



INVITATION FOR BIDS

City of Newport News

IFB #2011-4080-2005

January 21, 2011

Purchasing Department, Office of the Purchasing Director

4th Floor, City Hall, 2400 Washington Avenue

Newport News, VA 23607

Phone: (757) 926-8031/ Fax: (757) 926-8038

<http://www.nngov.com/purchasing>

ROBINHOOD LANE STREAM RESTORATION PROJECT

Sealed bids subject to the conditions and instructions contained herein, will be received at the above office of the Purchasing Director, 4th Floor, City Hall, 2400 Washington Avenue, Newport News, Virginia 23607, until the time and date shown below (local prevailing time), for furnishing the items or services described in the bid.

SCOPE OF WORK: Includes a stream restoration project along 662 linear feet (LF) of an unnamed tributary to the Warwick River. The approximate 0.77-acre site is located within the Warwick River drainage basin in the City of Newport News, Virginia. The site is situated east of Lucas Creek Road, south of Robinhood Lane, north of Sherbrooke Drive and can be accessed via Robinhood Lane.

Bid Due: 3:30 p.m., February 15, 2011

Shari D. Colvin

Contract Officer: _____

Shari D. Colvin, CPPB, VCO, Deputy Director, scolvin@nngov.com and Vines Brenda, Assistant Buyer, bvines@nngov.com

****AN ORIGINAL SECTION "A" AND ONE DUPLICATE COPY IS REQUESTED****

In compliance with this invitation for bids, and subject to all the conditions thereof, the undersigned offers, if this bid is accepted within (60) calendar days from the date of the opening, to furnish any or all of the items and/or services upon which prices are quoted, at the price set opposite each item, to be delivered at the time and place specified herein. The undersigned certifies he has read, understands, and agrees to all terms, conditions, and requirements of this bid, and is authorized to contract on behalf of firm named below.

Company Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____ FAX No.: _____

E-mail: _____

Print Name: _____ Title: _____

Signature: _____ Date: _____

This form must be signed. All signatures must be original and not photocopies.

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Section A

CONDITIONS AND INSTRUCTIONS

Rev: 10/08/2010

1. All bids shall be submitted on and in accordance with this form. If more space is required to furnish a description of the goods and/or services and/or services bid, or delivery terms, the bidder may attach a letter hereto that will be made a part of the bid. In case of conflict, the bid may be deemed non-responsive. The City's published specifications shall supersede any additional writings submitted with the bid. Such writings should be clearly marked and noted on the exception page.
2. All bids shall be submitted sealed, plainly marked showing the bid number, date and time. The entire solicitation document is to be returned when submitting a bid, unless otherwise directed by the bid document. Failure to return all pages may result in a determination that the submittal is non-responsive.
3. Bids and amendments thereto, if received by the Purchasing Department after the date and time specified for bid opening, will not be considered. It will be the responsibility of the bidder to see that their bid is received by the Purchasing Department as specified. There will be no exceptions. Date of postmark will not be considered. Telephone, facsimile, electronic and verbal bids will not be accepted. Prices or changes shown on the outside of an envelope will not be considered in determination of low bid.
4. If City Hall is closed for business at the time scheduled for bid opening, for whatever reasons, sealed bids will be accepted and opened on the next business day of the City, at the originally scheduled hour.
5. Each bid is received with the understanding that the acceptance in writing by the City of the bidder to furnish any or all of the goods and/or services described therein, shall constitute a contract between the bidder and the City, which shall bind the bidder on his part to furnish and deliver the goods and/or services quoted at the prices stated and in accordance with the conditions of the accepted bid; and the City on its part to order from such bidder, except for causes beyond reasonable control; and pay for, at the agreed prices, all goods and/or services specified and delivered.
6. Bidders have the right to request withdrawal of their bids from consideration due to error by giving notice not later than two business days after bids are publicly opened. Work papers showing evidence of error(s) may be required. Upon request, administrative withdrawal procedures will be provided that shall be used for that purpose.
7. If issued, addenda to this solicitation will be posted on the Purchasing Department's website (www.nngov.com/purchasing). It is the bidder's responsibility to check the website or contact the Purchasing Department prior to the submittal deadline to ensure that the bidder has a complete, up-to-date package.
8. The solicitation document maintained by the Purchasing Department, in the bid file folder, shall be considered the official copy. In the case of any inconsistency between bid documents submitted to the City, but not clearly listed on the exception page of the

document as an exception by the bidder, the language of the official copy shall prevail. Furthermore, any exception or changes to the specifications made by the bidder may be cause to disqualify your bid.

9. Award will be made to the lowest responsive and responsible bidder. The quality of the goods and/or services to be supplied, their conformity with the specifications, their suitability to the requirements, the delivery terms, qualifications and references will be taken into consideration in making an award. Length of time for delivery as well as price may be considered in awarding the bid.

Unless canceled or rejected, a responsive bid from the lowest responsible bidder shall be accepted as submitted; except that if the bid from the lowest responsible bidder exceeds available funds, the purchasing director may negotiate with the apparent low bidder to obtain a contract price within available funds.

Upon making an award, or giving notice of intent to award, the City will place appropriate notice on the public bulletin board located outside of the Purchasing Department at City Hall. Notice of award may also appear on the Purchasing Website: www.nngov.com/purchasing or www.demandstar.com.

10. The City reserves the right to reject any and all bids, and to waive any informality if it is determined to be in the best interest of the City.
11. Prices shall be stated in units of quantity specified. No additional charges shall be passed on to the City, including any applicable taxes, delivery, or surcharges. Prices quoted shall be the final cost to the City.
12. All prices and notations should be in ink or typewritten. Mistakes may be crossed out and corrections made in ink and must be initialed and dated in ink by the person signing the bid.
13. In case of error in the extension of prices, the unit price shall govern.
14. The time of proposed delivery must be stated in definite terms. If time of delivery for different goods and/or services varies, the bidder shall so state.
15. Samples, when requested, must be furnished free of expense, and upon request, if not destroyed, will be returned at the bidder's risk and expense.
16. Unless qualified by the provision "NO SUBSTITUTE", the use of the name of the manufacturer, brand make or catalog designation in specifying an item does not restrict bidders to the manufacturer, brand, make or catalog designation identification. This is used simply to indicate the character, quality and/or performance equivalence of the goods and/or services desired. The goods and/or services on which bids are submitted must be of such character, quality and/or performance equivalence that it will serve as that specified. In submitting bids on goods and/or services other than as specified, bidder

shall furnish complete data and identification with respect to the alternate goods and/or services they propose to furnish.

Consideration will be given to bids submitted on alternate goods and/or services to the extent that such action is deemed to serve the best interests of the City. If the bidder does not indicate that the goods and/or services he proposes to furnish is other than specified, it will be construed to mean that the bidder proposes to furnish the exact goods and/or services described.

17. The apparent silence of these specifications and any supplemental specifications as to any detail or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and correct type, size and design are to be used. All interpretations of these specifications shall be made on the basis of this statement.
18. All bids must be signed by a responsible officer or employee having the authority to sign for the firm. The bidder agrees that its contract performance shall be in strict conformance with the contract documents.
19. By signing this bid, the bidder assigns to the City any and all rights that it may have under the antitrust laws of the United States and the Commonwealth of Virginia in any way arising from or pertaining to this bid. This provision is remedial in nature and is to be liberally construed by any court in favor of the City.
20. The bidder certifies by signing this Invitation for Bid that this bid is made without prior understanding, agreement, or accord with any other person or firm submitting a bid for the same goods and/or services and that this bid is in all respects bona fide, fair, and not the result of any act of fraud or collusion with another person or firm engaged in the same line of business or commerce. Any false statement hereunder may constitute a felony and can result in a fine and imprisonment, as well as civil damages.
21. **Hold Harmless and Indemnification:** The contractor shall defend, indemnify and hold the City, and City's employees, agents, and volunteers, harmless, from and against any and all damage claim, liability, cost, or expense (including, without limitation, attorney's fees and court costs) of every kind and nature (including, without limitation, those arising from any injury or damage to any person, property or business) incurred by or claimed against the contractor, its employees, agents, and volunteers, or incurred by or claimed against the City, City's employees, agents, and volunteers, arising out of, or in connection with, the performance of all services hereunder by the contractor. This indemnification and hold harmless includes, but is not limited to, any financial or other loss including, but not limited to, any adverse regulatory, agency or administrative sanctions or civil penalties, incurred by the City due to the negligent, fraudulent or criminal acts of the contractor or any of the contractor's officers, shareholders, employees, agents, contractors, subcontractors, or any other person or entity acting on behalf of the contractor. Unless otherwise provided by law, the contractor indemnification obligations hereunder shall not be limited in any way by the amount or type of damages,

compensation, or benefits payable by or for the contractor under worker's compensation acts, disability benefit acts, other employee benefit acts, or benefits payable under any insurance policy. This paragraph shall survive the termination of the contract including any renewal or extension thereof.

22. The contractor agrees to defend and save the City, its agents, officials, volunteers and employees, harmless from liability of any nature or kind, for use of any copyright, composition, secret process, patented or unpatented invention, goods and/or services or appliances furnished or used in the performance of the contract, or which the contractor is not the patentee, assignee, or licensee, to the same extent as provided in the above paragraph.
23. The contractor shall keep fully informed of all federal, state and local laws, ordinances and regulations that in any manner affect the conduct of the work. The contractor shall at all times observe and comply with all such laws, ordinances and regulations.
24. **The contractor certifies that he does not and shall not during the performance of the contract for goods and services in the Commonwealth, knowingly employ unauthorized aliens as defined in the federal Immigration Reform and Control Act of 1986, as amended.**
25. All bidders or offerors organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50, as amended, shall include the identification number issued to it by the State Corporation Commission. Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50, as amended, or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.

Number or Statement: _____

Any business entity that enters into a contract with a public body pursuant to this chapter 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, as amended, to be revoked or cancelled at any time during the term of the contract. The City may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

26. **Contractor's License:** If any of the services promulgated under this solicitation consist of construction work, it is required under Title 54.1, Chapter 11, Code of Virginia for a contractor who performs or manages construction, removal, repair, or improvements when the total value referred to in a single contract or project is:

Seventy thousand dollars (\$70,000) or more, or the total value of all such construction, removal, repair or improvements undertaken by such person within any twelve-month

period is five hundred thousand dollars (\$500,000) or more shall show evidence of being licensed as a **Class A Contractor**.

Seventy-five hundred dollars (\$7,500.00) or more, but less than seventy thousand dollars (\$70,000) or the total value of all such construction, removal, repair or improvements undertaken by such person within any twelve-month period is one hundred and fifty thousand dollars (\$150,000) or more, but less than five hundred thousand dollars (\$500,000) shall show evidence of being licensed as a **Class B Contractor**.

Over one thousand dollars (\$1,000) but no more than seventy-five hundred dollars (\$7,500) or the total value of all such construction, removal, repair, or improvements undertaken by such person within any twelve-month period is no more than one hundred and fifty thousand dollars shall show evidence of being licensed as a **Class C Contractor**.

The City shall require master certification as a condition of licensure or certification of electrical, plumbing and heating, ventilation and air conditioning contractors.

A valid business license from the City may be required. The bidder shall complete whichever of the following notations as appropriate:

"Licensed Class A Virginia Contractor No. _____."

"Licensed Class B Virginia Contractor No. _____."

"Licensed Class C Virginia Contractor No. _____."

27. Availability of Funds: A contract shall be deemed in force only to the extent of appropriations available to each department for the purchase of such goods and/or services or services. The City's extended obligations on those contracts that envision extended funding through successive fiscal periods shall be contingent upon actual appropriations for the following years.
28. **Payment Terms:**
- a) Payment terms shall be "2%-20, Net 30 days" unless otherwise stated by the bidder on this submittal form. Alternate terms may be offered by bidder for prompt payment of bills.
 - b) Payment terms shall be considered in determining the low bidder.
 - c) Discount period shall be computed from the date of proper receipt of the contractor's correct invoice, or from the date of acceptable receipt of the goods and/or services, whichever is latest.

- d) The payment terms stated herein must appear on the contractor's invoice. Failure to comply with this requirement shall result in the invoice being returned to the contractor for correction.
 - e) Late payment charges shall not exceed the allowable rate specified by the Commonwealth of Virginia Prompt Payment Act. (1% per month)
29. In event of default by the contractor, the City reserves the right to procure the goods and/or services and/or services from other sources, and hold the contractor liable for any excess cost occasioned thereby.
30. Appeals Procedure: Upon your request, administrative appeals information will be provided that shall be used for hearing protests of a decision to award or an award, appeals from refusal to allow withdrawal of bids, appeals from disqualification, appeals for debarment or suspension, or determinations of non-responsibility and appeals from decision or disputes arising during the performance of a contract. To be timely, all appeals shall be made within the time period set forth in Chapter 2, divisions 4 and 5 of the City Code.
31. **It is the policy of the City of Newport News to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in the City's procurement activities. Toward that end, the City of Newport News encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidder is requested to complete the SMB, MBE and WBE Business Objectives form within this document.**
32. The City has a directory of Newport News Small, Women-owned and Minority (SWAM) businesses. The directory is available at www.nngov.com/purchasing.
33. This public body does not discriminate against faith based organizations.
34. Non-Discrimination: During the performance of this contract, the contractor agrees as follows:
- (a) It will not discriminate against any employees or applicants for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by federal or state law relating to discrimination in employment, except where one or more of these are a bona fide occupational qualification reasonably necessary to the normal operations 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 non-discrimination clause.

- (b) The contractor will be and state that he is an equal opportunity employer in all solicitations or advertisements for employees.
- (c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

The contractor will include the provisions of the foregoing paragraphs (a), (b) and (c) in every subcontract or purchase order of over ten thousand dollars so that the provisions will be binding upon each subcontractor or vendor.

- 35. During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of 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 subsection, "A 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 subsection, 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.

- 36. Assignment of Contract: A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.
- 37. **Governing Law and Venue:** This solicitation and any resulting contract is subject to the laws of the Commonwealth of Virginia and the Newport News City Code. Any litigation with respect thereto shall be brought in the courts of the City of Newport News, Virginia, or the United States District Court for the Eastern District of Virginia, Newport News Division.
- 38. Severability: If any provision of this contract or the application thereof to any person or circumstances shall to any extent be invalid or unenforceable, the remainder of this contract, or the application of such provision to persons or circumstances other than those which it is invalid or unenforceable, shall not be affected hereby, and each provision of this contract shall be valid and enforced to the full extent permitted by law.
- 39. Scheduling and Delays: The parties to any contract resultant of this solicitation acknowledge that all or part of the work to be performed hereunder may be delayed and extended at the option of the City. Such delays may be caused by delays, denials, and

modifications of the various state or federal permits, or for other reasons. The City shall not be required to pay any of the Contractor's direct or indirect costs, or claims for compensation, extended overhead, or other damage or consequential damages arising out of or related to any delays or interruptions required or ordered by the City. If the City delays the project for any reason for a continuous period of 6 months or more, the City and Contractor will negotiate a mutually agreeable adjustment to the Contractor's award amount.

40. **Termination by the City or the Contractor, or both, for convenience (Not applicable to contracts subject to the Department of Engineering Standard dated August 1, 1983, as amended, or the Department of Public Utilities "General Conditions"):**

The parties may terminate the contract at any time by mutual written agreement.

In addition, if the contract is an extended term contract, after completion of the first contract period, either party may terminate the contract without penalty or financial obligation, except that the parties remain liable for performance of all terms, conditions, and obligations through the date of termination. Written notice of termination shall be given to the other party a minimum of sixty (60) days prior to its effective date.

41. **Termination for Cause (Not applicable to contracts subject to the Department of Engineering Standard dated August 1, 1983, as amended, or the Department of Public Utilities "General Conditions"):**

In the event that the contractor shall for any reason or through any cause be in default of the terms, conditions, or obligations of the contract documents, the City may give the contractor written notice of such default and terminate the contract. All terms, conditions, and obligations of the contract documents are considered material.

The City may, in its discretion, provide the contractor an opportunity to cure the default, if curable, prior to termination. Unless a different duration is provided in the notice of default, or agreed upon by the parties in writing, the contractor shall have fourteen (14) calendar days to cure the default from the date such notice is mailed to the contractor unless notification is by facsimile or personal delivery, in which case the opportunity to cure shall commence upon delivery of the notice. Upon failure of the contractor to cure the default, the City may immediately terminate the contract effective as of the mailing or delivery of the default notice. If the City terminates the contract, the contractor shall remain liable for performance of all terms, conditions, and obligations through the date of termination. Termination by the City shall not constitute a waiver by the City of any other rights or remedies available to the City by law or contract.

42. **Bid Bond:** A bidder's bond or certified check in the amount of five percent (5%) of the amount bid shall accompany any bid in excess of \$100,000.00 for the bid to be acceptable.

43. **Performance and Labor and Material Payment Bond:** The Contractor shall have ten (10) days from the date of the City's request to provide a performance bond and a labor and material payment bond, (Use only the forms provided by the City, unless otherwise approved by the City Attorney) in the amount of the contract price, as security for faithful performance of the work in strict conformity with the Contract Documents and for payment of all persons who perform labor and furnish materials in prosecution of the work. The surety on such bonds shall be duly authorized to do business in the Commonwealth of Virginia and be satisfactory to the City.
44. **Direct contact with City departments other than Purchasing, on the subject of this bid is expressly forbidden except with the foreknowledge and permission of the contracting officer. Violation may result in a determination that your firm is ineligible for award.**
45. Questions or comments related to this solicitation should be directed to the contract officer, whose name and contact information appears on the front of this document. All questions must be submitted in writing (facsimile or email); telephonic inquiries will not be considered.
46. Successful bidder shall furnish all required bonds, certificates of insurance and required endorsements on City approved forms included in this bid package. Any other forms are not acceptable and shall not be approved by the City Attorney's office. Time is critical on this work and non-compliance will delay the work and may be cause to make award to the next qualified bidder.
47. **Engineering Standard Specifications:** This contract consists of plans, technical specifications and the Department of Engineering Standard Specifications. The Standard Specification are available for \$15.75, including tax, per copy non-refundable, from the Department of Engineering, City Hall Building, 8th floor, Newport News, Virginia 23607, telephone (757) 926-8611. In the Standard Specification any/all references to the Director of Engineering, which involves the initial Invitation for Bid and prior to an actual contract being awarded shall be defined and interpreted as the City's Purchasing Director or their designee.
48. **Liquidated Damages:** TIME IS OF THE ESSENCE ON THIS CONTRACT. Failure of the Contractor to complete the work within the time allowed will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For each consecutive calendar day in excess of the time specified for completion of the work, the Contractor shall pay to the City, or have withheld from monies due it, the sum of **\$300.00 per day**.

Execution of the contract under these specifications shall constitute agreement by the City and Contractor that this amount per day is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs.

Permitting the Contractor to continue and finish the work or any part thereof after the contract time or adjusted contract time, as pertinent, has expired shall in no way operate as a waiver on the part of the City or any of its rights under the contract.

Payment of liquidated damages shall not release the Contractor from obligations in respect to the fulfillment of the entire contract, nor shall the payment of such liquidated damages constitute a waiver of the City's right to collect any additional damages which may be sustained by failure of the Contractor to carry out the terms of the contract, it being the intent of the parties that said liquidated damages be full and complete payment only for failure of the Contractor to complete the work on time.

49. **Permits,** Contractor shall be responsible for furnishing all necessary permits as required by the City Newport News prior to start of construction. The Contractor is required to obtain and pay for all necessary permits along with required bonds and insurance. A minimum \$5,000.00 bond for Right-of-Way permits and a minimum \$2,000.00 for land disturbing permits (based on area disturbed). These bonds are in addition to any bid bond, performance or payment bond required as part of the bid. Contractor shall also be responsible to obtain and pay for any required permits from State or Federal agencies. The project signs, right-of-way permit, land disturbing permit, etc. and associated bonds shall also be included in this bid price. Proof of approved final inspections relating to these permits shall be required before final payment is made.
50. **Insurance:** The contractor shall maintain adequate liability insurance, which shall protect and save harmless the City of Newport News, Virginia, and its officials from all suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and from all claims arising under the workmen's compensation laws. The contractor shall furnish proof of said insurance prior to commencement of services. Separate forms, which name the City as additional insured and as alternate employer, must be included with the Certificate of Insurance. **Please make sure prior to submitting a bid that all insurance endorsements forms have been reviewed by your insurance carrier.**

The Commonwealth of Virginia requires construction contractors and subcontractors to obtain and maintain worker's compensation insurance while performing work on behalf for the City. Evidence of coverage needs to be provided prior to commencement of work.

Sample forms CG 20-10 (naming the City as additional insured for liability claims) and WC 00-03-01 (naming the City as an alternate employer for Worker's Compensation claims); and the Commonwealth's form for Worker's Compensation Certificate of Coverage are attached **(See Section B)**.

Contractor shall have ten (10) days from the date of the city's request, to provide insurance documentation. Failure to provide the Certificate and forms within this period

may be cause for the City to award a contract to the next responsive bidder, and hold the original contractor liable for excess costs.

51. The Conditions and Instructions in this solicitation are intended to apply to the resulting contract and shall supersede any conflicting terms offered. Any additional conditions a bidder intends to be considered must be submitted with the bid as an exception. Such exceptions may result in a finding that the submittal is 'non-responsive' to the bid, negating possibility of an award to that bidder. Contractual documents submitted by the successful firm after an award will not be accepted.
52. Failure of the contractor to perform the contract by reason of this non-acceptance of additional conditions shall result in termination of the contract by the City, and may result in debarment of the contractor for a period of up to three years. Termination and/or debarment of the contractor shall not constitute a waiver by the City of any other rights or remedies available to the City by law or contract.
53. **Records and Inspection:** The contractor shall maintain full and accurate records with respect to all matters covered under this contract, including, without limitation, accounting records, written policies and procedures, time records, telephone records, and any other supporting evidence used to memorialize, reflect, and substantiate charges or fees related to this contract. The contractor's records shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by the City and its employees, agents or authorized representatives after giving at least three (3) days notice to contractor by the City. The City shall have access to such records from the effective date of this contract, for the duration of the contract, and for five (5) years after the date of final payment by the City to the contractor pursuant to this contract or any renewal or extension of this contract. The City's employees, agents or authorized representatives shall have access to the contractor's facilities, shall have access to all necessary records, and shall be provided adequate and appropriate work space, in order to conduct audits.
54. **Rights and Remedies Not Waived:** In no event shall the making by the City of any payment to the contractor, or the waiver by the City of any provision under this contract including any obligation of the contractor, constitute or be construed as a waiver by the City of any other provision, obligation, breach of covenant, or any default which may exist under this contract on the part of the contractor, and the making of any such payment by the City while any such breach or default exists shall not impair or prejudice any rights or remedies available to the City.
55. **Entire Agreement:** This contract and any additional or supplementary documents incorporated herein by reference contain all the terms and conditions agreed upon by the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of this contract or any part thereof shall have any validity or bind any of the parties hereto. This contract shall not be modified, altered, changed or amended unless in writing and signed by the parties hereto.

56. **Independent Contractor:** The contractor and any employees, agents, or other persons or entities acting on behalf of the contractor shall act in an independent capacity and not as officers, employees, or agents of the City.
57. **Conflict:** In the event of a conflict between the contract documents, including these Conditions and Instructions, and the terms of a purchase order or related document issued by the Department of Purchasing, the contract documents shall control.

In the event of a conflict between the Department of Engineering Standard Specifications dated August 1, 1983, as amended, and the contract documents (including the General and Special Conditions), the contract documents shall control unless otherwise provided. In addition, Special Conditions take precedence over General Conditions.

In the event of a conflict between the Department of Public Utilities "General Conditions" and the contract documents (including the General and Special Conditions), the contract documents shall control unless otherwise provided. In addition, Special Conditions take precedence over General Conditions.

58. **Scheduling and Delays:** The parties to any contract resultant of this solicitation acknowledge that all or part of the work to be performed hereunder may be delayed and extended at the option of the City. Such delays may be caused by delays, denials and modifications of the various state or federal permits, or for other reasons. The City shall not be required to pay any of the Contractor's direct or indirect costs, or claims for compensation, extended overhead, or other damage or consequential damages arising out of or related to any delays or interruptions required or ordered by the City. If the City delays the project for any reason for a continuous period of six (6) months or more, the City and Contractor will negotiate a mutually agreeable adjustment to the Contractor's award amount. **Notwithstanding the above, in construction contracts, to the extent that an unreasonable delay is caused by the acts or omissions of the City due to causes within the City's control, the above waiver or release shall not apply.**

SPECIAL NOTE:

When the contractor chooses to work on Sunday or any City Holiday, the contractor shall be required to pay the City for project inspection services for those days. The payment rate is established at \$75.00 per inspector, per hour, for each hour the inspector(s) provides the inspection service, which shall include travel time to and from the site. The contractor shall submit with each monthly invoice for the specific billing period a check payable to the City of Newport News in an amount equivalent to the hours of inspection service times the above rate. There shall be a minimum service time requirement of two (2) hours per inspector.

The Contractor shall request approval from the City of any scheduled work on Sundays or Holidays a minimum of 72 hours prior to the scheduled work date. Approval by the Director of the Department of Engineering or his representative is required. There is no obligation or requirement that the City provide this service, and the City cannot guarantee the availability of an inspector.

Note: This requirement may not apply to contracts where work hour restrictions established by the City will require Sunday or Holiday work)

Since it is the intent of the City to promote small businesses (SBE), minority businesses (MBE) and women-owned businesses (WBE), you are requested to report the total dollars which will be sub-contracted to each of the business classifications pertaining to this contract. If you should sub-contract with SBE's, MBE's and WBE's, list the dollar figures separately for each general classification.

This will enable the City to track the amount of business the City does with small, minority and women-owned businesses. Without your cooperation it would be very difficult to fully understand the City's performance in this important segment of the market. Indicate your figures below and return this form to the Purchasing Department with your initial bid package.

If you are not sub-contracting, even if you are a S/M/WBE, put zeros in the spaces below.

IFB #2011-4080-2005

Total SBE Dollars to be Sub-contracted \$ _____

Total MBE Dollars to be Sub-contracted \$ _____

Total WBE Dollars to be Sub-contracted \$ _____

EXCEPTION PAGE

EXCEPTIONS:

Bidder must sign the appropriate statement below, as applicable:

- () Bidder understands and agrees to all terms, conditions, requirements, and specifications stated herein.

Firm: _____

Signature: _____

- () Bidder takes exception to terms, conditions, requirements, or specifications stated herein (Bidder must itemize all exceptions below, and return with this IFB):

Firm: _____

Signature: _____

Bidders should note that any exceptions taken from the stated terms and/or specifications may be cause for their submittal to be deemed "non-responsive", risking the rejection of their submittal.

Payment terms shall be considered in determining the low bidder.

BID RESULTS

Bid results of the will be made available after the bid opening by visiting our web site:

<http://www.nngov.com/purchasing> or www.demandstar.com

ANTI-COLLUSION CERTIFICATION

The bidder certifies that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same product and that this bid is in all respects bona fide, fair and not the result of any act of fraud or collusion with another person or firm engaged in the same line of business or commerce. The bidder understands collusive bidding is a violation of Federal law and that any false statement hereunder constitutes a felony and can result in fines, imprisonment, as well as civil damages. The bidder also understands that failure to sign this statement will make the bid non-responsive and unqualified for award.

Signed: _____ Date: _____

Name of Company: _____

ENGINEERING DEPARTMENT STANDARD SPECIFICATIONS

The bidder certifies that this bid is submitted in compliance with the contract and has obtained a copy of the City of Newport News, Engineering Department Standard Specifications prior to submission and shall kept a copy on the job site at all times.

Signed: _____ Date: _____

Name of Company: _____

REFERENCES FOR BIDDERS*

Please provide 3 references with contact person and phone number for construction projects occurring within the last 5 years (if applicable, please include 1 municipal government reference):

1. _____ tel. # _____
2. _____ tel. # _____
3. _____ tel. # _____

Please provide 3 construction projects that demonstrate your experience with stream restoration and stabilization activities and buffer restorations activities on project of similar size and complexity within the past 5 years:

1. _____
2. _____
3. _____

Provide 3 construction projects within the past 5 years where the given time frame for the project was achieved:

1. _____
2. _____
3. _____

_____ YES _____ NO Possess foreman and/or crew that are familiar with stream and buffer restoration activities. Provide approximate years of experience of each:

foreman: _____
crew: _____

_____ YES _____ NO Possess foreman and/or crew with experience in dealing with the public affected by construction projects

_____ YES _____ NO Company has performed construction projects for or within the limits of the City of Newport News.
Locations: _____

*** The City reserves the right to ask for additional information.**

INSTRUCTIONS TO BIDDERS

BIDDER RESPONSIBILITIES:

- A. Affirmative Steps:** Bidders shall take affirmative steps in compliance with the regulations, prior to submission of bids or closing data for receipt of initial bids, to encourage participation in projects by MBEs and WBEs. Such efforts include:
1. Establish and maintain a current solicitation list of minority and female recruitment sources, and assure MBEs and WBEs are solicited once they are identified.
 2. When feasible, segmenting total work requirements to permit maximum MBE/WBE participation, and establish delivery schedules to encourage MBE/WBE participation.
 3. Assuring that MBEs, and WBEs are solicited whenever they are potential sources of Goods or services. This step may include:
 - a. Sending letters or making other personal contact with MBEs, WBEs, private Agencies and state associations (e.g., those who appear on lists prepared by EPA or the recipient and other MBE/WBE known to the Bidder). MBEs/WBEs should be contacted when other potential subcontractors are contacted, within reasonable time prior to bid submission or closing date for receipt of initial bids. Those letters or other contacts should communicate the following:
 - (i) Specific description of the work to be contracted;
 - (ii) How and where to obtain a copy of plans and specifications or other detailed information needed to prepare a detailed price quotation;
 - (iii) Date the quotation is due to the bidder;
 - (iv) Name, address, and phone number of the person in the Bidders firm whom the prospective MBE/WBE subcontractor should contact for additional information.
 - b. Using the services and assistance of the Small Business Administration and the Department of Minority Business Enterprises of the Commonwealth of Virginia.

Affirm.A: Rev. 2/7/97

- B.** Bidders are requested to demonstrate compliance with MBE/WBE requirements. Demonstration of compliance may include the following information; however, the recipient may specify other methods of demonstrating compliance:
1. Names, addresses, phone number, scope of work, aggregate dollar amount of work for MBE/WBE firms expected to perform on this contract. If none, respond accordingly _____

 2. Description of contacts to MBE/WBE firms, including number of contacts, work offered, dates of contact and result of contact. If none, so state _____

 3. Description of contacts of organizations, agencies and associations, which assist MBE/WBE firms, showing the names, person contacted, and date of contact. If none, so state _____

 4. Copies of advertisements for employment showing your firm as advertised to be an Equal Opportunity Employer. (This is a requirement for firms who have received prior governmental contracts valued at \$10,000 or more and have advertised subsequently to that date) _____

- C.** Successful Bidder should take reasonable affirmative steps to subcontract with MBEs and WBEs whenever additional subcontracting opportunities arise during the performance of the contract.

NOTICE TO CONTRACTORS

Sealed bids will be received by the Department of Purchasing of the City of Newport News, Virginia on the 4th Floor, City Hall Building, 2400 Washington Avenue, no later than **February 15, 2011 at 3:30 p.m. for ROBINHOOD LANE STREAM RESTORATION PROJECT.**

Please be advised that all questions in reference to this project should be directed to the Department of Purchasing, Shari D. Colvin, CPPB, VCO, Deputy Director, scolvin@nngov.com and copy Brenda Vines, Assistant Buyer, bvines@nngov.com. **All bid questions must be received by 1:00 p.m., February 9, 2011.**

SCOPE OF WORK: Includes a stream restoration project along 662 linear feet of an unnamed tributary to the Warwick River. The approximate 0.77-acre site is located within the Warwick River drainage basin in the City of Newport News, Virginia. The site is situated east of Lucas Creek Road, south of Robinhood Lane, north of Sherbrooke Drive and can be accessed via Robinhood Lane.

Each proposal greater than \$100,000 shall be accompanied by a bidder's bond or a certified check of five percent (5%) of the amount of the bid. Performance and Labor & Material Payment Bond amounting to one hundred percent (100%) of the contract price will be required of the successful bidder.

This contract consists of plans and technical specifications as amended by Special Conditions and Department of Engineering Standard Specifications. Plans and technical specifications for said contract may be obtained by bona fide contractors and suppliers at the Office of the Department of Engineering, 8th Floor, City Hall Building, Newport News, Virginia, telephone (757) 926-8611 for a non-refundable fee of **\$26.25** including tax per copy or available for free download from our website, www.nngov.com/purchasing . If the contractor submitting a bid does not have a set of the current Department of Engineering Standard Specifications, a set shall be purchased prior to submitting a bid at a cost of **\$15.75, including tax per copy, non-refundable and shall be maintained on the job site at all times until the completion of the project.**

The attention of the bidder is invited to the provisions of Chapter 11 of Title 54.1 of the Code of Virginia regulating the practice of general contracting under which it will be necessary for the bidder to show evidence of certificate of registration as provided by said code.

The City of Newport News reserves the right to reject any or all bids.

Everett P. Skipper, PE, BCEE
Director of Engineering
2400 Washington Avenue
Newport News, VA 23607

NOTICE OF ESCROW OPTION

IF THIS IS A BID FOR CONSTRUCTION AS DEFINED IN VIRGINIA CODE SECTION 11.56.1 IN THE AMOUNT OF \$200,000.00, OR MORE, I/WE ELECT TO UTILIZE THE ESCROW ACCOUNT PROCEDURE DESCRIBED IN THE PROVISIONS OF THIS BID IF DETERMINED TO BE THE SUCCESSFUL LOW BIDDER(S) _____

(WRITE "YES" OR "NO")

INTEREST ON RETAINAGE

At the time the Contractor submits a bid, the Contractor shall have the option to use the escrow account procedure for utilization of City retained funds by so indicating in the space provided in the bid documents. In the event the Contractor elects to use the escrow account procedure, the "Escrow Agreement" form included in the Bid and Contract shall be executed and submitted to the City within 15 calendar days after notification of award of the bid. If the "Escrow Agreement" form is not submitted as noted herein before, the Contractor shall forfeit such rights to the use of the escrow account procedure. In order to have retained funds paid to an escrow agent, the Contractor, the escrow agent and the surety shall execute an "Escrow Agreement" form and submit same to the City for approval. The Contractor's escrow agent shall be a trust company, bank or savings and loan institution with its principal office located in the Commonwealth of Virginia. The "Escrow Agreement" form shall contain the complete address of the escrow agent and surety, and the executed "Escrow Agreement" will be authority for the City to make payment of retained funds to the escrow agent. After approving the agreement, the City will pay to the escrow agent the funds retained as provided herein except that funds retained for lack of progress or other deficiencies on the part of the Contractor will not be paid to the escrow agent. The escrow agent may, in accordance with the stipulations contained in the "Escrow Agreement", invest the funds paid into the escrow account and pay earnings on such investments to the Contractor or release the funds to the Contractor provided such funds are fully secured by approved securities.

Retained funds invested and securities held as collateral for retainage may be released only as and when directed by the City. When the final estimate is released for voucher, the City will direct the escrow agent to settle the escrow account by paying the Contractor or the City monies due them as determined by the City. The City reserves the right to recall retained funds and to release same to the surety upon receipt of written request from the Contractor or in the event of default.

This section shall be applicable only to contracts for \$200,000.00, or more, for the construction of highways, roads, streets, bridges, parking lots, demolition, clearing, grading, excavating, paving, pile driving, miscellaneous drainage structures, and the installation of water, gas, sewer lines, and pumping stations.

This section shall not apply to contracts for construction for railroads, public transit systems, runways, dams, foundations, installation or maintenance of power systems for the generation and primary and secondary distribution of electric current ahead of the customer's meter, the installation or maintenance of telephone, telegraph, or signal systems for public utilities and the construction or maintenance of solid waste or recycling facilities and treatment plants.

If this contract includes payment of interest on retained funds, the contractor, exclusive of reasonable circumstances beyond the control of the contractor stated in the contract, shall pay the specified penalty for each day exceeding the completion date stated in the contract.

Any subcontract for such public project, which provides for similar progress payments shall be subject to the provisions of this section.

To The City Manager
City of Newport News
Newport News, Virginia

Dear Sir:

In submitting this bid, the undersigned declares that he is, or they are, the only person, or persons, interested in said bid, that it is made without any connection with any person making another bid for the same contract; that the bid is in all respects fair and without collusion, fraud or mental reservation; and that no official of the City, or any person in the employ of the City, is directly or indirectly, interested in said bid, or in the supplies or work in which it relates, or on any portion of the profits thereof.

The undersigned also declares that he had, or they have, examined all the specifications, specifically including the Standard Specifications, August 1, 1983, as amended, form of contract, and that he has, or they have, personally inspected the actual location of the work together with the local sources of supply and understands that in signing this bid, he, or they, waive all right to plead a misunderstanding regarding the same.

The undersigned further understands and agrees that he is, or they are, to furnish and provide for the respective item price bid, all necessary materials, machinery, implements, tools, labor, service, et cetera, and to do, and perform all the work necessary under the aforesaid conditions to complete the improvements aforementioned in accordance with the specifications for said improvements which specifications, it is agreed, are a part of this bid, and to accept in full compensation therefore, the amount of the summation of the products of the actual quantities, as finally determined, multiplied by the unit price bid. For the purpose of award, however, the summation of the products of the approximate quantities herein stated, multiplied by the unit price, shall be considered the total bid.

The undersigned further agrees to accept the aforesaid unit prices in compensation for any additions or deductions caused by variations in quantities due to more accurate measurements.

BID**ROBINHOOD LANE STREAM RESTORATION PROJECT**

ITEM	DESCRIPTION	APP. QTY	UNIT	UNIT BID	UNIT TOTAL
1	Mobilization/ Demobilization	1	LS		
2	Site Preparation				
	Layout and Staking	1	LS		
	Clearing and Grubbing (limits of grading)	0.43	AC		
	Selective Clearing	0.34	AC		
	Orange Safety Fence (study limits)	1600	LF		
	Subtotal				
3	Earthworks – quantities include CY (cubic yard) not TCY (truck cubic yard)				
	Channel Excavation/Cut to Haul and Dispose	673	CY		
	Channel Fill (Imported)	755	CY		
	Topsoil (Strip, Stockpile, respread)	520	CY		
	Shaping and fine Grading	670	LF		
	Subtotal				
4	Structures - Instream Structures (including anchoring and geotextile)				
	Cross-Vanes (Imbricate Boulders)	2	EA		
	Rock Step (Imbricate Boulders)	11	EA		
	Buried Rock or Log Sill	9	EA		
	Rounded River Cobble (3”– 6”)	21	CY		
	Rounded River Cobble (6”- 10”)	203	CY		
	Channel Plugs (Clay, includes toe protection)	3	EA		
	Rock Toe Protection	422	LF		
	Soil Lifts (10” lift)	750	LF		
	(includes live branches, aggregate, matting, fill, staples)				
	Subtotal				
5	Erosion and Sediment Control				
	Construction Entrance (includes coordination)	1	EA		
	Temporary Silt Fence	160	LF		

ROBINHOOD LANE STREAM RESTORATION PROJECT

	Coir 700 Matting	1177	SY		
	EC-2 Matting (Biodegradable Matting)	1314	SY		
	Pump Around Operation – (includes outlet protection and check dam)	1	LS		
	Temporary Construction Road Stabilization	1000	LS		
	Temporary Stream Crossing	1	LS		
	Subtotal				
6	Soil and Seedbed Preparation				
	Fertilizer (10-10-10)	1	LS		
	Soil /Fertilizer/ Seed Incorporation	0.77	AC		
	Agro-form Tablets	184	EA		
	Subtotal				
7	Stabilization Seeding				
	General Stabilization Seed Mix	0.59	AC		
	Channel Stabilization Seed Mix	0.18	AC		
	Subtotal				
8	Planting – cost include at least 1 year warranty				
	Total Tubeling Plants	128	EA		
	Total 1 Gallon Container Plants	30	EA		
	Total 1” Caliper Plants	4	EA		
	Live Stakes – 3’ Live Stake	882	EA		
	Tree Mats	162	EA		
	Subtotal				
9	Additional Items				
	Final As-Built Survey	1	EA		
	42” RCP	24	LF		
	18” RCP	17	LF		
	Drop Inlet (DI-7)	2	EA		
	Riprap (Enhanced Outfall Protection)	86	SY		
	Geotechnical Field Supervision and Testing*	1	LS		
	Access Path and Coordination	100	LF		
	Subtotal				
	TOTAL BID				

* On site geotechnical engineer coordination required for replacement of compacted fills to be included in contractor bid.

LIMITS OF PAYMENT ROBINHOOD LANE STREAM RESTORATION PROJECT

GENERAL

Unless otherwise specified, the Contractor shall be responsible for furnishing all labor, materials, hardware, equipment, services and incidentals as may be required to complete each item of work as specified on the plans or included in these specifications. All work shall be in conformance with the Technical Specifications for Restoration Practices prepared by Williamsburg Environmental Group, the latest editions of the City of Newport News' Standard Specifications and Design Criteria Manual, the Virginia Department of Transportation Road and Bridge Specifications, the Virginia Erosion and Sediment Control Handbook, and the Virginia Stream Restoration and Stabilization Best Management Practices Guide.

No measurement and payment will be made for additional quantities of any item as a result of native material becoming unsuitable due to acts of the Contractor by error or intent beyond the limits set forth on the plans and in the specifications or as directed by the Engineer.

The Contractor shall; initially by letter and then verbally, keep residents and business owners situated immediately adjacent to the project advised of the re-routing of traffic, driveway closures and/or any other inconveniences that would alter the access to their property. Driveway entrances shall be accessible at all times during the project. No weekend or night work will be permitted without City approval that has been garnered at least 72 hours in advance. Furthermore, the project will be subject to the requirements of the **Special Note** contained in the Conditions and Instructions of this document.

ROBINHOOD LANE STREAM RESTORATION PROJECT

On acceptance of this bid for said work, the undersigned does, or do hereby bind himself, or themselves, to enter into a written contract within ten (10) days of award, with the said Authority, and to perform said work for the consideration above named.

The bidder agrees to complete the entire work within **ninety (90) calendar days** from date of Notice to Proceed.

State Contractor Registration Number: _____

Business Name: _____

Address: _____

(Street; P.O. Box not acceptable)

(City, State and Zip Code)

By: _____ Date: _____

By: _____ Date: _____

ADDENDA

No.

ACKNOWLEDGED

Initial

IF CONTRACTOR DESIRES TO MAKE ANY ALTERNATIVE BID ON DIFFERENT TYPE OF CONSTRUCTION THAN ONE CALLED FOR, IT SHALL BE ENCLOSED ON A SEPARATE SHEET.

Bid Bond # _____

BID BOND

KNOW ALL MEN BY THOSE PRESENT: That we, the undersigned:

_____ as Principal, and _____

as Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia, in the just and full sum of five percent (5%) of the maximum amount of accompanying bid for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

WHEREAS, the Principal has submitted a bid, dated _____,
20____, **ROBINHOOD LANE STREAM RESTORATION PROJECT, IFB#2011-4080-2005.**

NOW, THEREFORE, if the Oblige shall accept the bid of the Principal and the Principal shall enter into a contract with the Oblige in accordance with such bid and give bond with good and sufficient surety for the faithful performance of such contract, or in the event of the failure of the Principal to enter into such contract and give such bond, if the Principal shall pay to the Oblige the difference, not to exceed the penalty hereof, between the amount specified in said bid and the amount for which the Oblige may legally contract with another party to perform the work covered by said bid, if the latter amount be in excess of the former, then this obligation shall be null and void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused their corporation names and seals, respectively, to be hereunto subscribed and affixed by their officers in that behalf duly authorized this _____ day of _____.

CONTRACTOR

BY _____
SEAL

ATTEST:

SURETY

BY _____
SEAL

ATTEST:

Resident Virginia Agent of Surety
Submit with Power of Attorney

Section B

INSURANCE REQUIREMENTS

Insurance: The bidder/offeror shall maintain adequate liability insurance, which shall protect and save harmless the City of Newport News, Virginia, its officials and employees, from all suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and from all claims arising under the workers' compensation laws.

The Commonwealth of Virginia requires construction contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work on behalf of the City. Evidence of coverage needs to be provided prior to commencement of work.

Prior to commencement of services, the bidder/offeror shall furnish the City with the following separate endorsements, and a certificate of insurance showing all required insurance coverage with companies licensed to do business in Virginia. A separate endorsement to the general liability policy shall be provided in which the City is designated as an "Additional Insured." In addition, a separate endorsement to the workers' compensation policy shall be provided in which the City is designated as an "Alternate Employer."

Sample forms CG 20 10 (designating the City as Additional Insured for liability claims) and WC 00 03 01(2005 ed.) (designating the City as an Alternate Employer for workers' compensation claims, pursuant to Section 65.2-302(A) of the Code of Virginia, 1950, as amended); and the Commonwealth's form for Worker's Compensation Certificate of Coverage are attached.

Certain providers of professional services (including but not limited to architects and engineers) shall also furnish a certificate of insurance showing professional liability insurance with companies licensed to do business in Virginia, prior to the commencement of services.

The bidder/offeror shall have ten (10) days from notice of intent to award to provide insurance documentation. Failure to provide the Certificate and forms within this period may be cause for the City to award a contract to the next responsive bidder/offeror, and hold the original contractor liable for excess costs. All insurers providing the above coverage shall give the City thirty (30) days advance written notice in the event of any non-renewal or cancellation of such insurance (10 days notice for non-payment of premium). As confirmation thereof, the City must be furnished either a policy endorsement specifically providing for such notice (copies of three sample endorsements attached), or a copy of the policy language that gives the City such assurance, or a statement on the insurance agent's, broker's, or insurer's letterhead that the City shall be given such notice.

<u>TYPE INSURANCE COVERAGE</u>	<u>LIMITS</u>
1. Workers' Compensation Employer's Liability Bodily Injury by Accident Bodily Injury by Disease Bodily Injury by Disease	Statutory \$100,000.00 each accident \$100,000.00 each employee \$500,000.00 policy limit
2. Comprehensive General Liability	\$1,000,000.00 combined single limit each occurrence \$2,000,000.00 aggregate
3. Automobile Liability (Owned, hired, leased, and borrowed Vehicles)	\$100,000.00 combined single limit each occurrence
4. Professional Liability (if applicable)	\$200,000.00 combined single limit each occurrence \$200,000.00 aggregate

This insurance coverage supersedes any conflicting insurance coverage and limits in the Department of Engineering 1983 Standard Specifications.

POLICY NUMBER: _____ COMMERCIAL GENERAL LIABILITY
CG 20 10 10 93

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS (FORM B)**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
SCHEDULE

Name of Person or Organizations:

**City of Newport News
Purchasing Department
2400 Washington Ave
Newport News, VA 23607**

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement).

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for this insured.

CG 20 10 10 93

Endorsement**Alternate Employer****WC 00 03 01****Policy Amendment**

If the following information is not complete, refer to the appropriate information page attached to the policy.

INSURED	POLICY NO.	SEQ. NO.
PRODUCER	EFFECTIVE DATE	

	SCHEDULE	
Alternate Employer	Address	State of Special or Temporary Employment
City of Newport News c/o Purchasing Department 2400 Washington Avenue Newport News, Virginia		Virginia

This endorsement applies only with respect to bodily injury to your employees while in the course of special or temporary employment by the alternate employer in the state named in the Schedule. Part One (Workers Compensation Insurance) and Part Two (Employers Liability Insurance) will apply as though the alternate employer is insured.

Under Part One (Workers Compensation Insurance), we will reimburse the alternate employer for the benefits required by the workers compensation law if we are not permitted to pay the benefits directly to the person entitled to them.

The insurance afforded by this endorsement is not intended to satisfy the alternate employers duty to secure its obligations under the workers compensation law. We will not file evidence of this insurance on behalf of the alternate employer with any government agency.

We will not ask any other insurer of the alternate employer to share with us a loss covered by this endorsement.

Premiums will be charged for your employees while in the course of special or temporary employment by the alternate employer.

Part Four (Your Duties If Injury Occurs) applies to you and the alternate employer. The alternate employer will recognize our right to defend under Parts One and Two and our right to inspect under Part Six.

WORKER'S COMPENSATION

CERTIFICATE OF COVERAGE

Section 11-46.3, Code of Virginia, requires construction contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work on behalf of the Commonwealth of Virginia departments, institutions or agencies. This same requirement applies for work being performed on behalf of local governments.

Evidence of coverage needs to be provided prior to commencement of work.

This form is to be returned to the organization contracting the work.

The undersigned organization stipulates that it either:

A. Has worker's compensation insurance _____ Yes

Insurance Company: _____

Policy Expiration Date: _____

B. Is self-insured for workers' compensation _____ Yes

Title of Construction Contract: Robinhood Lane Stream Restoration Project, IFB#2011-4080-2005

Contract Number: _____

Signed By: _____

Title: _____

Firm Name: _____

Address: _____

NOTICE ENDORSEMENT

Policy Number:

IL 60 05 VA 01 10

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**MATERIAL COVERAGE CHANGE OR CANCELLATION
NOTIFICATION – CERTIFIED MAIL**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

COMMERCIAL INLAND MARINE COVERAGE PART

COMMERCIAL PROPERTY COVERAGE PART

CRIME AND FIDELITY COVERAGE PART

LIQUOR LIABILITY COVERAGE PART

OWNERS AND CONTRACTOR PROTECTIVE LIABILITY PART

RAILROAD PROTECTIVE LIABILITY COVERAGE PART

SCHEDULE

Name of additional Insured Person(s) Or Organization(s) and mailing address:	Location And Description Of Project
City of Newport News c/o Purchasing Department 2400 Washington Avenue Newport News, VA 23607	

We will not cancel or reduce coverage under this policy without providing at least 30 days notice of our intent to do so. Notice of such cancellation or reduction of coverage will be provided by certified mail, return receipt requested, to the Additional insured in the schedule above.

IL 60 05 VA 01 10

Page 1 of 1

NOTICE ENDORSEMENT

Policy Number:

WC 99 00 10 01 10A

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**MATERIAL COVERAGE CHANGE OR CANCELLATION
NOTIFICATION – CERTIFIED MAIL**

This endorsement modifies insurance provided under the following:
WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY

SCHEDULE

Name of additional Insured Person(s) Or Organization(s) and mailing address:	Location And Description Of Project
City of Newport News c/o Purchasing Department 2400 Washington Avenue Newport News, VA 23607	

We will not cancel or reduce coverage under this policy without providing at least 30 days notice of our intent to do so. Notice of such cancellation or reduction of coverage will be provided by certified mail, return receipt requested, to the Additional insured in the schedule above.

NOTICE ENDORSEMENT

Policy Number:

COMMERCIAL AUTO

CA 02 03 12 05

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

VIRGINIA CANCELLATION AND NONRENEWAL NOTICE TO DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

BUSINESS AUTO PHYSICAL DAMAGE COVERAGE FORM

GARAGE COVERAGE FORM

MOTOR CARRIER COVERAGE FORM

TRUCKERS COVERAGE FORM

SCHEDULE

1. Name: City of Newport News c/o Purchasing Department
2. Address: 2400 Washington Avenue Newport News, VA 23607
3. Number of days advance notice: 30
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.



City of Newport News

2400 Washington Avenue • Newport News, Virginia 23607

Office of the City Attorney

Phone (757) 926-8416 • Fax (757) 926-8549

City Attorney
STUART E. KATZ

Chief Deputy City Attorney
COLLINS L. OWENS, JR.

Deputy City Attorneys
DARLENE P. BRADBERRY
RICHARD D. CAPLAN
JOSEPH M. DuRANT
LYNN A. SUGG

Senior Assistant City Attorney
NICOLE M. MONTALTO

Assistant City Attorneys
PAMELA P. BATES
SHANNON M. MANNING
ROBERT E. PEALO

To Whom It May Concern:

Re: Notice of cancellation requirements for insurance coverage

Dear Sir or Madam:

In the wake of recent revisions to the Acord form, I have been receiving documentation from insurers that indicates that, since a statement regarding notice of cancellation is no longer included on the form, that the company cannot give any such assurance in the future. Many of the companies have indicated that they intend to strictly rely on the disclaimers in the form.

It is the City's position that a private company providing data reporting services for insurers has no standing or authority to alter legal provisions and contractual terms. Please note that the City does not agree with this industry position, and will not approve any proof of insurance that does not include the specific endorsements required under the contract. A simple notation of these endorsements on the Acord form will not be accepted.

Further the City will not accept proof of insurance that fails to provide for thirty (30) days notice of policy cancellation [ten (10) days for non -payment] when the City requires being named as an additional insured. This assurance may be provided by one of the following three methods:

1. A note on company letterhead that the City will receive such notice. This may be on the letterhead of either the agent, the broker, or the insurance company.
2. A separate endorsement specifying the notice as required, or
3. A copy of a policy provision regarding such notice.

In addition, this same assurance must be given when the City requires an Alternate Employer endorsement. No edition of an alternate employer endorsement that includes a provision that the statutory employer will receive no notice of cancellation will be accepted. A form including this provision appears to be contrary to Virginia Code § 65.2-804(B), which requires thirty (30) days notice of cancellation [ten (10) days for non -payment]. Virginia Code § 65.2-800 requires that an employer be insured, and paragraph C of that section equates an employer and a statutory employer for the purposes of that duty.

Page Two

Insurance forms required

In summary, the City will accept no proof of insurance that does not include in one of the forms indicated above an assurance that the City will receive thirty (30) days notice of cancellation [ten (10) days for non-payment]. Failure to provide the information could result in rejection of your insured's bid or offer to provide services to the City, or a rejection of the insured's request for City permits that require the City to be named as an additional insured.

Very Truly Yours,

/s/ Joseph M. DuRant

Joseph M. DuRant
Deputy City Attorney

Sample

CONTRACT

THIS AGREEMENT, made this ____ day of _____, 20____, between the City of Newport News, Virginia, hereinafter referred to and designated as "City" and/or _____, his, its or their successors, executors, administrators and assigns, hereinafter referred to and designated as "Contractor."

WHEREAS, the City of Newport News, Virginia, has accepted the sealed bid of the said contractor to furnish all the labor and equipment and to do and perform all the work necessary to complete the **ROBINHOOD LANE STREAM RESTORATION PROJECT, IFB#2011-4080-2005**, in the City of Newport News, Virginia, as shown on the plans and specifications hereto attached for the unit prices set forth in the said bid.

NOW THEREFORE, THIS AGREEMENT WITNESSETH: That in consideration of the payments to be made by the City of Newport News, Virginia, as hereinafter set out, the Contractor covenants and agrees with said City of Newport News, Virginia to furnish all labor, tools and equipment and to do and perform in a good and workmanlike manner all and singular all the work in and about the **ROBINHOOD LANE STREAM RESTORATION PROJECT, IFB#2011-4080-2005**, in the City of Newport News, Virginia, in strict accordance with all documents identified below which are incorporated and made a part hereof as fully and completely as if the same were herein, in words and figures, at length set forth:

Invitation for Bid.....	1 Page
Table of Contents	1 Page
Conditions and Instructions	16 Pages
Reference for Bidders	1 Page
Instructions to Bidders/Offertory	2 Pages
Notice to Contractors	1 Page
Escrow Option	1 Page
Interest on Retainage.....	1 Page
Bid.....	5 Pages
Bid Bond	2 Pages
Insurance Endorsements	9 Pages
Contract.....	6 Pages
Performance Bond	3 Pages
Labor and Material Payment Bond	4 Pages
Escrow Agreement.....	5 Pages
Special Traffic Conditions	2 Pages
Project Sign.....	2 Pages
Technical Specifications for Restoration Practices.....	29 Pages
Standard Specifications, August 1, 1983, as amended	260 Pages

The Contractor agrees to commence work under this contract immediately upon the written order of the owner and to diligently prosecute the same and to complete the same **within Ninety (90) calendar days from Notice to Proceed.**

CONTRACT
ROBINHOOD LANE STREAM RESTORATION PROJECT

ITEM	DESCRIPTION	APP. QTY	UNIT	UNIT BID	UNIT TOTAL
1	Mobilization/ Demobilization	1	LS		
2	Site Preparation				
	Layout and Staking	1	LS		
	Clearing and Grubbing (limits of grading)	0.43	AC		
	Selective Clearing	0.34	AC		
	Orange Safety Fence (study limits)	1600	LF		
	Subtotal				
3	Earthworks –quantities include CY (cubic yard) not TCY (truck cubic yard)				
	Channel Excavation/Cut to Haul and Dispose	673	CY		
	Channel Fill (Imported)	755	CY		
	Topsoil (Strip, Stockpile, respread)	520	CY		
	Shaping and fine Grading	670	LF		
	Subtotal				
4	Structures - Instream Structures (including anchoring and geotextile)				
	Cross-Vanes (Imbricate Boulders)	2	EA		
	Rock Step (Imbricate Boulders)	11	EA		
	Buried Rock or Log Sill	9	EA		
	Rounded River Cobble (3"– 6")	21	CY		
	Rounded River Cobble (6"- 10")	203	CY		
	Channel Plugs (Clay, includes toe protection)	3	EA		
	Rock Toe Protection	422	LF		
	Soil Lifts (10" lift)	750	LF		
	(includes live branches, aggregate, matting, fill, staples)				
	Subtotal				
5	Erosion and Sediment Control				
	Construction Entrance (includes coordination)	1	EA		
	Temporary Silt Fence	160	LF		

	Coir 700 Matting	1177	SY		
	EC-2 Matting (Biodegradable Matting)	1314	SY		
	Pump Around Operation – (includes outlet protection and check dam)	1	LS		
	Temporary Construction Road Stabilization	1000	LS		
	Temporary Stream Crossing	1	LS		
	Subtotal				
6	Soil and Seedbed Preparation				
	Fertilizer (10-10-10)	1	LS		
	Soil /Fertilizer/ Seed Incorporation	0.77	AC		
	Agro-form Tablets	184	EA		
	Subtotal				
7	Stabilization Seeding				
	General Stabilization Seed Mix	0.59	AC		
	Channel Stabilization Seed Mix	0.18	AC		
	Subtotal				
8	Planting – cost include at least 1 year warranty				
	Total Tubeling Plants	128	EA		
	Total 1 Gallon Container Plants	30	EA		
	Total 1” Caliper Plants	4	EA		
	Live Stakes – 3’ Live Stake	882	EA		
	Tree Mats	162	EA		
	Subtotal				
9	Additional Items				
	Final As-Built Survey	1	EA		
	42” RCP	24	LF		
	18” RCP	17	LF		
	Drop Inlet (DI-7)	2	EA		
	Riprap (Enhanced Outfall Protection)	86	SY		
	Geotechnical Field Supervision and Testing*	1	LS		
	Access Path and Coordination	100	LF		
	Subtotal				
	TOTAL BID				

* On site geotechnical engineer coordination required for replacement of compacted fills to be included in contractor bid.

LIMITS OF PAYMENT

ROBINHOOD LANE STREAM RESTORATION PROJECT

GENERAL

Unless otherwise specified, the Contractor shall be responsible for furnishing all labor, materials, hardware, equipment, services and incidentals as may be required to complete each item of work as specified on the plans or included in these specifications. All work shall be in conformance with the Technical Specification for Restoration Practices prepared by Williamsburg Environmental Group, the latest editions of the City of Newport News' Standard Specifications and Design Criteria Manual, the Virginia Department of Transportation Road and Bridge Specifications, the Virginia Erosion and Sediment Control Handbook, and the Virginia Stream Restoration and Stabilization Best Management Practices Guide.

No measurement and payment will be made for additional quantities of any item as a result of native material becoming unsuitable due to acts of the Contractor by error or intent beyond the limits set forth on the plans and in the specifications or as directed by the Engineer.

The Contractor shall; initially by letter and then verbally, keep residents and business owners situated immediately adjacent to the project advised of the re-routing of traffic, driveway closures and/or any other inconveniences that would alter the access to their property. Driveway entrances shall be accessible at all times during the project. No weekend or night work will be permitted without City approval that has been garnered at least 72 hours in advance. Furthermore, the project will be subject to the requirements of the **Special Note** contained in the Conditions and Instructions of this document.

BY

TITLE _____

Seal Here:

ATTEST: _____

TITLE: _____

(Officer or Corporation)

CITY OF NEWPORT NEWS, VIRGINIA

BY _____

Seal Here:

ATTEST: _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned _____, as Principal, and _____, as Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia as Oblige, in the amount _____ of _____ dollars, (_____) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

WHEREAS, the said _____ did, on the _____ day of _____, 20____, enter into a contract with the City of Newport News, Virginia for the **ROBINHOOD LANE STREAM RESTORATION PROJECT, IFB#2011-4080-2005**, which said contract is by reference made a part hereof, is hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall in all respects promptly and faithfully comply with and fulfill all the terms and conditions of said contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any change, alteration or addition to the terms of the Contract or extension of time made by the Owner.

Whenever principal shall be, and declared by Oblige to be in default under the Contract, the Surety may promptly remedy the default, or shall promptly

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Oblige elects, upon determination by the Oblige and Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Oblige, and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the

Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph, shall mean the total amount payable by the Oblige to principal under the Contract and any amendments thereto, less the amount properly paid by Oblige to principal.

It is hereby expressly further understood and agreed that this Bond is also given and made against defective material and workmanship in the said work covered by the said Contract, provided, however, that no suit, action or proceeding, by reason of any defect whatever, shall be brought upon this Bond after one (1) year following (i) completion of the contract, including the expiration of all warranties and guarantees, or (ii) discovery of the defect or breach of warranty, if the action be for such.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Oblige named herein or the heirs, executors, administrators or successors of Oblige.

SIGNED AND SEALED this ____ day of _____, 20____.

PRINCIPAL

BY _____

ATTEST:

SURETY

BY _____

ATTORNEY-IN-FACT

COUNTERSIGNED:

Resident Virginia Agent of Surety
(if original Agent is non-resident)

Submit with Power of Attorney

APPROVED AS
TO FORM

City Attorney

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, _____
_____, as Principal, and
_____, as Surety,
acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia as Oblige in the
amount of _____ Dollars (_____) for the payment of which,
well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors and assigns.

WHEREAS, the said _____ did, on the ____ day of
_____, 20____, enter into a contract with the City of Newport News, Virginia, for the
ROBINHOOD LANE STREAM RESTORATION PROJECT, IFB#2011-4080-2005, which
said contract is by reference made a part hereof, as fully and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall
promptly make payment to all claimants as hereinafter defined, for all labor and material used or
reasonably required for use in the performance of the Contract, then this obligation shall be void;
otherwise it shall remain in full force and effect, subject, however to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a
subcontractor of the Principal for labor, material, or both, used or reasonably required
for use in the performance of the Contract, labor and material being construed to also
include that part of water, gas, power, light, heat, oil, gasoline, telephone service or
rental of equipment directly applicable to the Contract.
2. The above-named Principal and Surety hereby jointly and severally agree with the
City that every claimant as herein defined, who has not been paid in full before

the expiration of a period ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for such sum or sums as may be justly due claimant, and have execution thereon. The City shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

A. Unless claimant, other than one having a direct contract with the Principal, shall have given written notice of the following: The Principal, the City, and the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or for whom the work or labor was done or performed.

Such notice shall be served by mailing the same by registered or certified mail, postage prepaid, in an envelope addressed to the Principal, City and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

B. After the expiration of one (1) year following the date on which Principal ceased work on said Contract, it being understood, however, that if any limitation embodied in this Bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

- C. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.
- 4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

SIGNED AND SEALED this _____ day of _____, 20_____.

Contractor

BY _____

ATTEST:

Surety

BY _____

ATTORNEY-IN-FACT

Resident Virginia Agent of Surety
(if original agent is non-resident)

Submit with Power of Attorney

APPROVED AS
TO FORM

City Attorney

**CITY OF NEWPORT NEWS
CONSTRUCTION CONTRACT
ESCROW AGREEMENT**

THIS AGREEMENT, made and entered into this ____ day of _____, 20____, by,
between and among the City of Newport News (City), _____
_____(Contractor),
_____(Name of Bank),
_____(Address of Bank), a trust
company, bank, or savings and loan institution with its principal office located in the
Commonwealth (hereinafter referred to collectively as "Bank") and _____
_____ ("Surety") provides:

I.

The City and the Contractor have entered into a contract with respect to: **ROBINHOOD LANE STREAM RESTORATION PROJECT, IFB#2011-4080-2005**, ("the contract"). This Agreement is pursuant to, but in no way amends or modifies the contract. Payments made hereunder or the release of funds from escrow shall not be deemed approval or acceptance of performance by the Contractor.

II.

In order to assure full and satisfactory performance by the Contractor of its obligations under the contract, the City is required thereby to retain certain amounts otherwise due the Contractor. The Contractor has, with the approval of the City, elected to have these retained amounts held in escrow by the Bank. This agreement sets forth the terms of the escrow. The Bank shall not be deemed a party to, bound by, or required to inquire into the terms of, the contract or any other instrument or agreement between the City and the Contractor.

III.

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

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

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

IV.

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

V.

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

1. United States Treasury Bonds, United States Treasury Notes, United States Treasury Certificates of Indebtedness or United States Treasury Bills,
2. Bonds, notes and other evidences of indebtedness unconditionally guaranteed as to the payment of principal and interest by the United States,
3. Bonds or notes of the Commonwealth of Virginia,
4. Bonds of any political subdivision of the Commonwealth of Virginia, if such bonds carried, at the time of purchase by the Bank or deposit by the Contractor, a Standard and Poor's or Moody's Investors Service rating of at least "A", and
5. Certificates of deposit issued by commercial banks located within the Commonwealth, including, but not limited to, those insured by the Bank and its affiliates.
6. Any bonds, notes, or other evidences of indebtedness listed in Sections (1) through (3) may be purchased pursuant to a repurchase agreement with a bank, within or without the Commonwealth of Virginia having a combined capital, surplus and undivided profit of not less than \$25,000,000, provided the obligation of the Bank to repurchase is within the time limitations established for investments as set forth herein. The repurchase

agreement shall be considered a purchase of such securities even if title, and/or possession of such securities is not transferred to the Escrow Agent, so long as the repurchase obligation of the Bank is collateralized by the securities themselves, and the securities have on the date of the repurchase agreement a fair market value equal to at least 100% of the amount of the repurchase obligation of the Bank, and the securities are held by a third party, and segregated from other securities owned by the Bank.

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

VI.

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

Upon receipt of a direction signed by the City Manager, Director of Finance, Director of Engineering, or Director of Public Utilities, the Bank shall pay the principal of the fund, or any specified amount thereof, to the City. Such payment shall be made in cash as soon as is practicable after receipt of the direction.

Upon receipt of a direction signed by the City Manager, Director of Finance, Director of Engineering, or Director of Public Utilities, the Bank shall pay and deliver the principal of the fund, or any specified amount thereof, to the Contractor, in cash or in kind, as may be specified by the Contractor. Such payment and delivery shall be made as soon as is practicable after receipt of the direction.

VII.

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

VIII.

The net income earned and received upon the principal of the escrowed fund shall be paid over to the Contractor in quarterly or more frequent installments. Until so paid or applied to pay the

Bank's fee or any other costs of administration such income shall be deemed a part of the principal of the fund.

IX.

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

WITNESS the following signatures, all as of the day and year first above written.

CITY OF NEWPORT NEWS

BY _____
CITY MANAGER

ATTEST:

CITY CLERK

CONTRACTOR

BY _____
OFFICER, PARTNER OR OWNER

BANK

BY _____
PRESIDENT/VICE-PRESIDENT

SURETY

BY _____
ATTORNEY-IN-FACT

Section C

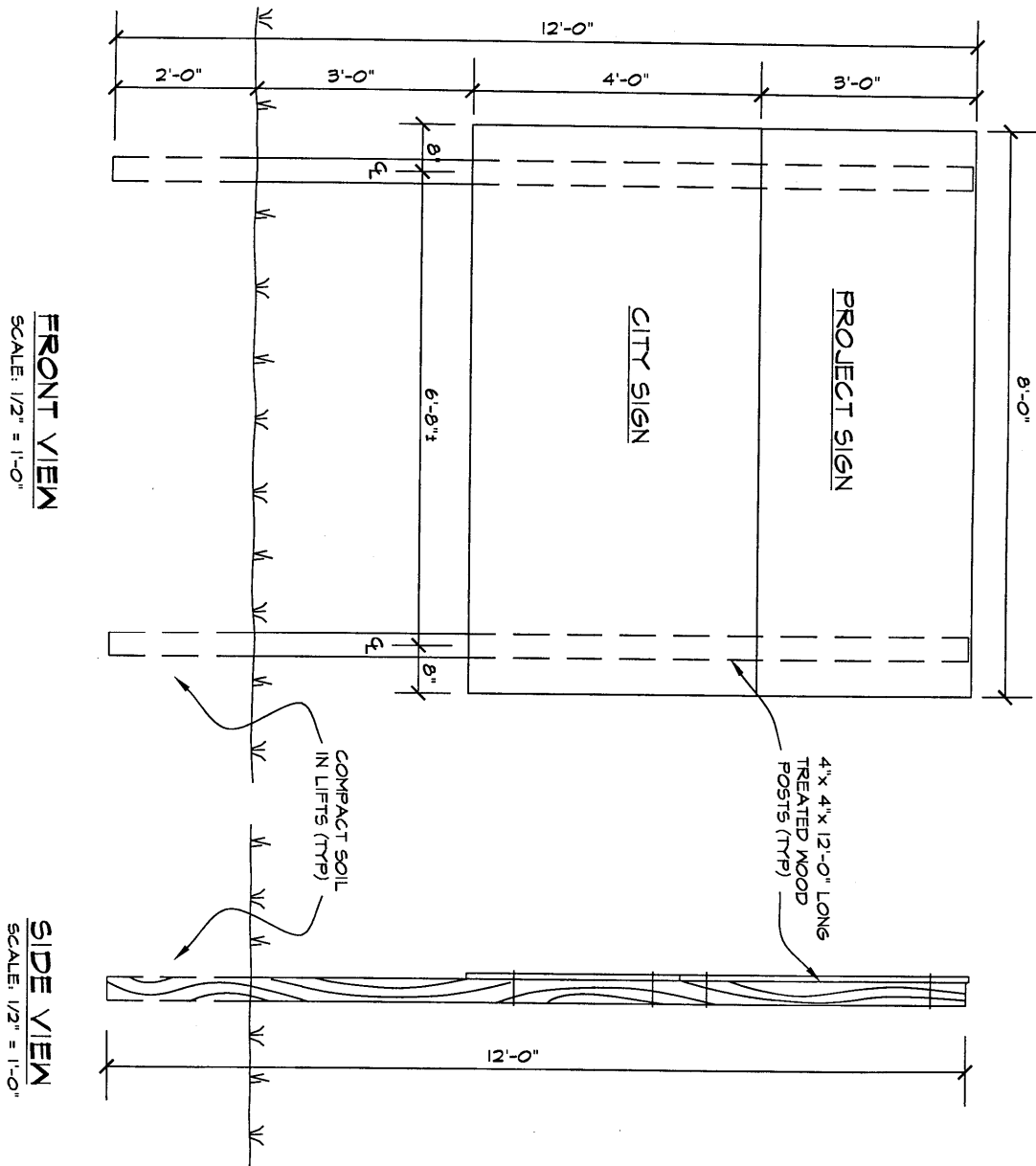
SPECIAL TRAFFIC CONDITIONS

The following traffic control requirements shall apply:

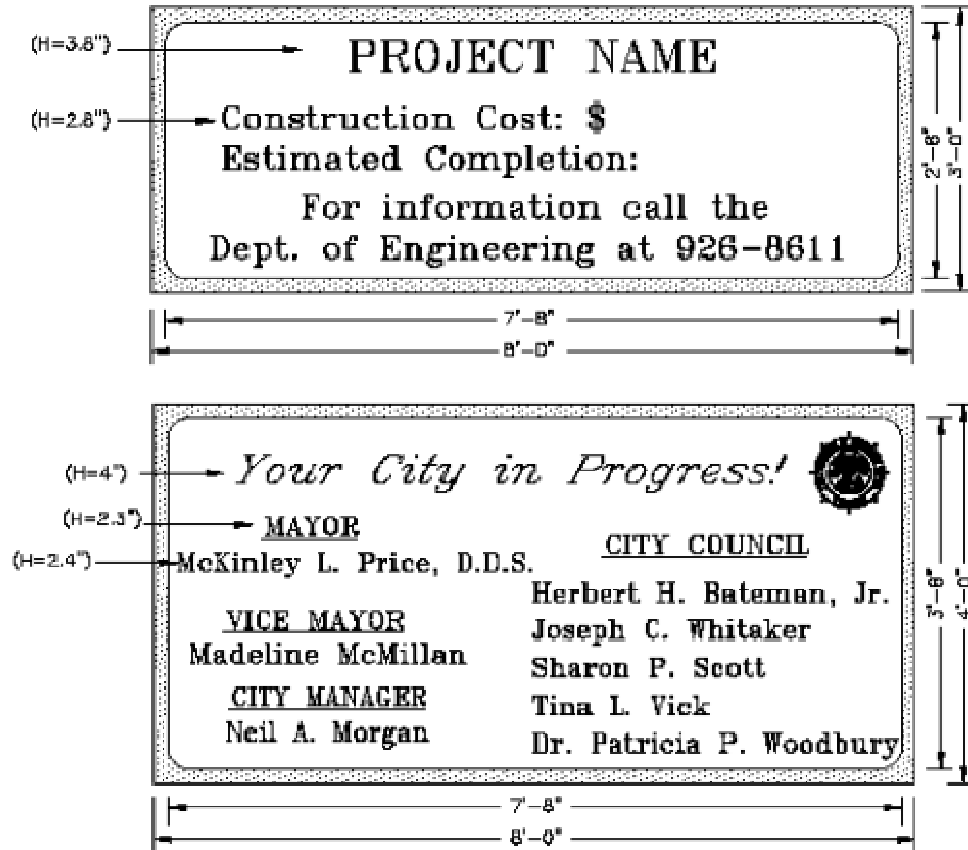
1. Section 1004.13 "Traffic Control" of our current Standard Specifications (as amended May 1, 1991) shall be applicable on this project. In addition, fluorescent prismatic lens sheeting signs (diamond grade) shall be used in work zones and other work zone improvements. The use of orange encapsulated lens sheeting for construction warning signs is no longer allowed.
2. The Virginia Work Area Protection Manual (dated January 2003) as well as the Manual on Uniform Traffic Control Devices, 2001 Millennium Edition, shall be used on this project.
3. If assistance from Traffic Operations for such items as "No Parking" signs, traffic signal information, or detector locations, etc. becomes necessary, the Contractor shall give at least forty-eight hours (weekdays) notice in advance. Contact Roger Hunt at 269-2452, weekdays, 7:00 A.M. to 4:00 P.M. for these services.
4. The Contractor shall control the stockpiling of materials and/or spoils so as not to prohibit access to residences or businesses. Lighted, reflectorized plastic drums shall also be provided around any and all materials and/or hazardous locations within the project limits and within the City's right-of-way.
5. Haul routes for spoil removal and/or needed materials (fill, asphalt, rip-rap, etc.) shall be requested in writing (including map) and shall be approved by the Engineer.
6. Local access to homes shall be maintained at all times.
7. The Contractor shall submit a traffic control plan to the Traffic Engineering Division for approval before work shall commence on the project. The City will reserve the right to require modifications to the traffic control plan/or traffic control material placement in the field as conditions change.
8. For streets where two-way traffic is reduced to a single travel lane, a flagging operation shall be required. Certified flaggers shall be properly attired as per the Virginia Work Area Protection Manual, and shall use "Stop/Slow" paddles to control traffic. Flags may be used as a supplemental hand-signaling device only.
9. Work Hour Restrictions: All lane closures in the aforementioned eleven (11) intersections area are restricted to between the hours of 8 am-3 pm and 6 pm-6 am. The closure of multiple lanes will require a review of special work hour restrictions for night or weekends only. Although care should be taken to minimize traffic disruption. A tentative schedule of lane closures and work hours shall be included with the traffic control plan as required in Note 7. Deviation from standard work hours and additional lane closures shall be approved by the

Department of Engineering prior to commencement. Notification to the Engineering Department – Traffic Division for any road closures must be done 24 hours prior to closure. “STOP” sign control (multi-way) shall be implemented during “downtime” to maintain orderly traffic flows.

10. Open manholes/valve boxes shall not be left unattended or remain open when work zone traffic control plan set-up is not in place. Work zones shall be clearly delineated and specific hazard areas are to be encircled with reflectorized plastic drums in lieu of Type I or Type II barricades which are not approved for use in the street.
11. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported into a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day or as often as directed by the Engineer.



CONSTRUCTION SIGN



NOTES:

1. 8'x4" OF 3/8" PLYWOOD, MOUNT ON 4"x4"x12' TREATED POSTS
2. FURNISHED BY CONTRACTOR
3. PAINTED LETTERING AS DIRECTED
4. HEIGHT OF LETTERING AS SHOWN

COLORS:

BORDER AND LETTERING...SHERWIN WILLIAMS
SW1182 MALACHITE GREEN
BACKGROUND.....SHERWIN WILLIAMS
SW1687 PINA COLADA

* CONSTRUCTION SIGN REQUIRED ON ALL PROJECTS UNLESS OTHERWISE NOTED.

ROBINHOOD LANE
STREAM RESTORATION CONSTRUCTION PLAN

TECHNICAL SPECIFICATIONS FOR RESTORATION PRACTICES

WEG PROJECT #4275

Submittal Date: 7/16/2010

TO ACCOMPANY PLAN SET DATED: 7/16/2010

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A. EROSION CONTROL BLANKET (COIR 700 MATTING)

1. DESCRIPTION

- 1.1. The practice consists of placing and securing the natural fiber matting on a prepared slope. Typically, a salvaged topsoil course is applied and the slope is seeded prior to placing the matting. In addition, trees and shrubs may be planted through the matting. Relevant specifications for this practice are contained in the *Virginia Stream Restoration and Stabilization Best Management Practices Guide (VSRS Guide)*, reference Practice 2.3: *Natural Fiber Matting*.

2. MATERIALS

2.1. Natural Fiber Matting

- 2.1.1. Natural Fiber Matting is available from many suppliers and in a number of different grades and combinations with other stabilization matting. Specifications for straw and jute matting are not given. Manufacturers can provide specifications and recommendations on these products based on shear stress and velocities. There are many types of erosion control matting made of coir fibers. Shear stress is the main factor dictating the type of erosion control matting used. The following example represents the *minimum* specifications for a single layer matting consisting of a machine-produced woven coir yarn matting:

Material: 100% coir fiber twine or yarn

Minimum Thickness: 0.30 inches

Elongation (Dry/Wet): 33%/36% (approximate)

Minimum weight: 11.8 Oz/SY

Maximum Open Area: 50%

Minimum Life Expectancy: 3 years

Tensile Strength: 504 x 480 lbs/ft

Water Velocity: 8 feet per second

Shear Stress: 3.2 psf

2.2. Staples

- 2.2.1. 0.125 inch diameter new steel wire formed into a “U” shape not less than 6 inches in length with a throat of 1 inch in width (or approved biodegradable alternative (preferred)). Wood stout stakes or organic staples are allowed and encouraged as substitute as directed by manufacturer/supplier.

2.3. Topsoil

- 2.3.1. Fertile, friable, loam soil, containing not less than 1.5% organic matter.

2.3.2. Reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than 1 inch, coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances.

2.3.3. Suitable for the germination of seeds and the support of vegetative growth.

2.4. Plant Materials

2.4.1. The selection of plant materials is based on climate, topography, soils, land use and planting season. Vegetation established should, at a minimum, comply with table 3.22-B STD and SPEC 3.22 Vegetative Streambank Stabilization of the Virginia Erosion and Sediment Control Handbook.

3. CONSTRUCTION

3.1. Site preparation is relatively easy, and may involve removal of trees and shrubs where specified on the design plans.

3.2. Bank grading may require the use of heavy equipment, and should be brought to final grade before applying matting. Finished slope shall be a smooth surface free from stones, clods or debris. Provide a minimum 6-inch deep course of topsoil and apply required seed (lightly raked into topsoil) to bank prior to installation of matting.

3.3. Natural Fiber matting should be stored in a secure area and protected from moisture.

3.4. For high vertical slopes, unroll matting from top of bank to toe of bank. For moderate to low vertical slopes unroll matting parallel with the face of the slope. Secure matting to bank with stakes and staples. Matting shall be in full contact with the prepared surface and free from tears, folds, holds or other inconsistencies in its final placement.

3.5. At the base of slopes, fiber matting shall be turned under and secured into the bank where it joins toe protection. Matting shall extend 2 feet beyond bank limits at the top of slopes and must be keyed into a 6-inch deep trench (minimum). Matting shall be stapled in place at the bottom of the trench at 1-foot maximum spacing and the trench shall be properly backfilled and tamped. Staples shall be placed at a minimum on two-foot centers, with 1-foot staple spacing at ends, overlaps, and key-in trenches.

4. MEASUREMENT AND PAYMENT

4.1. Natural fiber matting installed shall be measured and paid for at the Contract unit price per square yard (SY) of matting installed. Payment for natural fiber matting shall be in full compensation for furnishing and installing all materials, labor, and equipment, tools and incidentals necessary to complete the work.

END OF SECTION

B. EROSION CONTROL MATTING (EC-2)

1. DESCRIPTION

- 1.1. The practice consists of placing and securing erosion control matting (EC-2) on a prepared slope. Typically, a salvaged topsoil course is applied and the slope is seeded prior to placing the matting. In addition, trees and shrubs may be planted through the matting. EC-2 matting shall be applied to ancillary disturbed areas outside of the main conveyance channel, with slopes flatter than 3:1.

2. MATERIALS

2.1. EC-2 Matting (Biodegradable erosion control blanket)

- 2.1.1 See specifications for North American Green SC150BN Erosion Control Blanket provided herein. Alternates are acceptable provided they meet the specifications and are verified by the engineer.

2.2. Staples

- 2.2.1.0.125 inch diameter new steel wire formed into a “U” shape not less than 6 inches in length with a throat of 1 inch in width. Wood stout stakes or organic staples are allowed and encouraged as substitute as directed by manufacturer/supplier.

2.3. Topsoil

- 2.3.1. Fertile, friable, loam soil, containing not less than 1.5% organic matter.

- 2.3.2. Reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than 1 inch, coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances.

- 2.3.3. Suitable for the germination of seeds and the support of vegetative growth.

3. CONSTRUCTION

- 3.1. For high vertical slopes, unroll matting from top of bank to toe of bank. For moderate to low vertical slopes unroll matting parallel with the face of the slope. Secure matting to bank with stakes and staples.
- 3.2. At the base of slopes, fiber matting shall be turned under and secured into the bank where it joins toe protection.

4. MEASUREMENT AND PAYMENT

- 4.1. Matting installed shall be measured and paid for at the Contract unit price per square yard (SY) of matting installed. Payment for erosion control blankets and matting shall be in full compensation for furnishing and installing all materials, labor, and equipment, tools and incidentals necessary to complete the work.

END OF SECTION

C. BURIED LOG SILL

2.. DESCRIPTION

Log sills are grade control structures made of wood logs that provide a fixed bed elevation and long term grade control.

2.. MATERIALS

2.1. Logs

- 2.1.1 18-inch diameter or greater, rot-resistant logs (i.e. hardwoods) for footer and drop logs. Logs should be long enough to extend into the banks 3.5 feet beyond the bankfull position. Logs sill shall extend below design scour depth (3FT). If two logs are stacked (as dictated by size of logs to reach design scour depth), place flat to allow better stacking. (If necessary use two logs on the bottom to support the top log.)

2.2. Filter Fabric

- 2.2.1. For sealing the structure, filter fabric shall consist of a material meeting the requirement for filter fabric used with riprap as detailed in Table 3.19 D in section 3.19 of the *Virginia Erosion and Sediment Control Handbook*, Third Edition, 1992, page III-171.

2.3. Backfill and Clay Mixture

- 2.3.1. Backfill upstream of the filter fabric seal shall be placed and compacted (using a jumping jack or similar device) using a mixture of existing channel alluvium, and imported clay fill. Clay materials shall consist of material classified as SC, SM, or CL per the Unified Soil Classification System.

3. CONSTRUCTION

- 3.1. Inspect logs before they are placed. It is important that properly sized logs be installed properly to protect against structural failure.
- 3.2. Excavate a trench across the bottom of the stream bed and extend past channel edge 3.5 feet. The trench should be perpendicular to the streambank for the entire structure.
- 3.3. Extend the structure into the bank a minimum of 3.5 feet and armor upstream and downstream as needed for stability.

- 3.4. Seal the structure on the upstream side with geotextile fabric, backfilling with clay compacted in 8 inch lifts, and top dressed with cobble substrate enhancement.
- 3.5. Ensure no leakage / flow under or around the structure by properly grading, sealing, and compacting under and around the structure.
- 3.6 After installation, check proper function / flow path by observing flow over the structure. Repair as needed to ensure proper function.

4. MEASUREMENT AND PAYMENT

- 4.1. Log sills shall be measured and paid for at the Contract unit price for each (EA) structure installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of structures, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

D. BURIED ROCK SILLS

1. DESCRIPTION

Rock sills are grade control structures made of large rocks and/or boulders (Class II Rip Rap minimum) that provide a fixed bed elevation and long term grade control.

2.. MATERIALS

2.1. Rock

2.1.1 Rocks shall be relatively angular in shape, uniform in size, and have an intermediate axis greater than 2 feet.

2.2. Filter Fabric

2.2.1. For sealing the structure, filter fabric shall consist of a material meeting the requirement for filter fabric used with riprap as detailed in Table 3.19 D in section 3.19 of the *Virginia Erosion and Sediment Control Handbook*, Third Edition, 1992, page III-171. A granular filter may be substituted for or combined with filter fabric. See Standard and Specification 3.19: Riprap for granular filter material specifications.

2.3. Aggregate Backfill and Clay Mixture

2.3.1. Backfill upstream of the filter fabric seal shall be placed and compacted using a mixture of existing channel alluvium, and imported clay fill. Clay materials shall consist of material classified as SC, SM, or CL per the Unified Soil Classification System.

3. CONSTRUCTION

3.1. Inspect rocks/boulders before they are placed. It is important that properly sized rock be installed properly to protect against structural failure.

3.2. Excavate a trench across the bottom of the stream bed and lower bank area to accommodate the sill.

3.3. Place the bottom course of rock below the maximum scour depth. Ensure that the rocks extend into the banks 3.5 feet beyond the bankfull position.

3.4. Place filter fabric behind the rock sill and along the bottom of the stream bed. Key in filter fabric a minimum of one (1) foot at both ends. Cover filter fabric with salvaged alluvial channel bed material and clay backfill mixture.

3.5. Ensure no leakage / flow under or around the structure by properly grading, sealing, and compacting under and around the structure.

3.6. After installation, check proper function / flow path by observing flow over the structure. Repair as needed to ensure proper function.

4. MEASUREMENT AND PAYMENT

4.1. Rock sills shall be measured and paid for at the Contract unit price for each (EA) structure installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of structures, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

E. ROCK CROSS VANES

1. DESCRIPTION

- 1.1. A rock cross vane is a stone structure consisting of footer and vane rocks constructed in a way that provides grade control and reduces bank erosion. The vane is composed of a center section perpendicular to the streambank joined to two arms that extend into the streambank at the field determined Qcf height. The rock cross vane accumulates sediment behind the vane arms, directs flow over the cross vane, and creates a scour pool downstream of the structure. Relevant specifications for this practice are contained in the *Virginia Stream Restoration and Stabilization Best Management Practices Guide (VSRS Guide)*, reference Practice 3.1: Rock Cross Vanes.

2. MATERIALS

2.1. Rock

- 2.1.1 Rocks shall be relatively rectangular, angular in shape, uniform in size, and have an intermediate axis greater than 2 feet. Footer boulders shall be hand selected. Vane rocks shall be hand selected matching dimensions as specified on the plans. Relatively uniform, rectangular boulders and rock are preferred to rounded boulders.

2.2. Riprap

- 2.2.1. Riprap (CLII) per Standard and Specification 3.19: Riprap of the Virginia Erosion and Sediment Control Handbook for sill rocks, bank armoring, and toe protection.

2.3. Backfill and Clay Mixture

- 2.3.1. Backfill upstream of the filter fabric seal shall be placed and compacted (using a jumping jack or similar device) using a mixture of existing channel alluvium, and imported clay fill. Clay materials shall consist of material classified as SC, SM, or CL per the Unified Soil Classification System.

2.4. Filter Fabric

- 2.4.1. If used for sealing the structure, filter fabric shall consist of a material meeting the requirement for filter fabric used with riprap as detailed in Table 3.19 D in section 3.19 of the Virginia Erosion and Sediment Control Handbook Third Edition, 1992, page III-171.

3. CONSTRUCTION RECOMMENDATIONS

- 3.1. Placement of rock may require a track hoe with a hydraulic thumb.
- 3.2. Rock cross vanes must be sealed with filter fabric and compacted clay. This is especially true in sand, silt, and clay stream beds. Material passing through the structure can fill the scour pool. In addition, passing of bed material undermines one of the key benefits of the structure, which is the accumulation of sediment behind the rock cross vane.
- 3.3. Ensure no leakage/flow under or around the structure by properly grading, sealing, and compacting under and around the structure.
- 3.4. After installation, check proper function/flow path by observing flow over structure. Repair as needed to ensure proper function.

4. PLACEMENT, ORIENTATION AND INSTALLATION

- 4.1. Excavate a trench along the bottom of the stream bed and to the Qcf elevation in the streambank for the center section and arms of the cross vane. The trench should be perpendicular to the streambank in the middle 1/3 Qcf width for the center section and excavated to the design angle in the 1/3 Qcf width for each arm. The vane arms should be properly tied into the bank at the field determined Qcf elevation. Excavate a Qcf bench if the top of bank is not at the Qcf elevation. The trench shall be excavated to the minimum footer rock depth.
- 4.2. Place one or two courses of footer rocks to the minimum footer rock depth (3.5 FT).
- 4.3. Place vane rocks on top of footer rocks so that each half of the vane rock rests on one half of a footer rock below. Offset the vane rock in the upstream direction and place so they slope slightly against the flow direction. A portion of the vane rocks should be below the stream bed invert with a portion above the invert to the specified protrusion height.
- 4.4. Extend the structure into the bank a minimum of 3.5 feet at the Qcf elevation, and armor with riprap upstream and downstream as needed for stability.
- 4.5. At the Qcf elevation, create a sill of placed rock perpendicular to the streambank extending away from the end of the vane arm. Construct the sill per PRACTICE 4.5: Cut-Off Sills and Linear Deflectors contained in the *Virginia Stream Restoration and Stabilization Best Management Practices Guide (VSRS Guide)*. The rock should be smaller than the vane and footer rocks but large enough to resist displacement during high flow events.
- 4.6. Seal the structure on the upstream side for streams with a high proportion of clay material using filter fabric and alluvial substrate/clay mixture.

- 4.7. Vane arms should intersect the bank at an angle between 20 and 30 degrees. The angle is measured upstream from the tangent line where the vane intercepts the bank.
- 4.8. Vane arm slopes range from 2-15 percent. The center rock is flat (no slope). When designing cross vanes in larger systems, a 2-7 percent slope can result in excessive vane arm lengths.
- 4.9. Specify elevation and offset values for both ends of the vane arms. This ensures exact placement of the structure by the contractor.
- 4.10. Always use at least two vane rocks for the middle 1/3 of the structure. Streams have a tendency to erode around a single vane rock in the middle of the structure.
- 4.11. Excavate the scour pool to the design depth.
- 4.12. Clean-up
 - 4.12.1 Upon completion of the work, reshape slopes and stream bottom to specified elevations.
 - 4.12.2. Remove unsuitable and surplus rock, gravel tailings and excavated materials to fill areas or approved off-site locations.

5. FOOTER BOULDERS

- 5.1. Footer boulders shall be installed at a minimum of one (1) to two (2) footers per every two (2) vane boulders (see approximate dimensioning/spacing on plans).
- 5.2. Footers shall be installed in pre-excavated trenches and shall be completely submerged.
- 5.3. Place footer slightly downstream of top rock prior to anchoring to prevent the structure from sinking into the scour hole.
- 5.4. Footers shall consist of large boulders (min. 2000 lbs).

6. MEASUREMENT AND PAYMENT

- 6.1. Rock cross vane structures shall be measured and paid for at the Contract unit price for each (EA) rock cross vane structure installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of vane and footer rocks, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

F. ROCK STEP

1. DESCRIPTION

- 1.1. A rock step is a stone structure consisting of footer and arm rocks constructed in a way that provides grade control, reduces bank erosion and provides energy dissipation. The step is composed of a center rock perpendicular to the streambank joined to two arms that extend into the streambank at the field determined Qcf height. The rock step accumulates sediment behind the structure, centralizes stream flow, and creates a scour pool downstream of the structure. The rock step is utilized as a substitute for rock cross vanes where the stream channel dimensions dictate a limited area for proper cross vane geometry.

2. MATERIALS

2.1. Rock

- 2.1.1 Rocks shall be relatively rectangular, angular in shape, uniform in size, and have an intermediate axis greater than 2 feet. Footer boulders shall be hand selected. Rocks shall be hand selected matching dimensions as specified on the plans. Relatively uniform, rectangular boulders and rock are preferred to rounded boulders.

2.2. Riprap

- 2.2.1. Riprap per Standard and Specification 3.19: Riprap of the Virginia Erosion and Sediment Control Handbook for sill rocks, bank armoring, and toe protection.

2.3. Backfill and Clay Mixture

- 2.3.1. Backfill upstream of the filter fabric seal shall be placed and compacted using a mixture of existing channel alluvium, and imported clay fill. Clay materials shall consist of material classified as SC, SM, or CL per the Unified Soil Classification System.

2.4. Filter Fabric

- 2.4.1. If used for sealing the structure, filter fabric shall consist of a material meeting the requirement for filter fabric used with riprap as detailed in Table 3.19 D in section 3.19 of the Virginia Erosion and Sediment Control Handbook Third Edition, 1992, page III-171.

3. CONSTRUCTION RECOMMENDATIONS

- 3.1. Placement of rock may require a track hoe with a hydraulic thumb.
- 3.2. Rock steps must be sealed with filter fabric and compacted clay if the channel bed material is fine enough to pass the structure. This is especially true in sand, silt, and clay stream beds. Material passing through the structure can fill the scour pool. In addition, passing of bed material undermines one of the key benefits of the structure, which is the accumulation of sediment behind the rock step.
- 3.3. Ensure no leakage/flow under or around the structure by properly grading, sealing, and compacting under and around the structure.
- 3.4. After installation, check proper function/flow path by observing flow over structure. Repair as needed to ensure proper function.

4. PLACEMENT, ORIENTATION AND INSTALLATION

- 4.1. Excavate a trench along the bottom of the stream bed and to the Qcf elevation in the streambank for the center section and arms of the cross vane. The trench should be perpendicular to the streambank in the middle 1/3 Qcf width for the center section and excavated to the design angle in the 1/3 Qcf width for each arm. The step arms should be properly tied into the bank at the field determined Qcf elevation. Excavate a Qcf bench if the top of bank is not at the Qcf elevation. The trench shall be excavated to the minimum footer rock depth.
- 4.2. Place one or two courses of footer rocks to the minimum footer rock depth (3.5 FT).
- 4.3. Place step rocks on top of footer rocks so that each half of the step rock rests on one half of a footer rock below. Offset the rock in the upstream direction and place so they slope slightly against the flow direction. A portion of the step rocks should be below the stream bed invert with a portion above the invert to the specified protrusion height.
- 4.4. Extend the structure into the bank a minimum of 3.5 feet at the Qcf elevation, and armor with riprap upstream and downstream as needed for stability.
- 4.5. At the Qcf elevation, create a sill of placed rock perpendicular to the streambank extending away from the end of the step arm. Construct the sill per PRACTICE 4.5: Cut-Off Sills and Linear Deflectors contained in the *Virginia Stream Restoration and Stabilization Best Management Practices Guide (VSRS Guide)*. The rock should be smaller than the arm and footer rocks but large enough to resist displacement during high flow events.
- 4.6. Seal the structure on the upstream side for streams with a high proportion of clay material using filter fabric and alluvial substrate/clay mixture.

- 4.7. Vane arms should intersect the bank at an angle between 45 and 60 degrees. The angle is measured upstream from the tangent line where the vane intercepts the bank.
- 4.8. Vane arm slopes range from 2-15 percent. The center rock is flat (no slope). When designing cross vanes in larger systems, a 2-7 percent slope can result in excessive vane arm lengths.
- 4.9. Specify elevation and offset values for both ends of the vane arms. This ensures exact placement of the structure by the contractor.
- 4.10. Excavate the scour pool to the design depth.
- 4.11. Clean-up
 - 4.12.1 Upon completion of the work, reshape slopes and stream bottom to specified elevations.
 - 4.12.2. Remove unsuitable and surplus rock, gravel tailings and excavated materials to fill areas or approved off-site locations.

5. FOOTER BOULDERS

- 5.1. Footer boulders shall be installed at a minimum of one (1) to two (2) footers per every two (2) boulders (see approximate dimensioning/spacing on plans).
- 5.2. Footers shall be installed in pre-excavated trenches and shall be completely submerged.
- 5.3. Place footer slightly downstream of top rock prior to anchoring to prevent the structure from sinking into the scour hole.
- 5.4. Footers shall consist of large boulders (min. 2000 lbs).

6. MEASUREMENT AND PAYMENT

- 6.1. Rock step structures shall be measured and paid for at the Contract unit price for each (EA) rock step structure installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of vane and footer rocks, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

G. CLAY PLUGS (UPSTREAM END TO ABANDONED CHANNEL)

1. DESCRIPTION

- 1.1. Clay plugs shall be used in locations where the former and new stream channels intersect to prevent stream flow from re-activating the old channel. Clay plugs consist of soil material (i.e. clay) placed and compacted within the channel to block stream flow. Clay plugs shall be stabilized with topsoil, seed, and natural fiber matting.

2. MATERIALS

2.1. Soil Material

- 2.1.1. Soil material for the channel plug shall be defined as CL, CH, MH, or SC in accordance with ASTM D 2487 – Classification of Soils for Engineering Purposes. Core of the plug shall be constructed using Clay (CL) with a minimum 50% passing the #200 sieve, with a plasticity index greater than 10.

- 2.1.2. Soil material shall be obtained from an approved on- or off-site borrow source.

2.2. Matting, Topsoil, and Seed

- 2.2.1. Matting, Topsoil, and Seed shall be applied in the vicinity of the structure as specified on the design plans.

2.3. Rock Toe Protection

- 2.3.1. Rock toe protection shall consist of minimum boulder size as specified on the design plan details and shall be underlain by non-woven geotextile filter fabric. Boulder toe protection shall extend below the stream channel invert a minimum of 2 FT.

2.4. Filter fabric

- 2.4.1. Shall consist of material meeting the requirement for filter fabric used with rip rap/boulders as detailed in Table 3.19 D in section 3.19 of the VESCH Handbook, 2002 Third Edition, page III-171.

3. CONSTRUCTION

- 3.1. Clear the stream channel cross-section on all sides to remove all vegetation and root mat material to an elevation which is at least one foot below the elevation of the existing stream channel cross-section.

- 3.2. Construct the stream clay plugs to the dimensions and locations detailed in the plans.

- 3.3. Clay plug material shall be spread evenly in horizontal layers of approximately 8 inches loose lift thickness over the width of the lift. Each lift of soil layer material shall be machine compacted to a minimum 95% standard proctor of the material as defined by ASTM D698 to a density significantly greater than the surrounding, undisturbed soil.
- 3.4. Install rock toe along total length of clay plug, ensuring adequate depth and dimension as per the design plans. Stabilize channel plugs with minimum 6 inches of topsoil, seed, and natural fiber matting.

4. MEASUREMENT AND PAYMENT

- 4.1. Clay plugs shall be measured and paid for at the Contract unit price for each (EA) clay plug structure installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of structures, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

H. ROCK TOE PROTECTION

1. DESCRIPTION

- 1.1. A rock toe revetment involves placing a course of properly sized riprap at and above the streambank toe. This technique provides protection against erosion and creates a stable toe for the bank.

2. MATERIALS

2.1. Riprap

- 2.1.1. Standard and specification 3.19: Riprap of the Virginia Erosion and Sediment Control Handbook Third Edition, 1992 and Section 204 – Stone for Masonry, Riprap, Porous Backfill and Gabions of the VDOT Road and Bridge Specifications 2002.

2.2. Filter Fabric

- 2.2.1. Filter fabric shall consist of material meeting the requirement for filtration fabric used with riprap as detailed in Table 3.19 D in section 3.19 of the Virginia Erosion and Sediment Control Handbook Third Editions, 1992, page III-171. A granular filter may be substituted for filter fabric. See standard and specification 3.19: Riprap for granular filter material specifications. If a granular filter is used, it should be at least 6 inches thick.

3. CONSTRUCTION

- 3.1. Excavate a trench along the toe of the streambank to slightly below the design scour depth.
- 3.2. Place filter fabric cloth or install granular filter along backside of trench. Place filter fabric loosely and evenly on the prepared slope and secured with staples on 2 foot centers. Adjacent strips should overlap 12 inches and be stapled on 12 inch centers. The upstream or upslope filter fabric should always be placed over the downstream or downslope filter fabric. If the filter fabric is torn or damaged, it should be repaired or replaced.
- 3.3. When used in combination of Erosion Control Matting or Erosion Control Blanket (Cair 700 Matting), the matting should be stapled in place in the trench so that it will be firmly secured behind the riprap.
- 3.4. Place riprap starting in the bottom of the trench working up the bank. Riprap may have to be hand placed to voids to achieve desired result. Use smaller rock ($<D_{15}$) to fill voids.

4. MEASUREMENT AND PAYMENT

Rock toe protection shall be measured and paid for at the Contract unit price for each linear foot (LF) rock toe protection installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of structures, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

I. LIVE STAKES

1. DESCRIPTION

- 1.1. Live stakes are dormant woody cuttings that are driven into the soil. The cuttings then take root, grow, and create vegetative cover to stabilize the streambank.

2. MATERIALS

2.1. Live Stakes

2.1.1. Commercially supplied or field harvested, dormant stakes with diameters ranging from 1/2 inches to 2 inches; length determined by application.

2.1.2. The live stakes should be relatively straight with no visible signs of disease, damage, or deformity.

2.1.3. The stakes should have all side branches removed.

2.1.4. The bottom or basal end of the cutting should be cleanly cut at a 45 degree or sharper angle and the top end should be cut square (flat).

2.1.5. Stakes must be harvested after leaf drop in the fall and before bud break in the spring.

2.1.6. The use of rooting hormone Indoleacetic acid (IAA) will increase success of live stakes.

3. SPECIES

3.1. *Salix nigra*: black willow

3.2. *Cornus amomum*: silky dogwood (acceptable and recommended for 50% of total live stakes)

4. INSTALLATION

4.1. Live stakes must be installed after leaf drop in the fall and before bud break in the spring.

4.2. Live stakes that are splintered, split, or broken during installation must be replaced.

4.3. The use of a punch / planting bar, auger, or rebar may be used to pre-drill a hole for the live stake.

- 4.4. Store live stakes in a cool, shaded location in damp peat moss and sand, wrapped in newspaper in ventilated plastic bags or in burlap sacks and topsoil for a maximum of 48 hours. If live stakes cannot be installed within 48 hours of delivery, then they shall be stored in a cooler between 33 and 40 degrees Fahrenheit in one of the moist mediums listed above. If live stakes are stored onsite, the storage locations should be continually shaded and protected from wind and direct sunlight. Live stakes shall remain moist at all times before planting.
- 4.5. Soak the live branches for a minimum of 24 hours before planting. Soaking for 5-7 days is considered ideal and should promote establishment.
- 4.6. Drive stake directly into the streambank, basal / angled end first. Stakes can set vertically or perpendicular to the bank angle. Use an auger or punch/planting bar to create a pilot hole slightly smaller than the diameter of stake, as needed.
- 4.7. Tap the stake into the ground using a rubber mallet so that 80% of the length of the stake is below finished grade and 20% of the length of the stake is above finished grade.
- 4.8. Using loppers, cut stakes after installation, leaving 3 inches exposed above ground.
- 4.9. Fill the hole as needed with topsoil and water slurry. Tamp around the stake and water.
- 4.10. Place stakes in squared or staggered rows spaced 3 feet on center.

5. SPACING AND QUANTITIES

- 5.1. Install live stakes at interface of stone toe and at the beginning of the first stabilized soil lift.
- 5.2. Install live stakes 3 feet on center between first and second soil lift.
- 5.3. Stakes may be randomly spaced in void spaces of compacted fill as approved by Engineer.
- 5.4. Live stakes shall be cut in fall or spring when plants are dormant. They shall be planted within 30 days of cutting and shall be kept moist until planted. Live stakes must be installed after leaf drop in the fall and before bud break in the spring. No planting is to occur when the soil is frozen.

6. MEASUREMENT AND PAYMENT

- 6.1. Live stakes shall be paid for at the Contract unit price for each (EA) live stake installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of materials, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

J. SOIL LIFTS

1. DESCRIPTION

- 1.1. The practice consists of constructing soil lifts above a toe protection where slopes are steeper than the preferred 2:1 angle. The soil lifts are comprised of material suitable for plant growth wrapped in natural fiber matting with live branches and topsoil placed between the lifts.

2. MATERIALS

2.1. Live Branches (Branch Laying)

- 2.1.1 Commercially supplied or locally harvested dormant, ½" to 2" diameter, live branches; 1-2 feet longer than the width of proposed soil lift. The live branches should be relatively straight, with no visible signs of disease, damage or deformity. See Live Stakes for detailed material specifications.

2.2. Coarse Aggregate

- 2.2.1. Coarse Aggregate as defined in the VDOT Road and Bridge Specifications 2002 Section 203 – Coarse Aggregate.

2.3. Natural Fiber Matting

- 2.3.1. Machine produced woven un-seamed degradable natural fiber fabric with an outer layer and inner layer tied together at regular intervals meeting the following minimum specifications:

Material (Outer):	100% coir (coconut) fiber twine
Material (Inner):	100% jute twine (yarn)
Thickness:	0.30 inches
Maximum Elongation (Outer):	40% X 33%
(Machine vs. Transverse)	
Stiffness/Flexibility:	0.0122x0.0071 lbs-in.
Mass per unit area:	29.5 Oz/sq. yd.
Water Absorption:	146%

2.4. Select Fill

- 2.4.1. Soil used to build the lifts shall be one of the following:

2.4.1.1. Topsoil: Fertile, friable, loamy soil, containing not less than 1.5% organic matter; reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than 2 inch, coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances; suitable for the germination of seeds and the support of vegetative growth.

2.4.1.2. 50% Topsoil (described above); 50% Satisfactory Soil Material: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, SM, GC, SC, ML, and CL; free of rock or gravel larger than 1 inch in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

2.5. Staples

2.5.1.0.125 inch diameter new steel wire formed into a “U” shape not less than 6 inches in length with a throat of 1 inch in width.

3. CONSTRUCTION

3.1. Live branches should be soaked for a minimum of 24 hours before planting. It should be noted that soaking for 5-7 days is considered ideal and promotes establishment.

3.2. The initial step in the installation of live soil lifts is to excavate the existing streambank slope until a stable, undisturbed surface is encountered. A flat bench should be created from the toe of the stable cut slope to the toe of the streambank to accommodate the toe protection measure to be used.

3.3. Next, install the aggregate filter and toe protection (where proposed). Place a lift of fill, behind the aggregate filter and compact properly. The aggregate filter should exhibit a 10-15 degree slope away from the proposed streambank toe.

3.4. Place a batter board and jig (see detail 2.2b) and lay natural fiber matting along bottom of bench. Overlap adjacent matting by 1 foot.

3.5. Drape excess fabric over front of jig. Place select fill to a vertical depth of between 6 and 24 inches and a minimum of 4 feet in length along a 10- to 15- degree angle away from the proposed streambank toe.

3.6. Tamp soil firmly. Apply seed mixture to front portion of lift that will be left exposed.

3.7. Pull natural fiber matting over to cover lift and staple in place.

3.8. After the soil lift is completed, the live branches are criss-crossed on top of the lift at 8 to 12 branches per linear foot. The basal end of the branches should extend at least 1 foot past the back of the soil lift. No more than 6 inches of the budding end of the live branch should extend past the front or finished face of the soil lift. Orient the branches so the exposed portions have their buds facing upwards and remove the terminal bud to promote root and stem development.

3.9. Cover the live branches with topsoil to create an even surface for the construction of the next lift.

3.10. Repeat the previous step and this step until a minimum of 3 soil lifts have been created. If there is less than 2 vertical feet of slope to be filled after three soil lifts have been created, then finish the slope.

3.11. In fill sections, soil lifts may be tapered back in the areas where there is less than 4 horizontal feet of slope to be filled to avoid extra excavation. In this case, lifts that are one foot shorter than the lift below may be built until less than 2 horizontal feet of slope remain to be filled. The slope can then be finished with natural fiber matting and compacted fill.

3.12. On both terminal ends of the soil lifts, excess matting shall be used to fold over the ends of the lift and stapled firmly. Backfill or fill adjacent to the end of the lift and compact to secure it firmly.

4. MEASUREMENT AND PAYMENT

4.1. Soil lifts shall be measured and paid for at the Contract unit price per linear foot (LF) of soil lift installed. Payment for soil lifts shall be in full compensation for furnishing and installing all materials, labor, and equipment, tools and incidentals necessary to complete the work.

END OF SECTION

K. COBBLE SUBSTRATE ENHANCEMENT (REACH 1)

1. DESCRIPTION

- 1.1. Cobble Substrate enhancement shall be installed as specified on the plans in riffle areas as shown on the stream profile. Cobble substrate is typically placed in steeper reaches of the channel, and when used in conjunction with sills and or cross vanes, provides variability and stability to the bed. Cobble substrate enhances habitat by providing substrate diversity and aeration.

2. MATERIALS

2.1. Rock Material

- 2.1.1. Rock material for constructed riffles shall consist of 3-6 inches diameter rounded river cobble placed to a minimum thickness of two times the mean spherical diameter as shown on design profiles.

- 2.1.2. Rock material shall be obtained from an approved vendor or borrow site pending engineer approval.

3. CONSTRUCTION

- 3.1. Selectively clear the stream channel cross-section to the inner berm elevation on all sides to remove all vegetation and root mat material to an elevation which is approximately two times the mean spherical diameter below the elevation of the proposed channel cross-section elevation.
- 3.2. Cobble substrate materials shall be spread evenly over the width of the inner berm section as shown on the design cross-sections. (Inner berm will be made of earthen material and cobble is to extend out below inner berm features.)

4. MEASUREMENT AND PAYMENT

- 4.1. Cobble substrate enhancement shall be measured and paid for at the Contract unit price per each cubic yard (CY) installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

L. CONSTRUCTED RIFFLE (REACH 2 AND REACH 3)

1. DESCRIPTION

- 1.1. Constructed riffles shall be installed as specified on the plans downstream of existing outfall protection aprons and along the channel profile as specified. Constructed riffles are typically placed in steeper reaches of the channel, and when used in conjunction with sills and or cross vanes, provide localized grade control. Constructed riffles enhance habitat by providing substrate diversity and aeration

2. MATERIALS

2.1. Rock Material

- 2.1.1. Rock material for constructed riffles shall consist of 6-10 inches diameter rounded river cobble placed to a minimum thickness of 2 feet as shown on design profiles.
- 2.1.2. Rock material for footer boulders shall meet minimum specifications as described for rock cross vanes (Section E). In locations where a separate instream structure is proposed at the downstream terminus of the constructed riffle, additional footer boulders area not needed.
- 2.1.3. Rock material shall be obtained from an approved vendor or borrow site pending engineer approval.

3. CONSTRUCTION

- 3.1. Clear the stream channel cross-section on all sides to remove all vegetation and root mat material to an elevation which is at least one foot below the elevation of the existing stream channel cross-section.
- 3.2. Excavate trenches for up and downstream footers (or downstream structure) and install footer rocks/boulders to the dimensions and locations detailed in the plans.
- 3.3. Riffle materials shall be spread evenly over the width of the section between the footers.

4. MEASUREMENT AND PAYMENT

- 4.1. Constructed riffles shall be measured and paid for at the Contract unit price for each (EA) constructed riffle installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of structures, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

M. OUTFALL PROTECTION EXTENSION

1. DESCRIPTION

- 1.1. Outfall protection enhancement shall be installed as specified on the plans downstream of existing culverts. Outfall protection enhancement is typically placed downstream of culvert outlets to dissipate energy and prevent scour and/or erosion throughout the receiving channel.

2. MATERIALS

2.1. Rock Material

- 2.1.1. Rock material for constructed riffles shall consist of Class II Riprap ($D_{50} = 1.6$ ft) placed to a minimum thickness of 3 feet as shown on design profiles.
- 2.1.2. Rock material for footer boulders shall meet minimum specifications as described for rock cross vanes (Section E). In locations where a separate instream structure is proposed at the downstream terminus of the constructed riffle, additional footer boulders area not needed.
- 2.1.3. Rock material shall be obtained from an approved vendor or borrow site pending engineer approval.

2.2. Filter Fabric

- 2.2.1. Filter fabric shall consist of material meeting the requirement for filtration fabric used with riprap as detailed in Table 3.19 D in section 3.19 of the Virginia Erosion and Sediment Control Handbook Third Editions, 1992, page III-171. A granular filter may be substituted for filter fabric. See standard and specification 3.19: Riprap for granular filter material specifications. If a granular filter is used, is should be at least 6 inches thick.

3. CONSTRUCTION

- 3.1. Clear the flow path from the culvert outlet to the stream bed to the dimensions specified in the construction documents.
- 3.2. Clear the stream channel cross-section on all sides to remove all vegetation and root mat material to an elevation which is at least one foot below the elevation of the existing stream channel cross-section.
- 3.3. Excavate trenches for up and downstream footers (or downstream structure) and install footer rocks/boulders to the dimensions and locations detailed in the plans.
- 3.4. Place the filter fabric evenly on the excavated area.

3.5. Class II Riprap material shall be spread evenly over the width of the section between the footers.

3.6. Trim any excess filter fabric so nothing is showing.

4. MEASUREMENT AND PAYMENT

4.1. Outfall protection enhancement shall be measured and paid for at the Contract unit price for each (EA) outfall protection enhancement installed. Payment shall be full compensation for the transport of all materials, excavation, installation, and maintenance of structures, and for all material, labor, equipment, tools, and incidentals necessary to complete the work as specified in the Contract Documents, or as specified by the owner or engineer.

END OF SECTION

STREAM RESTORATION CONSTRUCTION PLAN

ROBINHOOD LANE STREAM RESTORATION PROJECT

CITY OF NEWPORT NEWS, VIRGINIA

APPLICANT

CITY OF NEWPORT NEWS, VIRGINIA
DEPARTMENT OF ENGINEERING
2400 WASHINGTON AVE, 8TH FLOOR, CITY HALL
NEWPORT NEWS, VIRGINIA 23607
ATTN: BRIAN LEWIS, P.E. AND/OR RICHARD HARR

BASE INFORMATION

A.D. POTTS & ASSOCIATES, INC.
11524 JEFFERSON AVENUE
NEWPORT NEWS, VIRGINIA 23601
ATTN: DUANE POTTS, L.S.
DATUM INFORMATION:
HORIZONTAL - NAD83 STATE PLANE VA SOUTH FEET
VERTICAL - NAVD88 FEET

ENGINEER

WILLIAMSBURG ENVIRONMENTAL GROUP, INC.
5209 CENTER STREET
WILLIAMSBURG, VIRGINIA 23188
(757) 220-6869
ATTN: SCOTT BLOSSOM, P.E.

STATISTICAL DATA

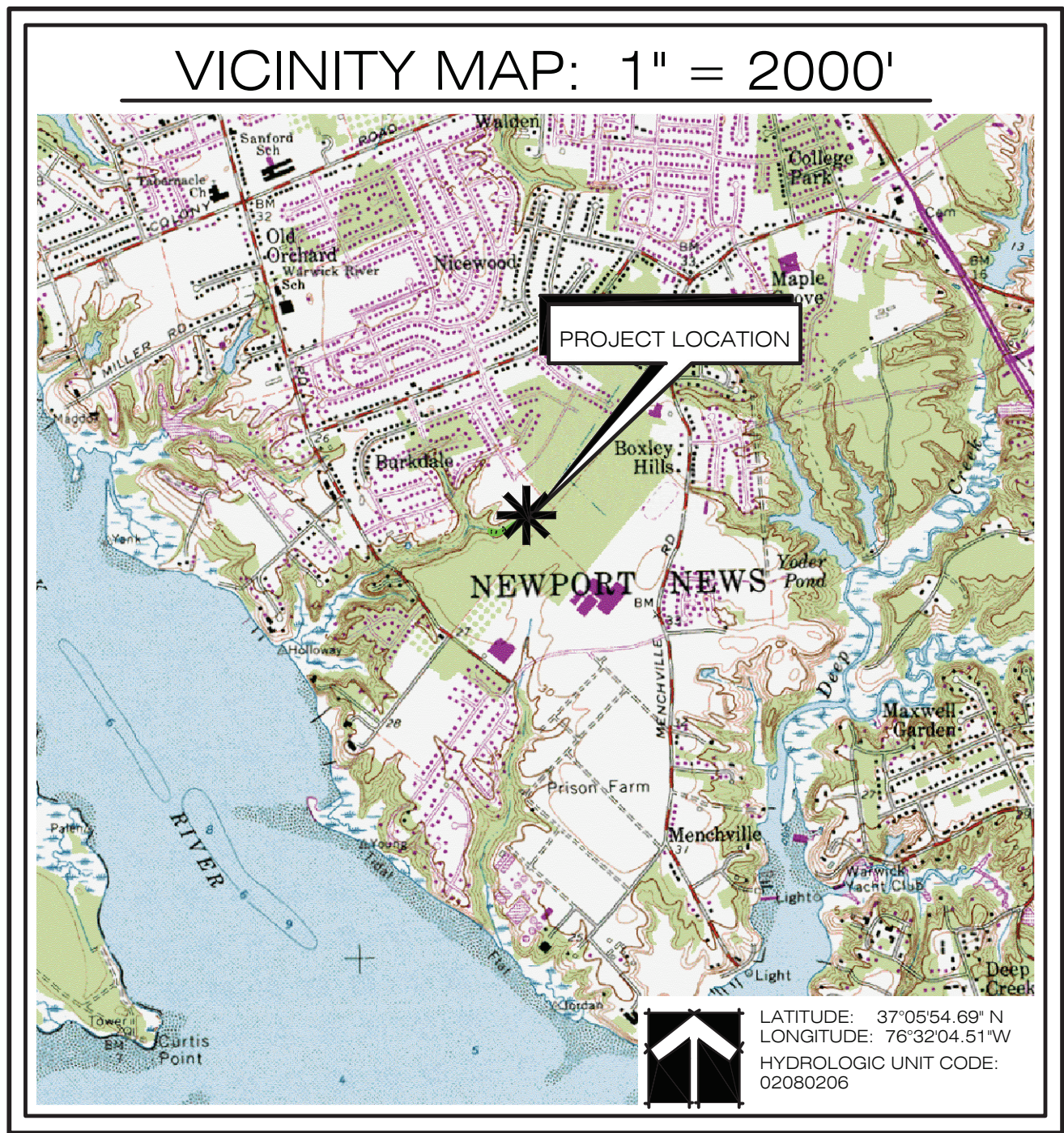
PROJECT LIMITS (APPROXIMATE):	0.77 ACRES ±
EXISTING WETLANDS:	0.11 ACRES ±
EXISTING STREAM CHANNEL:	0.11 ACRES ±
(EXCLUDING WETLANDS):	697 L.F. ±

APPROXIMATE LIMITS OF PROPOSED GRADING:	0.34 ACRES ±
PROPOSED STREAM CHANNEL RESTORATION:	662 L.F. ±

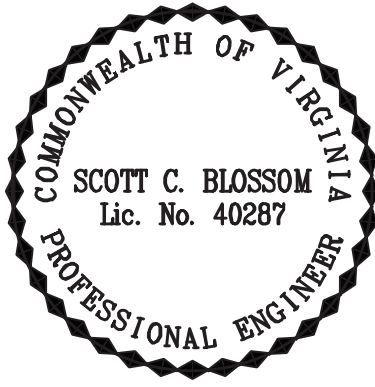
BENCHMARK

THE PROJECT BENCHMARK IS THE SOUTH EDGE SANITARY SEWER MANHOLE RIM LOCATED ON ROBINHOOD LANE. BASED ON INFORMATION PROVIDED BY A.D. POTTS & ASSOCIATES, INC., BENCHMARK DATA ARE AS FOLLOWS:

NORTHING: 3565506.6109
EASTING: 12056021.7019
ELEVATION: 30.66'



CAD FILES CAN BE PROVIDED TO THE
SELECTED CONTRACTOR FOR LAYOUT
AND STAKING.



DATE: 07/16/10
FIRST SUBMITTAL

APPROVED:	DATE:
EVERETT SKIPPER, P.E., B.C.E.E. DIRECTOR, DEPARTMENT OF ENGINEERING	

REVISIONS:	
DATE	DATE

PROJECT NARRATIVE:

THIS DOCUMENT PRESENTS THE STREAM RESTORATION PLAN FOR THE ROBINHOOD LANE PROJECT FOR THE CITY OF NEWPORT NEWS, VIRGINIA. THE CITY IS PROPOSING THE RESTORATION OF 662 LINEAR FEET (LF) OF AN UNNAMED TRIBUTARY OF THE WARWICK RIVER WITHIN THE JAMES RIVER DRAINAGE BASIN (HUC: 02080206). THE SUBJECT CHANNEL RECEIVES MULTIPLE SOURCES OF STORMWATER DRAINAGE, INCLUDING SEVERAL UNCONTROLLED INPUTS NEAR THE HEADWATERS. DRAINAGE AREA TO UPSTREAM AND DOWNSTREAM PROJECT LIMITS EQUALS APPROXIMATELY 20 AND 84 ACRES, RESPECTIVELY. THE DRAINAGE AREA IS DOMINATED BY DEVELOPMENT OF THE SURROUNDING RESIDENTIAL COMMUNITY, HOWEVER, SMALL STANDS OF MATURE HARDWOOD FOREST AND SEEP DRIVEN WETLANDS ALSO OCCUR DIRECTLY ADJACENT TO THE STREAM CHANNEL.

SEVERAL FORMS OF DEGRADATION HAVE BEEN DOCUMENTED WITHIN THE PROPOSED PROJECT AREA:

- 1) DOWNCUTTING VIA ACTIVE HEADCUTS HAS RESULTED IN A DEEPLY INCISED CHANNEL (BANK HEIGHT RATIO > 2).
- 2) SEVERE BANK EROSION AND LATERAL BEND MIGRATION IS ONGOING THROUGHOUT A MAJORITY OF THE REACH.
- 3) THE EXISTING CHANNEL IS ENTRENCHED AND HAS BECOME DISCONNECTED FROM ITS FLOODPLAIN.
- 4) SEDIMENTATION HAS SIGNIFICANTLY DEGRADED HABITAT, AND DEBRIS DAMS CONTRIBUTE TO BANK EROSION AND INSTABILITY.

THE PROPOSED CONCEPTUAL STREAM RESTORATION PLAN INCORPORATES SEVERAL GOALS:

- IMPROVE CHANNEL STABILITY, BANK FORM AND FUNCTION
- CREATE A STABLE DIMENSION, PLAN, AND PROFILE
- INCREASE FLOODPLAIN CONNECTIVITY AND STORMWATER ATTENUATION
- INSTALL STABLE GRADE CONTROLS WITHIN THE CHANNEL
- ENHANCE HABITAT THROUGH NATURAL RIFFLE AND POOL SEQUENCES
- PREVENT FUTURE PROPERTY LOSS

SHEET INDEX:

1. COVER
2. EXISTING CONDITIONS
3. MASTER PLAN
4. PLAN AND PROFILE - REACH 1
5. PLAN AND PROFILE - REACH 2
6. PLAN AND PROFILE - REACH 3
7. CROSS-SECTIONS (1)
8. CROSS-SECTIONS (2)
9. CONSTRUCTION NOTES AND DETAILS
10. EROSION & SEDIMENT CONTROL PLAN
11. EROSION & SEDIMENT CONTROL PLAN NOTES AND DETAILS
12. RIPARIAN PLANTING PLAN
13. HYDROLOGIC AND HYDRAULIC SUMMARY (1)
14. HYDROLOGIC AND HYDRAULIC SUMMARY (2)

WILLIAMSBURG
ENVIRONMENTAL
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(757) 220-6869

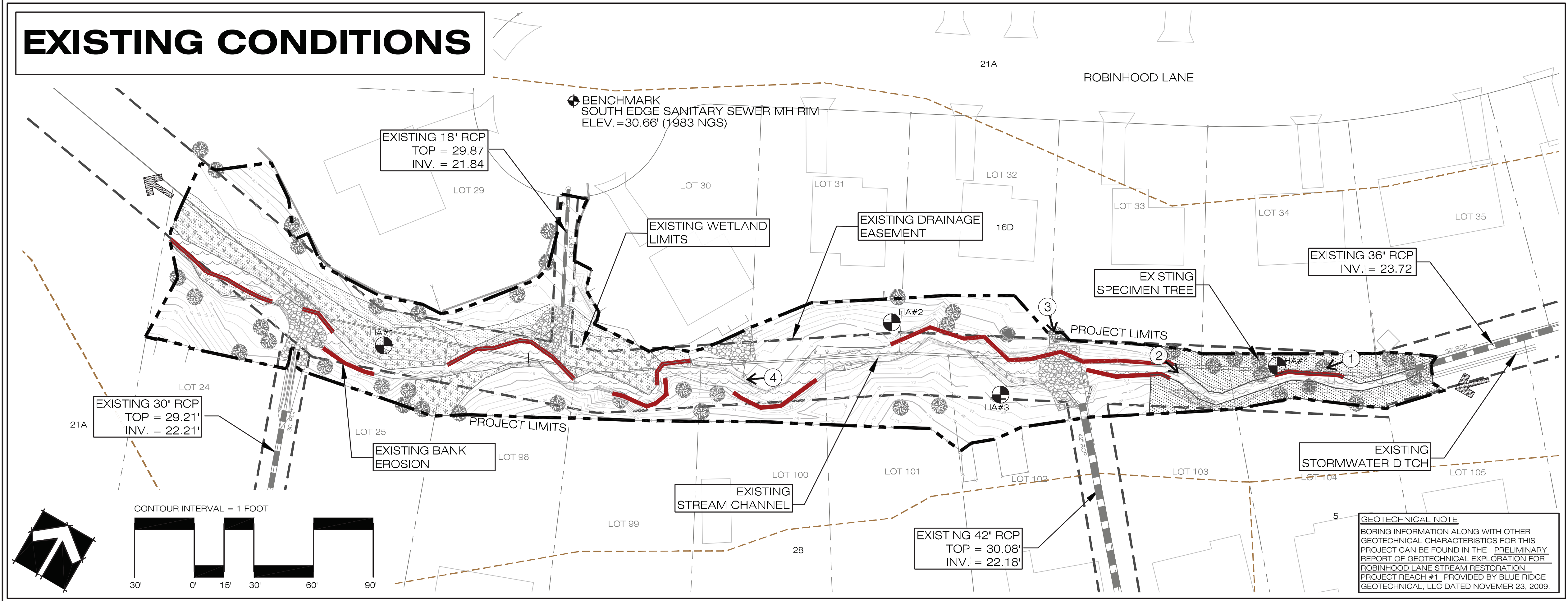
13921 Park Center Road
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(703) 437-3096

7501 Boulders View Drive
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5705 Salem Run Blvd.
Suite 105
Fredericksburg, Virginia 22407
(540) 785-5544

Environmental Consultants

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EXISTING CONDITIONS:

- NARROW RIPARIAN CORRIDOR DUE TO DEVELOPMENT
- DESTABILIZED STREAM BANKS AND DOCUMENTED EROSION
- LACK OF AQUATIC HABITAT

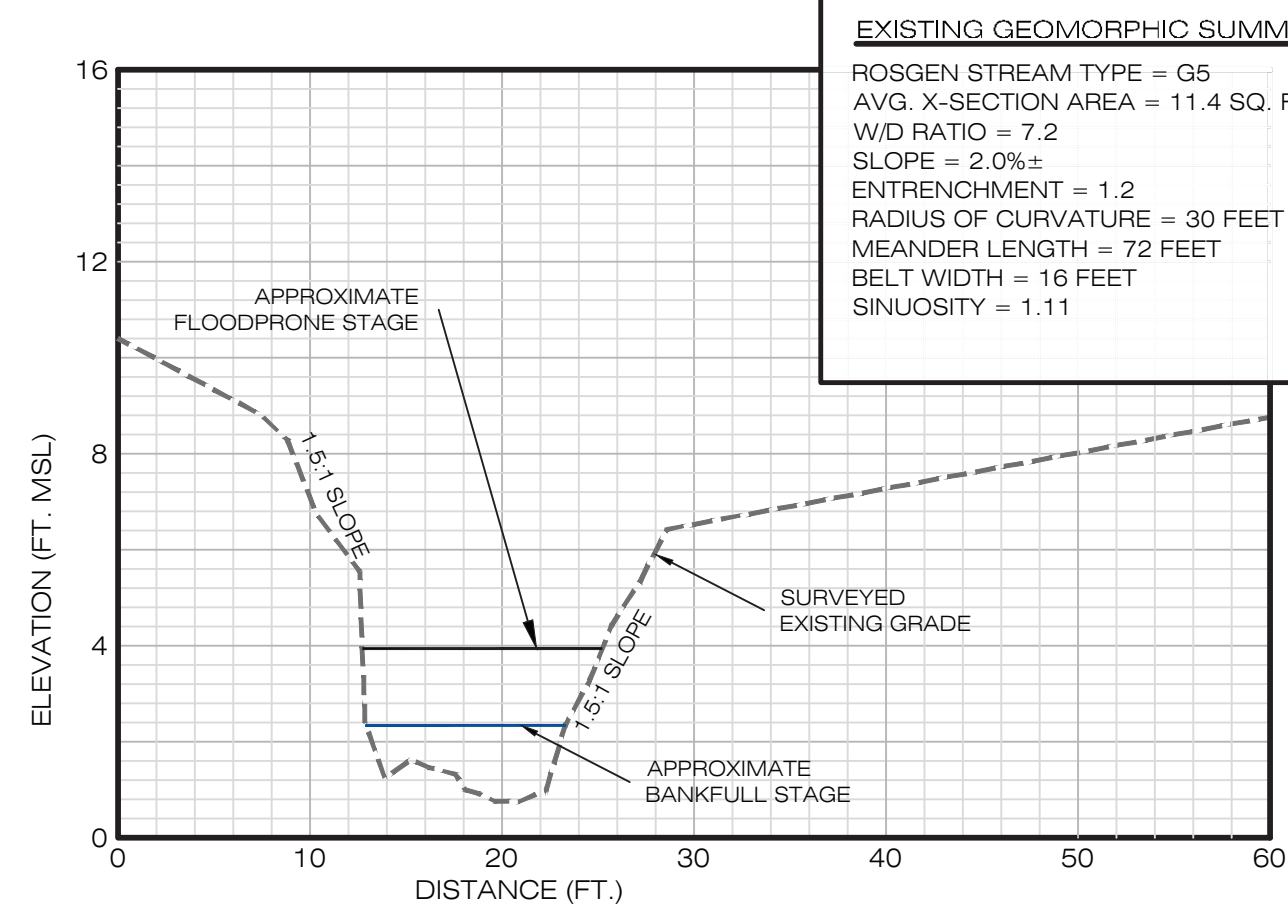
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EXISTING CONDITIONS:

- OUTER BEND EROSION AND EXPOSED VERTICAL BANKS
- INCREASED SEDIMENTATION ON CHANNEL BED
- MINIMAL AQUATIC HABITAT

2



EXISTING CONDITIONS SUMMARY

THE DRAINAGE AREA TO THIS EXISTING HEADWATER CHANNEL IS PREDOMINANTLY RESIDENTIAL DEVELOPMENT WITH A NARROW MIXED HARDWOOD/PINE CORRIDOR IMMEDIATELY ADJACENT TO THE CHANNEL. THE EXISTING STREAM CONDITIONS HAVE BEEN SIGNIFICANTLY ALTERED BY HUMAN ACTIVITIES THROUGH THE CLEARING AND MAINTENANCE OF THE IMMEDIATE RIPARIAN AREA AND SEVERAL STORMWATER INPUTS AND ASSOCIATED RIP RAP OUTFALLS (AS NOTED ON THE PLAN VIEW ABOVE). IN ADDITION, SEVERAL BANKS THROUGHOUT THE PROJECT AREA HAVE BEEN LINED WITH RIP RAP OR OTHER ATTEMPTS AT BANK STABILIZATION (SEE PHOTOGRAPHS, THIS SHEET) IN ORDER TO AVOID PROPERTY LOSS OR DAMAGE WITHIN THE SURROUNDING RESIDENTIAL PARCELS. THE STREAM CHANNEL HAS BECOME BOTH VERTICALLY AND Laterally UNSTABLE, WHICH CONTRIBUTES TO ADDITIONAL SEDIMENTATION AND LOSS OF AQUATIC HABITAT WITHIN THE REACH. THE EXISTING CHANNEL CLASSIFIES AS A "GULLY" TYPE SYSTEM WHICH IS INDICATIVE OF AN INCISED URBAN CHANNEL. REFER TO THE INITIAL SITE ASSESSMENT REPORT FOR ADDITIONAL INFORMATION REGARDING THIS OR OTHER REACHES IN THE WATERSHED.

INVASIVE SPECIES ERADICATION AND MANAGEMENT SHALL BE COORDINATED WITH PROPERTY OWNERS, AS SEVERAL OF THE LISTED SPECIES ARE ASSOCIATED WITH LAWNS AND GARDENS. FURTHERMORE, ANY APPROVED ERADICATION SHALL BE APPLIED WITHIN THE LIMITS OF DISTURBANCE. CONTROL MEASURES SHOULD BE TAKEN AS SOON AS FEASIBLE IN ORDER TO MAINTAIN CONTROL OF THE SITE AND PREVENT THE FURTHER SPREAD OF INVASIVE SPECIES. THE TREATMENT OF THE LISTED SPECIES CAN BE PERFORMED IN CONCERT WITH EACH OTHER AND TIME OF YEAR RESTRICTIONS WILL BE NOTED.

SOIL SERIES SUMMARY

MAP SYMBOL	SOIL NAME	SLOPE (%)	DRAINAGE	SOIL PROFILE DEPTHS	WATER TABLE/FLOODING FREQUENCY	HYDRIC	PERMEABILITY	HYDROLOGIC SOIL GROUP	DEPTH TO BEDROCK
21A	SLAGLE (URBAN LAND COMPLEX)	0-2	POOR	VERY DEEP	0-0.5 FEET/ NONE	Y	MODERATE	C	>5 FEET
5	BETHERA (URBAN LAND COMPLEX)	0-2	NEGLIGIBLE	VERY DEEP	0-6.0 FEET/ OCCASIONAL	Y	----	D	>5 FEET
16D	NEVARC-UCHEE COMPLEX	15-50	MODERATE	VERY DEEP	1.5-6.0 FEET/ NONE	N	MODERATE	C	>5 FEET
28	YEMASSEE-URBAN LAND COMPLEX	0-2	VERY POOR	VERY DEEP	1.0-6.0 FEET/ FREQUENT	N	MODERATE	C	>5 FEET

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE
SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR THE CITY OF NEWPORT NEWS, VIRGINIA



EXISTING CONDITIONS:

- STORMWATER OUTFALL
- DESTABILIZED STREAM BANKS
- LACK OF AQUATIC HABITAT

3



EXISTING CONDITIONS:

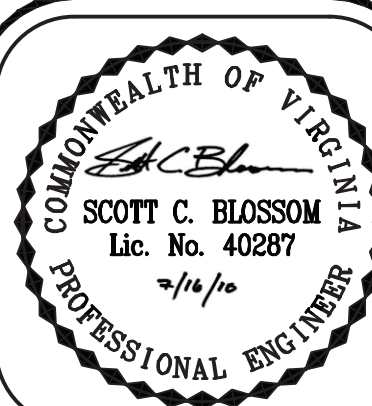
- OUTER BEND EROSION AND EXPOSED VERTICAL BANKS
- DEBRIS DAMS AND ANTHROPOGENIC EFFECTS
- MINIMAL AQUATIC HABITAT

4

LEGEND

- PROJECT LIMITS
- SURVEYED STREAM CHANNEL LIMITS
- SURVEYED WETLAND LIMITS
- EXISTING CONTOURS
- 5 SOIL SERIES LIMITS AND MAP SYMBOL
- EXISTING BUILDINGS
- EXISTING STORMSEWER
- EXISTING PARCEL LIMITS (PER A.D. POTTS & ASSOCIATES)
- EXISTING EASEMENTS
- EXISTING RIPRAP
- EXISTING BANK EROSION
- 5 PHOTO STATION LOCATION
- EXISTING HARDWOOD SPECIES (12" DBH OR LARGER)
- EXISTING PINE SPECIES (12" DBH OR LARGER)
- FLOW DIRECTION
- HEDRA HELIX-ENGLISH IVY (INVASIVE SPECIES)
- MICROSTEGIUM VINIPEUM-NEPALESE BROWNTOP (INVASIVE SPECIES)
- HA#3 APPROXIMATE BORING LABLES AND LOCATIONS (SEE GEOTECHNICAL REPORT)

EXISTING CONDITIONS ROBINHOOD LANE STREAM RESTORATION PROJECT CITY OF NEWPORT NEWS, VIRGINIA



REVISIONS:
DATE:

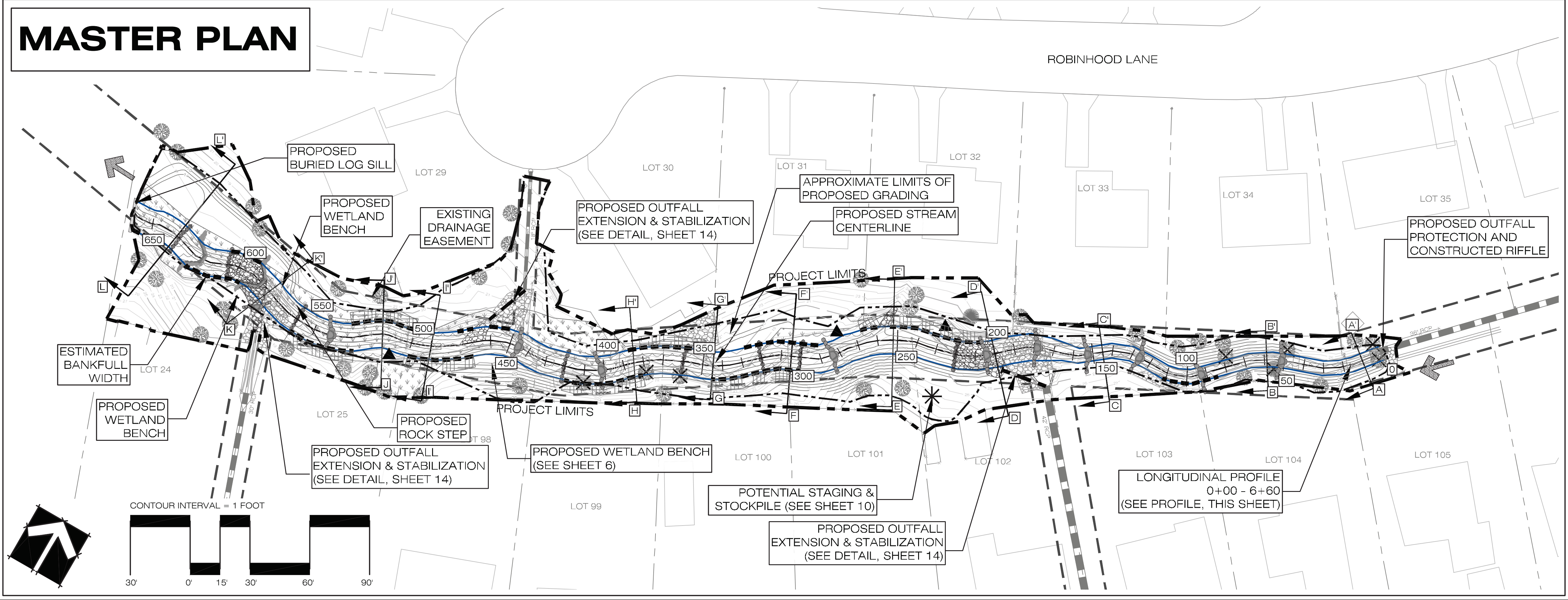
DRAWN BY: CJM
DATE: 7/16/10
DESIGNED BY: SHAWGHH
CHECKED BY: JWR/SBCK

SHEET: 2
JOB#: 4275

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Richmond, Virginia 23225
(804) 287-3474
WEG
WILLIAMSBURG
ENVIRONMENTAL
GROUP, INC.
Environmental Consultants

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MASTER PLAN



- ### LEGEND
- PROJECT LIMITS
 - EXISTING EASEMENT
 - SURVEYED STREAM CHANNEL LIMITS
 - SURVEYED WETLAND LIMITS
 - EXISTING CONTOURS
 - PROPOSED GRADING
 - EXISTING STORMSEWER
 - EXISTING RIPRAP
 - PROPOSED STREAM CENTERLINE & BANKFULL LIMITS
 - REPRESENTATIVE CROSS-SECTION
 - APPROXIMATE LIMITS OF PROPOSED CHANNEL GRADING
 - PROPOSED ROCK STEP
 - PROPOSED CROSS-VANE
 - PROPOSED BURIED ROCK SILL
 - PROPOSED BURIED LOG SILL
 - PROPOSED ROCK TOE PROTECTION
 - PROPOSED BANK STABILIZATION
 - PROPOSED TREE REMOVAL
 - PROPOSED CHANNEL RE-ALIGNMENT; CLAY PLUG (DETAIL 2, SHEET 9)

PROPOSED GEOMORPHIC SUMMARY

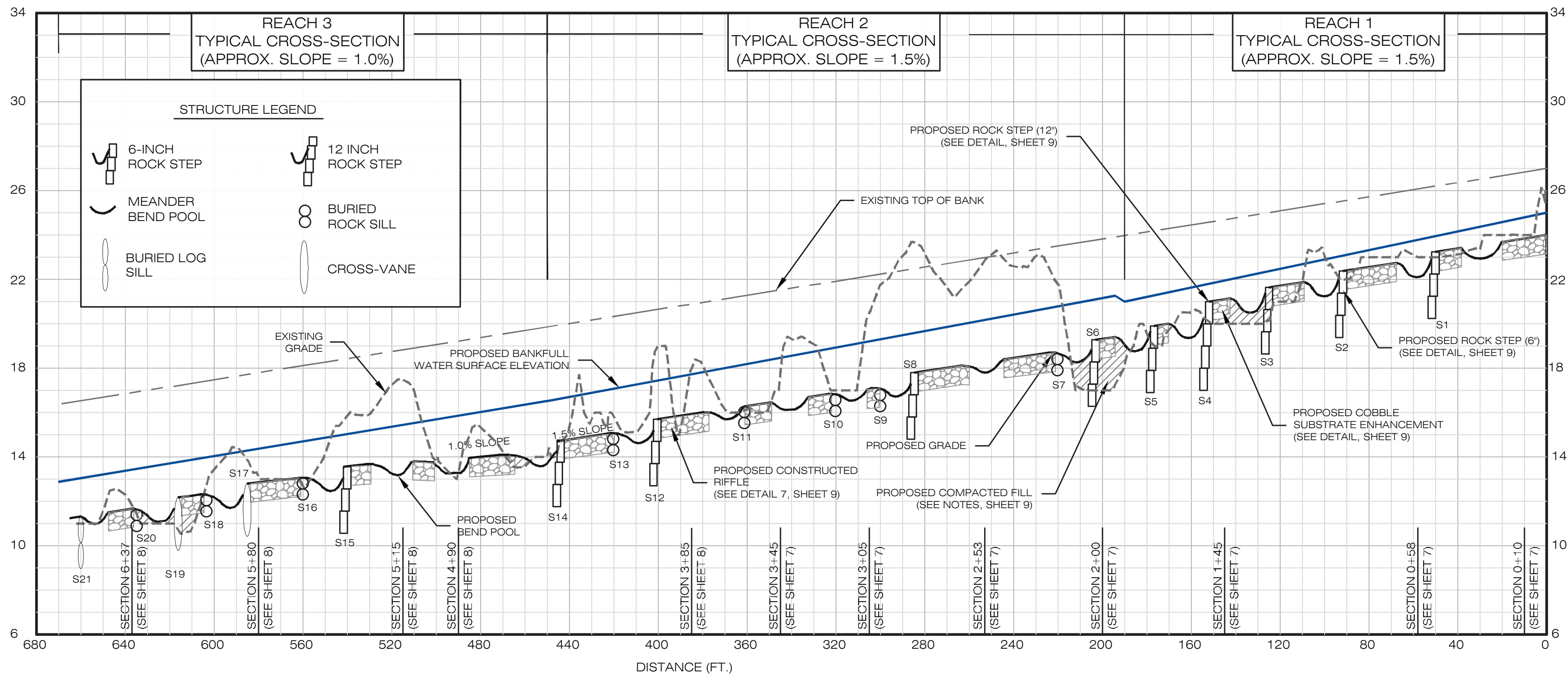
ROSGEN STREAM TYPE = B5c
X-SECTION AREA = 5.0 - 18.0 SQ. FEET
W/D RATIO = 9.0 - 11.0
SLOPE = 1.0 - 1.5%±
ENTRENCHMENT = 1.4 - 2.2
RADIUS OF CURVATURE = 15 - 60 FEET
MEANDER LENGTH = 40 - 96 FEET
BELT WIDTH = 20 - 45 FEET
SINUOSITY = 1.06

NOTE: SEE TYPICAL CROSS-SECTIONS ON SHEETS 4, 5, & 6.

PROPOSED CONDITIONS SUMMARY

THE PROPOSED STREAM RESTORATION PLAN WILL ALLEVIATE THE CURRENT CHANNEL INSTABILITY THROUGH PRIORITY 3 RESTORATION PRACTICES, AS DESCRIBED IN THE TABLE BELOW. THESE TECHNIQUES WILL BE UTILIZED DUE TO THE OVERALL CHANNEL AND VALLEY RESTRICTIONS, WHICH IS LOCKED IN BY SEVERAL CULVERT OUTFALLS THROUGHOUT THE REACH, AS WELL AS THE DOWNSTREAM BED ELEVATION, WHICH PREVENTS THE CHANNEL FROM BEING LIFTED TO ITS ORIGINAL FLOODPLAIN ELEVATION. PRIORITY 3 RESTORATION WILL BE APPLIED IN AREAS WHERE EXISTING INFRASTRUCTURE IS RELATIVELY SPARSE AND A NEW INTERNAL FLOODPLAIN (IDEALLY CAPABLE OF CONVEYING THE 10-YEAR STORM EVENT) MAY BE PROVIDED FOR ADDITIONAL STORMWATER ATTENUATION. THESE TECHNIQUES WILL BE UTILIZED WHERE EXISTING CONSTRAINTS HINDER FULL FLOODPLAIN RE-ESTABLISHMENT. THE CHANNEL WILL BE RELOCATED, WHERE POSSIBLE, TO RE-CREATE A STABLE MEANDER WIDTH AND RADIUS OF CURVATURE, AND TO ALLEVIATE BANK INSTABILITY THROUGHOUT THE REACH, ESPECIALLY AREAS IN CLOSE PROXIMITY TO EXISTING CULVERT OUTFALLS AND OTHER INFRASTRUCTURE. GRADE CONTROLS ARE PROPOSED, WHICH WILL CONTRIBUTE TO STREAM BED STABILITY AND OVERALL HABITAT CONDITIONS. SEVERAL CULVERT OUTFALL RETROFITS WILL BE INCLUDED TO REDIRECT STORMWATER FLOW STRAIGHT INTO THE CHANNEL, AND RELIEVE EXISTING HIGH VELOCITY AND SHEAR STRESS CONDITIONS IN THESE OUTFALL AREAS. THE REMOVAL OF LARGE SPECIMEN TREES WILL BE MINIMIZED WHERE POSSIBLE.

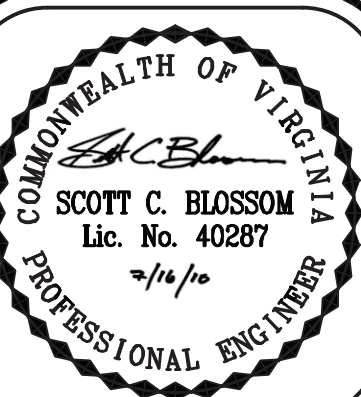
	DESCRIPTION	OBJECTIVES
PRIORITY 3	CONVERT TO A NEW STREAM TYPE WITHOUT AN ACTIVE FLOODPLAIN, BUT CONTAINING A FLOODPRONE AREA. CONVERT G TO B STREAM TYPE, AND F TO Bc.	1) REDUCE THE AMOUNT OF LAND NEEDED TO RETURN THE STREAM TO A STABLE FORM. 2) DEVELOPMENTS NEXT TO THE STREAM NEED NOT TO BE RE-LOCATED DUE TO FLOODING POTENTIAL 3) DECREASE FLOOD STAGE FOR THE SAME MAGNITUDE FLOOD. 4) IMPROVES AQUATIC HABITAT



LONGITUDINAL PROFILE (STATION 0+00 - 6+60)

VERTICAL SCALE: 1" = 4' HORIZONTAL SCALE: 1" = 40'

MASTER PLAN ROBINHOOD LANE STREAM RESTORATION PROJECT CITY OF NEWPORT NEWS, VIRGINIA

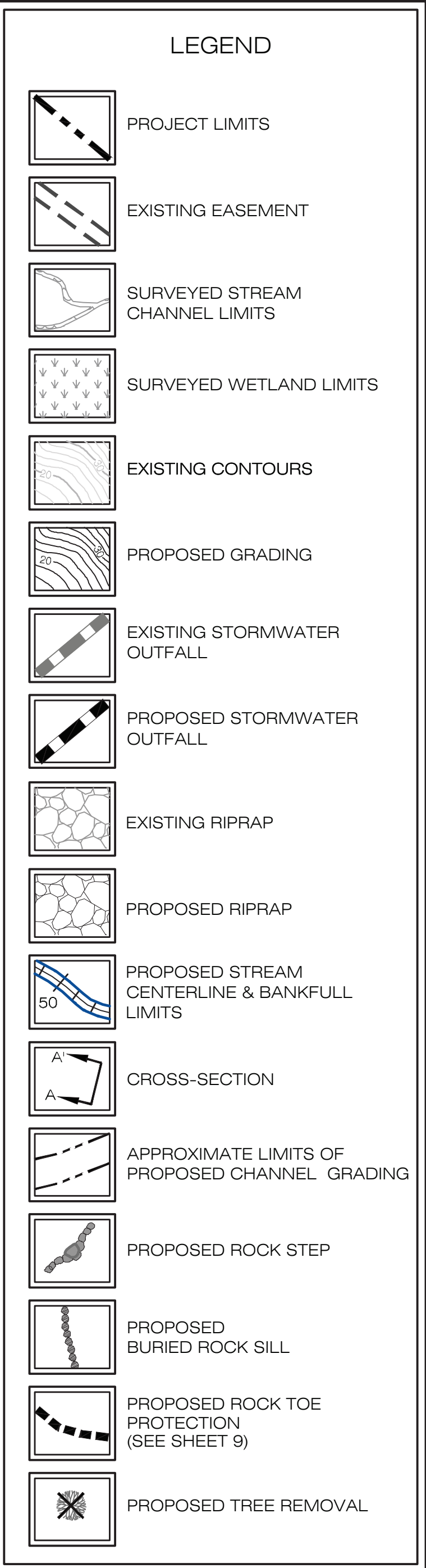


REVISIONS:
DATE:

DRAWN BY: CJM
DATE: 7/16/10
DESIGNED BY: SHAWGHH
CHECKED BY: JWR/SCBCK

SHEET: 3
JOB#: 4275

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Fredericksburg, Virginia 22407
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Environmental Consultants
WILLIAMSBURG ENVIRONMENTAL GROUP, INC.



1. CONTRACTOR TO APPROPRIATELY SIZE EQUIPMENT FOR PROPOSED WORK WITH REACH 1 TO LIMIT DISTURBANCE TO ADJACENT PROPERTIES.
2. AREAS WITHIN REACH 1 ARE TO BE SELECTIVELY ENHANCED AS SHOWN ON PROPOSED SECTIONS, AVOIDING SPECIMEN TREES AND STABLE AREAS WHERE PRACTICABLE.

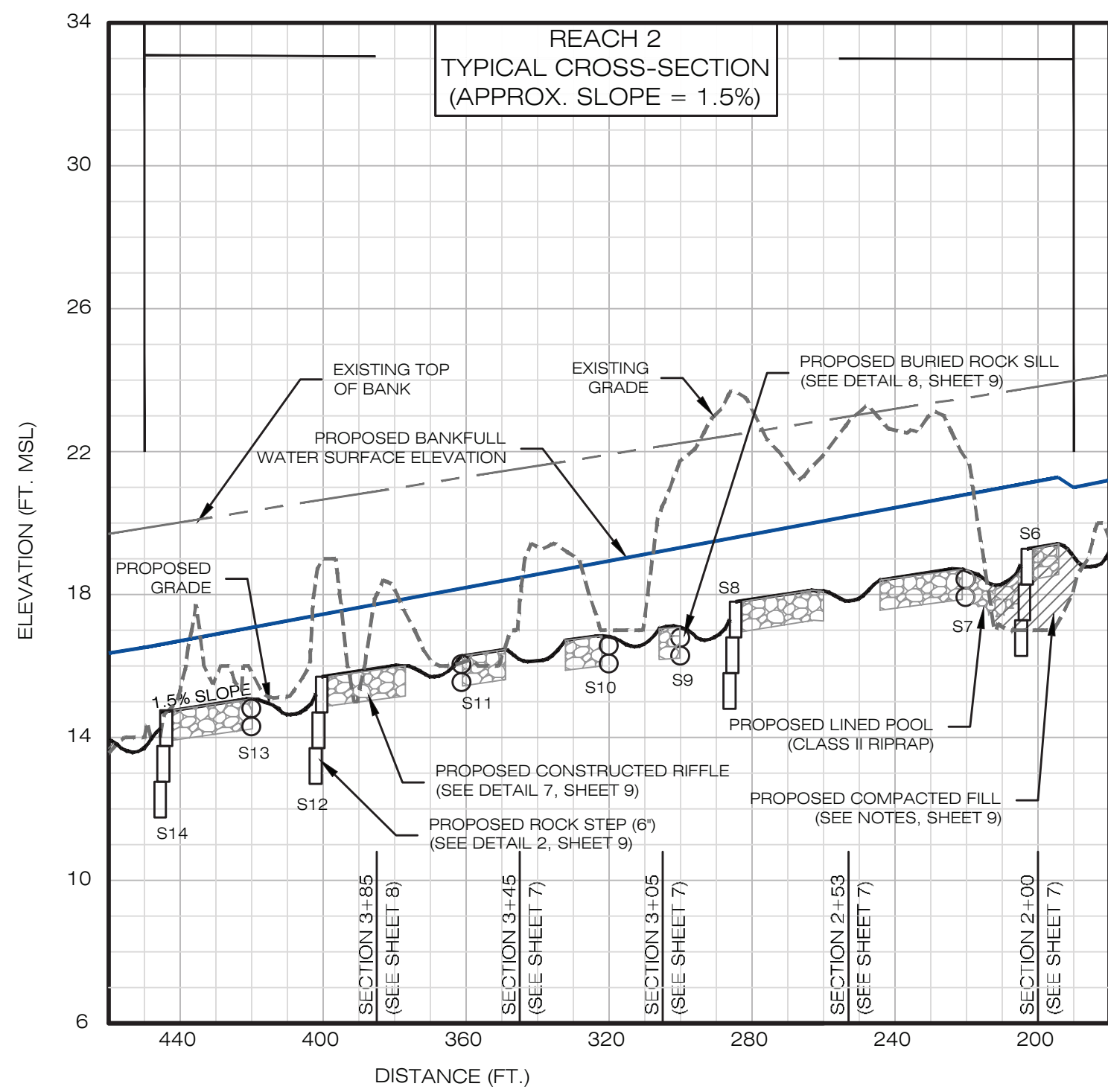
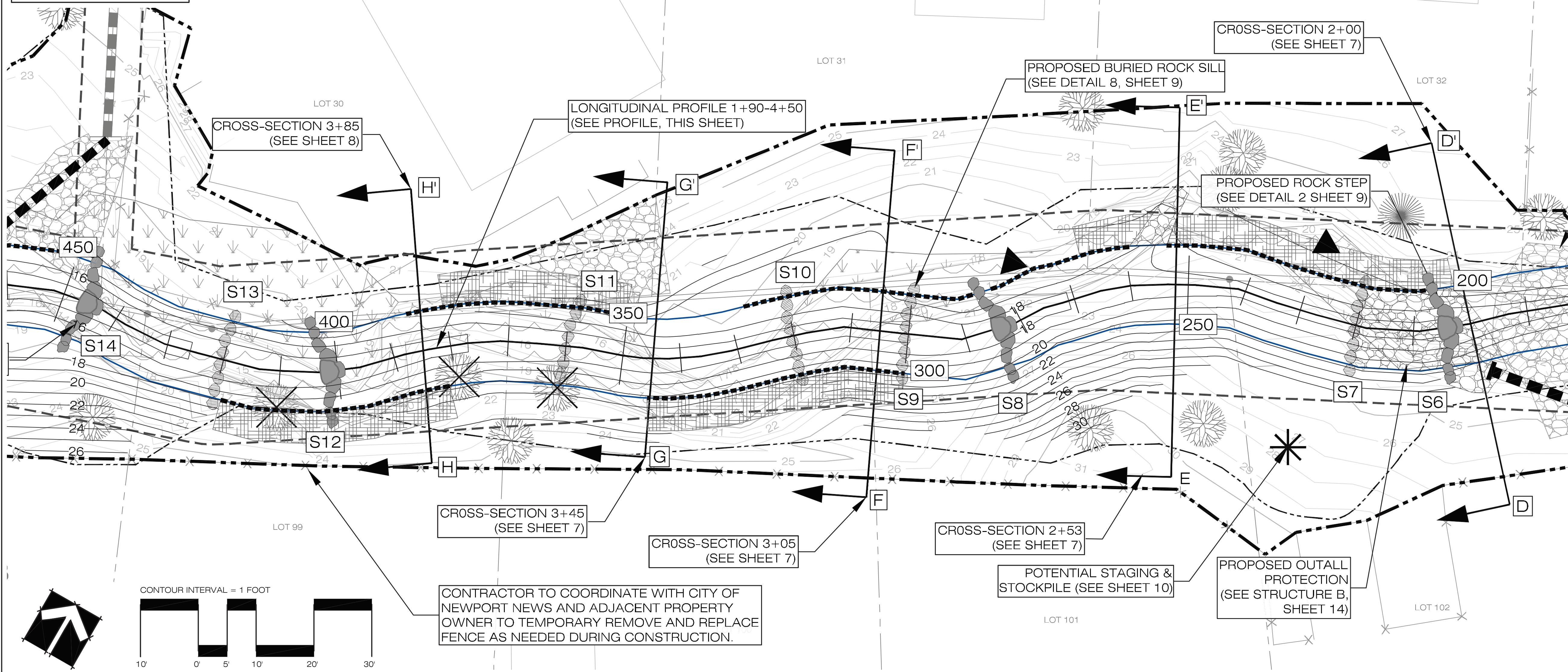


TYPICAL STRUCTURE POOL CROSS-SECTION - REACH 1
VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



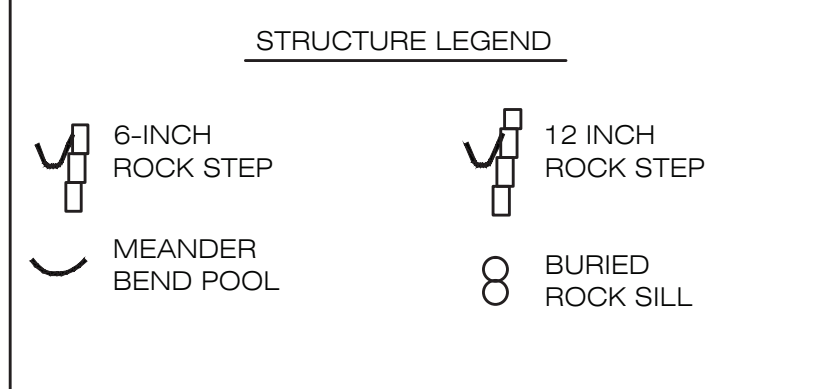
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REACH 2



LONGITUDINAL PROFILE REACH 2 (STATION 1+90 - 4+50)

VERTICAL SCALE: 1" = 4' HORIZONTAL SCALE: 1" = 40'

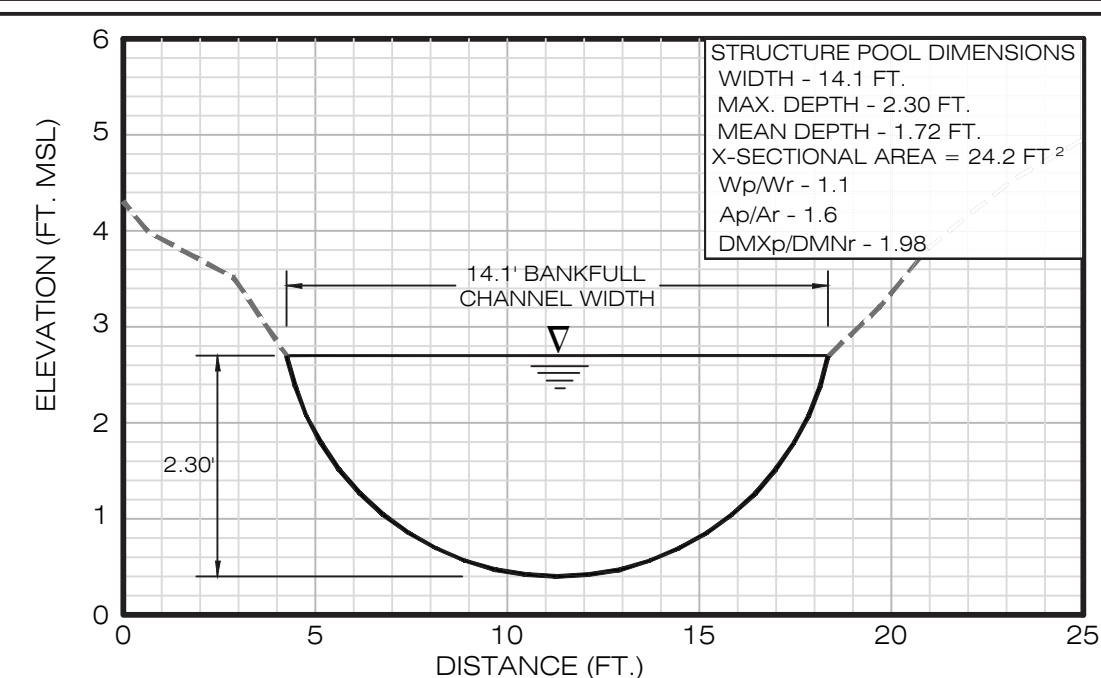


STRUCTURE INFORMATION

STRUCTURE #	STRUCTURE TYPE	PROFILE STATION	CREST HEIGHT (ELEVATION)
S6	6-INCH ROCK STEP	2+03	19.3
S7	BURIED ROCK SILL	2+20	18.7
S8	6-INCH ROCK STEP	2+85	17.8
S9	BURIED ROCK SILL	3+00	17
S10	BURIED ROCK SILL	3+20	16.8
S11	BURIED ROCK SILL	3+61	16.3
S12	6-INCH ROCK STEP	4+00	15.7
S13	BURIED ROCK SILL	4+20	15
S14	6-INCH ROCK STEP	4+44	14.8

NOTE: FINAL STRUCTURE ANGLES AND SLOPES MAY BE ADJUSTED IN FIELD BY ENGINEER. ROCK STRUCTURES MAY BE REPLACED BY LOG STRUCTURES IF SUITABLE SOURCE IS AVAILABLE NEARBY. LOGS MAY BE ACCEPTABLE FOR BURIED SILLS ONLY. THIS WOULD REQUIRE COORDINATION WITH WEG FOR DESIGN ADJUSTMENTS AND APPROVAL.

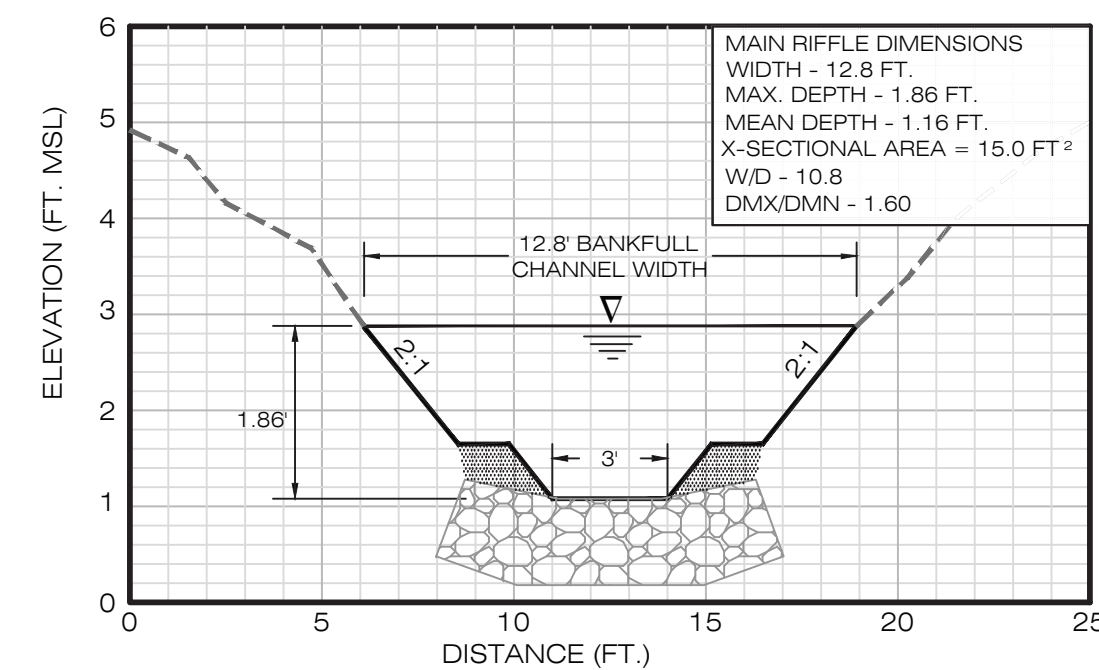
FOOTER DEPTH FOR ALL STRUCTURES ARE 3.5 FEET.
(SEE DETAIL 10 ON SHEET 9 FOR BOULDER SIZING SPECIFICATIONS)



TYPICAL STRUCTURE POOL CROSS-SECTION - REACH 2

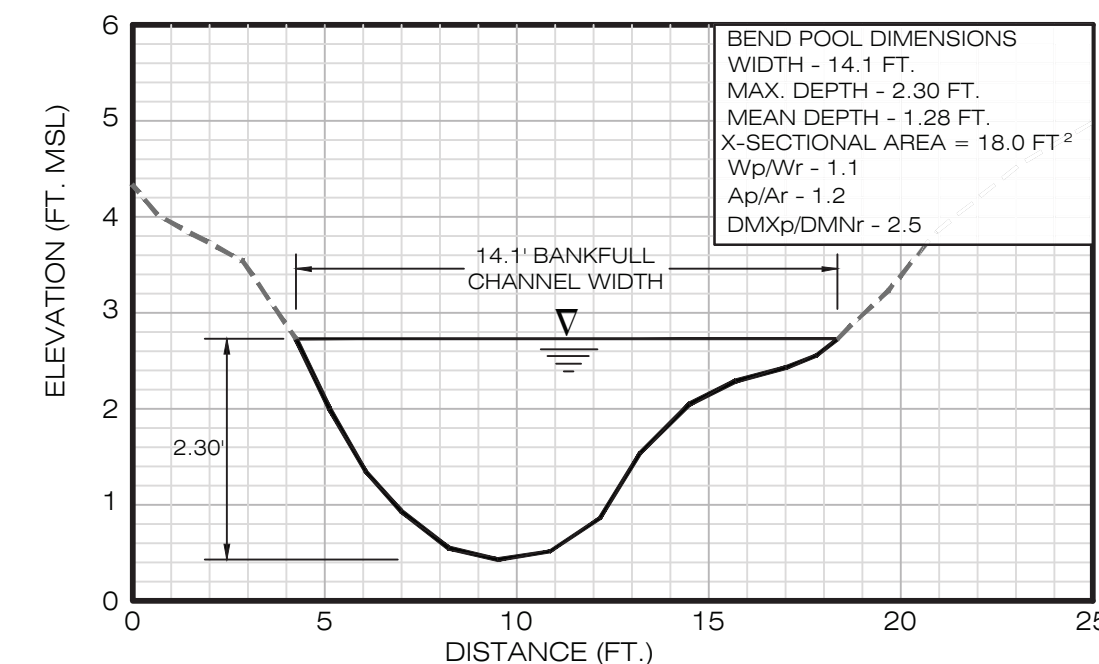
VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

TYPICAL BANKFULL CROSS-SECTIONS



TYPICAL RIFFLE CROSS-SECTION - REACH 2

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



TYPICAL BEND POOL CROSS-SECTION - REACH 2

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

LEGEND

- PROJECT LIMITS
- EXISTING EASEMENT
- SURVEYED STREAM CHANNEL LIMITS
- SURVEYED WETLAND LIMITS
- EXISTING CONTOURS
- PROPOSED GRADING
- EXISTING STORMWATER OUTFALL
- PROPOSED STORMWATER OUTFALL
- EXISTING RIPRAP
- PROPOSED RIPRAP
- PROPOSED STREAM CENTERLINE & BANKFULL LIMITS
- CROSS-SECTION
- APPROXIMATE LIMITS OF PROPOSED CHANNEL GRADING
- PROPOSED ROCK STEP
- PROPOSED BURIED ROCK SILL
- PROPOSED ROCK TOE PROTECTION (SEE DETAIL 4, SHEET 9)
- PROPOSED BANK STABILIZATION (SEE DETAIL 6, SHEET 9)
- PROPOSED TREE REMOVAL
- PROPOSED CHANNEL RE-ALIGNMENT: CLAY PLUG (DETAIL 2, SHEET 9)

PLAN AND PROFILE - REACH 2

ROBINHOOD LANE

STREAM RESTORATION PROJECT

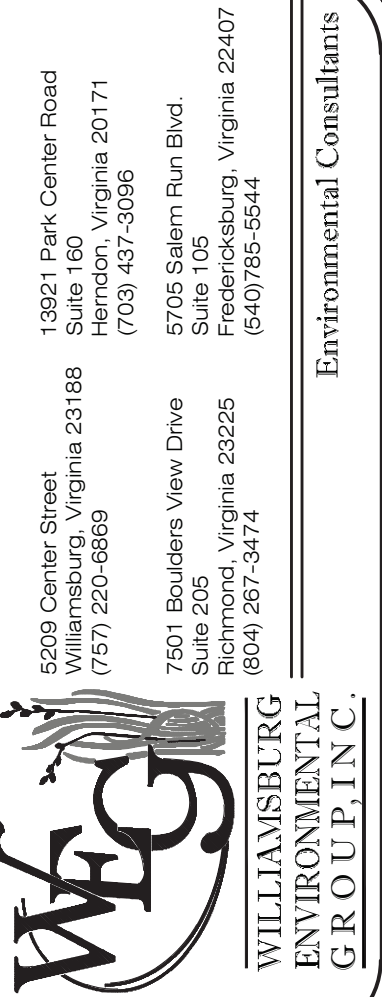
CITY OF NEWPORT NEWS, VIRGINIA

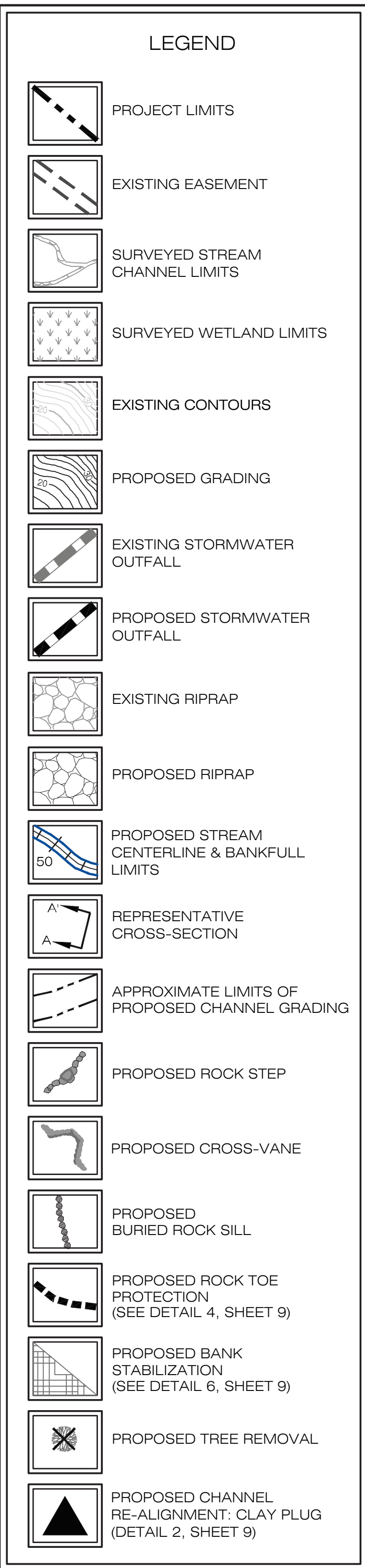


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DRAWN BY: CJM
DESIGNED BY: SHAWGHI
DATE: 7/16/10
CHECKED BY: JWR/SCBCK

SHEET: 5
JOB#: 4275





STRUCTURE LEGEND

	6-INCH ROCK STEP		12 INCH ROCK STEP
	MEANDER BEND POOL		BURIED ROCK SILL
	BURIED LOG SILL		CROSS-VANE

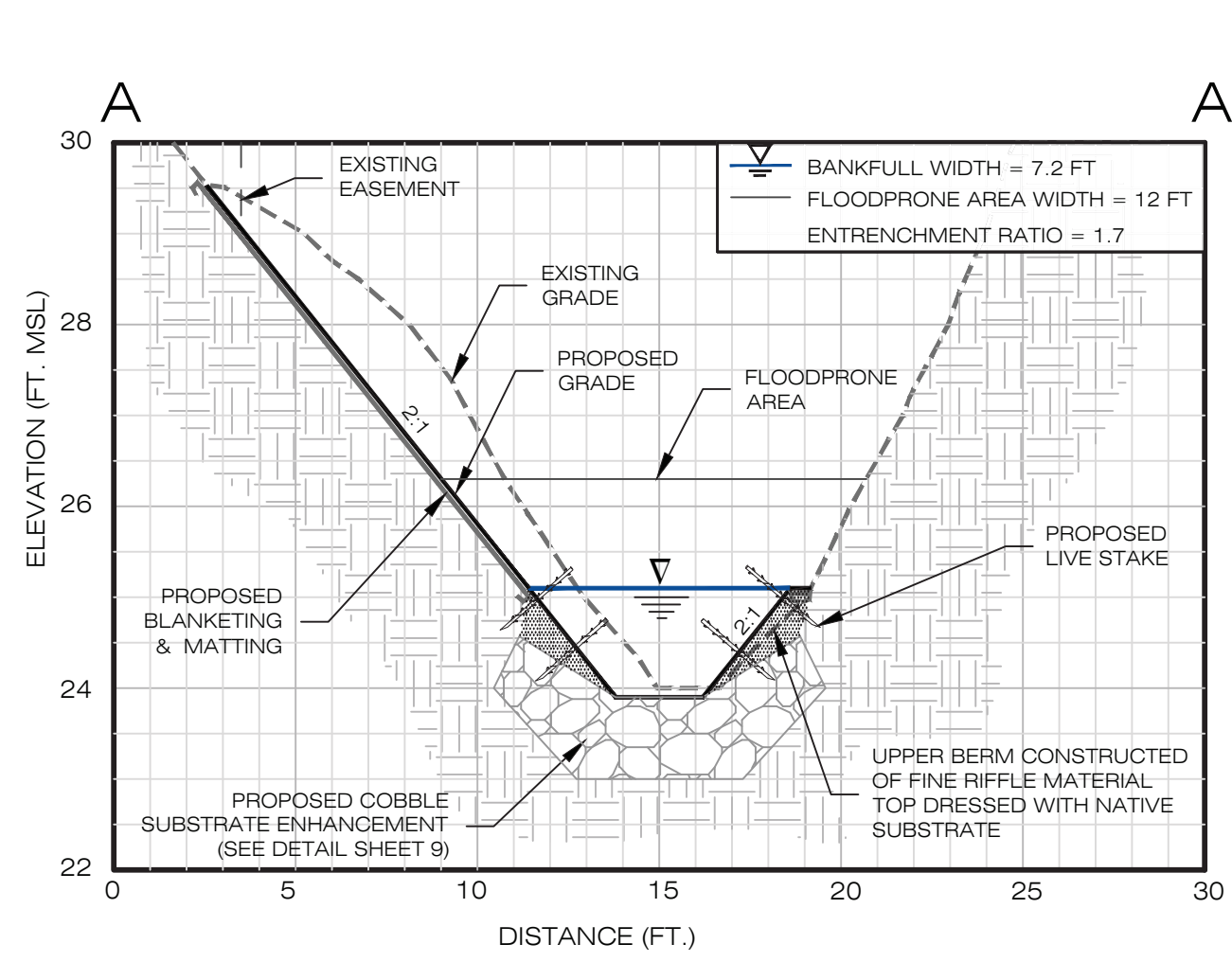
STRUCTURE INFORMATION			
STRUCTURE #	STRUCTURE TYPE	PROFILE STATION	CREST HEIGHT (ELEVATION)
S14	6-INCH ROCK STEP	4+44	14.8
S15	6-INCH ROCK STEP	5+40	13.6
S16	BURIED ROCK SILL	5+60	13.1
S17	CROSS-VANE	5+85	12.8
S18	BURIED ROCK SILL	6+04	12.3
S19	CROSS-VANE	6+16	12.2
S20	BURIED ROCK SILL	6+35	11.6
S21	BURIED LOG SILL	6+60	11.3

NOTE: FINAL STRUCTURE ANGLES AND SLOPES MAY BE ADJUSTED IN FIELD BY ENGINEER. ROCK STRUCTURES MAY BE REPLACED BY LOG STRUCTURES IF SUITABLE SOURCE IS AVAILABLE NEARBY. LOGS MAY BE ACCEPTABLE FOR BURIED SILLS ONLY. THIS WOULD REQUIRE COORDINATION WITH WEG FOR DESIGN ADJUSTMENTS AND APPROVAL.

FOOTER DEPTH FOR ALL STRUCTURES ARE 3.5 FEET.
(SEE DETAIL 10 ON SHEET 9 FOR BOULDER SIZING SPECIFICATIONS)

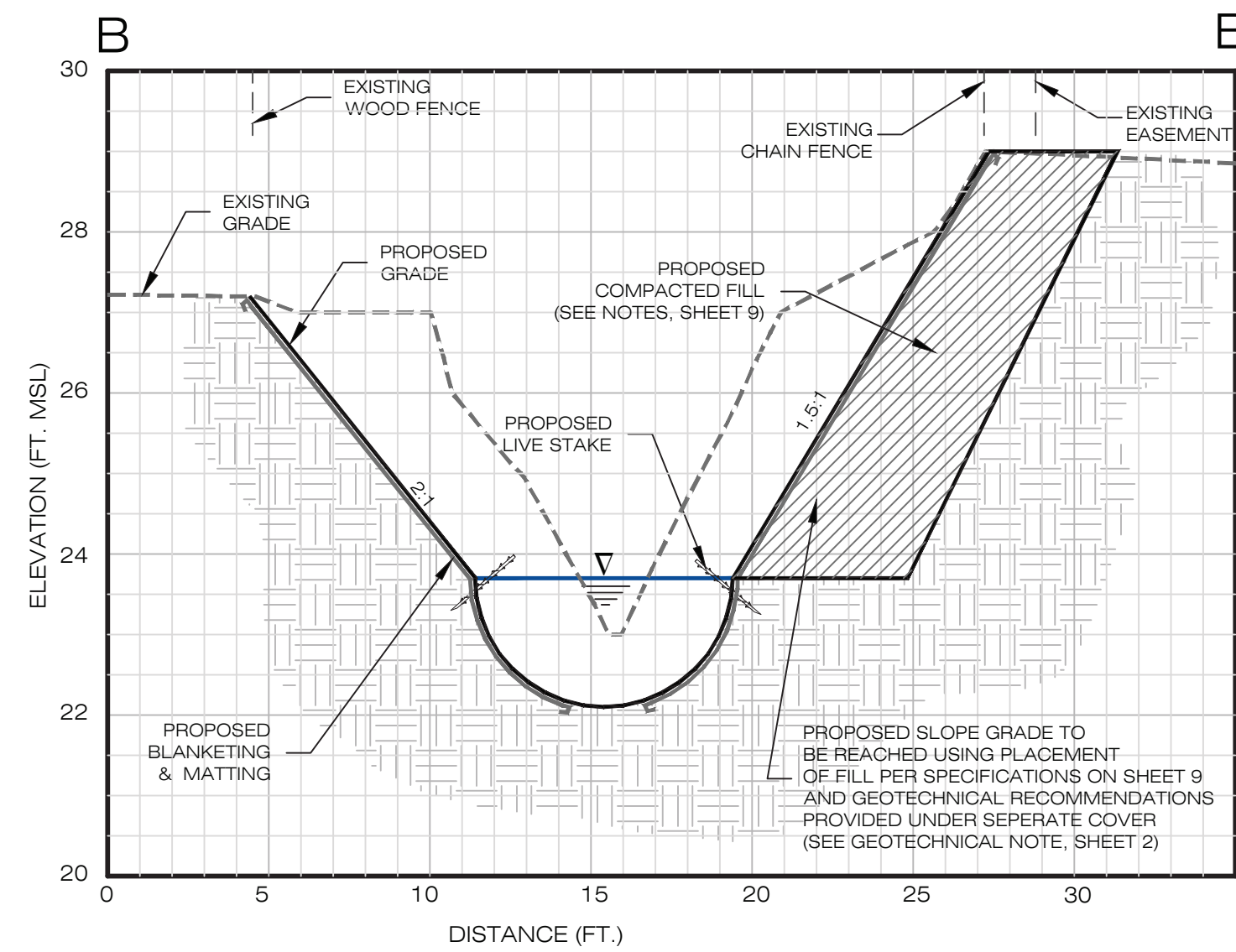


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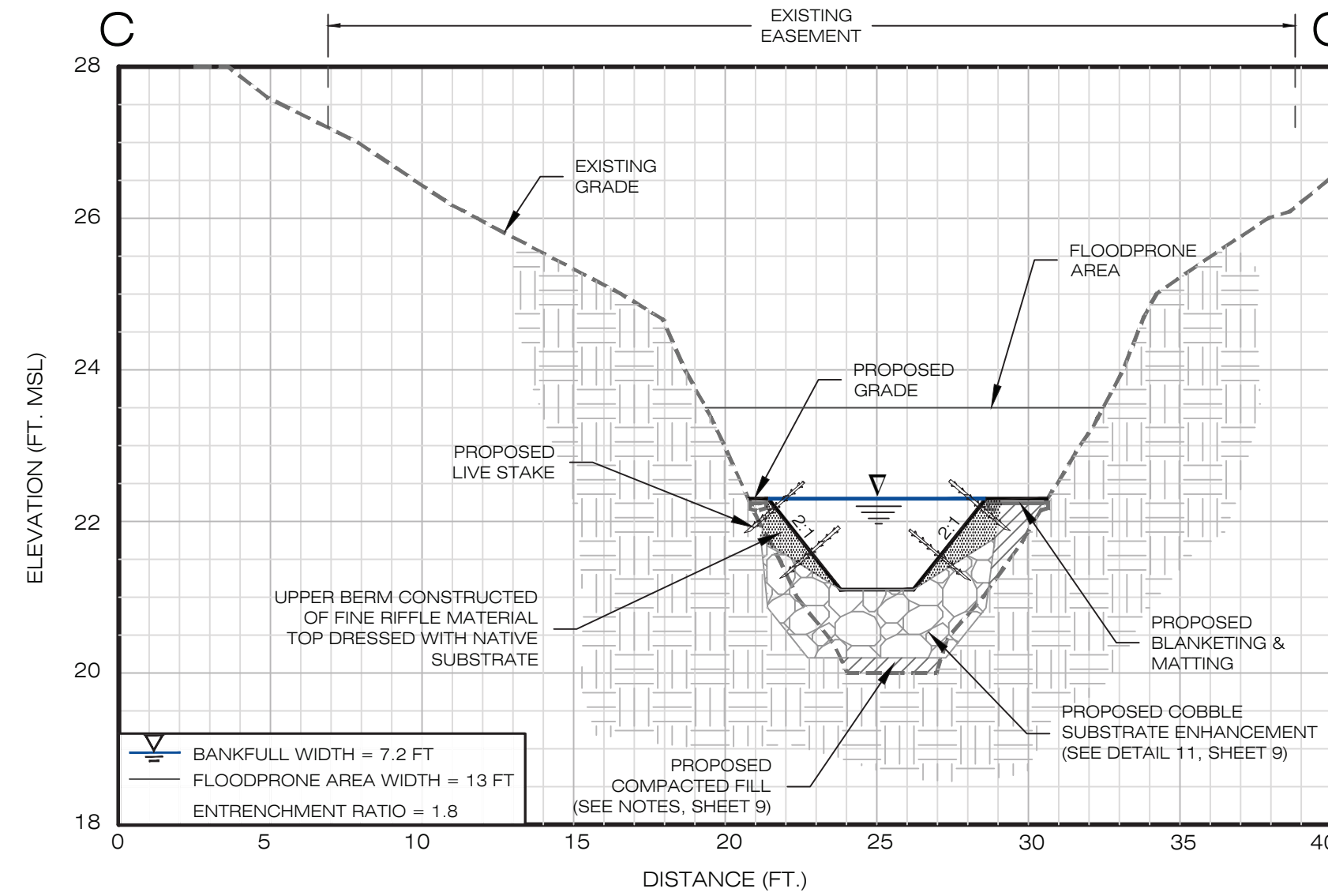
CROSS SECTION (STA. 0+10) - RIFFLE

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



CROSS SECTION (STA. 0+58) - POOL

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

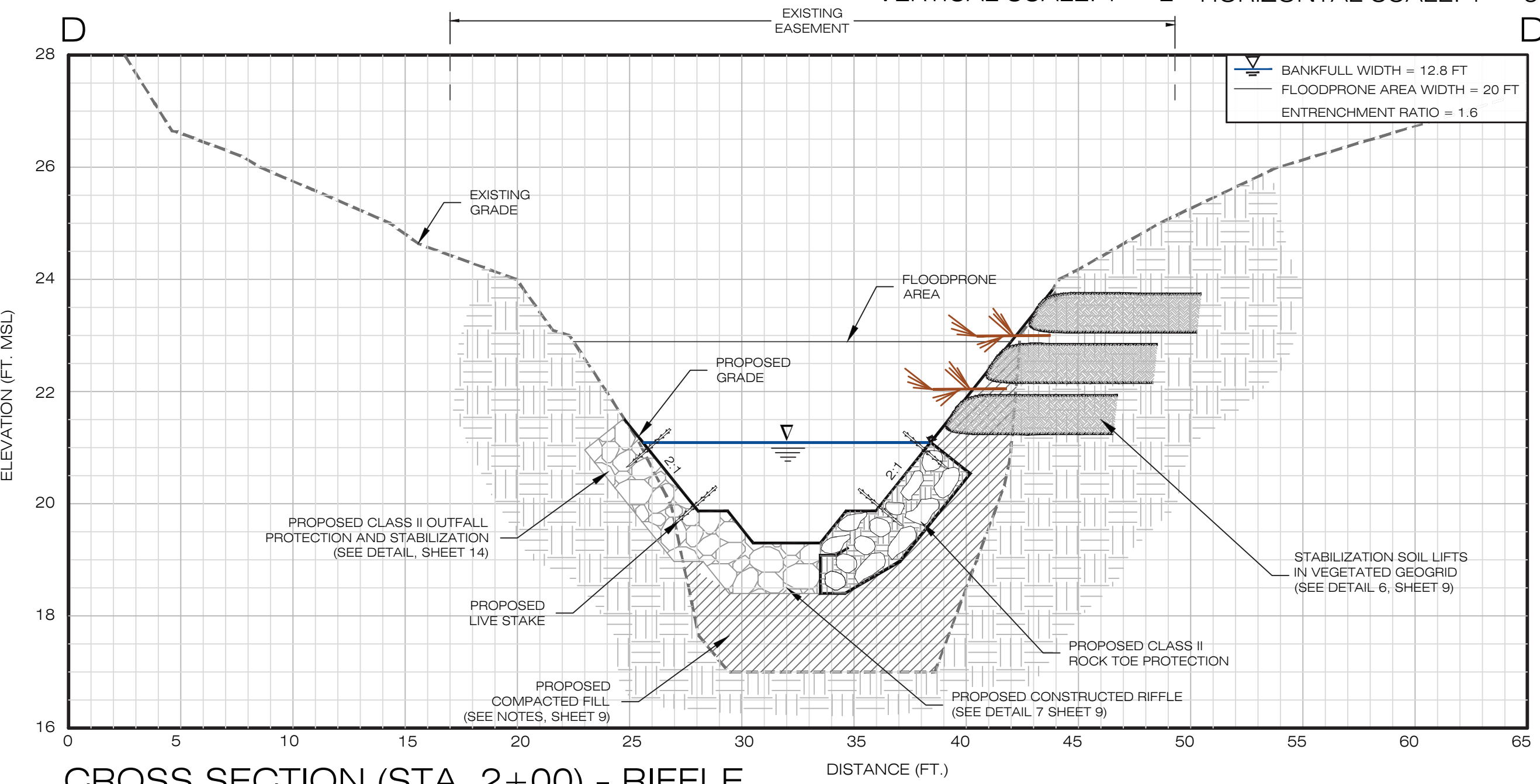


CROSS SECTION (STA. 1+45) - RIFFLE

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

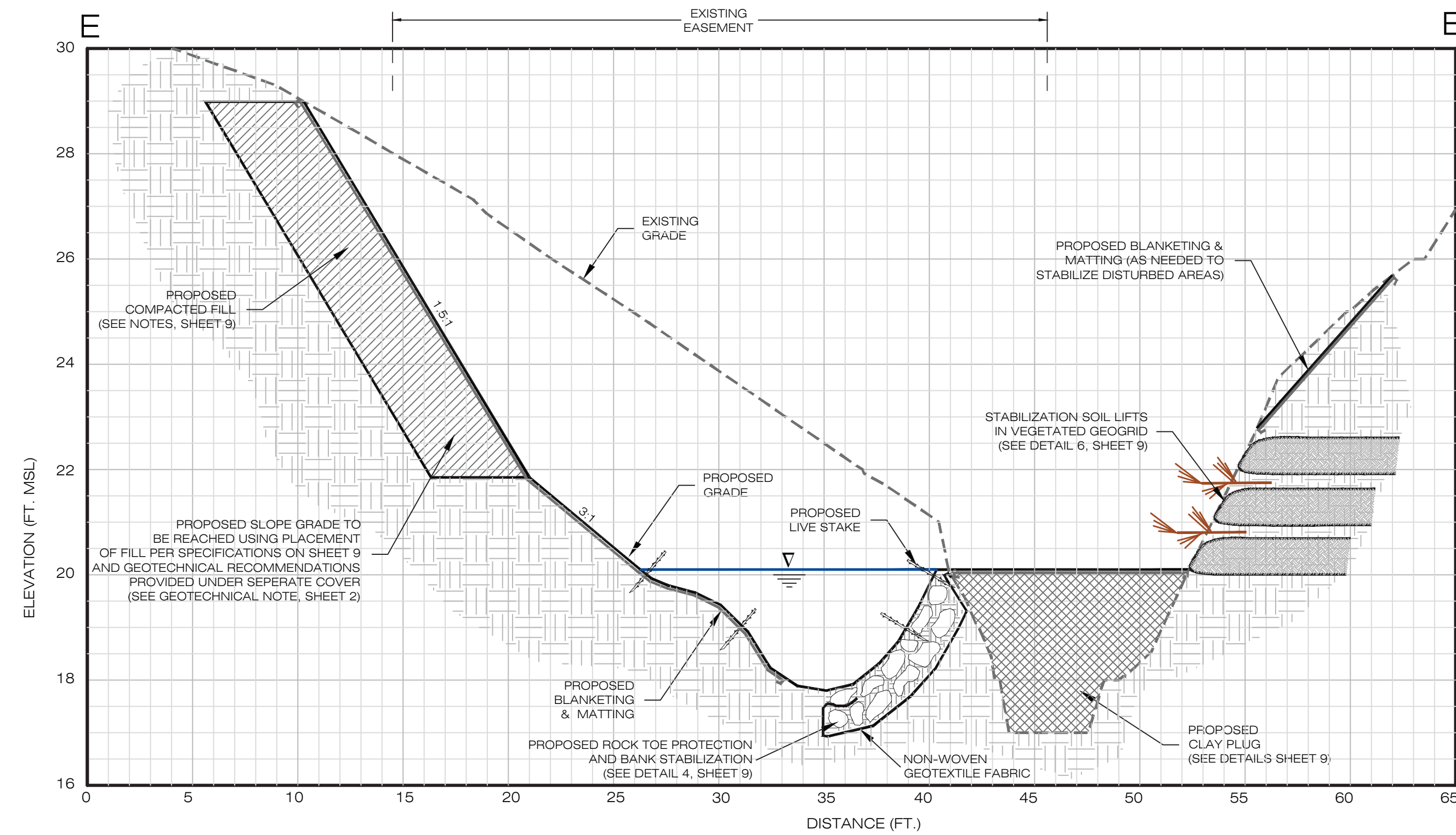
NOTES

1. PROPOSED CHANNEL ALIGNMENT REFLECTS MINOR MODIFICATIONS TO EXISTING EASEMENT TO INCORPORATE MINIMUM REQUIRED CHANNEL SINUOSITY.
2. PROPOSED CHANNEL GEOMETRY, DIMENSIONS AND BANK SLOPES MAY BE ADJUSTED TO LIMIT DISTURBANCE UPON APPROVAL OF THE ENGINEER.
3. ADDITIONAL FLOODPLAIN TERRACES (I.E. AT 10 YR ROUTED WATER SURFACE ELEVATION) MAY BE INCORPORATED WITH APPROVAL FROM THE CITY AND WITH CONSIDERATION OF STAKEHOLDER/ LANDOWNER COORDINATION.



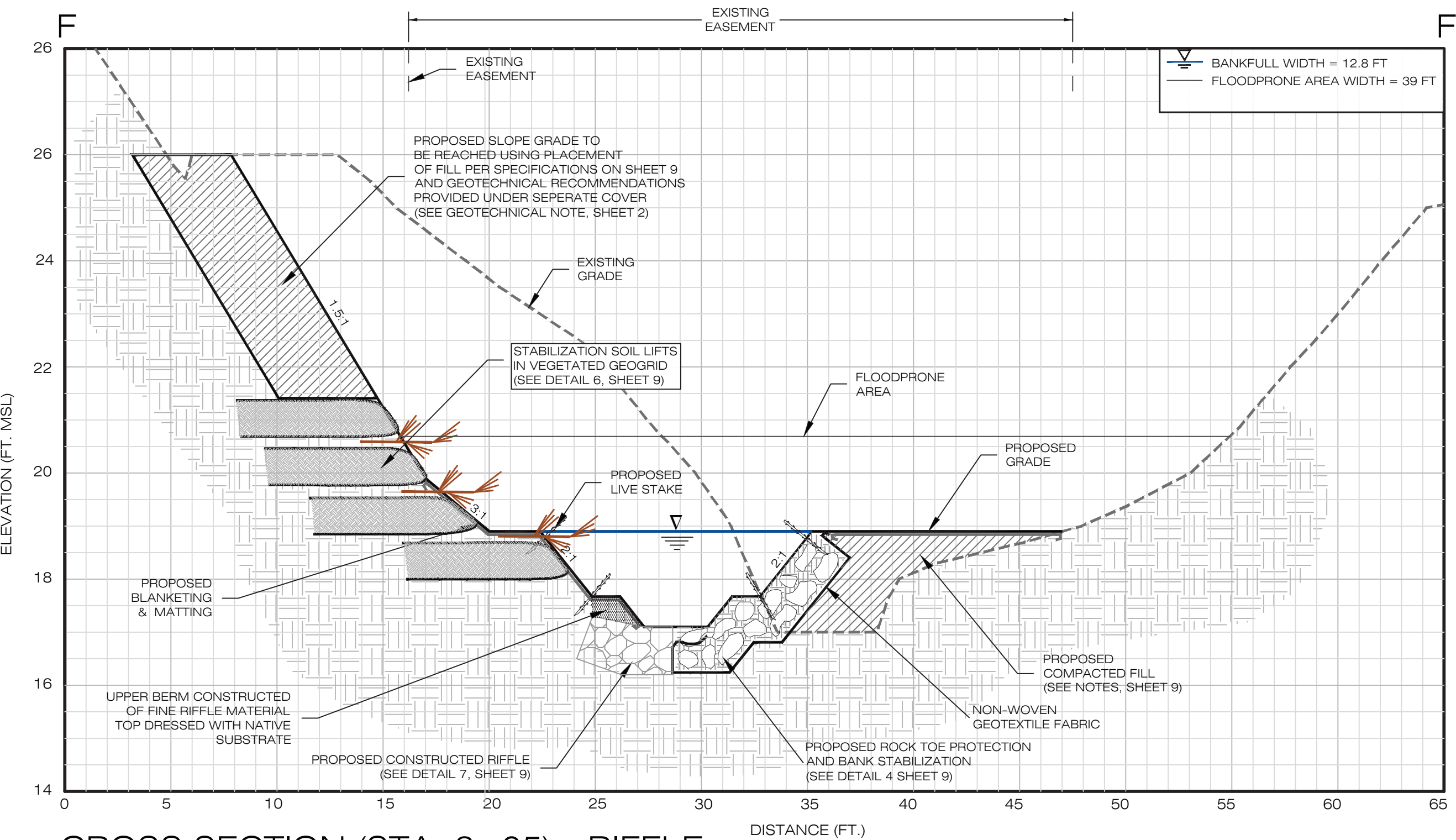
CROSS SECTION (STA. 2+00) - RIFFLE

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



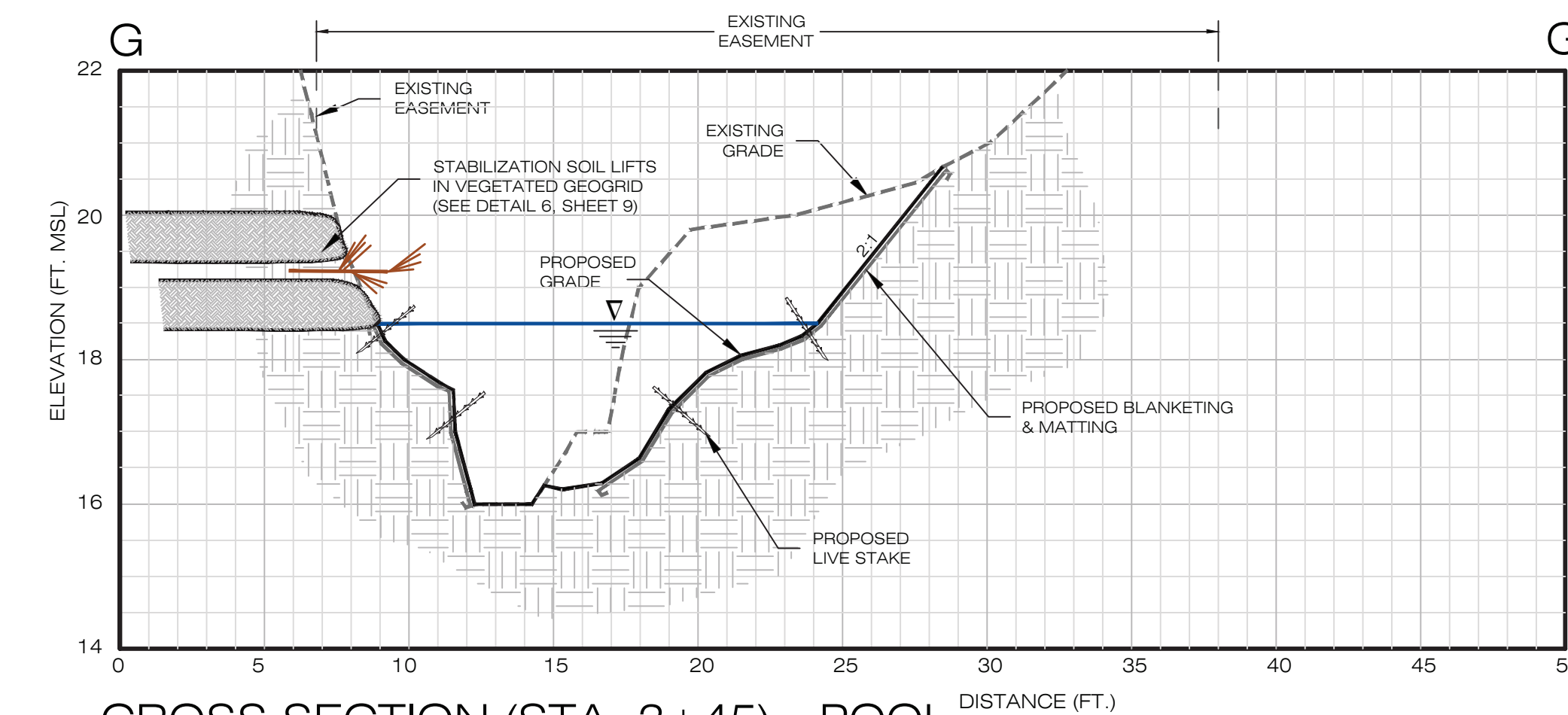
CROSS SECTION (STA. 2+53) - POOL

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



CROSS SECTION (STA. 3+05) - RIFFLE

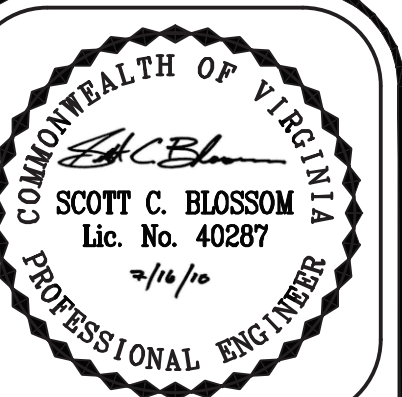
VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



CROSS SECTION (STA. 3+45) - POOL

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

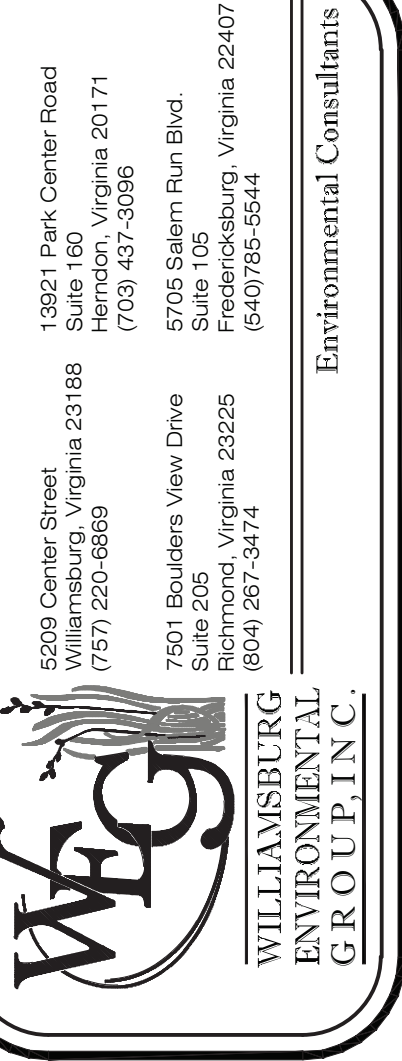
CROSS-SECTIONS (1) ROBINHOOD LANE STREAM RESTORATION PROJECT CITY OF NEWPORT NEWS, VIRGINIA



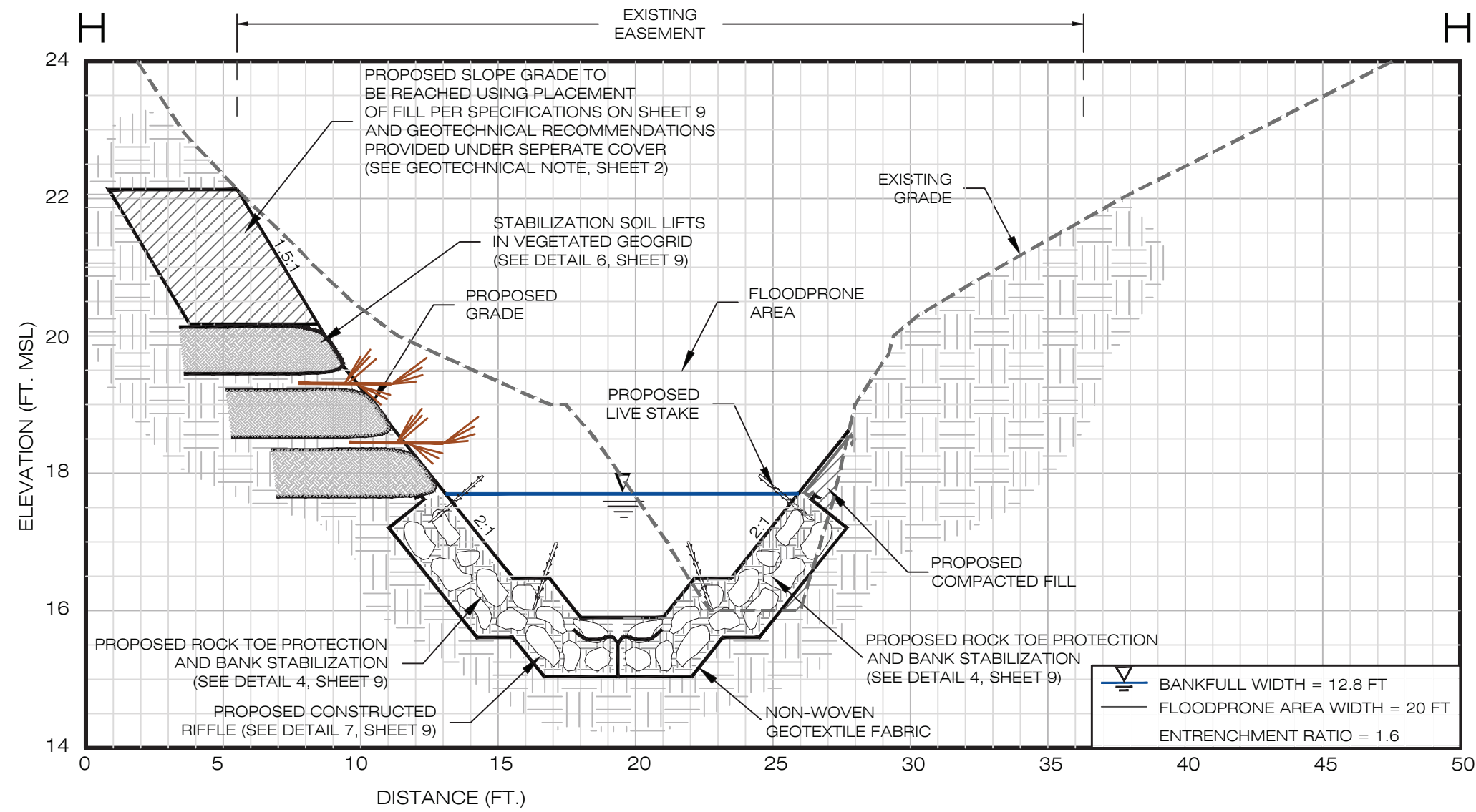
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DATE: 7/16/10
DESIGNED BY: SHAWCH
CHECKED BY: JWR/SCBCK

SHEET: 7
JOB#: 4275

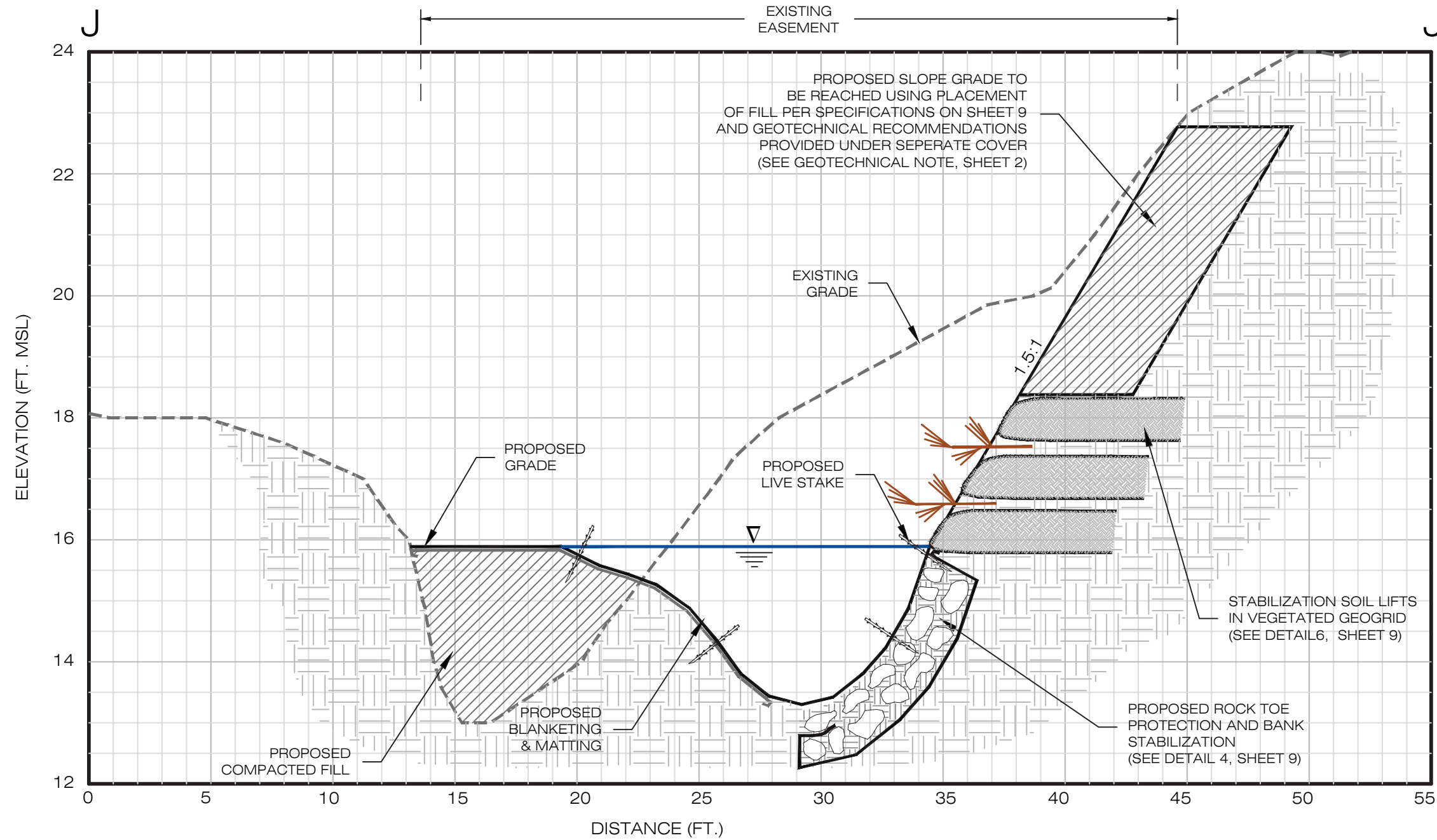


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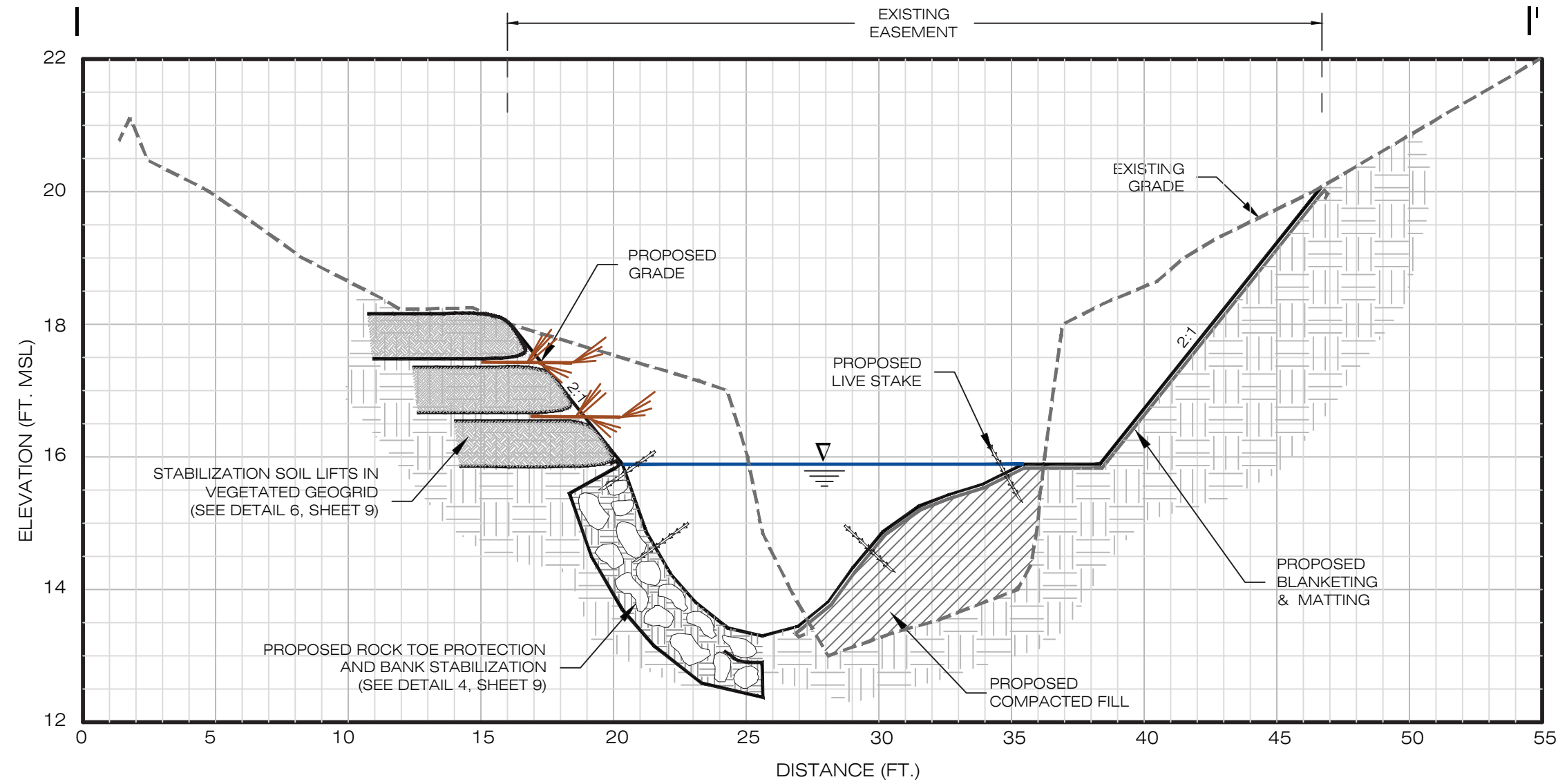
CROSS SECTION (STA. 3+85) - RIFFLE

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



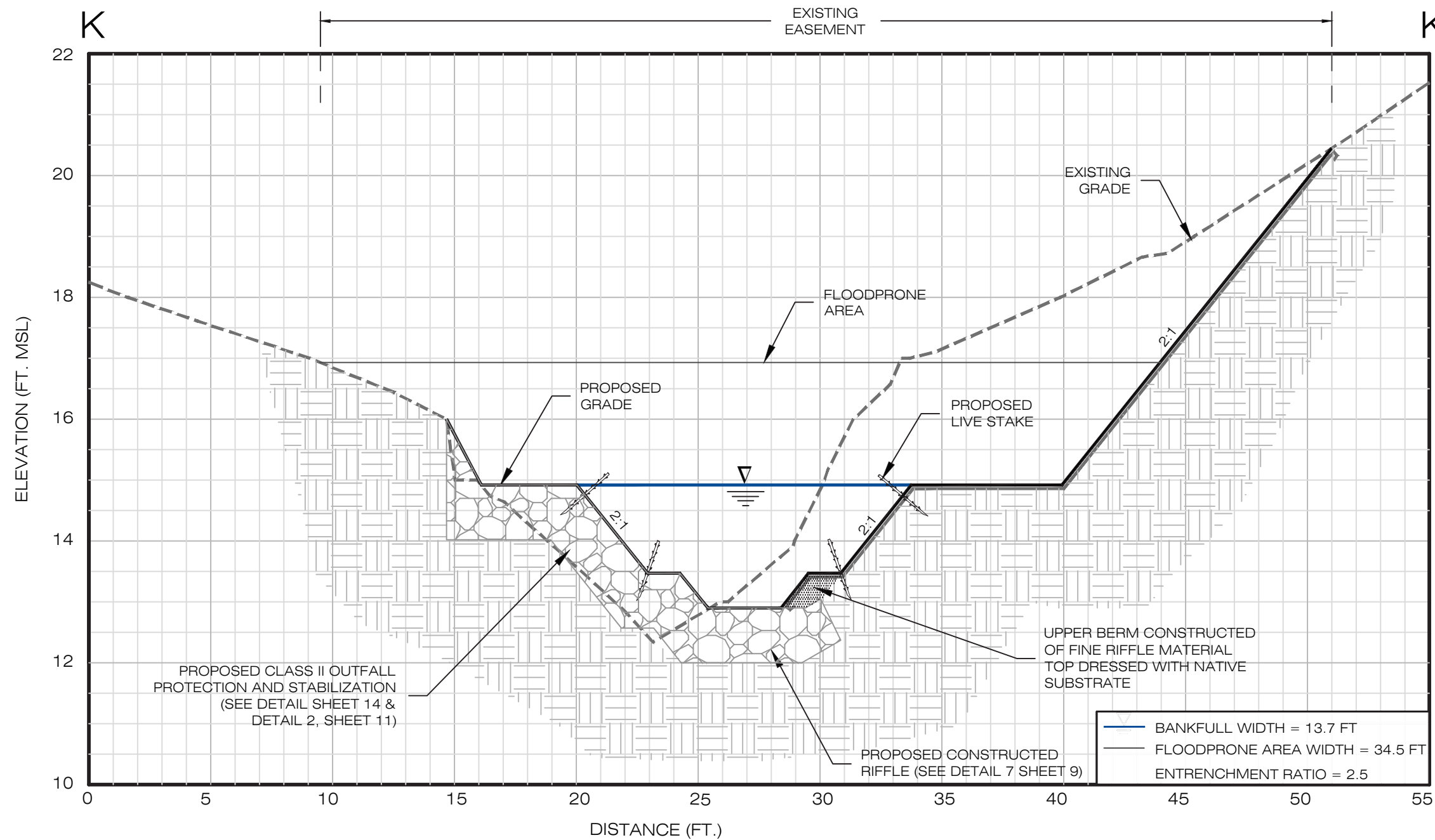
CROSS SECTION (STA. 5+15) - POOL

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



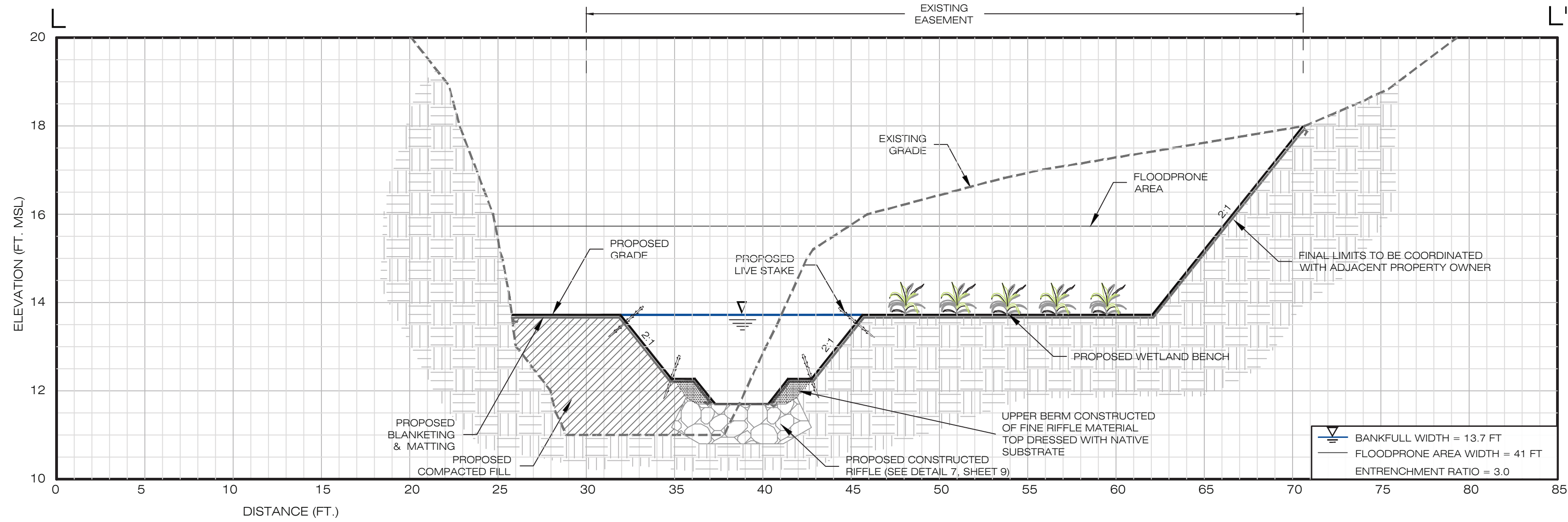
CROSS SECTION (STA. 4+90) - POOL

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'



CROSS SECTION (STA. 5+80) - RIFFLE

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

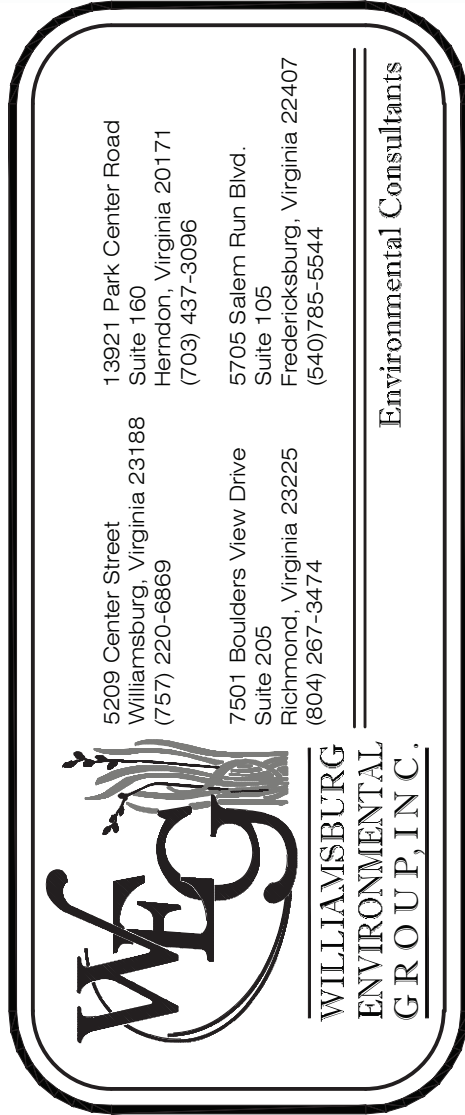


CROSS SECTION (STA. 6+37) - RIFFLE

VERTICAL SCALE: 1" = 2' HORIZONTAL SCALE: 1" = 5'

NOTES

1. PROPOSED CHANNEL ALIGNMENT REFLECTS MINOR MODIFICATIONS TO EXISTING EASEMENT TO INCORPORATE MINIMUM REQUIRED CHANNEL SINUOSITY.
2. PROPOSED CHANNEL GEOMETRY, DIMENSIONS AND BANK SLOPES MAY BE FIELD ADJUSTED TO LIMIT DISTURBANCE UPON APPROVAL OF THE ENGINEER.
3. ADDITIONAL FLOODPLAIN TERRACES (I.E. AT 10-YR ROUTED WATER SURFACE ELEVATION) MAY BE INCORPORATED WITH APPROVAL FROM THE CITY AND WITH CONSIDERATION OF STAKEHOLDER/ LANDOWNER COORDINATION.



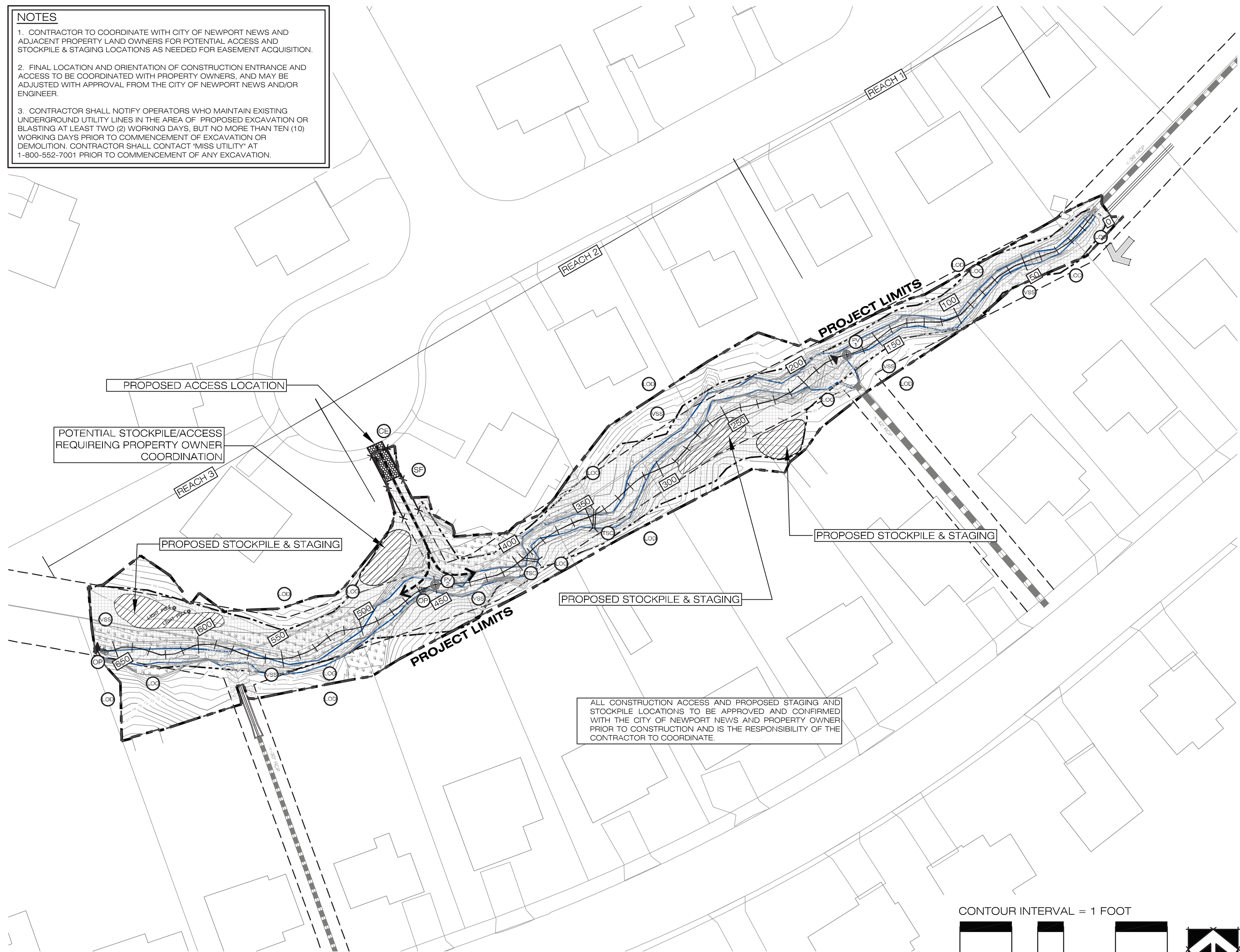
CROSS-SECTIONS (2)
ROBINHOOD LANE
STREAM RESTORATION PROJECT
CITY OF NEWPORT NEWS, VIRGINIA



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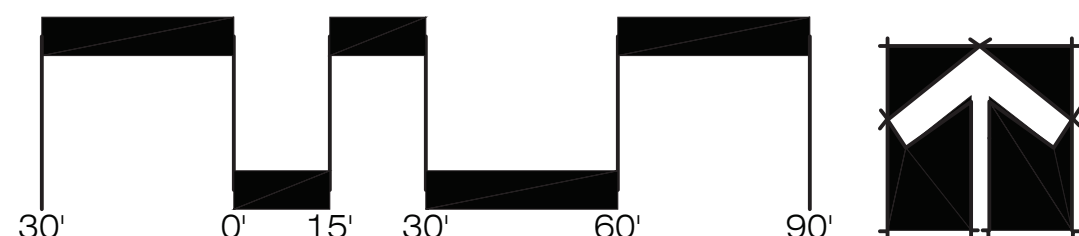
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DESIGNED BY: SHAWCH
DATE: 7/16/10
CHECKED BY: JWR/SCBCK
SHEET: 8
JOB#: 4275

1. CONTRACTOR TO COORDINATE WITH CITY OF NEWPORT NEWS AND ADJACENT PROPERTY LAND OWNERS FOR POTENTIAL ACCESS AND STOCKPILE & STAGING LOCATIONS AS NEEDED FOR EASEMENT ACQUISITION.
2. FINAL LOCATION AND ORIENTATION OF CONSTRUCTION ENTRANCE AND ACCESS TO BE COORDINATED WITH PROPERTY OWNERS, AND MAY BE ADJUSTED WITH APPROVAL FROM THE CITY OF NEWPORT NEWS AND/OR ENGINEER.
3. CONTRACTOR SHALL NOTIFY OPERATORS WHO MAINTAIN EXISTING UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-552-7001 PRIOR TO COMMENCEMENT OF ANY EXCAVATION.



SCALE: 1 INCH = 30 FEET

CONTOUR INTERVAL = 1 FOOT



DUE TO THE NATURE AND SHORT CONSTRUCTION PERIOD OF THIS PROJECT, EROSION AND SEDIMENT CONTROL SHALL BE HANDLED IN THE FOLLOWING MANNER. ALL DETAILS AND EROSION AND SEDIMENT CONTROL MEASURES SHALL FOLLOW THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESH, 1992) MINIMUM STANDARDS. ADDITIONALLY, THE CITY OF NEWPORT NEWS ENVIRONMENTAL DIVISION EROSION AND SEDIMENT CONTROL NOTES AND DETAILS, ALSO APPLY TO THIS PROJECT.

1. THE SITE SHALL BE ACCESSED AS SHOWN ON THIS PLAN SHEET. ACCESS LOCATIONS SHALL BE COORDINATED AND APPROVED BY THE CITY OF NEWPORT NEWS, VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) AND IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MANAGE.
2. CLEARING OF EXISTING TREES SHALL BE LIMITED TO THE MINIMUM EXTENT NEEDED TO PERFORM THE PROPOSED WORK.
3. ALL CONSTRUCTION ACTIVITIES WILL TAKE PLACE FROM UPSTREAM TO DOWNSTREAM, LIMITING DISTURBED AREAS TO THOSE WHICH CAN BE STABILIZED THE SAME WORKING DAY.
4. DURING PERIODS OF FLOW WITHIN THE CHANNEL, A PUMP AROUND PRACTICE SHALL BE USED, AS SHOWN IN THE E&S NOTES AND DETAILS (SHEET 11). NO WORK SHALL OCCUR WITHIN THE CHANNEL DURING PERIODS OF "HIGH FLOW".
5. TEMPORARY MATTING SHALL BE INSTALLED AS DIRECTED BY DESIGNER. THIS MEASURE WILL FURTHER HELP DETER THE MOVEMENT OF SEDIMENT DOWNSTREAM.
6. THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING, AS SPECIFIED ON THE REPRESENTATIVE CROSS-SECTIONS, PRIOR TO THE COMPLETION OF EACH WORK DAY. NO BARE SOIL SHALL BE LEFT EXPOSED AFTER THE CONTRACTOR HAS LEFT THE SITE.
7. BEFORE EROSION CONTROL MATTING HAS BEEN PLACED, THE GENERAL STABILIZATION MIX SHALL BE INCORPORATED WITH THE NEWLY GRADED SUBSTRATE. SPECIFICATIONS FOR THIS MIX ARE LOCATED ON THE RIPARIAN BUFFER PLANTING PLAN (SHEET 12).
8. THE CONTRACTOR SHALL RE-EXAMINE THAT ALL WORK HAS BEEN SEEDED AND STABILIZED PROPERLY.
9. WRITTEN PERMISSION BY THE PROPERTY OWNER MUST BE OBTAINED BY THE CLIENT BEFORE ACCESSING THE SITE AT THE PROPOSED LOCATION.
10. THE CITY OF NEWPORT NEWS INSPECTOR HAS THE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD AS CONDITIONS WARRANT.

NOTE: ALL ELEVATIONS SHALL BE CHECKED BY THE
DESIGNER/ENGINEER AT THE COMPLETION OF EACH WORK ZONE, OR
AS NEEDED DURING THE CONSTRUCTION PERIOD.

1. INSTALL TEMPORARY STONE CONSTRUCTION ENTRANCE (CE) FROM ADJACENT ROADWAY. CONSTRUCTION ENTRANCE STONE TO BE PLACED ON GEO-TEXTILE FABRIC FOR REMOVAL AFTER CONSTRUCTION.
2. INSTALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES TO COMPLY WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION 1992.
3. PERFORM ALL NECESSARY CLEARING & GRUBBING OPERATIONS.
4. EXCAVATE SUMP HOLE OR IDENTIFY EXISTING POOL UPSTREAM OF THE WORK AREA FOR PUMP AROUND INSTALLATION.*
5. INSTALL VELOCITY DISSIPATER DOWNSTREAM OF THE WORK AREA.
6. SET UP PUMP AROUND DIVERSION AND HOSE/PIPE. *
7. INSTALL UPSTREAM AND DOWNSTREAM BARRIERS AND START PUMP.*
8. ROUGH GRADE STREAM AREAS AS SHOWN ON RESTORATION PLAN AND PROFILES (SHEETS 4 - 6).
9. INSTALL INSTREAM STRUCTURES AS SHOWN ON RESTORATION PLAN AND PROFILES (SHEETS 4 - 6).
10. INSTALL STORMWATER RETROFITS AS SHOWN ON THE HYDROLOGY AND HYDRAULIC SUMMARY (SHEET 14).
11. BRING ALL PREVIOUSLY ROUGH GRADED AREAS TO FINISH GRADE.
12. APPLY SEEDING AND INSTALL EROSION CONTROL MATTING UP-SLOPE OF THE STREAM AS SHOWN ON RESTORATION PLAN AND PROFILES (SHEETS 4 - 6).
13. ONLY DISTURB AREA THAT CAN BE STABILIZED AT THE END OF EACH WORKING DAY.
14. REMOVE IN-STREAM BARRIERS ONCE RESTORATION ACTIVITIES ARE COMPLETED AND REMOVE PUMP AND PIPE. *
15. STABILIZE ALL OTHER AREAS DISTURBED DURING CONSTRUCTION WITH GENERAL STABILIZATION SEED MIX AS SHOWN ON PLANTING PLAN (SHEET 12).
16. THE CITY OF NEWPORT NEWS INSPECTOR HAS THE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD AS CONDITIONS WARRANT.

* NOTE - INSTALL PUMP AROUND ONLY DURING PERIODS OF FLOW WITHIN THE STREAM CHANNEL. PUMP AROUND OPERATION SHALL REMAIN IN PLACE UNTIL WORK AREA HAS BEEN STABILIZED WITH MATTING. USE DEWATERING PUMP AND DEWATERING DEVICE TO REMOVE WATER LEFT BETWEEN THE INSTREAM BARRIERS AFTER PRIMARY PUMP INSTALLATION AND AS NEEDED DURING CONSTRUCTION. IN ABSENCE OF A PUMP AROUND OPERATION, INSTALL CHECK DAMS DOWNSTREAM OF WORK AREA AT THE ASSUMED OUTFALL LOCATION OF PUMP AROUND.

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JOB#: 4275

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF ALL WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE PLAN TO CONFINE SEDIMENT TO THE PROJECT SITE, ALL APPROPRIATE MODIFICATIONS WILL BE MADE TO CORRECT ANY PLAN DEFICIENCIES. IN ADDITION TO THESE NOTES, ALL PROVISIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL APPLY TO THIS PROJECT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN THAT MAY BE PERTINENT TO THIS PROJECT, INCLUDING MINIMUM STANDARDS 1 THROUGH 14. APPROVED EROSION AND SEDIMENT CONTROL PLAN IS FOUND TO BE INADEQUATE IN THE FIELD, THE MINIMUM STANDARDS WILL APPLY IN ADDITION TO THE PROVISIONS OF THE APPROVED PLAN.
2. AS A PREREQUISITE TO APPROVAL OF AN EROSION AND SEDIMENT CONTROL PLAN FOR LAND-DISTURBING ACTIVITIES, THE NAME OF A RESPONSIBLE LAND-DISTURBER SHALL BE PROVIDED. THE RESPONSIBLE LAND-DISTURBER SHALL BE AN INDIVIDUAL WHO HOLDS A VALID CERTIFICATE OF COMPETENCE ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND IS DEFINED AS THE PERSON IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITY. PERMITS OR PLANS WITHOUT THIS CERTIFICATE WILL BE CONSIDERED INCOMPLETE AND WILL NOT BE APPROVED UNTIL PROPER NOTIFICATION IS RECEIVED. ALSO, IF THE PERSON DESIGNATED AS RESPONSIBLE LAND-DISTURBER CHANGES BETWEEN THE TIME OF PLAN APPROVAL AND THE SCHEDULED PRECONSTRUCTION MEETING, THE ENVIRONMENTAL DIVISION SHALL BE INFORMED OF THE CHANGE. IN WRITING, 24-HOURS IN ADVANCE OF THE PRECONSTRUCTION MEETING.
3. A PRECONSTRUCTION MEETING SHALL BE HELD ON SITE BETWEEN THE CITY, THE DEVELOPER, THE PROJECT ENGINEER, THE RESPONSIBLE LAND-DISTURBER AND THE CONTRACTOR PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT. THE CONTRACTOR SHALL NOT BE ALLOWED TO BEGIN CONSTRUCTION OF THE PROJECT UNTIL THE CONTRACTOR HAS ATTENDED THE PRECONSTRUCTION MEETING. THE DESIGNATED RESPONSIBLE LAND-DISTURBER IS REQUIRED TO ATTEND THE PRECONSTRUCTION MEETING FOR THE PROJECT.
4. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED BY A TEMPORARY CONSTRUCTION ENTRANCE TO PREVENT TRACKING MUD ONTO PUBLIC RIGHT-OF-WAYS. AN ENTRANCE PERMIT FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION IS REQUIRED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN STATE RIGHT-OF-WAYS. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY (STD & SPEC. 3.02).
5. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRANSVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SLOPE LOWER WATER DOWNSLOPE WITHOUT CAUSING EROSION. A TEMPORARY FILL DIVERSION (STD & SPEC. 3.10) AND SOFT DRAIN (STD & SPEC. 3.15) SHALL BE INSTALLED PRIOR TO THE END OF EACH WORKING DAY.
6. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT TIME OF CONSTRUCTION TO INSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. ENVIRONMENTAL DIVISION APPROVAL WILL BE REQUIRED FOR OTHER DEVIATIONS FROM THE APPROVED PLAN.
7. THE CONTRACTOR SHALL PLACE SOIL STOCKPILES AT THE LOCATIONS SHOWN ON THE PLAN. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT CONTROL MEASURES. OFF-SITE WASTE OR BORROW AREAS SHALL BE APPROVED BY THE ENVIRONMENTAL DIVISION PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.
8. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT. THE INSTALLATION OF DRAINAGE FACILITIES SHALL TAKE PRECEDENCE OVER ALL UNDERGROUND UTILITIES. OUTFALL DITCHES FROM DRAINAGE STRUCTURES SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION OF THE SAME (STD & SPEC. 3.18). THIS INCLUDES INSTALLATION OF EROSION CONTROL, STONE OR PAVED DITCHES WHERE REQUIRED. ANY DRAINAGE OUTFALLS REQUIRED FOR A STREET MUST BE COMPLETED BEFORE STREET GRADING OR UTILITY INSTALLATION BEGINS.
9. 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 ANY PORTION OF THE SITE THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
10. NO MORE THAN 300 FEET OF SANITARY SEWER, STORM DRAIN, WATER OR UNDERGROUND UTILITY LINES ARE TO BE OPEN AT ONE TIME. FOLLOWING INSTALLATION OF ANY PORTION OF THESE ITEMS, ALL DISTURBED AREAS ARE TO BE IMMEDIATELY STABILIZED (I.E., THE SAME DAY).
11. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING (STD & SPEC. 3.35). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.
12. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THIS PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIME AND FERTILIZER (STD & SPEC. 3.32). IRRIGATION SHALL BE REQUIRED AS NECESSARY TO ENSURE ESTABLISHMENT OF GRASS COVER.
13. ALL SLOPES STEEPER THAN 3H:1V SHALL REQUIRE THE USE OF EROSION CONTROL BLANKETS AND MATTINGS TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. INSTALLATION SHALL BE IN ACCORDANCE WITH STD & SPEC. 3.35, MULCHING, STD. & SPEC. 3.36. STABILIZATION BLANKETS AND MATTING MANUFACTURERS INSTRUCTIONS. NO SLOPES SHALL BE CREATED STEEPER THAN 2H:1V.
14. TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. TRAPPED SEDIMENT SHALL BE SPREAD, SEEDED AND MULCHED. AFTER THE PROJECT AND STABILIZATION IS COMPLETE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS.
15. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
16. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
17. FOR ANY SOIL STOCKPILES, SILT FENCE MUST BE PROVIDED AROUND THE PERIMETER IF THE STOCKPILE IS LOCATED OUTSIDE THE PERIMETER EROSION CONTROL FOR THE SITE.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE DRAINAGE OR OTHER PROTECTION WHENEVER WATER SEEPS FROM A SLOPE FACE.
19. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, A TEMPORARY STONE CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED IN A LOCATION TO BE DETERMINED BY THE OWNER. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEEPING AND TRANSPORTED TO A DISPOSAL AREA.
20. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN, OR CROSSING, A LIVE WATERCOURSE SHALL BE MET.

21. CONTRACTOR SHALL NOTIFY OPERATORS WHO MAINTAIN EXISTING UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION. CONTRACTOR SHALL CONTACT 'MISS UTILITY' AT 1-800-552-7001 PRIOR TO COMMENCEMENT OF ANY EXCAVATION.

22. PERIODIC INSPECTIONS OF ALL EROSION CONTROL MEASURES SHALL BE MADE BY THE CONTRACTOR TO ASSESS THEIR CONDITION. THIS INCLUDES INSPECTION AFTER EVERY ERODIBLE RAINFALL EVENT AND THE REPAIR OF MEASURES DAMAGED BY SUB-CONTRACTORS, ANY NECESSARY REPAIRS OR CLEAN UP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
23. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT THE TIME OF CONSTRUCTION TO ENSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. APPROVAL BY THE ENGINEER WILL BE REQUIRED FOR ANY DEVIATIONS FROM THE APPROVED PLANS.
24. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CITY OF NEWPORT NEWS ENVIRONMENTAL ENGINEERING DEPARTMENT.
25. ALL EROSION CONTROL DEVICES SHALL BE IN PLACE AND FUNCTIONAL AT ALL TIMES AND IF REMOVED FOR CONSTRUCTION PROGRESS, SHALL BE REPLACED BY THE CLOSE OF EACH WORKDAY.
26. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY, OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING IN ACCORDANCE WITH SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION. SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.
27. THE TEMPORARY STONE CONSTRUCTION ENTRANCE, SILT FENCE, AND ALL OTHER TEMPORARY ERS MEASURES SHALL BE REMOVED AND DISPOSED OF OFF-SITE AFTER FINAL APPROVAL AND ACCEPTANCE OF THE SITE BY THE ENGINEER. TRAPPED SEDIMENT SHALL BE SPREAD AND RESEED.

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM VIRGINIA EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992. THE MINIMUM STANDARDS OF THE SEDIMENT CONTROL REGULATIONS, LATEST EDITION SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

2. TEMPORARY STONE CONSTRUCTION ENTRANCE - STD. & SPEC. 3.02 - A CONSTRUCTION ENTRANCE SHALL BE EMPLOYED AT THE LOCATIONS SHOWN ON SHEET 10 TO REDUCE THE AMOUNT OF MATERIAL TRANSPORTED OFF-SITE BY CONSTRUCTION VEHICLES. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AT THE LOCATION SHOWN ON SHEET 10 FOR THE DURATION OF THE CONSTRUCTION AND STABILIZATION.
3. TEMPORARY VEHICULAR STREAM CROSSING - STD. & SPEC. 3.24 - A TEMPORARY STREAM CROSSING SHALL BE INSTALLED AS SHOWN ON SHEET 10 TO PROVIDE THE MEANS FOR CONSTRUCTION TRAFFIC TO CROSS FLOWING STREAMS WITHOUT DAMAGING THE CHANNELS AND TO KEEP SEDIMENT GENERATED BY CONSTRUCTION TRAFFIC OUT OF THE STREAM. TEMPORARY BRIDGE CROSSINGS ARE THE ONLY ACCEPTABLE CROSSING TYPES FOR DRAINAGE AREAS GREATER THAN 1 SQUARE MILE.
4. TEMPORARY PUMP AROUND DIVERSION- TEMPORARY SAND BAG DAMS WITH WATER PUMPS SHALL BE INSTALLED AS SHOWN ON SHEET 10 TO REDIRECT CONTINUOUS STREAM FLOW AROUND THE RESTORATION AREA AND REDUCE THE AMOUNT OF SCOUR AND POTENTIAL DOWNSTREAM EROSION. THE PUMP AROUND DIVERSION SHALL CREATE "DYE" WORKING CONDITIONS.
5. TEMPORARY OUTLET PROTECTION- STD. & SPEC. 3.18 - TEMPORARY OUTLET PROTECTION SHALL BE INSTALLED AS SHOWN ON SHEET 10 TO PREVENT SCOUR AND MINIMIZE ADDITIONAL EROSION AT THE OUTLET OF THE PUMP AROUND DISCHARGE HOSE. AS WITH THE PUMP AROUND DIVERSION, THE TEMPORARY OUTLET PROTECTION SHOULD ONLY BE INSTALLED DURING PERIODS IN WHICH THE STREAM SHOWS STEADY FLOW.
6. TEMPORARY ROCK CHECK DAM- STD. & SPEC. 3.20 - A TEMPORARY ROCK CHECK DAM SHALL BE INSTALLED AS SHOWN ON SHEET 10 TO REDUCE THE VELOCITY OF CONCENTRATED FLOWS, THEREBY REDUCING THE AMOUNT EROSION ON SITE AND SEDIMENT BEING TRANSPORTED OFFSITE.
7. SILT FENCE - STD. & SPEC. 3.05 - SILT FENCE WILL BE INSTALLED AT LOCATIONS AS SHOWN ON SHEETS 10 IN ORDER TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM THE DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.

1. TOPSOIL (STOCKPILE) -STD. & SPEC. 3.30 TOPSOIL SHALL BE STRIPPED FROM PROPOSED GRADING AREAS AND TEMPORARILY STOCKPILED PER THE OWNER WITHIN THE PROPOSED AREAS FOR LATER USE. STOCKPILE IN SUCH A MANNER THAT NATURAL DRAINAGE WILL NOT BE OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE WILL RESULT.

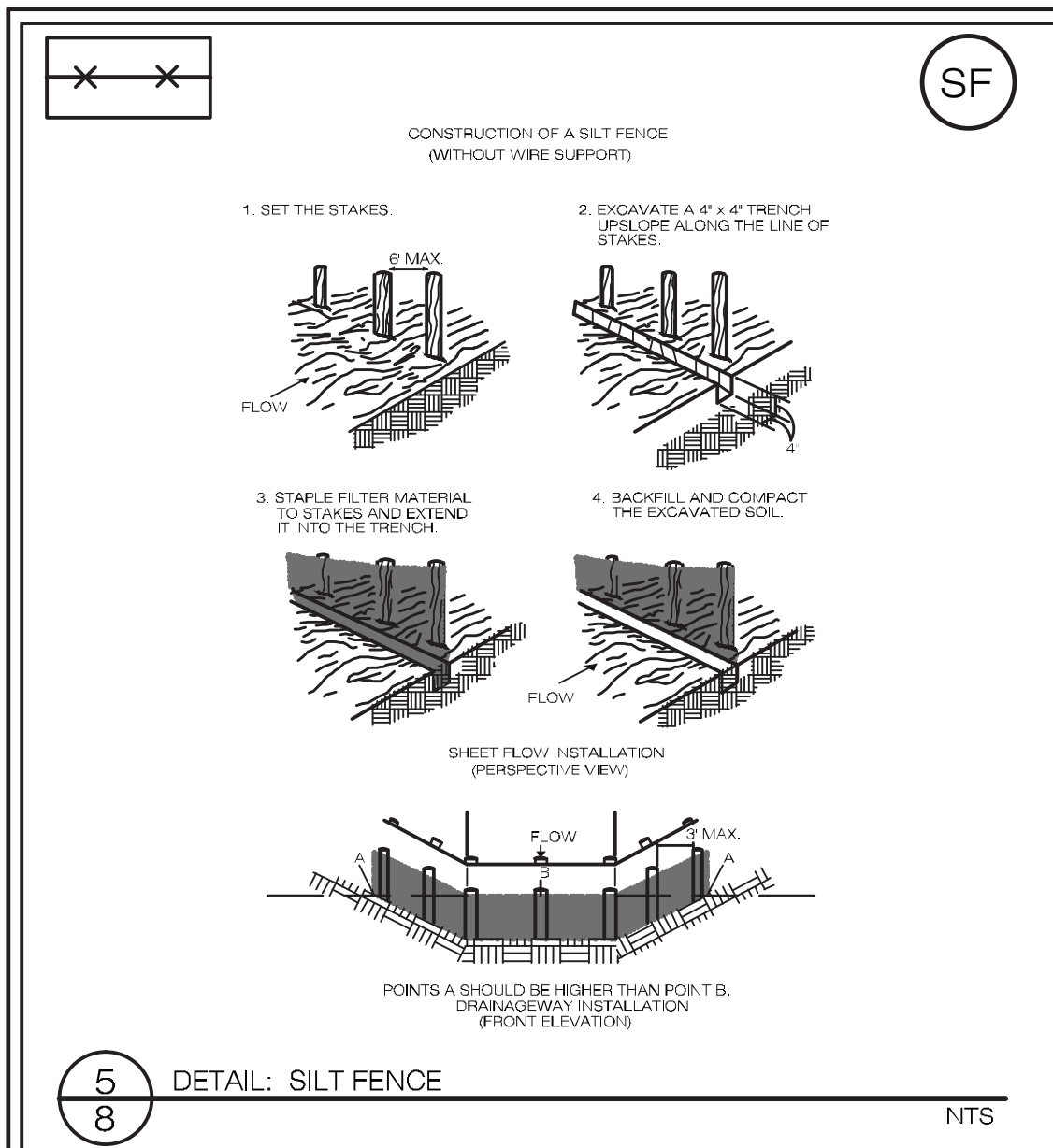
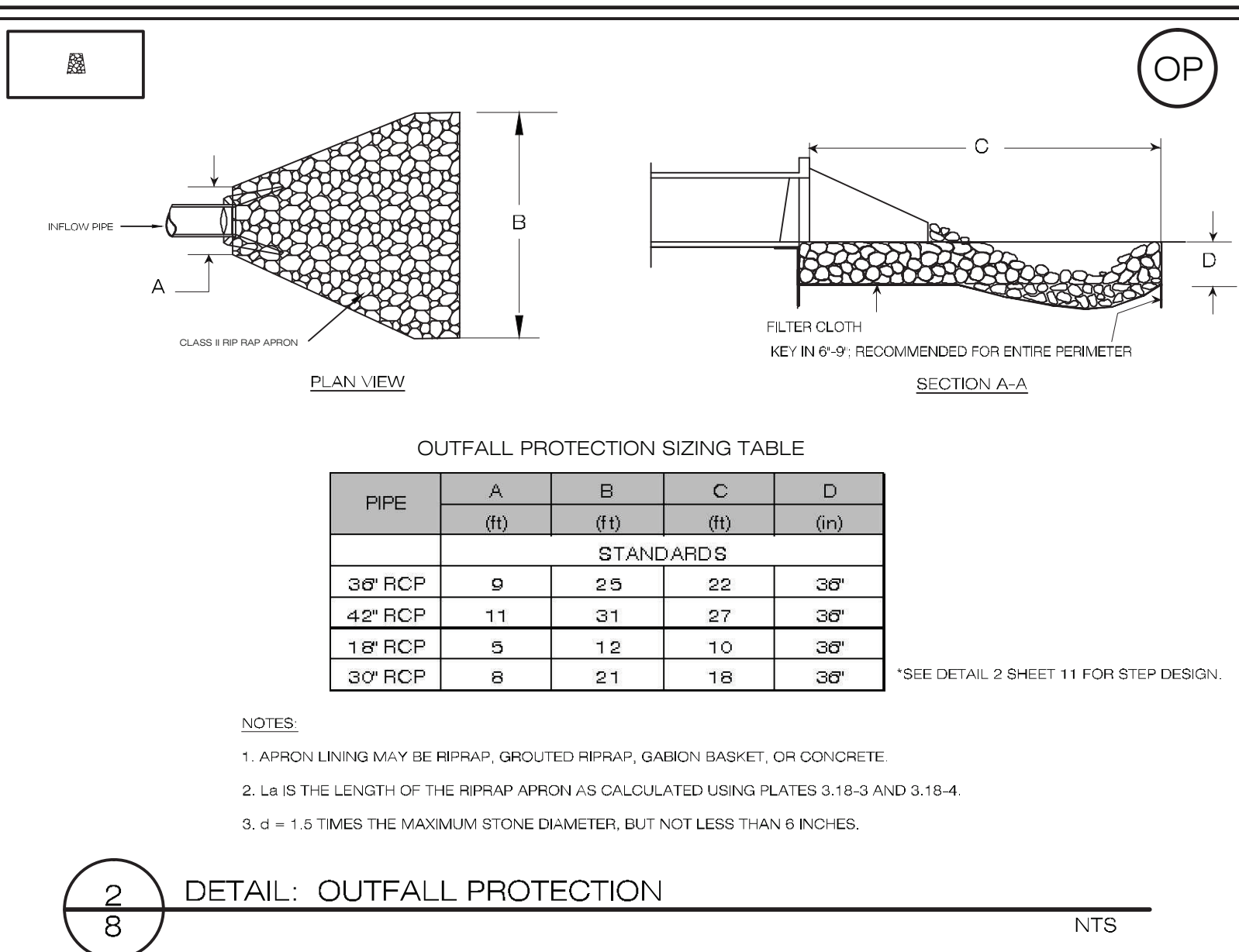
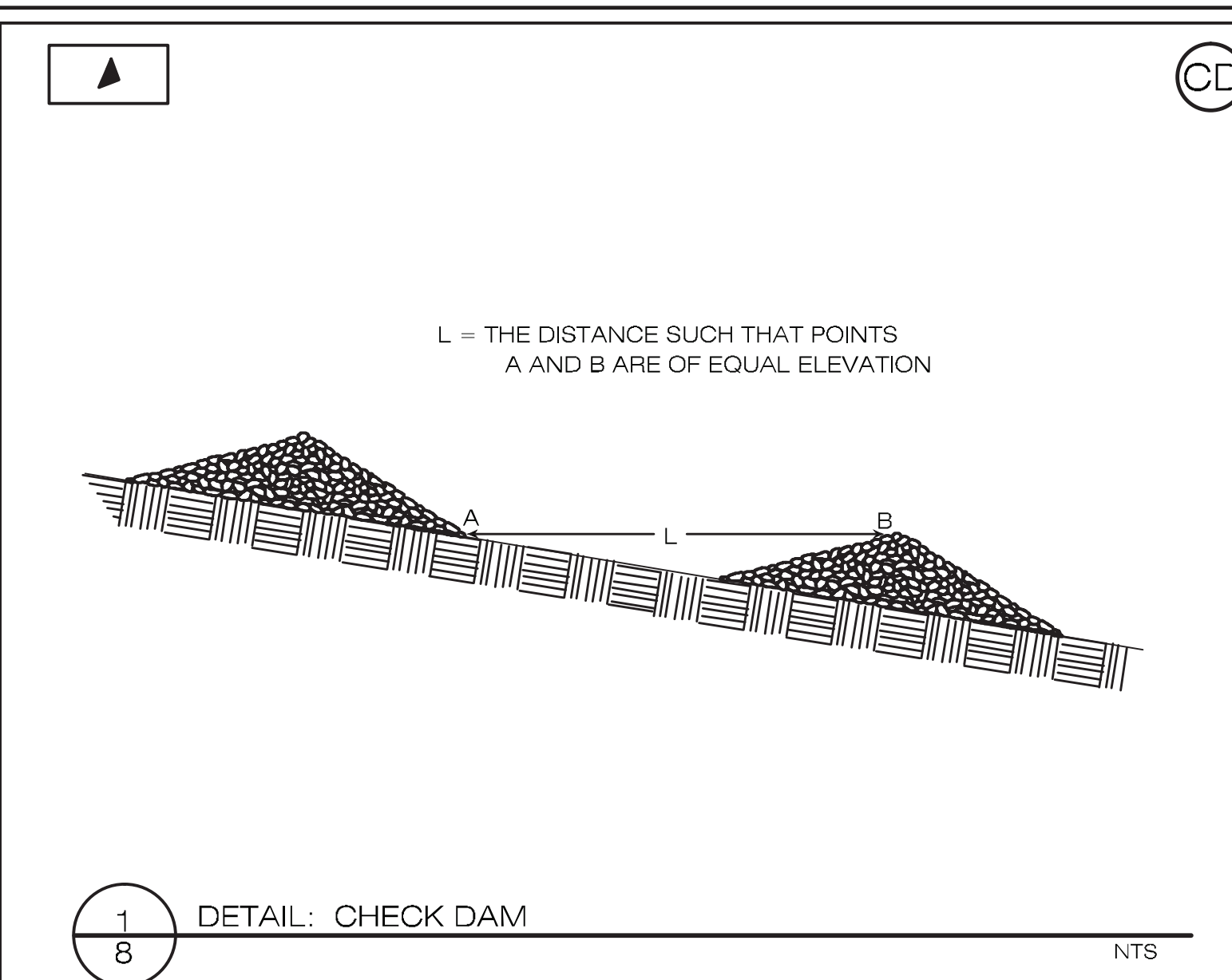
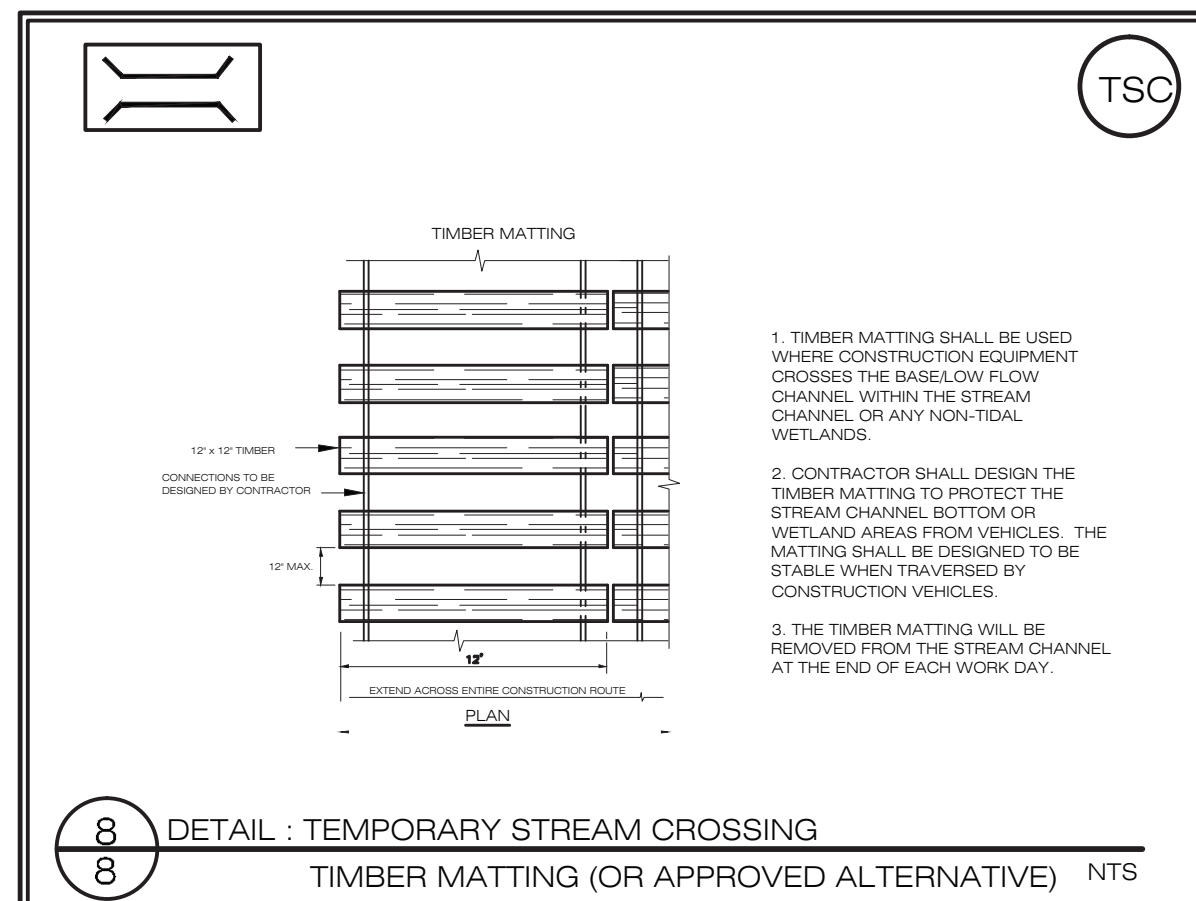
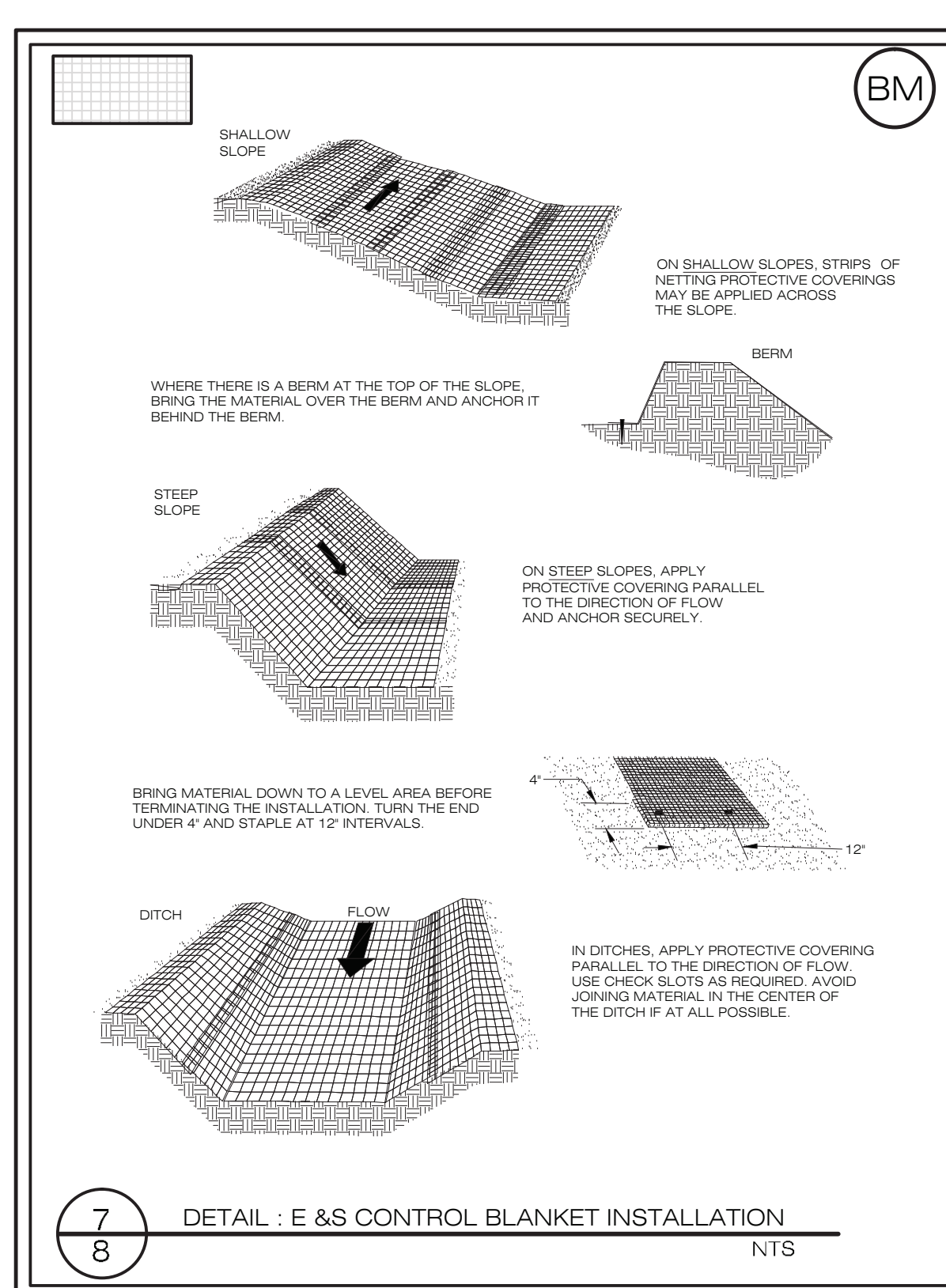
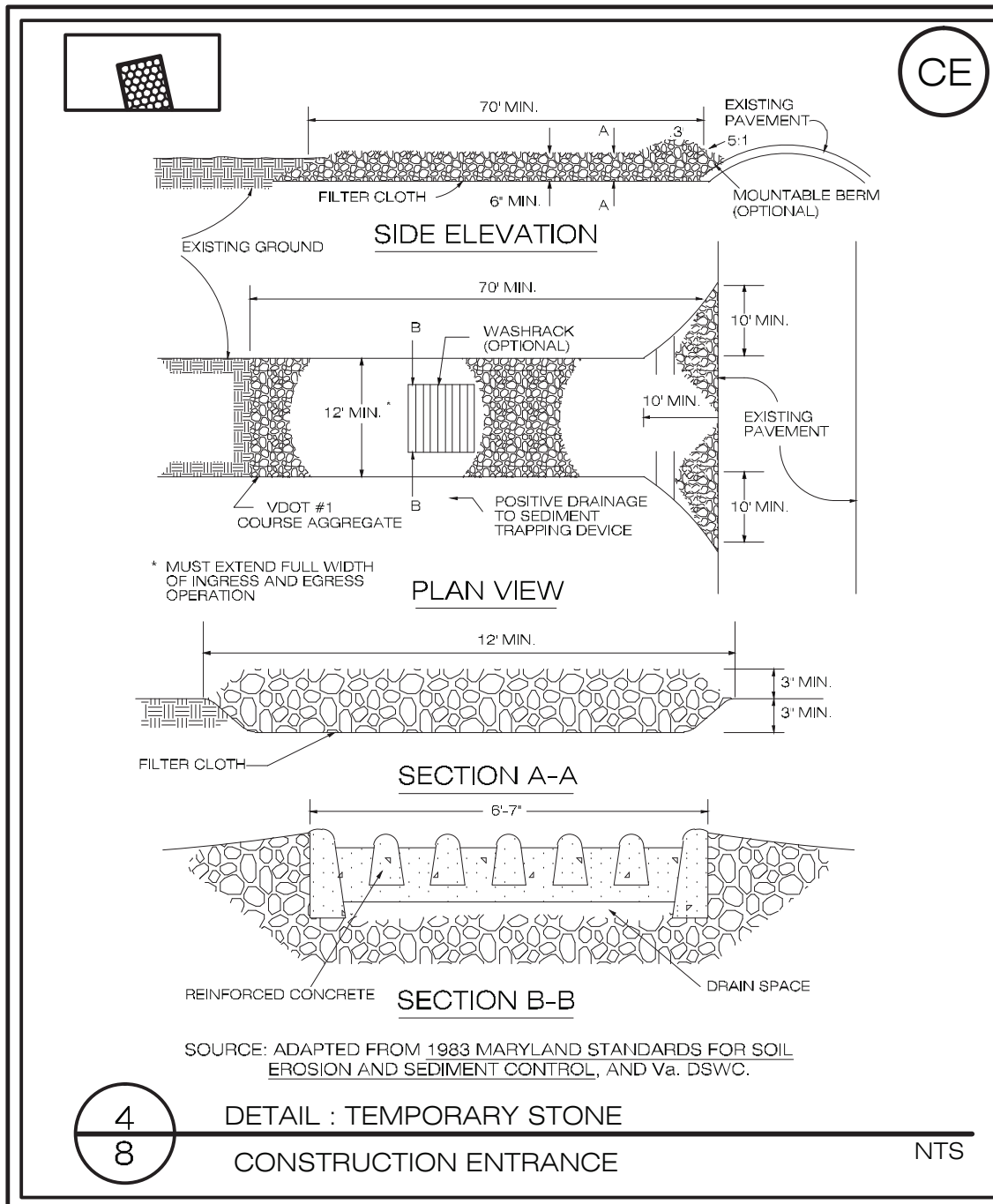
2. TEMPORARY SEEDING - STD. & SPEC. 3.31
ALL EXPOSED SOIL SURFACES THAT ARE NOT TO BE FINE-GRADED FOR PERIODS LONGER THAN 1 DAY SHALL RECEIVE TEMPORARY SEEDING. SELECTION OF THE TEMPORARY SEED MIXTURE SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992.
3. TEMPORARY STABILIZATION
100% ANNUAL RYEGRASS AT 90 LBS/ACRE
4. MULCHING - STD & SPEC. 3.36
MULCH SHALL BE APPLIED TO AREAS THAT REQUIRE TEMPORARY SEEDING TO PREVENT EROSION BY PROTECTING THE SOIL SURFACE FROM IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW. IN ADDITION, THE MULCH WILL FOSTER THE GROWTH OF VEGETATION BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT OR COLD.
5. PERMANENT SEEDING
ALL DISTURBED AREAS TO BE STABILIZED WITH STABILIZATION SEED MIX. SEE STABILIZATION SEED MIXTURE DEPCTED ON SHEET 12, RIPARIAN BUFFER PLANTING PLAN.

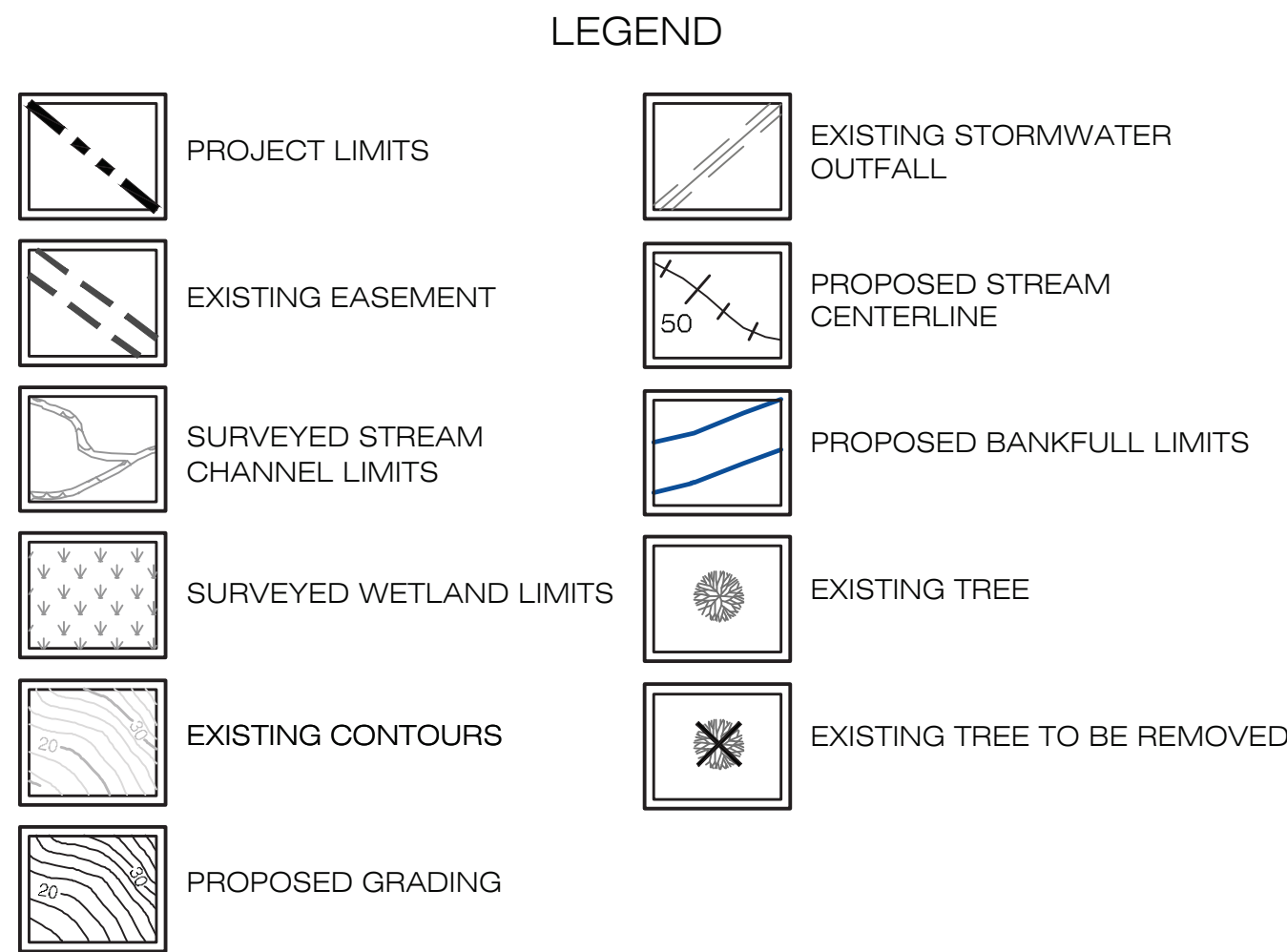
IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL BY THE CONTRACTOR. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

1. THE TEMPORARY STONE CONSTRUCTION ENTRANCE AND CONSTRUCTION ROAD STABILIZATION SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND. TO REMOVE MATERIALS WHICH ARE STRUCTURED TO BE REMOVED, THE DROPPED MATERIALS SHOULD BE TRACKED FROM THE ADJACENT ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
2. THE TEMPORARY ROCK CHECK DAMS AND TEMPORARY OUTLET PROTECTIONS SHOULD BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH RUNOFF-PRODUCING STORM EVENT OR AT THE END OF EACH WORKING DAY THE PUMP AROUND DIVERSION WAS IN USE. THE CHECK DAMS SHOULD BE KEPT AS CLOSE AS POSSIBLE TO THE ORIGINAL GRADE AS TRUE AS POSSIBLE AND NO EROSION HAS OCCURRED IN THE ADJACENT AREAS OF THESE STRUCTURAL PRACTICES.

PRIOR TO CONSTRUCTION ACTIVITIES THE FOLLOWING REQUIREMENTS SHALL BE MET:

- A LAND DISTURBING PERMIT MUST BE OBTAINED FROM THE CITY OF NEWPORT NEWS.
- A VSPM PERMIT MUST BE OBTAINED THROUGH THE DEPARTMENT OF CONSERVATION AND RECREATION.
- A PRE-CONSTRUCTION MEETING MUST BE HELD, INCLUDING ALL RELEVANT AGENCY, CONTRACTOR AND ENGINEERING PERSONNEL.

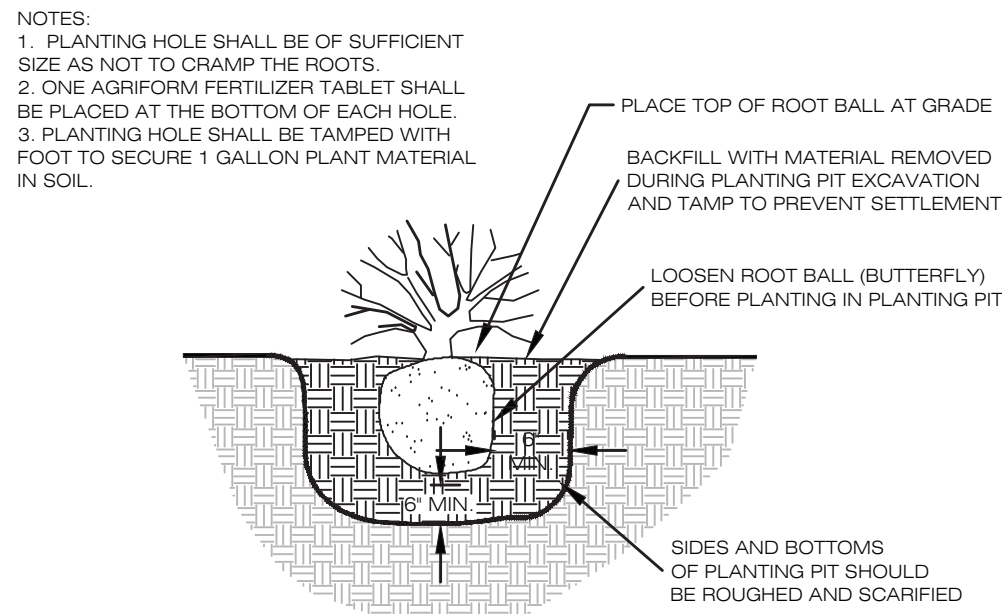




- PLANTING NOTES**
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF ALL EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO THE COMMENCEMENT OF PLANTING OPERATIONS.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH WEG THE LAYOUT OF ALL WORK COVERED UNDER THESE PLANS.
 3. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNIFORMLY BRANCHED AND HAVE A VIGOROUS ROOT SYSTEM. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE FROM DEFECTS, DECAY, DISEASES, INSECT PEST EGGS, AND ALL FORMS OF INFESTATION. ALL PLANT MATERIAL SHALL BE FRESH, FREE FROM TRANSPLANT SHOCK OR VISIBLE WILT. PLANTS DEEMED UNHEALTHY WILL BE REJECTED.
 4. ALL PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS AND STANDARDS DESCRIBED IN THE CURRENT ISSUE OF THE AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSEYMEN, 1250 I STREET, N.W., SUITE 500, WASHINGTON, D.C. 20005.
 5. ALL CONTAINER STOCK SHALL HAVE BEEN PROPAGATED IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL. CONTAINER STOCK WITH POORLY DEVELOPED ROOT SYSTEMS WILL NOT BE ACCEPTED.
 6. PLANTS WILL BE PREPARED FOR SHIPMENT IN A MANNER THAT WILL NOT CAUSE DAMAGE TO THE BARK, BUDS, BRANCHES, STEMS, OR OVERALL SHAPE OF THE STOCK. CONTAINER GROWN PLANTS WILL BE TRANSPORTED IN THE CONTAINERS IN WHICH THEY HAVE BEEN GROWN.
 7. PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL ONSITE SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. OUTSIDE STORAGE AREAS WILL BE SHADED AND PROTECTED FROM THE WIND AND SUN. PLANTS STORED ONSITE SHALL BE PROTECTED FROM ANY DRYING AT ALL TIMES BY COVERING THE BALLS OR ROOTS WITH MOIST SAWDUST, WET BURLAP, WOODCHIPS, SHREDDED BARK, PEAT MOSS, OR OTHER SIMILAR MULCHING MATERIAL.
 8. CONTRACTOR IS RESPONSIBLE FOR ADDING ANY SOIL AMENDMENTS DEEMED NECESSARY BY THE ENGINEER TO ESTABLISH A PH OF 6.2.
 9. NO SUBSTITUTIONS IN SIZE OR VARIETY OF PLANT MATERIAL WITHOUT THE PRIOR APPROVAL OF WEG.
 10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. NOTIFY WEG OF ANY VARIANCE FROM PLAN.
 11. NO PLANTING IS TO OCCUR WHEN THE SOIL IS FROZEN.
 12. THE CONTRACTOR MAY BE RESPONSIBLE FOR REPLANTING ANY PLANT MATERIAL INSTALLED WITHOUT APPROVAL BY WEG.
 13. HOLES FOR INDIVIDUAL PLANTINGS SHALL BE EXCAVATED TO PRODUCE VERTICAL SIDES AND FLAT BOTTOMS. ALL PLANTING HOLES SHALL HAVE ROUGHED, SCARIFIED SIDES AND BOTTOMS.
 14. CONTAINERIZED PLANTS SHALL BE SET IN THE PLANTING PIT AT THE PROPER DEPTH ON TAMPED SOIL. SOIL REMOVED FROM THE PLANTING PIT AND SHALL THEN BE FILLED AROUND THE ROOTS AND TAMPED.
 15. DURING PLANTING THE CONTRACTOR SHALL WATER EACH CONTAINERIZED PLANT INSTALLED WITH A MINIMUM OF 1 GALLON OF WATER, UNLESS OTHERWISE DIRECTED BY WEG DUE TO EXISTING SITE CONDITIONS AND SATURATIONS.
 16. APPLY SLOW RELEASE FERTILIZER TO ALL PLANTS AS PER MANUFACTURERS DIRECTIONS ON LABEL AT PLANTING.
 17. TREE MATS SHALL BE INSTALLED WITH ALL TUBELING MATERIAL.
 18. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO INDICATED FINAL GRADES IF DISTURBED BY THE INSTALLATION OF PLANT MATERIAL.
 19. SEED CONTAINING PROHIBITED OR RESTRICTED NOXIOUS WEEDS WILL NOT BE ACCEPTED. SEED SHALL NOT CONTAIN IN EXCESS OF 0.5% WEED SEED.
 20. CONTRACTOR TO DETERMINE EXACT AMOUNT OF STABILIZATION SEED MIXES REQUIRED BASED ON ACTUAL DISTURBANCE.
 21. LIVE STAKES SHALL BE INSTALLED DURING THEIR DORMANCY PERIOD.
 22. LIVE STAKES SHALL BE SOAKED IN WATER BEFORE PLANTING TO INCREASE SURVIVAL AND GROWTH RATE AND SHALL NOT BE ALLOWED TO DRY OUT DURING CONSTRUCTION.
 23. LIVE STAKES SHALL BE PLANTED AT RIGHT ANGLES TO THE GROUND SURFACE WITH 4 OF LENGTH UNDERGROUND AND BUDS ORIENTED UP.

PROJECT MAINTENANCE AND WARRANTY.

1. CONTRACTOR TO ENSURE A MINIMUM OF 80% COVERAGE IN ALL SEEDED AREAS AND 100% SURVIVAL OF THE PLANTED WOODY MATERIAL FOR A PERIOD OF ONE (1) YEAR WITHIN THE PROJECT LIMITS AS SHOWN ON THIS SHEET.
2. CONTRACTOR SHALL MAINTAIN ALL SEEDED AREAS AND INSTALLED TREES WITHIN THE PROJECT LIMITS UNTIL FINAL ACCEPTANCE OF THE PROJECT BY WEG.
3. FINAL PAYMENT TO THE CONTRACTOR SHALL BE AUTHORIZED, FOLLOWING PLANTING, ONCE A SITE INSPECTION HAS BEEN COMPLETED AND APPROVED BY WEG.



DETAIL: CONTAINER TREE INSTALLATION

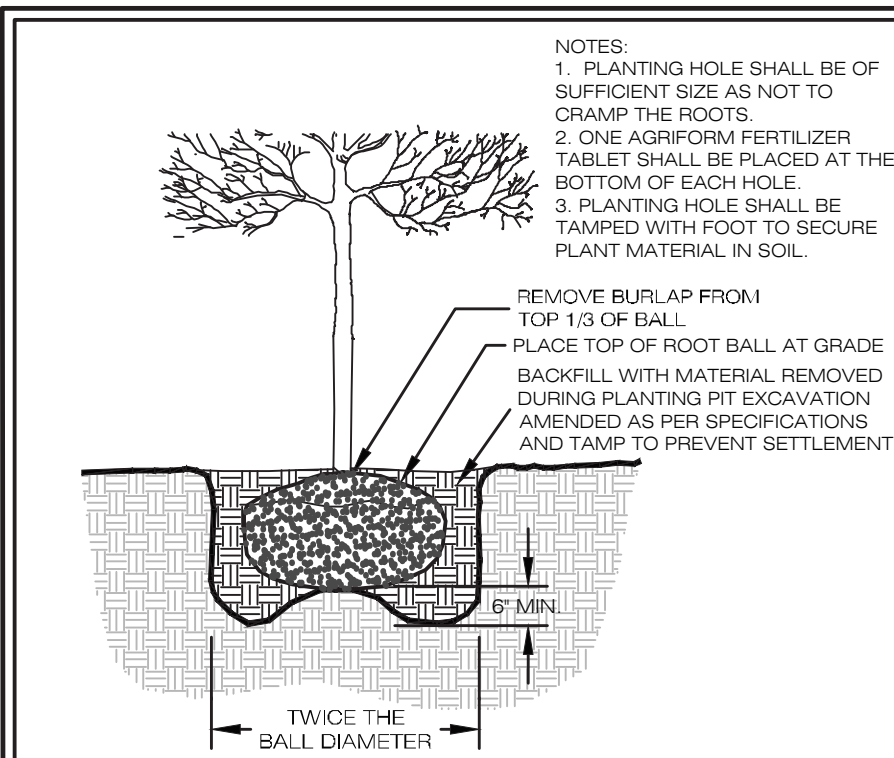
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INVASIVE SPECIES EVALUATION

AN INVASIVE SPECIES SURVEY WAS CONDUCTED IN ORDER TO DOCUMENT THE PRESENCE OF SPECIES LISTED BY THE INVASIVE ALIEN PLANT SPECIES OF VIRGINIA (ICR 2009). SPECIES IDENTIFIED WITHIN THE PROJECT AREA INCLUDE:

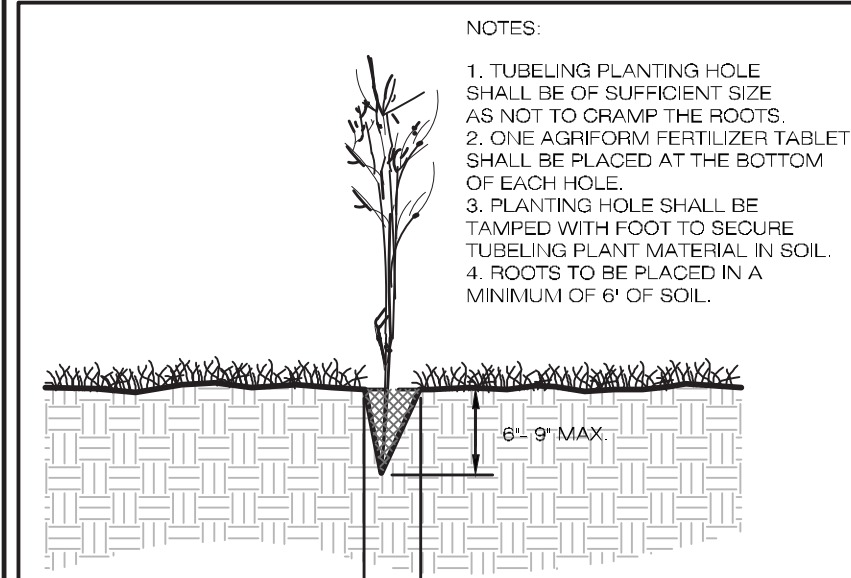
- ENGLISH IVY (HEDERA HELIX)
- NEPALESE BROWNTOP (MICROSTEGIUM VINEMUM)

INVASIVE SPECIES ERADICATION AND MANAGEMENT SHALL BE COORDINATED WITH PROPERTY OWNERS, AS SEVERAL OF THE LISTED SPECIES ARE LOCATED ON PRIVATE PROPERTY. FURTHERMORE, ANY APPROVED ERADICATION SHALL BE APPLIED WITHIN THE LIMITS OF DISTURBANCE. CONTROL MEASURES SHOULD BE TAKEN AS SOON AS FEASIBLE IN ORDER TO MAINTAIN CONTROL OF THE SITE AND PREVENT THE FURTHER SPREAD OF INVASIVE SPECIES. THE TREATMENT OF THE LISTED SPECIES CAN BE PERFORMED IN CONCERT WITH EACH OTHER AND TIME OF YEAR RESTRICTIONS WILL BE NOTED.



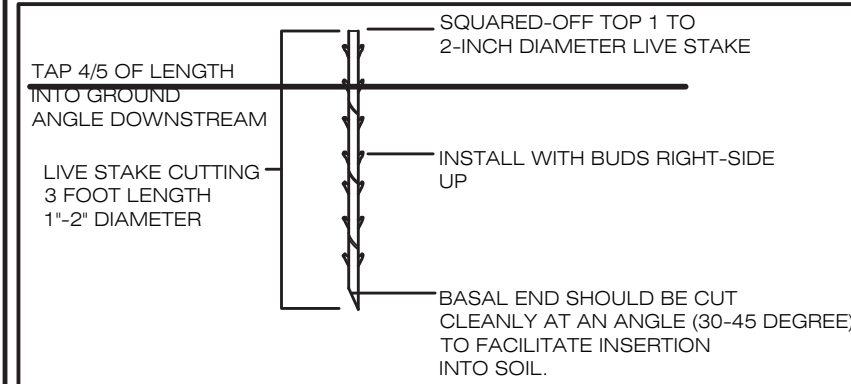
DETAIL: 1" CALIPER TREE PLANTING

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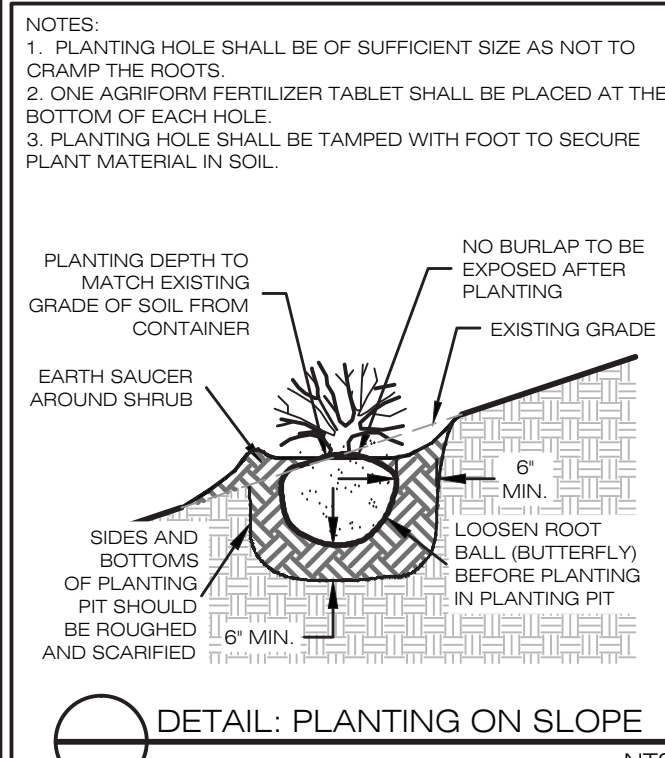
DETAIL: TUBELING INSTALLATION

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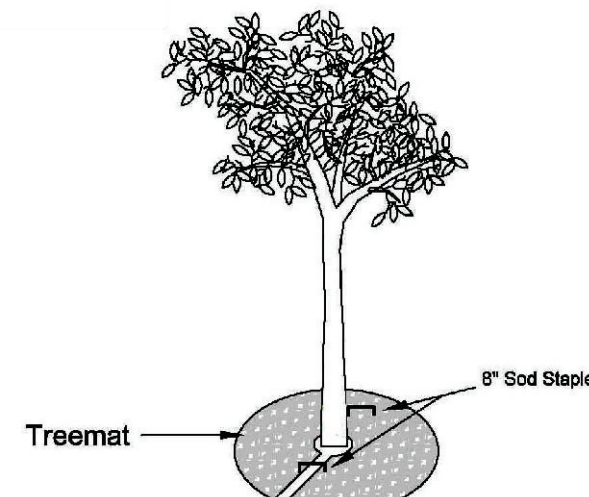
DETAIL: LIVE STAKES

NTS



DETAIL: PLANTING ON SLOPE

NTS



- INSTALLATION GUIDELINES:**
1. PLANT TREE ACCORDING TO STANDARD SPECIFICATIONS.
 2. GRUB ALL GRASS IN AREA WHERE TREEMAT WILL BE PLACED.
 3. PLACE TREEMAT AROUND TREE AND SECURE WITH SOD STAPLES.
 4. IF INSTALLING ON STEEP SLOPE, ADDITIONAL STAPLES MAY BE NEEDED.

PRODUCT NOTES:

1. TREEMAT MUST BE COMPOSED OF 100% BIODEGRADABLE, MACHINE-COMPRESSED CORP FIBER WITH 100% BIODEGRADABLE RUBBER COATING ON ONE SIDE.
2. TREEMAT MUST HAVE A CENTER OPENING AND RADIAL SLIT.
3. TREEMAT MUST BE A MINIMUM OF 1/2" THICK.

RECOMMENDED SIZING:

- 12" TREEMAT - FOR USE WITH TUBELINGS AND BARE ROOT MATERIAL
16" 24" TREEMAT - 1 GALLON AND 3 GALLON CONTAINERIZED TREES/SHRUBS
36" TREEMAT - 5 GALLON CONTAINERS OR 1 INCH CALIPER TREES
36" TREEMAT - 2 INCH CALIPER TREES

DETAIL: TREE MAT

NTS

PROPOSED PLANTING PALETTE

LEGEND	QUANTITY	BOTANICAL NAME	COMMON NAME	SPECIFICATION	HEIGHT	INDICATOR	REMARKS
GENERAL STABILIZATION SEED MIX (0.52 AC.)							
	1%	Agrostis perennans	AUTUMN BENTGRASS	SEED	-	FACU	SEED MIX SHALL BE APPLIED AT A RATE OF 30 LBS./AC. GREEN DYED MULCH SHALL BE APPLIED AT A RATE OF 1,200 LBS./AC. WHERE LAWN CONSTITUTES EXISTING STABILIZATION, CONTRACTOR TO MATCH EXISTING CONDITIONS WITH TURF TYPE SEED MIX.
	20%	Elymus virginicus	VIRGINIA WILD RYE	SEED	-	FACW+	
	30%	Lolium multiflorum	ANNUAL RYE	SEED	-	NI	
	11%	Panicum virgatum	SWITCH GRASS	SEED	-	FAC	
	2%	Monarda fistulosa	WILD BERGAMOT	SEED	-	UPL	
	10%	Parthenocissus quinquefolia	VIRGINIA CREEPER	SEED	-	FACU	
	15%	Schizachyrium scoparium	LITTLE BLUESTEM	SEED	-	FACU-	
	5%	Rudbeckia hirta	BLACK EYED SUSAN	SEED	-	FACU-	
	5%	Chamaecrista fasciculata	PARTRIDGE PEA	SEED	-	FACU	

BUFFER PLANT PALETTE (0.22 AC.)

3	Acer rubrum	RED MAPLE	#1 CONTAINER	18 INCH MIN.	FAC	PLANT QUANTITIES BASED ON A DENSITY OF 400 STEMS/ACRE PLUS MORTALITY.
17	Acer rubrum	RED MAPLE	TUBELING	12 INCH MIN.	FAC	
2	Acer rubrum	RED MAPLE	1" CALIPER B&B	6 FOOT MIN.	FAC	
3	Diospyros virginiana	COMMON PERSIMMON	#1 CONTAINER	18 INCH MIN.	FAC-	
17	Diospyros virginiana	COMMON PERSIMMON	TUBELING	12 INCH MIN.	FAC-	
3	Carpinus caroliniana	AMERICAN HORNBEAM	#1 CONTAINER	18 INCH MIN.	FAC	
12	Carpinus caroliniana	AMERICAN HORNBEAM	TUBELING	12 INCH MIN.	FAC	
4	Clethra alnifolia	SWEET PEPPER BUSH	#1 CONTAINER	18 INCH MIN.	FAC+	
18	Clethra alnifolia	SWEET PEPPER BUSH	TUBELING	12 INCH MIN.	FAC+	
3	Liriodendron tulipifera	TULIP TREE	#1 CONTAINER	18 INCH MIN.	FACU	

WETLAND STABILIZATION SEED MIX (0.055 AC.)

1%	Carex vulpinoidea	FOX SEDGE	SEED	-	OBL	SEED MIX SHALL BE APPLIED AT A RATE OF 20 LBS./AC. GREEN DYED MULCH SHALL BE APPLIED AT A RATE OF 1,200 LBS./AC.
55%	Elymus virginicus	VIRGINIA WILD RYE	SEED	-	FACW-	
1%	Eupatorium perfoliatum	COMMON BONESET	SEED	-	FACW+	
1%	Juncus effusus	SOFT RUSH	SEED	-	FACW+	
30%	Lolium multiflorum	ANNUAL RYEGRASS	SEED	-	NI	
12%	Panicum virgatum	SWITCHGRASS	SEED	-	FAC	

WETLAND PLANT PALETTE (0.055 AC.)

1	Acer rubrum	RED MAPLE	#1 CONTAINER	18 INCH MIN.	FAC	PLANT QUANTITIES BASED ON A DENSITY OF 400 STEMS/ACRE PLUS MORTALITY.
4	Acer rubrum	RED MAPLE	TUBELING	12 INCH MIN.	FAC	
1	Betula nigra	RIVER BIRCH	#1 CONTAINER	18 INCH MIN.	FACW	
4	Betula nigra	RIVER BIRCH	TUBELING	12 INCH MIN.	FACW	
1	Carpinus caroliniana	AMERICAN HORNBEAM	#1 CONTAINER	18 INCH MIN.	FAC	
4	Carpinus caroliniana	AMERICAN HORNBEAM	TUBELING	12 INCH MIN.	FAC	
1	Clethra alnifolia	SWEET PEPPER BUSH	#1 CONTAINER	18 INCH MIN.	FAC+	
5	Clethra alnifolia	SWEET PEPPER BUSH	TUBELING	12 INCH MIN.	FAC+	
1	Salix nigra	BLACK WILLOW	#1 CONTAINER	18 INCH MIN.	FACW+	
4	Salix nigra	BLACK WILLOW	TUBELING	12 INCH MIN.	FACW+	

LIVE STAKES (661 L.F.)

441	Cornus amomum	SILKY DOGWOOD	2' MIN LENGTH	-	FACW	LIVE STAKE QUANTITIES BASED ON A DOUBLE ROW SPACED 5' APART FOR THE LENGTH OF THE STREAM.
441	Salix nigra	BLACK WILLOW	2' MIN LENGTH	-	FACW+	

BRUSH LAYERING (750 L.F.)

125	Cornus amomum	SILKY DOGWOOD	BUNDLE, 5' STEM	-	FACW	BRUSH LAYERING QUANTITIES BASED ON ONE BUNDLE COVERING 7.5 L.F. ALONG PROPOSED PROFILE. LOCATE BUNDLES ACCORDING TO INDICATOR STATUS. BUNDLES SHALL BE DISTRIBUTED RANDOMLY AMONG SPECIES.
42	Salix nigra**	BLACK WILLOW	BUNDLE, 5' STEM	-	FACW+	
83	Viburnum dentatum	ARROWWOOD	BUNDLE, 5' STEM	-	FAC	

*BRUSH LAYERING TO BE INSTALLED DURING GEOGRID SLOPE STABILIZATION CONSTRUCTION.
** SALIX NIGRA TO BE USED ONLY ON LOWEST TWO LIFTS OF GEOGRID.

RIPARIAN PLANTING PLAN
ROBINHOOD LANE
STREAM RESTORATION PROJECT
CITY OF NEWPORT NEWS, VIRGINIA



REVISIONS:
DATE:

DRAWN BY: C.M.H./H.M.H.
DATE: 7/16/10
DESIGNED BY: SHAWCHUR/H.M.H.
CHECKED BY: J.W.R/S.B/C/K
JWB

SHEET: 12

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Environmental Consultants

REINFORCED CONCRETE PIPE NOTES

1. MATERIALS - REINFORCED CONCRETE PIPE CONDUITS SHOULD HAVE BELL AND SINGULAR SPIGOT JOINTS WITH RUBBER GASKETS AND SHOULD CONSIST OF CLASS IV PIPE OR STRONGER, AS DEFINED BY THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.

2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHOULD BE LAID IN APPROPRIATE BEDDING MATERIAL AND DIMENSIONS AS SPECIFIED N APPLICABLE ASTM STANDARD. THE CONTRACTOR SHALL ENSURE PROPER COMPACTION BENEATH AND AROUND THE PIPES IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS, ESPECIALLY DOWNSLOPE OF THE RAIN-TANK SYSTEM AND BENEATH THE PROPOSED SITE IMPROVEMENTS. IF PROPER COMPACTION AROUND SUCH PIPES CAN NOT BE OBTAINED, AN ALTERNATIVE METHOD MAY BE EMPLOYED AS DIRECTED BY THE GEOTECHNICAL ENGINEER ONSITE, SUCH AS A CONCRETE CRADLE, FLOWABLE FILL, OR BENTONITE SOIL AMENDMENTS.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHOULD BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHOULD BE MADE PER RECOMMENDATIONS FROM THE MANUFACTURER. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE RUN OF PIPE, THE BEDDING SHOULD BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHOULD BE TAKEN TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE.

4. BACKFILL - ALL BACKFILL MATERIAL AND PLACEMENT SHOULD CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

STRUCTURAL DESIGN/REVIEW:

SHOP DRAWINGS FOR THE PROPOSED OUTLET STRUCTURE AND ENDWALL SHALL BE REVIEWED AND SEALED BY STRUCTURAL ENGINEER AT CONTRACTOR OR PRECASTER EXPENSE.

PRECAST CONCRETE NOTES

1. PRECAST STRUCTURES WILL CONFORM WITH DESIGN SPECIFICATIONS DESCRIBED HEREIN.

2. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR OUTLET STRUCTURE & CONNECTIONS DEMONSTRATING WATERTIGHT SEALS & ADEQUATE CONNECTORS TO RESIST BUOYANT FORCES.

3. THE MANUFACTURER WILL HAVE THE OPTION OF SELECTING THE COMBINATION OF PRECAST UNITS TO COMPLETE A STRUCTURE UNLESS OTHERWISE NOTED ON THE PLANS.

4. OVERALL HEIGHT DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS, WITH APPROVAL BY ENGINEER.

5. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THIS WILL APPLY TO ALL STRUCTURES MEETING THIS CONDITION. THE COST FOR INVERT SHAPING SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.

6. ALL PRECAST STRUCTURES TO BE CONSTRUCTED WITH CLASS A3 (3200 PSI) MINIMUM CONCRETE.

7. MANHOLE STEPS TO BE PROVIDED TO MEET LATEST OSHA REGULATION 29 CFR 1910.27, SECTION 16 OF ASTM SPECIFICATION C478 AND SECTION 10 OF ASTM SPECIFICATION C497.

8. TWO 2" DIAMETER LIFT HOLES TO BE PROVIDE IN BASE UNIT. HOLES ARE TO BE LOCATED ABOVE THE CENTER OF GRAVITY OF UNIT WITH CENTERS 180 DEGREES APART.

9. LIFT HOLES TO BE GROUTED & SEALED WATERTIGHT AFTER ASSEMBLY OF OUTFALL STRUCTURE.

10. THREE LIFT EYES OF MANUFACTURERS DESIGN PER UNIT MAY BE SUBSTITUTED FOR LIFT HOLES.

11. ALL BASE, REDUCER AND RISER UNITS ARE TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M199, (ASTM C478).

12. BASE SECTION TO BE CAST MONOLITHIC INCLUDING BASE EXTENSION.

13. THE REQUIRED OPENINGS FOR PIPE SHALL BE FORMED, DRILLED OR NEATLY CUT AS APPROVED BY THE ENGINEER. THE CONTRACTOR WILL FURNISH THE FABRICATOR WITH THE ANGLES BETWEEN CENTER LINES, THE INVERT ELEVATIONS, AND THE SIZE OF ALL PIPES TO ENTER THE BASE OR RISER UNITS. FOR PIPE PENETRATIONS THE HOLES ARE TO BE A MINIMUM OF 4" TO 8" LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE.

14. ALL PIPE CONNECTIONS TO BE WATERTIGHT, FLEXIBLE AND DEFLECTION RESISTANT.

15. DIMENSIONS SHOWN ARE MINIMUM. ACTUAL DIMENSIONS MAY VARY WITH MANUFACTURER.

16. JOINT SEALANT AND INSIDE AND OUTSIDE GROUT TO BE PROVIDED FOR ALL JOINTS. JOINT SEALANT IS BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M-138.

17. REINFORCING STEEL WELDED WIRE FABRIC CONFORMS TO LATEST ASTM SPECIFICATION A185.

18. REINFORCING STEEL DEFORMED BARS CONFORM TO LATEST ASTM SPECIFICATION A6.

NOTES

1. CONTRACTOR SHALL INSTALL ROCK IN ACCORDANCE WITH THE VIRGINIA HANDBOOK, 1992, THIRD EDITION, STD & SPEC 3.19, AND THE 2004 VIRGINIA STREAM RESTORATION AND STABILIZATION BMP GUIDE, SIZE AS SPECIFIED.

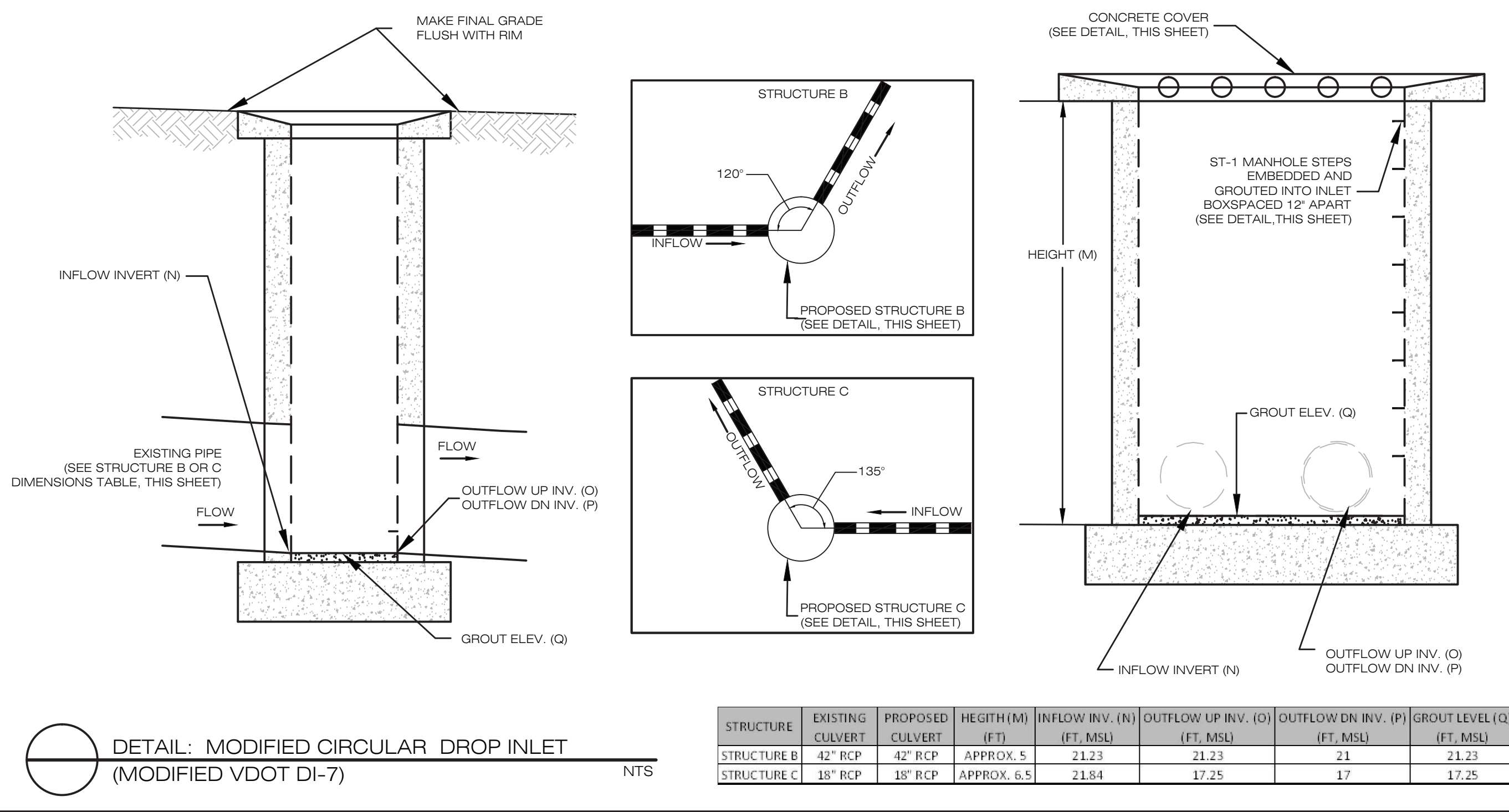
2. STONE SHALL BE ANGULAR AND PLACED TO CREATE A DENSE, WELL-GRADED MASS WITH A MINIMUM OF VOIDS.

3. ROCK TOE PROTECTION (REACH 7D, 8D, AND 10D); CLASS A1 RIPRAP.

4. SEE DESIGN SHEETS FOR LAYOUT OF ROCK TOE PROTECTION AND TYPICAL DETAIL FOR DIMENSIONS.

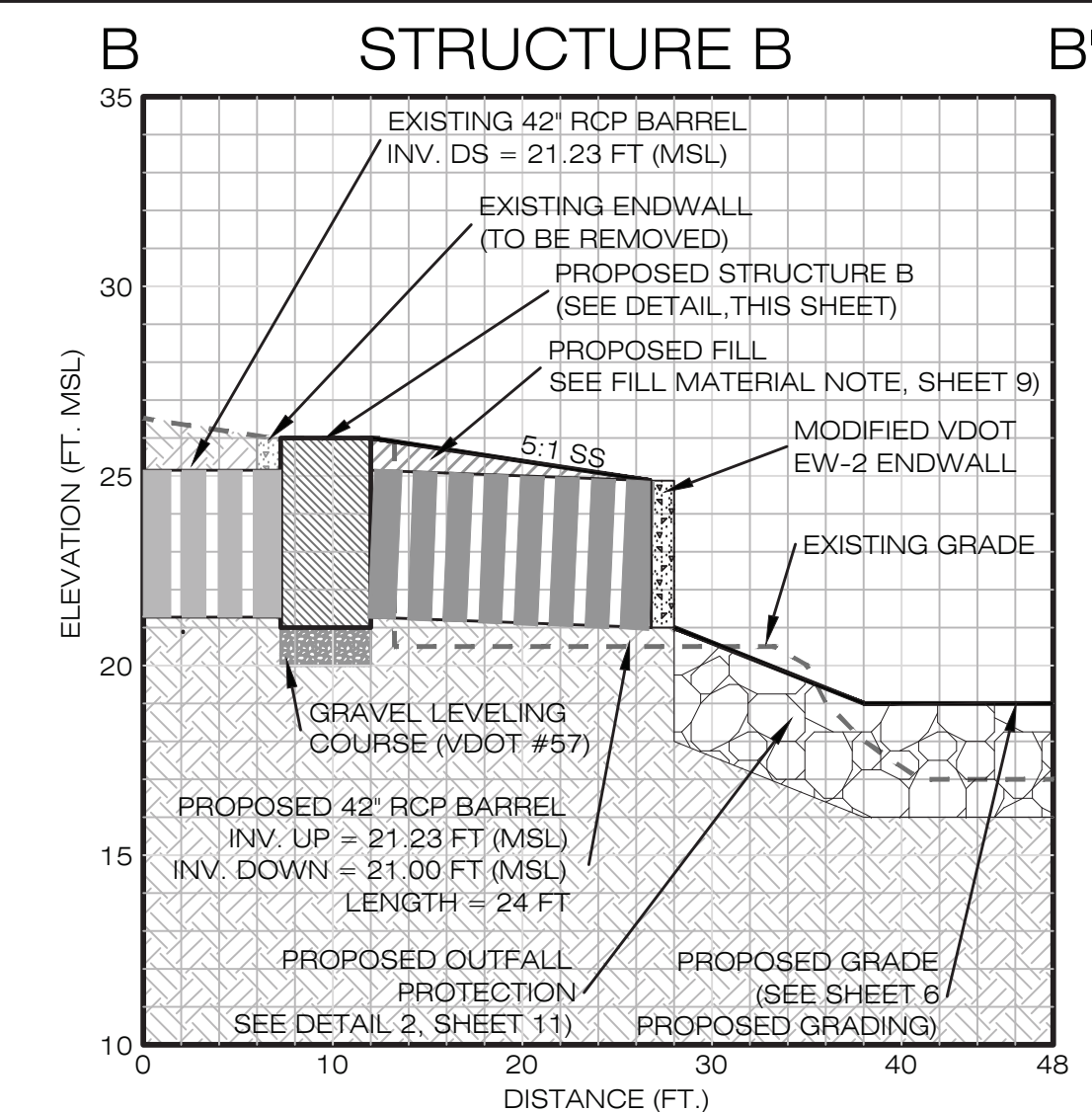
5. MAY USE STRAW MATTING (S150BN) ON OVBANK BENCH AND ABOVE 10-YEAR MAX DEPTH ONLY.

6. USE LIVE STAKES TO ANCHOR PROPOSED MATTING AND AS JOINT PLANTINGS.



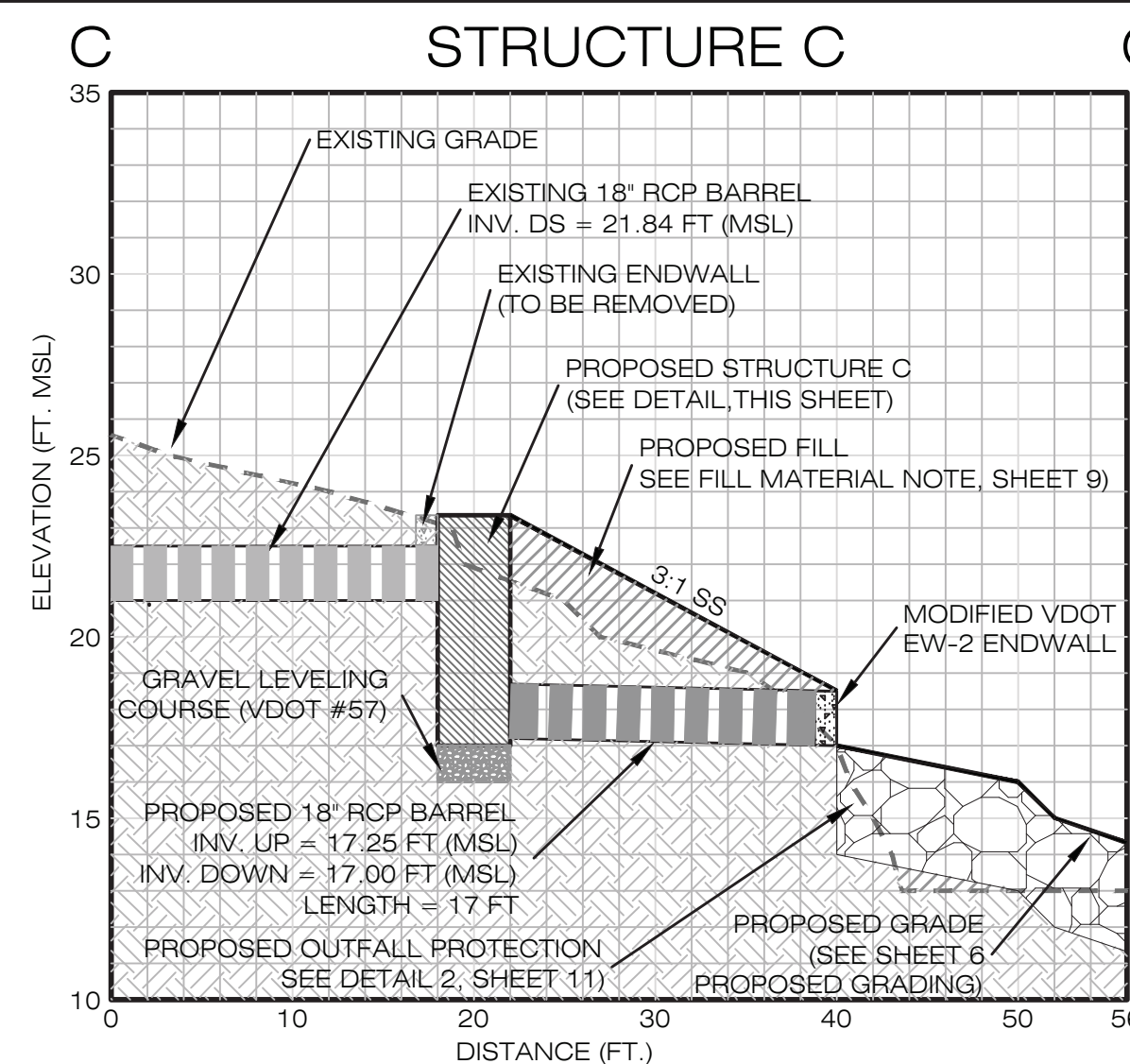
DETAIL: MODIFIED CIRCULAR DROP INLET (MODIFIED VDOT DI-7) NTS

STRUCTURE	EXISTING CULVERT	PROPOSED CULVERT	HEIGHT (M) (FT)	INFLOW INV. (N) (FT, MSL)	OUTFLOW UP INV. (O) (FT, MSL)	OUTFLOW DN INV. (P) (FT, MSL)	GROUT LEVEL (Q) (FT, MSL)
STRUCTURE B	42" RCP	42" RCP	APPROX. 5	21.23	21.23	21	21.23
STRUCTURE C	18" RCP	18" RCP	APPROX. 6.5	21.84	17.25	17	17.25



PROFILE - B-B'

VERTICAL SCALE: 1" = 5' HORIZONTAL SCALE: 1" = 10'

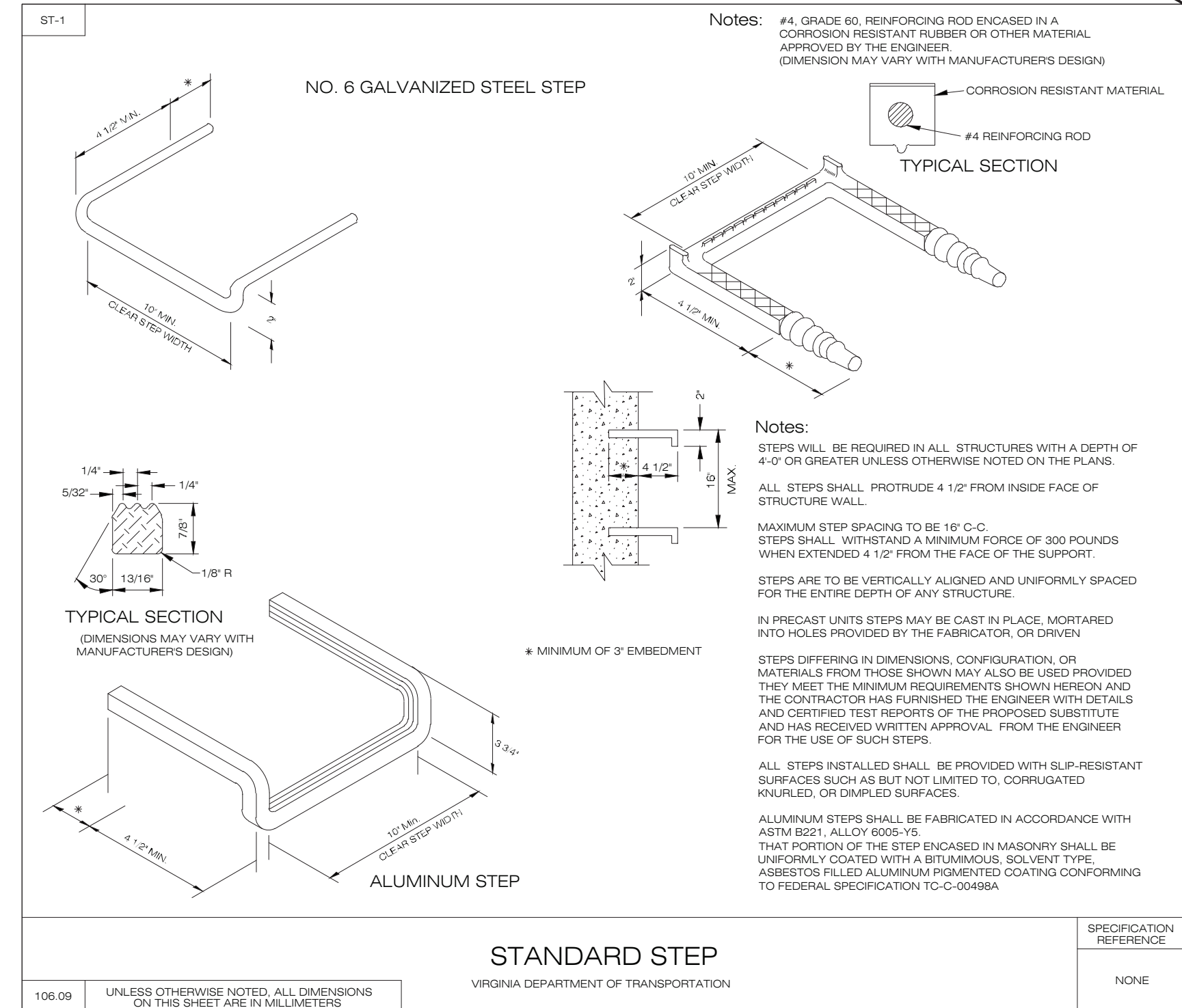


PROFILE - C-C'

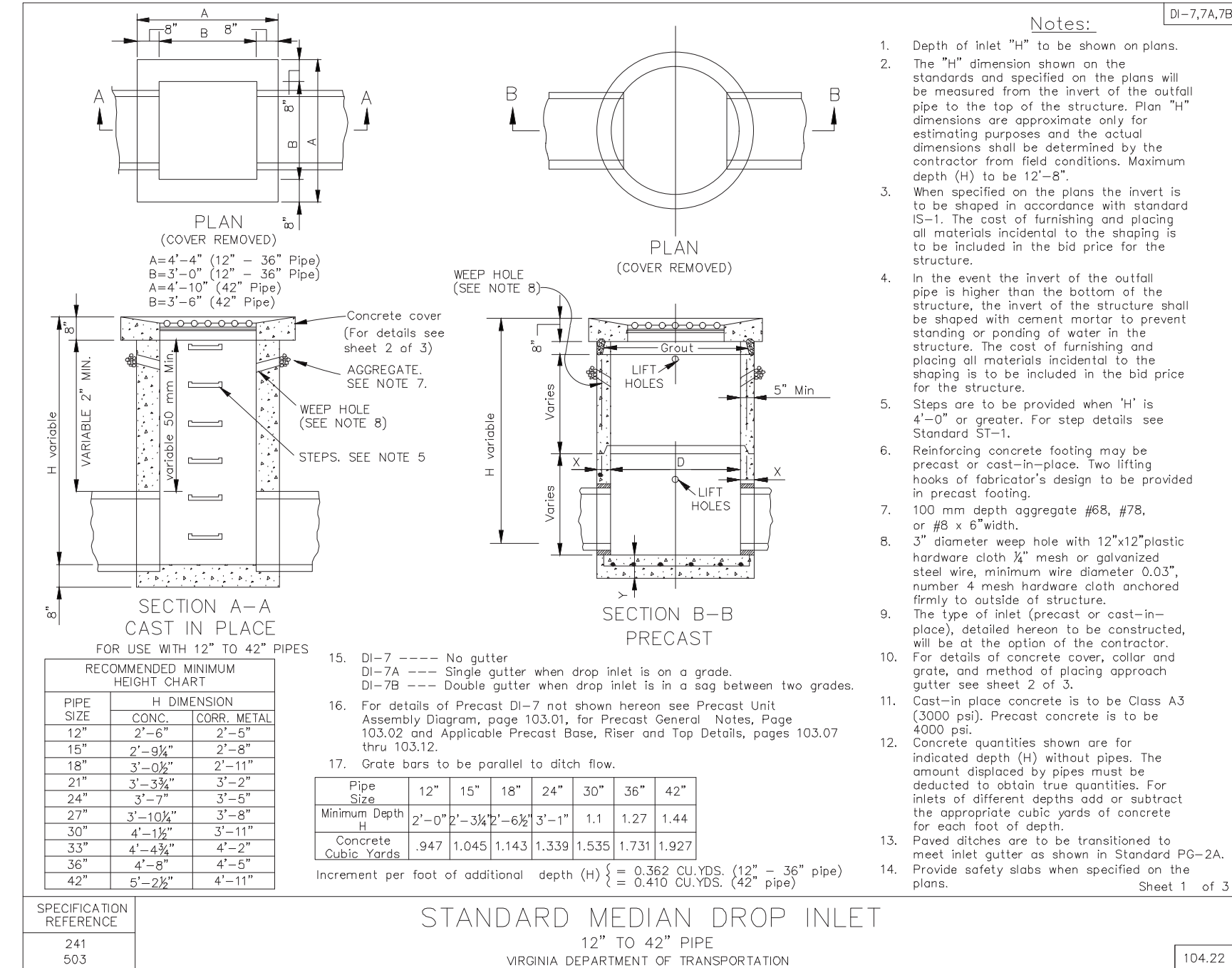
VERTICAL SCALE: 1" = 5' HORIZONTAL SCALE: 1" = 10'

BANK LINING AND TOE PROTECTION:

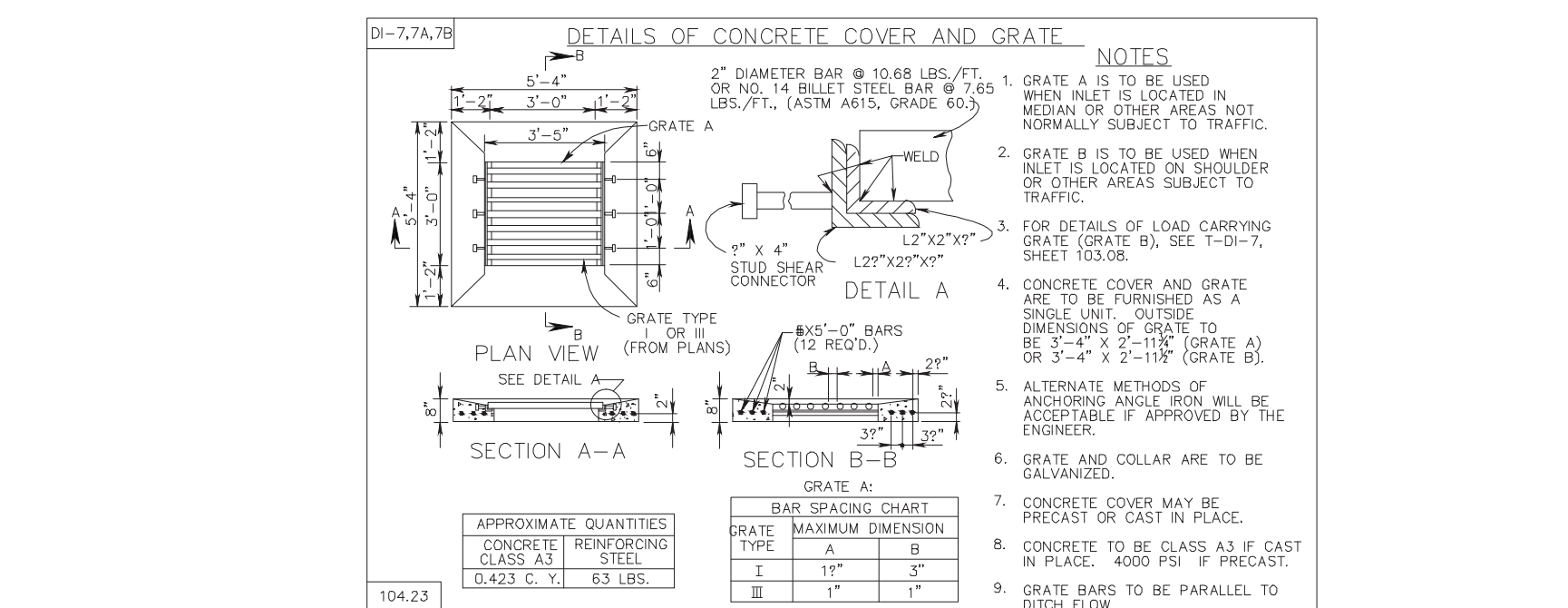
STATION	REST ORATION REACH	10-YR AVERAGE VELOCITY (FT/S)	10-YR FLOW DEPTH (FT)	CHANNEL BED (RIFLE) LINING	PROPOSED TOE PROTECTION (LEFT BANK)	PROPOSED TOE PROTECTION (RIGHT BANK)	PROPOSED BANK LINING (LEFT BANK)	PROPOSED BANK LINING (RIGHT BANK)
0+00 - 0+85	REACH 1	5.13 - 6.07	154 - 174	3/4" ROUNDED RIVER COBBLE (DEPTH = 8" - 12")	3/4" ROUNDED RIVER COBBLE WITH LIVE STAKES	3/4" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
0+85 - 1+12	REACH 1	4.53 - 6.07	174 - 181	3/4" ROUNDED RIVER COBBLE (DEPTH = 8" - 12")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	3/4" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
1+12 - 1+90	REACH 1	4.53 - 7.09	181 - 216	3/4" ROUNDED RIVER COBBLE (DEPTH = 8" - 12")	3/4" ROUNDED RIVER COBBLE WITH LIVE STAKES	3/4" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
1+90 - 2+06	REACH 2	6.44 - 7.09	216 - 223	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
2+06 - 2+68	REACH 2	5.70 - 7.09	223 - 239	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	CLASS II RIPRAP WITH LIVE STAKES (D50 = 1.6)	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL) (STATION 2+35 - 2+68)
2+68 - 2+90	REACH 2	5.70 - 7.09	223 - 239	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
2+90 - 4+20	REACH 2	6.81 - 7.09	221 - 239	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	CLASS II RIPRAP WITH LIVE STAKES (D50 = 1.6)	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL, 5 FOR 3+00 - 3+45)	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL)
4+20 - 4+51	REACH 2	6.81 - 7.09	221 - 239	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
4+51 - 5+00	REACH 3	6.75 - 7.09	221 - 226	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	CLASS II RIPRAP WITH LIVE STAKES (D50 = 1.6)	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL)	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
5+00 - 5+30	REACH 3	3.36 - 7.09	226 - 343	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	CLASS II RIPRAP WITH LIVE STAKES (D50 = 1.6)	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL)
5+30 - 5+60	REACH 3	3.36 - 6.90	252 - 343	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES
5+60 - 5+90	REACH 3	3.36 - 6.90	252 - 343	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL)
5+90 - 6+25	REACH 3	6.59 - 6.90	252 - 253	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	CLASS II RIPRAP WITH LIVE STAKES (D50 = 1.6)	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL)
6+25 - 6+50	REACH 3	6.59 - 6.90	252 - 253	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	STABILIZATION SOIL LIFTS (3 LIFTS ABOVE BANKFULL)
6+50 - 6+70	REACH 3	6.59 - 6.90	252 - 253	6" 10" ROUNDED RIVER COBBLE (DEPTH = 18"-24")	CLASS I RIPRAP WITH LIVE STAKES (D50 = 1.6)	6" 10" ROUNDED RIVER COBBLE WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES	COIR 700 MATTING (C125BN OR EQUIVALENT) WITH LIVE STAKES



STANDARD STEP VIRGINIA DEPARTMENT OF TRANSPORTATION



STANDARD MEDIAN DROP INLET 12" TO 42" PIPE VIRGINIA DEPARTMENT OF TRANSPORTATION



DETAILS OF CONCRETE COVER AND GRATE

HYDROLOGIC AND HYDRAULIC SUMMARY (2)

ROBINHOOD LANE STREAM RESTORATION PROJECT

CITY OF NEWPORT NEWS, VIRGINIA

COMMONWEALTH OF VIRGINIA
SCOTT C. BLOSSOM
Lic. No. 40287
4/1/10
PROFESSIONAL ENGINEER

REVISIONS:
DATE:

DRAWN BY: CJM/SMS
DESIGNED BY: SCB/OAR
DATE: 7/16/10
CHECKED BY: SCB/JWRCK

SHEET: 14
JOB#: 4275

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