



COUNTY OF ROANOKE

FINANCE DEPARTMENT

PURCHASING DIVISION

Kate Hoyt
Buyer

P.O. Box 29800
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Roanoke, VA 24018
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May 23, 2018

INVITATION TO BID

#2018-106

Green Hill Park Road Improvements

Sealed Bids Due:

June 7, 2018

2:00 PM

(Local Prevailing Time)

One (1) Original

Three (3) Complete Copies

One (1) Electronic Copy

INVITATION TO BID #2018-106 GREEN HILL PARK ROAD IMPROVEMENTS

GENERAL INFORMATION

The County of Roanoke, Virginia, is requesting sealed bids for road improvements at Green Hill Park, per the attached project plans (Attachment A to IFB 2018-106).

Per the project plans, the County intends to award a contract for the work included in the Base Bid (page C3), with the option to award Alternates 1 and/or 2 (page C4).

A Pre-Bid Meeting will be held on May 31, 2018, at 9:00 AM (EST) to provide site visits and answer questions. This meeting will be held at the project site at Green Hill Park (2501 Parkside Drive, Salem VA 24153).

SUBMISSION OF THE BID

One (1) Original, three (3) complete copies and, one (1) Electronic Copy (USB preferred), of the sealed bid will be accepted at and until **2:00 PM (local prevailing time) on June 7, 2018**, at the Department of Finance, Purchasing Division, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018. As this is a sealed formal Invitation to Bid, faxed bids will NOT be accepted. Bids not received by the date and time listed above will be returned to the Offeror unopened. The bid package must be clearly marked with **"IFB #2018-106 GREEN HILL PARK ROAD IMPROVEMENTS."**

It is not the intent of the specifications to be proprietary, nor to exclude any manufacturer or dealer. Deviations will be given consideration if they are considered to be suitable and acceptable for comparison. Any deviations must be submitted, in writing, with your bid. Deviations discovered after bid award or material receipt, not stated in your bid, shall be grounds for disqualification and nullification of order. It is the responsibility of the Offeror to prove that the deviation is equal to the product/service specified. The County of Roanoke will make the final determination as to whether the product is equivalent.

EVALUATION OF THE BID

The County of Roanoke shall provide the mechanism for the evaluation of all information received, the final determination of responsible Offerors, and reserves the right to waive informalities and irregularities and to accept or reject any or all bids. Roanoke County reserves the right to procure from State Contracts when it is in our opinion that the State Contract is in the best interest of Roanoke County. Roanoke County retains the right to split items to multiple suppliers.

Individuals with disabilities, who require assistance or special arrangements in order to participate in bidding, please contact us. We require that you provide at least 48 hours notice so that reasonable efforts may be made to provide the proper arrangements. You may be requested to specify the nature of any accommodation or assistance, which may be required for your participation.

FOR QUESTIONS REGARDING THE BID, PLEASE CONTACT:

Kate Hoyt, Buyer
5204 Bernard Dr., SW, Suite 300F
Roanoke, VA 24018
Telephone: 540-283-8149
Email: khoyt@roanokecountyva.gov

All communication regarding this invitation to bid must be facilitated through the Buyer for this project. Offerors are not permitted to communicate with other County personnel regarding this project, outside of the scheduled pre-bid conference.

SPECIFICATIONS

Project plans are included as Attachment A to this IFB #2018-106. All bids shall adhere to the specifications of these plans.

All necessary permitting will be the responsibility of the awarded Contractor.

COOPERATIVE PROCUREMENT

The procurement of goods and/or services provided for in this Invitation for Bid is being conducted pursuant to Virginia Code, Section 2.2-4304.

Therefore, the Offeror or Bidder is advised, and by submitting a response to this procurement, such Offeror or Bidder agrees that any resulting contract from this procurement may in addition to the County of Roanoke, may also be extended to other public agencies or bodies in the Commonwealth of Virginia to permit those public agencies or bodies to purchase such goods and/or services at contract prices, in accordance with the terms, conditions, and specifications of this procurement. The successful Offeror or Bidder shall deal directly with each public agency or body seeking to obtain any goods and/or services pursuant to any contract that may result from this procurement and in accordance with Virginia Code, Section 2.2-4304.

The County of Roanoke shall not be responsible or liable for any costs, expenses, or any other matters of any type to either the successful Offeror or Bidder or the public agency or body seeking to obtain any goods and/or services pursuant to this cooperative procurement provision.

GENERAL TERMS, CONDITIONS, AND INSTRUCTIONS –IFB (Revised 04/2013)

READ CAREFULLY - FAILURE TO COMPLY WITH EACH AND EVERY PROVISION OF THIS INVITATION AND THE SPECIFICATIONS ARE GROUNDS TO DISQUALIFY A BIDDER

Wherever the term Roanoke County, County or Roanoke County Board of Supervisors is used it is understood to include the Roanoke County School Board, in addition, any contract awarded from this solicitation may be used by Roanoke County Public Schools and any other public entity for which the County of Roanoke acts as a fiscal or purchasing agent.

Individuals with disabilities, who require assistance or special arrangements in order to participate in bidding, please contact (540) 772-2061. We require that you provide at least 48 hours' notice so that reasonable efforts may be made to provide the proper arrangements. You may be requested to specify the nature of any accommodations or assistance, which may be required for your participation.

SUBMISSION AND RECEIPT OF BIDS:

- (a) To be considered, all bids must be delivered in a sealed envelope, clearly marked with the words "BID DOCUMENTS", bid number and the name of the item being bid and received in the Roanoke County Finance Department/Purchasing Division no later than the specified date and time for the bid opening. Failure to timely submit such bid shall disqualify the bidder and such bid will be returned to the bidder unopened. NO FAXED BIDS WILL BE ACCEPTED.

- (b) Unless otherwise specified, bidders must use the invitation to bid form furnished by the County. Failure to do so shall be grounds for rejection of the bid.
- (c) Bids having any erasures or corrections must be initialed in ink by the bidder. An authorized officer of the company must sign bids in ink. Such authorization shall be a part of the bid document. All bids must either be typewritten or printed in ink.
- (d) The original copy of the bid must not be permanently bound and one (1) electronic copy is preferred.

IMPORTANT NOTICE EFFECTIVE 3/14/2011 - ADDENDUMS, BIDS, RFPs, TABULATIONS AND NOTICES OF AWARD:

Vendors may visit <http://roanokecountyva.gov/list.aspx> to sign up to receive emails or text message notices about bids, proposals, addendums, bid tabulation and awards. Vendors can sign up to receive notification in selected commodity/service categories. It is the vendor's responsibility to keep information current in the system in order to receive the notifications. The sign up only requires an email address and/or a cell phone number for receiving text messages (if your phone is capable) and your choice of categories.

Although '**Notify Me**' will be the only way to receive automatic notification, all BIDS/RFP Information will continue to be posted on our website, , and can be picked up at the Purchasing Division, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018. Phone # (540) 772-2061, Ext. 311.

PRICES TO BE FIRM:

The bidder warrants, by virtue of bidding, that the prices, terms and conditions quoted in his bid will be firm for a period of 60 days from the date of the bid opening.
NET 30 after receipt of invoice. Price should include shipping.

INVOICES:

The contractor must send all invoices directly to the payment address shown on the purchase order/contract and must submit invoices for items ordered, delivered and accepted by Roanoke County. All invoices must show the purchase order/contract number. All contractors need to be properly registered as a payment vendor for the County in order to receive payment. All vendors previously registered are still in the system as a payment vendor. This system will no longer be used for notification of bids/RFPs.

PERFORMANCE BOND:

At the time of or prior to the execution of the contract, the County reserves the right to require the bidder or contractor to furnish a performance and/or labor and material payment bond with corporate surety, satisfactory to the County of Roanoke, in the amount of the contract price.

DELIVERY POINT:

Unless otherwise indicated, all items shall be delivered F.O.B. with destination and delivery charges included in the bid price. F.O.B. destination is interpreted to mean unloading and placing in the building or area as directed by the County.

CASH DISCOUNTS:

In determining the award of a bid, cash discounts for prompt payment will be considered. Discount time period computation shall commence from and after complete delivery, in satisfactory condition, and receipt of a properly documented invoice.

BRAND NAMES:

When a brand name appears in the specifications, it is solely for the purpose of establishing a grade or quality of material. The County does not wish to rule out other brands or manufacturers; therefore, the words "EQUIVALENT TO" are automatically included. However, if a product other than that specified is bid, it is the vendor's responsibility to prove to the County that said product is equivalent to that specified in the bid.

QUALITY:

All materials used for the manufacture or construction of any supplies, materials, or equipment covered by this bid shall be of the best quality available.

ACCEPTANCE OF MATERIAL:

Until such time as all the conditions in the contract are fulfilled, the County reserves the right to refuse and return material, at the seller's expense.

WARRANTY/RETURNS:

Clearly specify your warranty of product and handling of returns, including turnaround time on faulty equipment. Warranties and other technical data are to be included.

DELIVERY:

Time is of the essence for delivery of any items, products or service procured as a result of this bid. If delivery is not made at the time specified on the Invitation to Bid form, the County reserves the right to call in any and all bonds or other security given for performance, to cancel the order, or any part thereof, without obligation, to declare the seller in default, and to disqualify the seller from bidding on future County contracts.

DEFAULT PROVISION:

In case of default by the contractor, the County shall have the sole discretion to procure the articles or services from other sources. The defaulting contractor shall be liable for any and all costs in excess of the contract price occasioned by or resulting from such default whether directly or indirectly, which sums may be paid or credited from any forfeited bond or other security.

PRICING:

In the event of discrepancy between the total pricing and unit prices, the County in its sole discretion, shall determine the bid price.

Negotiation with lowest responsible Bidder: The County of Roanoke reserves the right to negotiate with the lowest responsible bidder if the low bid exceeds available funds. This provision will be used in accordance with County Code Chapter 17 (Ord. No. 3350, S2-30, 12-14-82). State Code 2.2.4318.

COPYRIGHTS OR PATENT RIGHTS:

The bidder warrants that there have been no violations of copyrights or patent rights in the manufacture, production or sale of the goods shipped or ordered as a result of this bid. The

bidder agrees that the County of Roanoke shall be indemnified and held harmless from any and all liability or expense occasioned by any such violations.

FEES INCLUDED IN BID PRICE:

Submitted bids shall include in the price, the cost of any Business and/or Professional licenses, permits or fees as required by law.

TAX EXEMPTION:

The County of Roanoke is exempt from any taxes imposed by State and/or Federal Government. Upon notification, the County will furnish a certificate of tax exemption.

CERTIFICATION AND ABILITY:

The County of Roanoke reserves the right to request from the bidder, a separate manufacturer's certification of all statements made in the bid. The County may request any or all bidders to furnish proof of experience, ability and financial standing.

SIGNED BID CONSIDERED AN OFFER:

THIS INVITATION TO BID MUST BE SIGNED AS HEREIN PROVIDED. Submission of this signed invitation shall be considered an offer by the bidder or contractor to sell the items or services as required in the specifications. All bids are subject to approval by the County Board of Supervisors. In the case of default by the bidder or contractor after acceptance of a bid, the County of Roanoke may take such action, as it deems appropriate, including forfeiture of any and all bonds or other security and legal action for damages or specific performance.

NO BID:

To insure that your name remains on our bid listing, should you desire not to bid on a particular project, return the completed bid package marked with the words "NO BID". Failure to return to the County a bid or "NO BID" may cause your name to be removed from our listing.

COMPLIANCE WITH LAWS:

The bidder is responsible for compliance with all Local, State and/or Federal laws and regulations. The County of Roanoke shall be held harmless from any liability.

AUTHORITY TO TRANSACT BUSINESS IN VIRGINIA:

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 of the Code of Virginia or as otherwise required by law. Any business entity described herein that enters into a Contract with the County pursuant to the Virginia Public Procurement Act 2.2-4300 et seq. 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 of the Code of Virginia, to be revoked or cancelled at any time during the term of the Contract. The County may void any Contract with a business entity if the business entity fails to remain in compliance with the provisions of this section. All corporations, LLC's and LLP's shall be registered with the State Corporation Commission. To determine whether your firm should register, please contact the SCC.

By my signature on this solicitation, I certify compliance with federal, state, and local laws and regulations applicable to the performance of the services described herein.

ACCEPTANCE OR REJECTION OF BIDS:

The County of Roanoke reserves the right to accept or reject any or all bids/offers. The County also reserves the right to award the contract for any such materials, goods or services the County deems will best serve its interests. It further reserves the right to award the contract on a split order basis, lump sum or individual basis, or such combinations as shall best serve the interest of the County. Roanoke County reserves the right to make a site visit to the facility prior to bid award.

RULING LAW:

This invitation to bid and any contract executed pursuant hereto of which this invitation shall be an internal part shall be governed, controlled and interpreted in accordance with the laws of the Commonwealth of Virginia without reference to its conflict of law principles. Each party to such contract shall thereby submit to the exclusive jurisdiction of the Circuit Court of the County of Roanoke or, in the event that jurisdiction is authorized, to the United States District Court for the Western District of Virginia, sitting at Roanoke, Virginia.

NONDISCRIMINATION PROVISIONS:

During the performance of this contract, the contractor will not discriminate against any employee or applicant for employment because of age, race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. 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.

INSURANCE

The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

Claims under workmen's compensation, disability benefit and other similar employee benefit acts; and

Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees; and

Claims for damages because of bodily injury, sickness liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

Claims for damages because of bodily injury, sickness, or disease, or death of any person other than his employees; and

Claims for damages because of injury in or destruction of tangible property, including loss of use resulting there from.

Certificates of insurance acceptable to the OWNER shall be filed with the OWNER prior to coverage's afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:

CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting there from, sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damage sustained by two or more persons in any one accident.

The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the WORK is performed. Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any WORK is sublet, the CONTRACTOR shall require each SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous WORK under this CONTRACT at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

QUESTIONS REGARDING THE BID:

Questions should be directed to:

Kate Hoyt, Buyer

5204 Bernard Dr., SW, Suite 300F

Roanoke VA 24018

Telephone: 540-283-8149

Email: khoyt@roanokecountyva.gov

SPECIAL INSTRUCTIONS:**ANTITRUST:**

By entering into a contract, the bidder conveys, sells, assigns, and transfers to Roanoke County all rights, title, and interest in and to all causes of the action it may now or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by Roanoke County under said contract.

ASSIGNMENT OF CONTRACT:

A contract shall not be assignable by the contractor in whole or in part without the written consent of Roanoke County.

AVAILABILITY OF FUNDS:

It is understood and agreed between the parties herein that Roanoke County shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this contract.

IMMIGRATION REFORM AND CONTROL ACT OF 1986:

By signing this bid, the bidder certifies that the firm does not and will not during the performance of this contract employ illegal alien workers or otherwise violate the Federal Immigration Reform and Control Act of 1986.

ANTI-COLLUSION CERTIFICATION:

By my signature on the face of this bid, I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, equipment, or services, and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of the Virginia Governmental Frauds Act and Federal Law and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the bidder.

KICKBACKS:

I certify and warrant that by my signature on this solicitation, neither I nor the bidder for whom I am authorized to act has offered or received any kickback from any other bidder, supplier, manufacturer, or subcontractor in connection with bid on this contract, subcontractor in order, in the form of any payment, loan, subscription, advance, deposit of money, services or anything, present or promised, unless consideration of substantially equal or greater value is exchanged. Further, no person shall demand or receive any payment, loan, subscription, advance, deposit of money, service, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is exchanged.

DEBARMENT:

By my signature on this solicitation, I certify that this person/firm/corporation is not currently barred from bidding on contracts by any agency of the Commonwealth of Virginia or the federal government of the United States of America, nor is this person/firm/corporation a part of any firm/corporation that is currently barred from bidding on contracts by any agency of the Commonwealth of Virginia or the federal government of the United States of America. I have attached an explanation of the previous debarment(s) and copies of notice(s) of reinstatement(s).

INDEMNIFICATION:

To the fullest extent permitted by law, the Vendor shall indemnify and hold harmless the County

of Roanoke and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to, attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the Vendor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph.

The County cannot legally agree to any clause indemnifying the contractor from any damages arising out of the contract or holding the contractor harmless. The submission of a bid or proposal means that the contractor agrees not to request such language in the resulting contract.

CONTRACT:

Any contract resulting from his bid shall consist of the following documents: the General Terms and Conditions and the Specifications, both of which are contained in the Invitation for Bid, together with the bidders response, which consists of this document, the Price Schedule and other bid documents attached hereto or submitted with this document.

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 violation 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 of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes 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 in accordance with this chapter, 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.

DATA ON CONVICTIONS FOR CERTAIN CRIMES AND CHILD ABUSE AND NEGLECT:

The contractor certifies that none of the persons who will provide services on school property or requiring direct contact with students has been convicted of any of the following felony or misdemeanor offenses: felony sex or violence offenses, other felony offenses or misdemeanor sex offenses within the past ten years.

The contractor further understands and acknowledges (1) that if he makes a materially false statement regarding any of the above offenses, he will be guilty of a Class 1 misdemeanor and may forfeit profits derived from the contract. Further, the contractor understands and acknowledges that before any person is permitted to provide such services subsequent to this

certification, he must complete a new certification regarding such person in a form satisfactory to the School Board. The required certification form is attached hereto.

PROPRIETARY INFORMATION:

Ownership of all data, materials, and documentation originated and prepared for the County of Roanoke pursuant to the INVITAION FOR BID shall belong exclusively to the County and be subject to public inspection in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by a bidder shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the bidder must invoke the protections of Section 2.2-4342F of the Code of Virginia, in writing, either before or at the time the data or other material is submitted.

The bidder must specifically identify the data or materials to be protected and state the reasons why protection is necessary on the "Notice of Proprietary Information Form" below. In addition, the proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining in the Bid and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information.

The classification of an entire bid document, line item prices, and/or total bid prices as proprietary or trade secrets is not acceptable and may result in rejection of the bid.

DATA ON CONVICTIONS FOR CERTAIN CRIMES AND CHILD ABUSE AND NEGLECT
CERTIFICATION OF CONTRACTOR

Full Name of Contractor: _____

Description of Contract: _____

As required by Section 22.1-296.1 of the Code of Virginia, the undersigned hereby certifies that none of the persons who will provide services requiring direct contact with students on school property during school hours or during school-sponsored activities has been convicted of a felony or any offense involving the sexual molestation, physical or sexual abuse or rape of a child.

I further understand and acknowledge (1) that if I make a materially false statement regarding any of the above offenses, I will be guilty of a Class 1 misdemeanor and (2) that before any person is permitted to provide such services subsequent to this certification, I must complete a new certification regarding such person.

Date: _____

Name of Contractor

By: _____

TITLE

NOTICE OF PROPRIETARY INFORMATION FORM
INVITATION TO BID #2018-106 GREEN HILL PARK ROAD IMPROVEMENTS

Confidentiality References Protection in Accordance with the Code of Virginia, Section 2.2-4342

Section Title	Page #	Reason(s) for Withholding from Disclosure

INSTRUCTIONS: Identify the data or other materials to be protected and state the reasons by using the codes listed below. Indicate the specific words, figures, or paragraphs that constitute trade secrets or proprietary materials. The classification of an entire bid or proposal document, line item prices, and/or total bid or proposal prices as proprietary or trade secret is not acceptable and will result in rejection of the bid or proposal.

- A) This page contains information relating to "trade secrets", and "proprietary information" including processes. Operations, style of work, or apparatus. Identify confidential statistical data. Amount or source of any income...of any person (or) partnership. See Virginia Public Procurement Act. Section 2.2-4342. Unauthorized disclosure of such information would violate the Trade Secrets Act 18 U.S.C. 1905.
- B) This page contains proprietary information including confidential, commercial or financial information, which was provided to the Government on a voluntary basis and is of the type that would not customarily release to the public. See Virginia Public Procurement Act, Section 2.2-4342; 5 U.S.C. 552 (b) (4); 12 C.F.R. 309.5(c) (4).
- C) This page contains proprietary information including confidential, commercial or financial information. The disclosure of such information would cause substantial harm to competitive position and impair the Government's ability to obtain necessary information from contractors in the future. 5 U.S.C. See Virginia Public Procurement Act. Section 2.2-4342; 552 (b) (4)12 C.F.R. 309.5(c) (4).

PRICE FORM AND SIGNATURE PAGE
INVITATION TO BID #2018-106 GREEN HILL PARK ROAD IMPROVEMENTS

Base Bid: \$ _____

Alternate 1: \$ _____

Alternate 2: \$ _____

BIDDERS SIGNING THE BID FORM AGREE THAT THE PRODUCT BEING BID CONFORMS TO ALL SPECIFICATIONS LISTED IN THE BID. BIDDER CERTIFIES THAT BY SUBMISSION OF THIS BID, HE HAS READ AND AGREES TO THE TERMS AND CONDITIONS SET FORTH IN THIS INVITATION TO BID.

DATE _____

PAYMENT TERMS NET 30

COMPANY NAME _____

ADDRESS _____ PHONE # _____

_____ FAX # _____

_____ EMAIL _____

FEIN _____ VA BUSINESS LICENSE NO. _____

VIRGINIA SCC # OR STATEMENT DESCRIBING WHY FIRM IS NOT REQUIRED TO BE SO AUTHORIZED PER VA CODE §2.2-4311.2 _____

SIGNATURE / TITLE _____

NAME / TITLE (please print) _____

To receive consideration for award, this signature sheet must be returned to the Purchasing Division, as it shall be a part of your response.

IFB 2018-106
Green Hill Park Road Improvements

Attachment A
Project Plans

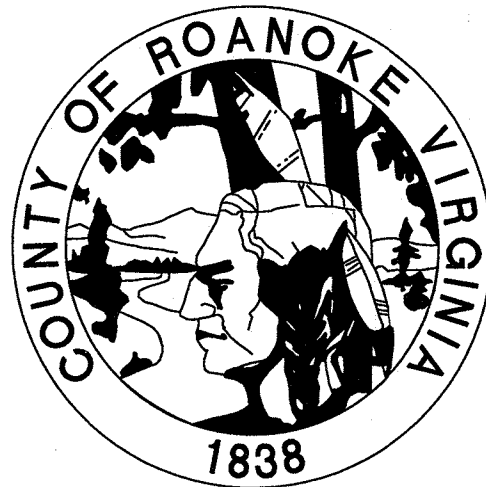
GENERAL NOTES

PRE-CONSTRUCTION MEETING AND CONSTRUCTION COMMENCEMENT:

- All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation.
 - Stormwater Management Agreements with an attached 8 1/2" x 11" or 8 1/2" x 14" plat must be approved and recorded prior to the pre-construction meeting.
 - Once all required items are submitted to the County of Roanoke, the developer must contact the Development Review Coordinator to indicate that a pre-construction meeting needs to be scheduled. The pre-construction meeting will be scheduled with the owner/developer two (2) working days later.
 - All land disturbing projects that require approval of an erosion and sediment control plan, grading or clearing permit shall require that the applicant provide the name of an individual who will be responsible for land disturbing activities and that this individual hold a Responsible Land Disturber (RLD) Certificate from the Department of Environmental Quality. The Responsible Land Disturber can be anyone from the Project team that is certified by the Commonwealth of Virginia to be in charge of carrying out the land disturbing activity for the project.
 - It is the responsibility of the owner/developer to notify the certified Responsible Land Disturber and the Utility Contractor to attend the pre-construction meeting.
 - The Development Review Coordinator will schedule the pre-construction meeting with the County Review Engineer, the County Inspector, and the Western Virginia Water Authority and the Town of Vinton Public Works Department if applicable.
 - An approved set of plans, Storm Water Pollution Prevention Plan (SWPPP), VSMP coverage letter, and all permits must be available at the construction site at all times.
 - The developer and/or contractor shall supply all utility companies with copies of approved plans, advising them that all grading and installation shall conform to approved plans.
 - The project engineer will inform the owner/developer verbally and in writing of the County's obligation to perform inspections on site. Everyone in the meeting will be required to sign a pre-construction checklist indicating their knowledge of Roanoke County's obligation to perform inspections on site.
 - The Erosion Control Permit or Combined Erosion Control & VSMP Permit is given to the developer at this pre-construction meeting.
 - Notify the County of Roanoke prior to beginning installation of ESC measures. The County will inspect initial installations to ensure compliance with approved plan prior to start of grading. The developer SHALL contact the project inspector 24 hours before beginning any grading or construction on the property.
 - County inspectors must inspect storm drain / stormwater management / BMP installations during the process of installation. Please contact the site inspector 24 hours in advance.
 - All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority and the Virginia Department of Transportation inspectors.
 - Contractors shall notify utilities of proposed construction at least two (2), but not more than ten (10) working days in advance. Area public utilities may be notified thru "Miss Utility": 1-800-552-7001 or VA 811.
 - The 100 year Floodway shall be staked prior to any construction.
 - Grade stakes shall be set for all curb and gutter, culvert, sanitary sewer and storm sewer at all times of construction.
 - The Department of Community Development shall be notified when a spring is encountered during construction.
 - Construction debris shall be containerized in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site.
 - The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets or rights of ways. It is the contractors responsibility to insure that the streets are in a clean, mud and dust free condition at all times.
 - Plan approval in no way relieves the developer or contractors of the responsibilities contained within the erosion and sediment control or stormwater management policies.
 - Field construction shall honor proposed drainage divides as shown on plans.
 - Field corrections shall be approved by the Roanoke County Engineering Division and/or the Western Virginia Water Authority and the Professional of Record, prior to such construction.
 - The developer or contractor shall supply the County and the Western Virginia Water Authority with correct As-Built plans before final acceptance.
- VIRGINIA DEPARTMENT OF TRANSPORTATION:**
- Plan approval by Roanoke County does not guarantee issuance of any permits by the Virginia Department of Transportation.
 - A permit must be obtained from the Virginia Department of Transportation, Salem Residency Office prior to construction in the highway right-of-way.
 - The preliminary pavement designs should be based on a predicted sub-grade CBR value of 7.0 and with a Resiliency Factor (RF) of 2.0 as shown in Appendix I of the 2000 Virginia Department of Transportation Pavement Design Guide for Subdivision and Secondary Roads. The sub-grade soil is to be tested by an independent laboratory and the results submitted to the Virginia Department of Transportation prior to base construction. Should the sub-grade CBR value and/or the RF value be less than the predicted values, additional base material will be required in accordance with Departmental specifications. Refer to the same manual as the number and locations of the required soil samples to be tested. All pavement designs shall be submitted to the Department for review and approval. The sub-grade shall be approved by the Virginia Department of Transportation prior to placement of the base. Base shall be approved by the Virginia Department of Transportation for depth, template, and compaction before the surface is applied.
 - Standard guardrail with safety end sections may be required on fills or in areas where hazards exist as deemed necessary. After completion of rough grading operations, the County Engineer and Virginia Department of Transportation shall be contacted to schedule a field review. Where guard rail is warranted, the standard shoulder width shall be provided and the guard rail shall be installed in accordance with the 2001 VDOT Road and Bridge Standards as part of this development.
 - Standard street and traffic control signs shall be erected at each intersection by the developer prior to final street acceptance.
 - All traffic devices shall be in accordance with current edition of the "Manual on Uniform Traffic Control Devices" (MUTCD).
 - All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.

See Sheet N/A for Stormwater Site Statistics Table.
See Sheet N/A for New BMP Information Table.

The Project Engineer shall provide electronic copies of the approved plans to the Development Review Coordinator within 5 working days of the pre-construction meeting.
The notes on this sheet shall not be modified.



COUNTY OF ROANOKE, VA

NAME OF DEVELOPMENT	GREEN HILL PARK ROAD IMPROVEMENTS		
MAGISTERIAL DISTRICT(S)	CATAWBA		
OWNER (name, address, telephone)	ROANOKE COUNTY BOARD OF SUPERVISORS P.O. BOX 29800 ROANOKE, VIRGINIA 24018		
DEVELOPER (name, address, telephone)	ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION, AND TOURISM ATTN: ERIC VEST 1206 KESSLER MILL ROAD SALEM, VIRGINIA 24153 540-777-6324 FAX 540-387-6146		
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	BALZER AND ASSOCIATES, INC. ATTN: CHRIS BURNS 1208 CORPORATE CIRCLE ROANOKE, VA 24018 540-772-9580 FAX 540-772-8050		
TAX MAP NO(S)	055.00-01-08.00-0000		

WATER NOTES

All water facilities shall be constructed according to the Western Virginia Regional Design and Construction Standards (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering valve vaults after paving and adjustment to final grade if necessary.

All existing utilities may not be shown in their exact location. The contractor shall comply with the State Water Works Regulations, Section 12VAC5-590-1150, where lines cross.

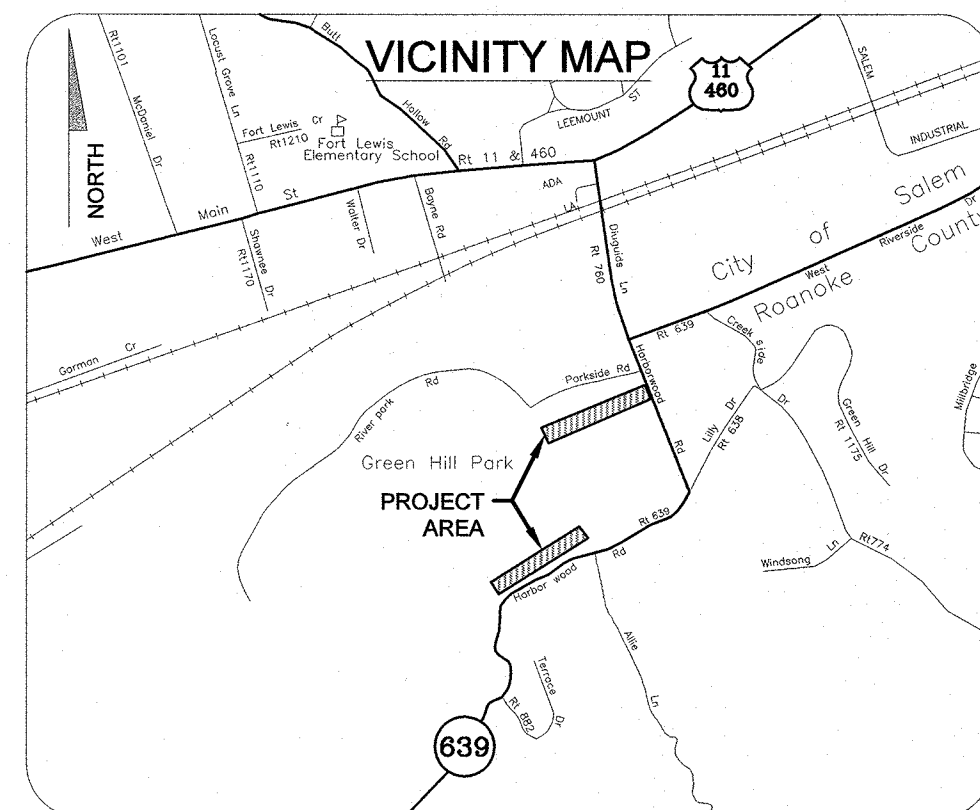
All trenches in existing or future highway right-of-ways shall be compacted according to Virginia Department of Transportation standards.

Lines shall be staked prior to construction.

Water main shall be minimum Class 350 Ductile Iron in accordance with AWWA C151 or DR-14 PVC in accordance with AWWA C-900.

Ductile Iron Pipe in accordance with the Western Virginia Regional Design and Construction Standards shall be required for all pipe with a working pressure equal to or greater than 100 p.s.i.

Western Virginia Water Authority
Availability letter number: N/A



LEGEND

Property Line	---
Right-of-way	---
Centerline	---
Minimum Building Line	--- MBL
Existing Storm Sewer	--- 48" RCP --- 48" RCP
Existing Sanitary Sewer	--- 8" SAN --- 8" SAN
Existing Water Main	--- 8" WM --- 8" WM
Existing Contour	--- 1155 --- 1155
Proposed Contour	--- 1155 --- 1155
Proposed Drainage Divide	---
Proposed Limits of Clearing	---
Proposed Storm Sewer	---
Proposed Sanitary Sewer	--- 8" SS --- 8" SS
Proposed Water Main	--- 8" W --- 8" W
To Be Removed	T.B.R.

SEWER NOTES

All sanitary sewer facilities shall be installed according to the Western Virginia Regional Design and Construction Standards (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering all manholes after paving. Manhole tops shall be adjusted to grade if necessary.

All existing utilities may not be shown in their exact location. The contractor shall comply with (State Water Works Regulations, Section 12VAC5-590-1150, where lines cross.)

All trenches in existing or future highway right-of-ways shall be compacted according to Virginia Department of Transportation standards.

Lines shall be staked prior to construction.

PRIVATE UTILITIES

Underground utilities installed on private property or in private utility easements and building related storm drains shall be designed and installed per the current edition of the Virginia Uniform Statewide Building Code. Design and installation requirements issued by the Western Virginia Water Authority that meet or exceed the USBC requirements are acceptable for private utilities. All private utilities are to be permitted through and inspected by the Roanoke County Inspections Office. Vaults, valves and other devices installed by or under the control of the Western Virginia Water Authority may not substituted for the code required devices.

- C1 COVER SHEET
- C2 EXISTING CONDITIONS & KEY PLAN
- C3 ROAD IMPROVEMENTS #1
- C4 ROAD IMPROVEMENTS #2
- C5 ESC NOTES & DETAILS

Sheet Index

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in year: MARCH 2018
By: BALZER & ASSOCIATES, INC.

All vertical elevations must be referenced to the National Geodetic Vertical Datum of 1929 or 1988. All horizontal elevations must be referenced to the North American Datum of 1927 or 1983.

Horizontal Datum: 1983 Vertical Datum: 1988

Source of topographic mapping is dated MARCH 2018

Boundary was performed by N/A dated: N/A

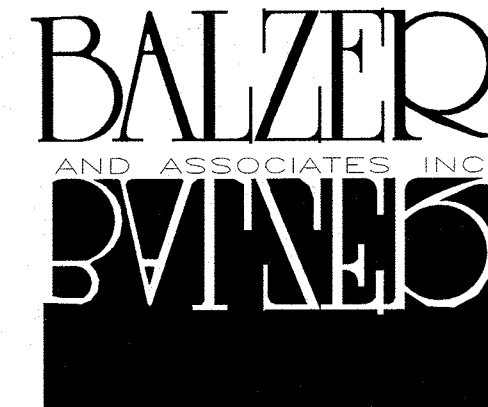
Benchmark Information: EXISTING UTILITY POLE
ELEVATION = 1046.15' (SEE SHEET C3)

The professional seal and signature certifies the boundary survey and topographic mapping to be accurate and correct.

NOTE: THIS COST ESTIMATE TABLE IS PROVIDED FOR BONDING PURPOSES ONLY. VERIFICATION OF ALL QUANTITIES AND PRICES FOR BIDDING PURPOSES SHALL BE THE RESPONSIBILITY OF THE BIDDER.

QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING		ACRES			
S.W.M. EXCAVATION		C.Y.			
S.W.M. EMBANKMENT		C.Y.			
DROP INLET DI-1		EACH			
VDOT STD DI-38		EACH			
VDOT STD MH-2		LUMP SUM			
15" TYPE S HDPE PIPE		LIN. FT.			
15" HDPE PIPE		LIN. FT.			
BOX CULVERT		LUMP SUM			
PAVED DITCH		LIN. FT.			
RIPRAP - CLASS		S.F.			
SODDED SWALE		S.F.			
-IN. CONCRETE ENDWALL EW-		EACH			
PAVEMENT (INCLUDING SUB-BASE)					
CURB & GUTTER CG-6		LIN. FT.			
GRAVEL SHOULDER		S.Y.			
SURFACE TREATMENT		S.Y.			
-IN. BIT. CONC.: TYPE B-		S.Y.			
-IN. BIT. CONC.: TYPE S-		S.Y.			
-IN. BASE MATERIAL		C.Y.			
-IN. SUBBASE MATERIAL		C.Y.			
COMMERCIAL WATER METER (1") & Lateral		EACH			
FIRE HYDRANT ASSEMBLIES		EACH			
BLOW OFFS W/VAULT, FRAME & COVER		EACH			
8-IN. GATE VALVE, W/VAULT, FRAME & COVER		EACH			
-IN. GATE VALVE, W/VAULT, FRAME & COVER		EACH			
SANITARY SEWER MANHOLE		EACH			
8" PVC SANITARY SEWER MAIN		LIN. FT.			
6" SANITARY SEWER LATERAL & SAMPLING MANHOLE		EACH			
LANDSCAPING (SEE SHEET C-08)		LUMP SUM			
AS-BUILT PLANS - STORM SEWER		LUMP SUM			
SUB-TOTAL					
10% CONTINGENCY					
ESTIMATED TOTAL					
I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.					
SIGNED:			DATE:		



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PLANNERS • ARCHITECTS
ENGINEERS • SURVEYORS

1208 Corporate Circle
Roanoke, Virginia 24018
Phone: 540/772-9580
FAX: 540/772-8050

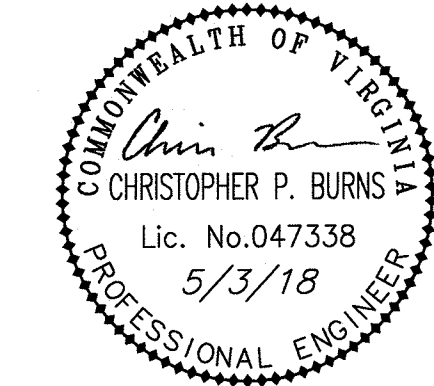
15871 City View Drive
Suite 200
Middleton, Virginia 23113
Phone: 804/794-0571
FAX: 804/794-2635

448 Peppers Ferry Road
Christiansburg, Virginia 24073
Phone: 540/381-4290
FAX: 540/381-4291

1561 Commerce Road
Suite 401
Verona, Virginia 24482
Phone: 540/248-3220
FAX: 540/248-3221

128 W. Market Street
Suite 301
Harrisonburg, Virginia 22801
Phone: 540/433-1908

DRAWN BY: EJP
DESIGNED BY: CPB
CHECKED BY: CPB
DATE: 4/16/2018
REVISIONS: 5/3/2018



DEVELOPMENT PLAN	APPROVED	DATE	5/1/18
FOR CONSTRUCTION	BY ROANOKE COUNTY	DATE	5/1/18
Department	Development Review	Engineering	Water & Sewer
Planning & Zoning			

GREEN HILL PARK ROAD IMPROVEMENTS

Green Hill Park
County of Roanoke, Virginia

SHEET No.:

C1

JOB No.: 04180031.00

THE SITE IS LOCATED WITHIN FEMA FIRM PANEL 51161C0138G.

JOB NO. 04180031.00

GENERAL SITE NOTES:

1. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER AND ROANOKE COUNTY.
2. ANY PAVEMENT TO REMAIN THAT IS DAMAGED OR DESTROYED DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED/REPLACED AS NECESSARY TO PRE-CONSTRUCTION CONDITIONS AT NO COST TO THE OWNER.
3. G.C. SHALL ENSURE THAT ALL APPROPRIATE PERMITS ARE IN HAND PRIOR TO ANY CONSTRUCTION.
4. G.C. TO CONFIRM ALL GRADES PRIOR TO CONSTRUCTION.
5. NO EXTERIOR LIGHTING, NO NEW UTILITIES, NO WATER/SEWER SERVICES ARE PROPOSED AS A PART OF THIS PROJECT.
6. ROANOKE COUNTY PARKS, RECREATION, AND TOURISM WILL REMOVE THE EXISTING GATES THAT ARE LOCATED ON-SITE AND REPLACE AFTER COMPLETION OF CONSTRUCTION. G.C. SHALL BE RESPONSIBLE FOR DISPOSAL OF ANY OTHER MATERIALS ON-SITE THAT MUST BE REMOVED FOR THE PROPOSED IMPROVEMENTS.
7. G.C. SHALL BE RESPONSIBLE FOR HAUL-OFF OF EXCESS MATERIAL FROM THE SITE AND DISPOSAL AT AN ACCEPTABLE LOCATION.

PAVEMENT LEGEND

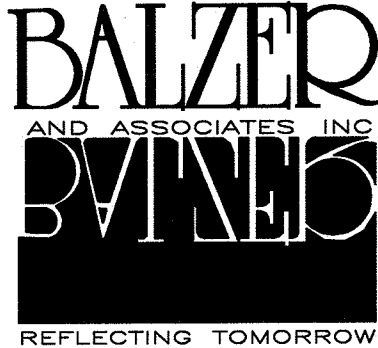
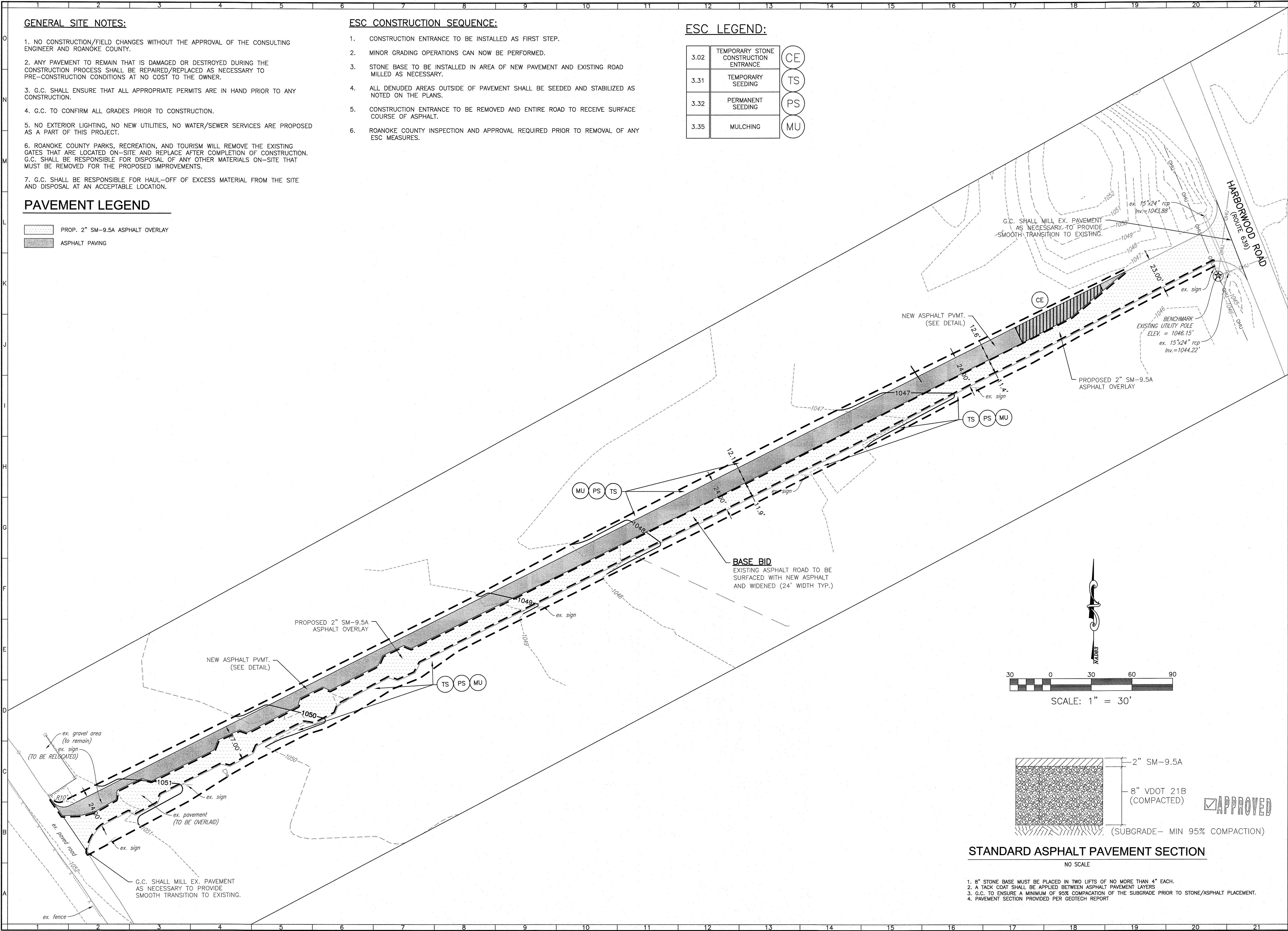
- PROP. 2" SM-9.5A ASPHALT OVERLAY
- ASPHALT PAVING

ESC CONSTRUCTION SEQUENCE:

1. CONSTRUCTION ENTRANCE TO BE INSTALLED AS FIRST STEP.
2. MINOR GRADING OPERATIONS CAN NOW BE PERFORMED.
3. STONE BASE TO BE INSTALLED IN AREA OF NEW PAVEMENT AND EXISTING ROAD MILLED AS NECESSARY.
4. ALL DENUDED AREAS OUTSIDE OF PAVEMENT SHALL BE SEEDED AND STABILIZED AS NOTED ON THE PLANS.
5. CONSTRUCTION ENTRANCE TO BE REMOVED AND ENTIRE ROAD TO RECEIVE SURFACE COURSE OF ASPHALT.
6. ROANOKE COUNTY INSPECTION AND APPROVAL REQUIRED PRIOR TO REMOVAL OF ANY ESC MEASURES.

ESC LEGEND:

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
3.31	TEMPORARY SEEDING	TS
3.32	PERMANENT SEEDING	PS
3.35	MULCHING	MU

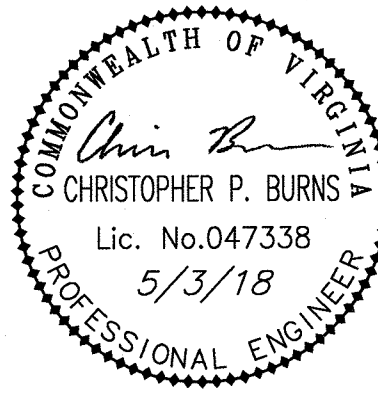


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ENVIRONMENTAL & SOIL SCIENCE
WETLAND DELINEATIONS & STREAM EVALUATIONS

Balzer and Associates, Inc.
1208 Corporate Circle
Roanoke, VA 24018
540-772-9580
FAX 540-772-8050



GREEN HILL PARK ROAD IMPROVEMENTS
2501 PARKSIDE DRIVE
ROAD IMPROVEMENTS #1
CATAWBA DISTRICT
ROANOKE COUNTY, VIRGINIA

DRAWN BY EJP
DESIGNED BY CPB
CHECKED BY CPB
DATE 4/16/2018
SCALE 1"=30'
REVISIONS:
5/3/2018

SHEET NO.
C3
JOB NO. 04180031.00

1. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER AND ROANOKE COUNTY.
2. ANY PAVEMENT TO REMAIN THAT IS DAMAGED OR DESTROYED DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED/REPLACED AS NECESSARY TO PRE-CONSTRUCTION CONDITIONS AT NO COST TO THE OWNER.
3. G.C. SHALL ENSURE THAT ALL APPROPRIATE PERMITS ARE IN HAND PRIOR TO ANY CONSTRUCTION.
4. G.C. TO CONFIRM ALL GRADES PRIOR TO CONSTRUCTION.
5. NO EXTERIOR LIGHTING, NO NEW UTILITIES, NO WATER/SEWER SERVICES ARE PROPOSED AS A PART OF THIS PROJECT.
6. ROANOKE COUNTY PARKS, RECREATION, AND TOURISM WILL REMOVE THE EXISTING GATES THAT ARE LOCATED ON-SITE AND REPLACE AFTER COMPLETION OF CONSTRUCTION. G.C. SHALL BE RESPONSIBLE FOR DISPOSAL OF ANY OTHER MATERIALS ON-SITE THAT MUST BE REMOVED FOR THE PROPOSED IMPROVEMENTS.
7. G.C. SHALL BE RESPONSIBLE FOR HAUL-OFF OF ANY EXCESS MATERIAL FROM THE SITE AND DISPOSAL AT AN ACCEPTABLE LOCATION. ROANOKE COUNTY SHALL BE NOTIFIED OF THE LOCATION OF THE HAUL OFF BORROW AREAS. ANY OFF-SITE LOCATIONS MUST BE APPROVED BY ROANOKE COUNTY AND MUST BE A PERMITTED SITE.

1. EXISTING GRAVEL AREA TO SERVE AS THE CONSTRUCTION ENTRANCE.
2. AFTER THE SITE IS ACCESSED, THE EXISTING GRAVEL ROAD SHALL BE REMOVED.
3. MINOR GRADING OPERATIONS CAN NOW BE PERFORMED.
4. STONE BASE TO BE INSTALLED IN AREAS OF NEW PAVEMENT.
5. ALL DENUDEED AREAS SHALL BE SEEDED AND STABILIZED AS NOTED ON THE PLANS.
6. PAVING OPERATIONS MAY BE COMPLETED AT THIS TIME.
7. ROANOKE COUNTY INSPECTION AND APPROVAL REQUIRED PRIOR TO REMOVAL OF ANY ESC MEASURES.

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
3.31	TEMPORARY SEEDING	TS
3.32	PERMANENT SEEDING	PS
3.35	MULCHING	MU



NO SCALE

1. 8" STONE BASE MUST BE PLACED IN TWO LIFTS OF NO MORE THAN 4" EACH.
2. A TACK COAT SHALL BE APPLIED BETWEEN ASPHALT PAVEMENT LAYERS
3. G.C. TO ENSURE A MINIMUM OF 95% COMPACTION OF THE SUBGRADE PRIOR TO STONE/ASPHALT PLACEMENT
4. PAVEMENT SECTION PROVIDED PER GEOTECH REPORT

 EX. GRAVEL AREA (TO RECEIVE 2" SM-9.5A SURFACE COURSE)
 ASPHALT PAVING
 EXISTING GRAVEL (TO BE REMOVED)



BALZER
AND ASSOCIATES INC
BVNEB
REFLECTING TOMORROW

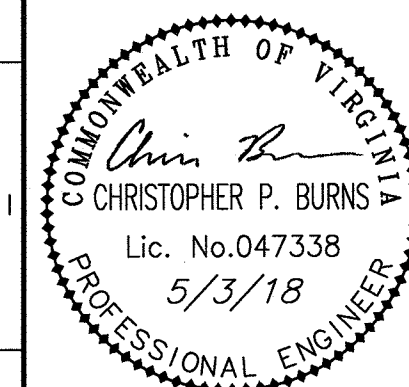
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Roanoke, VA 24018
540-772-9580
FAX 540-772-8050



GREEN HILL PARK ROAD IMPROVEMENTS

2501 PARKSIDE DRIVE
ROAD IMPROVEMENTS #2

CATAWBA DISTRICT
ROANOKE COUNTY, VIRG

DRAWN BY	<u>EJP</u>
DESIGNED BY	<u>CPB</u>
CHECKED BY	<u>CPB</u>
DATE	<u>4/16/2018</u>
SCALE	<u>1"=30'</u>

REVISIONS:
5/3/2018

SHEET NO.

A C4

JOB NO. 04180031.00

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS
- ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
- ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5: PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT BY ROANOKE COUNTY, THE OWNER SHALL PROVIDE DOCUMENTATION OF AN EXISTING LAND DISTURBING PERMIT(S) THAT WOULD BE ASSOCIATED OR REQUIRED FOR ANY OFF-SITE BORROW OR WASTE AREAS; WHETHER LOCATED WITHIN THE COUNTY LIMITS OR NOT.
- ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
- ES-10: ALL ASPHALT AREAS WILL BE STABILIZED WITH BASE STONE WITHIN 30 DAYS OF FINAL GRADING.
- ES-11: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- ES-12: THE LOCAL APPROVING AUTHORITY AND OTHER INTERESTED AGENCIES SHALL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS USED FOR THE OVERALL EFFECTIVENESS OF THE EROSION CONTROL PROGRAM. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN MAY BE AMENDED BY THE APPROVING AUTHORITY OF ON SITE INSPECTION INDICATED THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION OR IF BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CANNOT BE CARRIED OUT.
- ES-13: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.
- ES-14: ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA THE CONSTRUCTION ENTRANCES.
- ES-15: FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED TO ROANOKE COUNTY.

TABLE 3.31-B
(Revised June 2003)
TEMPORARY SEEDING SPECIFICATIONS
QUICK REFERENCE FOR ALL REGIONS

APPLICATION DATES	SEED SPECIES	APPLICATION RATES
Sept. 1 - Feb. 16	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME

- Apply 10-10-10 fertilizer at a rate of 450 lbs./acre (or 10 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs./1,000 sq. ft.)

NOTE:
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by diskling or by other means.
3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/esw/wds/nrnfpubs>

TS TEMPORARY SEEDING SPECIFICATIONS

TABLE 3.32-C
(Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR APALACHIAN/MOUNTAIN AREA

LAND USE	SEED ¹ SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue ¹ Perennial Ryegrass ² Kentucky Bluegrass ³	90-100lb 0-10lb 0-10lb TOTAL: 200-250 lbs.
High-Maintenance Lawn	Minimum of three (3) up to five (5) varieties of Kentucky Bluegrass from approved list for use in Virginia ⁴	TOTAL: 125 lbs.
General Slope (3:1 or less)	Tall Fescue ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ⁵	125 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ⁵ Crownvetch ⁶	125 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

- 1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at <http://www.vcia.org/vcia/edu/html/turf/turfpublications/publications2.html>
- 2 - Perennial Ryegrass will germinate faster and at lower soil temperatures than Tall Fescues, thereby providing cover and erosion resistance for seedbed.
- 3 - Use seasonal nurse crop in accordance with seeding dates as stated below:
- | | |
|--|----------------|
| March, April - May 15 th | Annual Rye |
| May 16 th - August 15 th | Foxtail Millet |
| August 16 th - September, October | Annual Rye |
| November - February | Winter Rye |
- 4 - All legume seed must be properly inoculated. If Flatpea is used, increase to 30 lbs/acre. If Vweeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40 lbs/acre.

FERTILIZER & LIME

- Apply 10-20-10 fertilizer at a rate of 500 lbs./acre (or 12 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs./1,000 sq. ft.)

NOTE:
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by diskling or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/esw/wds/nrnfpubs>

PS PERMANENT SEEDING SPECIFICATIONS

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS FOR THE IMPROVEMENT OF TWO EXISTING ROADS WITHIN GREEN HILL PARK IN ROANOKE COUNTY. THE DISTURBED AREA FOR THIS PROJECT IS APPROXIMATELY 41,295 SF (0.95 AC).

EXISTING SITE CONDITIONS: THE EXISTING SITE CONSISTS OF IMPERVIOUS ROADWAYS AND MANAGED TURF.

ADJACENT PROPERTY: THE PROJECT AREA IS BOUNDED ON ALL SIDES BY PROPERTY WITHIN GREEN HILL PARK.

OFF-SITE AREAS: MATERIAL WILL NEED TO BE HAULED OFF-SITE FROM EXCAVATION FOR ROAD SUBGRADE.

SOILS: A SUBSURFACE INVESTIGATION HAS NOT BEEN PROVIDED. SOIL INFORMATION IS AVAILABLE ON THE RESIDUAL SOILS THAT IS SUGGESTED IN THE "SOIL SURVEY OF ROANOKE COUNTY AND THE CITIES OF ROANOKE AND SALEM, VIRGINIA" AS PREPARED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE. THIS SURVEY IDENTIFIES THE ORIGINAL SOIL MATERIALS ON THE SITE AS 42A SINDION LOAM, 0 TO 2 PERCENT SLOPES, 43A SPEEDWELL LOAM, 0 TO 2 PERCENT SLOPES, 8A COMBS LOAM, 0 TO 2 PERCENT SLOPES, AND 40C SHOTTOWER COBBLY LOAM, 70 TO 15 PERCENT SLOPES.

EROSION AND SEDIMENT CONTROL MEASURES:

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION" (VESCH). THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE LOCAL PROGRAM ADMINISTRATOR.

STRUCTURAL —

CONSTRUCTION ENTRANCE—STD. 3.02.....A STONE PAD, LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS TO THE CONSTRUCTION SITE, TO REDUCE THE SOIL TRANSPORTED ONTO PUBLIC ROADS AND OTHER PAVED AREAS.

VEGETATIVE:

TEMPORARY SEEDING—STD. 3.31.....ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR PERIODS OF 7 DAYS TO 1-YEAR BY SEEDING WITH AN APPROPRIATE RAPIDLY GROWING SEED MIXTURE.

PERMANENT SEEDING 3.32.....ESTABLISHMENT OF A VEGETATIVE COVER BY PLANTING SEED ON ALL FINAL GRADED AREAS THAT WILL NOT RECEIVE AN IMPERVIOUS COVER FOR RECEIVE TOPSOIL MATERIAL TO PROVIDE A STABILIZED SITE AFTER THE PROJECT IS COMPLETE.

MULCHING—STD. 3.35.....APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE TO PREVENT EROSION BY PROTECTING THE SOIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW.

MANAGEMENT STRATEGIES:

- CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.
- THE LOCAL PROGRAM ADMINISTRATOR RESERVES THE RIGHT TO ADD TO, DELETE OR OTHERWISE CHANGE THE EROSION CONTROL MEASURES AS DEEMED NECESSARY DUE TO ACTUAL FIELD CONDITIONS BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
- ALL FILL AND CUT SLOPES SHALL BE SEEDDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE.
- ONLY AFTER INSPECTION AND APPROVAL FROM THE VSMP AUTHORITY MAY ITEMS BE REMOVED FOLLOWING THE STABILIZATION OF THE CONTRIBUTING AREAS.

INSPECTIONS:

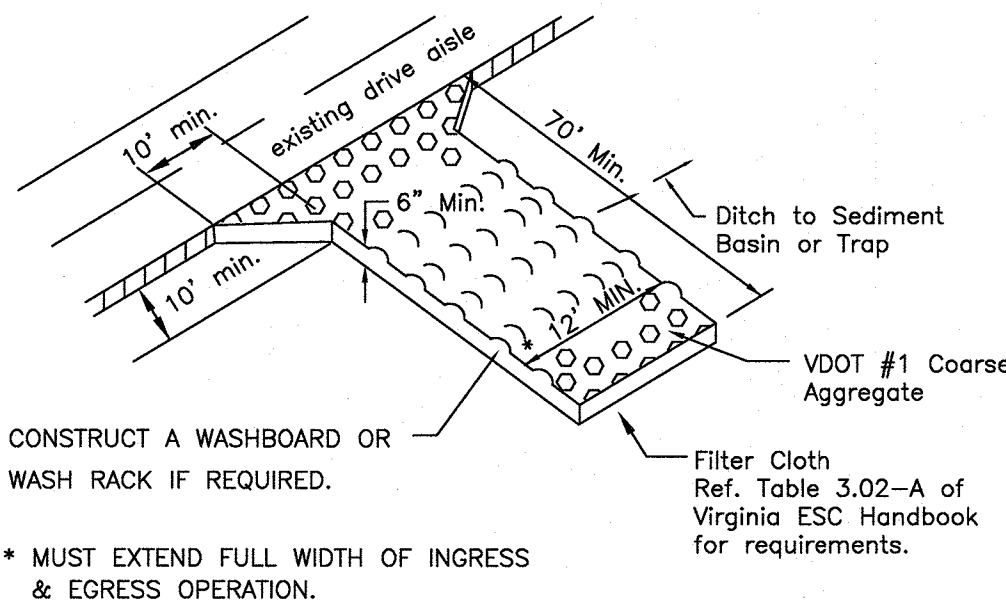
THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST (i) ONCE EVERY FOUR BUSINESS DAYS OR (ii) EVERY FIVE BUSINESS DAYS AND NO LATER THAN 48 HOURS FOLLOWING A MEASURABLE STORM EVENT (1"). IN THE EVENT THAT A MEASURABLE STORM EVENT OCCURS WHEN THERE ARE MORE THAN 48 HOURS BETWEEN BUSINESS DAYS, THE INSPECTION SHALL BE CONDUCTED ON THE NEXT BUSINESS DAY. WHERE AREAS HAVE BEEN FINALLY OR TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

- INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.
- IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.
- A REPORT SUMMARIZING THE SCOPE OF INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S QUALIFICATIONS, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS OF THESE REPORTS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE; LOCATIONS OF CONTROLS IN NEED OF REPAIR; LOCATIONS OF FAILED OR INADEQUATE CONTROLS; AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED.

STORMWATER MANAGEMENT:

ALL STORM RUNOFF FROM THIS PROJECT TO REMAIN AS SHEET FLOW. DUE TO THE MINIMAL INCREASE IN IMPERVIOUS AREA AND THE LINEAR NATURE OF THE PROJECT, THIS PROJECT IS NOT ANTICIPATED TO MAKE ANY NOTICEABLE AFFECT OF EROSION, SEDIMENTATION, OR FLOODING.

THE LIMIT OF DISTURBANCE IS LESS THAN ONE ACRE. THEREFORE, STORMWATER QUALITY REQUIREMENTS DO NOT APPLY.



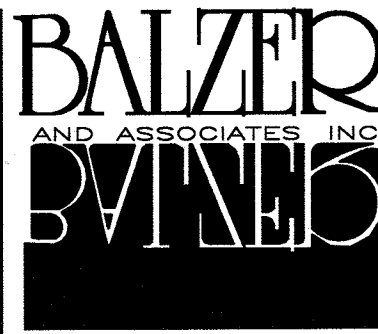
CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

MINIMUM STANDARDS

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 5000 S.F. IN AREA OF DISTURBANCE. THESE STANDARDS ARE CONSIDERED A MINIMUM AND MAY REQUIRE ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY OR THE CONSULTING ENGINEER.

No.	CRITERIA, TECHNIQUE OR METHOD	PRACTICES PROVIDED
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.	TS PS MU
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	NOT APPLICABLE
3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	TS PS MU
4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.	NOT APPLICABLE
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	NOT APPLICABLE
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	TS PS MU
8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	NOT APPLICABLE
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	SHOULD SEEPS OCCUR IN ANY EXISTING OR NEW CUT OR FILL SLOPE, THE CONTRACTOR SHALL FIRST ENSURE THAT THERE ARE NOT AREAS OF PONDING WATER AT THE TOPS OF THE SLOPES, AND THEN SHALL CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT GEOTECHNICAL ENGINEER FOR ON-SITE EVALUATION OF THE AREAS OF SEEPAGE.
10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	NOT APPLICABLE
11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE
12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NOT APPLICABLE
13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL.	NOT APPLICABLE
14	ALL APPLICABLE FEDERAL, STATE AND LOCAL CHAPTERS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	N/A
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	N/A
16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1)NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2)EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3)EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE. 4)BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. 4)WATERAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5)RESTALLMENT SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE CHAPTERS. 6)APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	NOT APPLICABLE
17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A DEDICATED CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	CE
18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION. AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VSMP AUTHORITY, TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	TS PS B/M
19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA: STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS. a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED. b. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION OR (2) (a) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF THE TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS; AND (b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF THE 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A 2-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND (c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE SYSTEM c. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL: (1) IMPROVE THE CHANNEL TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A 2-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTANCES; OR (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VSMP AUTHORITY TO PREVENT DOWNSTREAM EROSION. d. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. e. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT. f. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VSMP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE. g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL. h. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE. i. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. j. IN APPLICABLE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS. k. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE. l. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (i) OBTAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (ii) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (iii) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK RATE BY REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO 10.1-562 OR 10.1-570 OF THE ACT. m. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS. n. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.	ALL STORMWATER RUNOFF LEAVING THE SITE REMAINS AS SHEET FLOW.

APPROVED



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RESIDENTIAL LAND DEVELOPMENT ENGINEERING
SITE DEVELOPMENT ENGINEERING
LAND USE PLANNING & ZONING
LANDSCAPE ARCHITECTURE
LAND SURVEYING
ARCHITECTURE
STRUCTURAL ENGINEERING
TRANSPORTATION ENGINEERING
ENVIRONMENTAL & SOIL SCIENCE
WETLAND DELINEATIONS & STREAM EVALUATIONS

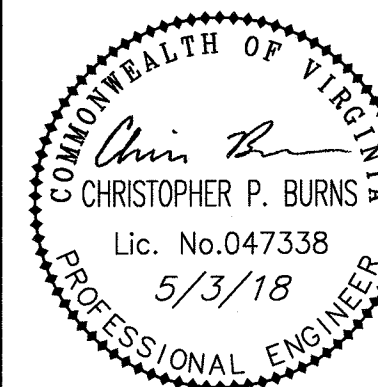
Balzer and Associates, Inc.

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Roanoke, VA 24018

540-772-9580

FAX 540-772-8050



GREEN HILL PARK ROAD IMPROVEMENTS

2501 PARKSIDE DRIVE

ESC NOTES & DETAILS

CATAWBA DISTRICT
ROANOKE COUNTY, VIRGINIA

DRAWN BY EJP

DESIGNED BY CPB

CHECKED BY CPB

DATE 4/16/2018

SCALE 1"=30'

REVISIONS:

5/3/2018

SHEET NO.

C5

JOB NO. 04180031.00