



# COUNTY OF ROANOKE

## FINANCE DEPARTMENT

### PURCHASING DIVISION

Dawn M. Rago  
Buyer

P.O. Box 29800  
5204 Bernard Drive SW, Suite 300F  
Roanoke, VA 24018  
Phone: (540) 283-8150  
[drago@roanokecountyva.gov](mailto:drago@roanokecountyva.gov)

Released January 18, 2019

#### **REQUEST FOR PROPOSAL (RFP)** **#2019-056**

Roanoke County for Western Virginia Regional Jail Authority (WVRJA)

Paving/Parking Lot Improvements

*Sealed Proposals Due:*

February 8, 2019

2:00 PM

(Local Prevailing Time)

One (1) unbound original

Three (3) bound complete copy

One (1) electronic copy (USB preferred)

## RFP #2019-056 Paving/Parking Lot Improvements

### **GENERAL INFORMATION**

Roanoke County Purchasing for Western Virginia Regional Jail Authority is seeking proposals from qualified vendors to provide Paving/Parking Lot Improvements according to the attached plans.

**Pre-Bid Conference will be held on January 30, 2019 at 2:00 PM (EST) to provide site visits and answer questions. This meeting will be held at 5885 West River Road, Salem, VA 24153. This meeting is MANDATORY. Only the Bidders that attend the meeting will be allowed to submit a proposal. Bidders are not to visit the site or have conversations with personnel prior to or subsequent to this scheduled conference.**

One (1) unbound original, three (3) bound complete copies and one electronic copy (USB preferred) of the proposals, in a sealed envelope/package, will be received at and until **February 8, 2018, at 2:00 PM (local prevailing time)**, in the Roanoke County Purchasing Division at 5204 Bernard Drive, Suite 300F, Roanoke, Virginia 24018. NO faxed proposals will be accepted. It is the responsibility of the Offeror to ensure that its proposal is received in the Purchasing Division by the above date and time. Any proposal received after the above time and/or date will be returned to the Offeror unopened. Your response must be submitted in a sealed envelope/package, clearly marked "**RFP# 2019-056 Paving Parking Lot Improvements**" on the outside of the envelope/package. The Offeror assumes responsibility for having its proposal delivered on time at the place specified. An agent of the Offeror authorized to make financial and delivery commitments must sign the proposal. As this is a formal, sealed Request for Proposal no information regarding the contents of the proposal or the identity of the Offerors will be discussed until after the negotiation process.

Roanoke County shall provide the mechanism for the evaluation of all information received. Roanoke County reserves the right to make the final determination of responsible Offerors and to waive informalities and/or irregularities and to accept or reject any or all offers. Proposals shall be as thorough and detailed as possible so that the County may properly evaluate the capabilities of the Offeror to provide the required services. It is not the intent of the specifications to be proprietary, or to exclude any individual, business or firm.

### **RFP QUESTIONS**

Any inquiries regarding submittal of proposal or any questions concerning specifications shall be in writing and sent via mail, fax or email to:

Dawn M. Rago, Buyer  
5204 Bernard Drive SW, Suite 300F  
Roanoke, VA 24018  
Phone: (540) 283-8150  
Fax: (540) 561-2827  
drago@roanokecountyva.gov

Written responses, including any questions will be provided on our Purchasing Website in the form of an Addendum. It is the responsibility of the Offeror to periodically check our website for any addendum or sign up for County Email Notification. Questions received within five (5) days of the proposal closing date will be attempted to be answered, but will not be reason to delay the closing time of the proposals.

### **NO CONTACT POLICY**

After the date and time of issuance of this Request for Proposals by the County, any contact initiated by any Offeror with any County representative, other than the purchasing representative listed herein, concerning this Request for Proposals is prohibited. Any such unauthorized contact may cause disqualification of the Offeror from this procurement transaction.

## **SCOPE OF WORK**

The County of Roanoke is soliciting proposals from qualified firms for Western Virginia Regional Jail Authority Parking Lot Improvements. The following specifications are provided for your review and consideration:

This project is for the repair of access road pavements, and drainage and curb improvements to the Western Virginia Regional Jail Authority Facility at 5885 West River Road, Salem, VA 24153.

Project includes erosion and sediment control, excavation and repair of two pavement failures in the perimeter access road containing approximately 800 square feet. Construction of new VDOT DI-1 inlet, 54 linear feet of 12" HDPE storm drain and associated pavement repair, approximately 390 lf of concrete paved ditch and approximately 355 linear feet of VDOT Standard CG-2 curb. All work as shown on plans entitled Western Virginia Regional Jail Parking Lot Improvements prepared by Caldwell White Associates.

This project will have a March 2019 start date. It will commence after the asphalt companies re-open for business. There will be the dates of March 4<sup>th</sup> through March 8<sup>th</sup>, 2019 that can not have work being done.

In the Bid package it is required to give dates of beginning and ending dates of the project.

References: Provide five (5) references with contact names, companies and phone numbers. These references must be for firms who have purchased the same types of products and/or services.

## **EVALUATION CRITERIA**

*Several factors, in addition to costs, will be taken into account when evaluating proposals.*

Roanoke County 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 to accept or reject any or all proposals.

The criteria below will be utilized in the evaluation of qualifications for development of the shortlist of those Offerors to be considered for interviews/demonstrations and/or potential negotiations. Offerors are required to address each evaluation criteria in the order listed and to be specific in presenting their qualifications.

## **QUALIFICATIONS AND PROPOSAL EVALUATION AND AWARD CRITERIA**

Experience and Quality of Previous Work	50%
Quality of Staff and Sub-Consultants	20%
Timeliness and Ability to Perform	10%
Strength of Overall Proposal including Price	20%

## **BASIS FOR AWARD**

Information and/or factors gathered during interviews, negotiations and any reference checks, in addition to the evaluation criteria stated in the RFP, and any other information or factors deemed relevant by the County, shall be utilized in the final award. Respondents are encouraged to submit proposals that the respondent feels best meets the needs of Roanoke County. The County will make the final determination of the proposal that best meets the needs of Roanoke County.

## **COOPERATIVE PROCUREMENT**

The procurement of goods and/or services provided for in this Request for Proposals 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-RFP (04/12/2012)**

**READ CAREFULLY** - Proposals must be submitted in accordance with instructions given in this document. All information requested must be submitted. Failure to do so may result in the proposal being considered non-responsive and, therefore, rejected.

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.

### **SUBMISSION AND RECEIPT OF PROPOSALS**

- (a) To be considered, all proposals must be delivered in a sealed envelope, clearly marked with the words "Proposal Documents", proposal number and the title of the Request for Proposal and received in the Roanoke County Finance Department/Purchasing Division no later than the specified date and time for the Request for Proposal opening. Failure to timely submit such proposal shall disqualify the Offeror and such proposal will be returned to the Offeror unopened. NO FAXED PROPOSALS WILL BE ACCEPTED.
- (b) Unless otherwise specified, Offerors must use the Request for Proposal price form furnished by the County. Failure to do so shall be grounds for rejection of the proposal.
- (c) Proposals having any erasures or corrections must be initialed in ink by the Offeror. An authorized officer of the company must sign proposals in ink. Such authorization shall be a part of the proposal document. All quotations must either be typewritten or printed in ink.
- (d) The original proposal response must not be permanently bound as to allow for document scanning for internal recordkeeping and one (1) electronic copy on USB Drive 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) 283-8150.

### **ACCEPTANCE OR REJECTION OF PROPOSALS**

The County of Roanoke reserves the right to accept or reject any or all 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 proposal award.

### **PROPOSAL GUARANTY**

The Offeror must guarantee not to withdraw a proposal during the period of ninety (90) days following the due date or until a contract is signed; that if such proposal is accepted the Offeror will accept and perform under the terms of this RFP, the proposal and any subsequent negotiation and resulting contract.

Modification or withdrawal of a proposal will be executed as outlined in the Roanoke County Procurement Code.

Roanoke County encourages free and open competition. Whenever possible, specifications, proposal invitations, and conditions are designed to accomplish this objective, consistent with the necessity to satisfy Roanoke County's needs and the accomplishment of a sound economical operation. The Offeror's signature on this

proposal guarantees that the price offered has been established without collusion with other eligible Offerors and without effort to preclude Roanoke County from obtaining the lowest possible competitive price. The award (s) will be made to the responsible Offeror(s) whose proposal is determined to be most advantageous to Roanoke County based on the evaluation factors set forth in this Request for Proposal.

Costs of developing and delivering responses to the Request for Proposals are entirely the responsibility of the Offeror.

All materials submitted in response to the RFP become the property of Roanoke County upon delivery to the Roanoke County Purchasing Office and are subject to public inspection in accordance with the Virginia Freedom of Information Act.

### **SELECTION PROCESS/AWARD OF CONTRACT**

As this is a Request for Proposal, no information regarding the identity of either the vendors nor the contents will be released until after the negotiation process.

Proposals may be ranked without interviews; hence, firms are encouraged to submit their initial proposals as comprehensively as possible.

The selection process will be in accordance with **Section 2.2-4301** of the Code of Virginia:

**3(a). Procurement of Professional Services.** *The public body shall engage in individual discussions with two or more Offerors deemed fully qualified, responsible and suitable on the basis of initial responses and with emphasis on professional competence, to provide the required services. Repetitive informal interviews shall be permissible. The Offerors shall be encouraged to elaborate on their qualifications and performance data or staff expertise pertinent to the proposed project, as well as alternative concepts. The Request for Proposal shall not, however, request that Offerors furnish estimates of man-hours or cost for services. At the discussion stage, the public body may discuss nonbinding estimates of total project costs, including, but not limited to, life-cycle costing, and where appropriate, nonbinding estimates of price for services. Proprietary information from competing Offerors shall not be disclosed to the public or to competitors.*

*At the conclusion of discussion, outlined in this subdivision, on the basis of evaluation factors published in the Request for Proposal and all information developed in the selection process to this point, the public body shall select in the order of preference two or more Offerors whose professional qualifications and proposed services are deemed most meritorious. Negotiations shall then be conducted, beginning with the Offeror ranked first. If a contract satisfactory and advantageous to the public body can be negotiated at a price considered fair and reasonable, the award shall be made to that Offeror. Otherwise, negotiations with the Offeror ranked first shall be formally terminated and negotiations conducted with the Offeror ranked second, and so on until such a contract can be negotiated at a fair and reasonable price. Notwithstanding the foregoing, if the terms and conditions for multiple awards are included in the Request for Proposal, a public body may award contracts to more than one Offeror.*

*Should the public body determine in writing and in its sole discretion that only one Offeror is fully qualified, or that one Offeror is clearly more highly qualified and suitable than the others under consideration, a contract may be negotiated and awarded to that Offeror.*

**3(b). Procurement of other than professional services.** *Selection shall be made of two or more Offerors deemed to be fully qualified and best suited among those submitting proposals, on the basis of the factors involved in the Request for Proposal, including price if so stated in the Request for Proposal. Negotiations shall then be conducted with each of the Offerors so selected. Price shall be considered, but need not be the sole determining factor. After negotiations have been conducted with each Offeror so selected, the public body shall select the Offeror which, in its opinion, has made the best proposal, and shall award the contract to that Offeror. When the terms and conditions of multiple awards are so provided in the Request for Proposal, awards may be made to more than one Offeror.*

*Should the public body determine in writing and in its sole discretion that only one Offeror is fully qualified, or that one Offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that Offeror.*

### **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. In this case: Virginia Western Regional Jail Authority at 5885 West River Road, Salem, Va 24153. All contractors need to be properly registered as a payment Vendor for Roanoke County. An on-line **Vendor Payment Registration** is found on the Purchasing website. All vendors previously registered are still in the system as a payment vendor. This system will no longer be used for notification of IFB/RFP's.

#### **PERFORMANCE BOND**

At the time of or prior to the execution of the contract, the County reserves the right to require the successful Offeror 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.

#### **QUALITY**

All materials used for the manufacture or construction of any supplies, materials or equipment covered by this contract 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 contract. If delivery is not made at the time specified on the Request for Proposal or subsequent negotiations, 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**

In case of failure to provide goods/services as specified herein, Roanoke County, after due written notice, may procure goods/services from other sources and hold the contractor responsible for any and all excess cost occasioned thereby.

#### **COPYRIGHT OR PATENT RIGHTS**

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

#### **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 Offeror, a separate manufacturer's certification of all statements made in the proposal. The County may request any or all to furnish proof of experience, ability and financial standing.

#### **COMPLIANCE WITH LAWS**

The Offeror 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 non stock 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.

#### **RULING LAW**

This request for proposals and any contract executed pursuant hereto of which this request for proposal shall be an internal part shall be governed, controlled and interpreted in accordance with the law of the Commonwealth of Virginia without reference to its conflict of law principles. Each party to such contract shall there by 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 nation 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.

**SPECIAL INSTRUCTIONS:**

**ANTITRUST**

By entering into a contract, the Offeror 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.

**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.

**ASSIGNMENT OF CONTRACT**

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

**CONTRACT**

Any contract resulting from this proposal shall consist of the following documents: the General Terms and Conditions and the Specifications, both of which are contained in the Request for Proposal, together with the Offeror's response, which consists of this document, the Price Schedule and other related documents attached hereto or submitted with this Request for Proposal.

## **MODIFICATION OF CONTRACT**

This RFP and any subsequent contract constitute the entire agreement between the Offeror and Roanoke County. No alteration, amendment, or modification in the provisions of the contract shall be effective unless it is put in writing, signed by all parties and attached.

## **CANCELLATION OF CONTRACT**

Roanoke County reserves the right to cancel and terminate any resulting contract, with a 30-day written notice to the contractor. Any contract cancellation notice will not relieve the contractor of the obligation to deliver and/or perform on all services prior to the effective date of cancellation. Cancellation of the contract would become effective the thirty-first day after notification. Data for cancellation of the contract will be gathered by Roanoke County. The opinion of Roanoke County as to lack of performance will be final and without appeal.

## **IMMIGRATION REFORM AND CONTROL ACT OF 1986**

By signing this proposal, the Offeror 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.

## **KICKBACKS**

I certify and warrant that by my signature on this solicitation, neither I nor the Offeror for whom I am authorized to act has offered or received any kickback from any other Offeror, supplier, manufacturer, or subcontractor in connection with proposal 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, and 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.

## **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 Proposer 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 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 Proposer 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 Proposer 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 REQUEST FOR PROPOSAL 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 an Offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the Offeror 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 Offeror 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 Proposal and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information.

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

**NOTICE OF PROPRIETARY INFORMATION FORM**  
**RFP #2019-056 Paving/Parking Lot 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).4342; 552 (b) (4); 12 C.F.R. 309.5 (c) (4).

**RFP #2019-056 Paving/Parking Lot Improvements**

**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

**SIGNATURE SHEET**  
**RFP #2019-056 Paving/Parking Lot Improvements**

My signature certifies that the proposal as submitted complies with all Terms and Conditions as set forth in the RFP.

My signature also certifies that the accompanying proposal is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under Title 18.2, Chapter 12, Article 1.1 of the Code of Virginia, 1950 as amended. Furthermore, I understand that fraud and unlawful collusion are crimes under the Virginia Governmental Frauds Act, The Virginia Government Bid Rigging Act, and Virginia Antitrust Act and Federal Law, and can result in fines, prison sentences, and civil damage awards.

My signature also certifies that this firm has no business or personal relationships with any other companies or persons that could be considered as a conflict of interest or potential conflict of interest to the County Of Roanoke, and that there are no principals, officers, agents, employees, or representatives of this firm that have any business or personal relationships with any other companies or persons that could be considered as a conflict of interest or a potential conflict of interest to the County Of Roanoke, pertaining to any and all work or services to be performed as a result of this request and any resulting contract with the County Of Roanoke.

I hereby certify that I am authorized to sign as a Representative for the Firm:

COMPANY NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ PHONE # \_\_\_\_\_

\_\_\_\_\_ FAX # \_\_\_\_\_

\_\_\_\_\_ EMAIL \_\_\_\_\_

FEIN \_\_\_\_\_ VA BUSINESS LICENSE NO. \_\_\_\_\_

STATE CONTRACTOR'S NUMBER (IF APPLICABLE) \_\_\_\_\_

VIRGINIA SCC # OR STATEMENT DESCRIBING WHY FIRM IS NOT REQUIRED TO BE SO

AUTHORIZED PER VA CODE §2.2-4311.2 \_\_\_\_\_

\_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

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

**REFERENCE FORM**  
**RFP #2019-056 Paving/Parking Lot Improvements**

Name of Entity \_\_\_\_\_

Contact \_\_\_\_\_ Title \_\_\_\_\_

Telephone \_\_\_\_\_ Length of Business Relationship \_\_\_\_\_

Email \_\_\_\_\_

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Name of Entity \_\_\_\_\_

Contact \_\_\_\_\_ Title \_\_\_\_\_

Telephone \_\_\_\_\_ Length of Business Relationship \_\_\_\_\_

Email \_\_\_\_\_

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Name of Entity \_\_\_\_\_

Contact \_\_\_\_\_ Title \_\_\_\_\_

Telephone \_\_\_\_\_ Length of Business Relationship \_\_\_\_\_

Email \_\_\_\_\_

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Name of Entity \_\_\_\_\_

Contact \_\_\_\_\_ Title \_\_\_\_\_

Telephone \_\_\_\_\_ Length of Business Relationship \_\_\_\_\_

Email \_\_\_\_\_

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Name of Entity \_\_\_\_\_

Contact \_\_\_\_\_ Title \_\_\_\_\_

Telephone \_\_\_\_\_ Length of Business Relationship \_\_\_\_\_

Email \_\_\_\_\_

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**RFP #2019-056 Paving/Parking Lot Improvements  
Pricing Form**

IN COMPLIANCE WITH THIS INVITATION FOR BID AND SUBJECT TO ALL CONDITIONS THEREOF, THE UNDERSIGNED OFFERS AND AGREES TO PROVIDE ALL PERMITS, LICENSES, EQUIPMENT, LABOR, AND MATERIAL NECESSARY TO EXECUTE AND COMPLETE THE WORK REQUIRED FOR THE PROJECT IN ACCORDANCE WITH ATTACHEMENTS , GENERAL TERMS AND CONDITIONS AND SPECIAL TERMS AND CONDITIONS.

BASE BID \$\_\_\_\_\_

**ATTACHMENT A TO  
REQUEST FOR PROPOSAL RFP 2019-056  
PAVING/PARKING LOT IMPROVEMENTS**

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## GENERAL CONDITIONS

### 1. DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicate which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement, which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS, and SPECIFICATIONS, by additions, clarifications or corrections.

1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER - Any person, firm, or corporation submitting a BID for the WORK.

1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion, or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS - The contract, including Advertisement for Bids, Information for Bidders, General Conditions, Supplemental General Conditions, BID, Technical Specifications and Special Conditions, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.10 CONTRACTOR - The persons, firm, or corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS - The part of the CONTRACT DOCUMENTS, which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

1.12 ENGINEER - The Roanoke County Engineer or person, firm, or corporation designated by the OWNER to supervise the WORK and/or administer the CONTRACT DOCUMENTS.

1.13 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

1.14 FINAL COMPLETION - The date as certified by the ENGINEER that the WORK has been completed in accordance with the CONTRACT DOCUMENTS and that final payment can be made. FINAL COMPLETIONS includes: 1) submission of Operation & Maintenance Manuals and 2) Record Documents and 3) completion of all punch list items.

1.15 NOTICE OF AWARD - The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.

1.16 NOTICE TO PROCEED - Written communication issued by the OWNER or authorized agent to the CONTRACTOR authorizing the Contractor to proceed with the WORK and establishing the date of commencement of the WORK.

1.17 OWNER - The Board of County Supervisors for Roanoke County, Virginia, or their authorized agent.

1.18 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.19 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the OWNER who is assigned to the project site or any part thereof.

1.20 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules, and other data, which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER, or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

1.21 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.22 SUBCONTRACTOR - An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.23 SUBSTANTIAL COMPLETION - That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended. SUBSTANTIAL COMPLETION includes: 1) a Certificate of Occupancy from the Building Official / Authority Having Jurisdiction, 2) delivery of extra stock materials, 3) OWNER training & demonstrations, 4) submittal of CONTRACTOR's internal punch list with identification of incomplete items.

1.24 SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions required for the PROJECT, or such requirements that may be imposed by applicable state laws, or required to clarify or amplify the General Conditions.

1.25 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.26 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.27 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the Project. Email notification is an acceptable form of WRITTEN NOTICE.

## 2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

## 3. SCHEDULES, REPORTS, AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedule, payrolls, reports, estimates, records, and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to beginning work the CONTRACTOR shall submit a construction progress schedules showing the order in which the CONTRACTOR proposes to carry out the WORK, including dates at which the CONTRACTOR will start the various parts of the WORK, estimated date of completion of each part, and, as applicable:

3.3 The dates at which special detail drawings will be required; and

3.4 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.5 For projects exceeding 90 days the CONTRACTOR shall submit a cost loaded Critical Path Method (CPM) schedule. The cost loaded CPM schedule shall be updated and submitted on a monthly basis in conjunction with the CONTRACTOR's payment applications.

3.6 CONTRACTOR shall also submit a schedule of payments anticipated to be earned during course of WORK.

#### **4. DRAWINGS AND SPECIFICATIONS**

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

In case of conflict between DRAWINGS and SPECIFICATIONS, the most stringent shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the CONTRACTOR'S risk.

#### **5. SHOP DRAWINGS**

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER. SHOP DRAWINGS, catalog cuts, samples, schedules, etc. shall be submitted for all materials and equipment. On initial submittals, three copies of each item shall be required. Once the review is complete and all corrections made, five copies of the final SHOP DRAWINGS shall be submitted for approval and distribution to all parties. Electronic copies of SHOP DRAWINGS is acceptable and preferred.

When submitted for the ENGINEER'S REVIEW, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked, and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.2 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

#### **6. MATERIALS, SERVICES, AND FACILITIES**

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection. All equipment, including but not limited to motors, drives, gear reducers, electrical switch gear, heating, ventilation and air conditioning equipment, communication and instrumentation shall be stored in a

secure, heated, ventilated and dry space. Storage must be approved by the ENGINEER. The ENGINEER'S approval of the storage plan shall not release the CONTRACTOR from responsibility for the equipment. Equipment that is not suitably stored shall not be paid for until storage requirements are met. The CONTRACTOR shall be required to comply with the manufacturers' requirements concerning lubrication, oil changes, and other special conditions during the storage period and until the equipment is installed, start-up of the equipment is instituted, and the equipment is finally accepted or determined as substantially completed.

6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. Materials, supplies, or equipment to be included into the WORK shall be new and unused.

## 7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS. The CONTRACTOR shall notify the OWNER of the work schedule planned in order that adequate inspection can be made. No work may be performed in any day on which it was not scheduled. A minimum of 12 hours' notice of change in work schedule must be given to OWNER by CONTRACTOR. If CONTRACTOR does not work on a scheduled day, the CONTRACTOR will be charged the cost incurred by the OWNER for the lost work of the inspector.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness.

7.5 Inspections, tests, or approvals by the ENGINEER or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and other OWNER representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all WORK, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose, or otherwise make available for observation, inspection, or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction and an appropriate CHANGE ORDER shall be issued.

## 8. SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that the first brand name listed in the SPECIFICATIONS is that around which the DRAWINGS have been prepared. Should the second or another brand name be utilized in preparing the BID, the CONTRACTOR shall be responsible for assuring that the costs of all changes, including costs of changes to the CONTRACT DOCUMENTS, required by such use are also included in the BID. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue cut, if piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

## 9. PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. The CONTRACTOR shall defend all suits or claims for infringement of patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process, or product specified is an infringement of a patent, CONTRACTOR shall be responsible for such loss unless CONTRACTOR promptly gives such information to the ENGINEER.

## 10. SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations, and other working points, lines, elevations, and cut sheets.

10.2 The CONTRACTOR shall carefully preserve benchmarks, reference points, and stakes; and, in case of willful or careless destruction, CONTRACTOR shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, CONTRACTOR shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

## 11. PROTECTION OF WORK, PROPERTY, AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR will take all necessary precautions for the safety of, and will protect the persons who may be affected thereby, protect all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and protect other property at the site adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. The CONTRACTOR will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. The CONTRACTOR will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage,

injury, or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either or them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

In emergencies affecting safety of persons or the WORK or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, shall act to prevent threatened damage, injury, or loss. CONTRACTOR will give OWNER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

#### 12. SUPERVISION BY CONTRACTOR

CONTRACTOR shall supervise and direct the WORK. CONTRACTOR shall be solely responsible for means, methods, techniques, sequences, and procedures of construction. CONTRACTOR shall employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by CONTRACTOR as CONTRACTOR'S representative at the site. Supervisor shall have full authority to act on behalf of CONTRACTOR and all communications given to the supervisor shall be as binding as if given to CONTRACTOR. Supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

#### 13. CHANGES IN THE WORK

The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter, the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

#### 14. CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

14.2 Unit prices previously approved. Under this method, it is understood that addition to or deletion of quantities of WORK in excess of 25 percent may be cause for review of the agreed unit price.

14.3 An agreed lump sum. For the negotiation of the agreed lump sum amount, the CONTRACTOR shall furnish the ENGINEER a breakdown of all labor, materials, supplies, and equipment utilizing the costing principles described under 14.1.3.

14.4 The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the WORK. In addition, there shall be added an amount to be agreed upon but not to exceed 15 percent of the actual cost of the WORK to cover the cost of general conditions, overhead and profit. To amplify the items described under 14.1.3, labor shall include the crew foreman but not supervisory, office, or administrative personnel, labor costs shall include taxes, insurance, and actual fringe benefits paid; and, rental rates for equipment owned by the CONTRACTOR shall not exceed 75 percent of Associated Equipment Distributors book rental monthly rates. To costs incurred by SUBCONTRACTORS for changes in the WORK,

there shall be an added amount not to exceed 10 percent of the subcontract to cover the cost of general conditions, overhead and profit.

#### 15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a dated specified in the NOTICE TO PROCEED. CONTRACT TIME to FINAL COMPLETION for this project is 120 consecutive calendar days.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount of \$200.00 per day for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.5 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather.

15.6 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4 and 15.5 of this article.

#### 16. CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

#### 17. SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of any emergency, notify the OWNER by WRITTEN NOTICE of:

17.2 Subsurface or latent physical conditions at the site differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

Unknown physical conditions at the site, of unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.3 The OWNER shall promptly investigate the conditions, and if the OWNER finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a

CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

#### 18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety (90) days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent; or if the CONTRACTOR makes a general assignment for the benefit of CONTRACTOR'S creditors; or if a trustee or receiver is appointed for the CONTRACTOR or for any of the CONTRACTOR'S property; or if the CONTRACTOR'S files a petition to take advantage of any debtor's act; or to reorganize under the bankruptcy or applicable laws; or if the CONTRACTOR repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment; or if the CONTRACTOR repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials, or equipment; or if the CONTRACTOR disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction of the WORK; or if the CONTRACTOR disregards the authority of the ENGINEER; or if the CONTRACTOR otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment, and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method the OWNER may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the CONTRACT. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER; or under any order of court or other public authority; or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted; or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days WRITTEN NOTICE to the OWNER and the ENGINEER stop the WORK until he has paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT shall be made to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

## 19. PAYMENTS TO CONTRACTOR

19.1 At least ten (10) days before the first pay application the CONTRACTOR shall submit a Schedule of Values for approval by the ENGINEER.

19.2 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER an updated project schedule. For projects expected to exceed 90 days this shall be a cost loaded CPM schedule.

19.3 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. As approved in advance by the OWNER if payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER'S title to the material and equipment and protect his interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within twenty (20) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate.

19.4 If approved in advance by the OWNER the request for payment may also include an allowance for the cost of such major materials and equipment, which are suitably stored either at or near the site.

19.5 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or SUBSTANTIALLY COMPLETED portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.6 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.7 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of the completion and acceptance of the WORK.

19.8 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so, the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonable sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party.

In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.9 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to

other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

## 20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the PERFORMANCE BOND and PAYMENT BONDS.

## 21. INSURANCE

21.1 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:

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

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

21.4 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

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

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

21.7 Certificates of insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These certificates shall contain a provision that coverages afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

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

21.9 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.

21.10 The CONTRACTOR shall acquire and maintain Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and the SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.11 The CONTRACTOR shall acquire and maintain such special insurance coverage as required by the railroad crossing license/permit

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.

The CONTRACTOR shall secure "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightening, vandalism, malicious mischief, wind, flood, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER, and the OWNER.

## 22. CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions, and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the State of Virginia and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in Virginia or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER. The Performance Bond shall remain in full force and effect through the guarantee period.

## 23. ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign, or otherwise dispose of the CONTRACT or any portion thereof, or of their right, title, or interest therein, or their obligations thereunder, without written consent of the other party.

## 24. INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that such claims, damage, loss, or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property including the loss of use resulting there from; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER or ENGINEER'S employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

## 25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate the CONTRACTOR'S WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT, or OWNER may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if the CONTRACTOR is performing the additional WORK), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate the CONTRACTOR'S WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, WRITTEN NOTICE thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves the CONTRACTOR in additional expense or entitles the CONTRACTOR to an extension of the CONTRACT TIME, the CONTRACTOR may make a claim therefore as provided in Sections 13 and 14.

## 26. SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty CONTRACTORS.

26.2 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of any SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as the CONTRACTOR is for the acts and omissions of persons directly employed by the CONTRACTOR.

26.3 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

Nothing contained in the CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

## 27. ENGINEER'S AUTHORITY

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. The ENGINEER shall decide questions, which may arise as to quality and acceptability of materials furnished and WORK performed. The ENGINEER shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply at the ENGINEER'S discretion.

27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

## 28. LAND AND RIGHT-OF-WAYS

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and right-of-ways necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

The OWNER shall provide to the CONTRACTOR information, which delineates and describes the lands owned and right-of-ways acquired.

The CONTRACTOR shall provide at CONTRACTOR'S own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

## 29. GUARANTY

29.1 Unless noted otherwise in the CONTRACT DOCUMENTS the CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of FINAL ACCEPTANCE. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of FINAL ACCEPTANCE of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects.

The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The PERFORMANCE BOND shall remain in full force and effect through the guarantee period.

## 30. TAXES

30.1 The CONTRACTOR will pay all sales, consumer, use, and other similar taxes required by the law of the place where the WORK is performed.

## 31. CLEAN UP ON COMPLETION OF PROJECT

31.1 On completion of the WORK covered by any of the sections of this PROJECT, the CONTRACTOR for said section shall clean up the entire premises occupied by his operations, and this area shall be left neat and clean of trash, debris, piles of earth, waste materials or equipment. All surplus materials and equipment, trash, debris, and other foreign matter shall be disposed of as directed by the ENGINEER or OWNER. The entire project or sections thereof shall be made ready for the OWNER'S use, and the CONTRACTOR shall assist as may be necessary in placing any equipment furnished under the contract in proper operating condition.

## 32. WORK HOURS

32.1 Monday through Friday from 8:00 am to 5:00 pm and other hours if approved in advance by the OWNER.

32.2 The WORK is to be scheduled to minimize disruption to ongoing staff and public functions. The CONTRACTOR may have use of the facility during business hours, but high noise generating activities, such as core drilling, concrete cutting/hammering, shooting of stud track, must be performed after 5:00 p.m. Monday

through Friday or on weekends.

32.3 All WORK after 4:30 p.m., Monday through Friday and on weekends must be scheduled a minimum of two business days in advance so that the County can make arrangements for security monitoring of the facility.

**33. PROJECT IDENTIFICATION SIGNBOARD**

Not required for this project.

**34. SUPPLEMENTAL CONDITIONS**

34.1 The following additions to, substitutions for, or explanation of the GENERAL CONDITIONS, if any, shall be included as part of these CONTRACT DOCUMENTS. The number utilized refer to those contained in the GENERAL CONDITIONS.

**35. NONDISCRIMINATION PROVISIONS**

35.1 The successful CONTRACTOR agrees not to 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 provision of the nondiscrimination clause.

35.2 The CONTRACTOR, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that the Contractor is an equal opportunity employer. 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.

35.3 The CONTRACTOR will include the provision of the foregoing paragraph in every subcontract or purchase order over ten thousand dollars (\$10,000.) so that the provisions will be binding upon each subcontractor or vendor.

**36. IMMIGRATION AND CONTROL ACT OF 1986**

36.1 CONTRACTOR is aware of and understands the Immigration Reform and Control Act of 1986 (IRCA) and is in compliance with IRCA; that it acknowledges its responsibility to complete I-9 Employment Eligibility Verification forms for all of its employees assigned to work on County contracts who are not authorized to work in the United States; and that it agrees to defend and indemnify the county for any liability arising out of claims that the contractor's employees are not authorized to work in the United States or any other claims based upon any alleged violations of IRCA by the contractor.

**ATTACHMENT B TO  
RFP #2019-056 Paving/Parking Lot Improvements**

**PLANS/DRAWINGS ATTACHED**

## GENERAL NOTES

### PRE-CONSTRUCTION MEETING AND CONSTRUCTION COMMENCEMENT:

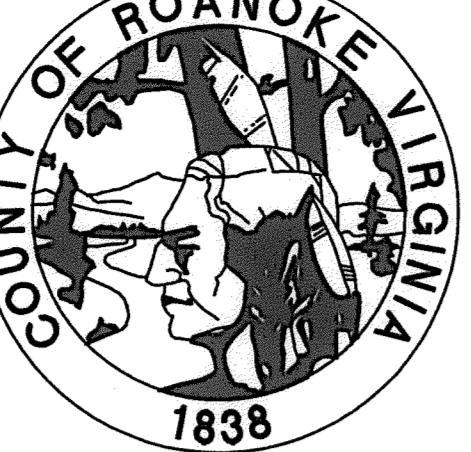
- All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation.
- Stormwater Management Agreements with an attached 8 1/2" x 11" or 8 1/2" x 14" plat must be 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 contained 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 : <b>WESTERN VIRGINIA REGIONAL JAIL PARKING LOT IMPROVEMENTS</b>		<i>[Signature]</i> I, [Signature], OWNER/DEVELOPER, AM AWARE OF THE SITE DESIGN REQUIREMENTS IMPOSED BY THIS SITE DEVELOPMENT PLAN AND OTHER APPLICABLE ROANOKE COUNTY CODES. I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS AND THE THIRTY (30) POINTS SHOWN ON THIS COVER SHEET UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.	
MAGISTERIAL DISTRICT(S): CATAWBA			
OWNER:	WESTERN VIRGINIA REGIONAL JAIL 5885 WEST RIVER ROAD SALEM, VIRGINIA 24153	Attn: LT. COL. David F. Cox Tel: (540) 378-3300	
ENGINEER:	CALDWELL WHITE ASSOCIATES P.O. BOX 6260 ROANOKE, VIRGINIA 24017	Attn: Frank Caldwell, III Tel: (540) 366-3400	
CONTRACTOR	SUBJECT TO BID		
TAX MAP NO(S):	064.03-01-19.03-0000		

### WATER NOTES

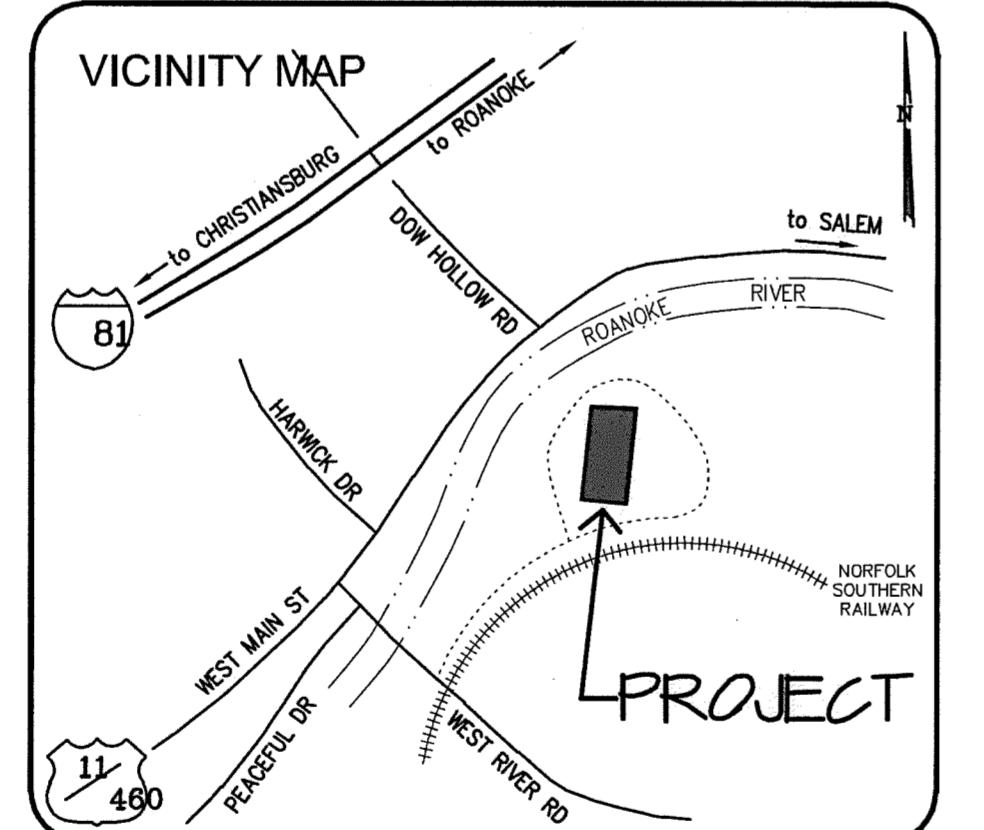
All water facilities shall be constructed according to the Western Virginia Regional Design and Construction Standards (Latest Edition).  
A minimum cover of three (3) feet is required over proposed lines.  
Contractor shall be responsible for locating and uncovering valve vaults after paving. Manhole tops shall be adjusted to grade if necessary.  
All existing utilities may not be shown in their exact location. The contractor shall comply with the (State Water Works Regulations, Section 12VAC5-590-1150, where lines cross.)  
All trenches in existing or future rights-of-way 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 to 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	
Existing Storm Sewer	
Existing Sanitary Sewer	
Existing Water Main	
Existing Contour	
Proposed Contour	
Proposed Drainage Divide	
Proposed Limits of Clearing	
Proposed Storm Sewer	
Proposed Sanitary Sewer	
Proposed Water Main	
HYDRANT	
VALVE	
BLOWOFF	

### 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 rights-of-way 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 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.

### SHEET INDEX

SHEET	TITLE
C-1	COVER SHEET
C-2	OVERALL PLAN
C-3	PAVEMENT WORK & DETAILS
C-4	EROSION CONTROL PLAN & DETAILS
C-5	V.E.S.C.P. REGULATIONS & NOTES

### SURVEY INFORMATION

Horizontal and vertical control surveys were performed in year: 2017  
By: CALDWELL WHITE ASSOCIATES

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: N/A Vertical Datum: ASSUMED

Source of topographic mapping is dated 08/15/2017

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

Benchmark Information: SEE SHEET C-3 FOR LOCATION & DESCRIPTION

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

### QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING		AC			
EXCAVATION		C.Y.			
EMBANKMENT		C.Y.			
CURB INLET DI-		EA			
CURB INLET DI-		EA			
MANHOLE MH-		EA			
MANHOLE MH-		EA			
-IN. CONCRETE PIPE, CLASS III		LF			
-IN. CONCRETE PIPE, CLASS IV		LF			
-IN. C.M. CULVERT		LF			
-IN. C.M. CULVERT		LF			
BOX CULVERT		LS			
PAVED SWALE		LF			
RIPRAP - CLASS		SF			
PERMANENT GRASS SWALE		LF			
-IN. CONCRETE ENDWALL EW-		EA			
-IN. END SECTION ES-		EA			
HEADER CURB & GUTTER CG-		LF			
CURB & GUTTER CG-		LF			
VALLEY GUTTER		EA			
GRAVEL BASE		SY			
GRAVEL SHOULDER		SY			
SURFACE TREATMENT		SY			
-IN. BIT. CONC. TYPE B-		SY			
-IN. BIT. CONC. TYPE S-		SY			
-IN. BASE MATERIAL		C.Y.			
-IN. SUBBASE MATERIAL		C.Y.			
TRAFFIC BARRICADE		EA			
8" WATER LINE		LF			
6" WATER LINE		LF			
FIRE HYDRANT ASSEMBLIES		EA			
BLOW OFFS W/ VAULT, FRAME & COVER		EA			
-IN. GATE VALVES, W/ VAULT, FRAME & COVER		EA			
-IN. GATE VALVES, W/ VAULT, FRAME & COVER		EA			
8" SANITARY SEWER		LF			
STANDARD MANHOLE W/ FRAME & COVER		EA			
SAMPLING MANHOLE/PORT		EA			
LANDSCAPING		LS			
AMENITIES (INCLUDING BUT NOT LIMITED TO TRAILS, ETC...)		LS			
STORMWATER MANAGEMENT		LS			
AS-BUILT PLANS (STORM SEWER SYSTEMS)		LS			
AS-BUILT PLANS (STORMWATER MANAGEMENT)		LS			
10% CONTINGENCY					
ESTIMATED TOTAL					

BY SEALING THE PLANS, THE DESIGN PROFESSIONAL HEREBY CERTIFIES THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.

Designed:..... J.V. Judy  
Drawn:..... J.V. Judy  
Checked:..... F.B. Caldwell  
Date:..... 08/27/18  
N.B. No.:..... J.W. 32  
W.O. No.:..... 17-0040

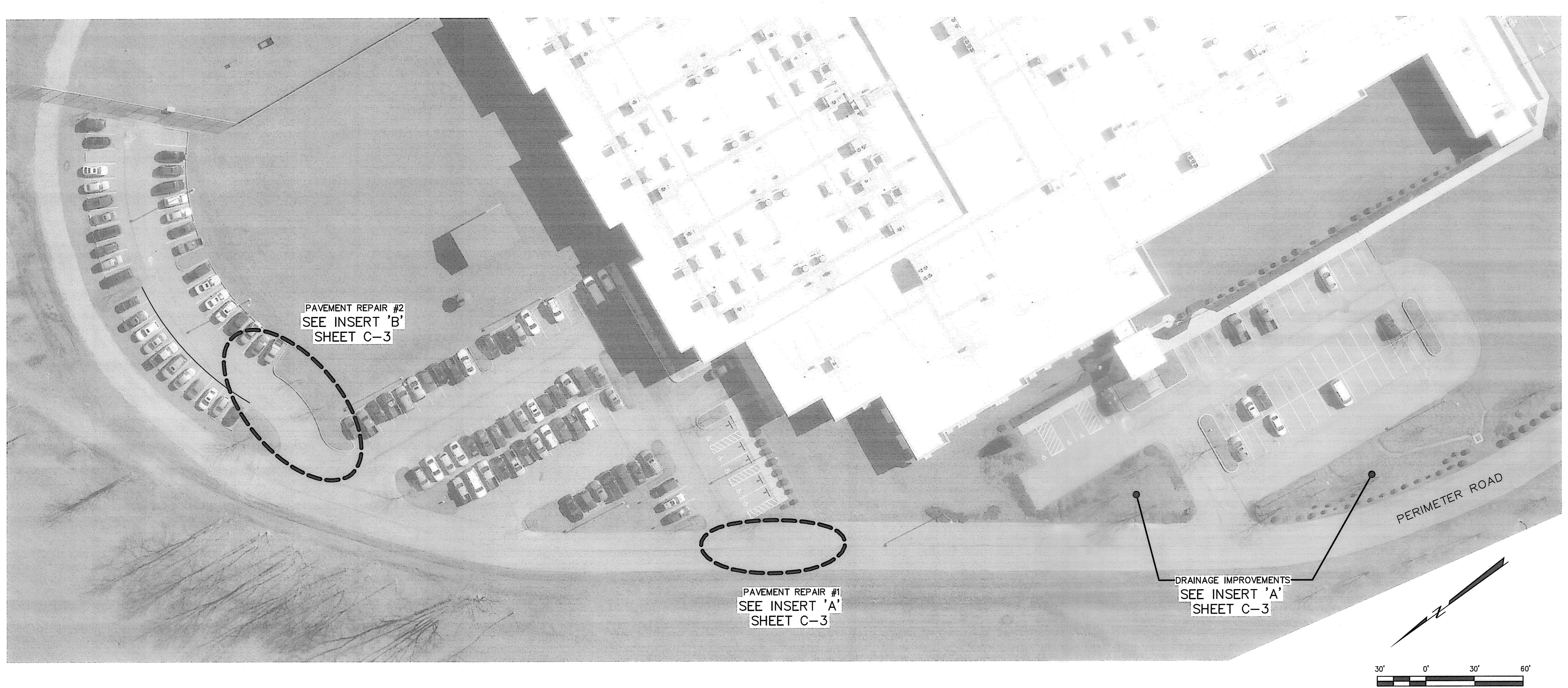
FRANK B. CALDWELL, III  
LIC. NO. 9184  
8 Oct 18  
PROFESSIONAL ENGINEER

NO. 1 ..... 10/08/18  
PER COUNTY OF ROANOKE 1st REVIEW

2nd REVIEW  
EC-18002283

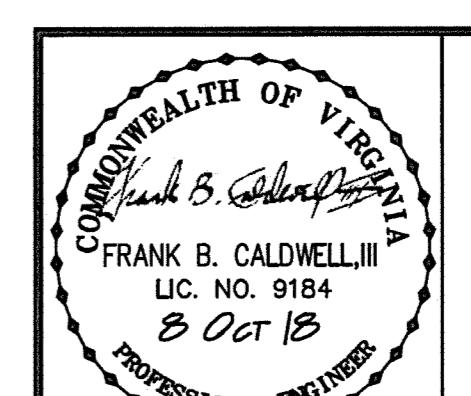
**CWA**  
Caldwell White Associates  
Engineers / Surveyors / Planners  
4203 Melrose Avenue, N.W.  
P.O. Box 6260  
Roanoke, Virginia 24017  
(540) 366-3400  
Email: CWAROANOKE@aol.com

**WESTERN VIRGINIA  
REGIONAL JAIL  
PARKING LOT IMPROVEMENTS**  
5885 WEST RIVER ROAD  
ROANOKE COUNTY, VIRGINIA  
SHEET  
C-1



#### CIVIL CONSTRUCTION NOTES:

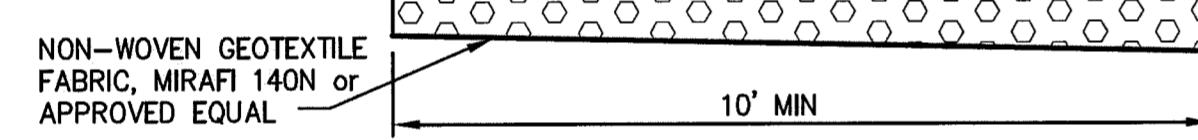
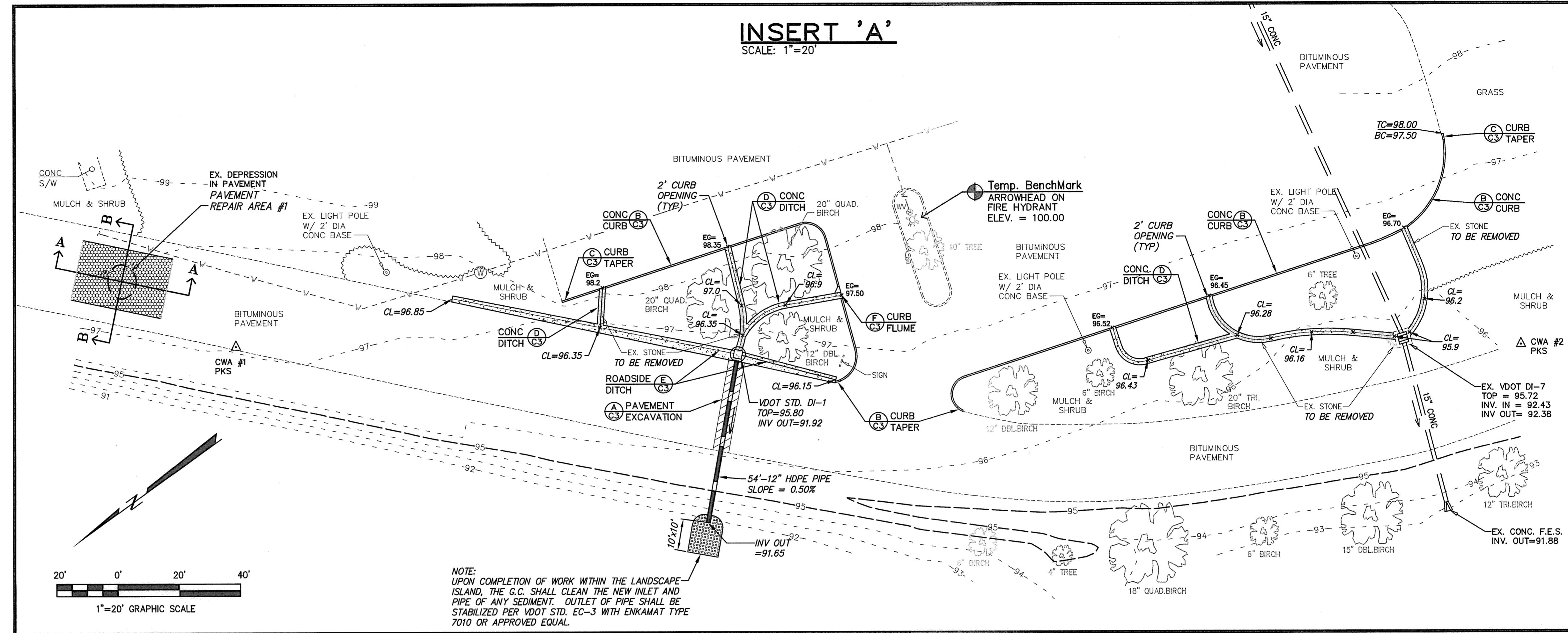
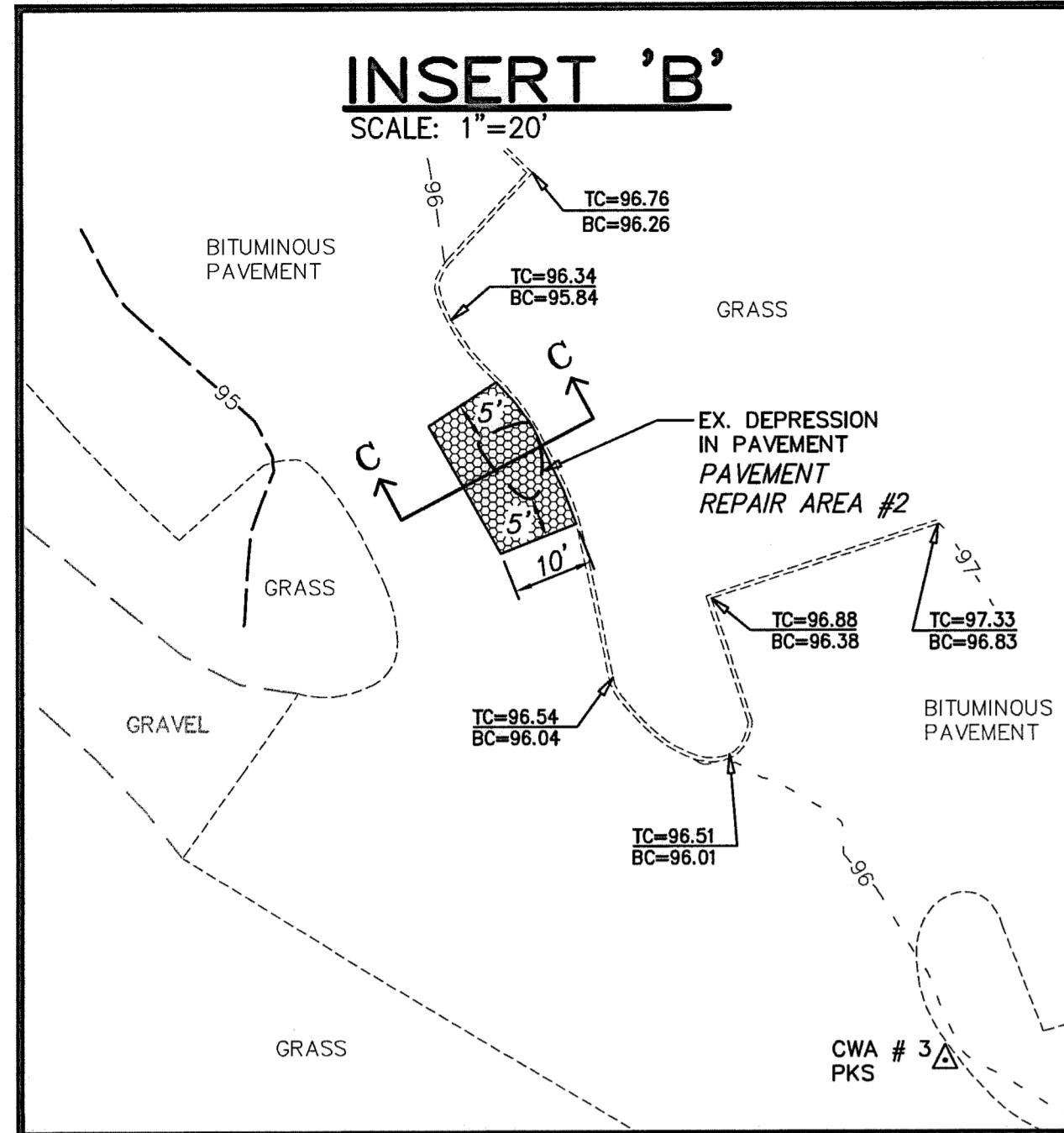
1. CONTRACTOR WILL NEED TO COORDINATE THE CLOSING OF THE PERIMETER ROAD FOR INSTALLATION OF THE NEW STORM DRAIN PIPE, AND REPAIR OF THE EXISTING PAVEMENT DEPRESSIONS #1 AND #2 WITH THE DEPUTY SUPERINTENDENT, OF THE FACILITY, LT. COL. DAVID COX, (540) 378-3702. WWRJ WILL ARRANGE FOR ALTERNATE PARKING TO ALLOW CLOSING OF THE PERIMETER ROAD DURING CONSTRUCTION. THE CONTRACTOR WILL SCHEDULE THEIR WORK TO MINIMIZE THE CLOSING OF THE PERIMETER ROAD.
2. CONTRACTOR SHALL DISPOSE OF ALL DEMOLISHED PAVEMENT AND EXCAVATED MATERIAL OFF-SITE AT A PERMITTED LANDFILL OR APPROVED ESC SITE.
3. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE THE APPLICABLE VDOT STANDARDS AND SPECIFICATIONS.
4. THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF FRANK B. CALDWELL III, L.S. FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THE ORIGINAL DATA WAS OBTAINED ON AUGUST 15, 2017 AND THIS MAP MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
5. THE SUBJECT PROPERTY LIES WITHIN FLOODWAY ZONE "AE" AND ZONE "X" AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP NO. 51161C0118G AND 51161C0206G, DATED SEPTEMBER 28, 2007.
6. LOCATION OF UNDERGROUND UTILITIES IS BASED ON FIELD LOCATION OF VISIBLE UTILITIES, AVAILABLE RECORDS, AND AS LOCATED BY "UNDERGROUND LOCATOR SERVICE", TICKET # A721300751. ADDITIONAL UTILITY LOCATIONS WERE PROVIDED BY SAVE UTILITY LINES (CURTIS HOWELL). THERE MAY BE UTILITIES WHICH THIS PROPERTY NOT SHOWN HEREON. CONTRACTOR SHALL CALL "MISS UTILITY" TO VERIFY LOCATION OF ANY UNDERGROUND UTILITIES PRIOR TO ANY CONSTRUCTION.



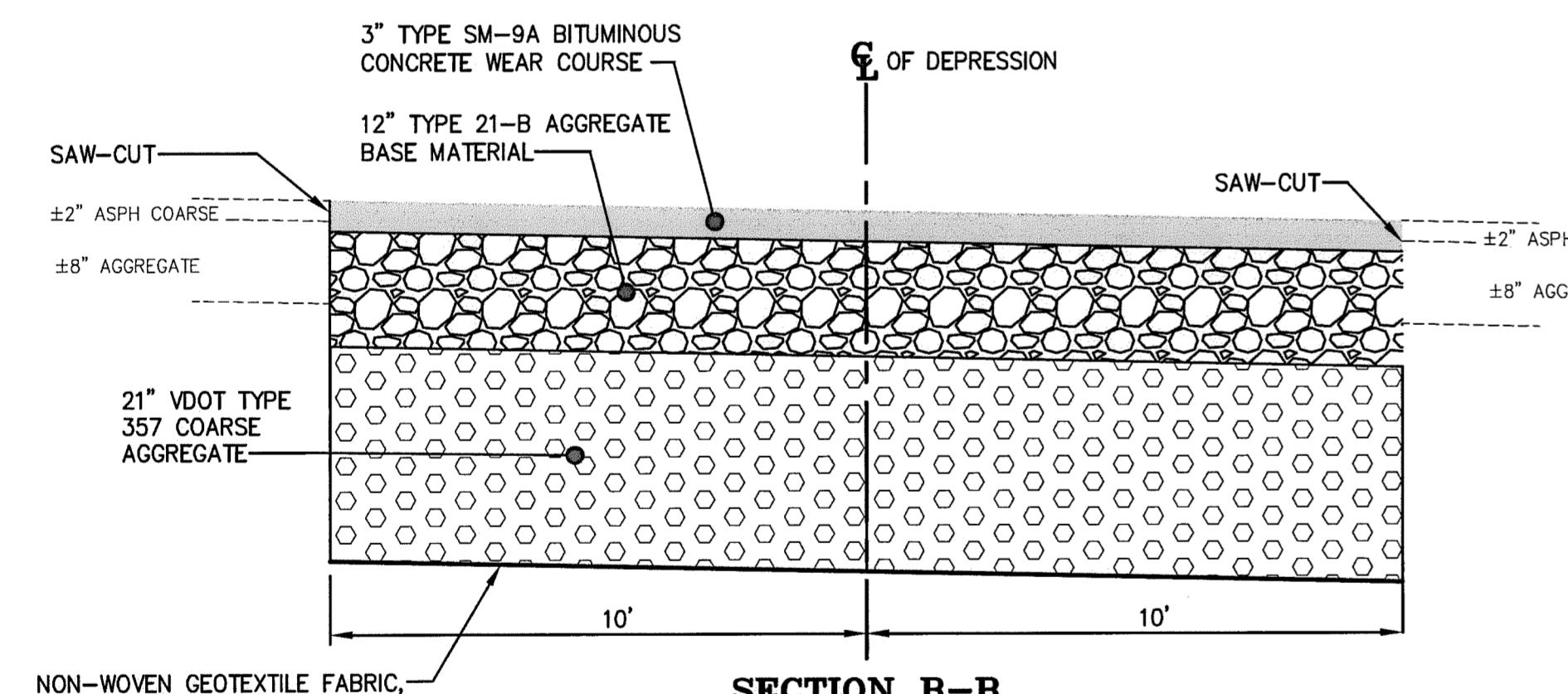
OVERALL PLAN  
FOR  
**WESTERN VIRGINIA  
REGIONAL JAIL**

SITUATE WEST RIVER ROAD  
CATAWBA MAGISTERIAL DISTRICT  
COUNTY OF ROANOKE, VIRGINIA

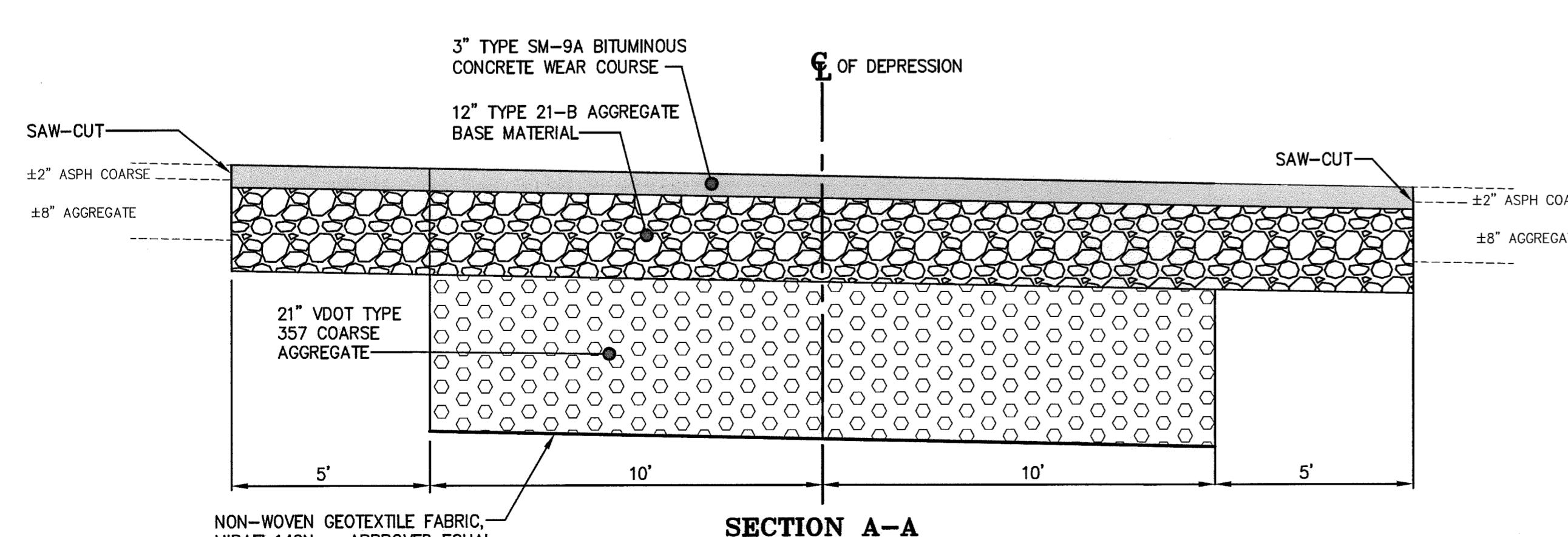
**CWA**  
**CALDWELL WHITE ASSOCIATES**  
ENGINEERS / SURVEYORS / PLANNERS  
4208 MELROSE AVENUE, N.W.  
OFFICE: (540) 346-8702  
ROANOKE, VIRGINIA 24017  
Telephone: (540) 346-3400 Fax: (540) 346-8702  
EMAIL: CWAROANOKE @ AOL.COM



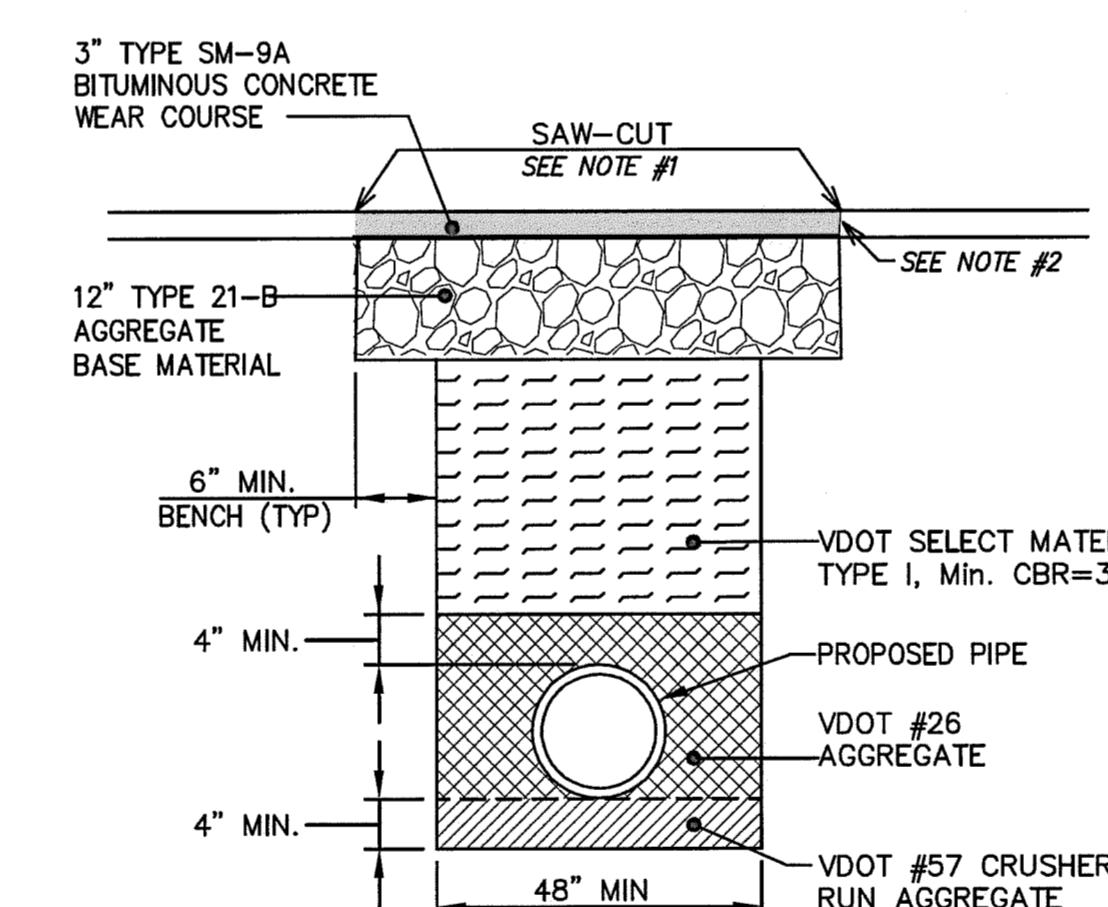
## **SECTION C-C**



## SECTION B-B



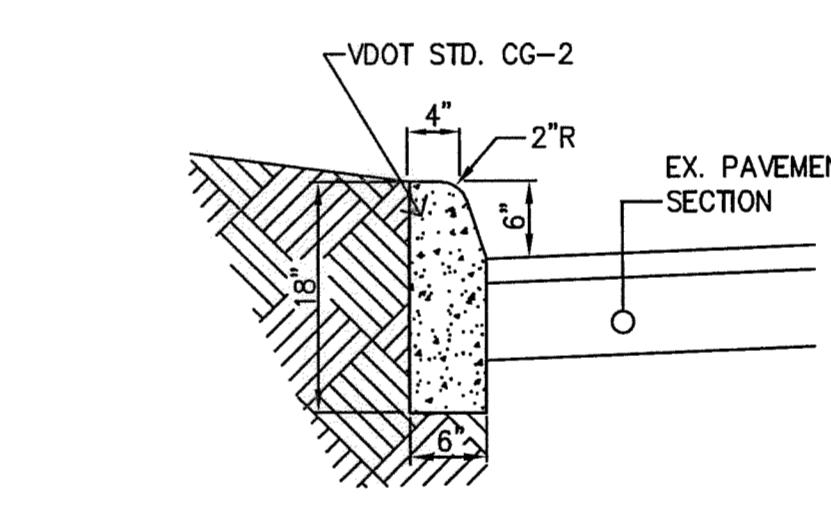
SECTION A-



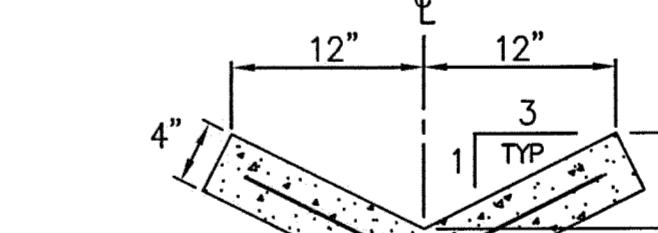
## NOTE:

1. ALL PAVEMENT SHALL BE SAW-CUT WITH NEAT, UNIFORM LINES PRIOR TO EXCAVATION. SAW-CUT SHALL EXTEND THROUGH FULL DEPTH OF ASPHALT.
2. HORIZONTAL AND VERTICAL SURFACES SHALL BE TACKED WITH RC-250 LIQUID ASPHALT AT THE RATE OF 0.1 Gallon/SY.
3. THE TRENCH TO BE BACKFILLED SHALL BE MADE AS DRY AS PRACTICABLE AT THE TIME OF BACKFILLING BY PUMPING, BAILING, DRAINING, OR OTHER APPROVED DEWATERING METHOD.
4. BEDDING STONE AND FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 6-INCHES, AND COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY (STANDARD PROCTOR TEST) WITH 2% OF OPTIMUM MOISTURE (VTM-1) WITH THE USE OF MECHANICAL TAMPERS OR VIBRATORY ROLLERS. WATER COMPACTION IS NOT PERMITTED. LOCAL MATERIAL CLASSIFIED AS TYPE I SELECT MATERIAL MAY BE USED AS BACKFILL UPON PRIOR APPROVAL BY THE LOCAL REVIEWING AGENCY.
5. ALL PAVEMENT SECTIONS SHALL BE IN ACCORDANCE WITH VDOT SPECIFICATION.
6. REPLACEMENT OF ALL ASPHALT SURFACE COURSES SHALL BE ROLLED WITH EQUIPMENT HAVING A MANUFACTURER'S RATING OF TEN (10) TONS UNTIL THE AGGREGATE IS KEYED INTO THE BITUMEN. WHERE ROLLING IS NOT POSSIBLE, A MECHANICAL TAMPER SHALL BE UTILIZED.
7. ALL EXCAVATIONS OR OPEN CUTS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, SECTION V, CHAPTER 2, "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING".

D C3 PAVEMENT EXCAVATION NO SCALE



**B** CONCRETE CURING  
C3 NO SCALE



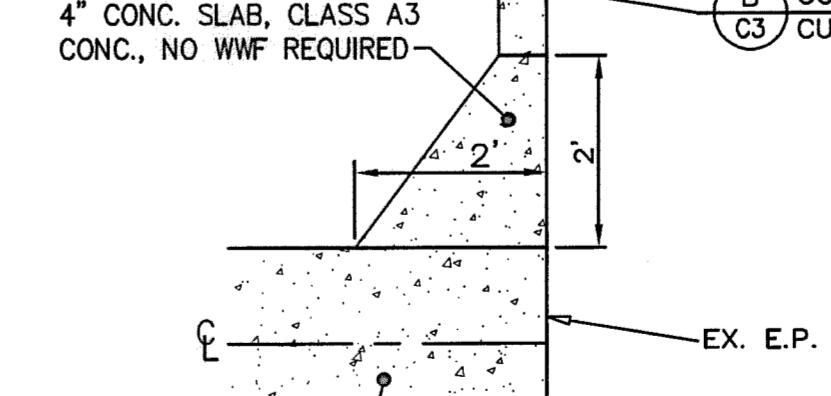
CONCRETE SHALL

6x6-W2.1xW2.1

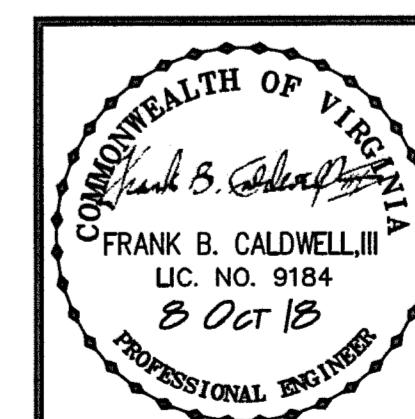
WELDED WIRE



NO. 2002-11

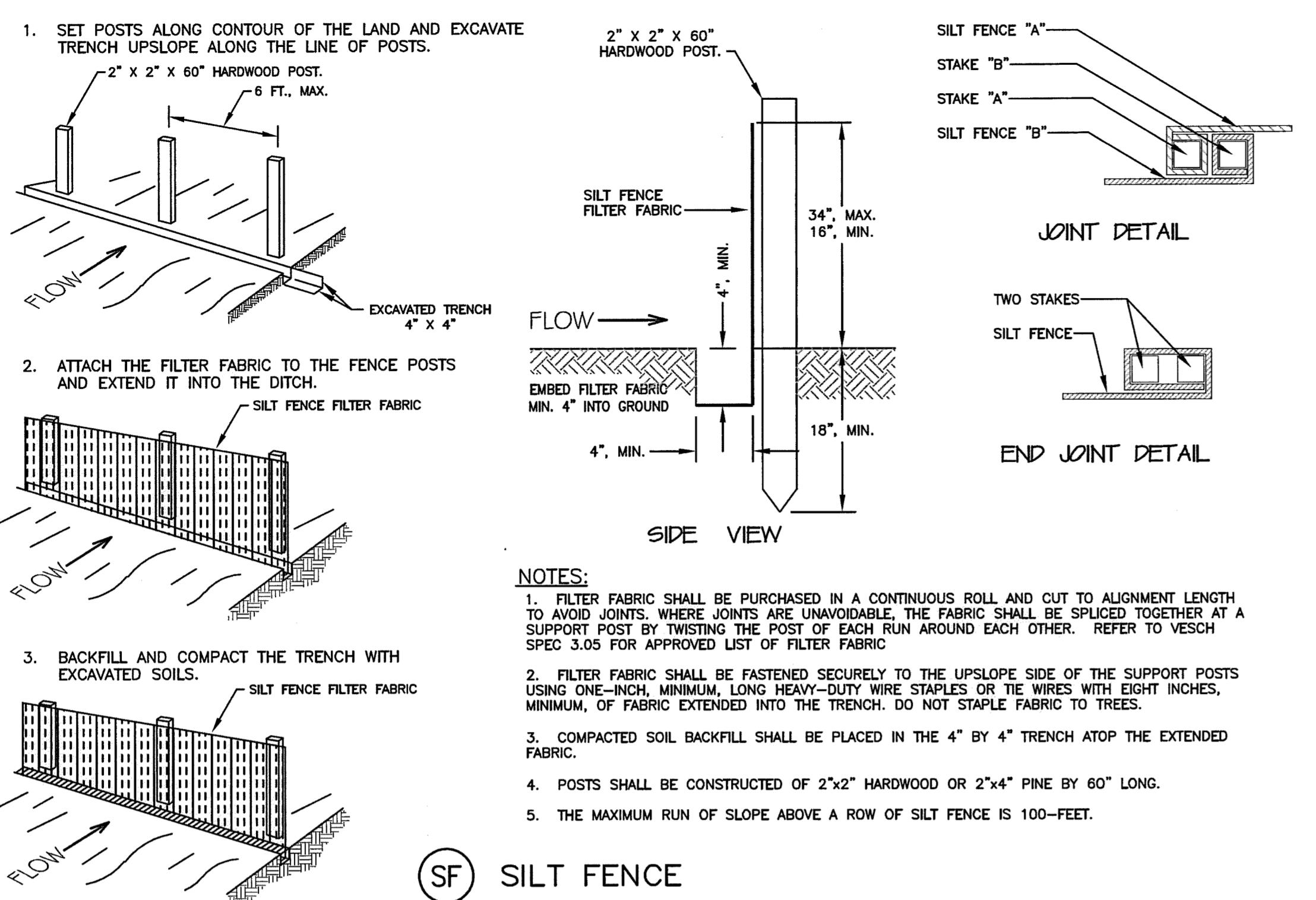


A diagram showing a concrete structure labeled 'CONC. C DITCH C3'. The structure is a U-shaped concrete channel. A vertical line extends upwards from the center of the U-shape. A horizontal line extends to the right from the right side of the U-shape. A diagonal line extends upwards and to the right from the bottom of the U-shape. A circle labeled 'C' is positioned to the right of the U-shape. A circle labeled 'B' is positioned above and to the right of the diagonal line. A circle labeled 'C3' is positioned below the circle 'B'.

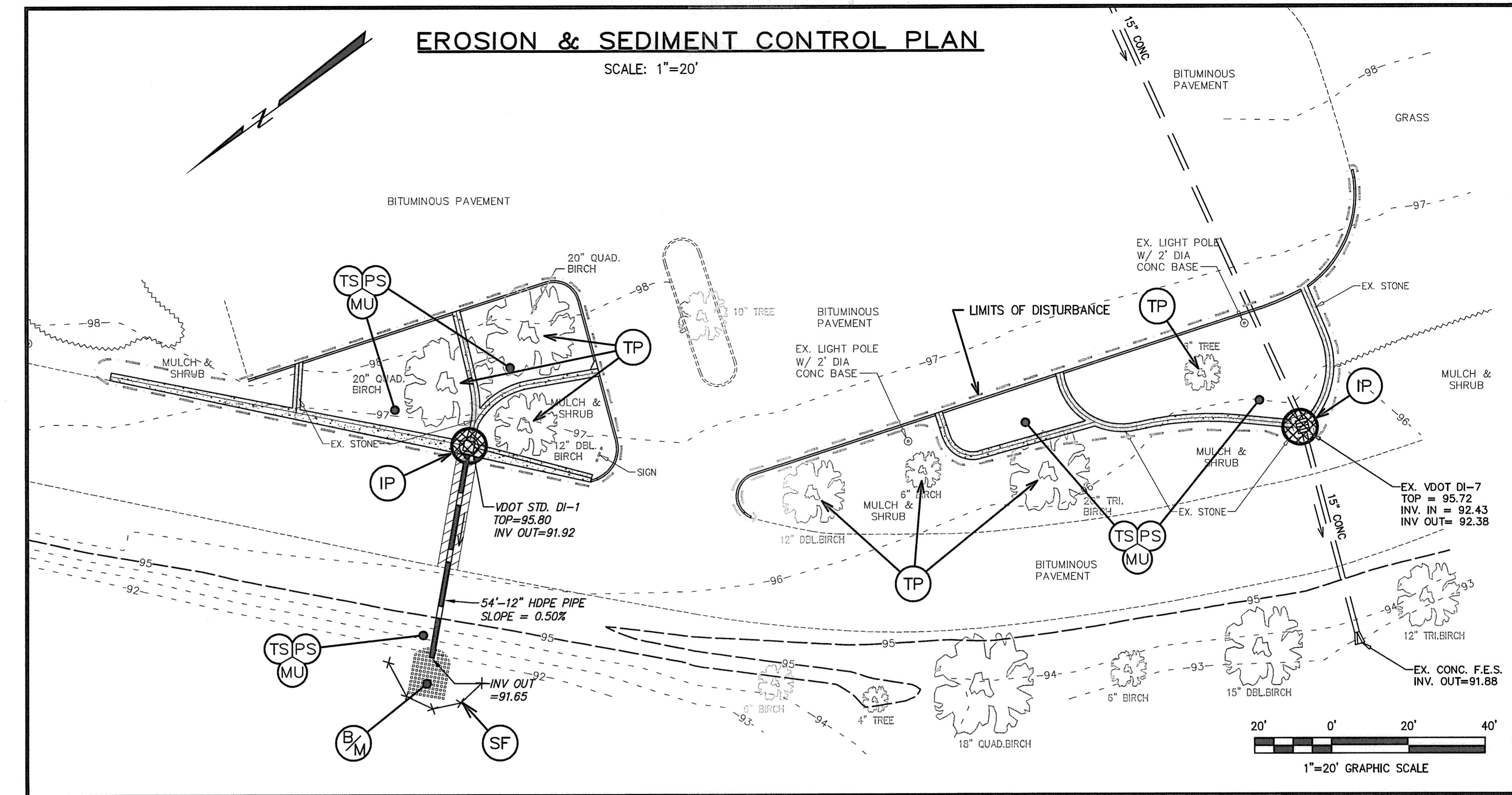


PAVEMENT WORK & DETAILS  
FOR  
**WESTERN VIRGINIA  
REGIONAL JAIL**

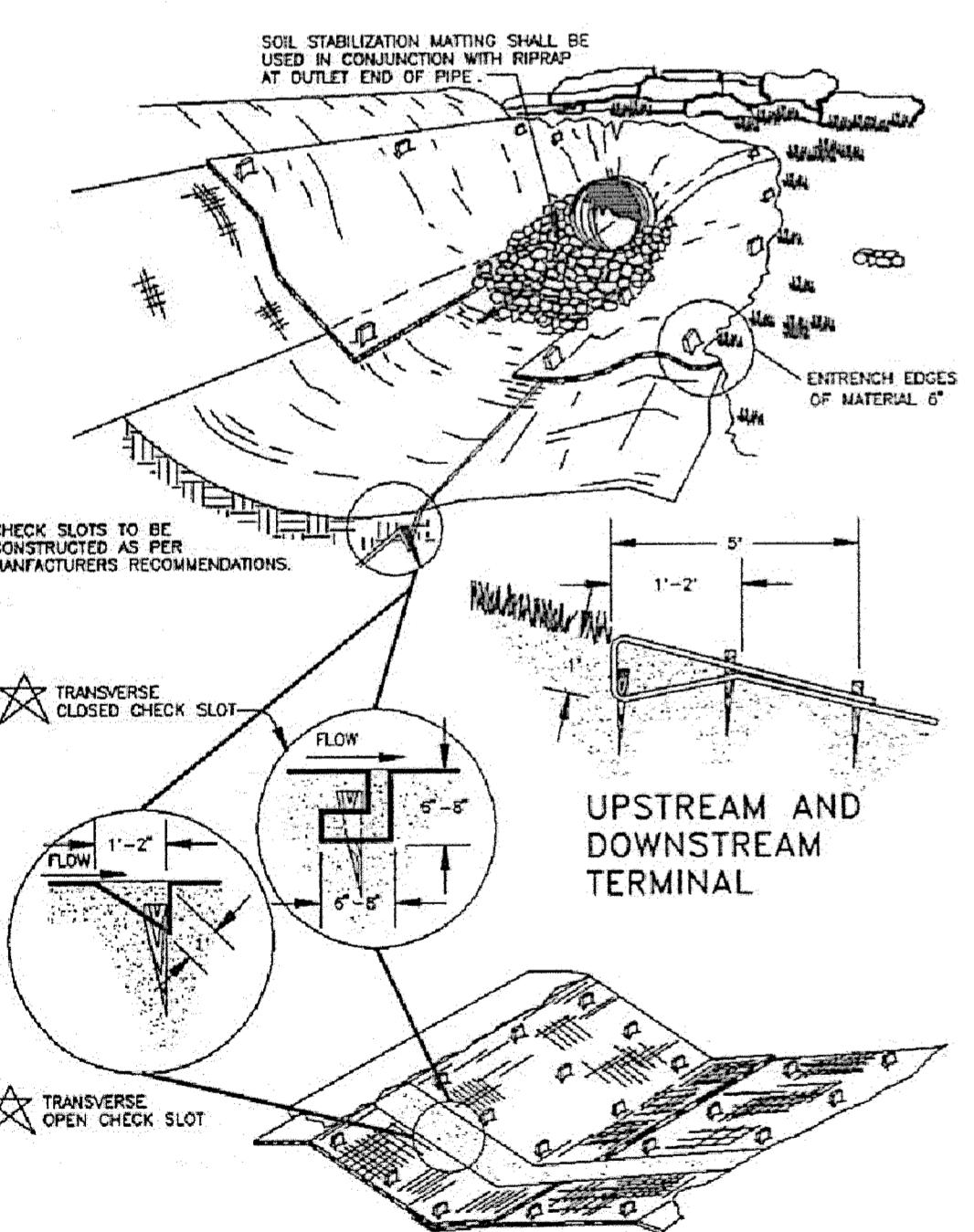
SITUATE WEST RIVER ROAD  
CATAWBA MAGISTERIAL DISTRICT  
COUNTY OF ROANOKE VIRGINIA



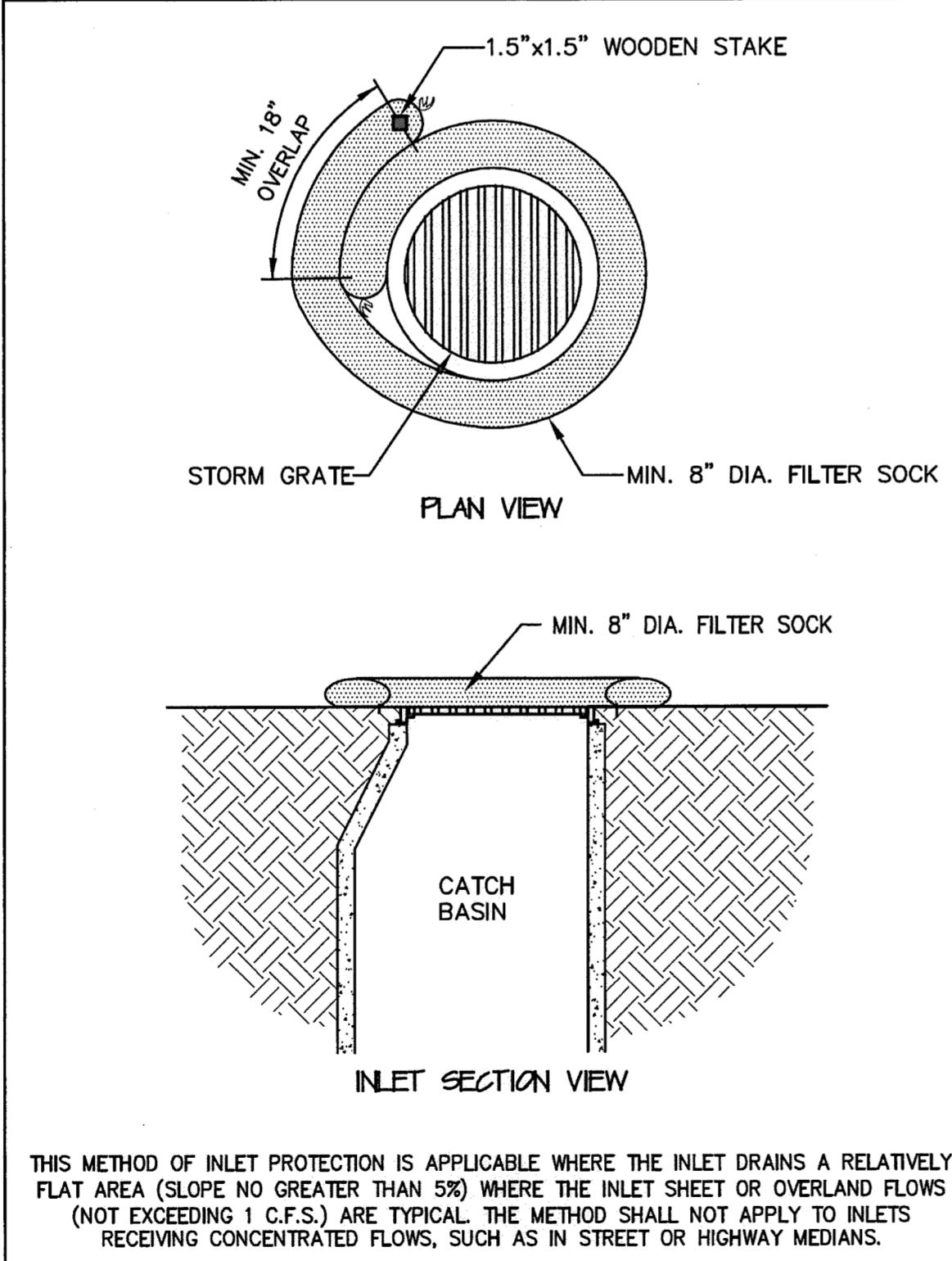
SF SILT FENCE



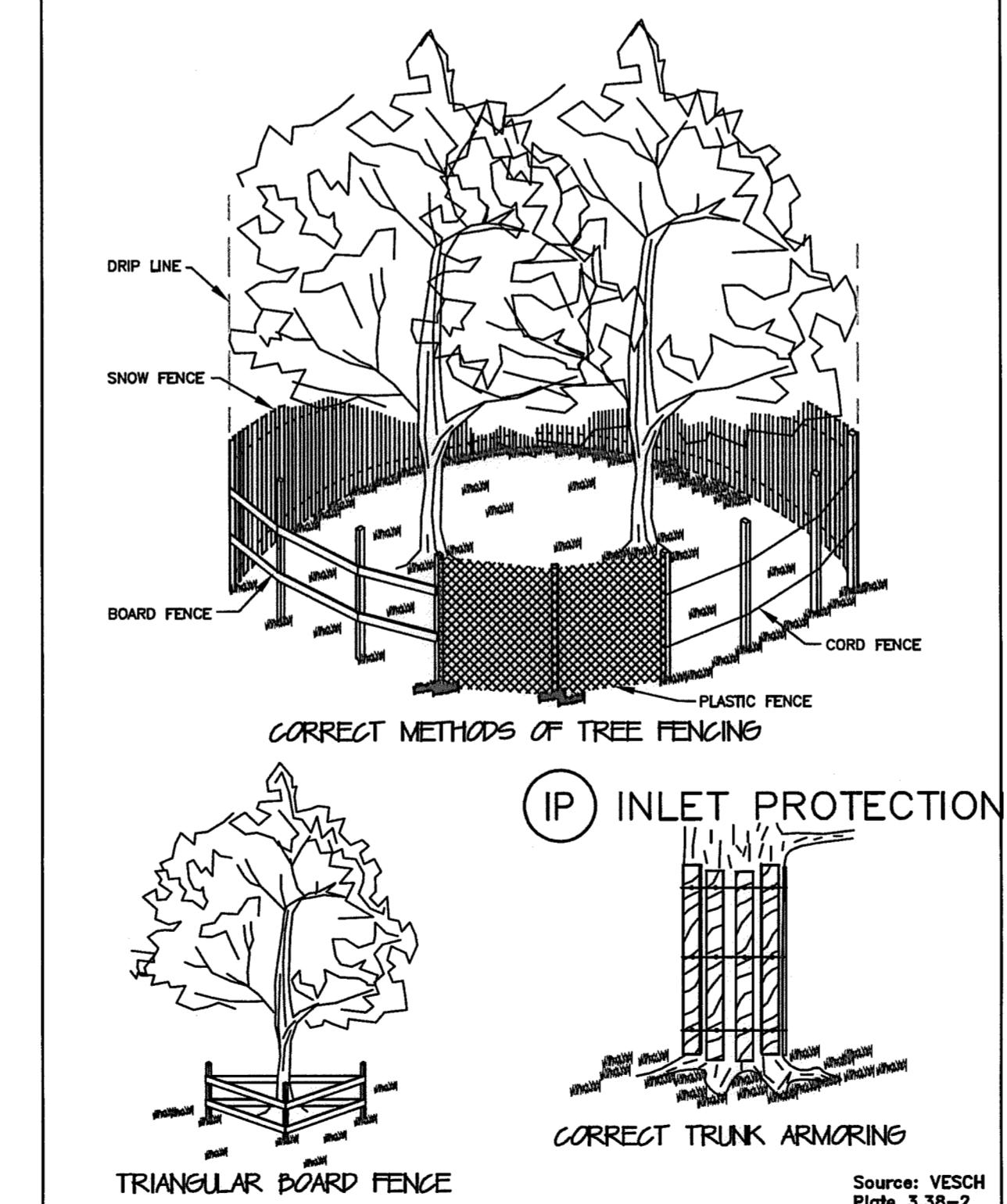
**TYPICAL TREATMENT-2  
SOIL STABILIZATION  
MATTING INSTALLATION**



B/M SOIL STABILIZATION  
BLANKETS & MATTING



IP INLET PROTECTION



TP TREE PROTECTION

VESCH TABLE 3.32-C (REVISED JUNE 2003) PERMANENT SEEDING SPECIFICATIONS FOR APPALACHIAN/MOUNTAIN AREA		
LAND USE	SEED <sup>1</sup> SPECIES	APPLICATION RATES
MINIMUM CARE LAWN (COMMERCIAL OR RESIDENTIAL)	TALL FESCUE <sup>1</sup> PERENNIAL RYEGRASS <sup>2</sup> KENTUCKY BLUEGRASS <sup>1</sup>	90 lbs/1000 sf 0-10% 0-10% TOTAL: 150 lbs.
HIGH-MAINTENANCE LAWN	MINIMUM OF THREE (3) UP TO FIVE (5) VARIETIES OF KENTUCKY BLUEGRASS FROM APPROVED LIST FOR USE IN VIRGINIA <sup>1</sup>	TOTAL: 125 lbs.
GENERAL SLOPE (3:1 OR LESS)	TALL FESCUE <sup>1</sup> RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP <sup>3</sup>	128 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	TALL FESCUE <sup>1</sup> RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP <sup>3</sup> CROWNFVETCH <sup>4</sup>	108 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

1 When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCA) recommended turfgrass varieties listed in the VCA Turfgrass Management Guide, approved by VCA. A list of turfgrass variety is available at the local Extension office or through VCA at (804)746-4894 or at [HTTP://SUDAN.CSES.VTE.DU/HTML/TURF/TURF/PUBLICATIONS/PUBLICATIONS2.HTML](http://SUDAN.CSES.VTE.DU/HTML/TURF/TURF/PUBLICATIONS/PUBLICATIONS2.HTML)  
2 - Perennial Ryegrass will germinate faster and at lower soil temperatures than Tall Fescues, thereby providing cover and erosion resistance for seedbeds.  
3 - Use seasonal nurse crop in accordance with seeding dates as follows:  
March 15th - May 15th Annual Rye  
May 15th - August 15th Foxtail Rye  
August 15th - October 15th Winter Rye  
November - February Winter Rye  
4 - All legume seed must be properly inoculated. If Flatepa is used, increase to 30 lbs/acre. If Weeping 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 sf)		
APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 tons/acre (or 90 lbs/1,000 sf)		
NOTES:		
1. SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF THE SITE.		
2. INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING 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 <a href="http://WWW.DCR.STATE.VA.US/SW/E&amp;S.HTML#PUBS">HTTP://WWW.DCR.STATE.VA.US/SW/E&amp;S.HTML#PUBS</a>		

PS PERMANENT SEEDING

VESCH TABLE 3.31-B (REVISED JUNE 2003) TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS		
APPLICATION DATES	SEED SPECIES	APPLICATION RATES
SEPT 1 - FEB 15	50/50 MIX OF ANNUAL RYEGRASS ( <i>litterum multi-florum</i> ) & CEREAL (winter) RYE ( <i>secale cereale</i> )	50-100 (lbs/acre)
FEB 16 - APR 30	ANNUAL RYEGRASS ( <i>litterum multi-florum</i> )	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 sf)

NOTES:

1. SITE TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF THE SITE.

2. INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING 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/SW/E&S.HTML#PUBS](http://WWW.DCR.STATE.VA.US/SW/E&S.HTML#PUBS)

TS TEMPORARY SEEDING

EROSION CONTROL PLAN & DETAILS FOR <b>WESTERN VIRGINIA REGIONAL JAIL</b>	
SITUATE WEST RIVER ROAD CATAWBA MAGISTERIAL DISTRICT COUNTY OF ROANOKE, VIRGINIA	
<p>Drawn: J.V.Judy Checked: F.B. Caldwell Revised: 10/08/18 Scale: 1"=30' Tax Parcel: 64.03-01-19.03 Field Book: JN-32 W.O.: 17-0040</p> <p><b>CWA</b> <b>CALDWELL WHITE ASSOCIATES</b> ENGINEERS / SURVEYORS / PLANNERS</p> <p>4203 MELROSE AVENUE, N.W. Post Office Box 1860 ROANOKE, VIRGINIA 24017 Telephone: (540) 566-8400 Fax: (540) 566-8702 EMAIL: CWAROANOKE @ AOL.COM</p>	

## STATE IMPOSED MINIMUM STANDARDS - 9VAC25-840-40

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 VIRGINIA EROSION & SEDIMENT CONTROL PROGRAM AUTHORITY OR THE CONSULTING ENGINEER.

### CRITERIA, TECHNIQUE OR METHOD

- 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 FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- 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 IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- 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.
- STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
  - THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
  - SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. ENGINEERING CALCULATIONS USED FOR OUTFALL CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
- CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.
- CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- 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.
- BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES 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.
- WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NON-ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON-ERODIBLE COVER MATERIALS.
- WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NON-ERODIBLE MATERIAL SHALL BE PROVIDED.
- ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
  - NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
  - EXCAVATION AND BACKFILLING OF TRENCHES SHALL BE PERFORMED IN A MANNER THAT WILL NOT ADVERSELY AFFECT THE WORK AREA.
  - EFFLUENTS FROM DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
  - MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
  - RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
  - APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.
- WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACTING 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 SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP 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.
- PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASED VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER FOR THE 10-YEAR, 24-HOUR DURATION, FLOOD EVENT. THESE STANDARDS AND FLOODPLAIN 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.
  - CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL 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 PROVIDED.
    - 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 A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS. (b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP BANKS AND (c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS AND (d) STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS. (e) PIPES AND STORM SEWER SYSTEMS SHALL NOT BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS. 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