

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

PROPOSAL DOCUMENTS
CONTRACT AND CONTRACT BOND
SUPPLEMENTAL SPECIFICATIONS
SPECIAL PROVISIONS
REPAIR PLANS
RECORD PLANS

HNTB Corporation

July 2022

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

INSTRUCTIONS TO BIDDERS

1. FORM OF BID: Submit bid, on forms furnished by the Authority, without alterations in the form. When completing bid, please notice the unit (Lump Sum, Each, Square Foot, etc...) of the individual line item and enter unit and total bid item prices accordingly.

If applicable, Contractor shall replace any original bid tab sheets with replacement bid tab sheets issued through an Addendum.

- a. Required Forms: The following list of required forms to be included in bid is provided for Contractors reference only:
 - i. Bid (see below)
 - ii. Non-Collusion Affidavit
 - iii. Statement of Contracts Underway
 - iv. Joint Venture Statement (if applicable)
 - v. Bidder or Subcontractor Shotcrete Experience
 - vi. Bidder or Subcontractor Steel Repairs Experience
 - vii. Bid Bond
 - viii. Receipt of Addenda (if applicable)
 - ix. Railroad Agreement (Schedule I)
2. SUBMISSION OF BID: Make sure the Authority receives bid prior to time and date listed on the Invitation to Bid. Bidder is responsible for delivery of the bid at or before the time set for opening. Bids received after the time set will be rejected.

If mailing, please write "Attention: RMTA MR – 2022 Contract Bid Opening" on outside of envelope or on mailing label.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

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RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

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INVITATION TO BID

The Richmond Metropolitan Transportation Authority (RMTA), 901 East Byrd Street, Suite 1120, Richmond, Virginia 23219 until 10:00 a.m. local time, will receive sealed Proposals for the above project on **Tuesday, August 09, 2022.**

Sealed bid documents will be transferred by RMTA staff to the **Powhite South-Administration Building**, located at 6500 Powhite Parkway, Richmond, VA 23225 where the bids will be publicly opened and read at 11:00 a.m. local time. *All Virginia executive orders, and CDC guidance related to COVID-19 must be adhered to at all times while on the RMTA premises.*

The work under this contract shall be completed no later than June 30, 2023.

The principal items of work and approximate quantities are as follows:

<u>Item:</u>	<u>Quantity:</u>	<u>Unit:</u>
Shotcrete, (Standard)	280	S.F.
Shotcrete, (Elevated)	50	S.F.
Shotcrete, (Over Water)	308	S.F.
Self-Consolidated Concrete, (Standard)	144	S.F.
Self-Consolidated Concrete, (Elevated)	30	S.F.
Self-Consolidated Concrete, (Over Water)	20	S.F.
Bridge 6, Unit 1, Beam 10, West Abutment, Broken Weld Repair	1	L.S.
Bridge 13, West Abutment, Unit 1 Stringer 6 Bearing Alignment	1	L.S.
Bridge 13, Pier 3, Unit 3 Stringers 1-6 Bearing Realignment	6	E.A.
Bridge 13, Pier 3, Unit 4, Stringers 5 and 6 Bearing Realignment	2	E.A.
Bridge 48, South Abutment, Unit 1, Girder1, Cracked Weld Repair	1	L.S.
Bridge 48, South Abutment, Unit 1, Girder 8 Laminar Defect Repair	1	L.S.
Overhead Sign Structure Lighting Retrofit	20	E.A.
Railway Coordination Service, Bridge 13	1	L.S.

A **mandatory pre-bid meeting** will be held at the RMTA's **Powhite South-Administration Building**, located at 6500 Powhite Parkway, Richmond, VA 23225 at 10:00 a.m. local time, on **Tuesday, July 19, 2022**. A mandatory site visit shall immediately follow the office portion of the pre-bid meeting. Only contractors and qualified subcontractors, who meet the requirements to propose, as stated below, should attend the pre-bid meeting. *All Virginia executive orders, and CDC guidance related to COVID-19 must be adhered to at all times while on the RMTA premises.*

Prospective bidders are responsible for verifying scope of work, field conditions, and examining locations of proposed work. Prospective bidders shall contact Glen Parker at GParker@HNTB.com or 804-938-3963 to schedule a separate site visit.

Bids for this Contract must be submitted on complete bidding forms bound in the Contract Documents. The successful bidder will be notified in writing.

To submit Proposals for this Contract, contractors or qualified subcontractors shall, on **Tuesday, July 19, 2022**, at 10:00 a.m. local time, meet the following requirements:

- Be prequalified by the Virginia Department of Transportation for bidding on State projects. The Authority reserves the right to request additional experience information for any bidder that has not been assigned the “**Major Structures**” and/or “**Bridge Repair**” work classes by VDOT or for contractors that have a prequalification level of Conditional, Currently Inactive or Probationary.
- Have prior experience in the jacking and blocking of beams and structural steel repairs. Contractor shall be able to provide written documentation demonstrating the successful completion of at least three bridge superstructure repair projects where one or more steel beams were jacked off the bearing and a portion of the steel beam was replaced with new steel by welding.
- Have prior experience in the repair of bridge substructures using Shotcrete and be able to provide written documentation demonstrating the successful placement of at least three bridge substructure repair projects where the cumulative Shotcrete square footage applied was a minimum of 10,000 s.f.

Note that a bidder must have prior experience and be able to provide written documentation in a minimum of one of the two work experience categories as noted above. A bidder cannot have subcontractors be the documented experience in all categories.

Complete contract documents will be available on Wednesday, **July 6, 2022**, after 1:00 p.m. (local time) from the RMTA website at: <https://www.rmtaonline.org/news-events/#news-rfps-public>. The documents will also be posted on the eVA Virginia procurement website at <https://eva.virginia.gov/index.html>.

Specifications (Virginia Department of Transportation 2020 Road and Bridge Specifications) and 2011 Virginia Work Area Protection Manual, Revision 2.1 - 2020) which form an integral part of this Contract, are available from the Virginia Department of Transportation website free of charge.

Each Bidder submitting a Proposal must also complete a statement bound with the Proposal forms, in which each Bidder shall give full information relating to the status of their contracts presently underway.

Each Proposal must be accompanied by a Proposal Guarantee consisting of either a certified check in the amount of at least five (5) percent of the Total Bid Price, made payable to the Richmond Metropolitan Transportation Authority, or a Proposal Bond (on the form provided) in the amount of five (5) percent of the same Total Bid Price.

The Authority strongly encourages the submission of bids by contractors whose principal businesses are located in the Richmond Metropolitan Area and further strongly encourage such contractors to utilize the services of local subcontractors and vendors.

The Authority strongly encourages minority-owned and women-owned businesses to submit proposals for this contract.

The Authority reserves the right to reject any and all Proposals submitted, and to waive informalities in bidding, as it may deem in its best interests.

Project related inquiries must be submitted in writing to Mr. Matt Foster, P.E. at HNTB Corporation at mfoster@hntb.com or Ms. Theresa Simmons, P.E., RMTA Director of Operations at Theresa.Simmons@rmtaonline.org. The deadline to submit inquiries and questions is Tuesday, July 26, 2022, at 1 P.M. local time.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY
Joi Dean, CEO
Richmond, Virginia

(Note: Bidders shall not remove this Bidding form from attached documents.)

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR – 2022

MISCELLANEOUS REPAIRS

BID FOR GENERAL CONSTRUCTION CONTRACT

To: Richmond Metropolitan Transportation Authority
901 East Byrd Street, Suite 1120
Richmond, Virginia 23219

Gentlemen:

I/we, the undersigned, declare: that no other person, firm or corporation is interested in this Bid; that I/we have carefully examined the Plans, Standard Specifications, Supplemental Specifications, and all other documents pertaining to this Contract which form a part of this Bid as if set forth at length herein; that I/we understand that the quantities of items shown herein below are approximate only; that I/we have examined the location of the proposed work; that I/we agree to bind myself/ourselves, upon award to me/us by the Richmond Metropolitan Transportation Authority under this Bid, to enter into and execute a Contract, with necessary surety bond, for the project named above; that I/we agree to start work not later than the date stated in the written Notice to Proceed (Sec. 105.01 of the Specifications), to furnish all necessary materials, provide all necessary labor, equipment, tools and plant, pay for all required insurance, bonds, permits, fees and service, and do all required work in strict compliance with the terms of all documents comprising said Contract, and to fully complete the entire project by June 30, 2023 and that I/we agree to accept as full compensation for the satisfactory prosecution of this project the following named unit and lump sum prices for the various scheduled items of work.

**RMTA
MR-2022 Bid Tab**

(_____) (INSERT BIDDER FIRM NAME HERE)

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT	2020 SPECIFICATION
1	MOBILIZATION	LS	1			513
2	TRUCK MOUNTED ATTENUATOR	HR	600			512
3	PORTABLE CHANGEABLE MESSAGE SIGN	HR	50			512
4	ELECTRONIC ARROW	HR	600			512
5	FLAGGER SERVICE	HR	50			512
6	GROUP 2 CHANNELIZING DEVICE	DAY	2,000			512
7	TRIM EXISTING VEGETATION	SF	10,000			ATTD/SP-C
8	FENCE (FE-CL)	LF	300			ATTD/SP-D
9	FENCE (FE-CL FABRIC ONLY)	LF	300			ATTD/SP-D
10	HYDRAULIC CEMENT CONCRETE PAVEMENT	SY	10			ATTD/SP-E
11	SHOTCRETE, (STANDARD)	SF	280			ATTD/SP-F
12	SHOTCRETE, (ELEVATED)	SF	50			ATTD/SP-F
13	SHOTCRETE, (OVER WATER)	SF	308			ATTD/SP-F
14	ASPHALT CONCRETE PATCH	SY * IN	95			ATTD/SP-G
15	REPAIR ASPHALT CONCRETE PAVEMENT CRACKS	LF	50,000			ATTD/SP-O
16	STANDARD 6" CURB, CG-2	LF	30			ATTD/SP-M
17	STANDARD 4" CURB, CG-3	LF	30			ATTD/SP-M
18	PATCHING TYPE A	SY	10			412
19	PATCHING TYPE B	SY	5			412
20	JOINT SEALANT REPLACEMENT	LF	200			427/SP-N
21	BRIDGE RAILING	LF	50			410/SP-P
22	BRIDGE RAILING POSTS	EA	8			410/SP-P
23	BRIDGE 6, UNIT 1, BEAM 10, WEST ABUTMENT, BROKEN WELD REPAIR AT BEARING SOUTH FACE	LS	1			ATTD/SP-I

**RMTA
MR-2022 Bid Tab**

(_____) (INSERT BIDDER FIRM NAME HERE)

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT	2020 SPECIFICATION
24	BRIDGE 13, WEST ABUTMENT, UNIT 1, STRINGER 6 BEARING REALIGNMENT	LS	1			ATTD/SP-I
25	BRIDGE 13, PIER 3, UNIT 3, STRINGERS 1 THROUGH 6 BEARING REALIGNMENT	EA	6			ATTD/SP-I
26	BRIDGE 13, PIER 3, UNIT 4, STRINGERS 5 AND 6 BEARING REALIGNMENT	EA	2			ATTD/SP-I
27	BRIDGE 48, SOUTH ABUTMENT, UNIT 1, GIRDER 1, CRACKED SOLE PLATE WELD	LS	1			ATTD/SP-I
28	BRIDGE 48, NEAR SOUTH ABUTMENT, UNIT 1, GIRDER 8, LAMINAR DEFECT REPAIR	LS	1			ATTD/SP-I
29	TOPSOIL, CLASS B	CY	30			244/602/SP-J/K
30	REGULAR SEED	LB	100			244/603/SP-J/K
31	FERTILIZER (15-30-15)	TON	1			244/603/SP-J/K
32	LIME	TON	1			244/603/SP-J/K
33	MISCELLANEOUS COATINGS	SF	1,000			411/SP-L
34	CONCRETE COATING	SF	50			SP-S
35	CLEAN MANHOLE	EA	1			ATTD/SP-H
36	TYPE A PAVEMENT LINE MARKING 6"	LF	9,800			704/SP-Q
37	TYPE A PAVEMENT LINE MARKING 12"	LF	2,800			704/SP-Q
38	TYPE B CLASS VI PAVEMENT LINE MARKING 6"	LF	400			704/SP-Q
39	TYPE B CLASS VI PAVEMENT LINE MARKING 12"	LF	450			704/SP-Q
40	DRAINAGE STRUCTURE REPAIRS	EA	5			302/SP-R
41	SELF CONSOLIDATING CONCRETE (STANDARD)	SF	144			217/412/SP-U
42	SELF CONSOLIDATING CONCRETE (ELEVATED)	SF	30			217/412/SP-U
43	SELF CONSOLIDATING CONCRETE (OVER WATER)	SF	20			217/412/SP-U
44	OVERHEAD SIGN LIGHTING RETROFIT	EA	20			SP-V
45	HYDRAULIC CEMENT CONCRETE SIDEWALK (4 inch)	SY	40			404/SP-T

**RMTA
MR-2022 Bid Tab**

(_____) (INSERT BIDDER FIRM NAME HERE)

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT	2020 SPECIFICATION
46	CRUSHED AGGREGATE NO. 21A OR 21B	TON	5			ATTD/SP-K
47	COARSE AGGREGATE NO.57	TON	5			ATTD/SP-K
48	AGGREGATE MATERIAL NO.1	TON	5			ATTD/SP-K
49	DRY RIPRAP CLASS I	TON	16			ATTD/SP-K
50	RAILWAY COORDINATION SERVICE, BRIDGE 13	LS	1			107.19/SP-W

(SIGN HERE)

(INSERT HERE)

Signature of Owner, Partner, or Corporate Officer:

Title:

TOTAL: _____

The quantities shown in the above schedule of items are considered to be approximate only and are given as the basis for comparison of bids. The Authority may increase or decrease the amount of any item or portion of the work as may be deemed necessary or expedient. The Authority reserves the right to delete, in whole or in part, without prejudice prior to the award of the Contract, any items listed in the Bid. It is understood that payment for unit price items will be made for the actual quantities of such work satisfactorily completed, rather than the estimated quantities given hereinabove, an increase or decrease in the quantity for any unit price item will not be regarded as sufficient grounds for an increase or decrease in the unit price, nor in the time allowed for the completion of the work, except as provided for in the Specifications.

The cost of any work performed, materials furnished, services provided, or expenses incurred, whether or not specifically delineated in the Contract document but which are incidental to the scope, intent and completion of this Contract, have been included in the price bid for the various items scheduled hereinabove.

Accompanying this Bid is a Bid Guarantee (Sec. 102.07 of the Specifications) consisting of either a certified check in the amount of at least (5) percent of the Total Bid Price for this Contract or a Bid Bond (Sec. PB of the bid documents) in the amount of (5) percent of the same Total Bid Price. It is hereby understood and agreed that said check or bond is to be forfeited as liquidated damages in the event that, on the basis of this Bid, the Authority should award this Contract to me/us and that I/we should fail to execute and deliver said Contract and the prescribed Contract Bond, together with the required progress schedule, proof of proper insurance coverage and other necessary documents, all within the prescribed time (Sec. 103.07 of the Specifications); otherwise, said check or bond is to be returned to the undersigned.

Business Name of Bidder: _____

Type of Organization: Individual
 Partnership
 Corporation

Virginia Contractor Registration No.: _____

Address of Bidder: _____

Signature of Owner, Partner or Corp. Officer: _____

Title: _____

Date: _____

Witness or Attest: _____ (Affix Corporate Seal Here)

NOTE: ONLY A PREQUALIFIED BIDDER MAY
USE THIS BIDDING FORM. BIDDING FORMS ARE NOT TRANSFERABLE.

RICHMOND EXPRESSWAY SYSTEM

Scale: 0 1000 2000 3000ft.

48 - Bridge Number
RMTA Facilities Shown in Red



RICHMOND

CITY OWNED GRAVEL LOT

APPROXIMATELY 10,500 S.F. RMTA OWNED STAGING AREA

RMTA OWNED ABANDONED RAMP

RMTA OWNED STAGING AREA

Section Two Connection To I-195

Section One

Connection to Downtown Expressway

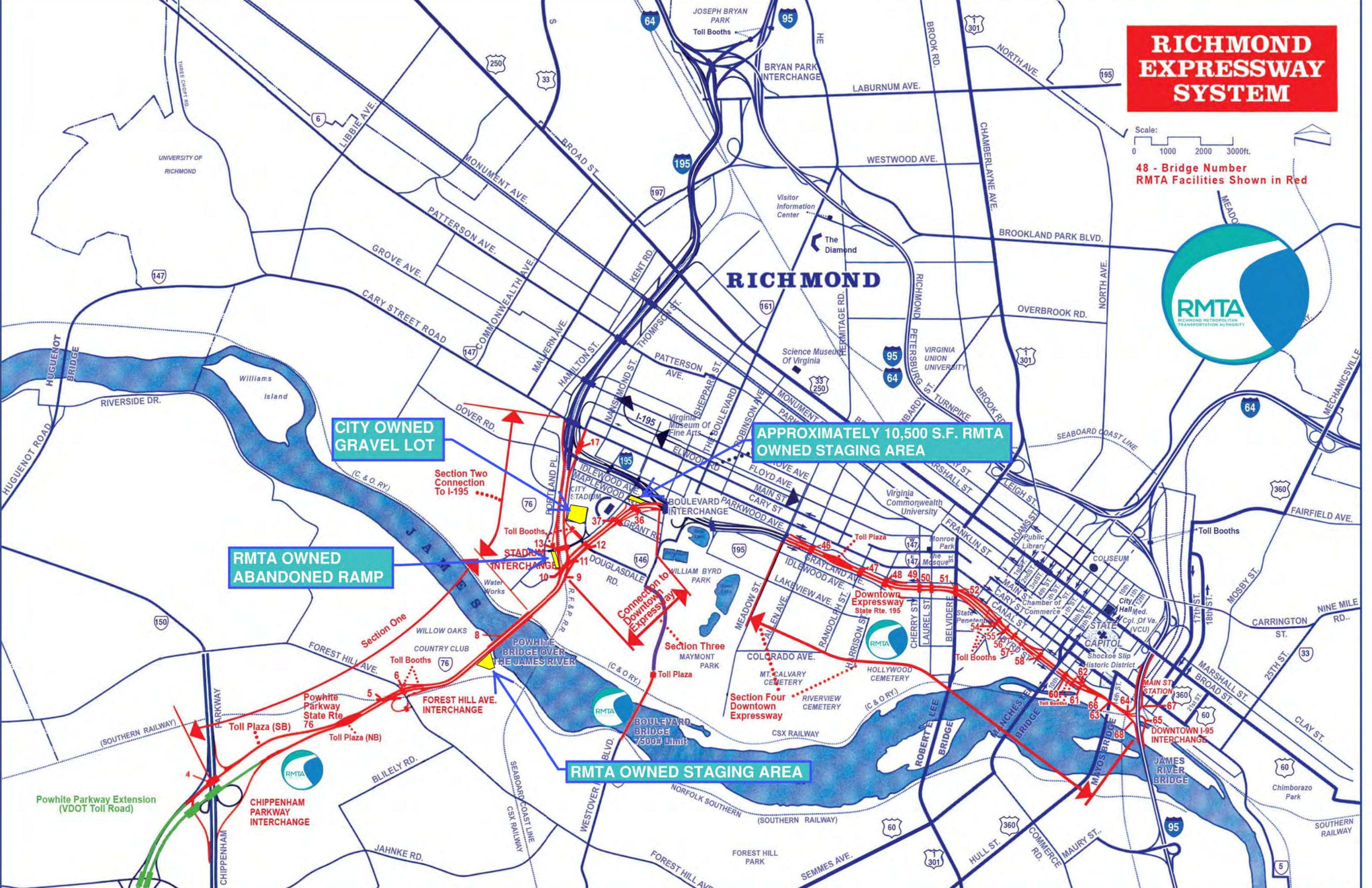
Section Three MAYMONT PARK

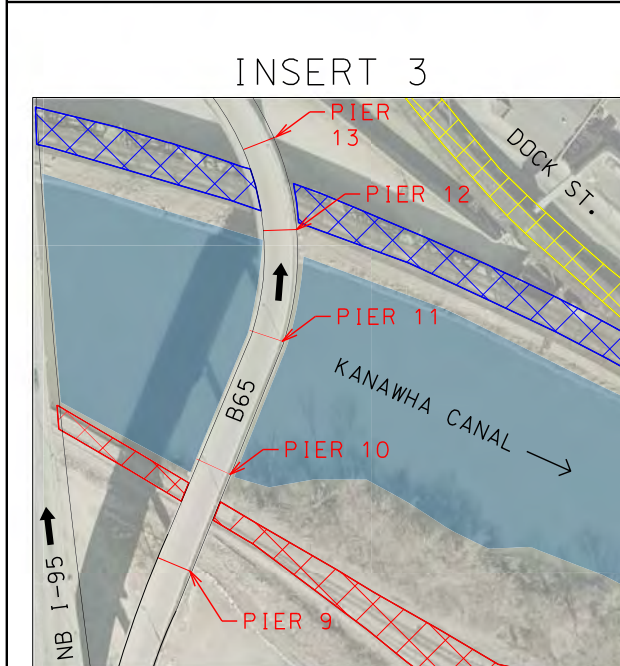
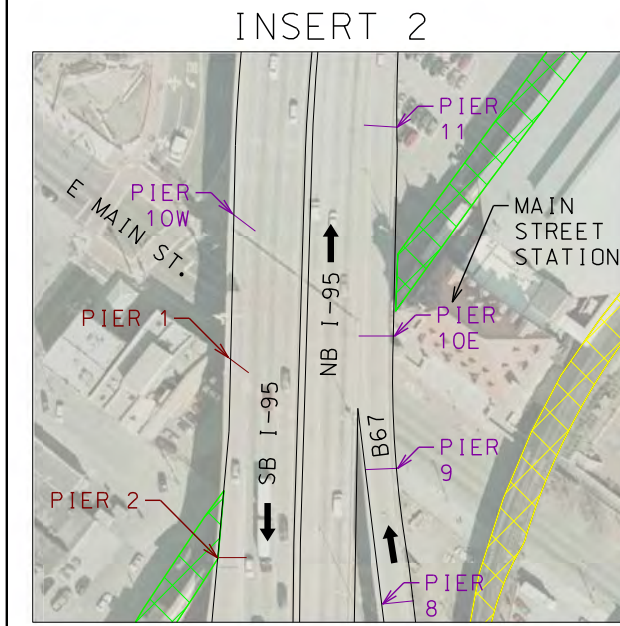
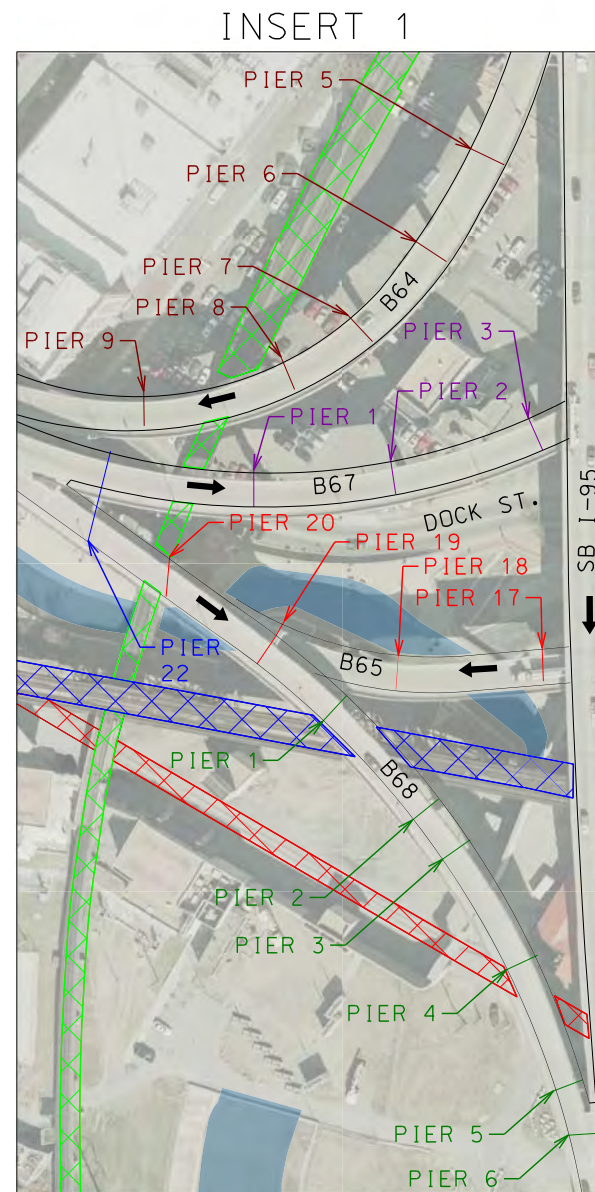
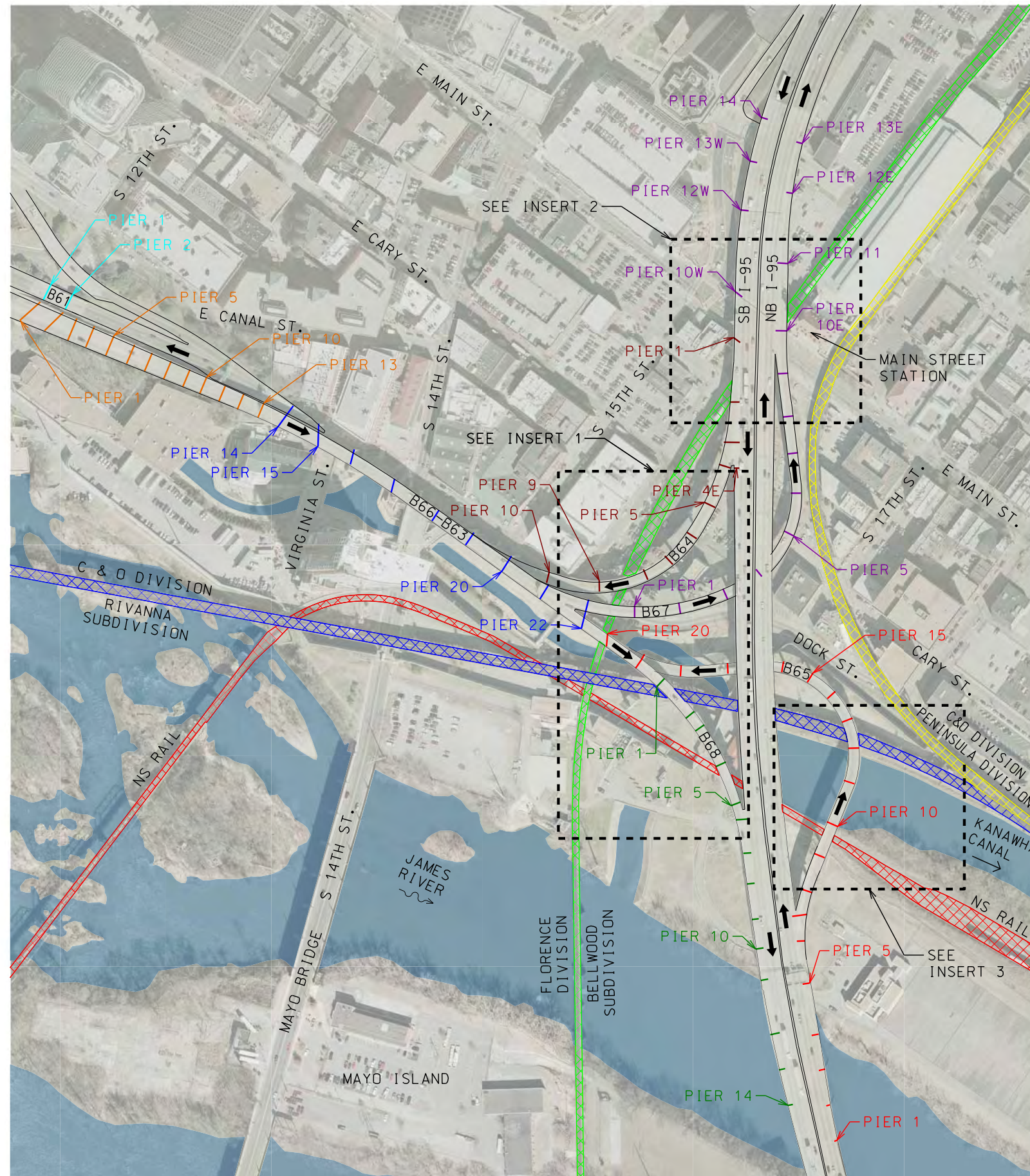
Section Four Downtown Expressway

Powhite Parkway Extension (VDOT Toll Road)

CHIPPENHAM PARKWAY INTERCHANGE

DOWNTOWN I-95 INTERCHANGE





LEGEND:

█	BRIDGE 63
█	BRIDGE 64
█	BRIDGE 65
█	BRIDGE 66
█	BRIDGE 67
█	BRIDGE 68
▨	N&S RAILROAD
▨	CSX RAILROAD
▨	CSX RAILROAD
▨	CSX RAILROAD

- NOTES:**
- 1) PIER NUMBERS BASED ON AS-BUILT DRAWINGS FROM CONTRACTS C-10 AND C-11.
 - 2) RAILROAD LIMITS AND PIER LOCATIONS BASED ON AERIAL PHOTOGRAPHY.
 - 3) THIS EXHIBIT IS FOR REFERENCE ONLY. REFER TO AS-BUILT DRAWINGS FOR EXACT PIER LOCATIONS.
 - 4) BRIDGE 63 IS ON BOTTOM, BRIDGE 66 IS ON TOP.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

<p>2900 S. QUINCY STREET, SUITE 200 ARLINGTON, VIRGINIA (703) 824-6100</p>	I-95 RAMPS PIER LOCATION EXHIBIT		
	Scale: N.T.S.	Date: MAY 2015	Contract No.: MR-2015

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR - 2022

MISCELLANEOUS REPAIRS

NON-COLLUSION AFFIDAVIT

STATE OF _____)
_____) ss.
COUNTY OF _____)

I, _____, of the City
of _____, County of _____ and State of
_____, being of full age and duly sworn according to law on my oath
depose and say:

That I am _____(Title) of
_____, the Bidder making
the Bid submitted to the Richmond Metropolitan Transportation Authority, on the _____ day of
_____, 20____, for Contract No. MR -2022 in connection with the Richmond
Expressway System; that I executed the said Bid with full authority to do so;

The said Bidder has not, directly or indirectly, entered into any combination or
arrangement with any person, firm or corporation or entered into any agreement, participated in
any collusion, or otherwise taken any action in restraint of free, competitive bidding or which
would increase the cost of construction or maintenance in connection with the said Contract; that
no person or selling agency has been employed or retained to solicit or secure the said Contract
upon an agreement or understanding for a commission, percentage, brokerage or contingent fee,
except bona fide full-time employees;

And that said Bidder is or has been a member of the following highway contractors' association during the preceding twelve months:

Name of Association	Location of Principal Office
_____	_____
_____	_____
_____	_____

I further warrant that all statements contained in said Bid and in this Affidavit are true and correct and made with full knowledge that the said Authority relies upon the truth of the statements contained in said Bid and in this Affidavit in awarding the said Contract.

Sworn to and subscribed
before me this _____

By: _____ (L.S.)
Person Signing Bid

day of _____,

20__.

Print Name: _____

Notary Public

My commission expires:

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR - 2022

MISCELLANEOUS REPAIRS

STATEMENT OF CONTRACTS UNDERWAY

The following is a tabulation of all contracts in which I/we am/are engaged as of the date given below, whether as a prime contractor or as a subcontractor. This tabulation includes not only contracts which are under construction, but also those awarded to me/us but not begun, and those on which I/we am/are the lowest bidder awaiting formal award.

<u>Contract Designation</u>	<u>City and State</u>	<u>Owner</u>	<u>Estimated Value of Work Remaining to be Completed</u>	<u>Estimated Completion Date</u>

Total: \$ _____

NOTE: Contracts in which the remaining work in each amounts to less than \$25,000 may be combined into one entry under the fourth column and designated as "Miscellaneous" in the first column.

If more space is needed, attach additional sheet(s).

The undersigned guarantees the accuracy and completeness of all the information given above.

Business Name of Bidder: _____

Address of Bidder: _____

Signature of Owner,
Partner or Corp. Officer: _____

Title: _____

Date: _____

Witness or Attest:

(Affix Corporate Seal Here)

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

JOINT VENTURE STATEMENT

STATE OF _____)
_____) ss.
COUNTY OF _____)

We, the undersigned, being duly sworn according to law, upon our respective oaths depose and say that:

1. The following named contractors have entered into a Joint Venture for the purpose of carrying out all the provisions of Contract No. MR-2022 for the above project:

(a) _____ An Individual
 A Partnership
 A Corporation

(b) _____ An Individual
 A Partnership
 A Corporation

(c) _____ An Individual
 A Partnership
 A Corporation

2. The contractors, under whose names we have affixed our respective signatures, have duly authorized and empowered us to execute this Joint Venture Statement in the name of and on behalf of such contractors for the purpose herein above stated.

3. Under the provisions of such Joint Venture, the assets of each of the contractors named in Paragraph 1 hereof, and in case any contractor so named above is a partnership, the assets of the individual members of such partnership, will be available for the performance of such Joint Venture and liable therefore and for all obligations incurred in connection therewith.

4. The assets and liabilities of the named contractors for whom we respectively execute this Joint Venture Statement are set forth in the statements given to the Virginia Department of Transportation in our prequalification questionnaire(s).

5. This Joint Venture Statement is executed so that the named contractors, as one organization, may, under such Joint Venture, bid upon said Contract, and be awarded the Contract if they should become the successful bidder therefore. Any bid, bond and agreement relating to said Contract shall be executed by any of the undersigned, and when so executed shall bind this Joint Venture and each and every contractor named herein, severally and jointly. Simultaneously with the execution of the Contract, the contractors entering into this Joint Venture shall designate and appoint a Project Supervisor to act as their true and lawful agent with full power and authority to do and perform any and all acts or things necessary to carry out the work set forth in said Contract.

6. We bind the contractors for whom we respectively execute this Joint Venture Statement in firm agreement with the Richmond Metropolitan Transportation Authority that each of the representations herein set forth is true.

Subscribed and sworn to before me,
this _____ day of _____,
_____, 20__.

Notary Public

My commission expires _____

(a) _____
Name of Contractor

By _____ (L.S.)
Print Name:

Title: _____

Va. Contractor Reg. No. _____

Subscribed and sworn to before me,
this _____ day of
_____, 20__.

Notary Public

My commission expires _____

(b) _____
Name of Contractor

By _____ (L.S.)
Print Name:

Title: _____

Va. Contractor Reg. No. _____

Subscribed and sworn to before me,
this _____ day of
_____, 20__.

Notary Public

My commission expires _____

(c) _____
Name of Contractor

By _____ (L.S.)
Print Name:

Title: _____

Va. Contractor Reg. No. _____

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

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MISCELLANEOUS REPAIRS

SHOTCRETE EXPERIENCE – BIDDER/SUBCONTRACTOR

In addition to the bidding requirements stated elsewhere in these documents, prospective bidders or their subcontractor must have successfully completed at least three bridge substructure repair projects where the cumulative shotcrete square footage applied is a minimum of 10,000 s.f. This form is provided to bidders for them to demonstrate that experience, and must be completed and submitted by all bidders, bound in this proposal. Note that a bidder must be experienced, and complete the experience forms, in either shotcrete repairs, or steel repairs, or all forms. A bidder cannot have a subcontractor be the documented experience in all categories.

If the bidder is not anticipating self-performing the scope of work associated with the experience type listed herein, please list the name of the qualified subcontractor below:

Subcontractor _____
(If applicable) Company Name

BRIDGE SUBSTRUCTURE SHOTCRETE REPAIR PROJECT NO. 1

Job Location(s)/Description(s): _____

Total Shotcrete Placement Square Footage: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

BRIDGE SUBSTRUCTURE SHOTCRETE REPAIR PROJECT NO. 2

Job Location(s)/Description(s): _____

Total Shotcrete Placement Square Footage: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

BRIDGE SUBSTRUCTURE SHOTCRETE REPAIR PROJECT NO. 3

Job Location(s)/Description(s): _____

Total Shotcrete Placement Square Footage: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

BRIDGE SUBSTRUCTURE SHOTCRETE REPAIR PROJECT NO. 4

Job Location(s)/Description(s): _____

Total Shotcrete Placement Square Footage: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR - 2022

MISCELLANEOUS REPAIRS

STEEL SUPERSTRUCTURE REPAIR EXPERIENCE - BIDDER/SUBCONTRACTOR

In addition to the bidding requirements stated elsewhere in these documents, prospective bidders or their subcontractor must have successfully completed at least three (3) bridge superstructure repair projects where one or more steel beams were jacked off the bearing and a portion of the steel beam was replaced with new steel by welding. This form is provided to bidders for them to demonstrate that experience, and must be completed and submitted by all bidders, bound in this proposal. Note that a bidder must be experienced, and complete the experience forms, in either shotcrete repairs or steel repairs, or all forms. A bidder cannot have a subcontractor be the documented experience in all categories.

If the bidder is not anticipating self-performing the scope of work associated with the experience type listed herein, please list the name of the qualified subcontractor below:

Subcontractor _____
(If applicable) Company Name

STEEL SUPERSTRUCTURE REPAIR PROJECT NO. 1

Job Location(s)/Description(s): _____

No. of Steel Beams Jacked and Repaired: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

STEEL SUPERSTRUCTURE REPAIR PROJECT NO. 2

Job Location(s)/Description(s): _____

No. of Steel Beams Jacked and Repaired: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

STEEL SUPERSTRUCTURE REPAIR PROJECT NO. 3

Job Location(s)/Description(s): _____

No. of Steel Beams Jacked and Repaired: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

STEEL SUPERSTRUCTURE REPAIR PROJECT NO. 4

Job Location(s)/Description(s): _____

No. of Steel Beams Jacked and Repaired: _____

Owner/Contact Information: _____

Owner/Contact Phone Number: _____

Approximate Date(s) of Project: _____

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
_____, as Principal/Contractor, and
_____, as Surety, legally authorized to do
business in the Commonwealth of Virginia, are held and firmly bounded unto the Richmond
Metropolitan Transportation Authority, as Authority, in the amount of FIVE (5) PERCENT OF
THE DOLLAR VALUE OF THE TOTAL AMOUNT WRITTEN IN THE BID, on which the
Contract is awarded lawful money of the United States of America, for the payment of which, well
and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and
assigns, jointly and severally and firmly by these presents:

WHEREAS, the Contractor is herewith submitting its Bid for Contract No. MR-2022
entitled Miscellaneous Repairs, in connection with the Richmond Expressway System; and

NOW, THEREFORE, the condition of this obligation is such, that if the Contractor shall be
awarded the Contract upon said Bid and shall, within fifteen (15) calendar days after the date of
written notice of such award, enter into and deliver a Contract and the prescribed Contract Bond
for the faithful performance of the Contract, together with the required proof of proper insurance
coverage and other necessary documents, then this obligation shall be null and void; otherwise, to
remain in full force and effect, and the Contractor and Surety will pay unto the Authority the
difference in money between the amount of the Total Amount written in the Bid of said Contractor
and the amount for which the Authority may legally contract with another party to perform the
said work, if the latter amount be in excess of the former; but in no event shall the Surety's liability
exceed the penal sum hereof.

SIGNED AND SEALED this _____ day of _____, 20_____.

PRINCIPAL/CONTRACTOR

Business Name

Address

Witness or Attest:

By: _____ (L.S.)

Title:

(Affix Corporate Seal Here)

SURETY:

Business Name

Address

Witness or Attest:

By: _____ (L.S.)

Title:

(Attach evidence of Power of Attorney)

(Affix Corporate Seal Here)

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

CONTRACT AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20 ____, between the Richmond Metropolitan Transportation Authority, 901 East Byrd Street, Suite 1120, Richmond, Virginia, 23219, hereinafter called the Authority and _____, or his, its or their successors, executors, administrators and assigns, hereinafter called the Contractor.

WITNESSETH, that the Contractor agrees with the Authority for the consideration herein mentioned, and at his, its or their own proper cost and expense, to do all the work and furnish all the materials, equipment, teams and labor necessary to prosecute and complete and to extinguish all liens therefore, Contract No. MR - 2022, entitled Miscellaneous Repairs, in the manner and to the full extent as set forth in the Special Provisions, Plans, Supplemental Specifications, 2020 Road and Bridge Specifications of the Virginia Department of Transportation, Bid (for the basis of award stated herein below) and other documents related to said Contract which are on file at the office of the Richmond Metropolitan Transportation Authority and which are hereby adopted and made part of this Agreement as completely as if incorporated herein, and to the satisfaction of the Richmond Metropolitan Transportation Authority or its duly authorized representative who shall have at all times full opportunity to inspect the materials to be furnished and the work to be done under this Agreement. In the event of a conflict among the Contract Documents, the Contract Documents shall control one over another in the following descending order of precedence: Special Provisions, Plans, Supplemental Specifications, 2020 Road and Bridge Specifications of the Virginia Department of Transportation, Bid and other documents related to said Contract.

This Contract is awarded on the basis of the Total Bid Price (based on Bid quantities) of _____ dollars and _____ Cents (\$ _____).

In consideration of the foregoing premise, the Authority agrees to pay the Contractor for all items of work performed and materials furnished at the unit and lump sum prices bid therefore in the Bid submitted for this Contract, subject to any percentage reductions in the total Contract amount that may be named in the Bid corresponding to the basis of award stated in the above paragraph, and subject to the conditions set forth in the Specifications.

The Contractor agrees as follows:

Indemnification: The Contractor shall indemnify and hold harmless Richmond Metropolitan Transportation Authority, and all officers, directors and employees of the named entity, (individually and collectively), from any and all liability, loss, damage, expense, cause of action, suits, claims or judgments arising from injury to person or property resulting from activity arising out of this contract; and shall, at its own cost and expense, defend any and all suits which may be brought against such parties, either alone or in conjunction with others upon any such liability or claim or claims and shall satisfy, pay and discharge any and all judgments and fines that may be recovered against such parties in any such action or actions, provided, such indemnity shall not extend to the negligence of such parties and, provided, further, that such parties shall give the Richmond Metropolitan Transportation Authority written notice of any such claim or demand.

Cancellation of Contract: The Authority reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice. Any contract cancellation notice shall not relieve the contractor of the obligation to deliver and/or complete all work tasks in progress prior to the effective date of cancellation.

Term of Contract: Sealed proposals for the above project are due Thursday, July 21, 2022, at 10:00 a.m. at which time and place the bids will be publicly opened and read. The work under this contract shall be completed no later than June 30, 2023.

Scope of Work: A complete list of all bid items and estimated quantities is included beginning on sheet P-2 in BID FOR GENERAL CONSTRUCTION CONTRACT.

Anti-Discrimination: By submitting their (bids/proposals), (bidders/offerors) certify to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the *Virginia Public Procurement Act*. If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (*Code of Virginia*, § 2.2-4343.1 E).

During the performance of this Contract, the Contractor agrees as follows:

- a. I/WE will not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor.
- b. I/WE agree to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- c. I/WE in any solicitations or advertising for employees placed by or on behalf of itself, will state that it is an equal opportunity employer.
- d. Notices and advertisements and solicitations placed in accordance with federal law, rule or regulation, shall be deemed sufficient for the purposes of meeting the requirements of this section.
- e. The Contractor does not and shall not during the performance of the contract for goods and services in the Commonwealth, knowingly employ an unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

To the extent that the Contractor enters into any subcontract or purchase order over Ten Thousand Dollars (\$10,000.00), the provisions of (a), (b) (c) (d) and (e) above shall be binding on each subcontractor or vendor.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement the day and year written above.

RICHMOND METROPOLITAN
TRANSPORTATION AUTHORITY

By: _____
Joi Dean, CEO

Sworn to and Subscribed
before me this _____
day of _____, 20 _____.

(Authority's Seal)

Notary Public

My commission expires:

CONTRACTOR:

Business Name

Address

by: _____(L.S.)
Title

(Affix Corporate Seal Here)

Sworn to and subscribed
before me this _____
day of _____, 20 _____.

Notary Public

My commission expires: _____

EVIDENCE OF CORPORATE AUTHORITY

I, _____, hereby certify that I am Secretary of _____, a Corporation existing under the laws of the State of _____, and that the following resolution was adopted at a meeting of the Board of Directors of the said Corporation duly called and held on the _____ day of _____, 20____, and that the same remains in full force and effect:

(Here insert resolution)

IN WITNESS WHEREOF, I have hereto appended my signature and the seal of the said Corporation on this the _____ day of _____, 20_____.

Secretary

SEAL

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

—————
RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
_____, as Principal/Contractor, and _____,
as Surety, legally authorized to do business in the Commonwealth of Virginia, are held and firmly
bounded unto the Richmond Metropolitan Transportation Authority (Authority), in the amount
of _____ Dollars
and _____ Cents (\$ _____), lawful money of the
United States of America, for the payment of which, well and truly to be made, we bind ourselves,
our heirs, executors, administrators, successors and assigns, jointly and severally and firmly by
these presents:

WHEREAS, the Contractor has entered into a Contract with the Authority for the faithful
prosecution and completion of a project designated as Contract No. MR-2022, entitled
Miscellaneous Repairs, in connection with the Richmond Expressway System; and

WHEREAS, it was one of the conditions of the Contract award by the Authority pursuant
to which said Contract was entered into, that these presents shall be executed;

NOW, THEREFORE, the condition of this obligation is such, that if the Contractor shall
faithfully prosecute and complete the entire work prescribed for this project in full compliance with
the terms and conditions of said Contract, including the Plans, Standard Specifications,
Supplemental Specifications, Bid and all other documents pertaining to this Contract, and such
alterations as may be made in said Plans and Specifications as therein provided for, shall indemnify
and save harmless the Authority against or from all costs, expenses; damages injury or loss to
which the Authority may be subjected by reason of any wrongdoing, misconduct, want of care or
skill, negligence or default, including patent infringement, on the part of the Contractor, his agents
or employees, in the execution or performance of said Contract, including errors in drawings

furnished by the Contractor, and shall promptly pay all just claims for damages, for injury to property, and for labor, materials, equipment rentals, services and other charges incurred by the Contractor in or about the work contracted for, and extinguish all liens therefore, then this obligation shall be null and void; otherwise, to remain in full force and effect.

SIGNED AND SEALED THIS _____ day of _____, 20_____.

PRINCIPAL/CONTRACTOR:

Business Name

Address

Witness or Attest:

By: _____(L.S.)

Title

(Affix Corporate Seal Here)

SURETY:

Business Name

Address

Witness or Attest:

By: _____(L.S.)
Title

Countersigned by
Resident Virginia Agent:

(Attach evidence of Power of Attorney)

(Affix Corporate Seal Here)

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

FINAL RELEASE OF LIABILITY

I/We, _____, hereby certify that all bills, charges and salaries for labor, services, materials and rental of equipment, arising out of the prosecution of the work under Contract/Project No. MR-2022 have been paid, or satisfactory arrangements for payment have been made. I/We further certify that all other just demands and liens relating to this project have been fully satisfied or provided for. I/We hereby release the Richmond Metropolitan Transportation Authority, its Engineers and representatives from all claims demands and liability of whatsoever nature arising from anything done or furnished under this contract except to the extent only as to the following matters for which unresolved claims have been submitted by the Contractor in accordance with Section 105.19 of the Supplemental Specifications of the Contract:

SIGNED AND SEALED THIS _____ day of _____, 20____.

Business Name

Address

By: _____ (L.S.)

Title: _____

(Affix Corporate Seal Here)

STATE OF VIRGINIA AT LARGE: }
 }
CITY/COUNTY OF } to-wit:

The foregoing instrument was acknowledged before me this ____ day of _____,
20____, by _____, _____ of
_____ [name] _____ [title]

_____ [business name]

a _____ corporation/partnership, on behalf of said corporation/partnership,
_____ [state]

Notary Public

My Commission expires: _____.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

SWaM-DBE Participation

The Authority strongly encourages the submission of bids by qualified contractors whose principal businesses are located in the Richmond Metropolitan Area and further encourage such contractors to utilize the services of local subcontractors and vendors.

In addition, the Authority strongly encourages the submission of bids by qualified contractors certified as Small, Women, and Minority Owned (SWaM) businesses and/or Disadvantaged Business Enterprises (DBE).

Furthermore, the Authority encourages the use of certified Small, Women, and Minority Owned (SWaM) businesses and Disadvantaged Business Enterprises (DBE) as subcontractors or vendors to the fullest extent reasonably possible.

Certification:

The Virginia Department of Small Business and Supplier Diversity is responsible for the certification of eligible small, women, and minority-owned businesses to participate in the SWaM Procurement Initiative, <https://www.sbsd.virginia.gov/directory/> . They also certify Disadvantaged Business Enterprises (DBEs) for participation under the Virginia Unified Certification Program (as part of the federal DBE Program). Service Disabled Veterans are also able to obtain SWaM certification upon receipt of their certification by the Department of Veterans Services and by meeting the eligibility requirements of the SWaM Program.

SWaM Category Type:

(As certified by the Virginia Department of Small Business and Supplier Diversity)

Minority Owned (M)

Small Business (S)

Women Owned (W)

Minority Owned with Small Business Certification (MS)

Women Owned with Small Business Certification (WS)

Other SWaM, DBE, WBE and MBE Programs:

Any contractors, subcontractors or vendors whose principal businesses are located outside the Commonwealth of Virginia must submit information on any business that is qualified as a Small, Women-Owned, Minority Owned and/or Disadvantaged Business Enterprises (DBE) by their home state or any federal program.

SWaM-DBE Summary:

As a part of the project closeout process and a prerequisite to final payment, the prime contractor shall submit fully executed pages DBE-3 and DBE-4, along with any additional sheets as needed, to document the actual amounts paid to each SWaM and/or DBE businesses that provided service or products during this execution of the contract.

SWaM/ DBE Summary

Firm Name: _____

Firm Address: _____

Owner/Contact Name: _____

Owner/Contact Phone Number: _____

SWaM Category Type: _____ SWaM Certification Number: _____

Amount Paid: \$ _____

Firm Name: _____

Firm Address: _____

Owner/Contact Name: _____

Owner/Contact Phone Number: _____

SWaM Category Type: _____ SWaM Certification Number: _____

Amount Paid: \$ _____

Firm Name: _____

Firm Address: _____

Owner/Contact Name: _____

Owner/Contact Phone Number: _____

SWaM Category Type: _____ SWaM Certification Number: _____

Amount Paid: \$ _____

Contractor shall attach additional sheets if needed.

SIGNED AND SEALED THIS _____ day of _____, 20____.

 Business Name

 Address

 By: _____ (L.S.)
 Title: _____

STATE OF VIRGINIA AT LARGE: }
 }
 CITY/COUNTY OF } to-wit:

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____, _____ of _____ [name] [title] _____ [business name]

a _____ corporation/partnership, on behalf of said Corporation/partnership, _____ [state]

 Notary Public

My Commission expires: _____.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

RECEIPT OF ADDENDA

I/We hereby acknowledge receipt of the following addenda and have made the necessary revisions to the Contractor's Proposal, plans, and specifications, etc., and agree that these addenda are included in the Contractor's Proposal.

<u>Addenda #</u>	<u>Signature</u>	<u>Date</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____

I understand that failure to confirm receipt of addenda may cause the bid to be irregular.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY
SUPPLEMENTAL SPECIFICATIONS

To

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SPECIFICATIONS

FOR
RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022
MISCELLANEOUS REPAIRS

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RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

SUPPLEMENTAL SPECIFICATIONS

PREFACE:

The 2020 Road and Bridge Specifications of the Virginia Department of Transportation, available from the Virginia Department of Transportation, as amended and augmented by the Supplemental Specifications following, shall govern the construction of this Project and the performance of the Contract. These specifications are hereby made a part of the Contract as fully and with the same effect as if set forth at length herein.

Attention is directed to the fact that any other documents printed by the Virginia Department of Transportation modifying or supplementing said 2020 Road and Bridge Specifications, such as Standard Supplemental Specifications, Special Provisions (by the Department), Notice to Bidders, etc., do not form a part of this Contract nor govern its performance, unless specifically so stated in the Supplemental Specifications herein contained. The 2016 edition of the VDOT "Road and Bridge Standards", revised May 2020 are hereby made a part of this contract. The Virginia Erosion and Sediment Control Handbook, Third Edition 1992 Standards and Specifications are hereby made a part of this Contract.

References to "Proposal" have been changed to "Bid" in the Authority's documents for this contract, including many standard VDOT terms such as "Examination of Site of Work and Bid [Proposal]". This shall be accounted for when working contract documents prepared by the Authority with those standards prepared by VDOT.

References made to specific section numbers in these Supplemental Specifications, or in any of the various documents which constitute the complete Contract Documents, shall, unless otherwise denoted, be construed as referenced to the corresponding section of the 2020 Road and Bridge Specifications issued by the Virginia Department of Transportation.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

SUPPLEMENTAL SPECIFICATIONS

TO

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SPECIFICATIONS

The following provisions represent modifications to the corresponding sections of the Virginia Department of Transportation Specifications, described above, and relate exclusively to the Richmond Metropolitan Transportation Authority Contracts. In case of conflicting requirements between the Virginia Department of Transportation Specifications and these Supplemental Specifications, the Supplemental Specifications shall govern. Any applicable provision in the Virginia Department of Transportation Specifications not amended by and not in conflict with any Supplemental Specifications or Special Provisions shall be in full effect.

All modifications contained herein are additions to the provisions of the designated sections of the Virginia Department of Transportation Specifications unless the text specifically identifies a requirement to be an amendment to, deletion of or substitution for a provision in the Virginia Department of Transportation Specifications.

SECTION 101 - DEFINITION OF ABBREVIATIONS, ACRONYMS AND TERMS

101.02 Terms

The following new definitions are added to this section:

ADDENDUM - - A written, fax or e-mail revision or addition to any of the Contract Documents, transmitted in advance of the opening of Bids to all parties who have been recorded by the Authority as having secured full sets of Contract Documents directly from the Authority or their designee.

AUTHORITY - - The Richmond Metropolitan Transportation Authority, a political subdivision and public body corporate and politic of the Commonwealth of Virginia, organized and existing under Virginia Code §§ 33.2-2900 et seq. The Authority's principal office is presently located at 901 East Byrd Street, Suite 1120, Richmond, Virginia, 23219.

AFFILIATE - - Any business entity which is closely associated to another business entity so that one has the power to control the other either directly or indirectly; or, where one business entity systematically shares resources, officers and/or other management with another business entity to the extent that a business relationship legally exists or is publicly perceived to exist; or, when a third party has the power to control both; or, where one business entity has been so closely allied with another through an established course of dealings, including but not limited to the lending of financial wherewithal or engaging in joint ventures, so as to cause a public perception that the two firms are one entity.

AVERAGE ANTICIPATED OPERATING SPEED - - The posted speed of the work zone plus 5 miles per hour.

MOT - - Maintenance of Traffic

BID BOND - - One of the two permissible means of security offered as the Bid Guaranty, in the form of a surety bond executed by the Bidder and the Contractor's Surety, guaranteeing that if the Authority should award the Contract to the Contractor, the Bidder will execute and deliver the Contract Agreement and Contract Bond, together with other required documents, all within the prescribed time.

STANDARD DRAWINGS - - Whenever the Plans and/or Specifications refer to "Standards" or "Standard Drawings" such reference shall be construed to mean the set of drawings issued by the Location and Design Division, Virginia Department of Transportation, 2016, and entitled "Road and Bridge Standards", Volumes I and II. Only those standards or standard drawings specifically referred to by number on the Plans or in the various Contract Documents are applicable to work on this Contract.

FULL COMPLETION OF ALL WORK (OR TO FULLY COMPLETE ALL WORK) - - The completion of all work specified under this Contract as evidenced by the formal acceptance thereof by the Authority.

WORK AREA PROTECTION MANUAL - - The 2011 Virginia Work Area Protection Manual including Revision 2.1 (2020), and all subsequent revisions.

Whenever in the various Contract Documents the term, "Commission" or "State" appears it shall be replaced by the term, "Richmond Metropolitan Transportation Authority." Similarly, the term, "Commissioner" shall be replaced by the term, "CEO of the Richmond Metropolitan

Transportation Authority,” and the term, "Deputy Commissioner" replaced by the term, "Director of Operations of the Richmond Metropolitan Transportation Authority."

Whenever in the Virginia Department of Transportation Specifications and Standard Drawings the term, "Department" or "Virginia Department of Transportation" appears, it shall be replaced by the term, "Richmond Metropolitan Transportation Authority, (Authority)" except in references to said Virginia Department of Transportation as being the author of certain Specifications and Standard Drawings, and in reference to said Department as the agency prequalifying prospective Bidders.

Whenever in the Virginia Department of Transportation Specifications and Standard Drawings the term, "District Engineer" appears, it shall be replaced by the term, "Engineer."

The definitions for the following terms as they appear in this section are deleted and the following definitions substituted therefore:

CONTRACT TIME - - Each calendar date indicated in the Specifications or Special Provisions as the time allowed for the completion of any designated portion or for all of the work under the Contract, including any extensions thereto that may subsequently be authorized.

ENGINEER - - The authorized representative(s) of the firm of the General Consultant, HNTB Corporation, who have been duly appointed by the Authority to prepare Plans and Specifications for the Contract and to monitor the construction work performed in connection therewith.

The headquarters office of HNTB Corporation for this project is located at 2900 S. Quincy St, Suite 600, Arlington, Virginia 22206, telephone (703) 824-5100.

SPECIFICATIONS (SPEC) - - The general term comprising all the directions, provisions and requirements contained in the Virginia Department of Transportation, 2020 Road and Bridge Specifications, the Authority's Supplemental Specifications and Special Provisions, and in any Addenda and Change Orders or Supplemental Agreements that may be issued, all of which are necessary for the proper performance of the Contract.

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS

102.01 Prequalification of Bidders

This Section is amended to add the following:

Only contractors who have been prequalified by the Virginia Department of Transportation for bidding on State projects will be permitted to submit Bids for Contracts for Construction of this Project. The foregoing notwithstanding, the Authority reserves the right to reject the bid of any bidder because of reason of unsatisfactory performance or progress on other or prior Authority contracts, as determined by the Authority in its sole discretion.

Contractor shall also see Prequalification requirements in the “Invitation to Bid” (Sheet IB-2 of the Contract Documents). If a Subcontractor is listed in one of the experience forms, that Subcontractor or a different Subcontractor which meets the experience requirements must complete at least 90% of the work in that category.

In order to bid on this project, prospective Bidders must meet the Prequalification requirements at the time specified in the “Invitation to Bid”. The Authority cannot be held liable in the event a party is unable to submit a valid bid due to a delay in the prequalification procedure. Securing prequalification and the timing thereof, shall at all times be the sole responsibility of the Contractor.

If a group of contractors should desire to submit a single bid for a contract or group of contracts, acting under the terms of a joint venture, each such contractor must be prequalified in the proper classification of work and must be registered with the Virginia Department of Transportation. The sum of the maximum pre-qualified classification capacity of the contractors comprising the joint venture must be greater than the estimated dollar value of the contract or group of contracts comprising the bid.

102.02 Content of Proposal

This section is amended as follows:

The following documents are bound with and are also a part of the Bid Form:

- i. Bid
- ii. Non-Collusion Affidavit
- iii. Statement of Contracts Underway
- iv. Joint Venture Statement (if applicable)
- v. Bidder or Subcontractor Shotcrete Experience
- vi. Bidder or Subcontractor Steel Repairs Experience
- vii. Bid Bond
- viii. Receipt of Addenda (if applicable)
- ix. Railroad Agreement (Schedule I)

102.04 Examination of Site of Work and Proposal

The Section is amended to add the following:

In addition to the virtual pre-bid meeting, the Bidders are expected to visit the Project site to form their own conclusions regarding access requirements, effort required to perform the tasks and other information needed to prepare their bid. Prior to visiting the site, a Bidder shall notify the Authority and Glen Parker (Construction Manager) at 804-938-3963 to coordinate the time and date of the Bidder's visit.

Any Addenda that may be issued will be posted on the RMTA website: <http://www.rmtaonline.org/news-events/#news-rfps-public>. All bidders are required to download any and all addenda from the website. The Authority shall not be responsible for individually delivering addenda to all proposers.

102.05 Preparation of Bid

Sub-Section (a) is amended to add the following:

No electronic bids shall be accepted. All bids shall be submitted on forms furnished by the Authority.

As part of the execution of the Bid, each Bidder shall execute the Statement of Contracts Underway, and the Non-Collusion Affidavit and, in the case of Joint Venture Bidders, the Joint Venture Statement.

The Statement of Contracts Underway shall list the stipulated status information of all other work in which the Bidder is presently engaged, whether as a prime contractor or a subcontractor. Such listings shall include not only contracts which are under construction, but also those awarded to the Contractor but not begun and those on which the contractor is the lowest bidder awaiting formal award. In the case of Joint Venture Bidders, each party involved shall complete, execute and submit a separate Statement of Contracts Underway, as well as the Bidder's portion of the Joint Venture Statement. Additional Statements of Contracts Underway forms are available at the office of the General Manager of the Authority.

The Non-Collusion Affidavit must be executed by the person signing the Bid. In the case of Joint Venture Bidders, only the person signing the Bid on behalf of the Contractors involved need execute the Non-Collusion Affidavit.

The Richmond Metropolitan Transportation Authority may elect to receive bids on more than one construction contract on the same date. When this event occurs, the Authority will award the various contracts after all of the bids for the various contracts are received and analyzed.

Sub-Section (f) is amended as follows:

In the event of a joint venture of a group of Contractors submitting a single Bid, the Bid shall be signed by an individual owner, partner or officer of any one of the Contractors bound in the joint venture, and the official business address of the joint venture shall be given. In addition, a Joint Venture Statement must be executed by all Contractors involved.

102.06 Irregular Bids

This section is amended as follows:

The following section is deleted:

Section (m)

The following is added:

(p). If the bidder fails to submit the executed Statement of Contracts Underway; in the case of Joint Venture Bidders, failure to submit an executed Statement of Contracts Underway for each Contractor in the joint venture and the Joint Venture Statement.

(q). If the signed bid form is received from a party who was not represented and recorded by the Authority as attending the mandatory pre-bid meeting.

(r). If the bidder is not pre-qualified by the Virginia Department of Transportation at the time of the mandatory pre-bid meeting.

(s). If the bidder fails to properly acknowledge receipt of addenda/addendum in the Receipt of Addenda form.

(t). Alterations to the Bid Tab

102.07 Proposal Guaranty (Bid Bond)

Add the following:

If a certified check is submitted as the Bid Guaranty, the check is to be made payable to the Richmond Metropolitan Transportation Authority, and the project name and Contract number shall also appear on the face of the check, as well as the business name of the bidder.

A bid bond will be accepted only if executed on a form which contains the exact wording as the Bid Bond included in these contract documents form. Any bid accompanied by a bond having wording which differs in any respect from the Bid Bond form may be rejected.

102.09 Submission of Bid

This section of the Specifications is completely replaced by the following:

Bids will be accepted at the Authority's office at 901 East Byrd Street, Suite 1120, Richmond, Virginia until scheduled bid opening time and shall be submitted in a sealed envelope. Bids shall be filed prior to the time specified in the Invitation to Bid. Bids received after that time will be returned to the bidder unopened. The bid date may be deferred by the Authority, in which case the bidders will be notified.

102.12 Public Opening of Bids

This section of the Specifications is completely replaced by the following:

Bids will be opened and read publicly at the time and place specified in the Invitation to Bid. Interested parties are invited to be present.

SECTION 103 - AWARD AND EXECUTION OF CONTRACTS

103.01 Consideration of Bids

Add the following:

In reviewing bids received, the Authority will give full consideration to a Bidder's capacity for undertaking and handling the work included in the bid. The difference in amounts between the maximum capacity stated in the prequalification certification for this classification of work, and the total estimated value of work remaining to be completed by the Bidder's organization as given in the Bidder's Statement of Contract Underway, shall constitute the Bidder's net capacity for

handling additional work. Such net capacity will be considered by the Authority in determining the successful Bidders for Contracts on this Project.

103.02 Award of Contract

This section of the Specifications is completely replaced by the following:

The Authority will award a contract within sixty (60) calendar days of the bid opening for said Contract. If a Contract is not awarded within this time period, the Bidder shall have the right to withdraw the Bidder's Bid for the Contract without penalty or prejudice, unless the award date is extended by mutual consent.

The Authority agrees that Award of Contract, if made, will be determined without discrimination on the ground of race, creed, color, sex or national origin.

Basis for Contract Award: The Contract, if awarded, will be awarded to the lowest responsive and responsible bidder, if any, provided the bid is reasonable and it is in the best interest of the Authority to accept it and subject to the Authority's right to reject any and all bids and to waive informality in the bids and in the bidding. Determination of the lowest responsive bidder, if any, will be based on the Total Bid Amount entered on the Bid Tab Form including any properly submitted bid modifications taken in sequence as the Authority in its discretion chooses to Award. **Where the sum of the values entered in the multiple parts do not agree with the Total Bid Amount, the Total Bid Amount entered on the Bid Tab Form, including any properly submitted bid modifications, shall take precedence.**

In the event that the Total Bid Amount from the lowest responsible bidder exceeds available funds, the Authority may negotiate the Total Bid Amount with the apparent low bidder to obtain a contract price within available funds, pursuant to §2.2-4318 of the Code of Virginia, as amended, and Section 12(c) herein.

Informalities: The Authority reserves the right to waive any informality in the bids when such waiver is in the interest of the Authority.

Negotiation with Lowest Responsible Bidder: If award of a contract to the lowest responsive and responsible bidder is precluded because of limitations on available funds, under the provisions of §2.2-4318 of the Code of Virginia (the Public Procurement Act), the Authority reserves the right to negotiate the Total Bid Amount with the lowest responsive, responsible bidder to obtain a contract price within the available funds. This may involve changes in either the features or scope of the work included in the Contract Documents. Such negotiations with the apparent low bidder may include reducing the quantity, quality, unit prices, or other cost saving mechanisms involving items in the Total Bid Amount. The Authority shall notify the

lowest responsive and responsible bidder that such a situation exists, and the Authority and bidder shall then conduct their negotiations in person, by mail, by telephone or by any means they find convenient. If an acceptable contract can be negotiated, the changes to the Invitation to Bid documents agreed upon in the negotiations shall be summarized in a "Post Bid Modification" and included in the contract. If an acceptable contract cannot be negotiated, the Authority reserves the right to terminate negotiations and begin negotiations with the second lowest responsive and responsible bidder or terminate negotiations with all bidders and reject all bids.

Notice of Award: The Notice of Award, the Notice of Intent to Award, or the Notice of Decision to Award will be posted at the Authority's Construction Engineering Inspection Office.

103.06 Contract Documents

Subsection (d) of this section of the Specifications is amended to include:

- All insurance certificates as required in Sec. 103.06 (d), as prescribed in Sec. 107 and as may be required in other sections.

Subsection (e) of this subsection of the Specifications is amended to include the following:

The Contractor shall submit a progress schedule as per Sec. 108.03 using the Critical Path Method (CPM) format. As a minimum, the schedule shall include:

- The duration of activities.
- The interrelationship of critical activities.
- Maintenance of traffic changes.
- Any temporary work necessary to complete project.
- An easily distinguishable critical path.
- Final completion by the date specified.

SECTION 104 - SCOPE OF WORK

104.02 Changes in Quantities or Alterations in the Work

Subsection (b) of this section of the Specifications is amended to include:

1. Major Items: There are no major items under this contract.

2. Minor Items: All items under this Contract are considered minor items. No adjustment of contract unit prices will be made for overruns or underruns of the original contract quantities, regardless of the extent of such overruns or underruns.

SECTION 105 - CONTROL OF WORK

105.01 Notice to Proceed

Add the following:

Notice to Proceed will be issued within seven (7) calendar days after the execution of the Contract by the Authority.

Contractor shall submit CPM schedule as detailed in Section 103.06 within fourteen (14) days of issuance of Notice to Proceed by the Authority.

105.06 Subcontracting

Add the following:

Except as noted below, the consent to sublet any part of the work, or obtain supplies, shall not be construed to be an approval of the said subcontract, supply contract or any of its terms, but shall operate only as an approval of the making of a subcontract or supply contract between the Contractor and Subcontractor or Supplier. The Subcontractor agrees, as a condition of entering into a subcontract on the project, that the Contractor shall make no claim whatsoever against the Authority, the Engineer, or any of their officers, servants, agents or employees for any work performed or thing done by reason of said subcontract, or for any other cause whatsoever that may arise by reason of the relationship created between the Contractor and Subcontractor unless the proposed Subcontractor furnishes a statement to the effect that said Subcontractor is acquainted with all provisions of the Contract and agrees thereto.

In the case of extra work to be performed on a force-account basis, if any portion of such work is proposed to be sublet on the basis of negotiated unit and/or lump-sum prices instead of on a force-account basis, then such negotiated unit and/or lump-sum prices shall first meet with the approval of the Engineer before consent will be given to sublet the work.

Sublet work shall not begin until approval thereof has been secured from the Engineer. It is understood, however, that any consent by the Engineer for the subletting of any of the work under the Contract in no way relieves the Contractor from the Contractor's full obligations under the Contract. The Contractor shall be responsible for all acts of omissions of any Subcontractor or Supplier.

105.13 State Force Construction Surveying

This Section is deleted in its entirety. All construction surveying shall be the responsibility of the Contractor.

105.15 Removing and Disposing of Structures and Obstructions

This section is amended as follows:

All materials removed by the Contractor as specified therein, shall become the property of the Contractor, except as may be otherwise specifically required, and shall be legally disposed of by the Contractor off of RMTA property.

105.19 Submission and Disposition of Claims

This section of the Specifications is completely replaced by the following:

(a) Alleged Damages and Exceptions. Early or prior knowledge by the Authority of an existing or impending claim for damages might alter the plans, scheduling and other actions of the Authority or result in mitigation or elimination of the effect of the act objected to by the Contractor. Therefore, a written statement describing (1) the act of omission or commission by the Authority or its agents that allegedly caused or will likely cause damage to the Contractor and (2) the nature of the claimed damage must be submitted to the Engineer at the time of occurrence or beginning of the work upon which the claim and subsequent action is based. If such damage is reasonably likely to result from the Contractor's acting upon an order emanating from the Engineer, the Contractor shall take written exception, delivered to the Authority, to such order immediately. Submission of such written statement or exception, as specified, shall be mandatory. Failure to submit such written statement or exception shall be a conclusive waiver of such damages or exception by the Contractor. Mere oral notice or statement will not be sufficient, nor will notice or statement after the event.

(b) Additional Compensation. At the time of occurrence or prior to beginning the work the Contractor shall furnish the Engineer, in writing, an itemized list of materials, equipment, and labor for which additional compensation will be claimed. The contractor shall afford the Engineer every facility for keeping an actual cost record of the work. The Contractor and the Engineer shall compare records and bring them into agreement at the end of each day. Failure on the part of the Contractor to afford the Engineer proper facilities for keeping a record of actual costs will constitute a conclusive waiver of a claim for such extra compensation except to the extent that it is substantiated by the Authority's records. The filing of such notice by the Contractor and the keeping of cost records by the Engineer shall in no way establish the validity of a claim. Failure to submit such written itemized list shall be a conclusive waiver of such claim for additional

compensation. Mere oral notice or statement will not be sufficient, nor will notice or statement after the fact.

(c) Verification. If the Contractor's claim contains data furnished by the Contractor that cannot be verified by the Authority's records, the data shall be subject to complete audit by the Authority or its authorized representative if they are to be used as a basis for claim settlement.

(d) Claims Procedure. Upon completion of the Contract, the Contractor may, within 60 calendar days from expiration of the period for review of the Final Estimate by the Contractor as provided in Section 109.10, submit to the Authority a written claim (original plus three legible copies) for such amount as the Contractor deems it is entitled to under the said contract setting forth the facts upon which said claim is based and including all pertinent data and correspondence which may substantiate the claim, provided that written notice of intention to file such claim shall have been given to the Authority at the time of occurrence or beginning of the work upon which claim and subsequent action is based. Failure of the Contractor to furnish any of the items required by Section 109.10 as prerequisite to the issuance of final payment shall not extend the time period in which the Contractor may submit a claim under this or any other section of the Contract. If the claim is not disposed of by agreement, then within 90 calendar days from receipt of said claim, the Authority will make an investigation and notify the Contractor by registered or certified mail, return receipt requested, of its decision; however, the Authority and Contractor may, by mutual agreement, extend such 90-calendar day period for another 30 calendar days. The decision of the CEO of the Authority shall be final, and failure of the Contractor to comply with the provisions of this section shall constitute a conclusive waiver of any such claim hereunder.

SECTION 106 - CONTROL OF MATERIAL

106.01 Source of Supply and Quality Requirements

This section is amended to add the following:

The Contractor shall not use in preparation of the bid nor on construction of this project any supplier or material person, hereinafter referred to simply as supplier, debarred by the Virginia Department of Transportation as of the date of advertisement.

It shall be the responsibility of the Bidder to determine from the Department's listings which suppliers are debarred as of the date of advertisement of this project. Such listings will be posted in the office of the Contract Engineer, 1401 E. Broad Street, Richmond, Virginia and in each District Office.

The Engineer will not approve for use any material furnished by a supplier debarred by the Department.

If subsequent to award of this contract, a previously debarred supplier is reinstated to eligibility, the Engineer may approve the use of that supplier on this project when requested by the Contractor and after consideration of all relevant factors.

106.02 Material Delivery

This section is amended as follows:

Contractor's invoices for materials delivered to the site shall show actual prices for such materials.

106.04 Disposal Areas.

The entire third paragraph under section (a) of the Specification is deleted.

SECTION 107 – LEGAL RESPONSIBILITIES

107.12 Responsibility for Damage Claims

Delete the first line of paragraph (a) and substitute:

"The Contractor shall indemnify and save harmless the Authority, the Engineer and its..."

Add the following statement to the end of paragraph (b):

". . . the contract provided, however, that the Authority and, where applicable, the Engineer are intended beneficiaries of this Contract and shall have standing to enforce the provisions of this Contract including the right to indemnification and the right to ascertain claims for damages.

Add the following after the last paragraph of this section:

In connection with the indemnification assumed by the Contractor by virtue of this section, but without limitation or release of the Contractor's responsibility for such indemnification or any other liability hereunder, the Contractor shall provide the following types and minimum amounts of insurance coverage for this project:

(a) Contractor's Comprehensive General Bodily Injury and Property Damage Liability Insurance, including Contractor's Protective Liability Insurance and Contractual Liability Insurance:

- (1) One (1) person in any one (1) occurrence, amount One Million Dollars (\$1,000,000).
- (2) Two (2) or more persons in any one (1) occurrence, amount One Million Dollars (\$1,000,000).
- (3) Property Damage in any one (1) occurrence, amount One Million Dollars (\$1,000,000), with aggregate property damage policy limit of One Million Dollars (\$1,000,000).

The portion of the policy dealing with property damage liability shall contain a provision of endorsement providing insurance protection against property damage, including loss of use, caused by explosion and/or collapse, and against damage to existing underground and overhead pipes, cables, ducts and other such facilities, whether or not such facilities appear on available plans and whether or not accurately located on such plans.

The Contractual Liability Insurance policy shall contain an endorsement attesting to the Contractor's responsibilities for indemnification set forth in this section. Insurance certificates shall specifically indicate the inclusion of such an endorsement with particular reference to the Contract number and to "Compliance with Sec. 107.13 of the Specifications."

(b) Comprehensive Automobile and Truck Liability Insurance including coverage for Contractor's automotive equipment (and including non-owned and hired vehicles):

- (1) One (1) person in any (1) occurrence, amount One Million Dollars (\$1,000,000).
- (2) Two (2) or more persons in any one (1) occurrence, amount One Million Dollars (\$1,000,000).
- (3) Property damage in any one (1) occurrence, amount One Million Dollars (\$1,000,000).

- (c) Workmen's Compensation Insurance - Statutory. Employer's Liability Insurance in the amount of Five-Hundred Thousand Dollars (\$500,000)
- (d) Contractor shall maintain all insurance, required by and acceptable to, CSX Transportation and Norfolk Southern Corporation as described in Section 107.19 Railway – Highway Provisions contained herein.

If any part of the work is sublet, similar insurance shall be obtained by or on behalf of the Subcontractor to cover the Subcontractor's operation.

The insurance specified shall be with an insurance company acceptable to the parties hereto and licensed to do business in the State of Virginia. All insurance must be obtained before any work is commenced and kept in effect until its completion.

In compliance with Sec. 103.06, satisfactory evidence, in triplicate, of all required insurance coverage, including special endorsements, shall be forwarded to the Authority for approval within fourteen (14) Calendar Days after the date of written notice of Award of Contract. All insurance coverage must be approved by the Authority before the Contract will be executed by the Authority.

The Authority's approval of insurance furnished by the Contractor, or its failure to disapprove such insurance shall not relieve the Contractor of full responsibility for liability, damages and accidents as set forth elsewhere herein.

All policies required above shall include an endorsement requiring thirty (30) calendar days prior written notice to the Authority before any change or cancellation is made effective.

All policies required shall be maintained until completion and acceptance of all work under this Contract.

No separate payment will be made for the cost of the insurance herein specified but the Contractor shall include the cost of such insurance in the prices bid for the various items scheduled in the Bid.

107.19 Railway - Highway Provisions

This section is amended as follows:

CSX Transportation

When performing work on, over or adjacent to CSX Transportation (CSXT) right-of-way or operations, the Contractor must abide by the current CSXT Special Provisions, CSXT Construction Submission Criteria, Construction Requirements, and Insurance Requirements.

All construction related correspondence and submittals will be directed to HNTB, acting as Engineer on behalf of the Richmond Metropolitan Transportation Authority. The Authority and the Engineer will have the sole responsibility and authority for submitting the Contractor's construction submissions and coordinating all reviews with CSX Transportation.

The Contractor shall submit complete Construction Submission packages for all areas that may require a construction agreement within fifteen (15) calendar days of Notice to Proceed. The Authority shall have up to seven (7) calendar days to review all submittals. The Contractor shall address any comments and submit revised Construction Submission packages for all areas that may require a construction agreement within thirty (30) calendar days of Notice to Proceed.

If any submissions are returned not approved by CSX Transportation, the Contractor shall have seven (7) calendar days after receipt of comments to address any comments and submit revised Construction Submission package(s).

Failure of the Contractor to meet the time schedules listed above in Section 107.19 shall be considered a Failure to Complete on Time subject to the Liquidated Damages as described in Section 108.06. All construction related correspondence shall be considered "submitted" on the date that it is received by the Authority.

Contractor shall coordinate all work activities in the areas described below with the Richmond Metropolitan Transportation Authority or its authorized representative.

<u>Bridge:</u>	<u>Location</u>	<u>Repairs:</u>	<u>Railroad Owner:</u>
13	Pier 3, Unit 3	Steel	CSXT Corp.

Contractor hereby agrees to fully execute Schedule I – Contractor's Acceptance and to abide by and perform all applicable terms of the Construction Agreement between CSXT and the Richmond Metropolitan Transportation Authority, including, but not limited to Exhibits C and F to the

Agreement, and Sections 3, 9 and 11 of the Agreement. A copy of this agreement, construction requirements and submission criteria are included in the contract documents.

The cost for flagger or watchperson services near CSXT tracks for work performed under this MR – 2022 Contract will be paid by the Richmond Metropolitan Transportation Authority.

Norfolk Southern Corporation

When performing work on, over or adjacent to Norfolk Southern Corporation. (NS Corp.) right-of-way or operations, the Contractor must abide by the current NS Corp. Special Provisions, Construction Submission Criteria, Construction Requirements, and Insurance Requirements.

All construction related correspondence and submittals will be directed to NS Corp. with a copy to HNTB acting as Engineer on behalf of the Richmond Metropolitan Transportation Authority. The Contractor will have the sole responsibility and authority for submitting and coordinating all reviews with NS Corp.

The Contractor shall submit complete Construction Submission packages for all areas that may require a construction agreement within fifteen (15) calendar days of Notice to Proceed.

The Contractor shall address any comments and submit revised Construction Submission packages for all areas that may require a construction agreement within thirty (30) calendar days of Notice to Proceed.

If any submissions are returned not approved by NS Corp. the Contractor shall have seven (7) calendar days after receipt of comments to address any comments and submit revised Construction Submission package(s).

Failure of the Contractor to meet the time schedules listed above in Section 107.19 shall be considered a Failure to Complete on Time subject to the Liquidated Damages as described in Section 108.06. All construction related correspondence shall be considered “submitted” on the date that it is sent to NS Corp.

Contractor shall coordinate all work activities in the areas described below with the Richmond Metropolitan Transportation Authority or its authorized representative.

The cost for right of entry permits, and for flagger or watchperson services near NS Corp. tracks for work performed under this Contract will be paid by the Contractor.

MEASUREMENT AND PAYMENT

The Pay Item Railway Coordination Service will be paid for at the contract lump sum price for each bridge. The Contract Lump Sum Price shall include the preparation of all plans, drawings, schedules, and narratives necessary for describing the contractor's means and methods required to perform the work. This pay item includes any and all insurance costs incurred by the contractor to work in the railroad easement or right-of-way for work.

Pay Item:	Pay Unit
RAILWAY COORDINATION SERVICE, BRIDGE 13	Lump Sum

SECTION 108 - PROSECUTION AND PROGRESS OF WORK

108.04 Determination and Extension of Completion Date

In the second paragraph of this section, substitute the number "75" for the number "60" wherever it appears.

108.06 Failure to Complete on Time

Sub-section (B) is completely replaced by the following:

CONTRACTOR WAIVES ANY DEFENSE AS TO THE VALIDITY OF ANY LIQUIDATED DAMAGES STATED IN THIS CONTRACT ON THE GROUNDS THAT SUCH LIQUIDATED DAMAGES ARE VOID AS PENALTIES OR ARE NOT REASONABLY RELATED TO ACTUAL DAMAGES.

SECTION 109 - MEASUREMENT AND PAYMENT

109.06 Common Carrier Rates.

This Section of the Specifications is deleted in its entirety.

109.08 Partial Payments

This section is completely replaced by the following:

Partial payments will be made once each month covering work performed and materials complete-in-place in accordance with the contract and for materials delivered in accordance with Sec. 109.09 on and between the 5th day of a month and the 4th day of the succeeding month as the work progresses. Partial payments will be made on the value of work performed based on approximate estimates prepared by the Engineer, provided, however, that no estimate shall be certified or payment made where the net amount receivable by the Contractor is less than Five-hundred Dollars (\$500.00). The value of work done on items measured on a unit basis will be determined on a pro rata basis. If the Engineer determines that the Contractor has been overpaid, all further partial payments may be credited against such overpayment.

The Engineer will review the partial payment estimate with the Contractor's representative prior to each partial payment.

From the total of the amounts so determined will be deducted an amount equivalent to five (5) percent of the whole, which will be retained by the Authority until completion of the entire Contract in an acceptable manner and the balance, less all previous payments, shall be certified for payment.

Total Contract value shall be considered to mean the original amount of the Contract, except when the Contract is increased or decreased by a supplemental agreement in which case the adjusted total shall be used.

The Authority reserves the right to withhold the payment of any partial or final estimate voucher or any sum or sums thereof from such vouchers in the event of the failure of the Contractor to promptly make payment to all persons supplying equipment, tools or materials, or for any labor used by the Contractor in the prosecution of the work provided for in the Contract, and for any other cause as determined by the Authority in its sole discretion, including overpayment on previous partial payments.

109.10 Final Payment

This section of the Specifications is completely replaced by the following:

After final inspection and final acceptance of the project has been made by the Engineer, as provided in Sec. 108.09, the Engineer will prepare the final estimate of item quantities and amounts for the completed work. The Contractor will be afforded a period of fifteen (15) calendar days from the date of the final estimate to review the final estimate at the Authority's office.

As a prerequisite to the issuance of final payment, the Contractor will be required to furnish the following items to the Engineer:

- (a) An executed SWaM Participation form (on the Authority's standard form) attesting to actual amounts fully paid to each Small, Women, and Minority Owned (SWaM) businesses and/or Disadvantaged Business Enterprises (DBE).
- (b) An executed Final Release of Liability (on the Authority's standard form) attesting to the fact that all bills, charges and salaries for labor, services, materials and rental of equipment, arising out of the prosecution of work under this Contract have been fully paid or arrangements satisfactory to the Engineer therefore have been made and all other just demands and liens relating to this project fully satisfied or arrangements to the Engineer therefore have been made, and releasing the Authority and their representatives from all claims, demands and liability of whatsoever nature from anything done or furnished under this Contract, except to the extent only as to such matters for which unresolved claims have been submitted by the Contractor in accordance with Section 105.19 hereof;
- (c) Sworn statements of any property owners or other parties who may have had any claims against the Contractor or liens against the project, evidencing that all their claims and liens are fully satisfied or provided for and the Contractor and Authority are released there from;
- (d) Any other documents, invoices, releases or objects which the Engineer may request in finalizing the Contract.

After the above items have been forwarded to the Engineer, and the final estimate and certificate for final payment sent to the Authority with the Engineer's recommendation for acceptance, the Contractor will be paid the total Contract amount less the amounts of all previous partial payments and less any imposed liquidated damages. This net amount will be subject to any increase or decrease resulting from corrections to any errors in previous partial payments that may be detected at this time and to deductions for unacceptable work not corrected by the Contractor as required hereunder.

This final payment will become due and payable to the Contractor within ninety (90) calendar days after the date when all the above listed documents and tracings have been received by the Engineer and acknowledged in writing by the Contractor. The Contractor will be entitled to interest on the final payment amount at the rate of four (4) percent per annum for the length of time beyond said 90 calendar days period that the final payment should remain unpaid.

SECTION 411—PROTECTIVE COATING OF METAL IN STRUCTURES

411.01 Description

This section is amended to include the following:

Regulatory Agencies

The Contractor shall perform all work in accordance with accepted construction standards and in compliance with Steel Structures Painting Council (SSPC), Occupational Safety and Health Act (OSHA), United States Coast Guard (USCG), United States Environmental Protection Agency (EPA), Virginia Air Pollution Control Board (VAPCB), Virginia Department of Environmental Quality (VDEQ) and other regulatory agencies' rules, regulations, standards and guidelines currently in effect.

Superintendent

The Contractor shall furnish a competent superintendent who is thoroughly familiar with the above regulations, the specified requirements and the methods needed for proper performance of the work. The superintendent's experience record shall be submitted to the Authority for review and approval. The superintendent shall plan, direct, coordinate, and supervise all of the work.

Quality Control

The Contractor shall be responsible for quality control on this project. The Contractor's site supervisor shall be equipped with thermometers, relative humidity gauges, wet and dry film thickness gauges and shall monitor all of the cleaning and painting operations. The Engineer will monitor work daily.

Classification

All surfaces shall be classified as Type B, unless otherwise noted.

Schedule

Contractor shall coordinate Coatings work schedules and Maintenance of Traffic patterns with adjacent contractors on site for other Authority contracts.

411.02 Materials

This section is amended to include the following:

Soluble Salt Remover: If chloride level is found to be above the threshold level (as described in Section 411.04), the contractor shall add a commercial soluble salt remover to the Method 7 preparation (pressure wash) as described in Section 411.04. In the first 50 sq ft, the

contractor shall test the worst deteriorated areas to determine the required rate of application, nozzle pressure, nozzle distance from surface, and dilution ration of mixture to achieve the desired level of cleanliness. Testing shall be the CHLOR*TEST method.

The Soluble Salt Remover shall be CHLOR*RID or Engineer approved equal. CHLOR*RID is manufactured by CHLOR RID International, Inc. of Chandler, AZ, PH: (480) 821-0039. The material shall meet or exceed the following specifications:

- Material shall contain zero VOC's.
- Material shall have a minimum shelf life of 24 months.
- Material shall be suitable for hand washing spot areas and for application by pressure washer at any pressure.
- Material shall be biodegradable.

The Soluble Salt Remover shall be used in accordance with all manufacturer's recommendations, specifications and directions.

411.04 General Surface Preparation and Application Standards

This section is amended to include the following:

All wash water shall be filtered with a 40 or finer mesh material to catch particles of paint and debris.

The Engineer or Engineer's representative will test the existing coatings for chloride contamination by the CHLOR*TEST (chloride test kit) method. Testing shall be completed at a minimum of one location per pier and one location per span. The maximum allowable level of chloride contamination shall be 5 micrograms/cm². When the chloride test results indicate a chloride level of 5 micrograms/cm² or greater, a soluble salt remover shall be added to the wash water as specified in Section 411.02. CHLOR*TEST results will be made available to the contractor.

If the Engineer allows the Contractor to complete the CHLOR*TEST, the Engineer shall approve and document each test.

If the contractor prefers to forego Engineer's testing of contaminated areas, Contractor shall have the option to include CHLOR*RID in all Method 7 wash water.

Cleaned steel surfaces shall be tested for soluble salt levels after all preparation and cleaning methods are completed but prior to the start of any coating activities. The maximum

level of soluble salt shall be 5 micrograms/cm². If test results show a higher level of soluble salt, Contractor shall re-wash surface with CHLOR*RID until soluble salt contamination level is less than 5 micrograms/cm².

See Special Provisions for further details on structures and surfaces to be coated.

411.04(B) General Surface Preparation and Application Standards – Physical Application

This section is amended to include the following:

All coating color formula, except for Bridges 61 and 62 shall be RMTA Green, which is Federal Standard I.D. #595-24227, or as otherwise directed by the Engineer. Contractor shall submit a color sample for review and approval by the Engineer.

All abrasive blast cleaned surfaces shall receive the following three-coat zinc, epoxy and urethane system or engineer approved equal:

- Zinc Rich Epoxy Primer 2-5 mils D.F.T.
- Fast Dry, High Solids Epoxy 4-8 mils D.F.T.
- Gloss Acrylic Aliphatic Polyurethane 2-3 D.F.T.

All high-pressure water cleaned, and power tool cleaned surfaces shall receive the following three coat sealer, epoxy and urethane system or engineer approved equal:

- Sealer Primer 1-2 mils D.F.T.
- Epoxy 4-8 mils D.F.T.
- Acrylic Aliphatic Polyurethane 2-3 mils D.F.T.

SECTION 512 - MAINTAINING TRAFFIC

512.01 Description

The following is added to this section:

The Contractor shall schedule the Contractor's operations in a manner as to not adversely affect traffic conditions. At all locations, the Contractor shall schedule the Contractor's operations in such a manner that all available traffic lanes are open to traffic on Commonwealth of Virginia holidays, the day preceding holidays and the day after holidays. If a holiday falls on a Saturday, Monday shall be considered the preceding day. If a holiday falls on a Sunday, Monday shall be considered the day after. Ramp traffic (unless otherwise noted) shall be maintained at all times.

The Engineer reserves the right to require the Contractor to provide a proposed maintenance of traffic plan for all lane closures seven (7) calendar days prior to closure. The Engineer shall coordinate the maintenance of traffic plan with the RMTA and provide any changes and additions required prior to the lane closure. In the event that a detour route is detailed in the contract drawings, the Contractor shall be required to provide a traffic plan for installing and removing the proposed detour route.

The Contractor shall not utilize shoulders, median or similar areas for storage of equipment or material including vehicles used by Contractor's personnel to access the site. Any stored equipment shall be placed behind guardrail or concrete barriers.

The Contractor shall provide continuous monitoring of traffic control devices as part of the effort required to maintain them. Additionally, the Contractor shall possess a minimum of one spare operable electronic arrow on site only when directed by the Engineer.

When night work is in progress, the Contractor shall provide sufficient lighting of the work site(s) to enable the satisfactory completion of the work. Lighting shall be arranged so as not to interfere with or impede traffic approaching the worksite(s). Payment for lighting of the work site shall be covered in other pay items and will not be measured for payment.

512.03 Procedures

Add the following:

See Maintenance of Traffic Special Provision for specific bridge and lane closure restrictions, assessment of damages due to MOT violations and certified personnel requirements.

All maintenance of traffic operations shall be conducted in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), the Virginia Work Area Protection Manual, and subject to the approval of the Engineer, VDOT, City of Richmond, and the RMTA. The Contractor's signing and MOT shall consider the efforts of adjacent contractors, motorists and pedestrian traffic.

The Contractor shall submit a plan sequenced with a plan of operations, for maintenance of traffic and detours to the Engineer for review and approval prior to commencement of work in a specific area. The plan shall be in accordance with the Virginia Work Area Protection Manual and the MUTCD. Plan shall be submitted at least seven (7) days prior to proposed work start

date. If and when the Engineer provides sequence of construction plans and estimated quantities for maintenance of traffic items, the plans and items are for estimating purposes only.

512.04 Measurement and Payment

This section is replaced with the following:

Any maintenance of traffic required for coating locations paid under the “Miscellaneous Coating” bid item or for Various Bridges shall be paid for under the following items:

Flagger Service will be measured in hours as authorized or approved by the Engineer except when used for the Contractor’s convenience, such as for ingress and egress for moving construction equipment or materials. In such cases, payment will not be made for flagger service. Flagger service will be paid for at the contract unit price per hour. This price shall include paddles, safety equipment, and portable traffic control signals.

Electronic Arrows will be measured in hours of actual use as required by the Engineer. Electronic arrows will be paid for at the contract unit price per hour. This price shall include arrow panels, fuel, maintenance, and a truck or trailer having flashing amber warning lights. The RMTA reserves the right to substitute their Electronic Arrow in lieu of Contractor’s at the RMTA’s direction. RMTA Electronic Arrow shall be operated by RMTA staff only. Contractor shall not submit or be paid for Electronic Arrow hourly pay units when the RMTA’s Electronic Arrow is in service.

Group 2 Channelizing Devices, as required by the Engineer, will be measured in days and will be paid for at the contract unit price per day. This price shall include maintaining devices, removing devices when no longer required, and signs. When Group 2 channelizing devices are moved to a new location or are removed and re-installed at the same location, they will be measured for separate payment. However, when the Group 2 channelizing devices are moved from one lane to another by simply moving the devices across the lane edge line without removal from the roadway, no additional payment will be made.

Truck-Mounted Attenuator (TMA) will be measured in hours of actual use and will be paid for at the contract unit price per hour. This price shall include the truck-mounted attenuator; support vehicle; lights; electronic arrows if allowed but not required; and maintenance. When electronic arrows are used at the option of the Contractor in lieu of the rotating or high-intensity amber strobe light, the cost of the electronic arrow shall be included in the price bid for truck-mounted attenuators. When electronic arrows are required and not only allowed on the truck-mounted attenuator support vehicles, they will be paid for separately. The

RMTA reserves the right to substitute their TMA in lieu of contractor's TMA at the RMTA's direction. RMTA TMA shall be operated by RMTA staff only. Contractor shall not submit or be paid for TMA hourly pay units for when the RMTA's TMA is in service.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Flagger Service	Hour
Electronic Arrow	Hour
Group 2 Channelizing Device	Day
Truck-Mounted Attenuator	Hour

The RMTA reserves the right to substitute their Portable Changeable Message Sign (PCMS) in lieu of contractor's PCMS at the RMTA's direction. Contractor shall not submit or be paid for PCMS hourly pay units for when the RMTA's PCMS is in service. When Contractor's PCMS is used, PCMS will be measured and paid for in hours of use.

SECTION 514 - FIELD OFFICE

This section of the Specifications is completely replaced by the following:

A field office is not required for this project.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

SPECIAL PROVISIONS

To

VIRGINIA DEPARTMENT OF TRANSPORTATION

2020 ROAD AND BRIDGE SPECIFICATIONS

FOR

RICHMOND EXPRESSWAY SYSTEM

CONTRACT NO. MR-2022

MISCELLANEOUS REPAIRS

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**SPECIAL PROVISION
TOLL COLLECTION PASS CARDS**

DESCRIPTION

This provision details the disbursement and return of Toll Collection Pass Cards (Cards).

PROCEDURES

The Contractor shall provide the Engineer and the RMTA with a written request for Cards within seven (7) calendar days prior to work start. The written request shall contain, but not be limited to, the number of Cards requested, names and addresses of the individuals to whom the Cards shall be assigned, a brief but thorough explanation why each individual requires a Card, and the anticipated time frame for each individual to require the Card.

The Engineer shall review the Request for Cards within seven (7) calendar days of receipt of Request. The RMTA, via the Engineer, may provide between zero and the total number of Cards requested.

Cards cannot be used in the Open Road Tolling (ORT), or "Express", lanes located on northbound and southbound Powhite Parkway and on the westbound Downtown Expressway (DTE). At these Toll Plazas, Contractors' vehicles must go through a "Full Service" lane to use Toll Pass Cards.

In the event that the Contractor is required to use the ORT lanes to perform Maintenance of Traffic operations, and with the approval of the Engineer, arrangements will be made to permit designated vehicles to use the ORT lanes with compensation. Other than said designated vehicles, additional Contractor's vehicles using the ORT lanes will not be compensated and are required to obtain an E-ZPass Transponder.

Prior to the distribution of a Card, the individual designated to receive a Card shall be required to provide a picture ID (driver's license preferred) of him- or herself, their home phone number, the name of their employer, their employer's address, and their employer's phone number. In addition, each person receiving a Card is required to sign a statement of fact that the Card shall be used only for and during the execution of RMTA contract obligations. Misuse of any Card by an individual shall result in the immediate revocation of Card privileges. Engineer shall notify individual's company and the Contractor of the assumed Card misuse. The Contractor is responsible for returning the misused Card to the Engineer within 48 hours of notification.

In addition, all Cards issued in accordance with this contract shall be returned to the Engineer within 48 hours after completion of work. Failure to return all Cards may result in delays in processing of the final payment.

**SPECIAL PROVISION
MAINTENANCE OF TRAFFIC**

MAINTENANCE OF TRAFFIC

All maintenance of traffic operations shall be conducted in accordance with the most current versions of the Manual on Uniform Traffic Control Devices (MUTCD), the Virginia Work Area Protection Manual (WAPM), and subject to the approval of the Engineer, VDOT, City of Richmond, and the RMTA. The Contractor shall prepare and submit a Maintenance of Traffic (MOT) Plan for review and approval by the Engineer for each phase of construction. The Contractor's signing and MOT plan shall consider the efforts of adjacent contractors, motorists, and pedestrian traffic.

The Contractor shall provide the Engineer no less than 7 calendar days' notice before closing any lane, ramp or bridge. A minimum of ten (10) calendar days' notice is required if the request is to close Boulevard Bridge. A minimum of fourteen (14) calendar days' notice is required if the request is to close any lane that would impact or extend onto a VDOT/City of Richmond roadway. Approval to close any ramp or bridge is subject to review and consideration of event traffic in the vicinity.

No work or installation of any MOT devices may commence unless the work can be completed and the area reopened to traffic within the allowable lane closure hours, AND the Contractor has a contingency plan approved by the Engineer. No less than seven (7) calendar days prior to beginning the work, the Contractor shall submit a contingency plan to the Engineer for approval. This plan shall detail temporary protective measures to allow for restoration of the road for use when the Contractor is unable to complete a repair due to unusual circumstances beyond his control. Temporary protective measures shall only be used in emergency situations and are not allowed to remain in place for an extended period of time without authorization by the Engineer.

The Contractor shall be aware that no traffic control devices (such as Group II channeling devices, cones, Arrow Boards, etc.), with the exception of advance warning signs, shall be placed on any median, roadway or shoulder prior to the time shown. Advance warning signs may be placed not more than thirty (30) minutes prior to the begin time in this special provision. All traffic control devices including advance warning signs and detours shall be removed, the roadway free of debris, and the lane open to traffic by the end time in this special provision.

The Contractor shall be aware that failure to comply with the times set forth in this special provision could result in liquidated damages.

Prior to setting any lane or shoulder closures, the Contractor shall meet with the Engineer to review MOT for each of the lane closures the Contractor intends to perform. The Contractor

shall prepare a sketch identifying the signs to be used and their respective locations. Sketches shall be prepared in accordance with the current version of the WAPM. The Contractor shall coordinate these meetings with the Engineer, so that the RMTA has no less than seven (7) days after the meeting ends, to advise the motoring public of upcoming traffic restrictions. Maintenance and installation of all lane closures shall be the sole responsibility of the Contractor.

DOWNTOWN EXPRESSWAY (DTE) & BELTLINE EXPWY. CONNECTOR TO DTE

Eastbound DTE/Northbound Connector: The road is to be clear by 6:00 a.m.

Westbound DTE/Southbound Connector: The road is to be clear by 3:00 p.m.

TIMES OF ALLOWABLE SINGLE LANE CLOSURES:

(1) E.B. DTE / N.B. Connector:

A. Weekdays – 10:00 a.m. to 6:00 a.m.

B. Weekends – 10:00 a.m. Friday – 6:00 a.m. Monday.

(2) W.B. DTE / S.B. Connector:

A. Weekdays – 6:00 a.m. to 3:00 p.m. & 7:00 p.m. to 6:00 a.m.

B. Weekends – 7:00 p.m. Friday – 3:00 p.m. Monday.

TIMES OF ALLOWABLE MULTIPLE LANE CLOSURES: Multiple lane closures which restrict open lanes to (1) one in a single direction.

(1) E.B. DTE / N.B. Connector:

A. Weekdays – 7:00 p.m. to 6:00 a.m.

B. Weekends – RMTA shall decide allowable times based on individual weekend request by Contractor.

(2) W.B. DTE / S.B. Connector:

A. Weekdays – 9:00 p.m. to 6:00 a.m.

B. Weekends – RMTA shall decide allowable times based on individual weekend request by Contractor.

NUMBER OF LANES CLOSED (ANY DIRECTION)

- All roadways must always have a minimum of one (1) lane open at all times. If a full roadway closure is required, the Contractor, the Authority and the Engineer shall schedule a mutually agreeable time. The length of the full closure shall be minimized by the Contractor.
- Where three (3) or more roadway lanes exist, the number of lanes which the Contractor may close is at the Engineer's discretion, based on the geometry of the area where lane/shoulder closures are desired.

DTE TOLL PLAZA (GATED LANES) AND EXPRESS LANES (ORT ZONE) RESTRICTIONS

NUMBER OF LANES CLOSED W.B DTE TOLL PLAZA (GATED LANES)

- No more than one (1) lane closure will be permitted at any time for the cash lanes 43-46.
- One (1) Full-Service lane must remain open at all times.
- No Toll Lane shall be closed from 3:00 p.m. to 7:00 p.m.
- Lane 45 (Secure Booth) may not be closed from 11:00 p.m. to 7:00 a.m. any day.

NUMBER OF LANES CLOSED E.B DTE TOLL PLAZA (GATED LANES)

- There shall be at least three (3) toll lanes open in a single direction at all times.
- One (1) Full-Service lane must remain open at all times.
- No Toll Lane shall be closed from 3:00 p.m. to 7:00 p.m.
- Lane 55 (Secure Booth) may not be closed from 11:00 p.m. to 7:00 a.m. any day.

NUMBER OF LANES CLOSED W.B DTE EXPRESS (ORT) LANES

- No more than two (2) lane closures will be permitted at any time for the WB express lanes 47- 49.
- No Toll Lane shall be closed from 3:00 p.m. to 7:00 p.m.

DOWNTOWN EXPRESSWAY (DTE) RAMP CONNECTIONS TO/FROM I-95

Lane closures on Bridges 63 and 66 shall only be permitted at nights between 9 P.M. and 6 A.M. and on weekends between 9 P.M. Friday and 6 A.M. Monday. Closures of Ramp Bridges 64, 65, 67 and 68 shall only be permitted at nights between 10 P.M. and 5 A.M. weekdays, and on weekends between 5 A.M. Saturday and 5 A.M. Monday.

There shall be no total closures of the either the eastbound Downtown Expressway (DTE) or westbound DTE permitted; One (1) lane shall be maintained on Bridge 63 and Bridge 66 at all times. In addition, Contractor shall maintain at least one (1) ramp entering and at least one (1) ramp exiting the city at all times; Bridge 64 shall not be permitted to be closed while Bridge 65 is closed and Bridge 67 shall not be permitted to be closed while Bridge 68 is closed.

All lane closures must be coordinated with VDOT, RMTA and the Engineer for final approval of dates and times. Contractor shall notify VDOT Smart Traffic Center at 804-796-4520 to advise of the lane closure status of these bridges.

POWHITE PARKWAY

Northbound/Eastbound: The road is to be clear by 6:00 am.

Southbound/Westbound: The road is to be clear by 3:00 pm.

TIMES OF ALLOWABLE SINGLE LANE CLOSURES:

(1) Northbound/Eastbound:

A. Weekdays – 10:00 a.m. to 5:00 a.m.

B. Weekends – 10:00 a.m. Friday – 5:00 a.m. Monday.

(2) Southbound/Westbound:

A. Weekdays – 6:00 a.m. to 3:00 p.m. & 7:00 p.m. to 6:00 a.m.

B. Weekends – 7:00 p.m. Friday – 3:00 p.m. Monday.

TIMES OF ALLOWABLE MULTIPLE LANE CLOSURES: Lane closures which restrict open lanes to (1) one in a single direction.

(1) Northbound/Eastbound:

A. Weekdays – 9:00 p.m. to 5:00 a.m.

B. Weekends – RMTA shall decide allowable times based on individual weekend request by Contractor.

(2) Southbound/Westbound:

A. Weekdays – 9:00 p.m. to 6:00 a.m.

B. Weekends – RMTA shall decide allowable times based on individual weekend request by Contractor.

LANE RESTRICTIONS (ANY DIRECTION)

- All roadways must have a minimum of (1) one lane open at all times.
- Where three (3) or more roadway lanes exist, the number of lanes which the Contractor may close is at the Engineer's discretion, based on the geometry of the area where lane/shoulder closures are desired.

POWHITE PARKWAY TOLL PLAZA (GATED LANES) AND EXPRESS LANES (ORT ZONE) RESTRICTIONS

NUMBER OF LANES CLOSED POWHITE N.B. AND S.B. TOLL PLAZAS (GATED LANES)

- There shall be at least three (3) toll lanes open in a single direction at all times.
- One (1) Full Service lane must remain open at all times.
- No NB Toll Lane shall be closed from 5:00 a.m. to 10:00 a.m.
- No SB Toll Lane shall be closed from 3:00 p.m. to 7:00 p.m.
- Lane 3 and Lane 12 (Secure Booths) may not be closed between 11:00 p.m. to 7:00 a.m. any day.

NUMBER OF LANES CLOSED POWHITE EXPRESS (ORT) LANES

- No more than two (2) lane closures will be permitted at any time for the NB express lanes 90 - 92.
- No more than two (2) lane closures will be permitted at any time for the SB express lanes 93 - 95.
- No NB ORT Toll Lane shall be closed from 5:00 a.m. to 10:00 a.m.
- No SB ORT Toll Lane shall be closed from 3:00 p.m. to 7:00 p.m.

EXIT AND ENTRANCE RAMP TOLL PLAZAS

TIMES AND NUMBERS OF TOLL LANE CLOSURES (ANY DIRECTION)

No toll lane closures shall be permitted during peak hours each weekday. Peak hours are 6:00 a.m. to 10:00 a.m. for EB or NB ramps and 3:00 p.m. to 7:00 p.m. for WB or SB ramps.

- The number of lanes which the Contractor may close is at the Engineer's discretion, based on the geometry of the area where lane/shoulder closures are desired.
- The Authority and the Engineer shall schedule a mutually agreeable time.
- The length of the full closure shall be minimized by the Contractor.

The Contractor shall provide the Engineer no less than seven (7) calendar days' notice before closing any given toll lane or any exit or entrance ramp. Pick up operation shall commence no later than thirty (30) minutes prior to closing period(s) referenced above.

The Contractor shall provide written notice to the Engineer a minimum of seven (7) calendar days' notice before any lane or ramp closures. The RMTA and the Engineer reserve the right to restrict dates and times of proposed lane or ramp closures. Contractor shall not be permitted to close any ramps or lanes during events in Downtown Richmond or the vicinity when high traffic volumes are expected to enter or exit Downtown.

All lane closures must be coordinated with VDOT, RMTA, City of Richmond (if applicable) and the Engineer for final approval of dates and times. It will be the Contractor's sole responsibility to enter the work zone in LCAMS and VA Traffic. Contractor shall notify VDOT Traffic Operations Center (Smart Traffic) at 804-796-4520 to advise of the lane closure status when the first sign is placed and last sign is picked up. The Contractor shall communicate any changes in these times/dates immediately with the Engineer.

POINT OF CONTACT

The Contractor must have a point of contact or construction foreman responsible for the entire project on-site at all times. This person will coordinate all work and shall be in close contact with the on-site inspections and shall clearly communicate any changes to the work plan, if they occur. In the event that this individual changes from the previous day, the Contractor shall contact the Engineer and confirm this change, prior to starting any work. The Contractor will be required to have a point of contact on-duty at all times, regardless of extended shifts or type(s) of work being performed

BOULEVARD BRIDGE

Boulevard Bridge is a two-lane bridge carrying traffic in opposing directions. Traffic in both directions must be maintained at all times. Typically, only single lane closures are permitted at any time. A full bridge closure may be permitted under rare circumstances with the approval of the Engineer and the Authority. The Contractor shall submit plans no less than ten (10) calendar days' notice prior for approval. Consideration to traffic volumes and event traffic in the vicinity will be given.

Lane closures shall not be permitted Monday – Friday between the hours of 6:30 am to 9:30 am and 3:00 pm to 7:00 pm, or as directed by the Engineer.

Traffic control shall utilize flaggers and be in accordance with MUTCD and the Virginia Work Area Protection Manual (WAPM) standards. Truck mounted attenuators are prohibited on Boulevard Bridge.

LANE CLOSURE AND MOT VIOLATIONS

The RMTA reserves the right to charge liquidated damages for the Contractor's failure to remove a lane or ramp closure by the prescribed time each day. The liquidated damages shall be established as One Thousand Dollars (\$1,000) per each fifteen minutes (15) , or a portion of 15 minutes(15) , per lane or ramp, for any closure beyond the limits established above. Assessment of liquidated damages will stop when all maintenance of traffic devices have been removed from the roadway and lanes or ramps have been safely reopened to the approval of the Engineer. Any liquidated damages assessed in this Special Provision will be in addition to those listed in Section 108 of the Specifications.

Active work shall be pursued by the Contractor within one (1) hour from the time a lane or ramp closure is placed. The RMTA reserves the right to charge liquidated damages, as stated above, after one (1) hour of non-active work from the time the lane or ramp closure placement is

completed. If active work has not started within two (2) hours from the time that the lane closure placement is completed, the Engineer shall require the lane closure to be immediately removed. Assessment of liquidated damages will end when lanes or ramps have been safely reopened to the approval of the Engineer or active work is pursued. Active work will be on-site activity as determined by the Engineer and the RMTA.

In addition, active work must be on-going at all times while a closure is in place. If active work is stopped for one (1) hour while a closure is in place or a closure is not removed within one (1) hour of the completion of active work, the Authority reserves the right to charge liquidated damages as stated above.

STAGING AREA / CONSTRUCTION ENTRANCE

The Contractor shall be aware of the close proximity of live traffic to the work zone. Extra care shall be taken when slow moving vehicles are entering live traffic. Contractor must demonstrate how vehicles can enter and exit the work zone safely and minimize impacts to general public in his MOT plan. Contractor may consider the use of a shadow vehicle for equipment entering live traffic at slow speeds

CERTIFICATION OF PERSONNEL

FHWA regulations provided in 23 CFR Subpart J state “States shall require that personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control be trained, appropriate to the job decisions each individual is required to make.” In accordance with the FHWA regulation and VDOT regulations, the Contractors foreman, or employee who is directly responsible for placing maintenance of traffic devices, shall be properly trained. The minimum training required for this Contract is the “Basic Work Zone Traffic Control Training” course. This is a one-day course designed by VDOT. For more information on the course, see the following: <http://www.vdot.virginia.gov/business/trafficeng-WZS.asp>

A trained employee must be on-site prior to setting up traffic control devices or a stop work order may be issued. In addition, a trained employee must be on-site at all times when any work inside a work zone requiring traffic control is on-going. A trained employee must be on-site at all times during the removal of traffic control devices. This employee will coordinate with the “Point of Contact” at all times. If the inspector or engineer observes the Contractor without a trained employee on-site during the setting up, maintenance or removal of the work zone traffic control, the RMTA reserves the right to charge liquidated damages at the rate of One Thousand Dollars (\$1,000) per day.

RESTRICTED TIME OF WORK AREAS

Portions of the Downtown Expressway, Beltline Expressway Connectors, and the Powhite Parkway are adjacent to residential areas. These areas are identified as, but not limited to, the neighborhoods near the intersection of Powhite Parkway and Forest Hill Avenue and neighborhoods between the Downtown Expressway Beltline Connector and Park Drive/Blanton Avenue on the north end of the project.

Work in these areas after 11:00 PM shall be restricted. Activities permitted after this time shall include saw-cutting, placement of concrete, and asphalt paving. Any activities that produce unacceptable decibel levels, as determined by the Engineer and the RMTA, shall not be permitted. Typical activities not permitted after 11:00 PM include, but are not limited to, jack hammering or roto-hammering.

PROTECTION OF PROPERTY

The Contractor shall provide for the Engineer's review the method intended to protect the motoring public, from any activity which poses a potential threat to another's property or person (i.e. cars, motorcycles, pedestrians, businesses, etc.).

HOLIDAYS AND SPECIAL EVENTS

The project will be officially shut down for the following holidays during the periods noted:

- Independence Day (Monday 7/4/22): 7/1/22 (Friday) – 5:00 A.M. through 7/5/22 (Tuesday) – 10:00 A.M.
- Labor Day (Monday 9/5/22): 9/2/22 (Friday) - 5:00 A.M. through 9/6/22 (Tuesday) - 10:00 A.M.
- Thanksgiving (Thursday 11/24/22): 11/23/22 (Wednesday) – 5:00 A.M. through 11/28/22 (Monday) – 10:00 A.M.
- Christmas (Sunday 12/25/22): 12/23/22 (Friday) – 5:00 A.M. through 12/26/22 (Monday) – 10:00 A.M.
- New Year's Day (Sunday 1/1/23): 12/30/22 (Friday) – 5:00 A.M. through 1/2/23 (Monday) – 10:00 A.M.
- Memorial Day (Monday 5/29/23): 5/26/23 (Friday) – 5:00 A.M. through 5/30/23 (Tuesday) – 10:00 A.M.

The Authority will not allow any lane closures during special events. The Engineer reserves the right to limit/cancel/modify the lane closure times and/or work that may be performed to accommodate the following special events. The Contractor should be aware of typical increased weekend traffic during these events.

- Any NASCAR Race in Richmond (Typically 2 per year in April and September)
- Ukrop's Monument Ave. 10K Race (Typically the second weekend in April)
- Dominion River Rock (Weekend in middle of May)
- Slide the City (Typically a Saturday in June)
- Jazz Festival at Maymont Park (Typically a weekend in August).
- Richmond Folk Festival (Weekend in the Middle of October)
- Richmond Marathon (Weekend in the Middle of November)

The Contractor shall prepare and submit a Schedule of Work Activities and Maintenance of Traffic (MOT) Plan for review and approval by the Engineer a minimum of fourteen (14) calendar days in advance of any special event.

No allowance shall be made for these periods in determining the contract end date.

MEASUREMENT AND PAYMENT

Standard Maintenance of Traffic pay items will be measured and paid as per VDOT 2020 Road and Bridge Specifications Section 512.04.

**SPECIAL PROVISION
TRIM EXISTING VEGETATION**

DESCRIPTION AND LOCATION

This work includes the cutting back of vegetation at specific locations adjacent to the roadway that include, but are not limited to, signs, guardrails, bridges, abutments, junction boxes, electrical services and access paths. This work is to include pruning existing branches and clearing of vegetation as close to the ground as possible to allow access to structures. It is not anticipated that herbicide spraying will be required for this item.

LOCATIONS

All work locations to be determine by the Engineer.

PROCEDURES

All work shall be in accordance with Section 601 and this Special Provision.

Contractor shall cut back or remove vegetation in areas where vegetation is encroaching structures or obstructing access to structures. Cut back shall be considered as a 10' clearance of foliage from structure as measured in all directions from the structure. For roadways, Contractor shall cut back vegetation where it is encroaching over the existing guardrails. Cut back shall provide a 4' clearance from the foliage to the guardrail or barrier face.

Branches of trees that overhang the roadway or reduce sight distance and that are less than 20 feet above the elevation of the finished grade shall be trimmed, as directed by the engineer, using approved tree surgery practices in accordance with the VDOT requirements of Section 601.03(b).

All trimmings, dead wood, windfalls, stumps, and rubbish in the trimming areas shall be removed as directed by the Engineer and legally disposed of by the Contractor off site. Contractor will not be permitted under any circumstance to burn debris on RMTA property.

MEASUREMENT AND PAYMENT

Trim Existing Vegetation will be measured in square feet of surface area and will be paid for at the contract unit price per square foot. This price shall include all labor, equipment, materials, incidentals and proper disposal of material off-site for vegetation removal throughout the RMTA Expressway System.

PAY ITEM

Trim Existing Vegetation

PAY UNIT

Square Foot

**SPECIAL PROVISION
RIGHT-OF-WAY FENCE**

DESCRIPTION

This work shall consist of furnishing, removing, replacing and installing sections of right-of-way fence. Locations will be determined by the Engineer.

MATERIALS

<u>ITEM</u>	<u>VDOT STANDARD</u>	<u>VDOT SECTION</u>
Right-of-way fence	FE-CL	507
Right-of-way fence (fabric only)	FE-CL	507

MEASUREMENT AND PAYMENT

Right-of-way fence will be measured and paid for in accordance with the **Fence (FE-CL)** item as described in VDOT Section 507.

The Pay Item **Fence (FE-CL Fabric Only)** will be measured in linear feet of installed fence fabric, complete in place, along the top of the fence and will be paid for at the contract unit price per linear foot of fence fabric.

<u>Pay Item</u>	<u>Pay Unit</u>
Fence (FE-CL)	Linear Foot
Fence (FE-CL Fabric Only)	Linear Foot

**SPECIAL PROVISION
HYDRAULIC CEMENT CONCRETE REPAIR**

DESCRIPTION

This work shall consist of constructing reinforced, non-reinforced, or continuously reinforced hydraulic cement concrete pavement and approach slabs composed of hydraulic cement concrete, with or without reinforcement as specified, on a prepared subgrade or base course in accordance with these specifications and within the specified tolerances for the lines, grades, thicknesses, and cross sections shown on the plans or as established by the Engineer. These repairs shall be in accordance with VDOT Spec. 316 Hydraulic Cement Concrete Pavement unless otherwise noted herein.

MATERIALS

Patching repairs will be made using a rapid-cure cement-based patching product, matching the requirements of VDOT Class A4 concrete, modified as necessary to achieve a compressive strength of at least 3,000 psi in a maximum of 8 hours. The product recommended for concrete pavement repairs is Heartland High Performance Volumetric Concrete. Substitute products may be used as approved by the Engineer. All products used must be listed on the most current VDOT Approved Products List. Contractor shall submit proposed product data sheet to Engineer for approval prior to use.

PROCEDURES

It is the Contractor's responsibility to dispose of the displaced concrete off site according to all applicable federal, state, and local laws.

The Contractor may not utilize the grassy areas adjacent to the Expressway System for construction purposes. If the use of these areas becomes absolutely necessary, the Contractor is to request, in writing, permission to conduct operations in said areas and also accept responsibility for any damage to said areas. Repair to any damaged areas will be prescribed solely by the Engineer.

At locations where bridge deck expansion joint sealant is being repaired or replaced, Contractor shall sound bridge deck two feet from each side of the joint opening. All delaminated concrete shall be removed to a minimum depth of at least ½" or as directed by the Engineer. At locations where joint sealant will be attached to repair product, Contractor shall certify that joint sealant primer will fully bond to concrete repair product. If any joint sealant does not bond to areas where concrete was repaired, as determined by the Engineer, Contractor shall fully remove

sealant and concrete repair product and replace same with comparable product at Contractor's expense and without extension of contract time.

Vehicular traffic will not be permitted on repaired areas until patching compound has attained a compressive strength of 3,000 pounds per square inch.

LOCATION

Work locations shall be as determined by the Engineer.

MEASUREMENT AND PAYMENT

Hydraulic cement concrete pavement will be measured in square yards of concrete pavement and will be paid for at the contract unit price per square yard. This price shall include marking utilities and coordinating with RMTA for replacement of loops in the vicinity of toll plazas, furnishing and placing materials, including dowels, reinforcement, and joint material, provided that for any pavement found deficient in average thickness, as described in Virginia Test Method 26 (VTM-26), by more than 0.20 inch but not more than 1.00 inch only the reduced price stated within the VDOT Road and Bridge Specifications will be paid. The width of measurement will be the width of the pavement shown on the typical cross section of the plans, additional widening where called for, or as otherwise directed in writing by the Engineer. The length will be measured horizontally along the centerline of each roadway or ramp. Concrete removal and surface preparation shall be incidental to all repair items.

Pay Item

Hydraulic Cement Concrete Pavement

Pay Unit

Square yard



Heartland High Performance Volumetric Concrete

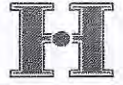
The Heartland High Performance Volumetric Concrete Solution is designed for the ultimate in construction quality, efficiency, flexibility and ease of operation. Heartland High Performance Concrete is friendly to the environment by eliminating waste, mixing the exact amount required for the project at the time it is needed. Heartland High Performance Volumetric Certified operators have ultimate control of the mix design on your project site, allowing us to provide the freshest, highest quality concrete, slurry, flowable fill, grout and shotcrete available for your project.



- Eliminate concrete waste
- Cost effective on-site concrete production
- Minimize crew production costs
- Control delivery schedule
- On-Demand production
- Eliminate "Hot" Loads
- Instantaneous mix design changes
- Integrate Rapid Return to Service Solutions
- Exceeds industry standards
- Independent certified testing

HEARTLAND
CONCRETE

23220 Airpark Drive, Petersburg, VA 23803
Office. 804.518.0361 Fax. 804.518.0363
www.heartlandconcrete.us



Why High Performance Volumetric?

The Heartland High Performance Volumetric Concrete system, provides many unique advantages to projects, owners, contractors and engineers.

First off, the mix design is calculated for a specific strength or certain desirable finishes. The mix is proportioned using known volumes of the component materials in the mix design. All of the ingredients are stored in separate compartments on the unit, as opposed to the traditional method of mixing sand, stone, water and cement

at a central batch plant. Other admixtures can be added to produce a specified concrete mix design, on a continuous or intermittent basis, on site where the mix is to be poured.

Once the Heartland High Performance Volumetric Mixer arrives at the project, the ingredients are conveyed into

the mixing auger which will continuously meter and combine the correct proportions using a volumetrically calibrated state of the art computer control system. This method of mixing the materials needed on site allows for a much easier clean up and wash out as the only component that needs to be cleaned is the mixing auger. Heartland High Performance Volumetric Mixers eliminate waste by allowing us to provide the exact amount of concrete the customer needs—nothing more. All mix designs can be made from the same High Performance Volumetric Mixer, on-the-fly, as desired saving you time and money.



- Long Distance and Remote Deliveries
- High Security Facilities
- Critical Production and Manufacturing Facilities
- Meet Around the Clock Demand
- No strength loss because of in truck hydration
- Low slump mixes are easily produced
- Meet Requirements of Virtually Any Mix Design
- Adjustable Discharge Rates

HEARTLAND
CONCRETE

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Form TL-27MC (Revised 12/07)

**VIRGINIA DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION**

STATEMENT OF HYDRAULIC CEMENT CONCRETE MIX DESIGN

Submit one copy to the District Administrator, Virginia Department of Transportation. Approval must be received by the contractor from the Materials Division before work is begun. This mix design is approved for all projects of the Department for the class of concrete shown: Calendar Year 2011 Mix Design No. 4-5206-11

Producer Heartland Concrete Plant Location Petersburg Phone (804) 518-0361
Type of Mix: Volumetric X Job Mix _____ Date 7/6/2011

Mix Design - One Cubic Yard (Meter) Based on SSD Condition

Class of Concrete Rapid 658 (E) Slump/ 4 - 8 In. _____ mm Air Content 4 - 8 %
(M) Flow _____

Material	Quantities		Source		Plant/Quarry Location
	Type	Quantities	Code	Name	
Cement	Rapid 658	lbs. _____ kg. _____	CTS	CTS	Logansport, In
Min. Admix. 1	FlyAsh	0 lbs. _____ kg. _____			
Min. Admix. 2		_____ lbs. _____ kg. _____			
Sand (1)		1235 lbs. _____ kg. _____	6014	Luck	Carolina Quarry
No. <u>57</u> Stone (1)		1774 lbs. _____ kg. _____	7007	Luck	Fairfax Quarry
Gr./No. _____ Aggr. (1)		_____ lbs. _____ kg. _____			
Water (2)	275 lbs.	33.0 gal. _____ L. _____		City	Arlington, VA
Admixture (AE) (3)	Dosage varies	oz. _____ ml. _____	66	Sika	Lyndhurst, NJ
Admixture (Retarder) (3)		oz. _____ ml. _____			
Admixture (Other) (3)		26.3 oz. _____ ml. _____	191	Sika	Lyndhurst, NJ

NOTES: Mix based on CTS Rapid Set manufactures recommendations

(1) The quantities of fine and coarse aggregates necessary to conform to specifications in regard to consistency and workability shall be determined by the method described in "Recommended Practice for Selecting Proportions for Normal Weight Concrete" (ACI-211.1) and the actual quantities used shall not deviate more than plus or minus 5 percent from such quantities.

(2) To provide minimum slump permissible in Table II-17 while satisfying placement and finishing requirements. A separate design shall be submitted for each slump desired.

(3) The quantity of admixture will not be approved or disapproved since it varies considerably and must be initially established by trial and error by the producer or contractor with subsequent adjustment during batching to maintain the desired results within the range specified

Mineral Admixture #1 - sp.gr.	2.09
Mineral Admixture #2 - sp.gr.	
Sand - Abs.	0.38
Sand - F.M.	2.80
Sand - sp.gr.	2.64
C.A. #1 - Abs.	0.75
C.A. #1 - sp.gr.	2.86
C.A. #1 Unit mass	104
lb./CF	kg./M ³
Aggr. #2 - Abs.	
Aggr. #2 - sp.gr.	
2nd F.A./C.A.-F.M./a.wt.	
E	M
Design W/C Ratio	0.42

Contractor _____
(Name of Company)

By Mitch Upton
(Certified Technician Preparing Form)

Producer Technician's Expiration Date

12/31/2012

(Do Not Use Social Security Number)

FOR DEPARTMENT USE ONLY

Remarks: _____

Copies: District Materials Engineer
Project Inspector
Plant Inspector
Sub- Contractor and / or R.M. Producer

Checked by Troy Simpson

Approved by Norah Dyer
District Materials Engineer

Approved tentatively subject to the production of material meeting the requirements of the Specifications and Special Provisions.

SPECIAL PROVISION SHOTCRETE

DESCRIPTION

This work shall consist of detecting delaminated sections of concrete substructure members and box culverts, removing delaminating concrete, preparing surfaces in concrete spalls, preparing exposed rebar within spalls and repairing surfaces with pneumatically applied concrete.

MATERIALS

VDOT Specification Section 412 shall apply. Contractor shall provide shotcrete mix design and performance data at least seven (7) calendar days prior to scheduled work start date to Engineer for approval. Shotcrete shall be Class A with silica fume. Shotcrete mixtures submitted for approval by the Engineer shall be on the VDOT Approved Products List.

PROCEDURE

Contractor shall visually inspect exposed concrete substructure surfaces for suspected delamination. Contractor shall sound out with a hammer or similar implement all surfaces where delamination is suspected. Delaminated sections shall be removed as directed by the Engineer.

Contractor shall notify the Engineer a minimum of 24 hours prior to the removal of any concrete to allow a proper inspection. Concrete removal shall not commence without an inspection and approval by the Engineer. The Contractor shall provide access to the Engineer to inspect work areas. The Authority reserves the right to restrict payment on any areas where the Engineer removed concrete prior to an inspection and approval. If the Engineer does not complete an inspection within 24 hours of notice by the Contractor, the Contractor is permitted to proceed with concrete removal without penalty.

The surface of all Shotcrete repairs shall receive "neat lines", acceptability subject to approval of the Engineer. All shotcrete repairs shall be completed no later than November 24, 2022.

LOCATIONS

A table of currently identified spalls, areas of delamination and cracks on a particular element of the referenced structure is presented below. This table is provided for informational purposes only. The estimated quantities below are provided for planning purposes only and are in no way a guarantee of actual quantities. The RMTA reserves the right to delete or add structures and repair locations to the scope of work. The Contractor is responsible to inspect the structure locations prior to bidding. No adjustments shall be made in unit price due to deletion of structure locations from the scope of work.

Shotcrete work locations are broken down into three category types:

1. "Standard" – Box Culverts and Locations on land less than 30 feet above grade.

2. "Elevated" - Locations on land greater than 30 feet above grade.
3. "Over Water" - Locations above the James River or Kanawha Canal.

Shotcrete (Class A) Standard - Possible Locations		
RMTA Bridge #	Element	Estimated Shotcrete Qty. (S.F.)
4	South Abutment Header	35
	Pier 1(South Face)	10
	South Abutment Backwall	20
13	Pier 4	25
36	Pier 1 North Face	12
47	Backwall	30
48	N. Abutment Backwall	25
49	N. Abutment Backwall	10
55	Pier Cap South Face Pier 1	8
56	Pier 1 Cap	10
C-1827	Box Culvert 4@10'X12'	60
C-1831	Box Culvert, 4@10'X12'	35

Shotcrete (Class A) Over Water - Possible Locations					
RMTA Bridge #	Element	Estimated Shotcrete Qty. (S.F.)	RMTA Bridge #	Element	Estimated Shotcrete Qty. (S.F.)
8N	Pier 1	28	BB	Pier 12 (North Face)	12
	Pier 2	7		Pier 15	12
	Pier 3	6		Pier 16	10
	Pier 4	18		Pier 18 (North Face)	12
	Pier 5	2		Pier 19	8
	Pier 6	22		Pier 22 (East Face Column)	12
	Pier 7	2		Pier 24	8
	Pier 8	14		Pier 26	12
	Pier 10	5		Pier 27 (South Face)	30
	Pier 11	4			
	Pier 12	20			
	Pier 13	24			
	Pier 15	8			
	Pier 16	14			
	Pier 17	18			

COORDINATION AND SCHEDULING

Contractor shall coordinate and schedule all Shotcrete Repair activities with the Engineer. RMTA structures to be repaired may require access from property owned or managed by others (e.g., VDOT or City of Richmond). Contractor shall coordinate and schedule with appropriate owner, party, or agency for work activities on non-RMTA property. In addition, Contractor shall secure all necessary permits required for site access to perform work. Contractor shall abide by all permits regulations and guidelines issued by the governing agency. Contractor shall provide the name and phone number of the contact person at each governing agency where a RMTA structure scheduled to be repaired is located (excluding RMTA property) at least five days prior to scheduled work start to the Engineer.

MEASUREMENT AND PAYMENT

Potential Shotcrete work locations are hereby delineated by means of access. Access to “Standard” shotcrete work locations may require incidental staging. Access to “Elevated” shotcrete work locations may require the use of a man lift or significant staging. Access to “Above Water” shotcrete work locations may require a float, staging built up from the river and attached to the bridge, or the use of an under-bridge access platform truck. Shotcrete unit costs shall be measured and paid for according to the defined Pay Items below:

The Pay Item **Shotcrete, (Standard)** will apply for all land locations where the work location is at grade level and up to 30' above grade and shall include all access requirements for Standard locations.

The Pay Item **Shotcrete, (Elevated)** will apply for all land locations where the work location is equal to or greater than 30' above grade and shall include all access requirements for Elevated locations.

The Pay Item **Shotcrete, (Over Water)** will apply for all locations over the James River and Kanawha Canal and shall include all access requirements for Over Water locations.

All Pay Item for **Shotcrete, (Type)** will be measured in square feet of surface area to which it is applied and will be paid for at the contract unit price per square foot by (Type). This Unit Price shall include all cutting, drilling, hammering, and all other work involved in the complete removal and disposal of concrete and other materials necessary to provide for joining new and old portions of the structure according to this Special Provision or as directed by the Engineer. The Contract Unit Price shall also include dowels or other approved anchor devices, cleaning, and repairing reinforcing steel, welded wire fabric and steel and synthetic fibers.

This Unit Price shall include all access requirements, labor, materials, equipment, supplies, permits, legal off-site disposal of waste and all other work involved to complete removal of damaged concrete members and replacement with shotcrete in accordance with this Special Provision or as directed by the Engineer.

<u>Pay Item</u>	<u>Pay Unit</u>
Shotcrete, (Standard)	Square foot
Shotcrete, (Elevated)	Square foot
Shotcrete, (Over Water)	Square foot

**SPECIAL PROVISION
PATCHING ASPHALT PAVEMENT**

DESCRIPTION

This work shall consist of repairing sections of cracked and deteriorated SMA or SM asphalt concrete pavement on the RMTA system.

LOCATIONS

Asphalt pavement patch locations shall be determined by the Engineer. Asphalt pavement on the entire RMTA system is subject to asphalt patching.

MATERIALS

Patching material shall be **SuperPave Mix SM 9.5E** with performance grade binder (PG 64E-22) subject to Engineer's approval. The mix design shall be submitted to the Engineer for approval at least seven (7) calendar days prior to starting work.

PROCEDURES

Patching consists of saw cutting an area designated by the Engineer, then removing the contents inside the area with pneumatic hammers. Once the contents have been removed, the hole is to be compacted and blown out with compressed air. Then the entire surface area, including sides, shall be covered with a tack coat. Surface course asphalt concrete is then to be placed in the hole and then rolled. All holes are to be a minimum 2" deep unless otherwise directed by the Engineer. The asphalt will be placed, in 2" lifts, with each 2" lift being tamped by gasoline-powered, piston-driven hand tamper with a compacting area of not less than one (1) square foot. After the final or only lift of asphalt has been placed, the asphalt is to be rolled with a steel-drum, vibratory roller that has been approved by the Engineer.

MEASUREMENT AND PAYMENT

Asphalt Concrete Patch shall be measured in square yards per inch of depth and will be paid for at the contract unit price per square yard per inch. This price shall include all equipment, labor, material, removal and disposal of materials, and incidentals required to complete the work.

Pay Item

Asphalt Concrete Patch

Pay Unit

Square Yard per Inch

**SPECIAL PROVISION
CLEANING DRAINAGE MANHOLE**

DESCRIPTION

This work shall consist of cleaning out built up trash and debris from the interior of a drainage manhole. Work shall be performed by manual labor, the use of a vacuum truck or any other method chosen by the Contractor and approved by the Engineer.

The manhole is approximately 50' west of the centerline of Portland Place, approximately 900' south of its intersection with Queen Charlotte Road. Approximate Google Maps coordinates are 37.548545, -77.491843. In 2008, the RMTA installed a steel trash separator device inside the manhole. The device is bolted to the sides and bottom of the manhole. The bottom of the device is approximately 23' below the top of manhole. The base of the manhole is a 4' x 4' square and the circular riser is 48" diameter. Steps are attached to the side of the manhole spaced approximately 16" on center.

There is a stone access road to the manhole from Portland Place Road.

Work shall be performed in accordance with all OSHA confined space and other applicable regulations pertaining to this type.

The Contractor shall clean the manhole twice during this Contract. The first shall be within one month after the Notice To Proceed is issued. The second shall be within one month of the contract completion date. The RMTA reserves the right to delete one of the cleaning occurrences. If only one cleaning is chosen, the cleaning date shall be as agreed upon by the Engineer and the Contractor.

MEASUREMENT AND PAYMENT

Clean Manhole will be measured in units of each occurrence of cleaning the manhole and will be paid for at the contract price per each. This price shall include all equipment, labor, incidentals and the proper disposal of trash and debris offsite per each cleaning.

Pay Item

Clean Manhole

Pay Unit

Each

SPECIAL PROVISION BRIDGE REPAIRS

DESCRIPTION

This work shall consist of repairing specific bridge structural steel members and resetting bridge bearings. Repair plans for specific bridge rehabilitation details are provided beginning on page SP-I-4.

All repairs shall be completed in accordance with the plan sheets, the requirements herein, and the 2020 VDOT Road and Bridge Specifications. All welding and testing shall be in accordance with AASHTO/AWS D1.5 Specifications. For each welder, welding operator, or tacker, the Contractor shall submit a copy of the certificate of qualification to the Engineer. The qualification certification shall state the name of the welder, operator, or tacker; name and title of the person who conducted the examination; type of specimens; position of welds; results of tests; and date of the examination. The qualification certification shall be made by an approved agency. Testing shall be in accordance with AASHTO/AWS D1.5 Specifications with a Flaw Severity Class A.

For the Contractor's reference, sheets from the as-built plans for Bridges 6, 13 and 48 are included in the Appendix.

All new structural steel plate(s) shall be shop primed. Subsequent coatings shall be field applied following plate installation. In addition to the repair plate(s), steel surfaces within one foot of repaired area and any other steel surface where the coating system was damaged during these repairs shall be cleaned and coated under this contract. All prime and paint coat application costs shall be the responsibility of the Contractor and shall be incidental to the bridge repair item.

All structural steel shall first be solvent cleaned as per SSPC SP-1 specification to remove contamination. Then the Contractor shall use hand tools to clean surfaces removing loose rust, soot, or other remaining contamination using specification SSPC-3. Lastly, the Contractor shall apply a primer coat of Amercoat Primer 68 HS Zinc Rich Epoxy, an intermediate coat of Amercoat 385 Polyamide Epoxy and an Amercoat Topcoat 450H Aliphatic Epoxy that is "RMA Green".

The Contractor shall perform 100% ultrasonic testing (UT) for the entire length of all full penetration welds. Magnetic particle (MT) or dye penetrant (PT) testing shall be performed for all fillet welds. All testing costs shall be the responsibility of the Contractor and shall be incidental to the bridge repair item.

Prior to any steel fabrication, the Contractor shall field verify all dimensions and assess the working conditions to determine any constructability issues. Should the Contractor have any issues or questions, they shall be submitted to the Engineer prior to steel fabrication and start of work.

The Kanawha Canal discharges into the James River which is in the Chesapeake Bay Watershed and all work may be subject to the provisions in the Chesapeake Bay Preservation Act; therefore, no debris or wastewater of any type shall be discharged into the canal or river. Furthermore, the Contractor shall be responsible for compliance with all environmental laws and regulations regarding this type of work. All environmental permits as well as submittals, if required, shall be incidental to this work.

For lane closures on and underneath these bridges and associated measurement and payment items, the Contractor shall refer to the special provisions for Maintenance of Traffic.

BRIDGE DESCRIPTIONS

Bridge 6

The bridge carries Forest Hill Avenue over both directions of State Route 76 (Powhite Parkway). The superstructure consists of four simple spans of multiple wide flange steel beams. Total bridge length is 251 feet. The repair is located on the south face of beam 10 at the West Abutment. The repair consists of removing the broken weld to base metal and rewelding.

Bridge 13

This bridge carries Douglasdale Road over both northbound and southbound directions of the I-195 Connector and CSX Railroad. The bridge has two abutments and five piers and is a multi-beam structure with six simple spans. Total bridge length is 303 feet. The repair locations are as follows:

- West Abutment, Unit 1, Stringer 6
- Pier 3, Unit 3, Stringers 1 through 6
- Pier 3, Unit 4, Stringers 5 and 6

The repairs consist of jacking the designated stringers in accordance with the plans, detaching the sole plate and realigning the sole plate and rocker plate to the center position based on the reference temperature of 60° F.

Bridge 48

This bridge carries Harrison Street over the Downtown Expressway (Route 195). The bridge has two abutments and one pier and is a multi-girder structure with two simple spans. Total bridge length is 204 feet. The repairs are listed below.

- Repair 1 is located at the South Abutment, Unit 1, Girder 1 and consists of removing the west face broken sole plate to girder weld to base metal and rewelding in accordance with the plans.
- Repair 2 is located near the South Abutment in Unit 1 at Girder 8 between the South Abutment and the first diaphragm line. The repair consists of removing a laminar tear on the inside bottom flange edge in accordance with the plans. The contractor is advised that in the event that cracks are found after dye pen testing has been performed that he is to notify the engineer.

Measurement and Payment

The pay items for the repairs will be paid for at the contract lump sum (LS) bid price or each (EA) at each location of bridge steel repairs as shown below. This price shall include all materials, labor, tools, equipment, and incidentals necessary to complete the repairs including access to the site, jacking and shoring procedures, removal of existing steel, steel fabrication, cutting, grinding, steel installation, welding, labor, shop and field cleaning, priming and painting, ultrasonic testing (where noted on plans), and shop coating of steel plates.

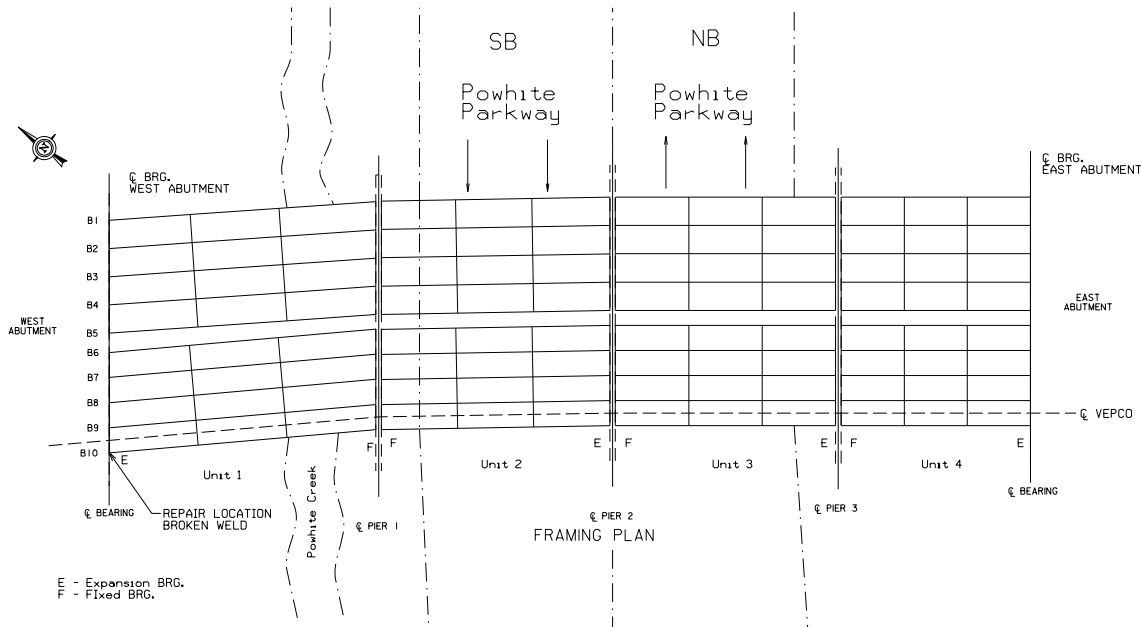
This price shall also include review fees; submittals; and preparation of all plans, drawings, schedules, and narratives necessary for describing the Contractor’s means and methods required to perform the work. This price shall include any requirements to remain in compliance with all environmental laws and regulations for work near or in the James River and Kanawha Canal. Legal offsite disposal of all waste materials shall be incidental to this item. Any repairs which may require coordination with railroads shall be performed in accordance with the Supplemental Specifications, Section 107.19 Railway-Highway Provisions.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
BRIDGE 6, UNIT 1, BEAM 10, WEST ABUTMENT, BROKEN WELD REPAIR AT BEARING SOUTH FACE	LS
BRIDGE 13, WEST ABUTMENT, UNIT 1, STRINGER 6 BEARING REALIGNMENT	LS
BRIDGE 13, PIER 3, UNIT 3, STRINGERS 1 THROUGH 6 BEARING REALIGNMENT	EA
BRIDGE 13, PIER 3, UNIT 4, STRINGERS 5 AND 6 BEARING REALIGNMENT	EA
BRIDGE 48, SOUTH ABUTMENT, UNIT 1, GIRDER 1 BROKEN WELD REPAIR	LS
BRIDGE 48, NEAR SOUTH ABUTMENT, UNIT 1, GIRDER 8 LAMINAR DEFECT REPAIR	LS



UNIT 1, BEAM 10, WEST ABUTMENT
BROKEN WELD REPAIR @ BEARING
SOUTH FACE



E - Expansion BRG.
F - Fixed BRG.

Notes:

1. Work must be completed in accordance with the Virginia Department of Transportation Road and Bridge Specification, issued 2020, current supplemental specification, contract special provisions and contract.
2. All existing structural steel is ASTM A36.
3. All repair welding shall be performed in accordance with AASHTO/AWS 2020 Bridge Welding Code, 8th Edition. All fillet welds shall be checked for cracks by mag particle or dye penetrant method.
4. Contractor is to field verify all dimensions and plate sizes before any fabrication, if required.
5. Contractor shall be required to apply a three coat epoxy-urethane system to all areas of paint damaged from completing repairs. The new paint system shall meet the requirements of the paint system specified herein. Surface preparations shall meet SSPC-SP3.

Paint system shall meet the following:

Prime Coat: Amercoat 68 HS Zinc Rich Epoxy
 Intermediate Coat: 385 Polyamide Epoxy
 Top Coat: 450H Aliphatic Epoxy
 Color Name: RMA Green
 LB-4Y+13
 PG-6Y+4+1/2
 TW-20Y+35
 YDA-13Y+43+1/2

Reference: Bridge B6 As-built plans.

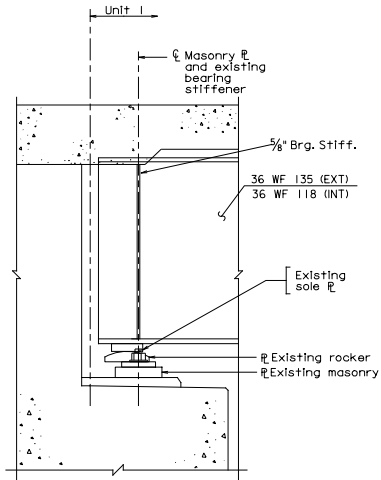
Suggested Sequence of Construction:

1. In general, the sequence of construction is as indicated below. Deviation from the sequence of construction shown is acceptable upon finish review and approval by the Engineer.
2. Remove paint and corrosion at repair location.
3. Remove exterior weld connecting sole plate to beam bottom flange. Removal method shall be by grinding, air carbon arc methods or gouging.
4. Contractor to take special care not to damage base metal.
5. Re-weld, taking care not to stop weld.
6. Dye pen weld, checking for cracks.
7. Clean and paint all areas of existing paint damaged during repair in accordance with specifications in these plans.

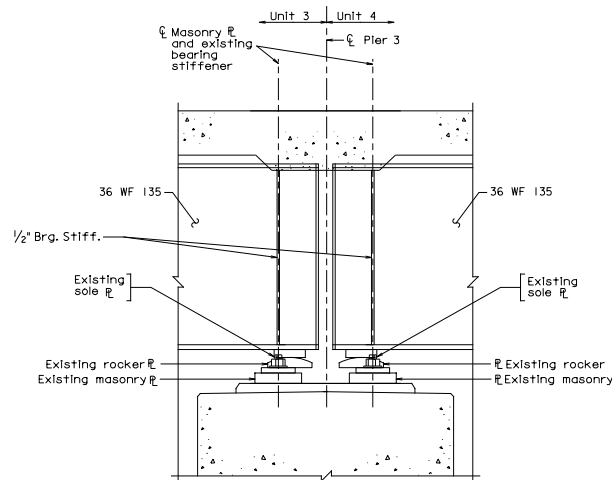
(Douglasdale Rd. over VA 76)

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY			
BRIDGE 6			
UNIT 1, BEAM 10 WEST ABUTMENT			
BROKEN WELD REPAIR @ BEARING			
SOUTH FACE			
HNTB		HNTB CORPORATION	
ARCHITECTS, ENGINEERS & PLANNERS		MEMPHIS, TENNESSEE	
SCALE: AS NOTED	DATE: APRIL 2022	SHEET: 1	OF: 5
PLAN NO. A	PROJECT: MR 2022	FILE NO.	SHEET NO. SP-1-4

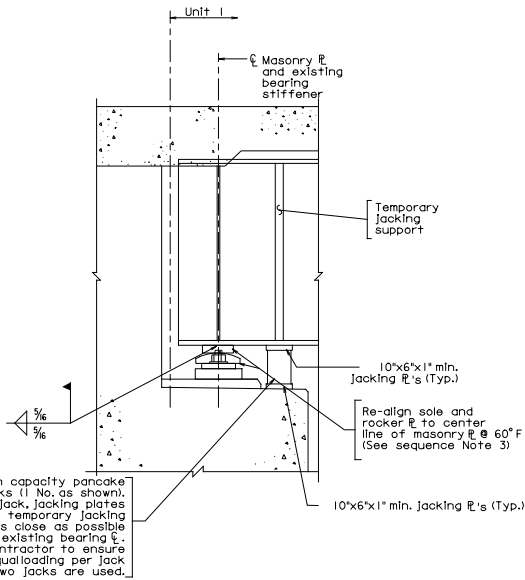
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EXISTING WEST ABUTMENT SOUTH FASCIA ELEVATION

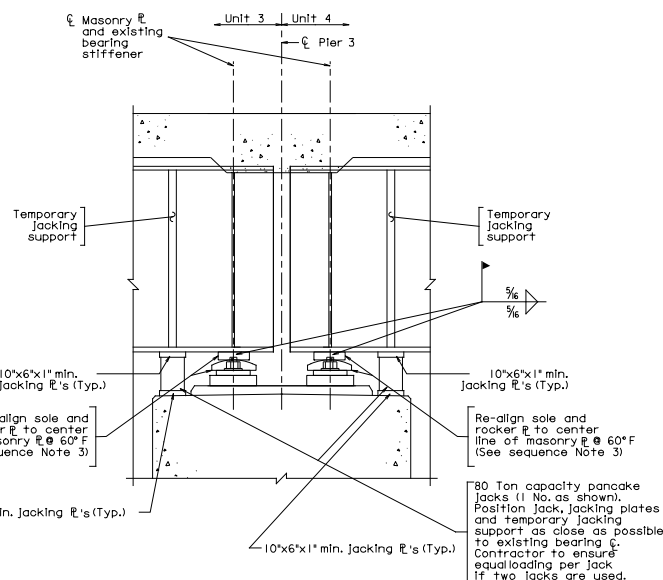


EXISTING PIER 3 SOUTH FASCIA ELEVATION



PROPOSED WEST ABUTMENT SOUTH FASCIA ELEVATION

Not to Scale



PROPOSED PIER 3 SOUTH FASCIA ELEVATION

REPAIR LOCATION
 WEST ABUTMENT, STRINGER 6
 PIER 3, UNIT 3, STRINGERS 1-6
 PIER 3, UNIT 4, STRINGERS 5-6

Notes:

- Work shall be completed in accordance with the Virginia Department of Transportation Road and Bridge Specification, issued 2020, current supplemental specifications, contract special provisions, and contract.
- Contractor shall field verify all dimensions and existing plate sizes prior to fabrication.
- The existing structural steels ASTM-A36. All new structural steel shall be AASHTO M270, grade 36.
- All repair welding shall be performed in accordance with AASHTO/AWS 2020 Bridge Welding Code, 8th Edition. All fillet welds shall be checked for cracks by mag particle or dye penetrant method.
- Contractor shall be required to apply a three coat epoxy-urethane system to all areas of paint damaged from completing repairs. The new paint system shall meet the requirements of the paint system specified herein. Surface preparations shall meet SSPC-SP3.
 Paint system shall meet the following:
 Prime Coat: Amercoat 68 HS Zinc Rich Epoxy
 Intermediate Coat: 385 Polyamide Epoxy
 Top Coat: 450H Aliphatic Epoxy
 Color Name: RMA Green
 LB-4Y+13
 PG-5Y+4+1*2
 TW-20Y+35
 YOA-13Y+43+1*2
- Contractor is responsible for determining the best location and method for jacking. Contractor shall only apply enough jacking force to relieve the load from the stringer bearing. A suggested jacking point is shown in these plans; however, an alternate method or location may be submitted by the Contractor. Alternate methods and locations shall be approved by the Engineer. Maximum jacking height is 1/4". Live load over subject stringer shall be removed while jacks are in use.
- Temporary jacking supports shall be installed as close to existing bearing stiffener as possible.
- Contractor shall provide shop drawings signed and sealed by a licensed Professional Engineer in the Commonwealth of Virginia for temporary jacking support, jack and jacking procedure.
- Service loads on jack:

Vertical: Dead load = 38 kips. Live load + impact = 79 kips
 Horizontal: Wind and thermal = 17 kips

Jacks shall have minimum 2x capacity of the maximum jacking load.

- Reference: Bridge B13 original plans.

Legend:

N.S. - Near side
 F.S. - Far side

Suggested Sequence of Construction:

In general, the sequence of construction is as indicated below. Deviation from the sequence of construction shown is acceptable upon review and approval by the Engineer. Live load over subject stringer shall be removed while jacks are in use.

- Install temporary jacking supports and jacking assemblies. Jack fascia stringer from pier cap and lock-off jacks. Maximum jacking height is 1/4".
- Grind weld between sole plate and bottom flange.
- Realign sole plate and rocker plate to centerline of masonry plate at 60°F.
 For temperatures other than 60°F adjustment shall be 1/8" expansion or contraction per 10°F increase or decrease. Reweld sole plate to bottom flange.
- Reweld sole PL to beam flange.
- Dye pen test all welds checking for cracks.
- Remove jacking system and temporary jacking support.
- Clean repair area.

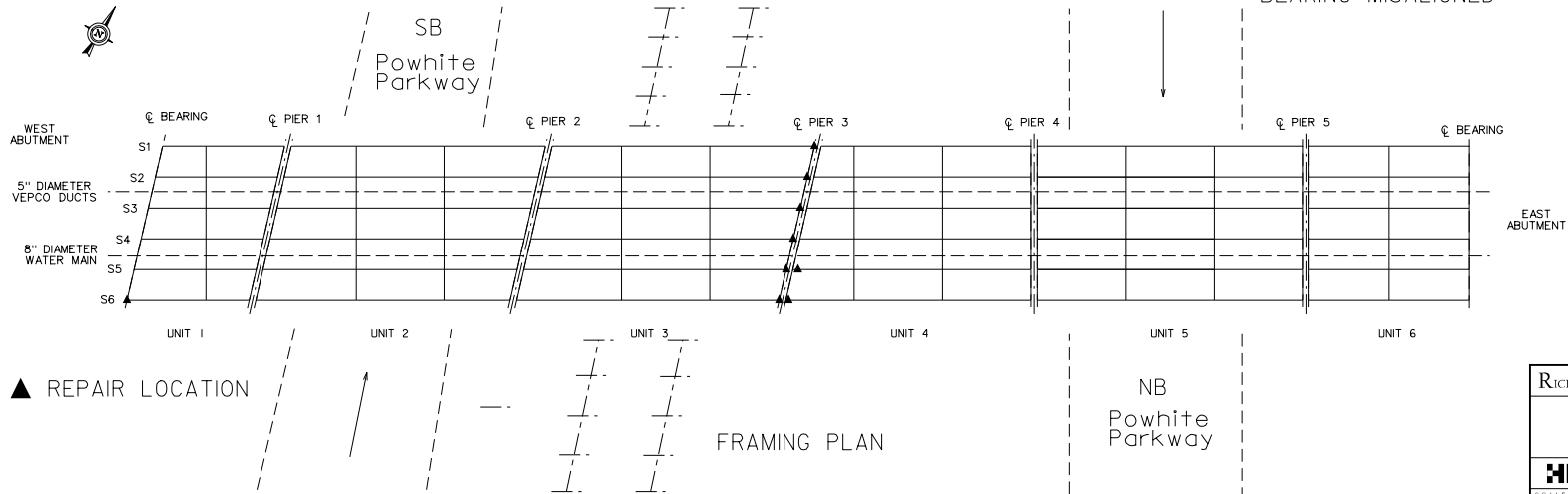
RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY			
BRIDGE 13			
WEST ABUTMENT & PIER 3			
BEARING REALIGNMENT			
HNTB		HNTB CORPORATION ARCHITECTS, ENGINEERS & PLANNERS ALLIANCE FOR VIRGINIA	
SCALE	AS NOTED	DATE	APRIL 2022
PROJECT	FILE NO.		SHEET 2 OF 5
A	MR 2022		SP-15



BRIDGE 13, WEST ABUTMENT
UNIT 1, STRINGER 6
BEARING MISALIGNED



BRIDGE 13, PIER 3
UNIT 3, STRINGER 1-6
UNIT 4, STRINGER 5-6
BEARING MISALIGNED



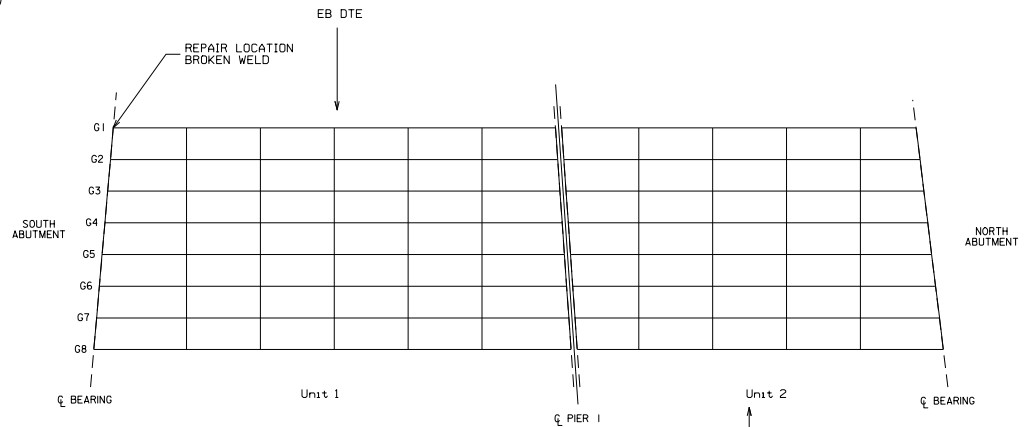
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RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY			
BRIDGE 13 WEST ABUTMENT & PIER 3 BEARING REALIGNMENT			
HNTB		HNTB CORPORATION ARCHITECTS, ENGINEERS & PLANNERS ALEXANDRIA, VIRGINIA	
SCALE: AS NOTED	DATE: APRIL 2022	SHEET: 3	OF: 5
PLAN NO. A	PROJECT: MR 2022	FILE NO.	SHEET NO. SP-I-6



REPAIR LOCATION

UNIT 1, GIRDER 1, SOUTH ABUTMENT
BROKEN WELD REPAIR @ BEARING
WEST FACE



FRAMING PLAN

(S. Harrison St.)

Notes:

1. Work must be completed in accordance with the Virginia Department of Transportation Road and Bridge Specification, issued 2020, current supplemental specification, contract special provisions and contract.
2. All existing structural steel is ASTM A36.
3. All repair welding shall be performed in accordance with AASHTO/AWS 2020 Bridge Welding Code, 8th Edition. All fillet welds shall be checked for cracks by mag particle or dye penetrant method.
4. Contractor shall be required to apply a three coat epoxy-urethane system to all areas of paint damaged from completing repairs. The new paint system shall meet the requirements of the paint system specified herein. Surface preparations shall meet SSPC-SP3.

Paint system shall meet the following:

Prime Coat:	Amercoat 68 HS Zinc Rich Epoxy
Intermediate Coat:	395 Polyamide Epoxy
Top Coat:	450H Aliphatic Epoxy
Color Name:	RMA Green
LB-4Y+13	
PG-6Y+4+1/2	
TW-20Y+35	
YDA-13Y+43+1/2	

Reference: Bridge B48 As-built plans.

Suggested Sequence of Construction:

1. In general, the sequence of construction is as indicated below. Deviation from the sequence of construction shown is acceptable upon finish review and approval by the Engineer.
2. Remove paint and corrosion at repair location.
3. Remove exterior weld connecting sole plate to beam bottom flange. Removal method shall be by grinding, air carbon arc methods or gouging.
4. Contractor to take special care not to damage base metal.
5. Re-weld, taking care not to stop weld.
6. Dye pen weld, checking for cracks.
7. Clean and paint all areas of existing paint damaged during repair in accordance with specifications in these plans.

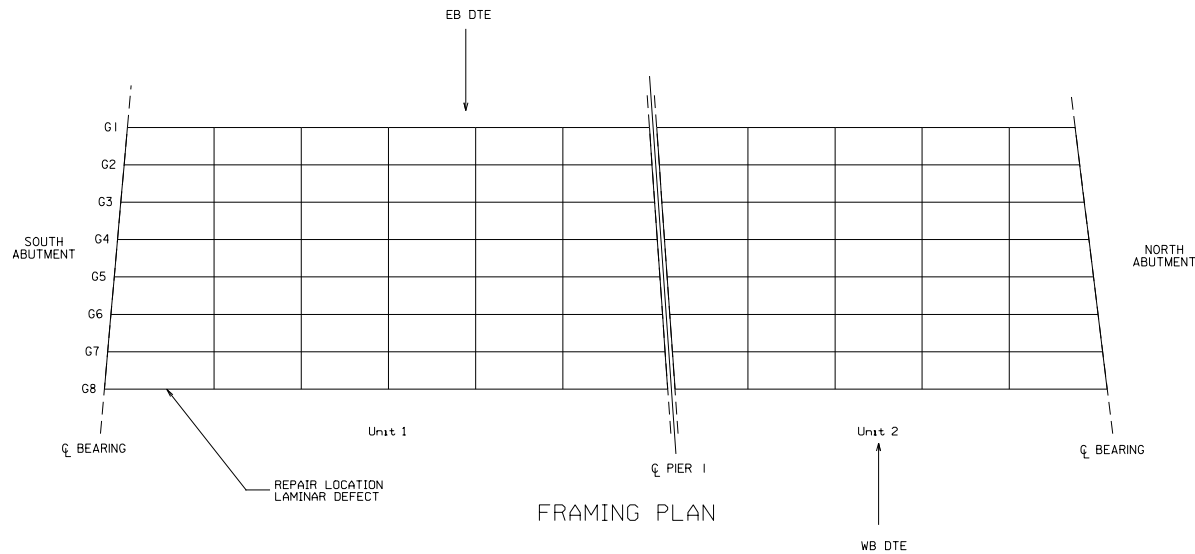
RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY				
BRIDGE 48				
UNIT 1, GIRDER 1, SOUTH ABUTMENT				
BROKEN WELD REPAIR @ BEARING				
WEST FACE				
HNTB		HNTB CORPORATION		
<small>ARCHITECTS, ENGINEERS & PLANNERS</small>				
<small>ALLIANCE DRIVE, FORT LAUDERDALE, FLORIDA</small>				
SCALE	AS NOTED	DATE	APRIL 2022	SHEET 4 OF 5
PLAN NO.	A	PROJECT	MR 2022	SHEET NO.
				SP-I-7

Not to Scale



BRIDGE 48
UNIT 1, GIRDER 8
LAMINAR DEFECT

REPAIR LOCATION



FRAMING PLAN

(S. Harrison St.)

Notes:

1. Work must be completed in accordance with the Virginia Department of Transportation Road and Bridge Specification, issued 2020, current supplemental specification, contract special provisions and contract.
2. Contractor shall be required to apply a three coat epoxy-urethane system to all areas of point damaged from completing repairs. The new point system shall meet the requirements of the paint system specified herein. Surface preparations shall meet SSPC-SP3.

Paint system shall meet the following:

Prime Coat: Amercoat 68 HS Zinc Rich Epoxy
 Intermediate Coat: 385 Polyamide Epoxy
 Top Coat: 450H Aliphatic Epoxy
 Color Name: RMA Green
 LB-4Y+13
 PG-6Y+4+1/2
 TW-20Y+35
 YGA-13Y+43+1/2

3. All existing structural steel is ASTM A36.
4. All repair welding shall be performed in accordance with AASHTO/AWS 2020 Bridge Welding Code, 8th Edition. All fillet welds shall be checked for cracks by mag particle or dye penetrant method.

Reference: Bridge B48 As-built plans.

Suggested Sequence of Construction:

In general, the sequence of construction is as indicated below. Deviation from the sequence of construction shown is acceptable upon finish review and approval by the Engineer.

1. Remove paint and clean area.
2. Remove laminar tear by grinding to smooth surface/profile.
3. Contractor to visually check for nicks, gouges, and sharp edges.
4. Dye pen test area for cracks. If cracks are found, notify the engineer.
5. Clean and paint all areas of existing point damaged during repair in accordance with specifications in these plans.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY			
BRIDGE 48 UNIT 1, GIRDER 8 LAMINAR DEFECT			
HNTB		HNTB CORPORATION ARCHITECTS, ENGINEERS & PLANNERS ALEXANDRIA, VIRGINIA	
SCALE	AS NOTED	DATE	APRIL 2022
PROJECT	MR 2022	SHEET	5 OF 5
PLAN NO.	A	FILE NO.	
			SHEET NO. SP-1-8

Not to Scale

**SPECIAL PROVISION
STREAM STABILIZATION**

DESCRIPTION

This work shall consist of placing riprap adjacent to box culverts for stabilization and scour protection at designated locations as directed by the Engineer. Contractor shall also remove any existing riprap and debris inside the barrels. The contractor shall submit the source of supply for Engineers approval.

MATERIALS

<u>ITEM</u>	<u>VDOT SECTION</u>
DRY RIP RAP CLASS I	414
SILT FENCE	242/245/303

LOCATIONS

Culvert 1827 is located under Forest Hill Ramp from SB Powhite Parkway and is a four-barrel 10'x12' culvert with scour along the inlet apron approximately 1-3' deep.

Culvert 1831 is located on Powhite Parkway over Powhite Creek west of Powhite North Toll Plaza and is a four barrel 10'x12' culvert with approximately 1.5' scour depth at Cell 1 and 2 inlets.

PROCEDURES

Generally, all work shall be performed from the edge of pavement or shoulder, utilizing lane closures as necessary to protect workers and the motoring public. Removal of guardrail is not anticipated but if removed, is incidental to work performed. It is solely the responsibility of the Contractor for acquiring permits or permissions for access from areas not owned by the RMTA. If the Contractor removes fence fabric to facilitate the repair work, the cost of removing and reinstalling the fence fabric will be incidental to the scope of work. Equipment shall be capable of

depositing repair materials over existing guardrail. The costs of removal of existing riprap and debris in the barrels will be incidental to the scope of work.

A sediment and erosion control plan must be submitted and approved by the Engineer prior to beginning any land disturbing activities.

Materials:

The materials needed for scour protection at box culverts includes Dry Riprap, Class I and shall conform to VDOT 2020 Road and Bridge Specifications Sections 204 and 414.

Riprap shall be placed so it forms dense, well-graded mass of stone with minimum voids. The Contractor should be aware that the desired distribution of stones throughout the mass may be obtained by selective loading at the quarry and controlled dumping during final placement. Riprap shall be placed at its full thickness in one operation. The Contractor shall not place riprap by dumping through chutes or other methods that cause segregation of stone sizes. Extra care shall be taken not to dislodge the underlying base when placing the Riprap.

MEASUREMENT AND PAYMENT

Stone will be measured by cross sectioning the area filled, prior to the placement of material and then converting to tons by using an appropriate conversion factor. If, by mutual consent, the Engineer and Contractor should agree to use a weight ticket furnished with the material to gauge either the quantity of stone placed at various locations or the total quantity of material placed at multiple locations to arrive at final quantities, this will be an acceptable method in lieu of the previously specified method.

<u>Pay Item</u>	<u>Pay Unit</u>
DRY RIPRAP CLASS I	TON
SILT FENCE	LINEAR FOOT

**SPECIAL PROVISION
SLOPE STABILIZATION**

DESCRIPTION

This work shall consist of slope stabilization material at designated locations as directed by the Engineer. The contractor shall submit the source of supply for Engineers approval.

MATERIALS

<u>ITEM</u>	<u>VDOT SECTION</u>
COARSE AGGREGATE NO. 57	203
AGGREGATE MATERIAL NO. 1	203
RIP RAP CLASS I	414
CRUSHED AGGREGATE NO. 21A OR 21B	208
TOPSOIL, CLASS B	244
REGULAR SEED	244
FERTILIZER (15-30-15)	244
LIME	244

LOCATIONS

Locations to be determined by the Engineer.

PROCEDURES

Generally, all work shall be performed from the edge of pavement or shoulder, utilizing lane closures as necessary to protect workers and the motoring public. Removal of guardrail is not

anticipated but if removed, is incidental to work performed. It is solely the responsibility of the Contractor for acquiring permits or permissions for access from areas not owned by the RMTA. If the Contractor removes fence fabric to facilitate the repair work, the cost of removing and reinstalling the fence fabric will be incidental to the scope of work. Equipment shall be capable of depositing repair materials over existing guardrail. Compaction of crusher run and 21A/21B will be required.

Stone Repair:

The Contractor shall cut the subgrade to the approval of the Engineer, so that the finished grade of the riprap will be at the elevation of the surrounding area. Contractor shall excavate a trench at the toe of the slope to key in the riprap and shall be at least two (2) feet deep. Contractor shall remove and dispose offsite all brush, trees, stumps, and other objectionable material to the approval of the Engineer. Removal of such items will be incidental to the work.

Stone placement should start at the toe trench and work upwards. Rip-Rap shall be placed so it forms dense, well-graded mass of stone with minimum voids. The Contractor should be aware that the desired distribution of stones throughout the mass may be obtained by selective loading at the quarry and controlled dumping during final placement. Rip-Rap shall be placed at its full thickness in one operation. The Contractor shall not place riprap by dumping through chutes or other methods that cause segregation of stone sizes. Extra care shall be taken not to dislodge the underlying base when placing the Rip-Rap. The finished slope shall be free of pockets of small stone or clusters of large stones. The Contractor should be advised that hand placing may be necessary to achieve proper distribution of stone sizes to produce a relatively smooth, uniform surface. The finished grade of the riprap shall blend with the surrounding area.

Topsoil Repair:

The Contractor shall perform regular excavation to prepare the site for topsoil. All areas of slope stabilization shall have a minimum of six (6)-inches Class B Topsoil. The Contractor shall place topsoil in a way that the loose depth shall be sufficient to allow the area to conform to the elevations shown on the plans after the topsoil settles. After topsoil has been applied, the Contractor shall remove large clods, hard lumps, and stones larger than three (3)-inches in diameter; brush; roots; stumps; litter; and foreign material. Where residential or commercial yards exist and to the approval of the Engineer, the Contractor shall remove all stones larger than 3/4 inch in diameter. Such areas shall be hand raked to provide a smooth yard suitable for mowing by a yard mower. When the placement of topsoil is complete, the area shall be in a condition to receive seed without further soil preparation. Areas of repair shall be seeded within seven (7) calendar days after repair is completed. The Contractor is advised that temporary

erosion control measures shall to the approval of the Engineer, be installed if seeding operation cannot occur at the moment that the repair is complete. Contractor shall install and maintain erosion control measures over the entire repaired area until the area is stabilized.

MEASUREMENT AND PAYMENT

Stone and topsoil will be measured by cross-sectioning the area filled, prior to the placement of material and then converting to tons by using an appropriate conversion factor. If, by mutual consent, the Engineer and Contractor should agree to use a weight ticket furnished with the material to gauge either the quantity of stone placed at various locations or the total quantity of material placed at multiple locations to arrive at final quantities, this will be an acceptable method in lieu of the previously specified method.

Topsoil will be paid in accordance with VDOT specifications. Any labor and disposal costs required for the removal of large clods, hard lumps, and stones larger than 3/4 inch in diameter; brush; roots; stumps; litter; and foreign material, and hand raking shall be incidental.

<u>Pay Item</u>	<u>Pay Unit</u>
COARSE AGGREGATE NO. 57	TON
AGGREGATE MATERIAL NO. 1	TON
RIP RAP CLASS I	TON
CRUSHED AGGREGATE NO. 21A OR 21B	TON
TOPSOIL, CLASS B	CUBIC YARD
REGULAR SEED	POUND
FERTILIZER (15-30-15)	TON
LIME	TON

**SPECIAL PROVISION
MISCELLANEOUS BRIDGE COATINGS**

DESCRIPTION

This work shall consist of cleaning and coating miscellaneous steel surfaces of existing bridge structural members. The intent of this work is to re-coat isolated structural members which exhibit corrosion and possible minor section loss. Structures are assumed to be Type B structures.

MATERIALS

All cleaned surfaces shall receive the following coating system, or engineer approved equal:

- A. Polymeric Epoxy Amine at 1.0-2.0 mils DFT. A thixotropic penetrating primer/sealer with excellent wetting properties that cures down to 35°. High solids that contain corrosion inhibitors and is compatible with a variety of topcoats.
- B. Epoxy Polyamide (3/4 tint formula) at 3.0 – 5.0 mils DFT. Low temperature and rapid curing primer/finish that is VOC compliant with current AIM regulations. Solids content by Volume 63% ±2%.
- C. Aliphatic Acrylic-Polyester Polyurethane (full tint formula) at 3.0 – 5.0 mils DFT. High build, low sheen finish that has excellent resistance to corrosion, chemicals, and abrasion. VOC compliant with to current AIM regulations. Solids content by volume 61% ± 2%.

PROCEDURES

Contractor shall remove deteriorated coating back around the edges of the repair until an area of completely intact and adherent coating film, with no rust or blisters underneath, is attained. Edges of tightly adherent coating remaining around the repair shall be recoated and must be feathered so that the recoated surface can have a smooth appearance to provide a transition from the area of repair to the intact coating.

The remaining existing coating should have sufficient adhesion so that it cannot be lifted as a layer by inserting the blade of a dull putty knife under it using moderate pressure. Unless experience or spot tests show otherwise and to the approval of the Engineer, the contractor should use the same generic type of coating for this work as is in the existing coating.

The cleaning method required shall be power tool cleaning (SSPC-SP-3). This is Method 3 in Section 411.

LOCATIONS

Locations to be determined by the Engineer.

MEASUREMENT AND PAYMENT

Miscellaneous Coatings will be measured in units of square foot of surface area and will be paid for at the contract unit price. This price shall include costs of any necessary staging for access, equipment required, labor, environmental protection, proper disposal of material offsite, and any incidentals required to complete the work.

The minimum square footage payment for an individual work location shall be 30 square feet. An individual work location shall be defined as a single bridge span.

Payment for MOT required at individual work locations shall be paid for in accordance with the individual Electronic arrow, Group 2 channelizing devices and Truck mounted attenuator bid items listed in Section 512.

Payment will be made under:

Pay Item

Miscellaneous Coatings

Pay Unit

Square Foot

**SPECIAL PROVISION
CONCRETE CURB**

DESCRIPTION

This work shall consist of removing and replacing sections of Hydraulic Cement Concrete Curb.

MATERIALS

<u>ITEM</u>	<u>VDOT SECTION</u>
Hydraulic Cement Concrete Curb	502

LOCATIONS

Locations for curb replacement may be determined by the Engineer.

PROCEDURES

Contractor shall inspect each location to determine the limits of work and shall submit plans to Engineer for approval prior to commencing work. Curb to be replaced shall be sawcut and removed in the designated area, then disposed of in an approved disposal area. New curb shall be installed in accordance with VDOT Specification 502 and shall match the profile of the existing curb.

MEASUREMENT AND PAYMENT

Curb shall be measured in linear feet and will be paid for at the contract unit price per linear foot. This price shall include the removal and disposal of the existing curb, repair of any adjacent damage to pavements, sidewalks, landscaping or turf areas; in addition to all equipment, labor, material, and incidentals required to complete the new installation. No additional payment will be made on the basis of varying curb shapes.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Standard 6" Curb, CG-2	Linear foot
Standard 4" Curb, CG-3	Linear foot

SPECIAL PROVISION EXPANSION JOINT SEALANT

DESCRIPTION

This work shall include two different methods.

Method I: consists of removing existing partial joint material, sandblasting the joint substrates clean, priming the joint surfaces and installing a flexible two part silicone joint.

Method II: consists of removing joint material for its entire length, including parapet walls, sandblasting the joint substrates clean, applying an epoxy bonder to both the joint substrate and joint seal and to install a low density, closed cell, cross-linked nitrogen blown joint seal.

All repair work, materials, methods and equipment shall be in accordance with the joint sealant manufacturer's recommendations unless specified in this special provision or as directed by the Engineer. Contractor shall obtain the most recent copies of the joint sealant manufacturer's current installation guidelines and equipment recommendations and submit to the Engineer 7 days prior to any joint installation or removal.

Contractor shall refer to Special Provision E: Hydraulic Cement Concrete Repair, and shall be used in conjunction with work contained in this Special Provision.

MATERIALS

Materials shall be delivered to the job site in the manufacturer's original sealed containers. Each container shall be marked with the manufacturer's name and lot number. Materials will be accepted based on the manufacturer's certification, subject to the storage and handling requirements of the manufacturer.

Backer rod shall be a round, flexible, continuous-length, non-absorbent, non-gassing, non-staining and non-shrinking material extruded from a closed-cell polyolefin or equivalent that is compatible with the joint sealant and approved for use by the sealant manufacturer.

For Method I: Joint Sealant Repairs shall be the Dow Corning 902 Rapid Cure Silicone (RCS) or Engineer approved equal.

Wherever the Dow Corning 902 RCS is to be applied, the primer shall be the recommended primer listed in the Dow Corning Brand Silicone Pavement Sealants document for the type of substrate. Mixing and application apparatus utilized for sealant application must be as

recommended by the manufacturer.

For Method II: Joint Sealant Replacement shall be the Wabo Evazote UV seal or Engineer approved equal.

Wherever the Wabo Evazote UV seal is to be applied, the epoxy bonder shall be the recommended epoxy bonder listed in the *Watson Bowman ACME* document for the type of seal. Mixing and application apparatus utilized for sealant application must be as recommended by the manufacturer.

LOCATION

Locations for expansion joint sealant replacement may be determined by the Engineer.

In addition to the Joint Sealant Replacement locations identified below, there are additional areas that will require partial removal and repair of the existing Joint Sealant Material. Locations for Joint Sealant Repair will be identified by the Engineer.

COORDINATION AND SCHEDULING

Contractor shall refer to Special Provision B: Maintenance of Traffic for details on scheduling restrictions.

Contractor is advised that joint sealant replacement/repair work on RMTA bridges may require permits from the City of Richmond. Contractor shall secure all permits required by the City of Richmond necessary to perform all joint replacement tasks, including Work in Street permits, and submit to the Engineer for approval, prior to performing any joint replacement activities.

Contractor shall provide the necessary prior notification of scheduled work start required by the City of Richmond to the appropriate City of Richmond divisions. In addition, Contractor shall provide a minimum of (7) calendar days notice to the Engineer and the City of Richmond Department of Traffic Engineering prior to any lane or bridge closure.

In order to minimize disruptions to local traffic, Contractor may be directed by City of Richmond and the Engineer to perform joint replacement activities at night or on weekends. In addition to abiding by the MOT requirements detailed in other sections of the Contract documents, Contractor shall abide by the City of Richmond's traffic control requirements including directives concerning total or partial lane closures.

PROCEDURES

It is the Contractor's responsibility to field measure the openings at each joint location:

Method I:

Limits of repair locations will be directed by the Engineer. The Contractor shall follow the Manufacturer's recommendations and the *Installation Guidelines and Equipment Regulations Dow Corning 902 RCS Joint Sealant* document for installation of the Joint Sealant Material. All Manufacturer's recommendations shall be submitted to the Engineer for approval (7) days prior to initial installation. The Contractor shall remove partial seal and sealant from transverse joint and parapet joint if present. The exposed substrate shall be sandblasted thoroughly, removing all visible residue and contaminants to assure a good bonding surface. Contractor is hereby advised that sandblasting shall be the only cleaning procedure allowed, wire brushing will not be allowed. The steel substrate, if present, shall be sandblasted to "near white" SSPC – SP10. All dust and debris shall be blown out with moisture-free and oil-free properly trapped compressed air immediately prior to application of primer.

Joints shall be inspected and approved by the Engineer prior to placing the sealant. Personnel installing the joint sealant must be skilled and properly trained.

Installation technician shall ensure that both sealant components dispense and mix uniformly resulting in a uniform color. Sealed joints displaying non-uniform colored sealant or sealants displaying color "streaks" shall be completely removed, the joint surfaces completely reworked and new uniformly colored sealant installed at no additional cost to the Authority, to the approval of the Engineer, and without extension of contract time.

Method II:

Measurements will be taken at each location in accordance with the manufacturer's guidelines. Seal material should be sized 25% larger than the joint opening at near neutral but never less than 10% oversized or greater than 35% oversized. Joint variations: if a joint opening is not uniform, the limits of the joint opening for the specified seal size are as follows:

Maximum limit for increase in joint opening is 8%.

Maximum limit for decrease in joint opening is 13%.

Contractor shall be aware that measurement taken during this stage will not be used for payment. The procedures for taking measurements for payment are described below.

The Contractor shall follow the Manufacturer's recommendations for installation of the Joint Sealant Material and submit to the Engineer for approval (7) calendar days prior to initial installation. The Contractor shall completely remove the old seal and sealant from transverse joint and parapet joint if present. The exposed substrate shall be sandblasted thoroughly,

removing all visible residue and contaminants to assure a good bonding surface. Wire brushing will not be allowed. The concrete substrate, if present, shall be sandblasted until clean, sound, free of contaminants and to “Near White” SSPC–SP10. All dust and debris shall be blown out with moisture-free and oil-free compressed air immediately prior to application of the epoxy bonder.

PROJECT CLEANUP

All of the existing joint sealant removed, sandblasting debris, containers, boxes, packages, wrappers, etc. generated under this project shall be disposed of properly off site.

Sandblasting media shall be properly cleaned and removed from area below bridge. Failure to properly clean media from below the bridge to the approval of the Engineer will result in a delay of payment for work completed.

MEASUREMENT AND PAYMENT

Joint widths are to be measured just prior to primer application and recorded. Widths shall be measured at three locations on the bridge deck and the average of the three measurements shall be used for payment.

Measurement and Payment of **Joint Sealant Repair** (Method I) shall be per Inch width x Linear Foot of joint for each specified joint width. Payment shall include removing and disposing of a portion of the existing sealant, sandblasting and disposing of the sandblast media, and furnishing and installing the primer, backer rod and joint sealant in accordance with the sealant manufacturer’s guidelines.

Measurement and Payment of **Joint Sealant Replacement** (Method II) shall be per Linear Foot of joint. Payment shall include removing and disposing of the existing sealant, sandblasting and disposing of the sandblast media, and furnishing and installing the epoxy bonder and joint sealant in accordance with the sealant manufacturer’s guidelines.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Joint Sealant Repair	In x Linear Foot
Joint Sealant Replacement	Linear Foot

**SPECIAL PROVISION
REPAIRING ASPHALT CONCRETE PAVEMENT CRACKS**

DESCRIPTION

This work includes repairing pavement cracks in asphalt pavement. The repair consists primarily of filling the crack with hot poured liquid asphalt and applying a detack liquid over top to remove surface tack.

LOCATIONS

Locations may be determined by the Engineer. No adjustments in unit price shall be made as a result of the addition or deletion of work locations from the scope of work.

MATERIALS

Asphalt shall conform to VDOT Spec. Section 210. Detack shall be manufactured by Crafcoc or Engineer approved equal.

Contractor shall submit product data or information sheet to the Engineer for review a minimum of seven (7) calendar days prior to starting work.

PROCEDURES

Cracks shall be prepared by blowing loose debris from them with compressed air. Compressors shall be of sufficient capacity to clean the crack opening with relative ease. Hot liquid asphalt shall then be poured into the crack to a level $3/16'' \pm 1/16''$ below the existing asphalt surface (horizontal) and as per Manufacturers Recommendations. Immediately after asphalt application apply Detack over hot liquid asphalt.

MEASUREMENT AND PAYMENT

Repair of asphalt pavement cracks shall be measured and paid by the linear foot which shall include crack preparation, hot liquid asphalt, detack, and all labor, equipment, and incidentals necessary to complete the work.

Pay Item

Repair Asphalt Concrete Pavement Cracks

Pay Unit

Linear Foot

**SPECIAL PROVISION
BRIDGE RAILING REPLACEMENT**

DESCRIPTION

This work shall consist of removal of damaged railings, posts, and hardware, and replacement with new railings, railing posts and installation using all necessary hardware as directed by the Engineer. The Contractor shall refer to the bridge railing replacement plan sheet for details and other notes.

Prior to beginning work, the Contractor shall submit shop drawings of the railing and posts to the Engineer for approval. All materials shall match existing color and appearance of existing railing to remain and to the approval of the Engineer. Installation of “shiny” railing and posts will not be permitted. The Contractor may submit refurbished railing and posts matching the existing railing to the Engineer for review and approval.

MATERIALS

<u>ITEMS</u>	<u>VDOT SECTION</u>
Replacement Bridge Railing	410
Replacement Railing Posts	410

PROCEDURES

Installation of bridge railings, posts, and all other necessary hardware shall be per Manufacturer’s recommendations. The Contractor shall refer to Maintenance of Traffic Special Provisions, SP-B, for allowable lane closure times.

LOCATIONS

Locations may be determined by the Engineer. The Contractor shall field verify all lengths of railing, and number of posts requiring replacement to the approval of the Engineer.

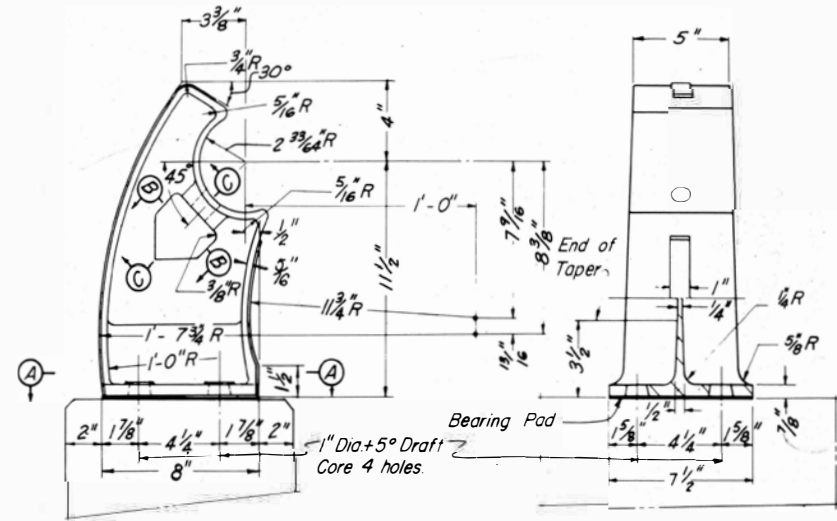
MEASUREMENT AND PAYMENT

Replacement Bridge Railing will be paid by linear foot at the contract price. This price shall include full compensation for removal and proper disposal offsite of existing damaged bridge railing, installation of new bridge railing, rail splice and expansion joints, all equipment, labor, materials, and incidentals necessary to replace the railing within the required limits and in accordance with section 410 of the specifications.

Replacement Railing Posts will be paid by each at the contract price. This price shall include full compensation for removal and proper disposal offsite of existing damaged bridge railing posts, installation of new bridge railing posts, neoprene bearing pads, Aluminum shims, Anchor bolts, Toggle Bolts, drilling and grouting in concrete parapet, and all necessary hardware, equipment, labor, and any incidentals necessary to complete this work in accordance with section 410 of the specifications.

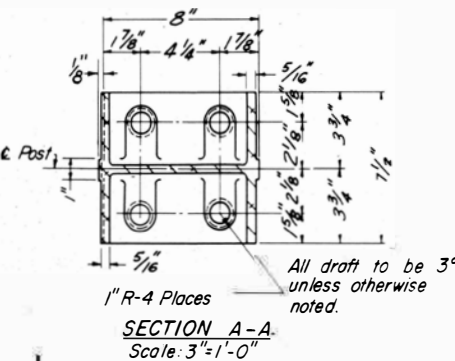
<u>Pay Item</u>	<u>Pay Unit</u>
Bridge Railing	Linear Foot
Bridge Railing Posts	Each

BRIDGE RAILING AND POST REPLACEMENT DETAIL:

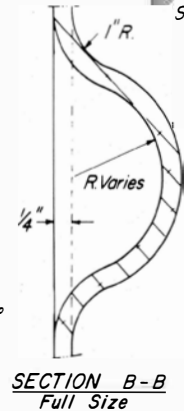


SIDE ELEVATION
Scale: 3" = 1'-0"

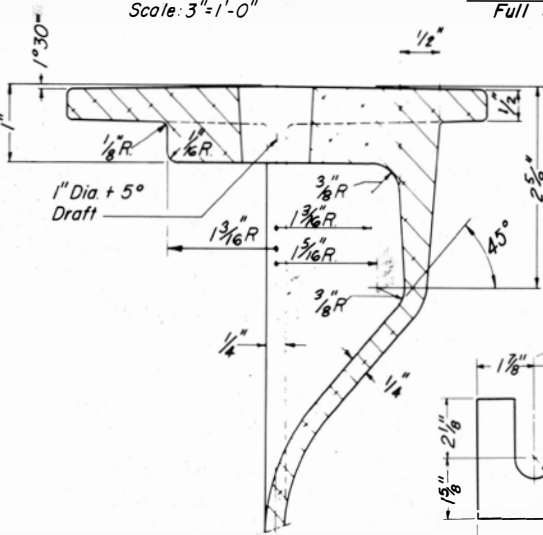
FRONT ELEVATION
Scale: 3" = 1'-0"



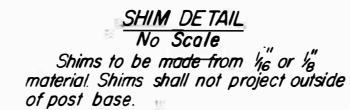
SECTION A-A
Scale: 3" = 1'-0"



SECTION B-B
Full Size



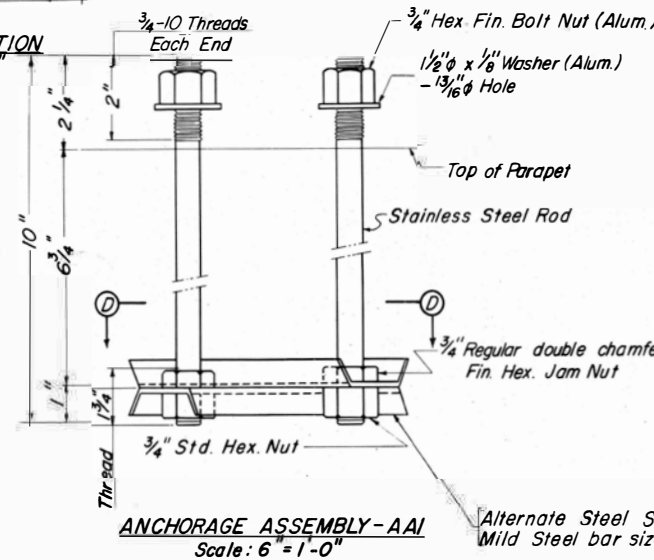
SECTION C-C
Full Size



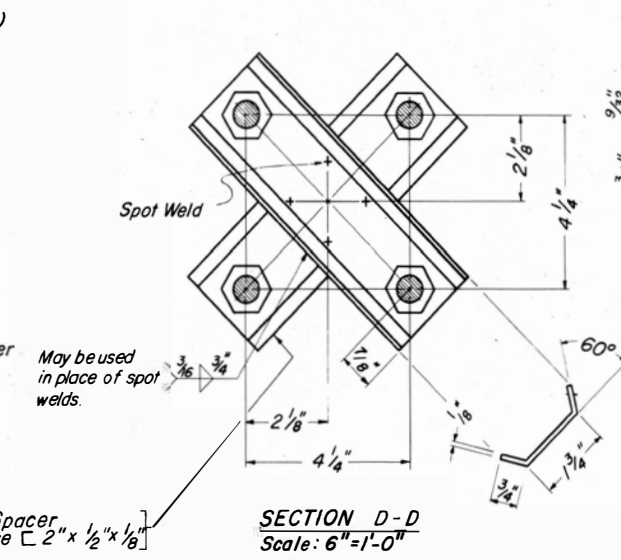
SHIM DETAIL
No Scale

- AAI - Steel Spacer - ASTM A425, or A36 (As shown)
- Nuts (Top) - ASTM B211, Alloy 6262-T9 or 6061-T6
- Top Washers - ASTM B209, Alloy ALCLAD 2024-T3 or T4
- Rods - ASTM A-276, Type 430 Annealed, Hot-finished
- Nuts (Bottom) - ASTM A307
- Threads on all rods may be rolled or cut.

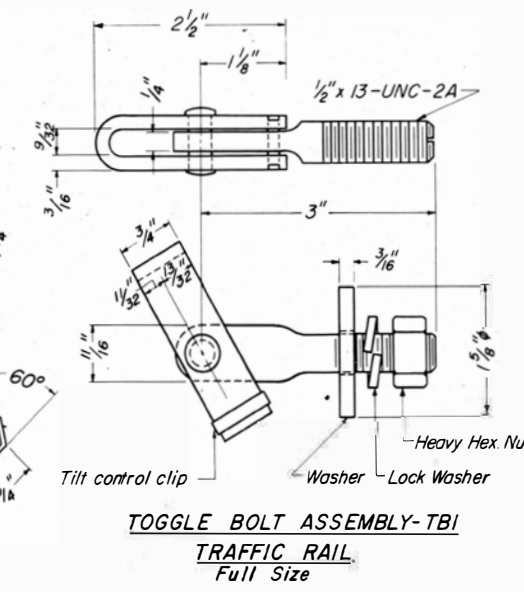
NOTES:
Rail to be continuous over a minimum of 3 posts before splicing, unless otherwise shown.
Post spacing to be measured along inside face of parapet. See Deck Plans.



ANCHORAGE ASSEMBLY - AAI
Scale: 6" = 1'-0"

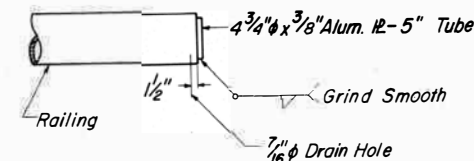


SECTION D-D
Scale: 6" = 1'-0"

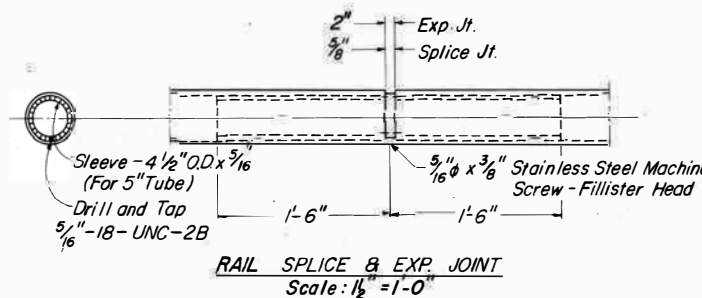


TOGGLE BOLT ASSEMBLY - TBI TRAFFIC RAIL
Full Size

Material for toggle bolt assembly TBI shall be carbon or stainless steel having a minimum elongation of 12%. Any non stainless component to be either galvanized to ASTM-A153 or cadmium plated to ASTM-A165, Type NS.
Required minimum tensile load to equal 9000 lbs. when in an open position and tested thru a 1" hole.



RAIL END CAP
Scale: 1 1/2" = 1'-0"



RAIL SPLICE & EXP. JOINT
Scale: 1 1/2" = 1'-0"

- NOTES:**
- Posts shall be seated on neoprene bearing pads 1/16" minimum thickness, having a nominal durometer hardness of 70. Pads shall conform to post base dimensions.
 - Aluminum shims may be used for adjusting post alignment, maximum thickness of shim build-up not to exceed 1/8". Where more tilting of the post is required, the concrete area shall be ground down.
 - Posts shall be cast aluminum.
 - Rail members shall be aluminum extruded tube.
 - Anchor bolts may be set normal to profile grade.

NOTES:

- Dimensions and details shown are based on as-built drawings from the James River Bridge Widening in 1987.
- Contractor shall field verify all existing dimensions bridge railing, posts, and all necessary hardware required for installation prior to fabrication and construction.
- Locations of repairs as shown in the special provision and to be determined by the Engineer.
- Shop drawings of the type of bridge railing, and posts shall be submitted to the Engineer for review in accordance with these details and section 410 of the specifications.
- Contractor shall submit a construction plan and maintenance of traffic plan for approval by the Engineer before beginning construction.

**SPECIAL PROVISION
PAVEMENT MARKINGS**

DESCRIPTION

This work shall consist of Eradication of Existing Pavement Markings and Message Markings and applying new Pavement Markings and Message Markings. The Contractor shall install all Pavement and Message Markings per the manufacturer’s recommendations.

MATERIALS

<u>ITEM</u>	<u>VDOT SECTION</u>
Type A Pavement Line Marking 6”	704
Type A Pavement Line Marking 12”	704
Type B Class VI Pavement Line Marking 6”	704*
Type B Class VI Pavement Line Marking 12”	704*

*Note: Contractor shall comply with the VDOT 2020 Road and Bridge Specification Revisions in “Division 7 – Traffic Control Devices”

Pavement markings shall conform to the requirements of Section 246 and the glass beads shall conform to the requirements of Section 234

Materials shall be delivered to the job site in the manufacturer’s original sealed containers. Each container shall be marked with the manufacturer’s name and lot number. Materials will be accepted based on the manufacturer’s certification, subject to the storage and handling requirements of the manufacturer. The Contractor shall use an approved inventory tracking system for all materials received from the manufacturer. Shipment of materials from such inventory shall be accompanied by a signed form C-85 containing the following certification statement:

Material shipped under the certification has been tested and approved by VDOT as indicated by Laboratory test numbers listed hereon.

PROCEDURES

The Contractor shall submit an MOT plan (7) days prior for approval of the Engineer and the RMTA. The Contractor shall refer to the Maintenance of Traffic Special Provision (SP-B) for allowable lane closure times.

Prior to installation of any pavement markings and message mark the Contractor and Engineer shall drive the site and be in mutual agreement on which markings are being removed / installed. Unless directed by the Engineer, no hatch markings are to be installed. The Contractor shall make sure that the surface is clear of any debris, by removing it with compressed air.

In general, the Contractor shall match all markings and messages in their current location unless directed by the Engineer. The Contractor shall have a Certified Pavement Marking Technician present during pavement marking operations. All pavement marking, and messages shall be installed per the Manufacturers recommendations or as approved by the Engineer.

Hand power tools shall be the only method of removal for the existing pavement markings. Walk behind power tools and sanders may be used if approved by the Engineer. Contractor shall take care not to damage pavement surface. Grinding for inlaid pavement markings will not be used for these repairs.

LOCATIONS

Locations for pavement marking may be determined by the Engineer.

MEASUREMENT AND PAYMENT

Type A Pavement Line Marking 6” and 12”, will be measured by linear foot and be paid at the contract price.

This price shall be full compensation for furnishing and installing pavement line markings, surface preparation, all equipment, labor, and incidentals required to complete the work. The cost of eradicating any existing pavement markings on asphalt concrete or bituminous asphalt concrete; installing, maintaining, and removing any Type A and Type D Construction Pavement Markings will be incidental to this item.

Type B Class VI Pavement Line Marking 6” and Type B Class VI Pavement Line Marking 12”, will be measured by linear foot and be paid at the contract price.

This price shall be full compensation for furnishing and installing pavement line markings, surface preparation, all equipment, labor, and incidentals required to complete the work. The cost of eradicating any existing pavement markings on asphalt concrete or bituminous asphalt concrete; installing, maintaining, and removing any Type A and Type D Construction Pavement Markings will be incidental to this item.

Pay Item

Type A Pavement Line Marking 6”
Type A Pavement Line Marking 12”
Type B Class VI Pavement Line Marking 6”
Type B Class VI Pavement Line Marking 12”

Pay Unit

Linear Foot
Linear Foot
Linear Foot
Linear Foot

**SPECIAL PROVISION
DRAINAGE STRUCTURE REPAIRS**

DESCRIPTION

The work shall consist of repairing and adjusting existing drainage inlets and manholes and installation of metal nosing as needed. When grade adjustment of existing structures is specified, frames, covers, and gratings shall be removed, and the walls shall be reconstructed as required. Cleaned frames shall be reset at the required elevation. Upon completion of the adjustment, each structure shall be cleaned of silt, debris, and foreign matter and shall be kept clear of such accumulation until final acceptance. This work shall be performed in accordance with Section 302 and 510 of the Specifications and VDOT 2016 Road and Bridge Standards for drainage structures.

Immediately following finishing operations, hydraulic cement concrete shall be cured and protected in accordance with Section 316.04(j). Backfilling shall be performed in accordance with Section 303.04(g). Surplus material shall be removed, and the site shall be left in a neat, clean, and orderly condition.

Curb and Gutter may need to be adjusted to meet the new top elevation.

MATERIALS

All materials shall conform to section 302.02 of the Specifications. Concrete shall be Class A3.

MEASUREMENT AND PAYMENT

Repairing Standard Precast Top Units shall be measured and paid for in units of each, complete in place, which price shall include removal of portions of existing structure, forming, furnishing and placing all Class A3 concrete, reinforcing steel, resetting manhole frame and cover, labor, tools, equipment and all incidentals necessary to complete the work. Curb and Gutter will be paid as a separate bid item.

Pay Item

DRAINAGE STRUCTURE REPAIRS

Pay Unit

Each

SPECIAL PROVISION CONCRETE COATING

DESCRIPTION

This work shall consist of cleaning, patching, and coating the Piers, Caps, Abutments, Barrier walls or other concrete surfaces as determined by the Engineer. The intent of this work is to provide a properly prepared concrete surface that is suitable for application and adhesion of the specified protective coating system and the application of polyamide epoxy to clean concrete surfaces.

MATERIALS

All cleaned surfaces shall receive the following coating system, or Engineer approved equal:

- A. PPG Amercoat 385 Polyamide Epoxy at 3.0 -8.0 mils DFT. A multi-purpose high build epoxy compatible with a wide range of substrates and surface preparations that cures down to 40°.
- B. PPG Amercoat 114A Epoxy Filler Compound for bug holes and surface cracks in concrete.

PROCEDURES

Contractor shall repair all delamination, spalls and significant cracks and allow proper curing as per manufacturer's recommendations before applying coating. Surface Preparation will be in accordance with SSPC SP-13 guidelines with minimum high-pressure water cleaning of 3000 PSI. Detergent water cleaning and steam cleaning may be used to remove oils and grease from concrete. After pressure cleaning the surface of the piers and abutments, it must dry for a minimum of 24 hours before applying the coating.

Coating application must be in accordance with the approved manufactures recommendation. Application will be by brush and roller only. No spraying will be permitted. A minimum of two coats will be necessary to achieve adequate film-build. One coat application will not be allowed.

LOCATIONS

Work locations shall be as determined by the Engineer.

MEASUREMENT AND PAYMENT

Concrete Coating will be measured by square feet and paid for at the contract price. This price shall be full compensation for any necessary patching/crack sealing, surface preparation, environmental protection, proper disposal of waste material offsite, furnishing and installing coating per manufacturer's recommendations, all equipment, labor, materials, and incidentals required to complete the work. Certain areas on the ground may be public sidewalks or parking lots which may require a Work in Street permit from the City of Richmond or coordinating access with the parking lot operators. Any cost associated with coordination or permits shall be incidental to the work.

Contractor is required to coordinate with CSX Transportation and Norfolk Southern Corporation as described Supplemental Specification 107.19 Railway – Highway Provisions and Special Provision SP-W for any locations that may conflict with Railways. Maintenance of Traffic items for concrete coating will be paid as per MOT Special Provision SP-B and the Supplemental Specifications.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Coating	Square Feet

**SPECIAL PROVISION
CONCRETE SIDEWALK**

DESCRIPTION

This work shall consist of removing and replacing sections of:

Existing Sidewalk

Concrete cap between adjacent sections of median barrier

Concrete cap between adjacent sections of curb and gutter.

MATERIALS

ITEM

VDOT SECTION

Hydraulic Cement Concrete Sidewalk (4 inch) 404 and 504

LOCATION:

Locations for sidewalk replacement may be determined by the Engineer.

PROCEDURES

Contractor shall inspect each location to determine the limits of work and shall submit plans to Engineer for approval prior to commencing work. Sidewalk or Concrete Cap to be replaced shall be sawcut and removed in the designated area, then disposed of in an approved disposal area. New sidewalk shall be installed in accordance with VDOT Specification 404 and 504 and shall match the width of the existing sidewalk. The sidewalk shall be finished in accordance with VDOT Specification 404.07(g) Class 7, Sidewalk Finish. Contractor shall preserve and protect adjacent roadway features such as curb, curb and gutter, guardrail, bridge parapets, etc. Items damaged in the prosecution of this work shall be replaced in like condition at no additional expense to the RMTA.

MEASUREMENT AND PAYMENT

Hydraulic Cement Concrete Sidewalk (4 inch) shall be measured in square yards and will be paid for at the contract unit price per square yard. This price shall include the removal and disposal of the existing sidewalk; subgrade preparation, bedding material, reinforcing steel, Class

A3 Concrete, in addition to all equipment, labor, material, and incidentals required to complete the new installation.

Payment will be made under:

Pay Item

Pay Unit

Hydraulic Cement Concrete Sidewalk (4 inch)

Square Yards

SPECIAL PROVISION SELF CONSOLIDATING CONCRETE

DESCRIPTION

This work shall consist of detecting delaminated sections of concrete substructure members, removing loose concrete, preparing surfaces and rebar within spalls, forming, and pouring the repair area with Self Consolidating Concrete (SCC) and applying two coats of the specified protective coating system to the cured repair areas.

MATERIALS

VDOT Specification Section 412 shall apply. VDOT Specification Section 217 Hydraulic Cement Concrete shall generally apply and specifically VDOT Specification Section 217.11 Self Consolidating Concrete (SCC) shall apply. Contractor shall provide SCC mix design and performance data at least seven (7) calendar days prior to scheduled work start date to Engineer for approval. SCC mixtures submitted for approval by the Engineer shall be on the VDOT Approved Products List.

After curing, all repaired surfaces shall receive the following coating system, or Engineer approved equal:

Surface Preparation will be in accordance with SSPC SP-13 guidelines with minimum high-pressure water cleaning of 3000 PSI will be required for any SCC repair areas that become contaminated after the SCC repair has been completed as determined by the Engineer. Detergent water cleaning and steam cleaning may be used to remove oils and grease from concrete. After pressure cleaning the surface of the piers and abutments, it must dry for a minimum of 24 hours before applying the coating.

PPG Amercoat 385 Polyamide Epoxy at 3.0 -8.0 mils DFT. A multi-purpose high build epoxy compatible with a wide range of substrates and surface preparations that cures down to 40° F.

Coating application must be in accordance with the approved manufactures recommendation and match the color of the existing epoxy coating. Application will be by brush and roller only. No spraying will be permitted. A minimum of two coats will be necessary to achieve adequate film-build. One coat application will not be allowed. The cost of the epoxy coating of the repaired areas shall be incidental to the SCC bid price and will not be measured or paid separately.

PROCEDURE

Contractor shall visually inspect exposed concrete substructure surfaces for suspected delamination. Contractor shall sound out with a hammer all surfaces where delamination is suspected. Delaminated sections shall be removed as directed by the Engineer.

Contractor shall notify the Engineer a minimum of 24 hours prior to the removal of any concrete to allow for inspection. Concrete removal shall not commence without an inspection and approval by the Engineer. The Contractor shall provide access to the Engineer to inspect all work areas. The Authority reserves the right to restrict payment on any areas where the Engineer removed concrete prior to an inspection and approval. If the Engineer does not complete an inspection within 24 hours of notice by the Contractor, the Contractor is permitted to proceed with concrete removal without penalty.

The surface of all Self Consolidating Concrete repairs shall receive "neat lines", acceptability subject to approval of the Engineer. All SCC repairs shall be completed no later than November 23, 2022.

LOCATIONS

A table of currently identified spalls, areas of delamination and cracks on a particular element of the referenced structure is presented below. This table is provided for informational purposes only. The estimated quantities below are provided for planning purposes only and are in no way a guarantee of actual quantities. The RMTA reserves the right to delete or add structures and repair locations to the scope of work. The Contractor is responsible to inspect the structure locations prior to bidding. No adjustments shall be made in unit price due to deletion of structure locations from the scope of work.

Self Consolidating Concrete work locations are broken down into three categories:

1. "Standard" - Locations on land less than 30 feet above grade.
2. "Elevated" - Locations on land greater than 30 feet above grade.
3. "Over Water" - Locations above the James River or Kanawha Canal.

Self-Consolidating Concrete Standard - Possible Locations		
RMTA Bridge #	Element	Estimated SCC Qty. (S.F.)
11	Bearing Seat at Pier 1 Beam 6	5
54	N. Abutment Bridge Seat	8
	N. Abutment Backwall	10
55	S. Abutment G4 Bearing Pedestal	8
	Light Post Pedestal Midspan	10
56	N. Abutment G3 Bearing Pedestal	4
	North Abutment Backwall	20
57	Pier 1 Bearing 3 Bearing Pedestal	4
58	Pier 1 Beam 5 Bearing Pedestal	4
60	S. Abutment B3 Bearing Pedestal	4

COORDINATION AND SCHEDULING

Contractor shall coordinate and schedule all Self Consolidating Concrete Repair activities with the Engineer. RMTA structures to be repaired may require access from property owned or managed by others (e.g., VDOT or City of Richmond). Contractor shall coordinate and schedule with appropriate owner, party, or agency for work activities on non-RMTA property. In addition, Contractor shall secure all necessary permits required for site access to perform work. Contractor shall abide by all permits regulations and guidelines issued by the governing agency. Contractor shall provide the name and phone number of the contact person at each governing agency where a RMTA structure scheduled to be repaired is located (excluding RMTA property) at least five days prior to scheduled work start to the Engineer.

MEASUREMENT AND PAYMENT

Potential Self Consolidating Concrete work locations are hereby delineated by means of access. Access to the repair location.

- “Standard” Self Consolidating Concrete work locations may require incidental staging.
- Access to “Elevated” Self Consolidating Concrete work locations may require the use of a man lift or significant staging.
- Access to “Above Water” Self Consolidating Concrete work locations may require a float, staging built up from the river and attached to the bridge, or the use of an under-bridge access platform truck.

Self Consolidating Concrete Unit Costs shall be measured and paid for according to the defined Pay Items below:

The Pay Item **Self Consolidating Concrete, (Standard)** will apply for all locations up to 30 feet above grade and shall include all access requirements for standard locations.

The Pay Item **Self Consolidating Concrete, (Elevated)** will apply for all locations equal to or greater than 30' above grade and shall include all access requirements for elevated locations.

The Pay Item **Self Consolidating Concrete, (Over Water)** will apply for all locations above the James River or Kanawha Canal and shall include all access requirements to over water work.

All Pay Items for **Self Consolidating Concrete, (Type)** will be measured in square feet of surface area and will be paid for at the contract unit price per square foot by (Type). This Unit Price shall include all access requirements, labor, materials, equipment, supplies, permits, legal off-site disposal of waste and all other work involved to complete removal of damaged concrete members and replacement with formed, poured, and finished SCC in accordance with this Special Provision or as directed by the Engineer. This Unit Cost shall include cleaning any contaminated repair areas as determined by the Engineer and applying two coats of epoxy coating to match the existing coating as previously defined herein.

<u>Pay Item</u>	<u>Pay Unit</u>
Self Consolidating Concrete (Standard)	Square feet
Self Consolidating Concrete, (Elevated)	Square feet
Self Consolidating Concrete, (Over Water)	Square feet



EUCLID CHEMICAL

EUCOREPAIR SCC

SELF-CONSOLIDATING CONCRETE REPAIR MORTAR

DESCRIPTION

EUCOREPAIR SCC is a versatile, one component, self-consolidating repair mortar that is shrinkage-compensated, polymer and microfiber modified, and contains an integral corrosion inhibitor. It is designed for horizontal and formed vertical/overhead structural repairs in applications from 1 inch (2.5 cm) to full depth.

PRIMARY APPLICATIONS

- Parking decks
- Joint repairs
- Balconies
- Equipment bases
- Pavements
- Beams
- Vertical and overhead formed repairs

FEATURES/BENEFITS

- Shrinkage compensation and reduction to minimize cracking
- Pre-mixed with pea gravel, ready-to-use
- Low permeability with excellent freeze-thaw resistance
- Polymer and microfiber modified
- Interior or exterior use
- Contains an integral corrosion inhibitor
- Long working time
- ANSI Standard 61 certified for contact with potable water

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field

Compressive Strength ASTM C39 3" x 6" cylinder @ 0.5 gal/50 lb bag

Age

1 day.....	2,750 psi (19 MPa)
3 days.....	4,100 psi (28 MPa)
7 days.....	4,800 psi (33 MPa)
28 days.....	5,600 psi (39 MPa)

Freeze/Thaw Resistance ASTM C666 Procedure A 300 cycles >98% relative dynamic modulus

Sulfate Resistance ASTM C1012

6 months +0.005%

Surface Resistivity @ 28 days . 31,200 ohm-cm

Flexural Strength ASTM C78

1 day.....	450 psi (3 MPa)
7 days.....	800 psi (6 MPa)
28 days.....	900 psi (6 MPa)

Rapid Chloride Permeability ASTM C1202

28 days.....1,800 coulombs

Length Change ASTM C157

50% RH @ 23°C (73°F) (3" x 3" x 11" specimens were removed from molds @ 24 hours)

28 day shrinkage..... <0.050%

Slump Flow ASTM C1611

Initial	24 - 33 inches (66 cm)
30 minutes.....	24 - 33 inches (66 cm)

J-Ring Slump Flow ASTM C1621

25 inches (63.5 cm)
Passing Ability: 0.75 inch (1.9 cm) no visible blocking

Set Time ASTM C403

Initial..... approx. 9 hrs

Fresh Wet Density ASTM C138

144.4 lb/ft³ (2313.1 kg/m³)

Slant Shear Bond Strength ASTM C882

7 days.....	2,400 psi (17 MPa)
28 days.....	2,560 psi (18 MPa)

Crack Resistance ASTM C1581

Net Time Until Cracking: 15.5 days
Stress Rate: 16 psi/day
Potential for Cracking: Moderate-Low

PACKAGING/YIELD

EUCOREPAIR SCC is packaged in 50 lb (22.7 kg) bags.

Yield: Approximately 0.375 ft³ (0.01 m³) per bag when mixed with 0.5 gal (4 pints) of water. Bulk bags suitable for mixing in ready-mix trucks are also available.

SPECIFICATIONS/COMPLIANCES

IAPMO/ANSI Standard 61

HORIZONTAL REPAIR

EUCOREPAIR SCC

MASTER FORMAT #:
03 01 30.71

SHELF LIFE

1 year in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile of at least CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Substrate shall be saturated surface dry (SSD) without standing water.

Formwork: For building forms, refer to ACI 347R - Guide to Formwork for Concrete. Forms should be filled with water 24 hours prior to placement of EUCOREPAIR SCC to ensure tightness and adequate saturation. Ensure forms are completely drained before pouring of product and any drainage outlets are sealed.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of EUCOWELD 2.0 to a dry substrate or a scrub coat of EUCOREPAIR SCC to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: All materials should be in the proper temperature range of 60°F (15°C) to 90°F (32°C). Single 50 lb (22.7 kg) bags may be mixed with a drill and “jiffy” mixer. Use a horizontal shaft, paddle type mortar mixer for mixing multiple bags simultaneously. Add the appropriate amount of water, 0.45 - 0.50 gal (1.7 - 1.9L) per bag, for the batch size and then add the dry product. Mix a minimum of 3 minutes. **Mixing Bulk Bags:** Add approximately 80% of the appropriate water for the batch size to the ready-mix concrete truck. Fully open the top of the bulk bag. Position the bulk bag over the truck opening using a forklift or crane. While the drum is turning at slow speed, cut the bottom of the bulk bag to release contents into truck. Use the remaining mix water to wash down any dry, stuck material into the drum. Mix for a minimum of 5 minutes after last bulk bag is added. Reverse drum and check consistency. **Note:** It is recommended to keep 50 lb (22.7 kg) bags on hand to adjust consistency if needed. The mixed product should be transported to the repair area and placed immediately.

Placement: Pump or pour product immediately after mixing. Vibration is typically not required, but form vibration can be used to ensure proper consolidation in situations which restrict flowability. If vibration is used, do not vibrate in excess as this can lead to segregation of the aggregate. When placing material, refer to ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

Curing and Sealing: Cure exposed surfaces of EUCOREPAIR SCC with a high-solids curing compound from The Euclid Chemical Company. In hot, windy, or direct sunlight situations, re-wet the surface after the curing compound has dried and cover with polyethylene for a minimum of three days. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use material at temperatures below 45°F (7°C).
- Keep repair from freezing until a minimum strength of 1,000 psi (6.90 MPa) is reached.
- Do not extend with aggregate.
- Do not use as an unbonded topping.
- When necessary, follow the recommendations in ACI 305R “Guide to Hot Weather Concreting” or ACI 306R “Guide to Cold Weather Concreting”.
- If quick turnaround for application of an impermeable coating (such as epoxy) is desired, use **EUCOREPAIR SCC FAST** instead.
- In all cases, consult the Safety Data Sheet before use.

Rev. 07.21

WARRANTY: The Euclid Chemical Company (“Euclid”) solely and expressly warrants that its products shall be free from defects in materials and workmanship for one (1) year from the date of purchase. Unless authorized in writing by an officer of Euclid, no other representations or statements made by Euclid or its representatives, in writing or orally, shall alter this warranty. EUCLID MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR ORDINARY OR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES THE SAME. If any Euclid product fails to conform with this warranty, Euclid will replace the product at no cost to Buyer. Replacement of any product shall be the sole and exclusive remedy available and buyer shall have no claim for incidental or consequential damages. Any warranty claim must be made within one (1) year from the date of the claimed breach. Euclid does not authorize anyone on its behalf to make any written or oral statements which in any way alter Euclid’s installation information or instructions in its product literature or on its packaging labels. Any installation of Euclid products which fails to conform with such installation information or instructions shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of Euclid’s products for the Buyer’s intended purposes.

**SPECIAL PROVISION
OVERHEAD SIGN LIGHTING RETROFIT**

DESCRIPTION

This work shall consist of replacing existing sign lighting fixtures with new LED fixtures. RMTA will provide the new Holophane Sign-Vue II LED fixtures for installation by the contractor. Existing signs and fixtures may be located on overhead signs structures or bridge mounted sign structures as outlined below:

MATERIALS

<u>ITEM</u>	<u>VDOT SECTION</u>
Overhead Sign Lighting Retrofit	229, 700 and 705

LOCATIONS

Various locations along Downtown Expressway (VA 195) and/or Powhite Parkway (VA 76). Several representative locations are shown below, however the Authority may add or remove locations as needed.

PROCEDURES

The Contractor shall follow the manufacturer's recommendations for installation of new fixtures. Contractor shall submit shop drawings for any required changes in brackets and fasteners. All existing fasteners removed shall be discarded and replaced with new fasteners. Once shop drawings have been approved, the Contractor shall submit an MOT plan (7) days prior to any lane closure for approval by the Engineer and the RMTA.

Contractor shall only be allowed to work on up to one EB sign and one WB sign at the same. Once the contractor begins work on each sign, they should pursue the work to ensure that all work on each sign is completed in less than 3 calendar days.

MEASUREMENT AND PAYMENT

Overhead Sign Lighting Retrofit will be measured on an Each basis and paid at the contract unit price. This shall be full compensation for verifying the existing mounting structure; submitting and resubmitting, if required, of shop drawings for Engineer's approval; removal and disposal of the existing sign lighting fixtures and disposal offsite; any required permits or fees for disposal; installation the RMTA provided fixtures and any additional mounting brackets if required, adjustment of the light fixture to provide optimal illumination of the existing sign, disconnecting and reconnecting electrical power; replacing, extending or shortening any conduit or electrical conductors as required for the new fixture and all equipment, labor and incidentals required to install the new fixtures.

MOT will be paid for under the items listed in the Maintenance of Traffic special provision SP-B and the supplemental specifications.

<u>Pay Item</u>	<u>Pay Unit</u>
Overhead Sign Lighting Retrofit	EACH



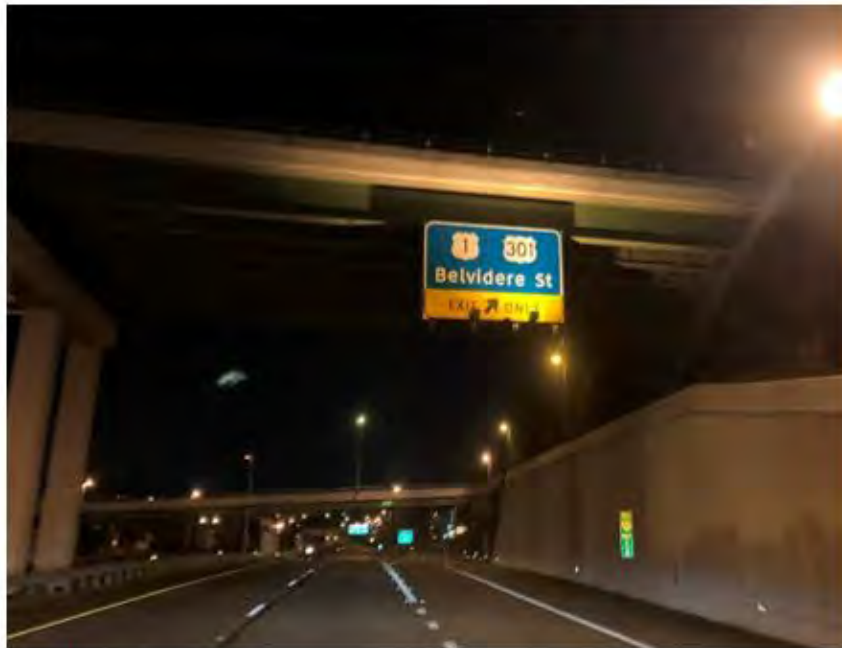
Direction WB DTE
Location Canal Street Off-Ramp / Gore
Mounting Simple Span Overhead Sign Structure
Mounted to: OHSS
Lighting 5
Working 0
Not Working 5



Direction WB DTE
Location 10th Street Overpass at Bridge 60
Mounting Bridge Mounted
Mounted to: 10th Street Overpass at Bridge 60
Lighting 3
Working 1
Not Working 2
Notes Replace all 3 units



Direction WB DTE
Location 5th Street Overpass at Bridge 57
Mounting Bridge Mounted
Mounted to: 5th Street Overpass Bridge 57
Lighting 2
Working 0
Not Working 2



Direction WB DTE
Location 3rd Street Overpass at Bridge 55
Mounting Bridge Mounted
Mounted to: 3rd Street Overpass Bridge 55
Lighting 2
Working 1
Not Working 1
Notes Replace both (2) units



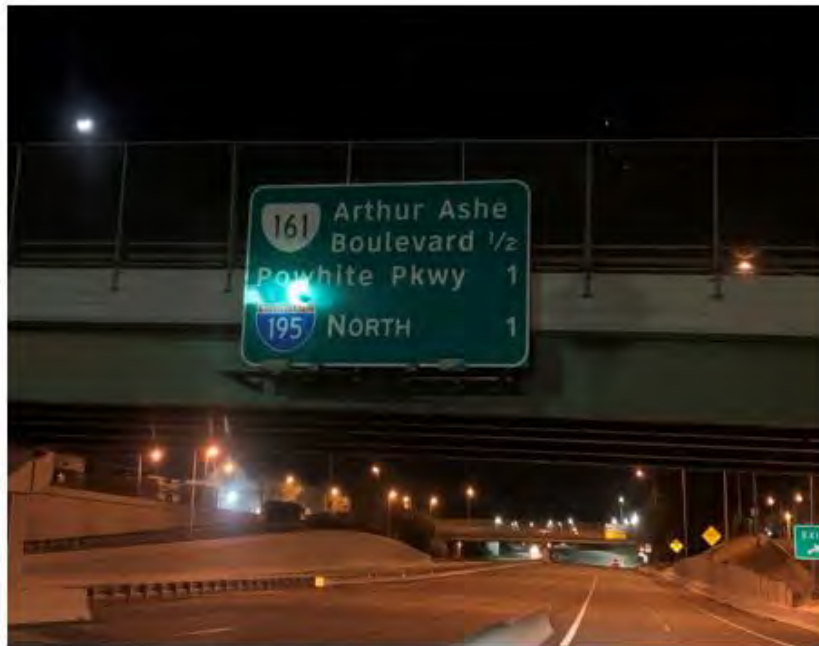
Direction WB DTE
Location Laurel Street Overpass at Bridge 50
Mounting Bridge Mounted
Mounted to: Laurel Street Overpass Bridge 50
Lighting 2
Working 0
Not Working 2



Direction WB DTE
Location Cherry Street Overpass at Bridge 49
Mounting Bridge Mounted
Mounted to: Cherry Street Overpass Bridge 49
Lighting 3
Working 0
Not Working 3



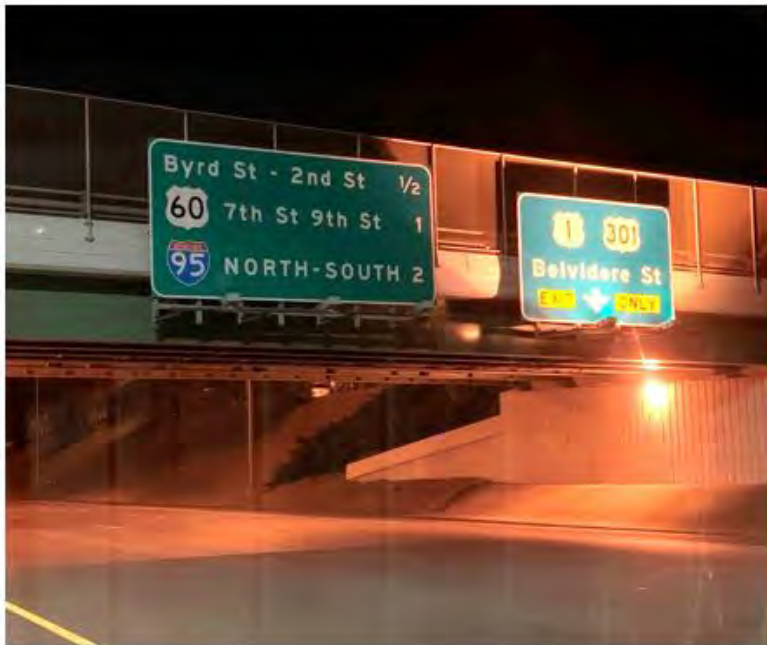
Direction WB DTE
Location Harrison Street Overpass at Bridge 48
Mounting Bridge Mounted
Mounted to: Harrison Street Overpass Bridge 48
Lighting 3
Working 1
Not Working 2



Direction WB DTE
Location Allen Street Overpass at Bridge 46
Mounting Bridge Mounted
Mounted to: Allen Street Overpass Bridge 46
Lighting 2
Working 0
Not Working 2



Direction EB DTE
Location Between Meadow St and EB DTE Toll Plaza
Mounting Bridge Mounted Sign
Mounted to: Allen Street Bridge
Lighting 3 existing conventional light fixtures
Working 2
Not Working 1
Notes Replace all 3 fixtures



Direction EB DTE
Location Between EB DTE Toll Plaza and Randolph Street
Mounting Bridge Mounted Sign
Mounted to: Randolph Street Bridge
Lighting 3 existing conventional light fixtures
Working 0
Not Working 3

Project: Richmond, Virginia - Proposed shotcrete, concrete coatings and/or steel repairs on RMTA Structures at the following locations:

RMTA Bridge 13 Pier 3, Unit 3, over and adjacent to CSXT; Milepost ARN 1.22, in the North End Subdivision, within the Florence Division.

CSXT OP# (TBD),

CONSTRUCTION AGREEMENT

This Construction Agreement ("**Agreement**") is made as of _____, 2022, by and between CSX TRANSPORTATION, INC., a Virginia corporation with its principal place of business in Jacksonville, Florida ("**CSXT**"), and the RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY, a body corporate and political subdivision of the Commonwealth of Virginia ("**Agency**" and "RMTA").

EXPLANATORY STATEMENT

1. Agency has proposed to repair, or to cause to be repaired, RMTA Bridges in Richmond, Virginia (the "Project").
 - B13 Pier 3, Unit 3, over and adjacent to CSXT; Milepost ARN 1.22, in the North End Subdivision, within the Florence Division.
2. Agency has obtained, or will obtain, all authorizations, permits and approvals from all local, state and federal agencies (including Agency), and their respective governing bodies and regulatory agencies, necessary to proceed with the Project and to appropriate all funds necessary to construct the Project.
3. Agency acknowledges that: (i) by entering into this Agreement, CSXT will provide services and accommodations to promote public interest in this Project, without profit or other economic inducement typical of other Agency contractors; (ii) neither CSXT nor its affiliates (including their respective directors, officers, employees or agents) will incur any costs, expenses, losses or liabilities in excess of payments made to CSXT, by or on behalf of Agency or its contractors, pursuant to this Agreement; and (iii) CSXT retains the paramount right to regulate all activities affecting its property and operations.

NOW, THEREFORE, in consideration of the foregoing Explanatory Statement and other good

and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties agree as follows:

1. Project Plans and Specifications

- 1.1. Preparation and Approval. Pursuant to Exhibit A of this Agreement, all plans, specifications, drawings and other documents necessary or appropriate to the design and construction of the Project shall be prepared, at Agency's sole cost and expense, by Agency or CSXT or their respective contractors. Project plans, specifications and drawings prepared by or on behalf of Agency shall be subject, at CSXT's election, to the review and approval of CSXT. Such plans, specifications and drawings, as prepared or approved by CSXT, are referred to as the "Plans", and shall be incorporated and deemed a part of this Agreement. Plans prepared or submitted to and approved by CSXT as of the date of this Agreement are set forth in Exhibit B to this Agreement.
- 1.2. Effect of CSXT Approval or Preparation of Plans. By its review, approval or preparation of Plans pursuant to this Agreement, CSXT signifies only that such Plans and improvements constructed in accordance with such Plans satisfy CSXT's requirements. CSXT expressly disclaims all other representations and warranties in connection with the Plans, including, but not limited to, the integrity, suitability or fitness for the purposes of Agency or any other persons of the Plans or improvements constructed in accordance with the Plans.
- 1.3. Compliance with Plans. The Project shall be constructed in accordance with the Plans.

2. Allocation and Conduct of Work

Work in connection with the Project shall be allocated and conducted as follows:

- 2.1. CSXT Work. Subject to timely payment of Reimbursable Expenses as provided by Section 4, CSXT shall provide, or cause to be provided, the services as set forth by Exhibit A to this Agreement. Agency agrees that CSXT shall provide all services that CSXT deems necessary or appropriate (whether or not specified by Exhibit A) to preserve and maintain its property and operations, without impairment or exposure to liability of any kind and in compliance with all applicable federal, state and local regulations and CSXT's contractual obligations, including, but not limited to, CSXT's existing or proposed third party agreements and collective bargaining agreements.
- 2.2. Agency Work. Agency shall perform, or cause to be performed, all work as set forth by Exhibit A, at Agency's sole cost and expense.

2.3. Conduct of Work. CSXT shall commence its work under this Agreement following: (i) delivery to CSXT of a notice to proceed from Agency; (ii) payment of Reimbursable Expenses (as provided by Section 4.1) as required by CSXT prior to the commencement of work by CSXT; (iii) issuance of all permits, approvals and authorizations necessary or appropriate for such work; and (iv) delivery of proof of insurance acceptable to CSXT, as required by Section 9. The initiation of any services by CSXT pursuant to this Agreement, including, but not limited to, the issuance of purchase orders or bids for materials or services, shall constitute commencement of work for the purposes of this Section. The parties intend that all work by CSXT or on CSXT property shall conclude no later than March 1, 2017, unless the parties mutually agree to extend such date.

3. Special Provisions. Agency shall observe and abide by, and shall require its contractors ("**Contractors**") to observe and abide by the terms, conditions and provisions set forth in Exhibit C to this Agreement (the "Special Provisions"). To the extent that Agency performs Project work itself, Agency shall be deemed a Contractor for purposes of this Agreement. Agency further agrees that, prior to the commencement of Project work by any third party Contractor, such Contractor shall execute and deliver to CSXT Schedule I to this Agreement to acknowledge Contractor's agreement to observe and abide by the terms and conditions of this Agreement.

4. Cost of Project and Reimbursement Procedures

4.1. Reimbursable Expenses. Agency shall reimburse CSXT for all costs and expenses incurred by CSXT in connection with the Project, including, without limitation: (1) all out of pocket expenses, (2) travel and lodging expenses, (3) telephone, facsimile, and mailing expenses, (4) costs for equipment, tools, materials and supplies, (5) sums paid to CSXT's consultants and subcontractors, and (6) CSXT labor in connection with the Project, together with CSXT labor overhead percentages established by CSXT pursuant to applicable law (collectively, "**Reimbursable Expenses**"). Reimbursable Expenses shall also include expenses incurred by CSXT prior to the date of this Agreement to the extent identified by the Estimate provided pursuant to Section 4.2.

4.2. Estimate. CSXT has estimated the total Reimbursable Expenses for the Project as shown on Exhibit D (the "**Estimate**", as amended or revised). In the event CSXT anticipates that actual Reimbursable Expenses for the Project may exceed such Estimate, it shall provide Agency with the revised Estimate of the total Reimbursable Expenses, together with a revised Payment Schedule (as defined by Section 4.3.1), for Agency's approval and confirmation that sufficient funds have been appropriated to cover the total Reimbursable Expenses of such revised Estimate. CSXT may elect, by delivery of notice to Agency, to immediately cease all further work on the Project, unless and until Agency provides such approval and confirmation.

4.3. Payment Terms.

- 4.3.1. Agency shall pay CSXT for Reimbursable Expenses as set forth in the Payment Schedule as shown on Exhibit E (the "Payment Schedule", as revised pursuant to Section 4.2). CSXT agrees to submit invoices to Agency for such amounts and Agency shall remit payment to CSXT at the later of thirty (30) days following delivery of each such invoice to Agency or, the payment date (if any) set forth in the Payment Schedule.
- 4.3.2. Following completion of the Project, CSXT shall submit to Agency a final invoice that reconciles the total Reimbursable Expenses incurred by CSXT against the total payments received from Agency. Agency shall pay to CSXT the amount by which Reimbursable Expenses exceed total payments as shown by the final invoice, within thirty (30) days following delivery of such invoice to Agency. In the event that the payments received by CSXT from Agency exceed the Reimbursable Expenses, CSXT shall remit such excess to Agency.
- 4.3.3. In the event that Agency fails to pay CSXT any sums due CSXT under this Agreement: (i) Agency shall pay CSXT interest at the lesser of 1.0% per month or the maximum rate of interest permitted by applicable law on the delinquent amount until paid in full; and (ii) CSXT may elect, by delivery of notice to Agency: (A) to immediately cease all further work on the Project, unless and until Agency pays the entire delinquent sum, together with accrued interest; and/or (B) to terminate this Agreement.
- 4.3.4. All invoices from CSXT shall be delivered to Agency in accordance with Section 16 of this Agreement. All payments by Agency to CSXT shall be made by certified check and mailed to the following address or such other address as designated by CSXT's notice to Agency:

CSX Transportation, Inc.
P. O. Box 116651
Atlanta, GA 30368-6651

4.4. Effect of Termination. Agency's obligation to pay to CSXT Reimbursable Expenses in accordance with Section 4 shall survive termination of this Agreement for any reason.

5. Appropriations. Agency represents to CSXT that: (i) Agency has appropriated funds sufficient to reimburse CSXT for the Reimbursable Expenses encompassed by the Estimate attached as Exhibit D; (ii) Agency shall use its best efforts to obtain appropriations necessary to cover Reimbursable Expenses encompassed by subsequent Estimates approved by Agency; and (iii)

Agency shall promptly notify CSXT in the event that Agency is unable to obtain such appropriations.

6. Easements and Licenses

6.1. Agency Obligation. Agency shall acquire all necessary licenses, permits and easements required for the Project.

6.2. Temporary Construction Licenses. Insofar as it has the right to do so, CSXT hereby grants Agency a nonexclusive license to access and cross CSXT's property, to the extent necessary for the construction of the Project (excluding ingress or egress over public grade crossings), along such routes and upon such terms as may be defined and imposed by CSXT and such temporary construction easements as may be designated on the Plans approved by CSXT.

7. Permits At its sole cost and expense, Agency shall procure all permits and approvals required by any federal, state, or local governments or governmental agencies for the construction, maintenance and use of the Project, copies of which shall be provided to CSXT.

8. Termination

8.1. By Agency. For any reason, Agency may, as its sole remedy, terminate this Agreement by delivery of notice to CSXT. Agency shall not be entitled to otherwise pursue claims for consequential, direct, indirect or incidental damages or lost profits as a consequence of CSXT's default or termination of this Agreement or Work on the Project by either party.

8.2. By CSXT. In addition to the other rights and remedies available to CSXT under this Agreement, CSXT may terminate this Agreement by delivery of notice to Agency in the event Agency or its Contractors fail to observe the terms or conditions of this Agreement and such failure continues more than ten (10) business days following delivery of notice of such failure by CSXT to Agency.

8.3. Consequences of Termination. If the Agreement is terminated by either party pursuant to this Section or any other provision of this Agreement, the parties understand that it may be impractical for them to immediately stop the Work. Accordingly, they agree that, in such instance a party may continue to perform Work until it has reached a point where it may reasonably and safely suspend the Work. Agency shall reimburse CSXT pursuant to this Agreement for the Work performed, plus all costs reasonably incurred by CSXT to discontinue the Work and protect the Work upon full suspension of the same, the cost of returning CSXT's property to its former condition, and all other costs of CSXT incurred as a result of the Project up to the time of full suspension of the Work. Termination of this

Agreement or Work on the Project, for any reason, shall not diminish or reduce Agency's obligation to pay CSXT for Reimbursable Expenses incurred in accordance with this Agreement. In the event of the termination of this Agreement or the Work for any reason, CSXT's only remaining obligation to Agency shall be to refund to Agency payments made to CSXT in excess of Reimbursable Expenses in accordance with Section 4.

9. Insurance. In addition to the insurance that Agency requires of its Contractor, Agency shall acquire or require its Contractor to purchase and maintain insurance in compliance with CSXT's insurance requirements attached to this Agreement as Exhibit F. Neither Agency nor Contractor shall commence work on the Project until such policy or policies have been submitted to and approved by CSXT's Risk Management Department.

10. Ownership and Maintenance

- 10.1. By Agency. Agency shall own and, without cost to CSXT, shall maintain, repair, replace and renew, or cause same to be done, in good condition and repair to CSXT's satisfaction, the Bridge #I OS railroad bridge structure (excluding only those components which CSXT owns and has agreed to maintain, repair and replace pursuant to this Section}, the highway underpass structure, the roadway surfacing, the roadway slopes, the retaining walls, the roadway drainage facilities, sidewalks and lighting. In the event that Agency fails to properly maintain such structures and improvements, and such failure, in the opinion of CSXT, jeopardizes the safe and efficient operation of its property, CSXT shall be entitled to remedy such failure and recover from Agency the costs incurred by CSXT in doing so.

Agency shall own and, without cost to CSXT, maintain, repair, replace and renew, or cause same to be done, in good condition and repair to CSXT's satisfaction, the RMTA Bridge #65 highway overpass structures, the roadway surfacing, the roadway slopes, the retaining walls, and the highway drainage facilities. In the event that Agency fails to properly maintain such structures and improvements and such failure, in the opinion of CSXT, jeopardizes the safe and efficient operation of its property, CSXT shall be entitled to remedy such failure and recover from Agency the costs incurred by CSXT in doing so. Upon the cessation of use of the Project by Agency, Agency shall remove the bridge structures and restore CSXT's property to its original condition, at Agency's sole cost and expense, to CSXT's satisfaction.

- 10.2. By CSXT. CSXT shall own and, at its sole cost and expense, maintain, repair, replace and renew its tracks, ballast and approach embankments, and railroad signal and communication systems, and CSXT shall be permitted to install, maintain, repair and replace other utilities, facilities and cable, or cause same to be done, as CSXT authorizes from time to time on or within the railroad bridge structure.

10.3. Alterations. Agency shall not undertake any alteration, modification or expansion of the Project, without the prior approval of CSXT, which may be withheld for any reason, and the execution of such agreements as CSXT may require.

11. Indemnification

11.1. Generally. To the maximum extent permitted by applicable law, Agency and its Contractors shall indemnify, defend, and hold CSXT and its affiliates harmless from and against all claims, demands, payments, suits, actions, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages), for any injury to or death to any person(s) (including, but not limited to the employees of CSXT, its affiliates, Agency or its Contractors), for the loss of or damage to any property whatsoever (including but not limited to property owned by or in the care, custody, or control of CSXT, its affiliates, Agency or its Contractors, and environmental damages and any related remediation brought or recovered against CSXT and its affiliates), arising directly or indirectly from the negligence, recklessness or intentional wrongful misconduct of the Contractors, Agency, and their respective agents, employees, invitees, contractors, or its contractors' agents, employees or invitees in the performance of work in connection with the Project or activities incidental thereto, or from their presence on or about CSXT's property . The foregoing indemnification obligation shall not be limited to the insurance coverage required by this Agreement, except to the extent required by law or otherwise expressly provided by this Agreement.

11.2. Compliance with Laws. Agency shall comply, and shall require its Contractors to comply, with any federal, state, or local laws, statutes, codes, ordinances, rules, and regulations applicable to its construction and maintenance of the Project. Agency's Contractors shall indemnify, defend, and hold CSXT and its affiliates harmless with respect to any fines, penalties, liabilities, or other consequences arising from breaches of this Section.

11.3. "CSXT Affiliates". For the purpose of this Section 11, CSXT's affiliates include CSX Corporation and all entities, directly or indirectly, owned or controlled by or under common control of CSXT or CSX Corporation and their respective officers, directors, employees and agents.

11.4. Notice of Incidents. Agency and its Contractor shall notify CSXT promptly of any loss, damage, injury or death arising out of or in connection with the Project work.

11.5. Survival. The provisions of this Section 11 shall survive the termination or expiration of this Agreement.

12. Independent Contractor The parties agree that neither Agency nor its Contractors shall be deemed either agents or independent contractors of CSXT. Except as otherwise provided by this Agreement, CSXT shall exercise no control whatsoever over the employment, discharge, compensation of, or services rendered by Agency or Agency's Contractors, or the construction practices, procedures, and professional judgment employed by Agency or its Contractor to complete the Project. Notwithstanding the foregoing, this Section 12 shall in no way affect the absolute authority of CSXT to prohibit Agency or its Contractors or anyone from entering CSXT's property, or to require the removal of any person from its property, if it determines, in its sole discretion, that such person is not acting in a safe manner or that actual or potential hazards in, on or about the Project exist.
13. "Entire Agreement " This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of both parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter. In the event of any inconsistency between this Agreement and the Exhibits, the more specific terms of the Exhibits shall be deemed controlling.
14. Waiver If either party fails to enforce its respective rights under this Agreement, or fails to insist upon the performance of the other party's obligations hereunder, such failure shall not be construed as a permanent waiver of any rights or obligations in this Agreement.
15. Assignment CSXT may assign this Agreement and all rights and obligations herein to a successor in interest, parent company, affiliate, or future affiliate. Upon assignment of this Agreement by CSXT and the assumption of CSXT's assignee of CSXT's obligations under this Agreement, CSXT shall have no further obligation under this Agreement. Agency shall not assign its rights or obligations under this Agreement without CSXT's prior consent, which consent may be withheld for any reason.
16. Notices All notices, consents and approvals required or permitted by this Agreement shall be in writing and shall be deemed delivered upon personal delivery, upon the expiration of three (3) days following mailing by first class U .S. mail , or upon the next business day following mailing by a nationally recognized overnight carrier, to the parties at the addresses set forth below, or such other addresses as either party may designate by delivery of prior notice to the other party:

If to CSXT:

CSX Transportation, Inc.
500 Water Street, J-301
Jacksonville, Florida 32202
Attention: Director Project Management- Public Projects

If to Agency: Richmond Metropolitan Transportation Authority
901 East Byrd Street, Suite 1120
Richmond, VA 23219
Attention: Theresa Simmons, PE, Director of Operations

17. Severability The parties agree that if any part, term or provision of this Agreement is held to be illegal, unenforceable or in conflict with any applicable federal, state, or local law or regulation, such part, term or provision shall be severable, with the remainder of the Agreement remaining valid and enforceable .

18. Applicable Law This Agreement shall be governed by the laws of the Commonwealth of Virginia, exclusive of its choice of law rules. The parties further agree that the venue of all legal and equitable proceedings related to disputes under this Agreement shall be situated in Duval County, Florida, and the parties agree to submit to the personal jurisdiction of any State or Federal court situated in Duval County, Florida.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate, each by its duly authorized officers, as of the date of this Agreement.

RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY

By: _____

Print Name: _____

Title: _____

CSX TRANSPORTATION, INC.

By: _____

Print Name : Dale W. Ophardt

Title: Assistant Vice President – Engineering

EXHIBIT A

ALLOCATION OF WORK

Subject to Section 2.1, work to be performed in connection with the Project is allocated as follows:

A. Agency shall let by contract to its Contractors:

1. Bridge Repairs on RMTA System.

a. Bridge 13 Pier 3, Unit 3, Douglasdale Road over northbound and southbound Powhite Parkway (RTE 76) -Steel Repairs.

Subject to Section 2.1, work to be performed in connection with the Project is allocated as follows:

B. CSXT shall perform or cause to be performed:

1. Preliminary Engineering Services

2. Railroad Flagging Services

3. Construction Monitoring

EXHIBIT B

PLANS AND SPECIFICATIONS

Plans, Specifications and Drawings:

As of the date of this Agreement, the following plans, specifications and drawings have been submitted by Agency to CSXT for its review and approval:

Miscellaneous As-Built Plans for Bridges 13; Titled: Richmond Expressway System, City of Richmond From: James River Bridge to Cary Street Contract C4; Prepared by Howard, Needles, Tammen & Bergendoff

NOTE: In the event subsequent plan submissions are made by Agency to CSXT for review and approval, once approved, said plans shall be considered to be incorporated into this Exhibit B as of the date of CSXT's written approval

EXHIBIT C

CSXT SPECIAL PROVISIONS

DEFINITIONS:

As used in these Special Provisions, all capitalized terms shall have the meanings ascribed to them by the Agreement, and the following terms shall have the meanings ascribed to them below:

"CSXT" shall mean CSX Transportation, Inc., its successors and assigns.

"CSXT Representative" shall mean the authorized representative of CSX Transportation, Inc.

"Agreement" shall mean the Agreement to which this Exhibit C is made a part thereof and as may be amended from time to time.

"Agency" shall mean the Richmond Metropolitan Transportation Authority.

"Agency Representative" shall mean the authorized representative of Richmond Metropolitan Transportation Authority.

"Contractor" shall have the meaning ascribed to such term by the Agreement.

"Work" shall mean the Project as described in the Agreement.

I. AUTHORITY OF CSXT ENGINEER

The CSXT Representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by the Agency or its Contractor for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement and these Special Provisions.

II INTERFERENCE WITH CSXT OPERATIONS

- A. Agency or its Contractor shall arrange and conduct its work so that there will be no interference with CSXT operations, including train, signal, telephone and telegraphic services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's Property or right-of-way. Agency or its Contractor shall store materials so as to prevent trespassers from causing damage to trains, or CSXT Property. Whenever Work is likely to affect the operations or safety of trains, the method of doing such Work shall first be submitted to the CSXT Representative for approval, but such approval shall not relieve

Agency or its Contractor from liability in connection with such Work.

- B. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, Agency or its Contractor shall make such provision. If the CSXT Representative determines that such provision is insufficient, CSXT may, at the expense of Agency or its Contractor, require or provide such provision as may be deemed necessary, or cause the Work to cease immediately.

III NOTICE OF STARTING WORK. Agency or its Contractor shall not commence any work on CSXT Property or right-of-way until it has complied with the following conditions:

- A. Notify CSXT in writing of the date that it intends to commence Work on the Project. Such notice must be received by CSXT at least ten (10) business days in advance of the date Agency or its Contractor proposes to begin Work on CSXT property. The notice must refer to this Agreement by date. If flagging service is required, such notice shall be submitted at least thirty (30) business days in advance of the date scheduled to commence the Work.
- B. Obtain authorization from the CSXT Representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which it must comply.
- C. Obtain from CSXT the names, addresses and telephone numbers of CSXT's personnel who must receive notice under provisions in the Agreement. Where more than one individual is designated, the area of responsibility of each shall be specified.

IV WORK FOR THE BENEFIT OF THE CONTRACTOR

- A. No temporary or permanent changes to wire lines or other facilities (other than third party fiber optic cable transmission systems) on CSXT property that are considered necessary to the Work are anticipated or shown on the Plans. If any such changes are, or become, necessary in the opinion of CSXT or Agency, such changes will be covered by appropriate revisions to the Plans and by preparation of a force account estimate. Such force account estimate may be initiated by either CSXT or Agency, but must be approved by both CSXT and Agency. Agency or Contractor shall be responsible for arranging for the relocation of the third party fiber optic cable transmission systems, at no cost or expense to CSXT.
- B. Should Agency or Contractor desire any changes in addition to the above, then it shall make separate arrangements with CSXT for such changes to be accomplished at the Agency or Contractor's expense.

V HAUL ACROSS RAILROAD

- A. If Agency or Contractor desires access across CSXT property or tracks at other than an existing and open public road crossing in or incident to construction of the Project, the Agency or Contractor must first obtain the permission of CSXT and shall execute a license agreement or right of entry satisfactory to CSXT, wherein Agency or Contractor agrees to bear all costs and liabilities related to such access.
- B. Agency and Contractor shall not cross CSXT's property and tracks with vehicles or equipment of any kind or character, except at such crossing or crossings as may be permitted pursuant to this section.

VI COOPERATION AND DELAYS

- A. Agency or Contractor shall arrange a schedule with CSXT for accomplishing stage construction involving work by CSXT. In arranging its schedule, Agency or Contractor shall ascertain, from CSXT, the lead time required for assembling crews and materials and shall make due allowance therefor
- B. Agency or Contractor may not charge any costs or submit any claims against CSXT for hindrance or delay caused by railroad traffic; work done by CSXT or other delay incident to or necessary for safe maintenance of railroad traffic; or for any delays due to compliance with these Special Provisions.
- C. Agency and Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.
- D. Agency and Contractor understand and agree that CSXT does not assume any responsibility for work performed by others in connection with the Project. Agency and Contractor further understand and agree that they shall have no claim whatsoever against CSXT for any inconvenience, delay or additional cost incurred by Agency or Contractor on account of operations by others.

VII STORAGE OF MATERIALS AND EQUIPMENT

Agency and Contractor shall not store their materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless Agency or Contractor has received CSXT Representative's prior written permission. Agency and Contractor understand and agree that CSXT will not be liable for any damage to such materials and equipment from any cause and that CSXT may move, or require Agency or Contractor to move, such material and equipment at Agency's or Contractor's sole expense. To minimize the possibility of damage to the railroad tracks

resulting from the unauthorized use of equipment, all grading or other construction equipment that is left parked near the tracks unattended by watchmen shall be immobilized to the extent feasible so that it cannot be moved by unauthorized persons.

VIII CONSTRUCTION PROCEDURES

A. General

1. Construction work on CSXT property shall be subject to CSXT's inspection and approval.
2. Construction work on CSXT property shall be in accord with CSXT's written outline of specific conditions and with these Special Provisions.
3. Contractor shall observe the terms and rules of the CSXT Safe Way manual, which Agency and Contractor shall be required to obtain from CSXT, and in accord with any other instructions furnished by CSXT or CSXT's Representative.

B. Blasting

1. Agency or Contractor shall obtain CSXT Representative's and Agency Representative's prior written approval for use of explosives on or adjacent to CSXT property. If permission for use of explosives is granted, Agency or Contractor must comply with the following:
 - a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Agency or Contractor.
 - b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
 - c. No blasting shall be done without the presence of an authorized representative of CSXT. At least thirty (30) days advance notice to CSXT Representative is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.
 - d. Agency or Contractor must have at the Project site adequate equipment, labor and materials, and allow sufficient time, to (i) clean up (at Agency's expense) debris resulting from the blasting without any delay to trains; and (ii) correct (at Agency's expense) any track misalignment or other damage to CSXT's property resulting from the blasting, as directed by CSXT Representative, without delay to trains. If Agency's or Contractor's actions result in delay of any trains, including Amtrak passenger trains, Agency shall bear the entire cost thereof.

e. Agency and Contractor shall not store explosives on CSXT property.

2. CSXT Representative will:

a. Determine the approximate location of trains and advise Agency or Contractor of the approximate amount of time available for the blasting operation and clean-up.

b. Have the authority to order discontinuance of blasting if, in his or her opinion, blasting is too hazardous or is not in accord with these Special Provisions.

IX MAINTENANCE OF DITCHES ADJACENT TO CSXT TRACKS

Agency or Contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from their operations. Agency or Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) hay or straw barrier; (3) berm or temporary ditches; (4) sediment basin; (5) aggregate checks; and (6) channel lining. All such maintenance and repair of damages due to Agency's or Contractor's operations shall be performed at Agency's expense.

X FLAGGING / INSPECTION SERVICE

- A. CSXT has sole authority to determine the need for flagging required to protect its operations and property. In general, flagging protection will be required whenever Agency or Contractor or their equipment are, or are likely to be, working within fifty (50) feet of live track or other track clearances specified by CSXT, or over tracks.
- B. Agency shall reimburse CSXT directly for all costs of flagging that is required on account of construction within CSXT property shown in the Plans, or that is covered by an approved plan revision, supplemental agreement or change order.
- C. Agency or Contractor shall give a minimum of thirty (30) days advance notice to CSXT Representative for anticipated need for flagging service. No work shall be undertaken until the flag person(s) is/are at the job site. If it is necessary for CSXT to advertise a flagging job for bid, it may take up to ninety (90) days to obtain this service, and CSXT shall not be liable for the cost of delays attributable to obtaining such service.

D. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT Representative, such inspection may be necessary. Agency shall reimburse CSXT for the costs incurred by CSXT for such inspection service. Inspection service shall not relieve Agency or Contractor from liability for its Work.

E. CSXT shall render invoices for, and Agency shall pay for, the actual pay rate of the flagpersons and inspectors used, plus standard additives, whether that amount is above or below the rate provided in the Estimate. If the rate of pay that is to be used for inspector or flagging service is changed before the work is started or during the progress of the work, whether by law or agreement between CSXT and its employees, or if the tax rates on labor are changed, bills will be rendered by CSXT and paid by Agency using the new rates. Agency and Contractor shall perform their operations that require flagging protection or inspection service in such a manner and sequence that the cost of such will be as economical as possible.

XL UTILITY FACILITIES ON CSXT PROPERTY

Agency shall arrange, upon approval from CSXT, to have any utility facilities on or over CSXT Property changed as may be necessary to provide clearances for the proposed trackage.

XII CLEAN-UP

Agency or Contractor, upon completion of the Project, shall remove from CSXT's Property any temporary grade crossings, any temporary erosion control measures used to control drainage, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings belonging to Agency or Contractor. Agency or Contractor, upon completion of the Project, shall leave CSXT Property in neat condition, satisfactory to CSXT Representative.

XIII FAILURE TO COMPLY

If Agency or Contractor violate or fail to comply with any of the requirements of these Special Provisions, (a) CSXT may require Agency and/or Contractor to vacate CSXT Property; and (b) CSXT may withhold monies due Agency and/or Contractor; (c) CSXT may require Agency to withhold monies due Contractor; and (d) CSXT may cure such failure and the Agency shall reimburse CSXT for the cost of curing such failure.

EXHIBIT D

**INITIAL ESTIMATE
ATTACHED**

EXHIBIT E

PAYMENT SCHEDULE

Agency shall remit payment to CSXT for its Reimbursable Expenses within thirty (30) days following delivery to Agency of an invoice.

EXHIBIT F

INSURANCE REQUIREMENTS

Insurance Policies:

Agency and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability coverage at their sole cost and expense with limits of not less than \$5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.
2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than \$1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates [if permitted by state law].
3. Commercial automobile liability insurance with limits of not less than \$1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.
4. Railroad protective liability insurance with limits of not less than \$5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of \$10,000,000, which insurance shall satisfy the following additional requirements:
 - a. The Railroad Protective Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance- Insurance Services Office (ISO) Form CG 00 35.
 - b. CSX Transportation must be the named insured on the Railroad Protective Insurance Policy.
 - c. Name and Address of Contractor and Agency must be shown on the Declarations page.
 - d. Description of operations must appear on the Declarations page and must match the Project description, including project or contract identification numbers.
 - e. Authorized endorsements must include the Pollution Exclusion Amendment-CG 28 31, unless using form CG 00 35 version 96 and later.
 - f. Authorized endorsements may include:
 - i. Broad Form Nuclear Exclusion- IL 00 21
 - ii. 30-day Advance Notice of Non-renewal or cancellation
 - iii. Required State Cancellation Endorsement
 - iv. Quick Reference or Index- CLIL 240
 - g. Authorized endorsements may not include:
 - i. A Pollution Exclusion Endorsement except CG 28 31

- ii. A Punitive or Exemplary Damages Exclusion
- iii. A "Common Policy Conditions" Endorsement
- iv. Any endorsement that is not named in Section 4 (e) or (f) above.
- v. Policies that contain any type of deductible

5. All insurance companies must be A.M. Best rated A- and Class VII or better.

6. Such additional or different insurance as CSXT may require.

Additional Terms

1. Contractor must submit the original Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies to:

Jonathan MacArthur
Insurance Department
CSX Corporation
500 Water Street- C907
Jacksonville, FL 32202
904.359.3394 (Phone)
904.306.5325 (Fax)
Jonathan_MacArthur@csx.com

2. Neither Agency nor Contractor may begin work on the Project until it has received CSXT's written approval of the required insurance.

Project: Richmond, Virginia - Proposed shotcrete, concrete coatings and/or steel repairs on RMTA Structures at the following locations:

RMTA Bridge 13 Pier 3, Unit 3, over and adjacent to CSXT; Milepost ARN 1.22, in the North End Subdivision, within the Florence Division.

CSXT OP# (TBD),

SCHEDULE I

CONTRACTOR'S ACCEPTANCE

To and for the benefit of CSX Transportation, Inc. ("CSXT") and to induce CSXT to permit Contractor on or about CSXT's property for the purposes of performing work in accordance with the Agreement dated _____ between the RICHMOND METROPOLITAN TRANSPORTATION AUTHORITY and CSXT, Contractor hereby agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to Exhibits C and F to the Agreement, and Sections 3, 9 and 11 of the Agreement.

Contractor: _____

By: _____

Name: _____

Title: _____

APPENDIX

CSX TRANSPORTATION

CONSTRUCTION SUBMISSION CRITERIA

Public Projects Group
Jacksonville, FL
Date Issued: January 2020

INTRODUCTION

SECTION I: Definitions

SECTION II: Construction Submissions

SECTION III: Hoisting Operations

SECTION IV: Demolition Procedure

SECTION V: Erection Procedure

SECTION VI: Temporary Excavation and Shoring

SECTION VII: Track Monitoring

INTRODUCTION

The intent of this document is to guide outside agencies and their Contractors when performing work on, over, or with potential to impact CSX property (ROW). Work plans shall be submitted for review to the designated CSX Engineering Representative for all work which presents the potential to affect CSX property or operations; this document shall serve as a guide in preparing these work plans. All work shall be performed in a manner that does not adversely impact CSX operations or safety; as such, the requirements of this document shall be strictly adhered to, in addition to all other applicable standards associated with the construction. Applicable standards include, but are not limited to, CSX Standards and Special Provisions, CSX Insurance Requirements, CSX Pipeline Occupancy Criteria, as well as the governing local, county, state and federal requirements. It shall be noted that this document and all other CSX standards are subject to change without notice, and future revisions will be made available at the CSX website: www.csx.com.

I. DEFINITIONS

1. Agency – The project sponsor (i.e., State DOT, Local Agencies, Private Developer, etc.)
2. AREMA – American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA Manual for Railway Engineering.
3. Construction Submission – The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.
4. Controlled Demolition – Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSX employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSX’s ability to access its property at all times.
5. Contractor – The Agency’s representative retained to perform the project work.
6. Engineer – CSX Engineering Representative or a GEC authorized to act on the behalf of CSX.
7. Flagman – A qualified CSX employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.
8. GEC – General Engineering Consultant who has been authorized to act on the behalf of CSX.
9. Horizontal Clearance – Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.
10. Professional Engineer – An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Licensed Professional Engineer and shall bear his/her seal and signature.
11. Potential to Foul – Work having the possibility of impacting CSX property or operations; defined as one or more of the following:
 - a. Any activity where access onto CSX property is required.

b. Any activity where work is being performed on CSX ROW.

c. Any excavation work adjacent to CSX tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSX property limits.

d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.

e. Any work where the scatter of debris, or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.

f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.

g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSX.

12. ROW – Right of Way; Refers to CSX Right-of-Way as well as all CSX property and facilities. This includes all aerial space within the property limits, and any underground facilities.

13. Submission Review Period - a minimum of thirty (30) days in advance of start of work. Up to thirty (30) days will be required for the initial review response. Up to an additional thirty (30) days may be required to review any/all subsequent submissions or resubmission.

14. Theoretical Railroad Live Load Influence Zone – A 1 horizontal to 1 vertical theoretical slope line starting at bottom corner of tie.

15. TOR – Top of Rail. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails.

16. Track Structure – All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.

17. Vertical Clearance – Distance measured from TOR to the lowest obstruction within six feet (6'-0") of the track centerline, in either direction.

II. GENERAL SUBMISSION REQUIREMENTS

A. A construction work plan is required to be submitted by the Agency or its Contractor, for review and acceptance, prior to accessing or performing any work with Potential to Foul.

B. The Agency or its representative shall submit six (6) sets of plans, specifications, supporting calculations, and detailed means and methods procedures for the specific proposed work activity.

C. Construction submissions shall include all information relevant to the work activity, and shall clearly and concisely explain the nature of the work, how it is being performed, and what measures are being taken to ensure that railroad property and operations are continuously maintained.

D. All construction plans shall include a map of the work site, depicting the CSX tracks, the CSX right of way, proposed means of access, proposed locations for equipment and material staging (dimensioned from nearest track centerline), as well as all other relevant project information. An elevation drawing may also be necessary in order to depict clearances or other components of the work.

E. Please note that CSX will not provide pricing to individual contractors involved in bidding projects. Bidding contractors shall request information from the agency and not CSX.

F. The Contractor shall install a geotextile fabric ballast protection system to prevent construction or demolition debris and fines from fouling ballast. The geotextile ballast protection system shall be installed and maintained by the Contractor to the satisfaction of the Engineer.

G. The Engineer shall be kept aware of the construction schedule. The Contractor shall provide timely communication to the Engineer when scheduling the work such that the Engineer may be present during the work. The Contractor's schedule shall not dictate the work plan review schedule, and flagging shall not be scheduled prior to receipt of an accepted work plan.

H. At any time during construction activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSX facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSX and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

I. Blasting will not be permitted to demolish a structure over or within CSX's right-of-way. When blasting off of CSX property but with Potential to Foul, vibration monitoring, track settlement surveying, and/or other protective measures may be required as determined by the Engineer.

J. Blasting is not permitted adjacent to CSX right-of-way without written approval from the Chief Engineer, CSX.

K. Mechanical and chemical means of rock removal must be explored before blasting is considered. If written permission for the use of explosives is granted, the Agency or Contractor must submit a work plan satisfying the following requirements:

1. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Agency or Contractor.

2. Electronic detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

3. No blasting shall be done without the presence of an authorized representative of CSX. Advance notice to the Engineer is required to arrange for the presence of an authorized CSX representative and any flagging that CSX may require.

4. Agency or Contractor must have at the project site adequate equipment, labor and materials, and allow sufficient time, to clean up debris resulting from the blasting and correct any misalignment of tracks or other damage to CSX property resulting from the blasting. Any corrective measures required must be performed as directed by the Engineer at the Agency's or Contractor's expense without any delay to trains. If Agency's or Contractor's actions result in the delay of any trains including passenger trains, the Agency or Contractor shall bear the entire cost thereof.

5. The Agency or Contractor may not store explosives on CSX property.

6. At any time during blasting activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSX facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSX and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

III. HOISTING OPERATIONS

A. All proposed hoisting operations with Potential to Foul shall be submitted in accordance with the following:

1. A plan view drawing shall depict the work site, the CSX track(s), the proposed location(s) of the lifting equipment, as well as the proposed locations for picking, any intermediate staging, and setting the load(s). All locations shall be dimensioned from centerline of the nearest track. Crane locations shall also be dimensioned from a stationary point at the work site for field confirmation.

2. Computations showing the anticipated weight of all picks. Computations shall be made based upon the field-verified plans of the existing structure. Pick weights shall account for the weight of concrete rubble or other materials attached to the component being removed; this includes the weight of subsequent rigging devices/components. Rigging components shall be sized for the subsequent pick weight.

3. All lifting equipment, rigging devices, and other load bearing elements shall have a rated (safe lifting) capacity that is greater than or equal to 150% of the load it is carrying, as a factor of safety. Supporting calculations shall be furnished to verify the minimum capacity requirement is maintained for the duration of the hoisting operation.

4. Dynamic hoisting operations are prohibited when carrying a load with the Potential to Foul. Cranes or other lifting equipment shall remain stationary during lifting. (i.e., no moving picks).

5. For lifting equipment, the manufacturer's capacity charts, including crane, counterweight, maximum boom angle, and boom nomenclature is to be submitted.

6. A schematic rigging diagram must be provided to clearly call out each rigging component from crane hook to the material being hoisted. Copies of catalog or information sheets shall be provided to verify rigging weights and capacities.

7. For built-up rigging devices, the contractor shall submit the following:

i. Details of the device, calling out material types, sizes, connections and other properties.

ii. Load test certification documents and/or design computations bearing the seal and signature of a Professional Engineer. Load test shall be performed in the configuration of its intended use as part of the subject demolition procedure.

iii. Copies of the latest inspection reports of the rigging device. The device shall be inspected within one (1) calendar year of the proposed date for use.

8. A detail shall be provided showing the crane outrigger setup, including dimensions from adjacent slopes or facilities. The detail shall indicate requirements for bearing surface preparation, including material requirements and compaction efforts. As a minimum, outriggers and/or tracks shall bear on mats, positioned on level material with adequate bearing capacity.

9. A complete written narrative that describes the sequence of events, indicating the order of lifts and any repositioning or re-hitching of the crane(s).

IV. DEMOLITION PROCEDURE

A. The Agency or its Contractor shall submit a detailed procedure for a controlled demolition of any structure on, over, or adjacent to the ROW. The controlled demolition procedure must be approved by the Engineer prior to beginning work on the project.

B. Existing Condition of structure being demolished:

1. The Contractor shall submit as-built plans for the structure(s) being demolished

2. If as-built plans are unavailable, the Contractor shall perform an investigation of the structure, including any foundations, substructures, etc. The field measurements are to be made under the supervision of the Professional Engineer submitting the demolition procedure. Findings shall be submitted as part of the demolition means and methods submittal for review by the Engineer.

3. Any proposed method for temporary stabilization of the structure during the demolition shall be based on the existing plans or investigative findings, and submitted as part of the demolition means and methods for review by the Engineer.

C. Demolition work plans shall include a schematic plan depicting the proposed locations of the following, at various stages of the demolition:

1. All cranes and equipment, calling out the operating radii.

2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track

3. Proposed locations for stockpiling material or locations for truck loading

4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.

5. Note that no crane or equipment may be set on the CSX rails or track structure and no material may be dropped on CSX property.

D. Demolition submittal shall also include the following information:

1. All hoisting details, as dictated by Section III of this document.
2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., torch/saw cutting various portions of the superstructure or substructure, dismantling splices, installing temporary bracing, etc.) shall be furnished so that the potential impact(s) to CSX operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
4. Design and supporting calculations shall be prepared, signed, and sealed by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSX forces, at the expense of the Agency or its contractor.

E. Girders or girder systems shall be stable at all times during demolition. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).

F. Existing, obsolete, bridge piers shall be removed to a minimum of three feet (3'-0") below the finished grade, final ditch line invert, or as directed by the Engineer.

G. A minimum quantity of twenty five (25) tons of CSX approved granite track ballast may be required to be furnished and stockpiled on site by the Contractor, or as directed by the Engineer.

H. The use of acetylene gas is prohibited for use on or over CSX property. Torch cutting shall be performed utilizing other materials such as propane.

I. CSX's tracks, signals, structures, and other facilities shall be protected from damage during demolition of existing structure or replacement of deck slab.

J. Demolition Debris Shield

1. On-track or ground-level debris shields (such as crane mats) are prohibited for use by CSX.
2. Demolition Debris Shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the structure. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris. The debris shield shall not be the primary means of debris containment.
 - i. The demolition debris shield design and supporting calculations, all signed/sealed by a Professional Engineer, shall be submitted for review and acceptance.
 - ii. The demolition debris shield shall have a minimum design load of 50 pounds per square foot (50 psf) plus the weight of the equipment, debris, personnel, and all other loads.

iii. The Contractor shall verify the maximum particle size and quantity of the demolition debris generated during the procedure does not exceed the shield design loads. Shield design shall account for loads induced by particle impact; however the demolition procedure shall be such that impact forces are minimized. The debris shield shall not be the primary means of debris containment.

iv. The Contractor shall include installation/removal means and methods for the demolition debris shield as part of the proposed Controlled Demolition procedure submission.

v. The demolition debris shield shall provide twenty three feet (23'-0") minimum vertical clearance, or maintain the existing vertical clearance if the existing clearance is less than twenty three feet (23'-0").

vi. Horizontal clearance to the centerline of the track should not be reduced unless approved by the Engineer.

vii. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Engineer.

K. Vertical Demolition Debris Shield

1. This type of shield may be required for substructure removals in close proximity to CSX track and other facilities, as determined by the Engineer.

2. The Agency or its Contractor shall submit detailed plans with detailed calculations, prepared, signed, and sealed by a Professional Engineer, of the protection shield.

V. ERECTION PROCEDURE

A. The Agency or its Contractor shall submit a detailed procedure for erection of a structure with Potential to Foul. The erection procedure must be approved by the Engineer prior to beginning work on the project.

B. Erection work plans shall include a schematic plan depicting the following, at all stages of the construction:

1. All proposed locations of all cranes and equipment, calling out the operating radii.
2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
3. All proposed locations for stockpiling material or locations for truck loading.
4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.

C. No crane or equipment may be set on the CSX rails or track structure and no material may be dropped on CSX property.

D. For erection of a structure over the tracks, the following information shall be submitted for review and acceptance by the Engineer, at least thirty (30) days prior to erection:

1. As-built beam seat elevations – field surveyed upon completion of pier/abutment construction.
2. Current Top of Rail (TOR) elevations – field measured at the time of as-built elevation collection.
3. Computations verifying the anticipated minimum vertical clearance in the final condition which accounts for all deflection and camber, based upon the current TOR and as-built beam seat elevations. The anticipated minimum

vertical clearance shall be greater than or equal to that which is indicated by the approved plans. Vertical clearance (see definitions) is measured from TOR to the lowest point on the overhead structure at any point within six feet (6'-0") from centerline of the track. Calculations shall be signed and sealed by a Professional Engineer.

E. Girders or girder systems shall be stable at all times during erection. No crane may unhook prior to stabilizing the beam or girder.

1. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
2. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer.
3. Temporary bracing shall not be removed until sufficient lateral bracing or diaphragm members have been installed to establish a stable condition. Supporting calculations, furnished by the Professional Engineer, shall confirm the stable condition.

F. Erection procedure submissions shall also include the following information:

1. All hoisting details, as dictated by Section III of this document.
2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., performing aerial splices, installing temporary bracing, installation of diaphragm members, etc.) shall be furnished so that the potential impact(s) to CSX operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
4. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSX forces, at the expense of the Agency or its Contractor.
5. Design and supporting calculations prepared by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review.

VI. TEMPORARY EXCAVATION AND SHORING

A. The Agency or its Contractor shall submit a detailed design and procedure for the installation of a sheeting/shoring system adjacent to the tracks. Shoring protection shall be provided when excavating with Potential to Foul, or as otherwise determined by CSX. Shoring shall be provided in accordance with the AREMA, except as noted below.

B. Shoring may not be required if all of the following conditions are satisfied:

1. The excavation does not encroach within the Theoretical Live Load Influence Zone. Please refer to Figure 1.
2. The track structure is situated on level ground, or in a cut section, and on stable soil.
3. The excavation does not adversely impact the stability of a CSX facility (i.e., signal bungalow, drainage facility, undergrade bridge, building, etc), or the stability of any structure on, over, or adjacent to CSX property with potential to foul.
4. Shoring is not required by any governing federal, state, local or other construction code.

C. Shoring is required when excavating the toe of an embankment. Excavation of any embankment which supports an active CSX track structure without shoring will not be permitted.

D. Trench boxes are not an acceptable means of shoring. Trench boxes are prohibited for use on CSX property or within the Theoretical Railroad Live Load Influence Zone.

E. Shoring shall be a cofferdam-type, which completely encloses the excavation. However, where justified by site or work conditions, partial cofferdams with open sides away from the track may be permissible, as determined by the Engineer.

F. Cofferdams shall be constructed using interlocking steel sheet piles, or when approved by the Engineer, steel soldier piles with timber lagging. Wales and struts shall be included when dictated by the design.

G. The use of tiebacks can be permissible for temporary shoring systems, when conditions warrant. Tiebacks shall have a minimum clear cover of 6'-0", measured from the bottom of the rail. Upon completion of the work, tiebacks shall be grouted, cut off, and remain in place.

H. All shoring systems on, or adjacent to CSX right-of-way, shall be equipped with railings or other fall protection, compliant with the governing federal, state or local requirements. Area around pits shall be graded to eliminate all potential tripping hazards.

I. Interlocking steel sheet piles shall be used for shoring systems qualifying one or more of the following conditions:

1. Within 18'-0" of the nearest track centerline
2. Within the live load influence zone
3. Within slopes supporting the track structure
4. As otherwise deemed necessary by the Engineer.

J. Sheet piles qualifying for one or more of the requirements listed in Section VI.I (above) of this document shall not be removed. Sheet piles shall be left in place and cut off a minimum of 3'-0" below the finished grade, the ditch line invert, or as otherwise directed by the Engineer. The ground shall be backfilled and compacted immediately after sheet pile is cut off.

K. The following design considerations shall be considered when preparing the shoring design package:

1. Shoring shall be designed to resist a vertical live load surcharge of 1,880 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, eight feet six inches (8'-6") wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA Manual for Railway Engineering, Chapter 8, Part 20.
2. Allowable stresses in materials shall be in accordance with AREMA Chapter 7, 8, and 15.3.
3. A minimum horizontal clearance of ten feet (10'-0") from centerline of the track to face of nearest point of shoring shall be maintained, provided a twelve feet (12'-0") roadbed is maintained with a temporary walkway and handrail system.

4. For temporary shoring systems with Potential to Foul, piles shall be plumb under full dead load. Maximum deflection at the top of wall, under full live load, shall be as follows:

- i. One-half (1/2) inch for walls within twelve feet (12'-0") of track centerline (Measured from centerline of the nearest track to the nearest point of the supporting structure).
- ii. One (1) inch for walls located greater than twelve feet (12'-0") from track centerline

L. Shoring work plans shall be submitted in accordance with Section II of this document, as well as the following additional requirements:

1. The work plan shall include detailed drawings of the shoring systems calling out the sizes of all structural members, details of all connections. Both plan and elevation drawings shall be provided, calling out dimensions from the face of shoring relative to the nearest track centerline. The elevation drawing shall also show the height of shoring, and track elevation in relation to bottom of excavation.
2. Full design calculations for the shoring system shall be furnished.
3. A procedure for cutting off the sheet pile, backfilling and restoring the embankment.

VII. TRACK MONITORING

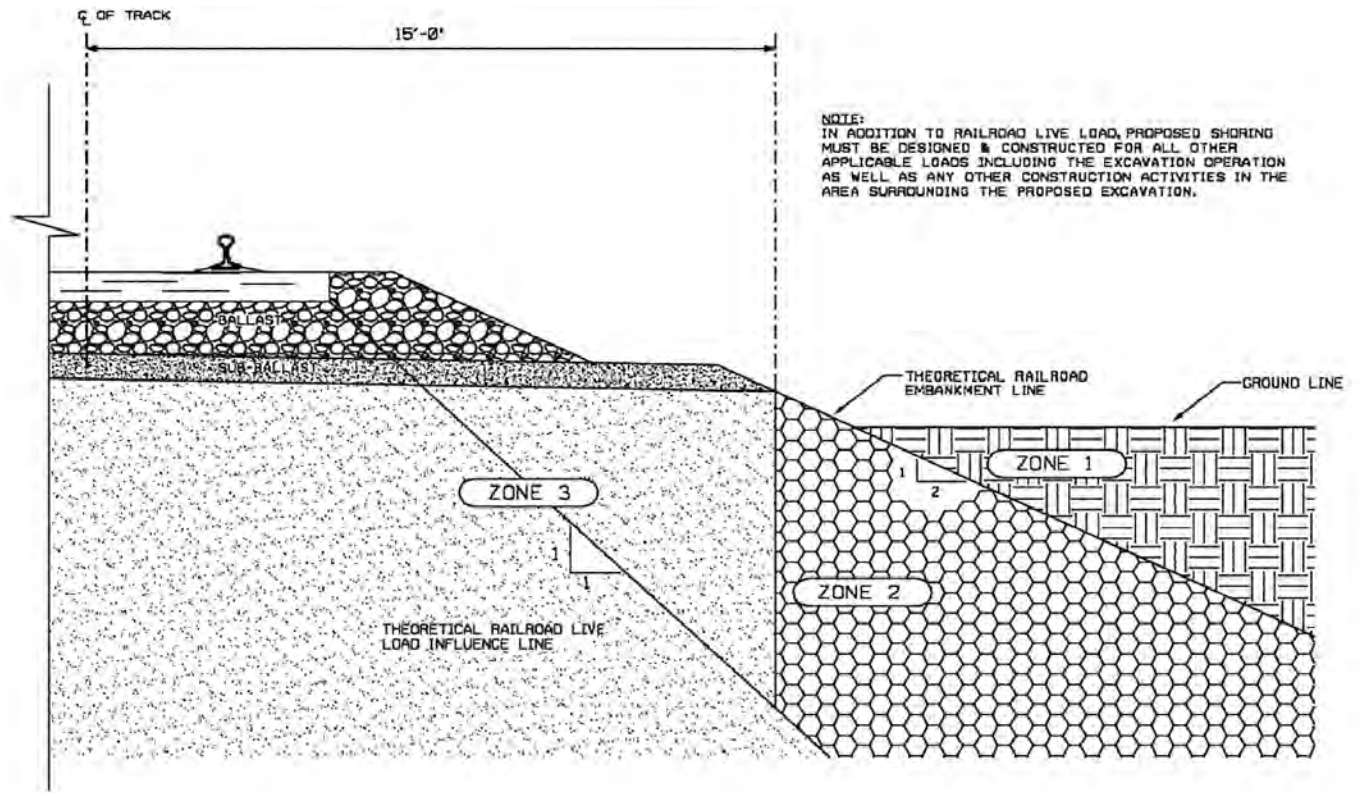
A. When work being performed has the potential to disrupt the track structure, a work plan must be submitted detailing a track monitoring program which will serve to monitor and detect both horizontal and vertical movement of the CSX track and roadbed.

B. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. CSX reserves to the right to modify the survey locations and monitoring frequency as necessary during the project.

C. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Engineer for analysis.

D. If any movement has occurred as determined by the Engineer, CSX will be immediately notified. CSX, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSX or performed by CSX including the monitoring of corrective action of the contractor will be at project expense.

FIGURE 1: Theoretical Live Load Influence Zone



NORMAL REQUIREMENTS FOR SHORING ADJACENT TO TRACK



ZONE 1 - EXCAVATIONS ABOVE AND OUTSIDE OF THE THEORETICAL RAILROAD EMBANKMENT LINE - DO NOT NORMALLY REQUIRE SHORING TO PROTECT RAILROAD ROADBED, SHORING MAY BE REQUIRED FOR OTHER REASONS.



ZONE 2 - EXCAVATIONS WHOSE BOTTOMS EXTEND INTO ZONE 2 REQUIRE SHORING, BUT THE SHORING MAY NORMALLY BE PULLED AFTER THE EXCAVATION HAS BEEN BACKFILLED.



ZONE 3 - EXCAVATIONS WHOSE BOTTOMS EXTEND INTO ZONE 3 WILL NORMALLY REQUIRE THE SHORING TO BE LEFT IN PLACE AND CUT-OFF 3' BELOW BASE OF RAIL. SHORING MUST BE DESIGNED FOR COOPER E88 LIVE LOAD