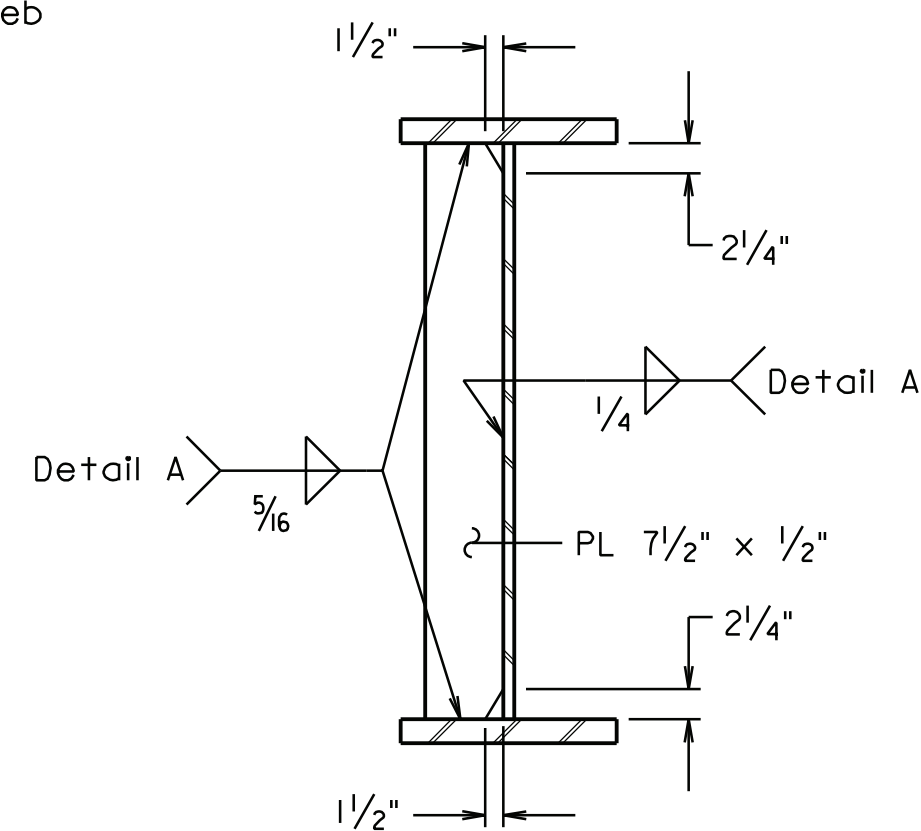


BEARING STIFFENERS



TYPICAL BEAM END DETAIL

(Bearing stiffeners not shown
for clarity)



DIAPHRAGM CONNECTOR PLATE

Revisions	Date

Issue Date: 02/16/24	Drawn By: DKA Designed By: CTB	Checked By: TJT Date: 11/21/2023
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FAX (540) 345-7691

APPERSON DRIVE BRIDGE REPLACEMENT

BEAM DETAILS

CITY OF SALEM, VIRGINIA

Vertical Scale:

N/A

Horizontal Scale:

NOT TO SCALE

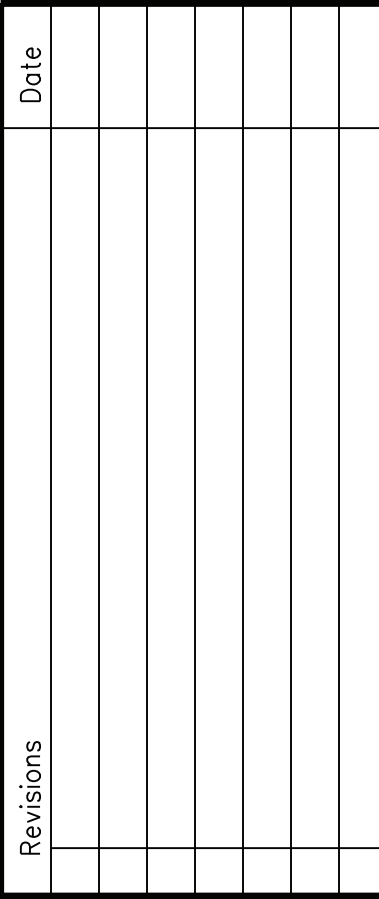
Commission Number:

3925E

Sheet No.:

B-18

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



Issue Date: 02/16/24	Drawn By: DKA Designed By: CTB	Checked By: TJT Date: 11/21/2023
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McM **Mattern & Craig**
ENGINEERS • SURVEYORS

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APPERSON DRIVE BRIDGE REPLACEMENT
CAMBER DIAGRAM
CITY OF SALEM, VIRGINIA

V.C.C = Vertical curve camber = Distance between the reference line and top of web after full dead load deflection.

$$\text{Total camber} = \Delta_s + \Delta'_s + \Delta_c + \text{V.C.C.}$$

Sign convention: Deflections are positive if downward; negative if upward.

V.C.C. is positive if the top of web after full dead load deflection is above the reference line; and negative if below the reference line.

Total camber is positive if the top of web as fabricated is above the reference line; and negative if below the reference line.

Diagram depicts all values being positive, and is not meant to reflect actual conditions.

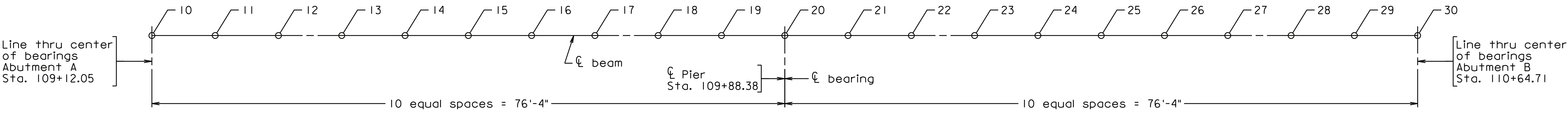
Vertical Scale:
N/A

Horizontal Scale:
NOT TO SCALE

Commission Number:
3925B

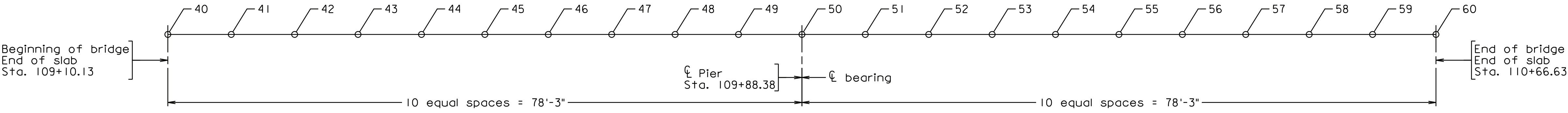
Sheet No.:

B-19



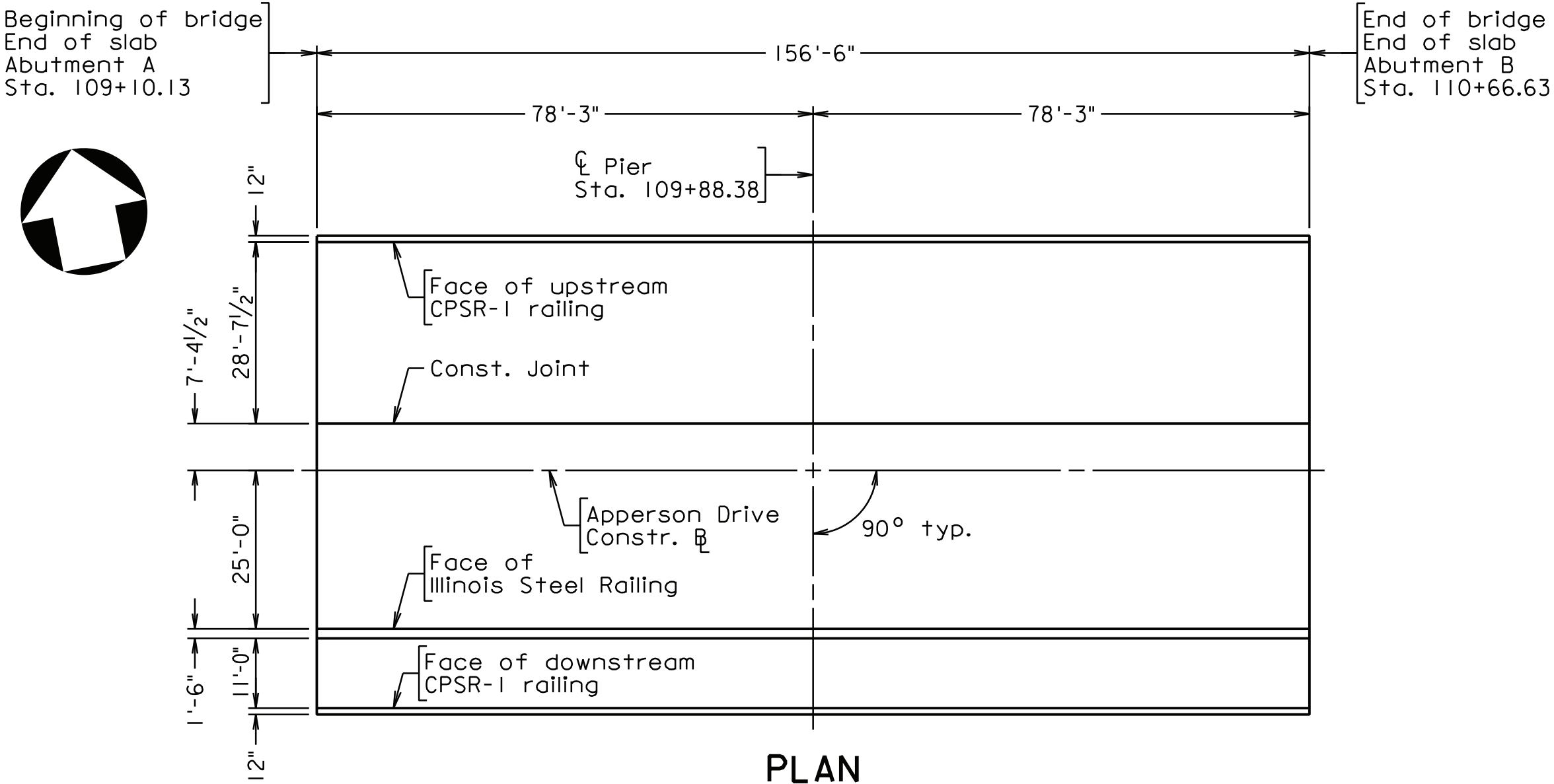
PLAN
Showing points of top of slab elevations

TOP OF SLAB ELEVATIONS ALONG $\varnothing$ BEAM																					
Point	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Beam 1	993.50	993.59	993.67	993.75	993.83	993.92	994.00	994.08	994.17	994.25	994.33	994.41	994.50	994.58	994.66	994.75	994.83	994.91	995.00	995.08	995.16
Beam 2	993.68	993.76	993.84	993.93	994.01	994.09	994.18	994.26	994.34	994.42	994.51	994.59	994.67	994.76	994.84	994.92	995.01	995.09	995.17	995.25	995.34
Beam 3	993.85	993.94	994.02	994.10	994.19	994.27	994.35	994.43	994.52	994.60	994.68	994.77	994.85	994.93	995.02	995.10	995.18	995.26	995.35	995.43	995.51
Beam 4	994.03	994.11	994.20	994.28	994.36	994.44	994.53	994.61	994.69	994.78	994.86	994.94	995.03	995.11	995.19	995.27	995.36	995.44	995.52	995.61	995.69
Beam 5	994.18	994.26	994.34	994.42	994.51	994.59	994.67	994.76	994.84	994.92	995.01	995.09	995.17	995.25	995.34	995.42	995.50	995.59	995.67	995.75	995.83
Beam 6	994.00	994.08	994.17	994.25	994.33	994.41	994.50	994.58	994.66	994.75	994.83	994.91	995.00	995.08	995.16	995.24	995.33	995.41	995.49	995.58	995.66
Beam 7	993.82	993.91	993.99	994.07	994.16	994.24	994.32	994.40	994.49	994.57	994.65	994.74	994.82	994.90	994.99	995.07	995.15	995.23	995.32	995.40	995.48
Beam 8	993.65	993.73	993.81	993.90	993.98	994.06	994.15	994.23	994.31	994.39	994.48	994.56	994.64	994.73	994.81	994.89	994.98	995.06	995.14	995.22	995.31
Beam 9	993.47	993.56	993.64	993.72	993.80	993.89	993.97	994.05	994.14	994.22	994.30	994.38	994.47	994.55	994.63	994.72	994.80	994.88	994.97	995.05	995.13



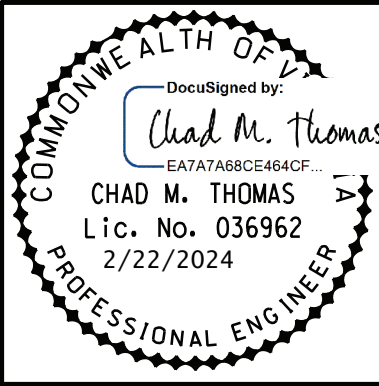
PLAN
Showing points of top of slab elevations

FINISHED GRADE ELEVATIONS																					
Point	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Upstream CPSR-I Railing	993.45	993.54	993.62	993.71	993.79	993.88	993.96	994.05	994.13	994.22	994.30	994.39	994.47	994.56	994.64	994.73	994.81	994.90	994.98	995.07	995.15
Construction Joint	994.02	994.11	994.19	994.28	994.36	994.45	994.53	994.62	994.70	994.79	994.87	994.96	995.04	995.13	995.21	995.30	995.38	995.47	995.55	995.64	995.72
Construction Baseline	994.17	994.26	994.34	994.43	994.51	994.60	994.68	994.77	994.85	994.94	995.02	995.11	995.19	995.28	995.36	995.45	995.53	995.62	995.70	995.79	995.87
Illinois Steel Railing	993.67	993.76	993.84	993.93	994.01	994.10	994.18	994.27	994.35	994.44	994.52	994.61	994.69	994.78	994.86	994.95	995.03	995.12	995.20	995.29	995.37
Downstream CPSR-I Railing	993.42	993.51	993.59	993.68	993.76	993.85	993.93	994.02	994.10	994.19	994.27	994.36	994.44	994.53	994.61	994.70	994.78	994.87	994.95	995.04	995.12



PLAN

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



Date																						
Revisions																						

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
**TOP OF SLAB ELEVATIONS,
FINISHED GRADE ELEVATIONS**
CITY OF SALEM, VIRGINIA

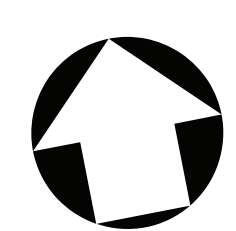
Vertical Scale:
N/A

Horizontal Scale:
NOT TO SCALE

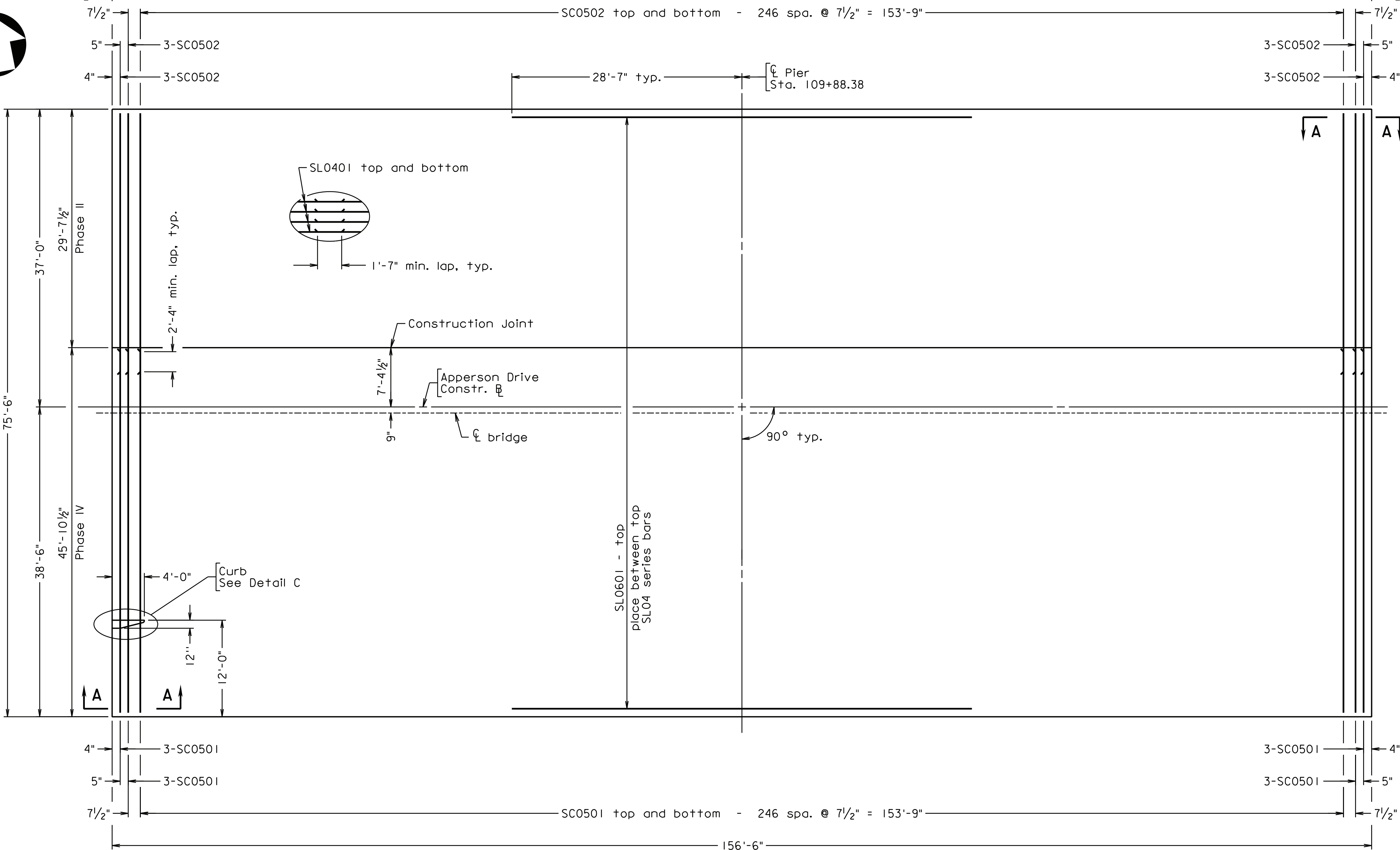
Commission Number:
3925B

Sheet No.:
B-21

Beginning of bridge
End of slab
Sta. 109+10.13

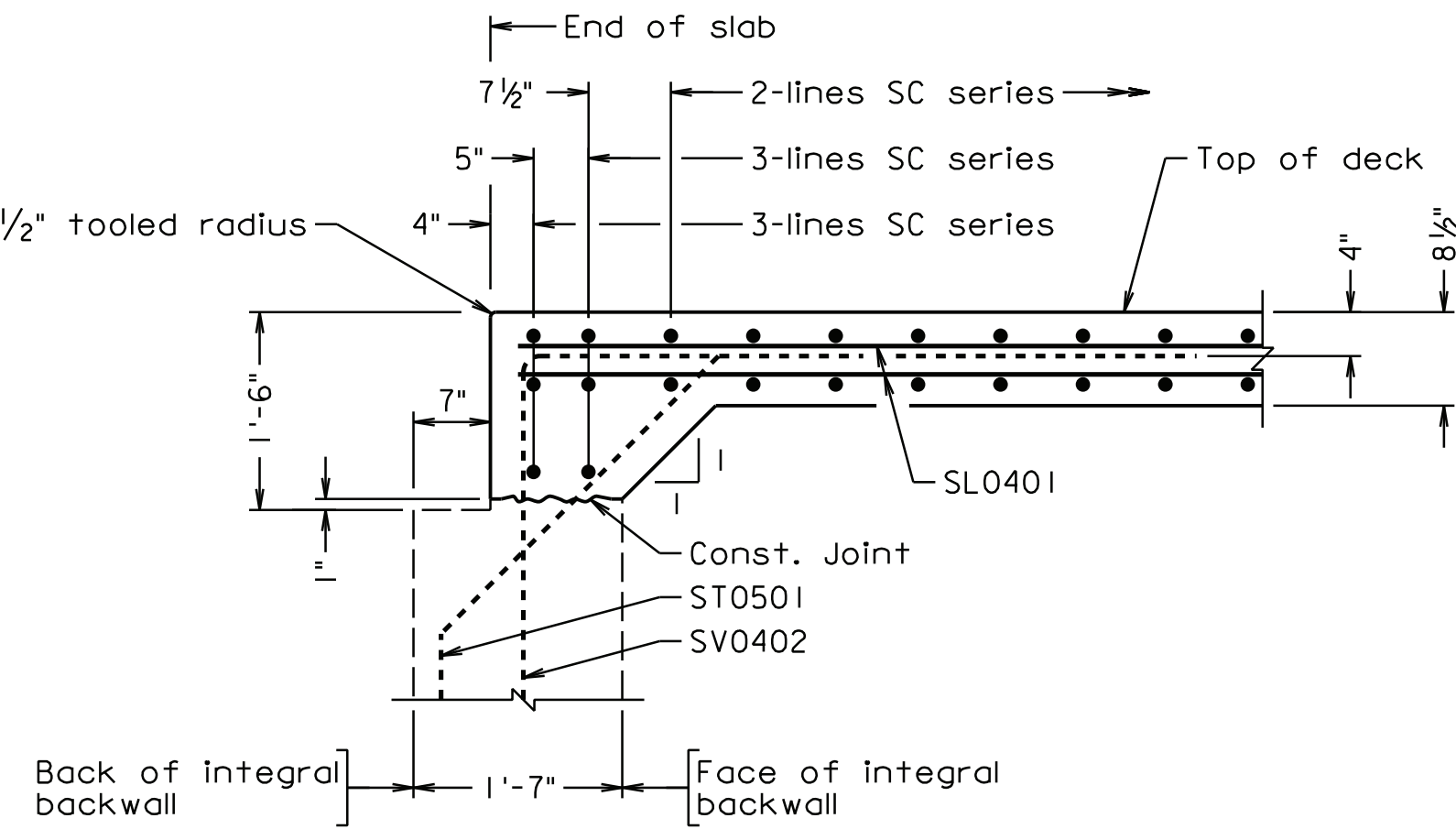


End of bridge
End of slab
Sta. 110+66.63



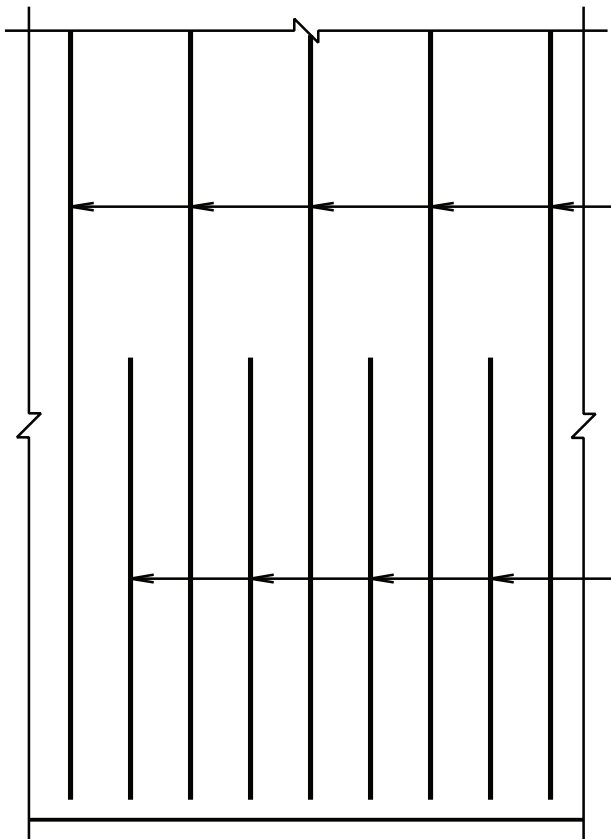
DECK SLAB PLAN

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



SECTION A-A

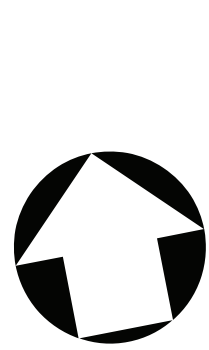
Scale: 3/4" = 1'-0"



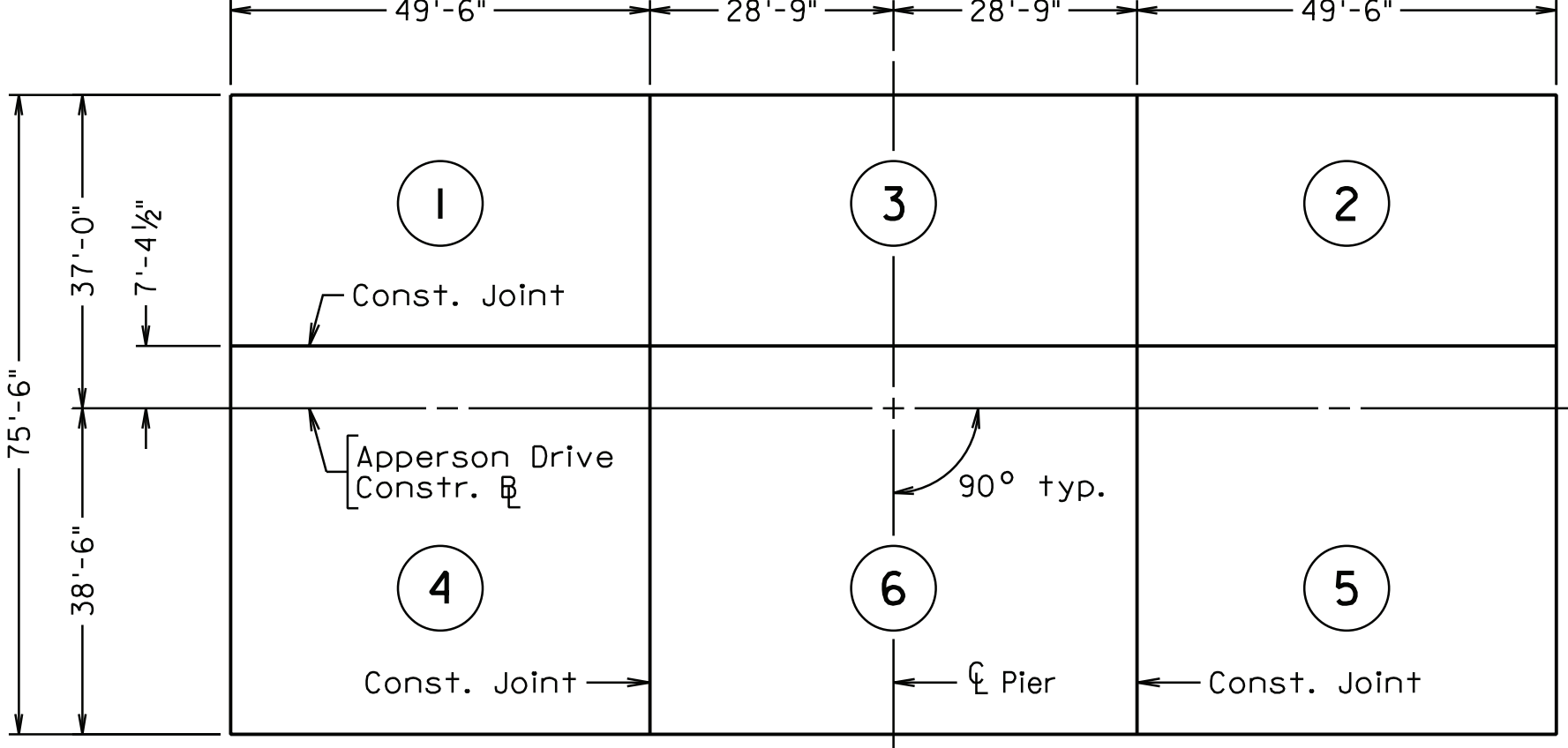
DECK OVERHANG PLAN

Not to scale

Beginning of bridge
End of slab
Sta. 109+10.13



End of bridge
End of slab
Sta. 110+66.63



DECK SLAB PLACEMENT SCHEDULE

Not to scale

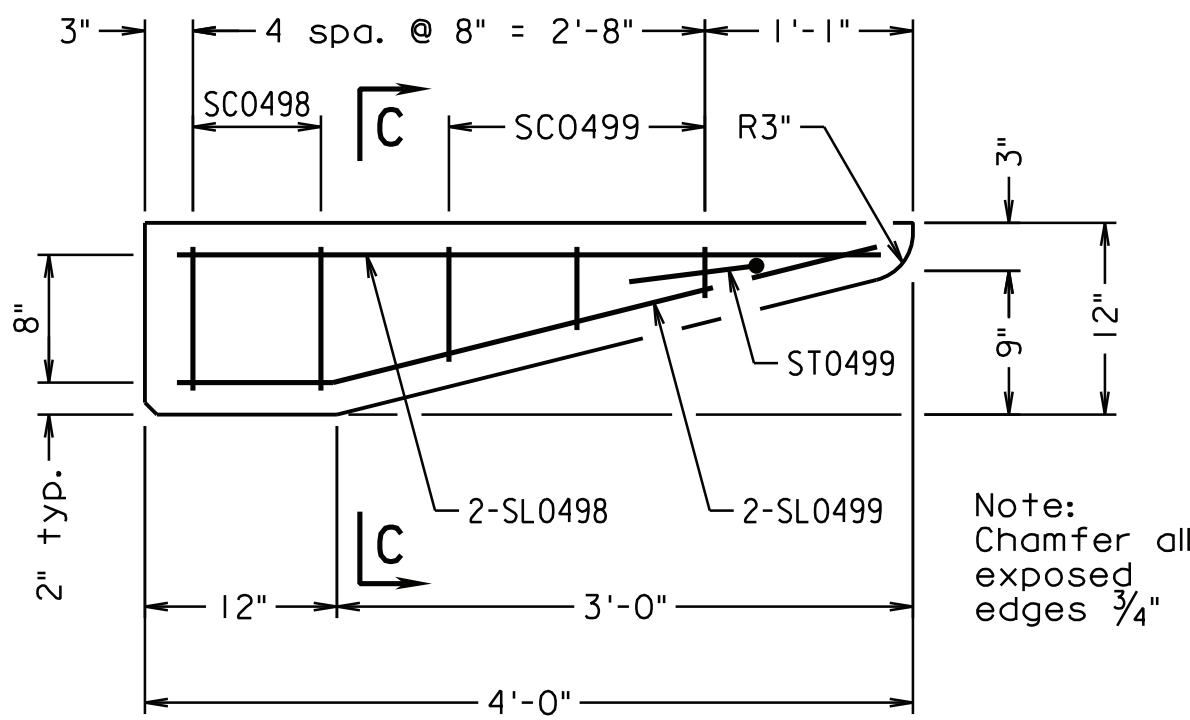
Notes:

For transverse section and details, see Sheets B-16.

For semi-integral backwalls and details, see Sheets B-23 thru B-26.

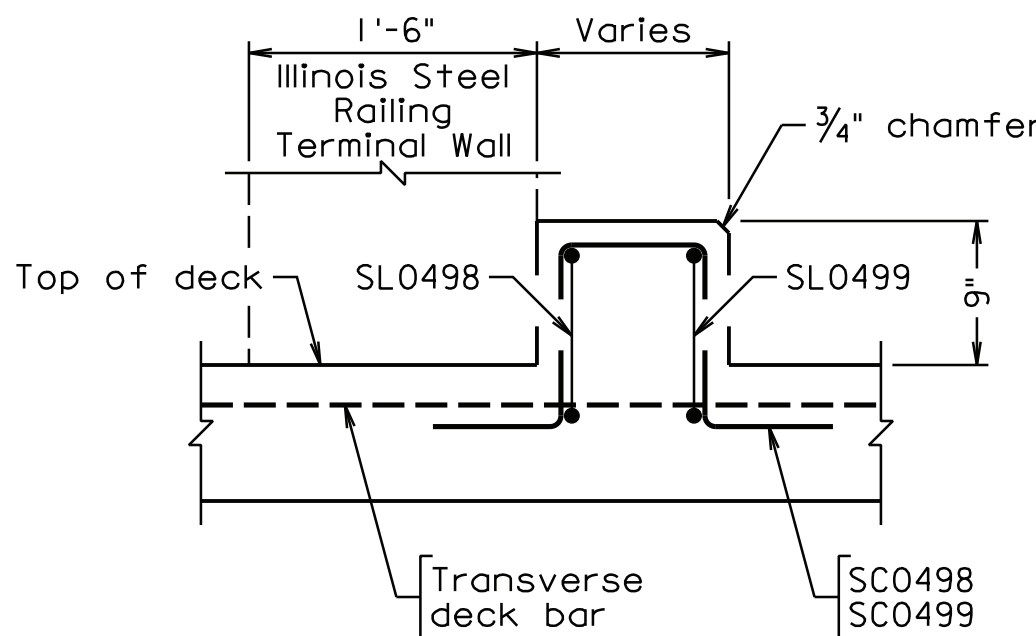
For railings and terminal wall details, see Sheets B-27 thru B-32.

Concrete and reinforcing steel quantities for curb are included with Concrete Class A4 Modified Low Shrinkage and Corrosion Resistant Reinf. Steel, Class I, under the Estimated Quantities - Superstructure Only table on Sheet B-2.



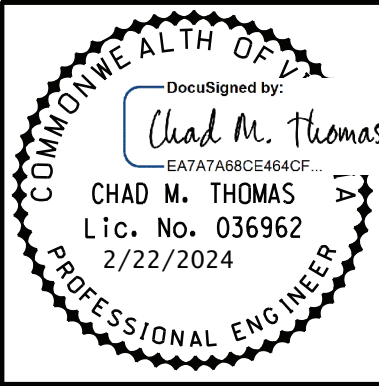
DETAIL C

Scale: 1" = 1'-0"



SECTION C-C

Scale: 1" = 1'-0"



Date	
Revisions	

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
**DECK SLAB PLAN AND
PLACEMENT SCHEDULE**
CITY OF SALEM, VIRGINIA

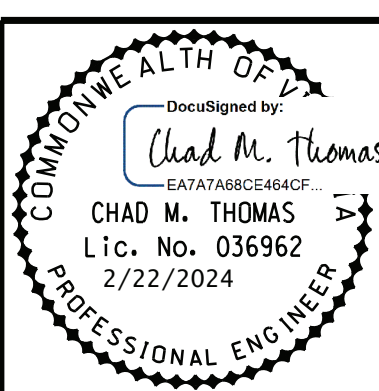
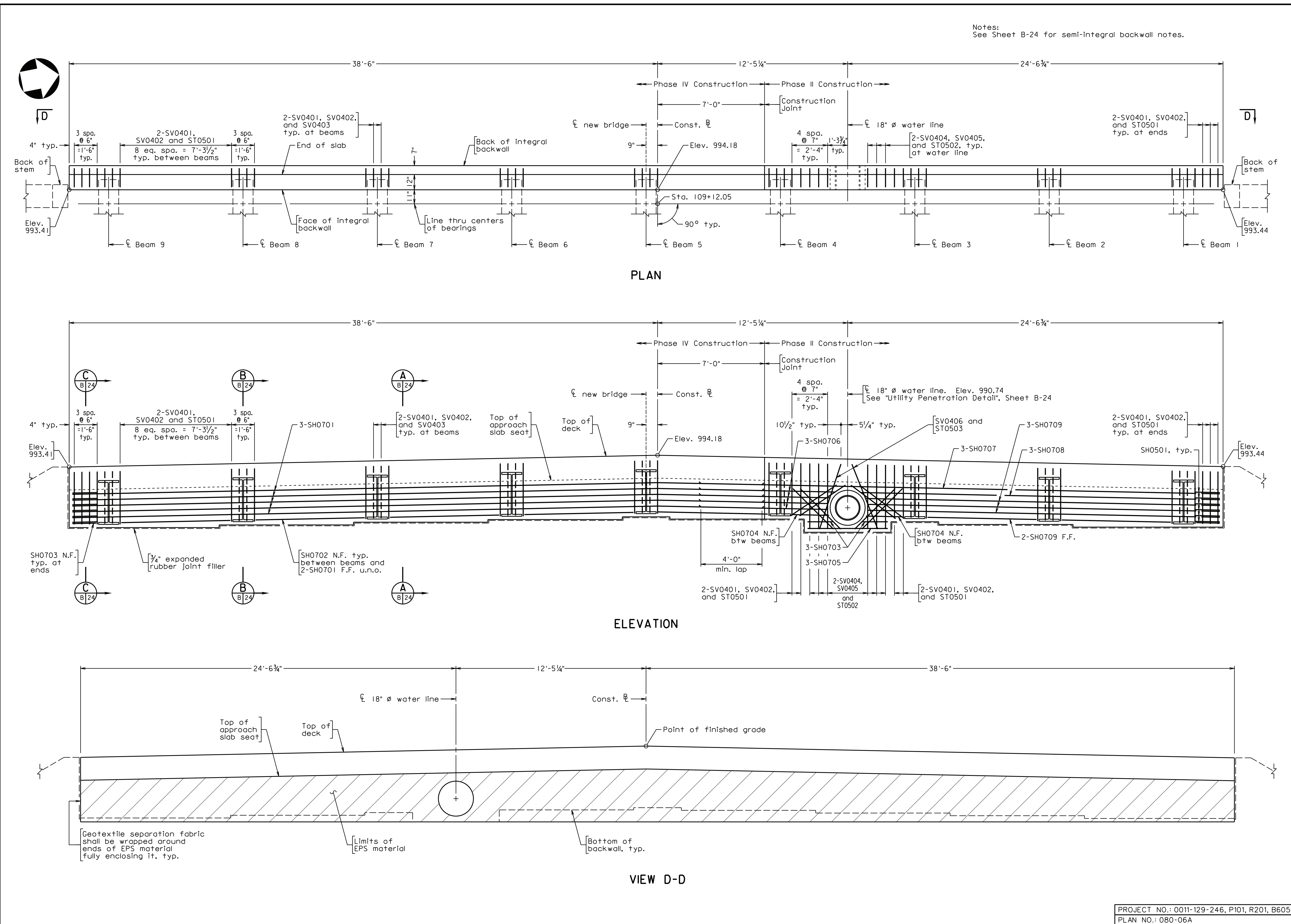
Vertical Scale:	N/A
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Horizontal Scale:	AS NOTED
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Commission Number:	3925B
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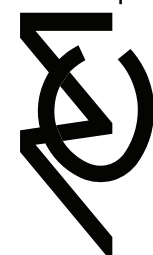
Sheet No.:

B-22



Date	
Revisions	

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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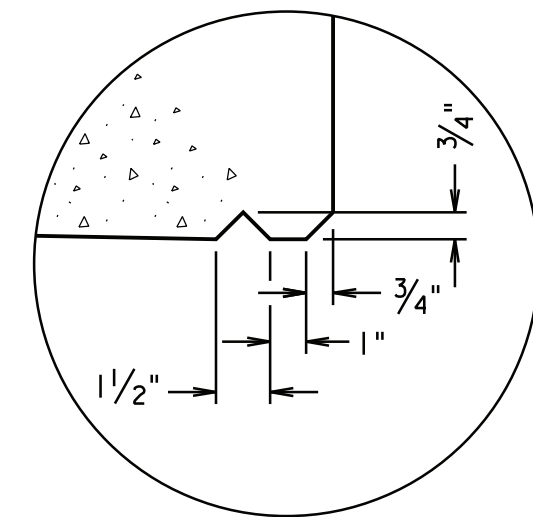
APPERSON DRIVE BRIDGE REPLACEMENT
**ABUTMENT A SEMI-INTEGRAL
BACKWALL PLAN AND ELEVATION**
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

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

Commission Number:
3925B

Sheet No.:
B-23

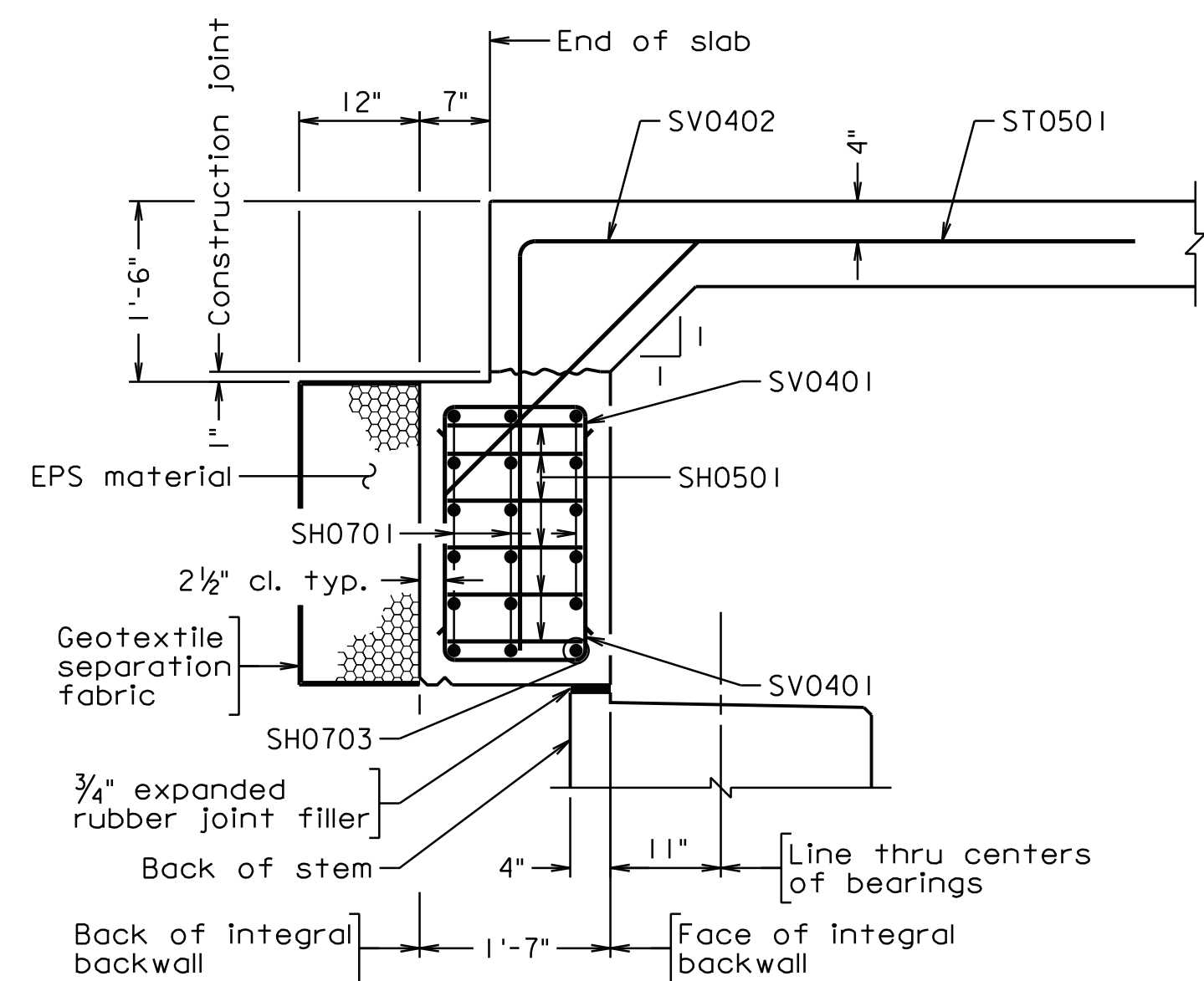


DRIP DETAIL
Not to scale

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

[illegible]

Checked By: TJT



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

For details not shown, see Sections A-A and B-B

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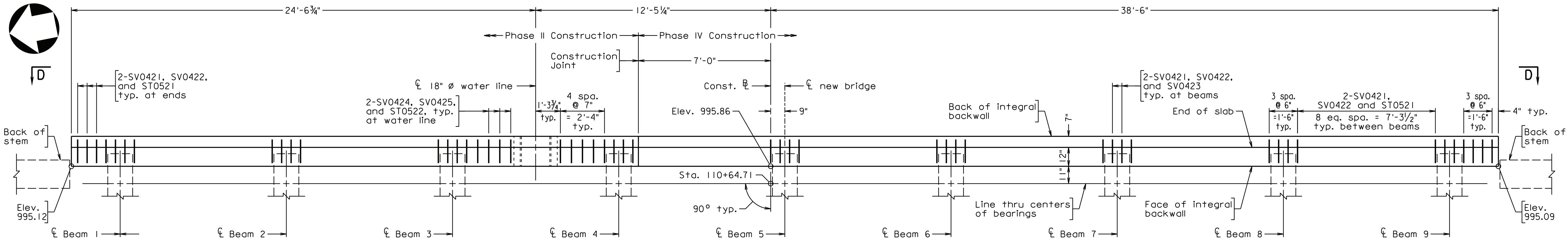
APPERSON DRIVE BRIDGE REPLACEMENT
ABUTMENT A SEMI-INTEGRAL
BACKWALL DETAILS AND NOTES
CITY OF SALEM, VIRGINIA

Sheet No.:

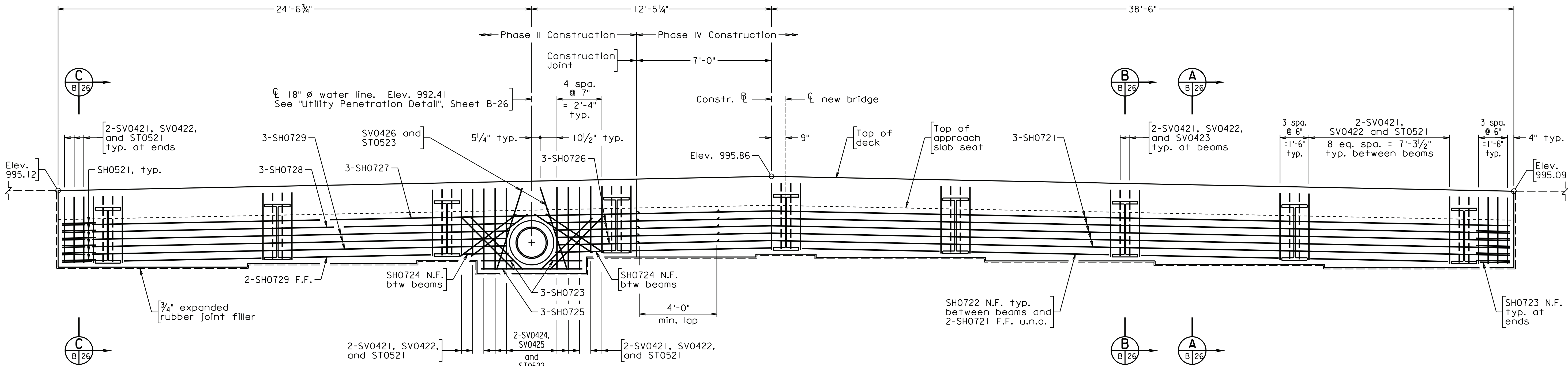
B-24

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A

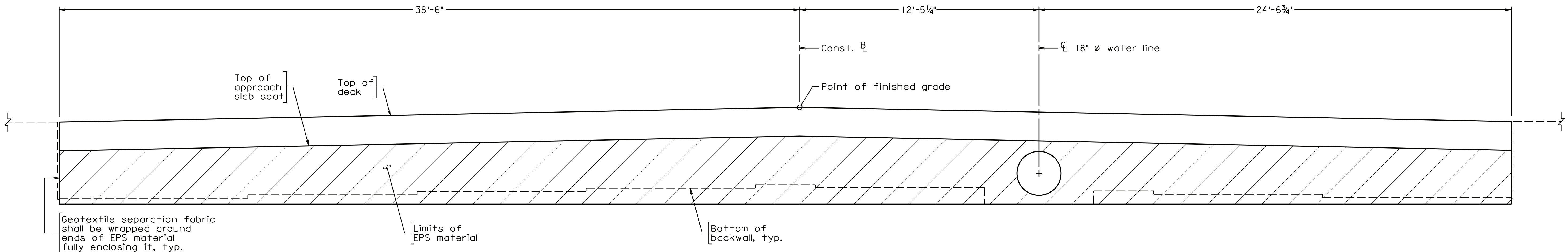
Notes:
See Sheet B-26 for semi-integral backwall notes.



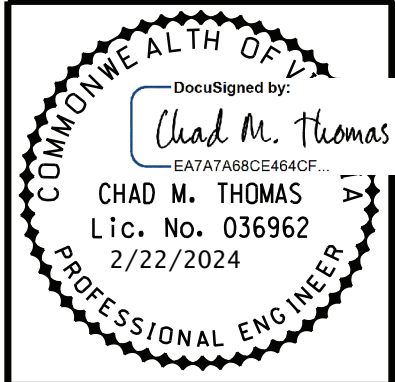
PLAN



ELEVATION



VIEW D-D



Date	
Revisions	

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
**ABUTMENT B SEMI-INTEGRAL
BACKWALL PLAN AND ELEVATION**
CITY OF SALEM, VIRGINIA

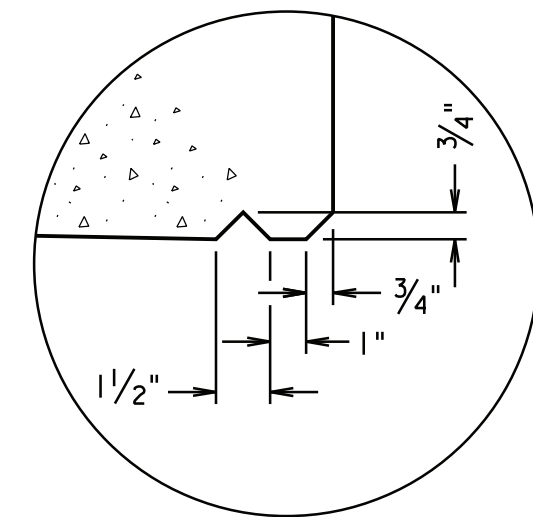
Vertical Scale:
N/A

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

Commission Number:
3925B

Sheet No.:

B-25

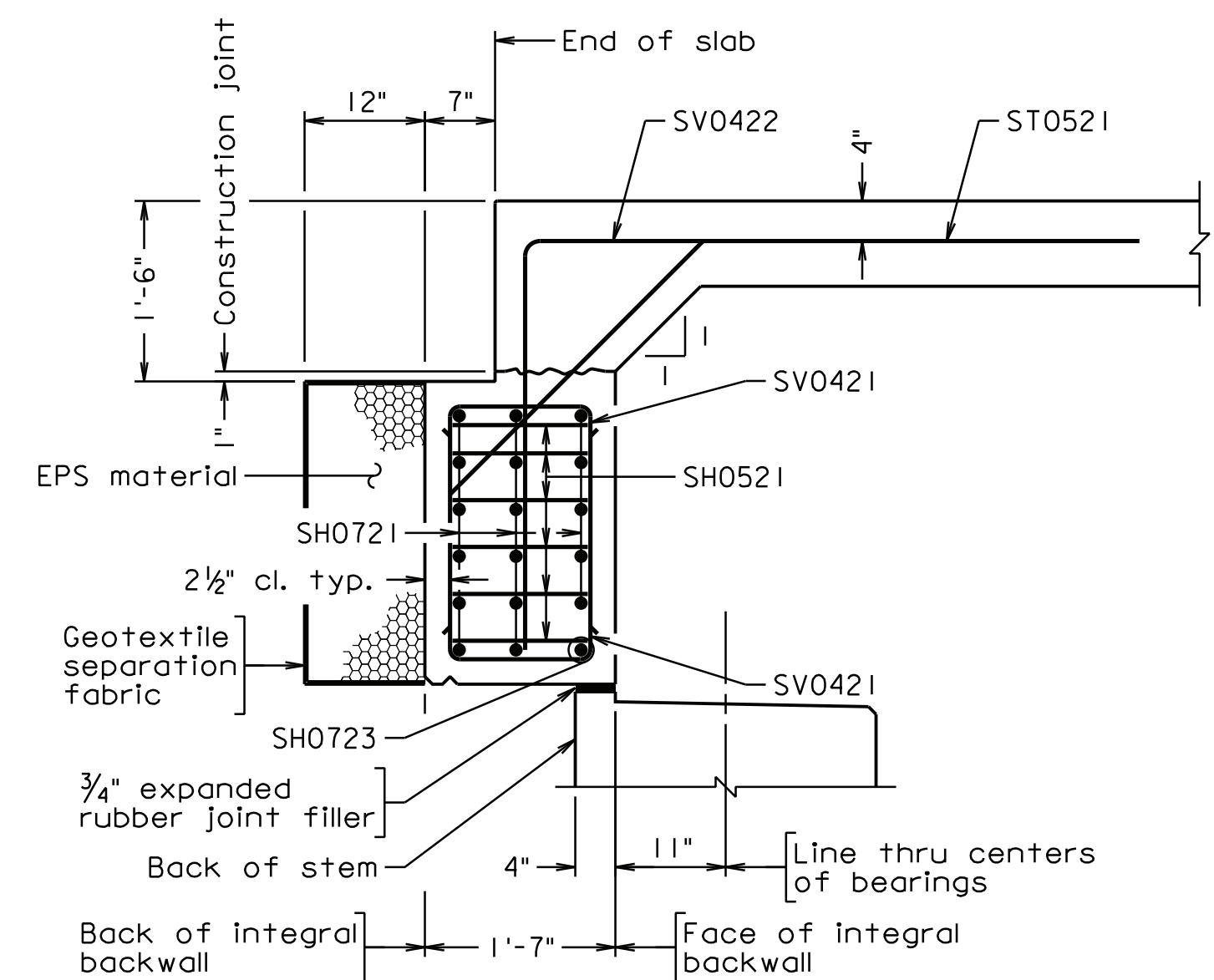


DRIP DETAIL
Not to scale

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

[illegible]

Date: 11/21/2023



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

For details not shown, see Sections A-A and B-B

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ENGINEERS • SURVEYORS

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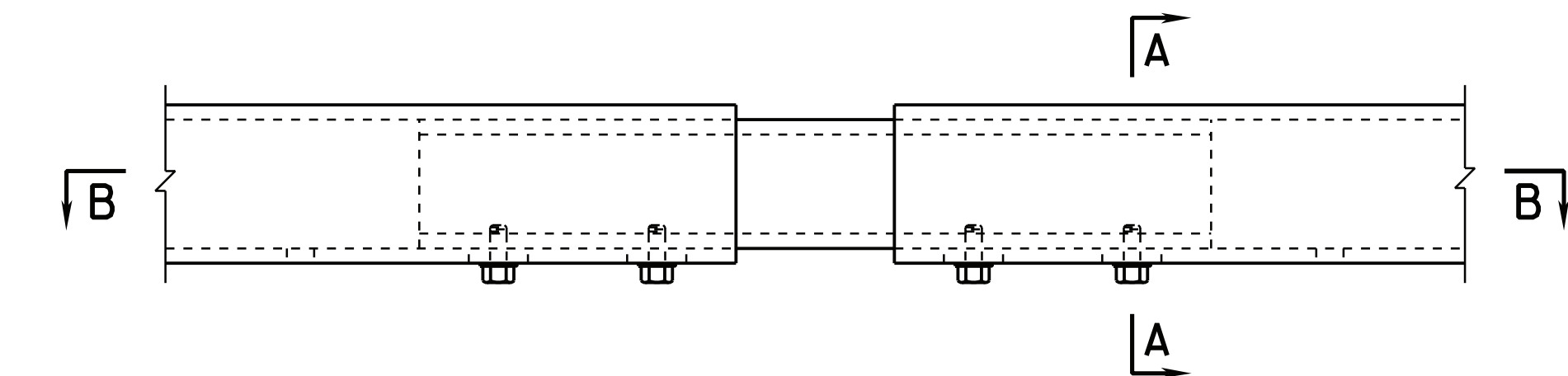
APPERSON DRIVE BRIDGE REPLACEMENT
ABUTMENT B SEMI-INTEGRAL
BACKWALL DETAILS AND NOTES
CITY OF SALEM, VIRGINIA

Sheet No.:

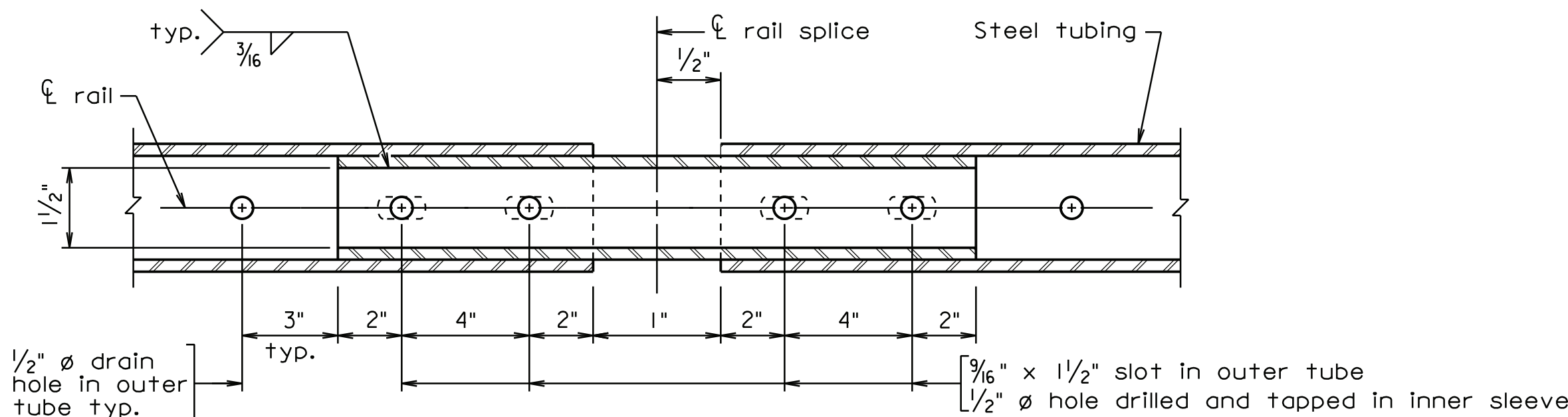
B-26

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A

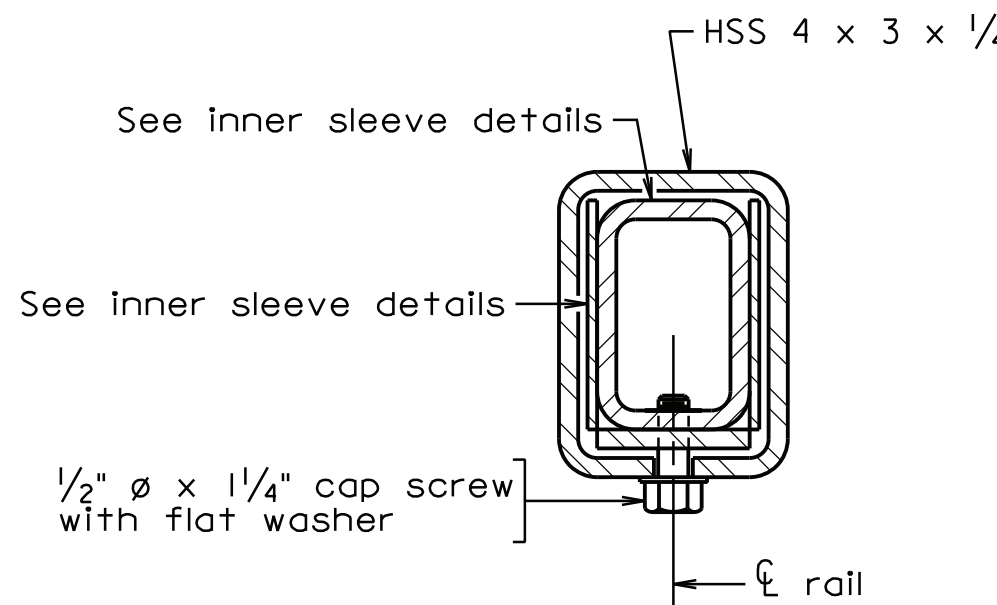
Dimensions in bending diagram are out-to-out of bars.



ELEVATION VIEW



SECTION B-B



SECTION A-A
SECTION AT RAIL SPLICE

RAIL SPLICE DETAILS

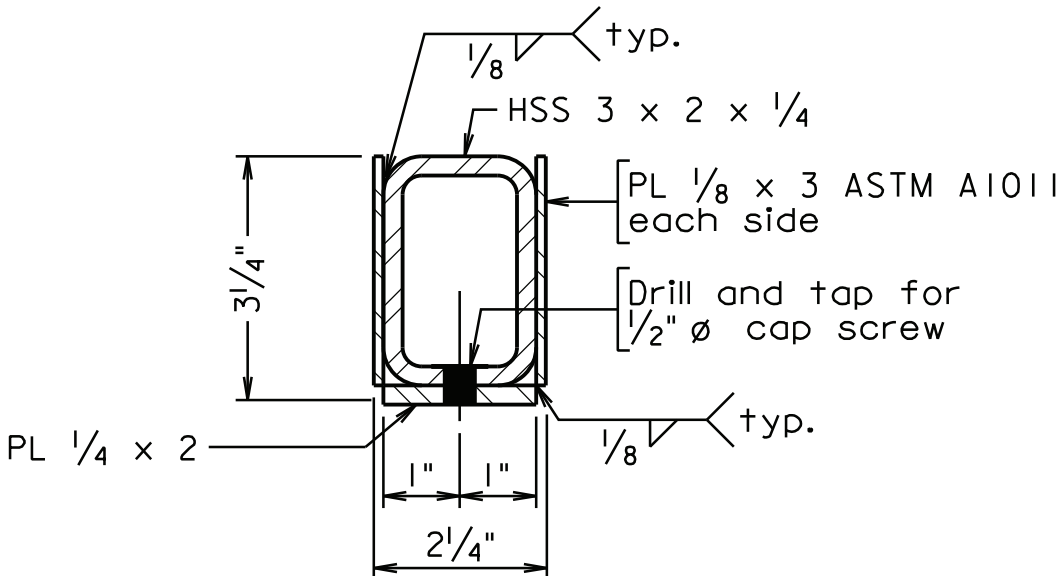
Notes (cont'd):

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.



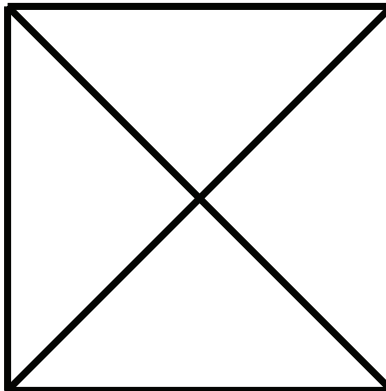
INNER SLEEVE DETAILS

Designed by:
Sealed
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

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



Date									
Revisions									

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
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Date:	11/21/2023



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APPERSON DRIVE BRIDGE REPLACEMENT

CPSR RAIL CONNECTIONS
AND NOTES (CPSR-3)

CITY OF SALEM, VIRGINIA

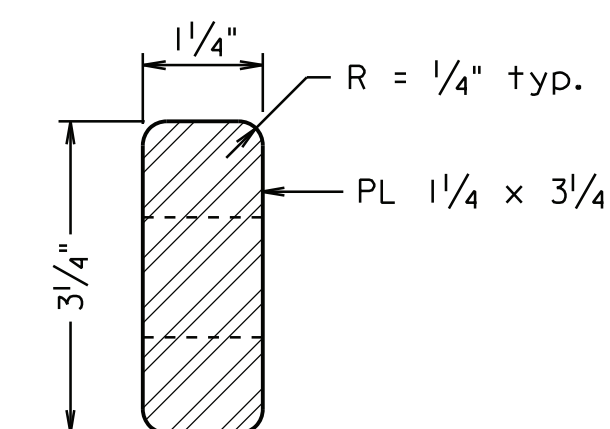
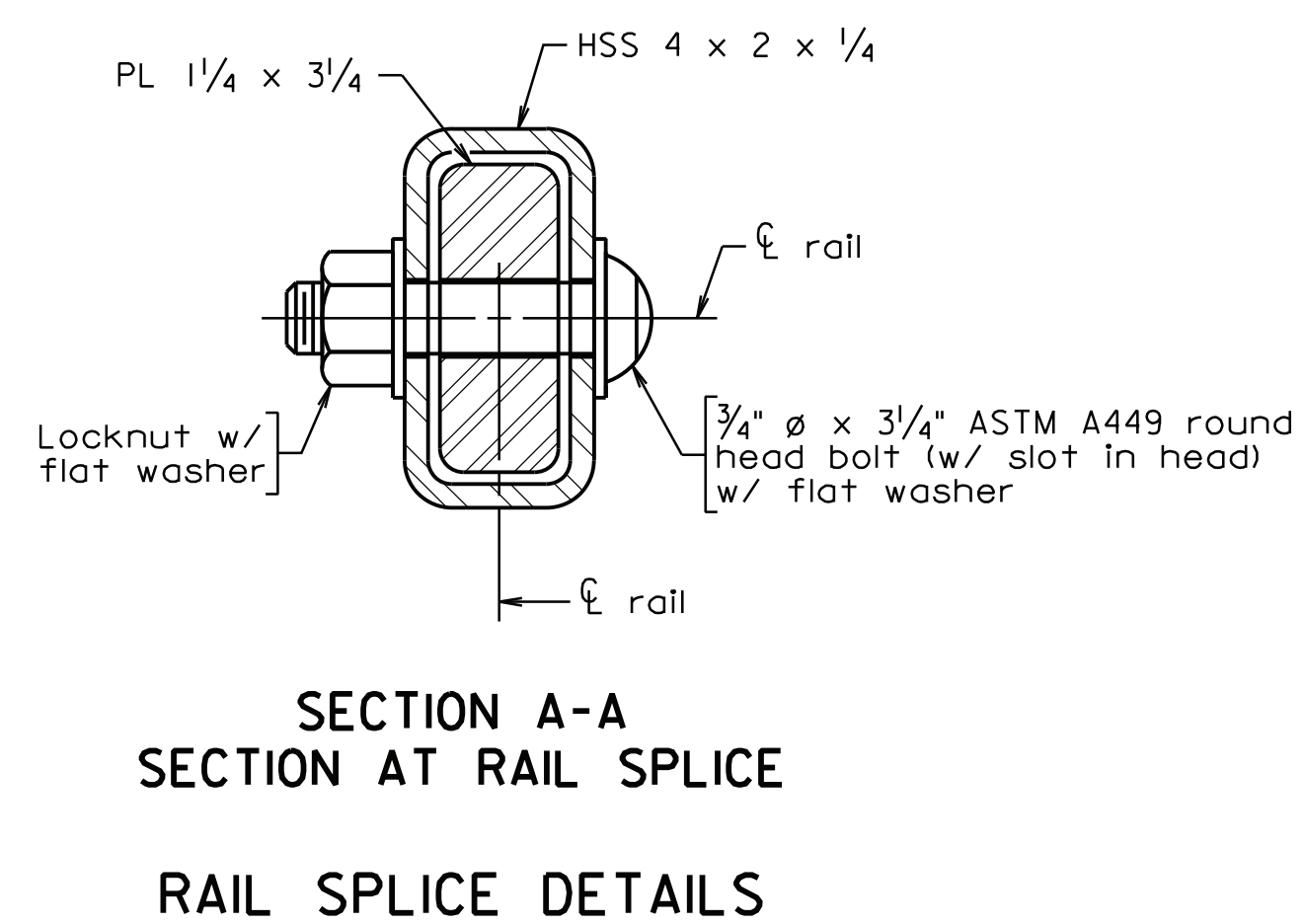
Vertical Scale:
N/A

Horizontal Scale:
NOT TO SCALE

Commission Number:
3925B

Sheet No.:

B-28



FINISHED DIMENSIONS OF INNER GUIDE RAIL

[illegible]

Issue Date: 02/16/24	Drawn By: DKA Designed By: CTB	Checked By: TJT Date: 11/21/2023
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APPERSON DRIVE BRIDGE REPLACEMENT
CPSR RAIL CONNECTIONS
(CPSR-4)
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

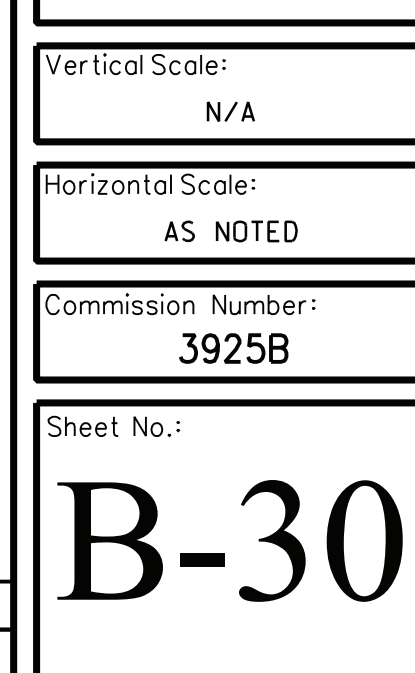
Horizontal Scale:
NOT TO SCALE

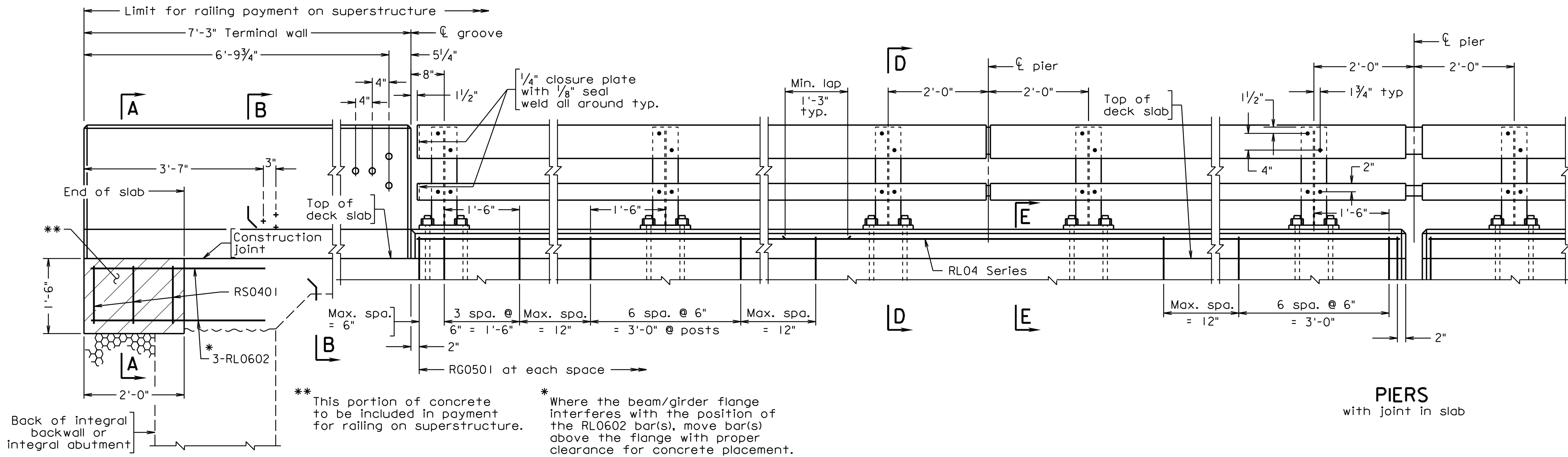
Commission Number:
3925B

Sheet No.:

B-29

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



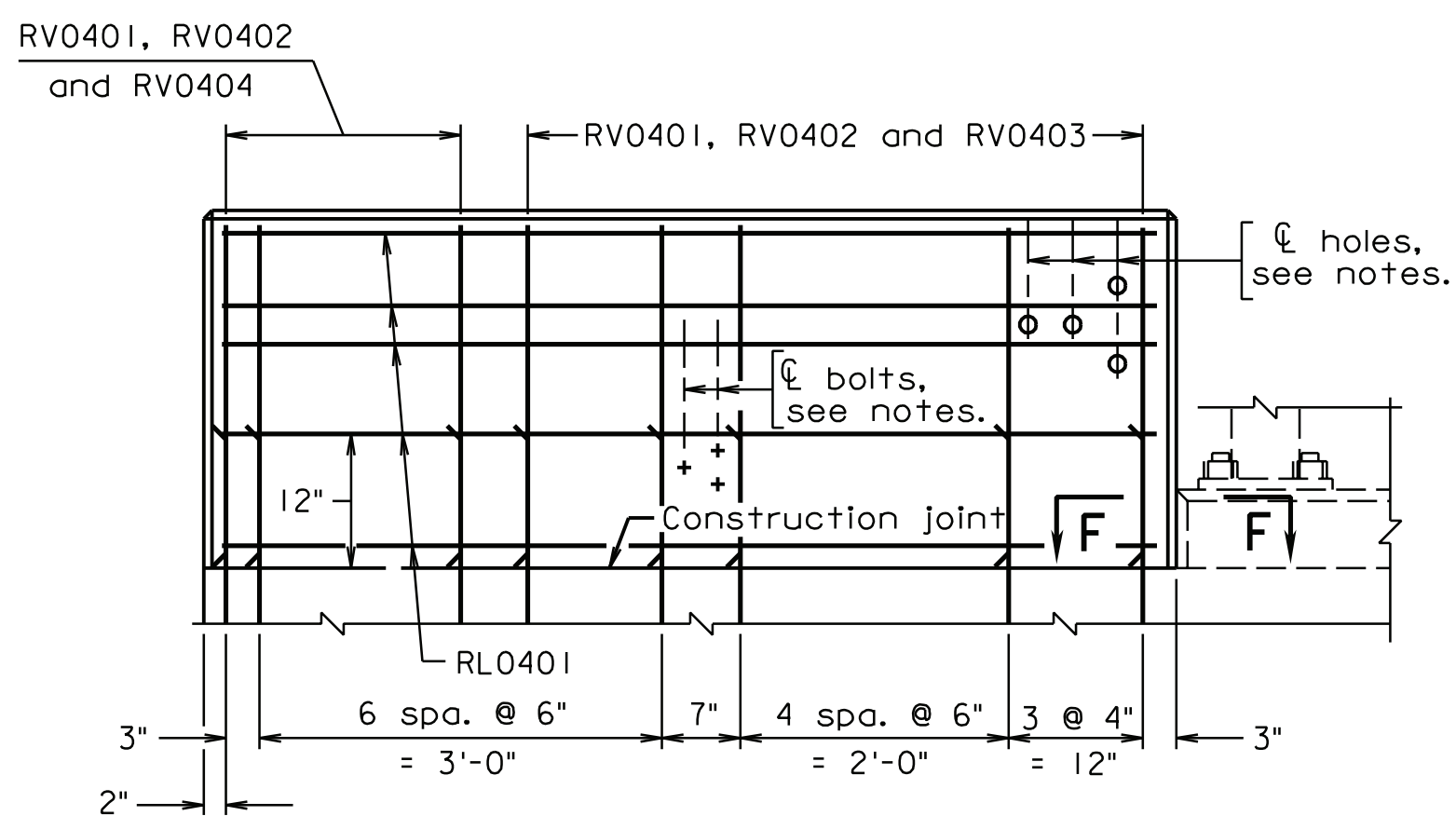


SEMI-INTEGRAL OR
FULL INTEGRAL ABUTMENT

For details of semi-integral backwall,
see Sheets B-23 thru B-26.

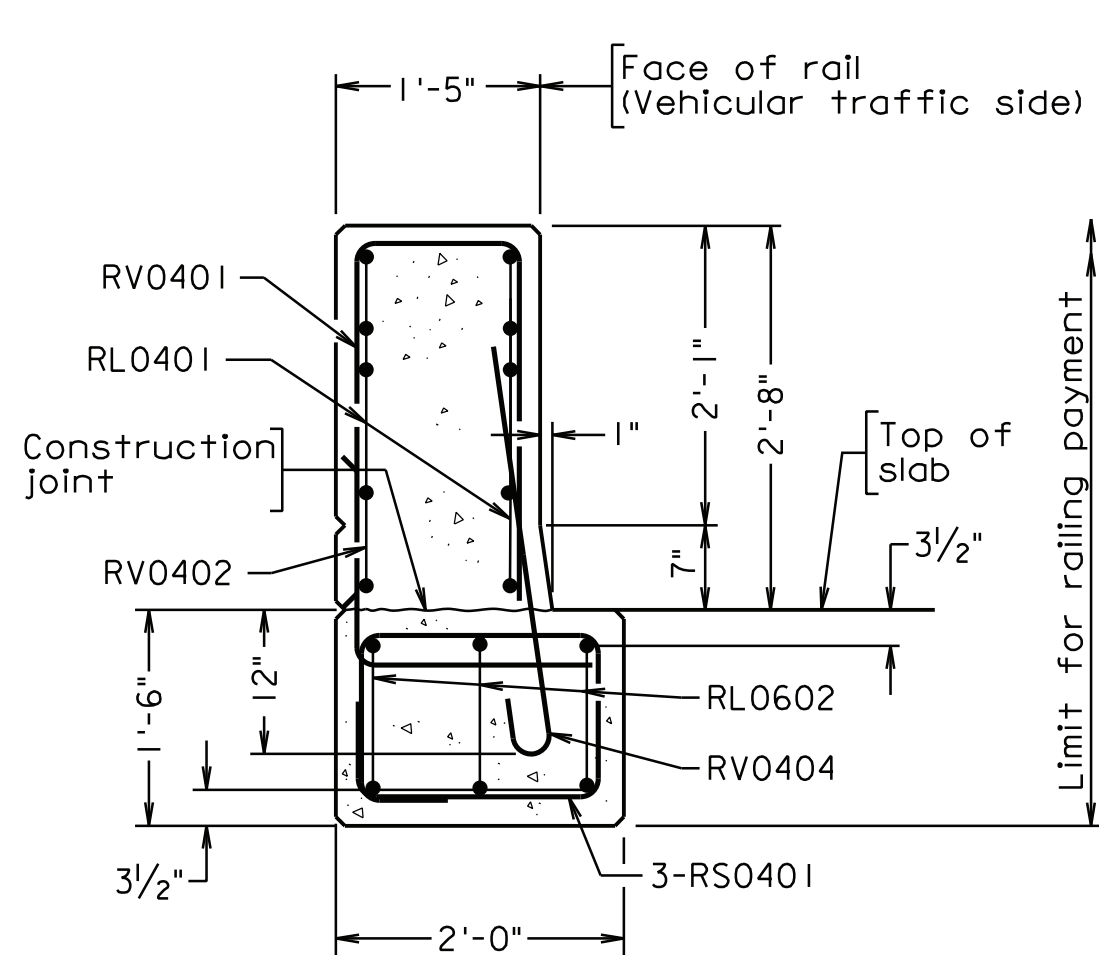
ELEVATION

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



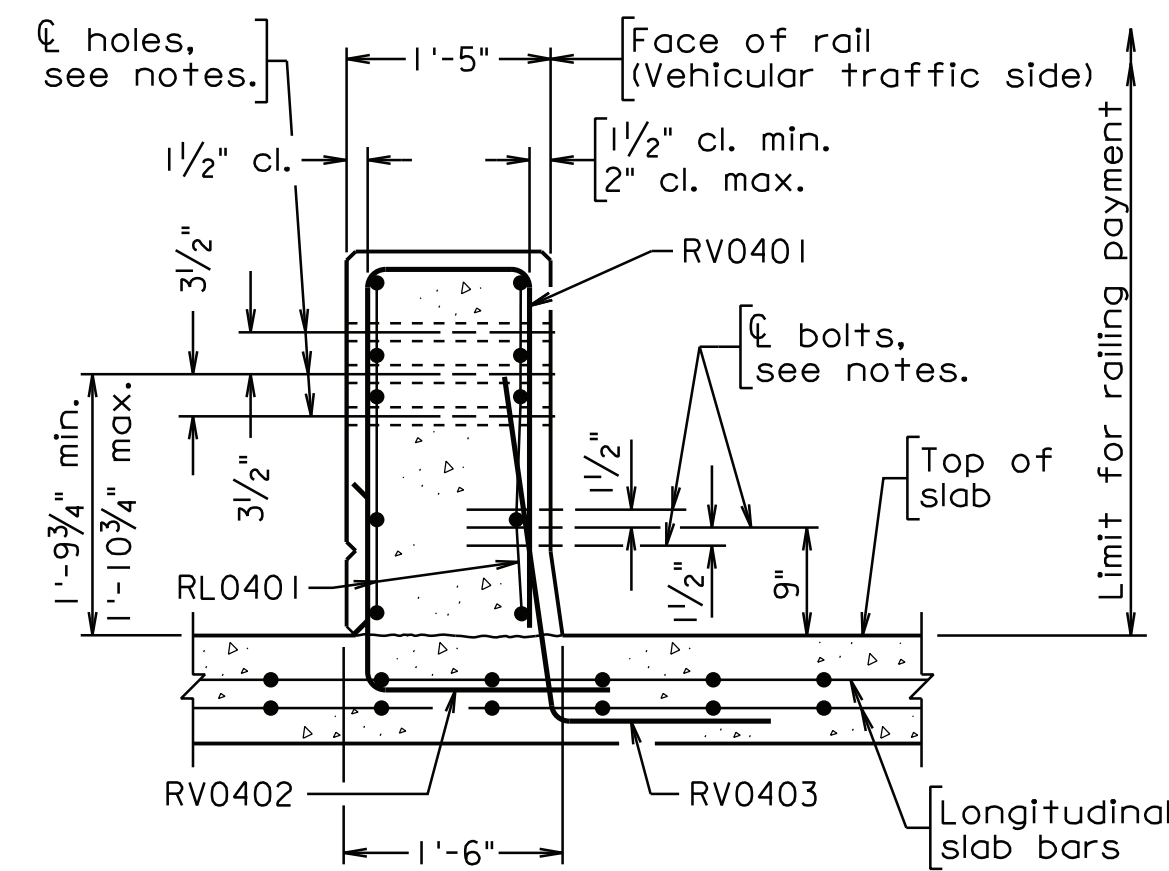
TERMINAL WALL

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



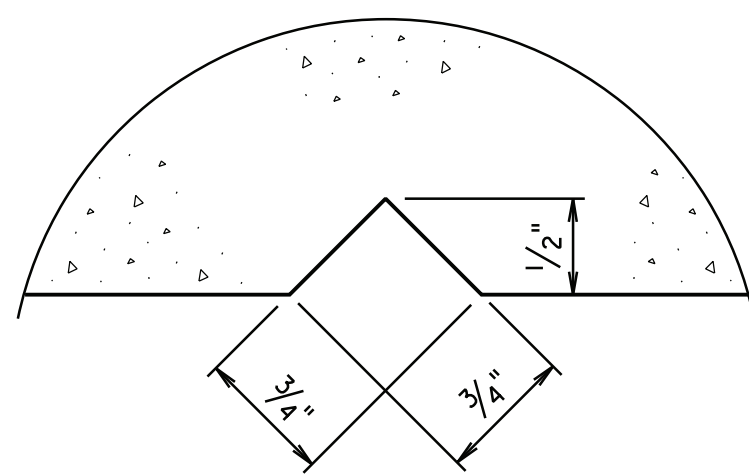
SECTION A-A

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



SECTION B-B

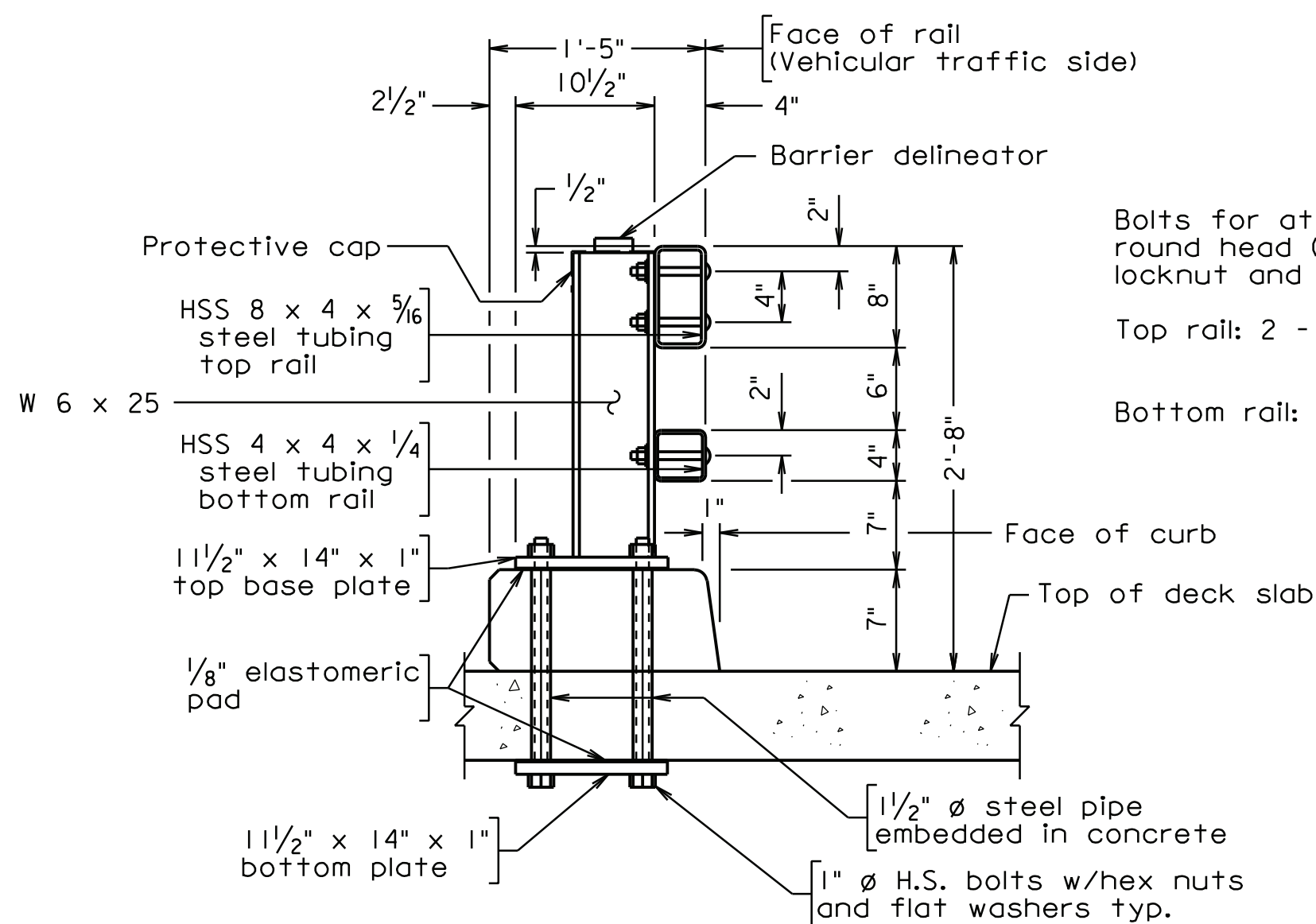
Scale: $\frac{3}{4}" = 1'-0"$



SECTION F-F

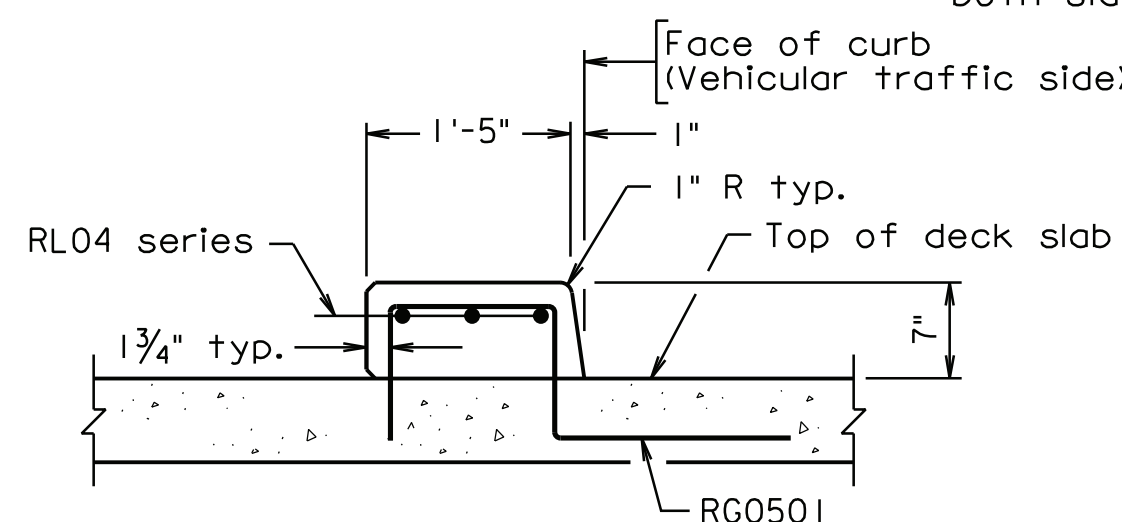
Full scale

Groove detail for
both sides of parapet



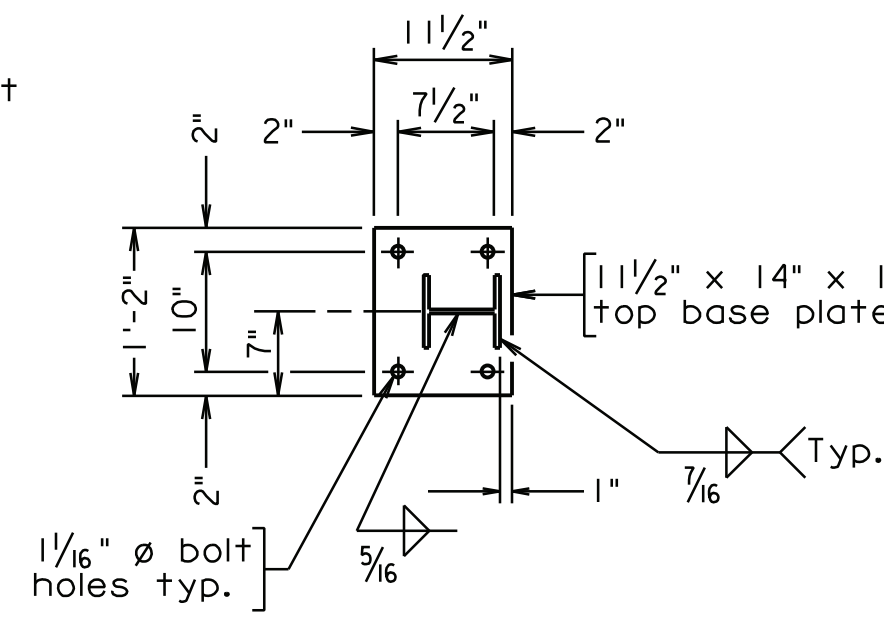
SECTION D-D

Not to scale



SECTION E-E

Not to scale

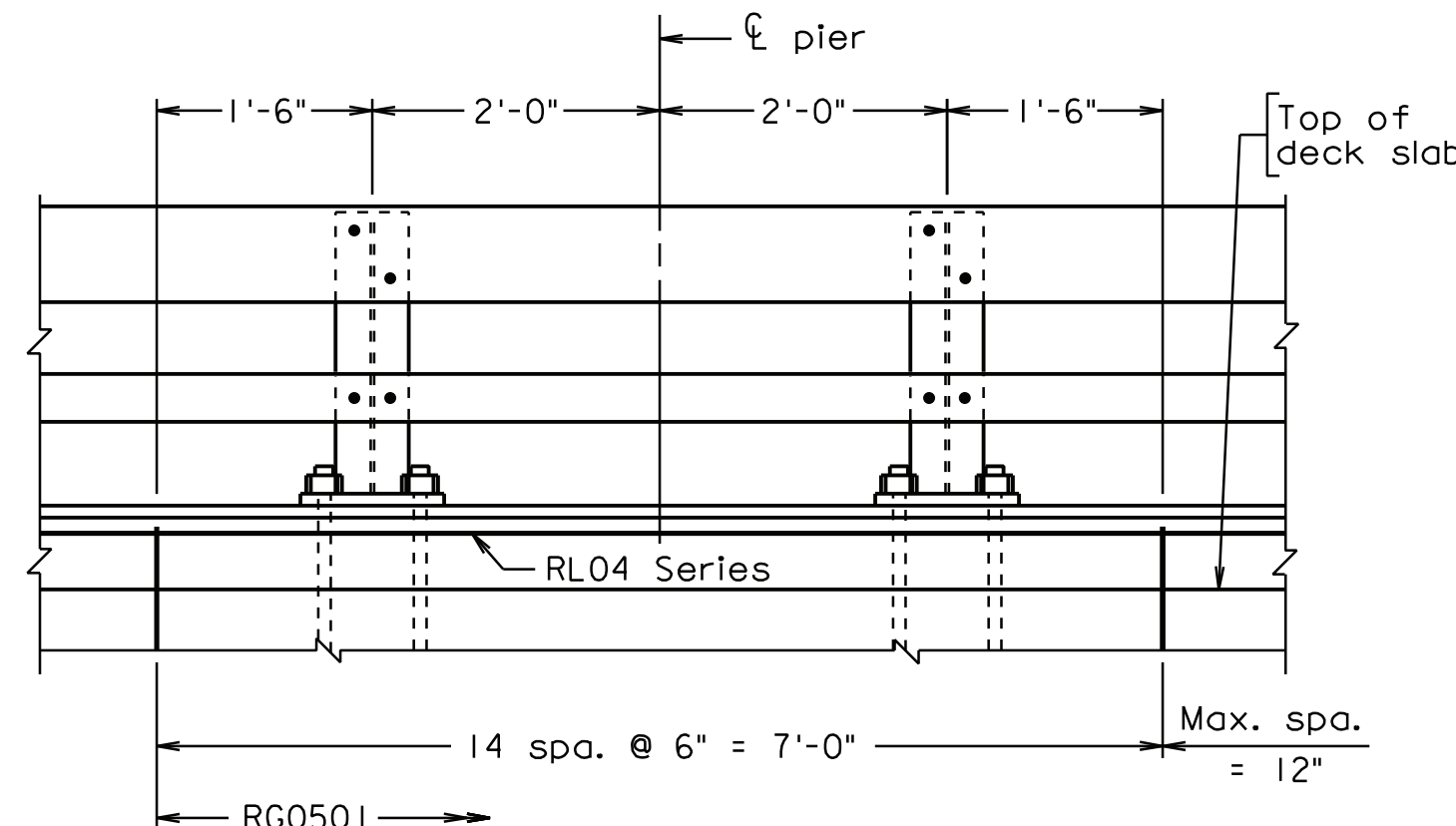


TOP BASE PLATE

Not to scale

(Bottom plate similar)

Notes:
For notes and miscellaneous details, see Sheet B-32.



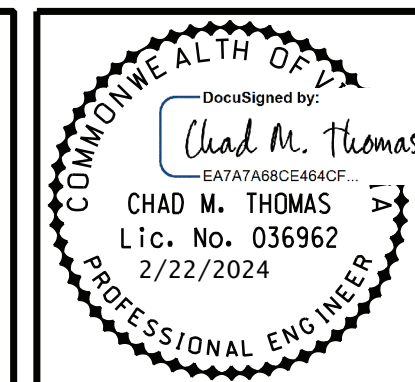
PIERS

Continuous - without joint in slab

REINFORCING STEEL SCHEDULE					
Mark	No.	Size	Pin ϕ	Length	Location
RG0501		#5	$3\frac{3}{4}"$	4'-8"	Curb
RV0401		#4	3"	6'-0"	Terminal wall
RV0402		#4	3"	3'-11"	Terminal wall, deck slab and terminal wall end support
RV0403		#4	3"	4'-2"	Terminal wall and deck slab
RV0404		#4	3"	3'-4"	Terminal wall and terminal wall end support
RS0401		#4	3"	6'-2"	Terminal wall end support
RL0401		#4	—	6'-11"	Terminal wall
RL0602		#6	—	3'-6"	Terminal wall end support
RL04		#4	—		Curb

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

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



Date	
Revisions	

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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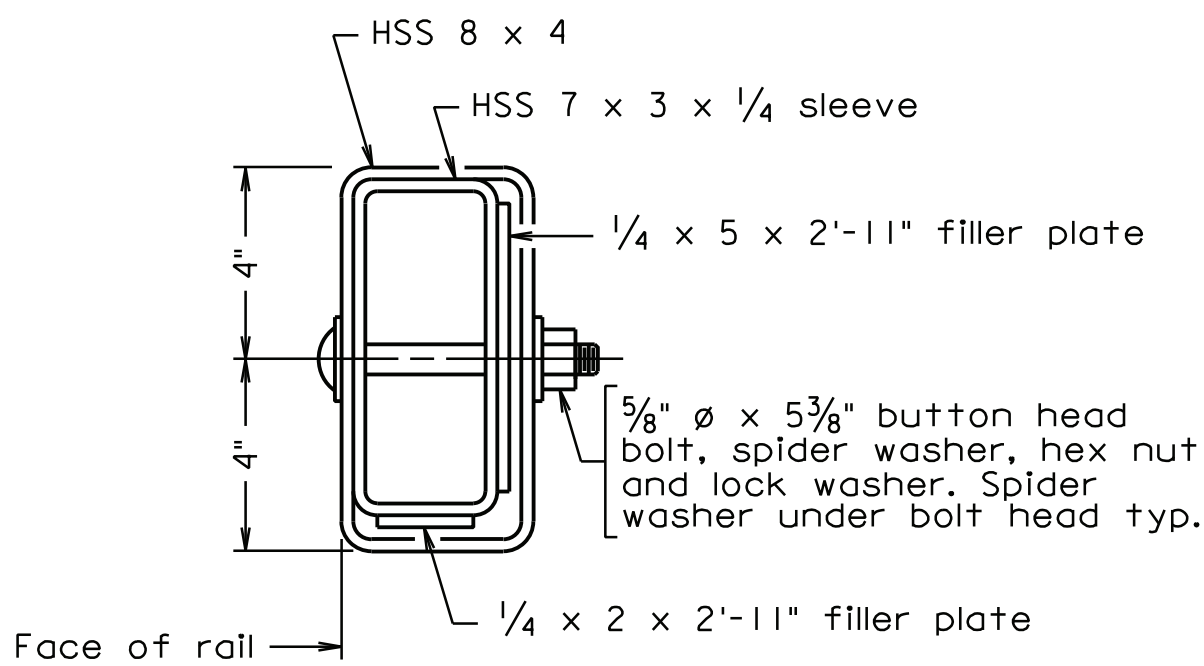
APPERSON DRIVE BRIDGE REPLACEMENT
ILLINOIS STEEL RAILING
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

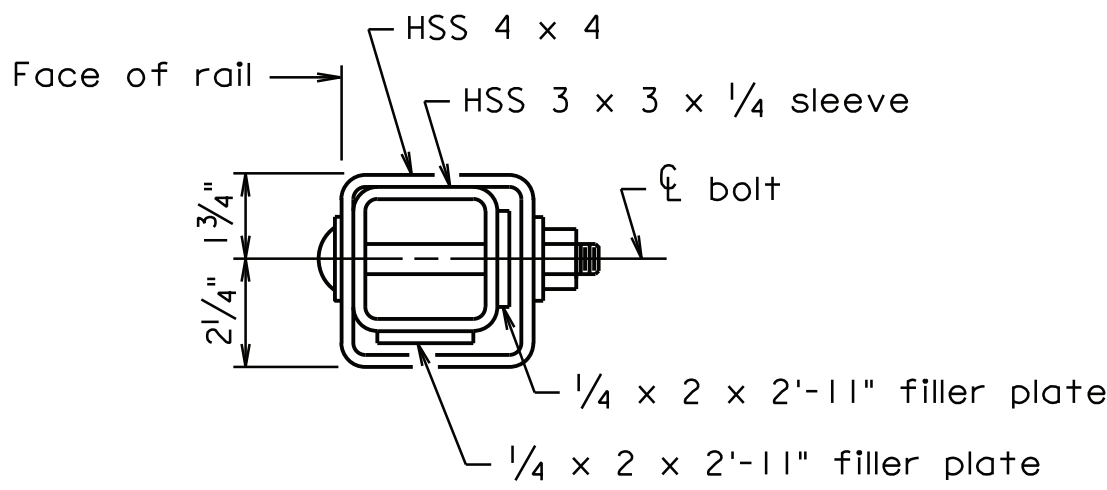
Horizontal Scale:
AS NOTED

Commission Number:
3925B

Sheet No.:
B-31

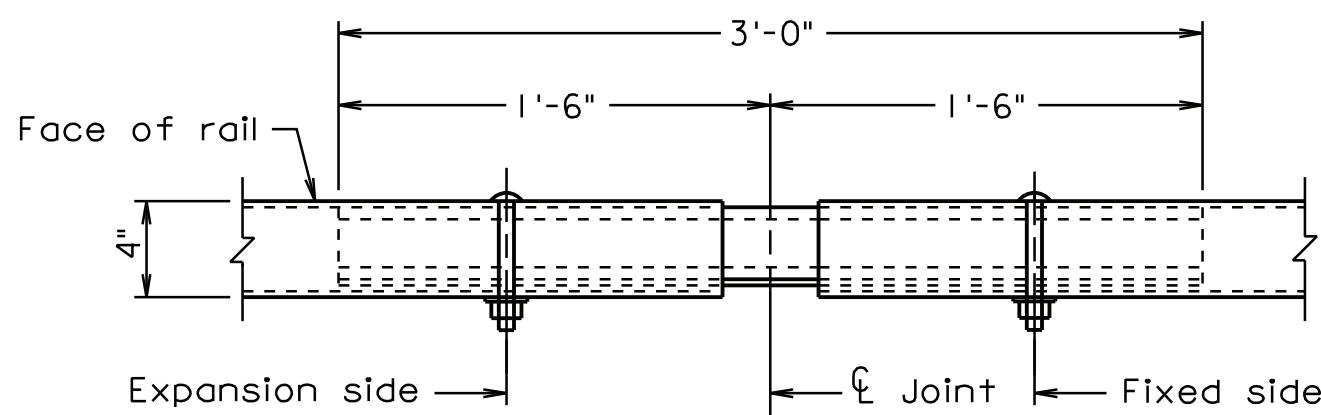


TOP RAIL

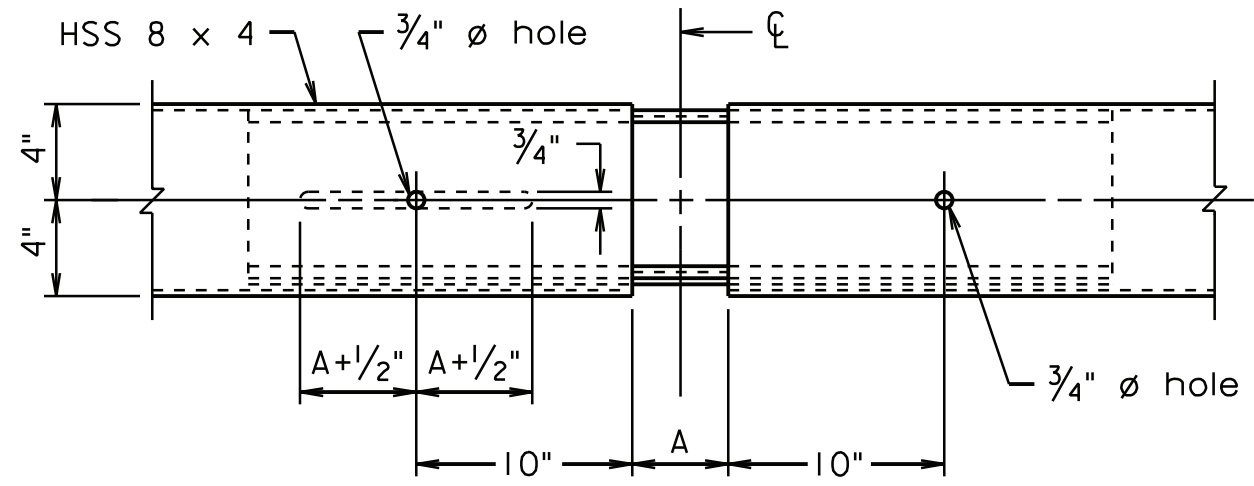


BOTTOM RAIL

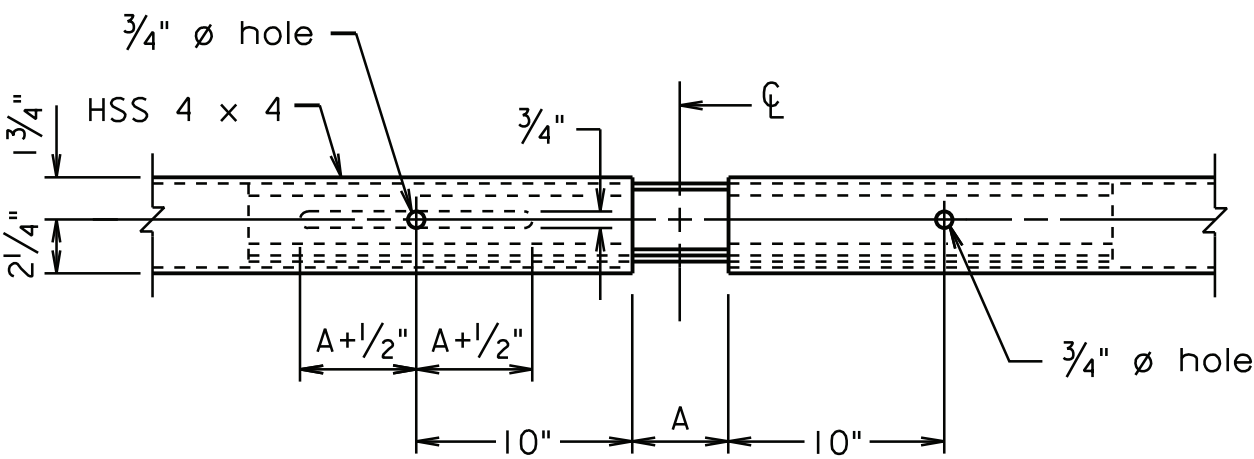
END VIEW RAIL



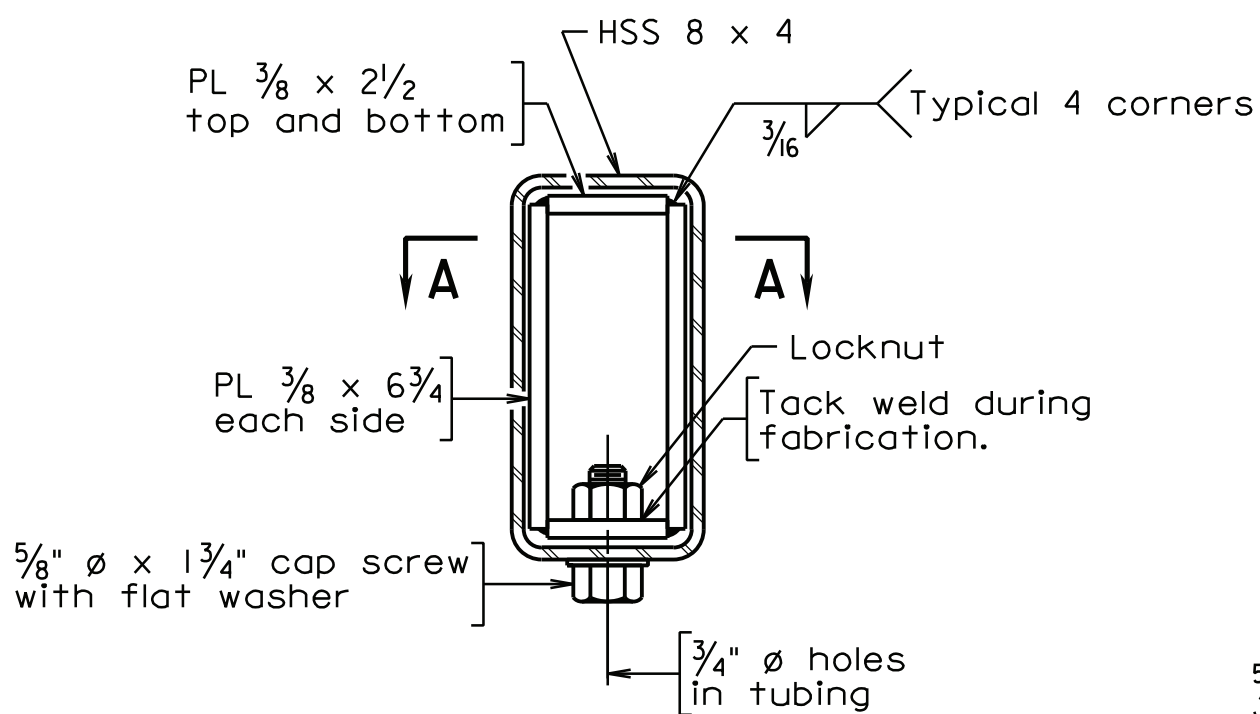
TOP VIEW FOR TOP AND BOTTOM RAILS



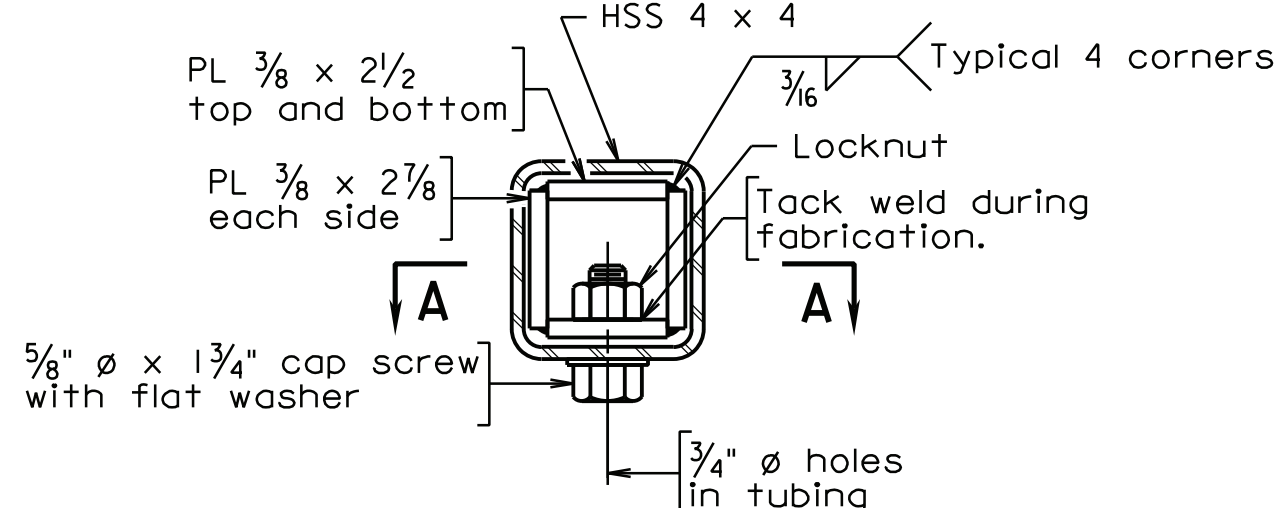
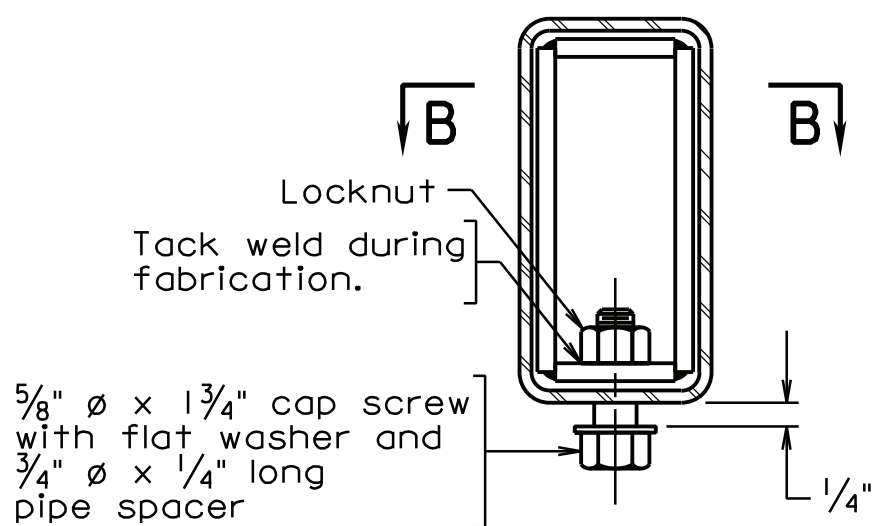
SIDE VIEW TOP RAIL



SIDE VIEW BOTTOM RAIL
EXPANSION/SPLICE JOINT DETAILS



TOP RAIL

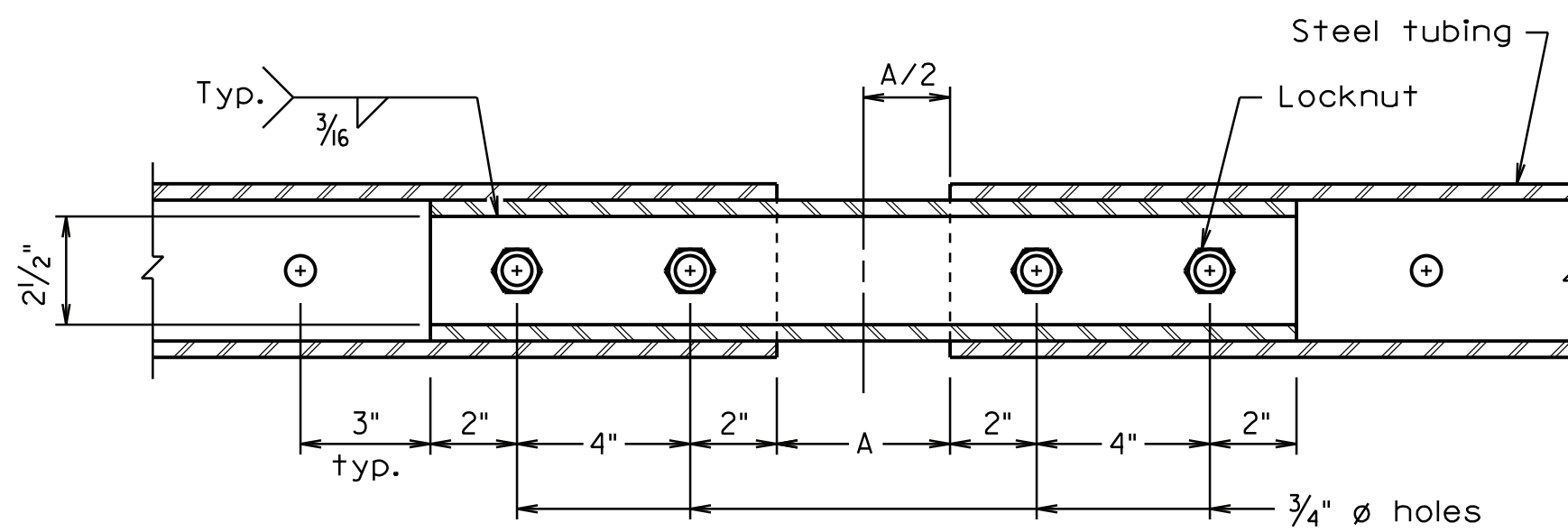


BOTTOM RAIL

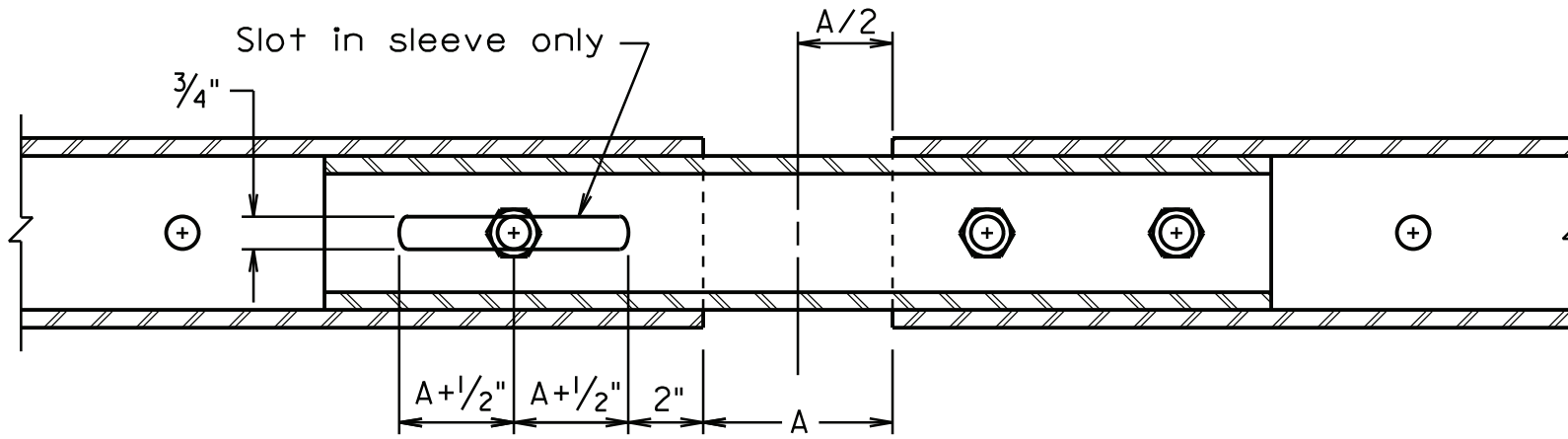
SECTION AT RAIL SPLICE

RAIL SPLICE CONNECTION AT EXPANSION JOINT

Details shown for top rail. Details for bottom rail similar.

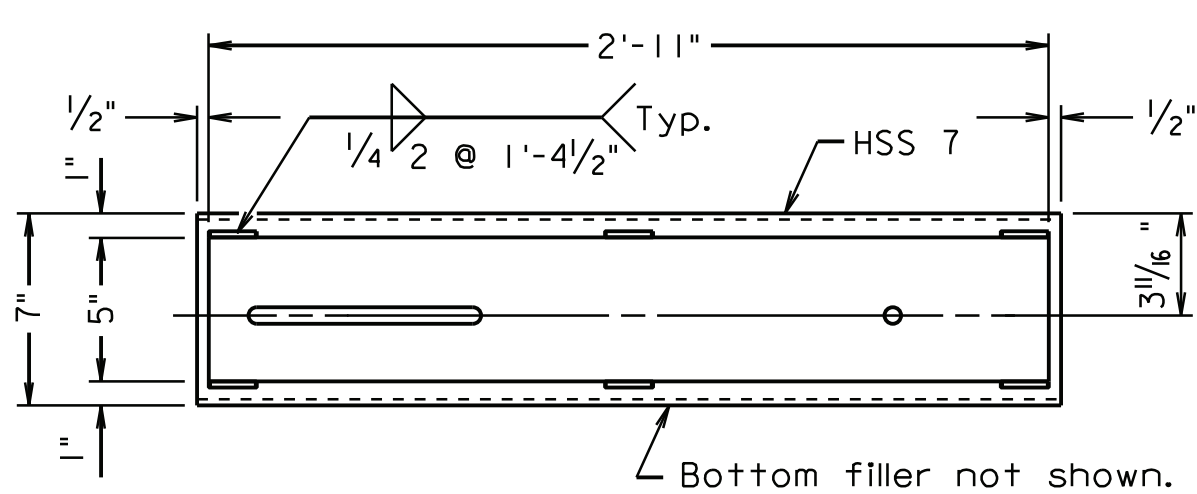


SECTION A-A

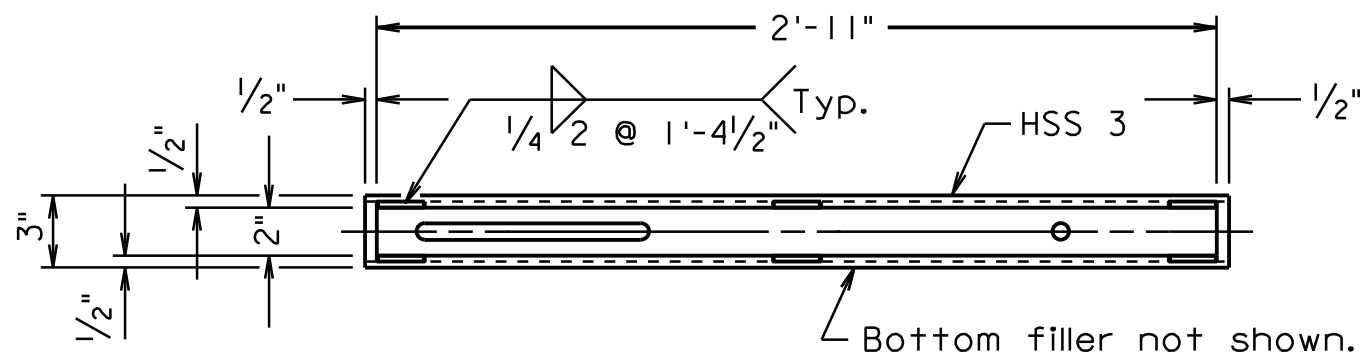


SECTION B-B

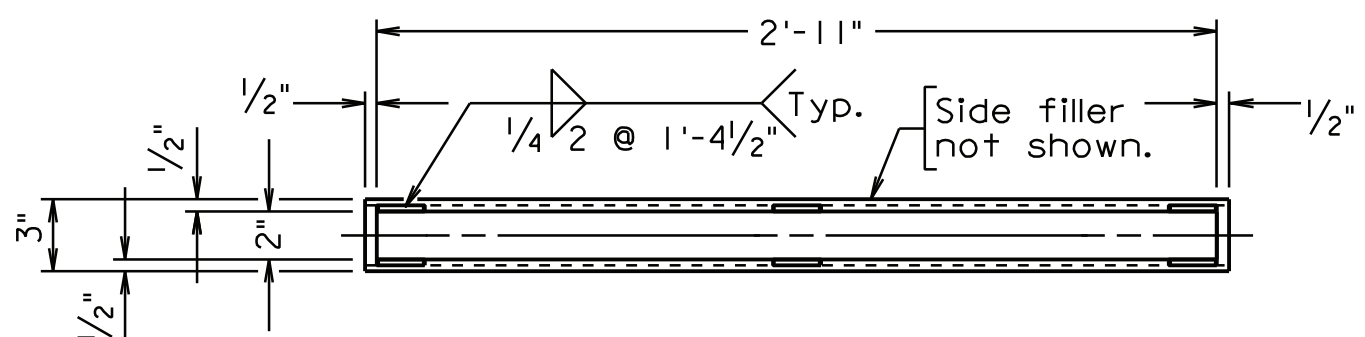
For details and dimensions not shown, see Section A-A.



SIDE VIEW FILLER PLATE FOR 7" SLEEVE



SIDE VIEW FILLER PLATE FOR 3" SLEEVE



BOTTOM VIEW FILLER PLATE FOR 7" AND 3" SLEEVE
WELDED FILLER PLATE DETAILS

Notes:

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

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

All concrete shall be Low Shrinkage Class A4 Modified.

All bevels for concrete shall be 3/4".

The reinforcing steel shown has been detailed based on a standard 1/4" per foot cross slope and for an 8 1/2" slab depth. The Contractor shall adjust the reinforcing steel as required for other cross slopes and slab depths.

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

For details and reinforcing steel schedule, see Sheet B-31.

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

Bolts for attaching rails to posts are round head (with slot in head), ASTM A449. All other bolts shall be ASTM F3125 Grade A325. Nuts shall be ASTM A563 Grade DH or ASTM A194 Grade 2H. Washers shall be ASTM F436.

All steel shall be hot dip galvanized.

Posts shall be equally spaced within a span. Maximum spacing is 6'-0". Minimum spacing is 4'-0".

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

Post tops shall have a protective cap. The cost for the protective caps shall be included in the unit bid price for the Illinois Steel Railing.

Cut bottom of posts to match cross slope before welding so that posts will be vertical. Steel shims may be used to adjust post alignment, maximum thickness of shim build-up not to exceed 1/8". Where more tilting of the post is required, the concrete shall be ground down.

Rails to be continuous over a minimum of 3 posts before splicing. Dimension A for splice joint = 1".

Rail expansion joint shall be provided between any two posts which span a deck expansion joint. Dimension A for expansion joint is equal to deck joint opening plus 1". Bolts in slot on the expansion side shall be tightened only to a point that will allow railing movement.

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

Anchor bolts may be set normal to profile grade but may require beveled washers.

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

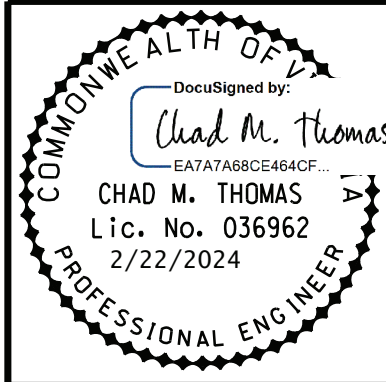
Spacing of grooves for U-back wings shall be approximately 8'-0". Maximum spacing of grooves in pedestal shall be limited to 3 x post spacing, shall be centered between posts and shall be no closer than 10'-0" to joints.

Each terminal wall shall be cast as one piece.

Terminal walls are detailed to take guardrail attachment GR-F0A-1.

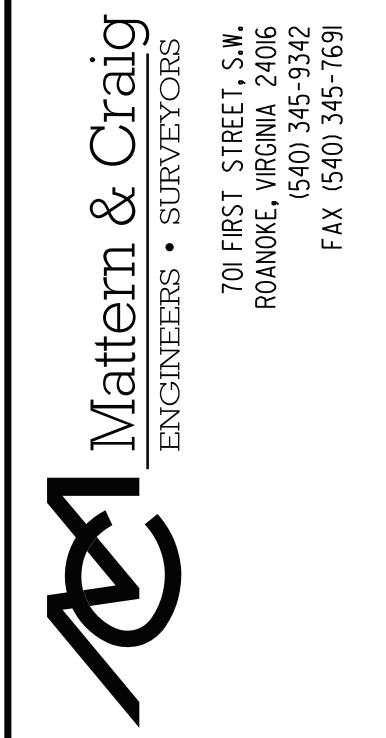
Holes, where shown, shall be formed with sleeves of 1 1/2" diameter nominal pipe.

Bolts for guardrail attachment, where shown, shall be 5/8" diameter expansion anchor bolts, 6" long and shall be drilled and installed when rub rail is attached.



Date	
Revisions	

Issue Date:	02/16/24
Drawn By:	DKA
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023



APPERSON DRIVE BRIDGE REPLACEMENT
ILLINOIS STEEL RAILING
MISC. DETAILS
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
NOT TO SCALE

Commission Number:
3925B

Sheet No.:

B-32

REINFORCING STEEL SCHEDULE							DIMENSION TABLE														
MARK	NO.	BAR SIZE	PIN DIA. FT-IN	LENGTH FT-IN	WEIGHT (LBS.)	LOCATION	TYPE	A FT-IN	B FT-IN	C FT-IN	D FT-IN	E P FT-IN	F Q FT-IN	G R FT-IN	H FT-IN	I S FT-IN	J T FT-IN	K U FT-IN	L FT-IN	V FT-IN	N
SUPERSTRUCTURE - CORROSION RESISTANT REINFORCING (CRR) CLASS I																					
SC0501	506	5		45-06	24013	DECK	I	45-06													
SC0502	506	5		32-00	16889	DECK	I	32-00													
SC0503	500	5		10-09	5607	DECK	I	10-09													
SL0401	1115	4		32-08	24331	DECK	I	32-08													
SL0601	86	6		57-02	7385	DECK	I	57-02													
SC0498	2	4		03-07	5	CURB	I 17		00-08	00-11¾	00-09										
SC0499	3	4		VARIABLE	7	CURB	I 17		00-08	00-11¾	VARIABLE										
SL0498	2	4		03-08	5	CURB	I 2	03-08				00-02¾	00-09½	00-10							
SL0499	2	4		03-09	6	CURB		02-11													
ST0499	1	4		02-01	2	CURB	I 10		00-08	00-11¾	00-08										
	TOTAL			WEIGHT OF PRECEEDING GROUP OF BARS	78250																
ABUTMENT A SEMI-INTEGRAL BACKWALL - CORROSION RESISTANT REINFORCING (CRR) CLASS I																					
SH0501	12	5	00-02½	04-04	54	BACKWALL	I 7		01-02	01-08	01-08										
SH0701	17	7		45-02	1570	BACKWALL	I	45-02													
SH0702	7	7		07-03	104	BACKWALL	I	07-03													
SH0703	8	7		01-08	28	BACKWALL	I	01-08													
SH0704	2	7		02-06	11	BACKWALL	I	02-06													
SH0705	3	7		05-03	33	BACKWALL	I	05-03													
SH0706	12	7		08-10	217	BACKWALL	I	08-10													
SH0707	3	7		34-00	209	BACKWALL	I	34-00													
SH0708	3	7		23-06	145	BACKWALL	I	23-06													
SH0709	11	7		23-00	518	BACKWALL	I	23-00													
SH0799	24	7		03-09	184	BACKWALL	I	03-09													
ST0501	73	5	00-03¾	08-01	616	DECK / BACKWALL	5	01-05			03-09	02-01¼	02-01¼	02-11¾							
ST0502	6	5	00-03¾	08-09	55	DECK / BACKWALL	5	02-01													
ST0503	2	5	00-03¾	09-02	20	DECK / BACKWALL	5	02-03			03-09	02-01¼	02-01¼	02-11¾							
SV0401	164	4	00-02	04-06	493	BACKWALL	7		01-02	01-09	03-09	02-03	02-03	03-02¼							
SV0402	91	4	00-03	06-05	389	DECK / BACKWALL	6		03-00	03-06											
SV0403	18	4	00-03	03-02	38	BACKWALL	6		01-02	02-02											
SV0404	12	4	00-02	05-08	46	DECK / BACKWALL	7		01-02	02-04	02-04										
SV0405	6	4	00-03	07-02	29	DECK / BACKWALL	6		03-00	04-03											
SV0406	2	4	00-03	07-05	10	DECK / BACKWALL	6		03-00	04-06											
	TOTAL			WEIGHT OF PRECEEDING GROUP OF BARS	4769																
ABUTMENT B SEMI-INTEGRAL BACKWALL - CORROSION RESISTANT REINFORCING (CRR) CLASS I																					
SH0521	12	5	00-02½	04-04	54	BACKWALL	I 7		01-02	01-08	01-08										
SH0721	17	7		45-02	1570	BACKWALL	I	45-02													
SH0722	7	7		07-03	104	BACKWALL	I	07-03													
SH0723	8	7		01-08	28	BACKWALL	I	01-08													
SH0724	2	7		02-06	11	BACKWALL	I	02-06													
SH0725	3	7		05-03	33	BACKWALL	I	05-03													
SH0726	12	7		08-10	217	BACKWALL	I	08-10													
SH0727	3	7		34-00	209	BACKWALL	I	34-00													
SH0728	3	7		23-06	145	BACKWALL	I	23-06													
SH0729	11	7		23-00	518	BACKWALL	I	23-00													
SH0799	24	7		03-09	184	BACKWALL	I	03-09													
ST0521	73	5	00-03¾	08-01	616	DECK / BACKWALL	5	01-05			03-09	02-01¼	02-01¼	02-11¾							
ST0522	6	5	00-03¾	08-09	55	DECK / BACKWALL	5	02-01													
ST0523	2	5	00-03¾	09-02	20	DECK / BACKWALL	5	02-03			03-09	02-01¼	02-01¼	02-11¾							
SV0421	164	4	00-02	04-06	493	BACKWALL	7		01-02	01-09	03-09	02-03	02-03	03-02¼							
SV0422	91	4	00-03	06-05	389	DECK / BACKWALL	6		03-00	03-06											
SV0423	18	4	00-03	03-02	38	BACKWALL	6		01-02	02-02											
SV0424	12	4	00-02	05-08	46	DECK / BACKWALL	7		01-02	02-04	02-04										
SV0425	6	4	00-03	07-02	29	DECK / BACKWALL	6		03-00	04-03											
SV0426	2	4	00-03	07-05	10	DECK / BACKWALL	6		03-00	04-06											
	TOTAL			WEIGHT OF PRECEEDING GROUP OF BARS	4769																

[illegible]

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

[illegible]

Issue Date: 02/16/24	Drawn By: CJW	Checked By: TJT
	Designed By: CTB	Date: 11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
REINFORCING STEEL SCHEDULE
ABUTMENT B
CITY OF SALEM, VIRGINIA

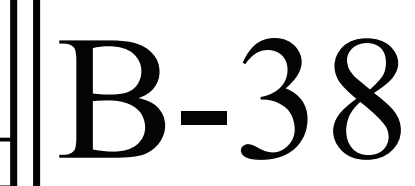
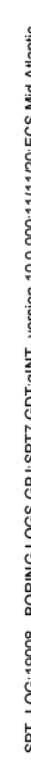
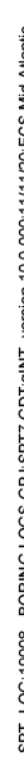
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Horizontal Scale:
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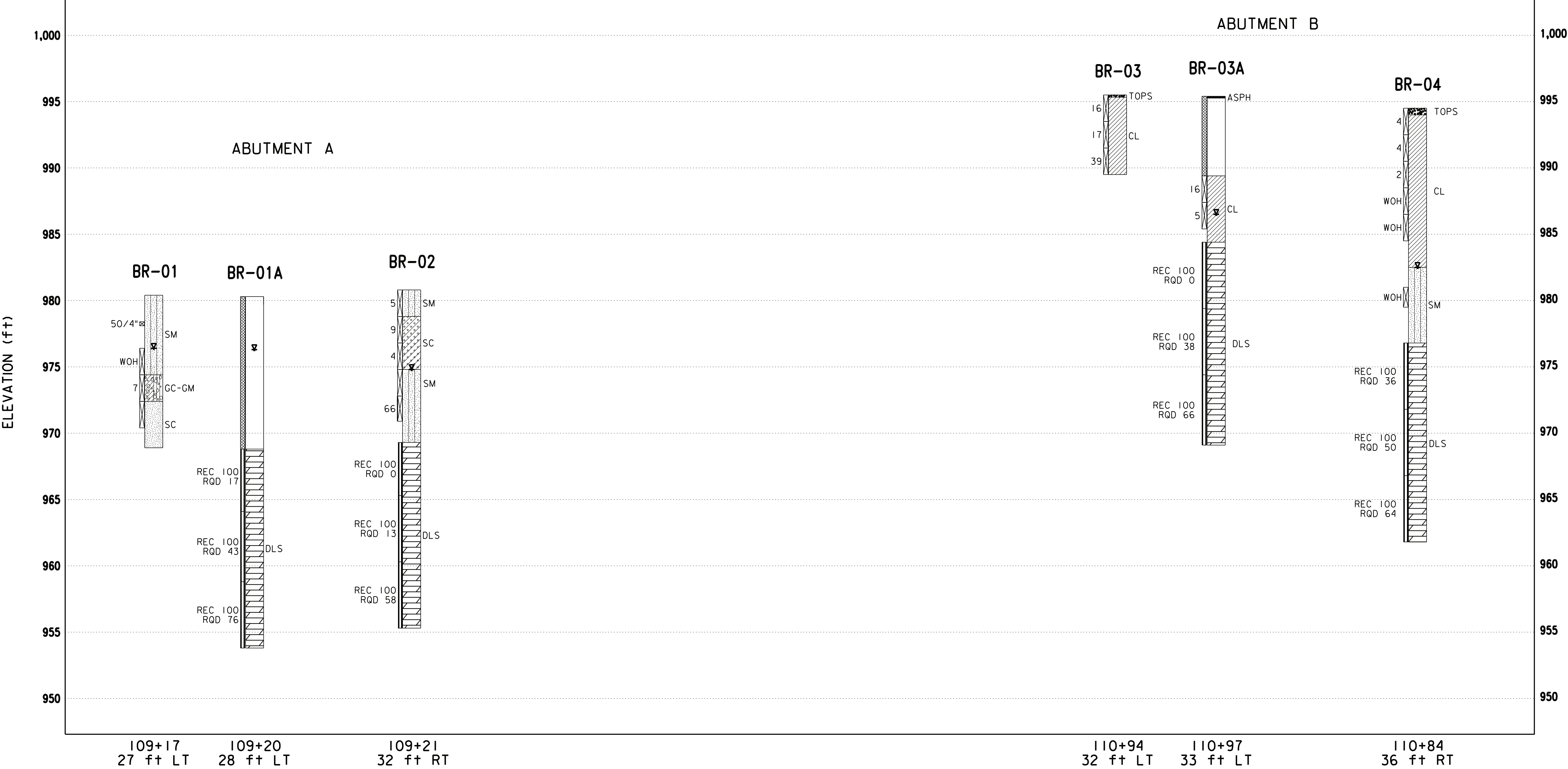
Commission Number:
3925B

Sheet No.:

B-37



APPERSON DR. OVER ROANOKE RIVER



The subsurface information shown on the boring logs in these plans was obtained with reasonable care and recorded in good faith solely for use by the City in establishing design controls for the project. The City has no reason to suspect that such information is not reasonably accurate as an approximate indication of the subsurface conditions at the sites where the borings were taken. The City does not in any way warrant or guarantee that such data can be projected as indicative of conditions beyond the limits of the borings shown; and any such projections by bidders are purely interpretive and altogether speculative. Further, the City does not in any way guarantee, either expressly or by implication, the sufficiency of the information for bid purposes.

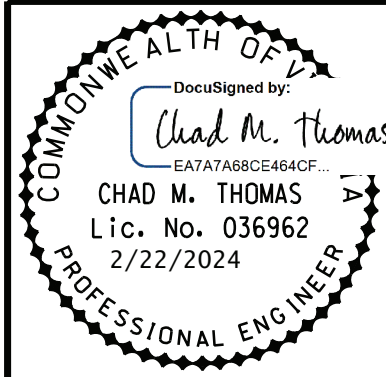
The boring logs are made available to bidders in order that they may have access to subsurface data identical to that which is possessed by the City, and are not intended as a substitute for personal investigation, interpretation and judgment by the bidders.

Notes: See borehole logs for complete data.
See Material and Sample Symbols list.

Legend:

- ☒ - Groundwater, initially encountered
- REC - Recovery
- RQD - Rock Quality Designation
- 12 - SPT N-value
- WOH - Weight of Hammer SPT Advance

PROJECT NO.: 0011-129-246, P101, R201, B605
PLAN NO.: 080-06A



Date	
Revisions	

Issue Date:	02/16/24
Drawn By:	CW
Designed By:	CTB
Checked By:	TJT
Date:	11/21/2023

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APPERSON DRIVE BRIDGE REPLACEMENT
ENGINEERING GEOLOGY
CITY OF SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
N/A

Commission Number:
3925B

Sheet No.:
B-40