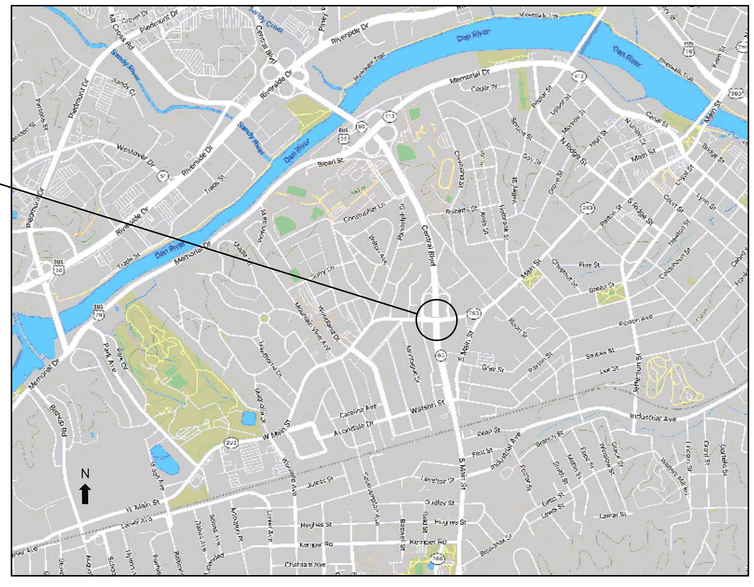
CITY OF DANVILLE,VIRGINIA

DEPARTMENT OF PUBLIC WORKS

PROPOSED BRIDGE REPAIR OF WEST MAIN STREET (ROUTE 293) OVER CENTRAL BOULEVARD (ROUTE 86)

Project Site: Rte. 293 over Rte. 86
Structure Number 108–1806



LOCATION MAP
(Not to Scale)

LEGEND

- Existing Object Lines
- Proposed Object Lines
- Existing Reinf. Steel
- Proposed Reinf. Steel
- Cutting Plane Line
- Center Line
- Hidden Lines

COMMONWEALTH OF VIRGINIA
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Date: 2025.03.19 10:38:32 -04'00'

SCHWARTZ & ASSOCIATES
LYNCHBURG, VA
STRUCTURAL ENGINEER

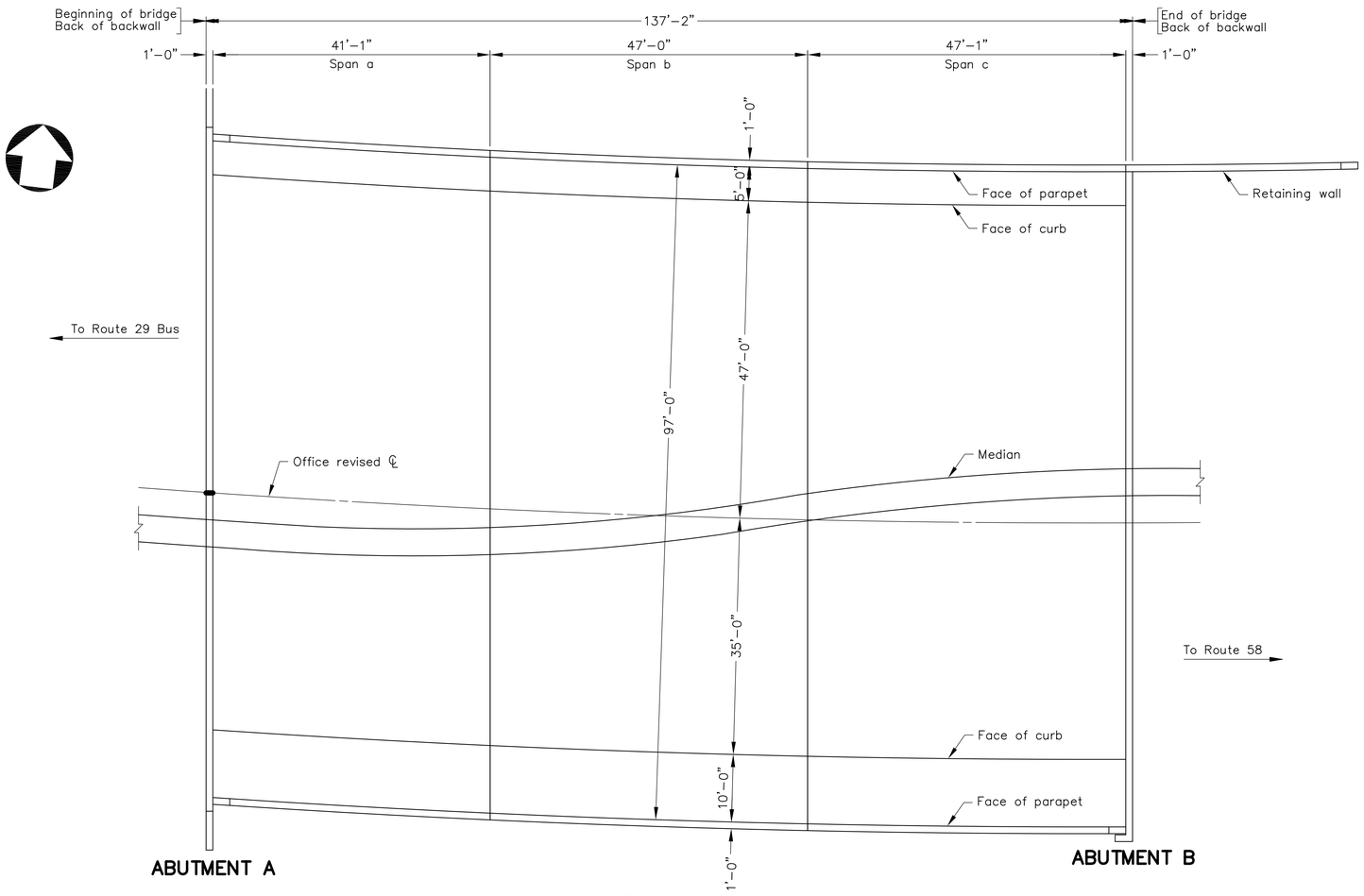
CADD REFERENCE NO.: 2023066_BRIDGE.DWG

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

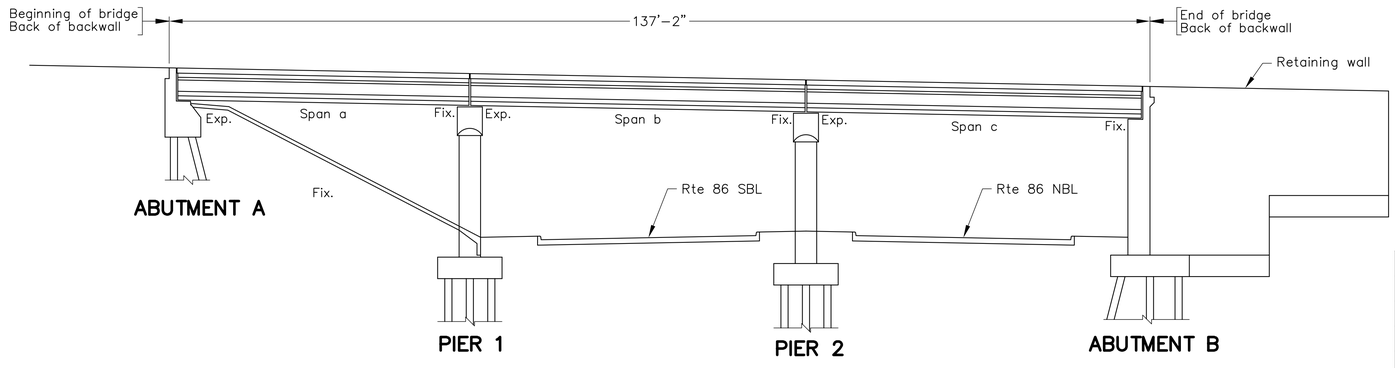
SCHWARTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
LYNCHBURG–ROANOKE

ROUTE 293 OVER ROUTE 86
CITY OF DAVNVILLE, VA
COVER SHEET

Designed: MRM	Date	Comm. No.	Sheet No.
Drawn: MRM	May 3, 2024	2023066	1 of 12
Checked: RWS			



PLAN



DEVELOPED SECTION ALONG ℄

GENERAL NOTES:

Width: 97'–00" face–to–face of curbs.

Span layout: 41'–1" – 47'–0" – 47'–1" simple prestressed concrete beam spans

Capacity: HS20–44 loading and alternate military loading.

Specifications:

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

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications.

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

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

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.

Permeability testing does not apply to this project.

All reinforcing steel shall be deformed and shall conform to ASTM A615 Grade 60. All reinforcing bar dimensions on the detailed drawings are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

Bridge No. of existing bridge is 1806. Plan No. is 251–58. and are available from Schwartz & Associates, Inc..

The locations and limits of all surface repairs on structure shall be determined by the Engineer.

All concrete used for repairs, except for shotcrete repairs and Type A and Type B deck edge repairs, shall be A4 P&R.

All existing concrete removed shall be removed to horizontal and vertical planes and to sound concrete and pneumatic hammers shall be worked at an angle of 45 to 60 degrees.

Contractor shall exercise extreme caution when removing existing concrete so that none of the portion of the structure or reinforcing steel to remain in place is damaged. Existing concrete shall be removed with pneumatic hammer (max. weight 35 lbs.) except use 15 lb. hammer for final trim work. Pneumatic hammers shall be worked at an angle of 45 to 60 degrees (Section 412.03 (a)).

The Contractor shall submit to the Engineer a detailed plan for containing construction related material (i.e. shot blasting media. concrete debris, uncured concrete, etc.) and preventing its entry onto Route 86 (Central Blvd.). This work shall be included in the price bid for appropriate bid items.

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

Dimensions of existing structures shown on the plans are taken from as–built drawings dated September 11, 1974. The contractor shall verify in the field all dimensions necessary for construction of the project. Plans for the existing bridge are available from Schwartz & Associates, Inc..

Before proceeding with any work within or adjacent to the existing structure, the contractor shall become familiar with existing conditions. During construction operations, it shall be the contractor's responsibility to maintain the integrity of the existing structure where the existing structure is modified to accommodate new construction, and to protect from damage those portions of the structure which are to remain.

All of the concrete within a span lane that is to be removed shall be removed before recasting any concrete within that span lane unless otherwise directed by the engineer.

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

Contractor shall take extreme caution in his operations so that no damage is done to utilities in the vicinity of bridge or on the bridge.

The contractor shall verify, in field all dimensions, skew and elevations before beginning construction and before submitting shop drawings.

For a continuation of General Notes, see sheet 3.

CADD REFERENCE NO.: 2023066_BRIDGE.DWG

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 3.

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

ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
PLAN, ELEVATION, AND GENERAL NOTE

DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RWS
SCALE: 1" = 10'–0"	PLAN NO.:	
DATE: MAY 3, 2024	SHEET: 2 OF 12	

ESTIMATED QUANTITITES – SUBSTRUCTURE BID ITEMS

		Shotcrete Type A SF	Embedded Galvanic Anode EA	✳ Substructure Concrete Repair SF
Abutment A	Neat	127	461	–
	Footing	–	–	–
Pier 1	Neat	55	194	–
	Footing	–	–	–
Pier 2	Neat	52	184	–
	Footing	–	–	–
Abutment B	Neat	23	71	991
	Footing	–	–	–
Totals		257	910	991

⊗ – Denotes items to be paid for on basis of plan quantities.

✳ – Rustification shall be used on Abutment B breastwall and shall match existing breastwall.

ESTIMATED QUANTITIES – SUPERSTRUCTURE ONLY

Item	Units	Quantity
Type B Patching	SY	20
Type C Patching	SY	2
Milling, Type A	SY	1,516
Epoxy Overlay	SY	1,516
Embedded Galvanic Anode	EA	350
Shotcrete, Type A	SF	436
Reseal Expansionjoints	LF	406
Deck Edge Repair, Type A	LF	21
Deck Edge Repair, Type B	LF	13
Remove Expansion Joint Cover Plate	EA	8

LUMP SUM BID ITEMS

Mobilization	LS
Maintenance of Traffic	LS
Clean Debris at Abutment and Pier Bearing Seats	LS
General Maintenance	LS
Concrete Surface Color Coating	LS

MISCELLANEOUS / ROAD ITEMS

Item	Units	Quantity
Type B Class VI Contrast Pavement Line Marking (4")	LF	1,007
Type B Class II Pavement Line Marking (12")	LF	39
Pavement Symbol Marking Single Turn Arrow Type B Class II	EA	1

INDEX OF DRAWINGS

GENERAL NOTE CONT.:

I. TRAFFIC CONTROL:

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

Bridge shall be repaired in two stages as shown on these contract drawings.

II. CONCRETE

All concrete used for repairs, except for shotcrete repairs and Type A and Type B deck edge repairs, shall be A4 P&R or self consolidating concrete.

Cost of adhesive anchors shall be included in unit price bid for item where used.

In areas of the structure where existing concrete is to be removed and replaced by new class A4 concrete the requirements of Section 412 of the Specifications shall apply, except as amended below:

1. Whenever existing reinforcing bars are exposed, concrete shall be removed no less than 1 inch behind the bar.
2. Existing concrete shall be removed as shown on the plan details or as directed by the Engineer, to horizontal and vertical planes only, and to sound concrete, taking care not to damage the existing reinforcing steel.
3. Within twenty–four hours prior to placing new concrete, exposed reinforcing steel and faces of existing concrete shall be cleaned by abrasive blast cleaning. Reinforcing steel shall be blasted until corroded steel material and foreign material are removed to clean white metal. Concrete material shall be blasted for a time sufficient to expose sound concrete and coarse aggregate.
4. Immediately prior to placing new concrete, exposed reinforcing steel and faces of existing concrete shall be cleaned of all dust and debris.
5. The perimeter of all surface repair areas shall be saw cut 1 inch deep in a generally rectangular pattern.

All costs related to bonding construction joints, as shown on these contract drawings, shall be included in cost bid for that concrete item.

The locations and limits of all surface repairs shall be determined by the Engineer.

III. BLASTING – GENERAL

All concrete areas blasted shall be blasted for a time sufficient to expose sound concrete and coarse aggregate, unless otherwise noted. They shall be blasted using an abrasive material or a mixture of water (8,000 psi min.) and abrasive.

All reinforcing steel areas blasted shall be blasted until all concrete, rust, scale, corroded steel material and foreign material are removed to clean white metal.

IV. BLASTING

FOR BONDING EPOXY OVERLAY

Blasting, prior to application of bonding epoxy and waterproofing, shall be to a medium finish that is one sufficient to generally expose coarse aggregate with slight reveal – maximum reveal 1/4 inch.

FOR CONCRETE SURFACE COLOR COATING

All concrete areas blasted shall be blasted for a time sufficient to expose sound concrete and coarse aggregate, unless otherwise noted. They shall be blasted using an abrasive material or a mixture of water (8000 psi min.) and abrasive.

Concrete Surface Color Coating shall be gray, similar to Federal Standard Color No. 595–36622.

V. REINFORCING STEEL:

When drilling for adhesive anchors, extreme caution shall be taken in order that existing reinforcing steel is not damaged. Any reinforcing steel damaged shall be corrected at the Contractor's expense.

Great care shall be taken during the removal of concrete in the structure in order that the existing reinforcing steel to be re–used is not damaged.

Any existing reinforcing steel that is to remain in structure and is damaged, as determined by the engineer, shall be corrected at the Contractor's expense.

All exposed reinforcing steel in concrete repaired areas shall be blasted and covered with bonding epoxy immediately prior to recasting concrete.

VI. EPOXIES:

All new concrete cast in structure shall be bonded to existing concrete with bonding epoxy. Bonding epoxy used on structure shall be Sika Armatec 110 (or approved equivalent) unless otherwise noted on plans.

All costs related to bonding construction joints, as shown on these contract drawings, shall be included in cost bid for other items.

Waterproofing shall be epoxy resin, Type EP–7 and shall meet all requirements of Section 431 of the VDOT Road and Bridge Specification.

VII. INCIDENTALS:

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

All costs for grading, shaping, seeding, fertilizing, liming, overseeding, furnishing & placing topsoil and mulching, in disturbed areas of the project shall be paid for under price bid "General Maintenance," lump sum. This bid item shall also include all costs for replacing damaged shrubs, flowers, etc. Any shrubs or flowers damaged shall be replaced with the original size and type that was damaged.

The costs of any necessary construction surveying shall be included in unit price bid for other items in contract.

IX. OPERATIONS:

1. SHOTCRETE:

The Contractor shall prepare 50% of the shotcrete areas so that they will be ready for viewing at one time. Contractor shall then shotcrete 50% of the total areas in one continuous operation.

2. CLASS A4 CONCRETE:

All Class A4 concrete cast in each repair stage (Stage 1 or 2) shall be cast in no more than two continuous operations per stage.

3. EPOXY OVERLAY:

The Contractor shall schedule application of all waterproofing (each stage) so that all of each coat is applied in one continuous operation with the second (2) coat following the first (1) coat as soon as the first coat has dried sufficiently.

4. CONCRETE SURFACE COLOR COATING:

The Contractor shall schedule application of all concrete surface color coating (each stage) so that all of each coat is applied in one continuous operation.

Rev. No.	Sheets Revised	Date

TABLE OF REVISIONS

No.	Description	Date

REVISIONS

COMMONWEALTH OF VIRGINIA
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COMM. NO. 2023066

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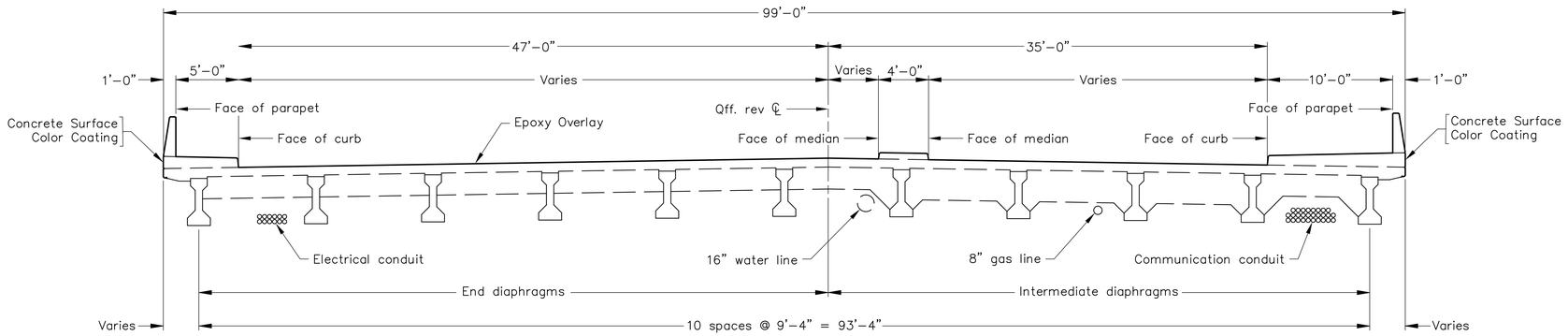
ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
ESTIMATED QUANTITIES AND INDEX OF SHEETS

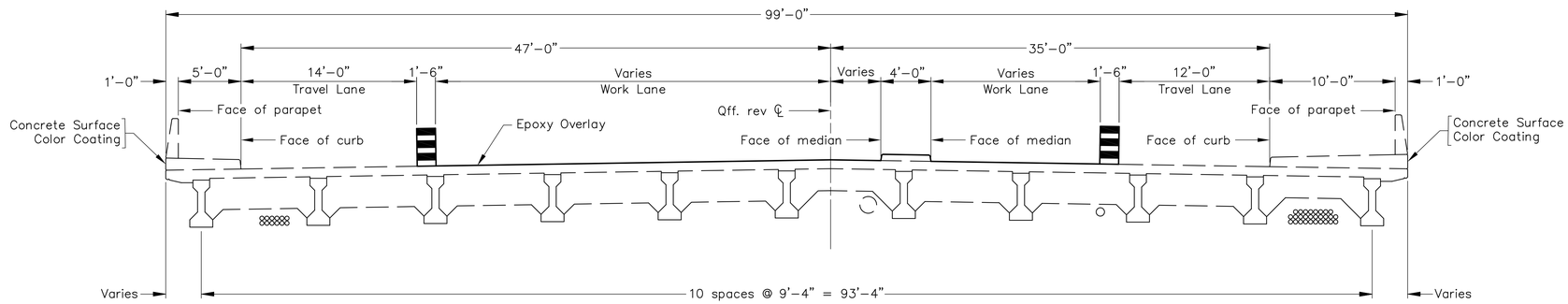
DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RWS
SCALE: NOT TO SCALE	PLAN NO.:	
DATE: MAY 3, 2024	SHEET: 3 OF 12	

CADD REFERENCE NO.: 2023066_BRIDGE.DWG



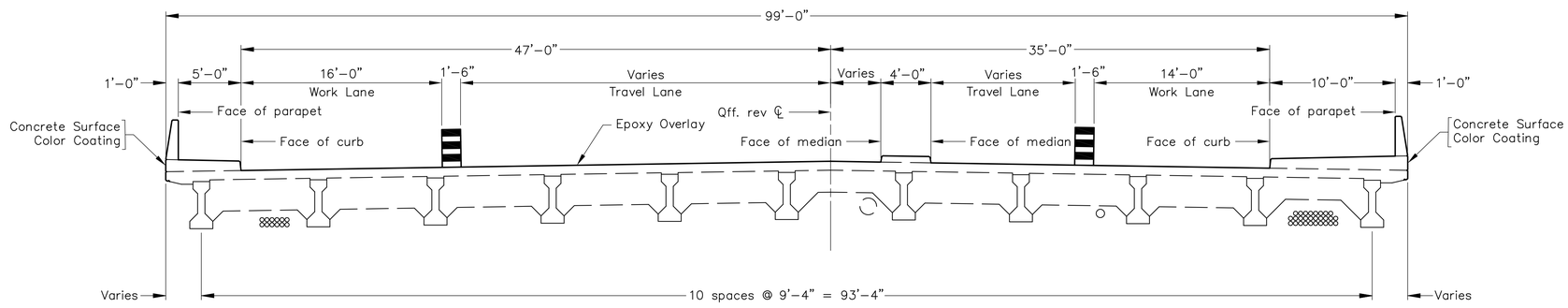
TRANSVERSE SECTION

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



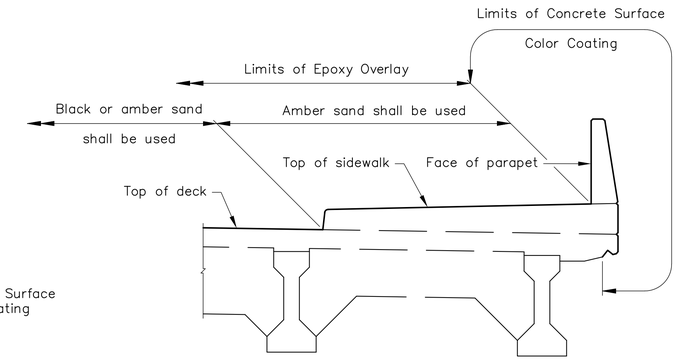
STAGE 1 TRANSVERSE SECTION

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



STAGE 2 TRANSVERSE SECTION

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



LIMITS OF EPOXY OVERLAY AND CONCRETE SURFACE COLOR COATING

Not to scale

SEQUENCE OF CONSTRUCTION

Perform Type A Milling on bridge deck, median, and sidewalks. All work shall be done with traffic control in accordance with the Virginia Work Area Protection Manual, 2011 and current revisions.

STAGE 1

1. Install Stage 1 traffic control.
2. Perform Deck Edge Repair Type A, Deck Edge Repair Type B, Patching Type B, and Patching Type C in Stage 1 Work Area.
3. Reseal Expansion Joints in stage 1 Work Area.
4. Place Epoxy Overlay on deck and median in stage 1 Work Area.
5. Complete all Stage 1 incidentals.
6. Remove Stage 1 traffic control and install Stage 2 traffic control.

Stage 2

1. Perform Deck Edge Repair Type A, Deck Edge Repair Type B, Patching Type B, Patching Type C, and Remove expansion Joint Cover Plates in Stage 2 Work Area.
2. Perform shotcrete repairs, Enlarge Sole Plate slots, and Clean Debris at Abutment and Pier Bearings. All work encroaching on Route 86 (Central Blvd.) shall be done with traffic control in accordance with the Virginia Work Area Protection Manual, 2011 and current revisions.
3. Reseal Expansion Joints in stage 2 Work Area.
4. Place Epoxy Overlay on deck and sidewalks in stage 2 Work Area.
5. Place Concrete Surface Color Coating on parapets and Terminal walls in Stage 2 work Area.
6. Complete all Stage 2 incidentals.
7. Remove Stage 2 traffic control.
8. Apply Pavement Line Markings as indicated on Sheet 7.

REVISIONS

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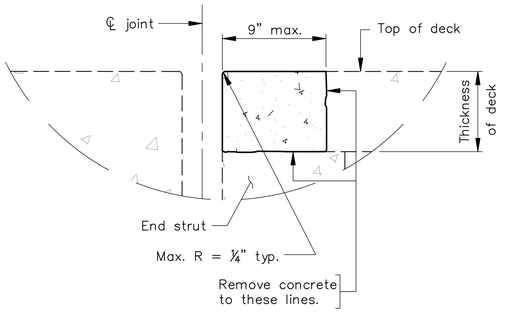
ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
TRANSVERSE SECTION, LIMITS OF EPOXY OVERLAY, AND CONSTRUCTION STAGES

DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RWS
SCALE: AS NOTED		PLAN NO.:
DATE: MAY 3, 2024		SHEET: 4 OF 12

CADD REFERENCE NO.: 2023066_BRIDGE.DWG

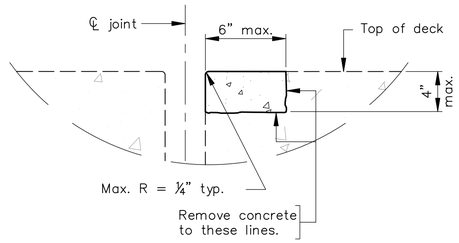
Note: VDOT approved very rapid (2500 psi in 2 hours) w/aggregate, shall be used in this repair



DECK EDGE REPAIR TYPE B

(Reinforcing steel not shown)
Not to scale

Note: VDOT approved very rapid (2500 psi in 2 hours) w/aggregate, shall be used in this repair



DECK EDGE REPAIR TYPE A

(Reinforcing steel not shown)
Not to scale

NOTES:

Shotcrete shall be used to cover exposed reinforcing steel, areas where reinforcing steel is corroded, and other areas of concrete deterioration, as directed by the engineer.

Shotcrete shall include silica fume and synthetic fibers.

The Contractor may substitute shotcrete with A4 P&R SCC.

Welded wire fabric shall be used where thickness of shotcrete is 3" or more.

Galvanized tie–wire shall be used to attach welded wire fabric to existing reinforcing steel.

Welded wire fabric shall be attached to existing reinforcing steel only.

Welded wire fabric shall be galvanized 6x6 – W1.4xW1.4

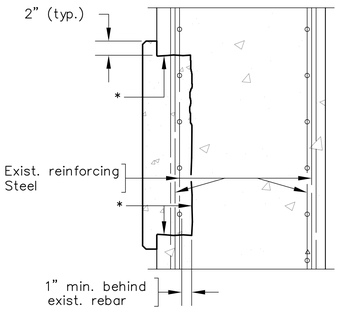
Remove existing concrete to sound concrete and in areas of corroded reinforcing, as directed by the Engineer, taking care not to damage any existing reinforcing steel. Sandblast exposed reinforcing steel and faces of existing concrete that will contact shotcrete.

All beam web repairs & patching shall be done with Shotcrete, Type A.

All concrete removal and surface preparation shall be performed in accordance with the General Notes on pages 2 & 3.

There shall be a minimum cover of 2¾" on all exposed reinforcing steel (including shotcrete containing silica fume).

Locations of shotcrete & beam web repairs will be determined in field by the Engineer. Extents of beam end repairs shall be determined by the Engineer.



TYPICAL DETAIL OF SHOTCRETE – TYPE A

*–Remove existing concrete to this line.

NOTE: Substructure Concrete Repair shall be similar.

CADD REFERENCE NO.: 20200.35_BRIDGE.DWG

REVISIONS

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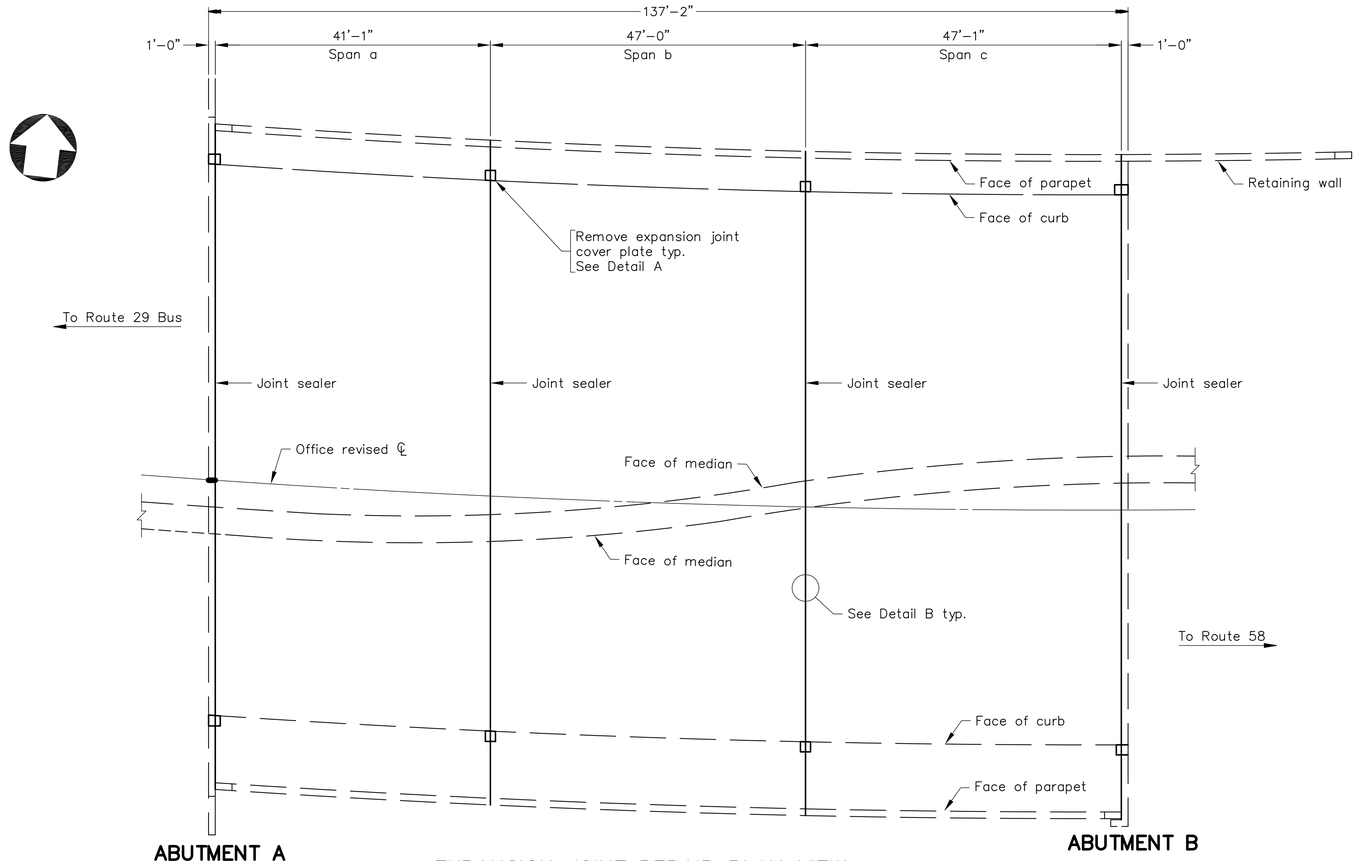
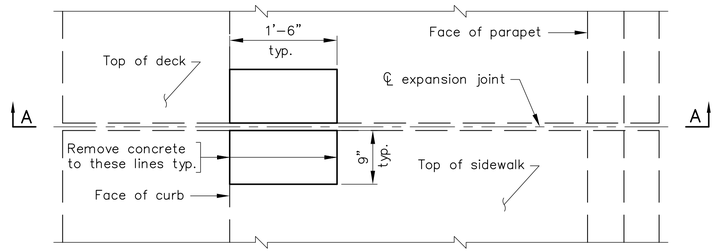
ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
SHOTCRETE, DECK EDGE REPAIR, AND SUBSTRUCTURE CONCRETE REPAIR

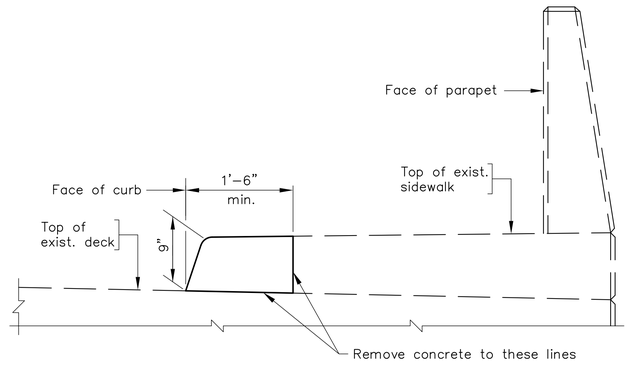
DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RWS
SCALE: 3/8"=1'–0"	PLAN NO.:	
DATE: MAY 3, 2024	SHEET: 5 OF 12	



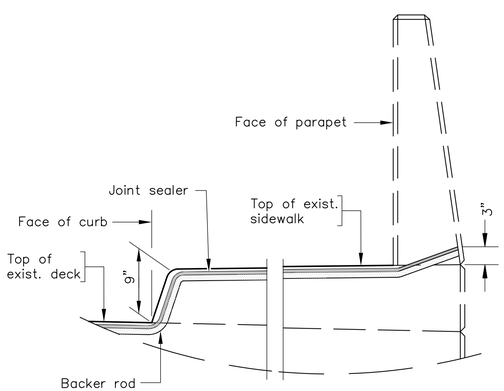
EXPANSION JOINT REPAIR PLAN VIEW
Not to scale



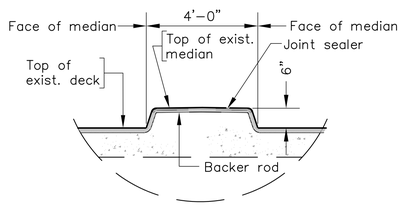
DETAIL A
Scale: 1" = 1'–0"



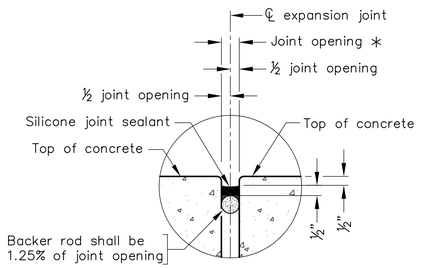
SECTION A–A
Scale: 1" = 1'–0"



TYPICAL TRANSVERSE JOINT DETAIL THROUGH SIDEWALK & PARAPET
Not to scale
(Reinforcing steel not shown for clarity)



TYPICAL TRANSVERSE JOINT DETAIL THROUGH MEDIAN
Not to scale
(Reinforcing steel not shown for clarity)



DETAIL B
Not to scale

∗ Total joint opening varies, see chat below for details.

JOINT OPENING		
LOCATION	MINIMUM	MAXIMUM
Abutment A	1 3/16"	1 5/8"
Pier 1	1 1/8"	1 1/2"
Pier 2	1 3/8"	1 7/8"
Abutment B	1 7/16"	1 11/16"

No.	Description	Date

REVISIONS

COMMONWEALTH OF VIRGINIA
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ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
EXPANSION JOINT REPAIR DETAILS

DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RWS
SCALE: AS NOTED	PLAN NO.:	
DATE: MAY 3, 2024	SHEET: 6 OF 12	

CADD REFERENCE NO.: 2020035_BRIDGE.DWG

MAINTENANCE OF TRAFFIC GENERAL NOTES

GENERAL

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

Traffic control devices and safety measures shall comply with:

- Virginia Work Area Protection Manual (2011) and revision 2
- USDOT Manual of Uniform Traffic Control Devices (2009) and its latest revisions
- VDOT Road and Bridge Standards (2016) and Current Revisions
- VDOT Road and Bridge Specifications (2020) and Current Revisions

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

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

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

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

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

The work shall be performed in one lane at a time so that the other lane is kept open to traffic. Unless otherwise directed, a clear roadway width of no less than 12'–0" shall be maintained for traffic.

Group 2 channeling Devices, Pavement Markings and Type III Barricade, shall be installed as directed by the Engineer.

Eradication of existing pavement marking shall be performed as directed by the Engineer.

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

The contractor shall work around all utilities on this project.

All costs for any additional temporary traffic control shall be included in lump sum bid for "Maintenance of Traffic".

LANE CLOSURES

No equipment shall be left in lane closures during non–working hours.

At the end of each work day, the contractor shall place a ¾" minimum thick steel plate over all open hole areas in the deck and median. Steel Plates shall be marked in accordance with Section 6G.15 of the Virginia Work Area Protection Manual. All costs for furnishing, marking steel plates, installing and removing steel plates shall be included in Lump Sum bid "Maintenance of Traffic".

For lanes closures on Route 293 (West Main St.), see sheets 8–11. For lane closures on Route 86 (Central Blvd.), use TTC–16.2, TTC–17.2, or TTC–39.2, as applicable, from the latest revision of the Virginia Work Area Protection Manual.

Sidewalks and bike lanes shall be kept open and pedestrians and bicycles protected at all times during construction. All cost to be included in Maintenance of Traffic.

SIGNS

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

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

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

The Contractor shall temporarily cover any existing signs that are contrary to construction signs and uncover these at the completion of the project as directed by the Engineer. Covered signs shall be delineated with ED–3, Type 2 delineators as specified in Figure 6F–1 of the Virginia Work Area Protection Manual. All costs shall be included in lump sum bid "Maintenance of Traffic".

CONSTRUCTION PAVEMENT MARKINGS

All temporary pavement markings shall be furnished and installed by the Contractor. All temporary pavement markings shall be 'Type D, Class III' or 'Type E'.

Non–reflective removable black construction pavement markings (Type E) shall be used to cover existing pavement line markings and symbols in lieu of eradication on asphalt surfaces. All costs shall be included in lump sum bid "Maintenance of Traffic".

Existing pavement line markings and symbols on bridge shall be eradicated. All costs shall be included in lump sum bid "Maintenance of Traffic".

PERMANENT PAVEMENT MARKINGS

All permanent pavement markings shall be furnished and installed by the Contractor as shown on Sheets 8–11.

CADD REFERENCE NO.: 2020035_BRIDGE.DWG

No.	Description	Date

REVISIONS

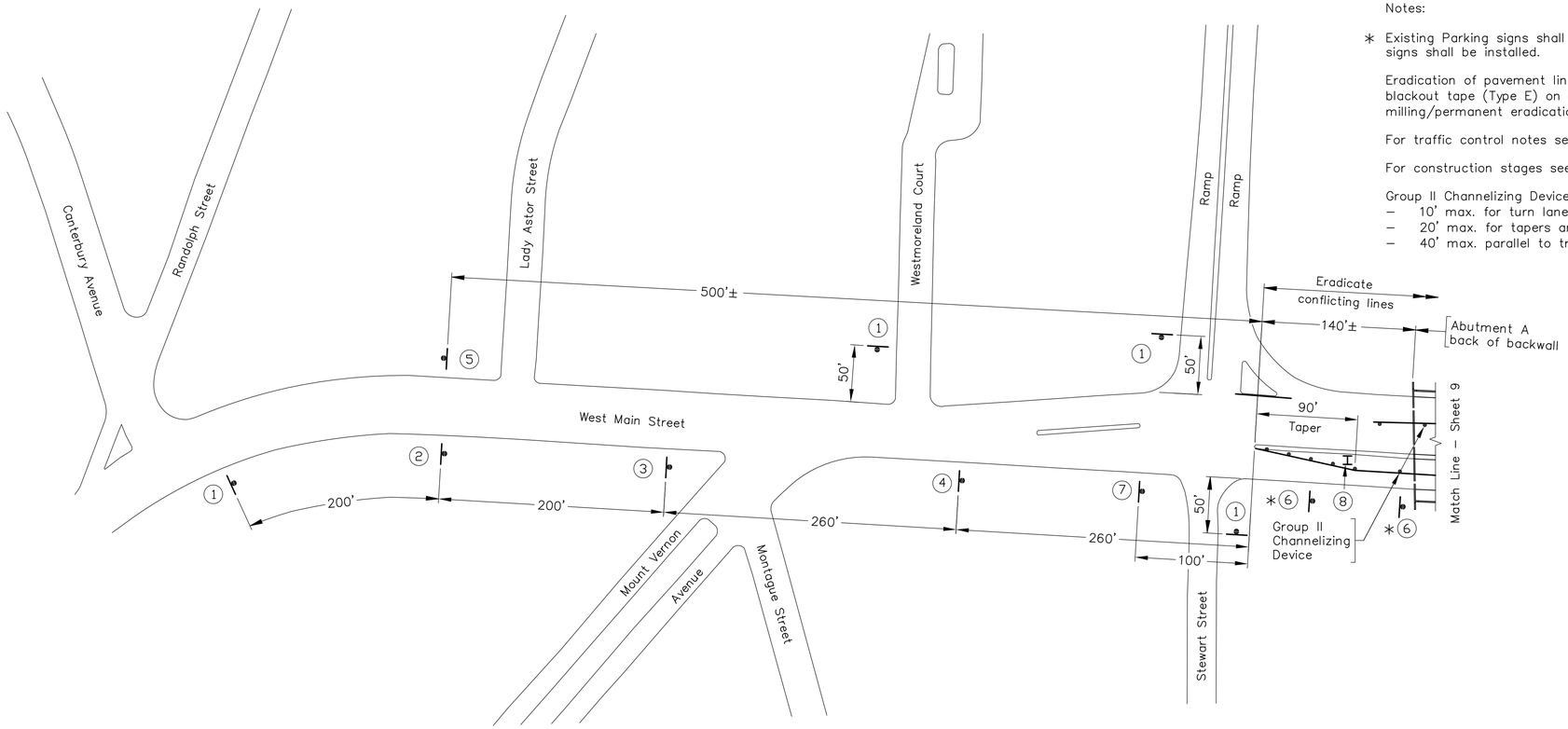
COMMONWEALTH OF VIRGINIA
R.W. SCHWARTZ
Lic. No. 4291
4-11-25
PROFESSIONAL ENGINEER

COMM. NO. 2023066

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

ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
MAINTENANCE OF TRAFFIC NOTES

DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RES
SCALE: NOT TO SCALE	PLAN NO.:	
DATE: MAY 3, 2024	SHEET: 7 OF 12	



Notes:

∗ Existing Parking signs shall be covered and No Parking (symbol) signs shall be installed.

Eradication of pavement line and symbol markings shall be blackout tape (Type E) on asphalt surfaces and milling/permanent eradication on bridge deck

For traffic control notes see Sheet 7.

For construction stages see Sheet 4.

Group II Channelizing Device spacing:
- 10' max. for turn lanes
- 20' max. for tapers and curves
- 40' max. parallel to travel way

PART STAGE 1 TRAFFIC CONTROL

LEGEND – REQUIRED SIGNAGE FOR TRAFFIC CONTROL

① – ROAD WORK AHEAD – W20–1 48"X48"

② – LEFT LANE CLOSED AHEAD – W9–3L 48"X48"

③ – KEEP RIGHT – R4–V7L 48"X48"

④ – W4–2L 48"X48"

⑤ – END ROAD WORK – G20–2 (V) 60"X24"

⑥ – R8–3a 24"X24"

⑦ – MAY USE FULL LANE – R4–11 30"X30"

⑧ – Illuminated Flashing Arrow Board, Type C

∣	– Denotes signs
•	– Denotes Group II Channelizing Device
I	– Illuminated Flashing Arrow Board, Type C

LEGEND – REQUIRED TEMPORARY PAVEMENT LINE MARKINGS FOR TRAFFIC CONTROL

Ⓐ 4" Construction Pavement Marking (Type D, Class III – Yellow) – 130 LF

Ⓑ 8" Construction Pavement Marking (Type D, Class III – Yellow) – 92 LF

REVISIONS		

COMMONWEALTH OF VIRGINIA
R.W. SCHWARTZ
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3-11-25

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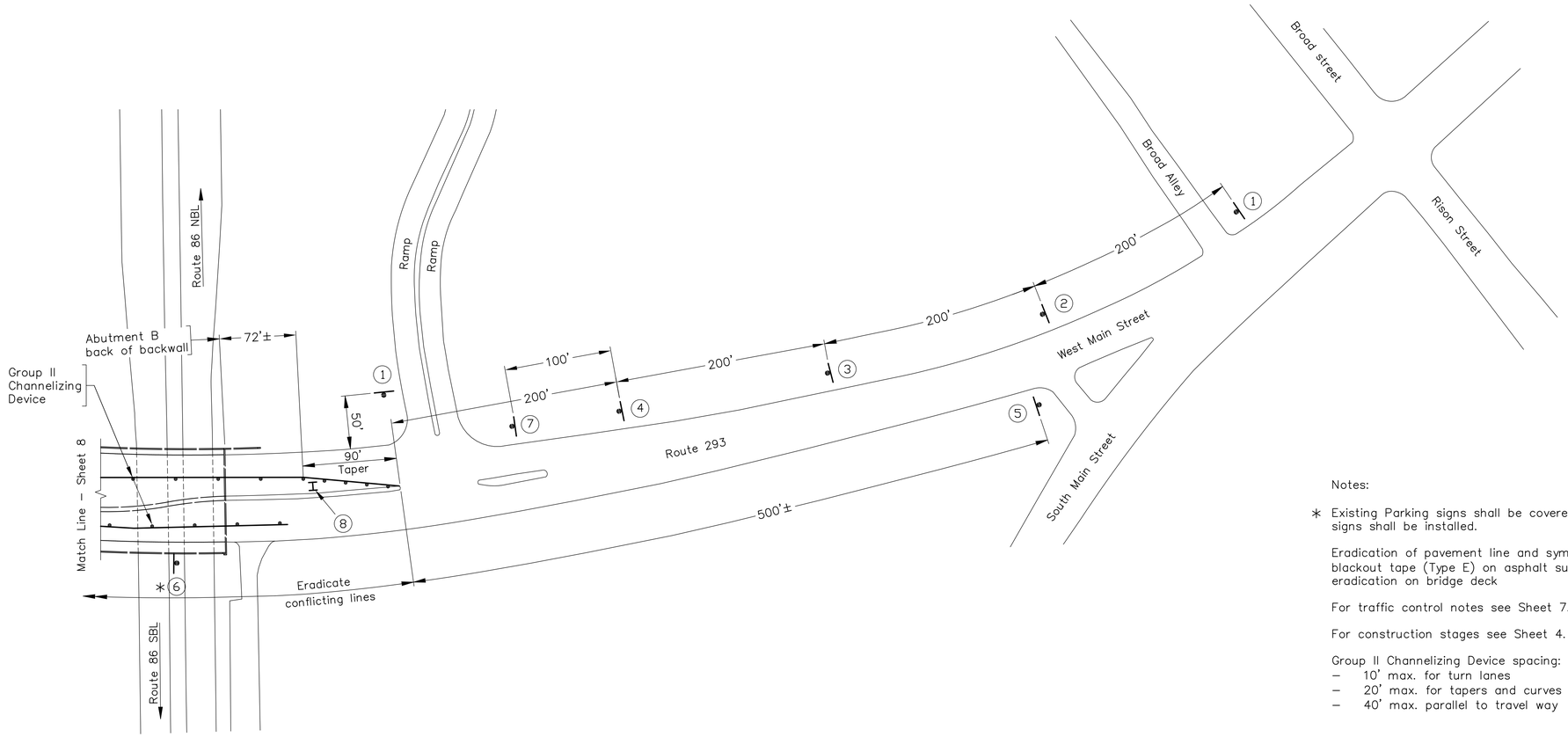
ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
MAINTENANCE OF TRAFFIC
STAGE 1

DESIGNED BY: RES	DRAWN BY: MRM	CHECKED BY: RES
SCALE: NOT TO SCALE	PLAN NO.:	
DATE: MAY 3, 2024	SHEET: 8 OF 12	

CADD REFERENCE NO.: 2023066_BRIDGE.DWG



Notes:

∗ Existing Parking signs shall be covered and No Parking (symbol) signs shall be installed.

Eradication of pavement line and symbol markings shall be blackout tape (Type E) on asphalt surfaces and milling/permanent eradication on bridge deck

For traffic control notes see Sheet 7.

For construction stages see Sheet 4.

Group II Channelizing Device spacing:
- 10' max. for turn lanes
- 20' max. for tapers and curves
- 40' max. parallel to travel way

PART STAGE 1 TRAFFIC CONTROL

LEGEND – REQUIRED SIGNAGE FOR TRAFFIC CONTROL

① – ROAD WORK AHEAD – W20–1 48"X48"

② – LEFT LANE CLOSED AHEAD – W9–3L 48"X48"

③ – KEEP RIGHT – R4–V7L 48"X48"

④ – W4–2L 48"X48"

⑤ – END ROAD WORK – G20–2 (V) 60"X24"

⑥ – R8–3a 24"X24"

⑦ – MAY USE FULL LANE – R4–11 30"X30"

⑧ – Illuminated Flashing Arrow Board, Type C

– Denotes signs

• – Denotes Group II Channelizing Device

I – Illuminated Flashing Arrow Board, Type C

LEGEND – REQUIRED TEMPORARY PAVEMENT LINE MARKINGS FOR TRAFFIC CONTROL

Ⓐ 4" Construction Pavement Marking (Type D, Class III – Yellow) – 368 LF

Ⓑ 8" Construction Pavement Marking (Type D, Class III – Yellow) – 92 LF

CADD REFERENCE NO.: 2023066_BRIDGE.DWG

REVISIONS		

COMMONWEALTH OF VIRGINIA
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ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
MAINTENANCE OF TRAFFIC
STAGE 1 CONTINUED

DESIGNED BY: RES	DRAWN BY: MRM	CHECKED BY: RES
SCALE: NOT TO SCALE		PLAN NO.:
DATE: MAY 3, 2024		SHEET: 9 OF 12

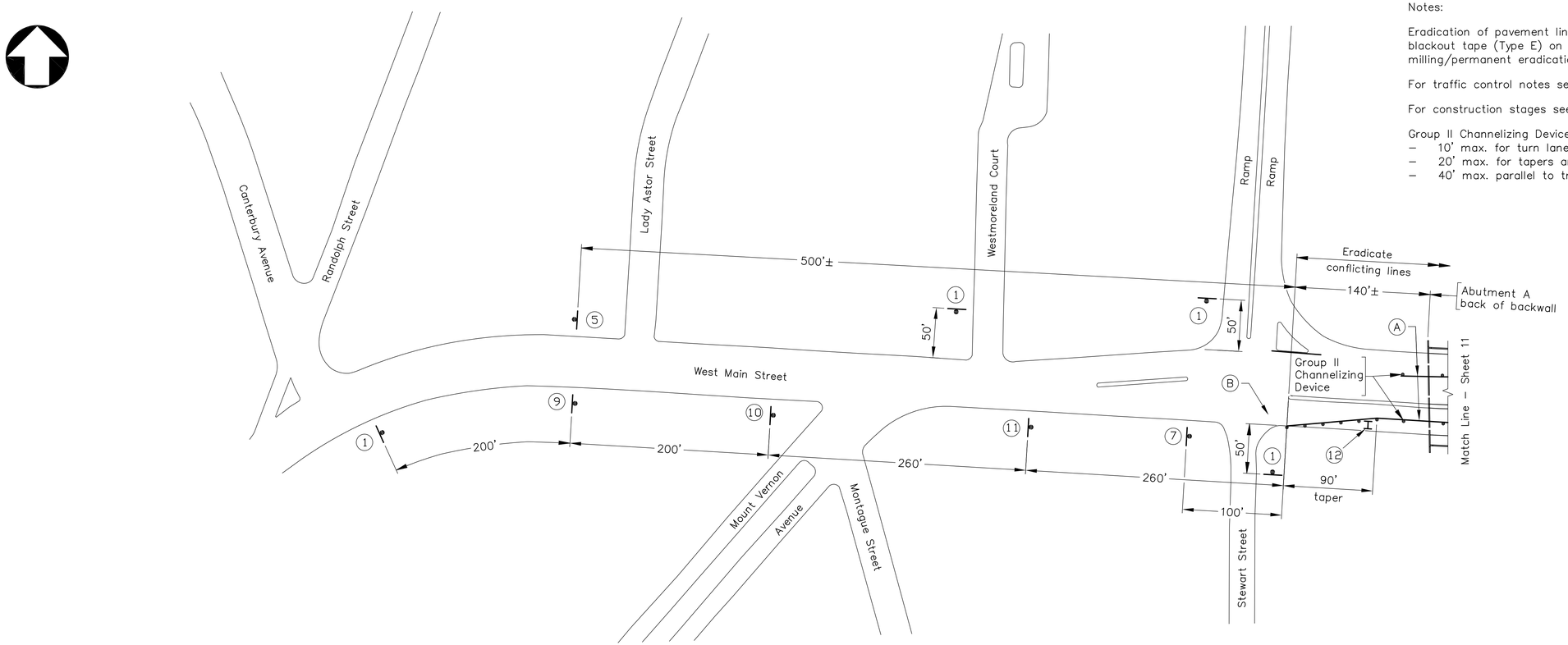
Notes:

Eradication of pavement line and symbol markings shall be blackout tape (Type E) on asphalt surfaces and milling/permanent eradication on bridge deck

For traffic control notes see Sheet 7.

For construction stages see Sheet 4.

Group II Channelizing Device spacing:
- 10' max. for turn lanes
- 20' max. for tapers and curves
- 40' max. parallel to travel way



PART STAGE 2 TRAFFIC CONTROL

LEGEND – REQUIRED SIGNAGE FOR TRAFFIC CONTROL

(1)	ROAD WORK AHEAD	W20-1 48"X48"	(5)	END ROAD WORK	G20-2 (V) 60"X24"
(9)	RIGHT LANE CLOSED AHEAD	W9-3R 48"X48"	(7)	MAY USE FULL LANE	R4-11 30"X30"
(10)	LANE ENDS MERGE LEFT	W9-2L 48"X48"	(12)		Illuminated Flashing Arrow Board, Type C
(11)		W4-2R 48"X48"	(13)	SIDEWALK CLOSED	R9-9 30"X18" – 2 required

– Denotes signs

• – Denotes Group II Channelizing Device

I – Illuminated Flashing Arrow Board, Type C

LEGEND – REQUIRED TEMPORARY PAVEMENT LINE MARKINGS FOR TRAFFIC CONTROL

(A) 4" Construction Pavement Marking (Type D, Class III – White) – 130 LF

(B) 8" Construction Pavement Marking (Type D, Class III – White) – 92 LF

CADD REFERENCE NO.: 2023066_BRIDGE.DWG

REVISIONS

COMMONWEALTH OF VIRGINIA
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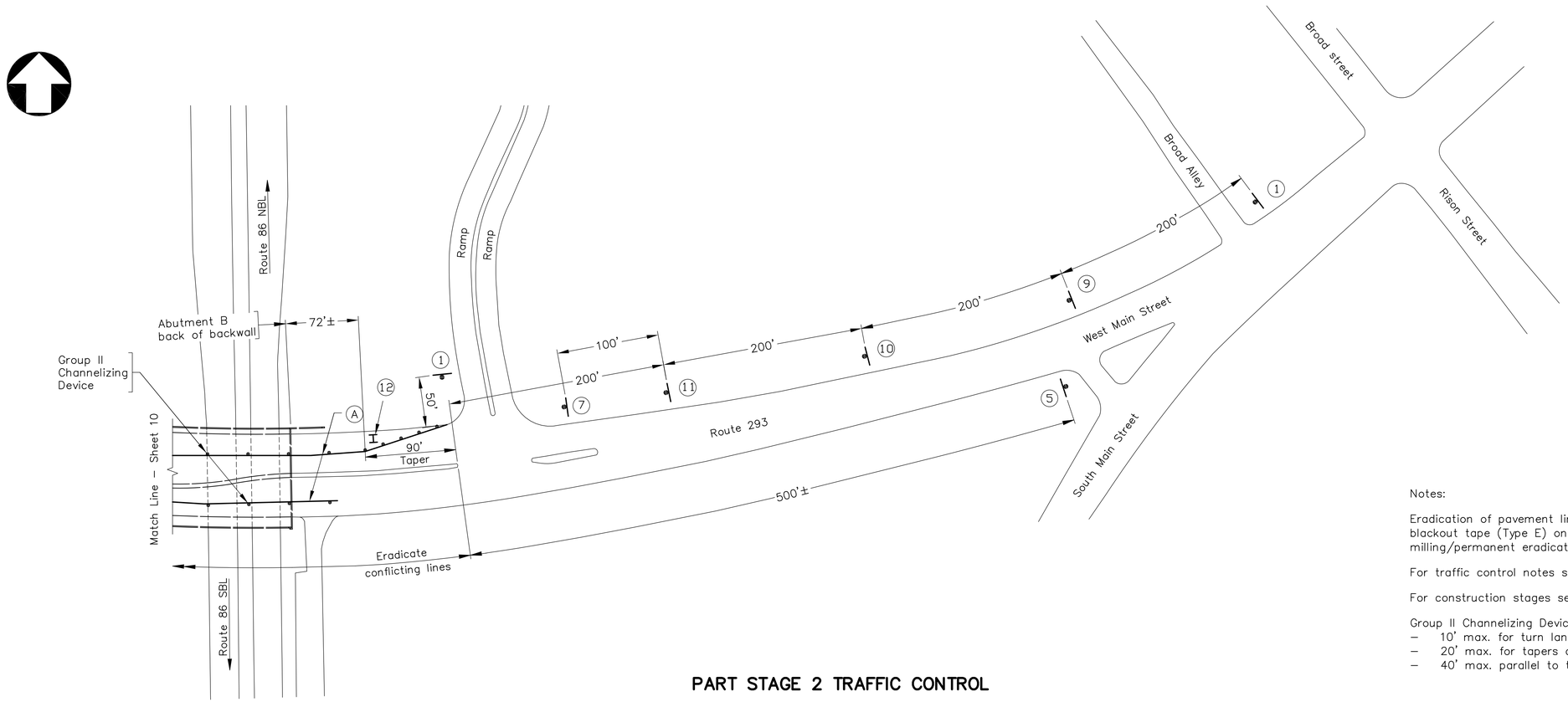
ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
MAINTENANCE OF TRAFFIC
STAGE 2

DESIGNED BY: RES	DRAWN BY: MRM	CHECKED BY: RES
SCALE: NOT TO SCALE		PLAN NO.:
DATE: MAY 3, 2024		SHEET: 10 OF 12



PART STAGE 2 TRAFFIC CONTROL

Notes:

Eradication of pavement line and symbols markings shall be blackout tape (Type E) on asphalt surfaces and milling/permanent eradication on bridge deck

For traffic control notes see Sheet 7.

For construction stages see Sheet 4.

Group II Channelizing Device spacing:
- 10' max. for turn lanes
- 20' max. for tapers and curves
- 40' max. parallel to travel way

LEGEND – REQUIRED SIGNAGE FOR TRAFFIC CONTROL

1	ROAD WORK AHEAD	W20-1 48"X48"	5	END ROAD WORK	G20-2 (V) 60"X24"
9	RIGHT LANE CLOSED AHEAD	W9-3R 48"X48"	7	MAY USE FULL LANE	R4-11 30"X30"
10	LANE ENDS MERGE LEFT	W9-2L 48"X48"	12		Illuminated Flashing Arrow Board, Type C
11		W4-2R 48"X48"	13	SIDEWALK CLOSED	R9-9 30"X18" – 2 required

– Denotes signs

• – Denotes Group II Channelizing Device

I – Illuminated Flashing Arrow Board, Type C

LEGEND – REQUIRED TEMPORARY PAVEMENT LINE MARKINGS FOR TRAFFIC CONTROL

(A) 4" Construction Pavement Marking (Type D, Class III – White) – 368 LF

(B) 8" Construction Pavement Marking (Type D, Class III – White) – 92 LF

CADD REFERENCE NO.: 2023066_BRIDGE.DWG

REVISIONS

COMMONWEALTH OF VIRGINIA
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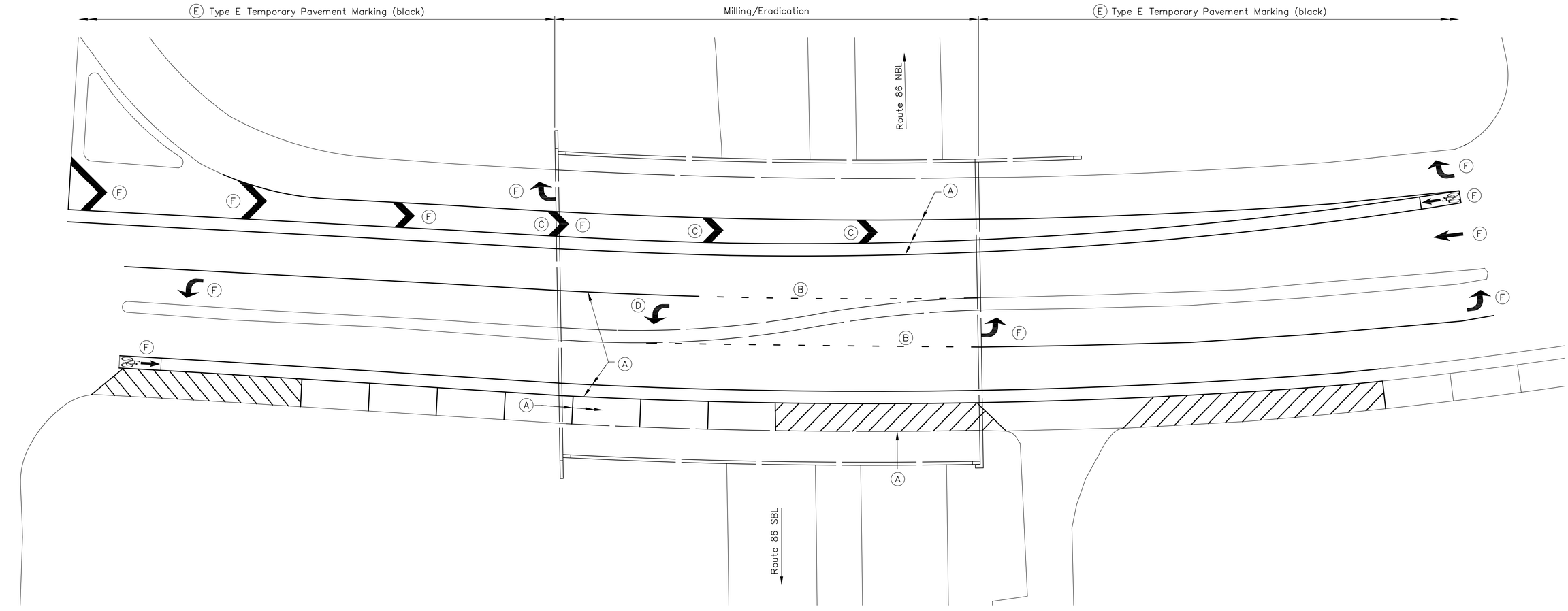
ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
MAINTENANCE OF TRAFFIC
STAGE 2 CONTINUED

DESIGNED BY: RES	DRAWN BY: MRM	CHECKED BY: RES
SCALE: NOT TO SCALE		PLAN NO.:
DATE: MAY 3, 2024		SHEET: 11 OF 12



PAVEMENT MARKINGS

PERMANENT PAVEMENT LINE MARKINGS

SYMBOL	ITEM	UNIT	QUANTITY
A	Type B Class VI Contrast Pavement Line Marking (4")(white)	LF	940
B	Type B Class VI Contrast Pavement Line Marking (4") (dotted)(white)	LF	67
C	Type B Class II Pavement Line Marking (24")(white)	LF	39
D	Pavement Symbol Marking Single Turn Arrow Type B Class II (white)	EA	1

ERADICATE PAVEMENT LINE MARKINGS (FOR CONSTRUCTION)

SYMBOL	ITEM	UNIT	QUANTITY
E	Type E Temporary Pavement Marking (6")(Black)	LF	3,112
F	Type E Temporary Pavement Symbol Marking (Black)	SF	482

Notes:
Item C is gore area hatching and shall be paid for as Type B Class II Pavement Line Marking (24").

All pavement marking eradication outside of the limits of the bridge shall be Type E Temporary Pavement Marking.

Quantities shown in Eradicate Pavement Markings (for Construction) are for estimating purposes only. All costs shall be included in lump sum bid "Maintenance of Traffic".

No.	Description	Date

REVISIONS

COMMONWEALTH OF VIRGINIA
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ROUTE 293 OVER ROUTE 86
CITY OF DANVILLE, VA
PAVEMENT MARKINGS

DESIGNED BY: MRM	DRAWN BY: MRM	CHECKED BY: RES
SCALE: NOT TO SCALE		PLAN NO.:
DATE: MAY 3, 2024		SHEET: 12 OF 12

CADD REFERENCE NO.: 2020035_BRIDGE.DWG