



# **P R O J E C T M A N U A L**

**BRANDON AVENUE OVER MURRAY RUN BRIDGE  
REHABILITATION  
ROANOKE, VIRGINIA**

**ITB No. 16-11-06**

**Date: June 10, 2016**

**Purchasing Division  
Monica Cole, Senior Buyer  
215 Church Avenue, S.W., Room 202  
Roanoke, Virginia 24011  
(540) 853-2871  
Fax (540) 853-1513**

**CITY OF ROANOKE, VIRGINIA**

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ROANOKE, VIRGINIA**

**ITB NO. 16-11-06**

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**CITY OF ROANOKE, VIRGINIA**

Sealed Bids for: **BRANDON AVENUE OVER MURRAY RUN BRIDGE REHABILITATION  
ROANOKE, VIRGINIA**

**ITB NO. 16-11-06**

**This project is generally described as a 36' cast-in-place double cell concrete box culvert extension, replacement of steel beams with precast segmental concrete slabs, scour repair, and associated work near the intersection of Brandon Avenue, SW and Windsor Avenue, SW.**

Sealed bids will be received by the City of Roanoke by the Purchasing Division, or a designee, 215 Church Avenue, S.W., Room 202, Roanoke, Virginia 24011, at or before 2:00 p.m., local time, on July 1, 2016. Bids received after 2:00 p.m. will not be accepted or considered. If the Noel C. Taylor Municipal Building is closed for business at the time scheduled for the bid opening, the sealed bid will be accepted and opened on the next business day of the City, at the originally scheduled hour.

The Invitation to Bid, Instructions to Bidders, plans, specifications, the Contract, and other Contract Documents may be examined during business hours at the Office of the City Engineer, 215 Church Avenue, S.W., Room 350, Roanoke, Virginia 24011 (Phone: 540-853-2731); or in the City of Roanoke Purchasing Division office, 215 Church Avenue, S.W., Room 202, Roanoke, Virginia 24011 (Phone: 540-853-2871).

Documents may be viewed and/or downloaded from the City of Roanoke Purchasing Division's Vendor Self Service system at <https://vss.roanokeva.gov> or from the Purchasing Division's website at [www.roanokeva.gov/purchasing](http://www.roanokeva.gov/purchasing).

A non-mandatory pre-bid conference will be conducted on Monday, June 20, 2016, at 10:00 a.m., local time, at the Engineering Conference Room, Noel C. Taylor Municipal Building, 215 Church Avenue, SW, Room 350, Roanoke, Virginia.

Bids may not be withdrawn for a period of sixty (60) calendar days after the opening of bids unless the bid is substantially lower than the other bids because of a clerical error as defined in Section 2.2 - 4330, of the Code of Virginia (1950), as amended. Pursuant to Section 2.2 - 4330 (B)(1), the bidder shall give notice in writing and shall submit the original work papers with such notice to the City of its claim of right to withdraw the bid within two (2) business days after the opening of bids.

The City expressly reserves the right to cancel this ITB and/or reject any or all bids, to waive any informality or irregularity in the bids received, and to accept a bid which is deemed to be in the best interest of the City.

Simone Knowles, Manager  
Purchasing Division  
City of Roanoke, Virginia

## **INVITATION TO BID**

### **CITY OF ROANOKE, VIRGINIA**

Sealed Bids for: **BRANDON AVENUE OVER MURRAY RUN BRIDGE REHABILITATION  
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**This project is generally described as a 36' cast-in-place double cell concrete box culvert extension, replacement of steel beams with precast segmental concrete slabs, scour repair, and associated work near the intersection of Brandon Avenue, SW and Windsor Avenue, SW.**

Sealed bids will be received by the City of Roanoke by Monica Cole, Senior Buyer, Purchasing Division, or a designee, Noel C. Taylor Municipal Building, 215 Church Avenue, S.W., Room 202, Roanoke, Virginia 24011, at or before 2:00 p.m., local time, on July 1, 2016, at which time all bids received will be publicly opened and read. Bids received after 2:00 p.m. will not be accepted or considered. The time of receipt shall be determined by the time clock stamp in the Purchasing Office, or if it is not working, such time shall be determined by the Purchasing official who is to open the bids. If the Noel C. Taylor Municipal Building is closed for business at the time scheduled for the bid opening, the sealed bid will be accepted and opened on the next business day of the City, at the originally scheduled hour. This project is generally described as set forth above.

The Instructions to Bidders, plans, specifications, the Contract, and other Contract Documents are incorporated herein by reference. Copies of these items may be examined during business hours at the Office of the City Engineer, Noel C. Taylor Municipal Building, 215 Church Avenue, S.W., Room 350, Roanoke, Virginia 24011 (Phone: 540-853-2731); or in the City of Roanoke Purchasing Division office, 215 Church Avenue, S.W., Room 202, Roanoke, Virginia 24011 (Phone: 540-853-2871). Bidders are cautioned to review bid documents thoroughly before submitting a bid.

Copies of the documents may be viewed and/or downloaded from the City of Roanoke Purchasing Division's Vendor Self Service system at <https://vss.roanokeva.gov> or from the Purchasing Division's website at [www.roanokeva.gov/purchasing](http://www.roanokeva.gov/purchasing). If you have any problems accessing the documents, you may contact Purchasing at 853-2871 or [purchasing@roanokeva.gov](mailto:purchasing@roanokeva.gov). The City will not be responsible for documents obtained from any other source.

All Contract Documents prepared and/or furnished by the City Engineer shall be the exclusive property of the City of Roanoke, Virginia, and shall not be used for any other project(s).

Each bidder is solely responsible for ensuring that such bidder has the current complete version of the Bid Documents prepared for the project, including any addenda issued by the City, before submitting a bid.

A non-mandatory pre-bid conference will be conducted on Monday, June 20, 2016, at 10:00 a.m., local time, at the Engineering Conference Room, Noel C. Taylor Municipal Building, 215 Church Avenue, SW, Room 350, Roanoke, Virginia.

Bidders and all subcontractors are required to comply with all applicable city, state, and federal laws, ordinances, and regulations; and are required to be properly licensed under Sections 54.1-1100, et seq., Code of Virginia (1950), as amended. If applicable, Bidders shall deposit with their bid a Bid Security executed in the amount and form stipulated in the Instructions to Bidders.

The City expressly reserves the right to cancel this ITB and/or reject any or all bids, to waive any informality or irregularity in the bids received, and to accept a bid from the lowest responsive and responsible bidder which is deemed to be in the best interest of the City.

If an award of a contract is made, notice of the award, or the announcement of the decision to award, will be made by posting a notice of such award or announcement in the foyer area of the second floor of the Noel C. Taylor Municipal Building at 215 Church Avenue, S.W., Roanoke, Virginia 24011 and also on the City website at [www.roanokeva.gov/purchasing](http://www.roanokeva.gov/purchasing) (select the Awarded Bids link).

To determine the lowest responsive and responsible bidder who may be awarded a Contract for the Work, the criteria set forth in or requested pursuant to the Instructions to Bidders or in the Bid Documents may be considered.

By submitting a bid, each bidder agrees that this is a solicitation of bids and each bidder agrees to be solely responsible for the cost or expense of its bid and the City shall have no responsibility for such costs or expenses.

If a certain brand, make, item or manufacturer is specifically and exclusively required or called for in the plans, specifications, or other contract documents, then that brand, make, item, or manufacturer shall be used unless otherwise agreed to by the City, in its sole discretion. Otherwise, an equivalent item can be requested as set forth in Section 10 of the Instructions to Bidders, or other Contract Documents.

If the bid by the lowest responsive and responsible bidder exceeds available funds, the City reserves the right to negotiate with the apparent low bidder pursuant to Section 2.2-4318 of the Code of Virginia. The conditions and procedures under which such negotiation may be undertaken are set forth in Section 2.2-4318, and Section 14.3 of Instructions to Bidders. Any such negotiated Contract shall be subject to final approval by the City in its sole discretion.

Bids may not be withdrawn for a period of sixty (60) calendar days after the opening of bids unless the bid is substantially lower than the other bids because of a clerical error as defined in Section 2.2 - 4330, of the Code of Virginia (1950), as amended. Pursuant to Section 2.2 - 4330 (B)(1), the bidder shall give notice in writing and shall submit the original work papers with such notice to the City of its claim of right to withdraw the bid within two (2) business days after the opening of bids.

The successful bidder shall comply with the Code of Virginia nondiscrimination provisions of Section 2.2-4311 and the Drug-free workplace provisions of Section 2.2-4312.

Pursuant to Code of Virginia, Section 2.2 - 4343.1, be advised that the City of Roanoke does not discriminate against faith-based organizations.

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**CITY OF ROANOKE, VIRGINIA**

**INSTRUCTIONS TO BIDDERS**

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## CITY OF ROANOKE, VIRGINIA

### INSTRUCTIONS TO BIDDERS

#### SECTION 1. DEFINITIONS

Definitions contained in Section 1 of the General Conditions are incorporated herein by reference. The bidder should refer to the General Conditions for definitions used in the Contract Documents. "Successful Bidder" is defined as the bidder to whom the City makes an award.

#### SECTION 2. EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- 2.1 Each bidder is responsible for examining carefully the site of the Work and the Contract and Bid Documents relating to the Work. By submitting a bid, the bidder acknowledges and agrees that it has examined and considered the conditions to be encountered at and adjacent to the site, the character, quality, and quantities of work to be performed, the material to be furnished, other requirements of the Contract Documents, and to have waived any claim or objection based thereon. Claims as a result of failure to have done such examination will not be considered by the City. See Section 8 of the General Conditions entitled "Conditions at Site."
- 2.2 Each bidder shall promptly notify, in writing, the Purchasing Division and Engineering Division of any ambiguity, inconsistency, or error which may be discovered upon examination of the Invitation to Bid, any Bid Documents, and/or any related documents.

#### SECTION 3. CLARIFICATION AND ADDENDA

- 3.1 **Questions on Contract Documents:** All questions about the meaning or intent of the Contract Documents shall be directed to the Purchasing Department. Questions received less than seven (7) calendar days prior to the date for opening bids may not be answered. Bidders may only rely upon written addenda issued by the Purchasing Department and no other communication or interpretation, whether oral or written, shall have any effect or efficacy.
- 3.2 **Addenda:** Any changes, interpretations, or clarifications that may be made to the Contract Documents will be in the form of an addendum. Receipt by the bidder of such addendum shall be acknowledged on the Bid Form. **However, all bidders are solely responsible for making sure that they have received and reviewed any and all addenda that may have been issued for this Invitation to Bid.**
- 3.3 **Interpretation:** All decisions made in good faith by the City Engineer on the meaning or interpretation of the Contract Documents shall be final.

- 3.4 Bidders Responsibility:** All bidders are responsible for ensuring that they have received and examined all bid documents, including all addenda, if any, that may have been issued before submitting their bid. The City is not responsible for any Invitation to Bid documents obtained from any source other than the City. If you have any questions, contact the Purchasing Division by telephone at (540) 853-2871, by fax at (540) 853-1513, or by email at [monica.cole@roanokeva.gov](mailto:monica.cole@roanokeva.gov).
- 3.5 Quantities:** Where the bid documents stipulate a unit price, the quantities of the work and material set forth in the bid form or on the plans approximately represent the work to be performed and material to be furnished and are for the purpose of comparing the bids on a uniform basis. Payment shall be made to the Contractor only for the actual quantities of work performed or material furnished in accordance with the plans and specifications and it is understood that the quantities may be increased or decreased as provided in the General Conditions without in any way invalidating the bid prices.

#### **SECTION 4. TIME FOR COMPLETION**

- 4.1 Time for Completion:** Unless otherwise stated or a specific time period is set forth on the Bid Form, each bidder shall indicate in the appropriate blank the number of consecutive calendar days required by such bidder to substantially complete the specified Work, with Final Acceptance to be achieved within thirty (30) consecutive calendar days thereafter. However, no such time period may exceed the number of consecutive calendar days set forth in the Bid Form.
- 4.2 Weather:** The bidder, in preparing and submitting its bid, is required to take into consideration normal weather conditions. Normal weather means a range of weather conditions which might be anticipated, based on weather data for the past ten years. Unusual weather is weather which could not be anticipated based on such data. Normal weather conditions shall be determined from the public historical records available from the National Weather Service. The data sheets to be used shall be for the locality or localities closest to the site of the Work. No additional compensation will be paid to the Contractor because of unusual weather conditions; however, an extension of time for unusual weather may be considered by the City as indicated in the General Conditions.
- 4.3 Liquidated Damages:** The amount indicated on the Bid Form as liquidated damages as described in the General Conditions (Section 21) shall be due from and paid by the Contractor to the City and/or, in the City's discretion, shall be withheld from the Contractor's Request for Payment, and/or retainage, for each consecutive calendar day of delay in excess of the stated time required to complete the Work, unless modified by a Change Order.

#### **SECTION 5. CONTRACTORS' LICENSES, PERMITS, FEES, AND TAXES**

- 5.1 State License:** Bidders and all subcontractors are required to comply with all applicable city, state, and federal laws, ordinances, and regulations, including, but not limited to,

registration with the Virginia State Corporation Commission if required by law; and are required to be properly licensed in accordance with Sections 54.1-1100, *et seq.*, of the Code of Virginia, which presently requires one to be licensed as a "Class A Contractor" before submitting a bid of One Hundred Twenty Thousand Dollars (\$120,000) or more; or to be licensed as a "Class B Contractor" before submitting a bid of Ten Thousand Dollars to One Hundred Twenty Thousand Dollars (\$10,000 to \$120,000); or to be licensed as a "Class C Contractor" before submitting a bid of One Thousand Dollars to Ten Thousand Dollars (\$1,000 to \$10,000). There are also cumulative total amounts which can require a certain class of license and bidders should check these requirements as well. (See also Section 7 of the General Conditions.)

## **5.2 Other Licenses, Permits, Fees, and Taxes:**

- a. Successful Bidder is responsible for paying on time for all licenses, permits, fees, and taxes applicable to the project. Such charges and fees include, but are not limited to the applicable building permits, mechanical and electrical permits, hauling and dumping of material, and such bidder will have to possess a City business license and be responsible for paying City of Roanoke business license taxes, as applicable. See Section 3 of the General Conditions.
- b. Right of Way Excavation Permit – Bidders are advised that all work within the public rights of way requires a Right of Way Excavation Permit from the City's Department of Public Works and/or the City's Department of Planning, Building and Development. The Successful Bidder, at its cost, shall be responsible for obtaining such permit(s) and providing a separate Excavation Permit Bond(s) in accordance with the requirements of the City's Right of Way Excavation and Restoration Standards, Revised July 1, 2013. Any such Bond(s) or other items are in addition to the Performance Security and Labor and Material Payment Security required for this Project.

**5.3 Virginia State Corporation Commission:** Each Bidder/Offeror who is a stock or nonstock corporation, limited liability company, business trust, or a limited partnership or other business entity shall be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if required by law. Each such Bidder/Offeror shall include in its bid response/proposal response the Identification Number issued to it by the Virginia State Corporation Commission (SCC) and should list its business entity name as it is listed with the SCC. Any Bidder/Offeror that is not required to be authorized to transact business in the Commonwealth as a domestic or foreign business entity as required by law shall include in its bid response/proposal response a statement describing why the Bidder/Offeror is not required to be so authorized. (See Va. Code Section 2.2-4311.2).

## **SECTION 6. PREPARATION AND SUBMISSION OF BIDS**

**6.1 Bid Form:** Bids shall be submitted on the Bid Form furnished, or copy thereof, and shall be completed and signed in ink. A copy of the Bid Form is provided in these specifications for the information of bidders only. Except as may be otherwise stated, all blank spaces in the Bid Form should be filled in and no changes shall be made to the Bid Form. Erasures or other changes in a bid amount must be explained or noted over

the initials of the bidder. Bids containing any conditions, omissions, unexplained erasures, alterations or items not called for in the bid documents, or irregularities of any kind, may be rejected by the City as being incomplete and/or non-responsive. NO CHANGES MADE TO THE BID FIGURES BY NOTATIONS ON THE OUTSIDE OF THE ENVELOPE WILL BE CONSIDERED IN THE REVIEW AND TABULATION OF BIDS OR FOR ANY OTHER PURPOSE.

- 6.2 Escrow:** In accordance with Section 2.2 - 4334, of the Code of Virginia, for bids of \$200,000 or more for construction of highways, roads, streets, bridges, parking lots, demolition, clearing, grading, excavating, paving, pile driving, miscellaneous drainage structures, and the installation of water, gas, sewer lines and pumping stations, the Bid Form will include a space for the bidder to indicate an option to use the escrow account procedure in order to have retained funds paid to an escrow agent. Otherwise, unless stated in the Supplemental General Conditions, no escrow will be provided.
- 6.3 Signatures:** Each bid must give the full business address of the bidder and be signed by bidder with its usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the state in which they are incorporated and by the signature and designation of the president or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below each signature. A bid by a person who affixes to his signature the word "President," "Authorized Agent," or other designation without disclosing such principal firm or employer, may be held to be the bid of the individual signing. Satisfactory evidence of the authority of the president or authorized agent signing on behalf of the corporation shall be furnished upon request by the City.
- 6.4 Bid Amounts:** Bidders shall indicate in the appropriate blank spaces on the Bid Form the amounts for the base bid and any alternates, written with ink or typed, in both words and figures. In the event of a discrepancy between the words and figures expressed in the base bid or alternates, the word amount shall govern. Any unit prices for separate items as called for on the Bid Form shall be written with ink or typed in figures in the appropriate blanks.
- 6.5 Bid Package Checklist:** Bidders should include with their bid the documents or information set forth in the Bid Package Checklist. See Section 16.

## **SECTION 7. RECEIPT AND OPENING OF BIDS**

- 7.1 Delivery of Bid:** It is the responsibility of the bidder to assure that its bid is delivered to the place designated for receipt of bids and prior to the time set for receipt of bids. No bids received after the time designated for receipt of bids will be considered.
- 7.2 Receipt of Bid:** The Bid Form, the Bid Security, and all other documents required to be submitted with the bid shall be enclosed in a sealed opaque envelope and addressed as follows:

Monica Cole, Senior Buyer  
Purchasing Division  
Noel C. Taylor Municipal Building  
215 Church Avenue, S.W., Room 202  
Roanoke, Virginia 24011

Place in front lower left-hand corner of envelope the project title and bid number as indicated at the top of the Invitation to Bid. Place in the upper left-hand corner of the envelope the bidder's name, mailing address, and Virginia Contractor number.

- 7.3 Opening of Bid:** Bids will be opened and read at the time and place stated in the Invitation to Bid. The contents may be made public in accordance with Section 2.2-4342 of the Code of Virginia. The officer or agent of the City, whose duty it is to open them, will decide when the specified time has arrived. No responsibility will be attached to any officer or agent for the premature opening of a bid not properly addressed and identified.
- 7.4 Withdrawing Bid:** After the date of opening of bids, no bid may be withdrawn for at least sixty (60) calendar days after such opening date, except as provided in Section 12 of these Instructions to Bidders.

## **SECTION 8. BID SECURITY**

Each bid of \$100,000 or more must be accompanied by a Bid Security in an amount equal to five (5%) percent of the maximum possible bid price in accordance with Sections 2.2-4336 and 2.2-4338 of the Code of Virginia. The Bid Security shall be furnished in one of the following forms:

- a. Bid Bond, in a form substantially similar to the one provided in the Contract Documents, made payable to the City of Roanoke and properly executed by the bidder as Principal and a Corporate Surety authorized to transact business in the Commonwealth of Virginia. Attorneys-in-fact who execute Bid Bonds must file with the bond a certified copy of their Power of Attorney.
- b. Certified check, cashier's check, or cash escrow deposited with the City of Roanoke Treasurer in the face amount required for the Bid Security and made payable to the City of Roanoke.
- c. Personal Bond or Letter of Credit issued by an authorized financial institution in the face amount required for the Bid Security, made payable to the City of Roanoke. These forms of security shall be submitted for review and must be approved by the City Attorney, in his/her sole discretion, at least three (3) business days prior to receipt of bids. Approval will be based upon a determination that the form of security offered will adequately protect the interests of the City as equivalent to a corporate surety's bond.
- d. For return of Bid Security, see Sections 13 and 14 of these Instructions to Bidders.

## **SECTION 9. INTENT**

- 9.1 Work Required:** The City requires that the Successful Bidder perform a complete and satisfactory job in accordance with the Contract Documents.

- 9.2 Conflicts in Contract Documents:** Anything called for by one of the Contract Documents and not called for by the others shall be of like effect as if required or called for by all Contract Documents. In the case of conflict between the Contract Documents, the Contract Documents shall take precedence in the following order: The Contract; addenda starting with the last issued addendum; the Supplemental General Conditions; the General Conditions; the Special Conditions; the specifications with attachments; and the drawings.
- 9.3 Work Not Described:** All work not specifically described in the Contract Documents, yet required to produce a fully functional and properly operating project shall be provided even though every item or minor detail for the proper installation or successful operation of the entire Work is not mentioned in the Contract Documents.
- 9.4 Completion of Work:** The Successful Bidder acknowledges and agrees that it has taken into account in its bid the requirements of the bid and Contract Documents, local conditions, availability of material, equipment, labor, and any other factors which may affect the performance of the Work. The Successful Bidder agrees and warrants that it will complete the Work not later than the time period or date indicated for completion.

## **SECTION 10. MATERIAL AND WORKMANSHIP**

- 10.1 "Or Equal" Clause:** The particular brand, make of material, device, or equipment described in the Contract Documents establishes a standard of required function, economy of operation, dimension, appearance, and quality to be met by any proposed substitution. No substitution will be considered unless a written request for approval has been submitted by the bidder and has been received by the Purchasing Department at least ten (10) calendar days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data, and any other information necessary or required by the City Engineer for an evaluation. A statement setting forth any changes in other material, equipment, or work that incorporation of the substitute would require shall be included. The burden of proof of merit of the proposed substitute is upon the bidder.
- 10.2 Approval of Substitution:** The City Engineer's decision of approval or disapproval of a proposed substitution shall be in his sole discretion and shall be final. If the City Engineer approves any proposed substitution, such approval will be set forth in an addendum issued to all recorded bidders. Bidders shall not rely on approvals made in any other manner.
- 10.3 Adaptation Due to Substitution:** The Successful Bidder shall be responsible for making all changes in the Work necessary to adapt and accommodate any equivalent product or item which it uses. The necessary changes shall be made at the Successful Bidder's sole expense.

## **SECTION 11. STATEMENT OF QUALIFICATIONS**

Each bidder shall be prepared to submit evidence of qualifications, experience, and financial ability to perform the Work set forth in the Contract Documents, should such be required by the

Contract Documents or requested by the City Engineer. Furthermore, each bidder must notify the Purchasing Division and Engineering Division if bidder has been terminated from any contract or job in the last three (3) years and/or if bidder has been during the last three (3) years debarred from bidding on or performing any federal, state or local procurement or job. If so, bidder must supply details of such matters by separate written statements included with bidder's response. Any bidder who is currently debarred will not be eligible to bid on this project.

## **SECTION 12. ERRORS IN BIDS**

- 12.1 Withdrawal of Bid:** A bidder may withdraw its bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor, or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents, and material used in the preparation of the bid sought to be withdrawn.
- 12.2 Withdrawal Procedure:** The bidder shall give notice in writing and shall submit the original work papers with such notice to the City of its claim of right to withdraw its bid within two (2) business days after the conclusion of the opening of bids as set forth in Section 2.2 - 4330 (B)(1), of the Code of Virginia.
- 12.3 Withdrawal Requirements:** Other applicable provisions of Section 2.2 - 4330 of the Code of Virginia shall apply to any errors in bids or any requested withdrawal due to errors in bids.

## **SECTION 13. REJECTION OF BIDS**

- 13.1 Rejection of Bids:** The City reserves the right to cancel the Invitation to Bid, to reject any or all bids, to reject the bid of a bidder who is not in a position to perform the contract, or to waive any informalities in any bid.
- 13.2 Bid Security Return for Rejected Bids:** The Bid Security will be returned to all rejected bidders after the City has issued and posted an Award.
- 13.3 Bid Security Return for Unsuccessful Bids:** Should a bid not be accepted by the City within sixty (60) consecutive calendar days after the opening of bids, or within such other time specified in the Bid Documents, each bidder may obtain its Bid Security from the City.

## **SECTION 14. ACCEPTANCE OF BIDS, EVALUATION OF BIDS, AWARD OF CONTRACT, AND SECURITY REQUIREMENTS**

- 14.1 Acceptance of Bids:** Each bidder should submit with its bid documentation the bidder's legal name and indicate the type of business entity bidder is operating under; i.e., if a corporation, bidder should enclose a copy of the Certificate of Incorporation issued by the State Corporation Commission; if a partnership, bidder should enclose a copy of the relevant portions of the Partnership Agreement; if a limited liability company, bidder should enclose a copy of the Certificate of Organization.

**14.2 Evaluation and Award to Lowest Responsive and Responsible Bidder:** To determine the lowest responsive and responsible bidder with respect to this bid, the following items, may be considered so as to protect the interest of the City:

- a. The total base bid plus any alternates (aka - additive bid item) the City elects to accept, if any. The City reserves the right to accept alternates in any order or combination.
- b. If a unit price contract is requested, the total amount based on the estimated quantities as set forth in the Bid Form will be considered. (The listed unit prices for each item will control and any mathematical errors may be adjusted by the Purchasing Division using the proper estimated quantities.)
- c. The ability, capacity and skill of the bidder to perform the contract or provide the services and/or items required.
- d. Whether the bidder can perform the contract promptly and within the time specified, without delay or interference.
- e. The character, integrity, reputation, judgment, experience and efficiency of the bidder.
- f. The quality of performance of previous contracts or services.
- g. The previous and existing compliance by the bidder with laws and ordinances relating to the contract, purchase or service.
- h. The equipment and facilities available to the bidder to perform the contract or provide the services and/or items.
- i. The sufficiency of the financial resources and ability of the bidder to perform the contract or provide the services and/or items.
- j. The quality, availability and adaptability of the supplies, materials, equipment or services to the particular use required.
- k. The ability of the bidder to provide future maintenance, parts and service for the use of the subject of the purchase or contract, if required.
- l. Bids shall be evaluated based on the requirements set forth in this Invitation to Bid, and other criteria to determine acceptability such as inspection, testing, quality, workmanship, delivery, suitability for a particular purpose and life cycle cost. The City, in its sole discretion, may elect to waive an informality in any bid.

Should a Contract be awarded to a bidder, it will be awarded to the lowest responsive and responsible bidder. If an award of a contract is made, notice of the award, or the

announcement of the decision to award, will be made by posting a notice of such award or announcement in the foyer area of the second floor of the Noel C. Taylor Municipal Building at 215 Church Avenue, S.W., Roanoke, Virginia 24011. Said notice or announcement will also be posted on the Purchasing web page at [www.roanokeva.gov/purchasing](http://www.roanokeva.gov/purchasing) (select Awarded Bids link).

- 14.3 Negotiation of Bid:** If the bid by the lowest responsive and responsible bidder exceeds available funds, the City reserves the right to negotiate with the apparent low bidder pursuant to Section 2.2-4318 of the Code of Virginia. The conditions and procedures under which such negotiation may be undertaken are that the appropriate City officials shall determine that the lowest responsive and responsible bid exceeds available funds and notify such bidder in writing of its desire to negotiate. Thereafter, negotiations with the apparent low bidder may be held to obtain a Contract within available funds involving discussions of reduction of quantity, quality, or other cost saving mechanisms. Any such negotiated Contract shall be subject to final approval of the City, in the sole discretion of the City.
- 14.4 Contract Execution:** The Successful Bidder shall be required, within fourteen (14) consecutive calendar days after receipt of the Contract, to return the signed Contract, and furnish to the City all other documents as enumerated hereinafter:
- a. Performance Security (if applicable)
  - b. Labor and Material Payment Security (if applicable)
  - c. Certificate of Insurance
  - d. Escrow Agreement (if applicable)
- 14.5 Security:** A Performance Security and a Labor and Material Payment Security each in the amount of one hundred percent (100%) of the contract amount for all contracts in excess of One Hundred Thousand Dollars (\$100,000) in accordance with Sections 2.2-4337 and 2.2-4338 of the Code of Virginia, shall be furnished by the Successful Bidder in one of the following forms:
- a. A Performance Bond and a Labor and Material Payment Bond, on forms as provided in the Contract Documents, made payable to the City of Roanoke, properly executed by the Successful Bidder as Principal and a Corporate Surety authorized to transact business in the Commonwealth of Virginia. Attorneys-in-fact who execute the bonds must file with each bond a certified copy of their Power of Attorney.
  - b. Certified checks, cashier's check, or cash escrow in the face amount required for the Performance Security and the Labor and Material Payment Security each made payable to the City of Roanoke.
  - c. Personal Bond or Letter of Credit issued by an authorized financial institution in the face amount required for the Performance Security and the Labor and Material Payment Security, made payable to the City of Roanoke. These forms of security must be approved by the City Attorney, in his/her sole discretion.

Approval will be based upon a determination that the form of security offered will adequately protect the interests of the City as equivalent to a corporate surety's bond.

**14.6 Escrow Agreement Form:** In the event the Contract meets the requirements as stipulated in Section 6.2 of these Instructions to Bidders and the Successful Bidder elects to use the escrow account procedure, the Escrow Agreement Form, as provided in the Contract Documents, shall be executed and submitted to the City within fifteen (15) calendar days after receipt of written notification of bid acceptance. If the executed Escrow Agreement Form is not submitted within the fifteen-day period, the Successful Bidder shall forfeit and waive the rights to the use of the escrow account procedure.

**14.7 Bid Security Return for Successful Bid:** Upon the execution of the Contract and approval of the Performance and Payment Securities, the Bid Security shall be returned to the Successful Bidder. Should the Successful Bidder fail or refuse to execute the Contract or furnish the required Performance and Payment Securities within the stipulated time, the Bid Security shall be due and paid to the City and the City shall be entitled to collect the Bid Security. In addition, the City may pursue any and all other remedies available to it at law or in equity against said bidder.

## **SECTION 15. ETHICS IN PUBLIC CONTRACTING**

The provisions, requirements, and prohibitions as contained in Sections 2.2 - 4367 through 2.2-4377, of the Code of Virginia, pertaining to bidders, offerors, contractors, and subcontractors are applicable to this project.

## **SECTION 16. BID PACKAGE CHECKLIST**

The following items must be completed and included in your bid package. Failure to include all required forms may result in rejection of the bid. If any of these documents were not included with your Project Manual, please contact the Office of the Purchasing Division at (540) 853-2871.

- a. Completed Bid Form (all pages).
- b. Properly Executed Bid Security (Bid Bond, Certified or Cashier's Check, etc., if applicable).

## **SECTION 17. PROTESTS**

Any bidder who wishes to protest or object to any award made or other decisions made pursuant to the Invitation to Bid may do so only in accordance with the provisions of Sections 2.2-4357, 2.2-4358, 2.2-4359, 2.2-4360, 2.2-4363, and 2.2-4364 of the Code of Virginia, and only if such is provided for in such Code Section. Any such protest or objection must be in writing signed by a representative of the entity making the protest or objection and contain the information required by the applicable Code Sections set forth above. Such writing must be delivered to the City Purchasing Manager within the required time period.

## **SECTION 18. MISCELLANEOUS**

- a. No bidder shall confer on any public employee having official responsibility for a purchasing transaction any payment, loan, subscription, advance, deposit or money, service, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is exchanged.
- b. The City may make investigations to determine the ability of the bidder to perform or supply the services or items as described in this Invitation to Bid. The City reserves the right to reject any bid if the bidder fails to satisfy the City that it is qualified to carry out the obligations of the proposed contract.
- c. The Successful Bidder must comply with the nondiscrimination provisions of Section 2.2-4311 of the Code of Virginia, which are incorporated herein by reference.
- d. The Successful Bidder must comply with the drug-free workplace provisions of Section 2.2-4312 of the Code of Virginia, which are incorporated herein by reference.
- e. It is the policy of the City of Roanoke to maximize and encourage participation by local, Small, Minority-Owned, Women-Owned, and Service Disabled Veteran-Owned businesses in all aspects of City contracting opportunities.
- f. The Successful Bidder shall comply with all applicable City, State, and Federal laws, codes, provisions, and regulations.
- g. Providers of any outside services shall be subject to the same conditions and requirements as the Successful Bidder in regards to law, code or regulation compliance. The City reserves the right of approval for any subcontract work, including costs thereof.
- h. This Invitation to Bid and all responses are subject to Section 2.2-4342 of the Code of Virginia regarding public inspection of records and the procedures a bidder must follow to protect trade secrets and proprietary information and could also be subject to the Virginia Freedom of Information Act.
- i. Conflict of Interests Act. The provisions, requirements and prohibitions as contained in Sections 2.2-3100, et. seq. of the Code of Virginia are applicable to this Invitation to Bid.
- j. The procurement provisions of the Code of the City of Roanoke (1979), as amended, Sections 23.2-1, et. seq., as well as the City Procurement Manual, apply to this Invitation to Bid, unless specifically modified herein. The City's Procurement Manual can be reviewed at the Purchasing office.
- k. Insurance. Successful Bidder, and any of its subcontractors, shall, at its or their sole expense, obtain and maintain during the life of the resultant contract the insurance policies and bonds required. Any required insurance policies and bonds shall be effective prior to the beginning of any work or other performance by Successful Bidder, or any of its subcontractors, under any resultant contract. The policies and coverages required are those as may be referred to in the sample contract and/or the general conditions or other documents of this Invitation to Bid.

- I. Each bidder is to notify in writing the Purchasing Division if any of bidder's owners, officers, employees, or agents, or their immediate family members, is currently, or has been in the past year, an employee of the City of Roanoke or has any responsibility or authority with the City that might affect the procurement transaction or any claim resulting therefrom. If so, please provide the Purchasing Division with the complete name and address of each such person and their connection to the City of Roanoke. Each bidder is advised that the Ethics in Public Contracting and Conflict of Interests Act of the Code of Virginia, as set forth in this Invitation to Bid, apply to this Invitation to Bid. Such information should be provided in writing before the bid opening date or may also be provided with the bid response.

**SECTION 19. SUPPLEMENTAL INSTRUCTIONS AND/OR ADDITIONAL INFORMATION FOR BIDDERS**

NOT USED.

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**ADOPTED FEBRUARY 22, 2005**

**CITY OF ROANOKE, VIRGINIA**

**Plan for Participation in Procurement  
Transactions of Small Businesses and  
Businesses Owned by Women and Minorities**

1. POLICY STATEMENT

It is the policy of the City of Roanoke to encourage participation by small businesses and minority-owned and women-owned business enterprises in all aspects of City contracting opportunities. In order to demonstrate its commitment to this policy, the procedures set forth in this document shall be followed whenever possible.

2. DEFINITIONS

A minority business enterprise (“MBE” or “MBES” in the plural form) is a business that is both owned and controlled by minorities. This means that minorities must own fifty-one percent of the business, and that they must control the management and daily operations of the business.

A women business enterprise (“WBE” or “WBES” in the plural form) is a business that is both owned and controlled by women. This means that women must own fifty-one percent of the business, and that they must control the management and daily operations of the business.

A small business (“SB” or “SBS” in the plural form) is a United States business that does not exceed fifty employees, is independently owned and operated, and is not dominant in its field or operation or an affiliate or subsidiary of a business dominant in its field of operation.

A minority is an individual who is a citizen or lawful resident of the United States and is Black, Hispanic, Asian American, American Indian, Alaskan Native or a member of another group who the Small Business Administration has determined is economically and socially disadvantaged under Section 8 (a) of the Small Business Act.

3. EMPLOYMENT DISCRIMINATION PROHIBITED

Every contract of over ten thousand dollars (\$10,000.00) to which the City is a party shall contain the provisions in subparagraphs (a) and (b) herein:

(a) During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
  2. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
  3. Notices, advertisement and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- (b) The contractor will include the provisions of the foregoing subparagraphs (a)(1), (2) and (3) in every subcontract or purchase order of over ten thousand dollars (\$10,000), with regard to the contract with the City, so that the provisions will be binding upon each subcontractor or vendor.

#### 4. LIST OF MBEs, WBEs AND SBs

The City's Purchasing Division will establish and maintain a list of minority-owned and women-owned business enterprises. As appropriate, this list may include vendors at regional, state and national levels. A separate list of local MBES and WBES shall be established and, when established, be made available or the master list shall be searchable for local vendors. The local area shall consist of the Roanoke Valley, which shall include those areas included in the metropolitan statistical area as defined by the United States Office of Management and Budget for Census Bureau data purposes. The regional area shall include all cities, counties and towns, within the Commonwealth of Virginia, any part of which fall within a 50 mile radius of the City of Roanoke.

The City's Purchasing Division will establish and maintain a list of small businesses at the regional level.

The Purchasing Division shall serve as the primary contact for businesses to request to be added to the MBE/WBE list or the small business list and for businesses, organizations or individuals desiring access to the lists.

In maintaining these lists, the City's Purchasing Division will cooperate with the Virginia Department of Minority Business Enterprise, the United States Small Business Administration and other public or private agencies.

The Purchasing Division will maintain a list of agencies and organizations that provide assistance and/or education to MBES, WBES and SBS and inform such businesses of the resources available to them. The list will contain the types of services offered and contact information. The Purchasing Division will assist other organizations in publicizing training opportunities for MBES, WBES and SBS.

## 5. ALL CONTRACTS

In procuring goods and services for the City, all City employees shall follow the guidelines and mandates contained in the Purchasing Division's Procurement Manual with regard to solicitation of MBES and WBES.

When bids or proposals are solicited directly from potential contractors, solicitations shall include, when possible, appropriate businesses from the lists maintained by and/or available to the Purchasing Division, including but not limited to the list from the Virginia Department of Minority Business Enterprise.

All solicitation, addenda and award actions over \$30,000 shall be posted on the City of Roanoke's web site <http://www.roanokeva.gov>

Invitation to Bid solicitation notices over \$50,000 and Requests for Proposals estimated to be over \$30,000 shall be advertised in both The Roanoke Times and The Roanoke Tribune whenever possible. Such Invitation to Bid solicitation notices and Requests for Proposals shall also be advertised on RVTV.

## 6. CONSTRUCTION CONTRACTS

This paragraph shall apply to all construction contracts whenever advertising of the Invitation to Bid is required.

The bid documents will contain a list of, or a reference to a list of, MBES, WBES and SBS. The list will be provided to assist and encourage the general contractors' use of the listed businesses as subcontractors.

The City will provide a copy of the plans and specifications for all construction projects to the Southwest Virginia Community Development Fund, F. W. Dodge of Roanoke, and Valley Construction News plan room(s) so that MBES, WBES and SBS can review the documents. The documents will also be available for review, at no charge, at the Office of the City Engineer.

The City Engineer, the Purchasing Manager and the Project Engineer will require that general contractors make a "best or good faith effort" to seek the participation of and utilize MBES, WBES and SBS as suppliers and subcontractors. General contractors will be required to show that they have made efforts to recruit MBES, WBES and SBS by incorporating into the bid or proposal form:

- a. Statements indicating efforts to negotiate with MBES, WBES and SBS and the results of such efforts. Bidders will be required to list those MBES, WBES and SBS from whom quotations for labor, materials, and/or services have been solicited, and state which MBES, WBES and SBS, if any, the contractor will use on the project if awarded the bid; and
- b. A certification that the contractor has made a good faith effort to utilize MBES, WBES and SBS whenever possible.

A bid response that does not contain such statements and certification will be deemed non-responsive and will be rejected.

If the contractor listed MBES, WBES and/or SBS that it would use on the project if awarded the bid and the contractor is awarded the bid, the contractor will be required to use his or her best efforts to utilize the MBES, WBES and SBS identified by the contractor unless the contractor can demonstrate a nondiscriminatory, sound, business reason for not using the MBE, WBE or SB. The City Engineer, in his or her sole discretion, will determine whether or not the contractor has demonstrated a nondiscriminatory, sound, business reason.

The contractor, in every monthly request for payment, shall submit a status report of MBE, WBE, and SB participation in the project to date. Payment shall not be issued to the contractor until such status report is submitted.

The Purchasing Manager will closely monitor the requirements of this section.

## 7. RACIAL DISCRIMINATION IN CONSTRUCTION CONTRACT BONDING AND INSURANCE

In construction contracting, if any person is found by the City Manager or a designee to have engaged in discrimination on the basis of race or gender in the granting of bonds or insurance to persons who contract with or desire to contract with the City, or to persons who receive subcontracts or desire to receive a subcontract in connection with a City contract, the person shall be deemed unqualified to submit a bond or insurance for any City construction contract unless and until the City Manager or designee determines that the discrimination has been purged and that adequate assurances have been made that it will not recur. Any determination by the City Manager of a violation of this section shall be reported in writing to City Council.

## 8. FEDERAL, STATE OR OTHER GRANT REQUIREMENTS

In addition to the provisions of this Plan, when the City is using funds subject to federal, state or other grant requirements with regard to MBES, WBES and/or SBS, the City's Department managing the specific solicitation will take all necessary affirmative steps to assure that the requirements of the grant or program are met.

## 9. ECONOMIC DEVELOPMENT

The Department of Economic Development will assist the Purchasing Division by providing MBES, WBES and SBS with information regarding the resources available to them and by referring such businesses to the Purchasing Division for additional information.

The Department of Economic Development will also include MBES, WBES and SBS in any programs it has to introduce and familiarize businesses with opportunities in the City.

## 10. DEBARMENT

Any offeror or bidder, or any principal thereof or person associated therewith, found to have engaged in substantial and intentional misrepresentation concerning either good faith MBE, WBE and/or SB participation efforts or its status as a minority owned, women owned or small business shall be debarred from any City contracting for a period of two (2) years. This debarment shall also extend to any successor firm substantially controlled or managed, whether directly or indirectly, by any debarred individual. This determination shall be made by the City Manager or a designee; and any debarment shall be reported in writing to Council.

## 11. REPORTING

The Purchasing Manager shall, at the conclusion of each fiscal year, report to the City Manager for report to City Council on the Purchasing Division's compliance with this Plan and efforts made pursuant to the Plan. The report shall also include the level of participation by MBES, WBES and SBS in contracts that have been awarded by the City through formal solicitations during that fiscal year.

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**CITY OF ROANOKE, VIRGINIA**

**BID FORM**

DATE: \_\_\_\_\_

SUBMITTED BY: \_\_\_\_\_  
(Exact Legal Name of Bidder)

**NOTE: ALL PAGES OF THE BID FORM ARE TO BE INCLUDED IN THE COMPLETED BID. ALSO, BIDS CONTAINING ANY CONDITIONS, OMISSIONS, UNEXPLAINED ERASURES, ALTERATIONS OR ITEMS NOT CALLED FOR IN THE BID, OR IRREGULARITIES OF ANY KIND, MAY BE REJECTED BY THE CITY AS BEING NON-RESPONSIVE. NO CHANGES ARE TO BE MADE TO THE BID FORM. ANY CHANGES TO A BID AMOUNT MUST BE INITIALED BY THE AUTHORIZED PERSON SIGNING THE BID FORM.**

The undersigned hereby proposes and agrees, if this bid is accepted by the City of Roanoke, to enter into a Contract with the City of Roanoke, Virginia, (hereafter - City or Owner) to furnish all equipment, materials, labor, and services necessary to construct the **Brandon Avenue over Murray Run Bridge Rehabilitation project, ITB No.16-11-06**, in accordance with the Contract Documents as prepared by the City of Roanoke, Virginia.

The quantities of work to be done at the unit prices indicated are approximate only and are intended principally to serve as a guide in evaluating bids. Subject to the constraints of the General Conditions and other Contract Documents, the quantities of work to be done and material furnished at the unit prices bid may be increased or decreased as considered necessary by the City Engineer to fully complete the Work as planned.

**BASE BID SCHEDULE**

ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT PRICE	TOTAL AMOUNT
Mobilization	1	LS		
Construction Stakeout	1	LS		
<b>Phase 1 - Superstructure Replacement</b>				
Maintenance of Traffic and Work Area Protection	1	LS		
Demolition of Existing Features, Corroded Steel Beams (Type B)	1	LS		
Demolition of Existing Features, Concrete Slab and Asphalt	1	LS		
Environmental Protection, Health and Safety for Type B Structure Removal	1	LS		
Testing, Manifest and Disposal of Type B Material	1	LS		
Debris Removal	5	TONS		
Abutment Backwall Reconstruction	93	LF		
Precast Concrete Slab (8'-3" Wide x 30'-0" Long x 1'-10" Deep) with CRR	4	EA		
Cast-In-Place Concrete Closure Pours with CRR	8	CY		
Base Asphalt, VDOT BM25.0	3	TONS		
Surface Asphalt, VDOT SM12.5D	11	TONS		
<b>Phase 2 - Upstream Cast-In-Place Culvert Extension and Scour Repair</b>				
Maintenance of Traffic and Work Area Protection	1	LS		
Clearing and Grubbing	1	LS		
Demolition of Existing Features, Retaining Wall / Culvert Wingwalls	1	LS		
Demolition of Existing Features, Sidewalk	63	SY		
Demolition of Existing Features, Curb / Gutter Associated with Entrance	25	LF		

Incidental Concrete, Sidewalk	63	SY		
Incidental Concrete, Curb and Gutter	25	LF		
Concrete, Cast-In-Place Double Cell Box Culvert (Class A4)	50	CY		
Concrete, Cast-In-Place Wingwalls (Class A4)	13	CY		
Reinforcement Steel (CRR), Double Cell Box Culvert	15500	LBS		
Reinforcement Steel, Wingwalls	1025	LBS		
Bypass Pumping with Dewatering Basin	1	LS		
Scour Repair (VDOT A3 Mass Concrete Pour)	20	CY		
Riprap Stone with Geotextile, Class II	200	Tons		
Riprap Stone with Geotextile, Class A1	30	Tons		
Storm Drain Structure, Drop Inlet	1	EA		
Storm Drain Pipe, 18" RCP	16	LF		
Milling, Asphalt (1 1/2" Depth)	1846	SY		
Surface Asphalt, VDOT SM12.5D	155	TONS		
Galvanized Handrail, VDOT HR-1 Mounted to Top of Culvert	21	LF		
Chain Link Fence, VDOT STD FE-CL	90	LF		
Erosion and Sediment Control Feature, Temporary Sediment Barrier	100	LF		
Erosion and Sediment Control Feature, Inlet Protection Type A	1	EA		
Pavement Marking, Stop Bar (24" Wide Thermoplastic - Type B)	42	LF		
Pavement Marking, Left Turn Arrow (Thermoplastic - Type B)	1	EA		
Pavement Marking, Right Turn Arrow (Thermoplastic - Type B)	1	EA		
Pavement Marking, White Line (4" Wide Thermoplastic - Type B)	508	LF		

Pavement Marking, Yellow Line (4" Wide Thermoplastic - Type B)	500	LF		
<b>TOTAL BASE BID</b>				<b>\$</b>

The undersigned hereby acknowledges the receipt of the following addenda to the Contract Documents:

Addendum Number \_\_\_\_\_ Dated \_\_\_\_\_  
 Addendum Number \_\_\_\_\_ Dated \_\_\_\_\_  
 Addendum Number \_\_\_\_\_ Dated \_\_\_\_\_

The undersigned hereby agrees, if this bid is accepted by the City, to commence work with an adequate force and equipment on the date stipulated in the written "Notice to Proceed" from the Office of the City Engineer and to substantially complete the work within One Hundred and Twenty (120) consecutive calendar days from the date stipulated in the written "Notice to Proceed", and to achieve Final Acceptance within thirty (30) consecutive calendar days thereafter, and to pay as liquidated damages the sum of Five Hundred Dollars (\$500) per day to the City of Roanoke for each consecutive calendar day in excess of the time indicated to substantially complete the work as indicated above and then to reach Final Acceptance as set forth above to fully and satisfactorily complete the Work. (See Section 21 of the General Conditions.)

By submitting a bid, the undersigned agrees it will not withdraw its bid during the time period provided for in the Invitation to Bid, except as provided for therein.

The undersigned agrees that if this bid is accepted by the City, the failure or refusal of the undersigned to execute the Contract with the City and furnish to the City the required bonds and certificates of insurance within fourteen (14) consecutive calendar days from receipt of the Contract Documents may result in a payment of the Bid Security to the City as liquidated damages.

The attention of each bidder is directed to Code of Virginia, Sections 54.1-1100, et. seq., which requires certain licenses for contractors, tradesmen, and others. Each bidder is required to determine which license, if any, it is required to have under such sections.

Complete the following:

Bidder \_\_\_\_\_ does have \_\_\_\_\_ does not have a Virginia Contractor's License. (Check appropriate blank.)

If bidder has a Virginia Contractor's License, circle the class bidder has and list the number.  
 Licensed "Class A", "Class B", or "Class C" Virginia Contractor Number \_\_\_\_\_  
 Identify Specialty \_\_\_\_\_

If bidder has another type of Virginia License, please list the type and number:  
 Type of license: \_\_\_\_\_ Number: \_\_\_\_\_

Bidder is a \_\_\_ resident or \_\_\_ nonresident of Virginia. (Check appropriate blank. See Code of Virginia, Sections 54.1-1100, et. seq.)

The attention of each Bidder/Offeror is directed to Virginia Code Section 2.2-4311.2, which requires a bidder or offeror organized or authorized to transact business in the Commonwealth of Virginia pursuant to Title 13.1 or Title 50 of the Code of Virginia, as amended, or as otherwise required by law, shall include in its bid or proposal the Identification Number issued to such bidder or offeror by the Virginia State Corporation Commission (SCC). Furthermore, any bidder or offeror that is not required to be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized. Please complete the following by checking the appropriate line that applies and providing the requested information:

- A. \_\_\_\_\_ Bidder/Offeror is a Virginia business entity organized and authorized to transact business in Virginia by the SCC and such bidder's/offeror's Identification Number issued to it by the SCC is \_\_\_\_\_.
- B. \_\_\_\_\_ Bidder/Offeror is an out-of-state (foreign) business entity that is authorized to transact business in Virginia by the SCC and such bidder's/offeror's Identification Number issued to it by the SCC is \_\_\_\_\_.
- C. \_\_\_\_\_ Bidder/Offeror does not have an Identification Number issued to it by the SCC and such bidder/offeror is not required to be authorized to transact business in Virginia by the SCC for the following reason(s):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please attach additional sheets of paper if you need more space to explain why such bidder/offeror is not required to be authorized to transact business in Virginia.

The undersigned states that it has made a best or good faith effort to seek the participation of and utilize local, Small, Minority-Owned, Women-Owned, and Service Disabled Veteran-Owned Businesses as suppliers and subcontractors whenever possible for this Project.

State the complete legal name of the bidder, exactly as it is recorded with the State Corporation Commission, if recorded there.

LEGAL NAME \_\_\_\_\_

BY \_\_\_\_\_ TITLE \_\_\_\_\_  
(TYPED NAME: \_\_\_\_\_ )

SIGNED NAME \_\_\_\_\_

DELIVERY ADDRESS \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

TELEPHONE \_\_\_\_\_ FAX \_\_\_\_\_

CONTACT EMAIL ADDRESS \_\_\_\_\_

ESCROW ACCOUNT REQUESTED (if applicable): YES \_\_\_\_\_ NO \_\_\_\_\_

DELIVERY OF BIDS: See Section 7.1 of the Instructions to Bidders.

Monica Cole, Senior Buyer  
Purchasing Division  
215 Church Avenue, S.W.  
Room 202, Noel C. Taylor Municipal Building  
Roanoke, Virginia 24011

Place in lower left-hand corner of envelope the project title and ITB No. as indicated below .  
Place in the upper left-hand corner of the envelope the bidder's name and mailing address.

BRANDON AVENUE OVER MURRAY RUN BRIDGE REHABILITATION  
ROANOKE, VIRGINIA  
ITB NO. 16-11-06

**CITY OF ROANOKE, VIRGINIA**

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED, \_\_\_\_\_  
\_\_\_\_\_, as Principal, and \_\_\_\_\_  
\_\_\_\_\_, as Surety, are hereby held and firmly bound unto  
\_\_\_\_\_, as City or Owner, in the penal sum of \_\_\_\_\_  
\_\_\_\_\_ (\$ \_\_\_\_\_) for the payment of which, well and truly to be made, we  
hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and  
assigns. Signed, sealed, and delivered this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

The condition of the above obligation is such that whereas the Principal has submitted to the  
a certain bid, attached hereto and hereby made a part hereof, to enter a contract in writing for the \_\_\_\_\_  
\_\_\_\_\_.

NOW, THEREFORE, if the bid shall be rejected, or if the bid shall be accepted and the Principal  
shall execute and deliver to the City a Contract substantially in the Form of the Contract contained in  
the proposed Contract Documents, properly completed in accordance with the bid, and shall furnish  
any required bond(s) for Principal's faithful performance of the Contract and for the payment of all  
persons performing labor or furnishing materials in connection herewith within the specified time period,  
and shall in all other respects perform the agreement created by the acceptance of the bid, then this  
obligation shall be void, otherwise the same shall remain in force and effect; it being expressly  
understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event,  
exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of the Surety  
and its bond shall be in no way impaired or affected by any extension of the time within which the City  
may accept such bid; and the Surety does hereby waive notice of any such extension.

This Bond shall be governed by, and construed in accordance with, the laws of the  
Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue and any  
actions for any litigation, suits, and claims arising from or connected with this Bond and/or the Contract  
referred to herein shall only be proper in the Roanoke City Circuit Court, or in the Roanoke City General  
District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to  
this Bond and/or such Contract voluntarily submit themselves to the jurisdiction and venue of such  
courts, regardless of the actual location of such parties.

IN WITNESS WHEREOF, the Principal and the Surety have hereunder set their hands and  
seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and  
these presents to be signed by their proper officers, the day and year first set forth above.

Attest: \_\_\_\_\_(SEAL)  
Principal

By \_\_\_\_\_  
Title

Witness to signature of  
Attorney-in-Fact: \_\_\_\_\_(SEAL)  
Surety

\_\_\_\_\_ By \_\_\_\_\_  
Witness Attorney-in-Fact

(Attorneys-in-fact affix seal and attach current original or certified copy of power of attorney.)



### III.

The City shall from time to time pursuant to its contract pay to the Escrow Agent amounts retained by it under the contract. Except as to amounts actually withdrawn from escrow by the City, the Contractor shall look solely to the Escrow Agent for the payment of funds retained under the contract and paid by the City to the Escrow Agent.

The risk of loss by diminution of the principal of any funds invested under the terms of this contract shall be solely upon the Contractor.

Funds and securities held by the Escrow Agent pursuant to this Escrow Agreement shall not be subject to levy, garnishment, attachment, lien, or other process whatsoever. Contractor agrees not to assign, pledge, discount, sell or otherwise transfer or dispose of his interest in the escrow account or any part thereof, except to the Surety.

### IV.

Upon receipt of checks drawn by the City and made payable to it as escrow agent, the Escrow Agent shall promptly notify the Contractor, negotiate the same and deposit or invest and reinvest the proceeds in approved securities in accordance with the written instructions of the Contractor. In no event shall the Escrow Agent invest the escrowed funds in any security not approved, as set forth in Section V. below.

### V.

The following securities, and none other, are approved securities for all purposes of this Agreement:

- (1) United States Treasury Bonds, United States Treasury Notes, United States Treasury Certificates of Indebtedness or United States Treasury Bills,
- (2) Bonds, notes and other evidences of indebtedness unconditionally guaranteed as to the payment of principal and interest by the United States,
- (3) Bonds or notes of the Commonwealth of Virginia,
- (4) Bonds of the City of Roanoke, Virginia, if such bonds carried, at the time of purchase by the Escrow Agent or deposit by the Contractor, a Standard and Poor's or Moody's Investor Service rating of at least "A", and
- (5) Certificates of deposit issued by commercial Banks located within the Commonwealth, including, but not limited to, those insured by the Escrow Agent and its affiliates.

- (6) Any bonds, notes, or other evidences of indebtedness listed in Sections (1) through (3) may be purchased pursuant to a repurchase agreement with a bank, within or without the Commonwealth of Virginia having a combined capital, surplus and undivided profit of not less than \$25,000,000, provided the obligation of the Bank to repurchase is within the time limitations established for investments as set forth herein. The repurchase agreement shall be considered a purchase of such securities even if title, and/or possession of such securities is not transferred to the Escrow Agent, so long as the repurchase obligation of the Bank is collateralized by the securities themselves, and the securities have on the date of the repurchase agreement a fair market value equal to at least 100% of the amount of the repurchase obligation of the Bank, and the securities are held by a third party, and segregated from other securities owned by the Bank.

No security is approved hereunder which matures more than five years after the date of its purchase by the Escrow Agent or deposit by the Contractor.

## VI.

The Contractor may from time to time withdraw the whole or any portion of the escrowed funds by depositing with the Escrow Agent approved securities as set forth in Section V. above in an amount equal to, or in excess of, the amount so withdrawn. Any securities so deposited or withdrawn shall be valued at such time of deposit or withdrawal at the lower of par or market value, the latter as determined by the Escrow Agent. Any securities so deposited shall thereupon become a part of the escrowed fund.

Upon receipt of a direction signed by the City Manager or Assistant City Manager, the Escrow Agent shall pay the principal of the fund, or any specified amount thereof, to the City or the Contractor as the City may direct. If payment is to be made to the City, it shall be made in cash. However, if payment has been authorized to be made to the Contractor, the Contractor may specify to the Escrow Agent if payment is to be made in cash or in kind. Such payment and delivery shall be made as soon as is practicable after receipt of the direction.

## VII.

For its services hereunder the Escrow Agent shall be entitled to a reasonable fee in accordance with its published schedule of fees or as may be agreed upon by the Escrow Agent and the Contractor. Such fee and any other costs of administration of this Agreement shall be paid from the income earned upon the escrowed fund and, if such income is not sufficient to pay the same, by the Contractor.

## VIII.

The net income earned and received upon the principal of the escrowed fund shall be paid over to the Contractor in quarterly or more frequent installments. Until so paid or applied to pay the Escrow Agent's fee or any other costs of administration such income shall be deemed a part of the principal of the fund.

## IX.

The Surety undertakes no obligation hereby but joins in this Agreement for the sole purpose of acknowledging that its obligations as surety for the Contractor's performance of the contract are not affected hereby.

X

This Escrow Agreement shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue and any actions for any litigation, suits, and claims arising from or connected with this Escrow Agreement and/or Contract referred to herein shall only be proper in the Roanoke City Circuit Court, or in the Roanoke City General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to this Escrow Agreement and/or such Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties.

**SIGNATURE PAGE TO FOLLOW**

IN WITNESS WHEREOF, the parties hereto have signed this Escrow Agreement by their authorized representatives.

Attest: (if corporation)  
Witness: (if individual)

\_\_\_\_\_

\_\_\_\_\_  
Typed Name of Contractor

\_\_\_\_\_  
President/Vice-President;  
Partner or Owner (Seal)

Attest:

\_\_\_\_\_  
Bank Officer

\_\_\_\_\_  
Typed Name of Escrow Agent

\_\_\_\_\_  
Vice President

Witness:

\_\_\_\_\_

\_\_\_\_\_  
Typed Name of Surety Company

By: \_\_\_\_\_  
Attorney-In-Fact

Attest:

\_\_\_\_\_  
City Clerk/Deputy City Clerk

City of Roanoke, Virginia

\_\_\_\_\_  
City Manager

Approved as to form:

\_\_\_\_\_  
City Attorney/Assistant City Attorney

Approved as to execution:

\_\_\_\_\_  
City Attorney/Assistant City Attorney

**CITY OF ROANOKE, VIRGINIA**

**SAMPLE CONTRACT**

THIS CONTRACT is dated \_\_\_\_\_, 20\_\_\_\_, between \_\_\_\_\_, hereinafter referred to as the "Contractor", and the City of Roanoke, Virginia, a Virginia municipal corporation, hereinafter referred to as the "City" or "Owner";

**RECITALS:**

WHEREAS, the Contractor has been awarded a contract by the City for

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

all in a proper and timely manner and in accordance with the Contract Documents, hereinafter and in the Contract Documents referred to as the "Work"; [and]

[WHEREAS, the Contractor has entered into a performance and a payment bond, with surety, each in the penalty of One Hundred Percent (100%) of the Contract sum, payable to the City of Roanoke as required by the Contract Documents;]

THEREFORE, in consideration of the terms and provisions set forth herein, the Parties agree that the above Recitals are incorporated into this Contract and made a part hereof and the Parties further agree as follows:

**ARTICLE 1. WORK TO BE PERFORMED AND DOCUMENTS.**

For and in consideration of the sums of money hereinafter specified to be paid by the City to the Contractor for the Work provided for in this Contract and in the Contract Documents to be performed by the Contractor, the Contractor hereby covenants and agrees with the City to fully construct, perform, and complete the Work in a good and workmanlike manner in accordance with this Contract and the Contract Documents to produce a fully functional and properly operating project within the time stipulated, time being made of the essence of this Contract. It is also agreed by the parties hereto that the Contract Documents consist of this Contract and those items set forth in the definition of Contract Documents in Section 1 of the General Conditions and includes the following, all of which are and constitute a part of this Contract as if attached hereto or set out in full herein, viz:

Project Manual ITB# 16-11-06 dated June 10, 2016 including:

Invitation to Bid;

Instructions to Bidders;

General Conditions;

Supplemental General Conditions, if any;

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_;

Plans and Drawings;

Specifications;

Special Conditions or similar documents, if any;

Bid Form completed by Contractor for this project;

[Ordinance No. \_\_\_\_\_ adopted \_\_\_\_\_];

Contractor's Performance Security;

Contractor's Labor and Material Payment Security;

[Escrow Agreement, if any.]

## **ARTICLE 2. CONTRACT AMOUNT.**

The City agrees to pay the Contractor for the Contractor's complete, timely, and satisfactory performance of the Work, in the manner and at the times set out in the Contract Documents the Contract Amount (or Sum) of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), as provided for in the Contract Documents and as the Contract Amount may be increased or decreased by additions and/or reductions in the Work or as the Contract Amount may be decreased by the City's assessment of liquidated damages against Contractor, or by setoff or as provided for in the Contract Documents or as allowed by law.

## **ARTICLE 3. TIME OF COMMENCEMENT AND COMPLETION.**

The Contractor shall commence the Work to be performed under this Contract on such date as is established and fixed for such commencement by written notice to proceed given by the City Engineer to the Contractor, and the Contractor covenants and agrees to properly construct, perform, and substantially complete the Work within \_\_\_\_\_ (\_\_\_\_\_) consecutive calendar days after the date of commencement fixed and established by such notice, and to achieve Final Acceptance within thirty (30) consecutive calendar days thereafter. The Contractor further agrees that the Work shall be started promptly upon receipt of such notice and shall be prosecuted regularly, diligently, and uninterruptedly at a rate of progress that will ensure full completion thereof in the shortest length of time consistent with the Contract Documents.

## **ARTICLE 4. LIQUIDATED DAMAGES.**

City and Contractor recognize that time is of the essence in the completion of the Work and that the City will suffer loss or damages if the Work is not completed within the period of time stipulated above, plus any extensions thereof allowed in accordance with the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving the actual loss or damages suffered by City if the Work is not completed on time. Accordingly, if such Work is not fully and satisfactorily substantially completed within the period of time set

forth in Article 3, the Contractor agrees it shall owe to and pay to City as liquidated damages for loss of City's full use or occupancy of the Work, but not as a penalty, the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) for each consecutive calendar day during which substantial completion of the Work is delayed or exceeds the date of substantial completion identified in Article 3 of this Contract to complete the Work and then to reach Final Acceptance as set forth above to fully and satisfactorily complete the Work. Provided, however, if Final Acceptance is not achieved by the Contractor within such additional time period, then the above mentioned sum of liquidated damages shall be due and paid by the Contractor to the City as additional liquidated damages for each consecutive calendar day Contractor does not achieve such Final Acceptance. Liquidated damages are defined in Section 21 of the General Conditions. Contractor further agrees that any liquidated damages City assesses against Contractor may also be withheld by City from any retainage or other sums City may otherwise owe to Contractor. Contractor hereby waives any defense as to the validity of any liquidated damages stated herein on the grounds such liquidated damages could be void as penalties or are not reasonably related to actual damages. All such liquidated damages are in addition to any other damages the City may be entitled to recover from Contractor.

#### **ARTICLE 5. PAYMENT FOR WORK.**

Construction estimates for payment, including the final payment request, submitted by the Contractor shall be in accordance with the provisions of Sections 20, 21, and 22 of the General Conditions and such other provisions of the Contract Documents that may be applicable. Final payment will not be made until the Work has been fully and satisfactorily completed, the Contract duly performed, and a Certificate of Final Acceptance has been issued by the City Engineer, all as provided for in the Contract Documents.

#### **ARTICLE 6. NONWAIVER.**

Contractor agrees that the City's waiver or failure to enforce or require performance of any term or condition of this Contract or the City's waiver of any particular breach of this Contract by the Contractor extends to that instance only. Such waiver or failure is not and shall not be a waiver of any of the terms or conditions of this Contract or a waiver of any other breaches of the Contract by the Contractor and does not bar the City from requiring the Contractor to comply with all the terms and conditions of the Contract and does not bar the City from asserting any and all rights and/or remedies it has or might have against the Contractor under this Contract or by law.

#### **ARTICLE 7. FORUM SELECTION AND CHOICE OF LAW.**

This Contract shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue and any actions for any litigation, suits, and claims arising from or connected with this Contract shall only be proper in the Roanoke City Circuit Court, or in the Roanoke City General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to this Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties.

## **ARTICLE 8. SEVERABILITY.**

If any provision of this Contract, or the application of any provision hereof to a particular entity or circumstance, shall be held to be invalid or unenforceable by a court of competent jurisdiction, the remaining provisions of the Contract shall not be affected and all other terms and conditions of the Contract shall be valid and enforceable to the fullest extent permitted by law.

## **ARTICLE 9. NONDISCRIMINATION.**

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

1. The Contractor will not discriminate against any Subcontractor, employee, or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by State law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal employment opportunity employer.
3. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

B. The Contractor will include the provisions of the foregoing Subsections A (1), (2), and (3) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

## **ARTICLE 10. FAITH-BASED ORGANIZATIONS.**

Pursuant to the Code of Virginia, Section 2.2 - 4343.1, be advised that the City of Roanoke does not discriminate against faith-based organizations.

## **ARTICLE 11. COMPLIANCE WITH FEDERAL IMMIGRATION LAW.**

Contractor agrees that Contractor does not, and shall not during the performance of this Contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

## **ARTICLE 12. COMPLIANCE WITH STATE LAW, FOREIGN AND DOMESTIC BUSINESSES AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VIRGINIA.**

Contractor shall comply with the provisions of Virginia Code Section 2.2-4311.2, as amended, which provides that a contractor organized as a stock or nonstock corporation, limited liability

company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law. Contractor shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Contract. The City may void the Contract if the Contractor fails to remain in compliance with the provisions of this section.

**ARTICLE 13. CONTRACT SUBJECT TO FUNDING.**

This Contract is or may be subject to funding and/or appropriations from federal, state and/or local governments and/or agencies and/or from the Council of the City of Roanoke. If any such funding is not provided, withdrawn, or otherwise not made available for this Contract, the Contractor agrees that the City may terminate this Contract on 7 days written notice to Contractor, without any penalty or damages being incurred by the City. Contractor further agrees to comply with any applicable requirements of any grants and/or agreements providing for such funding.

**ARTICLE 14 . HEADINGS.**

The captions and headings in this Contract are for convenience and reference purposes only and shall not affect in any way the meaning and interpretation of this Contract.

**ARTICLE 15. COUNTERPART COPIES.**

This Contract may be executed in any number of counterpart copies, each of which shall be deemed an original, but all of which together shall constitute a single instrument.

**ARTICLE 16. CONSTRUCTION OF TERMS.**

The terms and conditions in all parts of this Contract shall be in all cases construed according to their fair meaning and not strictly for or against any party.

**ARTICLE 17. NOT USED.**

**ARTICLE 18. ENTIRE CONTRACT.**

This Contract, including any attachments, exhibits, and referenced documents, constitutes the complete understanding between the parties. This Contract may be modified only by written agreement properly executed by the parties.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the parties hereto have signed this Contract by their authorized representatives.

Attest/Witness:

\_\_\_\_\_  
Typed Legal Name of Contractor

\_\_\_\_\_

By \_\_\_\_\_  
President/Vice-President; Partner or Owner

\_\_\_\_\_  
Typed or Printed Name and Title

\_\_\_\_\_  
Typed or Printed Name and Title  
(Contractor's Corporate Seal)

Attest/Witness:

CITY OF ROANOKE, VIRGINIA

\_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_  
Typed or Printed Name and Title

\_\_\_\_\_  
Typed or Printed Name and Title

Appropriation and Funds Required  
for this Contract Certified

Approved as to form:

\_\_\_\_\_  
Director/Deputy Director of Finance

\_\_\_\_\_  
City Attorney/Assistant City Attorney

Date: \_\_\_\_\_

Account #: \_\_\_\_\_

Approved as to execution:

\_\_\_\_\_  
City Attorney/Assistant City Attorney

**CITY OF ROANOKE, VIRGINIA**  
**CONTRACTOR'S PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS:

that \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert full name or legal title and address of Contractor)

as Principal, (hereinafter referred to as "Contractor"),

and \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert full name or legal title and address of Surety)

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

as Surety (hereinafter referred to as "Surety"), are held and firmly bound unto the City of Roanoke, Virginia, a municipal corporation, 215 Church Avenue, S.W., Noel C. Taylor Municipal Building, Room 350, Roanoke, Virginia 24011, as Obligee (hereinafter referred to as "City" or "Owner"), in the amount of \_\_\_\_\_

Dollars (\$\_\_\_\_\_), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents to the terms of this bond.

WHEREAS, Contractor has entered into a Contract with the City dated \_\_\_\_\_, 20\_\_\_\_, incorporating certain specifications and drawings prepared by:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert full name or legal title and address)

(which Contract, specifications, drawings, and other Contract Documents are hereinafter referred to collectively as the "Contract") for a fully functional and properly operating project, namely \_\_\_\_\_

\_\_\_\_\_ all in a proper and timely manner and in accordance with the Contract Documents, which Contract is expressly incorporated herein by reference and made a part of this bond.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly and faithfully perform the Contract, in strict conformity with each and every requirement of the Contract, then this obligation shall be null and void; otherwise, this Performance Bond shall remain in full force and effect and is subject to the following conditions:

- a. Any alteration which may be made in the terms of the Contract, including, without limitation, the amount to be paid or the work to be done under it, or the giving by the City of any extension of time for the performance of the Contract or any other forbearance of any nature whatsoever on the part of either the City or the Contractor to the other shall not in any way release the Contractor and the Surety, or either of them, their heirs, executors, administrators, successors, or assigns from their liability hereunder, and notice of such alteration, extension, or forbearance is hereby expressly waived by Surety.
- b. IT IS NOT INTENDED BY ANY OF THE PROVISIONS OF ANY PART OF THIS BOND TO CONFER A BENEFIT UPON ANY OTHER PERSON OR ENTITY NOT A PARTY TO THIS PERFORMANCE BOND OR TO AUTHORIZE ANY PERSON OR ENTITY NOT A PARTY TO THIS BOND TO MAINTAIN A SUIT PURSUANT TO THE TERMS OR PROVISIONS OF THIS BOND OTHER THAN THE CITY OR ITS SUCCESSORS OR ASSIGNS.
- c. This Bond shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue and any actions for any litigation, suits, and claims arising from or connected with this Bond and/or the Contract referred to herein shall only be proper in the Roanoke City Circuit Court, or in the Roanoke City General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to the Bond and/or Such Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties.
- d. Any suit under this bond must be instituted within one (1) year after (i) completion of the Contract, including the expiration of all warranties and guarantees, or (ii) discovery of the defect or breach of warranty, if the action be for such, whichever period is longer.

SIGNED AND SEALED this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, in the presence of:

WITNESS:

\_\_\_\_\_ CONTRACTOR

By: \_\_\_\_\_ (Seal)

\_\_\_\_\_

\_\_\_\_\_ (Type Name and Title)

WITNESS:

\_\_\_\_\_ SURETY

By: \_\_\_\_\_ (Seal)

Attorney-in-Fact

\_\_\_\_\_

\_\_\_\_\_ (Type Name and Title)

(Attorneys-in-fact affix seal and attach original or certified copy of current power of attorney.)

**CITY OF ROANOKE, VIRGINIA**

**CONTRACTOR'S LABOR AND MATERIAL PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS:

that \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert full name or legal title and address of Contractor)

as Principal, (hereinafter referred to as "Contractor"),

and \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert full name or legal title and address of Surety)

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

as Surety (hereinafter referred to as "Surety"), are held and firmly bound unto the City of Roanoke, Virginia, a municipal corporation, 215 Church Avenue, S.W., Noel C. Taylor Municipal Building, Room 350, Roanoke, Virginia 24011, as Obligee (hereinafter referred to as "City" or "Owner"), for the use and benefit of Claimants as herein below defined, in the amount of \_\_\_\_\_

Dollars (\$\_\_\_\_\_), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents to the terms of this bond.

WHEREAS, Contractor has entered into a Contract with the City dated \_\_\_\_\_, 20\_\_\_\_, incorporating certain specifications and drawings prepared by:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert full name or legal title and address)

(which Contract, specifications, drawings, and other Contract Documents are hereinafter referred to collectively as the "Contract") for providing a fully functional and properly operating project, namely \_\_\_\_\_

\_\_\_\_\_ all in a proper and timely manner and in accordance with the Contract Documents, which Contract is expressly incorporated herein by reference and made a part of this bond.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly make payment to all Claimants, as hereinafter defined, for all material furnished or labor supplied or performed in the prosecution of the work provided for in the Contract, then this obligation shall be void; otherwise this Labor and Material Payment Bond shall remain in full force and effect and is subject to the following conditions:

- a. Any alteration which may be made in the terms of the Contract, including, without limitation, the amount to be paid or the work to be done under it, or the giving by the City of any extension of time for the performance of the Contract or any other forbearance of any nature whatsoever on the part of either the City or the Contractor to the other shall not in any way release the Contractor and the Surety, or either of them, their heirs, executors, administrators, successors, or assigns from their liability hereunder, and notice of such alteration, extension, or forbearance is hereby expressly waived by Surety.
- b. A Claimant is defined as one who has and fulfills a contract to supply labor or materials, or both, to the Contractor or to any of the Contractor's subcontractors, in the prosecution of work provided for in the Contract, labor and material being construed to include, without limitation, public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the site, or who may otherwise be allowed by law to file a claim against the Contractor and/or Surety.
- c. The Contractor and Surety hereby jointly and severally agree with City that every Claimant, as defined in paragraph b, **who has a direct contractual relationship with the Contractor and** who has performed labor or furnished material in accordance with the Contract in the prosecution of the work provided for in the Contract and who has not been paid in full therefore before the expiration of ninety (90) days after the day on which such Claimant performed the last such labor or furnished the last of such materials for which Claimant claims payment, or as may otherwise be allowed by law, may bring an action on this payment bond to recover any amount due Claimant for such labor or material, and may prosecute such action to final judgment and have execution on the judgment. The Contractor and Surety expressly agree that City shall not be liable for the payment of any judgment, costs, or expenses resulting from any such suit and that neither Contractor nor Surety shall cause City to be named as a party in any such suit.
- d. The Contractor and Surety hereby jointly and severally agree with City that every Claimant, as defined in paragraph b, who has direct contractual relationship with any subcontractor, but who has no contractual relationship, express or implied, with such Contractor, may bring an action on this bond only if the Claimant has given written notice to the Contractor within **ninety (90)** days from the day on which the Claimant performed the last of the labor or furnished the last of the materials for which payment is claimed, stating with substantial accuracy the amount claimed and the name of the person for whom the work was performed or to whom the material was furnished, or as may otherwise be allowed by law. **Notice to the Contractor shall be given as set forth in Virginia Code §2.2-4341 and Claimants are advised to review such Code Section.** The Contractor and Surety expressly agree that City shall not be liable for the payment of any judgment, costs, or expenses resulting from any such suit and that neither Contractor nor Surety shall cause City to be named as a party in any such suit.

- e. This Bond shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue and any actions for any litigation, suits, and claims arising from or connected with this Bond and/or the Contract referred to herein shall only be proper in the Roanoke City Circuit Court, or in the Roanoke City General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to this Bond and/or such Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties.
- f. Any suit or action hereunder shall be brought within one year after the day on which the person bringing such action last performed labor or last furnished or supplied materials, or within such other time period as may be allowed by law, whichever is longer.

SIGNED AND SEALED this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, in the presence of:

WITNESS:

\_\_\_\_\_

\_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_ (Seal)

\_\_\_\_\_  
(Type Name and Title)

WITNESS:

\_\_\_\_\_

\_\_\_\_\_  
SURETY

By: \_\_\_\_\_ (Seal)

Attorney-In-Fact

\_\_\_\_\_  
(Type Name and Title)

(Attorneys-in-fact affix seal and attach current original or certified copy of power of attorney.)

**CITY OF ROANOKE, VIRGINIA**

**CERTIFICATE OF SUBSTANTIAL COMPLETION**

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the City Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the City of Roanoke, Virginia (City or Owner) can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

ITB NO.: \_\_\_\_\_

PROJECT: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

PROJECT OR DESIGNATED PORTION SHALL INCLUDE: \_\_\_\_\_

\_\_\_\_\_

The Work or portion thereof designated above performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as \_\_\_\_\_. The City will assume possession thereof at \_\_\_\_\_ a.m./p.m. on that date.

A list of items ("punch list"), prepared by the A/E and/or City Engineer, to be completed or corrected by the Contractor, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The Contractor will complete any portion of the Work that is not substantially complete and will complete or correct the work on the punch list in accordance with the Contract Documents.

The establishment of a date of substantial completion and/or the acceptance of the Work or designated portion thereof does not relieve the Contractor of any responsibility for any faulty materials or workmanship or operate to relieve the Contractor or its Surety from any obligation under the Contract with the City or the Performance Bond or Labor and Material Payment Bond.

This Certificate is subject to the terms and conditions of the Contract Documents, including but not limited to Section 20.8 of the General Conditions.

\_\_\_\_\_  
Contractor By \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
City of Roanoke, Virginia By \_\_\_\_\_ Date \_\_\_\_\_  
City

**CITY OF ROANOKE, VIRGINIA**  
**AFFIDAVIT OF PAYMENT OF CLAIMS**

By: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Insert Exact Name and Address of Firm)

This day \_\_\_\_\_ personally appeared before me,  
\_\_\_\_\_, a Notary Public in and for the City (County) of  
\_\_\_\_\_, and, being by me first duly sworn states that all subcontractors  
and suppliers of labor and materials have been paid all sums due them for work performed or  
materials furnished in the performance of the Contract between the City of Roanoke, Virginia,  
and \_\_\_\_\_, Contractor, dated \_\_\_\_\_, 20\_\_\_\_, for  
\_\_\_\_\_

\_\_\_\_\_ or arrangements have been made by the Contractor satisfactory to such subcontractors and  
suppliers with respect to the payment of such sums as may be due from the Contractor to the  
subcontractors and suppliers.

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_

PRINTED OR TYPED NAME AND TITLE: \_\_\_\_\_

COMMONWEALTH OF VIRGINIA

CITY/COUNTY OF \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public in and for the Commonwealth of  
Virginia, do hereby certify that \_\_\_\_\_,  
whose name is signed to the foregoing, has subscribed, sworn to and acknowledged the same  
before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Seal:

\_\_\_\_\_  
Notary Public

Registration #: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**CITY OF ROANOKE, VIRGINIA**

**SMALL BUSINESS, MINORITY-OWNED BUSINESS, WOMEN-OWNED BUSINESS,  
SERVICE DISABLED VETERAN-OWNED BUSINESS (SB/MB/WB/SDVB)  
USAGE STATUS FORM**

**FORM TO BE SUBMITTED WITH FINAL REQUEST FOR PAYMENT.**

**Section I:**

ITB No: \_\_\_\_\_ Date: \_\_\_\_\_

Project: \_\_\_\_\_

Prime Contractor: \_\_\_\_\_

List all SB/MB/WB/SDVB contractors or subcontractors and/or suppliers used on this project / solicitation and indicate what type of entity it is (i.e. SB, MB, WB, or SDVB):

\_\_\_\_\_ Type: \_\_\_\_\_ Amount : \_\_\_\_\_

\_\_\_\_\_ Type: \_\_\_\_\_ Amount : \_\_\_\_\_

\_\_\_\_\_ Type: \_\_\_\_\_ Amount : \_\_\_\_\_

Attach additional sheet(s) if necessary.

**Section II:**

Total Project Value: \_\_\_\_\_

Total SB/MB/WB/SDVB Value: \_\_\_\_\_

Percent SB/MB/WB/SDVB Work: \_\_\_\_\_

**Section III:**

I hereby certify that the above figures are true and reflective of the amount of SB/MB/WB/SDVB work used on this project / solicitation.

\_\_\_\_\_  
Legal Name of Contractor

\_\_\_\_\_  
Typed or Printed Name and Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**CITY OF ROANOKE, VIRGINIA**

**CERTIFICATE OF FINAL ACCEPTANCE**

This Certificate is subject to the terms and conditions of the Contract Documents, including but not limited to Section 20.8 of the General Conditions. The City and Contractor hereby agree that the date fixed for Final Acceptance of the Work by the City is \_\_\_\_\_.

The establishment of a date of Final Acceptance and/or the acceptance of the Work does not relieve the Contractor of any responsibility for any faulty materials or workmanship or operate to relieve the Contractor or its Surety from any obligation under the Contract with the City, including, but not limited to, any guaranties or warranties, or the Performance Bond or Labor and Material Payment Bond.

ITB NO. \_\_\_\_\_

PROJECT: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

_____ Contractor	_____ By	_____ Date
_____ City of Roanoke, Virginia City	_____ By	_____ Date

**CITY OF ROANOKE, VIRGINIA**

**GENERAL CONDITIONS**

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**CITY OF ROANOKE, VIRGINIA**

**GENERAL CONDITIONS**

**SECTION 1. DEFINITIONS**

Whenever used in these General Conditions or in the Contract Documents, the following terms have the meanings indicated, which are applicable to both the singular and plural and the male and female gender thereof, and where applicable to any other legal entity such as a corporation, partnership, limited liability company, etc.

The section and paragraph headings are inserted for convenience only.

**Architect, Engineer, Architect/Engineer or A/E:** The term used to designate the Architect and/or the Engineer who contracts with the City to provide the Architectural and Engineering services for the project. The Architect/Engineer is a separate Contractor and is referred to herein as the Architect/Engineer or abbreviated as A/E. The term includes any associates or consultants employed by the firm to assist in providing the A/E services.

**Bidder:** The person, firm, corporation, or other entity interested in submitting a bid for the Work to be performed.

**Change Order:** A document issued by the City Engineer on or after the effective date of the Contract which is agreed to by the Contractor and approved by the City, and which authorizes an addition, deletion, or revision in the Work, including any adjustment in the Contract Price and/or the Contract Time.

**City or Owner:** The City of Roanoke, Virginia, or its authorized representative.

**City Code:** Refers to the Code of the City of Roanoke (1979), as amended.

**City Engineer:** The City Engineer or his authorized representative.

**City Manager:** The City Manager or his authorized representative.

**Code of Virginia:** Refers to the Code of Virginia (1950), as amended. (Sometimes referred to as Va. Code or Virginia Code.)

**Contract Documents:** These documents include, but are not limited to, the Project Manual, Invitation to Bid, the Instructions to Bidders, the Bid Form, the Contract, the Bonds or other Bid Security, the Escrow Agreement, the General Conditions, Supplemental General Conditions, Special Conditions, the Specifications, Addenda or Change Orders, the Plans and Drawings, any Supplemental Drawings, and any additional documents incorporated by reference in the above.

**Contract:** The written agreement between the parties concerning the performance of the Work and consisting of the Contract Documents.

**Contractor:** The person, firm, corporation, or other entity entering into a contractual agreement with the City to perform the Work.

**Defect, Defective, or Deficient:** An adjective or noun which when modifying or referring to the word Work refers to Work or any part thereof that is unsatisfactory, faulty, or does not conform to the Contract Documents, or does not meet the requirements of any inspections, standards, tests, or approvals referred to in the Contract Documents.

**Document(s):** This term includes, but is not limited to: writings, drawings, items on which words, symbols, or marks are recorded; electronic data of any type; videotapes, recordings, photographs and negatives, digital or otherwise; and any other form of data, writing, or information compilation, however recorded or stored, and regardless of physical form or characteristics.

**Field Order:** A written order issued by the City Engineer which clarifies the requirements of the Contract by giving a more complete expression of the drawings or specifications or other documents without any change in the design, the Contract price, or the Contract time.

**Final Acceptance:** The City's acceptance of the project from the Contractor upon confirmation from the City Engineer and the Contractor that the project is apparently complete in accordance with the Contract requirements.

**Notice:** All written notices, demands, instructions, claims, approvals, and disapprovals required to obtain compliance with the Contract requirements. Any written notice by either party to the Contract shall be sufficiently given if delivered to or at the last known business address of the person, firm, or corporation constituting the party to the Contract, or to his, her, their, or its authorized agent, representative, or officer.

**Notice to Proceed:** A written notice given by the City at the City's discretion to the Contractor fixing the date on which the Contract time will commence for the Contractor to begin the prosecution of the Work in accordance with the requirements of the Contract Documents.

**Project Inspector:** One or more individuals employed by the City to inspect the Work and/or to act as Resident Inspector to the extent required by the City. The City shall notify the Contractor of the appointment of such Project Inspector(s).

**Provide:** Shall mean to furnish and install ready for its intended use.

**Subcontractor:** A person, firm, partnership, corporation, or other entity having a direct contract with the Contractor or with any other Subcontractor for the performance of the Work. It includes one who provides on-site labor, but does not include one who only furnishes or supplies material for the project.

**Submittals:** All drawings, diagrams, illustrations, brochures, schedules, samples, electronic data and other data required by the Contract Documents which are specifically prepared by or for the Contractor, Subcontractor, or Supplier, and submitted by the Contractor to illustrate the material, equipment, or layouts, or some other portion of the Work.

**Substantial Completion:** The date certified by the City Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the City can occupy or utilize the Work or designated portion thereof for the purposes for which it is intended.

**Supplier:** A manufacturer, fabricator, distributor, materialman, or vendor who provides only material or supplies for the project, but does not provide on-site labor.

**Utilities:** Utilities include all public and private lines, cables, conduit, pipelines, and appurtenances, whether underground, on the surface, and/or aerial, that may exist on the project site and/or adjoining public streets and/or rights-of-way for the purpose of providing communications, gas, petroleum, electricity, water, sanitary sewer, storm sewer, drainage, energy, signals, or lighting service to the site or adjoining properties.

**Work or Project:** The entire completed construction or the various separately identifiable parts thereof as required by the Contract Documents. Work is the result of performing services, furnishing labor, and furnishing and incorporating material and equipment into the construction.

## **SECTION 2. INDEMNITY PROVISION**

**2.1 Indemnity:** Contractor shall indemnify and hold harmless City and its officers, agents, and employees against any and all liability, losses, damages, claims, causes of action, suits of any nature, costs, and expenses, including reasonable attorney's fees, resulting from or arising out of Contractor's or its employees, agents, or subcontractors actions, activities, or omissions, negligent or otherwise, on or near City's property or easement or arising in any way out of or resulting from any of the work to be provided under this Contract, and this includes, without limitation, any fines or penalties, violations of federal, state, or local laws or regulations, personal injury, wrongful death, or property damage claims or suits, breach of contract claims, indemnity claims, and any other damages, losses, and/or claims of any type.

**2.2 Hazardous Material:** While on City's property or easement and in its performance of this Contract, Contractor shall not transport, dispose of or release any hazardous substance, material, or waste, except as necessary in performance of its Work under this Contract and in any event Contractor shall comply with all federal, state, and local laws, rules, regulations, and ordinances controlling air, water, noise, solid wastes, and other pollution, and relating to the storage, transport, release, or disposal of hazardous material, substances or waste. Regardless of City's acquiescence, Contractor shall indemnify and hold City, its officers, agents, and employees harmless from all costs, claims, damages, causes of action, liabilities, fines or penalties, including reasonable attorney's fees, resulting from Contractor's violation of this paragraph and agrees to reimburse City for all costs and expenses incurred by City in eliminating or remedying such violations. Contractor also agrees to reimburse City and hold City, its officers, agents, and employees harmless from any and all costs, expenses, attorney's fees and all penalties or civil judgments obtained against the City as a result of Contractor's use or release of any hazardous substance or waste onto the ground, or into the water or air from or upon City's premises. (See also Section 13.2 of these General Conditions.)

**2.3 Patents:** The Contractor shall protect, indemnify, and hold harmless the City from any and all demands for fees, claims, suits, actions, causes of action, or judgments based on the alleged infringement or violation of any patent, invention, article, trademark, arrangement, or other apparatus that may be used in the performance of the Contract or the Work.

## **SECTION 3. LAWS, REGULATIONS, PERMITS, AND IMMIGRATION LAW**

**3.1 Regulations:** The Contractor shall fully comply with all local, state, and federal ordinances, laws, and regulations, including without limitation all applicable building and fire code sections of the Occupational Safety and Health Act (OSHA), and the Virginia Uniform Statewide Building Code, and obtain all required licenses and permits, including business license, building permits, and pay all charges and expenses connected

therewith. Contractor further agrees that Contractor does not, and shall not during the performance of this Contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

- 3.2 Permits:** The Contractor shall, at its sole cost, obtain all required permits from the appropriate authorities, including a Right of Way Excavation Permit(s) from the City of Roanoke. Contractor shall obtain an additional separate Excavation Permit Bond(s) in accordance with the requirements of the City's Right of Way Excavation and Restoration Standards. Revised July 1, 2013, together with any other documents and/or items that may be required by the City's Department of Public Works and/or Department of Planning, Building and Development. No delay or extension of time or any claim for additional compensation of any type shall be granted for failure to obtain any required permits.
- 3.3 Litter:** In accordance with the Virginia Anti-Litter Law, receptacles sufficient to contain workmen's litter and construction wastes capable of being spread by wind or water shall be located on the construction site. The number and size of receptacles required shall be determined by the Contractor.
- 3.4 Asbestos License:** The Contractor, if not licensed as an asbestos abatement contractor or a Roofing, Flooring, and Siding (RFS) contractor in accordance with Section 54.1-514, of the Code of Virginia, shall have all asbestos related work performed by subcontractors who are duly licensed as asbestos contractors or RFS contractors as appropriate for the work required.

#### **SECTION 4. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE**

Neither the Contractor nor any subcontractor shall commence work under this Contract until the Contractor has obtained and provided proof of the required insurance under this Section to the City, and such proof has been approved by the City. The Contractor confirms to the City that all subcontractors have provided the Contractor with proof of insurance, or will do so prior to commencing any work under this Contract. Contractor further warrants that proof of coverage as provided to the City responds on a primary basis in the event of an uninsured or underinsured subcontractor. All such insurance shall be primary and non-contributory to any insurance or self-insurance the City may have in force.

**4.1 For All Contracts,** the following minimum insurance requirements apply:

**a. Workers' Compensation and Employers' Liability:**

The Contractor shall obtain and maintain the following limits:

Workers' Compensation: Statutory coverage for Virginia

Employers' Liability: \$100,000 Bodily Injury by Accident each occurrence  
\$500,000 Bodily Injury by Disease Policy Limit  
\$100,000 Bodily Injury by Disease each employee

**b. Commercial General Liability:**

Coverage is to be written on an "occurrence" basis and such coverage shall include broad form extension endorsements for both liability and property damage.

Completed Operations coverage will be required to be maintained for the life of the Contract.

For Limits of Liability see Sections 4.2 and 4.3 of these General Conditions.

**c. Automobile Liability:**

Limits for vehicles owned, non-owned, hired or borrowed shall not be less than:

- \$1,000,000 Bodily Injury and Property Damage combined single limit per occurrence.

**d. Additional Insurance Requirements:**

Additional specific insurance coverage minimum requirements to be provided by Contractor may include the following or as detailed in the Supplemental General Conditions or in other Contract Documents:

- 1) Builders Risk: At the discretion of the City, the Contractor, at its cost, shall obtain and maintain in the names of the City and the Contractor "all-risk" builders risk insurance (if approved by the City) upon the entire structure or structures on which the Work of this Contract is to be done and upon all material in or adjacent thereto or those that are "off-site" but which are intended for use thereon, to one hundred percent (100%) of the completed value thereof.
- 2) Property Coverage: Installation Floater (and Rigger's Form, if applicable) will be required for the installation of contents or equipment, coverage will begin with supplier and continue until equipment/contents has been fully installed. Floater will be valued for the replacement cost value of equipment/contents including all costs. The Contractor shall provide coverage for portions of the work stored off-site after written approval of the City at the value established in the approval and for portions of the work in transit.
- 3) Special Hazards: In the event special hazards are evident in the work contemplated, or if required by the Contract Documents, the Contractor shall obtain and maintain during the life of the Contract a rider to the policy or policies required, in an amount not less than that stipulated under the above Paragraphs. Should any unexpected special hazards be encountered during the performance of this Contract, the Contractor shall, prior to performing any work involving the special hazard, immediately obtain this insurance as instructed by the City. In the event the special hazard requiring the additional coverage was not a part of the original bid, the expense of such insurance shall be reimbursed to the Contractor by

the City, otherwise the Contractor shall assume full responsibility for the purchase with no charge back to the City.

- 4) Deductible: Deductible/self-insured retention amounts shall be reduced or eliminated upon written request from City. The insurer's cost of defense (and appeal), including attorney's fees, shall not be included within the coverages provided but shall remain the insurer's responsibility.
- 5) Term: Insurance shall remain in effect until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective work.
- 6) Limit of Liability: Nothing contained in these insurance requirements is to be construed as limiting the liability of Contractor or Contractor's insurance carriers. City does not in any way represent that the coverages or the limits of insurance specified is sufficient or adequate to protect Contractor's interests or liabilities, but are merely minimums. The obligation of the Contractor to purchase insurance herein shall not in any way limit the obligation of the Contractor in any event and/or in the event that the City should suffer an injury or loss in excess of the amount recoverable through insurance.

**4.2 Contracts of \$100,000 or More:** The following minimum insurance requirements apply in addition to the above requirements:

**a. Limits of Liability:** For the Commercial General Liability policy:

- \$2,000,000 general aggregate
- \$1,000,000 products/completed operations aggregate
- \$1,000,000 personal and advertising injury
- \$1,000,000 each occurrence

Coverage is to be written on an "occurrence" and "per project" basis and such coverage shall include:

**b. Umbrella Liability Insurance:**

This coverage shall be written for minimum limit of:

- \$5,000,000 each occurrence for Personal and Bodily Injury and Property Damage

This Policy shall apply in excess and follow the form of employer's liability, commercial general liability, and auto liability.

**4.3 Contracts Less Than \$100,000:** The following minimum insurance limits apply unless specified otherwise in the Supplemental General Conditions:

**a. Limits of Liability:** For the Commercial General Liability policy:

- \$1,000,000 general aggregate
- \$1,000,000 products/completed operations aggregate
- \$1,000,000 personal and advertising injury
- \$1,000,000 each occurrence

- 4.4 Proof of Insurance Coverage:** The policies of insurance required by Sections 4.1, 4.2, or 4.3 shall be purchased from a reputable insurer licensed to do business in Virginia and maintained for the life of the Contract by the Contractor. Other insurance requirements include the following:
- a. The Contractor shall furnish the City with the required certificates of insurance showing the insurer, type of insurance, policy number, policy term, deductible, and the amount insured for property coverages and the limits for liability coverages.
  - b. The Contractor shall notify the City Engineer and Risk Manager in writing within five (5) consecutive calendar days if any of the insurance coverages or policies are cancelled or materially altered and Contractor shall immediately replace such policies and provide documentation of such to the City Engineer and Risk Manager.
  - c. The required insurance policies and coverages, excluding those for Workers' Compensation and Professional Liability, shall name the City of Roanoke, its officers, agents, volunteers and employees as additional insureds, and the certificate of insurance shall show if the policies provide such coverage. Waiver of subrogation is required with respect to any policy of workers' compensation and employers' liability insurance required under this Section. The certificate of insurance shall show if the policies provide such waiver. Additional insured and waiver endorsements shall be received by the City's Risk Manager from the insurer with the certificate of insurance unless the City's Risk Manager agrees to another process. The City's Risk Manager may approve other documentation of such insurance coverages.
  - d. Insurance coverage shall be in a form and with an insurance company approved by the City which approval shall not be unreasonably withheld. Any insurance company providing coverage under this Contract shall be authorized to do business in the Commonwealth of Virginia.

## **SECTION 5. EMPLOYMENT AND CONDUCT OF PERSONNEL**

- 5.1 City Residents:** The Contractor is encouraged to try to use City residents, and local, Small, Minority-Owned, Women-Owned, and Service Disabled Veteran-Owned businesses, when practical.
- 5.2 Employee Qualifications:** Only skilled and reliable workers shall be employed for the Work. Should any person employed on the Work by the Contractor appear to the City Engineer to be incompetent, unable to perform the Work, or disorderly, such person shall be removed from the Work immediately upon proper notice to the Contractor from the City Engineer and such person shall not again be used for this Contract.
- 5.3 Superintendence:** The Contractor shall have a competent foreman or superintendent, satisfactory to the City Engineer, on the jobsite at all times during the progress of the Work. The Contractor shall notify the City, in writing, of any proposed change in the foreman or superintendent including the reason therefore prior to making such change.
- 5.4 Drug-free Workplace:** During the performance of this Contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in

conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purpose of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a Contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the Contract.

The Contractor shall post a copy of the policy in a conspicuous place at the jobsite and assure that all Contractor, subcontractor, and supplier personnel entering the jobsite are informed of the policy.

## **SECTION 6. EMPLOYMENT DISCRIMINATION BY CONTRACTOR PROHIBITED**

Every Contract of over \$10,000 to which the City is a party shall contain the provisions in Sections 6.1 and 6.2 herein:

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

- a. The Contractor will not discriminate against any Subcontractor, employee, or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by State law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal employment opportunity employer.
- c. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

**6.2 Nondiscrimination by Subcontractor or Vendor:** The Contractor will include the provisions of the foregoing Subsections 6.1 (a), (b), and (c) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

## **SECTION 7. SUBCONTRACTORS**

- 7.1 Licensure:** The Contractor shall comply with Title 54.1, Chapter 11, of the Code of Virginia, with respect to licensure of itself and all subcontractors employed to work on the project. The Contractor represents that it has verified that all subcontractors hold all required state and local licenses, including State Contractor's license and City business license. The Contractor shall verify that any additional subcontractors employed to work on the project, subsequent to the initial verification, hold all required state and local licenses, including State Contractor's license and City business license. Upon request from the City Engineer, Contractor shall provide documentation of compliance with this Section 7.1. Failure to comply constitutes a material breach of the Contractor's Contract with the City.
- 7.2 Change of Subcontractors:** Subcontractors shall not be changed without the written approval of the City Engineer.
- 7.3 Responsibility for Subcontractors:** The Contractor shall not employ for the project any subcontractor that the City may, within a reasonable time, object to as unsuitable. The Contractor further agrees that it is as fully responsible to the City for the acts and omissions of its subcontractors, suppliers, and invitees on the jobsite and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by it.

## **SECTION 8. CONDITIONS AT SITE**

- 8.1 Existing Conditions:** The Contractor shall have visited the site prior to bidding and is responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the site, and the character and extent of existing improvements and work within or adjacent to the site. Claims as a result of failure to have done so will not be considered by the City and will be the sole responsibility of the Contractor.
- 8.2 Hidden Conditions:** If, in the performance of the Contract, hidden physical conditions of a building being modified are exposed revealing unusual or materially different conditions than those ordinarily encountered or inherent in work of this nature, or if subsurface or latent conditions at the site are found which are materially different from those frequently present in the locality, from those indicated in the Contract Documents, or from those inherent in work of the character required by the Contract, the Contractor must report such conditions to the City Engineer before the conditions are disturbed. Upon such notice, or upon his own observation of such conditions, the City Engineer will make such changes in the Contract Documents as he finds necessary to conform to the different conditions. Any change in the cost of the Work or the time needed for completion must be requested pursuant to Section 19 of these General Conditions.
- 8.3 Suspected Hazardous Material:** If the Contractor, during the course of the project, observes the existence of any material which it suspects or knows to be hazardous to human health or the environment, the Contractor shall promptly notify the City Engineer. The City Engineer will provide the Contractor with instructions regarding the situation. The Contractor shall not perform any work involving the material or any work causing the material to be less accessible prior to receipt of special instructions from the City Engineer.

## **SECTION 9. SURVEYS AND LAYOUT**

- 9.1 Surveying Services:** All necessary drawings showing the location of property lines, buildings, and other appropriate information shall be furnished to the Contractor through the drawings and specifications. The Contractor shall provide competent surveying and engineering services to verify the given information and to execute the Work in accordance with the Contract requirements and shall be responsible for the accuracy of Contractor's surveying and engineering services. The Contractor shall immediately notify the City Engineer of any discrepancies and confirm such notice in writing within five (5) calendar days.
- 9.2 Survey Control:** Such general reference points and bench marks on the building site as will enable the Contractor to proceed with the Work will be established in the drawings and specifications. If the Contractor finds that any previously established reference points have been lost or destroyed, Contractor shall promptly notify the City Engineer.
- 9.3 Damage to Survey Control:** The Contractor shall protect and preserve the established bench marks and monuments and shall make no changes in locations without written notice to and approval from the City Engineer. Any of these which may be lost or destroyed or which require shifting because of necessary changes in grades or locations shall, subject to prior approval from the City Engineer, be replaced and accurately located by the Contractor.

## **SECTION 10. DRAWINGS AND SPECIFICATIONS**

- 10.1 Drawings and Specifications:** The general character and scope of the Work are illustrated by the drawings and specifications. Where on any of the drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the Work. If the Contractor deems additional detail or information to be needed, Contractor may request the same in writing from the City Engineer. The Contractor shall carry out the Work in accordance with the drawings and specifications and any additional detail drawings and instructions as issued by the City Engineer. However, Contractor shall immediately notify the City Engineer of any discrepancies in such drawings and/or specifications and confirm such notice in writing within five (5) calendar days.
- 10.2 Discrepancies in Drawings:** In case of difference between small and large scale drawings, the large scale drawings shall govern, unless otherwise directed in writing by the City Engineer.
- 10.3 "Similar":** Where the word "similar" appears on the drawings, it shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection with other parts of the Work.
- 10.4 Division of Specifications:** The specifications are divided into several parts for convenience only, since the entire specifications must be considered as a whole. The divisions of the specifications are not intended to control the Contractor in dividing the work among subcontractors or to limit the work performed by any trade. The Contractor shall be responsible for the coordination of the trades, subcontractors, and vendors engaged upon this Work.
- 10.5 Dimension Accuracy:** Measurements or dimensions shown on the drawings for site features, utilities, and structures shall be verified at the site by the Contractor. The location of underground utilities indicated on the plans are diagrammatic and were plotted from available records and field survey information and shall be considered approximate only, and the City makes no representations with regard to their accuracy.

The Contractor shall not scale measurements or dimensions from the drawings. Where there are discrepancies, the City Engineer shall be consulted. Where new work is to connect to, match with, or be provided for existing work, the Contractor shall verify the actual existing conditions and related dimensions prior to ordering or fabrication, so that such new work will properly fit with existing work.

- 10.6 As-Built Drawings:** The Contractor shall maintain at the site for the City one copy of all drawings, specifications, addenda, approved shop or setting drawings, change orders, field deviations, and other documents or modifications (referred to herein as "As-Built Drawings") in good order and marked to record all changes as they occur during construction. These shall be available to the City Engineer, the Project Inspector, and the City's testing personnel. These "As-Built Drawings" shall be neatly and clearly marked in color during construction to record all variations from the drawings made during construction. The representation of such variations shall include such supplemental notes, symbols, legends, documents, and details as may be necessary to clearly show the as-built construction.
- 10.7 Record Drawings:** Upon completion of the Work and prior to Final Acceptance, the Contractor shall deliver to the City Engineer, for preparation of the Record Drawings, one complete set of "As-Built Drawings" and documents referred to in Section 10.6 as well as an electronic copy, if available, or if requested by the City Engineer.

## **SECTION 11. SCHEDULE OF THE WORK**

- 11.1 Scheduling:** The Contractor is responsible for the sequencing, scheduling, and coordinating of the Work, for monitoring the progress of the Work, and for taking appropriate action to keep the Work on schedule. The Contractor is responsible for coordinating Contractor's work on the Project with any other work being carried on by the City or by other City consultants or contractors at the site or for the Project. The Contractor shall prepare and submit to the City Engineer a schedule for accomplishing the Work based upon the completion time stated in the Contract and submit such to the City Engineer at the pre-construction conference. No progress payments will be made to the Contractor until after Contractor has submitted a schedule which is acceptable to the City Engineer. All schedules under Section 11 shall be in both paper and electronic form unless otherwise directed by the City Engineer.
- 11.2 Progress:** The Contractor shall review the progress of the Work not less than each month, but as often as necessary to properly manage the project and stay on schedule. The Contractor shall collect and preserve information on Change Orders, including extensions of time. The Contractor shall evaluate this information and update the schedule monthly to finish within the contractually allowed time. The Contractor shall submit the updated schedule with each progress payment request. The scheduled completion date shall be within the period of time allowed by the Contract for completion of construction, except as amended by any Change Orders.
- 11.3 Delay and Recovery Schedule:** Should there be any delay, the City Engineer may require the Contractor to prepare, at no extra cost to the City, a plan of action and a recovery schedule for completing the Work by the contractual completion date. The plan of action and recovery schedule shall explain and display how the Contractor intends to regain compliance with the original schedule. The plan of action and recovery schedule, when required, shall be submitted and approved by the City Engineer prior to Contractor's submission of the next monthly construction estimate. The City may withhold progress payments until such schedule is submitted and approved.

## **SECTION 12. CONSTRUCTION SUPERVISION**

The Contractor shall be solely responsible to supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor is solely responsible to the City that the finished Work complies with the Contract Documents. The Contractor shall be solely responsible for health and safety precautions and programs for workers and others in connection with the Work. No inspection by, knowledge on the part of, or acquiescence by the City, or any other entity whatever shall relieve the Contractor from its sole responsibility for compliance with the requirements of the Contract or responsibility for health and safety programs and precautions.

## **SECTION 13. STANDARDS FOR MATERIAL INSTALLATION AND WORKMANSHIP**

- 13.1 Material and Equipment:** Unless otherwise specifically provided in this Contract, all equipment, material, and accessories incorporated in the Work are to be new and in first class condition. The Contractor shall furnish to the City Engineer for approval the name of the manufacturer, the model number, and other identifying data and information respecting the performance, capacity, nature, and rating of the machinery and mechanical and other equipment which the Contractor contemplates incorporating in the Work. Machinery, equipment, material, and articles installed or used without required approval may be subject to subsequent rejection by the City.
- 13.2 Hazardous Substances:** Unless specifically approved by the City or required by the specifications, the Contractor shall not incorporate any material into the Work containing asbestos or any material known by the Contractor to contain a substance known to be hazardous to human health. If the Contractor becomes aware that a material required by the specifications contains asbestos or other hazardous substances, it shall notify the City and the City Engineer immediately and shall take no further steps to acquire or install any such material without first obtaining City approval. (See also Sections 2.2 and 8.3 of these General Conditions.)
- 13.3 Workmanship:** The workmanship shall be of the highest quality found in the building industry in every respect. All items of Work shall be done by workmen skilled in the particular task to which they are assigned. In the acceptance or rejection of work, no allowance will be made for lack of skill on the part of workmen. Poor or inferior workmanship (as determined by the City Engineer, the City, or other inspecting authorities) shall be removed and replaced to conform to the highest quality standards of the trades concerned, or otherwise corrected to the satisfaction of the City Engineer, the City, or other inspecting authority all at the Contractor's sole expense.
- 13.4 Instructions for Installation:** Under the various sections of the specifications, where specified items are supplied with the manufacturer's printed instructions, recommendations, or directions for installation, or where such instructions, recommendations, or directions are available, installation of the specified items shall be in strict accordance with the manufacturer's printed instructions unless those instructions contradict the drawings or specifications, in which case the City Engineer will be notified by Contractor for an interpretation and decision.
- 13.5 Installation Procedures Without Instructions:** Where neither the manufacturer's printed instructions are available for installation of specific items, nor are specific code or standards given by reference to govern the installation of specific items; and where there is doubt concerning the installation procedures to be followed or the quality of

workmanship to be maintained in the installation of specific items, the Contractor shall consult the City Engineer for approval of the installation procedures Contractor proposes to follow or the specific standards governing the quality of workmanship Contractor proposes to maintain during the installation of the items in question.

- 13.6 Codes and Standards:** Under the various sections of the specifications, where reference is made to specific codes or standards governing the installation of specified items, installation shall in all cases be in strict accordance with the referenced codes and standards. Where no reference is made to specific codes or standards, installation shall conform to the generally recognized applicable standards for first-class installation of the specific item to be installed. Contractors are expected to be proficient and skilled in their respective trades and knowledgeable of the National Fire Protection Association (NFPA), the current edition of the Virginia Uniform Statewide Building Code (USBC) and its referenced technical codes and standards, Occupational Safety and Health Act (OSHA) and other codes and standards applicable to installations and associated work by its trade and/or that are applicable to the Work.

## **SECTION 14. SUBMITTALS**

- 14.1 General:** The Contractor shall submit for the approval of the City Engineer all submittals required by the specifications or requested by the City Engineer. All such submissions shall be made with such promptness as to cause no delay in this or any other part of the project, and to allow reasonable time for checking, correcting, resubmitting, and recorrecting. No part of the Work dealt with by a submittal shall be fabricated by the Contractor, save at Contractor's own risk, until such approval has been given. The Contractor shall maintain one (1) set of approved submittals at the jobsite at all times.
- 14.2 Format:** Submittals shall be made in such number of copies that two (2) approved copies may be retained by the City Engineer. Each submission shall be accompanied by a letter of transmittal listing the contents of the submission and identifying each item by reference to specification section or drawings. All submittals shall be clearly labeled with the name of the project and other necessary information. Catalog plates and other similar material that cannot be so labeled conveniently, shall be bound in suitable covers bearing the identifying data.
- 14.3 Supporting Material:** Submittals shall be accompanied by all required certifications and other such supporting material and documents, and shall be submitted in such sequence or in such groups that all related items may be checked together. When submittals cannot be checked because the submission is not complete, or because submittals on related items have not been received, then such submittals will be returned without action or will be held, not checked, until the material which was lacking is received.
- 14.4 Coordination:** Submittals shall have been reviewed by the Contractor and coordinated with all other related or affected work before they are submitted for approval, and shall bear the Contractor's certification that it has checked and approved them as complying with the information given in the Contract Documents. Submittals made without such certification and coordination will be returned to the Contractor without action, and will not be considered a formal submission. The Contractor shall be responsible for checking all dimensions and coordinating all material and trades to ensure that the material proposed will fit in the space available and be compatible with other material provided.
- 14.5 Variations:** If the submittals show variations from the Contract Documents because of standard shop practice or other reasons, the Contractor shall make specific mention of

such variation in Contractor's letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise the Contractor will not be relieved of the responsibility for executing the Work in accordance with the Contract Documents even though such submittals have been approved.

- 14.6 "Or Equal":** The drawings and/or specifications may indicate that the City Engineer designed or detailed a portion of the plans around a particular product (most commonly a piece of equipment). Should a different product be proposed by the Contractor and accepted, all modifications, rerouting, relocations, and variations required for proper installation and coordination to comply with the design concept and requirements of the Contract Documents shall be the sole responsibility of the Contractor and shall be made at no extra cost to the City. This naming of a particular product, around which the plans were designed or detailed, is not intended to preclude the use of other products or favor the product named when a "brand name or equal" specification has been used. (See also Section 10 of Instructions to Bidders.) Rather it is only intended to acknowledge the reality that in many instances the City Engineer must design around the dimensions and characteristics of a particular product.
- 14.7 Review by City Engineer:** The City Engineer will review and respond to the submittals within fourteen (14) calendar days. Checking and/or approval of submittals will be for general conformance with the design concept of the project and compliance with the information given in the Contract Documents, and will not include verification of quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Approval shall not be construed as permitting any departure from Contract requirements, authorizing any increase in price or time for completion or relieving the Contractor of the responsibility for any error in details, dimensions, or otherwise that may exist.
- 14.8** The Work shall be in accordance with approved submittals.

## **SECTION 15. INSPECTION AND INDEPENDENT TESTING**

- 15.1 Inspection and Testing:** All material and workmanship shall be subject to inspection, examination, and testing by the City Engineer at any and all times during manufacture and/or construction. The City Engineer shall have authority to reject defective material and workmanship and require its correction. Rejected workmanship shall be satisfactorily corrected and rejected material shall be satisfactorily replaced with proper material without charge therefore, and the Contractor shall promptly segregate and remove the rejected material from the premises. If the Contractor fails to proceed at once with replacement of rejected material and/or the correction of defective workmanship, the City may, by contract or otherwise, replace such material and/or correct such workmanship and charge the cost to the Contractor, and/or may terminate the right of the Contractor to proceed as provided in Sections 26 or 27 of these General Conditions, the Contractor and surety being liable for any damage to the same extent as provided for in those Sections.
- 15.2 Payment for Inspection, Testing, and Certification:**
- a. Jobsite inspections, tests conducted on site, or tests of material gathered on site which the Contract requires to be performed by independent testing entities shall be contracted and paid for by the City. The Contractor shall promptly furnish, without additional charge, all reasonable facilities, labor, and material necessary

for making such tests. Except as provided in Section 15.3 below, whenever such examination and testing finds defective material, equipment, or workmanship, the Contractor shall reimburse the City for the cost of reexamination and retesting.

- b. Although conducted by independent testing entities, the City will not contract and pay for tests or certifications of material, manufactured products or assemblies which the Contract, codes, standards, etc. require to be tested and/or certified for compliance with industry standards such as Underwriters Laboratories, Factory Mutual or ASTM. If there are any fees to be paid for such tests and certifications, they shall be paid by the Contractor.
- c. The Contractor shall also pay for all inspections, tests, and certifications which the Contract specifically requires it to perform or pay, together with any inspections and tests which it chooses to perform for its own quality control purposes.

**15.3 Examination of Completed Work:** Should it be considered necessary or advisable by City or the City Engineer at any time before final acceptance of the entire Work to make an examination of any part of the Work already completed, by removing or tearing out portions of the Work, the Contractor shall on request promptly furnish all necessary facilities, labor, and material to expose the Work to be tested to the extent required. If such Work is found to be defective in any respect, due to the fault of the Contractor or its Subcontractors, Contractor shall pay for all the expenses of uncovering the Work, of examination and testing, and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, the actual cost of the Contractor's labor and material necessarily involved in uncovering the Work, the cost of examination and testing and Contractor's cost of material and labor necessary for replacement shall be paid to the Contractor and it shall, in addition, if completion of the Work has been delayed thereby, be granted a suitable extension of time.

**15.4 Suspension of Work:** The City may suspend the Work when in its judgment the drawings and specifications are not being followed. Any such suspension shall be issued in writing and continued only until the matter in question is resolved to the satisfaction of the City. The cost of any such Work stoppage shall be borne by the Contractor unless it is later determined that no fault existed in the Contractor's Work.

**15.5 Project Inspector:** Failure of the Project Inspector to note or require correction of improper or defective work does not relieve the Contractor from its responsibility to correct such improper or defective work. The Project Inspector has no authority to and shall not:

- a. Enter into the area of responsibility of the Contractor's superintendent;
- b. Issue directions relative to any aspect of construction means, methods, techniques, sequences or procedures, or in regard to safety precautions and programs in connection with the Work;
- c. Authorize or suggest that the City occupy the project, in whole or in part; or
- d. Issue a certificate for payment.

## **SECTION 16. USE OF PREMISES AND REMOVAL OF DEBRIS**

- 16.1 Jobsite Coordination:** The Contractor shall perform the Contract in such a manner as not to interrupt or interfere with the operation of any existing activity on the premises or with the work of any other contractor.
- 16.2 Storage of Material:** The Contractor shall store apparatus, material, supplies, and equipment in such orderly fashion at the site of the Work as will not unduly interfere with the progress of its Work or the work of any other contractor.
- 16.3 Jobsite Appearance:** The Contractor expressly undertakes, either directly or through its Subcontractor(s), to clean up frequently all refuse, rubbish, scrap material, and debris caused by his operations, to the end that at all times the jobsite shall present a neat, orderly, and workmanlike appearance. No such refuse, rubbish, scrap material, and debris shall be left within the completed Work nor buried on the building site, but shall be properly protected and removed from the site and properly disposed of in a licensed landfill or otherwise as required by law.
- 16.4 Final Cleaning:** The Contractor expressly undertakes, either directly or through its Subcontractor(s), before final payment, to remove all surplus material, false work, temporary structures, including foundations thereof, and debris of every nature resulting from its operations and to put the site in a neat, orderly condition, to thoroughly clean and leave reasonably dust free all finished surfaces including all equipment, piping, etc., on the interior of all buildings included in the Contract; and to thoroughly clean all glass installed under the Contract including the removal of all paint and mortar splatter and other defacements. If a Contractor fails to clean up at the completion of the Work, the City may do so and charge for costs thereof to the Contractor in accordance with these General Conditions.
- 16.5 Erosion Control:** During and at completion of the Work, the Contractor shall prevent site soil erosion, the runoff of silt and/or debris carried by water from the site, and the blowing of dust or debris off the site in accordance with the applicable requirements and standards of the Virginia Erosion and Sediment Control Handbook, latest edition, and of the Contract Documents and the requirements of the City's Department of Planning, Building and Development.

## **SECTION 17. PROTECTING PERSONS AND PROPERTY**

- 17.1 Protection on Site:** The Contractor expressly undertakes, both directly and through its Subcontractor(s), to take every reasonable precaution at all times for the protection of all persons and property which may come on the jobsite or be affected by the Contractor's operation in connection with the Work.
- 17.2 Safety and Health Precautions:** The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety and health precautions and programs in connection with the Work, including but not limited to provision of appropriate sanitation facilities, if applicable.
- 17.3 Protecting the Public:** The Contractor shall in all cases protect the public and the Work, during its execution, by posting and maintaining, at its expense, appropriate signs,

barricades, barriers, lights, flagmen, and other safety devices in accordance with the current edition of the "Virginia Work Area Protection Manual".

**17.4 Protecting the Work and Adjacent Property:** The Contractor shall continuously maintain adequate protection of all the Work from damage and shall protect the City's property from injury or loss arising in connection with this Contract. The Contractor shall adequately protect adjacent property to prevent any damage to it or loss of use and enjoyment by its owners. The Contractor shall provide and maintain all passageways, guard fences, lights, and other facilities for protection required by public authority, local conditions, any of the Contract Documents or erected for the fulfillment of its obligations for the protection of persons and property.

**17.5 Emergencies:** In an emergency affecting the safety or life of persons or of the Work, or of the adjoining property, the Contractor, without special instruction or authorization from the City Engineer, shall act, at Contractor's discretion, to prevent such threatened loss or injury. Also, should Contractor, to prevent threatened loss or injury, be instructed or authorized to act by the City Engineer, Contractor shall so act immediately, without appeal.

## **SECTION 18. DAMAGES TO THE WORK AREA**

**18.1 Damage to the Work:** The Contractor shall have charge of and be solely responsible for the entire Work and be liable for all damages to the Work including, but not limited to any of the damages hereafter mentioned, and to any property in the vicinity of the Work, until its completion and acceptance by the City Engineer.

- a. Where the work involves alterations, renovations, or modifications to any existing building, the Contractor shall familiarize itself with the structural condition of such building before proceeding with any work. It shall be the Contractor's responsibility to take all necessary safeguards to protect and maintain all parts of the building in a safe condition at all times during the process of construction and to protect from damage those portions of the building that are to remain.
- b. Under no condition shall any load be placed on any part of a building, whether new or existing, in excess of the load the structure will safely support, and no structural member(s) shall be cut or altered without the written consent of the City Engineer.
- c. The Contractor shall conduct all operations in such a manner as to avoid damage to existing work and surfaces within any existing building that are to remain. Any and all damaged work and surfaces shall be repaired, replaced, or restored to their original condition at the time when this work was started, and the expense of such work shall be borne by the Contractor.

**18.2 Damage to Utilities:** The respective Utility Company shall be given a minimum of forty-eight (48) hours notice prior to any adjustment of utilities, and the Contractor shall comply with the provisions of the Virginia Underground Utilities Damage Prevention Act, Section 56-265.14 et seq., of the Code of Virginia. Damages that may occur to the utilities during the Work shall be the sole responsibility of the Contractor.

**18.3 Relocation of Utilities:** Should any utilities require adjustment during the Work, it shall be the Contractor's responsibility to have such utilities relocated as a part of the Work

and to contact and cooperate with the respective Utility Company in performance of such operations.

- 18.4 Damage to Other Work and Existing Structures:** The Contractor shall take into account all other work which shall be done by other parties on the jobsite, either now known or which may become necessary during the progress of the Work, and shall be responsible for any damage done to the other work. Damage to concrete curbs, gutters, sidewalks, or any existing facility that may occur during the construction shall be repaired or replaced by the Contractor, at its sole expense, as directed by and to the satisfaction of the City Engineer.
- 18.5 Weather Damage:** Damage with respect to the Work caused by the weather shall be the responsibility of the Contractor.
- 18.6 Blasting:** Any damage that may occur due to blasting shall be the sole responsibility of the Contractor.

## **SECTION 19. CHANGES IN THE WORK**

- 19.1 Changes in Drawings and Specifications:** The City reserves the right to make such changes in the drawings and specifications and in the character of the Work as may be necessary or desirable to ensure completion in the most satisfactory manner, provided such changes do not materially alter the original plans and specifications or change the general nature of the Work as a whole. Such changes shall not be considered as waiving or invalidating any condition or provision of the Contract and Bonds. Such changes shall be issued by the City Engineer to Contractor.
- 19.2 Changes in Quantities:** The City reserves the right to make changes in the quantities of the Work, as may be considered necessary or desirable, and such changes shall not be considered as waiving or invalidating any conditions or provisions of the Contract or Bonds. The Contractor shall perform the Work as altered, whether increased or decreased, and no allowances shall be made for anticipated profits. Payment to the Contractor for the changes in the quantities of work shall be made only for the actual quantities of work performed and material furnished at the unit prices set forth in the Contract, except as provided below.
- a. When the quantity of work to be done or of material to be furnished under any item of the Contract is more than 125 percent of the quantity stated in the Contract, then either party to the Contract, upon demand, shall be entitled to negotiate for revised consideration on the portion of work above 125 percent of the quantity stated in the Contract.
  - b. When the quantity of work to be done or of material to be furnished under any item of the Contract is less than 75 percent of the quantity stated in the Contract, then either party to the Contract, upon demand, shall be entitled to negotiate for revised consideration on the Work performed.
  - c. Any consideration after that as set forth above shall be paid for as is hereinafter provided under Section 19.7. The foregoing notwithstanding, the quantity of work to be done or of material to be furnished under any item of the Contract, or the total original Contract shall not be increased more than 25 percent or reduced by more than 25 percent without the written consent of the Contractor and City.

**19.3 Changes in the Work:** No change with respect to the Work, except in an emergency situation threatening life or property, shall be made by the Contractor without the prior written approval of the City. The Contractor shall deliver any request for a change in the Work, Contract price, and/or completion time in writing to the City Engineer within ten (10) calendar days of the occurrence requiring the change. The Contractor shall be required to certify the cause of the change order and, if appropriate, length of time involved. Payment for such changes approved by the City Engineer shall be as set forth in Section 19.7. This written request is a condition precedent to the consideration of any such request by the City.

**19.4 Delays:**

- a.** In the event a delay is caused by the City, the City Engineer, any other separate contractor employed by the City, or any party for whom the Contractor deems the City responsible, or the agents and employees of any of them, the Contractor shall inform the City and the City Engineer immediately at the time of the occurrence by the fastest means available and shall give written notice within a reasonable time, not to exceed ten (10) calendar days. The Contractor's notice to the City Engineer shall specify the nature of the delay claimed by the Contractor, the cause of the delay, and the impact of the delay on the Contractor's work schedule to the fullest extent possible. The City will within a reasonable time, not to exceed ten (10) calendar days, respond to the Contractor's notice with a resolution, remedy, or direction to alleviate the delay or with a notice rejecting the claim for delay alleged to be caused by the City or parties for whom the City is responsible. If the delay is not then resolved, the Contractor may then submit a request for change order in accordance with Sections 19.3 and 19.5. In the event of other delays, the Contractor shall give the City and City Engineer written notice within ten (10) calendar days of the occurrence causing the delay.
- b.** No extension of time or compensation shall be allowed for a delay if the Contractor failed to give notice in the manner and within the time prescribed in Subsection 19.4 (a). Furthermore, no extension of time shall be given or additional compensation allowed for any delay unless a claim therefore is made in writing to the City, with a copy to the City Engineer, within ten (10) calendar days of the occurrence causing the delay. The claim shall state the cause of the delay, the number of days of extension requested, and any compensation requested by the Contractor. The Contractor shall report the termination of the delay to the City and City Engineer not less than ten (10) calendar days after such termination. Failure to give notice of either the inception or the termination of the cause of delay or failure to present a claim for extension of time and/or monetary compensation within the times prescribed are conditions precedent to the assertion of any such claims by Contractor and shall constitute a waiver by Contractor of any such claims for compensation or extension based upon that cause.
- c.** Requests for compensation for delays must be substantiated by itemized data and records clearly showing that the work delayed was progressing according to the approved schedule and that the costs are directly attributable to the delay in the Work claimed. The Contractor shall provide written schedules demonstrating how the Work being delayed affects the approved schedule.
- d.** No extension of time, additional compensation, or change in the Contract price shall be allowed for any delays caused in whole or in part by the Contractor, any

subcontractors, or any supplier. (For unavoidable justified delays, see Section 19.9 of these General Conditions.)

- 19.5 Change Orders:** All change orders shall clearly define changes to the Work, the Contract amount or price, and the Contract time. Incomplete or partial change order requests may not be considered by the City Engineer. All change orders must indicate that the Contract Time for Completion is not changed or is either increased or decreased by a specific number of days. Any change or requested change in the Contract price shall also be included in the change order request. The Contractor must provide written justification for an extension of the Time for Completion to the City Engineer. The written justification must demonstrate an anticipated actual increase in the time required to complete the Work beyond that allowed by the Contract as adjusted by prior change orders or amendments to the Contract, not just an increase or decrease in the time needed to complete some portion of the total Work. City Engineer approved increases or decreases in time required to complete the Work shall be added or deducted, respectively, to the Time for Completion. The change to time or Contract price allowed by each change order shall include all time and monetary impacts of the change, whether the change order is considered alone or with all other changes during the course of the Project. Failure to include a change to time and/or Contract price in a change order shall waive any claims the Contractor may have for any change to the time and/or Contract price unless the parties mutually agree in writing to postpone a determination of the change to time and price resulting from the change order. However, the Contractor shall continue with the Work as may be directed by the City Engineer and shall not stop work on the Project unless directed to do so by the City Engineer.
- 19.6 Extra Work:** The City reserves the right to make alterations or changes in the Work as the Work progresses. When any work is necessary to the proper completion of the project which was not provided for in the Contract, the Contractor shall do such work, but only when and as ordered in writing by the City Engineer. Payment for such extra work shall be made as hereinafter provided in Section 19.7.
- 19.7 Payment Methods for Extra Work:** The extra work done by the Contractor as authorized and approved by the City Engineer shall be paid for in the manner hereinafter described; and the compensation thus provided shall be accepted by the Contractor as payment in full for all labor, material, tools, equipment, incidentals, all superintendents' and timekeepers' services, all insurance, bonds, and all other reasonable overhead expenses incurred in the performance of the extra work. Payment for extra work may be made by one of the following methods, as agreed on in writing by the City Engineer and the Contractor before said extra work is commenced, subject to all other conditions of the Contract:
- a. Unit prices; or
  - b. Lump sum price; or
  - c. The cost of change in work plus ten percent (10%) of allowable costs. Allowable costs for purposes of this paragraph shall only include labor, material, sales tax, the rental of power tools and equipment actually used, or a reasonable price for the use of power tools and equipment owned by the Contractor based upon their life expectancy and purchase price, utilities, pro rata charges for foremen, and all payroll charges such as employer's FICA contribution, Public Liability and Workers' Compensation Insurance, but only if all such costs are incurred as the direct result of the changes in the Work. The change in cost for labor and material bonds and for performance bonds relative to the value of the extra work shall be allowable cost but shall not be marked up.

- 19.8 Disputed Claims for Extra Work:** If one of the payment methods set forth in Section 19.7 is not agreed on by the City Engineer, the City may retain either an independent contractor to perform such extra work or use its own forces to perform such extra work and the Contractor shall cooperate fully with the independent contractor or City in its performance of the extra work. However, the City Engineer may also direct Contractor to perform such extra work and any dispute will be handled as set forth in Section 31 of these General Conditions.
- 19.9 Change in Contract Time or Contract Price:** The Contractor may request an extension of time or change in the Contract price should the Work be obstructed or delayed by any justified unavoidable delays not caused in whole or in part by the Contractor, any subcontractor, or suppliers. However, delays caused by weather conditions will not be considered justified unavoidable delays unless they are caused by unusual weather as set forth in Section 4.2 of the Instructions to Bidders, in which case only an extension of time may be considered by City, but no additional compensation will be allowed for unusual weather. Furthermore, Contractor agrees that for any delays not caused by the City or any delays beyond the control of the City, no additional compensation will be due the Contractor and no change in the Contract price will be allowed by the City, only an extension of the Contract time will be considered by the City. The Contractor shall deliver requests for changes in the Contract price and/or completion time in writing to the City Engineer within ten (10) calendar days of the occurrence requiring the change. Approved changes that alter the time of the Contract shall extend the completion time by a period equivalent to the certified time lost by such occurrence. No change in Contract price and/or completion time shall be allowed if the above notice has not been properly given, such notice being a condition precedent to any such request by the Contractor. However, the Contractor shall continue with the Work as may be directed by the City Engineer and shall not stop work on the Project unless directed to do so by the City Engineer.

## **SECTION 20. PAYMENT FOR WORK**

- 20.1 Monthly Construction Estimates:** Monthly construction estimates shall be submitted to the City Engineer, Noel C. Taylor Municipal Building, 215 Church Avenue, S.W., Room 350, Roanoke, Virginia 24011, no more than once every thirty (30) calendar days.
- 20.2 Preparing Progress Payment Requests:** In preparing construction estimates, the Contractor may request a progress payment based on the actual percentage of work completed during the preceding month. The estimate shall contain a breakdown of the total Contract amount, to include a separate breakdown of all approved change orders, into principal items of construction, showing the estimated quantity, unit price, and total for each item. In preparing progress payment requests, the material delivered on the site and preparatory work done may be taken into consideration, if properly documented, or as may be required by the City Engineer so that quantities can be verified. In addition to material delivered on the site, material such as large pieces of equipment and items purchased specifically for the project, but stored off the site, may be considered for payment, provided prior written approval is given by the City Engineer.
- 20.3 Progress Payments:** The City will make a progress payment to the Contractor on the basis of a duly certified and approved progress payment request for the work performed under the Contract. In the event that the City disagrees with the monthly construction progress payment request submitted by the Contractor, or in the event the As-Built

Drawings are not being kept current, the City may withhold all or a portion of the progress payment until such dispute is resolved to the satisfaction of the City. If there are any objections or problems with the progress payment request, the City will notify the Contractor of such matters. If the progress payment request is approved by the City, payment will be made by the City to the Contractor not more than thirty (30) calendar days after such request has been approved. However, if there is an objection or problem with a progress payment request, the Contractor shall continue with the Work as may be directed by the City Engineer and shall not stop work on the Project unless directed to do so by the City Engineer. Any such disputes shall be handled as set forth in Section 31 of these General Conditions.

**20.4 Retainage:** To ensure proper performance of the Contract, the City shall retain, unless stipulated otherwise, five percent (5%) of each progress payment until Final Acceptance of all work covered by the Contract. The Contractor may request that such retainage be paid into an escrow account on certain Contracts, pursuant to Section 2.2-4334 of the Code of Virginia. (See also Sections 6.2 and 14.6 of Instructions to Bidders.)

**20.5 Ownership of Material and Work:** All material and work covered by progress payments shall become the property of the City. This provision shall not relieve the Contractor from the responsibility for all material and to maintain all completed work and to repair all damaged work. The Contractor shall not deem a progress payment as a waiver to complete the terms of the Contract or shift the risk of loss from the Contractor to the City. The Contractor warrants that Contractor has good title to all material, equipment, and supplies which Contractor uses in the Work or for which Contractor accepts payment in whole or in part.

**20.6 Payments to Others by Contractor:** The Contractor agrees that Contractor will comply with the requirements of Section 2.2-4354 of the Code of Virginia regarding Contractor's payment to other entities and that Contractor will take one of the two actions permitted therein within seven (7) calendar days after receipt of amounts paid to Contractor by the City. The Contractor agrees that Contractor shall indemnify and hold the City harmless for any claims resulting from failure of the Contractor to make prompt payments to all persons supplying him equipment, labor, tools, or material in prosecution and completion of the Work provided for in the Contract.

**20.7 Final Payment:** After the Final Acceptance of the Work by the City, and after Final Payment is requested in writing by the Contractor, and the City Engineer has received and approved the items listed below, the City shall pay the Contractor the Final Payment, less all prior payments, damages, setoffs, liquidated damages, any amounts withheld from retainage, or any other amounts Contractor may owe the City for any reason whatever. Such final payment is subject to the City Engineer receiving and accepting all documents to finalize the Work or Project, such as, but not limited to:

- a. As-Built drawings, operation and maintenance manuals, written warranties (if applicable).
- b. Affidavit of Payment of Claims.
- c. Certificate of Final Acceptance.
- d. Small Business, Minority-Owned Business, Women-Owned Business, Service Disabled Veteran-Owned Business Usage Status Form
- e. Such other documents or items as the City Engineer may request in writing from the Contractor.

**20.8 Payment and Acceptance:** No payment, final or otherwise, nor partial or entire use, occupancy, or acceptances of the Work by the City shall be an acceptance of any work or material not in accordance with the Contract, nor shall the same relieve the Contractor of any responsibility for any faulty material or workmanship or operate to release the Contractor or its surety from any obligation under the Contract or the Performance Bond or the Labor and Material Payment Bond.

**20.9 Right to Audit and Maintenance of Records:** The Contractor agrees that the City, and any approving Federal or State Agency or any of their duly authorized representatives, shall have access to any books, documents, papers, records, schedules and electronic data of the Contractor which are pertinent to this Project for the purpose of making an audit, examinations, excerpts, copies, or transcriptions and that Contractor will provide copies of such items to City upon City's request, at no cost to City. Contractor shall maintain all books, records, electronic data, and other documents relating in any way to this Contract or Project for a period of five (5) years after Final Acceptance.

## **SECTION 21. LIQUIDATED DAMAGES**

If liquidated damages are provided for by the Contract, the following provisions shall apply:

- a. Subject to the provisions of the General Conditions for extension of time allowed for completion of the Work, if the Work is not substantially completed by the date required in the Contract, the Contractor shall owe to the City, not as a penalty but as liquidated damages, the sum stated in the Contract for liquidated damages for each and every calendar day of delay in substantial completion.
- b. Once the Work is substantially complete, the accrual of liquidated damages shall stop and the Contractor shall have thirty (30) calendar days in which to achieve Final Acceptance of the Work.
- c. Provided, however, if Final Acceptance of the Work is not achieved by the thirtieth (30th) calendar day after substantial completion, and if any extension of time is not granted by the City, the Contractor shall owe to the City, not as a penalty, but as additional liquidated damages, the sum stated in the Contract as liquidated damages for each and every calendar day of delay in Final Acceptance. All such liquidated damages set forth in this Section 21 are in addition to any other damages the City may be entitled to recover from the Contractor.

## **SECTION 22. INSPECTION FOR SUBSTANTIAL COMPLETION AND FINAL ACCEPTANCE**

**22.1 Substantial Completion:** The Contractor shall notify the City, in writing, that the Work will be ready for inspection to determine if it is substantially complete and ready for testing on or after a certain date, which date shall be stated in the notice. The notice shall be given at least ten (10) calendar days in advance of said date and shall be forwarded through the City Engineer. Inspection and testing shall take place at a time mutually agreeable to the Contractor, City, and City Engineer. The inspection shall determine if substantial completion has been accomplished. If so, the City Engineer will issue a Certificate of Substantial Completion and attach a written list of unfinished Work and defective Work, commonly referred to as a "punch list", which must be finished and corrected to obtain Final Acceptance.

**22.2 Request for Final Acceptance:** The Contractor shall notify the City Engineer, in writing, that the Work will be ready for final inspection and testing on or after a certain

date, which date shall be stated in the notice. That inspection and any necessary testing shall be conducted in the same manner as the inspection for substantial completion. When the Work is finally and totally complete, including the elimination of all known deficiencies, the Work shall be finally accepted by the City and final payment shall be made in accordance with Section 20.7 of these General Conditions.

- 22.3 Final Inspection:** The City Engineer will conduct the final inspection, and may elect to have other persons of his/her choosing also participate in the inspection. If one or more reinspection is required, the Contractor shall reimburse the City for all costs of reinspection or, at the City's option, the costs may be deducted from payments due to the Contractor.
- 22.4 As-Built Drawings:** No Contract retainage will be released prior to receipt of all approved As-Built Drawings.
- 22.5 Final Acceptance:** Upon successful completion of the final inspection and all Work required by the Contract, including, but not limited to, the delivery of the following documents and items; As-Built drawings; operation and maintenance manuals; written warranties; Certificate of Substantial Completion; Affidavit of Payment of Claims; and SB/MB/WB/SDVB Usage Status Form; the City Engineer will furnish a written Certificate of Final Acceptance of the Work to the Contractor. The City Engineer may accept the Work for occupancy or use while asserting claims against the Contractor, disputing the amount of compensation due to the Contractor, disputing the quality of the Work, its completion, or its compliance with the Contract Documents, and the like.
- 22.6 Release By Contractor:** The acceptance by the Contractor of the final payment or a payment designated as such shall be and does operate as a release by the Contractor of all claims by the Contractor against City and of all other liability of the City to the Contractor whatever, including liability for all things done or furnished in connection with the Work or the Contract.

## **SECTION 23. WARRANTY OF MATERIAL AND WORKMANSHIP**

- 23.1** The Contractor warrants that, unless otherwise specified, all material and equipment incorporated in the Work under the Contract shall be new, in first class condition, and in accordance with the Contract Documents. The Contractor further warrants that all workmanship shall be of the highest quality and in accordance with the Contract Documents and shall be performed by persons qualified at their respective trades.
- 23.2** Work not conforming to these warranties shall be considered defective.
- 23.3** These warranties of material and workmanship are separate and independent from and in addition to any of the Contractor's other guarantees or obligations in this Contract, or that may arise by law.

## **SECTION 24. GUARANTEE OF WORK**

- 24.1 One Year Warranty:** The Contractor further guarantees and warrants the Work against defects or deficiencies in the Work and as to all material, equipment, and workmanship for a period of one (1) year from the date of Final Acceptance. However, any

manufacturer's guarantees or warranties or any other guarantees or warranties required by the Contract Documents shall be for the period of time provided for therein.

- 24.2** The Contractor shall obtain and furnish to the City any available guarantees and warranties from manufacturers, installers, subcontractors, or others and any guarantees and warranties called for in the Contract and have such guarantees and warranties issued to the City, or transfer such guarantees and warranties to the City, in a timely manner. All guarantees and warranties shall be subject to the reasonable approval of the City. However, any such approval or disapproval does not relieve the Contractor of any of Contractor's guarantees and warranties. Contractor shall use its best efforts to ensure that all such guarantees and warranties do not contain any indemnity requirements from the City, any limitation of liability, any reduction of the applicable statute of limitations, any venue or forum selection other than the City of Roanoke, Virginia, or any requirement for mediation or arbitration. Any such language in a guaranty or warranty shall be deemed to be void and the Contractor along with the entity providing the guaranty or warranty shall be responsible for such guaranty or warranty with any such items being deemed deleted. All such guaranties or warranties shall be provided to the City before or within ten (10) days after Contractor's completion of the Work and the City may withhold payments to the Contractor until receipt of all such guaranties and warranties.
- 24.3** All guarantees and warranties from the Contractor or others, whether set forth above, in other parts of the Contract or other documents, or that may arise by law, shall be cumulative so as to maximize City's guarantee and warranty protection. The City, by accepting any of the guaranties or warranties provided for in the Contract does not waive, and specifically reserves any legal rights and remedies that the City may have for breach of the Contract and/or breach of any such guarantees or warranties.
- 24.4 Defective Work:** The Contractor agrees it shall repair or replace, at Contractor's sole expense, and to the satisfaction of the City Engineer, any work, material, equipment, or part that is found, by the City Engineer, to be defective.
- 24.5 Repairs:** If, within any guarantee period, defects are noticed by the City Engineer which require repairs or changes in connection with the guaranteed work, those repairs or changes being in the determination of the City Engineer rendered necessary as the result of the use of material, equipment, or workmanship which is defective, inferior, or not in accordance with the terms of the Contract, then the Contractor shall, promptly upon receipt of notice from the City Engineer, such notice being given not more than four weeks after the expiration of any such guarantee period, and without any expense to the City:
- a.** Place in satisfactory condition all guaranteed work and correct all defects therein; and
  - b.** Make good all damage to the structure, site, equipment, or contents thereof, which in the determination of the City Engineer is the result of the use of material, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract; and

- c. Make good any work or material or the equipment and contents of structures or the site disturbed in fulfilling any such guarantee.

**24.6 Warranty Extension:** In any case, where in fulfilling the requirements of the Contract or any guarantee embraced in or required thereby, the Contractor disturbs, damages or repairs any work guaranteed under the Contract, Contractor shall restore such work to a condition satisfactory to the City Engineer and guarantee such restored work to the same extent and for a like additional period of time as it was originally guaranteed under this Contract.

**24.7 Correction of Defects:** If the Contractor, after notice, fails to proceed promptly, but in no event longer than thirty (30) calendar days after such notice, unless otherwise agreed to by the City Engineer, to comply with the terms of the guarantee and/or correct the Work, the City may have the defects corrected by its own forces or another contractor and the Contractor and its surety shall be liable to the City for all costs and expenses incurred in doing so.

**24.8** Nothing contained in this section shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents or the law of Virginia, including liability for defective work.

## **SECTION 25. STOP WORK ORDER**

In the event that conditions exist such that no work can or should continue, other than the routine closing of the site, the Contractor may submit to the City Engineer a request to stop work or the City Engineer on his/her own may issue a Stop Work Order. The City Engineer will, if he/she approves the request or issues the order himself/herself, deliver a written "Stop Work Order" to the Contractor stipulating the effective date and the Contract time remaining. The Work, other than the routine closing of the site, and Contract time shall not again be started until a written "Resume Work Order" is received by the Contractor from the City Engineer. When the Work is stopped at the request of the Contractor and through no fault of the Contractor, the Contractor may only recover from the City payment for the cost of the Work actually performed, together with reasonable overhead and profit thereon up to that time, but profit shall be recovered only to the extent that the Contractor can demonstrate that it would have had profit on the entire Contract if it had completed the Work. The Contractor may not receive profit or any other type of compensation for parts of the Work not performed, including, but not limited to, home office overhead or any other such costs. The Contractor may also recover the actual cost of physically closing down the jobsite, but no other costs of the Stop Work Order. The City may offset any claims it may have against the Contractor against the amounts due to the Contractor. In no event shall the Stop Work Order to the Contractor relieve in any way the obligations of the Contractor's surety on its payment and performance bonds. When work is stopped by the City Engineer due to any fault of the Contractor, the Contractor may not recover any of the above costs or items or any other costs, profits, expenses, or damages of any type.

## **SECTION 26. TERMINATION OF CONTRACT FOR CAUSE**

**26.1 Termination for Cause:** If the Contractor should file a petition for relief as a debtor under any applicable bankruptcy law or should be adjudged bankrupt, or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, the City may terminate the Contract. If the Contractor should refuse or should fail, except in cases for which extension of time is

provided, to supply enough properly skilled workmen or proper material, or if it should fail to make prompt payment to subcontractors or suppliers of material or labor, or disregard laws, ordinances, or the written instructions of the City Engineer, or otherwise fails to comply with any of the terms or provisions of this Contract including, but not limited to, poor services, work or material, then the City may terminate this Contract. In no event shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.

- 26.2 Possession of Work:** Upon termination of the Contract, the City may take possession of the premises and of all material, tools, and appliances thereon and finish the Work by whatever method the City may deem expedient. In such case the Contractor shall not be entitled to receive any further payment of any type. If the expense of finishing the Work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the Contract price, the Contractor shall pay the difference to the City, together with any other cost or expenses of terminating the Contract and having it completed by others, together with any and all other damages the City may be entitled to from the Contractor.
- 26.3 Alternative Termination:** If it should be judicially determined that the City improperly terminated this Contract for cause, then the termination shall be deemed to be a termination for the convenience of the City.
- 26.4 Termination Rights:** Termination of this Contract under Section 26 or Section 27 is without prejudice and in addition to any other rights or remedies of the City against the Contractor.

## **SECTION 27. TERMINATION FOR CONVENIENCE OF CITY**

- 27.1 Termination for Convenience:** The City, at its discretion, may terminate this Contract at any time without cause, in whole or in part, upon giving the Contractor written notice of such termination. Upon such termination, the Contractor shall immediately cease work and remove from the jobsite all of its labor forces, equipment, and material as the City elects not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as City may require to assign to the City the Contractor's interest in all subcontracts and purchase orders designated by the City. After all such steps have been taken to the City's satisfaction, the Contractor shall receive as full compensation for termination and assignment only the following:
- a. All amounts then otherwise due under the terms of this Contract for actual work performed and approved by the City; and
  - b. Reasonable compensation for the actual cost of demobilization incurred by the Contractor as a direct result of such termination. The Contractor shall not be entitled to any compensation for lost profits or for any other type of contractual compensation or damage, other than those provided by the preceding sentence, including any on site or home office overhead. Upon payment of the foregoing, the City shall have no further liabilities or obligations to Contractor of any nature.
- 27.2 Termination Effect on Surety:** In no event shall termination for the convenience of the City terminate the obligation of the Contractor's surety on its payment and performance bonds.

**SECTION 28. PRECONSTRUCTION CONFERENCE**

The City Engineer shall notify the Contractor as to the location, date, and time of a preconstruction conference to confirm procedures for processing construction estimates for payment and related submissions and to discuss other matters pertaining to scheduling and execution of the Work.

**SECTION 29. PROJECT SIGN(S)**

The Contractor shall supply, erect, and maintain Project Sign(s) in accordance with the City of Roanoke Standard Detail. The sign(s) shall be located as directed by the City Engineer. The Contractor shall not display any other signs or advertisements.

**SECTION 30. ASSIGNMENTS**

The Contractor shall not assign or transfer this Contract in whole or in part except with the prior written consent of the City, which consent shall not be unreasonably withheld. If consent to assign is given, no such assignment shall in any way release or relieve the Contractor from any of the covenants or undertakings contained in this Contract and the Contractor shall remain liable for the Contract during the entire term thereof.

**SECTION 31. CONTRACTUAL DISPUTES**

Contractual claims, whether for money or for other relief, including any disputes as to change orders or extra work, shall be submitted, in writing, no later than sixty (60) calendar days after final payment or payment designated by the City as a final payment; however, written notice of the Contractor's intention to file such claim must be given at the time of the occurrence or beginning of the work upon which the claim is based. Such notice is a condition precedent to the assertion of any such claim by the Contractor. A written decision upon any such claims will be made by the City Manager or his/her designee (hereafter City Manager) within thirty (30) calendar days after submittal of the claim and any practically available additional supporting evidence required by the City Manager. The Contractor may not institute legal action prior to receipt of the City's decision on the claim unless the City Manager fails to render such decision within one hundred twenty (120) calendar days from submittal of its claim. The decision of the City Manager shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim or from expiration of the 120 day time limit, whichever occurs first, initiates legal action as provided in Section 2.2 - 4364, of the Code of Virginia. Failure of the City to render a decision within said one hundred twenty (120) calendar days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the City's failure to render a decision within said one hundred twenty (120) calendar days shall be Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to Section 2.2 - 4365, of the Code of Virginia, has been established for contractual claims under this Contract.

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**CITY OF ROANOKE, VIRGINIA**  
**SUPPLEMENTAL GENERAL CONDITIONS**

NOT USED.

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## Section 01000

### Special Conditions

#### 1. General

1.1. **Location of Work** – This project consists of a precast superstructure replacement, cast-in-place box culvert extension, and associated work. The project is located near the intersection of Brandon Avenue and 23<sup>rd</sup> Street, SW (near Towers Shopping Mall).

#### 1.2. General Description of Work

1.2.1. Description: Work includes demolition, precast superstructure replacement, cast-in-place box culvert extension, and associated work. This short description, however, shall not, in any way, be construed to limit the Contractor's obligation for compliance with the contract documents. Unless specified otherwise the Work shall be in accordance with the Virginia Department of Transportation Road and Bridge Specifications (VDOT RBS).

1.2.2. Unit and Lump-Sum Priced Items: The Bid Form has spaces for bidding several unit and lump-sum priced items. The prices submitted and subsequently paid shall constitute full compensation for all work required by the contract documents. The estimated quantities shown shall be considered as approximate only, and any item may be increased, decreased, or totally deleted should the City determine this to be in his best interest.

#### 1.3. Safety

1.3.1. Citizen and workman safety shall be given top priority at all times.

#### 1.4. Maintenance of Traffic and Work Area Protection

1.4.1. Contractor shall maintain each work site in accordance with Virginia Work Area Protection Manual and current VDOT RBS requirements. All signage shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). The City shall not provide any signs or traffic control devices.

1.4.2. Contractor shall give City Project Manager 48 hour notice before proceeding with work at each location.

1.5. **Utilities** – As required, the Contractor shall contact Miss Utility (1-800-552-7001) for location of utilities prior to construction.

#### 1.6. City of Roanoke Inspectors

- 1.6.1. The City of Roanoke shall have a Construction Inspector, who reports to the City Project Manager, assigned to this project.
- 1.6.2. The City Inspector shall be responsible for checking quality control, conformance of work with respect to project documents, and quantities for pay requests.
- 1.6.3. The Contractor shall give the City Inspector proper notice for overlay and paving operations.
- 1.6.4. At substantial completion of the project, the City Inspector shall develop a punch list of items to be resolved before final acceptance. City Inspectors shall also be responsible for checking work for acceptance within warranty periods.

### **1.7. Sequence of Construction**

- 1.7.1. Contractor shall complete Phase 1 (Superstructure Replacement) construction prior to starting any part of Phase 2.

### **1.8. Water Related Permits (USACE NW3 / NOA-2015-1698)**

- 1.8.1. The City has obtained a USACE NW3 permit to perform the superstructure replacement and culvert extension. See Appendix A for permit and associated requirements. Contractor shall be contractually obligated by all provisions associated with the permit. Details and requirements of bypass pumping are contained in the permit. The permit does have a time of year restriction (TOYR) of March 15 to July 1 for any in-stream work. This TOYR is associated with the endangered Roanoke River logperch.

### **1.9. Time Restrictions**

- 1.9.1. Contractor shall perform the work from 7:00 AM to 5:00 PM Monday thru Friday.

### **1.10. Manner of Conducting the Work**

- 1.10.1. Daily Cleanup: Clean up work regularly. Maintain the project in a neat and orderly manner consistent with normal operation.
- 1.10.2. The contractor shall provide the City's Project Manager, City's Inspector, or other City Representatives, safe access to all areas of work throughout the course of the construction project and for final inspection. Safe access includes the use of man-lifts, operated by a contractor's representative, or any other such equipment as needed to reach areas of inspection.

1.11. **Virginia Department of Transportation (VDOT) Specifications and Standards (RBS)** -This project manual references several VDOT specifications. Furthermore, all work and materials on this project shall be in accordance with the latest VDOT specifications and standards. However, there are City provisions that supersede the VDOT provisions. See following list:

1.11.1. General Contract Conditions: This is a City contract and the General Conditions in this Project Manual shall apply.

1.11.2. Measurement and Payment: The VDOT measurement and payment specification shall **not** apply. See City Measurement and Payment Section contained in this project manual.

1.11.3. Note that this manual does contain VDOT Special Provisions that supplement the VDOT Road and Bridge specifications. See Table of Contents for more detail.

2. **Products** - All products incorporated into the work are to be new, unused and first quality. All products shall be in accordance with the latest VDOT RBS.
3. **Execution** - All work is to be performed in a workmanlike manner by properly trained and qualified personnel under supervision of the contractor's representative.

**End of Section**

## **Section 01100**

### **Hierarchy of Construction Documents**

#### **1. Part 1 General**

1.1. The General Conditions, Supplemental General Conditions, Plans, Technical Specifications, Virginia Department of Transportation Road (VDOT) Road and Bridge Specifications, VDOT Special Provisions/Supplemental Sections are parts of the Contract. A requirement occurring in one shall be as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of a discrepancy, the following order of priority will apply, with the highest governing item appearing first and the least governing item appearing last:

- 1.1.1. Technical Specifications
- 1.1.2. General Conditions
- 1.1.3. Supplemental General Conditions
- 1.1.4. Plans. Calculated dimensions, unless obviously incorrect, will govern over scaled dimensions.
- 1.1.5. VDOT Special Provisions / Supplemental Sections
- 1.1.6. VDOT Road and Bridge Specifications

**End of Section**

## Section 01270

### Measurement and Payment

#### 1. General

- 1.1. Payment for all work will be on the basis of the unit or lump sum prices stated in the Bid Form and upon the actual work performed and materials installed, complete-in-place, in accordance with the Contract Documents.
- 1.2. Include the cost for items not listed in the Bid Form, which are mentioned in the specifications, Plans, indicated in the attached Appendix A, B, C or normally a part of the work described by the Contract Documents, in the cost of the appropriate items which are listed in the Bid Form.
- 1.3. No separate payments shall be made for work, material, equipment, or other expense which is not part of construction items listed in the Bid Form, subject to conditions described in paragraph 1.2, above.
- 1.4. Bid quantities shown in the Bid Form are estimated and will be adjusted based on the actual provided quantities.
- 1.5. Payment shall only be requested for in-place materials unless otherwise specified. Pay requests are to be limited to one per thirty (30) calendar days.
- 1.6. References:
  - 1.6.1. VDOT RBS: Latest edition of the Virginia Department of Transportation Road and Bridge Specifications.
  - 1.6.2. Plans: Mattern and Craig Plans for Brandon Avenue over Murray Run Bridge Rehabilitation.

2. **Bid Items** - Each bid item shall include full compensation for performing the work specified in the bid items and furnishing all materials, labor, tools, equipment, profit and incidentals as required. Each bid item shall be paid on a percentage completed for that bid item unless otherwise noted.

- 2.1. **Mobilization (Lump Sum, LS)** - This bid item shall be paid on a lump sum basis based on a percentage of completion. This bid item shall include the performance of construction preparatory operations, including the movement of personnel and equipment to the bridge sites as listed in the bid form, payment of performance and payment bond and other insurance premiums, and for the establishment of the Contractor's facilities necessary to begin work on a substantial phase of the contract.

- 2.2. **Construction Stakeout (Lump Sum, LS)** - This bid item shall be paid at a lump sum price. Pay requests may be made for this item based on a percentage of completion. This bid item shall include staking out all proposed improvements, checking elevations at utility crossings and connections, checking and adjusting curb elevations and heights, storm drain structures and pipe slopes, all grades to ensure positive drainage, and all other survey services necessary to complete the Work.
- 2.3. **Maintenance of Traffic (MOT) and Work Area Protection (Lump Sum, LS)** - This bid item shall be paid on a lump sum basis. Pay requests shall be made for this item based on a percentage of completion for the Project. This bid item shall include furnishing and installing all materials, signs, flashing devices, barricades, equipment, and manpower as indicated on the Plans. Contractor shall note that the barrel spacing is not to scale and the number of the barrels needs to be determined by dividing the length by the spacing. The City shall **not** provide any signs. This bid item shall include maintaining the work area in accordance with Virginia Work Area Protection Manual.
- 2.4. **Demolition of Existing Features (Feet, FT / Each, EA / Square Yard, SY / Lump Sum, LS)** – This bid item shall be paid for on a unit basis. Payment for this item is for the proper removal and off-site disposal of existing infrastructure as shown on Plans or as required in order to construct new proposed features.
- 2.5. **Environmental Protection, Health, and Safety for Type B Structure Removal (Lump Sum, LS)** - This bid item shall be paid for on a lump sum basis. Payment for this item is for the proper removal and abatement, in accordance with VDOT RBS, of the lead coating in locations and connections required for the proper removal of the superstructure and associated features. Abatement shall be performed to superstructure elements in-place prior to any grinding, sawing, burning, etc. This bid item shall also include a protection, health, and safety plan submitted to the City Project Manager for approval.
- 2.6. **Testing, Manifest and Disposal of Type B Material Removal (Lump Sum, LS)** - This bid item shall be paid for on a lump sum basis. Payment for this item is for the proper testing, manifest and disposal, in accordance with VDOT RBS, of the Type B material removed as part of the superstructure demolition activities. Contractor shall transport and dispose of the waste material in accordance with all local, state, and federal laws. Contractor shall provide the City with copies of the test reports and disposal facility manifests. City representatives shall sign the manifest as “generator” of the waste material collected as part superstructure removal. Once the superstructure elements are removed from the abutments they are the property of the Contractor.
- 2.7. **Debris Removal (Tons)** - This bid item shall be measured and paid for per ton. The bid shall include all work to properly remove and dispose of any debris or wooden drift that has been deposited under the bridge. Note that the debris is not shown on Plans. All debris to be disposed of in accordance with local, state and federal laws. Burning of debris is not allowed.

- 2.8. **Abutment Backwall Reconstruction (Linear Foot, LF)** - This bid item shall be measured and paid for per linear foot. The bid shall include all work and material in order to demolish and reconstruct the abutment backwall in accordance with the Plans and VDOT RBS.
- 2.9. **Precast Concrete Slab (Each, EA)** - This bid item shall be paid for on a unit basis. The unit price shall include the cost of furnishing and installing the reinforced concrete slabs along with elastomeric bearing pads, grouting shear keys, drainage aggregate (No. 57), shop and field applied waterproofing, and anchors. The unit price shall also include the required corrosion resistant rebar (CRR). Contractor shall submit precast shop drawings to the City Project Manager for review.
- 2.10. **Cast-In-Place Concrete Closure Pours (Cubic Yard, CY)** - This bid item shall be paid for on a cubic yard basis for installation of concrete and corrosion resistant rebar (CRR) as shown in Plans. Bid item shall include formwork, embedded rebar, joint sealant, waterproofing, hot/cold weather protection, drainage aggregate (No. 57), curing and other work as required for cast in place concrete. All concrete testing shall be performed by the City of Roanoke.
- 2.11. **Base Asphalt (TONS)** - The bid item shall be measured and paid on a per ton basis. This bid item shall include all materials and work required to install the base asphalt in accordance with the Plans and VDOT RBS. See Sheet S-6 End of Beam Asphalt Repair.
- 2.12. **Surface Asphalt (TONS)** - The bid item shall be measured and paid on a per ton basis. This bid item shall include all materials and work required to install the surface asphalt in accordance with the Plans and VDOT RBS.
- 2.13. **Clearing and Grubbing (Lump Sum, LS)** - This bid item shall be paid at a lump sum price. Pay requests may be made for this item based on a percentage of completion. This bid item shall include all clearing and grubbing in accordance with the Plans and VDOT RBS. Contractor shall note burning of vegetative debris is not allowed. All material shall be properly disposed of off-site in accordance with all local, state and federal laws.
- 2.14. **Incidental Concrete (Square Yard, SY / Linear Foot, LF)** - This bid item shall be measured and paid for on a unit basis. This bid item shall include all work and material for the proper installation of concrete in accordance with Plans and VDOT RBS.
- 2.15. **Concrete (Cubic Yard, CY)** - This bid item shall be measured and paid for on a unit basis. This bid item shall include all work and material for the proper installation of concrete in accordance with Plans and VDOT RBS. Bid item shall include formwork, hot/cold weather protection, curing and other work as required for cast in place concrete. All concrete testing shall be performed by the City of Roanoke.
- 2.16. **Reinforcement (Pounds, LBS)** – This bid item shall be measured and paid for on a unit basis. The price includes all work and material to properly install the reinforcement in accordance with the Plans and VDOT RBS.

- 2.17. **Bypass Pumping with Dewatering Basin (Lump Sum, LS)** - This bid item shall be paid for on a lump sum basis for bypass pumping during the construction of the box culvert. See Appendix A which contains the parameters for bypass pumping in the USACE Nationwide 3 permit.
- 2.18. **Scour Repair (Cubic Yard, CY)** - This bid item shall be paid for on a cubic yard basis for installation of concrete in scour locations between the bridge and box culverts. Scour repair shall be performed in the dry while bypassing pumping. Concrete shall VDOT Class A3. All concrete testing shall be performed by the City of Roanoke.
- 2.19. **Riprap Stone with Geotextile (TON)** - This bid item shall be paid for on a unit basis for the installation of riprap stone at the upstream culvert extension in accordance with the MC Plans and VDOT RBS. Price shall also include the installation of a geotextile to separate the rock from the existing soil.
- 2.20. **Storm Drain Structure (Each, EA)** - This bid item shall be paid for on a unit basis. The unit price shall include the cost of furnishing and installing the entire structure along with bedding and backfill material. The unit price for each structure shall also include required accessories such as inlet shaping and steps.
- 2.21. **Storm Drain Pipe (Linear Foot, LF)** - This bid item shall be paid for on a linear foot basis. Storm drain pipe shall be measured in linear foot along the centerline of the pipe for the size and type of pipe specified from end of pipe to end of pipe. The unit cost shall include the cost of furnishing, trenching, and installation of the pipe along with bedding material and backfill material.
- 2.22. **Milling (Square Yard, SY)** - This bid item shall be measured and paid per square yard. Bid item shall include the milling operation in accordance with VDOT RBS and proper disposal of concrete millings at an off-site location in accordance with local, state and federal regulations.
- 2.23. **Galvanized Handrail (Linear Foot, LF)** - This bid item shall be paid for on a linear foot basis. The linear foot price shall include labor, materials and equipment necessary for a complete in place installation in accordance with VDOT RBS Section.
- 2.24. **Chain Link Fence (Linear Foot, LF)** – This bid item shall be paid on a linear foot basis. The linear foot price shall include labor, materials and equipment necessary for a complete in place installation in accordance with VDOT RBS Section.
- 2.25. **Erosion and Sediment Control Devices (Linear Foot, LF / Each, EA)** - This bid item shall be measured and paid for on a unit basis. This bid item shall include the installation, maintenance of all erosion and sediment control devices as required on the Plans.

2.26. **Pavement Marking (Linear Foot, LF / Each, EA)** - This bid item shall be measured and paid for on a unit basis. The bid item shall include replacement of any existing pavement marking replacements within the limits of asphalt milling. All pavement markings shall be Thermoplastic, Type B in accordance with VDOT RBS Section 246.

**End of Section**

## Section 01350

### Submittals

#### 1. General

**1.1.** Submittals shall include all anticipated shop drawings, product data, and samples as defined in the Contract Documents and also include certificates, test data, and other submitted data required to demonstrate compliance with the contract documents. See General Conditions Section 14 for more information.

**1.2. Submittal Register – Submit by email to [luke.pugh@roanokeva.gov](mailto:luke.pugh@roanokeva.gov)**

Submittal Number	Description
1	Schedule
2	Precast Segmental Slab Shop Drawings
3	Health and Safety Plan for Type B Coating
4	Type B Manifest
5	Shoring Plan (As required)

**\*\* - Must be submitted and approved before notice to proceed date is set.**

**1.3. Resubmission** -Change or correct submittals as required by the City project manager or City's consultant.

**1.4. City Procedures - City's Review:** Submittals will be reviewed with reasonable promptness. Submittals will be stamped by the City with one of the five following actions:

1.4.1. "Approved" indicates approval with no exception taken and the plan of work shown may proceed. However, the City's approval of any submittal shall not relieve the Contractor from the responsibility of complying with all requirements of this Contract, including the obligation to provide submittals that are accurate and complete. The City assumes no responsibility for figured dimensions on shop drawings. In addition, the City assumes no responsibility for concrete compression strength tests even after the mix design has been approved.

1.4.2. "Approved as Noted" indicates approval subject to the noted corrections. Ordering or fabrication of work shown may proceed on the basis of corrections indicated.

1.4.3. "Correct and Resubmit" indicates that additional information or changes (as noted) are required prior to taking further action. Corrections shall be made to the submittal and it shall be resubmitted. Ordering or fabrication of work shall not proceed.

Submittals

1.4.4. “Disapproved” indicates information provided reveals that submittal does not conform to the contract requirements. Submittal conforming to the contract requirements shall be submitted for approval.

1.4.5. “No Action Taken” indicates one of the following: Submittal incomplete and a proper review cannot be performed, Insufficient copies submitted, Transmittal form incomplete, Contractor’s certificate approving submittal not signed or missing, Submittal not required and the contract documents do not require the City to take action on this item, and Other causes or reasons as noted.

**1.5 Colors – Not Used**

**1.6 Changes After Approval** – Contractor shall not make any changes in submittal marked “Approved” or “Approved as Noted” without obtaining the prior written consent of the City. If such written consent is obtained, revise the submittal to show fully the altered parts of the work and resubmit according to the procedures specified herein. State on resubmitted plans that the work shown supersedes and voids identified parts of the same work previously shown. Give full identification on the drawings previously approved by the City and the date of such action.

**1.7 Proceeding without Approval** - Proceeding with any construction and ordering or fabricating materials before all relevant drawings have been “Approved” or “Approved as Noted” shall be done at the Contractor’s sole risk.

**End of Section**

## Section 01500

### Temporary Facilities

#### 1. General

- 1.1. **Use Charges:** No cost or usage charges for temporary services or facilities shall be chargeable to the City. Cost or use charges for temporary services or facilities or for operation of permanent utilities shall not be accepted as a basis of claims for an increase in the contract sum.
- 1.2. **Temporary Electricity and Lighting (If Needed)** - Contractor shall arrange for power and lighting and pay costs for service and power used.
- 1.3. **Temporary Water (If Needed)** - Contractor shall arrange for water for construction purposes and pay costs for installation, maintenance and removal, and service charges for water used.
- 1.4. **Temporary Sanitary Facilities** - Contractor shall arrange and pay for toilet facilities and maintain those facilities in accordance with the public health authority having jurisdiction.
- 1.5. **Staging and Storage Areas** – Contractor shall arrange and pay for any staging and storage areas.
- 1.6. **Job site office** - The Contractor shall not be required to have a job site office or trailer.

#### 2. Products – Not Used

#### 3. Execution – Not Used

**End of Section**

## Appendix A



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

May 20, 2016

Western Virginia Regulatory Section  
NAO-2016-00805/VMRC-16-0675 (Brandon over Murray)

City of Roanoke-Engineering Department  
Attention: Luke Pugh  
215 Church Avenue, SW  
Roanoke, VA 24011

Dear Mr. Pugh,

This is in regard to your Department of the Army permit application number NAO-2016-00805/VMRC-16-V0675 to permanently impact approximately 904 square feet of Murray Run. The proposed work will include 3 separate phases. Phase 1: Installation of a new culvert extension to replace a leaning retaining wall. Phase 2: Replace the corroded steel beams with a concrete slab. Phase 3: Fix scour holes located at the interface of bridge and culverts at each end. Total amount of fill below the ordinary high water mark is approximately 23.68 cubic yards for all 3 phases. These impacts will occur on Brandon Avenue where it crosses Murray Run in the city of Roanoke, Virginia. These impacts are detailed on the enclosed drawings entitled, "Brandon Avenue Over Murray Run Bridge Rehabilitation", pages 1-6, dated April 26, 2016, prepared and submitted by the applicant and received by this office on May 2, 2016 (attached).

Your proposed work as outlined above satisfies the criteria contained in the Corps Nationwide Permit (3), attached. The Corps Nationwide Permits were published in the February 21, 2012 Federal Register notice (77 FR 10184) and the regulations governing their use can be found in 33 CFR 330 published in Volume 56, Number 226 of the Federal Register dated November 22, 1991.

This nationwide permit verification is contingent upon the following project specific conditions:

Special Conditions:

- Potential habitat for threatened and endangered species (Roanoke logperch) is present at Murray Run; therefore a Time of Year Restriction had been placed within the permit conditions. No in stream construction shall be taken place during the timeframe of March 15 through June 30.

Provided the Nationwide Permit General Conditions (enclosed) are met, an individual Department of the Army Permit will not be required. In addition, the Virginia Department of Environmental Quality has provided an unconditional §401 Water Quality Certification for Nationwide Permit Number 3. A permit may be required from the

Virginia Marine Resources Commission and/or your local wetlands board, and this verification is not valid until you obtain their approval, if necessary. This authorization does not relieve your responsibility to comply with local requirements pursuant to the Chesapeake Bay Preservation Act (CBPA), nor does it supersede local government authority and responsibilities pursuant to the Act. You should contact your local government before you begin work to find out how the CBPA applies to your project.

Enclosed is a "compliance certification" form, which must be signed and returned within 30 days of completion of the project, including any required mitigation. Your signature on this form certifies that you have completed the work in accordance with the nationwide permit terms and conditions.

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2017. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). Project specific conditions listed in this letter continue to remain in effect after the NWP verification expires, unless the district engineer removes those conditions. Activities completed under the authorization of an NWP which was in effect at the time the activity was completed continue to be authorized by that NWP.

If you have any questions and/or concerns about this permit authorization, please contact Chris Powell via telephone at (540) 344-1409 or via email at [christopher.c.powell@usace.army.mil](mailto:christopher.c.powell@usace.army.mil).

Sincerely,



Digitally signed by  
POWELL,CHRISTOPHER.CHARLES.12640823  
89  
DN: cn=US, o=U.S. Government, ou=DoD,  
ou=PKI, ou=USA,  
cni=POWELL,CHRISTOPHER.CHARLES.12640  
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Date: 2016.05.20 11:18:03 -04'00'

Chris Powell  
Project Manager, Western Virginia  
Regulatory Section

Enclosure(s)

Cc: Department of Environmental Quality, Jay Roberts  
Virginia Marine Resources Commission, Rachael Maulorico



**U.S. Army Corps  
Of Engineers**  
Norfolk District

**CERTIFICATE OF COMPLIANCE  
WITH  
ARMY CORPS OF ENGINEERS PERMIT**

Permit Number: NAO-2016-00805  
VMRC Number: VMRC-16-V0675  
Corps Contact: Chris Powell  
Name of Permittee: City of Roanoke  
Date of Issuance: May 20, 2016  
Permit Type: Nationwide 3

**Within 30 days of completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:**

US Army Corps of Engineers - Norfolk District  
Roanoke Field Office  
CENAO-WRR-W  
Poff Federal Building Room, 749  
210 Franklin Road SW  
Roanoke, VA 24011

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation has been completed in accordance with the permit conditions.

---

Signature of Permittee

Date

Nationwide Permit (3) Maintenance (3/19/2012)

- (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.
- (b) This NWP also authorizes the removal of accumulated sediments and debris in the vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and/or the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization. The placement of new or additional riprap must be the minimum necessary to protect the structure or to ensure the safety of the structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer.
- (c) This NWP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.
- (d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

**Notification:** For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 31). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Sections 10 and 404)

**Note:** This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

**REGIONAL CONDITIONS:**

- Conditions for Waters Containing Submerged Aquatic Vegetation (SAV) Beds:** A pre-construction notification (PCN) is required if work will occur in areas that contain submerged aquatic vegetation (SAVs). Information about SAVs can be found at the Virginia Institute of Marine Science's website: <http://www.vims.edu/bio/sav/>. Additional avoidance and minimization measures, such as relocating a structure or time-of-year (TOYR) restrictions may be required to reduce impacts to SAVs.
- Conditions for Anadromous Fish Use Areas:** To ensure that activities authorized by this Nationwide Permit (NWP) do not impact waterways documented to provide spawning habitat or a migratory pathway for anadromous fish, a check for anadromous fish use areas must be conducted via the Norfolk District's Regulatory GIS (for reporting permits) and/or the Virginia Department of Game and Inland Fisheries (VDGIF) Information System (by applicant for non-reporting permits) at <http://vafwis.org/fwis/>. If the project is located in an area documented as an anadromous fish use area (confirmed or potential), a time-of-year restriction (TOYR) prohibiting all in-water work will be required from February 15 to June 30 of any given year or any TOYR specified by VDGIF and/or Virginia Marine Resources Commission (VMRC). For permits requiring a PCN, if the Norfolk District determines that the work is minimal and the TOYR is unnecessary, informal consultation will be conducted with NOAA Fisheries Service (NOAA) to obtain concurrence that the TOYR would not be required for the proposed activity.
- Conditions for Designated Critical Resource Waters, which include National Estuarine Research Reserves:** Notification is required for work under this NWP in the Chesapeake Bay National Estuarine Research Reserve in Virginia. This multi-site system along a salinity gradient of the York River includes Sweet Hall Marsh, Taskinas Creek, Catlett Island, and Goodwin Islands. More information can be found at: <http://www.vims.edu/cbnerr/>.
- Conditions for Federally Listed Species and Designated Critical Habitat:** Notification for this NWP will be required for any project that may affect a federally listed threatened or endangered species or designated critical habitat. The U.S. Fish and Wildlife Service (Service) has developed an online system that allows users to find information about sensitive resources that may occur within the vicinity of a proposed project. This system is named "Information, Planning and Conservation System," (IPaC), and is located at: <http://ecos.fws.gov/ipac/>. This system provides information regarding federally listed and proposed candidate, threatened, and endangered species, designated critical habitats, and Service refuges that may occur in the identified areas, or may be affected by the proposed activities. The applicant may use this system to determine if any federally listed species or designated critical habitat may be affected by their proposed project, ensuring compliance with the Endangered Species Act.
- Conditions for Waters with Federally Listed Endangered or Threatened Species, Waters Federally Designated as Critical Habitat, and One-mile Upstream (including tributaries) of Any Such Waters:** A pre-construction notification (PCN) is required for work in the areas listed below for the Counties of Lee, Russell, Scott, Tazewell, Wise, and Washington in Southwestern Virginia within the following specific waters and reaches:

- 1) Powell River - from the Tennessee-Virginia state line upstream to the Route 58 Bridge in Big Stone Gap and one mile upstream of the mouth of any tributary adjacent to this portion of the River.
- 2) Clinch River - from the Tennessee-Virginia state line upstream to Route 632 at Pisgah in Tazewell County and one mile upstream of the mouth of any tributary adjacent to this portion of the River, the Little River to its confluence with Maiden Spring Creek, and one mile upstream of the mouth of any tributary adjacent to this portion of Little River.
- 3) North Fork Holston River - from the Tennessee-Virginia state line upstream to the Smyth County/Bland County line and one mile upstream of any tributary adjacent to this portion of the River.
- 4) Copper Creek - from its junction with the Clinch River upstream to the Route 58 bridge at Dickensonville in Russell County and one mile upstream of any tributary adjacent to this portion of the Creek.
- 5) Indian Creek - from its junction with the Clinch River upstream to the fourth Norfolk and Western Railroad bridge at Van Dyke in Tazewell County and one mile upstream of the mouth of any tributary adjacent to this portion of the Creek.
- 6) Middle Fork Holston River - from the Tennessee-Virginia state line to its junction with Walker Creek in Smyth County near Marion, Virginia.
- 7) South Fork Holston River - from its junction with Middle Fork Holston River upstream to its junction with Beech Creek in Washington County.

For activities requiring a PCN to work in specific waters and reaches, as described above, in the counties of Lee, Russell, Scott, Smyth, Tazewell, Wise, and Washington in southwestern Virginia, it is recommended that the prospective permittee first contact the applicable Norfolk District Field Office, found at this web link: <http://www.nao.usace.army.mil/Missions/Regulatory/SouthwestContacts.aspx> to determine if the PCN procedures would apply. If required, the PCN must be submitted in writing and include the following information (the Joint Permit Application may also be used – be sure to mark it with the letters PCN at the top of the first page):

- Name, address, and telephone number of the prospective permittee.
- Location of the proposed project.
- Vicinity map and project drawings on 8.5-inch by 11-inch paper (including a plan view, profile, & cross-sectional view).
- Brief description of the proposed project and the project purpose.
- Where required by the terms of the NWP, a delineation of affected special aquatic sites, including wetlands.

When all required information is received by the appropriate field office, the Corps will notify the prospective permittee within 45 days whether the project may proceed under the NWP permit or whether an individual permit is required. If, after reviewing the notification, the District Commander determines that the proposed activity would have more than a minimal individual or cumulative adverse impact on the aquatic environment or otherwise may be contrary to the public interest, then he/she will either condition the nationwide permit authorization to reduce or eliminate the adverse impacts, or notify the prospective permittee that the activity is not authorized by the nationwide permit and provide the prospective permittee with instructions on how to seek authorization under an individual permit.

Non-federal applicants shall notify the District Commander if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the District Commander that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that may be

affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The District Commander will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed.

6. **Conditions for Designated Trout Waters:** Notification is required for work in the areas listed below for this NWP. This condition applies to activities occurring in two categories of waters: Class V (Put and Take Trout Waters) and Class VI (Natural Trout Waters), as defined by the Virginia State Water Control Board Regulations, Water Quality Standards (VR-680-21-00), dated January 1, 1991, or the most recently updated publication. The Virginia Department of Game and Inland Fisheries (VDGIF) designated these same trout streams into six classes. Classes I-IV are considered wild trout streams. Classes V and VI are considered stockable trout streams. Information on designated trout streams can be obtained via their Virginia Fish and Wildlife Information Service's (VAFWIS's) Cold Water Stream Survey database. Basic access to the VAFWIS is available via <http://vafwis.org/fwis/>.

The waters, occurring specifically within the mountains of Virginia, are within the following river basins:

- 1) Potomac-Shenandoah River Basins
- 2) James River Basin
- 3) Roanoke River Basin
- 4) New River Basin
- 5) Tennessee and Big Sandy River Basins
- 6) Rappahannock River Basin

VDGIF recommends the following time-of-year restrictions (TOYR) for any in-stream work within streams identified as wild trout waters in its Cold Water Stream Survey database. The recommended TOYR for trout species are:

- Brook Trout: October 1 through March 31
- Brown Trout: October 1 through March 31
- Rainbow Trout: March 15 through May 15

This condition applies to the following counties and cities: Albemarle, Allegheny, Amherst, Augusta, Bath, Bedford, Bland, Botetourt, Bristol, Buchanan, Buena Vista, Carroll, Clarke, Covington, Craig, Dickenson, Floyd, Franklin, Frederick, Giles, Grayson, Greene, Henry, Highland, Lee, Loudoun, Madison, Montgomery, Nelson, Page, Patrick, Pulaski, Rappahannock, Roanoke City, Roanoke Co., Rockbridge, Rockingham, Russell, Scott, Shenandoah, Smyth, Staunton, Tazewell, Warren, Washington, Waynesboro, Wise, and Wythe.

Any discharge of dredged and/or fill material authorized by this NWP, which would occur in the designated waterways or adjacent wetlands of the specified counties, requires notification to the appropriate Corps of Engineers field office, and written approval from that office prior to performing the work. The Norfolk District recommends that prospective permittees first contact the appropriate field office by telephone to determine if the notification procedures would apply. The notification must be in writing and include the following information (the standard Joint Permit Application may also be used):

- Name, address, and telephone number of the prospective permittee.
- Location of the proposed project.

- Vicinity map and project drawings on 8.5-inch by 11-inch paper (plan view, profile, & cross-sectional view).
- Brief description of the proposed project and the project purpose.
- Where required by the terms of the nationwide permit, a delineation of affected special aquatic sites, including wetlands.

When all required information is received by the appropriate field office, the Corps will notify the prospective permittee within 45 days whether the project can proceed under the NWP or whether an individual permit is required. If, after reviewing the notification, the District Commander determines that the proposed activity would have more than minimal individual or cumulative adverse impacts on the aquatic environment or otherwise may be contrary to the public interest, then he/she will either condition the nationwide permit authorization to reduce or eliminate the adverse impacts, or notify the prospective permittee that the activity is not authorized by the NWP and provide instructions on how to seek authorization under an individual permit. If the prospective permittee is not notified otherwise within the 45-day period the prospective permittee may assume that the project can proceed under the NWP.

7. **Conditions Regarding Invasive Species:** Plant species listed by the most current *Virginia Department of Conservation and Recreation's Invasive Alien Plant List* shall not be used for re-vegetation for activities authorized by any NWP. The list of invasive plants in Virginia may be found at: [http://www.dcr.virginia.gov/natural\\_heritage/documents/invlist.pdf](http://www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf).

8. **Conditions Pertaining to Countersinking of Pipes and Culverts in Nontidal Waters:**

**NOTE: COUNTERSINKING IS NOT REQUIRED IN TIDAL WATERS.** However, replacement pipes/culverts in tidal waters must be installed with invert elevations no higher than the existing pipe/culvert invert elevation, and a new pipe/culvert must be installed with the invert no higher than the stream bottom elevation.

- Following consultation with the Virginia Department of Game and Inland Fisheries (DGIF), the Norfolk District has determined that fish and other aquatic organisms are most likely present in any stream being crossed, in the absence of site-specific evidence to the contrary. Although prospective permittees have the option of providing such evidence, extensive efforts to collect such information is not encouraged, since countersinking will in most cases be required except as outlined in the conditions below.
- All pipes:** All pipes and culverts placed in streams will be countersunk at both the inlet and outlet ends, unless indicated otherwise by the Norfolk District on a case-by-case basis (see below). Pipes that are 24" or less in diameter shall be countersunk 3" below the natural stream bottom. Pipes that are greater than 24" in diameter shall be countersunk 6" below the natural stream bottom. The countersinking requirement does not apply to bottomless pipes/culverts or pipe arches. All single pipes or culverts (with bottoms) shall be depressed (countersunk) below the natural streambed at both the inlet and outlet of the structure. In sets of multiple pipes or culverts (with bottoms) at least one pipe or culvert shall be depressed (countersunk) at both the inlet and outlet to convey low flows.
- Exemption for extensions and certain maintenance:** The requirement to countersink does not apply to extensions of existing pipes or culverts that are not countersunk, or to maintenance to pipes/culverts that does not involve replacing the pipe/culvert (such as repairing cracks, adding material to prevent/correct scour, etc.).
- Floodplain pipes:** The requirement to countersink does not apply to pipes or culverts that are being placed above ordinary high water, such as those placed

to allow for floodplain flows. The placement of pipes above ordinary high water is not jurisdictional (provided no fill is discharged into wetlands).

- Hydraulic opening:** Pipes should be adequately sized to allow for the passage of ordinary high water with the countersinking and invert restrictions taken into account.
- Pipes on bedrock or above existing utility lines:** Different procedures will be followed for pipes or culverts to be placed on bedrock or above existing buried utility lines where it is not practicable to relocate the lines, depending on whether the work is for replacement of an existing pipe/culvert or a new pipe/culvert:
  - Replacement of an existing pipe/culvert: Countersinking is not required provided the elevations of the inlet and outlet ends of the replacement pipe/culvert are no higher above the stream bottom than those of the existing pipe/culvert. Documentation (photographic or other evidence) must be maintained in the permittee's records showing the bedrock condition and the existing inlet and outlet elevations. That documentation will be available to the Norfolk District upon request, but notification or coordination with the Norfolk District is not otherwise required.
  - A pipe/culvert is being placed in a new location: If the prospective permittee determines that bedrock or an existing buried utility line that is not practicable to relocate prevents countersinking, he/she should evaluate the use of a bottomless pipe/culvert, bottomless utility vault, span (bridge) or other bottomless structure to cross the waterway, and also evaluate alternative locations for the new pipe/culvert that will allow for countersinking. If the prospective permittee determines that neither a bottomless structure nor an alternative location is practicable, then he/she must submit a pre-construction notification (PCN) to the Norfolk District in accordance with General Condition 31 of the NWPs. In addition to the information required by General Condition 31, the prospective permittee must provide documentation of measures evaluated to minimize disruption of the movement of aquatic life as well as documentation of the cost, engineering factors, and site conditions that prohibit countersinking the pipe/culvert. Options that must be considered include partial countersinking (such as less than 3" of countersinking, or countersinking of one end of the pipe), and constructing stone step pools, low rock weirs downstream, or other measures to provide for the movement of aquatic organisms. The PCN must also include photographs documenting site conditions. The prospective permittee may find it helpful to contact his/her regional fishery biologist for the Virginia Department of Game and Inland Fisheries (VDGIF), for recommendations about the measures to be taken to allow for fish movements. When seeking advice from VDGIF, the prospective permittee should provide the VDGIF biologist with all available information such as location, flow rates, stream bottom features, description of proposed pipe(s), slopes, etc. Any recommendations from VDGIF should be included in the PCN. The Norfolk District will notify the prospective permittee whether the proposed work qualifies for the nationwide permit within 45 days of receipt of a complete PCN. **NOTE:** Blasting of stream bottoms through the use of explosives is not acceptable as a means of providing for countersinking of pipes on bedrock.
- Pipes on steep terrain:** Pipes being placed on steep terrain (slope of 5% or greater) must be countersunk in accordance with the conditions above and will in most cases be non-reporting. It is recommended that on slopes greater than 5%, a larger pipe than required be installed to allow for the passage of ordinary high water in order to increase the likelihood that natural velocities can be maintained. There may be situations where countersinking both the inlet and outlet may result in a slope in the pipe that results in flow velocities that cause excessive scour at the outlet and/or prohibit some fish movement. This type of situation could occur on the side of a mountain where falls and drop pools

occur along a stream. Should this be the case, or should the prospective permittee not want to countersink the pipe/culvert for other reasons, he/she must submit a Pre-Construction Notification to the Norfolk District in accordance with General Condition 31 of the Nationwide Permits. In addition to the information required by General Condition 31, the prospective permittee must provide documentation of measures evaluated to minimize disruption of the movement of aquatic life as well as documentation of the cost, engineering factors, and site conditions that prohibit countersinking the pipe/culvert. The prospective permittee should design the pipe to be placed at a slope as steep as stream characteristics allow, countersink the inlet 3-6", and implement measures to minimize any disruption of fish movement. These measures can include constructing a stone step/pool structure, preferably using river rock/native stone rather than riprap, constructing low rock weirs to create a pool or pools, or other structures to allow for fish movements in both directions. Stone structures should be designed with sufficient-sized stone to prevent erosion or washout and should include keying-in as appropriate. These structures should be designed both to allow for fish passage and to minimize scour at the outlet. The quantities of fill discharged below ordinary high water necessary to comply with these requirements (i.e., the cubic yards of stone, riprap or other fill placed below the plane of ordinary high water) must be included in project totals. The prospective permittee may find it helpful to contact his/her regional fishery biologist for the Virginia Department of Game and Inland Fisheries (DGIF), for recommendations about the measures to be taken to allow for fish movements. When seeking advice from DGIF, the prospective permittee should provide the DGIF biologist with all available information such as location, flow rates, stream bottom features, description of proposed pipe(s), slopes, etc. Any recommendations from DGIF should be included in the PCN. The Norfolk District will notify the prospective permittee whether the proposed work qualifies for the nationwide permit within 45 days of receipt of a complete PCN.

- h. **Problems encountered during construction:** When a pipe/culvert is being replaced, and the design calls for countersinking at both ends of the pipe/culvert, and during construction it is found that the streambed/banks are on bedrock, then the permittee must stop work and contact the Norfolk District (contact by telephone and/or email is acceptable). The permittee must provide the Norfolk District with specific information concerning site conditions and limitations on countersinking. The Norfolk District will work with the permittee to determine an acceptable plan, taking into consideration the information provided by the permittee, but the permittee should recognize that the Norfolk District could determine that the work will not qualify for a nationwide permit.
- i. **Emergency pipe replacements:** In the case of an emergency situation, such as when a pipe/culvert washes out during a flood, a permittee is encouraged to countersink the replacement pipe at the time of replacement, in accordance with the conditions above. However, if conditions or timeframes do not allow for countersinking, then the pipe can be replaced as it was before the washout, but the permittee will have to come back and replace the pipe/culvert and countersink it in accordance with the guidance above. In other words, the replacement of the washed out pipe is viewed as a temporary repair, and a countersunk replacement should be made at the earliest possible date. The Norfolk District must be notified of all pipes/culverts that are replaced without countersinking at the time that it occurs, even if it is an otherwise non-reporting activity, and must provide the permittee's planned schedule for installing a countersunk replacement (it is acceptable to submit such notification by email). The permittee should anticipate whether bedrock or steep terrain will limit countersinking, and if so, should follow the procedures outlined in (f) and/or (g) above.

9. **Conditions for the Repair of Pipes:**

**NOTE: COUNTERSINKING IS NOT REQUIRED IN TIDAL WATERS.** However, replacement pipes/culverts in tidal waters must be installed with invert elevations no higher than the existing pipe/culvert invert elevation, and a new pipe/culvert must be installed with the invert no higher than the stream bottom elevation.

If any discharge of fill material will occur in conjunction with pipe maintenance, such as concrete being pumped over rebar into an existing deteriorated pipe for stabilization, then:

- A. **If the existing pipe or line of pipes are NOT currently countersunk:**
- As long as the inlet and outlet invert elevations of at least one pipe located in the low flow channel are not being altered, and provided that no concrete apron is being constructed, then the work may proceed under the NWP for the other pipes, provided it complies with all other NWP General Conditions, including Condition 9 for Management of Water Flows. In such cases, notification to the Norfolk District Commander is not required, unless specified in the NWP Conditions for other reasons, and the permittee may proceed with the work.
  - Otherwise, the prospective permittee must submit a pre-construction notification (PCN) to the Norfolk District Commander prior to commencing the activity. For all such projects, the following information should be provided:
    - Photographs of the existing inlet and outlet;
    - A measurement of the degree to which the work will raise the invert elevations of both the inlet and outlet of the existing pipe;
    - The reasons why other methods of pipe maintenance are not practicable (such as metal sleeves or a countersunk pipe replacement);
    - Depending on the specific case, the Norfolk District may discuss potential fish usage of the waterway with the Virginia Department of Game and Inland Fisheries.The Norfolk District will assess all such pipe repair proposals in accordance with guidelines that can be found under "Pipe Repair Guidelines" at: <http://www.nao.usace.army.mil/Missions/Regulatory/GuidanceDocuments.aspx>
  - If the Norfolk District determines that the work qualifies for the NWP, additional conditions will be placed on the verification. Those conditions can be found at the web link above (in item ii).
  - If the Norfolk District determines that the work does NOT qualify for the NWP, the applicant will be directed to apply for either an LOP-I permit (applicable only for Virginia Department of Transportation projects) or an individual permit. However, it is anticipated that the applicant will still be required to perform the work such that the waterway is not blocked or restricted to a greater degree than its current conditions.
- B. **If the existing pipe or at least one pipe in the line of pipes IS countersunk and at least one pipe located in the low flow channel will continue to be countersunk, and no concrete aprons are proposed:** No PCN to the Norfolk District is required, unless specified in the NWP Conditions for other reasons, and the permittee may proceed with the work.
- C. **If the existing pipe or at least one pipe in the line of pipes IS countersunk and no pipe will continue to be countersunk in the low flow channel:** This work cannot be performed under the NWPs. The prospective permittee must apply for either a Letter of Permission 1 (LOP-1) permit (applicable only for VDOT projects) or an individual permit. However, it is anticipated that the prospective permittee will still be required to perform the work such that the waterway is not blocked or restricted more so than its current conditions.
- D. **Emergency situations:** In the case of an emergency situation, a prospective permittee is encouraged to follow the above guidelines at the time of repair.

**However, if conditions or timeframes do not allow for compliance with the procedure outlined herein, then the pipe can be repaired as it was before the washout, but the prospective permittee will have to come back and replace or reconstruct the pipe/culvert in accordance with these guidelines. In other words, the repair of the pipe is viewed as a temporary fix, and an appropriate repair should be made at the earliest possible date. The Norfolk District must be notified of all pipes/culverts that are repaired without compliance with these guidelines at the time that the repair occurs, even if it is an otherwise non-reporting activity, and that notification must provide the prospective permittee's planned schedule for following these procedures and constructing an appropriate repair (it is acceptable to submit such notification by email).**

#### **GENERAL CONDITIONS:**

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation.
  - a) No activity may cause more than a minimal adverse effect on navigation.
  - b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
  - c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild

and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species.

- a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.
- b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.
- c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.
- e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.
- f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act.

The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties.

- a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
- b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.
- c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.
- d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of

interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.
  - a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
  - b) For NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.
23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal.
  - a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
  - b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
  - c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.
    - (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.
    - (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.
    - (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).
  - d) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.
  - e) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.
  - f) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.
  - g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWP's. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWP's.
  - h) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.
  - i) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.
  - j) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.
24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.
26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.
27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.
28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.
29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

\_\_\_\_\_  
(Transferee)

\_\_\_\_\_  
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:
- A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions.
  - A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the

certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification.

- Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:
  - He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
  - 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:
  - Name, address and telephone numbers of the prospective permittee;
  - Location of the proposed project;
  - A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

- (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
  - (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
  - (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and
  - (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.
- c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.
- d) Agency Coordination:
- (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWP's and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.
  - (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWP's, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district

engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

- (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.
- (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

#### **DISTRICT ENGINEER'S DECISION:**

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWP's 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.
2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed

compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

#### **FURTHER INFORMATION:**

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

#### **SECTION 401 WATER QUALITY CERTIFICATION (4/18/12):**

The State Water Control Board has provided unconditional §401 Water Quality Certification for all of the Norfolk District Regional Conditions and for the following Nationwide Permits, as meeting the requirements of the Virginia Water Protection Permit Regulation, which serves as the Commonwealth's §401 Water Quality Certification: Nationwide Permits 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 15, 20, 22, 23, 28, 30, 31, 33, 34, 35, 36, 37, 38, 45, 46, 49, and 50.

#### **COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION (4/19/12):**

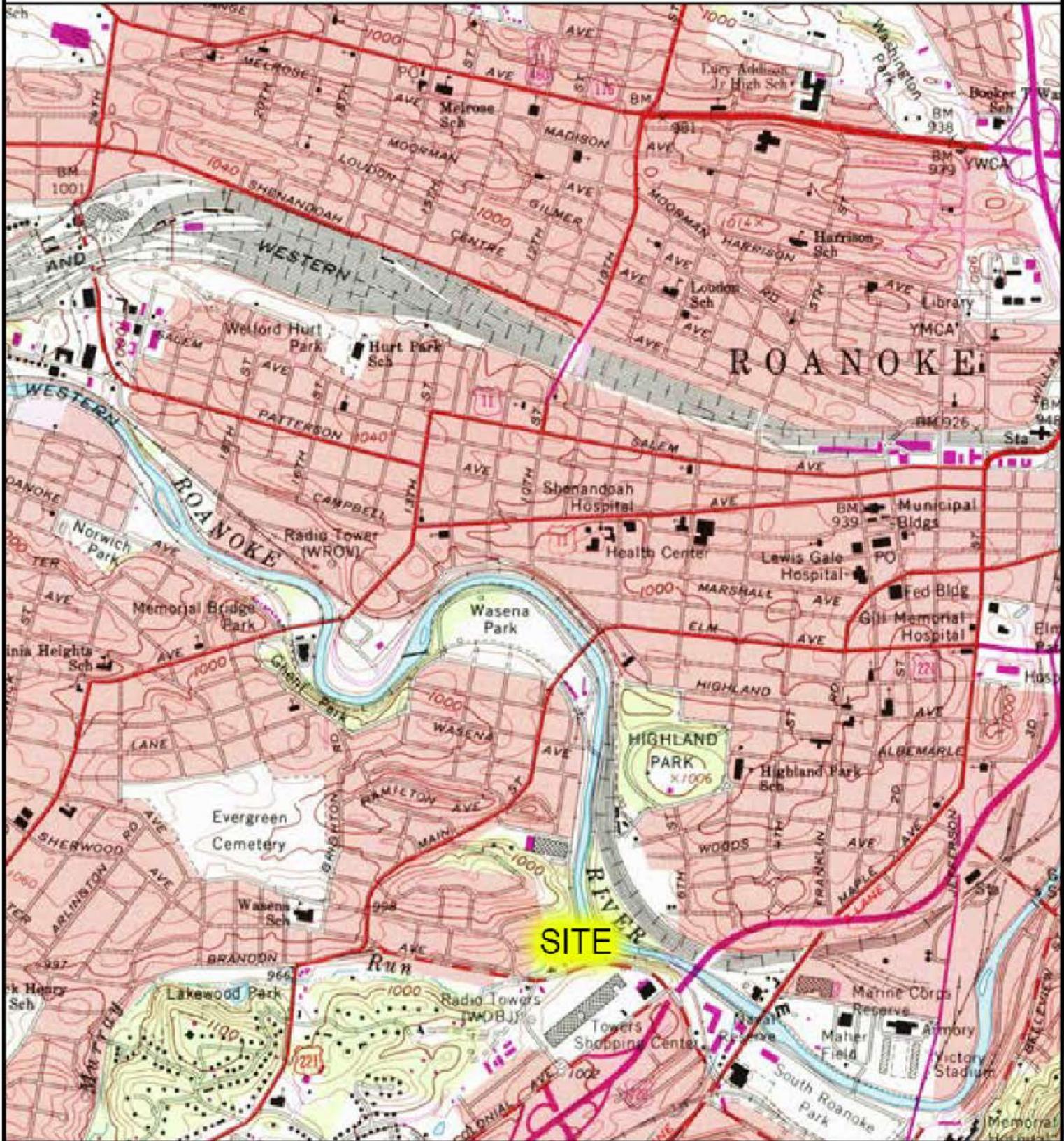
Based on the comments submitted by the agencies administering the enforceable policies of the Virginia Coastal Zone Management Program (VCP), the Virginia Department of Environmental Quality (DEQ) concurs that the reissuance of the 2012 NWPs and Virginia Regional Conditions, as proposed, is consistent with the VCP provided that the following conditions, discussed below, are satisfied:

1. Prior to construction, applicants shall obtain all required permits and approvals not yet secured for the activities to be performed that are applicable to the VCP's enforceable policies and that applicants also adhere to all the conditions contained therein.
  - The Virginia Marine Resources Commission's (VMRC) concurrence of consistency with the subaqueous lands management enforceable policy is based on the recognition that prospective permittees may be required to obtain additional state and/or local approvals

prior to commencement of work in waters of the United States from the VMRC and/or the local wetlands board. Such approvals must precede implementation of the projects.

- Similarly, the Department of Conservation and Recreation, Division of Stormwater Management, Local Implementation (formerly the Division of Chesapeake Bay Local Assistance) concurs that the proposed action is consistent with the coastal lands management enforceable policy provided projects are designed and constructed in a manner consistent with all state and local requirements pursuant to the Chesapeake Bay Preservation Act ("the Act") (Virginia Code §10.1-2100 et seq.) and the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20 et seq.). Applicable projects must receive local approval to be consistent with the coastal lands management enforceable policy.
2. The State Water Control Board has provided §401 Clean Water Act Water Quality Certification for the NWPs and Virginia Regional Conditions. Therefore, the activities that qualify for the NWPs meet the requirements of DEQ's Virginia Water Protection Permit Regulation, provided that the permittee abides by the conditions of the NWP. As to the exceptions for activities that would otherwise qualify for one of these Nationwide Permits, the State will continue to process applications for individual §401 Certification through a Virginia Water Protection General or Individual Permit pursuant to 9 VAC 25-210-10 et seq. The Commonwealth requests that the Corps forward to DEQ pre-construction notifications for any activities that fall into an excepted category for individual review of certain activities.

In accordance with the *Federal Consistency Regulations* at 15 CFR Part 930, section 930.4, this conditional concurrence is based on the applicants demonstrating to the Corps that they have obtained, or will obtain, all necessary authorizations prior to implementing a project which qualifies for a NWP. If the requirements of section 930.4, sub-paragraphs (a)(1) through (a)(3) are not met, this conditional concurrence becomes an objection under 15 CFR Part 930, section 940.43.



- LIST OF DRAWINGS**
- 1 OF 6 - SITE LOCATION MAP
  - 2 OF 6 - EXISTING CONDITIONS
  - 3 OF 6 - PROPOSED REPAIRS
  - 4 OF 6 - PROPOSED CULVERT AND WINGWALL DETAILS
  - 5 OF 6 - PROPOSED SCOUR REPAIRS
  - 6 OF 6 - BYPASS PUMPING DETAILS

**APPLICANT: CITY OF ROANOKE - ENGINEERING DEPARTMENT**  
**WATERWAY: MURRAY RUN (BASIN: ROANOKE RIVER)**  
**CITY: ROANOKE, VA**  
**TOWNSHIP: NA**  
**COUNTY: NA**  
**NUMBER: 1 OF 6**  
**DATE: 4/26/2016**



DUPONT CIRCLE

**LEGEND**

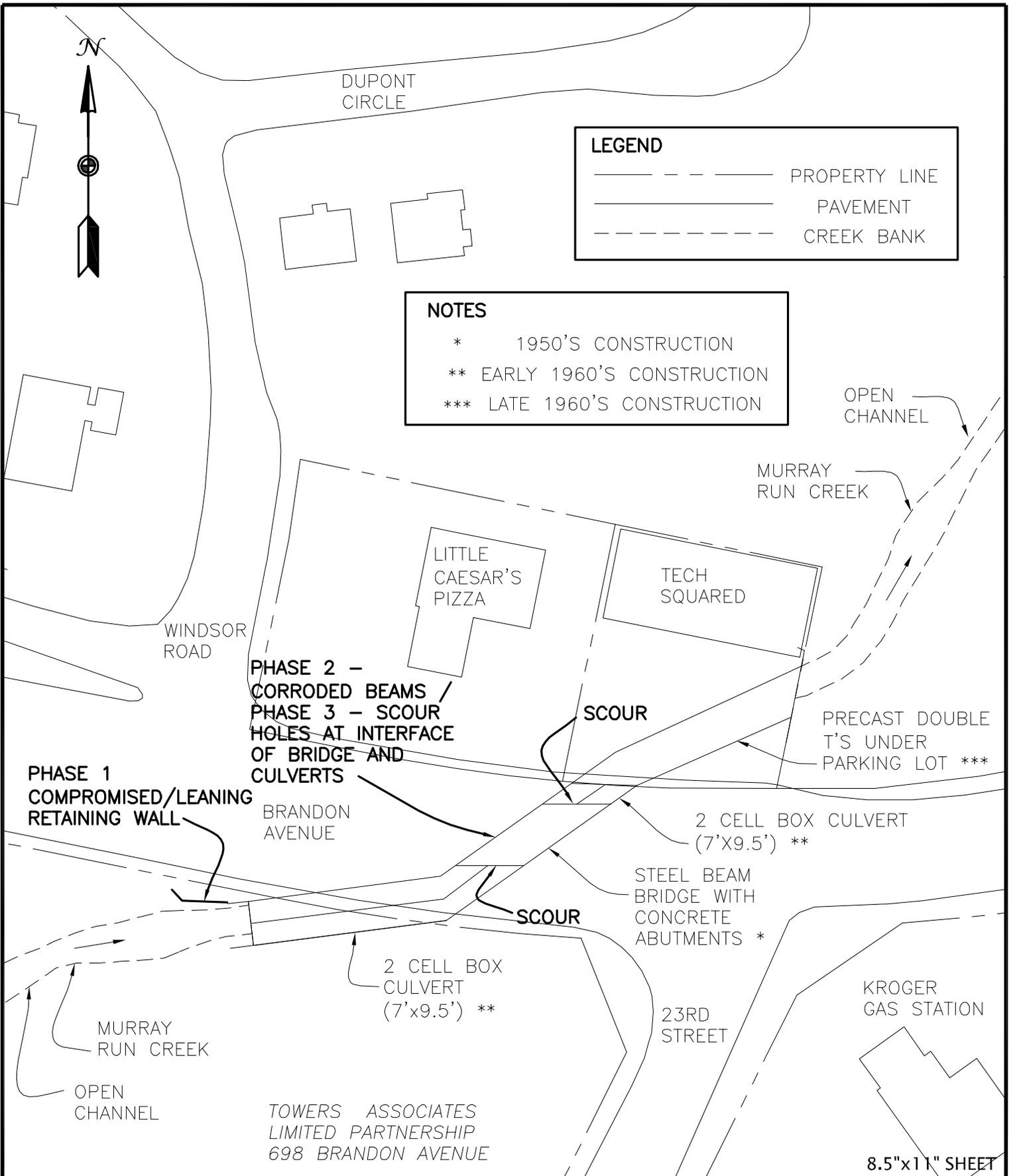
— — — — — PROPERTY LINE

————— PAVEMENT

- - - - - CREEK BANK

**NOTES**

- \* 1950'S CONSTRUCTION
- \*\* EARLY 1960'S CONSTRUCTION
- \*\*\* LATE 1960'S CONSTRUCTION



PHASE 1  
COMPROMISED/LEANING  
RETAINING WALL

PHASE 2 -  
CORRODED BEAMS /  
PHASE 3 - SCOUR  
HOLES AT INTERFACE  
OF BRIDGE AND  
CULVERTS

SCOUR

SCOUR

2 CELL BOX CULVERT  
(7'x9.5') \*\*

STEEL BEAM  
BRIDGE WITH  
CONCRETE  
ABUTMENTS \*

2 CELL BOX  
CULVERT  
(7'x9.5') \*\*

PRECAST DOUBLE  
T'S UNDER  
PARKING LOT \*\*\*

OPEN CHANNEL

MURRAY  
RUN CREEK

WINDSOR  
ROAD

BRANDON  
AVENUE

23RD  
STREET

KROGER  
GAS STATION

TOWERS ASSOCIATES  
LIMITED PARTNERSHIP  
698 BRANDON AVENUE

8.5"x11" SHEET

EXISTING CONDITIONS  
SCALE: 1"=60'

**RECEIVED**

By Virginia Marine Resources Commission at 4:17 pm, Apr 27, 2016

APPLICANT: CITY OF ROANOKE - ENGINEERING DEPARTMENT  
 WATERWAY: MURRAY RUN (BASIN: ROANOKE RIVER)  
 CITY: ROANOKE, VA  
 TOWNSHIP: NA  
 COUNTY: NA  
 NUMBER: 2 OF 6  
 DATE: 4/26/2016

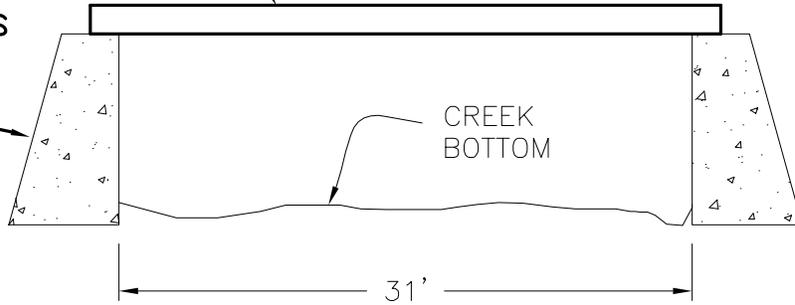
**RECEIVED**

By Virginia Marine Resources Commission at 4:17 pm, Apr 27, 2016

REPLACE STEEL BEAMS  
WITH CONCRETE SLAB  
/ MAINTAINING SAME  
HYDRAULIC OPENING

KEEP CONCRETE  
EXISTING ABUMENTS

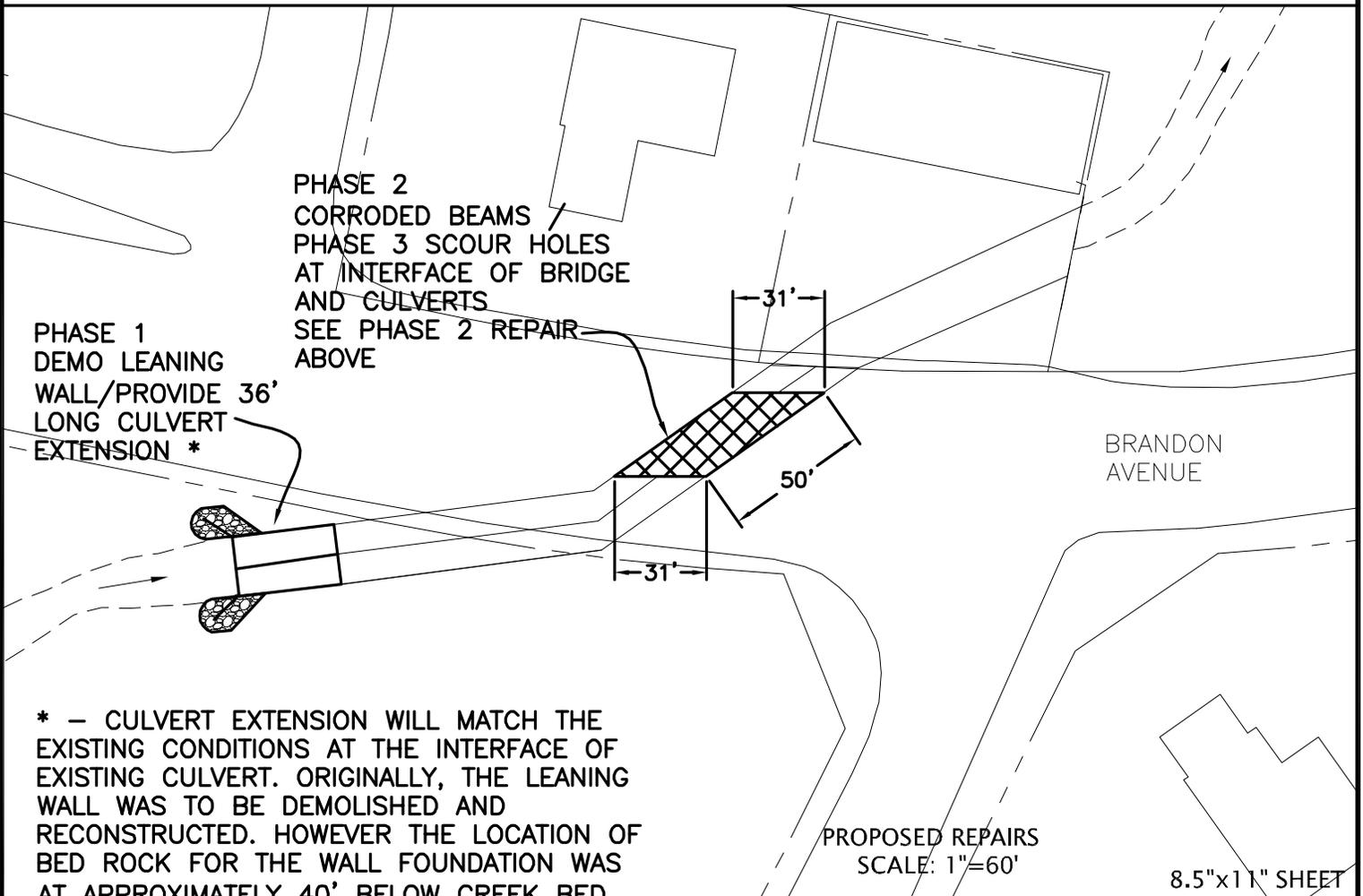
← BRANDON  
AVENUE →



PHASE 2 – STEEL BEAM BRIDGE REPAIR  
NTS

PHASE 2  
CORRODED BEAMS  
PHASE 3 SCOUR HOLES  
AT INTERFACE OF BRIDGE  
AND CULVERTS  
SEE PHASE 2 REPAIR  
ABOVE

PHASE 1  
DEMO LEANING  
WALL/PROVIDE 36'  
LONG CULVERT  
EXTENSION \*



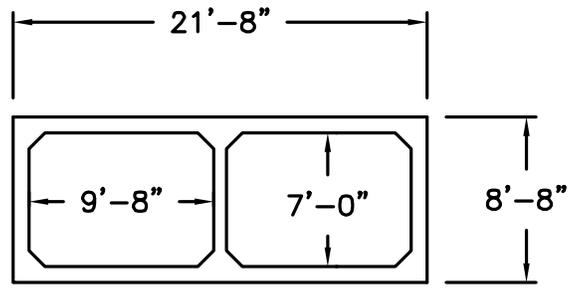
\* – CULVERT EXTENSION WILL MATCH THE EXISTING CONDITIONS AT THE INTERFACE OF EXISTING CULVERT. ORIGINALLY, THE LEANING WALL WAS TO BE DEMOLISHED AND RECONSTRUCTED. HOWEVER THE LOCATION OF BED ROCK FOR THE WALL FOUNDATION WAS AT APPROXIMATELY 40' BELOW CREEK BED. THE LOCATION OF THE ROCK FACILITATED CULVERT EXTENSION METHOD. EXTENSION WILL MATCH MUDLINE OF EXISTING CULVERT (6" APPROXIMATELY)

PROPOSED REPAIRS  
SCALE: 1"=60'

8.5"x11" SHEET

APPLICANT: CITY OF ROANOKE – ENGINEERING DEPARTMENT  
WATERWAY: MURRAY RUN (BASIN: ROANOKE RIVER)  
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COUNTY: NA  
NUMBER: 3 OF 6  
DATE: 4/26/2016

VDOT CLASS II RIPRAP  
TYPICAL ON BOTH WINGWALLS  
(3' DEEP)



FRONT VIEW

RIPRAP PER WINGWALL  
(BELOW OHW)

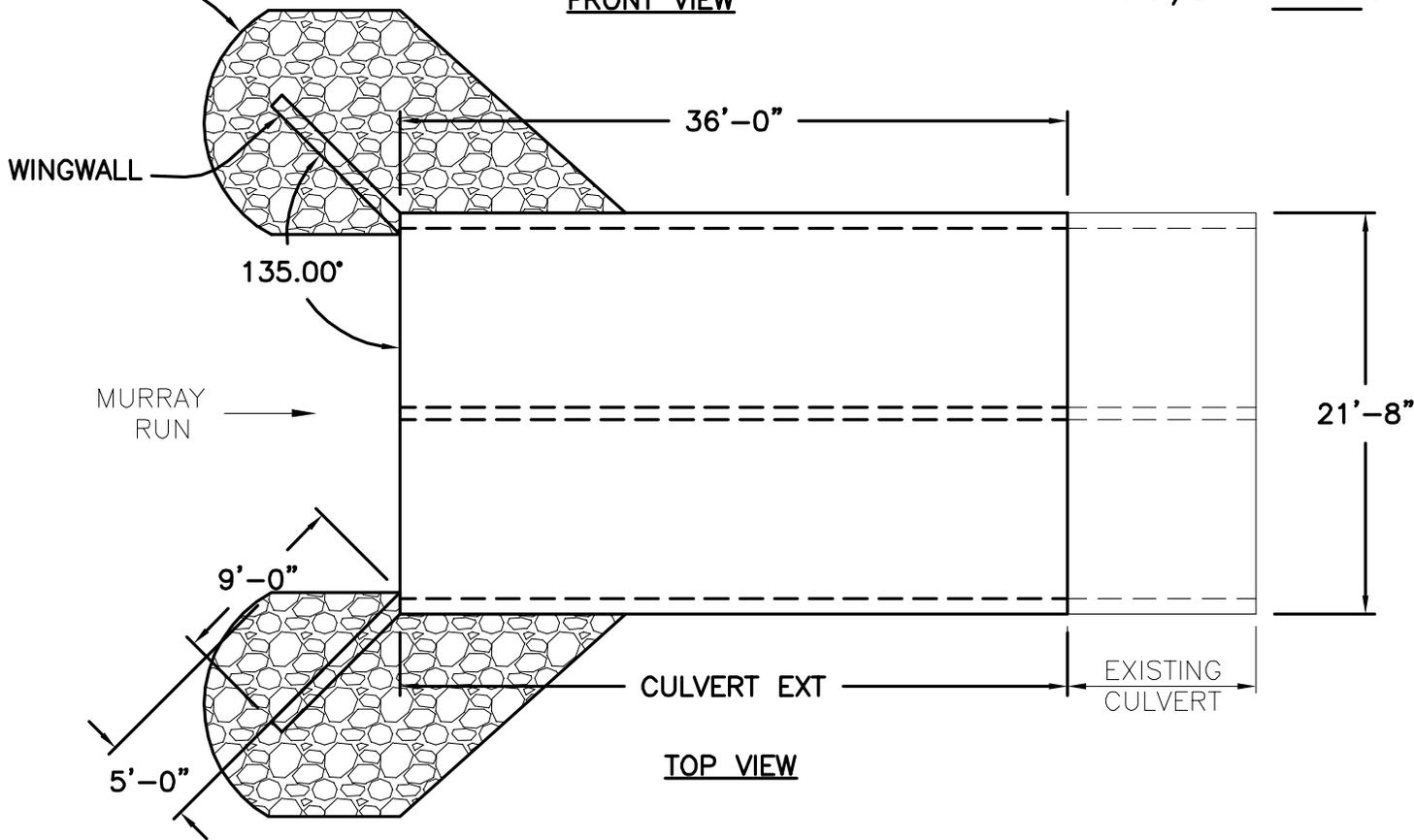
$$5' \times 9' \times 3' / 27 = 5 \text{ CY}$$

TOTAL RIPRAP FOR  
2 WINGWALLS

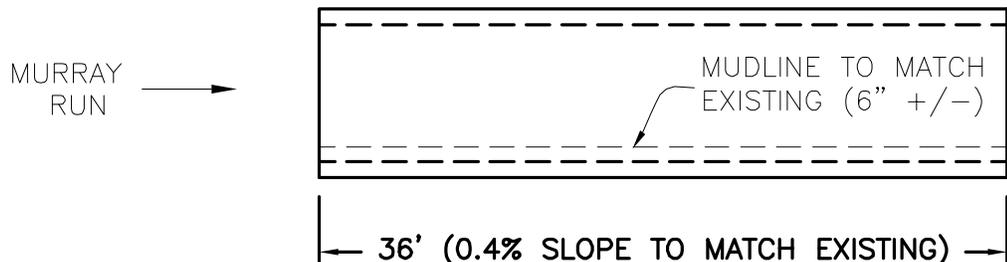
$$\text{TOTAL} = 2 * 5 \text{ CY} = \underline{10 \text{ CY}}$$

MUDLINE (BELOW OHW)

$$\text{TOTAL} = 36' * 21.67' * 0.5' / 27 = \underline{14.5 \text{ CY}}$$



TOP VIEW



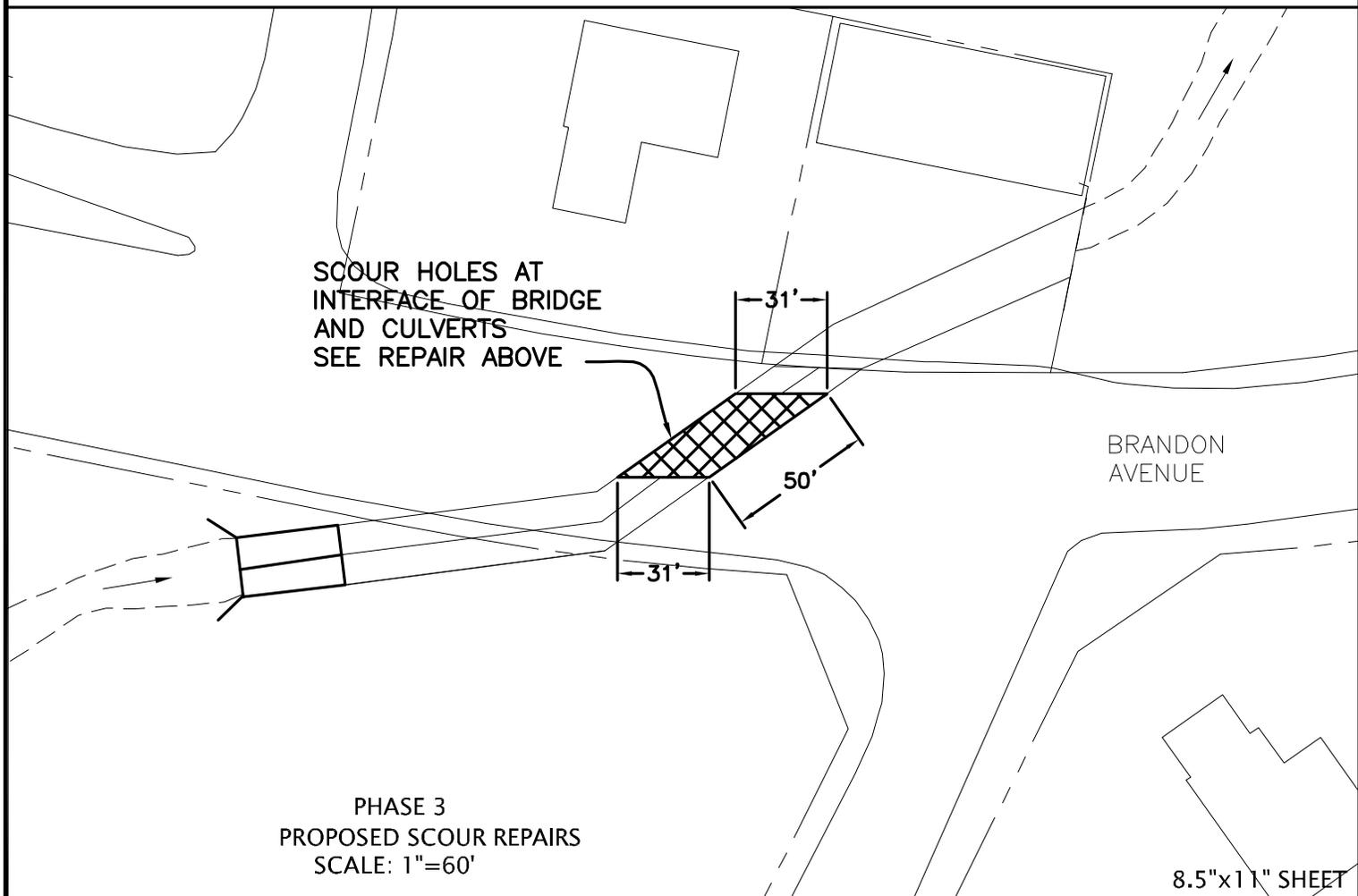
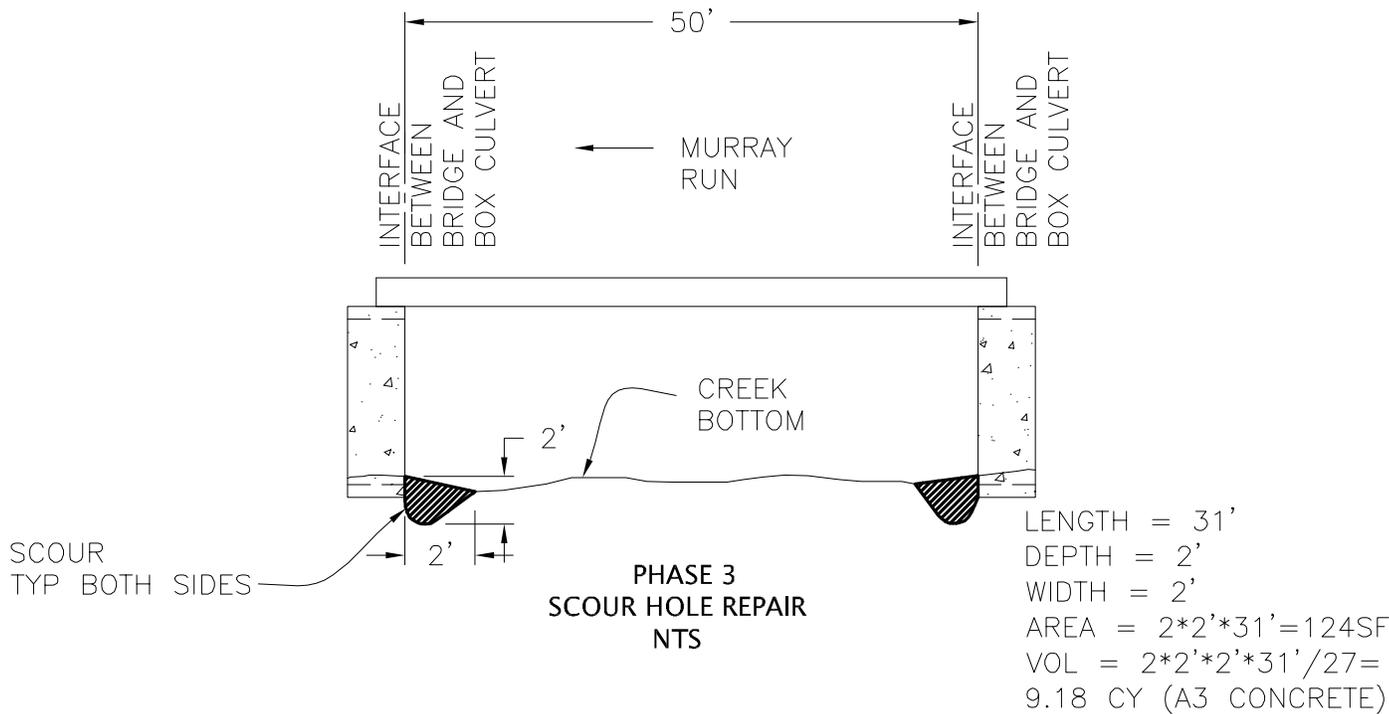
SIDE VIEW

PHASE 1  
PROPOSED CULVERT AND WINGWALL DETAILS  
SCALE: 1"=10'

8.5"x11" SHEET

**RECEIVED**  
By Virginia Marine Resources Commission at 4:17 pm, Apr 27, 2016

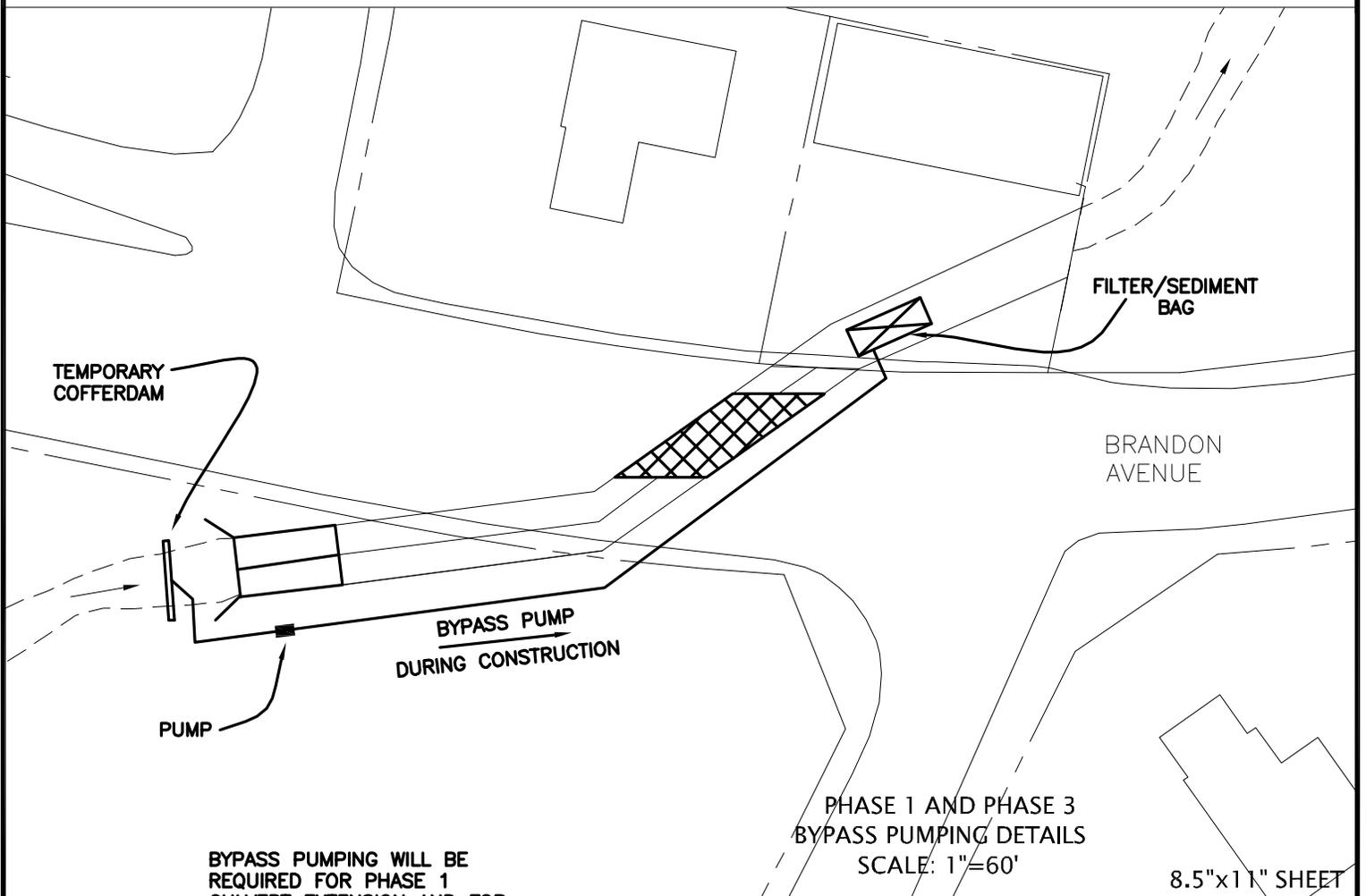
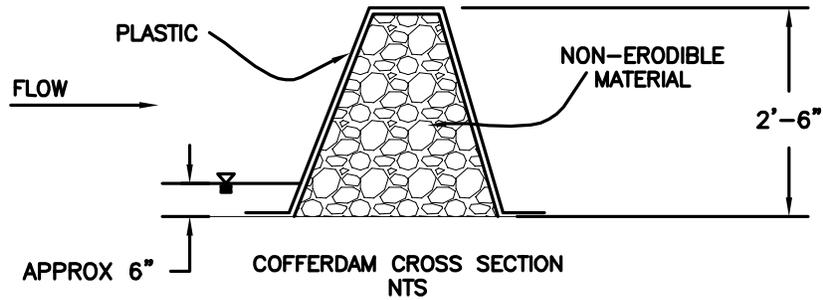
APPLICANT: CITY OF ROANOKE - ENGINEERING DEPARTMENT  
WATERWAY: MURRAY RUN (BASIN: ROANOKE RIVER)  
CITY: ROANOKE, VA  
TOWNSHIP: NA  
COUNTY: NA  
NUMBER: 4 OF 6  
DATE: 4/26/2016



**RECEIVED**

By Virginia Marine Resources Commission at 4:17 pm, Apr 27, 2016

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 WATERWAY: MURRAY RUN (BASIN: ROANOKE RIVER)  
 CITY: ROANOKE, VA  
 TOWNSHIP: NA  
 COUNTY: NA  
 NUMBER: 5 OF 6  
 DATE: 4/26/2016



BYPASS PUMPING WILL BE  
REQUIRED FOR PHASE 1  
CULVERT EXTENSION AND FOR  
FIXING THE PHASE 3 SCOUR  
BETWEEN THE BRIDGE AND  
CULVERTS

APPLICANT: CITY OF ROANOKE - ENGINEERING DEPARTMENT  
WATERWAY: MURRAY RUN (BASIN: ROANOKE RIVER)  
CITY: ROANOKE, VA  
TOWNSHIP: NA  
COUNTY: NA  
NUMBER: 6 OF 6  
DATE: 4/26/2016

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## Appendix B



# FROEHLING & ROBERTSON, INC.

*Engineering Stability Since 1881*

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**Record No: 62T-0119**

**May 19, 2015**

City of Roanoke - Engineering Department  
215 Church Avenue, S.W. - Room 350  
Roanoke, VA 24011  
Telephone: 540-853-5208

Attention: Mr. Luke Pugh; ([luke.pugh@roanokeva.gov](mailto:luke.pugh@roanokeva.gov))

Subject: Limited Lead-Based Paint Testing  
Bridge 8071 - Brandon Avenue, SW over Murray Run  
Brandon Avenue SW  
Roanoke, Virginia

Mr. Pugh;

Froehling & Robertson, Inc. (F&R) personnel conducted a limited lead based paint inspection and testing on May 19, 2015 of the Brandon Avenue SW Bridge (#8071), which spans Murray Run in Roanoke, Virginia. The bridge is located on Brandon Avenue, SW, between the intersections of Windsor Avenue, SW and 23<sup>rd</sup> Street, SW.

It is F&R's understanding that the bridge requires structural repair and repainting. The intent of the testing is to inform the contractors of the presence/absence of lead based and containing paint to ensure proper management and disposal and to advise them for their compliance with OSHA regulations in anticipation of the rehabilitation project. The bridge, which channelizes Murray Run, comprises three discrete construction sections: the central portion includes painted steel I-Beams with poured concrete decking and abutments; box culverts are located at either end of the steel I-Beam supported bridge, each at an angle to the central portion.

## **1.0 LIMITED LEAD-BASED PAINT SURVEY FINDINGS AND RESULTS**

### **1.1. Introduction**

Froehling & Robertson, Inc. (F&R) personnel performed lead based paint (LBP) testing of painted surfaces of the bridge system. Based on the nature of this survey, when one similarly painted component tests positive for the presence of lead paint, all similar painted components must be assumed to be positive, unless additional testing is performed. Component homogeneity was determined in the field.

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## 1.2. Lead-Based Paint (LBP) Survey Methodology

An F&R Industrial Hygienist performed the testing of painted surfaces for lead. The testing was conducted by using a Niton XLp-300 X-Ray Fluorescence (XRF) Lead Paint Analyzer. The XRF contains a small radioisotopic source and operates on the principle of x-ray fluorescence, whereby lead atoms in paint are stimulated to emit characteristic x-rays, which are then detected by the instrument. The XRF can measure surface or non-surface concentrations of lead with 95% accuracy at the HUD action level of 1.0 mg/cm<sup>2</sup>. Levels of lead are reported in units of milligrams per square centimeter (mg/cm<sup>2</sup>). The XRF is able to accurately detect as little as 0.1 mg/cm<sup>2</sup> of lead. The XRF classifies painted surfaces as “positive” or “negative” for lead content based on the HUD action level (1.0 mg/cm<sup>2</sup>) and the performance characteristics of the XRF.

**Positive:** Lead is present at or above the HUD standard of 1.0 mg/cm<sup>2</sup> on one or more of the components.

**Negative:** Lead is not present at or above the HUD standard of 1.0 mg/cm<sup>2</sup> on any of the components.

F&R had proposed surficial samples to be collected from the substrate for analysis of lead, in locations where the XRF readings indicated results in the inconclusive or negative range of the instrument, as based on the Performance Characteristic Sheet. Because the XRF identified as “positive” the steel components which were tested, samples were not collected for analysis.

## 1.3. Findings and Conclusions

A total of three (3) XRF readings were taken on the steel I-Beams. Two (2) of the samples tested positive for lead and are listed below in Table 1.

**Table 1: - Lead Based Paint XRF Testing Positive Sampling Results: May 19, 2015**

Reading #	Sample Location	Component	Substrate	Color
129	South End (by box culvert)	I Beam	Metal	Silver
131	Central Area	I Beam	Metal	Silver

### 1.3.1. Locations of Detected Lead Based Paint (LBP)

Based on the detection of LBP on specific component types associated with the bridge, the following components are assumed to be coated with LBP:

- The silver painted metal I-Beams.

F&R recommends that all of these materials and all similar painted surfaces be assumed to be coated with LBP.



One reading was collected of the silver I-Beam which indicated lead concentrations below the threshold which constitutes Lead-Based Paint (LBP); because similar components were tested and found to be LBP, a sample was not collected for laboratory analysis. It is presumed that underlying paint layers are inconsistent and that the beam should be considered represented by the other readings and considered LBP.

#### **1.4. Applicable Regulations**

##### **1.4.1. OSHA Regulations for Lead-Based Paint**

It is important to note that any painted surface may contain concentrations of lead in the paint, which when disturbed, may generate lead dust greater than the action level of 30 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) (for an 8-hour time-weighted average (TW)) or 50  $\mu\text{g}/\text{m}^3$  ceiling (averaged over an 8-hour period) established by the OSHA "Lead Exposure in Construction Rule" (29 CFR 1926.62). The OSHA standard gives no guidance on acceptable levels of lead in paint at which no exposure to airborne lead (above the action level) would be expected. Rather, OSHA defines airborne concentrations, and references specific types of work practices and operations from which a lead hazard may be generated (reference 29 CFR 1926.62, section d). Environmental and personnel monitoring should be conducted during any removal or demolition process (as appropriate) to determine actual personal exposure. This monitoring information can be used to determine the levels of personnel protection and environmental controls required for work involving specific removal/demolition processes on specific structures. Under OSHA requirements, the Contractor performing the work will be required to conduct this monitoring. It is important to note that environmental controls will vary dependent upon the content of lead in paint, the process used to remove it, duration of the work, and the amount of paint to be removed.

##### **1.4.2. EPA Regulations for Lead-Based Paint**

For disposal of construction/demolition debris that has LBP, the Environmental Protection Agency (EPA) requires that testing of lead content be performed to determine proper disposal. EPA regulations require that a generator of waste determine if that waste is hazardous by performing testing in accordance with the requirements of 40 CFR 261.11 or for wastes that may be RCRA hazardous (such as items with high lead content), the generator may assume that the waste is hazardous and comply with the hazardous waste regulation.

## **2.0 LIMITATIONS**

This report has been prepared for the exclusive use of the City of Roanoke and/or their agents. This service was performed in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have



not verified the completeness or accuracy of the information provided by others, unless otherwise noted. Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards. During F&R's non-invasive inspection, accessible portions of the claim area were visually surveyed for the presence of suspected LBP. Areas inspected for the above-referenced materials were limited to those designated by the Client and the scope of services and which could be safely accessed.

During this study, suspect lead based paint samples were submitted for analysis. As with any similar survey of this nature, actual conditions exist only at the precise locations from which samples were collected. Certain inferences are based on the results of this sampling and related testing to form a professional opinion of conditions in areas beyond those from which the samples were collected. It is also understood that this is a non-invasive survey so that it is possible that concealed materials may be present that were not accessible during the original survey. No other warranty, expressed or implied, is made.

Under this scope of services, F&R assumes no responsibility regarding response actions (e.g. O&M Plans, Encapsulation, Abatement, Removal, Notifications, etc.) initiated as a result of these findings. F&R assumes no liability for the duties and responsibilities of the Client with respect to compliance with these regulations. Compliance with regulations and response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements and should be performed by appropriately qualified and licensed-personnel, as warranted.

Froehling & Robertson, Inc. by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that may present a potential danger to public health, safety, or the environment. The Client agrees to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. The contents of the report should not be construed in any way as a recommendation to purchase, sell, or develop the project site.



### 3.0 SIGNATURES

If you have any questions concerning this report, please feel free to contact the undersigned. Froehling & Robertson, Inc. appreciates the opportunity to work with you as your Environmental Consultant, and looks forward to a continued cordial working relationship with you.

Respectfully Submitted,  
**FROEHLING & ROBERTSON, INC.**

A handwritten signature in cursive script, appearing to read 'Gregory L. Whitt'.

Gregory L. Whitt  
Environmental Group Manager  
VA Lead License 3356-000446

A handwritten signature in cursive script, appearing to read 'Jesse D. Phillips'.

Jesse D. Phillips  
Industrial Hygienist  
VA Lead License 3356-001002

Attachments: Explanation of XRF Data Tables  
XRF Results  
XRF Performance Characteristic Sheet



**Explanation of XRF Data Tables**

**XRF Data Tables**

**Performance Characteristic Sheet**



## EXPLANATION OF XRF DATA TABLES

The table header displays the XL-309a serial number, site (optional), and data download date.

<b>Column</b>	<b>Description</b>
<b>Reading No</b>	Sample numbers.
<b>Duration</b>	Amount of time it took for the XRF to take the reading.
<b>Units</b>	Unit of measure that the XRF uses to report readings: mg/cm <sup>2</sup> = milligrams per square centimeter.
<b>Component</b>	Specific building structural or design element being tested.
<b>Substrate</b>	Substrate. The type of material underlying the painted coating.
<b>Side</b>	Side of the structure where the specific reading was taken based on designations A, B, C, D, with A being the street (address) side of the structure.
<b>Color</b>	Color of the painted or varnished surface. (VARN = "varnished")
<b>Result</b>	Result of the test:    NEG    = negative POS    = positive NULL   = incomplete test / reading error
	<i>There is no inconclusive range for the Niton XL-309a.</i>
<b>Depth Index</b>	A depth index reading of less than 1.5 indicates that lead is near the surface of the material tested. A depth index reading between 1.6 and 4 indicates that lead was found at a moderate depth. A depth index reading of 4 or higher indicates that lead was found deeply buried in the material tested.
<b>Pbc</b>	Combined L and K-Shell x-ray readings of lead level (in milligrams per square centimeter) with statistical precision range.
<b>PbL, and Pbk</b>	L and K-Shell x-ray readings of lead level (in milligrams per square centimeter).



## Performance Characteristic Sheet

EFFECTIVE DATE: September 24, 2004

EDITION NO.: 1

### MANUFACTURER AND MODEL:

Make: Niton LLC

Tested Model: XLP 300

Source:  $^{109}\text{Cd}$ 

Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLI and XLP series:

XLI 300A, XLI 301A, XLI 302A and XLI 303A.

XLP 300A, XLP 301A, XLP 302A and XLP 303A.

XLI 700A, XLI 701A, XLI 702A and XLI 703A.

XLP 700A, XLP 701A, XLP 702A, and XLP 703A.

Note: The XLI and XLP versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

## FIELD OPERATION GUIDANCE

### OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

### XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm<sup>2</sup> (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm<sup>2</sup> in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm<sup>2</sup> film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

### SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is not needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

### INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm <sup>2</sup> )
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

## BACKGROUND INFORMATION

### EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

### OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

### SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

### EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use the K+L variable time mode readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

**TESTING TIMES:**

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
Substrate	All Data			Median for laboratory-measured lead levels (mg/cm <sup>2</sup> )		
	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

**CLASSIFICATION RESULTS:**

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

**DOCUMENTATION:**

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

## Appendix C



# ENGINEERING CONSULTING SERVICES

GEOTECHNICAL • CONSTRUCTION MATERIALS • ENVIRONMENTAL • FACILITIES

## REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ANALYSIS

MURRAY RUN RETAINING WALL REPLACEMENT  
BRANDON AVENUE, SW  
ROANOKE, VIRGINIA

ECS REPORT NO. 12:8329



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ECS Project No. 12:8329

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October 15, 2015

Mr. Luke Pugh  
City of Roanoke  
215 Church Street, SW  
Room 350  
Roanoke, Virginia 24011-1592

ECS Project No. 12:8329

Reference: Murray Run Retaining Wall Replacement  
Brandon Avenue, SW  
Roanoke, Virginia

Dear Mr. Pugh:

ECS Mid-Atlantic, LLC (ECS) is pleased to submit this Report of Subsurface Exploration and Geotechnical Analysis for the above-referenced project. Our services have been provided in accordance with ECS Proposal No. 12043-PR, dated August 10, 2015. This report includes the results of the soil test borings and geotechnical recommendations for this project.

### **SCOPE OF SERVICES**

The conclusions and recommendations contained in this report are based upon the results of our field exploration. Our exploration consisted of a site visit by an engineering geologist and two soil test borings drilled to depths of up to 53.5 feet below the existing ground surface. The borings were located in the field by an engineering geologist from our office by estimating angles from existing site features. The boring locations shown on Figure 2 and the existing ground surface elevations depicted on the boring logs, which are provided in the Appendix of this report, should be considered approximate.

The recommendations contained herein were developed from our interpretation of the subsurface data obtained from the soil test borings. The borings indicate subsurface conditions at specific locations at the time of the exploration. If, during the course of construction, variations appear evident, the geotechnical engineer should be informed so that the conditions can be addressed.

Design recommendations were developed based on building design criteria considered typical for this type of structure and the specific information provided. Should structural loading characteristics differ from those discussed herein, ECS should be contacted for review of these conditions and possible revisions to the recommendations of this report.

## **PROJECT CHARACTERISTICS**

Project information was provided during a scoping visit on July 20, 2015 with Mr. Luke Pugh of the City of Roanoke, as well as through discussions with Mr. Chad Thomas, P.E. of Mattern and Craig, Inc. (M&C). Project plans have not been provided.

Based on the information provided, we understand that the project will consist of the replacement of the existing cast-in-place concrete retaining wall located at the southwestern end of the Murray Run culvert which crosses beneath Brandon Avenue at a northeast to southwest skew. The retaining wall is located just west of the intersection of Brandon Avenue and 23<sup>rd</sup> Street, in Roanoke, Virginia. The existing retaining wall appears to be approximately 6 to 8 feet in height, and approximately 40 feet in length. It extends from the existing culvert toward the west, on the northern side of Murray Run. The wall appears to be failing as it has a negative batter toward Murray Run. We understand that the subject retaining wall will be replaced as part of a larger-scale rehabilitation program in the City of Roanoke for the Murray Run culvert.

Structurally, the replacement retaining wall will likely consist of a cantilevered, cast-in-place concrete wall of similar height and length. Specific loads are not available at this time.

We understand that depth to bedrock is the primary goal of the requested exploration, for determination of bearing conditions and scour potential.

## **EXPLORATION PROCEDURES**

### **Subsurface Exploration Procedures**

To characterize the general subsurface conditions, one soil test boring (B-1) was performed behind the existing retaining wall. This boring encountered very soft soil to a depth of 40 feet below existing grades, at which depth the boring had to be abandoned. The center plug for the augers dropped ahead of the augers through very soft soils and could not be retrieved. Based on discussions with the Owner and M&C, we remobilized to perform an offset boring approximately 5 feet from Boring B-1. The offset boring (B-1-A) refused at a depth of 7 feet, on possible cobbles, and was offset 2 additional feet, extending to a depth of 53.5 feet. At auger refusal depth, the augers had skewed, not permitting rock coring. The borings were performed with ATV-mounted drilling equipment utilizing continuous-flight, hollow stem augers (HSA) to advance the boreholes to their scheduled depths or auger refusal. Drilling fluid was not used in this process.

Representative samples were obtained by means of the split-barrel sampling procedure in accordance with ASTM Specification D 1586. In this procedure, a 2-inch O.D., split-barrel sampler is driven into the soil a distance of 18 inches by a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through a 12-inch interval is termed the Standard Penetration Test (SPT) N-value and is indicated for each sample on the boring logs. This N-value can be used as a qualitative indication of the in-place relative density of cohesionless soils. In a less reliable way, it also indicates the consistency of cohesive soils.

This indication is qualitative, since many factors can significantly affect the Standard Penetration resistance value and prevent a direct correlation between drill crews, drill rigs, drilling procedures, and hammer-rod sampler assemblies. Samples were obtained at 2.5-foot intervals in the upper 10 feet of the boring, and at 5-foot intervals thereafter.

After recovery, representative portions of each soil sample were removed from the sampler and sealed in glass jars. The samples were taken to our laboratory in Roanoke, Virginia for visual classification testing.

### **Laboratory Testing Program**

Laboratory testing was not within the scope of our services. An experienced engineering geologist visually classified each soil sample on the basis of texture and plasticity (ASTM D 2488) and identified each soil sample using the classification group symbols and names as prescribed in the Unified Soil Classification System (USCS) (ASTM D 2487). A brief explanation of the USCS is included with this report. The geologist grouped the various soil types into the major strata noted on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in-situ, the transitions may be gradual.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposition.

## **SITE AND SUBSURFACE CONDITIONS**

### **Site Conditions**

The subject site is located on the southern side of Brandon Avenue, just west of its intersection with 23<sup>rd</sup> Street. The site is bounded to the north by Brandon Avenue and a sidewalk, and further by residential properties and a Little Caesars restaurant; to the south by Murray Run and further by a grassed low area, wooded residential area, and Towers Shopping Center; to the east by 23<sup>rd</sup> Street, and further by a Kroger Fueling Center; and to the west by residential properties.

Topographically, the retaining wall is located within the floodplain of Murray Run, with grades rising further to the south and across Brandon Avenue.

### **Site Geology**

The project site is located within the Valley and Ridge Province in Southwestern Virginia. Specifically, the site area is located within the Roanoke Valley, which is a northeast-southwest trending lowlands extending for some 20 miles around the City of Roanoke and whose floor is characterized by easily eroded limestones and shale's

Specifically, geologic mapping indicates that the project site is underlain by the Rome belt of the Salem Thrust Sheet. The Rome belt consists primarily of shale and siltstone with carbonate

rock intervals up to approximately 50 feet thick. This area is characterized by deeply weathered residual soils overlying the rock surface.

The carbonate rock formations located in this area typically consist of limestone and dolomite. Carbonate materials solution in water over long periods of time, resulting in loss of rock material. The solution process typically occurs along planes of more soluble material and causes the formation of interconnected seams and cavities within carbonate formations. The rate of solutioning is also affected by rates of groundwater flow and groundwater chemistry; however, typical solutioning rates are on the order of one inch in 1,000 years. These seams and cavities are frequently filled with soft material which has not dissolved or materials that have infiltrated into the seam or cavity from above. Sinkholes can result from the collapse of material bridging over the top of caverns formed during the solution process.

Differential solution activity results in a highly-variable rock surface with soil-filled slots commonly encountered between pinnacles of more solution-resistant rock. Since solution activity is caused by groundwater flow, solution channels are commonly interconnected with narrow zones of solution activity extending from large solution features.

In the non-carbonate portion of the geology, the boundary between soil and rock is not sharply defined. A transitional zone termed "weathered rock" is normally found overlying the parent bedrock. Weathered rock is defined, for engineering purposes, as residual material with Standard Penetration resistance greater than 100 blows per foot. Because weathering is facilitated by fractures, joints, and the presence of less resistant rock types, the profile of the partially weathered rock and hard rock is typically irregular and erratic, even over short horizontal distances. Also, it is not unusual to find lenses and boulders of hard rock in zones of weathered rock within the soil mantle, well above the general bedrock level.

For the soil borings, a deep zone of very soft soils was encountered, followed by auger refusal without a significant zone of weathered rock. It appears that the borings encountered a deep mud seam which has been exacerbated by groundwater from Murray Run.

### **Soil Conditions**

Based on the borings, the subsurface conditions at the site primarily consist of FILL, related to the existing retaining wall and nearby Brandon Avenue, and alluvial deposits, underlain by a deep residual soil seam and carbonate rock.

Topsoil depths at the boring locations were measured to be approximately 3 inches. Depths of surficial materials may vary in unexplored areas.

FILL, which contained SANDY SILT (ML), was encountered to a depth of 5.5 feet below existing grades in Borings B-1 and B-1-A. The samples included rock and wood fragments. N-values in these materials ranged from 4 blows per foot (bpf) to 50 blows in 4 inches, with the high N-value attributable to debris in the fill. Based on the samples and N-values, the fill does not appear to have been placed in a controlled manner.

Below the fill, an alluvial layer consisting of SANDY FAT CLAY (CH) was encountered to a depth of 7 feet. The sample taken within this layer included rock and roots. The N-value in the alluvial materials was 5 bpf, indicating medium stiff consistency.

Residual ELASTIC SILT with varying sand content and rock fragments was encountered to the abandonment depth of 40 feet for Boring B-1 and 52.5 feet for Boring B-1-A. SPT N-values in this layer generally ranged from 15 bpf just below the alluvium to weight of hammer (WOH) and weight of rods (WOR), indicating very soft conditions for all but the upper 4 feet of the residuum.

HWR, which has been defined previously, was encountered at depths of 52.5 feet below existing grades in Boring B-1-A. Hard rock, which would have been defined by the depth of auger refusal on naturally-occurring mass stratigraphy not deposited by man or stream processes, was encountered at a depth of 53.5 feet. Based on the geology, there is the potential that hard rock ledges, pinnacles, or boulders could be encountered at shallower depths within short horizontal distances. Such shallow rock could require blasting or use of a pneumatic hoe ram for removal.

Boring logs describing the soil conditions encountered in the soil test borings are included in the Appendix of this report.

### **Groundwater Observations**

Groundwater observations were made during soil sampling and upon completion of the drilling operations at each boring location. In auger drilling operations, water is not introduced into the borehole, and the groundwater position can often be determined by observing water flowing into or out of the borehole. Furthermore, visual observations of the soil samples retrieved during the auger drilling exploration can often be used in evaluating the groundwater conditions.

Generally, the soil samples were dry to saturated, and observable groundwater was encountered in the borings at depths of 12.0 feet and 13.5 feet, respectively for Borings B-1 and B-1A, at the time of drilling. The groundwater is hydraulically connected to Murray Run located immediately to the south. It is anticipated that stabilized groundwater elevation would be higher, close to the elevation of Murray Run. It is anticipated the foundation and culvert excavations will encounter the static groundwater table, requiring dewatering measures for construction.

## **ANALYSIS AND RECOMMENDATIONS**

### **Karst Risk Commentary**

The subsurface conditions encountered in the soil test borings consist of a karst soil profile with residual soils of reducing strength and increasing moisture content with depth. These conditions are indicative of residual soils underlain by karst bedrock, which is subject to sinkhole development. We define the risk of future sinkhole development on this site as moderate, and the Owner should accept at least some risk of karst-related activity which could impact foundation and/or site improvement performance.

Based on the soil strength profile encountered in the soil test borings, the soils at the anticipated foundation bearing elevations will not provide consistent support for shallow foundations, particularly given the potential for scour.

### **Foundation Commentary**

Prior to the start of foundation construction, the existing wall and foundation should be demolished and the debris removed from the site. Demolition should include removal of underground utilities and associated loose backfill.

In preparing this report, we have considered several different foundation types for support of the proposed retaining wall based on the project information provided to us. The site is underlain by fill, alluvial soils, and very soft residual soils. It is also likely that depth to rock may vary significantly across the short length of the retaining wall. We considered a conventional shallow spread footing foundation system for the wall, but anticipate settlements in excess of 1 inch for a shallow mat foundation without ground improvement. Also, non-scourable rock was not encountered within the anticipated scour depth.

Due to the soil conditions encountered, we recommend the retaining wall be supported on a deep foundation system bearing in the underlying HWR and hard rock encountered in the boring. We recommend that the retaining wall be supported on either Micropiles or Driven H-Piles. Micropiles derive their capacity from side friction along a grouted length into the underlying rock, including penetration through weak rock and mud seam layers to suitable materials. H-Piles derive their capacity from side friction (albeit discounted for scour and possible karst voids) and end bearing, and can be readily driven to great depths. However, it is noted that dipping rock surfaces, such as those encountered in the borings, can make H-pile installation unpredictable. Installation of these options will not displace large amounts of soils nor will their installation require dewatering for installation, beyond excavation for the pile cap. Design and installation of both deep foundation systems need to consider the potentially erratic nature of the karst geology underlying the project site. General recommendations for Micropiles and Driven H-piles are provided in the following sections of this report.

The pile lengths presented are based on driving either HP 10x42 or HP 12x53 piles. Both piles types are expected to refuse at similar depths provided that hammer types used apply similar driving stress to the piles. With commonly used hammers, we expect that HP 12x53 and HP 10x42 piles will terminate or refuse at nominal axial resistances (without overstressing the piles during driving) of around 200 tons and 150 tons, respectively.

Settlements, both total and differential, are anticipated to be minimal for steel HP-piles bearing in HWR or at the rock surface.

Due to the variability of soil and rock conditions in the subsurface profile, we recommend that pile lengths and driving resistance be verified using a pile driving analyzer (PDA) prior to production pile driving.

The piles should be equipped with hardened pile points that have been welded on in accordance with the Supplier's details.

It is recommended that pile drivability studies be performed. The Contractor should submit the planned hammer type and cushion data to the Engineer to perform WAVE equation analyses to determine the pile driving criteria. The pile stress during driving should be limited to 45 kips per square inch or less, assuming Grade 50 steel is used. The Contractor should provide PDA test reports with CAPWAP signal-matching analyses to the Engineer for review and approval on a daily basis.

### **Foundation Recommendations – Micropiles**

As discussed previously, it is our opinion that Micropiles are also an acceptable deep foundation system to support the retaining wall. The geotechnical capacity of micropiles is based on the grout to ground (in this case rock) resistance, or side friction, of the pile around the perimeter of the micropile bond zone. The contribution of end bearing to the capacity is typically neglected due to the small surface area of the micropile. For structural design purposes, a total allowable axial compression capacity of 20 kips is recommended per pile (F.S.=2.5) for the proposed foundation support. Because the end bearing contribution is neglected, this capacity also applies to uplift loading.

Although means and methods will be determined by the micropile installer, we anticipate the micropiles will be installed per Type A requirements (gravity grout only). Pressure grouting (Type B micropiles) would not increase capacities because the bond zone will be within rock. The structural design should account for load eccentricity through the use of batter piles, if necessary.

The capacity and lengths are based on estimated minimum bond lengths into rock of 10 feet for weathered rock. The depths of the micropiles should be field verified through load testing by the installer and visual observations during installation by the geotechnical engineer. Spacing of the micropiles should be at least three diameters apart.

Based on our preliminary design review, we recommend that the minimum diameter of the casing for the micropiles be 3.5 inches, allowing for a grout zone (uncased) diameter of 4.5 inches. We recommend that the unbonded pile length above the rock surface remain permanently cased to avoid grout loss during construction and prevent buckling of the element. The reinforcing steel should be installed the full length of the pile. The cement grout used for the micropiles should have a minimum 28 day compressive strength of 5,000 psi. Lower grout strengths are not sufficient for the load test requirements; however, higher strengths may be required following the structural design.

It is noted that the complete design of the micropile elements should be completed as a joint effort between the geotechnical engineer of record, the structural engineer of record, and the micropile contractor. We recommend that the contractor be provided with a performance specification for bidding, design, and construction purposes. This should consist of a target allowable vertical capacity of 20 kips per pile and a minimum lateral load capacity to be specified by the structural engineer. For purposes of this report, we have estimated that nominal (ultimate) grout-to-rock bond strengths of 100 psi for limestone and 30 psi for weathered limestone are reasonable; however, these values may be subject to change by the installer's design team. Ultimately, we recommend that the micropile installer be responsible for the final geotechnical and structural design of the micropile elements, subject to review by the primary design team and the geotechnical engineer of record. Such design should account for possible buckling within the upper fill materials.

### **Foundation Recommendations – H-Piles**

Use of driven H-piles is anticipated to provide adequate support for the retaining wall. All piles should be driven at least 10 feet; however, based on the depth to rock, this is not anticipated to be a problem provided very shallow rock pinnacles are not encountered. If rock pinnacles are encountered and scour depth extends below this minimum depth, predrilling of at least 5 feet into the rock may be required.

We recommend that piles consist of driven steel HP piles. The center-to-center spacing of the piles should not be less than 30 inches, or 2.5 pile diameters.

It is expected that the piles will achieve the required axial resistance upon being driven a few feet into the HWR stratum. If HWR is not encountered, it is expected that the required design resistance will be achieved upon being driven to the top of bedrock, provided the pile seats into the rock surface. If the pile skews off a dipping rock surface, predrilling into the underlying rock may be required.

The pile lengths presented are based on driving either HP 10x42 or HP 12x53 piles. Both piles types are expected to refuse at similar depths provided that hammer types used apply similar driving stress to the piles. With commonly used hammers, we expect that HP 12x53 and HP 10x42 piles will terminate or refuse at nominal axial resistances (without overstressing the piles during driving) of around 200 tons and 150 tons, respectively.

Settlements, both total and differential, are anticipated to be minimal for steel HP-piles bearing in HWR or at the rock surface.

Due to the variability of soil and rock conditions in the subsurface profile, we recommend that pile lengths and driving resistance be verified using a pile driving analyzer (PDA) prior to production pile driving.

The piles should be equipped with hardened pile points that have been welded on in accordance with the Supplier's details.

It is recommended that pile drivability studies be performed. The Contractor should submit the planned hammer type and cushion data to the Engineer to perform WAVE equation analyses to determine the pile driving criteria. The pile stress during driving should be limited to 45 kips per square inch or less, assuming Grade 50 steel is used. The Contractor should provide PDA test reports with CAPWAP signal-matching analyses to the Engineer for review and approval on a daily basis.

### **Seismic Considerations**

The 2012 Edition of the International Building Code (IBC) requires that a seismic Site Class be assigned for new structures. The seismic Site Class may be evaluated by calculating a weighted average of the SPT N-values of subsurface materials to a depth of 100 feet. For the evaluation, the N-values recorded in the borings are used for overburden soil, and then, typically, all materials below the depth that HWR or hard rock is encountered (to a depth of 100 feet) are assigned an N-value of 100 bpf.

For this report, the seismic Site Class was evaluated using the SPT N-value method. HWR and hard rock were encountered in the boring at a depth of 53.5 feet below existing grades. With this information and the presence of a very soft, deep soil layer, we recommend use of a seismic Site Class E.

Although the SPT N-value method can be relatively conservative, we do not anticipate the seismic Site Class could be improved through the use of alternate methods on this site due to the conditions encountered in the borings.

### **Below-Grade Walls**

Below-grade walls should be designed to withstand the lateral earth pressures exerted upon them. We recommend that the "At Rest" soil condition be used in the design and evaluation of rigid walls. Site retaining walls which can tolerate free movement at their tops can be designed using "Active" soil conditions. If a keyway is incorporated into the footing design, the "Passive" soil condition can be used for passive resistance; however, any passive resistance acting on the front of the footing should be ignored for design purposes.

The following parameters should be utilized for the design of below-grade retaining walls. Two (2) sets of parameters have been provided to allow substitution of compacted stone for the on-site soils if lower earth pressure parameters are required.

	<u>On-Site Soils</u>	<u>VDOT No. 57 Stone</u>
• Coefficient of Earth Pressure at Rest ( $K_o$ ):	0.60	0.40
• Coefficient of Passive Earth Pressure ( $K_p$ ):	2.50*	2.50*
• Coefficient of Active Earth Pressure ( $K_a$ ):	0.40	0.25
• Moist unit weight of compacted backfill, $\gamma$ :	120 pcf	105 pcf
• Cohesive Strength (C):	500 psf	0 psf
• Angle of Internal Friction ( $\phi$ ):	0 degrees	38 degrees
• Sliding Friction Resistance (Concrete on Soil)	0.36*	0.36*

\*Indicates that the parameter is not affected by backfill material.

It is noted that increased lateral pressures generated by surcharge loads should be considered in the design.

Drainage behind retaining walls is considered essential towards relieving hydrostatic pressures. Drainage can be established by providing a perimeter drainage system located just above the retaining wall footing with discharge by gravity flow to a suitable outlet. This system should consist of a perforated pipe or porous-wall, closed-joint drain tiles. These drain lines should be surrounded by a minimum of 6 inches of free-draining, granular filter material having a gradation compatible with the size of the openings utilized in the drain lines and the surrounding soils to be retained, or by gravel wrapped in filter fabric. The space between the face of the retaining wall and the original earth face should be backfilled with a granular material of porous fill quality or better extending from the perimeter drainage system to near the top of the wall. To prevent frost heave effects from acting against these walls, the granular backfill should extend horizontally a minimum of 18 inches behind the wall. In landscaped areas, the upper 18 inches of backfill behind the retaining wall should consist of a relatively impermeable compacted clay cap. Prefabricated wall drainage products, which satisfy the drainage criteria outlined above, are considered an acceptable alternative to granular backfill.

### **Subgrade Preparation and Earthwork Operations**

The near-surface silts and clays at the site are moisture-sensitive. When wet they could be difficult to adequately compact and are subject to excessive deflection under wheel loads. To reduce the potential for moisture-related soil problems, we recommend that site grading operations be performed during the typically drier months of the year (May through October). If this is not possible, substantial undercutting of these soils could be required to achieve stable subgrade conditions.

Prior to proceeding with construction, all topsoil should be stripped from the proposed construction limits. Stripping should be accomplished a minimum distance of 5 feet outside the building lines and 2 feet beyond curb lines.

After stripping to the desired grade and prior to fill placement or foundation and pavement construction, the stripped surface should be observed by an experienced geotechnical engineer or his authorized representative. Proofrolling using a 10-ton drum roller or a loaded, tandem-axle dump truck having an axle weight of at least 10 tons should be used at this time to aid in identifying localized soft or unsuitable material. Any soft or unsuitable materials encountered during this proofrolling should be removed and replaced with engineered fill. The excavation and backfilling should be observed by a representative of the geotechnical engineer so that excessive or inadequate removal of material can be avoided.

Following stripping, proofrolling, and subgrade preparation procedures, engineered fill can be placed. Fill used to support buildings and pavements should be placed in lifts not exceeding 8 inches in loose thickness, moisture conditioned to within +/- 3% of the optimum moisture content, and compacted to at least 95% of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method.

Field density testing of subgrades and each lift of fill should be performed at a rate of no less than one test per 2,500 square feet in structural areas and 5,000 square feet in pavement areas.

The following fill types are recommended for use on this project:

**Engineered Fill:** All on-site soils which are free of organics and other deleterious, non-soil materials. If off-site borrow is required, imported material should classify as CL, ML, SM, SC, SP, or better. Suitable imported material should have a maximum Liquid Limit of 50 and maximum Plasticity Index of 25. Maximum aggregate size for all materials should be limited to 4 inches. It is noted that some of the on-site soils are anticipated above optimum moisture, which will require significant drying methods (i.e. scarifying, placing lime, etc.) to facilitate proper compaction.

**Porous Fill:** Clean crushed gravel (VDOT No. 57 Stone) with a maximum aggregate size of 1.5 inches placed in a minimum 4-inch-thick layer or Aggregate Base Material placed and compacted in a minimum 6-inch-thick layer.

**Aggregate Base:** Aggregate Base Material Type I, Size 21-A.

### **Construction Considerations**

In a dry and undisturbed state, the subgrade soils at the site will provide moderate subgrade support for fill placement and construction operations. However, when wet, these soils will degrade quickly with disturbance from contractor operations. Therefore, good site drainage should be maintained during earthwork operations so as to help maintain the stability of the soils. It should be incumbent on the contractor to protect all subgrades from damage due to construction, or to repair all damaged subgrades.

It is considered essential that any existing fills be evaluated at the time of construction. Where observed to be unstable, they should be undercut from below building and pavement areas at the direction of the geotechnical engineer.

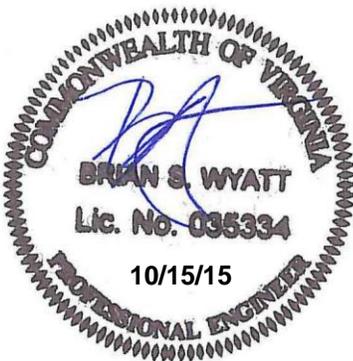
## CLOSING

The recommendations contained herein were developed from the data obtained in the soil test borings, which indicate subsurface conditions at specific locations at the time of exploration. Soil conditions may vary between the borings. If, during the course of construction, variations appear evident, the geotechnical engineer should be informed so that the conditions can be addressed. Design recommendations were developed based on the information provided and on building design criteria considered typical for this type of structure. Should structural loading characteristics differ from those discussed herein, ECS should be contacted for review of these conditions and possible revisions to the recommendations of this report.

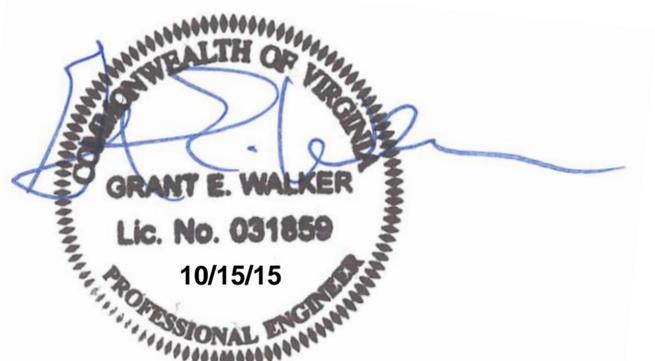
We have appreciated the opportunity to be of service to you. If you have any questions with regard to the information and recommendations contained in this report, or if we can be of further assistance to you during construction, please do not hesitate to contact us.

Respectfully,

**ECS MID-ATLANTIC, LLC**



Brian S. Wyatt, P.E.  
Principal Engineer  
Roanoke Branch Manager / V.P.



Grant E. Walker, P.E.  
Principal Engineer  
Senior Vice President

## **APPENDIX**

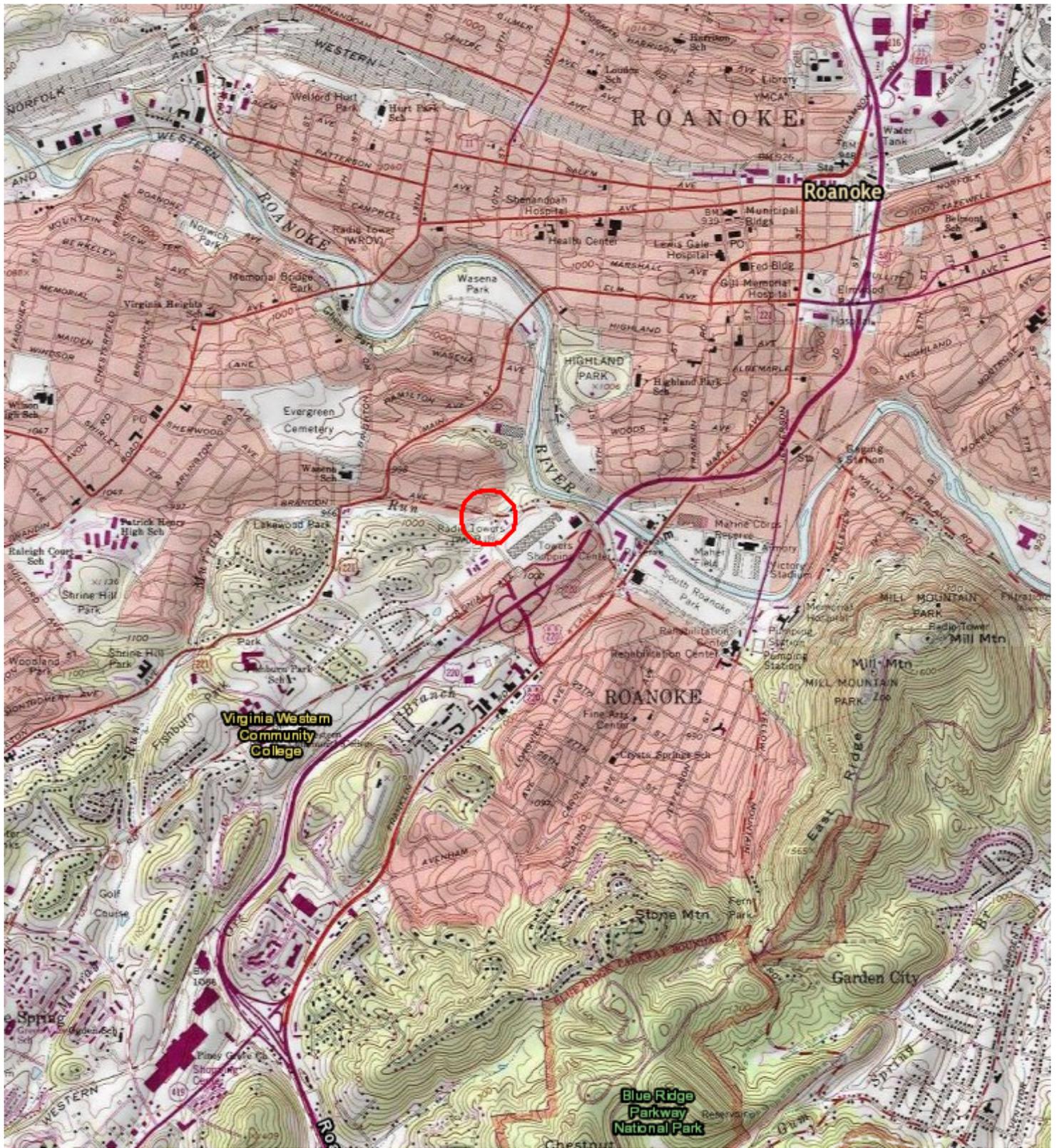
Site Location Map (Figure 1)

Boring Location Diagram (Figure 2)

Unified Soil Classification System (USCS)

Reference Notes for Boring Logs

Boring Logs B-1 and B-1-A



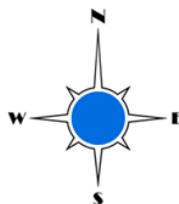
SOURCE: WORLD TRANSPORTATION MAP;USGS

SCALE: 1 INCH = 0.4MI

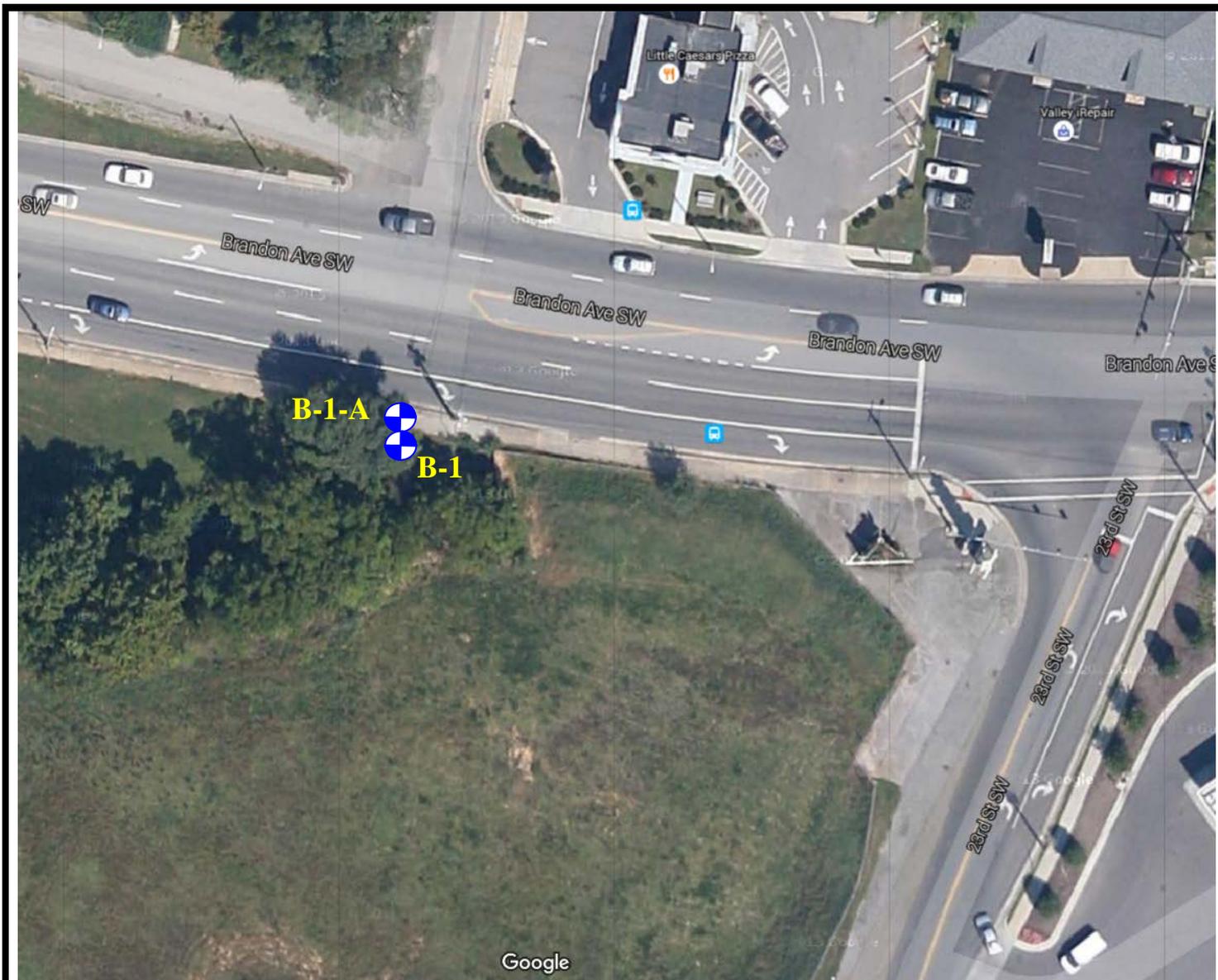
9/28/2015



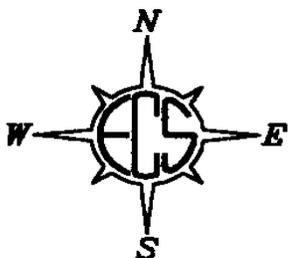
**SITE LOCATION DIAGRAM**  
 ROANOKE OFFICE  
 7670 ENON DRIVE  
 SUITE 101  
 ROANOKE VA 24019



**ECS PROJECT NO.12:8329**  
**MURRAY RUN RETAINING WALL REPLACEMENT**  
 703 BRANDON AVENUE, SW  
 ROANOKE VA 24015



**LEGEND**



- Approximate Boring Location

SCALE:

Not to Scale

SOURCE:  
GOOGLE MAPS  
DATED:  
2015



FIGURE 2  
BORING LOCATION DIAGRAM  
BRANDON AVENUE, SW  
ROANOKE, VA 24015  
ECS PROJECT NO. 12:8329

# UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

Major Divisions		Group Symbols	Typical Names	Laboratory Classification Criteria				
Coarse-grained soils (More than half of material is larger than No. 200 Sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent GW, GP, SW, SP More than 12 percent GM, GC, SM, SC 5 to 12 percent Borderline cases requiring dual symbols <sup>b</sup>	$C_u = D_{60}/D_{10}$ greater than 4 $C_c = (D_{30})^2/(D_{10} \times D_{60})$ between 1 and 3		
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for GW		
		Gravels with fines (Appreciable amount of fines)	GM <sup>a</sup>	d		Silty gravels, gravel-sand mixtures	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
				u				
		GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits below "A" line or P.I. less than 7				
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = D_{60}/D_{10}$ greater than 6 $C_c = (D_{30})^2/(D_{10} \times D_{60})$ between 1 and 3			
			SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW			
		Sands with fines (Appreciable amount of fines)	SM <sup>a</sup>	d	Silty sands, sand-silt mixtures	Atterberg limits above "A" line or P.I. less than 4	Limits plotting in CL-ML zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols	
				u				
		SC	Clayey sands, sand-clay mixtures	Atterberg limits above "A" line with P.I. greater than 7				
Fine-grained soils (More than half material is smaller than No. 200 Sieve)	Silts and clays (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity					
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays					
		OL	Organic silts and organic silty clays of low plasticity					
	Silts and clays (Liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts					
		CH	Inorganic clays of high plasticity, fat clays					
		OH	Organic clays of medium to high plasticity, organic silts					
	Pt	Peat and other highly organic soils						

<sup>a</sup> Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 28 or less and the P.I. is 6 or less; the suffix u used when L.L. is greater than 28.

<sup>b</sup> Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well-graded gravel-sand mixture with clay binder. (From Table 2.16 - Winterkorn and Fang, 1975)

## REFERENCE NOTES FOR BORING LOGS

### I. Drilling Sampling Symbols

SS	Split Spoon Sampler	ST	Shelby Tube Sampler
RC	Rock Core, NX, BX, AX	PM	Pressuremeter
DC	Dutch Cone Penetrometer	RD	Rock Bit Drilling
BS	Bulk Sample of Cuttings	PA	Power Auger (no sample)
HSA	Hollow Stem Auger	WS	Wash sample
REC	Rock Sample Recovery %	RQD	Rock Quality Designation %

### II. Correlation of Penetration Resistances to Soil Properties

Standard Penetration (blows/ft) refers to the blows per foot of a 140 lb. hammer falling 30 inches on a 2-inch OD split-spoon sampler, as specified in ASTM D 1586. The blow count is commonly referred to as the N-value.

#### A. Non-Cohesive Soils (Silt, Sand, Gravel and Combinations)

<i>Density</i>		<i>Relative Properties</i>	
Under 4 blows/ft	Very Loose	Adjective Form	12% to 49%
5 to 10 blows/ft	Loose	With	5% to 12%
11 to 30 blows/ft	Medium Dense		
31 to 50 blows/ft	Dense		
Over 51 blows/ft	Very Dense		

<i>Particle Size Identification</i>		
Boulders		8 inches or larger
Cobbles		3 to 8 inches
Gravel	Coarse	1 to 3 inches
	Medium	½ to 1 inch
	Fine	¼ to ½ inch
Sand	Coarse	2.00 mm to ¼ inch (dia. of lead pencil)
	Medium	0.42 to 2.00 mm (dia. of broom straw)
	Fine	0.074 to 0.42 mm (dia. of human hair)
Silt and Clay		0.0 to 0.074 mm (particles cannot be seen)

#### B. Cohesive Soils (Clay, Silt, and Combinations)

<i>Blows/ft</i>	<i>Consistency</i>	<i>Unconfined Comp. Strength Q<sub>p</sub> (tsf)</i>	<i>Degree of Plasticity</i>	<i>Plasticity Index</i>
Under 2	Very Soft	Under 0.25	None to slight	0 – 4
3 to 4	Soft	0.25-0.49	Slight	5 – 7
5 to 8	Medium Stiff	0.50-0.99	Medium	8 – 22
9 to 15			Stiff	High to Very High
16 to 30	Very Stiff	2.00-3.00		
31 to 50	Hard	4.00–8.00		
Over 51	Very Hard	Over 8.00		

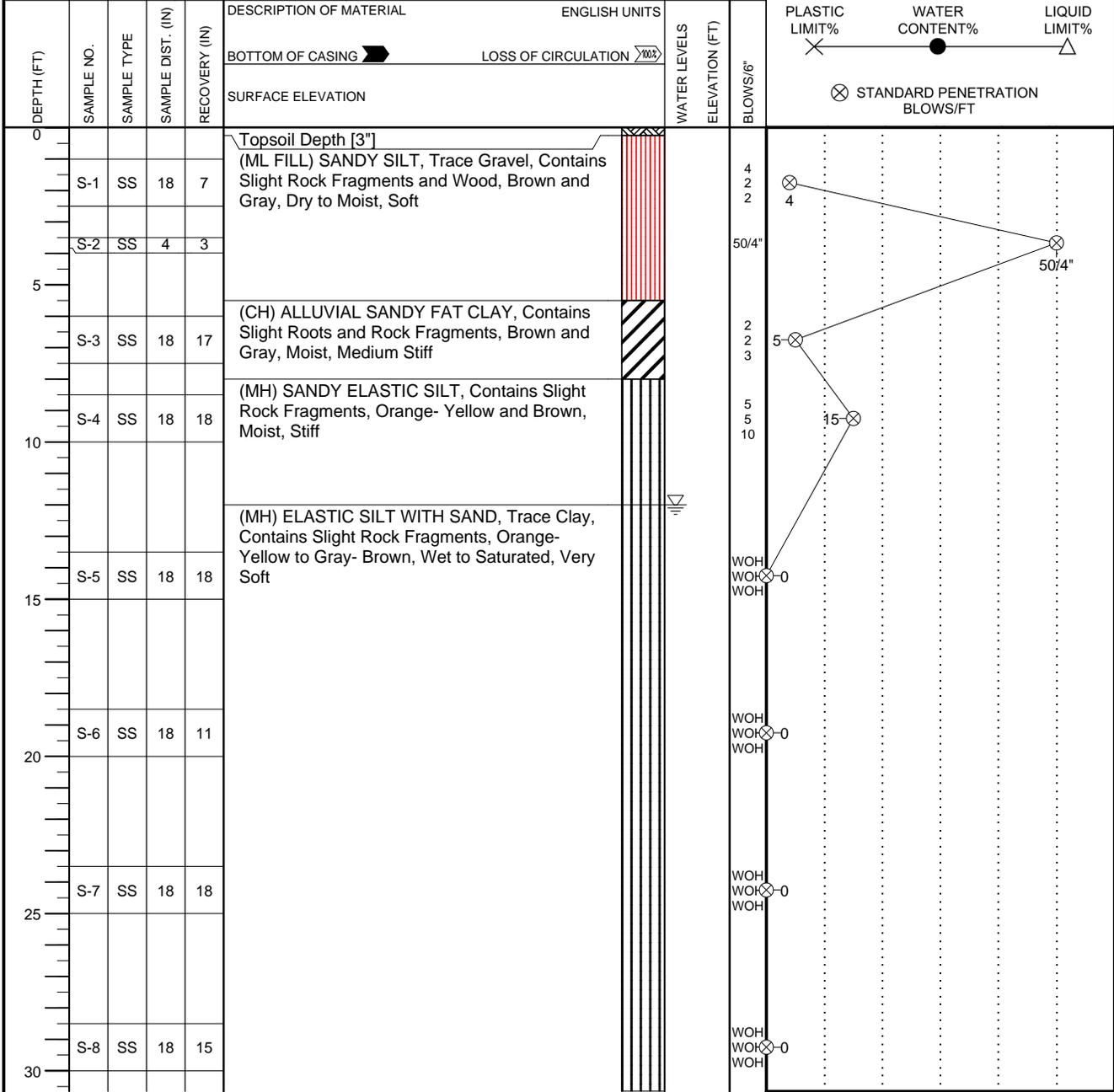
### III. Water Level Measurement Symbols

WL	Water Level	BCR	Before Casing Removal	DCI	Dry Cave-In
WS	While Sampling	ACR	After Casing Removal	WCI	Wet Cave-In
WD	While Drilling	▽	Est. Groundwater Level	▽	Est. Seasonal High GWT

The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in a granular soil. In clay and plastic silts, the accurate determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally applied.

CLIENT <b>City of Roanoke</b>	JOB # <b>12:8329</b>	BORING # <b>B-1</b>	SHEET <b>1 OF 2</b>	
PROJECT NAME <b>Murray Run Retaining Wall Replacement</b>	ARCHITECT-ENGINEER <b>Mattern &amp; Craig, Inc.</b>			

SITE LOCATION <b>703 Brandon Avenue, SW, City of Roanoke, Virginia</b>			○ CALIBRATED PENETROMETER TONS/FT <sup>2</sup> ROCK QUALITY DESIGNATION & RECOVERY RQD% - - - REC% - - - PLASTIC LIMIT%      WATER CONTENT%      LIQUID LIMIT% X      ●      △ ⊗ STANDARD PENETRATION BLOWS/FT
NORTHING	EASTING	STATION	



CONTINUED ON NEXT PAGE.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.					
WL 12.0	WS <input type="checkbox"/>	WD <input checked="" type="checkbox"/>	BORING STARTED	08/26/15	CAVE IN DEPTH @ 11.6'
WL(BCR)	WL(ACR)		BORING COMPLETED	08/26/15	HAMMER TYPE Auto
WL			RIG CME 55 ATV	FOREMAN BRD / Jones	DRILLING METHOD 3.25" HSA

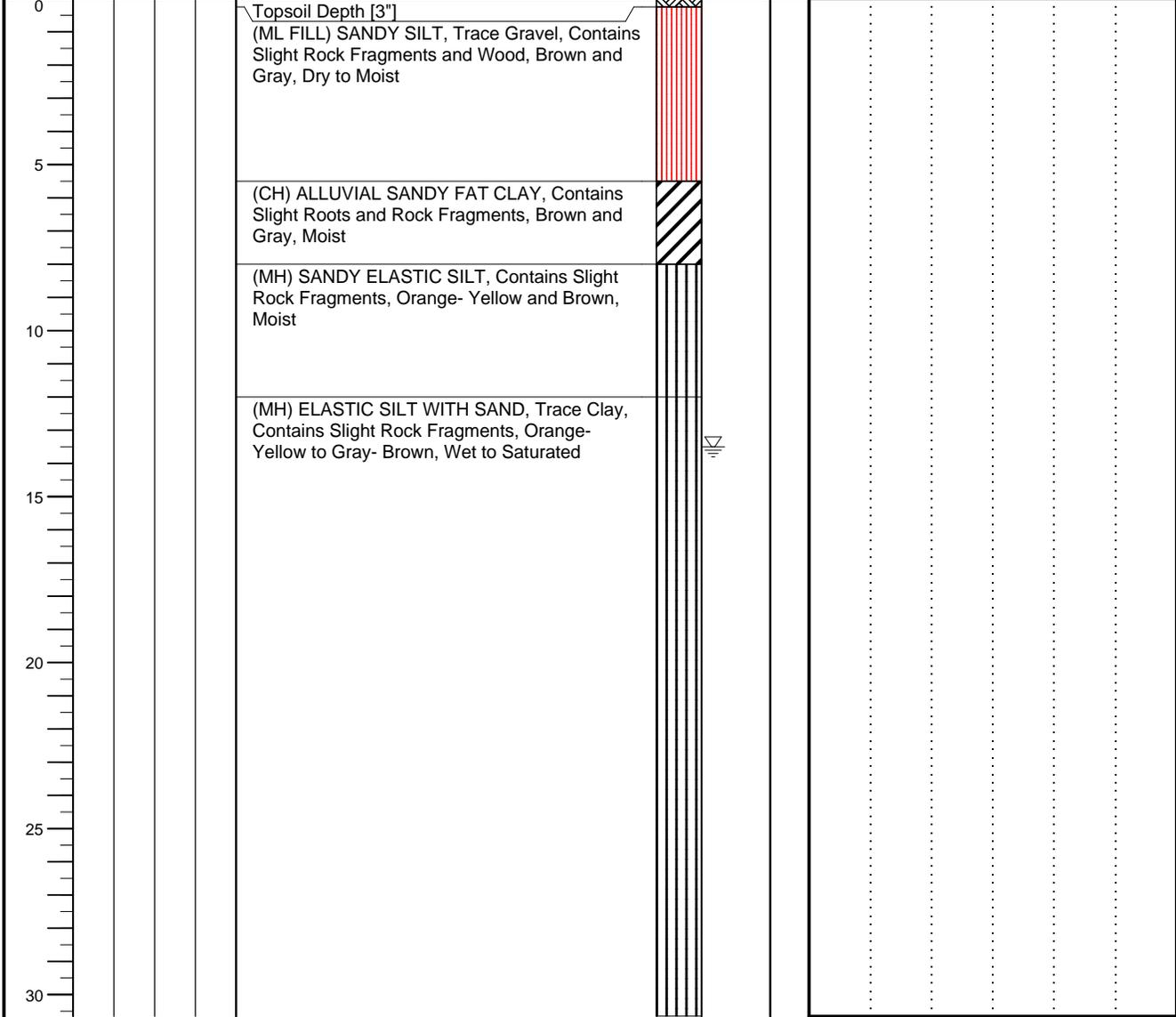


CLIENT <b>City of Roanoke</b>	JOB # 12:8329	BORING # B-1-A	SHEET 1 OF 2	
PROJECT NAME <b>Murray Run Retaining Wall Replacement</b>	ARCHITECT-ENGINEER <b>Mattern &amp; Craig, Inc.</b>			

SITE LOCATION  
**703 Brandon Avenue, SW, City of Roanoke, Virginia**

NORTHING	EASTING	STATION	
----------	---------	---------	--

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
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**CONTINUED ON NEXT PAGE.**

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 13.5	WS <input type="checkbox"/>	WD <input checked="" type="checkbox"/>	BORING STARTED	09/02/15	CAVE IN DEPTH @ 18.3'
WL(BCR)	WL(ACR)		BORING COMPLETED	09/02/15	HAMMER TYPE Auto
WL			RIG CME 55 ATV	FOREMAN BRD / Jones	DRILLING METHOD 3.25" HSA

