

ORDER NO.: D34
CONTRACT ID. NO.: C00089454N01

Form C-6a
Rev. 3-22-05

CNSP (F) 1-9-06

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
BID PROPOSAL AND CONTRACT**

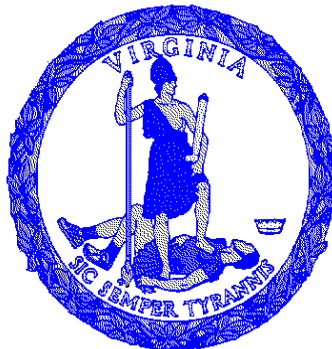
ROUTE NUMBER: VARIOUS

FHWA NUMBER: BH-BR02(237)

PROJECT NUMBER: (NFO)BRDG-962-044,N501

COUNTY: VARIOUS

DISTRICT: SALEM



DESCRIPTION: SUPERSTRUCTURE & SUBSTRUCTURE
PREVENTATIVE MAINTENANCE REPAIRS

LOCATION: DISTRICT WIDE

DATE BID SUBMITTED: 10:00 A. M., WEDNESDAY, FEBRUARY 3, 2010

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Form C-7
Rev. 7-2-08
SHEET 1 of 6

TERMS OF THE PROPOSAL\CONTRACT
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
SUBMITTED: 10:00 A. M., WEDNESDAY, FEBRUARY 3, 2010

PROJECT NUMBER: (NFO)BRDG-962-044,N501

ROUTE NUMBER: VARIOUS

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DESCRIPTION: SUPERSTRUCTURE & SUBSTRUCTURE PREVENTATIVE MAINTENANCE REPAIRS

LOCATION: DISTRICT WIDE

DISTRICT: SALEM

COUNTY: VARIOUS

I/we declare that no other person, firm or corporation is interested in this proposal; that I/we have carefully examined the plans, job specifications, current Road and Bridge specifications, and all other documents pertaining thereto and thoroughly understand the contents thereof; that I/we meet the prequalification requirements for bidding on this proposal; that I/we understand that the plans and current Road and Bridge specifications, are a part of this proposal; that all of the quantities shown herewith are a part of this proposal; that all the quantities shown herewith are approximate only; that I/we have examined the location of the proposed work and source of supply of materials; and that I/we agree to bind myself/ourselves upon award by the Commonwealth under this proposal to a contract with necessary surety bond to start work according to project specifications, and to complete all work in accordance with the plans, job specifications and current Road and Bridge Specifications within the time limit set forth in the contract.

October 10, 2010

BID TOTAL \$ _____

Attached is a bond conforming to the requirements of the current Road and Bridge Specifications, it being understood that such bond is to be forfeited as liquidated damages if, upon acceptance of the terms of this proposal, I/we fail to execute the contract and furnish bond as provided in the current Road and Bridge Specifications.

(Names of Individual(S), Firm(S) Or Corporation) BY: _____
Signature/Title

Street Address City State Zip Code Vendor#/Fin#

(Names of Individual(S), Firm(S) Or Corporation) BY: _____
Signature/Title

Street Address City State Zip Code Vendor#/Fin#

In consideration of the commitments made as shown herein, the Commonwealth of Virginia by The Commonwealth Transportation Commissioner agrees to pay for all items of work performed and materials furnished at the unit price(s) and under the conditions set forth in this proposal, in witnessed by the affixing of the name below.

Contract Execution Date _____ By _____

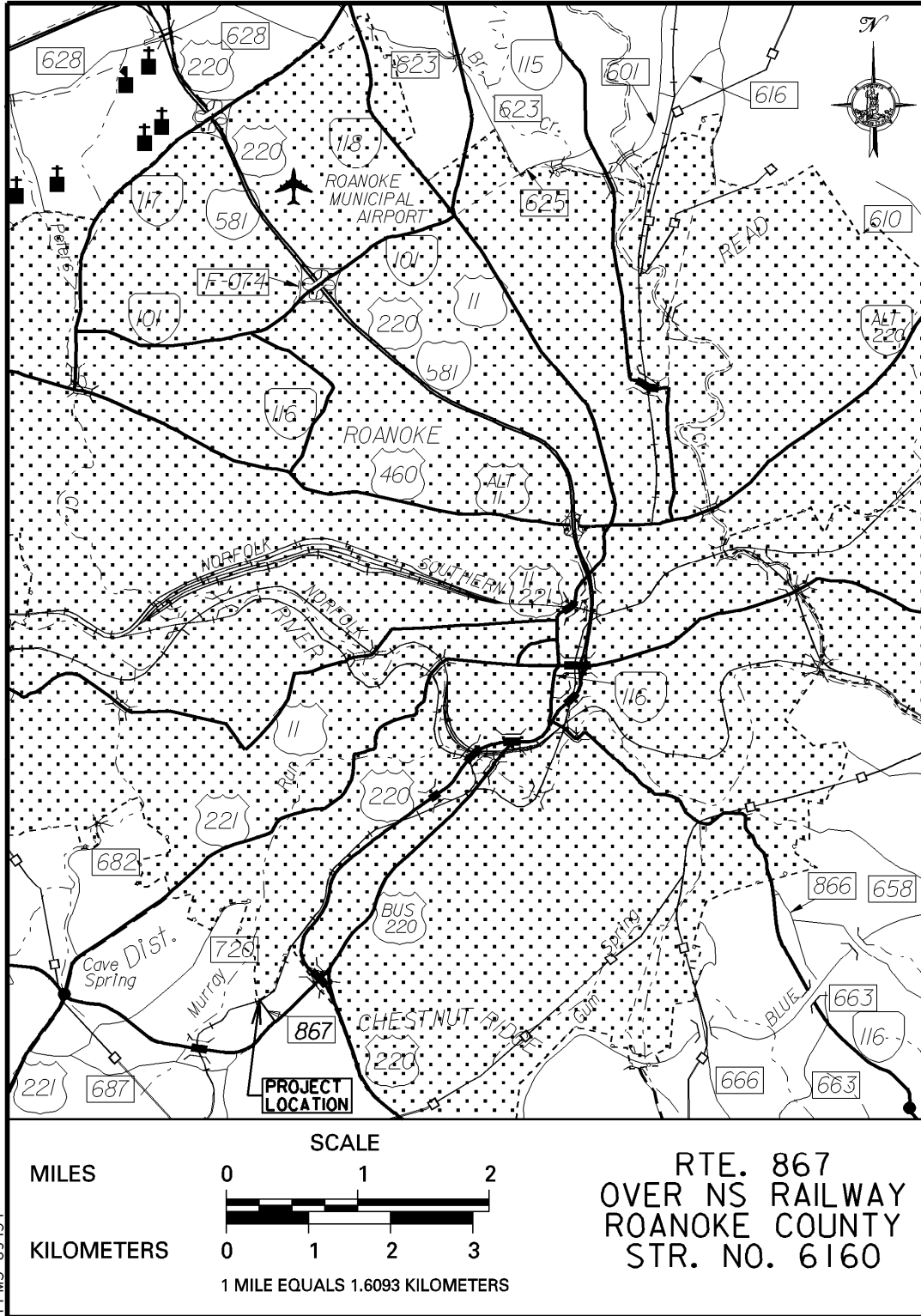
CHIEF ENGINEER
VIRGINIA DEPARTMENT OF TRANSPORTATION

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PEMS 89454

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S107100-0708

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS FOR
SECTION 107.19—RAILWAY - HIGHWAY PROVISIONS

January 14, 2008

Rte. 11 Project BRDG-962-044,N501

SECTION 107.19—RAILWAY - HIGHWAY PROVISIONS of the Specifications is amended as follows:

Section 107.19—Railway - Highway Provision is amended to include the following:

The Contractor shall notify the BRIAN HARRISON, MANAGER CONSTR. SERVICES of the AECOM INC. FOR CSX TRANSPORTATION Railway Company, PHILADELPHIA PA 19102
(City or Town) (State) (Zip)

215-966-4846 at least 72 hours before starting any work on or over the Railway (Telephone No.) (No.)
right-of-way. A vertical clearance above the highest rail of at least 22 feet and a horizontal clearance from the centerline of the track of at least 15 feet shall be maintained, unless otherwise authorized by the Railway Company. The approximate number and type of trains per day per track is as follows:

Track	<u>15 trains/day</u>	_____	_____	Track	_____	_____	_____
Track	_____	_____	_____	Track	_____	_____	_____
Track	_____	_____	_____	Track	_____	_____	_____

Upon starting work a slow order of N/A will be in effect.

The following Railway utilities are known to be on the Railway's right of way:
unknown

The Contractor shall promptly notify the Railway's duly authorized representative as noted above of any loss, damage, injury or death arising out of or in connection with the project work performed on or over the Railway right-of-way.

Section 107.19(a)—Flagger or Watchperson Services is amended to include the following:

The Contractor shall coordinate all construction operations on or over railway right-of-way with the Railway Company and make all arrangements for necessary flagger and watchperson service. Any flaggers or watchpersons required by the Railway Company for the safety of railway operations, because of work being performed by the Contractor or incidental thereto, will be provided by the Railway Company. No work shall be undertaken on or over the Railway right-of-way until the watchpersons or flaggers are present at the project site.

Flagger or watchperson service will be required whenever work is accomplished within 30 feet of the railroad's track or whenever any machinery or heavy equipment encroaches within 30 feet of the track. Also, flagger or watchperson service will be required whenever construction activities endanger the railroad signal and communication facilities. The jacking or boring of pipes or utility lines under the track will also require flagger service.

Contractor shall provide flaggers with a heated shelter and suitable sanitation facility.

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To procure or terminate flagger or watchperson services, the Contractor shall notify in writing,

Name STEVE BENNETT
Title ROAD MASTER
Address CSX TRANSPORTATION INC.
12TH AND VA STREET
GLASKOW VA 24555
Telephone No. 504-258-2114

On projects that will require these services for longer than a 30 day duration, it will require the posting of the position in accordance with union regulations. Consequently, it will require 30 days before a flagger can be assigned to the project. To terminate the service, it is necessary to allow 2 weeks from the receipt of such notification.

For flagger or watchperson services of less than 30 days duration, you must provide a 5 day advance notification. For termination of this service, allow 5 days from the receipt of the notification.

The Department has estimated that 300 hours of flagging service will be required for this project. If the Department is required to reimburse the Railway Company for cost of flagging service in excess of the cost associated with the established hours, the amount of excess will be deducted from monies due the Contractor.

Sections 107.19 (c) 1. and 107.19 (c) 2. are replaced by the following:

Contractor's public liability and property damage insurance: With respect to operations performed by the contractor, this insurance shall provide coverage with a combined single limit of not less than \$5,000,000.00 each occurrence for bodily injury and/or property damage liability. This insurance shall include explosion, collapse, and underground hazard coverage. If the Contractor subcontracts any portion of the work, the Contractor shall also secure insurance protection in its own behalf under its Public Liability and Property Damage Insurance policies to cover any liability imposed on him by law for damages because of bodily injury and/or property damage liability as a result of work undertaken by the subcontractor(s). A certificate of insurance shall be provided to the railway company as evidence that the Contractor has in full force and effect the insurance coverage hereinbefore specified. Said certificate shall provide railway company with at least 30 days advance written notice of any material change in or cancellation of the required policies.

Railroad protective liability insurance: With respect to the operations the Contractor or any of its subcontractors perform, the Contractor must provide in the name of the railway company a policy providing coverage with a combined single limit of \$5,000,000.00 each occurrence and \$10,000,000.00 aggregate for bodily injury and property damage.

This policy shall be written on the ISO/RIMA Form of Railroad Protective Insurance or its equivalent. The original of the policy shall be submitted to the Department for the railway company's approval and retention.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
EPOXY CONCRETE OVERLAY

February 3, 1993
Revised February 25, 2004

I. DESCRIPTION

This work shall consist of furnishing and applying epoxy as an overlay over concrete bridge decks in accordance with this Specification, and in conformity with the lines, grades and details shown on the plans.

II. MATERIALS

A. The epoxy shall be modified type EP-5 conforming to Section 243 of the Specifications with the following exceptions:

PROPERTY	REQUIREMENT	TEST METHOD
Pot Life	15 to 45 min. at 75°F.	ASTM C881 (50 ml sample in paper cup)
Tensile Strength	2,000 to 5,000 psi at 7 days	ASTM D638
Tensile Elongation	30 to 80% at 7 days	ASTM D638
Viscosity	7 to 25 poises	ASTM D2393 (Model RVF Brookfield, Spindle No. 3 at 20 rpm)
Minimum Compressive Strength at 3 hours	1,000 psi at 75°F.	ASTM C190 (Use plastic inserts)
Minimum Compressive Strength at 24 hours	5,000 psi at 75°F.	ASTM C109
Minimum Adhesion Strength at 24 hours	250 psi at 75°F.	VTM 92

B. Aggregate shall be angular grained silica sand or basalt having less than 0.2% moisture, and free of dirt, clay, asphalt and other foreign or organic materials.

The silica sand and basalt shall have a minimum Mohs' scale hardness of 7. Unless otherwise approved, silica sand and basalt shall conform to the following gradation:

Percent by Weight of Material Passing			
No. 4 Sieve	No. 8 Sieve	No. 16 Sieve	No. 30 Sieve
100	30-75	Max. 5	Max. 1

III. CONSTRUCTION METHODS

A. Safety Provisions

Personnel shall be thoroughly trained in the safe handling of materials in accordance with the Manufacturer's recommendations.

B. Storage of Materials

Materials shall be stored in accordance with Section 243 of the Specifications. MSDS and other information pertaining to the safe practices for the storage, handling and disposal of the

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materials, and to their health hazards shall be obtained from the manufactures and posted at storage areas. A copy of such information shall be provided to the Engineer.

C. Surface Preparation

Prior to placing the first course, the Contractor shall determine the bridge deck cleaning method in accordance with VTM-92 to obtain the size of shot, flow of shot, forward speed of shotblast machine, and number of passes necessary to provide a tensile rupture strength greater than or equal to 250 psi or a failure area, at a depth of 1/4 inch or more into the base concrete, greater than 50% of the test area. A test result shall be the average of three tests on a test patch of at least 1.5 ft. x 3 ft. consisting of two courses. One passing test result must be obtained for each span or 300 sq.yd., whichever is the smaller area. Test patches shall be placed in wheel paths, the area between wheel paths or in other areas that represent a worst surface condition as determined by the Engineer. To provide assurance that the cleaning procedure, materials, installation procedure, and curing period will provide the desired overlay, test patches shall be installed with the same materials, equipment, personnel, timing, sequence of operations, and curing period prior to opening to traffic that will be used for the installation of the overlay. The cleaning method, materials, and installation procedure will be approved if one passing test result is obtained from each test area.

If the cleaning method, materials and installation procedure are not acceptable, the Contractor must remove failed test patches and make the necessary adjustments, and test all test areas at no additional cost to the Department until satisfactory test results are obtained.

Before placement of the epoxy concrete overlay, the entire deck surface shall be cleaned by shotblasting and other means using the approved cleaning method to remove asphaltic material, oils, dirt, rubber, curing compounds, paint carbonation, laitance, weak surface mortar and other potentially detrimental materials, which may interfere with the bonding or curing of the overlay. Acceptable cleaning is usually achieved by significantly changing the color of the concrete and mortar and beginning to expose coarse aggregate particles. Mortar, which is sound and soundly bonded to the coarse aggregate, must have open pores due to cleaning to be considered adequate for bond. Areas of asphalt larger than one inch in diameter, or smaller areas spaced less than six inches apart, shall be removed. Traffic paint lines shall be considered clean when the concrete has exposed aggregate showing through the paint stripe. A vacuum cleaner shall be used to remove all dust and other loose material. Brooms shall not be used and will not be permitted.

If the Engineer determines that an approved cleaning method has changed prior to the completion of the job, the Contractor must return to the approved cleaning methods and reclean the suspect areas or verify through tests at no additional cost to the Department that the method is acceptable.

Epoxy concrete overlay shall not be placed on hydraulic cement concrete that is less than 28 days of age. Patching and cleaning operations shall be inspected and approved prior to placing each layer of the overlay. Any contamination of the deck or to intermediate courses, after initial cleaning, shall be removed. Both courses shall be applied within 24 hours following the final cleaning and prior to opening the area to traffic.

There shall be no visible moisture present on the surface of the concrete at the time of application of the epoxy concrete overlay. Compressed air may be used to dry the deck surface.

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D. Equipment

For mechanical applications, equipment shall conform to Section 243 of the Specifications, and shall consist of no less than epoxy distribution system, fine aggregate spreader, application squeegee and vacuum trucks, and a source of lighting if work will be performed at night. The distribution system or distributor shall accurately blend the epoxy resin and hardening agent, and shall uniformly and accurately apply the epoxy materials at the specified rate to the bridge deck in such a manner as to cover 100% of the work area. The fine aggregate spreader shall be propelled in such a manner as to uniformly and accurately apply the dry silica sand or basalt to cover 100% of the epoxy material. The vacuum truck shall be self-propelled.

For hand applications, equipment shall consist of calibrated containers, a paddle type mixer, squeegees, rollers and brooms, which are suitable for mixing the epoxy and applying the epoxy and aggregate in accordance with Section 243 of the Specifications.

E. Application

Handling and mixing of the epoxy resin and hardening agent shall be performed in a safe manner to achieve the desired results in accordance with Section 243 of the Specifications, and with the manufacturer's recommendations as approved or directed by the Engineer. Epoxy concrete overlay materials shall not be placed when weather or surface conditions are such that the material cannot be properly handled, placed and cured within the specified requirements of traffic control.

The epoxy overlay shall be applied in 2 separate courses in accordance with the following rate of application, and the total of the 2 applications shall not be less than 7.5 gals. per 100 sq.ft.

COURSE	RATE GAL./100 SQ.FT.	AGGREGATE LBS./SQ. YD.*
1	No less than 2.5	10+
2	No less than 5.0	14+
*Application of aggregate shall be of sufficient quantity to completely cover the epoxy.		

After the epoxy mixture has been prepared for the epoxy concrete overlay, it shall be immediately and uniformly applied to the surface of the bridge deck with a squeegee or paint roller. The temperature of the bridge deck surface and all epoxy and aggregate components shall be 60°F or above at the time of application. Epoxy shall not be applied if the air temperature is expected to drop below 55°F within 8 hours after application, or the gel time is less than 10 minutes. The dry aggregate shall be applied in such a manner as to cover the epoxy mixture completely within 5 minutes. First course applications, which do not receive enough sand prior to gel, shall be removed and replaced. A second course insufficiently sanded may be left in place, but will require additional applications before opening to traffic. Each course of epoxy concrete overlay shall be cured until vacuuming or brooming can be performed without tearing or damaging the surface. Traffic or equipment shall not be permitted on the overlay surface during the curing period. After the curing period, all loose aggregate shall be removed by vacuuming or brooming and the next overlay course applied; to completion. The minimum curing periods shall be as follows:

COURSE	AVERAGE TEMPERATURE OF DECK, EPOXY AND AGGREGATE COMPONENTS IN °F.					
	60-64	65-69	70-74	75-79	80-84	85+
1	4 hrs.	3 hrs.	2.5 hrs.	2 hrs.	1.5 hrs.	1 hr.
2	6.5 hrs.*	5 hrs.	4 hrs.	3 hrs.	3 hrs.	3 hrs.
*Course 2 shall be cured for 8 hours if the air temperature drops below 60°F. during the curing period.						

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The Contractor shall plan and prosecute the work to provide the minimum curing periods as specified herein, or other longer minimum curing periods as prescribed by the manufacturer prior to opening to public or construction traffic, unless otherwise permitted. Course 1 applications shall not be opened to traffic.

Unless otherwise specified, the epoxy concrete overlay courses shall be applied over the expansion joints of the bridge deck. The expansion joints shall be provided with a bond breaker. Within 12 hours of application and prior to opening to traffic, the overlay shall be removed over each joint by removal of the bond breakers, by scoring the overlay prior to gelling, or by saw cutting after cure

In the event the Contractor's operation damages or mars the epoxy concrete overlay, the Contractor shall remove the damaged areas by saw-cutting in rectangular sections to the top of the concrete deck surface and replacing the various courses in accordance with this Specification at no additional cost to the Department.

For each batch provided, the Contractor shall maintain and provide to the Engineer records including, but not limited to, the following:

1. batch numbers and sizes
2. location of batches as placed on deck, referenced by stations
3. batch time
4. gel time (50 ml sample)
5. temperature of the air, deck surface, epoxy components, including aggregates
6. loose aggregate removal time
7. time open to traffic

IV. MEASUREMENT AND PAYMENT

Epoxy concrete overlay will be measured and paid for in square yards, which price shall be full compensation for deck preparation and testing, for furnishing and applying the overlay courses including saw cutting joints.

Payment will be made under:

Pay Item	Pay Unit
Epoxy Concrete Overlay	Square Yard