



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000

Charles A. Kilpatrick, P.E.
Commissioner

November 25, 2014

Order No.: G70
Route: 29
Project: (NFO) 0029-104-248, C501
FHWA: STP-5104(229)
District: CULPEPER
City: CHARLOTTESVILLE
Bids: 10:00 A.M. WEDNESDAY, DECEMBER 17, 2015

To Holders of Bid Proposals:

Please make the following changes in your copy of the bid proposal for the captioned project:

BID PROPOSAL

Substitute page 2 of the TABLE OF CONTENTS FOR PROVISIONS since special provision copy note HYDRAULIC CEMENT CONCRETE (CITY MIX INTEGRAL COLOR) 11-20-14 and special provisions for SOUND WALL ARCHITECTURAL FINISH 10-22-14 and CITY OF CHARLOTTESVILLE HYDRAULIC CEMENT CONCRETE 11-20-14 have been added.

Add pages 290 to 297.

Don E. Silies
Director of Contracts
Construction Division

MAD
Enclosures

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TABLE 2. CONSTRUCTION EQUIPMENT NOISE EMISSION LIMITS

Equipment Description	Impact Device?	Lmax(slow) at 50 feet (dBA)
All Other Equipment > 5 HP	No	85
Auger Drill Rig	No	85
Backhoe	No	80
Bar Bender	No	80
Boring Jack Power Unit	No	80
Chain Saw	No	85
Clam Shovel (dropping)	Yes	93
Compactor (ground)	No	80
Compressor (air)	No	80
Concrete Batch Plant	No	83
Concrete Mixer Truck	No	85
Concrete Pump Truck	No	82
Concrete Saw	No	90
Crane	No	85
Dozer	No	85
Drill Rig Truck	No	84
Drum Mixer	No	80
Dump Truck	No	84
Excavator	No	85
Flat Bed Truck	No	84
Front End Loader	No	80
Generator	No	82
Generator (<25 KVA, VMS signs)	No	70
Gradall	No	85
Grader	No	85
Grapple (on backhoe)	No	85
Horizontal Boring Hydraulic Jack	No	80
Hydra Break Ram	Yes	90
Impact Pile Driver	Yes	95
Jackhammer	Yes	85
Man Lift	No	85
Mounted Impact Hammer (hoe ram)	Yes	90
Pavement Scarifier	No	85
Paver	No	85
Pneumatic Tools	No	85
Pumps	No	77
Refrigerator Unit	No	82
Rivet Buster/Chipping Gun	Yes	85
Rock Drill	No	85
Roller	No	85
Sand Blasting	No	85
Scraper	No	85
Shears (on backhoe)	No	85
Slurry Plant	No	78
Slurry Trenching Machine	No	82
Soil Mix Rig	No	80
Tractor	No	84
Vacuum Excavator (Vac-Truck)	No	85
Vacuum Street Sweeper	No	80
Ventilation Fan	No	85
Vibrating Hopper	No	85
Vibratory Concrete Mixer	No	80
Vibratory Pile Driver	No	95
Warning Horn	No	85
Welder/Torch	No	73

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Hydraulic Cement Concrete (City Mix Integral Color) - Unless otherwise noted in the plans, all hydraulic cement concrete used in the construction of roadway elements shall be "City Mix" (Federal Color #30450; minimum 3500 psi) and meet the requirements of VDOT Road and Bridge Specifications, Section 217 Hydraulic Cement Concrete.

These items include but are not limited to the following: curb, curb & gutter, sidewalk, median barrier, standard retaining walls, inlets, end sections, end walls, foundations. All details and requirements of the VDOT Standard Items are unchanged and will apply with the exception of the use of City Mix Concrete. Measurement and payment of these items will be made based upon the VDOT Standard.

Concrete mix requirements for construction in the City of Charlottesville are included in the Contract Special Provisions.

11-20-14 (SPCN)

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SOUND BARRIER WALLS / ARCHITECTURAL FINISHES

October 22, 2014

Project 0029-104-248, C501

SECTION 519 – SOUND BARRIER WALLS of the Specifications is amended as follows:

Section 519.01 Description is amended to include the following:

Sound barrier walls shall conform to the plans, Section 519 of the Specifications, and the provisions herein.

Section 519.01 (a) Acoustic Performance Standards is amended to include the following:

4. Ground-mounted or retaining wall supported sound barrier walls shall be precast concrete with a sound absorptive finish on the roadway side.

Section 519.01 (b) Design Standards is amended to include the following:

13. Failure on the part of the Contractor to acknowledge and address the requested changes after the second review request by the Department may result in the Department assessing further review costs to the Contractor and deducting such costs from monies due the Contractor on the next progress estimate.
14. The height of the sound barrier walls shall meet but not exceed the elevation of sound attenuation line depicted in the plans except as may be minimally necessary to “step” panels due to changes in grade at wall locations.

Section 519.03 – Procedures is amended as follows:

Section 519.03 (a) Foundations is amended to include the following:

The Contractor is advised that the Department has not performed subsurface investigation to locate existing utilities on this project. Therefore, it shall be the Contractor's responsibility to perform this work so as to avoid utility conflicts with the construction associated with the proposed sound barrier wall.

The geological data and soil parameters to be used for foundation design are shown on the plans.

Relative to the proposed sound barrier, the Contractor shall provide written notice to the Department of any anticipated utility impacts prior to performing the affected work.

Relative to the proposed Sound Barrier, the Department will not be responsible for any claims for additional compensation from the Contractor resulting from delays, inconvenience, or damage sustained by him attributable to interference by utility appurtenances or the operation of moving the Utilities.

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Section 519.03 (b) Piles and Post is amended to include the following:

Posts for ground-mounted sound barrier walls shall be structural concrete.
Posts for retaining wall mounted sound barrier walls shall be structural steel.

Concrete posts shall be federal color #30450. Structural steel posts if applicable shall be galvanized then powder-coated per VDOT specifications with the finish coat meeting federal color #30450 (to match concrete posts).

Section 519.03 (c) Panels is amended to add the following:

1. General Requirements

Finish on the roadway side of the precast concrete absorptive barrier shall be as shown in the Bid-builder's contract drawing submittal.

All Panels shall be colored on both the roadway and landowner sides. Sound barrier panels for both roadway and landowner sides shall be federal color #595B-36306.

The Architectural Finish on the roadway side and the landowner's side shall be the Virginia Dry Stack (Sound Wall Standard Drawing BSW-8A and BSW-8B Top Panel with Coping).

The top 12" of all top panels shall be smooth formed (i.e. minus either finish on both sides) so as to give the appearance of a "cap", though still maintaining the same width (depth) of the panel. The color of the top 12" of all panels shall match that of the concrete posts (color #30450).

The panels will not have decorative features or medallions.

The Contractor shall endeavor to design the wall when traversing a grade in such a manner that the finish profile of the top panels shall be as uniform in height as possible.

The Contractor shall not proceed with production fabrication of panels or posts until such items are reviewed and accepted by the Engineer.

Architectural Treatments

1. General Requirements

- e. **Description:** This section covers the construction of textured and colored formed concrete surfaces using designed form liners, and color stain system designed to duplicate the appearance of standard architectural designs. The work covered by this special provision consists of constructing textured surfaces on formed concrete surfaces as indicated on the Plans and in this Special Provision. The Contractor shall furnish all materials, labor, equipment, and incidentals necessary for the construction of sound barrier wall panels and one standard federal color stain.
- f. **Quality Assurance:** A Pre-Installation Meeting shall be scheduled with manufacturer(s) representative to assure understanding of proprietary-themed form liners use, color application, requirements for construction of mockup, and to coordinate the work.

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- g. **Submittals:** Shop drawings, including plans, elevations and details to show overall pattern, joint locations, and end, edge and other special conditions shall be submitted. Shop Drawings shall also indicate the Form Liner Supplier and Stain Supplier. Form ties, sample and description, showing method of separation when forms are removed shall be displayed on the shop drawings.
- h. **Job Conditions (Environmental requirements):** Apply color stain when ambient temperature is between 50 and 100 degrees F. Manufacturer shall be consulted if conditions differ from this requirement.
- i. Schedule color stain application with earthwork and back-filling of any wall areas making sure that all simulated stone texture is colored. Delay adjacent plantings until color application is completed. Coordinate work to permit coloring applications without interference from other trades. Design and pattern of the concrete surface shall follow VDOT's architectural treatments standard drawings. Seam lines or match lines caused from two or more form liners coming together will not be apparent when viewing final wall.

2. Concrete Form Liners

- a. Suppliers are subject to compliance with requirements, suppliers offering products that may be incorporated into the Work include but are not limited to, the following:

Hunt Valley Contractors, Inc.
3705 Crondall Lane
Owings Mills, MD 21117
Telephone: (410) 356-9677
<http://www.huntvalleycontractors.com/>

Greenstreak
3400 Tree Court Industrial Boulevard
St. Louis, Missouri 63122
Telephone: (800) 325-9504
<http://www.greenstreak.com/>

Symons Corporation
200 E. Touhy Avenue
Des Plaines, Illinois 60018
Telephone: (847) 298-3200
<http://www.symons.com/index.htm>

- b. The materials used in construction of the architectural treatment shall comply with Section 519 for concrete materials and form work. Furnish, store, prepare, apply, and cure all materials according to manufacturers' directions specified for the intended use.
 - i. **Form Liners:** The form liners shall be a high quality re-usable product manufactured of high strength urethane, which attaches easily to the forming system. Single use form liners will not be acceptable for this project. The liners shall be capable of withstanding anticipated concrete pour pressures without leakage causing physical or visual defects. The liners shall be removable without causing concrete surface deterioration.

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The Contractor is cautioned that the form oil shall be worked into all areas, especially pattern recesses. Form stripping methods and patching materials shall be compatible with the color system and be submitted to the Engineer for approval.

- ii. **Form Liner Theme Patterns:** The pattern for the architectural treatment for sound barrier walls for this project is shown in the project drawings. The dimension of form liners reveal from the outermost face of stone to the inside face of the grout joint shall be 2" on average with a 3" maximum. Specific form liner designs vary in finish pattern relief from 1/2" to 1 1/2". The form liners are designed to provide an architectural treatment to a sound wall or as determined by project requirements. Any proposed segments shall be shown on shop drawing submittals. Any variation in the length of the form liner modules shown on the Contract Documents shall be accommodated by adjusting (splicing in a matching textured liner or removing a segment and blending the joint) of the form liner without impacting the overall appearance of the pattern. Any field adjustment shall be done within the body of the pattern and not allow joints to line up between modules.
- iii. **Form Release Agents:** The form release agent shall be a non-staining petroleum distillate free from water, asphaltic and other insoluble residue, or equivalent product. Form release agents shall be mutually compatible with the color system to be applied.

3. Construction

General: Construct architectural treatment where shown in accordance with Section 519.03.

Maintain consistency of appearance among all surfaces treated according to this Section. The Engineer will visually inspect the element of work to which the architectural finish is applied, and upon the Engineer's approval of the appearance, that element of work will become the standard to which all other treated surfaces will be compared for acceptance.

The Engineer may reject any article whose appearance does not, in the sole judgment of the Engineer, provide the required level of visual consistency with the initially approved work.

- a. **Shop drawings:** Prior to beginning any work for the concrete to receive the simulated stone finish, working drawings representing the full size of the unit shall be provided for the simulated stone form liner pattern. The working drawings shall be drawn at a scale sufficient to show the detail of all stone and joint patterns, and the layout of the finish pattern.

The working drawings shall be submitted to the Engineer for approval. Any revisions to the working drawings shall be performed at no additional cost to the Department.

- b. **Sample panel:** Once the representative working drawings have been approved, the Contractor shall then provide and erect on site a 8'-0" high x 24'-0" long x 8" thick sample panel for specified theme form liner pattern. The sample panel shall be unreinforced and shall be constructed with all materials including form or wall ties proposed for use for constructing the predetermined architectural finish. Sample panels deemed unacceptable by the Engineer shall be removed from the project and replaced by additional sample panels at no additional cost to the Department.

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The location of the sample panel shall be readily visible from the proposed work where possible and placed as approved by the Engineer. The sample panel approved by the Engineer shall remain on the site as a basis for comparison for the work constructed on the project. All work constructed on the project shall duplicate this sample panel in form, architectural surface treatments, and appearance (texture, size, joint dimension and stone size). The Contractor shall dispose of the sample panel at the completion and acceptance of all work pertaining to the architectural treatment as determined by the Engineer.

- c. **Architectural finish:** Form liners shall be installed, prepared, stripped, handled or otherwise utilized in conformance with the manufacturer's recommendations, or as directed by the Engineer.
- d. **Form Liner Preparation:** Form liners shall be securely attached to forms in accordance with the manufacturer's recommendations, with less than a 1/4" seam. Blend form liner butt joints into the concept-themed pattern and finish off the final concrete surface. Create no visible vertical or horizontal seams or conspicuous form liner butt joint marks. At locations where the form liners are joined, carefully blend to match the balance of the concept-themed pattern. The Contractor shall have a technical representative from the form liner manufacturer on site for technical supervision during the installation and removal of form liners. Unless directed by the Engineer, installation and removal of form liners shall not be permitted if the technical representative is not present.

Form stripping and related construction shall avoid creating defects in finished surface.

- e. **Form Release:** Form release agent should be worked into all areas, especially pattern recesses.
- f. **Finishing:** All form tie holes and other defects in finished uncolored surface shall be repaired in accordance with Section 519.03.

Reinforced concrete shall be finished in accordance with the VDOT Road and Bridge Specifications except that curing of concrete should be done to accommodate the application of coloring and surface finish treatment.

- g. **Grout Pattern Joints:** Grout pattern joints shall be constructed to simulate the appearance of mortared joints produced in laid up masonry work. Grout pattern joints shall be produced in accordance with the form liner / concrete color system manufacturer.

4. Color Stain Coating

- a. **Description:** This work shall consist of furnishing and applying color stain coating in accordance with this provision and in conformity with the details and locations indicated on the plans
- b. **Detail Requirements**
 - i. **Locations:** Except as otherwise specified on the plans, the color stain coating shall be applied to all exposed sound wall elements, including sound barrier coping and posts. Copings, parapets, overhangs, decks, barriers, etc. shall NOT have the color stain coating applied unless otherwise specified on the plans.

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- ii. **Procedures:** The concrete stain coating shall be applied in accordance with the manufacturer's recommendations, except as otherwise specified. The color surface color coating shall not be applied until all concrete placement operations for the particular structure have been completed. The concrete surface shall be clean, free of any curing agents, form release agents, foreign substances, or signs of efflorescence at the time of application.

All work shall be performed by experienced workmen familiar with concrete finishing work and with the materials specified. Surfaces not to be treated shall be protected from splatter.

Materials shall be delivered to the job site in sealed containers bearing the manufacturer's labels. Materials shall be mixed and applied in accordance with the manufacturer's printed instructions of which two copies shall be furnished the Engineer.

All architectural treatment surfaces that are to be stained and any patching that have been done in these areas shall be at least 30 days old.

Clean surface prior to application of stain materials to assure that surface is free of latency, dirt, dust, grease, efflorescence, paint, or other foreign material, following manufacturer's instructions for surface preparation. Do not sandblast. Preferred method to remove latency is pressure washing with water, minimum 3000 psi (a rate of three to four gallons per minute), using fan nozzle perpendicular to and at a distance of one or two feet from surface. Completed surface shall be free of blemishes, discoloration, surface voids, and unnatural form marks.

- iii. **Protection:** Where exposed soil or pavement is adjacent which may spatter dirt or soil from rainfall, or where surface may be subject to over spray from other processes, provide temporary cover of completed work.

Section 519.04 Measurement and Payment is amended to include the following:

NS Noise Barrier will be measured in accordance with Sound Barrier Walls except at locations for integrated retaining structures shall include the required 2'-6" minimum embedment shown in the contract documents, however, any additional wall structure required beyond that limit will be considered incidental and not measured for separate payment. The exposed face of the retaining wall for sound barrier shall receive the same surface treatment as that side of the sound barrier, and shall be incidental to the cost of NS Noise Barrier. The fill face of the retaining wall shall have a plain concrete finish.

The cost for color stain coating and anti-graffiti coating shall be incidental to the cost of NS Noise Barrier.

Payment shall be in accordance with Section 519.04.

Cast-in-place Noise Barrier Footing will be paid for at the contract unit price per linear foot, which price shall be full compensation for the noise barrier footing on top of MSE Wall B, complete in place. This price shall include shop drawing preparation and submission, foundation preparation, formwork, furnishing and placing reinforcing steel and the corrugated steel post sleeve, furnishing and placing concrete, and furnishing and placing all imbedded items, water stops, EPS joint filler, joint materials, and all labor, tools, equipment and incidentals necessary to complete the work.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
CITY OF CHARLOTTESVILLE HYDRAULIC CEMENT CONCRETE

November 20, 2014

H. Hydraulic Cement Concrete Construction

Hydraulic Cement Concrete (Concrete) used in the construction of roadway elements shall meet the requirements of VDOT Road and Bridge Specifications, current edition, Section 217 – Hydraulic Cement Concrete. Concrete mix requirements for construction in the City of Charlottesville are presented in Table 2-1 below.

TABLE
2-1
CONCRETE MIX REQUIREMENTS

Class	Design Strength (1)	Cement (2)	Fine Aggregate (3) (4)	Coarse Aggregate (3) (4)	Water
A3	3000 psi	588 lb/cu yd	1362 lb/cu yd	1811 lb/cu yd	33.5 gal/cu yd
City Mix (9)	3500 psi	588 lb/cu yd	1260 lb/cu yd	1811 lb/cu yd	33.5 gal/cu yd
A4	4000 psi	635 lb/cu yd	1219 lb/cu yd	1811 lb/cu yd	33.5 gal/cu yd
Flowable Fill	30 psi	(10)	(10)	--	(10)

Class	W/C Ratio (5)	Fly Ash	AE Range (6)	WR (7)	HRWR (8)	Slump Range Inches
A3	0.56	--	6 +/- 2%	--	--	1-5"
City Mix	0.49	Not allowed	6 +/- 2%	--	--	1-5"
A4	0.45	--	6 +/- 1%	--	--	2-4"
Flowable Fill	(10)	(10)	--	--	--	8-10"

NOTES:

- (1) Minimum compressive strength in psi at 28 days.
- (2) Minimum amount of Type I or Type II Portland Cement per ASTM C-150. (3) Saturated surface dry weight.
- (4) #57 size manufactured and tested for acceptance by ASTM C33 and The Virginia Department of Transportation Road and Bridge Specifications.
- (5) Maximum water - cementitious ratio by weight.
- (6) AE is percent air-entrainment. AE admixtures to meet or exceed requirements of ASTM C-260 and AASHTO M-154.
- (7) WR is water-reducer admixture. WR admixtures to meet or exceed requirements of ASTM C-494 and AASHTO M-194.
- (8) HRWR is high-range water-reducer admixture. HRWR admixtures to meet or exceed requirements of ASTM C-494 Types A & F and AASHTO M-194 Types A & F.
- (9) "City Mix" to shall be Federal color # 30450. "City Mix" shall meet requirements of VDOT A3.5 concrete unless otherwise indicated.
- (10) Mix design shall be submitted for approval with laboratory test data verifying compliance with 28-day compressive strength requirements. Mix design shall be approved by the City Engineer prior to placement.