



**ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE PURCHASING AGENT
2100 CLARENDON BOULEVARD, SUITE 500
ARLINGTON, VA 22201
(703) 228-3410**

INVITATION TO BID (ITB) NO. 22-DES-ITB-269

FOR OPEN CHANNEL DREDGING OF THE FOUR MILE RUN EAST AND WEST LEVEE SYSTEM

ELECTRONIC SEALED BIDS WILL BE RECEIVED BY ARLINGTON COUNTY VIA [VENDOR REGISTRY](#) UNTIL 1:00 P.M. ON THE 21ST DAY OF JANUARY 2022. REGISTRATION IS NOT REQUIRED TO DOWNLOAD THE ITB. IN ORDER TO SUBMIT A RESPONSE TO THIS ITB, REGISTRATION IS REQUIRED. NO RESPONSES WILL BE ACCEPTED AFTER THE BID DUE DATE AND TIME.

THERE IS A NONMANDATORY PREBID CONFERENCE ON JANUARY 4, 2022 at 11:30 A.M.:

Join on your computer or mobile app

[Click here to join the Nonmandatory PriBid Conference via Microsoft Teams](#)

Or call in (audio only)

[+1 347-973-6905,115155575#](#) United States, New York City

Phone Conference ID: 115 155 575#

A virtual Prebid conference will be held at 11:30 a.m., January 4, 2022, on Microsoft Teams to allow potential Bidders an opportunity to obtain clarification of the specifications and requirements of the solicitation. To join the meeting, please click the link above or join by dialing the phone number and enter the Conference ID above. ATTENDANCE AT THE PREBID CONFERENCE IS OPTIONAL. Minutes of the Prebid conference will be recorded by the County and may be incorporated into the solicitation documents through an Addendum. All Bidders are strongly encouraged to attend.

The County will conduct the public bid opening via Microsoft Teams Application (APP). Bidders interested in viewing the public bid opening must download the APP and join the meeting via the Microsoft Teams APP and enable audio, video or both. The link to join the virtual bid opening is provided below:

PUBLIC BID OPENING ON JANUARY 21, 2022 AT 1:00 P.M.:

Join on your computer or mobile app

[Click here to join the Public Bid Opening via Microsoft Teams](#)

Or call in (audio only)

[+1 347-973-6905,677310776#](#) United States, New York City

Phone Conference ID: 677 310 776#

Bid Surety in the amount of not less than 5% of the bid must be submitted with the bid. Performance and Payment Bonds in the amount of 100% of the award will be required of the successful bidder.

NOTICE: ANY BIDDER ORGANIZED AS A STOCK OR NONSTOCK CORPORATION, LIMITED LIABILITY COMPANY, BUSINESS TRUST, OR LIMITED PARTNERSHIP OR REGISTERED AS A LIMITED LIABILITY PARTNERSHIP MUST BE AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VIRGINIA PRIOR TO SUBMITTING A BID (REFER TO AUTHORITY TO TRANSACT BUSINESS SECTION IN THE SOLICITATION FOR FURTHER INFORMATION)

Arlington County reserves the right to reject any and all bids, cancel this solicitation, and to waive any informalities or irregularities in procedure. A bidder's submission of a bid indicates acceptance of these terms.

Arlington County, Virginia
Office of the Purchasing Agent

Tomeka D. Price, VCO, VCA
Procurement Officer
tprice@arlingtonva.us

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I. INFORMATION FOR BIDDERS

1. QUESTIONS AND ADDENDA

BIDDERS MUST BE REGISTERED IN VENDOR REGISTRY TO SUBMIT A QUESTION FOR THIS INVITATION TO BID(ITB).

All communications relating to this solicitation must be submitted online using Vendor Registry. For a question to be considered, the question must be entered in the Question Section of **ITB No. 22-DES-ITB-269**. Prior to the award of a contract resulting from this solicitation, bidders are prohibited from contacting any County staff other than those assigned to the Office of the Purchasing Agent.

QUESTIONS REGARDING THE ORIGINAL SOLICITATION MUST BE SUBMITTED BY JANUARY 7, 2022, AT 5:00 PM EASTERN TIME TO BE CONSIDERED FOR AN ADDENDUM. ALL QUESTIONS RECEIVED BY THE QUESTION DEADLINE WILL BE RESPONDED TO WITHIN VENDOR REGISTRY AND POSTED FOR ALL BIDDERS. THE SYSTEM WILL NOT ACCEPT ANY QUESTIONS AFTER THIS DATE AND TIME.

If any questions or responses require revisions to this solicitation, such revisions will be by formal Addendum only. Bidders are cautioned not to rely on any written, electronic, or oral representations made by any County representative or other person, including the County's technical contact, that appear to change any portion of the solicitation unless the change is ratified by a written Addendum to this solicitation issued by the Office of the Purchasing Agent.

2. INTEREST IN MORE THAN ONE BID AND COLLUSION

Reasonable grounds for believing that a Bidder is interested in more than one bid for a solicitation, including both as a Bidder and as a subcontractor for another Bidder, or that collusion exists between two or more Bidders, will result in rejection of all affected bids. However, an individual or entity acting only as a subcontractor may be included as a subcontractor on bids of two or more different Bidders. Bidders rejected under the above provision will also be disqualified if they respond to a re-solicitation for the same work.

3. TRADE SECRETS OR PROPRIETARY INFORMATION

Trade secrets or proprietary information that a bidder or contractor submits in connection with a procurement transaction may be exempted from public disclosure under the Virginia Freedom of Information Act ("VFOIA"). However, the bidder or contractor must invoke VFOIA protection clearly and in writing on the Bid Form for County review. The Bid Form must include at least the following: (1) the data or other materials sought to be protected and (2) specific reasons why the material is confidential or proprietary. It is the bidder's sole responsibility to defend such exemptions if challenged in a court of competent jurisdiction.

4. DEBARMENT STATUS

The Bidder must indicate on the Bid Form whether it or any of its principals is currently debarred from submitting bids to the County or to any other state or political subdivision and whether the Bidder is an agent of any person or entity that is currently debarred from submitting bids to the County or to any other state or political subdivision. An affirmative response may be considered grounds for rejection of the bid.

5. AUTHORITY TO TRANSACT BUSINESS

Any Bidder organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership must be authorized to

transact business in the Commonwealth of Virginia as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law. The proper and full legal name of the entity and the identification number issued to the Bidder by the Virginia State Corporation Commission must be included on the Bid Form. Any Bidder that is not required to be authorized to transact business in the Commonwealth must include in its bid a statement describing why the Bidder is not required to be so authorized. The County may require a Bidder to provide documentation that 1) clearly identifies the complete name and legal form of the entity and 2) establishes that the entity is authorized by the State Corporation Commission to transact business in the Commonwealth of Virginia. Failure of a Bidder to provide such documentation will be a ground for rejection of the bid or cancellation of any award. For further information refer to the Commonwealth of Virginia State Corporation Commission website at: www.scc.virginia.gov.

6. BUSINESS LICENSES

The successful Bidder must comply with the provisions of Chapter 11 ("Licenses") of the Arlington County Code, if applicable. For information on the provisions of that Chapter and its applicability to this solicitation, contact the Arlington County Business License Division, Office of the Commissioner of the Revenue, at 2100 Clarendon Blvd., Suite 200, Arlington, Virginia, 22201, tel. (703) 228-3060, or e-mail business@arlingtonva.us.

The successful Bidder must comply with the provisions of Chapter 1 ("Business Licenses"), Title 9 ("Licensing and Regulation") of the Code of the City of Alexandria, if applicable. For information on the provisions of that Chapter and its applicability to this solicitation, contact the City of Alexandria Business License, at P.O. Box 34850, Alexandria, Virginia, 22334, tel. (703) 746-4800, or e-mail businessstax@alexandriava.gov

7. COVID-19 VACCINATION POLICY FOR CONTRACTORS

Due to the ongoing COVID-19 pandemic, the County has taken various steps to protect the welfare, health, safety, and comfort of the workforce and public at large. As part of these steps, the County has implemented various requirements with respect to health and safety including policies with respect to social distancing, the use of face-coverings and vaccine mandates. To protect the County's workforce and the public at large, all employees and subcontractors of the Contractor who are assigned to this Contract, must be fully vaccinated against COVID-19. Any contractor employee or subcontractor who is not fully vaccinated should follow a weekly testing protocol as established by the Contractor, unless exempt pursuant to a valid reasonable accommodation under state or federal law. By submitting a bid, the Bidder certifies that it will comply with this provision and will ensure that its subcontractors, if any, do so as well.

8. VIRGINIA CONTRACTOR LICENSE

For all work that is classified as being performed by "Contractors" as defined by the Virginia State Board for Contractors, a Class A, B, or C License is required.

If a contract for performing or managing construction, removal, repair or improvements is for \$120,000 or more, or if the total value of all such construction, removal, repair, or improvements undertaken by the bidder within any twelve-month period is \$750,000 or more, the bidder is required under Title 54.1, Chapter 11, Code of Virginia, as amended, to be licensed as a "CLASS A CONTRACTOR."

If a contract for performing or managing construction, removal, repair or improvements is for \$10,000 or more, but less than \$120,000, or if the total value of all such construction, removal, repair, or improvements undertaken by the bidder within any twelve-month period is \$150,000 or more, but less

than \$750,000, the bidder is required under Title 54.1, Chapter 11, Code of Virginia, as amended, to be licensed as a "CLASS B CONTRACTOR."

If a contract for performing construction, removal, repair or improvements is for \$1,000 or more, but no more than \$10,000 or if the total value of all such construction, removal, repair, or improvements undertaken by the bidder within any twelve-month period is less than \$150,000, the bidder is required under Title 54.1, Chapter 11, Code of Virginia, as amended, to be licensed as a "CLASS C CONTRACTOR." Class C contractors shall not include electrical, plumbing, and heating, ventilation and air conditioning contractors.

For further information, contact the State Board for Contractors, 2 South Ninth Street, Richmond, VA 23219, (804) 367-8511.

9. ESTIMATED QUANTITIES/NON-EXCLUSIVITY OF CONTRACTOR

The contract that will result from this solicitation will not obligate the County to purchase a specific quantity of items or services during the Contract Term. Any quantities that are included in the contract documents are the present expectations the County for the period of the contract, and the County is under no obligation to buy that, or any, amount as a result of having provided this estimate or of having had any normal or otherwise measurable requirement in the past. The County may require more goods and/or services than the estimated annual amount, and any such additional quantities will not give rise to any claim for compensation other than at the unit prices and/or rates specified in the contract.

The items or services covered by this contract may be or become available under other County contract(s), and the County may determine that it is in its best interest to procure the items or services through such other contract(s). The County does not guarantee that the selected contractor will be the exclusive provider of the goods or services covered by the resulting contract.

10. BID FORM SUBMISSION

The submitted Bid Form must be signed and fully executed. The Bid Form must be submitted electronically via Vendor Registry no later than the date and time specified in this solicitation. The Vendor Registry system will not accept bids after the close date and time. The County will not accept emailed or faxed bid.

Bid Submittals shall include:

- **Pages 77 - 83, The Bid Form (Unit Price shall include all labor, material, and equipment)**
- **Bidder's Project Experience List covering:**
 - **Company's qualification and Project criteria**
- **Resumes of the proposed Key Personnel with their Bids**
- **OSHA 10 certification**
- **VDOT Flagger Certification, or American Traffic Safety Services Association Flagger Certification, or any other VDOT approved flagger Certification**
- **VDOT Erosion & Sediment Control Contractor Certification**

Failure to do so may result in the Bid being determined as non-responsive.

The Bidder name on the electronic bid submittal shall be the same as the Contractor/Vendor name as the registration in Vendor Registry for the upload to be considered a valid bid. ONLY ELECTRONIC SUBMISSION IS ALLOWED, NO BID SUBMITTED OTHER THAN A VENDOR REGISTRY ELECTRONIC UPLOAD

WILL BE ACCEPTED. **Arlington County is not responsible for late submissions, missed Addendums, or questions not submitted before the end date and time.**

Timely submission is solely the responsibility of the Bidder. The Vendor Registry System will not accept applications after the publicly posted date and time. A bid may be rejected if the Bid Form is not signed in the designated space by a person authorized to legally bind the Bidder.

Modification of or additions to the Bid Form may be cause for rejection of the bid; however, Arlington County reserves the right to decide, in its sole discretion, whether to reject such a bid as nonresponsive. As a precondition to bid acceptance, Arlington County may request the bidder to withdraw or modify any such modifications or additions, if it does not affect quality, quantity, price, or delivery.

Bids and all documents uploaded/submitted to Arlington County by an Bidder become the property of the County upon receipt.

11. BIDDER CERTIFICATION

Submission of a signed Bid Form is certification by the respective bidder that it is registered with the Virginia State Corporation Commission (SCC), if applicable, it is the legal entity authorized to enter into an agreement with the County, and that it will accept any award made to it as a result of the submission. Entry of a Bidder's SCC number may be required at Vendor Registration.

12. ERRORS IN EXTENSION

If the unit price and the extension price differ, the unit price will prevail.

13. EXCEPTIONS

Conditional or qualified bids containing exceptions, unless specifically allowed in the solicitation, are subject to rejection in whole or in part as nonresponsive.

14. NONCONFORMING TERMS AND CONDITIONS

If a bid contains alternate terms and conditions that do not conform to the terms and conditions in this solicitation, the bid will be subject to rejection for nonresponsiveness. The County reserves the right to permit a bidder to withdraw nonconforming terms and conditions from its bid prior to the County's determination of nonresponsiveness.

15. BIDDERS' RESPONSIBILITY TO INVESTIGATE

Before submitting a bid, each bidder must make all investigations necessary to ascertain all conditions and requirements affecting the full performance of the contract and to verify any representations made by the County upon which the bidder will rely. No pleas of ignorance of such conditions and requirements will relieve the successful bidder from its obligation to comply in every detail with all provisions and requirements of the contract or will be accepted as a basis for any claim for any monetary consideration on the part of the successful bidder.

16. SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

Each bidder is responsible for ascertaining the nature and locations of the Work of the solicitation, and for investigating the general and local conditions and factors which can affect the work or its cost, including but not limited to:

- a. conditions bearing upon transportation, disposal, handling, and storage of materials;

- b. the availability of labor, water, electric power, and roads;
- c. uncertainties of weather, river stage, tides, or similar physical conditions at the site;
- d. the conformation and conditions of the ground; and
- e. the character of equipment and facilities needed before and during work performance.

Each bidder is responsible for investigating the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work publicly or otherwise available, as well as from the drawings and specifications made a part of this solicitation.

The locations of existing utilities, including underground utilities, which may affect the work are indicated on the drawings or in the specifications insofar as their existence and location were known at the time of preparation of the drawings. However, nothing in these drawings or specifications shall be construed as a guarantee that such utilities are in the location indicated or that they actually exist, or that other utilities are not within the area of operations. The bidder shall make all necessary investigations to determine the existence and locations of such utilities.

The County assumes no responsibility for any conclusions or interpretations made by the bidder based on the information made available by the County. The County assumes no responsibility for any understanding reached or representation made concerning conditions which could affect the work by any of its officers or agents before the execution of the contract, unless that understanding, or representation is expressly stated in the Contract.

17. INCOMPLETE DOCUMENTS

Each bidder is responsible for having determined the accuracy and/or completeness of the solicitation documents upon which it relied in making its bid, and has an affirmative obligation to notify the Arlington County Purchasing Agent immediately upon discovery of an apparent or suspected inaccuracy, error in, or omission of any pages, drawings, sections, or addenda whose omission from the documents was apparent from a reference or page numbering or other indication in the solicitation documents.

If a bidder downloads an electronic version of the solicitation documents, that potential bidder is responsible for determining the accuracy and/or completeness of the electronic documents and ensuring that the electronic documents used in preparing the bid are the most current version of solicitation documents issued by the County.

If the successful bidder proceeds with any activity that may be affected by an inaccuracy, error in, or omission in the solicitation documents of which it is aware but has not notified the Arlington County Purchasing Agent, the bidder hereby agrees to perform any activity described in the missing or incomplete documents at bidder's sole expense and at no additional cost to Arlington County.

18. ERRONEOUS OR INFEASIBLE REQUIREMENTS

Each bidder is responsible for having determined the feasibility of the work required and shall notify the County Purchasing Agent immediately upon discovery of any apparent erroneous, contradictory, incomplete, or infeasible requirements or directions contained in the Solicitation Documents. If a bidder fails to notify the County of such conditions immediately upon discovery, the bidder assumes all responsibility for any and all work required to satisfy the contract requirements at no additional cost to the County and within the Time for Completion.

19. QUALIFICATION OF BIDDERS

In order to be considered responsible and responsive, Bidders shall have a minimum of five (5) years of experience conducting public works infrastructure stream bank maintenance projects, stream restoration projects, dredging projects, flooding, and drainage projects. The experience shall be work of similar size and scope, construction, re-construction, and maintenance described below, and provide the supporting documentation as instructed.

Project Experience: Bidders shall provide a list of a minimum of three (3) similar recently completed projects of similar scope. For each project, Bidders shall list the following information to show compliance with the experience criteria:

- Project Name
- Project description and scope of work
- Owner Project manager's name, telephone number and email address
- Final contract value

Staffing Qualifications: All key personnel proposed for this contract and each task order must have experience as designated key personnel in similar size and type of projects. The following are considered key personnel:

- Designated Site Supervisor shall have at least five (5) years of experience in overseeing projects of similar type and size.
- Designated Safety Project Officer:
 - At least one (1) VDOT Basic Work Zone Traffic Control certified employee on-site at all times (a certified flagger in accordance with the VDOT Flagger Certification Program, the American Traffic Safety Services Association Flagger Certification Program or any other VDOT approved flagger program).
 - At least one (1) OSHA 10 certified employee on-site at all times who has served as a Project Safety Officer on at least three (3) prior projects.
- Designated Environmental Project Officer:
 - At least one (1) employee that has successfully completed the VDOT Erosion & Sediment Control Contractor Certification training.

The experience of the contractor owner(s) may be imputed to a newly formed company/Contractor provided the Contractor owner(s) has/have at least five (5) years of demonstrated experience of reliability and meets the criteria set forth herein.

In addition, the Purchasing Agent may require a bidder to demonstrate that it has the necessary facilities, ability, and financial resources to comply with the contract and furnish the service, material or goods specified herein in a satisfactory manner before the award of any contract. A bidder may also be required to provide past history and references. Failure to qualify according to the foregoing requirements will result in bid rejection.

20. DETERMINATION OF RESPONSIBILITY

If Bidder is not prequalified by the Virginia Department of Transportation, in determining "a responsible Bidder", in addition to price and other considerations, the Purchasing Agent shall consider: History or good faith assurances of (i) completion by the Bidder and any potential subcontractors of specified safety training programs established by the U.S. Department of Labor, Occupational Safety and Health Administration; (ii) participation by the bidder and any potential subcontractors in apprenticeship training

programs approved by state agencies or the U.S. Department of Labor; or (iii) maintenance by the Bidder and any potential subcontractors of records of compliance with applicable local, state, and federal laws.

21. INFORMALITIES

The County reserves the right to waive minor defects or variations from the exact requirements of the solicitation in a bid insofar as those defects or variations do not affect the price, quality, quantity, or delivery schedule of the services being procured. If insufficient information is submitted for Arlington County to properly evaluate a bid or a bidder; the County may request such additional information after bid opening, provided that the information requested does not change the price, quality, quantity, or delivery schedule for the services being procured.

22. NEW MATERIAL

Unless otherwise provided for in this solicitation, all goods, materials, supplies, or components offered to the County under this bid solicitation must be new, not used or reconditioned, and are not of such age or so deteriorated as to impair their usefulness or safety and that the goods, materials, supplies, or components offered are current production models of the respective manufacturer. If a bidder believes that furnishing used or reconditioned goods, materials, supplies or components will be in the County's interest, the bidder shall notify the County Purchasing Agent in writing no later than fifteen (15) calendar days prior to the date set for opening of bids. The notice shall include the reasons for the request and any benefits which may accrue to the County if the Purchasing Agent authorizes the bidding of used or reconditioned goods, materials, supplies or components.

23. BID WITHDRAWAL PRIOR TO BID OPENING

The Bidder may withdraw a bid from Vendor Registry before the opening date and time. It is the sole responsibility of the Bidder to remove and/or resubmit a bid before the bid deadline.

24. WITHDRAWAL OF BID FROM CONSIDERATION AFTER BID OPENING

After the opening of a bid, a bidder may withdraw its bid from consideration if the price of the bid is substantially lower than other bids due solely to a mistake therein, provided the bid is submitted in good faith, the mistake is a clerical mistake as opposed to a judgment mistake, and is actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, which unintentional error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. No partial withdrawals of bids will be permitted after the time and date set for the bid opening. The bidder must give an electronic written notice to the Arlington County Purchasing Agent of a claim of right to withdraw a bid and provide all work papers, documents and other materials used in the preparation of the bid sought to be withdrawn, within two (2) business days after the date of bid opening. A bid may also be withdrawn if the County fails to award or issue a notice of intent to award the bid within ninety (90) days after the date fixed for opening bids.

25. METHOD OF AWARD

The County will award to the lowest responsive and responsible bidder. The lowest bidder will be determined by the **Grand Total on the Bid Form**.

26. NOTICE OF DECISION TO AWARD

When the County has made a decision to award a contract(s), the County will post a Notice of Award or Intent to Award to [Vendor Registry](#).

27. INSURANCE REQUIREMENTS

Each bidder must be able to demonstrate proof of the specific coverage requirements and limits applicable to this solicitation. If the bidder is not able to do so, it may propose alternate insurance coverage for consideration by the County. Written requests for consideration of alternate coverage must be received by the County Purchasing Agent at least 10 working days prior to bid due date. If the County permits alternate coverage, an amendment to the Insurance Checklist will be issued prior to the time and date set for receipt of bids.

28. SURETY REQUIRED

Companies who wish to implement digital signatures during the COVID-19 public health emergency may do so, along with a SURETY BOND SEAL ADDENDUM which contains an electronic corporate seal and states the following:

“Due to logistical issues associated with the use of traditional seals during this COVID-19 pandemic, [Surety Company] has authorized its Attorney-in-Fact to affix [Surety Company’s] corporate seal to any bond executed on behalf of [Surety Company] by any such Attorney-in-Fact by attaching this Addendum to said bond.

To the extent this Addendum is attached to a bond that is executed on behalf of [Surety Company] by its Attorney-in-Facts, [Surety Company\ hereby agrees that the seal below shall be deemed affixed to said bond to the same extent as if its raised corporate seal was physically affixed to the face of the bond.”

A. BID SURETY:

A fully completed and properly executed original Bid Bond, cashier's check, certified check, money order, or cash escrow in the amount of 5% of the amount of the bid made payable to the Treasurer of Arlington County shall accompany each bid. The Bid Surety will be retained until after the award to the successful bidder. The Bid Surety of the successful bidder will be retained until completion of the Contract or the posting of a Performance Bond, whichever occurs sooner. A bid submitted without a proper bid surety will be rejected.

B. FAILURE TO EXECUTE:

The failure of a bidder to accept an award and file acceptable Performance and Payment Bonds within ten (10) days after award notice will cause cancellation of the award and the forfeiture of the Bid Surety to the County.

C. PERFORMANCE SURETY:

A fully completed and properly executed original Performance Bond in the amount of 100% of the amount of the bid will be required of the successful bidder to ensure satisfactory completion of the work. The bond shall be a corporate surety bond issued by a surety company authorized to do business in the Commonwealth of Virginia and acceptable to the County. Where applicable, the Performance Bond shall be renewable annually in the original amount through the completion of the Contract, including all warranty and guarantee periods.

D. PAYMENT BOND:

A fully completed and properly executed original Payment Bond in the amount of 100% of the amount of the bid, will be required of the successful bidder to ensure payment of all persons

who have and fulfill contracts for the Contractor for performing labor, providing equipment, or providing material in the performance of the work provided for in the Contract. The Bond shall be a corporate surety bond issued by a surety company authorized to do business in the Commonwealth of Virginia and acceptable to the County. Where applicable, the Payment Bond shall be renewable annually in the original amount for the duration of the Contract.

29. EXECUTION OF CONTRACT

Within three days after the Contract is presented to the successful Bidder for signature, the Contractor must submit to the County Purchasing Agent the original of the executed Agreement. Within ten days the Contractor must submit executed performance and payment bonds and required certificate of insurance. Failure to do so shall constitute a default, and the County may award the Contract to the next lowest responsive and responsible bidder or solicit new bids. The County may then charge against the Contractor the difference between the amount of the Contract award and the amount for which a Contract is subsequently executed, up to the total amount of the Contractor's bid security.

30. EXPENSES INCURRED IN PREPARING BID

All expenses related to a bid are the sole responsibility of the bidder.

31. OPTIONAL ESCROW AGREEMENT

If the successful bidder so elects, the bidder may utilize an escrow account for utilization of the retainage funds pursuant to § 2.2-4334 of the Code of Virginia. The bidder must indicate on the Bid Form whether or not it elects the escrow account procedure.

32. NEGOTIATIONS WITH LOWEST RESPONSIVE AND RESPONSIBLE BIDDER

If the bid by the lowest responsive and responsible bidder exceeds available funds, the County reserves the right to negotiate with the apparent low bidder to obtain an acceptable price. Negotiations with the apparent low bidder may involve discussions of reduction of quantity, quality, or other cost saving mechanisms. The final negotiated contract shall be subject to final approval of the County, in its sole discretion.

33. ELECTRONIC SIGNATURE

If awarded, the Bidder may be required to accept an agreement and sign electronically through the County's e-signature solution, DocuSign.

<p>FOLLOWING THIS PAGE IS THE AGREEMENT THAT WILL BE ENTERED INTO BETWEEN THE COUNTY AND THE CONTRACTOR. THE AGREEMENT IS PART OF THIS SOLICITATION. THIS AGREEMENT IS SUBJECT TO REVIEW BY THE COUNTY ATTORNEY PRIOR TO BEING SUBMITTED FOR CONTRACTOR'S SIGNATURE.</p>
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II. AGREEMENT AND CONTRACT TERMS AND CONDITIONS



ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE PURCHASING AGENT
SUITE 500, 2100 CLARENDON BOULEVARD
ARLINGTON, VA 22201

AGREEMENT NO. 22-DES-ITB-269

THIS AGREEMENT is made, on _____, between Contractor's name,
Contractor's address ("Contractor") a name of state type of entity
authorized to do business in the Commonwealth of Virginia, and the County Board of Arlington County,
Virginia ("County"). The County and the Contractor, for the consideration hereinafter specified, agree as
follows:

1. CONTRACT DOCUMENTS

The Contract Documents consist of:

- Agreement No. 22-DES-ITB-269, and all modifications properly incorporated into the Agreement
- Exhibit A –DES General Conditions, Special Conditions, and Supplementary Specifications
- Exhibit B – Special Provisions
- Exhibit C – Arlington County DES Construction Standards and Specifications 2020
- Exhibit D –Construction Drawings for Four Mile Run Dredge Project
- Exhibit E – Price Bid of Contractor
- Arlington County Invitation to Bid No. 22-DES-ITB-269 is incorporated by reference.

Where the terms and provisions of this Agreement vary from the terms and provisions of the other Contract Documents, the terms and provisions of this Agreement will prevail over the other Contract Documents, and the remaining Contract Documents will be complementary to each other. If there are any conflicts, the most stringent terms or provisions will prevail.

The Contract Documents set forth the entire agreement between the County and the Contractor. The County and the Contractor agree that no representative or agent of either party has made any representation or promise with respect to the parties' agreement that is not contained in the Contract Documents. The Contract Documents may be referred to below as the "Contract" or the "Agreement".

2. SCOPE OF WORK

The Contractor will furnish all labor, materials, and equipment, tools, transportation, and other applicable services or facilities that are necessary for the proper and safe execution and completion of the Four Mile Run Dredge Project, including Long Branch. This includes the clearing, dredging, and removal of shoaling, vegetation, and all other encroachments needed to reestablish the as-built freeboard, as shown on the

plans (the "Project") and all other work shown, described, and required by the Contract Documents (hereinafter "the Work").

Contractor's Responsibilities:

- a. Contractor shall supervise work and be solely responsible for all construction means, methods, sequences, and procedures and for coordinating all portions of the work under this Contract.
- b. Contractor shall be responsible for all actions and/or omissions of their employees and/or subcontractors.
- c. Maintain bonds and insurance as required per the contract documents.
- d. Comply with all safety requirements and best practices.
- e. Compliance with Law, Codes and Ordinances, and Regulatory Permits
- f. Complete work within the Period of Performance
- g. Ensure permeable pavers and the stormwater BMPs are effectively protected from damage and sediment at Four Mile Run parking lot. At the sole discretion of the City of Alexandria, Contractor shall make repairs at no additional cost to the City of Alexandria or Arlington.
- h. Obtain and comply with requirements of all construction-related permits (hauling, ROW, etc.) as required to execute and complete the project.
- i. Contractor's Constraints
 - I. Limit work to designated areas and limits of disturbance, as per the contract documents.
 - II. Working days and hours shall be in accordance with the City of Alexandria's and Arlington's.
 - III. Observe and comply with all weight restrictions associated with bridges and haul routes.

The Work shall be performed according to the standards established by the Contract Documents read together as a single specification. It shall be the Contractor's responsibility, at solely the Contractor's cost, to provide sufficient services to fulfill the purposes of the Work. Nothing in the Contract Documents shall be construed to limit the Contractor's responsibility to manage the details and execution of its Work.

3. PROJECT OFFICER

The performance of the Contractor is subject to the review and approval of the County Project Officer, unless the Contractor is otherwise notified in writing.

The County has authorized the consultant identified below to act as the County representative for specific purposes to perform specified duties and responsibilities, and to have the rights and authorities as assigned in connection with completion of the Work in accordance with the Contract Documents until such time as the County may notify the Contractor otherwise:

Wetland Studies and Solutions, Inc.

The County will notify the Contractor after contract award of the specific roles and responsibilities of the Consultant(s).

4. TIME FOR COMPLETION

Work under this Agreement shall achieve Substantial Completion no later than one hundred eighty (180) consecutive calendar days after the commencement date given in a Notice to Proceed provided by the County to the Contractor, subject to any modifications made as provided for in the Contract Documents. This one hundred eighty (180) day period shall be the Period of Performance for Substantial Completion. No Work shall be deemed Substantially Complete until it meets the requirements of Substantial Completion set forth in the General Conditions. Final Completion of the Work shall be completed no later

than thirty (30) calendar days after the date of acceptance of Substantial Completion by the County Project Officer. Work will not reach Final Completion until it meets the requirements set forth in the General Conditions. Unless otherwise provided, no claims for early completion are allowed.

The work in Four Mile Run is subject to US Army Corps of Engineers (USACE) Time-of-Year-Restrictions. The restriction for in-stream work begins on February 15 and ends on June 30, and the restriction for tree removal begins on March 15 and ends on August 15. Due to these time-of-year restrictions, work in Long Branch may be scheduled separately from work in Four Mile Run.

5. CONTRACT AMOUNT

The County will pay the Contractor in accordance with the terms of the Progress Payments and Retainage and Payment Terms sections below and at the prices shown in Exhibit E, but not more than \$_____ for the Contractor's completion of the Work as required by the Contract Documents provided the Work is performed to the satisfaction of and is accepted by the Project Officer. The Contractor will complete the Work for the total amount specified in this section ("Contract Amount") unless such amount is modified as provided in this Agreement. The Contract Amount includes all of the Contractor's costs and fees (profit) and is inclusive of all anticipated or known site conditions, anticipated or known materials, labor, and equipment costs, or any other costs which should reasonably have been expected by the Contract Documents.

6. PROGRESS PAYMENTS AND RETAINAGE

The County will make monthly progress payments to the Contractor upon written application by the Contractor, on the basis of a written estimate of the work performed during the preceding calendar month as approved by the Project Officer. However, 5% of each progress payment will be retained by the County until Final Completion and acceptance of all Work covered by the Agreement.

All material and work covered by partial payments will become the property solely of the County at the time the partial payment is made. However, the Contractor will have the sole responsibility, care and custody for all materials and work upon which payments have been made until Substantial Completion. When calculating payment for materials on-site, the County shall not pay for materials which are not scheduled for incorporation into the Work within sixty (60) days from the date of application for payment.

7. PAYMENT TERMS

The Contractor must submit invoices to the County's Project Officer, who will either approve the invoice or require corrections. The County will pay the Contractor 45 days after approval of an invoice for completed work which is reasonable and allocable to the Contract. The number of the County Purchase Order pursuant to work has been performed must appear on all invoices.

8. PAYMENT OF SUBCONTRACTORS

The Contractor is obligated to take one of the two following actions within seven days after receipt of payment by the County for work performed by any subcontractor under this Contract:

- a. Pay the subcontractor for the proportionate share of the total payment received from the County attributable to the work performed by the subcontractor under this Contract; or
- b. Notify the County and the subcontractor, in writing, of the Contractor's intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.

The Contractor is obligated to pay interest to the subcontractor on all amounts owed by the Contractor to the subcontractor that remain unpaid after seven days following receipt by the Contractor of payment from the County for work performed by the subcontractor under this Contract, except for amounts withheld as allowed in subsection b., above. Unless otherwise provided under the terms of this Contract, interest will accrue at the rate of 1% per month.

The Contractor must include in each of its subcontracts, if any are permitted, a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

The Contractor's obligation to pay an interest charge to a subcontractor pursuant to this section may not be construed to be an obligation of the County. A Contract modification may not be made for the purpose of providing reimbursement for such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

9. RELEASE AND REQUEST FOR FINAL PAYMENT

In order to receive final payment upon Final Completion of the Project and before Final Acceptance, the Contractor must submit to the Project Officer a signed original notarized copy of the Arlington County Release and Request for Final Payment form per the General Conditions.

10. LIQUIDATED DAMAGES

Time is of the essence under this Contract. The Work must be completed within the Time for Completion. The County and the Contractor agree that damages for failure to achieve Substantial Completion of the Work by the date specified under Time for Completion are not susceptible to exact determination but that \$1,400.00 per calendar day is in proportion to the actual loss that the County would suffer from such delay. Therefore, the Contractor will pay the County as liquidated damages \$1,400.00 per day for each and every day beyond the time for Substantial Completion that the County determines Substantial Completion has not achieved. The County and the Contractor also agree that damages for failure to achieve Final Completion of the Work by the date specified under Time for Completion are not susceptible to exact determination but that \$1,400.00 per calendar day is in proportion to the actual loss the County would suffer from such delay. Therefore, the Contractor will pay the County as liquidated damages \$1,400.00 per day for each and every day beyond the time for Final Completion until Final Completion is achieved.

The County will be entitled to deduct liquidated damages against any sums owed by the County to the Contractor under this Contract. The Contractor hereby waives any defense as to the validity of any liquidated damages on grounds that such liquidated damages are void as penalties or are not reasonably related to actual damages.

11. NON-APPROPRIATION

All payments by the County to the Contractor pursuant to this Contract are subject to the availability of an annual appropriation for this purpose by the County Board of Arlington County, Virginia ("Board"). In the event that the Board does not appropriate funds for the goods or services provided under this Contract, the County will terminate the Contract, without termination charge or other liability to the County, on the last day of the fiscal year or when the previous appropriation has been spent, whichever occurs first.

12. ESTIMATED QUANTITIES/NON-EXCLUSIVITY OF CONTRACTOR

This Contract does not obligate the County to purchase a specific quantity of items or services during Contract Term. Any quantities that are included in the Contract Documents are the present expectations of the County for the period of the Contract; and the County is under no obligation to buy that or any amount as a result of having provided this estimate or of having had any normal or otherwise measurable requirement in the past. The County may require more goods and/or services than the estimated annual quantities, and any such additional quantities will not give rise to any claim for compensation other than at the unit prices and/or rates in the Contract.

The County does not guarantee that the Contractor will be the exclusive provider of the goods or services covered by this Contract. The items or services covered by this Contract may be or become available under other County contract(s), and the County may determine that it is in its best interest to procure the items or services through those contract(s).

13. COUNTY PURCHASE ORDER REQUIREMENT

County purchases are authorized only if the County issues a Purchase Order in advance of the transaction, indicating that the ordering County agency has sufficient funds available to pay for the purchase. If the Contractor provides goods or services without a signed County Purchase Order, it does so at its own risk and expense. The County will not be liable for payment for any purchases made by its employees that are not authorized by the County Purchasing Agent.

14. LIEN

It is expressly agreed that after any payment has been made by the County either to the Contractor for work done, or labor or material supplied under the Contract, the County will have a lien upon all material delivered to the site either by the Contractor, or for the Contractor, which is to be used in the performance of the Contract.

15. EMPLOYMENT DISCRIMINATION BY CONTRACTOR PROHIBITED

During the performance of its work pursuant to this Contract:

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, sexual orientation, gender identity, national origin, age, disability or on any other basis prohibited by state law. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- B. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation will be deemed sufficient for meeting the requirements of this section.
- C. The Contractor will state in all solicitations or advertisements for employees that it places or causes to be placed that such Contractor is an Equal Opportunity Employer.
- D. The Contractor will comply with the provisions of the Americans with Disabilities Act of 1990 ("ADA"), which prohibits discrimination against individuals with disabilities in employment and mandates that disabled individuals be provided access to publicly and privately provided services and activities.

- E. The Contractor must include the provisions of the foregoing paragraphs in every subcontract or purchase order of more than \$10,000.00 relating to this Contract so that the provisions will be binding upon each subcontractor or vendor.

16. EMPLOYMENT OF UNAUTHORIZED ALIENS PROHIBITED

In accordance with §2.2-4311.1 of the Code of Virginia, as amended, the Contractor must not during the performance of this Contract knowingly employ an unauthorized alien, as that term is defined in the federal Immigration Reform and Control Act of 1986.

17. DRUG-FREE WORKPLACE TO BE MAINTAINED BY CONTRACTOR

During the performance of this Contract, the Contractor must: (i) provide a drug-free workplace for its 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 violating such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of more than \$10,000.00 relating to this Contract so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "workplace" means the site(s) for the performance of the work required by this Contract.

18. *SEXUAL HARASSMENT POLICY

If the Contractor employs more than five employees, the Contractor shall (i) provide annual training on the Contractor's sexual harassment policy to all supervisors and employees providing services in the Commonwealth, except such supervisors or employees that are required to complete sexual harassment training provided by the Department of Human Resource Management, and (ii) post the Contractor's sexual harassment policy in (a) a conspicuous public place in each building located in the Commonwealth that the Contractor owns or leases for business purposes and (b) the Contractor's employee handbook.

19. COVID-19 VACCINATION POLICY FOR CONTRACTORS

Due to the ongoing COVID-19 pandemic, the County has taken various steps to protect the welfare, health, safety, and comfort of the workforce and public at large. As part of these steps, the County has implemented various requirements with respect to health and safety including policies with respect to social distancing, the use of face-coverings and vaccine mandates. To protect the County's workforce and the public at large, all employees and subcontractors of the Contractor who are assigned to this Contract, must be fully vaccinated against COVID-19. Any contractor employee or subcontractor who is not fully vaccinated should be following a weekly testing protocol as established by the Contractor, unless exempt pursuant to a valid reasonable accommodation under state or federal law.

20. PROJECT STAFF

The County has the right to reasonably reject staff or subcontractors whom the Contractor assigns to the Project. The Contractor must then provide replacement staff or subcontractors satisfactory to the County in a timely manner and at no additional cost to the County. The day-to-day supervision and control of the Contractor's employees and its subcontractors is the sole responsibility of the Contractor.

21. FAILURE TO DELIVER

If the Contractor fails to deliver goods or services in accordance with the Contract terms and conditions, the County, after notice to the Contractor, may procure the goods or services from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. The County shall be entitled to offset such costs against any sums owed by the County to the Contractor. However, if public necessity requires the use of nonconforming materials or supplies, they may be accepted at a reduction in price to be determined solely by the County.

22. UNSATISFACTORY WORK

If any of the work done, or material, goods, or equipment provided by the Contractor, is unsatisfactory to the County the Contractor must, upon notice from the County, immediately remove at the Contractor's expense such unsatisfactory work, material, goods, or equipment and replace the same with work, material, goods, or equipment satisfactory to the County. If the Contractor fails to do so after fifteen (15) days the County shall have the right to remove or replace the rejected work, material, goods, or equipment at the expense of the Contractor and offset the expense and administrative costs against any sums owed to the Contractor. This provision applies during the Contract term and during any warranty or guarantee period. At the Project Officer's discretion, rather than correction or replacement of the work, an appropriate adjustment to the Contract Amount may be made.

23. TERMINATION

The County may terminate this Contract at any time as follows: (1) for cause, if, as determined by the County, the Contractor is in breach or default or has failed to perform the Work satisfactorily; or (2) for the convenience of the County.

Upon receipt of a notice of termination, the Contractor must not place any further orders or subcontracts for materials, services or facilities; must terminate all vendors and subcontracts, except as are necessary for the completion of any portion of the Work that the County did not terminate; and must immediately deliver all documents related to the terminated Work to the County.

Any purchases that the Contractor makes after the notice of termination will be the sole responsibility of the Contractor, unless the County has approved the purchases in writing as necessary for completion of any portion of the Work that the County did not terminate.

If any court of competent jurisdiction finds a termination for cause by the County to be improper, then the termination will be deemed a termination for convenience.

A. TERMINATION FOR CAUSE, INCLUDING BREACH AND DEFAULT; CURE

1. Termination for Unsatisfactory Performance. If the County determines that the Contractor has failed to perform satisfactorily, then the County will give the Contractor written notice of such failure(s) and the opportunity to cure them within 15 days or any other period specified by the County ("Cure Period"). If the Contractor fails to cure within the Cure Period, the County may terminate the Contract for failure to provide satisfactory performance by providing written notice with a termination date. Upon such termination, the Contractor may apply for compensation for Contract services that the County previously accepted ("Termination Costs"), unless payment is otherwise barred by the Contract. The Contractor must submit any request for Termination Costs, with all supporting documentation, to the County Project Officer within 30 days after the expiration of the Cure Period. The County may accept or reject the request for

Termination Costs, in whole or in part, and may notify the Contractor of its decision within a reasonable time.

In the event of termination by the County for failure to perform satisfactorily, the Contractor must continue to provide its services as previously scheduled through the termination date, and the County must continue to pay all fees and charges incurred through the termination date.

2. Termination for Breach or Default. If the County terminates the Contract for default or breach of any Contract provision or condition, then the termination will be immediate after notice of termination to the Contractor (unless the County provides for an opportunity to cure), and the Contractor will not be permitted to seek Termination Costs.

Upon any termination pursuant to this section, the Contractor will be liable to the County for costs that the County must expend to complete the Work, including costs resulting from any related delays and from unsatisfactory or non-compliant work performed by the Contractor or its subcontractors. The County will deduct such costs from any amount due to the Contractor; or if the County does not owe the Contractor, the Contractor must promptly pay the costs within 15 days of a demand by the County. This section does not limit the County's recovery of any other damages to which it is entitled by law.

Except as otherwise directed by the County, the Contractor must stop work on the date of receipt the notice of the termination.

B. TERMINATION FOR THE CONVENIENCE OF THE COUNTY

The County may terminate this Contract in whole or in part whenever the Purchasing Agent determines that termination is in the County's best interest. The County will give the Contractor at least 15 days' notice in writing. The notice must specify the extent to which the Contract is terminated and the effective termination date. The Contractor will be entitled to Termination Costs, as defined above, plus any other reasonable amounts that the parties might negotiate; but no amount will be allowed for anticipatory profits.

Except as otherwise directed by the County, the Contractor must stop work on the date of receipt of the notice of the termination.

24. INDEMNIFICATION

The Contractor covenants for itself, its employees and its subcontractors to save, defend, hold harmless and indemnify the County and all of its elected and appointed officials, officers, current and former employees, agents, departments, agencies, boards and commissions (collectively the "County Indemnitees") from and against any and all claims made by third parties for any and all losses, damages, injuries, fines, penalties, costs (including court costs and attorneys' fees), charges, liability, demands or exposure resulting from, arising out of or in any way connected with the Contractor's acts or omissions, including the acts or omissions of its employees, vendors, delivery drivers and/or subcontractors, in performance or nonperformance of the Contract. This duty to save, defend, hold harmless and indemnify will survive the termination of this Contract. If the Contractor fails or refuses to fulfill its obligations contained in this section, the Contractor must reimburse the County for any and all resulting payments and expenses, including reasonable attorneys' fees. The Contractor must pay such expenses upon demand by the County, and failure to do so may result in the County withholding such amounts from any payments to the Contractor under this Contract.

25. INTELLECTUAL PROPERTY INDEMNIFICATION

The Contractor warrants and guarantees that in providing services under this Contract neither the Contractor nor any subcontractor is infringing on the intellectual property rights (including, but not limited to, copyright, patent, mask and trademark) of third parties.

If the Contractor or any of its employees or subcontractors uses any design, device, work or material that is covered by patent or copyright, it is understood that the Contract Amount includes all royalties, licensing fees, and any other costs arising from such use in connection with the Work under this Contract.

The Contractor covenants for itself, its employees and its subcontractors to save, defend, hold harmless, and indemnify the County Indemnitees, as defined above, from and against any and all claims, losses, damages, injuries, fines, penalties, costs (including court costs and attorneys' fees), charges, liability or exposure for infringement of or on account of any trademark, copyright, patented or unpatented invention, process or article manufactured or used in the performance of this Contract. This duty to save, defend, hold harmless and indemnify will survive the termination of this Contract. If the Contractor fails or refuses to fulfill its obligations contained in this section, the Contractor must reimburse the County for any and all resulting payments and expenses, including reasonable attorneys' fees. The Contractor must pay such expenses upon demand by the County, and failure to do so may result in the County withholding such amounts from any payments to the Contractor under this Contract.

26. COPYRIGHT

By this Contract, the Contractor irrevocably transfers, assigns, sets over and conveys to the County all rights, title and interest, including the sole exclusive and complete copyright interest, in any and all copyrightable works created pursuant to this Contract. The Contractor will execute any documents that the County requests to formalize such transfer or assignment.

The rights granted to the County by this section are irrevocable and may not be rescinded or modified, including in connection with or as a result of the termination of or a dispute concerning this Contract.

The Contractor may not use subcontractors or third parties to develop or provide input into any copyrightable materials produced pursuant to this Contract without the County's advance written approval and unless the Contractor includes this Copyright provision in any contract or agreement with such subcontractors or third parties related to this Contract.

27. OWNERSHIP AND RETURN OF RECORDS

This Contract does not confer on the Contractor any ownership rights or rights to use or disclose the County's data or inputs.

All drawings, specifications, blueprints, data, information, findings, memoranda, correspondence, documents or records of any type, whether written, oral or electronic, and all documents generated by the Contractor or its subcontractors as a result of this Contract (collectively "Records") are the exclusive property of the County and must be provided or returned to the County upon completion, termination, or cancellation of this Contract. The Contractor will not use or willingly cause or allow such materials to be used for any purpose other than performance of this Contract without the written consent of the County.

The Records are confidential, and the Contractor will neither release the Records nor share their contents. The Contractor will refer all inquiries regarding the status of any Record to the Project Officer or to his or

her designee. At the County's request, the Contractor will deliver all Records, including hard copies of electronic records, to the Project Officer and will destroy all electronic Records.

The Contractor agrees to include the provisions of this section as part of any contract or agreement related to this Contract into which it enters with subcontractors or other third parties.

The provisions of this section will survive any termination or cancellation of this Contract.

28. CONFIDENTIAL INFORMATION

The Contractor and its employees, agents and subcontractors will hold as confidential all County information obtained under this Contract. Confidential information includes, but is not limited to, nonpublic personal information; personal health information (PHI); social security numbers; addresses; dates of birth; other contact information or medical information about a person; and information pertaining to products, operations, systems, customers, prospective customers, techniques, intentions, processes, plans and expertise. The Contractor must take reasonable measures to ensure that all of its employees, agents and subcontractors are informed of and abide by this requirement.

29. ETHICS IN PUBLIC CONTRACTING

This Contract incorporates by reference Article 9 of the Arlington County Purchasing Resolution, as well as all state and federal laws related to ethics, conflicts of interest or bribery, including the State and Local Government Conflict of Interests Act (Code of Virginia § 2.2-3100 et seq.), the Virginia Governmental Frauds Act (Code of Virginia § 18.2-498.1 et seq.) and Articles 2 and 3 of Chapter 10 of Title 18.2 of the Code of Virginia, as amended (§ 18.2-438 et seq.). The Contractor certifies that its bid was made without collusion or fraud; that it has not offered or received any kickbacks or inducements from any other offeror, supplier, manufacturer or subcontractor; and that it has not conferred on any public employee having official responsibility for this procurement any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

30. COUNTY EMPLOYEES

No Arlington County employee may share in any part of this Contract or receive any benefit from the Contract that is not available to the general public.

31. FORCE MAJEURE

Neither party will be held responsible for failure to perform the duties and responsibilities imposed by this Contract if such failure is due to a fire, riot, rebellion, natural disaster, war, act of terrorism or act of God that is beyond the control of the party and that makes performance impossible or illegal, unless otherwise specified in the Contract, provided that the affected party gives notice to the other party as soon as practicable after the force majeure event, including reasonable detail and the expected duration of the event's effect on the party.

32. AUTHORITY TO TRANSACT BUSINESS

The Contractor must, pursuant to Code of Virginia § 2.2-4311.2, be and remain authorized to transact business in the Commonwealth of Virginia during the entire term of this Contract. Otherwise, the Contract is voidable at the sole option of and with no expense to the County.

33. RELATION TO THE COUNTY

The Contractor is an independent contractor, and neither the Contractor nor its employees or subcontractors will be considered employees, servants or agents of the County. The County will not be responsible for any negligence or other wrongdoing by the Contractor or its employees, servants or agents. The County will not withhold payments to the Contractor for any federal or state unemployment taxes, federal or state income taxes or Social Security tax or for any other benefits. The County will not provide to the Contractor any insurance coverage or other benefits, including workers' compensation.

34. ANTITRUST

The Contractor conveys, sells, assigns and transfers to the County all rights, title and interest in and to all causes of action under state or federal antitrust laws that the Contractor may have relating to this Contract.

35. REPORT STANDARDS

The Contractor must submit all written reports required by this Contract for advance review in a format approved by the Project Officer. Reports must be accurate and grammatically correct and should not contain spelling errors. The Contractor will bear the cost of correcting grammatical or spelling errors and inaccurate report data and of other revisions that are required to bring the report(s) into compliance with this section.

36. AUDIT

The Contractor must retain all books, records and other documents related to this Contract for at least five years, or such period of time required by the County's funding partner(s), if any, whichever is greater, after the final payment and must allow the County or its authorized agents to examine the documents during this period and during the Contract Term. The Contractor must provide any requested documents to the County for examination within 15 days of the request, at the Contractor's expense. Should the County's examination reveal any overcharging by the Contractor, the Contractor must, within 30 days of County's request, reimburse the County for the overcharges and for the reasonable costs of the County's examination, including, but not limited to, the services of external audit firm and attorney's fees; or the County may deduct the overcharges and examination costs from any amount that the County owes to the Contractor. If the Contractor wishes to destroy or dispose of any records related to this Contract (including confidential records to which the County does not have ready access) within five years after the final payment, or such period of time required by the County's funding partner(s), if any, whichever is greater, the Contractor must give the County at least 30 days' notice and must not dispose of the documents if the County objects.

The Purchasing Agent may require the Contractor to demonstrate that it has the necessary facilities, ability, and financial resources to comply with the Contract and furnish the service, material or goods specified herein in a satisfactory manner at any time during the term of this Contract.

37. ASSIGNMENT

The Contractor may not assign, transfer, convey or otherwise dispose of any award or any of its rights, obligations or interests under this Contract without the prior written consent of the County.

38. AMENDMENTS

This Contract may not be modified except by written amendment executed by persons duly authorized to bind the Contractor and the County.

39. ARLINGTON COUNTY PURCHASING RESOLUTION AND COUNTY POLICIES

Nothing in this Contract waives any provision of the Arlington County Purchasing Resolution, which is incorporated herein by reference, or any applicable County policy.

40. DISPUTE RESOLUTION

All disputes arising under this Agreement or concerning its interpretation, whether involving law or fact and including but not limited to claims for additional work, compensation or time, and all claims for alleged breach of contract must be submitted in writing to the Project Officer as soon as the basis for the claim arises. In accordance with the Arlington County Purchasing Resolution, claims denied by the Project Officer may be submitted to the County Manager in writing no later than 60 days after the final payment. The time limit for a final written decision by the County Manager is 30 days. Procedures concerning contractual claims, disputes, administrative appeals and protests are contained in the Arlington County Purchasing Resolution. The Contractor must continue to work as scheduled pending a decision of the Project Officer, County Manager, County Board or a court of law.

41. APPLICABLE LAW, FORUM, VENUE, AND JURISDICTION

This Contract is governed in all respects by the laws of the Commonwealth of Virginia; and the jurisdiction, forum and venue for any litigation concerning the Contract or the Work is in the Circuit Court for Arlington County, Virginia, and in no other court.

42. ARBITRATION

No claim arising under or related to this Contract may be subject to arbitration.

43. NONEXCLUSIVITY OF REMEDIES

All remedies available to the County under this Contract are cumulative, and no remedy will be exclusive of any other at law or in equity.

44. NO WAIVER

The failure to exercise a right provided for in this Contract will not be a subsequent waiver of the same right or of any other right.

45. SEVERABILITY

The sections, paragraphs, clauses, sentences, and phrases of this Contract are severable; and if any section, paragraph, clause, sentence or phrase of this Contract is declared invalid by a court of competent jurisdiction, the rest of the Contract will remain in effect.

46. ATTORNEY'S FEES

In the event that the County prevails in any legal action or proceeding brought by the County to enforce any provision of this Contract, the Contractor will pay the County's reasonable attorney's fees and expenses.

47. SURVIVAL OF TERMS

In addition to any statement that a specific term or paragraph survives the expiration or termination of this Contract, the following sections also survive: INDEMNIFICATION; INTELLECTUAL PROPERTY INDEMNIFICATION; RELATION TO COUNTY; OWNERSHIP AND RETURN OF RECORDS; AUDIT; COPYRIGHT; DISPUTE RESOLUTION; APPLICABLE LAW AND JURISDICTION; ATTORNEY'S FEES, AND CONFIDENTIAL INFORMATION.

48. HEADINGS

The section headings in this Contract are inserted only for convenience and do not affect the substance of the Contract or limit the sections' scope.

49. AMBIGUITIES

The parties and their counsel have participated fully in the drafting of this Agreement; and any rule that ambiguities are to be resolved against the drafting party does not apply. The language in this Agreement is to be interpreted as to its plain meaning and not strictly for or against any party.

50. NOTICES

Unless otherwise provided in writing, all legal notices and other formal communications required by this Contract are deemed to have been given when either (a) delivered in person; (b) delivered by an agent, such as a delivery service; or (c) deposited in the United States mail, postage prepaid, certified or registered and addressed as follows:

TO THE CONTRACTOR:

Email:

Phone:

TO THE COUNTY:

_____, Project Officer

AND

Dr. Sharon T. Lewis, LL.M, MPS, VCO, CPPB
Purchasing Agent
Arlington County, Virginia
2100 Clarendon Boulevard, Suite 500
Arlington, Virginia 22201
Phone: (703) 228-3294
Email: slewis1@arlingtonva.us

TO COUNTY MANAGER'S OFFICE (FOR PROJECT CLAIMS):

Mark Schwartz, County Manager
Arlington County, Virginia
2100 Clarendon Boulevard, Suite 318
Arlington, Virginia 22201

51. NON-DISCRIMINATION NOTICE

Arlington County does not discriminate against faith-based organizations.

52. INSURANCE, PAYMENT AND PERFORMANCE BONDS

The Contractor shall maintain the required insurance coverage and payment and performance bonds as set forth in the Invitation to Bid through completion of the Contract, including all warranty and guarantee periods.

53. MATERIAL CHANGES

The Contractor shall notify Purchasing Agent within seven days of any material changes in its operation that relate to any matter attested regarding certifications on its bid form.

WITNESS these signatures:

THE COUNTY BOARD OF ARLINGTON
COUNTY, VIRGINIA

CONTRACTOR

AUTHORIZED
SIGNATURE: _____

AUTHORIZED
SIGNATURE: _____

NAME: TOMEKA D. PRICE

NAME: _____

TITLE: PROCUREMENT OFFICER

TITLE: _____

DATE: _____

DATE: _____

III. ARLINGTON COUNTY CONSTRUCTION GENERAL CONDITIONS

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A. INTRODUCTION TO TERMS

- 1) The term "Agreement" means the completed and signed Form of Contract Agreement.
- 2) The term "Award Date" means the date of execution of the Agreement by the Purchasing Agent.
- 3) The term "Business Day" shall refer to any day that the County is open for general business.
- 4) The term "Calendar Day" means any day of twenty-four hours measured from midnight to the next midnight. Included are weekends and holidays. When the term "Day" is used it shall be assumed to refer to a Calendar Day unless otherwise specified.
- 5) The term "Change Order" means a written order to the Contractor, signed by the Project Officer and the Contractor, which authorizes a change in the Work, and/or adjustment to the Contract Amount and/or an adjustment to the Time for Completion. A Change Order once signed by all the parties is incorporated into and becomes part of the Contract.
- 6) The term "Commencement Date" means the date on which the Time for Completion will commence for the Contractor to begin to perform his obligations under the Contract Documents as provided in the Notice to Proceed.
- 7) The term "Construction Change Directive" means a written order issued by the County directing a change in the Work prior to agreement on adjustment, if any, in the Contract Amount or Contract Time, or both.
- 8) The term "Contract Documents" means the Agreement and all the documents and Exhibits and/or Attachments identified therein which shall include the Drawings and the Specifications, and all modifications including amendments and subsequent Change Orders thereto properly incorporated in the Contract.
- 9) The terms "County" and "Contractor" shall mean the respective parties to the Contract. They shall be treated throughout the Contract Documents as though each were of the singular number and masculine gender. Only one Contractor is recognized as a party to this Contract.
- 10) The term "Critical Path Method or CPM" means a step-by-step project management technique for process planning that defines critical and non-critical tasks with the goal of preventing time-frame problems and process bottlenecks. An activity on the critical path cannot be started until its predecessor activity has been completed. is delayed then the entire project is delayed.
- 11) The term "Delay" means an event or condition that results in a work activity starting or being completed later than originally planned.
- 12) The term "Drawings" means all drawings pertaining to the Contract, including the Contract Drawings and Construction Notes which show and describe the locations, character, dimensions, and details of the Work to be performed under the contract.
- 13) The term "Field Order" is a written order to the Contractor, authorized by the Project Officer, which acknowledges a change in the Work that does not adjust the Contract Amount and does not adjust the Time for Completion.

- 14) The term "Final Acceptance" shall mean the date on which the County issues the final payment for the Work.
- 15) The term "Final Completion" shall mean the condition when the County agrees that all the Work has been fully completed in accordance with the Contract Documents and is acceptable. The date of the Final Completion of the Work under the Contract is the date on which Final Completion is accomplished.
- 16) The term "Float" shall represent the amount of time that a task in a project network or sequence can be delayed without causing a delay to: subsequent tasks ("free Float") or project completion date ("total Float"). Float shall belong to the County and shall be used for the successful completion of the Project within the Time for Completion.
- 17) The term "Limits of Disturbance (LOD)" shall represent the area within which land disturbing activities take place. Land disturbing activities include all actions that expose bare soil during construction.
- 18) The term "Limits of Work (LOW)" shall represent the area within which construction activities take place, including but not limited to the Limits of Disturbance area.
- 19) The term "Notice to Proceed" shall mean a written notice issued by the County to the Contractor stating the Commencement Date. The Notice to Proceed will specify the Time for Completion of the Contract.
- 20) The term "Project" means the entire proposed construction to be executed as stipulated in the Contract Documents
- 21) The term "Project Officer" means the County Project Officer assigned by the Director of the County Department responsible for the project, or the Director's designee. When a designee to act on behalf of the Project Officer is used by the County, the name of the designee and the duties and authority of such designee will be identified in the Contract Documents or in a written notice to the Contractor from the Project Officer responsible for the project. The designee may be a professional architect or engineer or other person employed by the County to perform construction services administration, design services, or project oversight.
- 22) The term "Punch List" means unfinished items of the construction of the Project, which unfinished items of construction are minor or insubstantial details of construction, mechanical adjustment or decoration remaining to be performed, the non-completion of which would not materially affect use of the Project, and which are capable of being completed within the time specified for Final Completion after Substantial Completion has been achieved.
- 23) The term "Request for Information" (RFI) means a request originated by the Contractor requesting clarification or additional information from the Project Officer and/or Architect/Engineer concerning information in the construction documents where the Contractor believes there is insufficient information or a conflict in the documents. RFI's shall be submitted by the Contractor sufficiently in advance of the Work to provide time for assessment and response without delay of the Work. Responses to RFI's shall not be construed as authorization for a Change Order.

- 24) The term "Schedule of Values" means a listing of the Contractor's total contract value by Construction Specifications Institute (CSI) divisions, including Division 1, Contractor's General Conditions.
- 25) The term "Site" refers to that portion of the property on which the Work is to be performed or which has otherwise been set aside for use by the Contractor.
- 26) The terms "Special Conditions" mean the written statements modifying or supplementing the Technical Specifications or General Conditions for requirements or conditions peculiar to the Contract.
- 27) The term "Specifications" means and shall include the Technical Specifications, the Special Conditions and all written agreements and instructions pertaining to the performance of the Work.
- 28) When used, the term "Stipulated Price Item" means and includes an item of Work, unanticipated or of unknown quantity at the time of issuance of the solicitation for a Bid and determined to be executed, based on the actual field conditions during the progress of Work under the Contract. The Unit Price for the "Stipulated Price Item", as identified in the "Stipulated Price Items" section of the Bid Form, is predetermined by the County as the current reasonably workable rate for the Item inclusive of all necessary labor, equipment, materials, overheads (provision and installation), and the contractor's profit.
- 29) The term "Subcontractor", shall include only those having a direct contract with the Contractor, and it shall include those who furnish material worked to a special design according to the plans and specifications for this Work but shall not include those who merely furnish material not so worked.
- 30) The term "Substantial Completion" shall mean the condition when the County agrees that the Work, or a specific portion thereof, is sufficiently complete, in accordance with the Contract Documents, so that it can be utilized by the County for the purposes for which it was intended. The date of Substantial Completion of the Work under the Contract is the milestone date on which Substantial Completion condition is accomplished.
- 31) The term "Technical Specifications" means that part of the Contract Documents that describe the quality of materials, method of installation, standard of workmanship, and the administrative and procedural requirements for the performance of the Work under the contract.
- 32) The term "Time for Completion" shall mean the time period set forth in the Agreement.
- 33) The term "Work" shall mean the services performed under this Contract including, but not limited to, furnishing labor, and furnishing and installing materials and equipment required to complete the Project specified in the Contract Documents.

B. DRAWINGS, SPECIFICATIONS, RELATED DATA AND RECORDS KEEPING

1. INTENT OF THE DRAWINGS AND SPECIFICATIONS

- a. It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, water haulage, light power, transportation, superintendence, temporary construction of all kinds, and other services and facilities of every nature whatsoever that are necessary to execute and deliver the Work, complete and usable within the scope of the Contract with all parts in working order, and all connections properly made.
- b. The general character and scope of the Work are illustrated by the Drawings and listed in the Specifications. Any additional drawings and or other instructions deemed necessary by the Project Officer or designee will be furnished to the Contractor when required for the Work and shall be incorporated into the Contract Documents.
- c. Where "as shown", "as indicated", "as detailed", or words of similar import are used, it shall be understood that direction, requirements, permission, or review of Project Officer or designee is intended unless stated otherwise. As used herein, "provide" shall be understood to mean "provide complete in place", that is, "furnish and install."
- d. Unless otherwise specifically noted, the word "similar" where it occurs in the Drawings, shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relation to their locations and their connection with other parts of the Work.
- e. Materials or work described in words which, so applied, have a well-known technical, construction industry, or trade meaning, shall be held to refer to the recognized technical or trade meaning.
- f. The Contract Documents are complementary, and what is called for by any one document shall be as binding as if called for by all documents. In case of conflicting variance between the Contract Documents, the Order of Precedence stated in the Agreement shall govern. Figured dimensions on the plans shall be used; drawings shall not be scaled.
- g. Unless otherwise specifically noted, construction tolerances shall be to the numerical precision presented in the Contract Drawings.

2. DISCREPANCIES AND ERRORS

If the Contractor discovers any discrepancies between the Drawings and Specifications and the site conditions or any errors or omissions in the Drawings or Specifications, the Contractor shall at once, but in no event later than three calendar days after discovery of the discrepancy or error, report them in writing to the Project Officer or designee. If the Contractor proceeds with any work that may be affected by such discrepancies, errors, or omissions, after their discovery, but before a clarification is provided, such work shall be at the Contractor's risk and expense. Issues affecting critical path activities shall be made known to the Project Officer or designee within one business day after discovery.

3. DIFFERING SITE CONDITIONS

The Contractor shall immediately, and before the conditions are further disturbed, give notice to the Project Officer of subsurface or latent physical conditions at the site which differ materially from those indicated in this Contract, or previously unknown physical conditions discovered at the site of an unusual nature, and which differ materially from those ordinarily expected to be encountered at the site. Such notice shall be followed by a written notice provided within 48 hours of discovery.

The Project Officer will investigate the site conditions promptly after receiving the notice. If the conditions do materially differ to the extent that an increase or decrease would result in the Contractor's cost of the Work, or the time required for performing any part of the Work under the contract, an equitable adjustment may be made under this clause and the Contract modified in writing accordingly.

No request by the Contractor for an adjustment to the Contract under this clause shall be allowed, unless the Contractor has given the written notice required. If the Contractor proceeds with any work that may be affected by such differing site conditions before giving notice to the Project Officer as set forth herein, such work shall be at the Contractor's sole risk and expense.

No request by the Contractor for an adjustment to the contract for differing site conditions shall be allowed if made after Final Payment under the Contract.

4. COPIES FURNISHED

Except as provided for otherwise, copies of the Drawings and Specifications reasonably necessary for the execution of the Work will be furnished to the Contractor. One electronic copy of the Contract Drawings and Specifications will be provided by the Project Officer or designee to the Contractor.

5. USE OF CADD FILES

The Contractor may request Electronic CADD files related to the Work or the Project. The CADD files will be provided by the County only if the Contractor completes the Arlington County Electronic CADD Drawing Release Form, which form is then incorporated by reference into this Contract. Use of CADD files is at the Contractor's own risk and in no way alleviates Contractor's responsibility for the Work to conform to the Plans and Specifications.

6. DOCUMENTS ON THE JOBSITE

The Contractor shall keep on the site of the Project a copy of the Drawings and Specifications updated to include all authorized revisions and RFI responses and shall at all times give the County and its authorized representatives access thereto. The Contractor shall mark up the Drawings on a daily basis in red. The As-Built Drawings shall be submitted to the County at Substantial Completion as the Final As-Built Drawings.

7. OWNERSHIP OF DRAWINGS AND SPECIFICATIONS

All Drawings and Specifications and copies thereof furnished by the County are the property of the County and shall not be used on other projects. All copies of the Drawings and Specifications except the signed Contract sets shall be returned to the Project Officer or designee at Final Completion.

8. SUBMITTALS

- a. The term "submittals", as used herein, shall include fabrications, erection and setting drawings, manufacturers' standard drawings, schedules, descriptive literature, catalogs, brochures, performance and test data, wiring and control diagrams, and other descriptive data pertaining to the materials and equipment as required to demonstrate compliance with the Contract requirements.
- b. Unless other specified in the Specifications the Contractor shall submit for the review of the Project Officer or designee a listing of all submittals required by the Specifications or requested by the Project Officer or designee within fifteen (15) calendar days after receipt of the Notice to Proceed. This listing shall include due dates for each required submittal, coordinated with the project schedule such that adequate time is allotted for review and potential resubmittals, fabrication and delivery without causing delay. The Contractor bears all risk for delay associated with submittals not received in a timely manner.
- c. Submittals shall be submitted in such number of copies as established in the Specifications. Each submission shall be accompanied by a letter of transmittal, listing the contents of the submission and identifying each item by reference to specification section or drawing. All submittals shall be clearly labeled with the name of the project and such information as may be necessary to enable their complete review by the Project Officer or designee. Catalog plates and other similar material that cannot be so labeled conveniently shall be bound in suitable covers bearing the identifying data.
- d. Submittals shall be accompanied by all required certifications and other such supporting material and shall be submitted in sequence or groups that all related items can be checked together. When submittals cannot be checked because a submission is not complete, or because submittals on related items have not been received by the Project Officer or designee, then such submittals will be returned without action or will be held, not checked, until the missing material is received. Incomplete or defective submittals shall not be considered to have been submitted. Failure to deliver submittals within the specified time will not be grounds for additional time or compensation.
- e. Submittals shall have been reviewed by the Contractor and coordinated with all other related or affected work before they are submitted for review and acceptance and shall bear the Contractor's certification that the Contractor has checked and approved them as complying with all relevant information in the Contract Documents. Submittals submitted without such certification and coordination will be returned to the Contractor without action and will not be considered as a formal submission.
- f. If shop drawings show variations from the Drawings and Specifications because of standard shop practice or other reasons, the Contractor shall make specific mention of such variation in the Contractor's letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise, the Contractor will not be relieved of the responsibility for executing the work in accordance with the Drawings and Specifications even though shop drawings have been accepted.
- g. The Project Officer or designee shall review the shop drawings with reasonable promptness. Review and/or acceptance of shop drawings will be general for conformance with the

design concept of the Project and compliance with the information given in the Contract Documents, and will not include quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Acceptance shall not be construed as permitting any departure from Contract requirements, as authorization of any increase in price nor as relieving the Contractor of the responsibility for any error in details, dimensions or otherwise that may exist. Review is not intended to relieve the contractor of full responsibility for the accuracy and completeness of the plans and calculations, or for the complete compliance with the contract documents. Contractor is solely responsible for the means and methods of the construction, including temporary items proposed for use.

9. SAMPLES

The Contractor shall submit to the Project Officer or designee, all samples required by the Specifications or requested by the Project Officer or designee. Samples shall be submitted in single units only, unless the Contractor desires additional units for the Contractor's own use. Each sample shall bear a label indicating what the material represented, the name of the producer and the title of the Project. Acceptance of a sample shall be only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents, and only for the characteristics or use named in such acceptance. Such acceptance shall not be construed to change or modify any Contract requirements or the Contract Price. Materials and equipment incorporated in the Work shall match the accepted samples. The Contractor shall be responsible for researching the availability of the specified product in the dimensions and colors specified at no additional cost to the County. Failure of the Contractor to identify specified products that are not commercially produced within the time required for submittal transmittal in order to meet the project schedule shall not be entitled to additional time or compensation.

10. TESTS

Any specified tests of materials and finished articles shall be made by bureaus, laboratories or agencies approved by the Project Officer or designee and the certified reports of such tests shall be submitted to the Project Officer or designee. All tests shall be in compliance with the Specifications. All costs in connection with the testing and test failures shall be borne by the Contractor. Failure of any material to pass the specified tests or any test performed by the Project Officer or designee, will be sufficient cause for refusal to consider, under this Contract, any further materials of the same brand or make of that material. Samples of various materials delivered on the site or in place may be taken by the Project Officer or designee for testing. Samples failing to meet the Contract requirements will automatically void previous acceptance of the items tested. The Contractor will not be compensated for additional time and/or cost incurred in finding an acceptable replacement or the removal and replacement of the defective item.

11. MATERIALS AND EQUIPMENT LIST

- a. Unless otherwise specified in the Specifications, within thirty (30) days of the Commencement Date the Contractor shall submit to the Project Officer or designee a complete list of materials and equipment proposed for use in connection with the Project. Partial lists submitted from time to time will not be considered unless specifically approved by the Project Officer or designee.

- b. After any material or piece of equipment has been approved through submittal process, no change in brand or make will be permitted unless satisfactory written evidence is presented to prove that the manufacturer cannot make scheduled delivery of the accepted material, or that material delivered has been rejected and the substitution of a suitable material is an urgent necessity, or that other conditions have become apparent which indicate that acceptance of such other material is in the best interest of the County. The Contractor is solely responsible for the cost and time required to obtain and install a suitable replacement.

12. STANDARDS, SUBSTITUTIONS

- a. Any material specified by reference to the number, symbol or title of a specific standard, such as a Commercial Standard, a Federal Specification, a Trade Association Standard, or other similar standard, shall comply with the requirements in the latest revision of the standards or specification and any amendment or supplement, except as limited to type, class or grade, or as modified in such reference. The standard referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.
- b. Reference in the Specifications or on the Drawings to any article, device, product, material, fixture, form or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as eliminating from competition other products of equal or better quality by other approved manufacturers. Otherwise, applications for acceptance of substitutions for the specified items will be considered only upon request of the Contractor, not of individuals, trades or suppliers, and only for a specific purpose; no blanket acceptance will be granted. No acceptance of a substitution shall be valid unless it is in written form and signed by the Project Officer or designee.
- c. If any proposed substitution will affect a correlated function, adjacent construction or the work of other contractors, then the necessary changes and modifications to the affected work shall be considered as an essential part of the proposed substitution, to be accomplished by the Contractor without additional expense to the County or an extension of the contract time, if and when accepted. Detail drawings and other information necessary to show and explain the proposed modifications shall be submitted with the request for acceptance of the substitution.

13. SURVEYS AND CONTROLS

Unless otherwise specified, the Contractor shall establish all baselines for the location of the principal component parts of the Work, establish a suitable number of benchmarks adjacent to the Work, and develop all detail surveys necessary for construction by a professional land surveyor licensed in the Commonwealth of Virginia. The Contractor shall carefully preserve benchmarks, reference points and stakes, and in the case of destruction thereof by the Contractor or due to the Contractor's negligence or the negligence of any subcontractor or supplier, the Contractor shall be responsible for expense and damage resulting therefrom and shall be responsible for any mistakes that may be caused by the loss or disturbance of such benchmarks, reference points and stakes. The Contractor shall within 30 days of NTP perform a full site survey to verify all control points shown on the drawings against existing conditions

within the site limits. Any discrepancies found during this effort shall be made known immediately to the Project Officer. Failure to perform this survey and provide proof and acceptance of Project datum, control points, and existing benchmarks will not give rise to any extensions to contract time or amount. The cost of all necessary surveying services shall be considered incidental to the work and, unless otherwise specified, shall be included in the cost of the Work.

14. AS-BUILT DRAWINGS

As-Built Drawings shall be the responsibility of the Contractor. The Contractor shall maintain and mark up one set of prints of the applicable Contract Drawings to portray as-built construction. The prints shall be neatly and clearly marked in red to show all variations between the Work actually provided and that indicated on the Contract Drawings, and all utilities encountered in the Work. All drafting shall conform to good drafting practice and shall include such supplementary notes, legends and details as may be necessary for legibility and clear portrayal of the as-built construction. These drawings shall be marked promptly upon any approved change to the Work or discovery of any undocumented utility or obstruction and shall be submitted to the Project Officer or designee in sufficient time to be approved no later than thirty (30) calendar days after the Substantial Completion Date. The final As-Built Drawings approved by the Project Officer or designee shall be submitted in paper copy and .pdf format electronic files prior to Final Completion. Unless otherwise required under the Contract Documents, incorporation of red-lined changes into CADD format shall be the responsibility of the Architect and/or Engineer of Record, with the exception being any documents prepared by the Contractor in CADD, the record version of which shall also be provided to the County in CADD format by the Contractor. Final payments will be held until the complete set of red-line drawings are submitted to and approved by the Project Officer.

15. WEB BASED RECORDS DOCUMENTATION

Unless instructed otherwise, the Contractor shall use the web-based construction management tool, e-Builder for, but not limited to, submittals, record keeping and document storage of all construction files including, invoices, pay applications, RFIs, approved shop drawings, change orders, construction progress meeting minutes, warranties, equipment specifications and brochures, record drawings, automated alerts and reminders for all functions, and Operation and Maintenance (O&M) Manuals.

C. COUNTY, COUNTY PROJECT OFFICER, AND CONTRACTOR RELATIONS

1. STATUS OF COUNTY PROJECT OFFICER OR DESIGNEE

The Project Officer or designee shall be the County's representative during the construction period. All Contractor instructions or requests shall be issued from or submitted through the Project Officer or designee. The Project Officer or designee shall have authority to suspend the Work whenever such suspension may be necessary in the responsible opinion of the Project Officer or designee to ensure the proper execution of the Contract. The Project Officer or designee shall also have authority to reject all work and materials that do not conform to the Contract and to decide questions that arise in the execution of the Work. The County Project Officer or designee will, within a reasonable time, make decisions on all matters relating to the execution and progress of the Work.

2. LIMITATION ON COUNTY'S RESPONSIBILITIES

The County shall not supervise, direct, or have control or authority over, nor be responsible for: The Contractor's means, methods, techniques, sequences or procedures of construction; the safety precautions and programs related to safety, or the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

3. DISPUTES

- a. All disputes or claims arising under this Contract or its interpretation, whether involving law or fact or both, or extra work, and all claims for alleged breach of Contract shall be submitted in writing to the Project Officer or designee as set forth in these General Conditions. Such claims must set forth in detail the amount of the claim and shall state the facts surrounding it in sufficient detail to identify it together with its character and scope.
- b. Claims denied by the Project Officer shall be processed in accordance with the procedures outlined in Sections 7-107, Contractual Disputes and 7-108, Legal Actions of the Arlington County Purchasing Resolution and the Dispute Resolution paragraph in the Agreement.
- c. The Contractor shall not cause a delay in the work pending a decision of the Project Officer or designee, County Manager, County Board, or court, except by prior written approval of the Project Officer or designee.

4. INSPECTION OF WORK

The Project Officer or designee and representatives of any public authority having jurisdiction shall, at all times, have access to the Work while in progress. The Contractor shall provide suitable facilities for such access and for proper observation of the Work and shall conduct all special tests required by the Specifications, the Project Officer or designee's instructions, and any laws, ordinances or the regulations of any public authority applicable to the work. Nothing in this section shall abrogate or otherwise limits or relieves the Contractor's independent duty to inspect the Work.

5. INSPECTION OF MATERIALS

All articles, materials, and supplies purchased by the Contractor for the Work are subject to inspection upon delivery to the site and during manufacturing or fabrication. The County reserves the right to return for full credit, at the risk and expense of the Contractor, all or part of the articles, materials, or supplies furnished contrary to Specifications and instructions. Nothing in this section shall abrogate or otherwise limit or relieve the Contractor's independent duty to inspect materials.

6. EXAMINATION OF COMPLETED WORK

If the Project Officer or designee requests it, the Contractor, at any time before acceptance of the Work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the Specifications. Should the work thus exposed or examined prove acceptable, then the uncovering or removing, and the replacing of the covering or making good of the parts removed shall be paid for as extra work but should the work so exposed or examined prove unacceptable, then the uncovering, removing and replacing shall be at the Contractor's expense.

7. RIGHT TO SUSPEND WORK

The County shall have the authority to suspend the Work, in whole or in part, for such periods and such reasons as the County may deem necessary or desirable. Any such suspension shall be in writing to the Contractor and the Contractor shall obey such order immediately and not resume the Work until so ordered in writing by the County. No such suspension of the Work shall be the basis for a claim by the Contractor for any increase in the Contract Amount provided that the suspension is for a reasonable time under the circumstances then existing. If the suspension of Work is caused by the County's belief that non-conforming work is being installed, and subsequent investigation proves that the Work was non-conforming, the Contractor shall not be awarded additional time or costs.

8. RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a 10-day period after receipt of written notice from the County or such shorter time as may be reasonable under the circumstances, to commence and continue correction of such default or neglect with diligence and promptness, the County may, without prejudice to other remedies the County may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including the County's expenses, and any additional architect or engineering costs necessary by Contractor's default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the County upon demand.

9. CONTRACTOR MANAGEMENT PERSONNEL

The Contractor shall keep a competent superintendent and any necessary assistants on the Site at all times during progress of the Work and such persons shall be satisfactory to the Project Officer or designee. The superintendent or project manager shall not be changed except with the Project Officer or designee's consent. If the Project Officer determines that the superintendent or project manager is no longer satisfactory, then the superintendent or project manager must be replaced within 15 days of the Project Officer's written notice with a replacement superintendent or project manager with equal or superior qualifications and subject to Project Officer approval.

The superintendent and project manager shall represent the Contractor and all directions given to such persons shall be as binding as if given to the Contractor. The Contractor shall at all times enforce strict discipline and good order among the workers performing under this Contract and shall not employ on the Work any person not reasonably proficient in the Work assigned. Persons permitted to perform Work under Contractor, or any subcontractor, or sub-subcontractor, shall meet all employment eligibility, safety training, security or drug/alcohol testing requirements required by law or by the County. Any person not complying with all such requirements shall be immediately removed from the Site.

The Contractor shall have a qualified and experienced person who can clearly communicate technical matters regarding the subject project. This person shall be available via phone to respond to emergency situations on the project 24 hours a day.

10. DRUG-FREE POLICY

The Contractor is responsible for ensuring that the Site remains a drug-free site. Contractor will require that employees undergo random drug/alcohol screening on a quarterly interval. Any employee who fails the test must be removed from the Site immediately. Random screening shall be performed by a third party licensed to do so in the Commonwealth of Virginia. The Contractor shall provide its random testing policy and schedule to the Project Officer within 30 days of Notice to Proceed. The Contractor will include this provision in every subcontract relating to this Contract. Any infraction by an employee of the Drug-Free policy shall be reported to the Project Officer within 24 hours.

11. LANDS BY COUNTY

The County shall provide access to the lands shown on the Drawings upon which the Work under the Contract is to be performed and to be used for rights of way and for access. In case all the lands, rights-of-way or easements have not been obtained as herein contemplated before construction begins, then the Contractor shall begin its work on such lands and rights-of-way that the County has acquired access to. No additional time or compensation shall be awarded to the Contractor for modifying work location and sequence provided other locations are available for work.

Contractor shall verify the acquisition of all off-site easements and Rights-of-Way prior to the start of off-site construction. Restore all off-site easements to the conditions existing prior to the start of work.

The Contractor shall confine all activities at the site associated with construction activities, to include storage of equipment and or materials, access to the work, formwork, etc. to within the designated Limits of Disturbance (LOD).

12. LANDS BY CONTRACTOR

If the Contractor requires additional land or lands for temporary construction facilities and for storage of materials and equipment other than the areas available on the site or right-of-way, or as otherwise furnished by the County, then the Contractor shall provide such other lands and access thereto entirely at the Contractor's own expense and without liability to the County. The Contractor shall not enter upon private property for any purpose without prior written permission of all of the persons and entities who own the property. The Contractor shall provide copies of all agreements to the County and shall include language in the agreement indemnifying and holding the County harmless for any damages, repairs, restoration or fees associated with the use of the property. Upon termination of the agreement, the Contractor shall provide to the County a fully executed release from the property owner.

13. PROTECTION OF WORK AND PROPERTY

- a. The Contractor shall continuously maintain and protect all of its Work from damage and shall protect the County's property from damage or loss arising in connection with this Contract until Substantial Completion. After Substantial Completion, the maintenance or protection of any incomplete or remedial Work identified on the punch list that requires maintenance or protection in order to allow for the final completion and acceptance of such Work shall be the responsibility of the Contractor until Final Completion. The Contractor shall make good any such damage or loss, except such as may be caused by agents or

employees of the County. Failure to adequately protect the Work shall not be grounds for additional compensation for any maintenance and/or repairs to such Work.

- b. The Contractor shall not place upon the Work, or any part thereof, any loads which are not consistent with the design strength of that portion of the Work.
- c. The Contractor shall be responsible for the preservation of all public and private property, trees, monuments, etc., along and adjacent to the street and/or right-of-way, and shall use every precaution to prevent damage to pipes, conduits and other underground structures, curbs, pavements, etc., except those to be removed or abandoned in place and shall protect carefully from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. Any damage which occurs by reason of the operations under this Contract, whether shown or not on the approved construction plans, shall be completely repaired or replaced to the County's satisfaction by the Contractor at the Contractor's expense. The Contractor shall be responsible for all damages caused by their construction activities.
- d. Prior to commencing construction activity at the Site, the Contractor shall videotape the Site and an additional fifty (50) feet outside the perimeter of the Site. Contractor shall submit a copy of high-resolution digital recording on a DVD or flash drive to the County. The recording shall be stable, continuous, and contain all items within the limits of Work. Submission of the DVD to the County shall be a condition precedent to any obligation of the County to consider an Application for Payment. The DVD shall be the property of the County, and the County shall be permitted to reproduce such DVD's and use the same for any purpose without limitation or claim of ownership or compensation from any party. Contractor shall incorporate the cost of the preconstruction survey in the bid amount or the unit prices of the bid items, as applicable. No additional payment will be made by the County.
- e. The Contractor shall shore, brace, underpin, secure, and protect, as may be necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site that may be affected in any way by excavations or other operations connected with the work required under this Contract. The Contractor shall be responsible for giving any and all required notices to owners or occupants of any adjoining or adjacent property or other relevant parties before commencement of any work. Contractor shall provide all engineering (signed and sealed) for items listed in this section per the Specifications. The Contractor shall indemnify and hold the County harmless from any damages on account of settlements or loss of all damages for which the County may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- f. In an emergency affecting the safety of life or of the Work, or of adjoining property, the Contractor, without special instruction or authorization from the Project Officer or designee, or the County, is hereby permitted to act, at the Contractor's discretion, to prevent such threatened loss or injury, and the Contractor shall so act without appeal, if so instructed or authorized.

- g. The Contractor shall contact "Miss Utility" at 811 for marking the locations of existing underground utilities (i.e., Water, sewer, gas, telephone, electric, and cable tv) at least 72 hours prior to any excavation or construction. The Contractor is required to identify and protect all other utility lines found in the work site area belonging to other owners that are not members of "Miss Utility". Private water and/or sewer laterals will not be marked by "Miss Utility" or the County. The Contractor shall locate and protect these services during construction.

14. SEPARATE CONTRACTS

- a. The County reserves the right to let other contracts in connection with this Project. The Contractor shall afford other contractors' reasonable access to the Project including storage of their materials and the execution of their work and shall properly connect and coordinate its work with the work of other such contractors.
- b. If any part of the Contractor's work depends, for proper execution or results, upon the work of any other contractor, the Contractor shall inspect and promptly report to the Project Officer or designee any defects in such work that renders it unsuitable for such proper execution and results. The Contractor's failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the Contractor's work, except as to defects which may develop in other contractor's work after its execution.
- c. If the Contractor or any of the Contractor's subcontractors or employees cause loss or damage to any separate contractor on the Work, the Contractor agrees to settle or make every effort to settle or compromise with such separate contractor. If such separate contractor sues the County on account of any loss so sustained, the County shall notify the Contractor, who shall indemnify and save the County harmless against any expense, claim or judgment arising therefrom, including reasonable attorney's fees.
- d. In case of a dispute arising between two or more separate contractors engaged on adjacent work as to the respective rights of each under their respective contracts, the Project Officer shall determine the rights of the parties.

15. SUBCONTRACTS

- a. Unless otherwise specified, the Contractor shall, within fifteen (15) calendar days after the execution of the Contract by the County, provide to the Project Officer or designee, in writing, the names of all subcontractors proposed for the principal parts of the Work and for such others as requested by the Project Officer or designee, and shall not employ any subcontractors that the Project Officer or designee may object to as incompetent or unfit after an appropriate determination of the subcontractor's ability. No proposed subcontractor will be disapproved except for cause.
- b. The Contractor shall make no substitutions for any subcontractor previously selected/approved unless first submitted to the County for approval.

- c. The Contractor shall be as fully responsible to the County for the acts and omissions of the Contractor's subcontractors as the Contractor is for the acts and omissions of persons directly employed by the Contractor.
- d. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to the Contractor by the terms of the General Conditions of the Contract, Special Provisions and other Contract Documents comprising the Contract insofar as such documents are applicable to the work of subcontractors.
- e. Nothing contained in the Contract shall be construed to create any contractual relation between any subcontractor and the County, nor shall it establish any obligation on the part of the County to pay to or see to the payment of any sums to any subcontractor. The County will not discuss, negotiate or otherwise engage in any contractual disputes with any subcontractor.
- f. If requested by the County, the Contractor shall replace any subcontractor at no cost to the County within 30 days of the Project Officers written notice or as otherwise specified. No additional time or compensation will be provided in the event a subcontractor is removed due to non-compliance of the requirements outlined within the Contract.

16. ELIMINATED ITEMS

If any item(s) in the Contract are determined to be unnecessary for the proper completion of the Work contracted, the Project Officer or designee may, upon written notice to the Contractor, eliminate such item(s) from the Contract. Payment will not be made for such item(s) so eliminated; except that the Contractor will be compensated for the actual cost of any work performed and the net cost of materials purchased before the item(s) was eliminated from the Contract, including freight and tax costs, as evidenced by invoice. No additional compensation will be made for overhead or anticipated profit. The County will receive the full unit price credit for work eliminated prior to production or installation.

17. COUNTY ORDINANCES

The Contractor shall comply with all applicable County ordinances, including but not limited to: the *Noise Control*, *Erosion & Sediment Control*, *Storm Water Management*, and *Chesapeake Bay Preservation ordinances (Chapters 15, 57, 60, and 61 of the County Code)*.

D. MATERIALS AND WORKMANSHIP

1. MATERIALS FURNISHED BY THE CONTRACTOR

Unless otherwise specified, all materials and equipment incorporated in the Work under the Contract shall be new. All work shall be accomplished by persons qualified in the respective trades.

2. IBC AND VUSBC REQUIREMENTS

The Contractor certifies that all material supplied or used under this Contract meets all current International Building Code (IBC) requirements and the requirements of the Virginia Uniform Statewide Building Code (VUSBC); and further certifies that, if the material delivered or used in the performance of the work is found to be deficient in any of the applicable state or national code requirements, all costs necessary to bring the material into compliance with the

requirements shall be borne by the Contractor. The County shall be entitled to offset such costs against any sums owed by the County to the Contractor under this Contract.

3. ADA COMPLIANCE

The Contractor shall ensure that all Work performed under this Agreement is completed in accordance with the Contract Documents, including Work intended to meet the accessibility requirements of the Americans with Disabilities Act (ADA).

The Contractor is not required to ascertain whether the Contract Documents meet ADA design standards and guidelines. However, should the Contractor discover any non-conformity with such requirements, the Contractor shall immediately inform the County and its design consultant, if applicable, to allow for corrective action.

The Contractor shall defend and hold the County harmless from any expense or liability arising from the Contractor's non-compliance in meeting its obligations herein. The Contractor shall be responsible for all costs related to permitting delays, redesign, corrective Work, and litigation relating to such non-compliance.

4. MANUFACTURER'S DIRECTIONS

Manufactured articles, material, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's directions as accepted by the Project Officer or designee, unless herein specified to the contrary.

5. WARRANTY

All material provided to the County shall be fully guaranteed by the Contractor against manufacturing defects within the period of the manufacturer's standard warranty. Such defects shall be corrected by the Contractor at no expense to the County. The Contractor shall provide all manufacturers' warranties to the Project Officer by the date of Final Completion.

All Work is guaranteed by the Contractor against defects resulting from the use of inferior or faulty materials. The Contractor warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects or inferior or faulty workmanship or work not in accordance with the Contract Documents for one (1) year from the date of Substantial Completion or as set forth in the Specifications of the work by the County in addition to and irrespective of any manufacturer's or supplier's warranty.

No date other than Substantial Completion or as set forth in the Specifications shall govern the effective date of the Warranty, unless that date is agreed upon by the County and the Contractor in advance and in a signed writing.

The Contractor shall promptly correct any defective work or materials after receipt of a written notice from the County to do so. If the Contractor fails to proceed promptly or use its best efforts and due diligence to complete such compliance as quickly as possible, the County may have the materials or work corrected and the Contractor and its Sureties shall be liable for all expenses and costs incurred by the County.

Nothing contained in this section shall be construed to establish a period of limitations with respect to other obligations the Contractor may have under this Contract.

6. INSPECTION AND ACCEPTANCE OF MATERIALS

Inspection and acceptance by the County will be at the work site in Arlington County, Virginia and within ten (10) calendar days of delivery unless otherwise provided for in the Contract Documents. The County will not inspect, accept, or pay for any materials stored or delivered off-site by the Contractor, except as provided by the Payment for Stored Materials clause of these General Conditions and other requirements of the Contract Documents. The County's right of inspection shall not be deemed to relieve the Contractor of its obligation to ensure that all articles, materials and supplies are consistent with Specifications and instructions and are fit for their intended use. The County reserves the right to conduct any tests or inspections it may deem appropriate before acceptance. The Contractor shall be responsible for maintaining all materials and supplies in the condition in which they were accepted until they are used in the work.

The Contractor is to coordinate its work and request inspections in such a manner as to minimize the cost to the County without impacting the overall schedule of the Project within reason. All costs associated with re-inspection shall be borne by the Contractor.

7. CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the work shall be purchased by the Contractor or any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that it has good title to, and that it will require all subcontractors to warrant that they have good title to, all materials and supplies for which the Contractor invoices for payment. The County may request proof of title or payment prior to acceptance of the Contractor's invoice.

8. TITLE TO MATERIALS AND WORK COVERED BY PARTIAL PAYMENTS

All material and work covered by partial payments made by the County will become the property solely of the County at the time the partial payment is made. However, risk of loss or damage to all items shall be the responsibility of the Contractor until Final Acceptance by the County. This provision will not be construed as relieving the Contractor from having sole responsibility for all materials and work upon which payments have been made and for the restoration of any damaged work or replacement or repair at the County's option of any damaged materials. This provision will not be construed as a waiver of the County's right to require fulfillment of all terms of the Agreement, including full rights under the terms of the Warranty provisions of the Agreement, nor shall payment indicate acceptance of the materials or work.

9. CONNECTING WORK

The Contractor shall do all cutting, patching, or digging of the Contractor's work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors as shown upon or reasonably implied by the Drawings and Specifications for the completed Project and shall make good after them as the Project Officer or designee may direct. This work will be performed in a workmanlike manner utilizing proper care and equipment to achieve proper line and grade. The Contractor shall not endanger any

work by cutting, patching, or digging, or otherwise, and shall not cut or alter the work of any other contract except with the prior written consent of the Project Officer or designee.

10. REJECTED WORK AND MATERIALS

- a. Any of the Work or materials, goods, or equipment which do not conform to the requirements of the Contract Documents or are not equal to samples accepted by the Project Officer or designee or are in any way unsatisfactory or unsuited to the purpose for which they are intended, shall be rejected and replaced immediately so as not to cause delay to the Project or work by others. Any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, shall be removed and the work shall be re-executed by the Contractor at the Contractor's expense. The fact that the Project Officer or designee may have previously overlooked such defective work shall not constitute acceptance of any part of it.
- b. If the Contractor fails to proceed at once with the replacement of rejected material and/or the correction of defective workmanship when notified to do so by the Project Officer or designee, the County may, by contract or otherwise, replace such material or correct such workmanship and charge the cost to the Contractor. This clause applies during the Contract and during any warranty or guarantee period.
- c. The Contractor shall be responsible for managing, addressing within a timely manner, and formally closing out all notices of non-compliance issued by the inspector of record, Arlington County Inspection Services, or the Design Team. The Contractor shall be solely liable for any costs or time associated with the corrective action to address any notices of non-compliance. The Contractor must work directly with the entity issuing the notice of non-compliance.
- d. If the Project Officer or designee deems it expedient not to require correction of work which has been damaged or not done in accordance with the Contract, an appropriate adjustment to the Contract Price may be made.

11. PROHIBITION AGAINST ASBESTOS CONTAINING MATERIALS

No goods or equipment provided to the County or construction material installed shall contain asbestos. If a Contractor or supplier provides or installs any goods, equipment, supplies, or materials that contain asbestos in violation of this prohibition, the Contractor shall be responsible for all costs related to the immediate removal and legal disposal of the goods, equipment or materials containing asbestos and replacement with County-approved alternate. The Contractor shall be responsible for all goods, equipment, supplies or materials installed or provided by any of its employees, agents or subcontractors in connection with the work under this contract. The Contractor shall also reimburse to the County all costs of such goods, equipment, supplies or materials installed if not corrected by the Contractor.

E. LEGAL RESPONSIBILITY AND PUBLIC SAFETY

1. SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and locations of the work of the Contract, and that it has investigated and satisfied itself as to the general and local conditions and factors which can affect the Work or its cost, including but not limited to:

- a. conditions bearing upon transportation, disposal, handling, and storage of materials;
- b. the availability of labor, water, electric power, and roads;
- c. uncertainties of weather, river stages, tides, or similar physical conditions at the site;
- d. the information and conditions of the ground; and
- e. the character of equipment and facilities needed before and during work performance.

The Contractor, by executing the Contract, represents that it has reviewed and understands the Contract Documents and has notified the County of and obtained clarification of any discrepancies which have become apparent during the bidding period. During the Contract, the Contractor must promptly notify the County in writing of any apparent errors, inconsistencies, omissions, ambiguities, construction impracticalities or code violations discovered as a result of the Contractor's review of the Contract Documents including any differences between actual and indicated dimensions, locations and descriptions, and must give the County timely notice in writing of same and of any corrections, clarifications, additional Drawings or Specifications, or other information required to define the Work in greater detail or to permit the proper progress of the Work. The Contractor must provide similar notice with respect to any variance between its review of the Site and physical data and Site conditions observed. If the Contractor performs any Work involving an apparent error, inconsistency, ambiguity, construction impracticality, omission or code violation in the Contract Documents of which the Contractor is aware, or which could reasonably have been discovered, without prompt written notice to the County and request for correction, clarification or additional information, as appropriate, the Contractor does so at its own risk and expense and all related claims are specifically waived.

The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the County, as well as from the Drawings and Specifications made a part of this Contract. Unless otherwise specified, all existing structures, materials and obstructions that interfere with the new construction shall be removed and disposed of as part of this Contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work without additional expense to the County.

The locations of existing utilities, including underground utilities, which may affect the Work, are indicated on the Drawings or in the Specifications insofar as their existence and location were known at the time of preparation of the drawings. However, nothing in these Drawings or Specifications shall be construed as a guarantee that such utilities are in the location indicated or that they actually exist, or that other utilities are not within the area of the operations. The Contractor shall make all necessary investigations to determine the existence and locations of such utilities. Should uncharted or incorrectly charted utilities be encountered during performance of the Work, notify the Project Officer or designee immediately for instructions. The Contractor will be held responsible for any damage to and maintenance and protection of existing utilities and structures, of both public and private ownership. However, if it is determined that such existing utility lines or structures require relocation or reconstruction or any other work beyond normal protection, then such additional work will be ordered under the terms of the clause entitled "Changes in Work." At all times, cooperate with the County and utility companies to keep utility services and facilities in operation.

The County assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the County. The County assumes no responsibility for any understanding reached or representation made concerning conditions which can affect the Work by any of its officers or agents before the execution of this Contract, unless that understanding, or representation is expressly stated in this Contract.

2. PUBLIC CONVENIENCE

The Contractor shall at all times so conduct its Work as to ensure the least possible obstruction to traffic (vehicular, bicycle and pedestrian) and inconvenience to the general public, County employees, and the residents in the vicinity of the Work. Traffic shall be maintained in accordance with the approved Maintenance of Traffic (MOT) plan. No road, street or sidewalk shall be closed to the public except with the permission of the Project Officer or designee and or proper governmental authority. Fire hydrants on or adjacent to the Work shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor and included in the cost of the Work to ensure the use of sidewalks, trails, and transit facilities compliant with all applicable ADA and other regulations, as well as the proper functioning of all gutters, drainage inlets, drainage ditches, and irrigation ditches, which shall not be obstructed except as approved by the Project Officer or designee.

The Contractor is responsible for securing its work area for safety and security. The Contractor shall confine its construction and presence to the Limits of Work, unless otherwise approved by the County Project Officer.

3. SAFETY AND ACCIDENT PREVENTION

The Contractor shall comply with, and ensure that the Contractor's employees and subcontractors comply with, all current applicable local, state and federal policies, regulations and standards relating to safety and health, including, by way of illustration and not limitation, the U.S. Department of Labor's Occupational Safety and Hazard Administration (OSHA) Construction Industry Regulations, the standards of the Virginia Occupational Safety and Health program of the Department of Labor and Industry for General Industry and for the Construction Industry, the Federal Environmental Protection Agency Standards and the applicable standards of the Virginia Department of Environmental Quality.

The Contractor shall provide, or cause to be provided, all technical expertise, qualified personnel, equipment, tools and material to safely accomplish the Work specified to be performed by the Contractor and subcontractor(s).

The Contractor shall identify to the County Project Officer at least one on-site person who is the Contractor's competent, qualified, and authorized safety officer on the worksite and who is, by training or experience, familiar with and trained in policies, regulations and standards applicable to the work being performed. The competent, qualified and authorized person must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, shall be capable of ensuring that applicable safety regulations are complied with, and shall have the authority and responsibility to take prompt corrective measures, which may include removal of the Contractor's personnel from the work site.

The Contractor shall provide to the County, within 7 days of issuance of the Notice to Proceed, a copy of the Contractor's written safety policies and safety procedures applicable to the scope of work. Failure to provide this information within may result in cancellation of the Contract.

The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all injury to persons and damage to property either on or off the site, which occur as a result of the Contractor's prosecution of the Work.

The Contractor shall take or cause to be taken such additional safety and health measures as the County may determine to be reasonably necessary. Machinery, equipment, and all hazards shall be guarded in accordance with the safety provisions of the current version of "Manual of Accident Prevention" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws. The Contractor is directed to the "Rules and Regulations Governing Construction, Demolition and All Excavation" and adopted by the Safety Codes Commission of Virginia, 1966, or latest edition, covering requirements for shoring, bracing, and sheet piling of trench excavations.

4. HAZARDOUS MATERIALS

Arlington County is subject to the Hazard Communication Standard, 29 CFR §1910.1200 (Standard). The Contractor agrees that it will provide or cause to be provided Safety Data Sheets (SDS) required under the Standard for all hazardous materials supplied to the County or used in the performance of the work. Such SDS shall be delivered to the County no later than the time of actual delivery of any hazardous materials to the County or use of such material in the performance of work under the Contract by the Contractor or its subcontractors, whichever occurs first. Container labeling meeting the requirements of the Standard shall be appropriately affixed to the shipping or internal containers. The County reserves the right to refuse shipments of hazardous materials not appropriately labeled, or when SDS have not been received prior to or at the time of receipt of the shipment for use by the County or for use by the Contractor in the performance of the Contract, or whenever the material is delivered in a manner inconsistent with any applicable law or regulation. Any expenses incurred due to the refusal or rejection of SDS are the responsibility of the Contractor. The Contractor shall comply with all federal, state, and local laws governing the storage, transportation, and use of toxic and hazardous materials. The Contractor shall maintain onsite an up to date SDS binder for all material used and delivered to the Project. The County Project Officer or his designee shall be allowed access to the SDS book at all times.

5. HAZARDOUS WASTE

Hazardous Waste Generator/Hazardous Waste Disposal: The County Board of Arlington County, Virginia and the Contractor shall be listed as Co-generators. The Contractor shall assume all the duties pertaining to the Waste Generator, including signing the Waste Shipment Record ("WSR") and manifest. The Contractor shall supply the County Project Officer with the executed original Owner's Copy of the WSR, as required by applicable regulatory agencies within 35 days from the time the waste was accepted by the initial waste transporter, and prior to request for final payment. A separate WSR shall be submitted for each shipment to the disposal site.

Delayed Waste Shipment Records: The Contractor shall report in writing to the EPA Region III office within 45 days if an executed copy of the WSR is not received from the operator of the disposal site. The report to the EPA regional office shall include a copy of the original WSR and

a cover letter signed by the Contractor stating the efforts taken to locate the hazardous waste shipment and the results of those efforts.

Temporary Hazardous Waste Storage Prohibited: The Contractor shall not temporarily store hazardous waste unless pre-approved by the County in writing. If so approved, hazardous waste stored off-site in a temporary facility shall be monitored and records shall be kept on the number of containers, size, and weight. The Contractor shall inform the County when the hazardous waste is to be transported to the final disposal site. The County has the right to inspect the temporary site at any time. The Contractor shall submit copies of all relevant manifests, Waste Shipment Record(s), and landfill receipts to the County Project Officer prior to the request for final payment. All paperwork shall be signed by the Contractor and disposal site operator as required.

6. ASBESTOS

Whenever and wherever during the course of performing any work under this Contract the Contractor discovers the presence of asbestos or suspects that asbestos is present, the Contractor shall stop work immediately, secure the area, notify the County Project Officer immediately and await positive identification of the suspect material. During the downtime in such a case, the Contractor shall not disturb any surrounding surfaces but shall protect the area with suitable dust covers. Work shall not proceed without an Asbestos-Related Work Authorization executed by the County Asbestos Program Manager.

7. CROSSING UTILITIES

When construction crosses highways, railroads, streets, waterways, or utilities under the jurisdiction of State, County, City, or other public agency, public utility, or private entity, the Contractor shall secure written permission where necessary from the proper authority before executing such new construction. A copy of such written permission must be filed with the County before any work is started. The Contractor shall be required to furnish a release from the proper authority before Final Acceptance of the Work.

8. OVERHEAD HIGH VOLTAGE LINES SAFETY ACT

If any work required herein will be performed within ten feet of an overhead high voltage line, the provisions of Virginia Statute 59.1-406, et. seq., "Overhead High Voltage Line Safety Act" (Act) shall apply. The "person or contractor responsible for the work to be done", as that term is used in the Act, will be interpreted to mean the Contractor. The Contractor shall notify the owner or operator of the high voltage line in the manner prescribed in Section 59.1-411 of the Act in sufficient time prior to the time work is to be commenced to avoid any delays in the work. The County will not pay for lost time, profits, or permit any extension of the work for any delays caused by the failure of the Contractor to make such arrangements in a timely manner. All costs for the work shall be paid by the Contractor. The County shall reimburse the Contractor for the actual reasonable cost paid to the owner or operator of the high voltage line by the Contractor on presentation to the County by the Contractor of original invoices from the owner or operator of the high voltage line in the same manner as for other Contractor invoices submitted for work performed. Retention, if applicable to the Contract, shall not be withheld from the payment to the Contractor by the County for this work. No processing, administrative, or other charges above the actual amount charged by the owner or operator of the high voltage line shall be paid to the Contractor by the County.

9. SANITARY PROVISIONS

The Contractor shall provide and maintain such sanitary accommodations for the use of the Contractor's employees and those of its subcontractors as may be necessary to comply with the requirements and regulations of OSHA and of the local and State departments of health.

10. SITE CLEAN-UP AND WASTE DISPOSAL

The Contractor shall frequently remove and properly dispose of all refuse, rubbish, scrap materials, and debris from the site resulting from the Contractor's operations during the performance of this contract. The Contractor shall ensure the work site presents a neat and orderly appearance at all times. The Contractor shall isolate any and all dumpsters, trash cans and recycling bins provided for the Project from public use until Final Acceptance.

Unless otherwise stated, the Contract Amount and any unit prices shall include all costs and fees for removal and disposal of all waste and debris, whether disposed of at a County site or at any other location.

The Contractor shall remove all surplus material, false work, temporary structures including foundations thereof, and debris resulting from the Contractor's operations at work completion and before Final Acceptance. The County shall reserve the right to remove the surplus material, false work, temporary structures including foundations and debris. The County will restore the site to a neat, orderly condition if the Contractor fails to do so. The County shall be entitled to offset such cost against any sums owed by the County to the Contractor under this Contract.

11. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

When the Project includes an approved SWPPP, the Contractor shall strictly abide by this plan which includes: a Pollution Prevention (P2) Plan, an Erosion and Sediment Control (E&S) Plan, and a Stormwater Management Plan. If the Contractor proposes to deviate from this approved plan, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes.

No separate payment shall be made by the County for SWPPP implementation, with the exception of E&S items as specified on the E&S plans or listed as pay items. The Contractor shall not be entitled to any additional payment for changes to the SWPPP which are the result of the Contractor's work schedule or resource allocation, weather delays, or other factors not controlled by the County.

F. PROGRESS AND COMPLETION OF THE WORK

1. NOTICE TO PROCEED

The Contractor shall be given written Notice to Proceed with the Work. Such Notice to Proceed shall state the date on which the Work is to be commenced, and every calendar day thereafter shall be counted in computing the actual Time for Completion.

2. TIME FOR COMPLETION

It is hereby understood and mutually agreed by and between the Contractor and the County that the Commencement Date, the rate of progress, and the Time for Completion of the Work to be done hereunder are essential conditions of the Contract. The Contractor agrees that the Work shall be started promptly upon receipt of a written Notice to Proceed in accordance with

the accepted schedule. The Work shall be prosecuted regularly, diligently, and uninterruptedly at a rate of progress that will ensure full completion of the Project within the Time for Completion specified in the Contract Documents.

3. SCHEDULE OF COMPLETION

Unless otherwise specified, the Contractor shall within 10 business days after the Award Date, or prior to the pre-construction meeting, whichever occurs first, submit schedules which show the order in which the Contractor proposes to carry on the Work, with dates for starting and completing the various activities of the Work. The Contractor shall submit an updated schedule monthly with the request for partial payment. Review and acceptance by the County of the Contractor's schedule of completion shall in no way relieve the Contractor of its responsibility to complete the Work within the contract time. If the Work falls behind the schedule, the County may require the Contractor to prepare and submit, at no extra cost to the County, a recovery schedule indicating by what means the Contractor intends to regain compliance with the schedule. The recovery schedule must be submitted to the County for review by the date indicated in the County's written demand.

4. CONDITIONS FOR COMPLETION

a. **SUBSTANTIAL COMPLETION:** The Work will be considered Substantially Complete when all of the following conditions have been met and accepted by the Project Officer, and a Certificate of Substantial Completion has been issued:

1. The Contractor has provided formal notice that the Work is substantially complete, and the Project Officer has agreed that the condition of the Work warrants a Substantial Completion inspection;
2. The Contractor has provided a Punch List and that list has been reviewed and approved by the Project Officer. Failure to include an item on the Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents;
3. Final test reports as required by the Contract and certificates of inspection and approval required for use and occupancy;
4. Fire Marshal's report, if applicable;
5. Approval forms and transfer documents for all utilities;
6. All life safety systems, including fire alarms, visual and audios alarms, fire detectors and fire alarm annunciator system, sprinkler systems, and all mechanical and electrical systems are complete and working in an automatic mode, and the County has been adequately trained in the operation of the systems;
7. The HVAC system Testing and Balancing Report and build air quality test results as required for LEED certification have been accepted by the Project Officer;
8. Operation and Maintenance Manuals have been submitted for review;

9. All documents and verification of training required in accordance with any Commissioning Plan;
 10. Mark-ups of construction drawings showing the As-Built or "Record" condition have been submitted for review and approval by the Project Officer;
 12. Entrances and egress pathways have been constructed and can remain clear of construction activities;
 13. A Certificate of Occupancy has been issued for the space by the County's Inspection Services Division;
 14. All Commissioning has performed and completed to the satisfaction of the Project Officer; and
 15. Schedule to complete the Punch List and value of Work not yet complete.
- b. Upon the Contractor providing notice that the Work is substantially complete, the Project Officer or designee will invite all relevant parties to perform an inspection of the Work, and any noted deficiencies or incomplete items not indicated on the Contractor's punch list will be added. All punch list items, whether generated by the Contractor or any other party on behalf of the County, shall be completed within thirty (30) days of the date of Substantial Completion, unless otherwise agreed to by the County due to seasonal or other extenuating circumstances.
- c. FINAL COMPLETION: The Work will be considered Finally Complete when all of the following conditions have been met and accepted and a Final Completion Notice has been issued by the Project Officer:
1. The Contractor has provided formal notice that the Work is complete, and the Project Officer has agreed that the condition of the Work warrants a Final Completion inspection;
 2. All construction deficiencies and punch list items have been closed and all construction deficiencies corrected and accepted by the Project Officer;
 3. All spare parts and attic stock have been delivered, stored in an orderly manner in a space designated by the Project Officer and a complete inventory list has been verified and accepted by the Project Officer;
 4. All warranties and manufacturer certificates and contact information for parties providing warranties have been delivered and accepted by the Project Officer;
 5. All final Operating and Maintenance manuals have been delivered and approved and accepted by the Project Officer;
 6. All final As-Built Drawings in .pdf format on a CD delivered and accepted by the Project Officer;

7. All commissioning has been completed and any open construction items in the commissioning agent's report have been closed and accepted by the Project Officer; and
8. All LEED documents and submittals, if applicable, to be provided by the Contractor or sub-contractors have been submitted and accepted by the Project Officer.

5. USE OF COMPLETED PORTIONS

The County shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding that the time for completing the entire Work or such portions may not have expired; but taking such possession and use shall not be deemed an acceptance of any work not done in accordance with the Contract Documents. If the Contractor claims that such prior use increases the cost or delays, the completion of remaining work, or causes refinishing of completed work, the Contractor may submit a claim for compensation or extension of time, or both.

G. MEASUREMENT AND PAYMENT

1. PAYMENTS TO CONTRACTOR

The County will make partial payments, less retainage, to the Contractor monthly on the basis of the Contractor's written estimate of the work performed during the preceding calendar month as approved by the Project Officer or designee.

The Contractor's application for payment shall indicate the amount of work completed to date in a format consistent with the accepted bid and as indicated below:

- a. Lump Sum: For lump sum contracts, the Contractor shall provide to the Project Officer a Schedule of Values, and the application for payment will reflect the Schedule of Values and the amount of work completed in those units.

For contracts that include multiple lump sum line items, the application for payment shall reflect the percentage of work completed for each lump sum item. If requested by the Project Officer, the Contractor shall provide a Schedule of Values for each lump sum line item in the contract.

- b. Unit Price: The schedule of unit prices in the accepted bid shall be used as the basis for preparing the estimates, and each partial payment shall represent the total value of all units of work completed, computed at the unit prices stated in the Contract, less the aggregate of previous payments.

At the discretion of the Project Officer, payments may alternatively be based on actual quantities and site measurements taken in the field by County staff using the Contract Unit Prices.

If Stipulated Price Items are included in the contract, Work on such Stipulated Price Items shall be carried out only upon written order by the Project Officer. The payment for a Stipulated Price Item shall be made by the County to the Contractor at the related unit price specified in the 'Stipulated Price Items' section of the Bid Form on the same basis as the payment for any other regular Bid Item.

In addition to the amount of work completed to date, the application for payment shall indicate the aggregate of all previous payments for each line item, the retainage previously withheld, and the total payment requested this period.

The Contractor's application for payment will not be reviewed or processed unless an updated schedule is attached. The pay application shall also contain a certification by the Contractor that due and payable amounts have been paid by the Contractor, including payments to subcontractors, for work which previous payment was received by the Contractor from the County.

2. PAYMENT FOR STORED MATERIALS

When requested in writing by the Contractor, payment allowances may be made for material secured for use on the Project and secured at the project site. Such payments will only be made for materials scheduled for incorporation into the work within sixty (60) days.

Payment for materials stored offsite may be considered at the discretion of the Project Officer. Any such request shall be made in writing, and the Contractor shall provide photographs of materials stored offsite, bills of sale, and proof of insurance on the premises at which off-site materials are stored with the application for payment. Payment for stored materials may also be subject to additional requirements contained elsewhere in the Contract Documents.

3. PAYMENTS WITHHELD

The Project Officer or designee may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate for payment to the extent necessary to protect the County from loss on account of defective work not remedied or withhold payment for violation of any contract term or condition not remedied after sufficient notice given to the Contractor.

Any such withholding shall not result in any liability to the Contractor for damages.

4. COUNTY ORDERED CHANGES IN WORK

The County, without invalidating the Contract, may order extra Work or make changes by addition, deletion or revision in the Work, with the total Contract Amount being adjusted accordingly if applicable. All such work shall be executed under the conditions of the original Contract, except that modification of the Time for Completion caused thereby shall be made at the time of approving such change.

- a. Changes in the Work which do not involve extra cost and are not inconsistent with the purpose of the Project can be directed by means of a Field Order. Otherwise, except in an emergency endangering life or property, no extra Work or change shall be made unless in pursuance of a written Construction Change Directive or Change Order and no claim for an addition to the Contract Amount or Contract Time shall be valid unless so ordered.
- b. The Contractor shall review any County requested or directed change and shall respond in writing within 14 days after receipt of the proposed change stating the effect of the proposed change upon Contractor's work, including any increase or decrease in Contract time and price. The Contractor shall furnish the County an itemized breakdown of the

quantities and prices used in computing the proposed change. The Contractor shall also furnish any sketches, drawings, and or pictures to properly explain the change or impact to the Project Officer. It is the sole responsibility of the Contractor to provide adequate change order backup to satisfy the Project Officer.

- c. The value of any such extra work or change shall be proposed by the Contractor in one or more of the following ways: (a) by estimate in a lump sum; (b) by cost and fixed fee; (c) by unit price additions or deletions of quantities stated in the unit price contract; or (d) by any other method permitted under the Arlington County Purchasing Resolution. The Project Officer will determine the method appropriate based on the nature of the changes.
- d. If none of the aforementioned methods is agreed upon the Contractor shall proceed with the work without delay under force account, provided the Contractor receives a Construction Change Directive. In such case, the Contractor shall keep and present in such form as the Project Officer or designee may direct, a correct account of the cost, together with vouchers. The Project Officer or designee shall be permitted to verify such records on a daily basis and may require such additional records as are necessary to determine the cost of the change to the Work. The Project Officer or designee shall certify to the amount due to the Contractor, including a reasonable lump sum allowance for overhead and profit. A complete accounting of the extra cost shall be made within 14 days after completion of the work involved in the claim. Refer to Paragraph G.5, *Force Account Work*, below for a description of allowable costs when work is performed under force account.
- e. A cost proposal for a change in the Work shall provide a complete breakdown itemizing the estimated quantities and costs of labor, materials, and equipment (base cost) required in addition to any markup used. The allowable percentage markups for overhead and profit for a non-force account change to the Work performed by the Contractor's own forces or performed by the Subcontractor shall be negotiated based on the nature, size, and complexity of the Work involved but shall not exceed the percentages for each category listed below.
 - 1) Subcontractor's markup for overhead and profit for the work it performs in a change to the Work shall be a maximum of fifteen (15%).
 - 2) Contractor's markup for overhead and profit on the Subcontractor's base cost in a change to the Work shall be a maximum of ten percent (10%).
 - 3) Contractor's markup for overhead and profit (including bonds and insurance) for work it performs in a change to the Work shall be a maximum of fifteen percent 15%.
 - 4) The markup for overhead and profit of a sub-subcontractor at any tier on a change to the Work it performs shall be a maximum of fifteen percent (15%). The Contractor and all intervening tiers of subcontractors' markup on such sub-subcontractor's base cost in the change to the Work shall not exceed a total of ten percent (10%).
- f. Base Cost is defined as the total of labor, material, and equipment costs, it does not include markup for overhead and profit. The labor costs include only the costs of employees directly

constructing or installing the change in the Work and exclude the costs of employees coordinating or managing the work.

- g. The allowable percentage markups for overhead and profit stated above shall compensate the Contractor, subcontractor, and sub-subcontractor for all other costs associated with or relating to the change to the Work including by way of illustration and not limitation, general conditions, supervision, field engineering, coordination, insurance, bond(s), use of small tools, incidental job costs, and all other general and administrative home and field office expenses.
- h. Allowable costs for changes in the Work shall not include home office expenses including payroll costs for the Contractor's officers, executives, administrators, project managers, estimators, clerks' timekeepers, and other administrative personnel employed by the Contractor, whether at the Site or in the Contractor's principal or branch office for general administration of the Work. These costs are deemed overhead included in the percentage markups in Subsection (e) above.
- i. If the change to the Work also changes the Time for Completion by adding days to perform the Work, an itemized accounting of the following Site direct overhead expenses for the change to the time may be considered as allowable costs for compensation in addition to the base cost indicated above:
 - 1) site superintendent's pro-rata salary
 - 2) temporary site office trailer expense
 - 3) temporary site utilities including basic telephone service, electricity, heat, water, and sanitary/toilet facilities.

All other direct and indirect overhead expenses are considered covered by and included in Subsection (e) markups above. In no case shall subcontractor extended overhead be submitted or considered. The County does not have a direct contractual relationship with any subcontractor or supplier and therefore will not direct, discuss or negotiate with subcontractors employed by the Contractor.

- j. If Contractor requests an extension to the Time for Completion due to changes in the Work it must provide to the Project Officer adequate documentation substantiating its entitlement for the time extension. The documentation must demonstrate an anticipated actual increase in the time required to complete the Work beyond that allowed by the Contract as adjusted by prior changes to the Work, not just an increase or decrease in the time needed to complete a portion of the total Work. In the event a Critical Path Method (CPM) schedule is required by the Contract, no extension to the Time for Completion shall be granted unless the additional or change to the Work increases the length of the critical path beyond the Time for Completion as demonstrated on the approved CPM schedule or bar chart schedule. Any Float belongs to Arlington County. A written statement in addition to a CPM analysis shall be prepared explaining how no other sequence of work activities could have been performed to decrease the impact or eliminate the impact altogether. If requested by the Project Officer, the Contractor must provide alternate documentation detailing the claim to the County's satisfaction.

- k. Any change that will increase the Contract Amount more than 10% will require notice to sureties and require that Performance and Payment Bonds be increased by the Contractor. The increased Performance and Payment Bonds must be sent to the County's Office of the Purchasing Agent within 15 calendar days of the County's approval of such change.

5. FORCE ACCOUNT WORK

A Force Account may be used at the County's discretion and only when either 1) agreement on the valuation of a change cannot be made using the methods described in the preceding paragraph, *County Ordered Changes in the Work*, or 2) the County cannot firmly establish an applicable and acceptable estimate for the cost of the work because the level of effort necessary to perform and complete the work cannot be reasonably estimated or anticipated but can only be determined by performing the work. Because of the significant burden on the County to monitor and control the work, Force Account work is not a preferred method, and it shall be the responsibility of the Contractor to provide all necessary documentation and justification of costs. The rates for labor, equipment and materials to be used in cases of work performed on a force account basis will be compensated as documented below. No costs other than those explicitly listed below shall be allowed:

- a. Labor: Before any Force Account work begins, the Contractor shall submit for approval to the Project Officer the proposed hourly rates and associated labor costs (benefits and payroll burden) for all laborers and forepersons to be engaged in the work. The number of laborers and forepersons engaged in the work will be subject to regulation by the Project Officer and shall not exceed the number that the Project officer deems most practical and economical for the work. For all labor and forepersons in direct charge of the force account work, excluding general superintendence, compensation will be as follows:
 - 1) Certified Pay Rate: The Contractor will receive the actual rate of wage or scale as set forth in his most recent payroll for each classification of laborers, and forepersons who are in direct charge of the specific operation. The time allowed for payment will be the number of hours such workers are actually engaged in the work. If overtime work is authorized by the County, payment will be at the normal overtime rate set forth in the Contractor's most recent payroll.
 - 2) Benefits: The Contractor will be entitled to receive the actual cost for any fringe benefits that are regularly provided to the classes of laborers and forepersons engaged in the work and that are not included in the certified pay rate.
 - 3) Payroll Burden: The Contractor will be entitled to receive the actual cost for all costs associated with required payroll taxes and payroll benefits not covered in 2) above, including:
 - Social Security Tax
 - Medicare Tax
 - Unemployment Tax
 - Worker's Compensation Insurance
 - Contractor's Public Liability Insurance
 - Contractor's Property Damage Liability Insurance

- 4) If the Contractor is unable to provide the necessary documentation for Benefits and Payroll Burden as identified above, the Contractor will be entitled to an additive of 20% of the Certified Hourly Pay Rate as full and final compensation for Benefits and Payroll Burdens
- 5) Overhead and Profit: The Contractor will be entitled to an additive of 10% on all properly documented and approved costs established in paragraphs 1), 2), 3), and 4) above for all administrative, overhead, and profit associated with labor costs.
- 6) Subsistence and lodging allowances may be allowed by the Project Officer at the actual and documented costs for lodging and meals if the following conditions are met and the applicable rates and authorization for such costs are established prior to beginning the work. No additives for overhead, administrative, profit, or any other costs will be permitted for subsistence and lodging.
 - i. The specific Force Account work is outside the scope of the original contract, requires mobilization of a separate crew not intended to be used on the original contract, and the Contractor's base location is more than 50 miles from the work site, or
 - ii. Forces which have been working on the Contract will be used for the Force Account work and have been routinely staying overnight during the life of the Project, and the Force Account Work will warrant an extension of the contract time, and the distance from the Contractor's base location to the work site is more than 50 miles
- b. Materials: The Contractor will receive the actual cost of materials accepted by the Project Officer that are delivered and used for the work including taxes, transportation, and handling charges paid by the Contractor, not including labor and equipment rentals as herein set forth, to which 15 percent (15%) of the cost will be added for administration and profit. The Contractor shall make every reasonable effort to take advantage of trade discounts offered by material suppliers. Any discount received shall pass through to the County. Salvageable temporary construction materials will be retained by the County, or their appropriate salvage value shall be credited to the County, at the County's discretion.
- c. Equipment: For all equipment other than small tools, the Contractor will be entitled to rental rates as established herein and agreed to in writing before the work is begun. Transportation costs directly attributable to Force Account work will be as stated below. Small tools will be considered any equipment which has a new cost of \$1000 or less and will not be eligible for any compensation. The Contractor shall provide the Project Officer a list of all equipment to be used in the work. For each piece of equipment, the list shall include the serial number; date of manufacture; location from which equipment will be transported; and, for rental equipment, the rental rate and name of the company from which it is rented. The number and types of equipment engaged in the work will be subject to regulation by the Project Officer as deemed to be the most practical and economical for the work. No compensation will be allowed for equipment which is inoperable due to mechanical failure. Compensation for equipment shall be as follows:

- 1) Hourly Base Equipment Rental Rates (Owned Equipment) – For equipment authorized for use in the Force Account work that is owned by the Contractor, the Contractor shall be entitled to an Hourly Base Rental Rate as detailed in the following paragraphs. The Hourly Base Rental Rate for Contractor owned equipment will not exceed 1/176 of the monthly rates of the schedule shown in the *Rental Rate Blue Book* modified in accordance with the *Rental Rate Blue Book* rate adjustment tables that are current at the time the force account is authorized. The rates for equipment not listed in the *Rental Rate Blue Book* schedule shall not exceed the hourly rate being paid for such equipment by the Contractor at the time of the force account authorization. In the absence of such rates, prevailing rates being paid in the area where the authorized work is to be performed shall be used.
- 2) Hourly Base Equipment Rental Rates (Rented Equipment) – If the Contractor does not possess or have readily available equipment necessary for performing the force account work and such equipment is rented from a source other than a company that is an affiliate of the Contractor, payment will be based on actual invoice rates when the rates are reasonably in line with established rental rates for the equipment in question and are approved by the Project Officer.
- 3) Hourly Operating Rates – Hourly Operating Rates shall be as established in the Blue Book estimated operating cost per hour. This operating cost will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling, and oiling), small tools, and any and all incidentals. If rental rates for the equipment being used in the work are not listed in the Blue Book or otherwise readily available, the Hourly Operating Cost will be 15% of the established Hourly Base Rental Rate. If invoices for Rental Equipment include the furnishing of fuel, lubricants, repair, and servicing, then the Contractor will not be entitled to any Hourly Operating costs for that equipment.
- 4) Equipment Usage - Equipment usage will be measured by time in hours of actual time engaged in the performance of the work. The Contractor shall be entitled to the applicable Hourly Base Equipment Rental Rate and Hourly Operating Rate for all approved Equipment Usage.
- 5) Equipment Standby – Standby time is defined as the period of time equipment authorized for Force Account work by the Project Officer is available on-site for the work but is idle for reasons not the fault of the Contractor or normally associated with the efficient and necessary use of that equipment in the overall operation of the work at hand. Hourly rates for Contractor owned equipment on standby, will be at 50 percent (50%) of the rate paid for equipment performing work. Operating costs will not be allowed for equipment on Standby. When equipment is performing work less than 40 hours for any given week and is on standby, payment for standby time will be allowed for up to 40 hours, minus hours performing work. Payment for Standby will be allowed only for working days. Payment for Standby will not be made for the time that equipment is on the Project in excess of 24 hours prior to its actual performance in the force account work.
- 6) Transporting Costs – When it is necessary to obtain equipment exclusively for Force Account work from sources beyond the Project limits and the Project Officer authorizes

the transporting of such equipment to the Project site, the cost of transporting the equipment will be allowed as an expense. Where the transport requires the use for a hauling unit, the allowable expense will consist only of the actual cost incurred for the use of the hauling equipment, or the applicable Blue Book cost, whichever is less. When equipment is transferred under its own power, the allowable Transporting cost shall be 50% of the Hourly Base Equipment Rental Rate.

- 7) Overhead and Profit – The Contractor shall be entitled to an additive of 10% on all appropriate and approved Equipment Rental, Operating, and Transporting costs as defined above.

- d. Subcontracting: The Contractor shall receive the cost of work performed by a subcontractor as determined in (a), (b), and (c) above. In addition, the Contractor will be allowed an allowance per the schedule below for administrative costs and profit.

Total Cost of Subcontract Work:	Rate	Schedule
\$0 - \$10,000	10%	
> \$10,000	\$1,000 + 5 % above	\$10,000

- e. Other Costs: The Contractor shall not be entitled to any costs associated with Force Account Work other than those specifically identified in this section.
- f. Statements: Payments will not be made for work performed on a force account basis until the Contractor has furnished the Project Officer duplicate itemized statements of all costs of such work detailed as follows:
1. Payroll indicating name, classification, date, daily hours, total hours, rate, and extension of each laborer, foreperson
 2. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of equipment
 3. Quantities of materials, prices, and extensions
 4. Transportation of materials
 5. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his stock; that the quantity claimed was actually used; and that the price, transportation, and handling claimed represented his actual cost.

6. CLAIMS FOR EXTRA COST

If the Contractor claims that any event will give rise to a claim for an increase in the Contract Amount or that any instructions from the Project Officer, by drawings or otherwise, will incur him extra cost under the Contract, then, except in emergencies endangering life or property, it shall give the Project Officer written notice thereof no later than three (3) days of the event or instruction. The Contractor thereafter must provide to the Project Officer a full cost proposal within 14 days detailing the amount of additional compensation claimed, together with the basis therefore and documentation supporting the claimed amount. No such claims shall be valid unless so made. If the Project Officer agrees that such event or instructions involve extra

cost to the Contractor, any additional compensation will be determined by one of the methods provided in the Changes in Work paragraph of these General Conditions as selected by the Project Officer. All pricing and supporting documentation requirements of the Changes in the Work clause shall apply to claims for extra cost deemed valid under this paragraph.

7. DAMAGES FOR DELAY; EXTENSION OF TIME OTHER THAN FOR WEATHER

- a. Excusable Non-Compensable Delays: If and to the extent that the Contractor is delayed at any time in the progress of the Work by a Force Majeure event or other causes outside of the County's control or the Contractor's control and which the Contractor could not have reasonably foreseen, the Contractor may request an extension of the Time for Completion. To be considered for an extension of the Time for Completion, the Contractor shall give the Project Officer timely written notice at the inception of the delay. The Contractor thereafter must provide to the Project Officer a full claim within 14 calendar days of the cessation of the delay and demonstrate that the delay affected the critical path of the accepted schedule, and any Float has been consumed. If the Project Officer agrees with the existence and impact of the delays, the Project Officer shall extend the Time for Completion for the length of time that the Time for Completion was actually delayed thereby. The Contractor shall not be due compensation or damages of any kind as a result of such delay. Delays caused by weather are addressed in Section G.8.
- b. Excusable Compensable Delays: If and to the extent that the Contractor is unreasonably delayed at any time in the progress of the Work by any act or omission of the County, its agents or employees, due to causes within the County's control, the Contractor may request an extension of the Time for Completion and/or additional compensation. The Contractor shall give notice to the Project Officer immediately at the time of the occurrence giving rise to the delay and shall give written notice no later than five (5) calendar days after the inception of the delay. The Contractor's written notice shall specify the nature of the delay claimed, the cause of the delay, and the impact of the delay on the Contractor's schedule. Thereafter the Contractor shall provide to the Project Officer a full claim within 14 calendar days of the cessation of the delay. The claim must detail the amount of additional contract time or compensation claimed, together with the basis therefor along with itemized documentation supporting the claim. The itemized documentation must demonstrate that the claimed delay directly affected the critical path of the accepted schedule, and any Float has been consumed and the time and/or costs incurred by the Contractor are directly attributable to the delay in the work claimed. The Contractor shall be entitled to additional compensation only if the delay was caused solely by acts or omission of the County, its agents or employees, or due to causes within their control.

If the Contractor is entitled to compensation, an itemized accounting of the following direct site overhead expenses will be considered as allowable costs to be used in determining the compensation due the Contractor: the site superintendent(s) (as identified at the inception of the work) pro rata salary, temporary site facilities, temporary site office expense, and temporary site utilities including basic telephone service, electricity, heat, water, and sanitary/toilets. A fifteen percent (15%) markup of these expenses will be allowed to compensate the Contractor for home office and other direct or indirect overhead.

Furthermore, compensation for the delay shall be calculated from the contractual Time for Completion, as adjusted by Change Order, and shall not be calculated based on any early completion planned or scheduled by the Contractor

- c. **Non-Excusable Non-Compensable Delays:** The Contractor shall not be entitled to an extension of the Time for Completion or to any additional compensation for delays if and to the extent they are caused by acts, omissions, fault, or negligence of the Contractor or its subcontractors, agents, or employees or due to foreseeable causes within their control, including, but not limited to, delays resulting from defective work, including workmanship and/or materials, from rejected work which must be corrected before dependent work can proceed, from defective work or rejected work for which corrective action must be determined before like work can proceed, from incomplete, incorrect, or unacceptable Submittals or samples, or from the failure to furnish enough properly skilled workers, proper materials or necessary equipment to diligently perform the work in a timely manner in accordance with the Project schedule.
 - d. No extension of time or additional compensation shall be given for a delay if the Contractor failed to give notice in the manner and within the time prescribed herein. Furthermore, no extension of time or additional compensation shall be given for any delay unless a full claim is made to the Project Offer within 14 days of the end of the delay. Failure to give written notice or failure to present a timely claim shall constitute a waiver of any claim for extension or additional compensation based upon that cause.
 - e. If the Contractor submits a claim for damages pursuant to this Section, the Contractor shall be liable to the County for a percentage of all costs incurred by the County in investigating, analyzing, negotiating and litigating the claim, which percentage shall be equal to the percentage of the Contractor's total delay claim that is determined through litigation to be false or to have no basis in law or fact (Virginia Code §2.2-4335).
 - f. Any change in the Time for Completion or additional compensation shall be accomplished only by the issuance of a Change Order.
8. **TIME EXTENSIONS FOR WEATHER**
The Contractor's sole relief on any claims for delay which is caused by abnormal weather shall be an extension of the Time for Completion provided the Contractor gave the Project Officer written notice no later than five (5) calendar days after the onset of such delay and provided the weather affected the Critical Path. A fully documented claim for a time extension under this Section must be submitted no later than thirty (30) calendar days after the cessation of the delay. It shall be the Contractor's responsibility to provide the necessary documentation to satisfy the Project Officer that the weather conditions claimed were encountered, which may include daily reports by the Contractor, copies of notification of weather days to the Project Officer, NOAA backup, and pictures from each day claimed.

The Time for Completion will not be extended due to inclement weather conditions which are normal, as defined below, for Arlington County. The Time for Completion includes an allowance

for workdays (based on five (5) day workweek) which according to historical data may not be suitable for construction work. The Contractor may request extension to the Time for Completion if it can demonstrate unusual and disruptive weather conditions per the requirements below:

- a. That one or more of the Weather Conditions listed below was encountered; and,
- b. The occurrence of the Weather Condition(s) resulted in an inability to prosecute work which would have otherwise been performed on the day(s) the Weather Condition(s) occurred; and,
- c. The work which was not able to be completed was on the Critical Path and could not be completed **only** due to the Weather Condition(s) claimed.

The Project Officer will determine the Contractor's entitlement to an extension of the Time for Completion. A time extension of no more than one (1) day will be granted for one (1) day of lost work which satisfies the requirements above, regardless of the number of Weather Conditions encountered. The Contractor's sole relief shall be an extension of the Time for Completion and no claim for an increase in Contract Amount will be allowed.

The Weather Conditions listed below will be the only basis for consideration by the County, based upon the requirements listed above, as an extension of the Time for Completion due to inclement weather or weather-related site conditions.

Weather Condition #1: Unusually Heavy Precipitation - Figure 1 illustrates the anticipated monthly inclement weather due to precipitation (Rain Days). If the number of days with precipitation in excess of 0.10", as recorded at Washington Reagan National Airport, exceeds the anticipated Rain Days, the Contractor will be entitled to an extension of one (1) day on the Time for Completion for every day in excess of the Rain Days illustrated in Figure 1. The anticipated value of Rain Days for partial months at the beginning and end of the Contract shall be evaluated on a pro-rated basis.

FIGURE 1

Average days with precipitation of 0.1" or more

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
7	6	7	6	8	6	7	6	6	5	6	6

Weather days are not exclusive to the individual months that they represent in Figure 1. If weather days are not used in a previous month(s) they can be used to offset weather delays in subsequent months. This will be reviewed on a case-by-case basis and is subject to reconciliation at the end of the Project.

Condition #2: Temperature – The Contractor may be entitled to an additional day for every day that the recorded high temperature at Washington Reagan National Airport is 32 degrees Fahrenheit or less, that has not already been incurred under Weather Condition #1 above. This condition does not apply to vertical construction as defined by the Arlington County Vertical Construction Standards.

9. RELEASE OF LIENS

The County, before making final payment, shall require the Contractor to furnish a complete release of all liens arising out of this Contract. The Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the County, to indemnify him against any lien. If any lien remains unsatisfied after all payments have been made, the Contractor shall refund to the County all money that the latter may be compelled to pay in discharging such lien. However, the County may make payments in part or in full to the Contractor without requiring the releases or receipts, and the payments so made shall not impair the obligations of any Surety or Sureties on any bond or bonds furnished under this Contract.

10. FINAL PAYMENT

After the Contractor has completed all work and corrections to the satisfaction of the Project Officer or designee and delivered all maintenance and operating instructions, schedules, quantities, bonds, certificates of inspection, maintenance records, As-Built Drawings, and other items required as final payment submittal documents, the Contractor may make application for final payment following the procedure for progress payments. The Final Application for Payment shall be accompanied by all documents required in the Contract, including a complete and signed and notarized copy of the Final Payment Release Form as follows:

RELEASE AND REQUEST FOR FINAL PAYMENT

CONTRACT NUMBER: _____ CONTRACTOR NAME: _____

FINAL PAYMENT AMOUNT: _____

The Contractor hereby requests final payment in the amount indicated on the above referenced Contract. The Contractor agrees that its acceptance of final payment releases and forever discharges Arlington County and its officers, employees, servants and agents from any and all actions, claims, demands and liability of whatever nature now existing or which may hereafter arise as a result of or in connection with the above referenced Contract.

The Contractor certifies that all of the debts for labor, materials, and equipment incurred in connection with the above referenced Contract have been fully paid.

AUTHORIZED SIGNATURE DATE: _____

The date of Final Acceptance is the date on which the County issues the final payment for the work performed.

COMMONWEALTH OF VIRGINIA

COUNTY OF ARLINGTON

On this the ____ day of _____, 20__, before me, personally appeared _____, who acknowledged himself/herself to be _____ in the above instrument, and that he/she, as such _____, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing his/her name by himself/herself as _____.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My Commission Expires: _____

VI. INSURANCE REQUIREMENTS

Review this section carefully with your insurance agent or broker prior to submitting a bid. See the Insurance Checklist (part of the Bid Forms) for specific coverages applicable to this Contract. The term "Contract," as used in this section, shall mean the fully executed Agreement covering the work entered into between the County and the Contractor.

1. General

- 1.1 The Contractor shall provide insurance as specified in the Insurance Checklist found on the last page of the bid form.
- 1.2 The Contract with the Contractor will not be executed by the County until the Contractor has obtained, at its own expense, all of the insurance called for hereunder and such insurance has been approved by the County; additionally, the Contractor shall not allow any subcontractor to start work on any subcontract until all insurance required of the subcontractor has been so obtained and approved by the Contractor. The Contractor shall submit to the County Purchasing Agent copies of all required endorsements and documentation of coverage consistent with the requirements herein or, alternately, at the County's request, certified copies of the required insurance policies in compliance with the insurance requirements. All endorsements and documentation shall state this Contract's number and title.
- 1.3 The Contractor shall require all subcontractors to maintain during the term of this Agreement, Commercial General Liability insurance, Business Automobile Liability insurance, and Workers' Compensation, Employers' Liability insurance, or any other insurance required by the Contract in the same manner and form as specified for the Contractor. The Contractor shall furnish subcontractors' evidence of insurance and copies of endorsements to the County Purchasing Agent immediately upon request by the County and/or prior to the subcontractor's performance of work related to this Contract.
- 1.4 If there is a material change or reduction in coverage, nonrenewal of any insurance coverage or cancellation of any insurance coverage required by this contract, the Contractor shall notify the Purchasing Agent immediately. It is the Contractor's responsibility to notify the County upon receipt of a notice indicating that the policy will not be renewed or will be materially changed. Any policy on which the Contractor has received notification from an insurer that the policy has or will be cancelled or materially changed or reduced must be immediately replaced with another policy consistent with the terms of this Contract and in such a manner that there is no lapse in coverage, and the County immediately notified of the replacement. Not having the required insurance throughout the Contract is considered a material breach of this Contract and grounds for termination. The Contractor shall also obtain an endorsement providing to the County thirty (30) days advance notice of cancellation or nonrenewal (ten days for nonpayment of premium). A copy of that endorsement shall be provided to the County Purchasing Agent prior to the execution of this Contract or any Contract extension thereafter.
- 1.5 No acceptance and/or approval of any insurance by the County shall be construed as relieving or excusing the Contractor, any surety, or any bond, from any liability or obligation imposed under this Agreement.

- 1.6 Arlington County, and its officers, elected and appointed officials, employees, agents, and City of Alexandria, VA are to be listed as additional insureds under all coverages except Workers' Compensation, Professional Liability, and Automobile Liability, and the endorsement must clearly identify the County and City of Alexandria as an additional insured permitted to enjoy all the benefits under the applicable policy of insurance. The certified policy, if requested, must so state coverage afforded under this paragraph shall be primary as respects the County, its officers, elected and appointed officials, agents, employees and City of Alexandria. The following definition of the term "County" applies to all policies issued under the Contract and to all applicable endorsements:

"The County Board of Arlington County and any affiliated or subsidiary Board, Authority, Committee, or Independent Agency (including those newly constituted), provided that such affiliated or subsidiary Board, Authority, Committee, or Independent Agency is either a Body Politic created by the County Board of Arlington County, Virginia, or one in which controlling interest is vested in Arlington County; and Arlington County Constitutional Officers."

- 1.7 The Contractor shall be responsible for the work performed under the Contract Documents and every part thereof, and for all materials, tools, equipment, appliances, and property of any description used in connection with the work. The Contractor assumes all risks for direct and indirect damage or injury to the property or persons used or employed on or in connection with the Work contracted for, and of all damage or injury to any person or property wherever located, resulting from any action, omission, commission or operation under the Contract, or in connection in any way whatsoever with the contracted work.
- 1.8 The insurance coverage required shall remain in force throughout the Contract or as otherwise stated in the Contract Documents or these Insurance Requirements. If the Contractor fails to provide acceptable evidence of current insurance within seven (7) days of written notice at any time during the Contract, the County shall have the absolute right to terminate the Contract without any further obligation to the Contractor.
- 1.9 Contractual and other liability insurance provided under this Contract shall not contain a supervision, inspection or engineering services exclusion that would preclude the County and City of Alexandria from supervising or inspecting the work as to the end result. The Contractor shall assume all on-the-job responsibilities as to the control of persons directly employed by it and of the subcontractors and any persons employed by the subcontractor and/or carriers delivering and receiving materials from the Project.
- 1.10 If any policy contains a warranty stating that coverage is null and void (or words to that effect) if the Contractor does not comply with the most stringent regulations governing the work, such policy shall be modified so that coverage shall be afforded in all cases except for the Contractor's willful or intentional noncompliance with applicable government regulations.
- 1.11 All policies shall include the following language: "The insolvency or bankruptcy of the insured or of the insured's estate will not relieve the insurance company of its obligations under this policy."
- 1.12 All policy forms must "Pay on behalf of" rather than "Indemnify" the insured.

- 1.13 Nothing contained in these Insurance Requirements, or the Contract Documents shall be construed as creating any contractual relationship between any subcontractor and the County and City of Alexandria. The Contractor shall be as fully responsible to the County and City of Alexandria for the acts and omissions of its subcontractors and of persons employed by them as it is for acts and omissions of persons directly employed by it.
- 1.14 Precaution shall be exercised by the Contractor at all times for the protection of persons, (including employees) and property. All existing structures, utilities, roads, services, trees and shrubbery shall be protected against damage or interruption of service at all times by the Contractor and its subcontractors during the term of the Contract, and the Contractor shall be held responsible for any damage to property occurring by reason of its work under the Contract whether identified on the Contract Documents or not.
- 1.15 For any claims related to this work, The Contractor's insurance shall be deemed primary and non-contributory to all other applicable coverage and in particular with respect to Arlington County and City of Alexandria, its representatives, officials, employees, and agents. Any insurance or self-insurance maintained by Arlington County and City of Alexandria shall be excess and noncontributory of the Contractor's insurance. The Contractor shall waive its right of subrogation for all insurance claims.
- 1.16 If the Contractor does not meet the insurance requirements set forth by the Contract Documents, alternate insurance coverage or self-insurance, satisfactory to the Purchasing Agent, may be considered. Written requests for consideration of alternate coverages including the Contractor's most recent actuarial report and a copy of its self-insurance resolution to determine the adequacy of the insurance funding must be received by the County Purchasing Agent at least ten (10) working days prior to the date set for receipt of bids or proposals. If the County denies the request for alternate coverages, the specified coverages will be required to be submitted. If the County permits alternate coverage, an Addendum to the Insurance Requirements will be prepared and distributed prior to the time and date set for receipt of bids.
- 1.17 All required insurance coverages must be acquired from insurers authorized to do business in the Commonwealth of Virginia and acceptable to the County and City of Alexandria. The insurers must also have a policyholders' with a rating of "A-VII" in the latest edition of the A.M. Best Co.'s Insurance Reports, unless the County grants specific approval for an exception, in the same manner as described in 1.16 above.
- 1.18 The Contractor shall be responsible for payment of any deductibles applicable to the coverages.
- 1.19 The Contractor must disclose the amount of any deductible or self-insurance component applicable to the General Liability, Automobile Liability, Professional Liability, Intellectual Property or any other policies, if any. The County reserves the right to request additional information to determine if the Contractor has the financial capacity to meet its obligations under a deductible. Thereafter, at its option, the County may require a lower deductible, funds equal to the deductible be placed in escrow, a certificate of self-insurance, collateral, or other mechanism in the amount of the deductible to ensure additional protection for the County.

2. Contractor's Insurance:

2.1 The Contractor shall purchase the following insurance coverages, including the terms, provisions and limits shown in the Insurance Checklist.

2.1.1 Commercial General Liability - Such Commercial General Liability policy shall include any or all of the following as indicated on the Checklist:

- i. General aggregate limit is to apply per project;
- ii. Premises/Operations;
- iii. Actions of Independent Contractors;
- iv. Products/Completed Operations to be maintained for five (5) years after completion of the Work;
- v. Contractual Liability, including protection for the Contractor from claims arising out of liability assumed under this Contract;
- vi. Personal Injury Liability including, including but not limited to, coverage for offenses related to employment and copyright infringement;
- vii. Explosion, Collapse, or Underground (XCU) hazards.

2.1.2 Business Automobile Liability, including coverage for any owned, hired, or non-owned motor vehicles, Uninsured Motorists coverage, and automobile contractual liability.

2.1.3 Workers' Compensation - statutory benefits as required by Virginia law or the U.S. Longshoremen's and Harbor Workers' Compensation Act, or other laws as required by labor union agreements, including standard Other States coverage: Employers' Liability coverage. The policy shall not contain any provision or definition which would serve to eliminate third party action over claims, including exclusion for bodily injury to an employee of the insured, employees of the premises owner, or employees of the general contractor to which the insured is subcontracted; or employees of the insured's subcontractor.

2.1.4 Contractors Pollution Liability (CPL) Policy

- i. Minimum liability limits required shall be \$1,000,000 Per Loss and \$2,000,000 Total All Losses, including, but not limited to, property damage, bodily injury, loss of use, and clean-up costs.
- ii. Limits must be dedicated to work performed under this Contract only, unless prior approval by the Arlington County Risk Manager has been obtained. The policy of insurance shall contain or be endorsed to include the following:
 - a. Pollution coverage as respects asbestos, lead, VOC and PCB's.
 - b. "Covered Operations" designated by the CPL policy must specifically include all work performed under this contract. (This would include and not be limited to excavation, off-site incineration of soils, demolition,

asbestos abatement, drum removal and disposal, in-situ vapor extraction, etc.) and exclusions or limitations affecting work performed under this contract must be deleted. (i.e., lead, asbestos, pollution, testing, underground storage tanks, radioactive matter, etc.)

- c. Contractor must comply with all applicable DOT and EPA requirements.
- d. Premises/Operations.
- e. Broad form property damage.
- f. Products/Completed Operations coverage for a minimum of five (5) years after Final Payment.
- g. Contractual liability coverage in accordance with ISO policy form CG 00 01 11 85. Modifications to the standard provision will not be acceptable if they serve to reduce coverage.
- h. Cross liability/severability of interest.
- i. The scope of work and all related activities under this Contract shall be scheduled as "Covered Operations" under this policy.
- j. Coverage is included on behalf of the insured for covered claims arising out of the actions of independent contractors. If insured is utilizing subcontractors, the CPL policy must use "By or On behalf of" language with regards to coverage.
- k. Loading and unloading exclusions must be amended so as to include coverage for mobile equipment and automobiles.

2.1.5 Environmental Impairment Liability, including coverage of insureds' on-site clean up, with the following minimum limits of liability:

Bodily Injury and Property	3,000,000 each occurrence
Damage Liability	6,000,000 annual aggregate

The County Board of Arlington County, Virginia and City of Alexandria, Virginia, is to be named in Additional Name Insured or a Broad Form Contractual Endorsement may be added to the policy as respects any liability that may arise out of or result from the handling of Work on this Project including specifically but without limitation thereto, the indemnity provisions in the Agreement. Such policies will be endorsed to provide that they are primary to an insurance carried by the County Board of Arlington County, Virginia.

2.1.6 Should any of the Work hereunder involve the cleanup, remediation and/or removal of bio-solids, bio-hazards waste, or any hazardous or toxic materials, trash, debris, refuse, or waste, the Contractor shall provide, or shall require its subcontractor performing the work to provide, the following coverage in addition to the above requirements:

- a) Environmental Liability and Cleanup Coverage – with limits of not less than \$3,000,000 per occurrence.
- b) Business Automobile Liability – for transportation or regulated and/or hazardous waste, products, or materials with limits of not less than \$1,000,000, per occurrence. Said coverage shall include County as an additional insured and shall include both the MCS-90 and CA 9948 (or equivalent) endorsements, which shall be specifically referenced on the certificate of insurance.

2.1.7 Environmental Services Involving County and City of Alexandria Property Indemnity and Insurance

2.1.7.1. Contractor acknowledges that the property which is the subject matter of or related to the performance of this Agreement is being handled on a “as is whereis.” basis and Contractor assumes all risks attendant thereto. Contractor further acknowledges that said property has been or will be inspected by Contractor to determine the existence of any substance or a hazardous nature and the Contractor will take all necessary steps to control any such substance, including cleanup, whether or not on property owned or controlled by Contractor or County in accordance with all applicable laws and regulations. Upon acceptance of the Agreement, Contractor agrees to protect, defend, indemnify and hold harmless the County and all of its elected and appointed officials, officers, current and former employees, agents, departments, agencies, boards and commissions (collectively the “County Indemnitees”) from and against any and all claims for any and all losses, damages, injuries, fines, penalties, costs (including court costs and attorneys’ fees), charges, liability, demands or exposure resulting from, arising out of or in any way connected with the Contractor’s acts or omissions, including the acts or omissions of its employees and/or subcontractors, in performance or nonperformance of the Contract. This duty to save, defend, hold harmless and indemnify will survive the termination of this Agreement.

The Contractor shall purchase and maintain Environmental Liability insurance with a \$3,000,000 per occurrence or \$6,000,000 annual aggregate combined single limit to injuries to or death of person(s) and/or damage to property.

2.1.7.2. In the event Contractor is insured for liability with limits in excess of those specified in paragraph 2.1.6 above, Contractor’s said obligation shall extend up to but not exceed the limits of the insurance. Contractor’s costs to undertake the duty or obligation to defend the County in connection with such liabilities shall not be limited by or be subject to the aforesaid limits for damages for injuries, deaths, and property damage. Should any provisions of this Agreement be determined by a court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining provisions shall not be impaired.

2.1.8 Environmental Services Involving Discharge or Disposal of County’s and City of Alexandria’s Hazardous Material and General Environmental Work

2.1.8.1 Contractor agrees to defend indemnify and hold harmless the County and City of Alexandria and all of its elected and appointed officials, officers, current and former employees, agents, departments, agencies, boards and commissions (collectively the “County Indemnitees”) from and against any and all claims for any and all losses, damages, injuries, fines, penalties, costs (including court costs and attorneys’ fees),

charges, liability, demands or exposure resulting from, arising out of or in any way connected with the Contractor's acts or omissions, including the acts or omissions of its employees and/or subcontractors, in performance or nonperformance of the Contract including without limitation environmental assessments, evaluations, remediations, fines, penalties, and cleanup costs which may be asserted against or imposed upon, or incurred by County and City of Alexandria arising from the Contractor's discharge or disposal of any hazardous or toxic materials, trash, debris, refuse, waste or other materials ("Materials") related in any way to Contractor's operations herein. Contractor agrees that it will dispose of all Materials in a strict compliance with local, County and City, state, and federal statutes, laws, ordinances, codes, rules, regulations, orders, or decrees, and shall provide evidence of such disposal satisfactory to County and City of Alexandria on a weekly basis to County's and City of Alexandria's designated representative. This duty to save, defend, hold harmless and indemnify will survive the termination of this Agreement.

In the event that Contractor fails to comply with this paragraph, and upon discovery of a failure or violation related to its disposal operations, Contractor shall immediately report such failure or violation to all applicable governmental agencies having jurisdiction, and to the County and City of Alexandria, and Contractor shall, at its sole cost and expense, promptly commence and diligently pursue any required investigation, assessment, cleanup, remediation, restoration, and monitoring of any waters and lands affected by Contractor's failure to comply, and to restore the damaged water and/or land to the condition existing immediately prior to the occurrence which caused the damage. The provisions of this paragraph shall survive the termination or expiration of this Agreement.

2.1.9 Environmental Services safety Language:

The Contractor shall take reasonable precautions for the safety of and shall provide all reasonable protection to prevent damage, injury or loss to, its employees on the job, and others. The Contractor shall comply with all applicable provisions of federal, state and municipal safety laws, insurance requirements, standard industry practices, the requirements of the operations and this Agreement. The Contractor or thru its subcontractors, shall erect and properly maintain at all times, as required by the conditions and progress of the work, necessary safeguards for safety and protection of the public, including securing areas, posting signs, placarding, labeling or posting other forms of warnings against hazards

2.1.10 The Contractor shall carry Professional Liability/Miscellaneous Errors and Omissions insurance which will pay for injuries arising out of errors or omissions in the rendering, or failure to render professional services under the contract, in the amount shown in the checklist.

- 2.2 The Contractor shall take reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to, its employees on the job, and others. The Contractor shall comply with all applicable provisions of federal, state and municipal safety laws, insurance requirement's, standard industry practices, the requirements of the operations and this contract, the Contractor, directly through its subcontractors, shall effect and properly maintain at all times, as required by the conditions and progress of the work, necessary safeguards for safety and protection of the public, including securing areas, posting danger signs, placarding, labeling or posting other forms of warning against hazards.

3. Commercial General or other Liability Insurance - Claims-made Basis:

3.1 If Commercial General or other liability insurance purchased by the Contractor has been issued on a claims-made basis, the Contractor must comply with the following additional conditions. The limits of liability and the extensions to be included as described in the Insurance Checklist remain the same. The Contractor must either:

- i. Agree to provide insurance, copies of the endorsement and certified documentation evidencing the above coverages and naming the County and City of Alexandria as an additional insured for a period of five (5) years after final payment under the Contract. Such documentation shall evidence a retroactive date, no later than the beginning of the Contractors or subcontractors' work under this Contract, or
- ii. Purchase an extended (minimum five [5] years) reporting period endorsement for the policy or policies in force during the term of this Contract and evidence the purchase of this extended reporting period endorsement by means of a copy of the endorsement itself. The extended reporting period will begin upon final payment under the Contract.

4. Builder's Risk Insurance or Inland Marine Insurance

4.1 The Contractor shall purchase and maintain builders' risk or inland marine insurance with a limit equal to the initial Contract Amount and any amendments to the Contract which affect the project cost on a replacement cost basis. Builder's risk or inland marine insurance shall be maintained until Final Payment under the Contract has been made or until no person or entity other than the County has an insurable interest in the covered property, whichever is earlier. The builders' risk or inland marine insurance shall include the County as defined in Section 1.6, City of Alexandria, Contractor, subcontractors and sub-subcontractors as named insureds.

4.2 Insurance shall be on an all-risks policy form including the perils of fire, theft, vandalism, malicious mischief, lightning, wind, force majeure, collapse, and earthquake. Coverage is to apply for demolition occasioned by enforcement of any applicable legal requirements, and Architect's fees. Coverage for the peril of flood shall not be required unless otherwise required in the Contract Documents.

4.3 Unless otherwise provided in the Contract Documents, the builders risk insurance or inland marine shall also cover materials to be incorporated into the project which are stored off the site.

4.4 The Contractor shall purchase and maintain Boiler and Machinery insurance, if required by the contract documents or by law, with a limit satisfactory to the County and City of Alexandria. The Boiler and Machinery insurance shall cover objects during installation and until Final Acceptance by the County and City of Alexandria. The County and City of Alexandria shall be included as a named insured.

4.5 Any loss under builder's risk insurance or inland marine shall be payable to the County as fiduciary for the insureds, as their interests may appear, subject to any mortgagee clause. The Contractor shall pay subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require subcontractors to

make payments to their sub-subcontractors in similar manner. The County, as fiduciary, shall have the right to adjust and settle a loss with insurers.

- 4.6 The insurance company providing the builders risk or inland marine coverage shall grant permission for the County and City of Alexandria to partially occupy or use the premises under construction prior to final acceptance without removing or affecting the coverage.

VII. ATTACHMENTS AND FORMS

ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE PURCHASING AGENT

INVITATION TO BID NO. 22-DES-ITB-269

B I D F O R M

ELECTRONIC BIDS WILL BE RECEIVED BY THE COUNTY VIA VENDOR REGISTRY NOT LATER THAN 1:00 P.M., JANUARY 21, 2022.

FOR PROVIDING OPEN CHANNEL DREDGING OF THE FOUR MILE RUN EAST AND WEST LEVEE SYSTEM IDENTIFIED HEREIN IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS, TERMS AND CONDITIONS OF THIS SOLICITATION

PRICING

Unit Prices shall be inclusive of all costs, including but not limited to labor, materials, tools, equipment, transportation, and other services or facilities necessary for the proper and safe execution and completion of the work as set forth.

Total for Four Mile Run Gabion Baskets (Tab 1 on excel spreadsheet): \$ _____

Total for Four Mile Run (Tab 2 on excel spreadsheet): \$ _____

Total for Long Branch (Tab 3 on excel spreadsheet): \$ _____

Grand Total For Tabs 1 through 3: \$ _____

COMPLETE THE PRICING SHEET PROVIDED WITH THE BID DOCUMENTS AS ATTACHMENT A TO ITB NO. 22-DES-ITB-269 AND SUBMIT IT WITH YOUR BID. FAILURE TO SUBMIT THE PRICING SHEET WITH THE BID WILL DEEM THE BIDDER NONRESPONSIVE.

THE FULL LEGAL NAME OF THE ENTITY SUBMITTING THIS BID MUST BE WRITTEN IN THE SPACE BELOW. THIS BID FORM AND ALL OTHER DOCUMENTS THAT REQUIRE A SIGNATURE MUST BE FULLY AND ACCURATELY COMPLETED AND SIGNED BY A PERSON WHO IS AUTHORIZED TO BIND THE BIDDER, OR THE BID MAY BE REJECTED.

SUBMITTED BY:

(Legal name of entity)

AUTHORIZED SIGNATURE:

PRINT NAME AND TITLE:

ADDRESS:

CITY/STATE/ZIP:

TELEPHONE NO.:

E-MAIL ADDRESS:

THIS ENTITY IS INCORPORATED

IN:

THIS ENTITY IS A:

(check the applicable option)

CORPORATION ☐

LIMITED PARTNERSHIP ☐

GENERAL PARTNERSHIP ☐

UNINCORPORATED
ASSOCIATION ☐

LIMITED LIABILITY COMPANY ☐

SOLE PROPRIETORSHIP ☐

IS BIDDER AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH
OF VIRGINIA?

YES ☐ NO ☐

IDENTIFICATION NO. ISSUED TO THE ENTITY BY THE
SCC:

Any Bidder exempt from Virginia State Corporation Commission (SCC) authorization requirement must include a statement with its bid explaining why it is not required to be so authorized.

VIRGINIA CONTRACTOR'S LICENSE NUMBER:

ENTITY'S DUN & BRADSTREET D-U-N-S NUMBER: (if available):

HAS YOUR FIRM OR ANY OF ITS PRINCIPALS BEEN DEBARRED FROM
SUBMITTING BIDS TO ARLINGTON COUNTY, VIRGINIA, OR ANY OTHER
STATE OR POLITICAL SUBDIVISION WITHIN THE PAST THREE YEARS?

YES ☐ NO ☐

HAS YOUR FIRM DEFAULTED ON ANY PROJECT IN THE LAST
THREE YEARS?

YES ☐ NO ☐

HAS YOUR FIRM HAD ANY TYPE OF BUSINESS, CONTRACTING OR TRADE
LICENSE, REGISTRATION OR CERTIFICATION REVOKED OR SUSPENDED IN
THE PAST THREE YEARS?

YES ☐ NO ☐

HAS YOUR FIRM AND ITS PRINCIPALS/OWNERS BEEN CONVICTED OF ANY
CRIME RELATING TO ITS CONTRACTING BUSINESS IN THE PAST TEN YEARS?

YES ☐ NO ☐

HAS YOUR FIRM BEEN FOUND IN VIOLATION OF ANY LAW APPLICABLE TO
ITS CONTRACTING BUSINESS (LICENSING LAWS, TAX LAWS, WAGE AND
HOUR LAWS, PREVAILING WAGE LAWS, ENVIRONMENTAL) WHERE THE
RESULT OF SUCH VIOLATION WAS THE PAYMENT OF A FINE, BACK PAY
DAMAGES, OR ANY OTHER PENALTY IN THE AMOUNT OF \$5000 OR MORE?

YES ☐ NO ☐

IS YOUR FIRM PREQUALIFIED BY THE VIRGINIA DEPT. OF TRANSPORTATION?

YES ☐ NO ☐

IF YOUR FIRM IS NOT PREQUALIFIED BY THE VIRGINIA DEPT. OF
TRANSPORTATION, YOUR FIRM ENSURES THAT ALL CRAFT LABOR IT
EMPLOYS UNDER THE PROJECT WILL HAVE COMPLETED, PRIOR TO
WORKING ON THE PROJECT, THE OSHA 10-HOUR TRAINING COURSE FOR
SAFETY ESTABLISHED BY THE U.S. DEPARTMENT OF LABOR.

YES ☐ NO ☐

BIDDER STATUS: MINORITY OWNED: ☐ WOMAN OWNED: ☐ NEITHER: ☐

The undersigned certifies that (Bidder Name)_____ is currently registered with the Virginia State Board of Contractors as required by the Code of Virginia. Certificate Number _____ for a Class _____ License was issued on the _____ day of _____, 20____. The undersigned further certifies that the registration fee and all renewal fees required under law have been paid.

TIME LIMIT FOR PROJECT: SUBSTANTIAL COMPLETION – 180 **CALENDAR DAYS**
FINAL COMPLETION – 30 **CALENDAR DAYS** FROM
SUBSTANTIAL COMPLETION

LIQUIDATED DAMAGES: SUBSTANTIAL COMPLETION - **\$1,400.00** PER DAY
FINAL COMPLETION - **\$1,400.00** PER DAY

MINIMUM BIDDER QUALIFICATIONS:

In a separate attachment, Bidders shall provide the following documentation:

Company Qualifications: Proof of a minimum of five (5) years of experience conducting public works infrastructure, stream bank maintenance projects, stream restoration projects, dredging projects, flooding, and drainage projects. The experience shall be work of similar size and scope, construction, reconstruction, and maintenance.

Project Experience: Bidders shall provide a list of a minimum of three (3) similar recently completed projects of similar scope. For each project, Bidders shall list the following information to show compliance with the experience criteria:

- Project Name
- Project description and scope of work
- Owner Project manager's name, telephone number and email address
- Final contract value

Staffing Qualifications:

Resumes of the proposed Site Supervisor, Safety Project Officer and Environmental Project Officer assigned to this work, who have the requirements as described in the scope of work.

YES ☐ NO ☐

(ATTACH TO YOUR BID SUBMISSION)

OSHA 10 Certification

YES ☐ NO ☐

(ATTACH TO YOUR BID SUBMISSION)

VDOT Flagger Certification, or American Traffic Safety Services Association Flagger Certification, or any other VDOT approved flagger Certification

YES ☐ NO ☐

(ATTACH TO YOUR BID SUBMISSION)

VDOT Erosion & Sediment Control Contractor Certification

YES ☐ NO ☐

(ATTACH TO YOUR BID SUBMISSION)

THE UNDERSIGNED UNDERSTANDS AND ACKNOWLEDGES THE FOLLOWING:

THE OFFICIAL COPY OF THE SOLICITATION DOCUMENTS, WHICH INCLUDES ANY ADDENDA, IS THE ELECTRONIC COPY THAT IS AVAILABLE ON THE [VENDOR REGISTRY WEBSITE](#).

VENDORS ARE REQUIRED TO REGISTER ON [VENDOR REGISTRY](#) IN ORDER TO SUBMIT A RESPONSE TO THIS INVITATION TO BID. **NO RESPONSES WILL BE ACCEPTED AFTER THE BID DUE DATE AND TIME.**

POTENTIAL BIDDERS ARE RESPONSIBLE FOR DETERMINING THE ACCURACY AND COMPLETENESS OF ALL SOLICITATION DOCUMENTS THEY RECEIVE FROM ANY SOURCE, INCLUDING THE COUNTY.

The undersigned acknowledges receipt of the following Addenda:

ADDENDUM NO. 1 DATE: _____ INITIAL: _____

ADDENDUM NO. 2 DATE: _____ INITIAL: _____

ADDENDUM NO. 3 DATE: _____ INITIAL: _____

TRADE SECRETS OR PROPRIETARY INFORMATION:

Trade secrets or proprietary information submitted by a Bidder in connection with a procurement transaction will not be subject to public disclosure under the Virginia Freedom of Information Act. Pursuant to Section 4-111 of the Arlington County Purchasing Resolution, however, a Bidder seeking to protect submitted data or materials from disclosure must, before or upon submission of the data or materials, identify the data or materials to be protected and state the reasons why protection is necessary.

Please mark one:

☐ No, the bid that I have submitted does not contain any trade secrets and/or proprietary information.

☐ Yes, the bid that I have submitted does contain trade secrets and/or proprietary information.

If Yes, you must clearly identify below the exact data or materials to be protected and list all applicable page numbers, sections, and paragraphs of the bid that contain such data or materials:

State the specific reason(s) why protection is necessary and why the identified information constitutes a trade secret or is proprietary:

If you fail above to identify the data or materials to be protected or to state the reason(s) why protection is necessary, you will not have invoked the protection of Section 4-111 of the Purchasing Resolution. Accordingly, upon the award of a contract, the bid will be open for public inspection consistent with applicable law.

CERTIFICATION OF NON-COLLUSION: The undersigned certifies that this bid is not the result of or affected by (1) any act of collusion with another person engaged in the same line of business or commerce (as defined in Virginia Code §§ 59.1-68.6 *et seq.*) or (2) any act of fraud punishable under the Virginia Governmental Frauds Act (Virginia Code §§ 18.2-498.1 *et seq.*).

CONTACT PERSON AND MAILING ADDRESS FOR DELIVERY OF NOTICES

Provide the name and address of the person who is designated to receive notices and other communications regarding this solicitation. Refer to the “Notices” section in the draft Contract Terms and Conditions for information regarding delivery of notices.

NAME:

ADDRESS:

E-MAIL:

CONTRACTOR COMPLIANCE WITH COUNTY COVID-19 VACCINATION POLICY CERTIFICATION

I, _____(hereinafter referred to as “Bidder”), certify that I will comply with the COVID-19 Vaccination Policy as a condition of contract award which requires that all contractor employees or subcontractors who will be working on the contract are fully vaccinated against COVID-19, being tested on a weekly basis, or are exempt pursuant to a valid reasonable accommodation under state or federal law.

Signed: _____ **Date:** _____

Name of Bidder: _____

INSURANCE CHECKLIST

CERTIFICATE OF INSURANCE MUST SHOW ALL COVERAGE AND ENDORSEMENTS MARKED "X".

COVERAGES REQUIRED

COVERAGE MINIMUM(S)

COVERAGES REQUIRED

LIMITS (FIGURES DENOTE MINIMUMS)

- ☒ 1. Workers' Compensation..... Statutory limits of Virginia
- ☒ 2. Employer's Liability.....\$500,000/accident, \$500,000/disease, \$500,000/disease policy limit
- ☒ 3. Commercial General Liability.....\$1,000,000 CSL BI/PD each occurrence, \$2 Million annual aggregate
- ☒ 4. Premises/Operations.....\$500,000 CSL BI/PD each occurrence, \$ 1 Million annual aggregate
- ☒ 5. Automobile Liability.....\$1 Million BI/PD each accident, Uninsured Motorist
- ☒ 6. Owned/Hired/Non-Owned Vehicles.....\$1 Million BI/PD each accident, Uninsured Motorist
- ☒ 7. Independent Contractors.....\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate
- ☒ 8. Products Liability.....\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate
- ☒ 9. Completed Operations.....\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate
- ☒ 10. Contractual Liability (Must be shown on Certificate).....\$1 Million CSL BI/PD each occurrence, \$ 1 Million annual aggregate
- ☒ 11. Personal and Advertising Injury Liability.....\$1 Million each offense, \$1 Million annual aggregate
- ☒ 12. Umbrella/Excess Liability.....\$1 Million Bodily Injury, Property Damage and Personal Injury
- ☒ 13. Per Project Aggregate
- ☐ 14. Professional Liability
- ☐ a. Architects and Engineers.....\$1 Million per occurrence/claim
- ☐ b. Asbestos Removal Liability\$2 Million per occurrence/claim
- ☐ c. Medical Malpractice.....\$1 Million per occurrence/claim
- ☐ d. Medical Professional Liability.....\$1 Million per occurrence/claim
- ☐ 15. Miscellaneous E&O/ Professional Liability\$1 Million per occurrence/claim
- ☐ 16. Motor Carrier Act End. (MCS-90) \$1 Million BI/PD each accident, Uninsured Motorist
- ☐ 17. Motor Cargo Insurance
- ☐ 18. Garage Liability.....\$1 Million Bodily Injury, Property Damage per occurrence
- ☐ 19. Garagekeepers Liability.....\$500,000 Comprehensive, \$500,000 Collision
- ☐ 20. Inland Marine's Insurance..... \$ _____
- ☐ 21. Moving and Rigging Floater..... Endorsement to CGL
- ☐ 22. Dishonesty Bond..... \$ _____
- ☒ 23. Builder's Risk..... Provide Coverage in the full amount of contract
- ☐ 24. XCU Coverage..... Endorsement to CGL
- ☐ 25. USL&H..... Federal Statutory Limits
- ☐ 26. Carrier Rating shall be Best's Rating of A-VII or better or its equivalent
- ☐ 27. Notice of Cancellation, nonrenewal or material change in coverage shall be provided to County at least thirty (30) days prior to action.
- ☐ 28. The County and City of Alexandria shall be named Additional Insured on all policies except Workers Compensation, Errors and Omissions/Professional Liability and Auto.
- ☐ 29. Certificate of Insurance shall show Contract Number and Contract Title.
- ☒ 30. Environmental Impairment Liability, including coverage of on-site clean up.....BI/PD \$3 Million per occurrence/\$6 Million Aggregate
- ☐ a In addition to environmental impairment liability, if work requires clean up, remediation, and/or removal of bio-solids, bio-hazards waste, and any hazardous or toxic material via transportation request:
- ☐ x Business Auto Liability.....\$2 Million per occurrence with MCS-90 and CA9948 (or equivalent endorsements specifically referenced in the certificate of insurance)
- ☐ 31. Cyber insurance.....\$2 Million per occurrence/Aggregate
- ☐ 32. OTHER INSURANCE REQUIRED: _____

INSURANCE AGENT'S STATEMENT:

I have reviewed the above requirements with the bidder named below and have advised the bidder of required coverages not provided through this agency.

AGENCY NAME: _____

AUTH. SIGNATURE: _____

BIDDER'S STATEMENT:

If awarded the Contract, I will comply with all Contract insurance requirements.

BIDDER NAME: _____

AUTH. SIGNATURE: _____

ESCROW AGREEMENT

The following pages contain the escrow agreement authorized by 2.2-4334 of the Code of Virginia. Its use is at the Contractor's option. If the Contractor elects to use the escrow procedures, indicate by completing the applicable section of the Bid Form. If the Contractor indicates that it elects to use the escrow procedures, the Contractor must submit the completed escrow agreement to the County, signed by all parties except the County, no later than fifteen (15) days after the date of the notice of award or intent to award issued by the County Purchasing Agent. Escrow agreements received after that time will not be considered.

ESCROW AGREEMENT

THIS AGREEMENT, made and entered into on the date of execution of this agreement by the County by, between and among the County Board of Arlington, Virginia (County), _____ (Contractor), _____ and _____ (Name of Bank), _____ (Address of Bank), a trust company, bank, or savings and loan institution with its principal office located in the Commonwealth of Virginia (hereinafter referred to collectively as Bank) and (Surety) provides:

- I. The County and the Contractor have entered into a Contract with respect to_(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 County is required thereby to retain certain amounts otherwise due the Contractor. The Contractor has, with the approval of the County, 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 County and the Contractor.
- III. The County 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 County, the Contractor shall look solely to the Bank for the payment of funds retained under the Contract and paid by the County 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 or warrants drawn by the County 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 evidence 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 evidence 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 escrowed 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 County Comptroller, the Bank shall pay the principal of the fund, or any specified amount thereof, to the Treasurer of Arlington County, Virginia for the account of the County. 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 County Comptroller, 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:

_____, CONTRACTOR

By: _____ (Officer/Partner/Owner)

Date: _____ -

Bank Attest: _____ (Bank Officer)

Bank: _____

By: _____ (Vice President)

Date: _____

Surety Attest: _____ (Surety Company)

By: _____ (Resident Virginia Agent)

_____, (Address)

Date: _____

By: _____ (Attorney in fact)

Date: _____

THE COUNTY BOARD OF ARLINGTON COUNTY, VIRGINIA

By: _____ (Purchasing Agent)

Date: _____

CITY OF ALEXANDRIA, VIRGINIA

By: _____ (Purchasing Agent)

Date: _____

**ATTACHMENT B
ARLINGTON COUNTY DES ENGINEERING
SPECIAL CONDITIONS**

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PROJECT SUMMARY

This flood control project will entail the removal of sediment (dredge) from the Four Mile Run channel, upstream and downstream of the Mount Vernon bridge. Proposed dredging will restore the available capacity to provide the original design freeboard set by the U.S. Army Corps of Engineers. This project will also remove vegetation, sediment, and debris accumulation within the existing culvert of Long Branch. Damaged gabion baskets will be replaced in both the Four Mile Run and Long Branch streams. Project work will be conducted in an environmentally sensitive area (in an RPA, FEMA floodplain, Waters of the U.S., and U.S. Army Corps of Engineers flood control levee and channel. Whenever possible, in-stream work should be avoided during periods of high tide.

The work in Four Mile Run is subject to time-of-year-restrictions. The restriction for in-stream work begins on February 15 and ends on June 30, and the restriction for tree removal begins on March 15 and ends on August 15. Due to these time-of-year restrictions, work in Long Branch may be scheduled separately from work in Four Mile Run.

There are two gas lines (4" and 8"), a 16" watermain, and a 48" sanitary sewer line within the project limits of the Long Branch project. The contractor must perform the test pits and determine precise location of the utilities before excavation. The contractor must protect the utilities from any damage and notify the project officer of any conflict with the proposed work well in advance.

Non-electric pumps will not be permitted for this project.

The Contractor shall provide all resources to successfully perform the terms of this contract in accordance with project plans, and in compliance with Arlington County and VDOT Standards and Specifications. The Contractor shall perform the work complete, in place, tested, and ready for continuous service.

All work within the VDOT Right-Of-Way shall be performed in accordance with the VDOT Standards and Specifications, unless otherwise noted. All work within the County Right-Of-Way shall be in accordance with the Arlington County Standards and Specifications, unless otherwise noted.

SUPPLEMENTS TO THE GENERAL CONDITIONS

These Conditions modify the Arlington County Construction General Conditions. All provisions that are not modified or deleted by these Supplemental Conditions shall remain in full force and effect.

The address system used in these Supplemental Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE B – DRAWINGS, SPECIFICATIONS AND RELATED DATA

SC-B.10 TESTS

Add the following new language to Paragraph B.10:

All materials testing shall be in compliance with the Arlington County Materials Testing Specification Reference. This document specifies the method and frequency of testing for Arlington County projects. A copy of this document is included in the bid documents. This shall be incidental to the work and no separate payment will be made.

The Contractor shall engage the services of a geotechnical company, acceptable to both the County and VDOT, to conduct all materials testing per the County and VDOT Specifications.

If it is observed that samples for testing are being improperly taken or that samples are being taken from an area that is not fully representative of all project conditions, then Contractor shall take and test additional samples at the County Project Officer's request from areas designated by the County Project Officer and at the Contractor's expense.

In addition, the Contractor shall provide the County with unfettered site access as needed for VDOT/County personnel or VDOT/County consultants to enter the site, inspect, and perform any additional testing for any and all materials (including soil, concrete, asphalt, etc.).

Compaction results must meet VDOT Specifications and be certified by a Geotechnical Engineer licensed in Virginia. This work shall be at no cost to the County.

SC-B.13 SURVEYS AND CONTROLS

Delete Paragraph B.13 in its entirety and insert the following in its place:

Unless otherwise stated, the County will provide horizontal and vertical reference points necessary for the Contractor to proceed with the Work. The Contractor shall carefully preserve all reference points, and in the case of destruction thereof by the Contractor or due to the negligence of the Contractor or of any subcontractor, the Contractor shall be responsible for expense and damage resulting therefrom and shall be responsible for any mistakes or construction errors that may be caused by the loss or disturbance of such reference points. The Contractor shall be responsible for laying out the Work and shall retain a professional land surveyor licensed in the Commonwealth of Virginia to survey and provide all necessary construction layouts and to establish all control lines, grades, and elevations during construction.

ARTICLE C – COUNTY, COUNTY PROJECT OFFICER, AND CONTRACTOR RELATIONS

SC-C.1 STATUS OF COUNTY PROJECT OFFICER OR DESIGNEE

Add the following new language to Paragraph C.1:

The County Project Officer will coordinate and consult with the VDOT Field Inspector as appropriate when working within the VDOT Right-Of-Way.

SC-C.4 INSPECTION OF WORK

Add the following new language to Paragraph C.4:

Contractor shall notify the Project Officer at least 3 working days prior to disturbing any existing, or installing any new, traffic signs, signals, or other traffic control devices. The Contractor shall allow 3 working days for the inspection and approval of the premarkings prior to placing the permanent markings.

SC-C.9 SUPERINTENDENCE BY CONTRACTOR

Add the following new language to Paragraph C.9:

Site Supervisor:

The Contractor shall have a qualified and experienced site supervisor who can clearly communicate technical matters on-site at all times when construction activity is occurring or when the site is not in a secure state.

Safety Project Officer:

The Contractor shall have at least one (1) employee certified by VDOT in Basic Work Zone Traffic Control on-site at all times that work is occurring and be responsible for the following:

- Placement, maintenance, and removal of work zone traffic control devices,
- Compliance with permit requirements and conditions, approved plans and specifications, the Virginia Work Area Protection Manual, and the Manual of Uniform Traffic Control Devices.

The flagger shall be certified in accordance with the VDOT Flagger Certification Program, the American Traffic Safety Services Association Flagger Certification Program or any other VDOT approved flagger program. The flagger shall have his/her certification card with them at all times while performing flagging activities.

The Contractor shall have at least one (1) employee certified in OSHA 10 on-site at all times that work is occurring. The employee shall have served as a Project Safety Officer on at least three (3) prior projects. If the contractor has multiple employees with these requirements, the Contractor shall clearly identify which employee shall serve as the Project Safety Officer.

Environmental Project Officer:

For each task order, the Contractor shall have at least one (1) employee that has successfully completed the VDOT Erosion & Sediment Control Contractor Certification training. The contractor employee shall be on-site during all land disturbance activities. The Contractor shall be responsible for ensuring compliance with all applicable local, State, and Federal erosion and sediment control regulations and permits during land disturbance activities.

If the Contractor proposes to deviate from the approved Erosion and Sediment Control Plan, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes.

SC-C.13 PROTECTION OF WORK AND PROPERTY

Add the following new language to Subparagraph C.13.c:

The Contractor shall be responsible for all damages caused by their construction activities. The Contractor shall perform or provide repairs, replacements, and restoration to all property that has been damaged resulting from construction operations performed by the Contractor, and shall meet the following requirements:

1. Restore all areas to conditions that existed prior to construction. Remove and replace damaged items with items equal to or better than the damaged items.

ARTICLE E – LEGAL RESPONSIBILITY AND PUBLIC SAFETY

SC-E.1 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

Add the following new language at the end of E.1:

When construction activity reaches in proximity to existing utilities, the trench(es) shall be opened a sufficient distance ahead of the work or test pits shall be made to verify the exact location and inverts of the utility to allow for possible changes in the line or grade as directed by the Project Officer. This shall be incidental to the work and no separate payment shall be made.

SC-E.2 PUBLIC CONVENIENCE

Add the following new language to Paragraph E.2:

The Contractor shall set up controls at the beginning of each workday and take down controls at the end of each workday for the duration of the project. At all times the Contractor shall maintain safe two-way vehicular traffic, and safe accessible pedestrian traffic in conformance with County and VDOT standards.

At all times the Contractor shall use the personnel and traffic control signs and devices necessary to comply with the Virginia Work Area Protection Manual and Part VI of the "National Manual on Uniform Traffic Control Devices." The Contractor has sole responsibility for ensuring that its operations are conducted in a safe manner and notwithstanding any other provision to the contrary, shall fully indemnify Arlington County, its officers, agents and employees for any damage or injury related to traffic operations which is caused by negligent or otherwise improper or deficient performance under the Contract or nonperformance of the terms of the Contract. All personnel, signs, barricades and any other items necessary for the maintenance of traffic and safety shall be provided by the Contractor.

When conditions warrant due to traffic volumes, patterns, or special events, the County may suspend or otherwise direct the Contractor's activities to protect the public and or the County's transportation network.

When the project includes a VDOT and/or County approved MOT Plan (or Plans), the Contractor shall strictly abide by this plan. If the Contractor proposes to deviate from the approved MOT Plan for a County Road, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes. If the Contractor proposes to deviate from the approved MOT Plan for a VDOT road, it shall be the Contractor's responsibility to coordinate and obtain approval directly from VDOT prior to implementing any changes.

Prior to any lane closures within the VDOT Right-of-Way, the County Project Officer and VDOT Field Inspector must be notified in advance of such lane closure in accordance with VDOT requirements.

The Contractor shall not be entitled to any additional payment for changes to MOT which are the result of the Contractor's work schedule or resource allocation, weather delays, or other factors not controlled by the County.

Failure of the Contractor to correct any MOT deficiency immediately upon notification may result in the project being shut down until the deficiency is corrected, and a reduction from the amount of payment due in the amount of \$1,000.00 per violation. Repeated violations of this provision may result in contract termination.

The Contractor shall install project information signs (size - 36"x48") at least two (2) different locations for each site. Signs will be supplied by the County. Signposts and incidentals necessary for a complete installation of the signs shall be furnished by the Contractor. Signs shall be installed at least two (2) weeks prior to the start of the construction. The Contractor shall coordinate the location of the signs with the Project Officer. After the project has been completed the Contractor shall remove and return the signs to the County Project Officer. The cost for this work shall be considered incidental to other items within the Contract and no separate payment will be made. At the close of each workday, the area of work shall be confined to the smallest area possible, but in no event larger than the area designated in the Construction Documents, so that the maximum use of the street and sidewalk shall be restored and the hazard to traffic reduced to the minimum.

The Contractor shall preserve all bus stops, including maintaining adequate accessibility through and adjacent to the construction for buses and their passengers. The Contractor shall not close, relocate, or otherwise modify a bus stop without prior request of the Project Officer. Any relocation or closure of a bus stop will require at least four weeks advance notice for coordination with the county's bus stop coordinator.

SC-E.10 SITE CLEAN-UP AND WASTE DISPOSAL

Add the following new language to Paragraph E.10:

The County's Earth Products Recycling Yard (located at 4300 29th Street South, Arlington, VA) shall **not** be used on an as-needed basis for unspecified quantities of waste (due in part to the limited size of the Yard). Although atypical, the Yard **may** be considered, on a case-by-case basis, for disposal of specific types/quantities of waste from County construction projects. In such cases disposal arrangements must be approved by the County Project Officer, be made in advance, depend on available space and the type/quantity of waste, and comply with certain requirements (for example, concrete shall be broken into pieces no longer than 24" in any dimension, contain less than 20% soil content, and be free of rebar).

SC-E.11 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Delete Paragraph 2.

ARTICLE F— PROGRESS AND COMPLETION OF THE WORK

SC-F.2 TIME FOR COMPLETION

Delete Paragraph F.2 and replace with the following language:

It is hereby understood and mutually agreed by and between the Contractor and the County that the Commencement Date, the rate of progress, and the Time for Completion of the Work to be done hereunder are essential conditions of the Contract. The Contractor agrees that the Work shall be started promptly upon receipt of a written Notice to Proceed in accordance with the accepted schedule. Additional time shall not be allowed for holidays or weather delays except as allowed in the contract.

ARTICLE G— MEASUREMENT AND PAYMENT

SC-G.1 PAYMENTS TO CONTRACTOR

Add the following new language to Section G.1:

Payments will be based on actual quantities and site measurements of the approved work taken in the field by the County Project Officer using the Contract Unit Prices. Any Work that is not shown on the approved plans

that has not been previously authorized in writing by the Project Officer shall be at the Contractor's expense, and at no cost to the County.

SPECIAL CONDITIONS

These Special Conditions include any project-specific requirements in addition to the General Condition, Supplementary Specifications, and the County Standards Referenced herein.

1. CONSTRUCTION STANDARDS

All work shall conform to project plans and specifications along with the current edition of following County and VDOT construction standards and specifications:

- **The Arlington County Department of Environmental Services (DES) Bike Parking Standards**, a copy of which may be downloaded at no charge from the internet at: <https://info.arlingtontransportationpartners.com/arlington-county-bike-parking-standards>
- **The Arlington County Department of Environmental Services (DES) Construction Standards and Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://www.arlingtonva.us/Government/Programs/Building/Resources/Design-Standards-Guidelines>
- **The Arlington County Department of Environmental Services (DES) Traffic Signal Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://www.arlingtonva.us/Government/Programs/Transportation/Streets/Traffic-Signal-Standards-Specifications-Updates>
- **The Arlington County Department of Environmental Services (DES) Streetlight Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://transportation.arlingtonva.us/streets/street-lights/lighting-standards-specifications-updates/>
- **The Arlington County Department of Environmental Services (DES) Pavement Marking Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://www.arlingtonva.us/Government/Programs/Building/Resources/Design-Standards-Guidelines>
- **The Arlington County Department of Parks and Recreation (DPR) Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://www.arlingtonva.us/Government/Departments/Parks-Recreation/About/Design-Standards>
- **The Virginia Department of Transportation (VDOT) Road and Bridge Standards and Specifications**, a copy of which may be downloaded at no charge from the internet at: <http://www.virginiadot.org/business/const/spec-default.asp>
- **The Virginia Work Area Protection Manual (WAPM)**, a copy of which may be downloaded at no charge from the internet at: <http://www.virginiadot.org/business/trafficeng-WZS.asp>
- **Manual on Uniform Traffic Control Devices (MUTCD)**, a copy of which may be downloaded at no charge from the internet at: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm
- **The Arlington County Department of Environmental Services (DES) Dechlorination and Disposal Procedures**, a copy of which may be downloaded at no charge from the internet at: <https://www.arlingtonva.us/Government/Programs/Building/Resources/Design-Standards-Guidelines>
- **The Supplementary Specifications listed within the Contract.**

In case of a discrepancy, the following order of priority will apply, with the highest governing item appearing first and the least governing item appearing last:

The Contract Bid Items
Special Conditions
Contract Drawings
Supplemental Specifications
Arlington County Construction Standards and Specifications
External Agency Specifications

2. PERMITS

Permits required for the project include, but are not limited to:

- **County Land Disturbing Activities (LDA) permit**
- **County Public Right-Of-Way (PROW) permit**
- **County Transportation Right-Of-Way (TROW) permits**
- **County Resource Protection Area (RPA) permit**
- **VA DEQ Virginia Storm Water Management Program (VSMP) permit**
- **Alexandria ROW Permit**
- **Alexandria Excavation Permit**
- **Alexandria Hauling Permit (Contractor shall follow designated haul route)**

All fees for County permits will be waived by Arlington County, and fees for non-County permits will be paid by Arlington County.

The County will obtain the County LDA permit, the County RPA permit, and VSMP Permit prior to the start of work. The Contractor shall transfer the County LDA permit, and the VSMP Permit in the Contractors name as the permittee and/or responsible party prior to the start of Work.

The Contractor shall provide a Responsible Land Disturber (RLD) that meets all the required qualifications of the permits. The Contractor shall complete and sign the RLD certificate and submit to the County Project Officer prior to the start of Work.

The Contractor shall obtain the County PROW permit, the County TROW permits and the County Water Meter and Fire Hydrant permits. The Contractor is responsible for investigating and satisfying all permit requirements for the above-mentioned permits.

3. STAKEOUT AND CUT-SHEETS

The Contractor shall be responsible for laying out the work and shall retain a professional land surveyor licensed in the Commonwealth of Virginia to provide all necessary construction layouts and establish all control lines, grades, and elevation during construction. The Contractor shall submit a copy of all cut-sheets for review, per the Arlington County Specifications. All cut-sheets for layout and construction shall be provided as submittals at least seven (7) calendar days prior to construction of the work included on that cut-sheet. The cost of all necessary surveying services shall be considered incidental to the work and no separate payment shall be made.

4. SCHEDULE, DURATION, AND PHASING REQUIREMENTS

The Contractor shall provide a schedule for all work listed on plans including any additional work not specifically mentioned on plans but was agreed upon with the County prior to work commencing.

Contractor shall make sure that the submittals/shop drawings are reviewed and accepted, and materials ordered and delivered on site as no additional time will be granted for this.

5. *WORK HOURS*

The Contractor shall comply with **normal daytime working hours** as defined in the County Noise Control Ordinance unless otherwise defined by the project plans and specifications or approved by the Project Officer.

The Contractor shall comply with **restricted working hours** of 9:00 am to 4:00 pm when working in Arlington County arterial streets unless otherwise indicated on the Maintenance of Traffic Plans for each project.

When working in Alexandria, normal work hours authorized by a permit are Monday through Friday 7 a.m. to 5 p.m. and Saturday 9 a.m. to 6 p.m. except in an emergency or when otherwise noted on the permit. No work is permitted on Sundays. Work hours on rush hour routes are limited to 9 a.m. to 3:30 p.m. Monday through Friday. Any work to be performed outside of the above hours requires a Noise Permit from the Office of Environmental Quality. Per City Code section 11-5-5(a)(5) a work is not permitted on the following holidays: New Years Day (the first day of January) Memorial Day (the last Monday in May) Independence Day (July 4) Labor Day (the first Monday in September) Thanksgiving Day (the fourth Thursday in November) and Christmas Day (December 25).

In addition, the County and the City of Alexandria reserve the right to restrict working days and hours to accommodate special site conditions as required.

6. *GENERAL SITE SECURITY AND CONTROLS*

The Contractor is responsible for securing its work area for safety and security. The Contractor shall confine its construction and presence to the Limits of Work, unless otherwise approved by the County Project Officer.

The Contractor shall provide, erect, and maintain barricades, fences, and/or signage as required to protect the general public, workers, and adjoining properties at no additional cost to the County. Before leaving the site at the end of each day, the Contractor shall replace any and all sections of the security fence or barricade moved or removed during work hours.

The Contractor shall maintain clear vehicular access to existing driveways and entrances at all times unless such access is otherwise addressed on County-approved project plans, precluding concrete pouring and curing of such access points, unless otherwise directed by the County Project Officer.

Homeowners shall be notified by the Contractor a minimum of fourteen (14) calendar days in advance of any driveway closure, and driveways can only be closed for a maximum of five (5) calendar days.

The Contractor shall monitor parking of construction personnel's private vehicles and ensure that the public has unobstructed access to and through parking areas.

SUPPLEMENTS TO THE DES CONSTRUCTION STANDARDS AND SPECIFICATIONS

SECTION 02600 - BITUMINOUS ROADWAY PAVEMENTS

PART 4 – MEASUREMENT AND PAYMENT

Delete

4.2 Subbase shall be measured to the width and depths shown on the approved plans as verified in the field by the Project Officer or his designee. Payment shall be in cubic yards of material.

Add

4.2 Subbase shall be measured to the width and depths shown on the approved plans as verified in the field by the Project Officer or his designee. Payment shall be in cubic yards of material and shall include demolition, excavation, and the necessary preparation of the sub grade surface.

SECTION 02900 - PAVEMENT MARKINGS

PART 3 - EXECUTION

Add

SECTION 3.2

All Type D pavement markings shall conform to the latest VDOT requirements.

PART 4 - MEASUREMENT AND PAYMENT

4.4 Removal/Eradication of Existing Pavement Markings

Delete

- A. Payment for pavement line markings (type, class, width) removal and/or eradication shall be paid by actual work performed as listed in the contract and shall include all labor, materials, tools, equipment, transportation, supplies, and incidentals required to remove and/or eradicate the line markings as specified.

Add

- A. Payment for pavement line markings (type, class, width) removal and/or eradication shall be incidental to the work and no separate payment shall be made.

Add

4.5 Pavement Message Marking

- A. Measurement of pavement message markings (type, class, size) shall be in units of each furnished and installed.
- B. Payment for pavement message markings (type, class, size) shall be in units of each and shall include all labor, materials, tools, equipment, transportation, supplies, and incidentals required to furnish and install the message markings as specified.

SECTION 329100 - PLANTING PREPARATION
PART 4 - MEASUREMENT AND PAYMENT

Add

- 4.10 The measurement of CONTINUOUS SOIL PANEL to be paid for shall be per CUBIC YARD of the amended soil in accordance with the plans, specifications and to the satisfaction of the Project Officer.
- 4.11 The unit price for CONTINUOUS SOIL PANEL shall include the cost of furnishing all labor, materials, equipment and incidental expenses, including but not limited to imported topsoil, vapor barrier, 4" UD-4 underdrain (per VDOT specification), bedding material per Continuous Soil Panel and Tree Pit Drainage Details, and connection to storm sewer system.

SUPPLEMENTAL SPECIFICATIONS

SECTION 01501 - EROSION AND SEDIMENT CONTROL

Section 01500 Erosion and Sediment Control and Pollution Prevention of the Arlington County Department of Environmental Services Construction Standards and Specifications applies to this project. Section 01501 amends Section 01500 in the following sections and shall override Section 01500.

PART 1 - GENERAL

1.1 Description of Work

- A. Erosion and sediment control measures shall include, but are not limited to, the use of temporary construction entrances, cofferdam, turbidity curtain, temporary access path, temporary culvert crossing, dewatering basins, tree protection, root pruning, super silt fence, temporary timber matting, overseeding, sediment basins, fiber mats, silt fences, straw bales, mulch, grasses, slope drains, temporary seeding, and other methods. Erosion and sediment control measures shall be applied to erodible material exposed by any activity associated with the construction, and consistent with federal, state and local regulations.

1.2 Related Work Specified Elsewhere

- A. Section 02201 – Stream Channel Earthwork
- B. Section 311300 – Tree Protection and Root Pruning

1.3 Applicable Standards and Specifications

- A. See Part 1.2 – Applicable Standards and Specifications of Section 01500 Erosion and Sediment Control and Pollution Prevention

PART 2 - PRODUCTS

2.1 See Section 01500 Erosion and Sediment Control and Pollution Prevention.

2.2 Cofferdams shall comply with the requirements of the Virginia Erosion and Sediment Control Field Manual, Utility Stream Crossings.

2.3 Temporary access path and culvert crossings

- A. See Virginia Erosion and Sediment Control Field Manual, Std. & Spec. 3.19, RIPRAP, for required physical qualities of required filter cloth.
- B. Path and culvert base aggregate shall be VDOT Class II Dry Rip Rap meeting the requirements of VDOT Section 414.02(a).
- C. Path and culvert crossing shall be topped with VDOT #1 or #2 coarse aggregate meeting the requirements of VDOT Section 203.
- D. Pipe for culverts shall be HDPE.

2.4 Turbidity Barrier

- A. Ensure that the type of barrier used, and the deployment and maintenance of the barrier will minimize dispersion of turbid waters from the project. The Project Officer may approve

alternate methods or materials.

PART 3 - EXECUTION

Add following to part 3 of section 01500

- 3.1 Prior to installation of any cofferdams, temporary culvert crossing, and temporary access path, Contactor shall submit proposed phased access and dewatering plan for review and approval by the Project Officer. The plan shall be based on field conditions and show phased access path layout; phased cofferdam layout and heights, dewatering method, number, size and length of culvert pipes; embedment depth of pipes; aggregate depths; and aggregate widths for review and approval by the Project Officer.
- 3.2 If Erosion and Sediment Control materials (i.e. cofferdam, turbidity curtain, access path, dewatering equipment, etc.) are in good condition, they can be reused and reset on site as needed for different phases of dredging and access. The Project Officer can reject material deemed unsuitable for reuse at any time. The Contractor shall remove and properly dispose of unsuitable material.
- 3.3 Cofferdams shall comply with the requirements of the Virginia Erosion and Sediment Control Field Manual, Utility Stream Crossings. Contractor to establish the height of and area within the dam in accordance with the size of the work area and the amount of steam flow. Materials shall be installed in a manner and height to keep the work area watertight during active construction.
- 3.4 Temporary culvert crossings and temporary access path
 - A. Clearing and excavation of the stream bed and banks shall be kept to a minimum.
 - B. The invert elevation of the culvert shall be installed on or below the natural streambed grade to minimize interference with fish migration.
 - C. Filter cloth shall be placed on the streambed and streambanks prior to placement of the culvert pipe(s) and base aggregate. The filter cloth shall cover the streambed and extend a minimum of six inches and a maximum of one foot beyond the culvert pipe(s) and base material. Filter cloth reduces settlement and improves crossing stability.
 - D. The culvert pipe(s) shall extend a minimum of one foot beyond the upstream and downstream toe of the aggregate placed around the culvert pipe.
 - E. In no case shall the culvert pipe(s) exceed 40 feet in length.
 - F. The temporary access roadbed shall be a minimum 12" depth. The temporary access road topping aggregate shall be minimum 6" in depth.
 - G. If multiple culverts are used, they shall be separated by at least 12 inches of compacted aggregate fill.
 - H. When the temporary access path and culverts are no longer needed, all structures including culverts, bedding and filter cloth materials shall be removed. Upon removal of the structure, the stream shall immediately be shaped as shown in the Contract Documents and properly stabilized.

- I. The temporary access path and culverts shall be inspected after every rainfall and at least once a week, whether it has rained or not. The path and culverts shall be protected by the Contractor to prevent washout. All damage shall be repaired immediately and at no additional cost to the County.

3.5 Turbidity Curtain

- A. Furnish, install, maintain, and remove floating turbidity barriers in accordance with the applicable permits, the manufacturer's directions, and the Contract Documents. Place the barriers prior to the commencement of any Stream Channel Earthwork. Install and maintain turbidity barriers to avoid or minimize the degradation of the water quality of the surrounding waters and minimize damage to areas where the floating barriers are installed.

PART 4 - MEASUREMENT AND PAYMENT

- A. See Part 4 – Measurement and Payment of Section 01500 Erosion and Sediment Control and Pollution Prevention.

END OF SECTION 01501

SECTION 02101 – TREE REMOVAL (DBH GREATER THAN 6")

PART 1 – GENERAL

This work shall consist of selectively removing, trimming, and disposing of trees greater than 6" DBH, as shown on the plans, described elsewhere in the Contract, or as directed by the Project Officer. This work shall be accomplished by removing and disposing of rubbish and fallen or undesirable trees and spraying the stumps of removed trees with an approved herbicide to prevent sprouting.

Removal of trees and vegetation 6" DBH or less shall be considered incidental to Clearing and Grubbing (Section 02100).

PART 2 – PRODUCTS

Herbicide shall conform to Section 244.02(a) of the Virginia Department of Transportation, Road and Bridge Specifications (VDOT).

PART 3 – EXECUTION

Execution shall conform to Section 601.03 (SELECTIVE TREE REMOVAL, TRIMMING, AND CLEANUP) – Procedures of the Virginia Department of Transportation, Road and Bridge Specifications (VDOT).

PART 4 – MEASUREMENT AND PAYMENT

TREE REMOVAL (DBH GREATER THAN 6") shall be measured by Each tree removed and will be paid for at the contract unit price per each.

SECTION 02201 – STREAM CHANNEL EARTHWORK

PART 1 – GENERAL

1.1 Description of Work

- A. All excavation and dredging work within the stream channel shall be classified as Stream Channel Earthwork. Constructed works governed by this section shall conform to the requirements of the Standard Arlington County Section 02200 - Earthwork, and as stipulated herein. Where discrepancies arise between Sections for Stream Channel Excavation, this Section shall override, followed by the Standard Arlington County Section 02200 - Earthwork.

Provide all labor, material and equipment to perform all excavation, transportation, handling, disposal, placement, shaping, compaction, and other tasks pertaining to earthwork for the removal of sediment and debris from the stream channel as called for on the approved plans and as specified herein.

1.2 Related Work Specified Elsewhere

- A. Section 01400 – Quality Requirements
- B. Section 01500 – Erosion and Sediment Control and Pollution Prevention
- C. Section 01720 – Project As-built Drawings
- D. Section 02050 – Surveys for Construction Layout and Quality Control
- E. Section 02100 – Clearing and Grubbing
- F. Section 02200 – Earthwork
- G. Section 02400 – Protection of Excavation

1.3 Applicable Standards and Specifications

- A. Virginia Erosion and Sediment Control Handbook, Third Edition, 1992 (VESCH)
- B. FEMA Publication 325, Debris Management Guide (FEMA Publication 325)

1.4 Definitions

- A. Debris Removal or Excavation: Removal of deposited materials above indicated lines and grades shown in the Drawings and as directed by the Project Officer. As discussed within these Specifications, these terms are interchangeable for the same.
- B. Deposited Material: Deposited material may include but is not limited to sediments, soil, rock, organic deposits, lumber, logs, branches, vegetative debris, trash of any nature, metal objects, discarded equipment, etc. located above indicated lines and dimensions as shown in the Drawings. In accordance with FEMA Publication 325, deposited material shall include debris classified as burnable, non-burnable, and tree stumps.
- C. Required Excavation: Removal of material encountered above lines and grades indicated, including side slopes.
- D. Authorized Additional Excavation: Removal of material beyond indicated lines and grades, inclusive of side slopes, horizontal positioning accuracy, allowable overdepths, and as directed by

the Project Officer, which will be measured and paid for at the applicable contract unit price for Debris Removal.

- E. Unauthorized Excavation: Removal of material beyond indicated lines and grades, inclusive of side slopes and allowable over depths, without direction by the Project Officer. Unauthorized excavation, transportation, and disposal of material, as well as remedial work directed by the Project Officer, shall be without additional compensation.
- F. Horizontal Positioning Accuracy: Allowable horizontal positioning accuracy for locating areas identified for excavation.
 - 1. Horizontal Positioning Accuracy: +/- 1.5 foot

1.5 Submittals

- A. General: The Contractor shall submit for review and approval by the Project Officer a detailed written work plan for accomplishing the debris removal work of this contract.
- B. Accessways (Retaining Walls, Structural Ramps and Platforms): Submit shop drawings for review and approval for each point of access to the waterway. Describe in detail the materials, methods, equipment, and sequence of operations to be used.

1.6 Project Conditions

- A. General: The contractor is expected to examine the site of the work and determine the character of the materials to be removed.
- B. Sampling analyses of sediment indicate conditions where no additional handling and disposal requirements beyond those stipulated herein will be necessary for the debris removal. A copy of the sediment testing report is listed under Section VII, "Attachments and Forms."

PART 2 - PRODUCTS

2.1 Salvaged Material

- A. Salvaged stream bed material for use shall consist of salvaged sand, gravel, cobble, and angular rock material excavated from the top of the existing stream channel in areas to be filled due to relocation, in areas where stream bed grading is to occur, or in areas where structures are proposed. Salvaged stream bed material may include all-natural stone within the channel and shall be approved by the Project Officer prior to use. Material shall be stockpiled as necessary. Handling and replacement shall be incidental to excavation.

PART 3 – EXECUTION

3.1 Surveys and As-builts

- A. Contours of the existing channel topography are shown on the Drawings for information only and shall not be used as basis for debris removed. Contractor shall follow the requirements of Section 02050 Survey for Construction Layout and Quality Control to verify the existing condition and establish quantities for payment.
- B. Final conditions will be documented in as-built survey conducted by the contractor no later than 2 weeks following completion of the earthwork operations. Transverse survey lines shall be conducted on 25-foot intervals and at obvious break points along the channel baseline for all excavated areas. See Section 02050 Survey for Construction Layout and Quality Control for additional requirements.

- 3.2 Preparation
- A. Preparation of subgrade for earthwork operations including removal of vegetation, debris, obstructions, and deleterious materials from ground surface is specified in Section 02100 Clearing and Grubbing.
 - B. Protect and maintain erosion and sedimentation controls, as specified in Section 01500 Erosion and Sediment Control and Pollution Prevention.
- 3.3 Temporary Access
- A. The contractor shall provide temporary access to the area of excavation per Section 01500 Erosion and Sediment Control and Pollution Prevention.
 - B. The contractor shall keep causeways clean of debris accumulation at all times.
- 3.4 Debris Handling, Stockpiling, and Disposal
- A. The contractor shall begin the debris removal operation from the farthest end of the designated debris removal area. During debris removal operations, all sand (gravel) removed from the designated area shall be delivered to the stockpile area for dewatering, consolidation and removal.
 - B. All unsuitable debris such as timber, trees, stumps, brush, shrubs, roots, grass, weeds, metal, plastic, concrete, macadam, rubbish, and other miscellaneous debris from the designated area shall be transported to a disposal location as directed by the Project Officer. The cost of disposal shall be incidental to the unit price of excavation.
 - C. Remove and replace with acceptable material any embankment or portion thereof that has been constructed with unsuitable material and that is likely to be displaced due to natural stream processes.
 - D. There shall be no stockpiling within the limits defined by normal water surface level.
 - E. Debris shall be consolidated and loaded into appropriate vehicles for transport. A Debris Load Ticket shall be prepared for each vehicle (see example Debris Load Ticket below). Debris shall be transported to one of the approved disposal locations provided in the geotech report found under Section VII, "Attachments and Forms", or legally disposed off the project site to a location selected by the contractor.

Sample Debris Load Ticket

LOAD TICKET	
TICKET NUMBER:	
CONTRACT NUMBER:	
PRIME CONTRACT NAME:	
DATE:	
DEBRIS QUANTITY	
Truck No:	Capacity (CY):
Load Size: Cubic Yards _____	
Or Tons _____	
Truck Driver:	
LOCATION	

3.5 Compaction and Embankments

- A. Compact the embankments and backfill materials by mechanical means, which shall include tamping of fill by an excavator/backhoe or, if specified in the plans, by the use of mechanical tampers or vibratory compactors. Subgrade compaction of embankments and backfill shall be visually inspected and approved by Project Officer. This shall occur prior to the placement of structures, topsoil, and landscaping. Area within the stream channel that is cut to grade shall not require compaction, unless directed by the Project Officer in order to ensure stability.
- B. Maintain all embankments and grades until final or partial acceptance.

3.6 Protection of Existing Structures, Utilities, Levees, and Gabions

- A. The contractor shall conduct the debris removal operations in compliance with the Drawings to ensure that it does not undermine, weaken or otherwise impair existing structures, utilities, levees, and undamaged gabions located in or near the designated areas, and shall perform stabilization and interim restoration as necessary.

- 3.7 Final Cleanup of Excavation Site, Access Roads, and Stockpile Area
- A. Final cleanup shall include the removal of all contractors' equipment either for disposal or reuse. Equipment and materials to be disposed of shall only be disposed in a manner and at location approved by the Project Officer. Unless otherwise approved, the contractor will not be permitted to abandon any equipment.
 - B. Failure to promptly remove all equipment, materials upon completion of the excavation shall be considered a delay in the completion of the final cleanup and demobilization work. In such case, the Project Officer will exercise its right to remove any equipment, materials at the contractor's expense. Haul's roads shall remain in place until the Project Officer determines they are no longer necessary.

PART 4 - MEASUREMENT AND PAYMENT

- A. STREAM CHANNEL EARTHWORK will be measured in cubic yards excavated as measured from pre-construction survey and as-builts and will be paid for at the Contract unit price per cubic yard. The Contract quantity has been estimated based on survey and will serve as a basis for estimated payments. The Contractor may request a pre-construction survey to verify takeoff quantities if a discrepancy is suspected. The price shall include all excavation and hauling, formation and compaction of stream channel, embankments and backfill, stockpiling and placement of salvageable streambed material, repairs to structures, and removal and disposal (at an approved location) of unsuitable and surplus materials. The total quantity shall be considered fixed, and the Contractor shall be paid the total quantity at completion of grading without recalculation of actual quantities. It shall be the Contractor's sole responsibility to determine the effort necessary to achieve the grades shown and complete the job within the payment quantities.
- B. The cost of removal and disposal of material shall be incidental to the unit price of STREAM CHANNEL EARTHWORK.
- C. Repair to structures, completed work, completed or undamaged existing gabion baskets, and walls shall not be measured and is incidental to the unit price of the STREAM CHANNEL EARTHWORK.

END SECTION 02201

SECTION 02211—GABION BASKET

Part 1 – GENERAL

- 1.1. Description of Work
This work shall consist of furnishing, assembling, replacing damaged gabions, and installing gabions in accordance with these Specifications and drawings and in conformity to the lines, dimensions, and existing grades or as established by the Project Officer.
- 1.2. Related Work Specified Elsewhere
Arlington County Department of Environmental Services Construction Standards and Specifications (Arlington County Specifications):
 - A. None
- 1.3. Submittals
 - A. Product Data: Manufacturers' printed data sheets or catalog pages illustrating the products to be incorporated into the project.
 - B. Shop Drawings: Illustrate details, dimensions, and other data necessary for satisfactory fabrication or construction that are not shown in the contract documents.
 - C. Certificates: Submit installers or manufacturers certifications and/or qualifications.
- 1.4. Warranty
 - A. Manufacturer Warranty: Provide gabion guarantee against defects in materials, workmanship, and construction for a period of one year from date of acceptance of installation.
 - B. Furnish manufacturer's warranties as published in its literature and as specified.

PART 2 – MATERIALS

- 2.1 Gabions shall have a uniform horizontal width of at least 36 inches. Their dimensions shall be within +/- 3 percent of the manufacturer's stated sizes.
- 2.2 Wire
 - A. Wire mesh shall conform to Section 223.02(a). VDOT Road and Bridge Specifications
 - B. Selvedge (or perimeter) wire shall be at least 0.148 inch in diameter (9 gauge) and shall conform to Section 223.02(a) of the VDOT Road and Bridge Specifications for wire mesh.
 - C. Tie and connection wire shall conform to the requirements for the wire used in the muesli except that it shall be not more than two gages smaller.
- 2.5 Manufacturers and products listed are approved. Substitutions are permitted:
 - A. Mfg: Maccaferri Gabions, Inc. – Galvanized Gabions (Dimensions as indicated on the drawings.)
 - B. Or Project Officer approved equivalent.

2.6 Rock/Stone

- A. The rock for gabion boxes shall be hard, angular to round, durable and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure.
- B. Stone shall weigh between 4 and 30 pounds except that approximately 5 percent of the individual stones may weigh less than 4 or more than 30 pounds. At least 50 percent of the stone shall weigh more than 10 pounds.
- C. Gabion rocks shall range between 4 inches and 8 inches. The range in sizes may allow for a variation of 5% oversize and/or 5% undersize rock, provided it is not placed on the gabion exposed surface. The size shall be such that a minimum of three layers of rock must be achieved when filling the gabions.
- D. Filter material shall be Miraf 700 or equal.
- E. Gabion stone shall conform to Section 204 of the VDOT Road and Bridge Standards.

PART 3 – EXECUTION

- 3.1 Gabions shall be fabricated in such a manner that the sides, ends, lid, and diaphragms can be assembled at the construction site into rectangular wire mesh baskets. Gabions shall be of single unit construction whereby the base, lid, ends, and sides are woven into a single unit or whereby one edge of these units is connected to the base section of the gabion. The strength and flexibility at the point of connection shall be at least equal to those of the wire mesh.
- 3.2 If the length of the gabion exceeds its horizontal width, the gabion shall be equally divided into cells by diaphragms of the same mesh and gage as the body of the gabion. The length of each cell shall not exceed its width. The gabion shall be furnished with the necessary diaphragms securely tied in their proper positions on the base so that no additional tying at the junction will be necessary.
- 3.3 Perimeter edges of the mesh forming the gabion shall be securely clip bound or selvaged in such a manner that the joints formed by tying the selvages will have at least the same strength, durability, and integrity as the body of the mesh.
- 3.4 The Contractor shall supply tie and connection wire in sufficient quantity to securely fasten all edges of the gabion and diaphragms. At least two cross connecting wires shall be in each cell whose height is one-third or one-half the width of the gabion. At least four cross-connecting wires shall be in each cell whose height equals the width of the gabion. The wire shall be secured through two open loops of the cage.
- 3.5 The Contractor shall perform excavating and backfilling operations for the installation of gabions according to Section 303 of the VDOT Road and Bridge Specifications. Gabions shall be placed on a smooth foundation, and the final line and grade shall be approved by the Project Officer.
- 3.6 Each gabion unit shall be assembled by binding the vertical edges with wire ties at approximately 6-inch intervals or by stitching a continuous piece of connecting wire around

the vertical edges with a coil approximately every 4 inches. Wire ties or connecting wire shall be used to join units in the same manner as described for assembling. Internal tie wires shall be uniformly spaced and securely fastened in each cell of the structure.

- 3.7 The Contractor may use a standard fence stretcher, chain fall, or iron rod to stretch wire baskets and hold the installation alignment.
- 3.8 The Contractor shall fill gabions with stone so that the finished basket maintains alignment, has a minimum of voids, and avoid bulges. Rock and connection wires shall be alternately placed until the gabion is filled. After the gabion is filled, the lid shall be bent over until it meets the sides and edges of the gabion. The Contractor shall then secure the lid to the sides, ends, and diaphragms with wire ties or connecting wire in the manner described hereinbefore.

PART 4 – MEASUREMENT AND PAYMENT

GABION BASKET will be measured in cubic yards and will be paid for at the Contract unit price per cubic yard. This price shall include furnishing, assembling, excavating, installing and backfilling with suitable material, compacting, disposing of surplus or unsuitable material, disposing of the damaged gabions, and any excavation required to properly install gabions.

END SECTION 02211

SECTION 02601 – BITUMINOUS HIKING, BIKING AND JOGGING TRAILS

This section is a replacement to Section 02601 Bituminous Hiking, Biking and Jogging Trails in the Arlington County Department of Environmental Services Construction Standards and Specifications.

PART 1 - GENERAL

1.1. Description of Work

- A. Should the Contractor damage the existing asphalt trail or watermark, the contractor is responsible for replacement at no additional cost to the County.
- B. Provide all plant, labor, material and equipment to demolish damaged sections of the existing asphalt trail and watermark, if applicable, and furnish and construct the bituminous hiking, biking and jogging trails, including replacing any existing watermark, in reasonably close conformity with existing lines, grades, thicknesses and typical cross sections shown on construction standards and as and specified herein.
- C. The specifications referenced for each material and watermark shall fully apply and no deviations from said specification limits or quality will be permitted unless specifically stated otherwise in this Section. The failure of any component of a product to comply with the referenced specifications shall constitute failure of the whole product.

1.2. Related Work Specified Elsewhere

Section 02600 - Bituminous Roadway Pavements

1.3. Applicable Specifications

[Virginia Department of Transportation, Road and Bridge Specifications \(VDOT\)](#)

1.4. Applicable References

- A. [American Association of State Highway and Transportation Officials - \(AASHTO\)](#)
- B. [American Society for Testing and Materials \(ASTM\)](#)

PART 2 - PRODUCTS

2.1. Aggregate Base

The aggregate base shall be 6 inches of crusher run aggregate of size 25 or 26 and in conformance with Section 205 of the VDOT Specifications.

2.2. Surface Course

The surface course shall be 4-inch in thickness and type SM-9.5A as specified for the surface course in Section 02601 and Section 205 of the VDOT Specifications.

2.3. Tack Coats

Tack coat shall be asphalt cement of viscosity grade CMS-2 or CRS-2 in conformance with Section 310 of VDOT Specifications.

2.4. Watermark

The contractor shall coordinate with the Project Officer on replacement of any damaged watermarks.

PART 3 - EXECUTION

- 3.1. Demolish the damaged section of pavement, trail, or watermark and remove all material.
- 3.2. Lay the subbase to the compacted thickness as shown on the Construction Standards and defined on the Contract Drawings in conformance with Section 308 of VDOT Specifications.
- 3.3. Lay the asphalt pavement to the compacted thickness as shown on the Construction Standards and defined on the Contract Drawings in conformance with Section 315.04 of VDOT Specifications.
- 3.4. Place the tack coat in conformance with Section 310 of VDOT Specifications.

PART 4 - MEASUREMENT AND PAYMENT

- 4.1. Demolition associated with the asphalt trail is incidental to the work and shall only be performed if the asphalt trail is damaged by the contractor. No separate payment will be made.
- 4.2. Bituminous concrete pavement is incidental to the work and shall only be performed if the asphalt trail is damaged by the contractor. No separate payment will be made.
- 4.3. Aggregate base is incidental to the work and shall only be performed if the asphalt trail is damaged by the contractor. No separate payment will be made.

END SECTION 02601



SEDIMENT CHARACTERIZATION REPORT
Four Mile Run
Arlington County and Alexandria, Virginia

August 31, 2020

Updated September 9, 2020

Prepared for:

Brian Rahal, P.E., CFM
Civil Engineer IV / Section Lead
Stormwater Management Division
Department of Transportation &
Environmental Services
City of Alexandria, Virginia

Prepared by:

Cardno, Inc.
10988 Richardson Road
Ashland, Virginia 23059
www.cardno.com



September 9, 2020

Brian Rahal, P.E., CFM
Civil Engineer IV / Section Lead
Stormwater Management Division
Department of Transportation & Environmental Services
City of Alexandria, Virginia

Cardno, Inc.

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Ashland, VA 23005

Phone +1 804 798 6525
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www.cardno.com

**Subject: Sediment Characterization
Four Mile Run
Alexandria, Virginia
Cardno Project No.: COA408**

Dear Mr. Rahal:

Please find enclosed an updated Sediment Characterization Report for the Four Mile Run dredging project. This report presents the results of **Cardno's** field investigation conducted in August 2020 and follow-up laboratory testing of five sediment samples.

Cardno is pleased to serve as the City of Alexandria's environmental consultant for this project. Please do not hesitate to contact us should you have any questions or concerns.

Sincerely,

A handwritten signature in black ink that reads 'John T. Voorhees'. The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

John T. Voorhees C.P.G
Principal/Geologist
for Cardno
Direct Line +1 804 412 6558
Email: john.voorhees@cardno.com

Enclosures: Sediment Characterization Report

Table of Contents

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3	Methods	1
4	Results.....	3
5	Conclusions/Recommendations	3

Appendices

A.....	Map
B.....	Geotechnical Testing Certificates
C.....	Laboratory Analysis/Chain of Custody
D.....	Photographs

1 Introduction

The City of Alexandria's Stormwater Management Division of the Department of Transportation and Environmental Services requested Cardno to provide services to characterize sediments in Four Mile Run in preparation for procuring dredging services to deepen the stream channel. The field investigation was conducted to determine whether petroleum residues, chemicals and/or metals were detectable in the material at concentrations exceeding regulatory limits governing safe handling and disposal and to provide a basic geotechnical characterization of the material.

The Scope of Services for this project included the following:

- > Advance multiple borings to five feet or refusal at five different locations (locations specified by client) and collect five composite samples of sediment for chemical analytical testing and geotechnical testing.
- > Submit samples to a certified laboratory for analysis of Extractable Organic Halides (EOX) using EPA Method 9023; Total Petroleum Hydrocarbons (TPH-Diesel Range and TPH-Gasoline Range) using Method 8015; Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) using EPA Method 8021; PCB congeners using method 8082, and RCRA 8 TCLP Metals using EPA Methods 6010/6020 respectively.
- > Submit samples for geotechnical testing to include sediment particle size distribution analysis including sieve and hydrometer.
- > Preparation of a brief narrative report describing the methods and results including a review of potential disposal costs.

2 Project Description

Four Mile Run flows through Arlington County and the City of Alexandria and discharges into the Potomac River. Long Branch flows through Arlington County into Four Mile Run. Two of the five composite sample locations are located in Long Branch just upstream of Four Mile Run while the three remaining composite sample locations are located in Four Mile Run downstream of Long Branch in a cobble bar located near and underneath the Mt. Vernon Avenue overpass (see **Figure 1 – Appendix A**).

3 Methods

At each of the five sampling locations shown on **Figure 1**, three hand auger borings were advanced within ten feet of the designated sampling location into the sand bars to a depth of 2-3 feet below grade. The borings were advanced using a hand auger equipped with a three-inch diameter sand bucket and reached auger refusal at each location due to presence of large cobbles. Multiple attempts were made to further penetrate the cobble sediments but was not possible without the use of an excavator. A composite sample from each of the three grouped borings were combined into composite samples B-1 through B-5. The five composite samples were placed in laboratory supplied glass jars and placed in a cooler on ice for transport to Air Water and Soil Laboratories in Richmond, Virginia for analysis. An additional sample split for each composite was placed in one-gallon plastic bags and transported to Hillis-Carnes Laboratories in Ashland, Virginia for geotechnical analysis. **Table 1** below provides a summary of the chemical and geotechnical laboratory results. Photographs of the sediment with a tape included for size reference are included in **Appendix D**.

Table 1. Summary of Laboratory Analyses					
Stream	Long Branch		Four Mile Creek		
Sample ID	LB-1 (1)	LB-2 (2)	FMR-3 (3)	FMR-4 (4)	FMR-5 (5)
Boring Location	B1	B2	B3	B4	B5
TCLP ¹	mg/l	mg/l	mg/l	mg/l	mg/l
Arsenic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Barium	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Cadmium	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 0.0200
Chromium	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Lead	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Mercury	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Selenium	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250
Silver	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
BTEX ¹	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Benzene	< 2.98	< 149	< 147	< 13.6	< 146
Toluene	< 2.98	< 149	< 147	< 13.6	< 146
Ethylbenzene	< 2.98	< 149	< 147	< 13.6	< 146
m+p Xylenes	< 2.98	< 149	< 147	< 13.6	< 146
o Xylene	< 2.98	< 149	< 147	< 13.6	< 146
Total Xylenes	< 8.93	< 446	< 440	< 40.9	< 439
Extractable Organic Halides ¹	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
(EOX)	25.5	< 10.0	< 10.0	< 10.0	< 10.0
PCB ¹	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arochlor 1016	< 0.053	< 0.058	< 0.051	< 0.051	< 0.055
Arochlor 1221	< 0.053	< 0.058	< 0.051	< 0.051	< 0.055
Arochlor 1232	< 0.053	< 0.058	< 0.051	< 0.051	< 0.055
Arochlor 1242	< 0.053	< 0.058	< 0.051	< 0.051	< 0.055
Arochlor 1248	< 0.053	< 0.058	< 0.051	< 0.051	< 0.055
Arochlor 1254	< 0.053	< 0.058	< 0.051	< 0.051	< 0.055
Arochlor 1260	0.055 J	< 0.058	< 0.051	< 0.051	< 0.055
	J - The reported result is an estimated value.				
	PCB results reported on Dry Weight basis				
Total Petroleum Hydrocarbons ¹	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Diesel Range Organics (DRO)	11.1	< 10.0	< 9.9	< 10.0	< 9.7
Gasoline Range Organics (GRO)	< 0.10	< 4.95	< 4.89	< 0.45	< 4.88
Percent Solids ¹	%	%	%	%	%
	92.9	84.2	96.1	97.0	88.2
Texture ^{2, 3}	%	%	%	%	%
Gravel	57.2	69.0	56.8	40.0	50.8
Sand	40.0	29.6	41.2	58.6	48.2
Silt	1.5	0.5	1.0	0.5	0.2
Clay	1.3	0.9	1.0	0.9	0.8
1 - Analytical Testing Conducted by Enthalpy Analytical, Richmond, VA					
2 - Particle Size Analysis by Hillis-Carnes Engineering Associates, Ashland, VA					
3 - Particle Size Analysis of composite representative samples of "finer" fraction, due to size of largest cobbles					

4 Results

Since the cores were advanced into the sandbars near the water level, all recovered sediments were generally wet. The material was generally characterized as a poorly graded gravel with sand. We note that the material contained large cobbles of significant size and collection of a representative geotechnical sample including the largest cobbles was not practical, therefore the geotechnical analyses are biased to the smaller gravel fraction and finer materials. The material is classified as GP under the Unified Soil Classification System (USCS). Geotechnical test certificates for both samples indicating the grain size distribution, Atterberg Limits and related characteristics are presented in **Table 1**. The laboratory certificates are attached in **Appendix B**.

Analytical testing results for TCLP RCRA 8 metals are below laboratory detection limits for all five samples. Benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds are below laboratory detection limits for all five samples. One sample (collected from the B1 location in Long Branch) had a reportable concentration of Extractable Organic Halides of 25.5 mg/kg, each of the other samples were below laboratory detection limits. PCB analyses were below detection limits for each sample with the exception of a low, estimated concentration of a single Arochlor congener (Arochlor 1260) in the sample collected from boring B1. Total Petroleum Hydrocarbons for gasoline and diesel range were below laboratory detection limits with the exception of 11.1 mg/kg of diesel range organics in the sample collected from the B1 location in Long Branch. The laboratory results are summarized in **Table 1**. The certificates of analysis and chain of custody are presented in **Appendix C**.

5 Sediment Characterization Conclusions

Fifteen soil borings (composited to five samples) were advanced into sand/cobblebars located along the Five Mile Run dredging project corridor. Sediments from the five sampling locations were combined into five composite samples. The five samples were tested for TCLP metals, PCBs, petroleum constituents and organic compounds. Tests were also conducted to characterize the geotechnical properties of the materials.

The sediments recovered from each sampling area of the corridor were generally similar in geotechnical characteristics and described under the USCS as a poorly graded gravel with sand (GP) – one sample location is classified as a poorly graded sand with gravel (SP). The chemical analytical testing was generally below laboratory detection limits with the exception of low level detections reported in the B1 composite sample. The sample results do not exceed regulatory limits and are below levels that would impose special handling and disposal restrictions.

6 Disposal Review

To provide general information on potential estimated costs associated with disposition of the dredged sediments, Cardno contacted regional facilities including landfills, upland beneficial reuse disposal facilities, as well as aggregate producers that might have interest in reclaiming economic value of the sand or gravel portion. Field observations and sampling indicate that there is a significant portion of rounded cobble, gravel and coarse aggregates as well as finer sand, silt and clay. The sediment textural analysis conducted for the characterization was provided to the aggregate producers. The costs presented here are general estimates based on guidance provided by contacted disposal facilities. The costs do not include dredging, on-site management of the sediment, or labor and equipment for on-loading for transportation (estimated transportation costs have included one-hour of loading time per truck). Costs are based on assumed 18,000 cubic yards of excavated sediment or

30,375 tons of material. For landfill disposal as well as aggregate reuse options, transportation costs are based on estimated one hour each for load and unloading, assumed travel times and use of 22-ton minimum dump trailers (average 25 ton load).

6.1 Landfill Disposal

Landfills contacted include Lorton Landfill, Potomac Landfill, King William Landfill and Dominion Recycling. Lorton Landfill does not accept dredge material or materials excavated from creeks. King William County Landfill, the most distant one contacted, could use the finer material for daily cover and would accept all of the dredged material. Potomac Landfill does have screening capability to separate materials by size and produce aggregate products. The following table summarizes estimated disposal costs by landfill. Truck transport costs are based on a round trip cycle time including loading and unloading. Potomac landfill was satisfied with the characterization data and will accept the material as-is. King William landfill requested that total RCRA eight metals analysis be completed in addition to the provided TCLP metals analysis.

Estimated Disposal Costs – Landfill Disposal

<u>Owner/Operator</u>	<u>Landfill</u>	<u>Mileage</u>	<u>Transport Cost per Ton</u>	<u>Transport Cost</u>	<u>Disposal Fee</u>	<u>Total Estimated Cost</u>
Potomac Landfill Inc.	Potomac Landfill Inc., Dumfries, VA	31	\$8.35	\$253,530.00	\$32.50/ton	\$ 1,240,718
Waste Management	King George Landfill	67	\$17.95	\$545,130.00	\$70/ton (wet)	\$ 2,671,380
Lorton Landfill	Lorton Landfill, Lorton, VA	Will not accept material excavated from creeks				

6.2 Upland Beneficial Reuse Disposal

Dominion Recycling is located in Chesapeake, Virginia and excavated materials would need to be transported by barge. Dominion Recycling does not have on-site barge access so sediment would require offloading at an identified nearby offloading facility then be trucked to the final site. Dominion Recycling does have screening capabilities and could potentially use the material for daily cover or as aggregate. Weanack Land Reclamation Project in Charles City, Virginia is an upland placement site for dredge materials and other excavated materials and does have barge access for direct offloading. Weanack has indicated that they believe the sediment can be used for internal roads at their facility and therefore have waived disposal and dock fees. The following table summarizes the transportation and disposal costs for Dominion Recycling and Weanack.

Estimated Disposal Costs – Upland Beneficial Reuse

<u>Owner/Operator and Facility</u>	<u>Transport Mode</u>	<u>Barge Cost</u>	<u>Offloading</u>	<u>Trucking to Facility from Offload</u>	<u>Disposal Fee</u>	<u>Total Estimated Cost</u>
Conley Environmental Dominion Recycling, Chesapeake, VA	66 Hour Round Trip - Barge. Two 3,500 ton barges & 1 tug	\$450,000	\$5/CY	\$2.50/CY	\$8/ton	\$828,000
Weanack Land LLC Weanack Land Reclamation Project, Charles City, VA	75 Hour Round Trip - Barge	\$600,000	\$16.40/CY	\$49,000	Waived	\$944,200

6.3 Beneficial Aggregate Reuse

Aggregate producers contacted include Chantilly Crushed Stone, Chaney Enterprises, Vulcan Materials and Luck Stone. Each of the contacted aggregate producers expressed interest in the dredged materials. Chantilly Crushed Stone noted that the cobble and coarse materials would be useful in restoration projects such as the one they currently are constructing at the Loudoun Quarry in Sterling, Virginia. Luck Stone Ecosystem Group uses cobble and coarse material in structural mixes and for projects such as stream restorations and landscaping. Luck has indicated that they are interested in the material and would accept it without any tipping fee. In addition, Luck indicated that they may be willing to partner with the owner/contractor and cover a portion of the transportation costs to one of their northern Virginia facilities. They have an established haulage network and may be able to provide assistance with completing haulage of the sediment. Chaney Enterprises, which has two plants in Maryland that are configured to process the material, also expressed interest.

Dredged or excavated materials often contain undesired debris and other unusable materials, therefore aggregate producers will likely charge a processing fee to remove debris and screen the coarser materials to generate marketable aggregate products. Chaney Enterprises indicated that an estimated processing fee of \$5.00 - \$10.00/ton would be charged based on the composition of the excavated materials and degree of sorting and screening. Chaney also requested that additional sediment samples be collected for further geotechnical analysis before accepting the material.

The following table summarizes potential costs for aggregate reuse.

Estimated Costs – Aggregate Reuse

<u>Producer</u>	<u>Mileage</u>	<u>Estimated Transport Cost per Ton</u>	<u>Estimated Transport Cost Total</u>	<u>Processing Fee</u>	<u>Estimated Total Reuse Cost</u>
Vulcan Materials Woodbridge Sand Yard, Woodbridge, VA	18	\$4.88	\$148,230	To be determined based on additional analyses	TBD
Chantilly Crushed Stone / Gudelsky Group Loudoun Quarry, Sterling, VA	25	\$6.75	\$204,930	To be determined based on additional analyses	TBD
Chaney Enterprises Waldorf, MD	27	\$7.28	\$221,130	\$152,000-\$304,000	\$373,130 - \$525,130
Chaney Enterprises Riddle Sand & Gravel, Harwood MD	30	\$8.08	\$245,430	\$152,000-\$304,000	\$397,430 - \$549,430
Luck Stone Caroline Sand and Gravel, Milford, VA	80	\$21.41	\$650,430 (Luck has indicated that they may be able to provide support for haulage)	To be determined based on additional analyses	TBD

Four Mile Run Sediments


APPENDIX

A

MAPS



Virginia Geographic Information Network (VGIN)



This map and all data contained within are supplied as is with no warranty. Cardno Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

0200400 Feet

050100 Meters

Figure 1 - Four Mile Run Sediment Characterization

Arlington County/City of Alexandria Virginia



10988 Richardson Road, Ashland, Virginia 23005 USA
Phone (+1) 804-798-6525
www.cardno.com

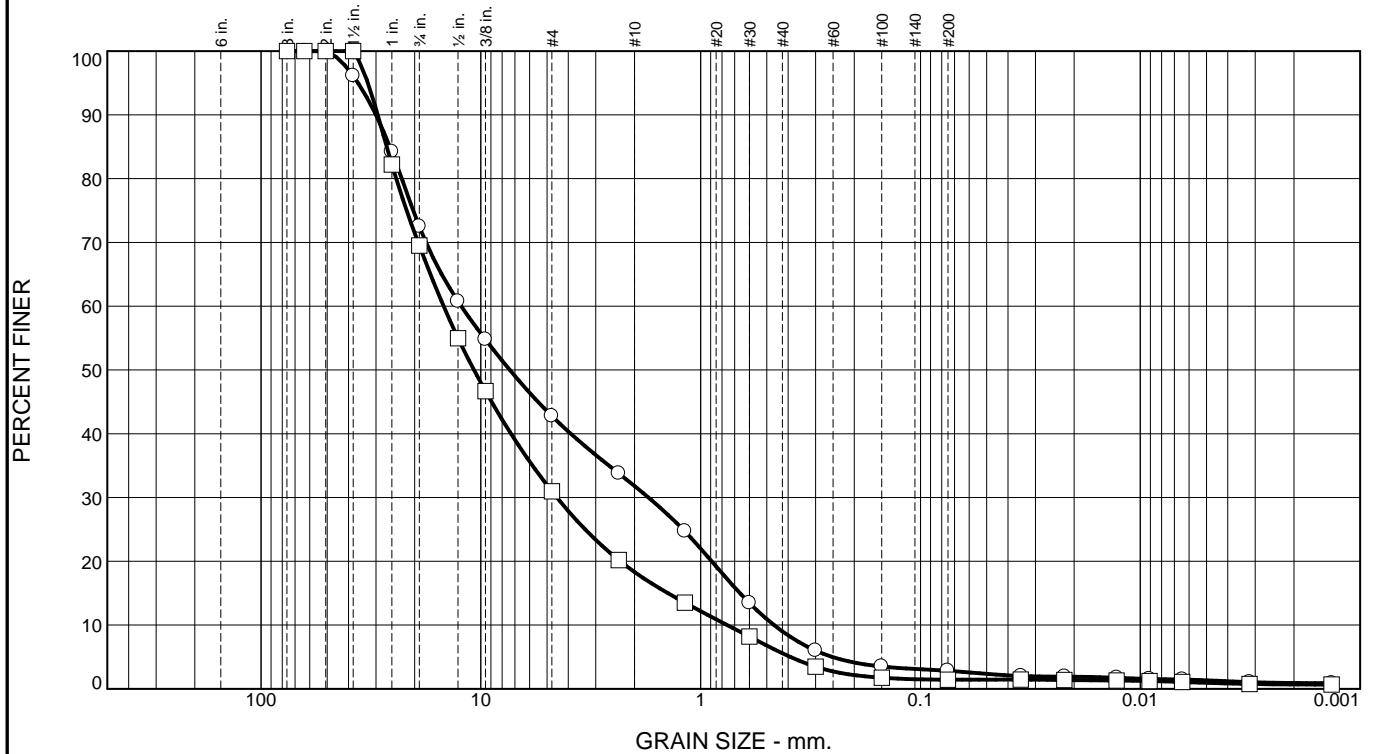
Four Mile Run Sediments

APPENDIX

B

GEOTECHNICAL LAB CERTIFICATES

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	57.2	40.0	1.5	1.3	GP	A-1-a	NP	NV
□	0.0	69.0	29.6	0.5	0.9	GW	A-1-a	NP	NV

SIEVE inches size	PERCENT FINER	
	○	□
3.0	100.0	100.0
2.5	100.0	100.0
2.0	100.0	100.0
1.5	96.1	100.0
1.0	84.2	82.2
0.75	72.5	69.5
0.5	60.8	55.0
0.375	54.8	46.7
GRAIN SIZE		
D ₆₀	12.2797	14.7687
D ₃₀	1.7284	4.5102
D ₁₀	0.4637	0.7576
COEFFICIENTS		
C _c	0.52	1.82
C _u	26.48	19.49

SIEVE number size	PERCENT FINER	
	○	□
#4	42.8	31.0
#8	33.8	20.2
#16	24.7	13.5
#30	13.5	8.2
#50	6.0	3.5
#100	3.5	1.7
#200	2.8	1.4

Material Description

☐ poorly graded gravel with sand

☐ well-graded gravel with sand

REMARKS:

☐ AASHTO T 11, T 27 and T 88

☐ AASHTO T 11, T 27 and T 88

○ Source of Sample: Long Branch
 □ Source of Sample: Long Branch

Sample Number: LB-1 (1)
 Sample Number: LB-2 (2)

**HILLIS-CARNES
 ENGINEERING ASSOCIATES
 ASHLAND, VIRGINIA**

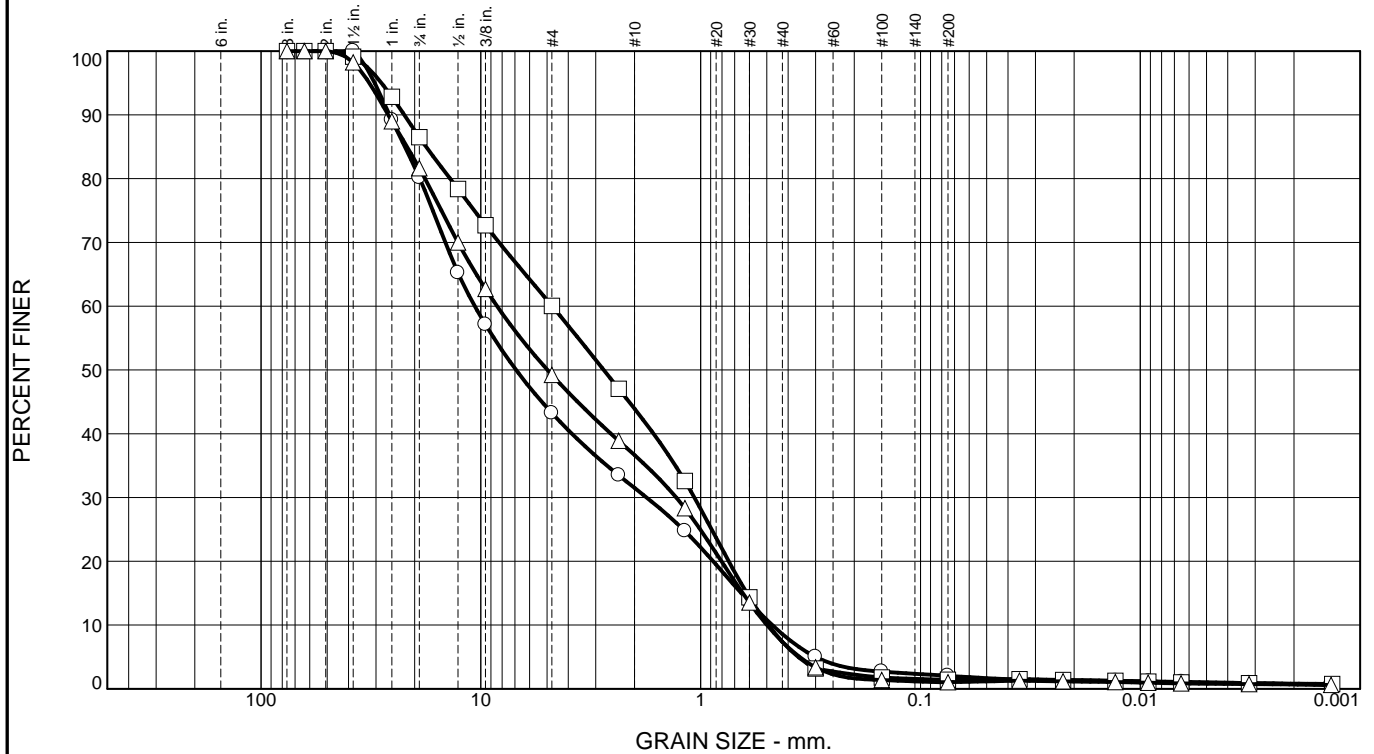
Client: Cardno - Ashland, Virginia
 Project: Four Mile Run Sand & Gravel Assessment/COA408
 Project No.: M19287-7

Figure

Tested By: DLC/FRB

Checked By: TWR

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	56.8	41.2	1.0	1.0	GP	A-1-a	NP	NV
□	0.0	40.0	58.6	0.5	0.9	SP	A-1-a	NP	NV
△	0.0	50.8	48.2	0.2	0.8	GP	A-1-a	NP	NV

SIEVE inches size	PERCENT FINER		
	○	□	△
3.0	100.0	100.0	100.0
2.5	100.0	100.0	100.0
2.0	100.0	100.0	100.0
1.5	100.0	99.1	98.2
1.0	89.2	92.8	89.0
0.75	80.2	86.5	81.6
0.5	65.2	78.4	70.0
0.375	57.1	72.7	62.7
GRAIN SIZE			
D ₆₀	10.6655	4.7395	8.4378
D ₃₀	1.7629	1.0682	1.2917
D ₁₀	0.4724	0.4920	0.4994
COEFFICIENTS			
C _c	0.62	0.49	0.40
C _u	22.58	9.63	16.90

SIEVE number size	PERCENT FINER		
	○	□	△
#4	43.2	60.0	49.2
#8	33.5	47.1	38.9
#16	24.7	32.6	28.3
#30	13.6	14.4	13.5
#50	5.0	3.2	3.4
#100	2.7	1.8	1.4
#200	2.0	1.4	1.0

Material Description	
○	poorly graded gravel with sand
□	poorly graded sand with gravel
△	poorly graded gravel with sand

REMARKS:	
○	AASHTO T 11, T 27 and T 88
□	AASHTO T 11, T 27 and T 88
△	AASHTO T 11, T 27 and T 88

○ Source of Sample: Four Mile Run
 □ Source of Sample: Four Mile Run
 △ Source of Sample: Four Mile Run

Sample Number: FMR-3 (3)
 Sample Number: FMR-4 (4)
 Sample Number: FMR-5 (5)

**HILLIS-CARNES
 ENGINEERING ASSOCIATES
 ASHLAND, VIRGINIA**

Client: Cardno - Ashland, Virginia
 Project: Four Mile Run Sand & Gravel Assessment/COA408
 Project No.: M19287-7

Figure

Tested By: DLC/FRB

Checked By: TWR

Four Mile Run Sediments

APPENDIX

C

LABORATORY ANALYSIS / CHAIN OF
CUSTODY

Analysis Detects Report

Client Name: Cardno-Ashland
Client Site ID: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Laboratory Sample ID: 20G1316-01

Client Sample ID: LB-1 (1)

Parameter	Samp ID	Reference Method	Sample Results	Qual	DL	LOQ	Dil. Factor	Units
TCLP Extraction Fluid, Metals	01	SW1311	1		0	0	1	#
TPH-Semi-Volatiles (DRO)	01	SW8015C	11.1		10.0	10.0	1	mg/kg
PCB as Aroclor 1260	01	SW8082A	0.055	J	0.053	0.106	1	mg/kg dry
Extractable Organic Halides (EOX)	01	SW9023	25.5		10.0	10.0	1	mg/kg

Laboratory Sample ID: 20G1316-02

Client Sample ID: LB-2 (2)

Parameter	Samp ID	Reference Method	Sample Results	Qual	DL	LOQ	Dil. Factor	Units
TCLP Extraction Fluid, Metals	02	SW1311	1		0	0	1	#

Laboratory Sample ID: 20G1316-03

Client Sample ID: FMR-3 (3)

Parameter	Samp ID	Reference Method	Sample Results	Qual	DL	LOQ	Dil. Factor	Units
TCLP Extraction Fluid, Metals	03	SW1311	1		0	0	1	#

Laboratory Sample ID: 20G1316-04

Client Sample ID: FMR-4 (4)

Parameter	Samp ID	Reference Method	Sample Results	Qual	DL	LOQ	Dil. Factor	Units
TCLP Extraction Fluid, Metals	04	SW1311	1		0	0	1	#

Laboratory Sample ID: 20G1316-05

Client Sample ID: FMR-5 (5)

Parameter	Samp ID	Reference Method	Sample Results	Qual	DL	LOQ	Dil. Factor	Units
TCLP Extraction Fluid, Metals	05	SW1311	1		0	0	1	#

Note that this report is not the "Certificate of Analysis". This report only lists the target analytes that displayed concentrations that exceeded the detection limit specified for that analyte. For a complete listing of all analytes requested and the results of the analysis see the " Certificate of Analysis".



an Enthalpy Analytical Laboratory

1941 Reymet Road • Richmond, Virginia 23237 • Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 20G1316

Client Name: Cardno-Ashland
10988 Richardson Road
Ashland, VA 23005

Date Received: July 31, 2020 15:17
Date Issued: August 7, 2020 16:12
Project Number: COA408
Purchase Order:

Submitted To: John Voorhees

Client Site I.D.: Four Mile Creek

Enclosed are the results of analyses for samples received by the laboratory on 07/31/2020 15:17. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

A handwritten signature in black ink that reads "Ted Soyars".

Ted Soyars
Technical Director

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

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Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB-1 (1)	20G1316-01	Soil	07/30/2020 11:47	07/31/2020 15:17
LB-2 (2)	20G1316-02	Soil	07/30/2020 12:15	07/31/2020 15:17
FMR-3 (3)	20G1316-03	Soil	07/30/2020 13:40	07/31/2020 15:17
FMR-4 (4)	20G1316-04	Soil	07/30/2020 13:25	07/31/2020 15:17
FMR-5 (5)	20G1316-05	Soil	07/30/2020 13:05	07/31/2020 15:17

PCB results have been calculated based on dry weight.

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-1 (1)

Laboratory Sample ID: 20G1316-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
TCLP Metals by 6000/7000 Series Methods												
TCLP Silver	01	7440-22-4	SW6010D	08/04/2020 11:00	08/05/2020 12:31	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Arsenic	01	7440-38-2	SW6010D	08/04/2020 11:00	08/05/2020 12:32	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Barium	01	7440-39-3	SW6010D	08/04/2020 11:00	08/05/2020 12:31	BLOD		1.00	5.00	1	mg/L	SNL
TCLP Cadmium	01	7440-43-9	SW6010D	08/04/2020 11:00	08/05/2020 12:32	BLOD		0.0200	0.0400	1	mg/L	SNL
TCLP Chromium	01	7440-47-3	SW6010D	08/04/2020 11:00	08/05/2020 12:32	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Mercury	01	7439-97-6	SW7470A	08/05/2020 08:40	08/05/2020 14:17	BLOD		0.008	0.008	1	mg/L	MWL
TCLP Lead	01	7439-92-1	SW6010D	08/04/2020 11:00	08/05/2020 12:32	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Selenium	01	7782-49-2	SW6010D	08/04/2020 11:00	08/05/2020 12:32	BLOD		0.250	0.250	1	mg/L	SNL
TCLP Extraction Fluid, Metals	01	NA	SW1311	08/03/2020 16:30	08/03/2020 16:30	1		0	0	1	#	ESW
Volatile Organic Compounds by GC												
Benzene	01	71-43-2	SW8021B	08/03/2020 14:53	08/03/2020 14:53	BLOD		2.98	5.00	1	ug/kg	BMR
Toluene	01	108-88-3	SW8021B	08/03/2020 14:53	08/03/2020 14:53	BLOD		2.98	5.00	1	ug/kg	BMR
Ethylbenzene	01	100-41-4	SW8021B	08/03/2020 14:53	08/03/2020 14:53	BLOD		2.98	5.00	1	ug/kg	BMR
m+p-Xylenes	01	179601-23-1	SW8021B	08/03/2020 14:53	08/03/2020 14:53	BLOD		2.98	10.0	1	ug/kg	BMR
o-Xylene	01	95-47-6	SW8021B	08/03/2020 14:53	08/03/2020 14:53	BLOD		2.98	5.00	1	ug/kg	BMR
Xylenes, Total	01	1330-20-7	SW8021B	08/03/2020 14:53	08/03/2020 14:53	BLOD		8.93	15.0	1	ug/kg	BMR
<i>Surr: 2,5-Dibromotoluene (Surr PID)</i>	01	101 %	80-120	08/03/2020 14:53	08/03/2020 14:53							
Volatile Hydrocarbons by GC												
TPH-Volatiles (GRO)	01	NA	SW8015C	08/03/2020 14:53	08/03/2020 14:53	BLOD		0.10	0.10	1	mg/kg	BMR
<i>Surr: 2,5-Dibromotoluene (Surr FID)</i>	01	100 %	80-120	08/03/2020 14:53	08/03/2020 14:53							
Semivolatile Hydrocarbons by GC												
TPH-Semi-Volatiles (DRO)	01	NA	SW8015C	08/05/2020 14:00	08/06/2020 17:25	11.1		10.0	10.0	1	mg/kg	LBH2

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Client Sample ID: LB-1 (1)

Laboratory Sample ID: 20G1316-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Semivolatile Hydrocarbons by GC												
<i>Surr: Pentacosane (Surr)</i>	01	93.8 %	45-160	08/05/2020 14:00	08/06/2020 17:25							

Certificate of Analysis

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-1 (1)

Laboratory Sample ID: 20G1316-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Organochlorine Pesticides and PCBs by GC/ECD												
PCB as Aroclor 1016	01	12674-11-2	SW8082A	08/04/2020 09:45	08/04/2020 21:47	BLOD		0.053	0.106	1	mg/kg dry	LBH2
PCB as Aroclor 1221	01	11104-28-2	SW8082A	08/04/2020 09:45	08/04/2020 21:47	BLOD		0.053	0.106	1	mg/kg dry	LBH2
PCB as Aroclor 1232	01	11141-16-5	SW8082A	08/04/2020 09:45	08/04/2020 21:47	BLOD		0.053	0.106	1	mg/kg dry	LBH2
PCB as Aroclor 1242	01	53469-21-9	SW8082A	08/04/2020 09:45	08/04/2020 21:47	BLOD		0.053	0.106	1	mg/kg dry	LBH2
PCB as Aroclor 1248	01	12672-29-6	SW8082A	08/04/2020 09:45	08/04/2020 21:47	BLOD		0.053	0.106	1	mg/kg dry	LBH2
PCB as Aroclor 1254	01	11097-69-1	SW8082A	08/04/2020 09:45	08/04/2020 21:47	BLOD		0.053	0.106	1	mg/kg dry	LBH2
PCB as Aroclor 1260	01	11096-82-5	SW8082A	08/04/2020 09:45	08/04/2020 21:47	0.055	J	0.053	0.106	1	mg/kg dry	LBH2
<i>Surr: DCB</i>	<i>01</i>	<i>85.5 %</i>	<i>30-105</i>	<i>08/04/2020 09:45</i>	<i>08/04/2020 21:47</i>							
<i>Surr: TCMX</i>	<i>01</i>	<i>87.3 %</i>	<i>30-105</i>	<i>08/04/2020 09:45</i>	<i>08/04/2020 21:47</i>							

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Client Sample ID: LB-1 (1)

Laboratory Sample ID: 20G1316-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Extractable Organic Halides (EOX)	01	NA	SW9023	08/04/2020 09:23	08/04/2020 09:23	25.5		10.0	10.0	1	mg/kg	PMQ
Percent Solids	01	NA	SM18 2540G	08/04/2020 14:41	08/04/2020 14:41	92.9		0.10	0.10	1	%	AKB

Certificate of Analysis

Client Name: Cardno-Ashland
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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-2 (2)

Laboratory Sample ID: 20G1316-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
TCLP Metals by 6000/7000 Series Methods												
TCLP Silver	02	7440-22-4	SW6010D	08/04/2020 11:00	08/05/2020 12:33	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Arsenic	02	7440-38-2	SW6010D	08/04/2020 11:00	08/05/2020 12:34	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Barium	02	7440-39-3	SW6010D	08/04/2020 11:00	08/05/2020 12:34	BLOD		1.00	5.00	1	mg/L	SNL
TCLP Cadmium	02	7440-43-9	SW6010D	08/04/2020 11:00	08/05/2020 12:34	BLOD		0.0200	0.0400	1	mg/L	SNL
TCLP Chromium	02	7440-47-3	SW6010D	08/04/2020 11:00	08/05/2020 12:34	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Mercury	02	7439-97-6	SW7470A	08/05/2020 08:40	08/05/2020 14:19	BLOD		0.008	0.008	1	mg/L	MWL
TCLP Lead	02	7439-92-1	SW6010D	08/04/2020 11:00	08/05/2020 12:34	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Selenium	02	7782-49-2	SW6010D	08/04/2020 11:00	08/05/2020 12:34	BLOD		0.250	0.250	1	mg/L	SNL
TCLP Extraction Fluid, Metals	02	NA	SW1311	08/03/2020 16:30	08/03/2020 16:30	1		0	0	1	#	ESW

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-2 (2)

Laboratory Sample ID: 20G1316-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GC												
Benzene	02	71-43-2	SW8021B	08/03/2020 20:30	08/03/2020 20:30	BLOD		149	248	50	ug/kg	BMR
Toluene	02	108-88-3	SW8021B	08/03/2020 20:30	08/03/2020 20:30	BLOD		149	248	50	ug/kg	BMR
Ethylbenzene	02	100-41-4	SW8021B	08/03/2020 20:30	08/03/2020 20:30	BLOD		149	248	50	ug/kg	BMR
m+p-Xylenes	02	179601-23-1	SW8021B	08/03/2020 20:30	08/03/2020 20:30	BLOD		149	495	50	ug/kg	BMR
o-Xylene	02	95-47-6	SW8021B	08/03/2020 20:30	08/03/2020 20:30	BLOD		149	248	50	ug/kg	BMR
Xylenes, Total	02	1330-20-7	SW8021B	08/03/2020 20:30	08/03/2020 20:30	BLOD		446	743	50	ug/kg	BMR
Surr: 2,5-Dibromotoluene (Surr PID)	02	94.8 %	80-120	08/03/2020 20:30	08/03/2020 20:30							

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-2 (2)

Laboratory Sample ID: 20G1316-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Hydrocarbons by GC												
TPH-Volatiles (GRO)	02	NA	SW8015C	08/03/2020 20:30	08/03/2020 20:30	BLOD		4.95	4.95	50	mg/kg	BMR
Surr: 2,5-Dibromotoluene (Surr FID)	02	94.0 %	80-120	08/03/2020 20:30	08/03/2020 20:30							

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-2 (2)

Laboratory Sample ID: 20G1316-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Semivolatile Hydrocarbons by GC												
TPH-Semi-Volatiles (DRO)	02	NA	SW8015C	08/05/2020 14:00	08/06/2020 17:51	BLOD		10.0	10.0	1	mg/kg	LBH2
<i>Surr: Pentacosane (Surr)</i>	<i>02</i>	<i>86.6 %</i>	<i>45-160</i>	<i>08/05/2020 14:00</i>	<i>08/06/2020 17:51</i>							

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-2 (2)

Laboratory Sample ID: 20G1316-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Organochlorine Pesticides and PCBs by GC/ECD												
PCB as Aroclor 1016	02	12674-11-2	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
PCB as Aroclor 1221	02	11104-28-2	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
PCB as Aroclor 1232	02	11141-16-5	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
PCB as Aroclor 1242	02	53469-21-9	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
PCB as Aroclor 1248	02	12672-29-6	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
PCB as Aroclor 1254	02	11097-69-1	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
PCB as Aroclor 1260	02	11096-82-5	SW8082A	08/04/2020 09:45	08/04/2020 22:08	BLOD		0.058	0.117	1	mg/kg dry	LBH2
Surr: DCB	02	65.9 %	30-105	08/04/2020 09:45	08/04/2020 22:08							
Surr: TCMX	02	79.7 %	30-105	08/04/2020 09:45	08/04/2020 22:08							

Certificate of Analysis

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: LB-2 (2)

Laboratory Sample ID: 20G1316-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Extractable Organic Halides (EOX)	02	NA	SW9023	08/04/2020 09:23	08/04/2020 09:23	BLOD		10.0	10.0	1	mg/kg	PMQ
Percent Solids	02	NA	SM18 2540G	08/04/2020 14:41	08/04/2020 14:41	84.2		0.10	0.10	1	%	AKB

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-3 (3)

Laboratory Sample ID: 20G1316-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
TCLP Metals by 6000/7000 Series Methods												
TCLP Silver	03	7440-22-4	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Arsenic	03	7440-38-2	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Barium	03	7440-39-3	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		1.00	5.00	1	mg/L	SNL
TCLP Cadmium	03	7440-43-9	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		0.0200	0.0400	1	mg/L	SNL
TCLP Chromium	03	7440-47-3	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Mercury	03	7439-97-6	SW7470A	08/05/2020 08:40	08/05/2020 14:21	BLOD		0.008	0.008	1	mg/L	MWL
TCLP Lead	03	7439-92-1	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Selenium	03	7782-49-2	SW6010D	08/04/2020 11:00	08/05/2020 12:39	BLOD		0.250	0.250	1	mg/L	SNL
TCLP Extraction Fluid, Metals	03	NA	SW1311	08/03/2020 16:30	08/03/2020 16:30	1		0	0	1	#	ESW

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-3 (3)

Laboratory Sample ID: 20G1316-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GC												
Benzene	03	71-43-2	SW8021B	08/03/2020 20:52	08/03/2020 20:52	BLOD		147	245	50	ug/kg	BMR
Toluene	03	108-88-3	SW8021B	08/03/2020 20:52	08/03/2020 20:52	BLOD		147	245	50	ug/kg	BMR
Ethylbenzene	03	100-41-4	SW8021B	08/03/2020 20:52	08/03/2020 20:52	BLOD		147	245	50	ug/kg	BMR
m+p-Xylenes	03	179601-23-1	SW8021B	08/03/2020 20:52	08/03/2020 20:52	BLOD		147	489	50	ug/kg	BMR
o-Xylene	03	95-47-6	SW8021B	08/03/2020 20:52	08/03/2020 20:52	BLOD		147	245	50	ug/kg	BMR
Xylenes, Total	03	1330-20-7	SW8021B	08/03/2020 20:52	08/03/2020 20:52	BLOD		440	734	50	ug/kg	BMR
Surr: 2,5-Dibromotoluene (Surr PID)	03	101 %	80-120	08/03/2020 20:52	08/03/2020 20:52							

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-3 (3)

Laboratory Sample ID: 20G1316-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Hydrocarbons by GC												
TPH-Volatiles (GRO)	03	NA	SW8015C	08/03/2020 20:52	08/03/2020 20:52	BLOD		4.89	4.89	50	mg/kg	BMR
Surr: 2,5-Dibromotoluene (Surr FID)	03	98.6 %	80-120	08/03/2020 20:52	08/03/2020 20:52							

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Client Sample ID: FMR-3 (3)

Laboratory Sample ID: 20G1316-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Semivolatile Hydrocarbons by GC												
TPH-Semi-Volatiles (DRO)	03	NA	SW8015C	08/05/2020 14:00	08/06/2020 18:18	BLOD		9.9	10.0	1	mg/kg	LBH2
<i>Surr: Pentacosane (Surr)</i>	<i>03</i>	<i>66.3 %</i>	<i>45-160</i>	<i>08/05/2020 14:00</i>	<i>08/06/2020 18:18</i>							

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-3 (3)

Laboratory Sample ID: 20G1316-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Organochlorine Pesticides and PCBs by GC/ECD												
PCB as Aroclor 1016	03	12674-11-2	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1221	03	11104-28-2	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1232	03	11141-16-5	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1242	03	53469-21-9	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1248	03	12672-29-6	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1254	03	11097-69-1	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1260	03	11096-82-5	SW8082A	08/04/2020 09:45	08/04/2020 22:29	BLOD		0.051	0.102	1	mg/kg dry	LBH2
Surr: DCB	03	86.0 %	30-105	08/04/2020 09:45	08/04/2020 22:29							
Surr: TCMX	03	98.4 %	30-105	08/04/2020 09:45	08/04/2020 22:29							

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Client Sample ID: FMR-3 (3)

Laboratory Sample ID: 20G1316-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Extractable Organic Halides (EOX)	03	NA	SW9023	08/04/2020 09:23	08/04/2020 09:23	BLOD		10.0	10.0	1	mg/kg	PMQ
Percent Solids	03	NA	SM18 2540G	08/04/2020 14:41	08/04/2020 14:41	96.1		0.10	0.10	1	%	AKB

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-4 (4)

Laboratory Sample ID: 20G1316-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
TCLP Metals by 6000/7000 Series Methods												
TCLP Silver	04	7440-22-4	SW6010D	08/04/2020 11:00	08/05/2020 12:50	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Arsenic	04	7440-38-2	SW6010D	08/04/2020 11:00	08/05/2020 12:51	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Barium	04	7440-39-3	SW6010D	08/04/2020 11:00	08/05/2020 12:51	BLOD		1.00	5.00	1	mg/L	SNL
TCLP Cadmium	04	7440-43-9	SW6010D	08/04/2020 11:00	08/05/2020 12:51	BLOD		0.0200	0.0400	1	mg/L	SNL
TCLP Chromium	04	7440-47-3	SW6010D	08/04/2020 11:00	08/05/2020 12:51	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Mercury	04	7439-97-6	SW7470A	08/05/2020 08:40	08/05/2020 14:23	BLOD		0.008	0.008	1	mg/L	MWL
TCLP Lead	04	7439-92-1	SW6010D	08/04/2020 11:00	08/05/2020 12:51	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Selenium	04	7782-49-2	SW6010D	08/04/2020 11:00	08/05/2020 12:51	BLOD		0.250	0.250	1	mg/L	SNL
TCLP Extraction Fluid, Metals	04	NA	SW1311	08/03/2020 16:30	08/03/2020 16:30	1		0	0	1	#	ESW

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-4 (4)

Laboratory Sample ID: 20G1316-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GC												
Benzene	04	71-43-2	SW8021B	08/03/2020 20:07	08/03/2020 20:07	BLOD		13.6	22.7	1	ug/kg	BMR
Toluene	04	108-88-3	SW8021B	08/03/2020 20:07	08/03/2020 20:07	BLOD		13.6	22.7	1	ug/kg	BMR
Ethylbenzene	04	100-41-4	SW8021B	08/03/2020 20:07	08/03/2020 20:07	BLOD		13.6	22.7	1	ug/kg	BMR
m+p-Xylenes	04	179601-23-1	SW8021B	08/03/2020 20:07	08/03/2020 20:07	BLOD		13.6	45.5	1	ug/kg	BMR
o-Xylene	04	95-47-6	SW8021B	08/03/2020 20:07	08/03/2020 20:07	BLOD		13.6	22.7	1	ug/kg	BMR
Xylenes, Total	04	1330-20-7	SW8021B	08/03/2020 20:07	08/03/2020 20:07	BLOD		40.9	68.2	1	ug/kg	BMR
Surr: 2,5-Dibromotoluene (Surr PID)	04	101 %	80-120	08/03/2020 20:07	08/03/2020 20:07							

Certificate of Analysis

Client Name: Cardno-Ashland
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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-4 (4)

Laboratory Sample ID: 20G1316-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Hydrocarbons by GC												
TPH-Volatiles (GRO)	04	NA	SW8015C	08/03/2020 20:07	08/03/2020 20:07	BLOD		0.45	0.45	1	mg/kg	BMR
Surr: 2,5-Dibromotoluene (Surr FID)	04	103 %	80-120	08/03/2020 20:07	08/03/2020 20:07							

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-4 (4)

Laboratory Sample ID: 20G1316-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Semivolatile Hydrocarbons by GC												
TPH-Semi-Volatiles (DRO)	04	NA	SW8015C	08/05/2020 14:00	08/06/2020 18:44	BLOD		10.0	10.0	1	mg/kg	LBH2
<i>Surr: Pentacosane (Surr)</i>	<i>04</i>	<i>83.6 %</i>	<i>45-160</i>	<i>08/05/2020 14:00</i>	<i>08/06/2020 18:44</i>							

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-4 (4)

Laboratory Sample ID: 20G1316-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Organochlorine Pesticides and PCBs by GC/ECD												
PCB as Aroclor 1016	04	12674-11-2	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1221	04	11104-28-2	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1232	04	11141-16-5	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1242	04	53469-21-9	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1248	04	12672-29-6	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1254	04	11097-69-1	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
PCB as Aroclor 1260	04	11096-82-5	SW8082A	08/04/2020 09:45	08/04/2020 22:51	BLOD		0.051	0.102	1	mg/kg dry	LBH2
Surr: DCB	04	84.2 %	30-105	08/04/2020 09:45	08/04/2020 22:51							
Surr: TCMX	04	80.5 %	30-105	08/04/2020 09:45	08/04/2020 22:51							

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Client Sample ID: FMR-4 (4)

Laboratory Sample ID: 20G1316-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Extractable Organic Halides (EOX)	04	NA	SW9023	08/04/2020 09:23	08/04/2020 09:23	BLOD		10.0	10.0	1	mg/kg	PMQ
Percent Solids	04	NA	SM18 2540G	08/04/2020 14:41	08/04/2020 14:41	97.0		0.10	0.10	1	%	AKB

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-5 (5)

Laboratory Sample ID: 20G1316-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
TCLP Metals by 6000/7000 Series Methods												
TCLP Silver	05	7440-22-4	SW6010D	08/04/2020 11:00	08/05/2020 12:52	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Arsenic	05	7440-38-2	SW6010D	08/04/2020 11:00	08/05/2020 12:53	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Barium	05	7440-39-3	SW6010D	08/04/2020 11:00	08/05/2020 12:53	BLOD		1.00	5.00	1	mg/L	SNL
TCLP Cadmium	05	7440-43-9	SW6010D	08/04/2020 11:00	08/05/2020 12:53	BLOD		0.0200	0.0400	1	mg/L	SNL
TCLP Chromium	05	7440-47-3	SW6010D	08/04/2020 11:00	08/05/2020 12:53	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Mercury	05	7439-97-6	SW7470A	08/05/2020 08:40	08/05/2020 14:25	BLOD		0.008	0.008	1	mg/L	MWL
TCLP Lead	05	7439-92-1	SW6010D	08/04/2020 11:00	08/05/2020 12:53	BLOD		0.100	0.100	1	mg/L	SNL
TCLP Selenium	05	7782-49-2	SW6010D	08/04/2020 11:00	08/05/2020 12:53	BLOD		0.250	0.250	1	mg/L	SNL
TCLP Extraction Fluid, Metals	05	NA	SW1311	08/03/2020 16:30	08/03/2020 16:30	1		0	0	1	#	ESW

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-5 (5)

Laboratory Sample ID: 20G1316-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GC												
Benzene	05	71-43-2	SW8021B	08/03/2020 21:15	08/03/2020 21:15	BLOD		146	244	50	ug/kg	BMR
Toluene	05	108-88-3	SW8021B	08/03/2020 21:15	08/03/2020 21:15	BLOD		146	244	50	ug/kg	BMR
Ethylbenzene	05	100-41-4	SW8021B	08/03/2020 21:15	08/03/2020 21:15	BLOD		146	244	50	ug/kg	BMR
m+p-Xylenes	05	179601-23-1	SW8021B	08/03/2020 21:15	08/03/2020 21:15	BLOD		146	488	50	ug/kg	BMR
o-Xylene	05	95-47-6	SW8021B	08/03/2020 21:15	08/03/2020 21:15	BLOD		146	244	50	ug/kg	BMR
Xylenes, Total	05	1330-20-7	SW8021B	08/03/2020 21:15	08/03/2020 21:15	BLOD		439	732	50	ug/kg	BMR
Surr: 2,5-Dibromotoluene (Surr PID)	05	99.3 %	80-120	08/03/2020 21:15	08/03/2020 21:15							

Certificate of Analysis

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-5 (5)

Laboratory Sample ID: 20G1316-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Volatile Hydrocarbons by GC												
TPH-Volatiles (GRO)	05	NA	SW8015C	08/03/2020 21:15	08/03/2020 21:15	BLOD		4.88	4.88	50	mg/kg	BMR
Surr: 2,5-Dibromotoluene (Surr FID)	05	98.2 %	80-120	08/03/2020 21:15	08/03/2020 21:15							

Certificate of Analysis

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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-5 (5)

Laboratory Sample ID: 20G1316-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Semivolatile Hydrocarbons by GC												
TPH-Semi-Volatiles (DRO)	05	NA	SW8015C	08/05/2020 14:00	08/06/2020 19:10	BLOD		9.7	10.0	1	mg/kg	LBH2
<i>Surr: Pentacosane (Surr)</i>	<i>05</i>	<i>72.8 %</i>	<i>45-160</i>	<i>08/05/2020 14:00</i>	<i>08/06/2020 19:10</i>							

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
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Date Issued: 8/7/2020 4:12:04PM

Client Sample ID: FMR-5 (5)

Laboratory Sample ID: 20G1316-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Organochlorine Pesticides and PCBs by GC/ECD												
PCB as Aroclor 1016	05	12674-11-2	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
PCB as Aroclor 1221	05	11104-28-2	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
PCB as Aroclor 1232	05	11141-16-5	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
PCB as Aroclor 1242	05	53469-21-9	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
PCB as Aroclor 1248	05	12672-29-6	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
PCB as Aroclor 1254	05	11097-69-1	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
PCB as Aroclor 1260	05	11096-82-5	SW8082A	08/04/2020 09:45	08/04/2020 23:12	BLOD		0.055	0.111	1	mg/kg dry	LBH2
Surr: DCB	05	81.2 %	30-105	08/04/2020 09:45	08/04/2020 23:12							
Surr: TCMX	05	65.7 %	30-105	08/04/2020 09:45	08/04/2020 23:12							

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Client Sample ID: FMR-5 (5)

Laboratory Sample ID: 20G1316-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Extractable Organic Halides (EOX)	05	NA	SW9023	08/04/2020 09:23	08/04/2020 09:23	BLOD		10.0	10.0	1	mg/kg	PMQ
Percent Solids	05	NA	SM18 2540G	08/04/2020 14:41	08/04/2020 14:41	88.2		0.10	0.10	1	%	AKB

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

TCLP Metals by 6000/7000 Series Methods - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0045 - SW1311 Metals										
Blank (BDH0045-BLK1)				Prepared & Analyzed: 08/03/2020						
Extraction Fluid, Metals	1	0	#							
Blank (BDH0045-BLK2)				Prepared & Analyzed: 08/03/2020						
Extraction Fluid, Metals	2	0	#							
Blank (BDH0045-BLK3)				Prepared & Analyzed: 08/03/2020						
Extraction Fluid, Metals	1	0	#							
Batch BDH0054 - SW3010A										
Blank (BDH0054-BLK1)				Prepared: 08/04/2020 Analyzed: 08/05/2020						
Arsenic	ND	0.100	mg/L							
Barium	ND	5.00	mg/L							
Cadmium	ND	0.0400	mg/L							
Chromium	ND	0.100	mg/L							
Lead	ND	0.100	mg/L							
Selenium	ND	0.250	mg/L							
Silver	ND	0.100	mg/L							
LCS (BDH0054-BS1)				Prepared: 08/04/2020 Analyzed: 08/05/2020						
Arsenic	2.33	0.100	mg/L	2.50		93.3	80-120			
Barium	2.35	5.00	mg/L	2.50		93.9	80-120			
Cadmium	2.25	0.0400	mg/L	2.50		89.9	80-120			
Chromium	2.25	0.100	mg/L	2.50		90.2	80-120			
Lead	2.25	0.100	mg/L	2.50		90.2	80-120			
Selenium	2.25	0.250	mg/L	2.50		90.0	80-120			
Silver	0.422	0.100	mg/L	0.500		84.4	80-120			

Certificate of Analysis

Client Name: Cardno-Ashland
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Date Issued: 8/7/2020 4:12:04PM

TCLP Metals by 6000/7000 Series Methods - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BDH0054 - SW3010A

LCS Dup (BDH0054-BSD1)

Prepared: 08/04/2020 Analyzed: 08/05/2020

Arsenic	2.44	0.100	mg/L	2.50		97.6	80-120	4.47	20	
Barium	2.08	5.00	mg/L	2.50		83.2	80-120	12.1	20	
Cadmium	2.37	0.0400	mg/L	2.50		94.9	80-120	5.47	20	
Chromium	2.37	0.100	mg/L	2.50		94.9	80-120	5.11	20	
Lead	2.38	0.100	mg/L	2.50		95.3	80-120	5.51	20	
Selenium	2.38	0.250	mg/L	2.50		95.4	80-120	5.86	20	
Silver	0.374	0.100	mg/L	0.500		74.8	80-120	12.0	20	L

Matrix Spike (BDH0054-MS1)

Source: 20G1316-02

Prepared: 08/04/2020 Analyzed: 08/05/2020

Arsenic	2.28	0.100	mg/L	2.50	BLOD	91.3	75-125			
Barium	2.38	5.00	mg/L	2.50	BLOD	95.4	75-125			
Cadmium	2.19	0.0400	mg/L	2.50	BLOD	87.6	75-125			
Chromium	2.21	0.100	mg/L	2.50	BLOD	88.4	75-125			
Lead	2.24	0.100	mg/L	2.50	BLOD	89.4	75-125			
Selenium	2.22	0.250	mg/L	2.50	BLOD	88.9	75-125			
Silver	0.423	0.100	mg/L	0.500	BLOD	84.6	75-125			

Matrix Spike Dup (BDH0054-MSD1)

Source: 20G1316-02

Prepared: 08/04/2020 Analyzed: 08/05/2020

Arsenic	2.37	0.100	mg/L	2.50	BLOD	94.8	75-125	3.84	20	
Barium	2.51	5.00	mg/L	2.50	BLOD	100	75-125	5.17	20	
Cadmium	2.28	0.0400	mg/L	2.50	BLOD	91.2	75-125	4.05	20	
Chromium	2.28	0.100	mg/L	2.50	BLOD	91.3	75-125	3.24	20	
Lead	2.31	0.100	mg/L	2.50	BLOD	92.5	75-125	3.37	20	
Selenium	2.31	0.250	mg/L	2.50	BLOD	92.5	75-125	4.04	20	
Silver	0.436	0.100	mg/L	0.500	BLOD	87.3	75-125	3.11	20	

Batch BDH0096 - SW7470A

Certificate of Analysis

Client Name: Cardno-Ashland
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Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

TCLP Metals by 6000/7000 Series Methods - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0096 - SW7470A										
Blank (BDH0096-BLK1)				Prepared & Analyzed: 08/05/2020						
Mercury	ND	0.008	mg/L							
LCS (BDH0096-BS1)				Prepared & Analyzed: 08/05/2020						
Mercury	0.050	0.008	mg/L	0.0500		99.1	80-120			
LCS Dup (BDH0096-BSD1)				Prepared & Analyzed: 08/05/2020						
Mercury	0.048	0.008	mg/L	0.0500		96.0	80-120	3.26	20	
Matrix Spike (BDH0096-MS1)				Prepared & Analyzed: 08/05/2020						
Mercury	0.050	0.008	mg/L	0.0500	BLOD	100	80-120			
Matrix Spike Dup (BDH0096-MSD1)				Prepared & Analyzed: 08/05/2020						
Mercury	0.050	0.008	mg/L	0.0500	BLOD	101	80-120	0.864	20	

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Volatile Organic Compounds by GC - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0017 - SW5030B										
Blank (BDH0017-BLK1)				Prepared & Analyzed: 08/03/2020						
Benzene	ND	5.00	ug/kg							
Toluene	ND	5.00	ug/kg							
Ethylbenzene	ND	5.00	ug/kg							
m+p-Xylenes	ND	10.0	ug/kg							
o-Xylene	ND	5.00	ug/kg							
Xylenes, Total	ND	15.0	ug/kg							
<i>Surr: 2,5-Dibromotoluene (Surr PID)</i>	105		ug/L	100		105	80-120			
LCS (BDH0017-BS1)				Prepared & Analyzed: 08/03/2020						
Benzene	109	5.00	ug/kg	100		109	70-130			
Toluene	114	5.00	ug/kg	100		114	70-130			
Ethylbenzene	110	5.00	ug/kg	100		110	70-130			
m+p-Xylenes	226	10.0	ug/kg	200		113	70-130			
o-Xylene	120	5.00	ug/kg	100		120	70-130			
<i>Surr: 2,5-Dibromotoluene (Surr PID)</i>	109		ug/L	100		109	80-120			
Matrix Spike (BDH0017-MS1)				Source: 20H0004-06	Prepared & Analyzed: 08/03/2020					
Benzene	99.8	5.00	ug/kg	98.6	BLOD	101	70-130			
Toluene	104	5.00	ug/kg	98.6	BLOD	105	70-130			
Ethylbenzene	100	5.00	ug/kg	98.6	BLOD	101	70-130			
m+p-Xylenes	203	10.0	ug/kg	197	BLOD	103	70-130			
o-Xylene	108	5.00	ug/kg	98.6	BLOD	110	70-130			
<i>Surr: 2,5-Dibromotoluene (Surr PID)</i>	109		ug/L	100		109	80-120			
Matrix Spike Dup (BDH0017-MSD1)				Source: 20H0004-06	Prepared & Analyzed: 08/03/2020					
Benzene	93.8	5.00	ug/kg	97.5	BLOD	96.3	70-130	6.12	20	

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Volatile Organic Compounds by GC - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0017 - SW5030B										
Matrix Spike Dup (BDH0017-MSD1) Source: 20H0004-06 Prepared & Analyzed: 08/03/2020										
Toluene	97.7	5.00	ug/kg	97.5	BLOD	100	70-130	5.90	20	
Ethylbenzene	94.5	5.00	ug/kg	97.5	BLOD	96.9	70-130	5.71	20	
m+p-Xylenes	191	10.0	ug/kg	195	BLOD	98.2	70-130	6.09	20	
o-Xylene	102	5.00	ug/kg	97.5	BLOD	105	70-130	5.96	20	
<i>Surr: 2,5-Dibromotoluene (Surr PID)</i>	<i>108</i>		ug/L	<i>100</i>		<i>108</i>	<i>80-120</i>			

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Volatile Hydrocarbons by GC - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0017 - SW5030B										
Blank (BDH0017-BLK1)				Prepared & Analyzed: 08/03/2020						
TPH-Volatiles (GRO)	ND	0.10	mg/kg							
Surr: 2,5-Dibromotoluene (Surr FID)	104		ug/L	100		104	80-120			
LCS (BDH0017-BS1)				Prepared & Analyzed: 08/03/2020						
TPH-Volatiles (GRO)	1.00	0.10	mg/kg	1.00		100	70-130			
Surr: 2,5-Dibromotoluene (Surr FID)	102		ug/L	100		102	80-120			
Matrix Spike (BDH0017-MS1)				Source: 20H0004-06		Prepared & Analyzed: 08/03/2020				
TPH-Volatiles (GRO)	0.94	0.10	mg/kg	0.986	BLOD	94.9	70-130			
Surr: 2,5-Dibromotoluene (Surr FID)	106		ug/L	100		106	80-120			
Matrix Spike Dup (BDH0017-MSD1)				Source: 20H0004-06		Prepared & Analyzed: 08/03/2020				
TPH-Volatiles (GRO)	0.88	0.10	mg/kg	0.975	BLOD	90.5	70-130	5.85	20	
Surr: 2,5-Dibromotoluene (Surr FID)	107		ug/L	100		107	80-120			

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Semivolatile Hydrocarbons by GC - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0128 - SW3550C										
Blank (BDH0128-BLK1)				Prepared: 08/05/2020 Analyzed: 08/06/2020						
TPH-Semi-Volatiles (DRO)	ND	10.0	mg/kg							
<i>Surr: Pentacosane (Surr)</i>	3.37		mg/kg	5.00		67.5	45-160			
LCS (BDH0128-BS1)				Prepared: 08/05/2020 Analyzed: 08/06/2020						
TPH-Semi-Volatiles (DRO)	79.5	10.0	mg/kg	100		79.5	40-160			
<i>Surr: Pentacosane (Surr)</i>	3.27		mg/kg	5.00		65.3	45-160			
Matrix Spike (BDH0128-MS1)				Source: 20H0081-01		Prepared: 08/05/2020 Analyzed: 08/07/2020				
TPH-Semi-Volatiles (DRO)	72.5	10.0	mg/kg	100	13.6	58.9	40-160			
<i>Surr: Pentacosane (Surr)</i>	4.07		mg/kg	5.00		81.3	45-160			
Matrix Spike Dup (BDH0128-MSD1)				Source: 20H0081-01		Prepared: 08/05/2020 Analyzed: 08/07/2020				
TPH-Semi-Volatiles (DRO)	70.7	10.0	mg/kg	100	13.6	57.1	40-160	2.50	20	
<i>Surr: Pentacosane (Surr)</i>	4.02		mg/kg	5.00		80.3	45-160			

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Organochlorine Pesticides and PCBs by GC/ECD - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0082 - SW3550B										
Blank (BDH0082-BLK1)				Prepared & Analyzed: 08/04/2020						
PCB as Aroclor 1016	ND	0.100	mg/kg wet							
PCB as Aroclor 1221	ND	0.100	mg/kg wet							
PCB as Aroclor 1232	ND	0.100	mg/kg wet							
PCB as Aroclor 1242	ND	0.100	mg/kg wet							
PCB as Aroclor 1248	ND	0.100	mg/kg wet							
PCB as Aroclor 1254	ND	0.100	mg/kg wet							
PCB as Aroclor 1260	ND	0.100	mg/kg wet							
Surr: DCB	0.0315		mg/kg wet	0.0330		95.4	30-105			
Surr: TCMX	0.0258		mg/kg wet	0.0330		78.3	30-105			
LCS (BDH0082-BS1)				Prepared & Analyzed: 08/04/2020						
PCB as Aroclor 1016	0.136	0.100	mg/kg wet	0.167		81.9	60-140			
PCB as Aroclor 1260	0.156	0.100	mg/kg wet	0.167		93.5	60-140			
Surr: DCB	0.0290		mg/kg wet	0.0333		87.2	30-105			
Surr: TCMX	0.0226		mg/kg wet	0.0333		67.9	30-105			
Matrix Spike (BDH0082-MS1)				Source: 20G1247-02	Prepared & Analyzed: 08/04/2020					
PCB as Aroclor 1016	0.174	0.112	mg/kg dry	0.186	BLOD	93.4	60-140			
PCB as Aroclor 1260	0.182	0.112	mg/kg dry	0.186	BLOD	97.8	60-140			
Surr: DCB	0.0299		mg/kg dry	0.0372		80.5	30-105			
Surr: TCMX	0.0335		mg/kg dry	0.0372		90.0	30-105			
Matrix Spike Dup (BDH0082-MSD1)				Source: 20G1247-02	Prepared & Analyzed: 08/04/2020					
PCB as Aroclor 1016	0.165	0.110	mg/kg dry	0.183	BLOD	90.2	60-140	4.90	20	
PCB as Aroclor 1260	0.164	0.110	mg/kg dry	0.183	BLOD	89.6	60-140	10.1	20	
Surr: DCB	0.0285		mg/kg dry	0.0367		77.7	30-105			

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Organochlorine Pesticides and PCBs by GC/ECD - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BDH0082 - SW3550B

Matrix Spike Dup (BDH0082-MSD1) Source: 20G1247-02 Prepared & Analyzed: 08/04/2020

Surr: TCMX	0.0250	mg/kg dry	0.0367	68.1	30-105
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Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BDH0068 - No Prep Halides										
Blank (BDH0068-BLK1)				Prepared & Analyzed: 08/04/2020						
Extractable Organic Halides (EOX)	BLOD	10.0	mg/kg							
LCS (BDH0068-BS1)				Prepared & Analyzed: 08/04/2020						
Extractable Organic Halides (EOX)	96.3	10.0	mg/kg	100		96.3	80-120			
LCS Dup (BDH0068-BSD1)				Prepared & Analyzed: 08/04/2020						
Extractable Organic Halides (EOX)	95.7	10.0	mg/kg	100		95.7	80-120	0.687	20	
Duplicate (BDH0068-DUP1)				Prepared & Analyzed: 08/04/2020						
Extractable Organic Halides (EOX)	10.3	10.0	mg/kg		25.5			84.8	20	P
Matrix Spike (BDH0068-MS1)				Prepared & Analyzed: 08/04/2020						
Extractable Organic Halides (EOX)	95.3	10.0	mg/kg	100	BLOD	95.3	70-130			
Batch BDH0070 - No Prep Wet Chem										
Blank (BDH0070-BLK1)				Prepared & Analyzed: 08/04/2020						
Percent Solids	100	0.10	%							
Duplicate (BDH0070-DUP1)				Prepared & Analyzed: 08/04/2020						
Percent Solids	85.1	0.10	%		88.2			3.62	20	
Duplicate (BDH0070-DUP2)				Prepared & Analyzed: 08/04/2020						
Percent Solids	97.1	0.10	%		97.0			0.147	20	

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			Preparation Method:	No Prep Halides	
20G1316-01	10.0 g / 10.0 mL	SW9023	BDH0068	SDH0071	
20G1316-02	10.0 g / 10.0 mL	SW9023	BDH0068	SDH0071	
20G1316-03	10.0 g / 10.0 mL	SW9023	BDH0068	SDH0071	
20G1316-04	10.0 g / 10.0 mL	SW9023	BDH0068	SDH0071	
20G1316-05	10.0 g / 10.0 mL	SW9023	BDH0068	SDH0071	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			Preparation Method:	No Prep Wet Chem	
20G1316-01	10.0 g / 10.0 mL	SM18 2540G	BDH0070	SDH0074	
20G1316-02	10.0 g / 10.0 mL	SM18 2540G	BDH0070	SDH0074	
20G1316-03	10.0 g / 10.0 mL	SM18 2540G	BDH0070	SDH0074	
20G1316-04	10.0 g / 10.0 mL	SM18 2540G	BDH0070	SDH0074	
20G1316-05	10.0 g / 10.0 mL	SM18 2540G	BDH0070	SDH0074	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
TCLP Metals by 6000/7000 Series Methods			Preparation Method:	SW1311 Metals	
20G1316-01	100 g / 2000 mL	SW1311	BDH0045	SDH0047	
20G1316-02	100 g / 2000 mL	SW1311	BDH0045	SDH0047	
20G1316-03	100 g / 2000 mL	SW1311	BDH0045	SDH0047	
20G1316-04	100 g / 2000 mL	SW1311	BDH0045	SDH0047	
20G1316-05	100 g / 2000 mL	SW1311	BDH0045	SDH0047	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
TCLP Metals by 6000/7000 Series Methods			Preparation Method:	SW3010A	
20G1316-01	10.0 mL / 50.0 mL	SW6010D	BDH0054	SDH0115	AH00020

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
TCLP Metals by 6000/7000 Series Methods			Preparation Method: SW3010A		
20G1316-02	10.0 mL / 50.0 mL	SW6010D	BDH0054	SDH0115	AH00020
20G1316-03	10.0 mL / 50.0 mL	SW6010D	BDH0054	SDH0115	AH00020
20G1316-04	10.0 mL / 50.0 mL	SW6010D	BDH0054	SDH0115	AH00020
20G1316-05	10.0 mL / 50.0 mL	SW6010D	BDH0054	SDH0115	AH00020

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Organochlorine Pesticides and PCBs by GC/ECD			Preparation Method: SW3550B		
20G1316-01	30.4 g / 5.00 mL	SW8082A	BDH0082	SDH0097	AD00054
20G1316-02	30.5 g / 5.00 mL	SW8082A	BDH0082	SDH0097	AD00054
20G1316-03	30.7 g / 5.00 mL	SW8082A	BDH0082	SDH0097	AD00054
20G1316-04	30.4 g / 5.00 mL	SW8082A	BDH0082	SDH0097	AD00054
20G1316-05	30.7 g / 5.00 mL	SW8082A	BDH0082	SDH0097	AD00054

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Hydrocarbons by GC			Preparation Method: SW3550C		
20G1316-01	50.0 g / 1.00 mL	SW8015C	BDH0128	SDH0177	AG00052
20G1316-02	50.0 g / 1.00 mL	SW8015C	BDH0128	SDH0177	AG00052
20G1316-03	50.3 g / 1.00 mL	SW8015C	BDH0128	SDH0177	AG00052
20G1316-04	50.0 g / 1.00 mL	SW8015C	BDH0128	SDH0177	AG00052
20G1316-05	51.7 g / 1.00 mL	SW8015C	BDH0128	SDH0177	AG00052

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Hydrocarbons by GC			Preparation Method: SW5030B		
20G1316-01	5.04 g / 5.00 mL	SW8015C	BDH0017	SDH0024	AG00049
20G1316-02	5.05 g / 5.00 mL	SW8015C	BDH0017	SDH0024	AG00049
20G1316-03	5.11 g / 5.00 mL	SW8015C	BDH0017	SDH0024	AG00049
20G1316-04	1.10 g / 5.00 mL	SW8015C	BDH0017	SDH0024	AG00049

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Hydrocarbons by GC			Preparation Method:	SW5030B	
20G1316-05	5.12 g / 5.00 mL	SW8015C	BDH0017	SDH0024	AG00049
20G1316-01	5.04 g / 5.00 mL	SW8021B	BDH0017	SDH0024	AG00049
20G1316-02	5.05 g / 5.00 mL	SW8021B	BDH0017	SDH0024	AG00049
20G1316-03	5.11 g / 5.00 mL	SW8021B	BDH0017	SDH0024	AG00049
20G1316-04	1.10 g / 5.00 mL	SW8021B	BDH0017	SDH0024	AG00049
20G1316-05	5.12 g / 5.00 mL	SW8021B	BDH0017	SDH0024	AG00049

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
TCLP Metals by 6000/7000 Series Methods			Preparation Method:	SW7470A	
20G1316-01	1.00 mL / 20.0 mL	SW7470A	BDH0096	SDH0106	AH00021
20G1316-02	1.00 mL / 20.0 mL	SW7470A	BDH0096	SDH0106	AH00021
20G1316-03	1.00 mL / 20.0 mL	SW7470A	BDH0096	SDH0106	AH00021
20G1316-04	1.00 mL / 20.0 mL	SW7470A	BDH0096	SDH0106	AH00021
20G1316-05	1.00 mL / 20.0 mL	SW7470A	BDH0096	SDH0106	AH00021

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Certified Analyses included in this Report

Analyte	Certifications
SW1311 in Solids	
Extraction Fluid, Metals	VELAP
SW6010D in Non-Potable Water	
Arsenic	VELAP,WVDEP
Barium	VELAP,WVDEP
Cadmium	VELAP,WVDEP
Chromium	VELAP,WVDEP
Lead	VELAP,WVDEP
Selenium	VELAP,WVDEP
Silver	VELAP,WVDEP
SW7470A in Non-Potable Water	
Mercury	VELAP,WVDEP
SW8015C in Solids	
TPH-Semi-Volatiles (DRO)	VELAP,NC,WVDEP
TPH-Volatiles (GRO)	VELAP,NC,WVDEP
SW8021B in Solids	
Benzene	VELAP,WVDEP
Toluene	VELAP,WVDEP
Ethylbenzene	VELAP,WVDEP
m+p-Xylenes	VELAP,WVDEP
o-Xylene	VELAP,WVDEP
Xylenes, Total	VELAP,WVDEP
SW8082A in Solids	
PCB as Aroclor 1016	VELAP,NC
PCB as Aroclor 1221	VELAP,NC
PCB as Aroclor 1232	VELAP,NC

Certificate of Analysis

Client Name: Cardno-Ashland

Date Issued: 8/7/2020 4:12:04PM

Client Site I.D.: Four Mile Creek

Submitted To: John Voorhees

Certified Analyses included in this Report

Analyte	Certifications
PCB as Aroclor 1242	VELAP,NC
PCB as Aroclor 1248	VELAP,NC
PCB as Aroclor 1254	VELAP,NC
PCB as Aroclor 1260	VELAP,NC
SW9023 in Solids	
Extractable Organic Halides (EOX)	VELAP,WVDEP

Code	Description	Laboratory ID	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2020
NC	North Carolina DENR	495	12/31/2020
NJDEP	New Jersey DEP	VA015	06/30/2021
NYDOH	New York DOH Drinking Water	12096	04/01/2021
PADEP	NELAC-Pennsylvania Certificate #005	68-03503	10/31/2020
VELAP	NELAC-Virginia Certificate #10886	460021	06/14/2021
WVDEP	West Virginia DEP	350	11/30/2020

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Qualifiers and Definitions

J	The reported result is an estimated value.
L	LCS recovery is outside of established acceptance limits
P	Duplicate analysis does not meet the acceptance criteria for precision
RPD	Relative Percent Difference
Qual	Qualifiers
-RE	Denotes sample was re-analyzed
LOD	Limit of Detection
BLOD	Below Limit of Detection
LOQ	Limit of Quantitation
DF	Dilution Factor
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

CHAIN OF CUSTODY

PAGE 1 OF 1

Page 49 of 51

COMPANY NAME: <u>Cardno - Ashland</u>	INVOICE TO: <u>Cardno - Ashland</u>	PROJECT NAME/Quote #: <u>ATG Oronoco - Sediment</u>
CONTACT: <u>John Voorhees</u> VA 23045	INVOICE CONTACT: <u>Jermene Jeffrey</u>	SITE NAME: <u>Four Mile Creek</u> / <u>Wet Weight</u>
ADDRESS: <u>10988 Richardson Rd, Ashland</u>	INVOICE ADDRESS: <u>Same</u>	PROJECT NUMBER: <u>COA 408</u>
PHONE #: <u>804-798-6525</u>	INVOICE PHONE #: <u>Same</u>	P.O. #:
FAX #:	EMAIL: <u>john.voorhees@cardno.com</u>	Pretreatment Program:

Is sample for compliance reporting? YES ☒ NO ☐ Regulatory State: Is sample from a chlorinated supply? YES ☒ NO ☐ PWS I.D. #:

SAMPLER NAME (PRINT): SAMPLER SIGNATURE: Turn Around Time: Circle: 10 ☒ 5 Days or ___ Day(s)

Matrix Codes: WW=Waste Water/Storm Water GW=Ground Water DW=Drinking Water S=Soil/Solids, OR=Organic A=Air WP=Wipe OT=Other

CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	ANALYSIS / (PRESERVATIVE)						COMMENTS
											EOX SW-9023	DRO SW-8015	GRW SW-8015	BTEX SW-8021	PCB SW-8082 (Percent Solids)	TCLF Metals	
1) LB-1 (1)		X				7/30/20	11:47		S	3	X	X	X	X	X	X	
2) LB-2 (2)		X				7/30/20	12:15		S	3	X	X	X	X	X	X	
3) FMR-3 (3)		X				7/30/20	13:40		S	3	X	X	X	X	X	X	
4) FMR-4 (4)		X				7/30/20	13:25		S	3	X	X	X	X	X	X	
5) FMR-5 (5)		X				7/30/20	13:05		S	3	X	X	X	X	X	X	
6)																	
7)																	
8)																	
9)																	
10)																	

Preservative Codes: N=Nitric Acid
C=Hydrochloric Acid S=Sulfuric Acid
H=Sodium Hydroxide A=Ascorbic Acid
Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol

PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)

RELINQUISHED: <u>John All</u>	DATE / TIME: <u>7/31/20 15:17</u>	RECEIVED: <u>MAH 7/31/200 15:17</u>	DATE / TIME: <u>7/31/200 15:17</u>	QC Data Package	LAB USE ONLY Therm ID: <u>271</u>	COOLER TEMP <u>3.9</u> °C
RELINQUISHED:	DATE / TIME:	RECEIVED:	DATE / TIME:	Level III <input type="checkbox"/>	Custody Seals used and intact? (Y/N)	Received on ice? (Y/N)
RELINQUISHED:	DATE / TIME:	RECEIVED:	DATE / TIME:	Level IV <input type="checkbox"/>	MMA 20G1316	
				ATG Oronoco - Wet Weight Sediment		
				Recd: 07/31/2020 Due: 08/07/2020		

Where a purchaser (Client) places an order for laboratory, consulting or sampling services from Air Water & Soil Laboratories, Inc., a Virginia corporation (referred to as "Air Water & Soil"), Air Water & Soil shall provide the ordered services pursuant to these Terms and Conditions, and the related Quotation or Price Schedule, or as agreed in a negotiated contract. In the absence of a written agreement (referred to as "Air Water & Soil"), Air Water & Soil shall provide the ordered services pursuant to these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by Air Water & Soil in writing.

1.1 The Client may place the Order (i.e., specify a Scope of Work) either by submitting a purchase order to Air Water & Soil in writing or by telephone, then subsequently confirmed in writing, or by negotiated contract (i.e., particular samples must be accompanied by: a) adequate instruction on type of analyses requested; and b) complete written disclosure of the known or suspected presence of any hazardous substances as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosures, causes interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the cost of clean up and recovery. If the sample being analyzed has been previously analyzed, then laboratory results from such analysis shall be provided to the Client.

1.2 The Client shall provide one week's advance notice of the sample delivery schedule, or any changes to the schedule, whenever possible. Upon timely delivery of samples, Air Water & Soil will use its best efforts to meet mutually agreed turnaround times, but turnaround times are based on business days and will be calculated from the point in time when Air Water & Soil has determined that it can proceed with defined work following receipt, inspection of samples and resolution of any discrepancies in Chain-of-Custody forms and project guidance regarding work to be done (Sample Delivery Acceptance), in the event of any changes in the sample delivery schedule by the Client, prior to Sample Delivery Acceptance. Air Water & Soil reserves the right to modify its turnaround time commitment, to change the date upon which Air Water & Soil will accept samples or refuse samples. ~~Client's liability for any delays or non-compliance with the schedule shall be limited to the cost of the sample delivery.~~

1.2.1 Turn around times are defined as follows: Any sample group requiring a turnaround time of less than five(5) business days will be considered a "Rush Turn Around Time". Rush Turnaround samples received after 3:00pm will be considered as received on the next business day.

1.4 Prior to Sample Delivery Acceptance, the entire risk of loss or damage to samples remains with the Client, except where Air Water & Soil provides courier services. In no event will Air Water & Soil have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from Air Water & Soil's premises. The Client is responsible for assuring that any sample containing any hazardous or not such substance has been disclosed to Air Water & Soil by the Client, or c) holding times cannot be met, due to passage of more than 48 hours from the time of sampling or 1/2 the holding time for the requested test, whichever is less.

2.1 Services performed by Air Water & Soil will be in accordance quoted and later confirmed in writing or as stated in the Price Schedule. Quoted prices do not include sales tax. Applicable sales tax will be added to invoices where required by law. An Environmental Management Fee of 5% of the invoice value will also be applied, at Air Water & Soil's discretion.

2.2 Invoices may be submitted to the Client upon completion of any sample delivery group. Billing corrections must be requested within 30 days of invoice date. Payment in advance is required for all Clients except those who are billed monthly.

2.3 Air Water & Soil may suspend work and withhold delivery of this order at any time in the event the Client fails to make timely payment of its invoices. The Client shall be responsible for all costs and expenses incurred directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party, which acknowledges and accepts payment responsibility. Invoices and service charges of one and one half percent (1.5%) for the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. All fees are charged or assessed upon completion of work and are subject to adjustment if the Client fails to pay its invoice within the specified time period.

3.1. Changes to the Scope of Work, price or result/delivery date may be initiated by Air Water & Soil after Sample Delivery Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. Air Water & Soil will not proceed with such changes until an agreement with the Client is reached, and documented, on the amount of any cost, schedule change or technical change to the Scope of Work. Email communications are acceptable, but must be followed up with written documentation.

3.2. Changes to the Scope of Work, including but not limited to, expansion or decreasing the work, changing test and analysis specification or acceptance in the performance of the work, may be initiated by the Client after the Client offers to pay for the change.

feasibility and operational capacity. Such a change will be documented in writing and may result in a change in cost and turnaround time commitment. Air Water & Soil's acceptance of such changes is contingent upon technical sample delivery acceptance. 3.3 Suspension or termination of all or any part of the work may be initiated by the Client. Air Water & Soil will be compensated consistent with Section 2 of these Terms and Conditions. Air Water & Soil will complete all work in progress and be paid in full for all work completed. 4. WARRANTIES AND LIABILITY

4.1 Where applicable, Air Weyer & Soil will use analytical methodologies which are in substantial conformity with published test methods that have been implemented in Air Weyer & Soil's Laboratory Quality Manual and referenced Standard Operating Procedures. Air Weyer & Soil reserves the right to deviate from these methodologies, based on its reasonable judgment, as necessary or appropriate where the nature or composition of the sample requires it. The deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or Air Weyer & Soil's Laboratory Quality Manuals. The Client may request that Air Weyer & Soil perform according to a mutually agreed Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, Air Weyer & Soil will proceed with analyses under its standard operating procedures. Air Weyer & Soil will not be responsible for QAPPs in the event that changes to test methods that requested to comply with a referenced analytical QAPP are not made in a timely manner.

4.2 Air Water & Soil shall start preparation and/or analysis within holding times provided that Sample Delivery Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less. Where resolution of inconsequence leading to Sample Delivery Acceptance does not occur within this period, Air Water & Soil will use its best efforts to meet or exceed holding times with the work provided that, in Air Water & Soil's judgment, the chain-of-custody or definition of the scope of work provide sufficient guidance. Reanalysis of samples to comply with Air Water & Soil's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty

4.3 Air Water & Soil warrants that it possesses and maintains all licenses and certifications which are required to perform services under these Terms and Conditions, provided that such requirements are specified in writing to Air Water & Soil prior to Sample Delivery Acceptance.

4.4 The warranty obligations set forth in Sections 4.1, 4.2, and 4.3 are the sole and exclusive warranties given by Air Water & Soil in connection with any services performed by Air Water & Soil or any Results generated from such services. Air Water & Soil makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of Air Water & Soil is authorized to give or make any

4.5 The Client's sole and exclusive remedy for the breach of warranty in connection with any services performed by Air Water & Soil, will be limited to repeating any services performed, contingent on the Client's providing, at the request of Air Water & Soil and at the Client's expense, additional samples (if necessary, any reanalysis requested by the Client generating Results consistent with the original Results will be at the Client's expense. If re-sampling is necessary, Air Water & Soil's liability for re-sampling costs will be limited to actual cost or one hundred and fifty dollars (\$150) per sample, whichever is less.

4.6 Air Water & Soil's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services

4.7 In no event shall Air Water & Soil have any reports prepared, performed or by application or use of the reports prepared, arising in connection with (including negotiating, negotiating), or otherwise, shall Air Water & Soil be deemed responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

5. RESULTS, WORK PRODUCT

5.1. Data or information provided to Air Water & Soil or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by Air Water & Soil of payment for the whole Order. Ownership of any analytical method, QAC protocols, software programs or equipment developed by Air Water & Soil for performance of work will be retained by Air Water & Soil, and the Client shall not disclose or use such information for the whole Order.

such information to any third party.
5.3 Data and sample materials provided by the Client, or at the Client's request, and the result obtained by Air Water & Soil shall be held in confidence (unless such information is generally available to the public or is in the public domain or the Client has failed to pay Air Water & Soil for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.
5.3 Should the Results delivered by Air Water & Soil be used by the Client or the Client's client, even though subsequently deemed defective, not to meet the warranties described in these Terms and Conditions, then the Client shall indemnify Air Water & Soil for all damages, including reasonable attorneys' fees, that the Client may incur in connection with the Client's defense of such claim, and the Client shall not be responsible for the data delivered by Air Water & Soil.

5.4 Air Water & Soil reserves the right to subcontract services ordered by the Client to another laboratory or laboratory, if, in Air Water & Soil's sole judgment, it is reasonably necessary, appropriate or advisable to do so. Air Water & Soil will be liable for any subcontracted services except for work performed at laboratories which have been audited and approved by Air Water & Soil.

5.5 Air Water & Soil shall dispose of the Client's samples 30 days after receipt of samples. 15 days after receipt of samples for BOD, COD and TSS analyses, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable (federal, state or local) requirements. Any samples for projects that are cancelled or terminated by the Client shall be disposed of in the Client's own sample or treated sample container. Air Water & Soil shall dispose of the Client's samples in the Client's own sample or treated sample container. Any samples for projects that are cancelled or terminated by the Client shall be disposed of in the Client's own sample or treated sample container. Air Water & Soil shall dispose of the Client's samples in the Client's own sample or treated sample container. Any samples for projects that are cancelled or terminated by the Client shall be disposed of in the Client's own sample or treated sample container.

Water & Soil's permitted capability or the capabilities of Air Water & Soil's designated waste disposal vendors) 5.7 Unless a different time period is agreed under these Terms and Conditions, Air Water & Soil agrees to retain all records for five (5) years in the event that Air Water & Soil is required to respond to legal process related to services for the Client, the Client agrees to reimburse Air Water & Soil for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

6.1. Any Water & Soil shall maintain in force during the performance of services under these Terms and Conditions, Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over Air Water & Soil's employees, who are engaged in the performance of the work. Air Water & Soil shall also maintain during such period, Comprehensive General and Contractual Liability (limit of \$1,000,000 per occurrence/aggregate), and Professional Automobile Liability, owned and hired, (\$1,000,000 combined single limit), and Professional Pollution Liability Insurance (limit of \$1,000,000 per occurrence/aggregate).

7.1 Upon prior notice to Air Water & Soil, the Client may audit and inspect Air Water & Soil's records and accounts covering reimbursable costs related to work done for the Client, for a period of two (2) years after completion of the work. The purpose of any such audit shall be only for verification of such costs, and Air Water & Soil shall not be required to provide access to cost records where prices are expressed as fixed fees or published unit prices.

1. These Terms and Conditions, together with any additional or separate agreements or transactions which may be agreed to in writing by Air Walter & Soil, including the mid-air agreement of the parties and printed or handwritten, typed, or printed terms, conditions, undertakings, obligations or representations other than those contained herein, These Terms and Conditions shall supersede all previous communications, representations, or agreements, either verbal or written, between the Client and Air Walter & Soil. These Terms and Conditions, and any transactions or agreements to which they apply, shall be governed both as to interpretation and performance by the laws of the state where Air Walter & Soil's services are performed.

2. The invalidity or unenforceability of the remainder of these Terms and Conditions, shall not affect in any way the validity or enforceability of the remainder of these Terms and Conditions, the intent of the

parties being that the provisions are severable. The section headings of these Terms and Conditions are intended solely for convenience reference and shall not affect, limit or alter in any way these Terms and Conditions or their interpretations. No waiver by either party of any provision, term or condition hereof or of any obligation of the other party hereunder shall constitute a waiver of any subsequent breach or other obligation. 8.3 The obligations, liabilities, damages and compensation payable hereunder shall be exclusive and in lieu of any other claims or damages available at law or in equity. Indemnifications, releases from liability and limitations of liability shall apply, notwithstanding the fault, negligence or strict liability of the party to be indemnified, released, or whose liability is limited, the extent of sole negligence or willful misconduct.

Certificate of Analysis

Client Name: Cardno-Ashland
Client Site I.D.: Four Mile Creek
Submitted To: John Voorhees

Date Issued: 8/7/2020 4:12:04PM

Sample Conditions Checklist

Samples Received at:	3.90°C
How were samples received?	Walk In
Were Custody Seals used? If so, were they received intact?	No
Are the custody papers filled out completely and correctly?	Yes
Do all bottle labels agree with custody papers?	Yes
Is the temperature blank or representative sample within acceptable limits or received on ice, and recently taken?	Yes
Are all samples within holding time for requested laboratory tests?	Yes
Is a sufficient amount of sample provided to perform the tests included?	Yes
Are all samples in appropriate containers for the analyses requested?	Yes
Were volatile organic containers received?	No
Are all volatile organic and TOX containers free of headspace?	NA
Is a trip blank provided for each VOC sample set? VOC sample sets include EPA8011, EPA504, EPA8260, EPA624, EPA8015 GRO, EPA8021, EPA524, and RSK-175.	NA
Are all samples received appropriately preserved? Note that metals containers do not require field preservation but lab preservation may delay analysis.	Yes

Work Order Comments

Four Mile Run Sediments

APPENDIX

D

PHOTOGRAPHS



Most Common Size Cobble in Dredge Area



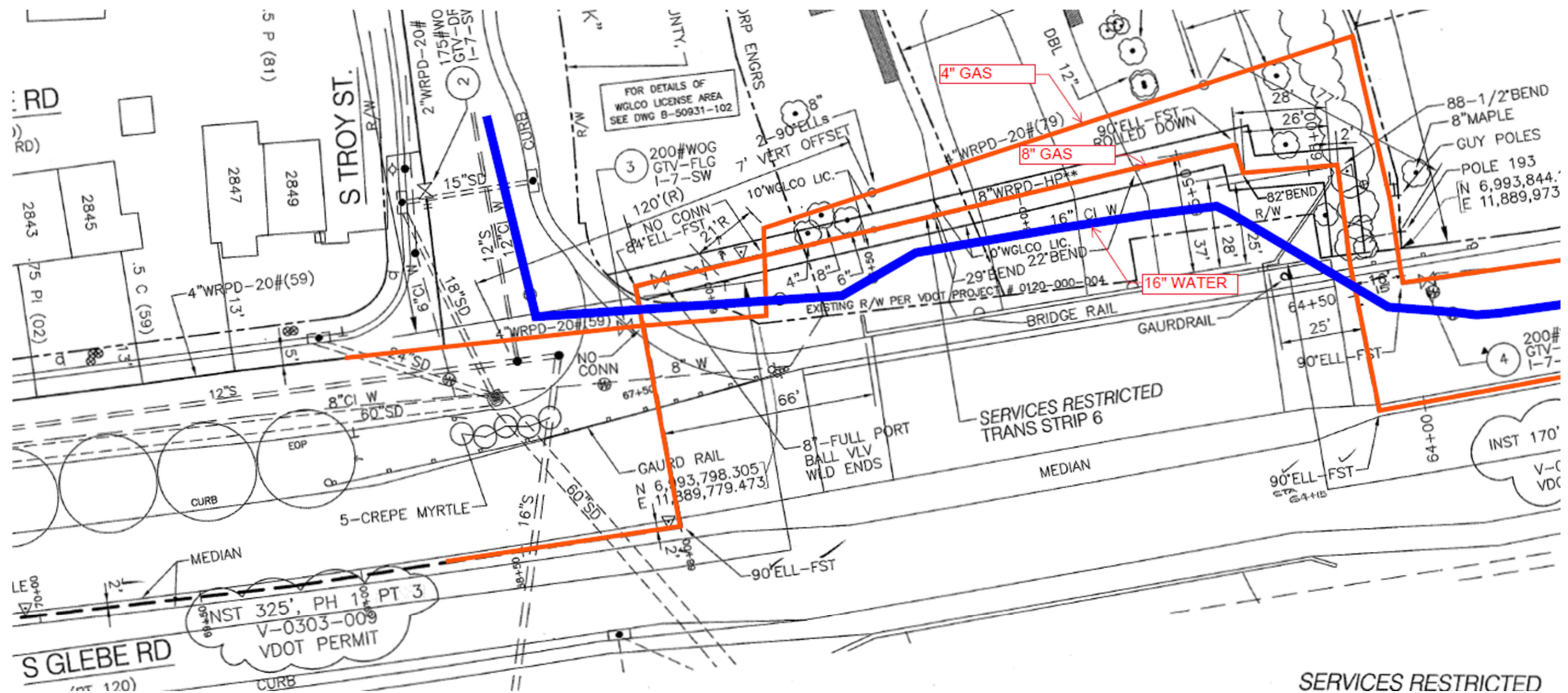
Larger Size Rock in Dredge Area



General View of Cobbles

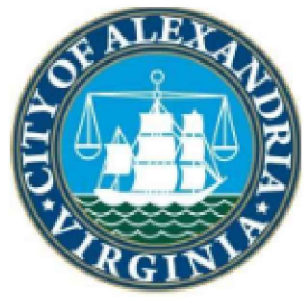


General View of Cobbles



SERVICES RESTRICTED

ARLINGTON
VIRGINIA



OWNER
DEPARTMENT OF
ENVIRONMENTAL SERVICES

Engineering and Capital Projects Division
Engineering Bureau
2100 Clarendon Boulevard, Suite 813, Arlington, VA 22201
Phone: 703.228.3629 Fax: 703.228.3606 www.arlingtonva.us

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OWNER
DEPARTMENT OF TRANSPORTATION &
ENVIRONMENTAL SERVICES

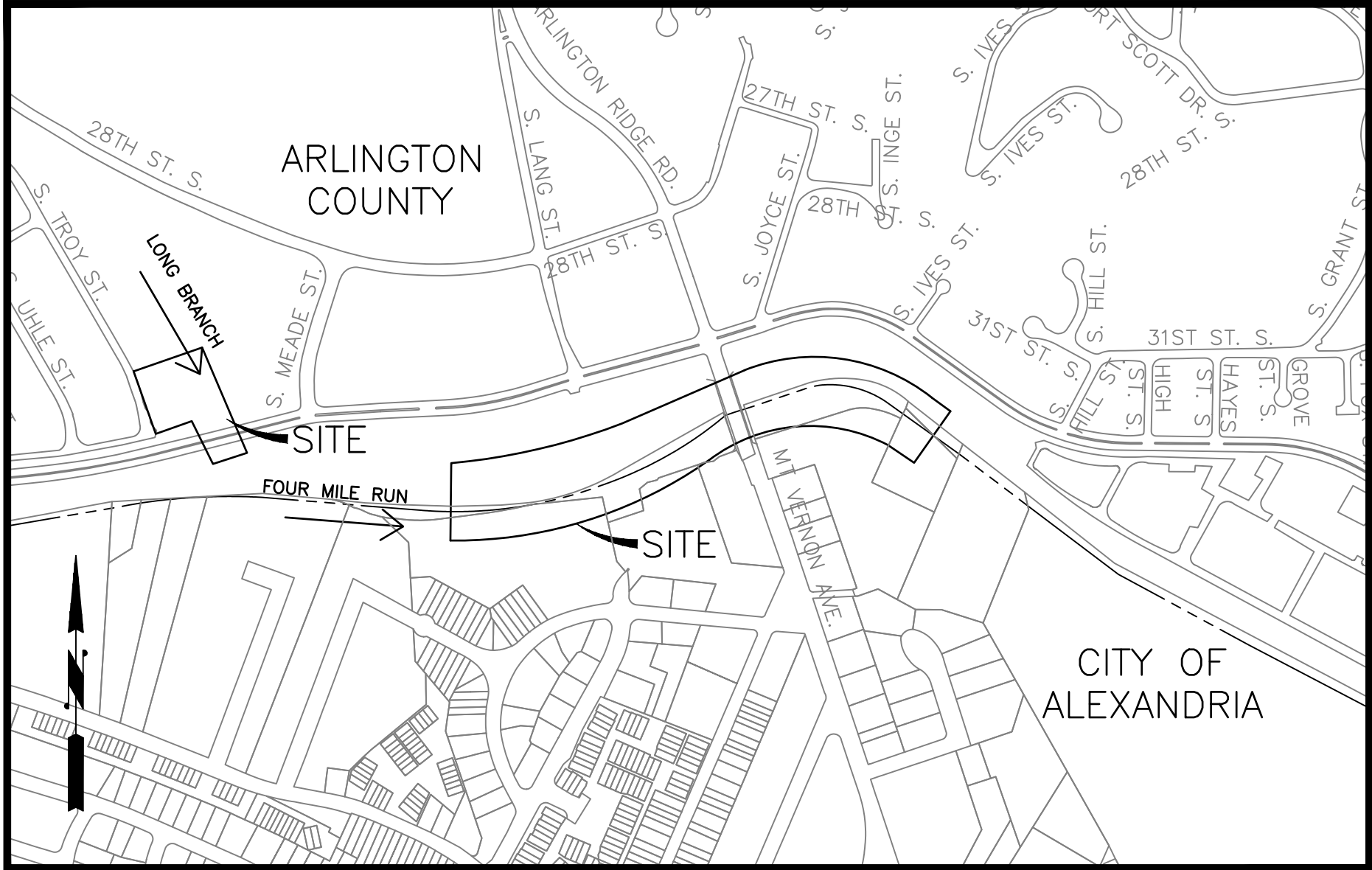
Stormwater Management Division
301 King Street, Room 4100, Alexandria, VA 22314
Phone: 703.746.4057 www.alexandriava.gov

CONSULTANT
RK&K, LLP

12600 FAIR LAKES CIRCLE, SUITE 300
FAIRFAX, VA 22033
PHONE: 703.246.0028

CONTRACTOR
TO BE DETERMINED

Location Map
Scale: 1"=500'
Vicinity



ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

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SEAL



APPROVALS DATE

Ankur Patal 07/19/21
DESIGN TEAM ENGINEER SUPERVISOR
Kamal Taktak 8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR
07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF
Dennis M. Leach 07/21/20
TRANSPORTATION DIRECTOR
Michael Gallo 07/21/21
PROJECT MANAGER

REVISIONS DATE

General Notes for Arlington County Related Works:

GENERAL CONSTRUCTION NOTES

1. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. ALL CONSTRUCTION WORK FOR THIS PROJECT SHALL CONFORM TO THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES, CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND WHERE APPLICABLE THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS, AND ROAD AND BRIDGE STANDARDS. THE LATEST EDITIONS OF EACH RELEVANT MANUAL SHALL BE USED.
3. ALL CONSTRUCTION AND WORK ACTIVITIES SHALL COMPLY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL AND ALL OTHER RELEVANT WORK SAFETY REQUIREMENTS, LATEST EDITIONS.
4. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 811 FOR MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES (i.e. WATER, SEWER, GAS, TELEPHONE, ELECTRIC, AND CABLE TV) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO IDENTIFY AND PROTECT ALL OTHER UTILITY LINES FOUND IN THE WORK SITE AREA BELONGING TO OTHER OWNERS THAT ARE NOT MEMBERS OF "MISS UTILITY". PRIVATE WATER AND/OR SEWER LATERALS WILL NOT BE MARKED BY MISS UTILITY OR THE COUNTY. THE CONTRACTOR WILL BE EXPECTED TO LOCATE AND PROTECT THESE SERVICES DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT THE WORK AND SHALL RETAIN A PROFESSIONAL LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA TO PROVIDE ALL NECESSARY CONSTRUCTION LAYOUTS AND ESTABLISH ALL CONTROL LINES, GRADES, AND ELEVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A COPY OF ALL CUT SHEETS FOR REVIEW, PER THE SPECIFICATIONS. THE COST OF ALL NECESSARY SURVEYING SERVICES SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND, UNLESS OTHERWISE SPECIFIED, THE COST SHALL BE INCORPORATED INTO THE COSTS FOR RELEVANT ITEMS.
6. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS ARE FROM BEST AVAILABLE RECORDS AND SHALL BE CONSIDERED TO BE APPROXIMATE. WHEN CONSTRUCTION ACTIVITY REACHES IN PROXIMITY TO EXISTING UTILITIES, THE TRENCH(ES) SHALL BE OPENED A SUFFICIENT DISTANCE AHEAD OF THE WORK OR TEST PITS SHALL BE MADE TO VERIFY THE EXACT LOCATION AND INVERTS OF THE UTILITY TO ALLOW FOR POSSIBLE CHANGES IN THE LINE OR GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING UTILITIES AND THE RELATED STRUCTURES. ALL EXISTING UTILITY SYSTEMS SHALL BE PROTECTED TO PREVENT DAMAGE DURING THE CONTRACTOR'S OPERATIONS. ANY SYSTEM DAMAGED SHALL BE PROMPTLY REPAIRED AT NO COST TO THE OWNER.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT OFFICER OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE APPROVED PLANS.
7. EXISTING MANHOLE FRAMES, COVERS, VALVE BOXES, AND OTHER APPURTENANCES SHALL BE ADJUSTED TO THE FINAL GRADE OR REPLACED, AS NECESSARY. UNLESS OTHERWISE SPECIFIED, THE COST FOR THIS SHALL BE CONSIDERED INCIDENTAL TO THE WORK, AND SHALL BE INCORPORATED INTO THE COSTS FOR RELEVANT ITEMS.
8. THE CONTRACTOR SHALL PROVIDE ADA COMPLIANT ACCESS THROUGH OR AROUND THE SITE AT ALL TIMES AND SHALL ENSURE THE SAFETY OF ALL THOSE PASSING THROUGH OR ADJACENT TO THE SITE.

STORMWATER AND ENVIRONMENTAL PROTECTION

9. THE CONTRACTOR SHALL CONFINE ALL ACTIVITIES AT THE SITE ASSOCIATED WITH CONSTRUCTION ACTIVITIES, TO INCLUDE STORAGE OF EQUIPMENT AND OR MATERIALS, ACCESS TO THE WORK, FORMWORK, ETC. TO WITHIN THE DESIGNATED LIMITS OF DISTURBANCE (LOD).
10. THE CONTRACTOR SHALL PROTECT EXISTING DRAINAGE FACILITIES (TO INCLUDE CURB AND GUTTER) AND WATERWAYS FROM ADVERSE IMPACTS PER SECTION 01500 OF THE ARLINGTON COUNTY STANDARDS & SPECIFICATIONS.
11. ANY WORK WITHIN A RESOURCE PROTECTION AREA (RPA) SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 61 OF THE COUNTY CODE (THE CHESAPEAKE BAY PRESERVATION ORDINANCE).

TREE PROTECTION

12. THE CONTRACTOR SHALL CONFINE ALL ACTIVITIES AT THE SITE ASSOCIATED WITH TREE ACTIVITIES, TO

INCLUDE REMOVAL OF INVASIVE TREES, TO WITHIN THE DESIGNATED LIMITS OF DISTURBANCE (LOD).

13. NO TREES SHALL BE REMOVED OR OTHERWISE AFFECTED UNLESS CLEARLY MARKED ON THE APPROVED PLAN.
14. TREES SHALL BE PROTECTED PER THE REQUIREMENTS OF SECTION 02100 - CLEARING AND GRUBBING

TRAFFIC CONTROL

15. CONTRACTOR SHALL NOTIFY THE PROJECT OFFICER AT LEAST 3 WORKING DAYS PRIOR TO DISTURBING ANY EXISTING, OR INSTALLING ANY NEW, TRAFFIC SIGNS, SIGNALS, OR OTHER TRAFFIC CONTROL DEVICES.
16. THE CONTRACTOR SHALL PREMARK THE LAYOUT OF ANY PERMANENT TRAFFIC CONTROL STRIPING, INDICATING THE PROPOSED LOCATION AND TYPE OF MARKING TO BE INSTALLED. THE PREMARKING MAY CONSIST OF TYPE D TAPE, CHALK, OR LUMBER CRAYONS. THE CONTRACTOR SHALL ALLOW 3 WORKING DAYS FOR THE INSPECTION AND APPROVAL OF THE PREMARKINGS PRIOR TO PLACING THE PERMANENT MARKINGS.
17. THE CONTRACTOR SHALL SUBMIT ANY REQUESTS FOR TEMPORARY "NO PARKING" RESTRICTIONS TO THE PROJECT OFFICER AT LEAST 3 WORKING DAYS PRIOR TO THE DESIRED ONSET OF RESTRICTIONS.
18. THE CONTRACTOR SHALL PRESERVE ALL BUS STOPS, INCLUDING MAINTAINING ADEQUATE ACCESS THROUGH AND ADJACENT TO THE CONSTRUCTION FOR BUSES AND THEIR PASSENGERS. THE CONTRACTOR SHALL NOT CLOSE, RELOCATE, OR OTHERWISE MODIFY A BUS STOP WITHOUT PRIOR REQUEST OF THE PROJECT OFFICER. TYPICALLY ANY RELOCATION OR CLOSURE OF A BUS STOP WILL REQUIRE AT LEAST FOUR WEEKS ADVANCE NOTICE FOR COORDINATION WITH THE COUNTY'S BUS STOP COORDINATOR, WHO SHALL BE NOTIFIED AT 703-228-3049.
19. WHEN CONDITIONS WARRANT DUE TO TRAFFIC VOLUMES, PATTERNS, OR SPECIAL EVENTS, THE COUNTY MAY SUSPEND OR OTHERWISE DIRECT THE CONTRACTOR'S ACTIVITIES TO PROTECT THE PUBLIC AND OR THE COUNTY'S TRANSPORTATION NETWORK.

WATER DISTRIBUTION, STORM, AND SANITARY SEWER SYSTEMS

20. UNLESS OTHERWISE DIRECTED, CONTRACTORS ARE EXPRESSLY PROHIBITED FROM OPERATING ANY WATER VALVES OR APPURTENANCES. CONTRACTORS SHALL SUBMIT ALL REQUESTS FOR VALVE OPERATIONS TO THE PROJECT OFFICER AT LEAST 3 WORKING DAYS IN ADVANCE OF THE REQUIRED OPERATION.
21. IN THE EVENT OF A WATER OR SEWER EMERGENCY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY'S WATER CONTROL CENTER AT 703-228-5555 AND THE PROJECT OFFICER.
22. STORM OR SANITARY SEWERS AND APPURTENANCES TO BE ABANDONED SHALL BE EXCAVATED AND REMOVED, OR ABANDONED AS DETAILED IN THE COUNTY'S STANDARDS AND SPECIFICATIONS.

WORK WITHIN A VDOT RIGHT OF WAY

23. WHEN REQUIRED FOR THE WORK, AN APPROVED VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) PERMIT WILL BE PROVIDED BY THE COUNTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO AND IMPLEMENTING ALL PERMIT REQUIREMENTS.
24. THE CONTRACTOR SHALL HAVE AT LEAST ONE EMPLOYEE ON-SITE CERTIFIED BY VDOT IN BASIC WORK ZONE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR THE PLACEMENT, MAINTENANCE AND REMOVAL OF WORK ZONE TRAFFIC CONTROL DEVICES WITHIN THE PROJECT LIMITS IN COMPLIANCE WITH THE PERMIT REQUIREMENTS AND CONDITIONS, THE APPROVED PLANS, SPECIFICATIONS, THE VIRGINIA WORK AREA PROTECTION MANUAL AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
25. THE CONTRACTOR SHALL HAVE AT LEAST ONE EMPLOYEE ON-SITE WHO HAS COMPLETED VDOT EROSION AND SEDIMENT CONTROL, CONTRACTOR CERTIFICATION TRAINING AND WILL BE RESPONSIBLE FOR INSURING COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS DURING ALL LAND DISTURBANCE ACTIVITIES.
26. THE CONTRACTOR SHALL NOT ACCESS THE SITE FROM EXISTING LIMITED ACCESS ROADWAYS

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RELEASED
**TRANSPORTATION &
ENVIRONMENTAL SERVICES**
BRIAN DOFFLEMYER
DEVELOPMENT REVIEW MANAGER
DATE: 9/21/2021
STAFF: F.Montoney

As-Built:

I CERTIFY THAT THIS PROJECT WAS BUILT IN SUBSTANTIAL CONFORMANCE WITH THIS PLAN, UNLESS DULY NOTED IN THE ABOVE REVISION BLOCK.

PROJECT MANAGER	DATE
CONSTRUCTION MANAGER	DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES.	
APPROVED	09/21/2021
X [Signature]	DATE:
DIRECTOR	
RECOMMENDED FOR APPROVAL	
X [Signature]	09/21/2021
X	DATE:
DEPUTY DIRECTOR OF OPERATIONS	
RECOMMENDED FOR APPROVAL	
X [Signature]	09/21/2021
X	DATE:
DEPUTY DIRECTOR OF INFRASTRUCTURE & ENVIRONMENTAL QUALITY	
RECOMMENDED FOR APPROVAL	
X [Signature]	09/21/2021
X	DATE:
DEPUTY DIRECTOR OF RIGHT-OF-WAY & DEVELOPMENT SERVICES	
RECOMMENDED FOR APPROVAL	
X [Signature]	09/21/2021
X	DATE:
DEPUTY DIRECTOR OF TRANSPORTATION	
DEPARTMENT OF PROJECT IMPLEMENTATION	
APPROVED	
X [Signature]	DATE: 09/09/21
DIRECTOR	
RECOMMENDED FOR APPROVAL	
X [Signature]	DATE: 9/21/21
X	DATE:
DIVISION CHIEF Matthew V Landes, PLA	

COVER SHEET
& GENERAL NOTES (ARLINGTON)

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF
PLOTTED: AUGUST 23 2021

SCALE:

SHEET 01 of 32

FOUR MILE RUN DREDGE PROJECT

General Notes for City of Alexandria Related Works:

EXISTING CONDITIONS SURVEY NOTES

- HORIZONTAL DATUM: NAD 1983
VERTICAL DATUM: NAVD 1988
- UTILITY INFORMATION, AS SHOWN ON THIS PLAN, IS TAKEN FROM THE RECORDS AND/OR FIELD SURVEY PROVIDED BY THE CITY OF ALEXANDRIA (DATED 05/15/2018) OR ARLINGTON COUNTY (DATED 09/26/2019); AND CANNOT BE GUARANTEED. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-257-7777, 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.
- LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHOULD DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS TO VERIFY EXACT LOCATION.

CITY STANDARD GENERAL NOTES

- "CITY" MEANS THE CITY OF ALEXANDRIA, A MUNICIPAL CORPORATION OF VIRGINIA AND ITS AUTHORIZED REPRESENTATIVES AND EMPLOYEES.
- TOTAL LIMIT OF WORK: 373,959.0 SQUARE FEET OR 8.58 ACRES OF WHICH 373,959.0 SQUARE FEET OR 8.58 ACRES WILL BE DISTURBED WITH THIS PROJECT. 16,444 CUBIC YARDS OF SEDIMENT WILL BE DREDGED FROM FOUR MILE RUN AND 1,538 CY WILL BE DREDGED FROM LONG BRANCH.
- THE NATURAL SOILS AT THE SITE CONSIST OF HYDROLOGIC SOIL GROUP TYPES C AND D.
- THE SITE IS LOCATED IN THE FOUR MILE RUN WATERSHED.
- THE SUBJECT PROPERTY LIES WITHIN A CITY OF ALEXANDRIA RESOURCE PROTECTION AREA.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR CONSTRUCTION.
- ALL NEW CONSTRUCTION WILL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA AND/OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.
- ALL IMPROVEMENTS TO THE CITY RIGHT-OF-WAY SUCH AS CURB, GUTTER, SIDEWALK, AND DRIVEWAY APRONS, ETC., SHALL BE CONSTRUCTED PER THE PROJECT TECHNICAL SPECIFICATIONS, PROJECT DETAILS AND THE CITY OF ALEXANDRIA STANDARDS MANUAL.
- ALL STREET CUT AND PATCH WORK LOCATED IN PUBLIC RIGHT-OF-WAYS, REQUIRED FOR ANY UTILITY INSTALLATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS AND TO THE SATISFACTION OF THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES).
- ALL EROSION AND SEDIMENTATION CONTROL SHALL BE PLACED AND MAINTAINED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA AND/OR VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).
- ANY WORK IN THE PUBLIC RIGHT OF WAY SHALL REQUIRE A SEPARATE PERMIT FROM THE CITY.
- COMPACTION OF BACKFILL IN UTILITY TRENCHES SHALL BE IN ACCORDANCE WITH THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS.
- ALL SANITARY SEWERS SHALL BE CONSTRUCTED TO THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS.
- ALL STORM SEWERS SHALL BE CONSTRUCTED TO THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS.
- ALL WATER FACILITY CONSTRUCTION SHALL CONFORM TO VIRGINIA AMERICAN WATER COMPANY STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL CONTACT VIRGINIA AMERICAN WATER COMPANY AT (703) 549-7080 TO COORDINATE CONSTRUCTION AND INSPECTION OF WATER FACILITIES.
- ELECTRIC POWER IS PROVIDED BY DOMINION VIRGINIA POWER.
- THERE IS NO OBSERVABLE EVIDENCE OF CEMETERIES OR BURIAL GROUNDS ON THIS PROJECT.
- A SEPARATE PERMIT IS REQUIRED FOR SIGN CONSTRUCTION.
- SHOULD UTILITY CONSTRUCTION BE PERFORMED AFTER COMPLETING EARTHWORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACHIEVING 98 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1551) COMPACTION IN ALL TRENCH BACKFILL.
- FOR PROJECTS WITH DISTURBED AREAS GREATER THAN 2500 SF, THE CONTRACTOR MUST PROVIDE THE NAME OF THE RESPONSIBLE LAND DISTURBER (RLD) AND A CURRENT CERTIFICATION FOR THE SAME INDIVIDUAL PRIOR TO THE PRE-CONSTRUCTION MEETING. THE CERTIFICATION MUST BE IN EFFECT FOR THE DURATION OF THE PROJECT.
- GAS SERVICE IS PROVIDED BY WASHINGTON GAS.

ARCHAEOLOGY NOTES

- THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.
- THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.

CODE

C-1 ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE ZONING ORDINANCE.

DEMOLITION NOTES

- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY UPON ENCOUNTERING ANY HAZARDOUS MATERIALS DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL DOCUMENT SAME TO THE CITY AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
- PRIOR TO REMOVAL OF MATERIALS OVER EXISTING UTILITY SYSTEMS, THE CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS AND, IF AT VARIANCE WITH CONDITIONS AS REPRESENTED ON THE PLANS, NOTIFY THE CITY AND OBTAIN DIRECTION(S) TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
- THE CONTRACTOR SHALL PROTECT AND PREVENT DAMAGE TO EXISTING ON-SITE UTILITY DISTRIBUTION FACILITIES. ACTIVE UTILITY DISTRIBUTION FACILITIES ENCOUNTERED DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES SHALL BE SHUT OFF AT THE SERVICE MAIN WITH THE APPROVAL OF THE CITY.
- DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY UPON ENCOUNTERING ANY EXISTING UTILITIES AND/OR UTILITY SYSTEM STRUCTURES NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL DOCUMENT SAME TO THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
- CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING FOR ALL ITEMS AS INDICATED ON THE PLANS AND SPECIFICATIONS.

ENVIRONMENTAL SITE ASSESSMENT

- THERE ARE TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, HIGHLY ERODIABLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, AND STREAMS LOCATED IN THE SITE. HOWEVER, THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. ADDITIONALLY, THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS OR AREAS OF SOIL OR GROUNDWATER CONTAMINATION ON THE SITE.
- THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, DIVISION OF ENVIRONMENTAL QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OR UNDERGROUND STORAGE TANKS, DRUMS, AND CONTAINERS ARE ENCOUNTERED AT THE SITE. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, ITS CONTENTS, ANY SOIL CONTAMINATION AND RELEASES TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE, AND CITY REGULATIONS.
- ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11, CHAPTER 5, WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS:
A. MONDAY THROUGH FRIDAY FROM 7 AM TO 6 PM AND
B. SATURDAYS FROM 9 AM TO 6 PM.
C. NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.
D. PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
MONDAY THROUGH FRIDAY FROM 9 AM TO 6 PM AND
SATURDAYS FROM 10 AM TO 4 PM.

NOTES FOR PROPOSED PLANTINGS

- PLANTINGS SHALL BE FURNISHED AND INSTALLED IN COMPLIANCE WITH LANDSCAPE GUIDELINES OF THE CITY OF ALEXANDRIA.
- IN LIEU OF MORE STRENUOUS SPECIFICATIONS, ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT TIME OF CONSTRUCTION) OF LANDSCAPE SPECIFICATION GUIDELINES AS PRODUCED BY THE LANDSCAPE CONTRACTORS' ASSOCIATION OF MARYLAND, DISTRICT OF COLUMBIA AND VIRGINIA; GAITHERSBURG, MARYLAND.
- PRIOR TO COMMENCEMENT OF LANDSCAPE INSTALLATION/PLANTING OPERATIONS, A PRE-INSTALLATION/CONSTRUCTION MEETING SHALL BE SCHEDULED WITH THE CITY'S ARBORIST AND LANDSCAPE ARCHITECT TO REVIEW PLANT INSTALLATION PROCEDURES AND PROCESSES.

UTILITY WORKS

- THE FOLLOWING ARE THE APWA COLOR CODES:

COLOR	CODES
RED	CAUTION BURIED ELECTRIC POWER LINES, CABLES, CONDUITS AND LIGHTNING CABLES.
YELLOW	CAUTION GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS.
ORANGE	CAUTION COMMUNICATIONS, ALARM OR SIGNAL LINES, CABLES OR CONDUITS.
BLUE	CAUTION POTABLE WATER
PURPLE	CAUTION RECLAIMED WATER, IRRIGATION AND SLURRY LINES
GREEN	CAUTION, SEWER, DRAIN LINES AND FORCE MAIN

UTILITY CONTACTS

DOMINION VIRGINIA POWER 888-667-3000
VERIZON COMMUNICATIONS 888-826-2355
COMCAST 888-683-1000
WASHINGTON GAS 703-750-1000
PEPO 202-833-7500
VIRGINIA AMERICAN WATER 800-452-6863
SANITARY SEWER - CITY OF ALEX. 703-746-4488

CONTRACTOR SHALL CONFORM TO THE OVERHEAD HIGH VOLTAGE ACT (EFFECTIVE JULY 1, 2003) AND SHALL CONTACT THE NECESSARY AUTHORITIES PRIOR TO START OF CONSTRUCTION.



CONSTRUCTION NOTES

- THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE CITY AND TAKE NECESSARY ACTION AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUATION OF SERVICE.
- THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED FOLLOWING NOTIFICATION AND MARKING OF ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES TEST HOLES TO BE PERFORMED AT LEAST 30 DAYS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE OWNER AND ENGINEER. REDESIGN AND APPROVAL BY REVIEWING AGENCIES SHALL BE OBTAINED, IF REQUIRED.
- THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
- ALL AREAS, ON OR OFF-SITE, WHICH ARE DISTURBED BY THIS CONSTRUCTION AND WHICH ARE NOT PAVED OR BUILT UPON, SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION. THE MINIMUM ACCEPTABLE STABILIZATION SHALL CONSIST OF PERMANENT GRASS, SEED MIXTURE TO BE AS RECOMMENDED BY THE CITY AGENT. ALL SLOPES 3:1 AND GREATER SHALL BE SODDED AND PEGGED OF OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.
- ALL OVER HEAD POLE LINES SHALL BE RELOCATED AS REQUIRED BY THE OWNING UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL ARRANGEMENTS AND COORDINATING ALL WORK REQUIRED FOR THE NECESSARY RELOCATIONS.
- EXISTING PHYSICAL FEATURES ARE TO BE REMOVED AS REQUIRED BY THE CONTRACTOR.
- EXISTING CONSTRUCTION SHALL BE REMOVED TO NEAREST JOINT. NEW CONSTRUCTION SHALL BE PROVIDED AS SHOWN AND ANY DAMAGED AREA SHALL BE REPAIRED TO MATCH CONDITIONS EXISTING PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO THE ADJACENT CURB, GUTTER, AND RIGHT-OF-WAY, IF DAMAGED DURING CONSTRUCTION ACTIVITY AS DETERMINED BY THE CITY.
- TOPS OF EXISTING STRUCTURES WHICH REMAIN IN USE ARE TO BE ADJUSTED IN ACCORDANCE WITH THE GRADING PLAN. ALL PROPOSED STRUCTURE TOP ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE SITE GRADING PLANS. IN CASE OF CONFLICT, THE GRADING PLAN SHALL SUPERSEDE PROFILE ELEVATIONS. ADJUSTMENTS TO STRUCTURE TOPS TO MEET FINISHED GRADE ELEVATIONS MAY BE REQUIRED.
- CONSTRUCTION STAKEOUT SHALL BE UNDER THE DIRECT SUPERVISION OF A LICENSED LAND SURVEYOR IN THE COMMONWEALTH OF VIRGINIA. CUT SHEETS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO CONSTRUCTION.
- SMOOTH GRADE SHALL BE MAINTAINED ACCORDING TO EXISTING CONDITIONS DURING RECONSTRUCTION OF ANY ENTRANCE AND/OR CURB & GUTTER TO PRECLUDE THE FORMING OF FALSE AND/OR THE PONDING OF WATER ON THE ROADWAY.
- ALL PAVEMENT MARKING TO MEET THE REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
- ALL EROSION CONTROLS SHALL CONFORM TO THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCHB) AND MUST BE SUBMITTED AND APPROVED BY THE CITY.
- THE CONTRACTOR MUST ENSURE THAT POSITIVE DRAINAGE OCCURS ON SITE TO PREVENT PONDING OR DRAINAGE PROBLEMS ON ADJACENT PROPERTIES.
- CONTRACTOR MUST ENSURE THAT THERE IS NO DISTURBANCE ON ADJACENT PROPERTIES, UNLESS OTHERWISE NOTED ON PLANS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN UTILITY SERVICES AT ALL TIMES DURING CONNECTION AND/OR CONSTRUCTION.
- ANY CHANGES OR DEVIATIONS FROM DESIGN DOCUMENTS, DRAWINGS, SPECIFICATIONS, OR SHOP DRAWINGS REQUIRE APPROVAL OF THE CITY PRIOR TO IMPLEMENTATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL DURING CONSTRUCTION INCLUDING THE DEVELOPMENT OF TRAFFIC CONTROL PLANS. ALL TRAFFIC CONTROL COSTS FOR ALL STAGES SHALL BE INCLUDED IN THE BID PRICE FOR "MAINTENANCE OF TRAFFIC (LSUM)." NO LANES SHALL BE CLOSED DURING CONSTRUCTION. IF LANES NEED TO BE CLOSED TO FACILITATE THE CONSTRUCTION THEN THE CONTRACTOR SHALL PROVIDE A LANE CLOSURE PLAN TO THE SATISFACTION OF THE CITY. TEMPORARY PAVEMENT MARKING AND REMOVAL MAY BE REQUIRED AND SHALL BE INCLUDED IN THE BID PRICE FOR "MAINTENANCE OF TRAFFIC (LSUM)." NO SIDE AND/OR CROSS WALK SHALL BE CLOSED DURING CONSTRUCTION. IF SIDE AND/OR CROSS WALKS NEED TO BE CLOSED TO FACILITATE THE CONSTRUCTION THEN THE CONTRACTOR SHALL PROVIDE A SIDE AND/OR CROSS WALK CLOSURE PLAN TO THE SATISFACTION OF THE CITY.

SIGNING AND PAVEMENT MARKING

- ALL SIGN WORK AND PAVEMENT MARKING SHALL MEET ALL THE LATEST APPLICABLE VDOT, CITY OF ALEXANDRIA STANDARDS, AND MANUAL ON UNIFORM TRAFFIC CONTROL (MUTCD) REQUIREMENTS.
- ALL PAVEMENT MARKINGS ARE THERMOPLASTIC UNLESS OTHERWISE NOTED.
- ALL EXISTING PAVEMENT MARKINGS MAY NOT BE SHOWN. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE ERADICATED.
- ALL PROPOSED SIGNS SHALL BE HIGH INTENSITY SHEETING MEETING THE REQUIREMENTS OF AASHTO M268.
- NO PORTION OF PROPOSED SIGN PANEL SHALL OVERHANG ADJACENT ROADWAY PAVEMENT. I.E. SHALL NOT HANG IN FRONT OF FACE OF CURB.
- PROPOSED SIGN POSTS SHALL BE LOCATED A MINIMUM OF 2 FEET BEHIND ANY ADJACENT FACE OF CURB (ADDITIONAL REQUIREMENTS APPLY TO ACCOMMODATE SIGN PANEL LATERAL AND VERTICAL CLEARANCE). IF LOCATED ADJACENT TO SIDEWALKS, A 32" MINIMUM CLEAR AND 48" PREFERRED PASSING SPACE ON EXISTING AND PROPOSED SIDEWALKS SHALL BE MAINTAINED.
- PROPOSED SIGN POSTS SHALL BE INSTALLED IN NEW LOCATIONS SUCH THAT THE EXISTING SIGNS OR SIGNALS ARE NOT BLOCKED.
- FOR NEW POST INSTALLATION, THE CONTRACTOR SHALL VERIFY THERE ARE NO CONFLICTING UNDERGROUND OR OVERHEAD UTILITIES.
- SIGNS MOUNTED TO EXISTING LIGHT, SIGNAL OR UTILITY POLES SHALL BE FASTENED WITH A MANUFACTURED STEEL BANDING SYSTEM. POLES SHALL NOT BE DRILLED DIRECTLY, THE CONTRACTOR SHALL SUBMIT MANUFACTURER INFORMATION ON THE BANDING SYSTEM TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.

ARLINGTON
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SEAL



APPROVALS DATE

Arjun Patel 07/19/21
DESIGN TEAM ENGINEER SUPERVISOR
Kamal Taktak 8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR
Shafiq 07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF
Dennis M. Leach 07/21/20
TRANSPORTATION DIRECTOR
Michael Gallo 07/21/21
PROJECT MANAGER

REVISIONS DATE

GENERAL NOTES (CITY OF
ALEXANDRIA)

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE:

SHEET 01A of 32

REVISED ON 01/07/2021

FILENAME: 01A-LEGEND.DWG PATH: \\AD-RK\COM\F3\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE\CADD\PLAN PLOTTED BY: HCHEN

ARLINGTON COUNTY LEGEND

	Existing	Proposed
Easement		
Asphalt		
Building		
Cable TV		
Center Line		
Concrete		
Contours		
Curb		
Electric (Underground)		
Fence		
Fiber Optic		
Floodplain		
Guardrail		
2" Gas		
3" Gas		
6" Gas		
8" Gas		
Gas		
Limits Of Disturbance		
Limits Of Work		
Overhead Wires		
Property Line		
Resource Protection Area		
8" Sanitary		
12" Sanitary		
Sanitary Sewer		
Sanitary House Con.		
Sidewalk		
Storm (size noted)		
Telephone (Underground)		
Wall		
6" Water		
8" Water		
20" Water		
Wetland		
Water Main		
Water House Con.		
Lane Marking		
Tree Line		
PVC (Street Lights)		
Asphalt - Mill & Overlay		
Asphalt - Overlay		
Asphalt - Full Depth		
Water Main (Shown on Profile Only)		
Ex. Esm't. for Public Access & Public Utilities		
Proposed Emergent Marsh		
Proposed Shrub Wetland		
Proposed Forested Wetland		
Proposed Water Surface		
Grasspave2 (Or Equivalent)		

CITY OF ALEXANDRIA LEGEND

	Prop. Storm Catch Basin		Traffic Sign
	Ex. Storm Catch Basin		Guy Wires
	Prop. Storm Grate		Prop. Gas Valve
	Ex. Storm Grate		Ex. Gas Valve
	Prop. Storm MH		Prop. Handicap Ramp
	Ex. Storm MH		Ex. Handicap Ramp
	Prop. Sanitary MH		Metro Station
	Ex. Sanitary MH		Benchmark
	Prop. Cobra Head Light		Deciduous Tree
	Prop. Carlye Light		Coniferous Tree
	Prop. Light Pole		Shrub
	Ex. Light Pole		Wooded Area
	Prop. Utility Pole		Bridge
	Ex. Utility Pole		North Arrow
	Ex. Utility MH (Type Indicated Elec. Tele. etc)		Telephone Ped.
	Ex. Traffic Control Box		Electric Box
	Prop. Water MH		Cable Ped.
	Ex. Water MH		Gas Marker
	Prop. Water Valve		Construction Notes (Leader to area affected)
	Ex. Water Valve		Curve Number (See Curve Table)
	Prop. Water FH		Line Number (See Line Table)
	Ex. Water FH		Ex. Sanitary Sewer Structure Number (Number obtained from WSE)
	Prop. Water Meter		Ex. Storm Sewer Structure Number (Number obtained from WSE)
	Ex. Water Meter		Prop. Sanitary Sewer Structure Number (Number obtained from WSE)
	P.K. Nail Found		Prop. Storm Sewer Structure Number (Number obtained from WSE)
	P.K. Nail Set		Parking Meter
	Rebar Rod Found		Mailbox
	Rebar Rod Set		Ground Light
	Iron Pipe		Traverse
	Monument (GPS)		Bus Sign
	Monument		Existing Test Hole Test Hole Requested and Data Received
			Prop. Test Hole Test Hole Requested

ABBREVIATIONS

TREE (# - DENOTES SIZE)	
VEGETATION LINE	
WATERLINE	
WATER METER	
WATER VALVE	
FIRE HYDRANT	
ROOF DOWNSPOUT	
STORM SEWER	
STORM SEWER MANHOLE	
SANITARY SEWER	
SANITARY SEWER MANHOLE	
GAS VALVE	
GAS LINE	
UNDERGROUND TELECOMMUNICATIONS LINE	
TELECOMMUNICATIONS MANHOLE	
UNDERGROUND ELECTRIC LINE	
STREET LIGHT W/ ARM	
STREET LIGHT	
AIR CONDITIONING UNIT	
SIGN	
TURF/VEGETATION	
CURB AND GUTTER	
CURB AND GUTTER	
RIGHT-OF-WAY LINE	
INDEX CONTOUR	
INTERMEDIATE CONTOUR	
LIMITS OF WORK	
BENCHMARK LOCATION	

STORM SEWER TABLE

#8926 TOP = 24.06 15" RCP IN = 18.06 18" RCP OUT = 17.81	(8919) (SOUTH)	#19988 TOP = 25.93 15" RCP OUT = 22.28 (19967)
#8919 TOP = 23.59 15" RCP OUT = 19.59	(8926)	#8446 15" RCP OUT = 19.27 (8980)
#20590 TOP = 14.93 18" RCP IN = 8.41 24 RCP IN = 8.33 60" RCP OUT = 8.28	(20550) (20579) (S.E.)	#8980 TOP = 29.00 15" RCP IN = 19.30 15" RCP OUT = 19.28 (8977) (8446)
#20550 TOP = 14.28 15" RCP IN = 10.98 18" RCP OUT = 10.68	(20529) (20590)	#8977 TOP = 29.03 18" RCP OUT = 19.18 (8980)
#20529 TOP = 14.24 15" RCP OUT = 11.19	(20550)	#8474 36" RCP OUT = 25.01 (8953)
#20579 TOP = 14.84 24" RCP OUT = 10.44	(20590)	#8953 TOP = 33.55 12" PVC IN = 26.16 36" RCP IN = 26.16 36" RCP OUT = 26.11 (8974) (8963) (8474)
#3980 24" RCP OUT = 12.69	(8991)	#8963 TOP = 33.58 36" RCP IN = 26.33 36" RCP OUT = 26.28 (8960) (8953)
#8991 24" RCP OUT = 12.77	(3980)	#8960 TOP = 34.82 36" RCP IN = 26.99 (8963)
#4483 15" RCP OUT = 21.40	(2229)	#19706 18" RCP OUT = 26.70 (19712)
#2229 TOP = 24.10 15" RCP OUT = 21.35	(4483)	#19712 TOP = 34.24 15" RCP IN = 28.44 18" RCP OUT = 27.98 (19713) (19706)
#19967 15" RCP IN = 21.27 15" RCP IN = 21.30 21" RCP IN = 21.33	(19950) (19988) (19914)	#19713 TOP = 33.75 15" RCP IN = 29.35 15" RCP OUT = 29.25 (19648) (19712)
		#19648 TOP = 33.69 15" RCP IN = 29.19 15" RCP OUT = 29.14 (19625) (19713)
		#19625 TOP = 33.13 15" RCP OUT = 29.98 (19648)
		#6042 24" RCP OUT = 11.73 (EAST)

ARLINGTON VIRGINIA

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SEAL



APPROVALS DATE

<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Shirley</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

LEGEND

FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

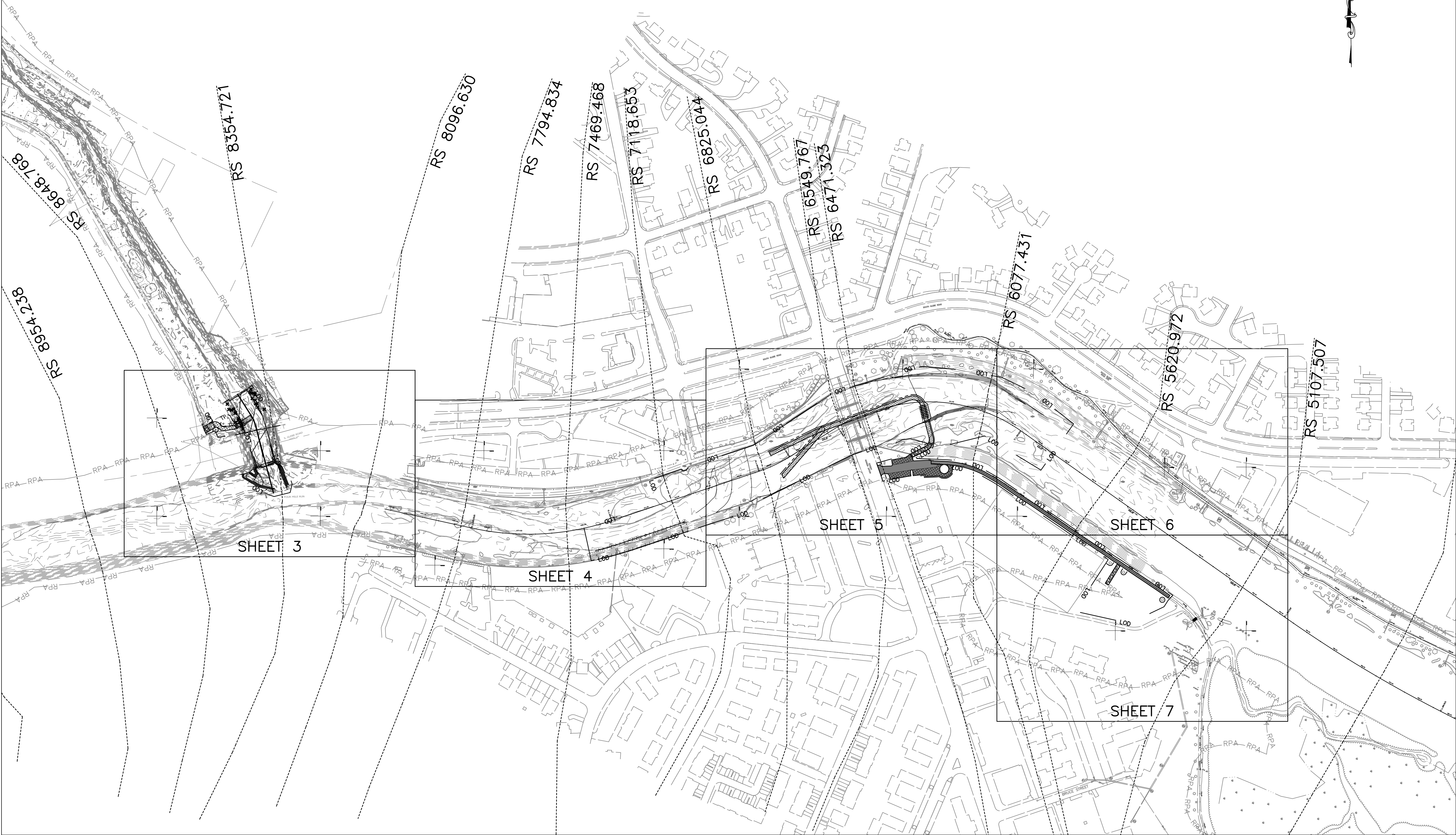
PLOTTED: AUGUST 23 2021

SCALE:

REVISED ON 01/07/2021

FILENAME: PROPOSED GRADING & EROSION CONTROL PLANNING PATH: \\AD.RKK.COM\FS\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE CAD\PLAN PLOTTED BY: HCHEN

NOTE:
RS TRANSECTS ARE HEC-RAS
CROSS SECTION LOCATIONS
RELATED TO FLOOD MODELING



PLAN LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- HEC-RAS CROSS-SECTIONS
- 50' BASELINE CROSS-SECTIONS

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SEAL



APPROVALS	DATE
Arjun Patel DESIGN TEAM ENGINEER SUPERVISOR	07/19/21
Kamal Taktak CONSTRUCTION MANAGEMENT SUPERVISOR	8.18.21
07.23.2021 WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach TRANSPORTATION DIRECTOR	07/21/20
Michael Gallo PROJECT MANAGER	07/21/21

REVISIONS	DATE

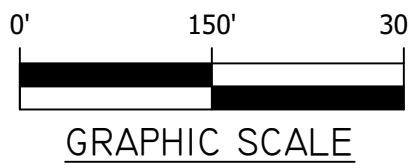
SHEET LAYOUT

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=150'

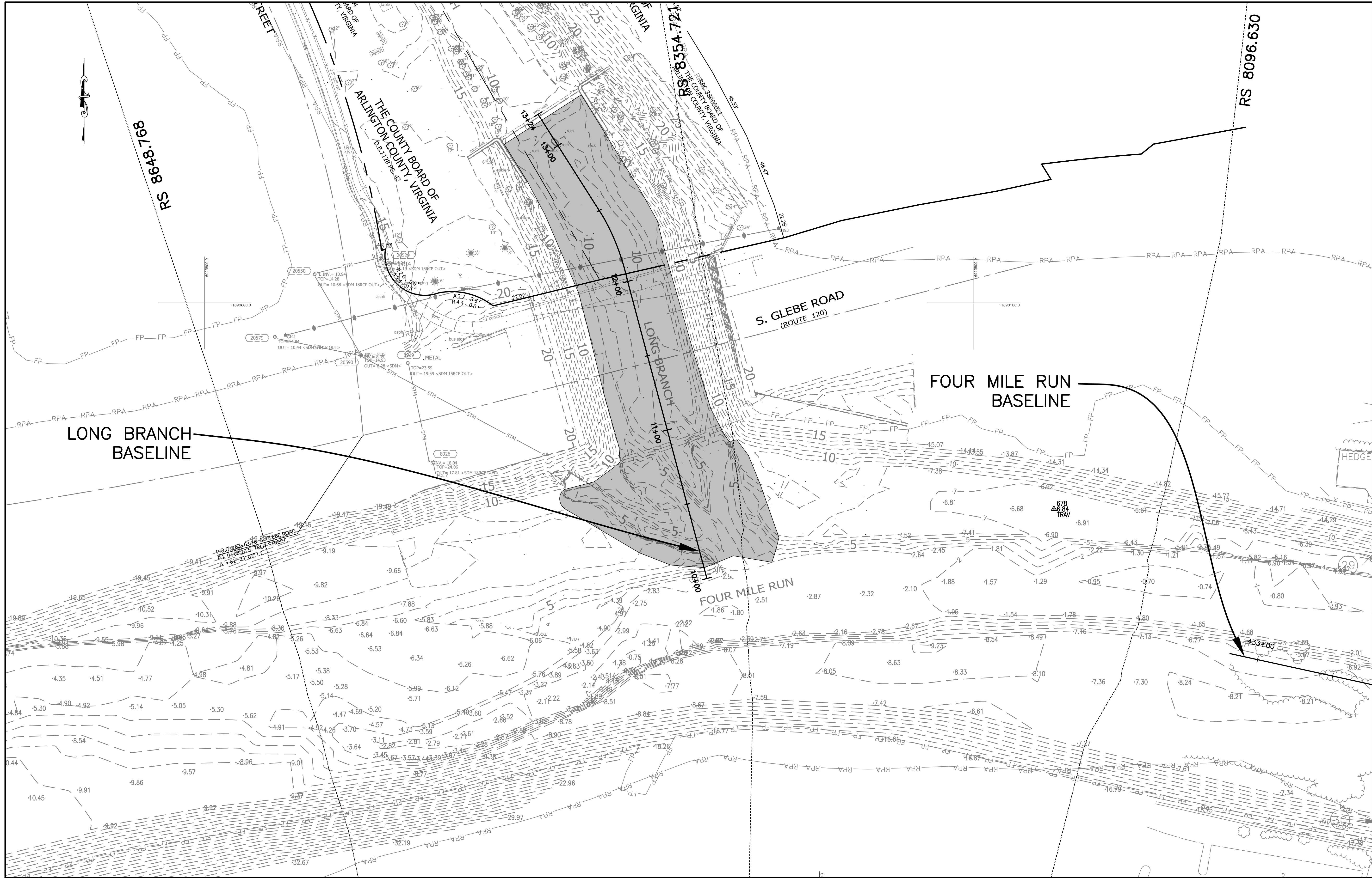


SHEET 02 of 32

FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021

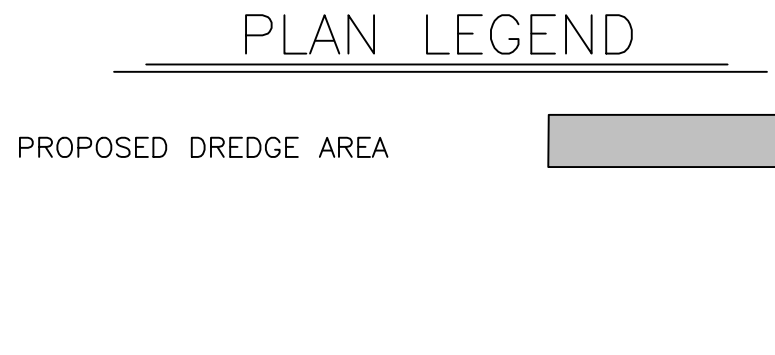
FILENAME: 03 - EXISTING CONDITIONS.DWG PATH: \\VAD.RKX.COM\FSCLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4WR DREDGE\CADD\PLAN PLOTTED BY: HCHEN



MATCH LINE - SEE SHEET 04

TRAVERSE BENCHMARK STATIONS									
Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description	Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description
1	6993343.031	11888305	17.5682	TRAV	1779	6993929.358	11891989.01	-0.005	TRAV
2	6993325.083	11888540.88	15.1179	TRAV	1780	6993871.755	11891846.27	1.181	TRAV
99	6993517.507	11888188.39	28.8916	TRAV	2073	6993938.011	11892300.64	12.9143	TRAV
108	6993469.817	11888373.82	25.055	TRAV	2074	6994039.552	11892072.72	14.0179	TRAV
313	6993569.855	11889325.54	19.2664	TRAV	2195	6993810.771	11891893.36	3.2554	TRAV
677	6993653.751	11889971.94	8.3673	TRAV	2196	6993853.26	11891976.56	3.3549	TRAV
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979	6993443.429	11890871.51	3.9933	TRAV	2448	6993728.736	11891264.88	12.7859	TRAV
1622	6993713.095	11891414.22	4.7791	TRAV	2449	6993707.693	11891145.26	13.0773	TRAV
1623	6993771.083	11891583.45	2.8481	TRAV					

△ DENOTES BENCHMARK LOCATION



ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
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ARLINGTON, VA 22201
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SEAL



APPROVALS	DATE
Arjun Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
07.23.2021	
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

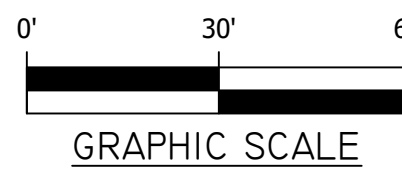
EXISTING CONDITIONS

FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

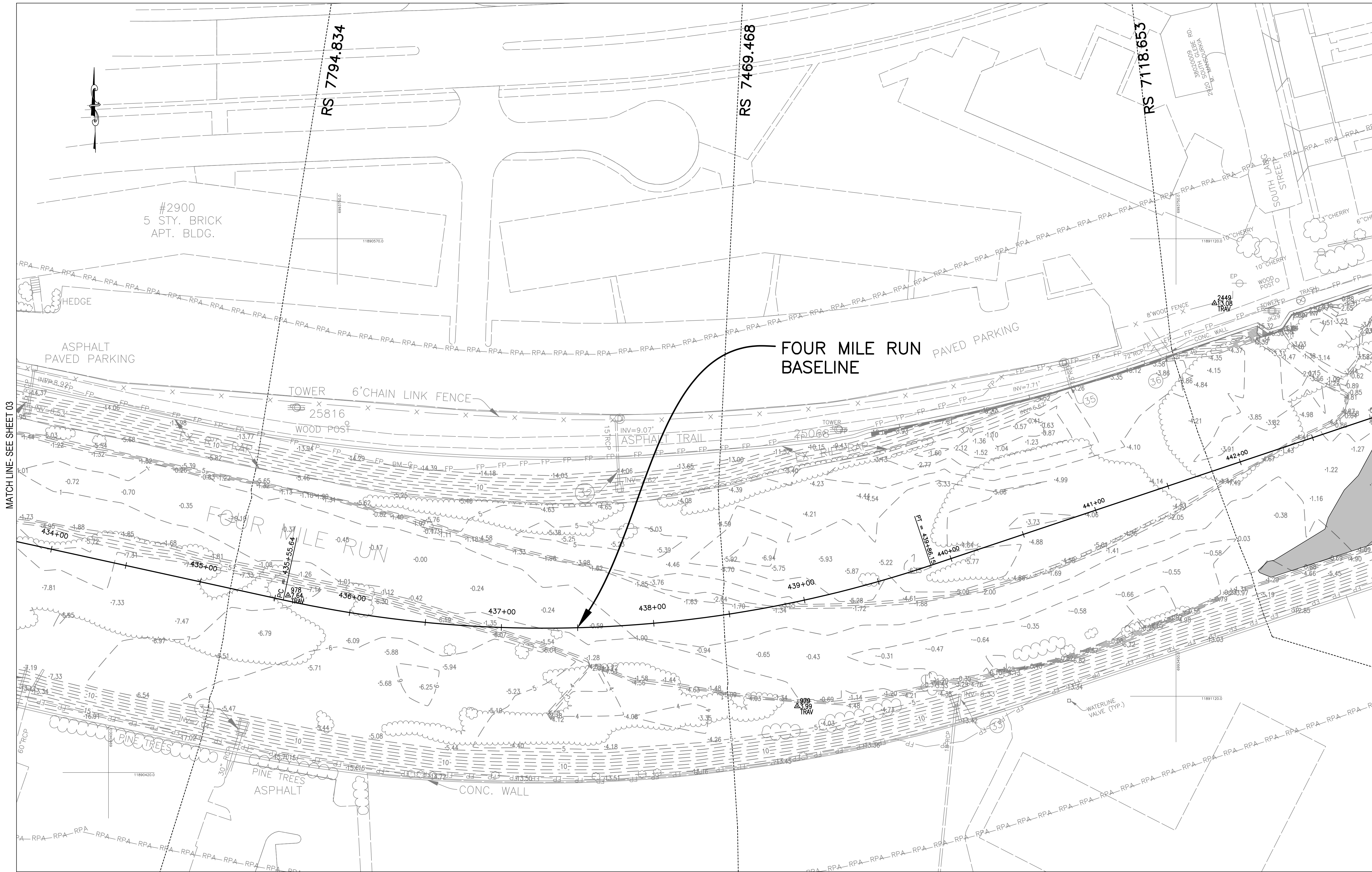
PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



SHEET 03 of 32

FOUR MILE RUN DREDGE PROJECT



TRAVERSE BENCHMARK STATIONS

Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description	Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description
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1623	6993771.083	11891583.45	2.8481	TRAV					

△ DENOTES BENCHMARK LOCATION

PLAN LEGEND

PROPOSED DREDGE AREA

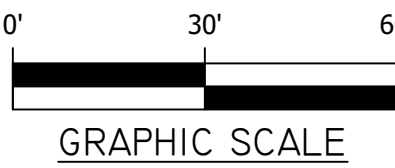
EXISTING CONDITIONS

FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
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SEAL



APPROVALS DATE

Ankur Patel 07/19/21
DESIGN TEAM ENGINEER SUPERVISOR
Ramat Taktak 8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR
Dennis M. Leach 07/23/2021
WATER, SEWER, STREETS BUREAU CHIEF
TRANSPORTATION DIRECTOR
Michael Gallo 07/21/21
PROJECT MANAGER

REVISIONS DATE



TRAVERSE BENCHMARK STATIONS

Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description	Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description
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1623	6993771.083	11891583.45	2.8481	TRAV					

△ DENOTES BENCHMARK LOCATION

PLAN LEGEND

PROPOSED DREDGE AREA

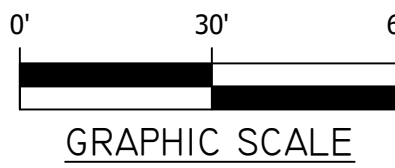
EXISTING CONDITIONS

FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



SHEET 05 of 32

FOUR MILE RUN DREDGE PROJECT

ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
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2100 CLARENDON BOULEVARD, SUITE 813
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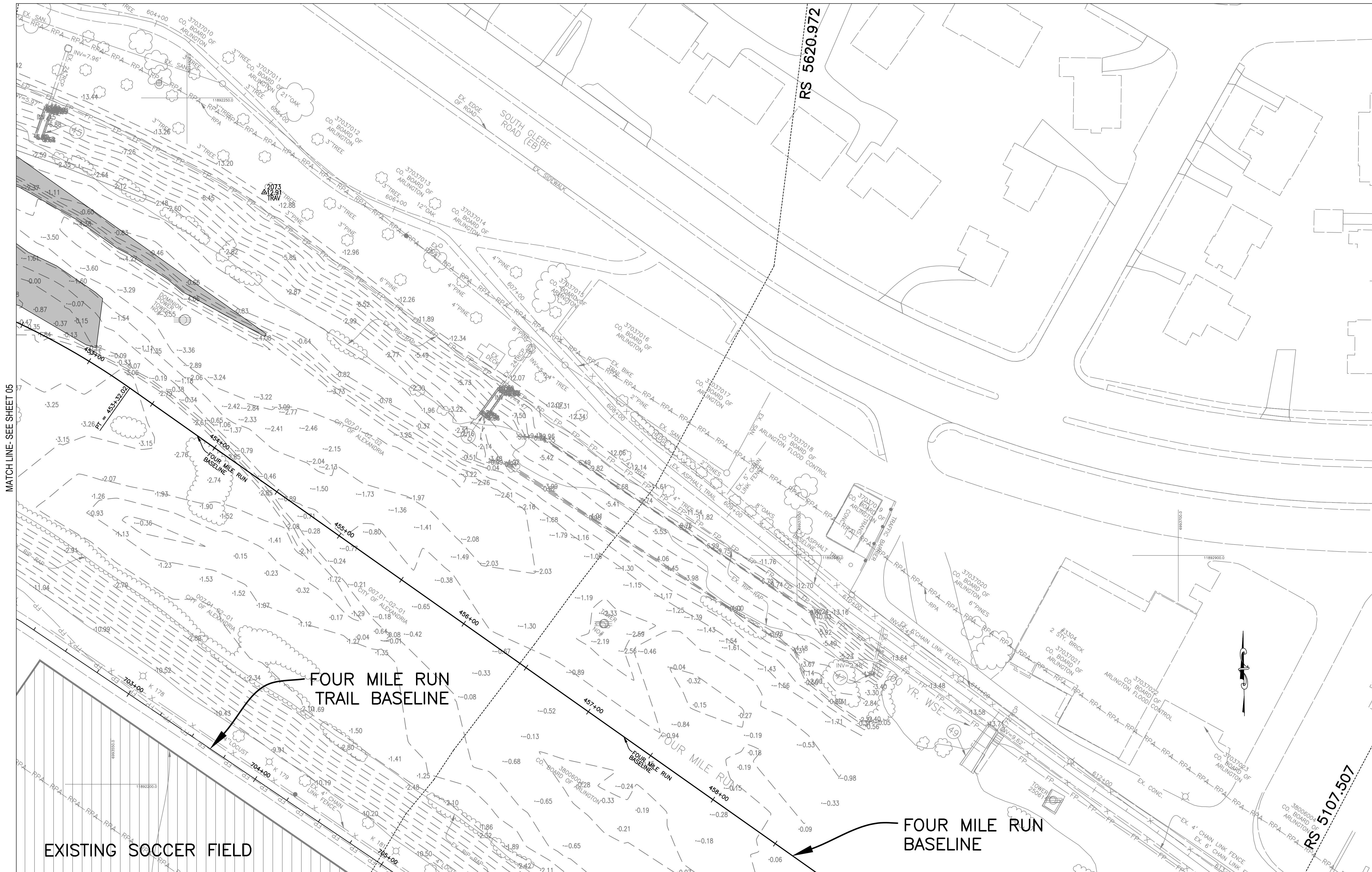
SEAL



APPROVALS DATE

Ankur Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Ramal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
Michael J. Leach	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS DATE



MATCH LINE - SEE SHEET 07

TRAVERSE BENCHMARK STATIONS

Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description	Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description
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1623	6993771.083	11891583.45	2.8481	TRAV					

△ DENOTES BENCHMARK LOCATION

PLAN LEGEND

PROPOSED DREDGE AREA

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
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SEAL



APPROVALS DATE

Arjun Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
07.23.2021	
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS DATE

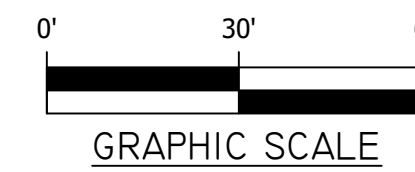
EXISTING CONDITIONS

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

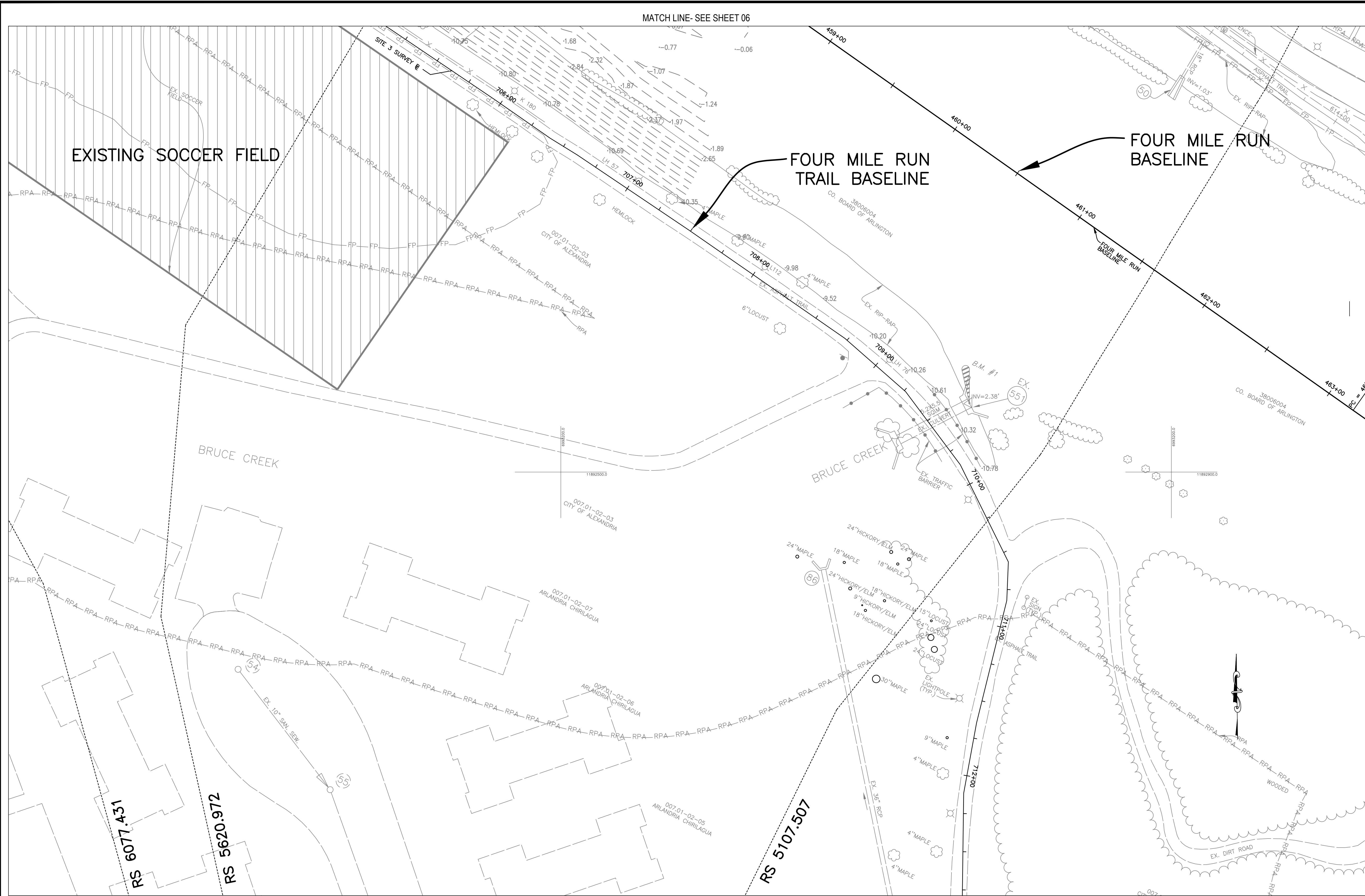
PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



SHEET 06 of 32

FOUR MILE RUN DREDGE PROJECT



Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description	Point No.	Northing(Y)	Easting(X)	Elev(Z)	Description
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1623	6993771.083	11891583.45	2.8481	TRAV					

 DENOTES BENCHMARK LOCATION

PLAN LEGEND

PROPOSED DREDGE AREA

ARLINGTON
VIRGINIA

**DEPARTMENT OF
ENVIRONMENTAL SERVICES**
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 811
ARLINGTON, VA 22201
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SEAL



APPROVALS	DATE
<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.2
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Glen</i>	07.23.202
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis W. Leach</i>	07/21/2
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/2
PROJECT MANAGER	

[illegible]

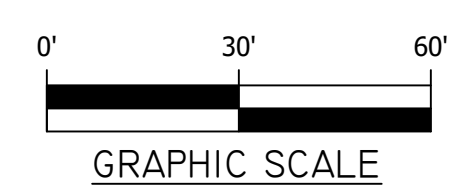
EXISTING CONDITIONS

FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



REVISED ON 01/07/2021

FILENAME: EROSION & SEDIMENT CONTROL NARRATIVE AND DETAILS.DWG PATH: \\AD.BKK.COM\FS\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4MR DREDGE\CADD\PLAN PLOTTED BY: HCHEN

EROSION AND SEDIMENT
CONTROL LEGEND

SAFETY FENCE	SAF	
CONSTRUCTION ENTRANCE	CE	
COFFER DAM	CD	
TURBIDITY CURTAIN	TC	
SUPER SILT FENCE	SSF	
LIMIT OF DISTURBANCE		
DEWATERING DEVICE	DW	
TEMPORARY TIMBER MATTING	TM	
TREE PROTECTION	TP	
TREE REMOVAL		
TEMPORARY ACCESS ROAD AND CULVERT CROSSING	TA	

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.
- THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- 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.
- DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- 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.
- ALL STORM AND SANITARY SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.
- ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 5 DAYS OF BACKFILL.
- ANY DISTURBED AREA NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED NO LATER THAN MAY 15TH.
- AT THE COMPLETION OF THE CONSTRUCTION PROJECT AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED. CITY OF ALEXANDRIA/ARLINGTON COUNTY INSPECTOR TO APPROVE REMOVAL OF ALL TEMPORARY SILTATION MEASURES.
- PROTECT TREES DURING CONSTRUCTION OF PROPOSED WORK AS SHOWN. CALL ARLINGTON URBAN FORESTER (703-228-1863) OR ALEXANDRIA CITY ARBORIST (703-838-4999) PRIOR TO BEGINNING WORK ADJACENT TO TREE. PROCEED WITH WORK AS DIRECTED BY THE ENGINEER IF ANY CONFLICT ARISES WITH PROPOSED WORK.

GENERAL LAND CONSERVATION NOTES

- NO DISTURBED AREA WILL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
- ALL STORM AND SANITARY SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.
- ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 5 DAYS OF BACKFILL.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS ARE TO BE MULCHED AND SEEDED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. THE SAME APPLIES TO ALL SOIL STOCKPILES.
- DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
- ANY DISTURBED AREA NOT COVERED BY NOTE # 1 ABOVE AND NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED NO LATER THAN MAY 15TH.
- AT THE COMPLETION OF THE CONSTRUCTION PROJECT AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED. CITY OF ALEXANDRIA/ARLINGTON COUNTY INSPECTOR TO APPROVE REMOVAL OF ALL TEMPORARY SILTATION MEASURES.

POLLUTION PREVENTION NOTES

- ONLY THE FOLLOWING NON-STORMWATER DISCHARGES ARE AUTHORIZED BY CITY OF ALEXANDRIA/ARLINGTON COUNTY'S MS4 PERMIT, UNLESS THE STATE WATER CONTROL BOARD, THE VIRGINIA SOIL AND WATER CONSERVATION BOARD (BOARD), CITY OF ALEXANDRIA, OR ARLINGTON COUNTY DETERMINES THE DISCHARGE TO BE A SIGNIFICANT SOURCE OF POLLUTANTS TO SURFACE WATERS, WATER LINE FLUSHING; LANDSCAPE IRRIGATION; DIVERTED STREAM FLOWS; RISING GROUND WATERS; UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)); UNCONTAMINATED PUMPED GROUND WATER; DISCHARGES FROM POTABLE WATER SOURCES; FOUNDATION DRAINS; AIR CONDITIONING CONDENSATION; IRRIGATION WATER; SPRINGS; WATER FROM CRAWL SPACE PUMPS; FOOTING DRAINS; LAWN WATERING; INDIVIDUAL RESIDENTIAL CAR WASHING; FLOWS FROM RIPARIAN HABITATS AND WETLANDS; DECHLORINATED SWIMMING POOL DISCHARGES; DISCHARGES OR FLOWS FROM FIRE FIGHTING; AND, OTHER ACTIVITIES GENERATING DISCHARGES IDENTIFIED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AS NOT REQUIRING VPDES AUTHORIZATION.
- APPROPRIATE CONTROLS MUST BE IMPLEMENTED TO PREVENT ANY NON-STORMWATER DISCHARGES NOT INCLUDED ON THE ABOVE LIST (E.G., CONCRETE WASH WATER, PAINT WASH WATER, VEHICLE WASH WATER, DETERGENT WASH WATER, ETC.) FROM BEING DISCHARGED INTO CITY OF ALEXANDRIA/ARLINGTON COUNTY'S MS4 SYSTEM, WHICH INCLUDES THE CURB AND GUTTER SYSTEM, AS WELL AS CATCH BASINS AND OTHER STORM DRAIN INLETS, OR STREAM NETWORK.
- IT SHALL BE UNLAWFUL FOR ANY PERSON TO DISCHARGE DIRECTLY OR INDIRECTLY INTO THE STORM SEWER SYSTEM OR STATE WATERS, ANY SUBSTANCE LIKELY, IN THE OPINION OF THE CITY/COUNTY MANAGER, TO HAVE AN ADVERSE EFFECT ON THE STORM SEWER SYSTEM OR STATE WATERS.

PROJECT DESCRIPTION:

THIS FLOOD CONTROL PROJECT WILL ENTAIL THE REMOVAL OF SEDIMENT (DREDGE) FROM APPROXIMATELY 1200 LF OF THE FOUR MILE RUN CHANNEL (WIDTH VARIABLE FROM 196 FT TO 63 FT), UPSTREAM AND DOWNSTREAM OF THE MOUNT VERNON BRIDGE. PROPOSED DREDGING WILL RESTORE THE AVAILABLE CAPACITY TO PROVIDE THE ORIGINAL DESIGN FREEBOARD SET BY THE U.S. ARMY CORPS OF ENGINEERS. THE PROJECT WILL REMOVE 16,444 CY OF SEDIMENT FROM FOUR MILE RUN. PROPOSED WORK WITHIN LONG BRANCH INCLUDES REMOVAL OF VEGETATION, SEDIMENT, AND DEBRIS ACCUMULATION WITHIN THE EXISTING CULVERT. 1,538 CY WILL BE DREDGED FROM LONG BRANCH. DAMAGED EXISTING GABION BASKETS ALONG THE BANKS OF BOTH LONG BRANCH AND FOUR MILE RUN WILL BE REPAIRED AND RESTORED TO ORIGINAL DESIGN DIMENSIONS, WHERE NECESSARY.

PROJECT WORK WILL BE CONDUCTED IN AN ENVIRONMENTALLY SENSITIVE AREA (IN AN RPA, FEMA FLOODPLAIN, WATERS OF THE U.S., AND U.S. ARMY CORPS OF ENGINEERS FLOOD CONTROL LEVEE AND CHANNEL). TOTAL LAND DISTURBANCE IS 8.58 ACRES (373,959.0 SF).

EXISTING SITE CONDITIONS:

LONG BRANCH IS AN URBANIZED STREAM CHANNEL WITH A CONCRETE WEIR AND GABION BASKET REINFORCED BANKS, PRIOR TO THE SOUTH GLEBE BRIDGE.

THE FOUR MILE RUN CHANNEL CONSISTS OF A BRAIDED CHANNEL WITH CONCRETE SIDE SLOPES, LEVEES, AND CONSTRUCTED BANK STABILIZATION. CURRENTLY, THE CHANNEL BOTTOMS HAVE ACCUMULATED SEDIMENT DEPOSITION SUCH THAT THE CHANNELS DO NOT PROVIDE SUFFICIENT FLOOD CAPACITY.

ADJACENT PROPERTY:

THE ADJACENT PROPERTIES CONSIST OF PUBLIC PARKS, COMMUNITY RESIDENTIAL AND COMMERCIAL, WITH PUBLIC PARK PROPERTY LOCATED DIRECTLY ADJACENT THE ACCESS ROAD, THE LAND COVER WITHIN THE PROJECT IS PRIMARILY PERVIOUS AND ADJACENT TO THE PROJECT IS MIXED PERVIOUS AND IMPERVIOUS.

OFF-SITE AREAS:

SOIL STOCKPILES SHALL BE KEPT IN THE CONSTRUCTION STAGING AREA OR (AS NEEDED) SHALL BE KEPT OFF-SITE TO STAY CLEAR OF ALL CONSTRUCTION ACTIVITY. THE STOCKPILES WILL BE STABILIZED WITH TEMPORARY VEGETATION TO PREVENT SOIL LOSS AND SEDIMENT TRANSPORT FROM THE STOCKPILE ITSELF UNTIL NEEDED. PRIOR TO LAND-DISTURBING ACTIVITIES, THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY E&S PLAN TO THE OWNER COVERING THE OFF-SITE STOCKPILE AREA WHICH MUST BE APPROVED BY THE PLAN APPROVING AUTHORITY BEFORE ANY OFF-SITE ACTIVITY COMMENCES.

CRITICAL EROSION AREAS:

AS THE PROJECT CONSISTS OF IN-STREAM WORK, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CLOSELY MONITORED THROUGHOUT THE PROJECT.

EROSION AND SEDIMENT CONTROL MEASURES:

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

STRUCTURAL PRACTICES:

THE EROSION AND SEDIMENT CONTROL MEASURES FROM THIS PROJECT AREA INCLUDE SUPER SILT FENCE (VESCH ST'D. 3.05), SAFETY FENCE (VESCH ST'D. 3.01), DEWATERING DEVICE (VESCH ST'D. 3.26), CONSTRUCTION ENTRANCE (VESCH ST'D. 3.02), COFFER DAM (VESCH ST'D 3.25), TURBIDITY CURTAIN (VESCH ST'D 3.27), TIMBER MATTING, TREE PROTECTION (ARLINGTON ST'D 311300.1 /ALEXANDRIA ST'D LD 014), AND ROOT PROTECTION MATTING (ARLINGTON ST'D 311300.7NS).

- DEWATERING BASIN – VESCH ST'D. 3.26: A TEMPORARY SEDIMENT AND FILTERING DEVICE FOR WATER WHICH IS DISCHARGED FROM DEWATERING ACTIVITIES. DEWATERING BASIN WILL BE PLACED AS NEEDED AT THE DISCRETION OF THE CONTRACTOR. IN LIEU OF DEWATERING BASIN SHOWN IN DETAILS ON SHEET 09, AN ALTERNATIVE OPTION MAY BE USED, IF APPROVED BY THE CITY OF ALEXANDRIA/ARLINGTON COUNTY.
- CONSTRUCTION ENTRANCE – VESCH ST'D. 3.02: CONSTRUCTION ENTRANCE LOCATION AS SHOWN IN PLANS IS FINAL. CONSTRUCTION ENTRANCE WILL CONFORM TO VDOT STANDARDS. WASH RACK REQUIRED. SEE E&S DETAIL SHEET 08 FOR SPECIFIC DESIGN CRITERIA.
- SUPER SILT FENCE – VESCH ST'D. 3.05: SUPER SILT FENCE SHALL BE USED ON THE DOWN-GRADE SIDE OF THE STAGING AREA, TO PREVENT SEDIMENT FROM LEAVING THE LIMITS OF WORK, AS WELL AS ALONG THE TRAIL TO THE STREAM. MEASURE SHALL BE USED TO PROTECT THE EXISTING ONSITE BMP DURING CONSTRUCTION ACTIVITIES.
- SAFETY FENCE – VESCH ST'D. 3.01: SAFETY FENCE SHALL BE USED AROUND THE STAGING AREA AND CONSTRUCTION ENTRANCE, AS WELL AS ALONG THE TRAIL TO THE STREAM TO HELP SECURE THE PROJECT SITE.
- COFFER DAM – VESCH ST'D 3.25: COFFER DAM WILL BE USED FOR IN-STREAM WORK TO CREATE DRY WORKSPACE. DEWATERING BASINS WILL BE USED IN CONJUNCTION WHERE NECESSARY.
- TURBIDITY CURTAIN – VESCH ST'D 3.27: CURTAIN MAY BE USED ON THE FLOW SIDE OF THE TEMPORARY STREAM CAUSEWAY AND ALONGSIDE ACCESS ROAD TO WORK AREAS.
- TEMPORARY STREAM CAUSEWAY – VESCH ST'D 3.24: TO BE USED WHEN ACCESSING PHASE 1 WORK ZONES FROM STAGING AREA, TO BE REMOVED AS NECESSARY WHEN MOVING THE WORK ZONE DOWNSTREAM.
- TIMBER MATTING: TEMPORARY TIMBER MATTING UNDERLAIN WITH IMPERMEABLE FABRIC SHALL BE USED TO PROTECT EXISTING ONSITE PERMEABLE PAVEMENT DURING CONSTRUCTION ACTIVITIES. TEMPORARY TIMBER MATTING SHALL BE USED ALONG CONSTRUCTION ACCESS PATHS WHERE INDICATED TO REDUCE EQUIPMENT IMPACT ON TREE ROOTS.
- TREE PROTECTION – ARLINGTON ST'D 311300.1 OR ALEXANDRIA ST'D LD 014: TREE PROTECTION SHALL BE USED TO PROTECT PRESERVED TREES FROM CONSTRUCTION DISTURBANCE. REFER TO THE APPLICABLE STANDARD FOR RELATED WORK UNDER THE RESPECTIVE LOCALITY JURISDICTION.
- ROOT PROTECTION MATTING – ARLINGTON ST'D 311300.7NS: ROOT PROTECTION MATTING SHALL BE USED WHERE NECESSARY TO REDUCE CONSTRUCTION EQUIPMENT IMPACT ON TREE ROOTS.

PERMANENT STABILIZATION:

ALL OF THE AREA DISTURBED WITH THIS PLAN SHALL BE PERMANENTLY STABILIZED WITH NATIVE GRASS SEEDING. ALL UNPAVED AREAS WILL BE STABILIZED WITH GRASS OR MULCH.

STORMWATER RUNOFF CONSIDERATIONS:

THE EXISTING STORM SEWER SYSTEM WILL BE USED TO DRAIN THE STORMWATER RUNOFF.

EROSION & SEDIMENT CONTROL PROGRAM:

- THE EROSION CONTROL PLAN IS INTENDED TO ESTABLISH ENTRANCES AND PERIMETER CONTROL MEASURES WHICH INCLUDES SAFETY FENCE, AND OTHER CONTROLS SPECIFIED ON THE PLANS.
- THE SEDIMENT MEASURES ARE INTENDED TO PROVIDE CONTROL DURING ALL STAGES OF IMPROVEMENTS. IT IS ANTICIPATED THAT CONTROLS WILL REMAIN IN PLACE UNTIL THEIR REMOVAL IS REQUIRED TO CONSTRUCT THE PROPOSED IMPROVEMENTS.

- NO DISTURBED AREA WILL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY CITY OF ALEXANDRIA/ARLINGTON COUNTY.
- WHERE CONSISTENT WITH JOB SAFETY REQUIREMENTS, ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. NO MATERIAL SHALL BE PLACED IN STREAMBEDS. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN 14 DAYS SHALL BE SEEDED AND MULCHED. WHEN SPOIL IS PLACED ON THE DOWNHILL SIDE OF TRENCH, IT SHALL BE BACKSLOPED TO DRAIN TOWARD THE TRENCH. WHEN NECESSARY TO DEWATER THE TRENCH, THE PUMP DISCHARGE HOSE SHALL OUTLET IN A STABILIZED AREA OR A SEDIMENT TRAPPING DEVICE. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
- DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
- THE CONTRACTOR SHALL TAKE THE FOLLOWING STEPS TO MINIMIZE THE VOLUME OF SILT:
 - CONTRACTOR SHALL EVALUATE THE SITE TO DETERMINE EXTENSIVE CUT AND FILL AREAS, AND SHALL WORK THOSE AREAS TO MINIMIZE THE EXTENT OF HEAVY EQUIPMENT WORK. CONTRACTOR SHALL STRIVE TO BRING AREAS TO GRADE (ROUGH OR FINISH) AND TO STABILIZE, BY TEMPORARY OR PERMANENT VEGETATION, THESE DISTURBED AREAS PRIOR TO BEGINNING WORK IN ANOTHER AREA.
 - FILL AREAS SHALL BE COMPACTED COMPLETELY PRIOR TO THE END OF EACH WORK DAY. FILL SLOPE SURFACES SHALL BE LEFT ROUGHENED TO REDUCE SHEET EROSION OF THE SLOPES. CONTRACTOR SHALL RE-DIRECT CONCENTRATED RUNOFF, BY EARTH BERMS OR OTHER DEVICES, AROUND ACTIVELY DISTURBED AREAS TO STABILIZED OUTLETS.
 - CUT SLOPE, AS NECESSARY, SHALL BE PROTECTED FROM CONCENTRATED FLOW BY BERMS ABOVE THE SLOPE AND DIRECTED AROUND THE DISTURBED AREA TO STABILIZED OUTLETS.
 - IN NEW PAVEMENT AREAS, PLACE THE AGGREGATE BASE STONE ON THE FINISH SUBGRADE AT THE EARLIEST POSSIBLE TIME.

MAINTENANCE PROGRAM:

THE FOLLOWING IS A PROGRAM OF MAINTENANCE FOR THE CONTROLS SPECIFIED IN THIS PLAN:

- THE SITE SUPERINTENDENT OR HIS/HER REPRESENTATIVE SHALL MAKE A VISUAL INSPECTION OF ALL CONTROLS AND NEWLY STABILIZED AREAS (I.E. SEEDED AND MULCHED AREAS) ON A DAILY BASIS; ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO INSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING IF NECESSARY.
- ALL SEDIMENT TRAPPING DEVICES SHALL BE CLEARED OUT AT 50% TRAP CAPACITY AND THE SEDIMENT SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR IF NOT SUITABLE FOR FILL, HAULING AWAY, AND DEPOSITING AT AN ACCEPTABLE DUMP SITE.
- THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT MUD AND/OR OTHER DEBRIS FROM BEING ENTERED ONTO EXISTING SWM/BMP FACILITIES OR DOWN STREAM WATER WAYS. SHOULD OFF SITE AREAS BECOME POLLUTED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE EFFECTED AREAS TO THE SATISFACTION OF THE INSPECTOR.
- AFTER CONSTRUCTION OPERATIONS HAVE ENDED, ALL DISTURBED AREAS SHALL BE STABILIZED. UPON APPROVAL OF THE CITY/COUNTY INSPECTOR, SEDIMENT CONTROLS SHALL BE REMOVED AND THE GROUND PERMANENTLY STABILIZED WITH VEGETATION WITHIN 30 DAYS.

TEMPORARY SEEDING – VESCH ST'D. 3.31:

TEMPORARY SEEDING, SEEDING RATES AND DATES SHALL CONFORM TO COASTAL PLAIN REQUIREMENTS DETAILED IN TABLE 3.31-B OF THE VESCH. LIMING SHALL BE BASED ON TABLE 3.31-B OF VESCH. FERTILIZERS SHALL BE APPLIED AS 600 LB/ACRE. THE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2"-4" OF SOIL. SEED SHALL BE EVENLY APPLIED AND SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1.5" DEEP. SEEDING MADE IN FALL FOR WINTER COVER AND DURING HOT SUMMER MONTHS SHALL BE MULCHED.

PERMANENT SEEDING (TURF) – VESCH ST'D. 3.32:

PERMANENT SEEDING (TURF), SEEDING RATES AND DATES SHALL CONFORM TO COASTAL PLAIN REQUIREMENTS DETAILED IN TABLE 3.32-E OF THE VESCH. IF SOD IS TO BE USED LIEU OF PERMANENT SEEDING (TURF), REFERENCE SODDING NOTE BELOW. FOR SEEDING WITHIN THE RPA USE METHODS AND SPECIES PROVIDED ON NEXT SHEET.

SODDING – VESCH ST'D. 3.33:

SODDED AREAS SHALL BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLANS. SOIL TEST SHOULD BE MADE TO DETERMINE THE EXACT REQUIREMENTS FOR LIME AND FERTILIZER. PRIOR TO LAYING SOD, SOIL SURFACE SHALL BE CLEAR OF TRASH, DEBRIS AND LARGE OBJECTS. QUALITY OF SOD SHALL BE STATE CERTIFIED AND ENSURE GENETIC PURITY. SOD SHALL NOT BE LAID IN EXCESSIVELY WET OR DRY WEATHER OR ON FROZEN GROUND. SOD SHALL BE INSTALLED PER PAGE III-339 OF THE VESCH, WITHIN 36 HOURS OF DELIVERY.

DUST CONTROL – VESCH ST'D. 3.39:

DUST SHALL BE CONTROLLED. DUST CONTROL METHODS INCLUDE VEGETATIVE COVER, MULCH, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE, BARRIERS, AND CALCIUM CHLORIDE. DUST CONTROL METHODS SHALL BE INSTALLED PER SECTION 3.39 OF VESCH.

UTILITY INSTALLATION:

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

- NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
- EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
- MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- RESTALLIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
- APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

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SEAL



APPROVALS DATE

<i>Arjun Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Shirley</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

EROSION & SEDIMENT CONTROL
NARRATIVE AND DETAILS

FOUR MILE RUN DREDGE
PROJECT

DESIGNED:	EC
DRAWN:	EC
CHECKED:	BMF

PLOTTED: AUGUST 23 2021

SCALE:

SHEET 08 of 32

FOUR MILE RUN DREDGE PROJECT

Pre-Storm Erosion and Sediment Control Checklist

Per Erosion and Sediment Control General Note 6, the Contractor is responsible for the installation and maintenance of any additional erosion and sediment control (ESC) measures necessary to prevent erosion and sedimentation as determined by the County. These supplementary practices are in addition to those shown in an ESC plan. ESC practices shall be modified as needed to ensure only clear water is discharged from the site.

The following actions shall be taken prior to storm events with predicted heavy and/or large volume rainfall to prevent sediment discharges from a construction site. A typical summer thunderstorm is an example of a storm event with predicted heavy and/or large volume rainfall.

Perimeter controls

- Silt fence shall be checked for undermining, holes, or deterioration of the fabric. Fencing shall be replaced immediately if the fabric is damaged or worn. Silt fence must be trenched into the ground per state specifications (Std & Spec 3.09).
- Wooden stakes or steel posts shall be properly secured upright into the ground. Damaged posts or stakes must be replaced.
- Sediment that has accumulated against the silt fence should be removed. Accumulated sediment must be removed when the level reaches one-half the height of the fencing.
- Hay bales or a stone berm should be placed across the construction entrance to prevent sediment from leaving the construction site.

Exposed slopes and soil

- Exposed slopes not at the final stabilization phase shall be covered with tarps, plastic sheeting, or erosion control matting. Covering material shall be properly secured/anchored.
- Controls shall be installed to prevent concentrated flow down an exposed slope. Berms or diversion dikes shall be installed at the top of cut / exposed slopes to direct storm flow around the disturbed area.
- Exposed slopes at the final stabilization phase shall be stabilized using slope stabilization practices such as soil stabilization blankets or matting as specified in the Virginia Erosion and Sediment Control Handbook (VESCH) Std & Spec 3.36. Blankets or mats must be properly secured and anchored to the slope using staples, pins, or stakes.
- Seeded areas shall be checked and reseeded as necessary to cover exposed soil. Recently seeded areas shall be protected by straw or soil stabilization blankets to prevent seeding from being washed away.

Stockpiles

- Stockpiled soil and other loose materials that can be washed away shall be covered with a tarp, plastic sheeting, or other stabilization matting. The cover must be properly secured / anchored down to prevent it from being blown off and exposing materials to rain. Controls such as hay bales or booms should be placed along the perimeter of the stock pile (downhill side).

Inlet protection

- Inlet protection controls shall be inspected to ensure they are functioning properly and flooding will not occur. Clogged or damaged controls must be replaced immediately. Ensure controls allow for overflow / bypass of stormwater runoff during significant storm events.

In addition to these pre-storm actions, all erosion and sediment control (ESC) measures must be checked daily and after each significant rainfall.

date

Qianqian Li, P.E.
ESC Program Administrator
Department of Environmental Sevices
2100 Clarendon Boulevard, Suite 813
Arlington, Virginia 22201

Re: Erosion and Sediment Control Permit Application for:

Four Mile Run and Long Branch Dredging
street address

Arlington County and City of Alexandria, VA
lot, block, section subdivision

permit number

Dear Mrs. Li:

I hereby certify that I accept the responsibilities of Responsible Land Disturber for the above referenced project. I understand that these responsibilities include:

- Reviewing the erosion and sedimentation (E&S) plan for the project.
- Walking the site prior to construction to identify critical areas.
- Conducting a pre-construction briefing with earth moving and site contractors to present the E&S plan and highlight the presence of critical areas, the limits of clearing and the required E&S controls and tree protection measures to be installed. Call 703-228-0760 to schedule pre-construction meeting.
- Regularly inspecting the site during construction to ensure that all E&S controls are functioning and are adequate to address erosion and sedimentation. Inspect the site 48 hours after a runoff-generating storm, and provide a copy of the inspection findings to the county.
- Reporting to the owner the presence inadequate or non functioning E&S controls when they are observed.
- Ensuring that temporary soil stabilization is applied within 7 days to areas denuded that will remain undisturbed for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
- Calling (703) 228-0760 at least 80 hours before demolishing any structure.

I may be reached at _____ with questions about this plan or my execution of the duties of Responsible Land Disturber.
telephone number

Sincerely,

signed

name printed

professional registration (type and number)

E&S QUANTITIES
(FOR WORK AREA 1 ONLY)
FOUR MILE RUN SECTION

ITEM	UNIT	QUANTITY
TEMPORARY CONSTRUCTION ENTRANCE	EA	2
12' SWING GATE	EA	2
TEMPORARY TOPPING OF VDOT #1/#2 STONE	TON	250
ACCESS PATH VDOT CLASS II DRY RIP RAP	TON	1125
SAFETY FENCE (FENCE FE-CL)	LF	1190
TREE PROTECTION FENCE	LF	120
TURBIDITY CURTAIN, IMPERVIOUS	LF	675
DEWATERING BASIN	EA	1
SUPER SILT FENCE	LF	905
COFFERDAM	LF	395
TEMPORARY 48" HDPE PIPE	LF	180
TEMPORARY TIMBER MATTING	LF	420
TREE REMOVAL (GREATER THAN 6" DBH)	EA	-

NOTES:

- ALL QUANTITIES SHOWN ARE FOR INFORMATION ONLY.
- QUANTITIES REFLECT WORK ASSOCIATED WITH THE WORK AREA 1 AS SHOWN IN THE PLANS. RESETTling OF MATERIALS WILL BE REQUIRED FOR ADDITIONAL WORK AREAS. CONTRACTOR MAY ADJUST PHASING AND LAYOUT PER FIELD CONDITIONS WITH PRIOR APPROVAL BY THE ENGINEER/PROJECT OFFICER.
- THE MOVING, RESETTling, REPLACEMENT, AND REPAIR OF ALL EROSION AND SEDIMENT CONTROL MEASURES ARE CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT BE PAID FOR SEPARATELY.

E&S QUANTITIES
(FOR PHASE 1 WORK AREA ONLY)
LONG BRANCH SECTION

ITEM	UNIT	QUANTITY
TEMPORARY CONSTRUCTION ENTRANCE	EA	2
12' SWING GATE	EA	1
TEMPORARY TOPPING OF VDOT #1/#2 STONE	TON	15
ACCESS PATH VDOT CLASS II DRY RIP RAP	TON	65
SAFETY FENCE (FENCE FE-CL)	LF	225
TREE PROTECTION FENCE	LF	200
TURBIDITY CURTAIN, IMPERVIOUS	LF	35
DEWATERING BASIN	EA	1
SUPER SILT FENCE	LF	80
COFFERDAM	LF	230
TEMPORARY 48" HDPE PIPE	LF	25
TEMPORARY TIMBER MATTING	LF	110
TREE REMOVAL (GREATER THAN 6" DBH)	EA	26

NOTES:

- ALL QUANTITIES SHOWN ARE FOR INFORMATION ONLY.
- QUANTITIES REFLECT WORK ASSOCIATED WITH THE PHASE 1 WORK AREA AS SHOWN IN THE PLANS. RESETTling OF MATERIALS WILL BE REQUIRED FOR ADDITIONAL WORK AREAS IN PHASE 1 AND PHASE 2. CONTRACTOR MAY ADJUST PHASING AND LAYOUT PER FIELD CONDITIONS WITH PRIOR APPROVAL BY THE ENGINEER/PROJECT OFFICER.
- THE MOVING, RESETTling, REPLACEMENT, AND REPAIR OF ALL EROSION AND SEDIMENT CONTROL MEASURES ARE CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT BE PAID FOR SEPARATELY.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM
CONSTRUCTION ACTIVITIES (VAR10)
REGISTRATION STATEMENT 2019

PERMIT #:
PLAN/ID #:
TECHNICAL CRITERIA: IIB ☐ IIC ☐

Application type. ☒ NEW PERMIT ISSUANCE
(CHOOSE ONE) ☐ MODIFICATION WITH ACREAGE INCREASE
☐ MODIFICATION WITHOUT ACREAGE INCREASE
☐ EXISTING PERMIT RE-ISSUANCE

Section I. Operator/Permittee Information.

A. Construction Activity Operator (Permittee). The person or entity that is applying for permit coverage and will have operational control over construction activities to ensure compliance with the general permit. A person with signatory authority for this operator must sign the certification in Section V. (per Part III. K. of the VAR10 Permit).

Operator Name: RK&K
Contact person: John M. McDowell, PE
Address: 12600 Fair Lakes Circle, Suite 300
City, State and Zip Code: Fairfax, VA 22033
Phone Number:
Primary and CC Email: jmcowell@rkk.com; CC: mgallo@arlingtonva.us

B. Electronic correspondence. To receive an emailed coverage letter or to pay by credit card, you must choose YES and include a valid email. May we transmit correspondence electronically? YES ☒ NO ☐

Section II. Construction Activity Information.

A. Include a site map showing the location of the existing or proposed land-disturbing activities, the limits of land disturbance, construction entrances and all waterbodies receiving stormwater discharges from the site.

B. Project site location information.

Construction Activity Name: Four Mile Run Dredge Project
Address: 1) Four Mile Run and 2) Long Branch
City and/or County and Zip Code: 1) City of Alexandria, 22305, 2) Arlington County, 22206
Construction Activity Entrance Location (description, street address and/or latitude/longitude in decimal degrees): 1) Four Mile Run: Four Mile Run Park entrance, 4131 Mt Vernon Ave, Alexandria, 22305
2) Long Branch: Troy Park, on S. Troy St at intersection with S. Glebe Rd, Arlington, 22206
Latitude and Longitude (6-digit, decimal degrees format): 1) 38.8448 N, 77.0643 W, 2) 38.8447 N, 77.0712 W

C. Acreage totals for all land-disturbing activities to be included under this permit coverage. Report to the nearest one-hundredth of an acre.

Total land area of development (include entire area to be disturbed as approved in the Stormwater Management Plan): 8.58 ac
Primary estimated area to be disturbed (include portions with Erosion and Sediment Control Plan approval only): 8.58 ac
Off-site estimated area to be disturbed (if applicable): N/A

D. Property Owner Status: FEDERAL ☒ STATE ☐ PUBLIC ☒ PRIVATE ☐

E. Nature of the Construction Activity Description (i.e. commercial, industrial, residential, agricultural, environmental, utility): Environmental

F. Municipal Separate Storm Sewer System (MS4) name(s) (if the site is discharging to a MS4): N/A

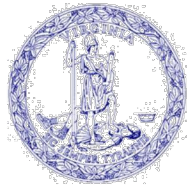
G. Estimated Project Dates (MM/DD/YYYY).

Start Date: TBD
Completion Date:

H. Is this construction activity part of a larger common plan of development or sale? YES ☐ NO ☒

Rev 11/2020

PAGE 1 | 6



Commonwealth of Virginia
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482 FAX (804) 698-4178
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural and Historic Resources

David K. Taylor
Director
(804) 698-4000

August 03, 2021

Rummel Klepper and Kahl LLP dba RK and K
12600 Fair Lakes Cir
Fairfax, VA 22033
jmcowell@rkk.com

RE: Coverage under the VPDES Construction General Permit (VAR10)
General Permit Number VAR10P848
CIP2020-00017
Four Mile Run Dredge Project
Environmental - Capacity
Alexandria

Dear Permittee:

DEQ has reviewed your Registration Statement received complete on July 19, 2021 and determined that the proposed 8.58 acre land-disturbing activity is covered under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10). The effective date of your coverage under this general permit is July 1, 2019 or the date of this letter, whichever is later. You may obtain a copy of the general permit from <https://law.lis.virginia.gov/admincode/title9/agency25/chapter80/section70/>.

The general permit contains the conditions of coverage and Stormwater Pollution Prevention Plan (SWPPP) requirements. Please print the general permit and read it carefully as you will be responsible for compliance with all permit conditions. Coverage under this construction general permit does not relieve the operator of complying with all other federal, state, or local laws and regulations.

Our records indicate that your site may discharge to waters identified as impaired or exceptional. Please see below for additional requirements:

- Does this proposed land-disturbing activity discharge to a surface water identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of the general permit for (i) sediment or a sediment-related parameter or (ii) nutrients? Yes. If YES, then the following general permit (Part I B 4 a) and SWPPP requirements (Part II B 5) must be implemented for the land-disturbing activity:

- Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site;
- Nutrients (e.g., fertilizers) shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events;
- Inspections shall be conducted at a frequency of (i) at least once every four (4) business days or (ii) at least once every (5) business days and no later than 24 hours following a measurable storm event. In the

CONSTRUCTION GENERAL PERMIT (VAR10) REGISTRATION STATEMENT 2019

I. 6th Order Hydrologic Unit Code (HUC) and Receiving Water Name(s). Include additional areas on a separate page.

HUC	NAME(S) OF RECEIVING WATERBODY
PL25	Potomac River-Four Mile Run

Section III. Off-site Support Activity Location Information.

List all off-site support activities and excavated material disposal areas being utilized for this project. Include additional areas on a separate page.

Off-site Activity Name:	To be determined and updated by Contractor
Address:	
City or County:	
Off-site Activity Entrance Location (description, street address and/or latitude/longitude in decimal degrees):	
Latitude and Longitude (6-digit, decimal degrees format):	
Is this off-site activity an excavated material disposal area?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
If this off-site activity is an excavated material disposal area, list the contents of the excavated fill material:	Cobbles, gravel, and sand dredged from stream
Will a separate VPDES permit cover this off-site activity?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

Section IV. Other Information.

A. A stormwater pollution prevention plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities prior to submitting the Registration Statement. By signing the Registration Statement, the operator is certifying that the SWPPP has been prepared.

B. Has an Erosion and Sediment Control Plan been submitted to the VESC Authority for review? YES ☒ NO ☐
Erosion and Sediment Control Plan Approval Date (for the estimated area to be disturbed MM/DD/YYYY):

C. Has land-disturbance commenced? YES ☐ NO ☒

D. Annual Standards and Specifications. If this project is utilizing approved Annual Standards and Specifications (AS&S), attached the completed AS&S Entity Form.
AS&S Entity Name (if different from the Operator identified in Section I): N/A

E. Billing information (leave blank if same as the Operator identified in Section I. above). This entity will receive Annual Permit Maintenance and Permit Modification Fee invoices (if applicable).

Billing Name:
Contact Name:
Address:
City, State and Zip Code:
Phone Number:
Primary and CC Email:

Rev 11/2020

PAGE 2 | 6

August 03, 2021
General Permit Number VAR10P848
Page 2

- event that a measurable storm event occurs when there are more than 24 hours between business days, the inspection shall be conducted on the next business day; and
 - Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls.
- Does this proposed land-disturbing activity discharge to a surface water identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of the general permit for polychlorinated biphenyl (PCB)? Yes. If YES, then the following general permit (Part I B 4 b) and SWPPP requirements (Part II B 6) must be implemented for the land-disturbing activity if the construction activity involves the demolition of structures (i) equal to or greater than 10,000 square feet and (ii) built or renovated on or before January 1, 1980:

- Implement an approved erosion and sediment control plan;
 - Dispose of PCB-contaminated materials in compliance with applicable state, federal, and local requirements to minimize the exposure of PCB-containing building materials;
 - Inspections shall be conducted at a frequency of (i) at least once every four (4) business days or (ii) at least once every (5) business days and no later than 24 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 24 hours between business days, the inspection shall be conducted on the next business day; and
 - Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls.
- Does this proposed land-disturbing activity discharge to an exceptional water as identified in Section 30 of the Water Quality Standards, 9VAC 25-260? No. If YES, then the following general permit (Part I B 5) and SWPPP requirements (Part II B 7) must be implemented for the land-disturbing activity:

- Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site;
- Nutrients (e.g., fertilizers) shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events;
- Inspections shall be conducted at a frequency of (i) at least once every four (4) business days or (ii) at least once every (5) business days and no later than 24 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 24 hours between business days, the inspection shall be conducted on the next business day; and
- Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls.

The general permit requires that you submit a complete Notice of Termination packet no later than 30 days after meeting one or more of the termination conditions set forth in the general permit (Part I F). In accordance with the Virginia Stormwater Management Program State Permit Fee Regulation (9VAC 25-870-830), you may be required to pay an annual permit maintenance fee until coverage under this general permit has been terminated. If you are required to pay an annual permit maintenance fee, you will receive an invoice from the VSMP Authority.

The general permit will expire on June 30, 2024. The conditions of the general permit require that you submit a new registration statement at least 60 days prior to that date if you wish to continue coverage under the general permit, unless permission for a later date has been granted by the Board. Permission cannot be granted to submit the registration statement after the expiration date of the general permit.

If you have any questions about this permit, please contact the DEQ Office of Stormwater Management at ConstructionGP@deq.virginia.gov.

Sincerely,

Erin Ervin Belt
Erin Ervin Belt, Manager

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

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SEAL



APPROVALS DATE

Arjun Patel 07/19/21
DESIGN TEAM ENGINEER SUPERVISOR
Kamal Taktak 8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR
WATER, SEWER, STREETS BUREAU CHIEF
Dennis M. Leach 07/21/20
TRANSPORTATION DIRECTOR
Michael Gallo 07/21/21
PROJECT MANAGER

REVISIONS DATE

EROSION & SEDIMENT CONTROL
NARRATIVE AND DETAILS

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE:

TABLE 3.31-B (Revised June 2003) TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS		
APPLICATION DATES	SEED SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME		
<ul style="list-style-type: none">Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)		
NOTE: 1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. 2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means. 3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs		

Restoration Measures for Natural Areas and RPAs

- ☒ If streambanks are to be disturbed, contact DES OSEM about bank stabilization alternatives.
- ☒ Apply permanent seeding, weed-free straw and matting rather than leaf mulch for stabilization in natural areas.
- ☒ Use only regionally native plant seed mixes, weed-free straw and 100% biodegradable natural fiber matting for permanent stabilization. *Non-native perennial grasses such as perennial rye, tall fescue, creeping fescue, Kentucky bluegrass, etc. are not appropriate for stabilization of natural areas.*
- ☒ Permanent seeding: Seed and straw with the following seed mix at a rate of 50 lb per acre (2 lb/1000 sf):

- 20% Annual rye - Lolium multiflorum
- 30% Virginia wild rye - Elymus virginicus
- 25% Deer-tongue grass - Panicum clandestinum
- 15% Riverbank wild rye - Elymus riparius
- 5% Bottle-brush grass - Elymus hystrix
- 2% Partridge pea - Chamaecrista fasciculata
- 1% Rough-stemmed goldenrod - Solidago rugosa
- 1% Common milkweed - Asclepias syriaca
- 1% Grass-leaved goldenrod - Euthamia graminifolia

Seed should be applied to roughened soil (soil surface broken up) via broadcast seeding.

Due to significant demand, particularly for native seed mix, it is recommended that seed be pre-ordered and stored. Seed mixes are best used within 1 year of ordering, but can be kept for up to 2 years if necessary. Potential sources for native seed mix and native plants:

- Earth Sangha - Wild Plant Nursery (seed mix must be pre-ordered) - www.earthsangha.org
- Ernst Conservation Seeds - www.ernstseed.com
- Davey Tree via the County's existing Landscape Contract.

TABLE 3.32-E (Revised June 2003) PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA		
LAND USE	SEED SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue ¹ or Bermudagrass ¹	175 - 200 lbs. 75 lbs.
High-Maintenance Lawn	Tall Fescue ¹ or Bermudagrass ¹ (seed) or Bermudagrass ¹ (by other vegetative establishment method, see Std. & Spec. 3.34)	200-250 lbs. 40 lbs. (unhulled) 30 lbs. (hulled)
General Slope (3:1 or less)	Tall Fescue ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ²	128 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Sleeper than 3:1)	Tall Fescue ¹ Bermudagrass ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ² Sericea Lespedeza ³	93-108 lbs. 0-15 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

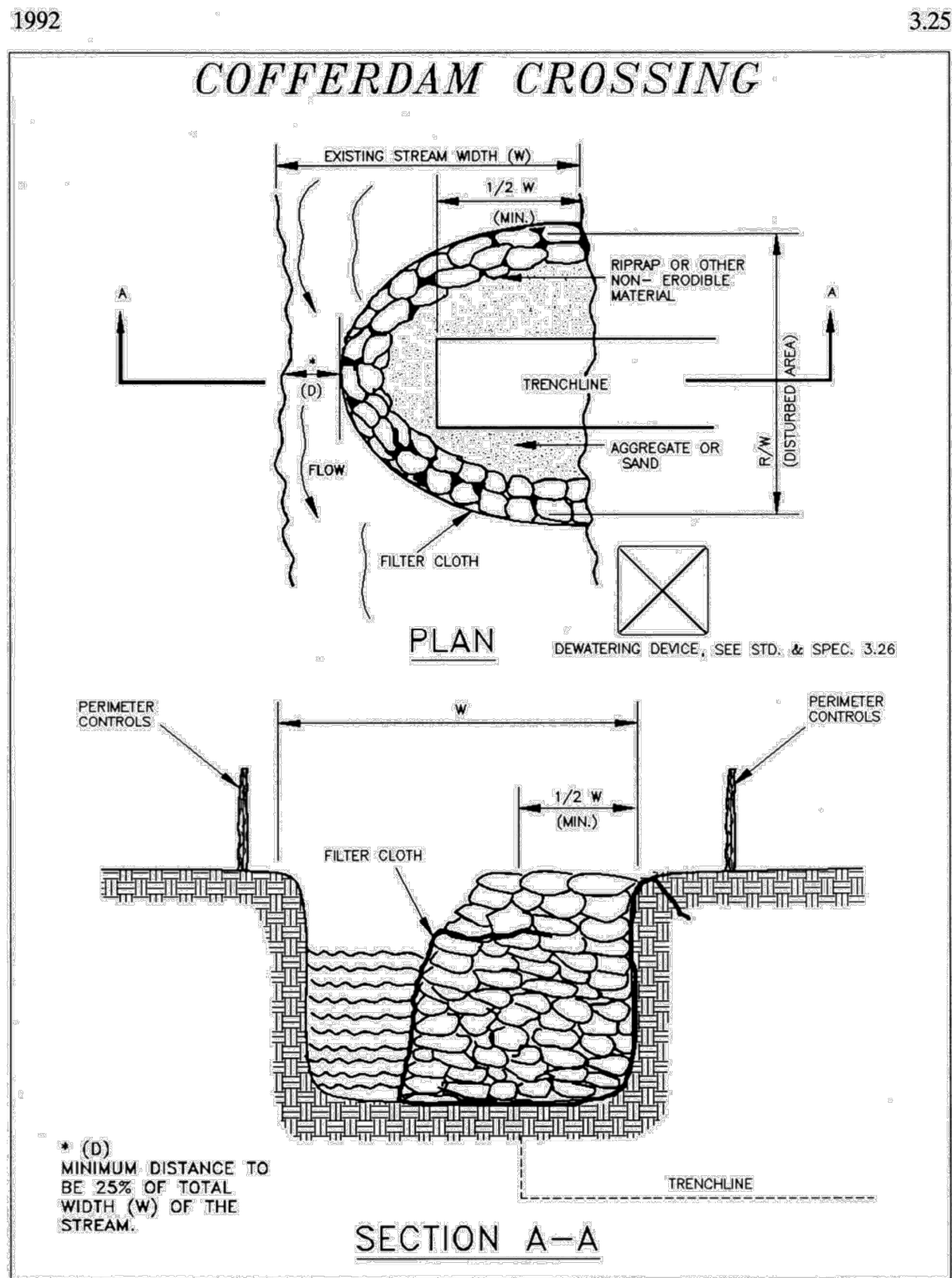
1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at <http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html>

2 - Use seasonal nurse crop in accordance with seeding dates as stated below:

February, March - April	Annual Rye
May 1 st - August	Foxtail Millet
September, October - November 15 th	Annual Rye
November 16 th - January	Winter Rye

3 - May through October, use hulled seed. All other seeding periods, use unhulled seed. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 - 40 lbs/acre.

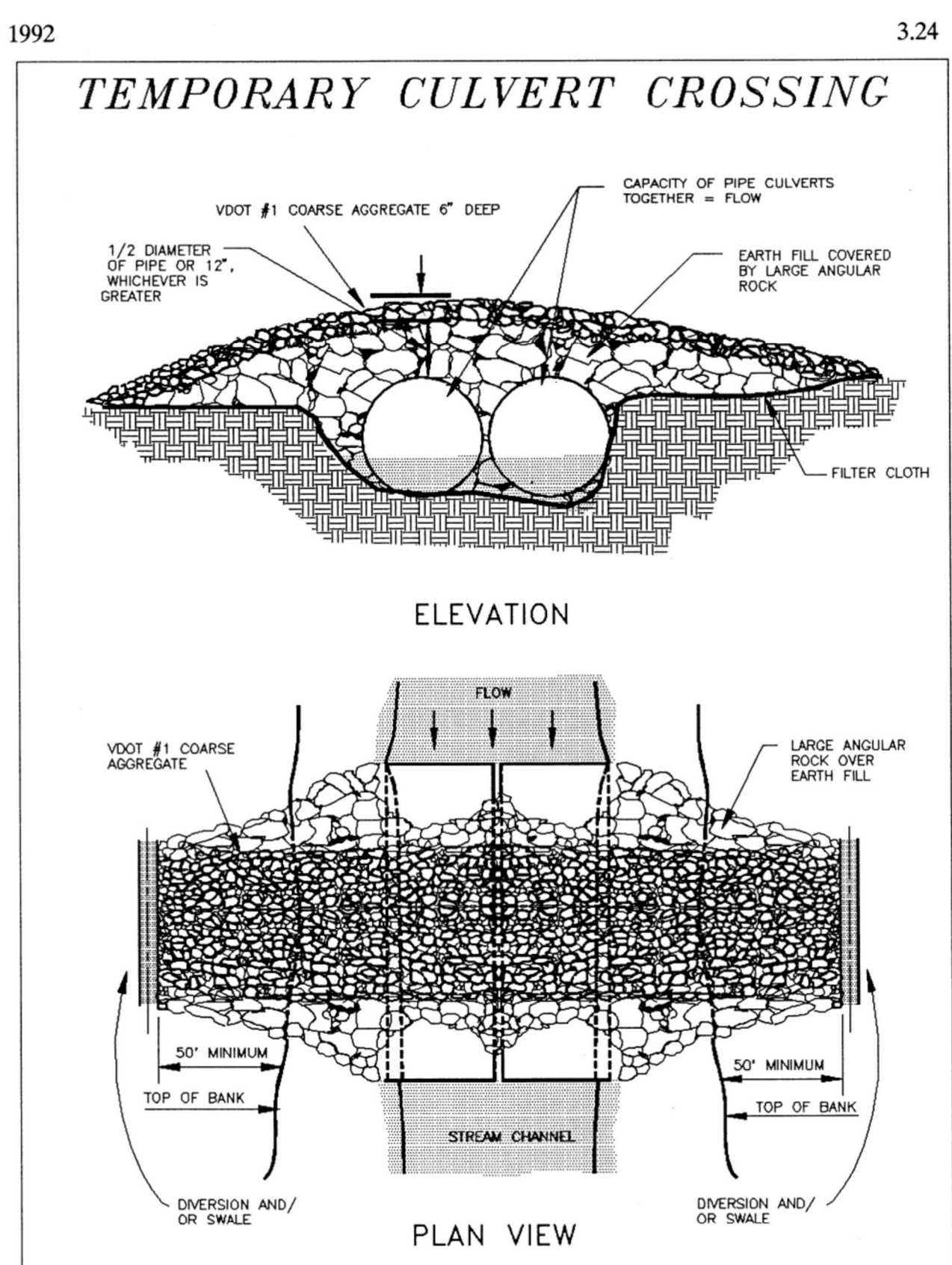
FERTILIZER & LIME		
<ul style="list-style-type: none">Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)		
NOTE: - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means. - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs		



Source: Va. DSWC

Plate 3.25-4

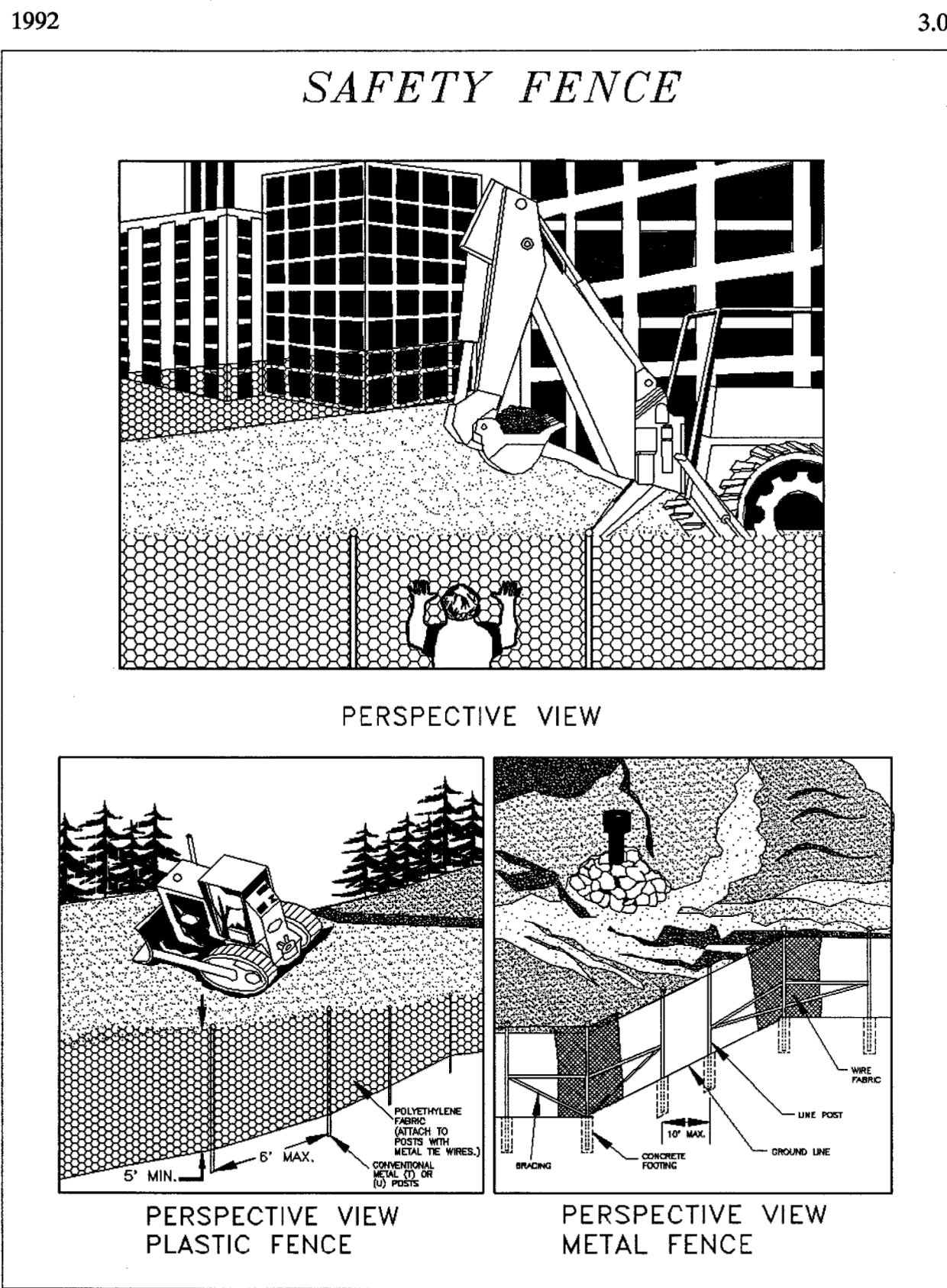
III - 236



Source: Va. DSWC

Plate 3.24-2

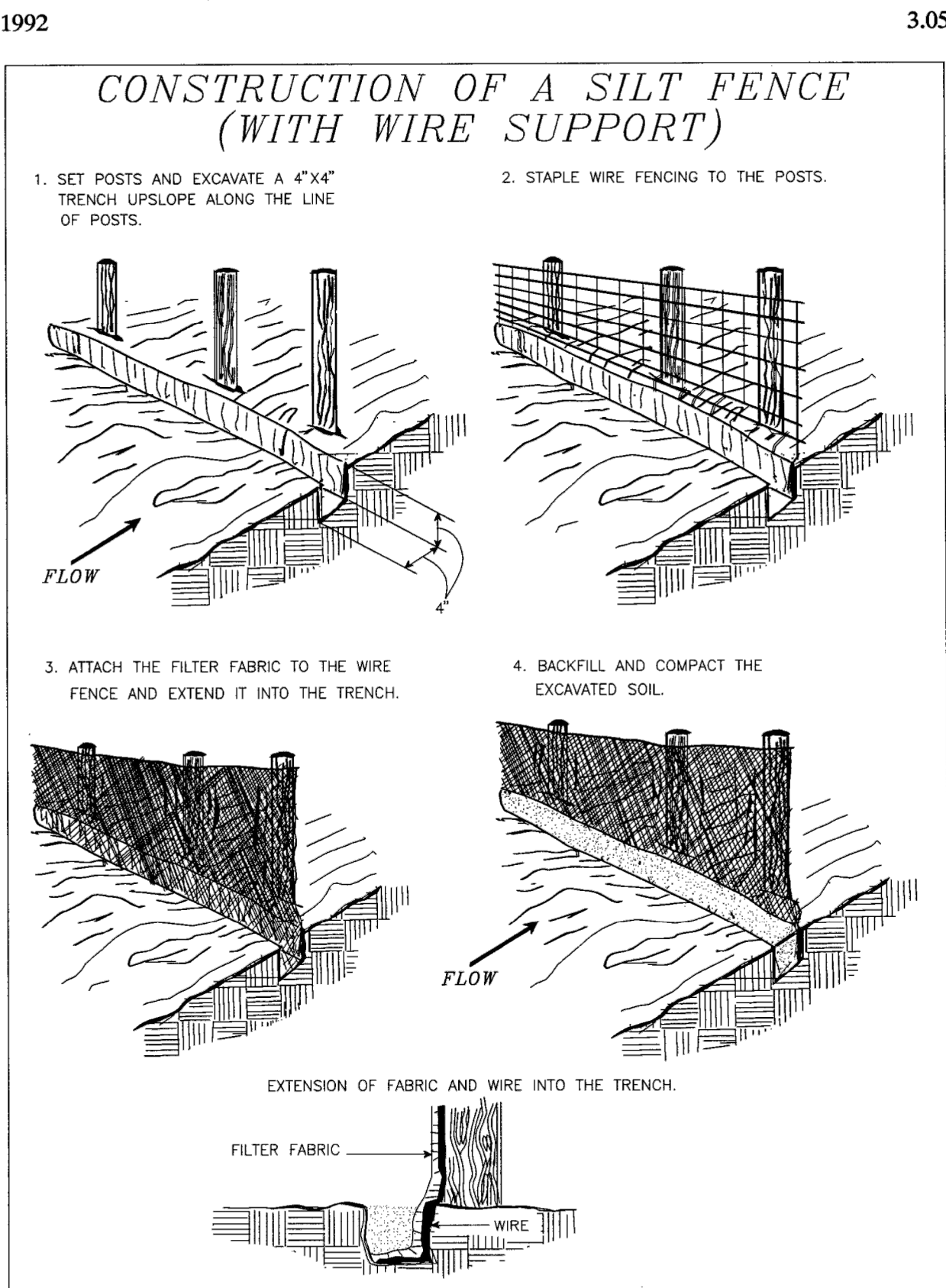
III - 222



Source: Adapted from Conwed Plastics and VDOT Road and Bridge Standards

Plate 3.01-1

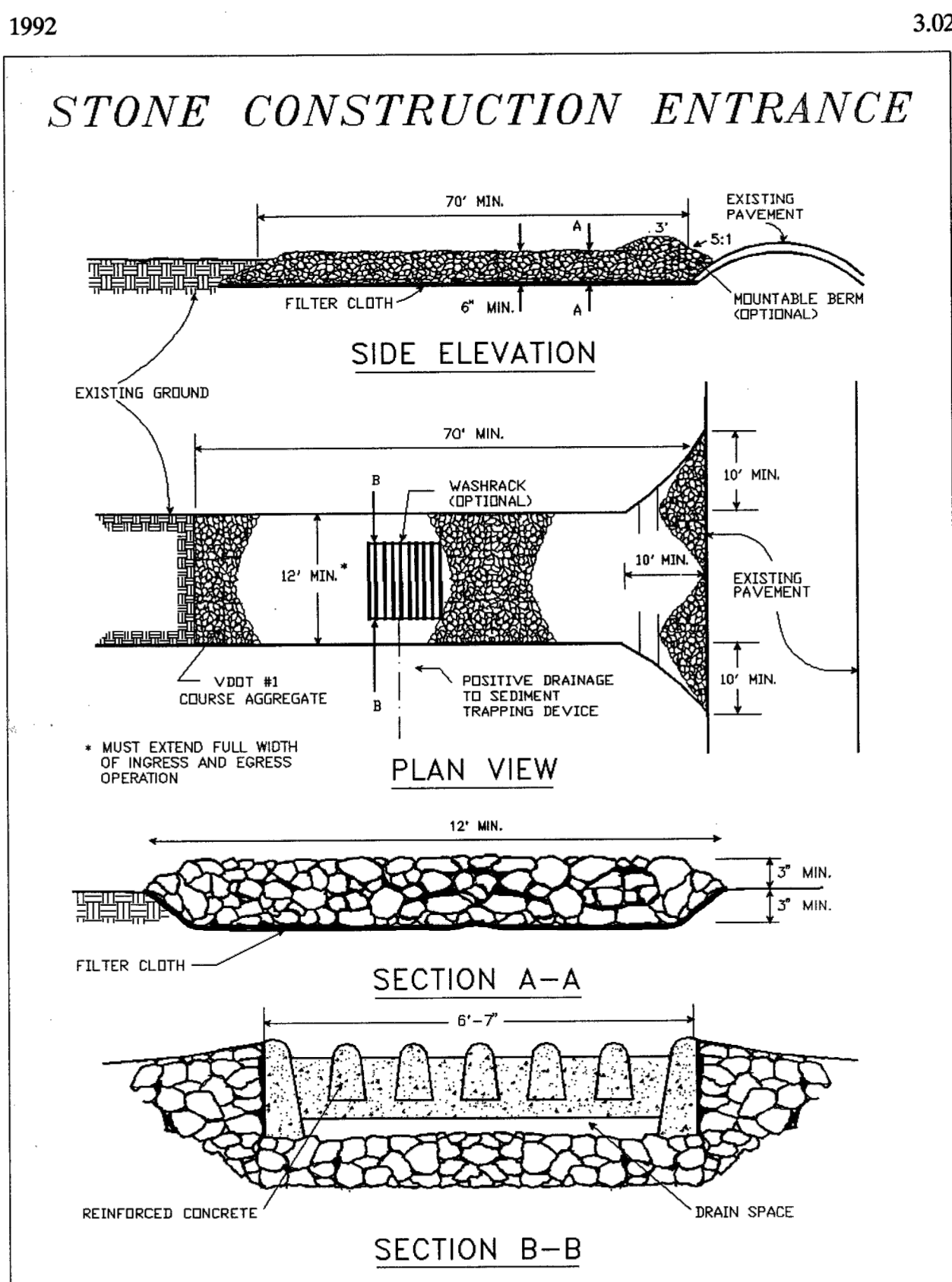
III - 5



Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

Plate 3.05-1

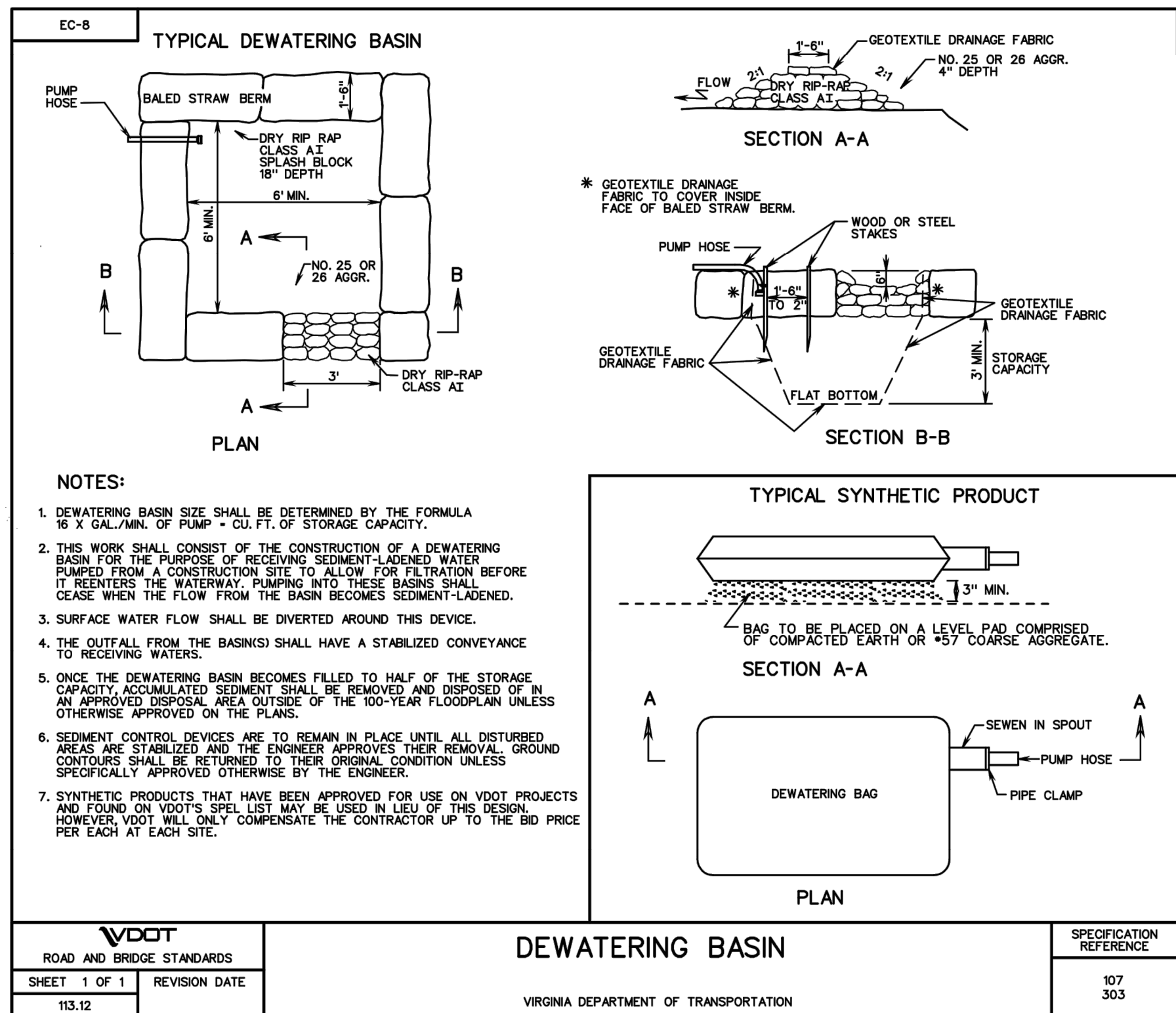
III - 24



Source: Adapted from 1983 Maryland Standards for Soil Erosion and Sediment Control, and Va. DSWC

Plate 3.02-1

III - 9



DEWATERING BASIN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

107 303

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
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ARLINGTON, VA 22201
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FAX: 703.228.3606

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SEAL



APPROVALS DATE

Arjun Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
Michael Gallo	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS DATE

REVISIONS	DATE

EROSION & SEDIMENT CONTROL
NARRATIVE AND DETAILS

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

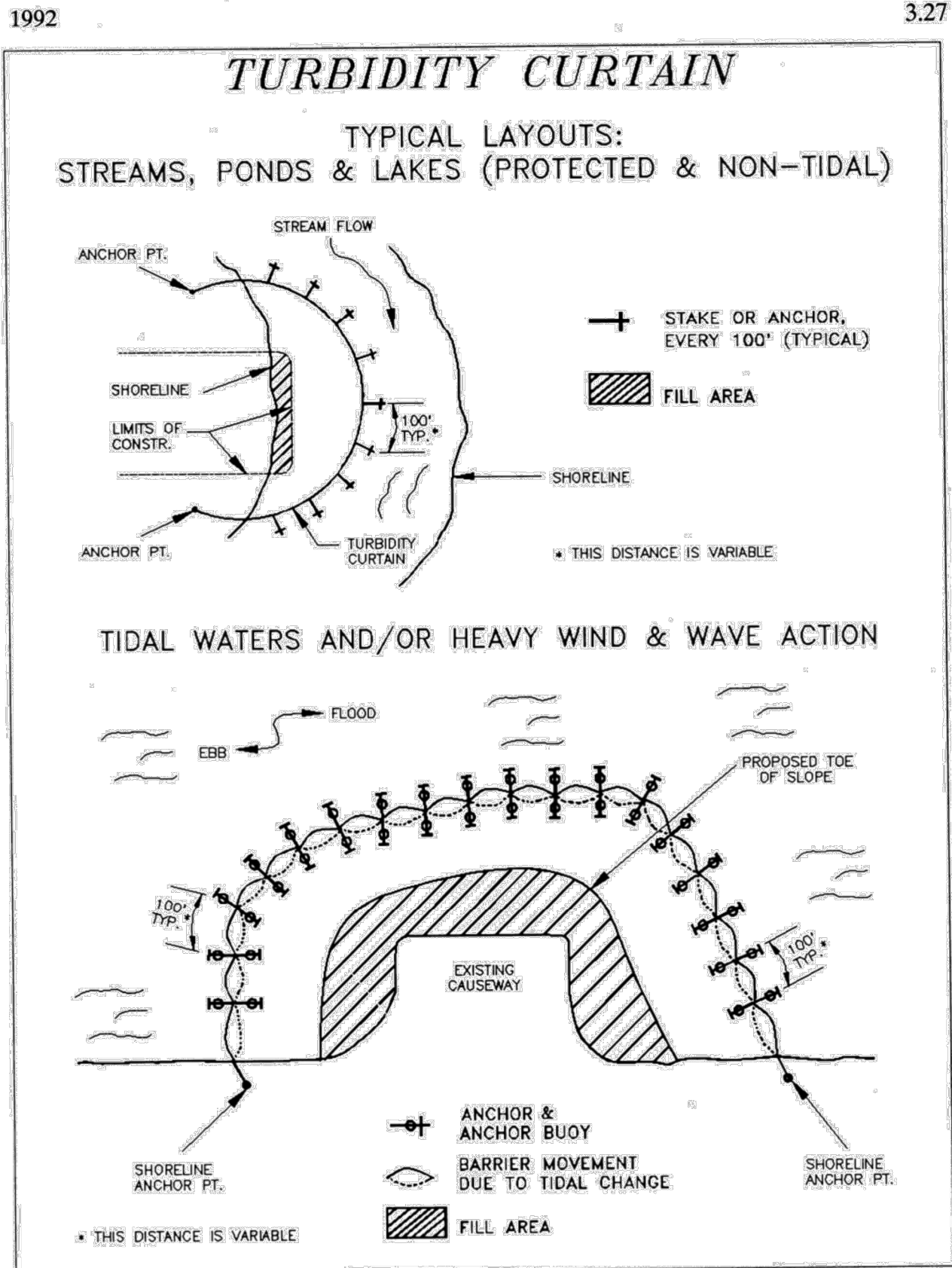
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SCALE: As Noted

SHEET 09 of 32

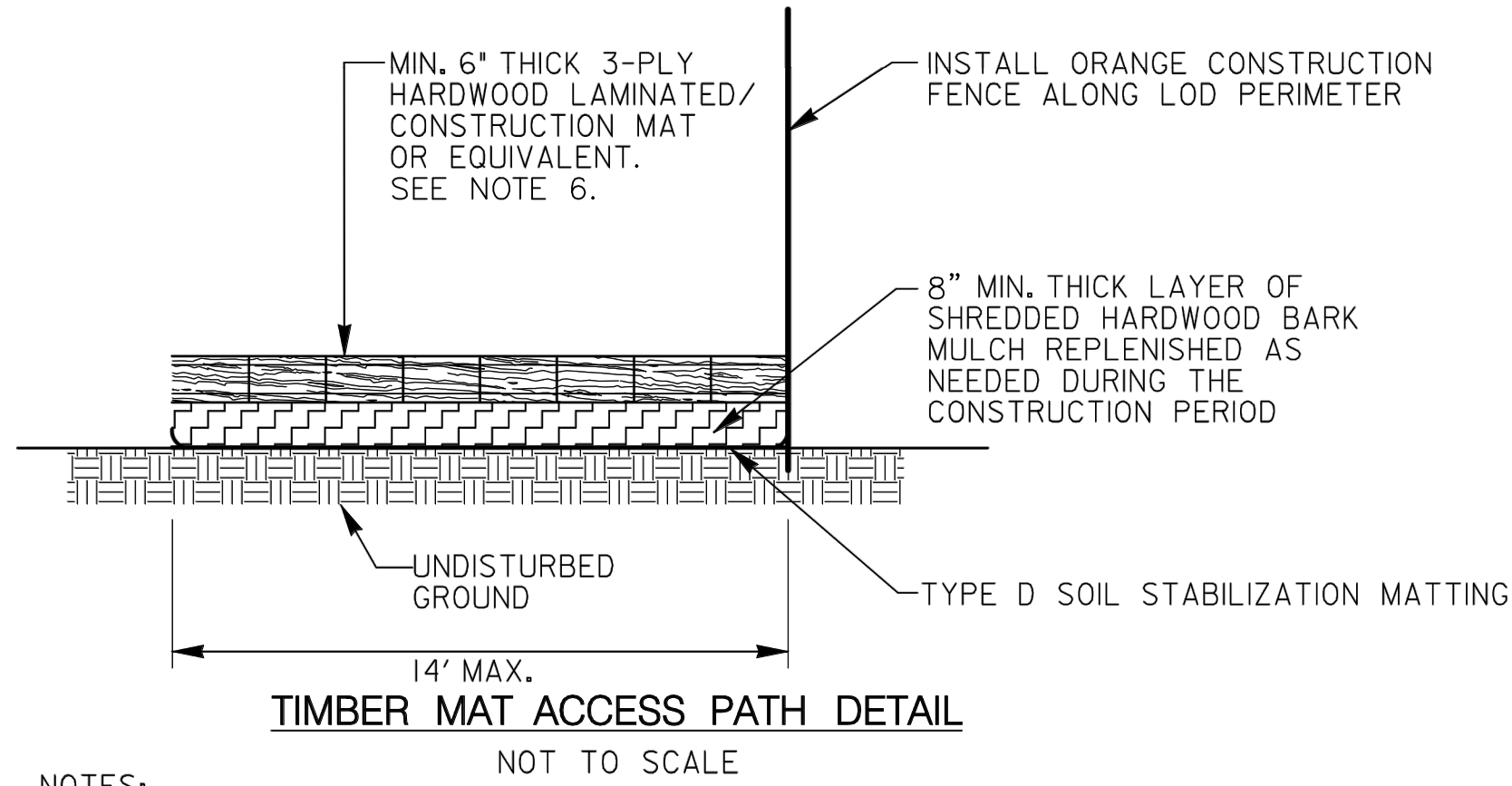
FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021
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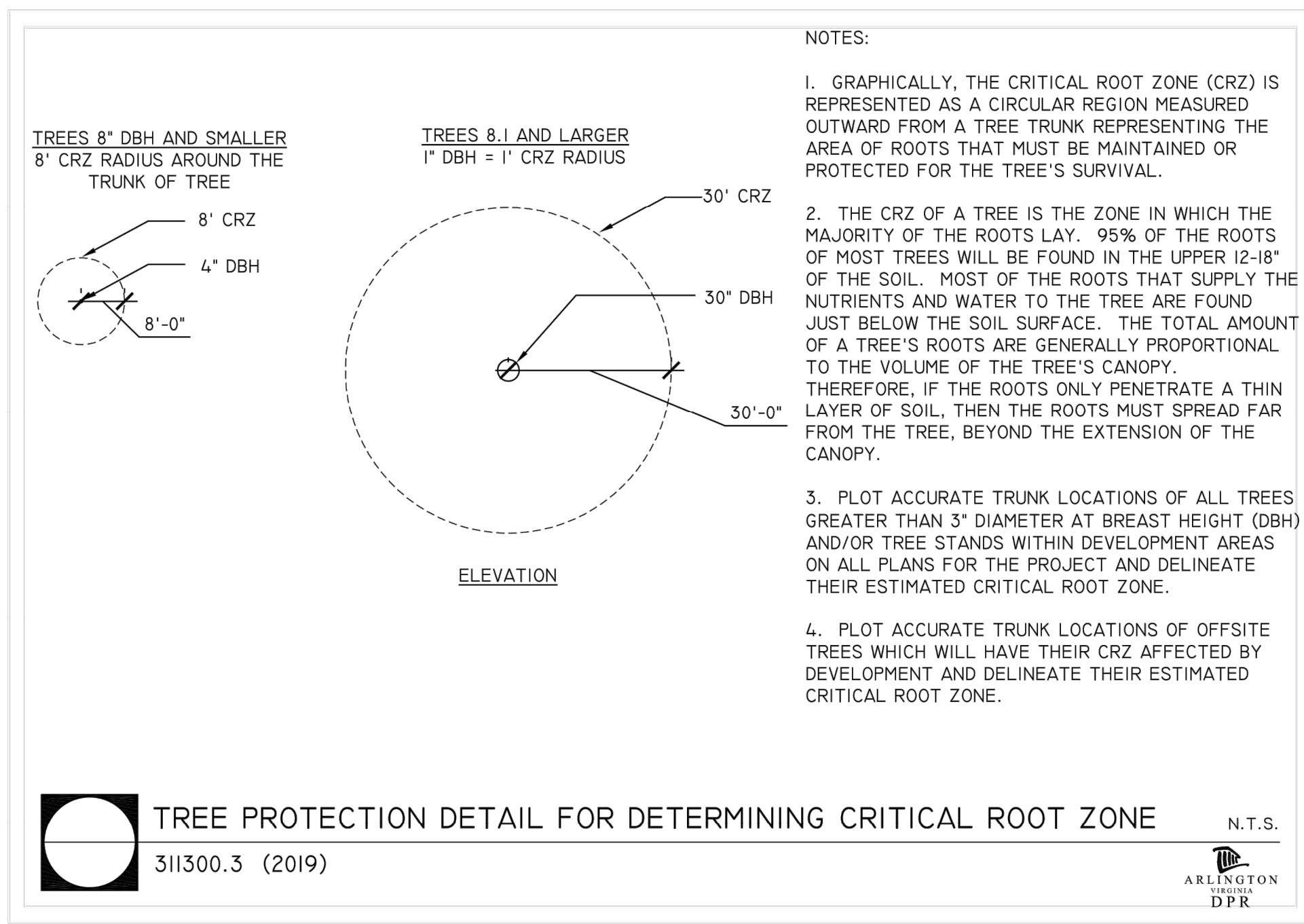


Source: Adapted from Florida Department of Transportation Road and Design Specifications

Plate 3.27-3



- NOTES:
- TIMBER MATS TO BE INSTALLED AS INDICATED ON PLANS IN CRITICAL ROOT ZONES OF TREES 24\"/>



TREE PROTECTION DETAIL FOR DETERMINING CRITICAL ROOT ZONE

311300.3 (2019)

N.T.S.

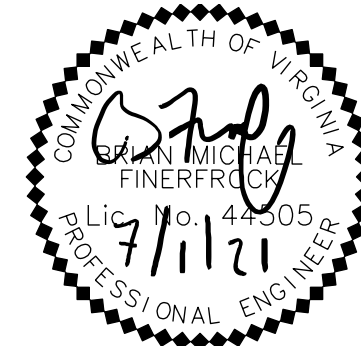
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DEPARTMENT OF
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FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
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07/23/2021	
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS DATE

EROSION & SEDIMENT CONTROL
NARRATIVE AND DETAILS

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

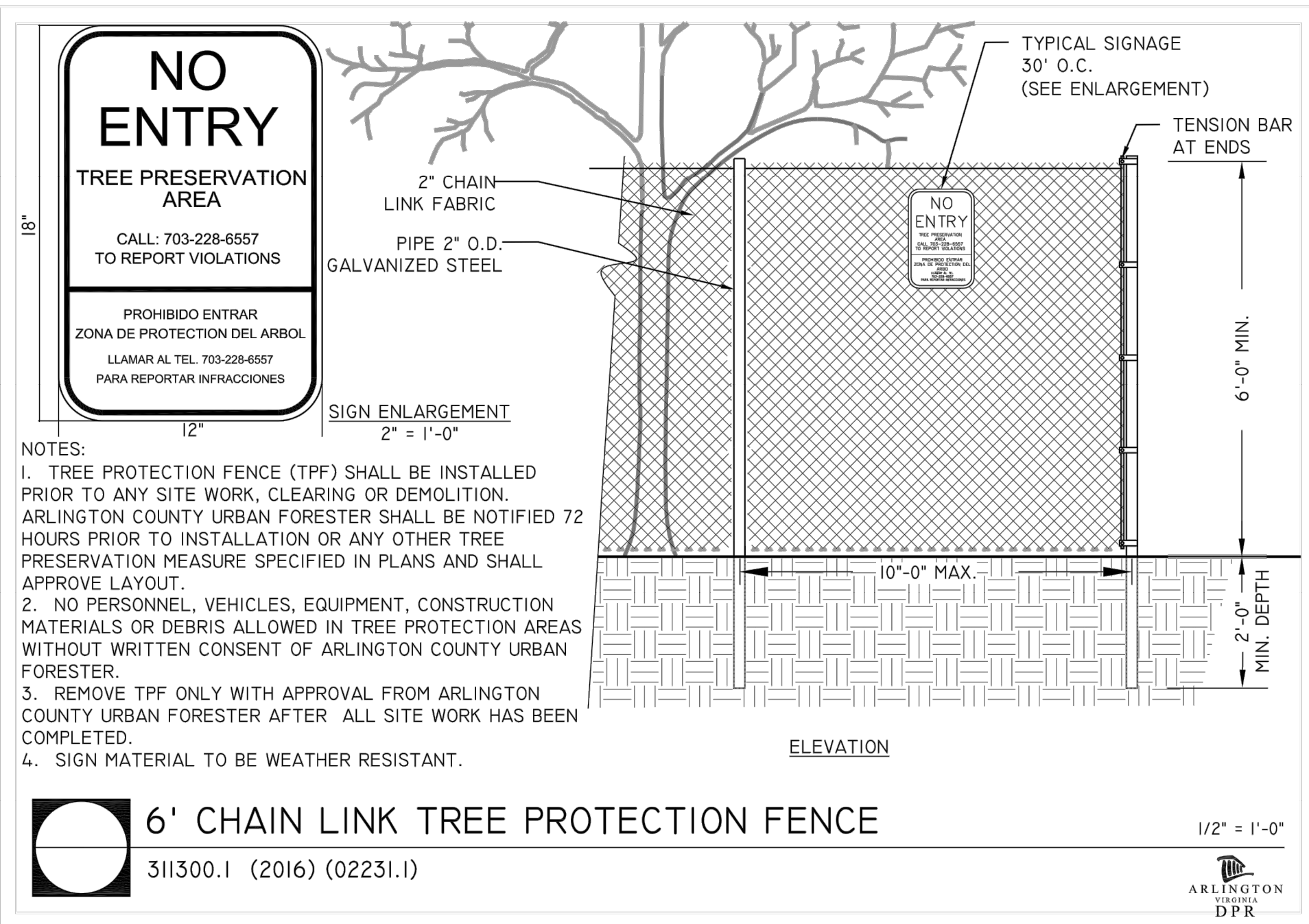
PLOTTED: AUGUST 23 2021

SCALE: As Noted

SHEET 10 of 32

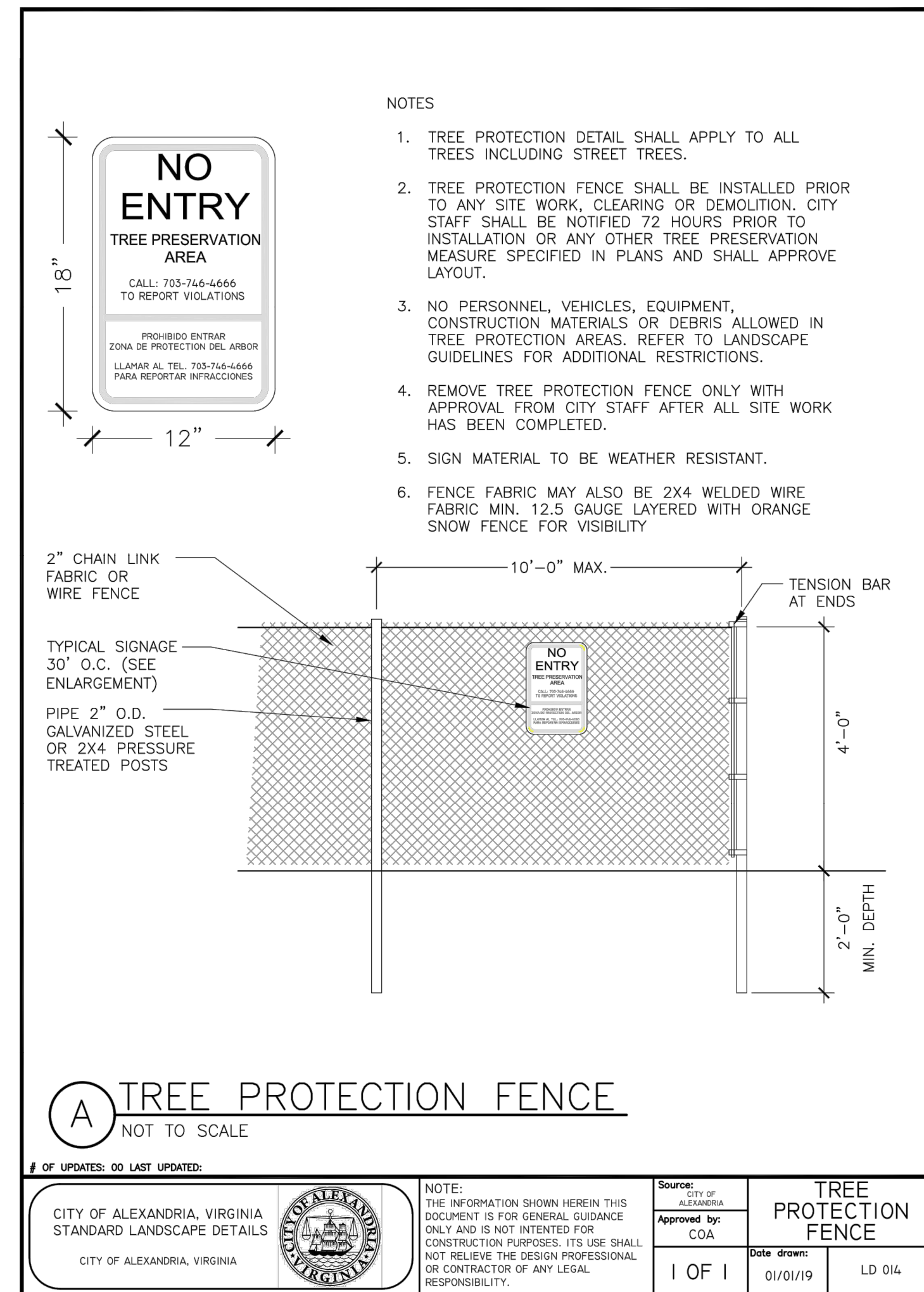
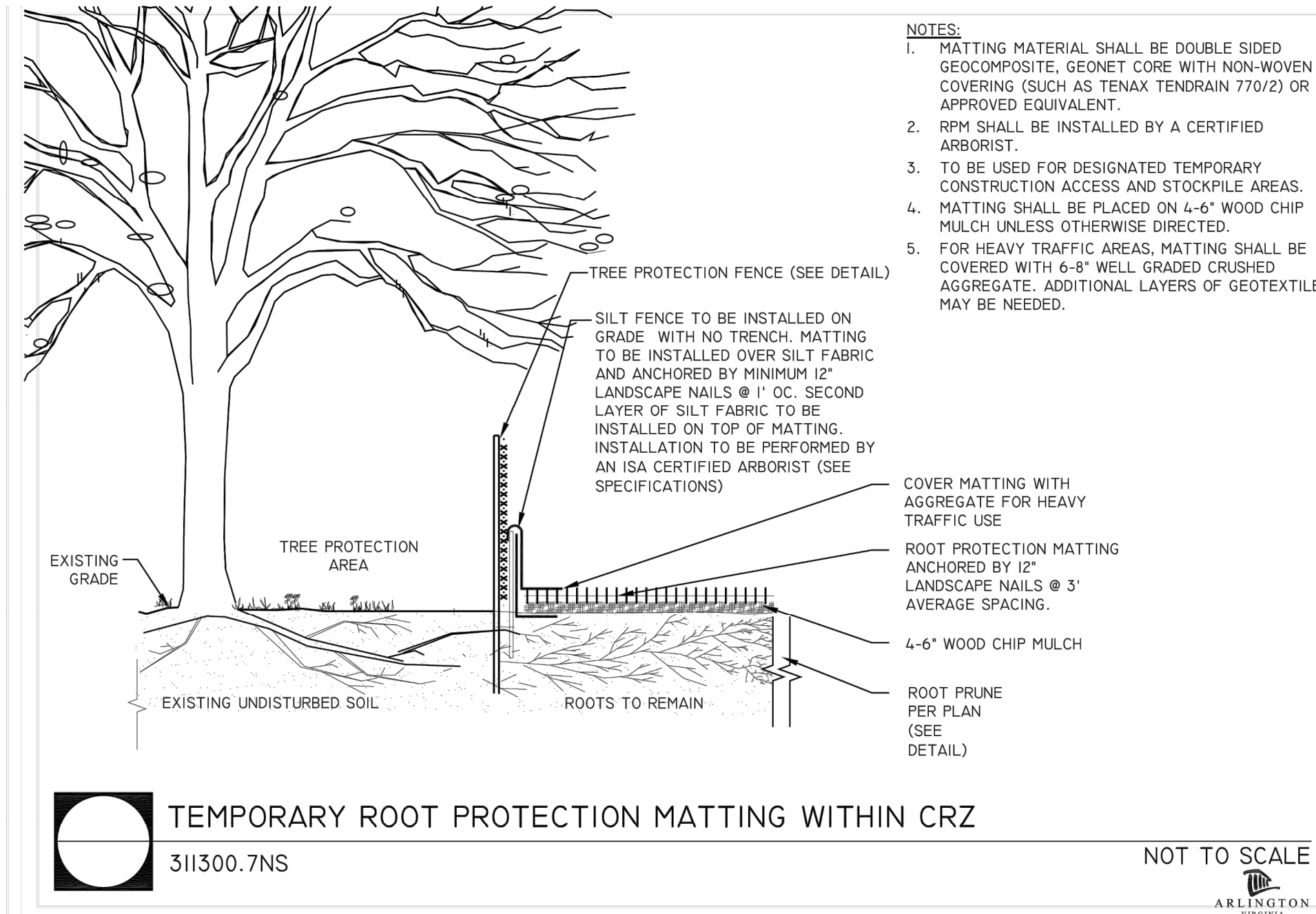
FOUR MILE RUN DREDGE PROJECT

III - 252



TREE PRESERVATION

- BEFORE ANY GRADING, DEMOLITION, OR OTHER DISTURBANCE, INCLUDING TREE REMOVAL, A PRECONSTRUCTION MEETING SHALL BE HELD WITH AN ARLINGTON COUNTY URBAN FORESTER. CHANGES TO THE PLAN, BASED ON FIELD CONDITIONS, MAY BE REQUESTED BY THE URBAN FORESTER AT THE TIME OF THE PRECONSTRUCTION MEETING.
- TREE PROTECTION SHALL BE INSTALLED PER PLAN, WITH ANY CHANGES REQUESTED AT THE PRECONSTRUCTION MEETING, AND INSPECTED BY AN ARLINGTON COUNTY URBAN FORESTER. EROSION AND SEDIMENT CONTROLS ARE INSPECTED BY THE DEPARTMENT OF ENVIRONMENTAL SERVICES.
- REMOVAL OF TREES, NOTED FOR REMOVAL ON THE PLAN, INSIDE A TREE PRESERVATION AREA SHALL BE PERFORMED, BY HAND, WITHOUT GROUND DISTURBANCE, OR DISTURBANCE TO NEARBY PRESERVED TREES. TREES IN THESE AREAS SHALL BE CUT FLUSH TO THE GROUND, WITHOUT STUMP GRINDING.
- NO CHANGES SHALL BE MADE TO TREE PRESERVATION OR PROPOSED LANDSCAPE UNLESS DIRECTED BY AN ARLINGTON COUNTY URBAN FORESTER.
- FOLLOW ANSI STANDARDS WHEN PRUNING TREES. ANY PRUNING BEYOND 5% OF THE CANOPY SHALL BE COMMUNICATED AND APPROVED TO THE URBAN FORESTER
- DO NOT REMOVE TREES ON OTHER PROPERTIES, OR RIGHTS-OF-WAY, WITHOUT WRITTEN PERMISSION OF THE OWNER.
- TREE PROTECTION AREAS SHALL HAVE ALL NON-NATIVE INVASIVE VINES REMOVED AT THE END OF THE PROJECT. WHERE DEEMED NECESSARY BY THE COUNTY URBAN FORESTER TO ENSURE TREE SURVIVAL, THE PROTECTION AREA SHALL BE COVERED WITH SHREDDED HARDWOOD MULCH, OR OTHER ORGANIC MULCH AS APPROVED BY THE COUNTY URBAN FORESTER.
- AT THE END OF THE PROJECT, PRESERVED AND PLANTED TREES MUST BE INSPECTED AND APPROVED BY AN ARLINGTON COUNTY URBAN FORESTER.

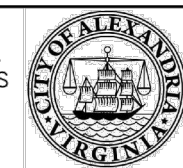


A TREE PROTECTION FENCE

NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA



NOTE:
THE INFORMATION SHOWN HEREIN THIS DOCUMENT IS FOR GENERAL GUIDANCE ONLY AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES. ITS USE SHALL NOT RELIEVE THE DESIGN PROFESSIONAL OR CONTRACTOR OF ANY LEGAL RESPONSIBILITY.

Source:
CITY OF ALEXANDRIA

Approved by:
COA

DATE
1 OF 1

Date drawn:
01/01/19

LD 014

TREE PROTECTION FENCE

REVISED ON 01/07/2021

FILENAME: PERMITS.DWG PATH: \\AD.RKK.COM\FSCLOUD\PROJECTS\2019\19160_4MR DREDGE\CADD\PLAN PLOTTED BY: HCHEN

Appendix C. Water Quality Impact Assessment Data Sheet

Project Address	Four Mile Run and Long Branch Arlington, VA RPC #	Date:
Applicant Name/Affiliation:	Arlington County Dept. of Environmental Services and City of Alexandria Dept. of Transportation & Environmental Services	Applicant Contact Information (phone and email):
Owner/Client Name:		Owner/Client Contact Information (phone and email):

Section 1: Type of activity proposed

Activity type (check all that apply):

☐ New construction (residential, commercial, public, etc.)

☐ Alteration of non-residential structure

☐ Residential addition

☐ Detached residential structure

☐ Deck, patio, or retaining wall

☐ Landscaping (includes tree removal)

☐ Utility work

☐ Fence

☒ Other (please describe): Stream sediment dredging to reestablish flood capacity

Section 2: Key details of the proposed activity

Complete all that apply		Explanation	
Total area of disturbance on parcel (sf)	373,959.0 sf	Includes building footprint plus a 10 foot buffer. Also includes all soil disturbance, ingress/egress areas, stockpiling areas, etc.	
Area of disturbance within RPA (sf)	371,999.9 sf	Includes removal of trees ≥ 3" in diameter	
Area of disturbance on slopes greater than or equal to 15 percent located adjacent to landward RPA boundary (sf)	0	Does not apply to RPA parcels along Chain Bridge Road (15 percent and greater slopes are included as part of RPA)	

Complete all fields		Existing condition	Proposed condition	Explanation
RPA encroachment (ft)	Left third of parcel or site	n/a	n/a	The distance (in feet) from the existing or proposed structure to the designated RPA feature (edge of stream or open channel, wetland, etc.). Encroachments of zero (0) indicate the project will impact the stream or other RPA feature.
	Middle third of parcel or site	n/a	n/a	
	Right third of parcel or site	n/a	n/a	
Total development footprint in RPA (sf)		19,011.7 sf	19,011.7 sf	The existing footprint includes the area of any existing structures, patios, decks, walkways, etc. Proposed footprint is the anticipated post-project area of all structures, additions, decks, walkways, regraded area behind a retaining wall, etc.
Impervious footprint in RPA (sf)		19,011.7 sf	19,011.7 sf	Total area of impervious surfaces within the RPA (rooftops, pavement, etc.)

(OVER)

STAFF USE ONLY

Building/demolition/LDA/Fence permit number(s):

Major WQIA required? ☐ Yes ☐ No

Date WQIA/Exception request information complete:

Date Chesapeake Bay Preservation Ordinance and E/S ordinance (if applicable) approvals issued in Permits Plus:

Section 3: Plan and Narrative

Provide a plan showing the location of the proposed activity, along with the RPA boundary Briefly describe the proposed project, including any potential water quality impacts and mitigation measuresproposed. The narrative must address three impact categories 1. Tree/vegetation impacts, 2. Stormwater and runoff 3. Erosion and sediment control. Please refer to the WQIA plan/narrative checklist for additional information.

The proposed activity is sediment dredging of Four Mile Run near the Mount Vernon Avenue bridge and around the confluence with Long Branch at the South Glebe Road bridge. In-stream maintenance to remove vegetation and debris will be performed within Long Branch at the confluence with Four Mile Run. Repair and restoration of damaged existing gabion baskets along the banks of both streams will be performed where necessary. Within the area of disturbance, existing trees not proposed to be removed as maintenance will be protected with tree protection fencing and other measures as needed.

Four Mile Run is a stream that conveys runoff through Arlington County to the Chesapeake Bay. The stream was originally modified with concrete banks and levees by the Army Corps of Engineers, built in the early 1980's. The work in this project is not changing the location, nor altering the stream width, but improving the flood capacity for the 100-year storm freeboard by restoring the sediment transport capacity at the stream's current location. A total of 16,444 CY will be removed from the Four Mile Run portion of this project. Sections of the stream banks are protected by gabion baskets, which were identified as damaged at certain locations. Work will be performed to repair and restore these gabion baskets to original dimensions.

Long Branch is an urbanized stream in Arlington, VA that conveys water to the Four Mile Run stream near the South Glebe Road bridge. Proposed work within Long Branch includes removal of vegetation, sediment, and debris accumulation within the existing culvert, as well as repair of damaged gabion baskets lining the stream banks and removal of vegetation impacting the gabions. 1,538 CY will be dredged from Long Branch.

A total of 8.58 acres will be disturbed. This project includes work within an environmentally sensitive area (RPA, FEMA floodplain, waters of the U.S., and in a U.S. Army Corps of Engineer's Flood Control Levee and Channel). All permits (i.e. Joint Permit Application, WQIA, and SWPPP) are being secured for this project prior to construction.

Additional Water Quality Impact Assessment Information

The information supplied on this form satisfies the minimum requirements for a Minor Water Quality Impact Assessment. For projects that disturb over 2500 square feet, elements of a Major Water Quality Impact Assessment may also be required, depending on the nature and extent of the proposed RPA encroachment, as outlined in Section 61-12 of the ordinance.

Appendix D. Exception Request Form

Applicant: Arlington County Dept. of Environmental Services and City of Alexandria Dept. of Transportation & Environmental Services	Project address: Four Mile Run and Long Branch Arlington, VA RPC #
--	---

Section 1: Brief description of exception request

Four Mile Run is a stream that conveys runoff through Arlington County to the Chesapeake Bay. The work in this project is not changing the location, nor altering the stream width, but improving the flood capacity for the 100-year storm freeboard by restoring the sediment transport capacity at the stream's current location. Gabion basket work will repair damaged structures, restoring to originally designed dimensions.

Long Branch is stream in Arlington, VA that conveys water to the Four Mile Run stream through the South Glebe Road bridge. Proposed maintenance activities include removal of vegetation, sediment, and debris accumulation within the existing culvert, and repair of damaged gabion baskets.

The project is considered ordinary maintenance activities, addressing Categorical Exclusion Section 3.2 of Arlington County Administration Regulation 4.4. It also meets all criteria defined in Exempted Projects Section 3.3 of Arlington County Administration Regulation 4.4. Therefore, this project is a Categorical Exclusion, and is exempt from the environmental assessment process. Erosion and sediment control requirements shall be observed, details found in the plan documents.

Section 2: Parcel, structure, and ownership information

Date parcel ownership began:_____	Date(s) of construction of any prior work by <u>current</u> owner (alterations, additions, decks, patios, etc.)—list individually: Date Type of prior work
Date existing principal structure built: _____	1. 2. 3. 4.
Will existing principal structure remain intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	

STAFF USE ONLY

☐ Allowable development in RPA (§ 61-7.A)

☐ Allowable modification in RPA (§ 61-7.B)

☐ Allowable encroachment in RPA (§ 61-7.C)

☐ Expansion of nonconforming structure or use in RPA (§ 61-14) (exception request required)

☐ New development in the RPA, redevelopment that increases impervious area in the RPA or encroaches further into the RPA, or any other proposed disturbance of any RPA component (exception request required)

☐ Exempted activity in RPA (§ 61-15)

☐ Proposed development in RMA on 15 percent slopes adjacent to RPA

☐ Other RMA activity_____

CBORC hearing required? ☐ Yes ☐ No

Date public notification sent certified mail:

Hearing date:

CBORC decision: ☐ Approved ☐ Not approved

Date of final approval letter:

ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

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SEAL

APPROVALS DATE

Ankur Patel 07/19/21
DESIGN TEAM ENGINEER SUPERVISOR
Kamal Taktak 8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR
07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF
Dennis M. Leach 07/21/20
TRANSPORTATION DIRECTOR
Michael Gallo 07/21/21
PROJECT MANAGER

REVISIONS DATE

WATER QUALITY IMPACT
ASSESSMENT &
CULVERT COMPUTATIONS
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF
PLOTTED: AUGUST 23 2021

SCALE:

SHEET 11 of 32

FOUR MILE RUN DREDGE PROJECT

TEMPORARY CULVERT CROSSING COMPUTATIONS

HY-8 Analysis Results

Crossing Summary Table

Culvert Crossing: 4 Mile Dredge				
Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
0.50	6.28 (peak base flow)	6.28	0.00	1
2.67	170.65	170.65	0.00	1
4.10	335.02	335.02	0.00	1
5.58	499.40 (~1-year peak)	499.40	0.00	1
6.55	663.77	602.53	61.12	3
7.07	828.14	656.03	171.94	4
7.61	992.51	711.35	282.37	11
8.35	1156.88	783.96	374.26	5
9.10	1321.26	856.31	468.30	9
9.83	1485.63	924.20	556.39	8
10.55	1650.00 (~2-year peak)	989.26	660.58	8
6.00	544.35	544.35	0.00	Overtopping

Total discharges estimated from StreamStat.
Culvert vs road discharges estimated from HY-8.

HY-8 Analysis Results

Crossing Summary Table

Culvert Crossing: Long Branch				
Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
500000.00	0.59 (peak base flow)	0.59	0.00	1
3.70	61.73	61.73	0.00	1
6.17	122.87	116.51	6.30	10
6.70	184.01	125.71	58.26	5
7.08	245.16	131.34	113.66	4
7.39	306.30 (~1-year peak)	136.03	170.19	4
7.67	367.44	140.07	227.32	4
7.93	428.58	143.67	284.86	4
8.17	489.72	146.98	342.69	4
8.40	550.86	150.02	400.80	4
8.61	612.00 (~2-year peak)	152.80	458.91	3
6.00	113.56	113.56	0.00	Overtopping

Total discharges estimated from StreamStat.
Culvert vs road discharges estimated from HY-8.



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

October 23, 2020

Northern Virginia Regulatory Section
NAO-2007-02373 (Alexandria Flood Control Channel Maintenance)

City of Alexandria
and
Arlington County
c/o City of Alexandria – Dept. of Transportation & Env. Services
301 King Street, Room 4100
Alexandria, Virginia 22314

To Whom It May Concern:

This is in reference to your Department of the Army permit application number NAO-2007-02373/ (VMRC #16-V1420, 07-V0235) to perform maintenance dredging of five flood control channels. Approximately 50,000 cubic yards of accumulated material will be removed from the subject waterways to return them to their original design configuration. All work will be performed within Cameron Run, Backlick Run, Holmes Run, Four Mile Run and Hooffs Run, tributaries of the Potomac River located in the City of Alexandria and Arlington County, Virginia. These impacts are detailed on the enclosed drawings entitled "Cameron Run, Backlick Run, Holmes Run, Four Mile Run and Hooffs Run Flood Control Channel Maintenance, City of Alexandria" and dated July and August 2016.

Your proposed work as outlined above satisfies the criteria contained in the Corps Nationwide Permit (31), attached. The Corps Nationwide Permits were published in the January 6, 2017 Federal Register notice (82 FR 1860) and the regulations governing their use can be found in 33 CFR 330 published in Volume 56, Number 226 of the Federal Register dated November 22, 1991.

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

1. The dredge material will be transported to and disposed of at an approved upland area and/or disposed of offsite at a local landfill.
2. No in-water work shall occur within Cameron Run and Four Mile Run, between February 15 to June 20 of any year, to protect anadromous fish species.

The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Provided the project specific conditions (above) and the Nationwide Permit General Conditions (enclosed) are met, an individual Department of the Army Permit will not be required. In addition, the Virginia Department of Environmental Quality has provided an **unconditional** \$401 Water Quality Certification for Nationwide Permit Number 31. A permit may be required from the Virginia Marine Resources Commission and/or your local wetlands board, and this verification is not valid until you obtain their approval, if necessary. This authorization does not relieve your responsibility to comply with local requirements pursuant to the Chesapeake Bay Preservation Act (CBPA), nor does it supersede local government authority and responsibilities pursuant to the Act. You should contact your local government before you begin work to find out how the CBPA applies to your project.

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

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2022. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). Project specific conditions listed in this letter continue to remain in effect after the NWP verification expires, unless the district engineer removes those conditions. Activities completed under the authorization of an NWP which was in effect at the time the activity was completed continue to be authorized by that NWP.

In granting an authorization pursuant to this permit, the Norfolk District has relied on the information and data provided by the permittee. If, subsequent to notification by the Corps that a project qualifies for this permit, such information and data prove to be materially false or materially incomplete, the authorization may be suspended or revoked, in whole or in part, and/or the Government may institute appropriate legal proceedings.

If you have any questions and/or concerns about this permit authorization, please contact Ms. Theresita Crockett-Augustine via telephone at (757) 201-7194 or via email at theresita.m.crockett-augustine@usace.army.mil.

Sincerely,

Theresita Crockett-Augustine
Theresita Crockett-Augustine
Environmental Scientist
Northern Virginia Regulatory Section

Digitally signed by
Theresita Crockett-
Augustine
Date: 2020.10.23
08:52:42 -04'00'

Enclosures:
Drawings
Nationwide Permit
Certificate of Compliance



U.S. Army Corps
Of Engineers
Norfolk District

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

Permit Number: NAO-2007-02373 (Alexandria Flood Control Channel Maintenance)
VMRC Number: 16-V1440, 07-V0235

Corps Contact: Theresita Crockett-Augustine

Name of Permittee: City of Alexandria and Arlington County

Date of Verification: October 23, 2020

Permit Type: NWP #31

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

US Army Corps of Engineers - Norfolk District
Northern Virginia Field Office
Attn: Ms. Theresita Crockett-Augustine
18139 Triangle Plaza, Suite 213
Dumfries, Virginia 22026

Or scan and send via email to theresita.m.crockett-augustine@usace.army.mil

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

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

Signature of Permittee

Date

ARLINGTON
VIRGINIA

DEPARTMENT OF
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ENGINEERING BUREAU
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SEAL



APPROVALS DATE

<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Jeffrey</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

US ARMY CORPS OF ENGINEERS
PERMIT - FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

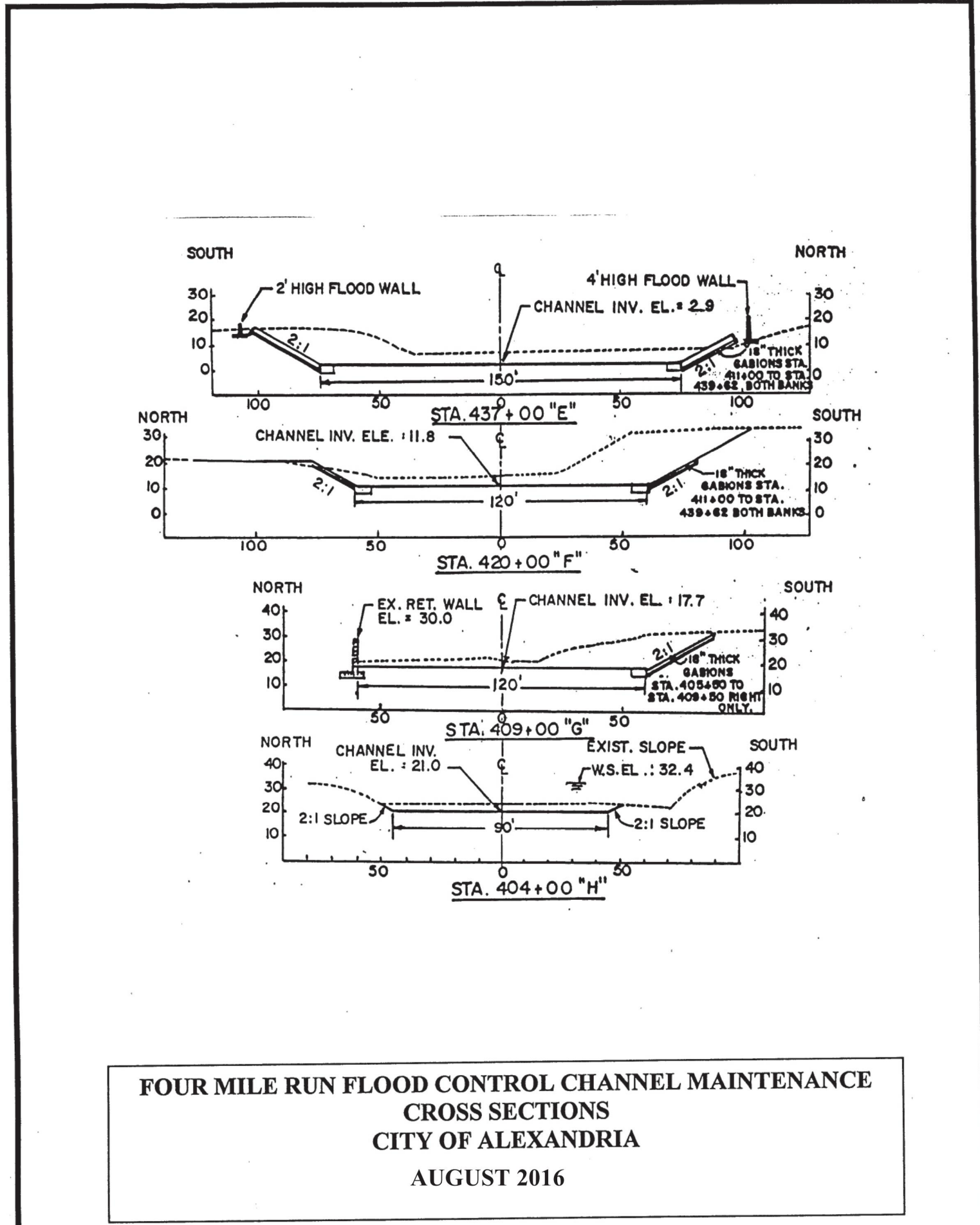
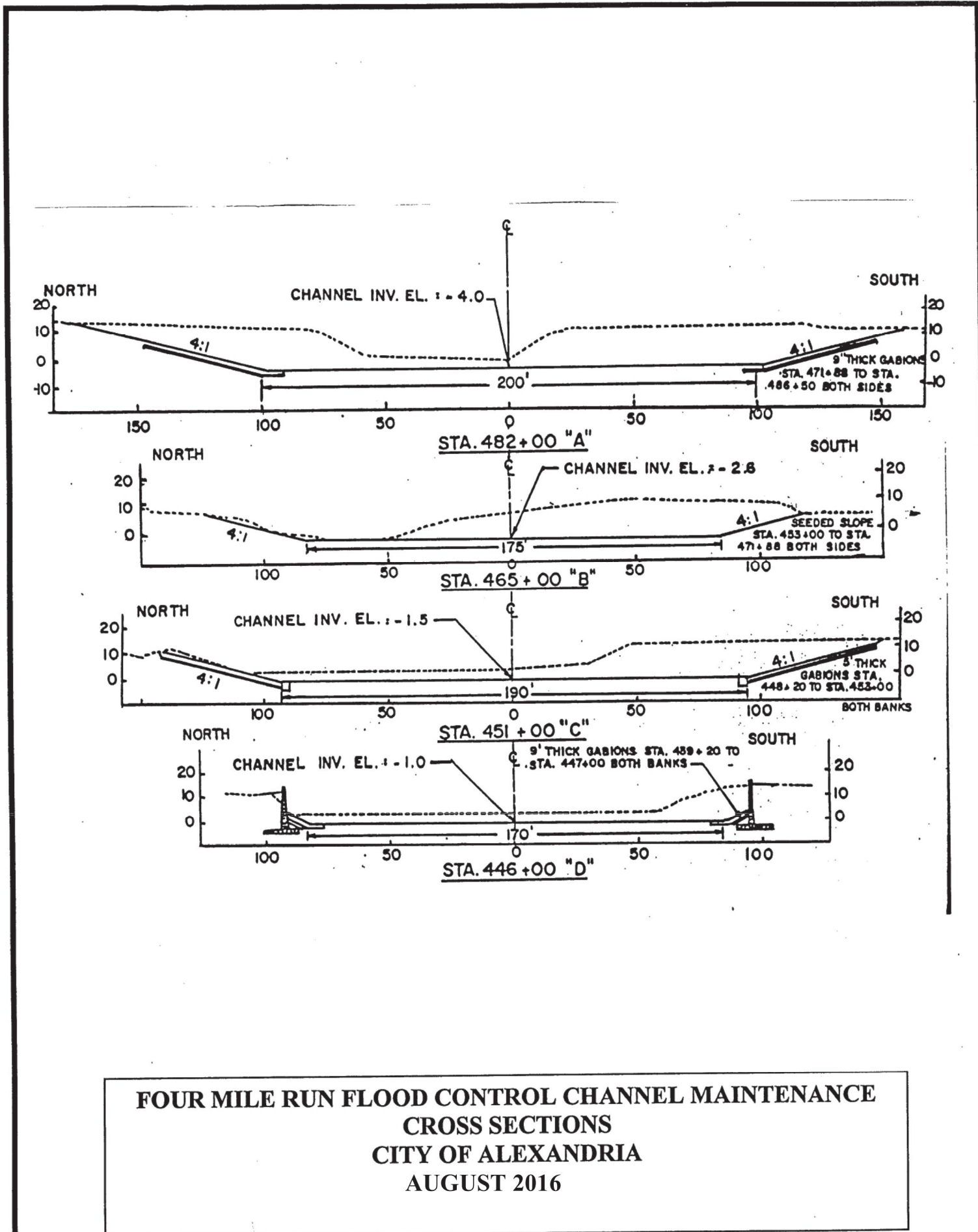
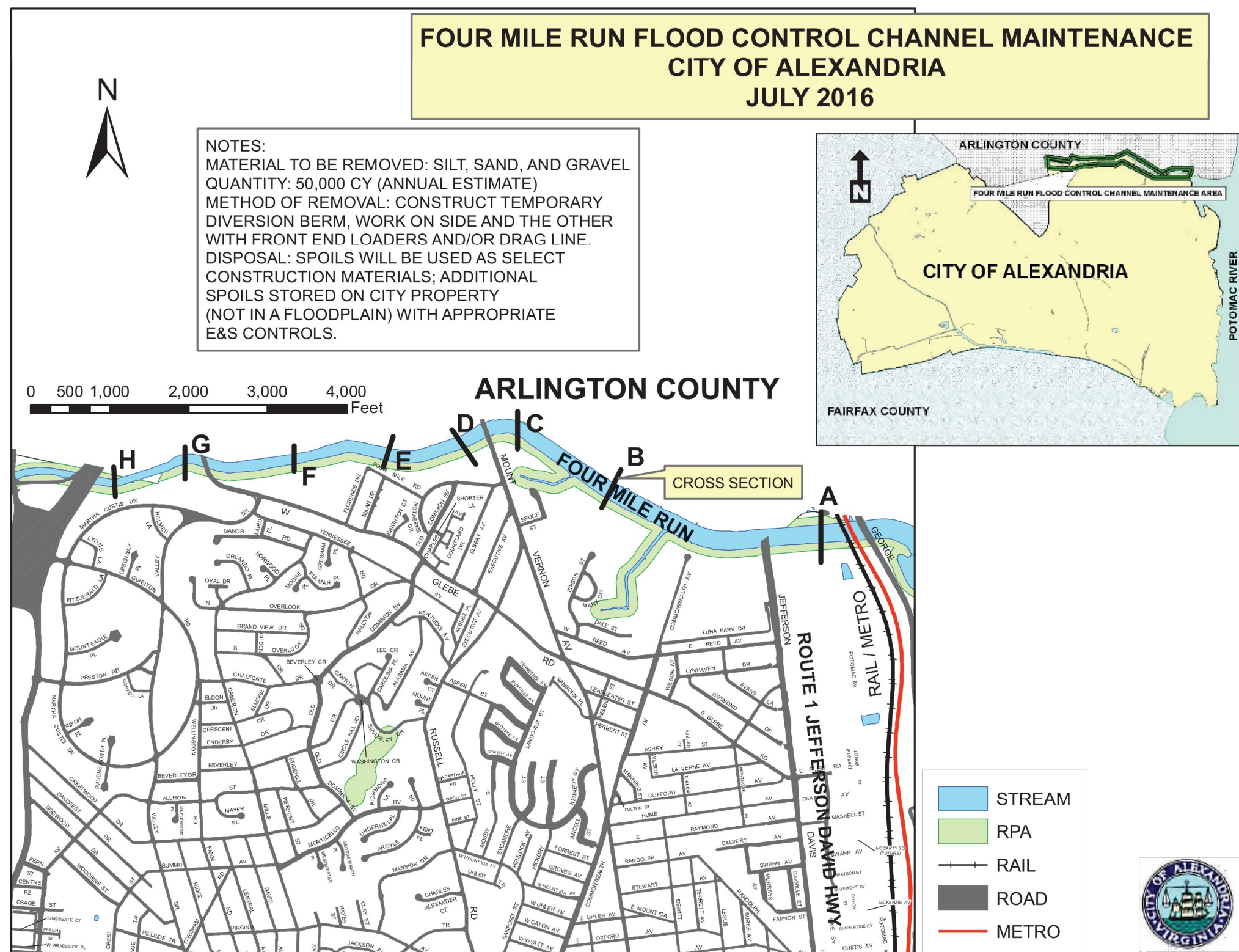
DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE:

SHEET 12 of 32

FOUR MILE RUN DREDGE PROJECT





DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1911

April 9, 2021

Northern Virginia Regulatory Section
NAO-2020-02464/VMRC#20-V2283 (Long Branch)

Arlington County Dept. of Environmental Services
Attn: Mr. Michael Gallo
2100 Clarendon Blvd., Suite 705
Arlington, Virginia 22201

Dear Mr. Gallo:

This is regarding your Department of the Army permit application number NAO-2020-02464 (VMRC#20-V2283) to perform maintenance dredging along a section of Long Branch tributary. Approximately 1,480 cubic yards of accumulated sediment will be removed. The work will occur in the Long Branch tributary near Four Mile Run in Arlington County, Virginia (Latitude: 38.844 and Longitude: -77.071). These impacts are detailed on the enclosed drawings entitled "Four Mile Run Dredge Project," prepared and submitted by the applicant and dated May 15, 2020 and October 15, 2000 (attached).

☐ Your proposed work as outlined above satisfies the criteria contained in the Corps Nationwide Permit(s) (XX), attached. Certain Corps Nationwide Permits were published in the January 13, 2021, Federal Register notice (86 FR 2744) and the regulations governing their use can be found in 33 CFR 330 published in Volume 56, Number 226 of the Federal Register dated November 22, 1991.

☒ Your proposed work as outlined above satisfies the criteria contained in the Corps Nationwide Permit(s) (3), attached. The Corps Nationwide Permits were published in the January 6, 2017, Federal Register notice (82 FR 1860) and the regulations governing their use can be found in 33 CFR 330 published in Volume 56, Number 226 of the Federal Register dated November 22, 1991.

Provided the Regional Conditions, and the Nationwide Permit General Conditions (enclosed) are met, an individual Department of the Army Permit will not be required. To assist in your compliance with NWP General Condition #30, enclosed is a "compliance certification" form, which must be signed and returned within 30 days of completion of the project, including any required mitigation.



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

Permit Number: NAO-2020-02464 (Long Branch)
VMRC Number: 20-V2283

Corps Contact: Theresita Crockett-Augustine

Name of Permittee: Arlington County Dept. of Environmental Services

Date of Verification: April 9, 2021

Permit Type: NWP #3

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

US Army Corps of Engineers - Norfolk District
Fredericksburg Field Office
Attn: Ms. Theresita Crockett-Augustine
1329 Alum Spring Road, Suite 102
Fredericksburg, Virginia 22401

Or scan and send via email to theresita.m.crockett-augustine@usace.army.mil

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

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

Signature of Permittee

Date

Northern Virginia Regulatory Section
NAO-2020-02464/VMRC#20-V2283 (Long Branch)

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

This verification is valid until the Nationwide Permit is modified, reissued, or revoked.

☐ This Nationwide Permit(s) XX is/are scheduled to be modified, reissued, or revoked prior to March 14, 2026.

☒ This Nationwide Permit(s) 3 is/are scheduled to be modified, reissued, or revoked prior to March 18, 2022.

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

In granting an authorization pursuant to this permit, we relied on the information and data provided by the permittee. If we determine that this information is false or incomplete, we may suspend or revoke, in whole or in part, this authorization and institute appropriate legal proceeding.

Northern Virginia Regulatory Section
NAO-2020-02464/VMRC#20-V2283 (Long Branch)

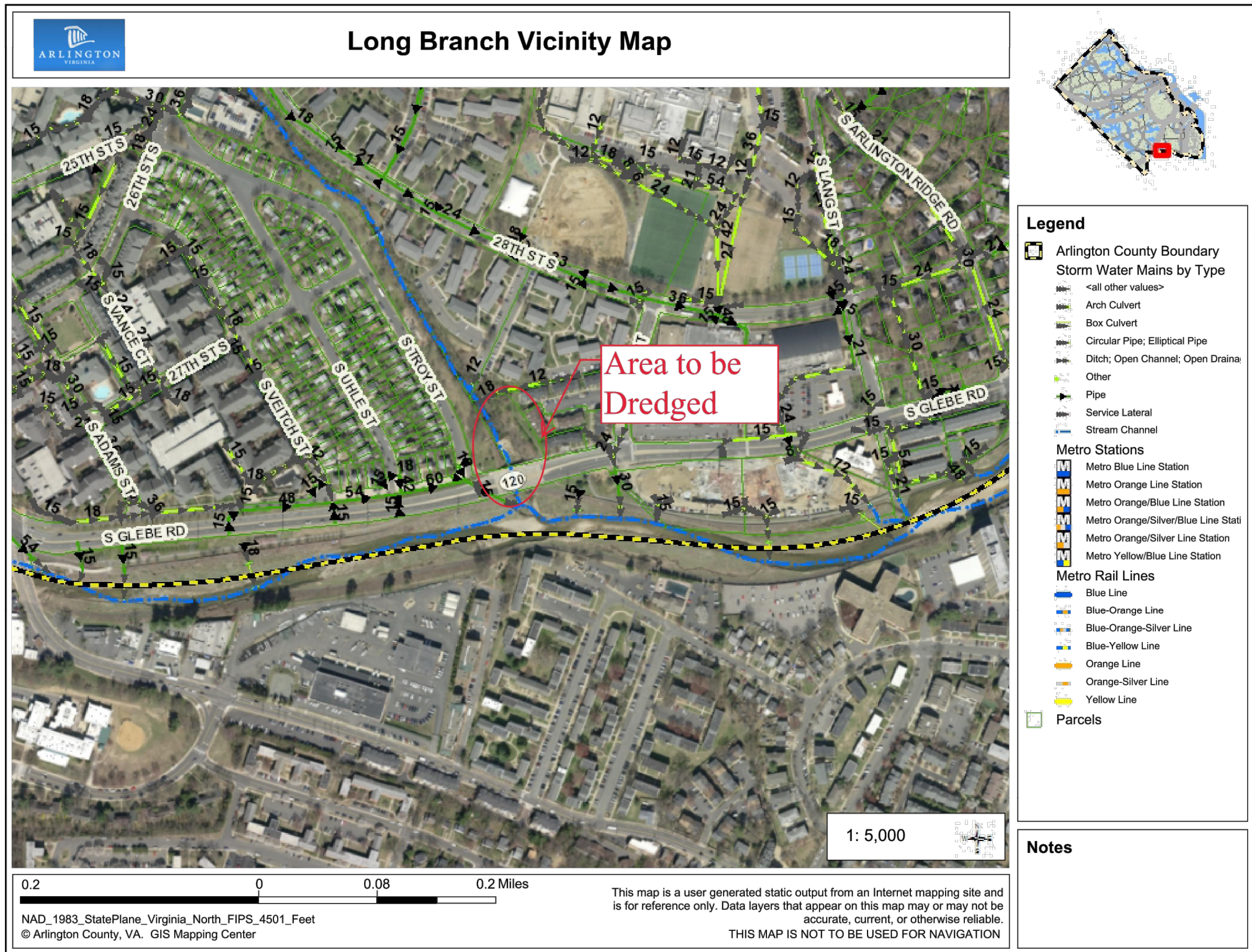
If you have additional questions or concerns about this permit authorization, please contact me at (757) 201-7195 or by email at theresita.m.crockett-augustine@usace.army.mil.

Sincerely,

Theresita Crockett-Augustine
Theresita Crockett-Augustine
Northern Virginia Regulatory Section

Digitally signed by
Theresita Crockett-
Augustine
Date: 2021.04.09
15:23:30 -0400

Enclosures



ARLINGTON
VIRGINIA

DEPARTMENT OF
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FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
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SEAL



APPROVALS DATE

<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Shafiq</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

US ARMY CORPS OF ENGINEERS
PERMIT - LONG BRANCH

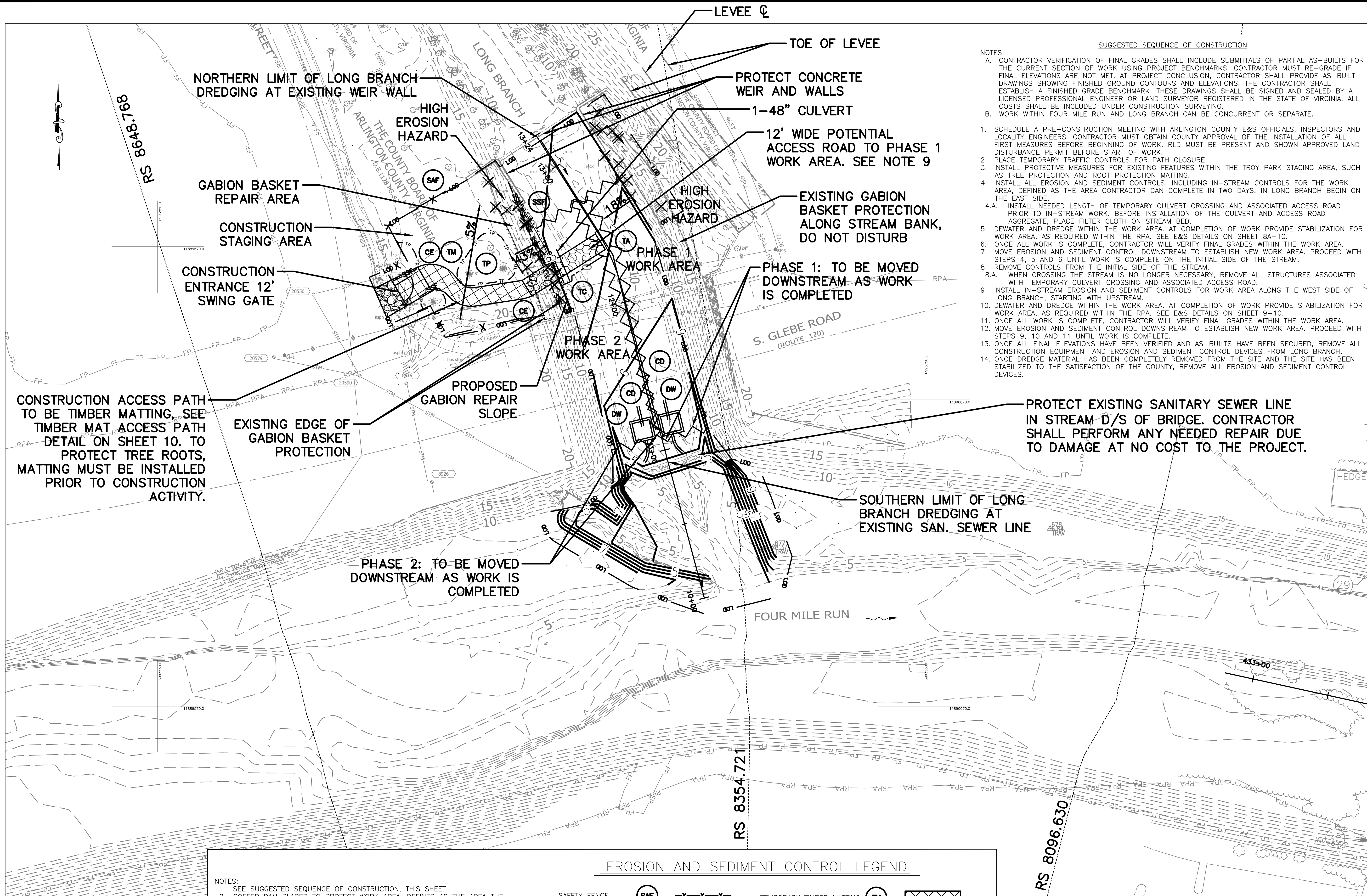
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021











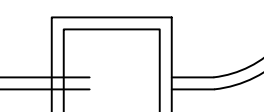









SCALE:

SHEET 12A of 32



PLAN LEGEND	
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
HEC-RAS CROSS-SECTIONS	----
50' BASELINE CROSS-SECTIONS	----
GABION BASKET REPAIR AREA	-----

- NOTES:
- SEE SUGGESTED SEQUENCE OF CONSTRUCTION, THIS SHEET.
 - COFFER DAM PLACED TO PROTECT WORK AREA, DEFINED AS THE AREA THE CONTRACTOR CAN COMPLETE WITHIN 2 DAYS. TIE COFFER DAM INTO EMBANKMENT AND MAINTAIN HALF OF THE STREAM CHANNEL.
 - DEWATERING DEVICE PLACED TO KEEP THE WORK AREA DRY.
 - EROSION AND SEDIMENT CONTROL ELEMENTS ARE SHOWN CONCEPTUALLY. CONTRACTOR SHALL FIELD DETERMINE ACTUAL CONTROL MEASURE PLACEMENT. CONTRACTOR RESPONSIBLE FOR PROTECTING WORK AREA, EQUIPMENT, AND STREAM CROSSINGS FROM FLOODING.
 - GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.
 - LONG BRANCH WORK LOCATED IN A NON-TIDAL AREA.
 - NUMEROUS UTILITIES ARE PRESENT IN THE VICINITY OF CONSTRUCTION. CONTRACTOR SHALL PROTECT THESE FACILITIES FROM DAMAGE.
 - ACCESS ROAD AND OTHER MEANS AND METHODS FOR ACCESS TO IN-STREAM WORK AREAS TO BE DETERMINED AS APPROPRIATE BY CONTRACTOR.

EROSION AND SEDIMENT CONTROL LEGEND				
SAFETY FENCE			TEMPORARY TIMBER MATTING	 
CONSTRUCTION ENTRANCE			LIMIT OF DISTURBANCE	
COFFER DAM			DEWATERING DEVICE	 
TURBIDITY CURTAIN			SUPER SILT FENCE	 
TREE PROTECTION			TREE REMOVAL	
TEMPORARY ACCESS ROAD AND CULVERT CROSSING				

- NOTES:
- A. CONTRACTOR VERIFICATION OF FINAL GRADES SHALL INCLUDE SUBMITTALS OF PARTIAL AS-BUILTS FOR THE CURRENT SECTION OF WORK USING PROJECT BENCHMARKS. CONTRACTOR MUST RE-GRADE IF FINAL ELEVATIONS ARE NOT MET. AT PROJECT CONCLUSION, CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS SHOWING FINISHED GROUND CONTOURS AND ELEVATIONS. THE CONTRACTOR SHALL ESTABLISH A FINISHED GRADE BENCHMARK. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF VIRGINIA. ALL COSTS SHALL BE INCLUDED UNDER CONSTRUCTION SURVEYING.
- B. WORK WITHIN FOUR MILE RUN AND LONG BRANCH CAN BE CONCURRENT OR SEPARATE.
1. SCHEDULE A PRE-CONSTRUCTION MEETING WITH ARLINGTON COUNTY E&S OFFICIALS, INSPECTORS AND LOCALITY ENGINEERS. CONTRACTOR MUST OBTAIN COUNTY APPROVAL OF THE INSTALLATION OF ALL FIRST MEASURES BEFORE BEGINNING OF WORK. RLD MUST BE PRESENT AND SHOWN APPROVED LAND DISTURBANCE PERMIT BEFORE START OF WORK.
2. PLACE TEMPORARY TRAFFIC CONTROLS FOR PATH CLOSURE.
3. INSTALL PROTECTIVE MEASURES FOR EXISTING FEATURES WITHIN THE TROY PARK STAGING AREA, SUCH AS TREE PROTECTION AND ROOT PROTECTION MATTING.
4. INSTALL ALL EROSION AND SEDIMENT CONTROLS, INCLUDING IN-STREAM CONTROLS FOR THE WORK AREA, DEFINED AS THE AREA CONTRACTOR CAN COMPLETE IN TWO DAYS. IN LONG BRANCH BEGIN ON THE EAST SIDE.
- 4.A. INSTALL NEEDED LENGTH OF TEMPORARY CULVERT CROSSING AND ASSOCIATED ACCESS ROAD PRIOR TO IN-STREAM WORK. BEFORE INSTALLATION OF THE CULVERT AND ACCESS ROAD AGGREGATE, PLACE FILTER CLOTH ON STREAM BED.
5. DEWATER AND DREDGE WITHIN THE WORK AREA. AT COMPLETION OF WORK PROVIDE STABILIZATION FOR WORK AREA, AS REQUIRED WITHIN THE RPA. SEE E&S DETAILS ON SHEET 8A-10.
6. ONCE ALL WORK IS COMPLETE, CONTRACTOR WILL VERIFY FINAL GRADES WITHIN THE WORK AREA.
7. MOVE EROSION AND SEDIMENT CONTROL DOWNSTREAM TO ESTABLISH NEW WORK AREA. PROCEED WITH STEPS 4, 5 AND 6 UNTIL WORK IS COMPLETE ON THE INITIAL SIDE OF THE STREAM.
8. REMOVE CONTROLS FROM THE INITIAL SIDE OF THE STREAM.
- 8.A. WHEN CROSSING THE STREAM IS NO LONGER NECESSARY, REMOVE ALL STRUCTURES ASSOCIATED WITH TEMPORARY CULVERT CROSSING AND ASSOCIATED ACCESS ROAD.
9. INSTALL IN-STREAM EROSION AND SEDIMENT CONTROLS FOR WORK AREA ALONG THE WEST SIDE OF LONG BRANCH, STARTING WITH UPSTREAM.
10. DEWATER AND DREDGE WITHIN THE WORK AREA. AT COMPLETION OF WORK PROVIDE STABILIZATION FOR WORK AREA, AS REQUIRED WITHIN THE RPA. SEE E&S DETAILS ON SHEET 9-10.
11. ONCE ALL WORK IS COMPLETE, CONTRACTOR WILL VERIFY FINAL GRADES WITHIN THE WORK AREA.
12. MOVE EROSION AND SEDIMENT CONTROL DOWNSTREAM TO ESTABLISH NEW WORK AREA. PROCEED WITH STEPS 9, 10 AND 11 UNTIL WORK IS COMPLETE.
13. ONCE ALL FINAL ELEVATIONS HAVE BEEN VERIFIED AND AS-BUILTS HAVE BEEN SECURED, REMOVE ALL CONSTRUCTION EQUIPMENT AND EROSION AND SEDIMENT CONTROL DEVICES FROM LONG BRANCH.
14. ONCE DREDGE MATERIAL HAS BEEN COMPLETELY REMOVED FROM THE SITE AND THE SITE HAS BEEN STABILIZED TO THE SATISFACTION OF THE COUNTY, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES.

PROTECT EXISTING SANITARY SEWER LINE IN STREAM D/S OF BRIDGE. CONTRACTOR SHALL PERFORM ANY NEEDED REPAIR DUE TO DAMAGE AT NO COST TO THE PROJECT.

MATCH LINE- SEE SHEET 14

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
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Arneem Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
Michael Gallo	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

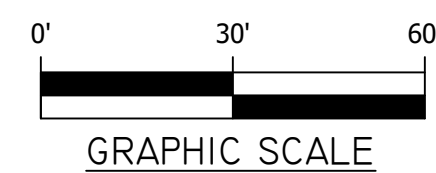
REVISIONS DATE

PROPOSED GRADING &
EROSION CONTROL PLAN -
LONG BRANCH
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



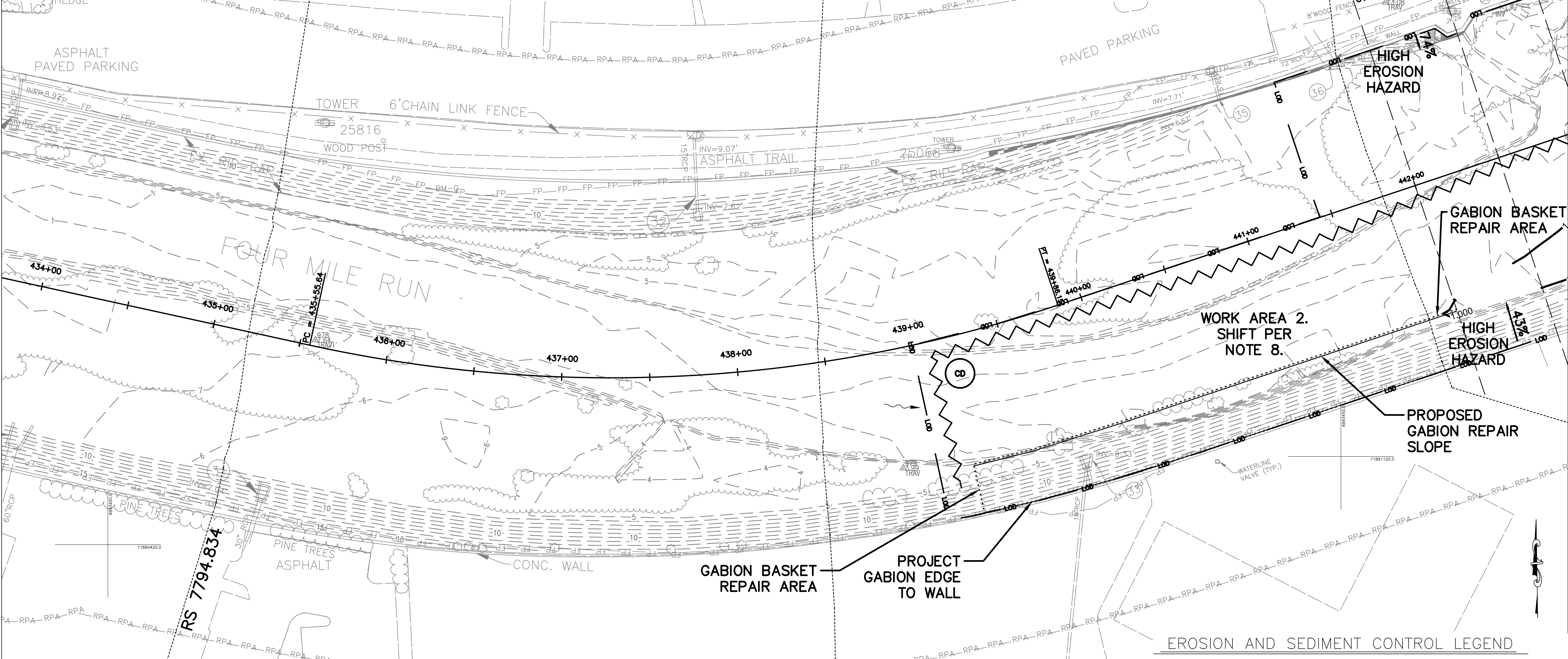
SHEET 13 of 32

FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021
FILENAME: PROPOSED GRADING & EROSION CONTROL PLAN.DWG PATH: \\VD.RKK.COM\F\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE\CAD\PLAN PLOTTED BY: HCHEN

- NOTES:
- CONTRACTOR VERIFICATION OF FINAL GRADES SHALL INCLUDE SUBMITTALS OF PARTIAL AS-BUILTS FOR THE CURRENT SECTION OF WORK USING PROJECT BENCHMARKS. CONTRACTOR MUST RE-GRADE IF FINAL ELEVATIONS ARE NOT MET. AT PROJECT CONCLUSION, CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS SHOWING FINISHED GROUND CONTOURS AND ELEVATIONS. THE CONTRACTOR SHALL ESTABLISH A FINISHED GRADE BENCHMARK. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF VIRGINIA. ALL COSTS SHALL BE INCLUDED UNDER CONSTRUCTION SURVEYING.
 - WORK WITHIN FOUR MILE RUN AND LONG BRANCH CAN BE CONCURRENT OR SEPARATE.
 - PRIOR TO INSTALLATION OF ANY COFFERDAMS, TEMPORARY CULVERT CROSSING AND TEMPORARY ACCESS ROAD, CONTRACTOR SHALL SUBMIT PROPOSED PHASED ACCESS AND DEWATERING PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER/PROJECT OFFICER. THE PLAN SHALL BE BASED ON FIELD CONDITIONS AND SHOW PHASED ACCESS ROAD LAYOUT; PHASED COFFERDAM LAYOUT AND HEIGHTS, DEWATERING METHOD; NUMBER, SIZE AND LENGTH OF CULVERT PIPES, EMBEDMENT DEPTH OF PIPES; AGGREGATE DEPTH AND AGGREGATE WIDTHS FOR REVIEW AND APPROVAL BY THE ENGINEER/PROJECT OFFICER.
 - IF E&S CONTROL MATERIALS (I.E. COFFERDAM, TURBIDITY CURTAIN, ACCESS ROAD, DEWATERING EQUIPMENT, ETC.) ARE IN GOOD CONDITION, THEY CAN BE REUSED AND RESET ONSITE AS NEEDED FOR DIFFERENT PHASES OF DREDGING AND ACCESS. THE ENGINEER/PROJECT OFFICER CAN REJECT MATERIAL DEEMS UNSUITABLE FOR REUSE AT ANY TIME. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF UNSUITABLE MATERIAL.

- SCHEDULE A PRE-CONSTRUCTION MEETING WITH ARLINGTON COUNTY AND CITY OF ALEXANDRIA E&S OFFICIALS, INSPECTORS AND LOCALITY ENGINEERS. CONTRACTOR MUST OBTAIN COUNTY/CITY APPROVAL OF THE INSTALLATION OF ALL FIRST MEASURES BEFORE BEGINNING OF WORK. RLD MUST BE PRESENT AND SHOWN APPROVED LAND DISTURBANCE PERMIT BEFORE START OF WORK.
- PLACE TEMPORARY TRAFFIC CONTROLS FOR PATH CLOSURE.
- INSTALL PROTECTIVE MEASURES FOR EXISTING FEATURES WITHIN THE FOUR MILE RUN PARKING AREA, INCLUDING THE TEMPORARY MATTING WITH IMPERVIOUS SHEETING AND SILT FENCE AROUND THE CIRCULAR BIORETENTION AREA.
- INSTALL ALL EROSION AND SEDIMENT CONTROLS, INCLUDING IN-STREAM CONTROLS FOR THE WORK AREA, DEFINED AS THE AREA CONTRACTOR CAN COMPLETE IN TWO DAYS. IN FOUR MILE RUN BEGIN ALONG THE NORTH SIDE OF FOUR MILE RUN
- INSTALL NEEDED LENGTH OF TEMPORARY CULVERT CROSSING PRIOR TO IN-STREAM WORK. BEFORE INSTALLATION OF THE CULVERT AND ACCESS ROAD AGGREGATE, PLACE FILTER CLOTH ON STREAM BED.
- DEWATER AND DREDGE WITHIN THE WORK AREA. AT COMPLETION OF WORK PROVIDE STABILIZATION FOR WORK AREA, AS REQUIRED WITHIN THE RPA. SEE E&S DETAILS ON SHEET 9-10.
- ONCE ALL WORK IS COMPLETE, CONTRACTOR WILL VERIFY FINAL GRADES WITHIN THE WORK AREA.
- MOVE EROSION AND SEDIMENT CONTROL DOWNSTREAM OR Laterally across the stream to establish new work area. PROCEED WITH STEPS 4, 5 AND 6 UNTIL WORK IS COMPLETE.
- ONCE ALL FINAL ELEVATIONS HAVE BEEN VERIFIED AND AS-BUILTS HAVE BEEN SECURED, REMOVE ALL CONSTRUCTION EQUIPMENT AND EROSION AND SEDIMENT CONTROL DEVICES FROM FOUR MILE RUN.
- WHEN CROSSING THE STREAM IS NO LONGER NECESSARY, REMOVE ALL STRUCTURES ASSOCIATED WITH TEMPORARY CULVERT CROSSING.
- ONCE DREDGE MATERIAL HAS BEEN COMPLETELY REMOVED FROM THE SITE AND THE SITE HAS BEEN STABILIZED TO THE SATISFACTION OF THE CITY, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES.



- PLAN LEGEND
- | | |
|-----------------------------|-------|
| EXISTING CONTOURS | --- |
| PROPOSED CONTOURS | --- |
| HEC-RAS CROSS-SECTIONS | --- |
| 50' BASELINE CROSS-SECTIONS | --- |
| GABION BASKET REPAIR AREA | ----- |
- NOTES:
- SEE SUGGESTED SEQUENCE OF CONSTRUCTION, THIS SHEET.
 - COFFER DAM PLACED TO PROTECT WORK AREA, DEFINED AS THE AREA THE CONTRACTOR CAN COMPLETE WITHIN 2 DAYS. TIE COFFER DAM INTO EMBANKMENT AND MAINTAIN HALF OF THE STREAM CHANNEL.
 - DEWATERING DEVICE PLACED TO KEEP THE WORK AREA DRY.
 - EROSION AND SEDIMENT CONTROL ELEMENTS ARE SHOWN CONCEPTUALLY. CONTRACTOR SHALL FIELD DETERMINE ACTUAL CONTROL MEASURE PLACEMENT.
 - CONTRACTOR RESPONSIBLE FOR PROTECTING WORK AREA, EQUIPMENT, AND STREAM CROSSINGS FROM FLOODING.
 - GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.
 - ACCESS ROAD AND OTHER MEANS AND METHODS FOR ACCESS TO IN-STREAM WORK AREAS TO BE DETERMINED AS APPROPRIATE BY CONTRACTOR.
 - SHIFT WORK AREA AND RESET ASSOCIATED ESC MEASURES (I.E. COFFERDAM, ACCESS ROAD, TURBIDITY CURTAIN, DEWATERING EQUIPMENT, ETC.) ONCE WORK IN THIS AREA IS COMPLETE. WORK AREAS SHOULD CUMULATIVELY COVER ENTIRE DREDGE AREA SHOWN ON SHEETS 21-24. CONTRACTOR SHALL KEEP AT LEAST HALF THE CHANNEL WIDTH OPEN AT ALL TIMES.

- POLLUTION PREVENTION PLAN NOTES:
- THE CONTRACTOR WILL ENSURE THE POLLUTION PREVENTION MEASURES ARE DESIGNED, INSTALLED, IMPLEMENTED AND MAINTAINED TO:
- PROHIBIT THE DISCHARGE OF WASTEWATER AND WASH WATER, WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS;
 - PROHIBIT DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
 - PROHIBIT DISCHARGE OF SOAPS OR SOLVENT USED IN VEHICLE AND EQUIPMENT WASHING;
 - PROHIBIT UNLESS MANAGED BY APPROPRIATE CONTROLS THE DISCHARGES FROM DEWATERING ACTIVITIES, INCLUDING DEWATERING OF TRENCHES OR EXCAVATIONS;
 - MINIMIZE EXPOSURE OF CONSTRUCTION AND LANDSCAPE MATERIALS AND WASTES, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS ONSITE TO PRECIPITATION AND TO STORMWATER; AND
 - MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.

- EROSION AND SEDIMENT CONTROL LEGEND
- | | | | | | |
|--|-----|-----------------|--------------------------|-----|-------------|
| SAFETY FENCE | SAF | ---X---X---X--- | TEMPORARY TIMBER MATTING | TM | XXXXXX |
| CONSTRUCTION ENTRANCE | CE | XXXXXX | LIMIT OF DISTURBANCE | LOD | --- |
| COFFER DAM | CD | ~~~~~ | DEWATERING DEVICE | DW | □ |
| TURBIDITY CURTAIN | TC | --- | SUPER SILT FENCE | SSF | SSS-SSS-SSS |
| TREE PROTECTION | TP | ---TP---TP--- | TREE REMOVAL | | X |
| TEMPORARY ACCESS ROAD AND CULVERT CROSSING | TA | XXXXXX | | | |

ARLINGTON
VIRGINIA

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Arjun Patel	07/19/21
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Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
07/23/2021	
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS DATE

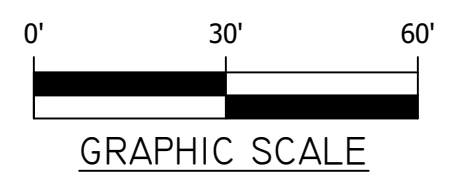
REVISIONS	DATE

PROPOSED GRADING &
EROSION CONTROL PLAN -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

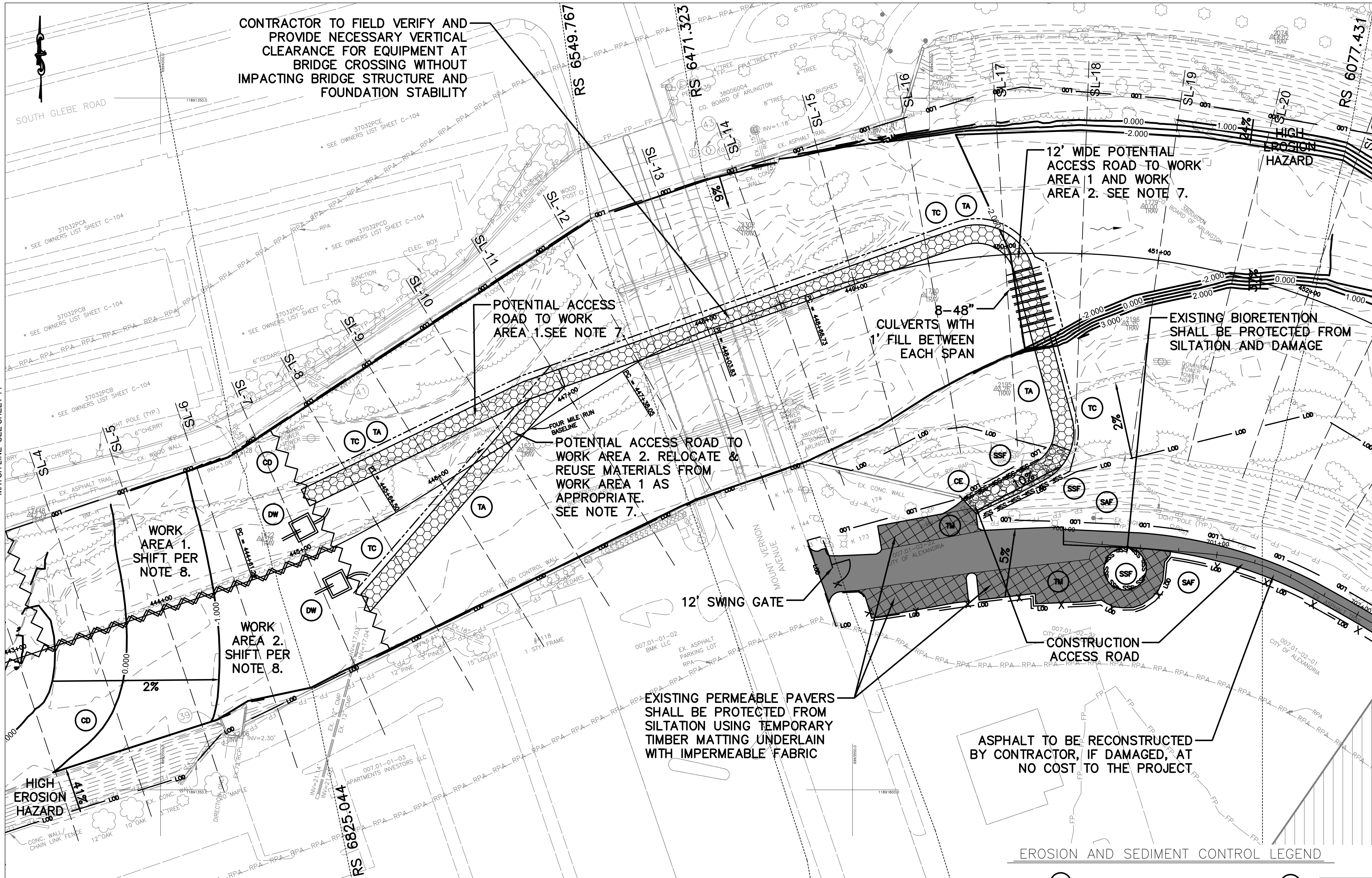
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SHEET 14 of 32

FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021
FILENAME: PROPOSED GRADING & EROSION CONTROL PLAN.DWG PATH: \\VDD.RKK.COM\F\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE\CAD\PLAN PLOTTED BY: HCHEN
MATCH LINE- SEE SHEET 14
MATCH LINE- SEE SHEET 16

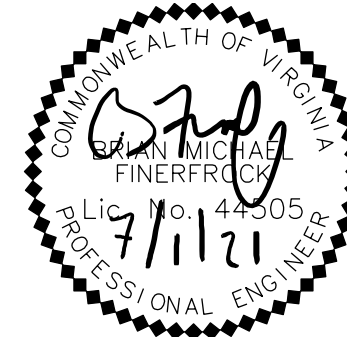


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TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

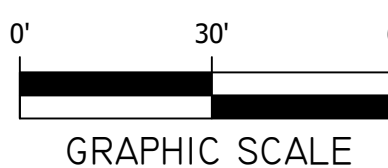
REVISIONS DATE

PROPOSED GRADING &
EROSION CONTROL PLAN -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'

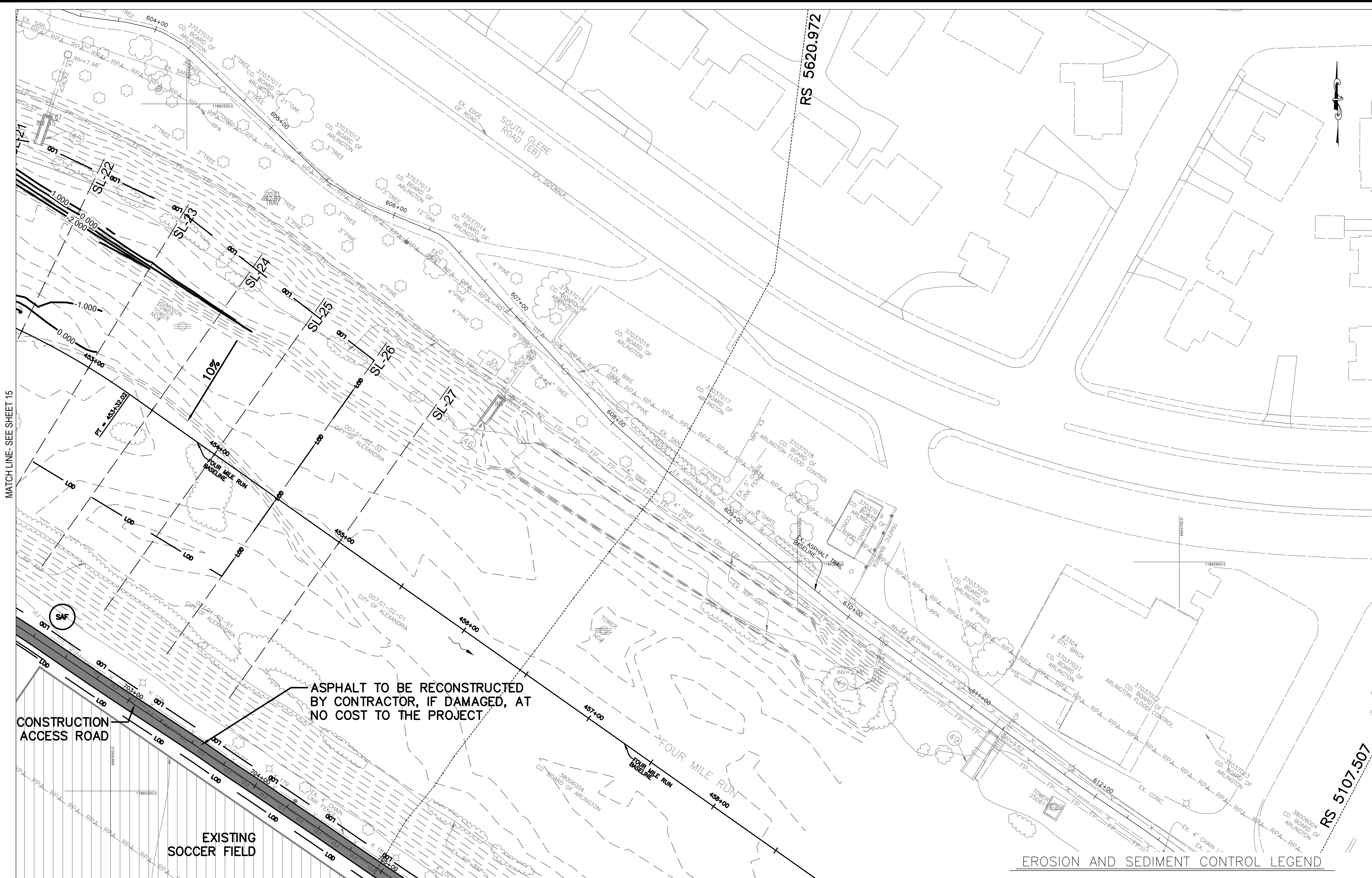


SHEET 15 of 32

FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021

FILENAME: PROPOSED GRADING & EROSION CONTROL PLAN.DWG PATH: \\VDD.RKK.COM\F5\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE\CADD\PLAN PLOTTED BY: HCHEN



PLAN LEGEND

EXISTING CONTOURS	---
PROPOSED CONTOURS	---
HEC-RAS CROSS-SECTIONS	---
50' BASELINE CROSS-SECTIONS	---
GABION BASKET REPAIR AREA	---

NOTES:

- SEE SUGGESTED SEQUENCE OF CONSTRUCTION, SHEET 14.
- COFFER DAM PLACED TO PROTECT WORK AREA, DEFINED AS THE AREA THE CONTRACTOR CAN COMPLETE WITHIN 2 DAYS. TIE COFFER DAM INTO EMBANKMENT AND MAINTAIN HALF OF THE STREAM CHANNEL.
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EROSION AND SEDIMENT CONTROL LEGEND

SAFETY FENCE	SAF	---
CONSTRUCTION ENTRANCE	CE	---
COFFER DAM	CD	---
TURBIDITY CURTAIN	TC	---
TREE PROTECTION	TP	---
TEMPORARY ACCESS ROAD AND CULVERT CROSSING	TA	---
TEMPORARY TIMBER MATTING	TM	---
LIMIT OF DISTURBANCE	LOD	---
DEWATERING DEVICE	DW	---
SUPER SILT FENCE	SSF	---
TREE REMOVAL	X	---

ARLINGTON
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SEAL



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DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
07/23/2021	
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

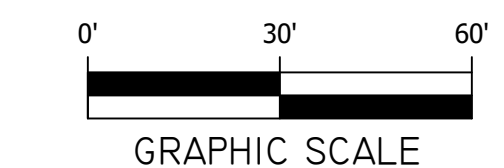
REVISIONS DATE

PROPOSED GRADING &
EROSION CONTROL PLAN -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



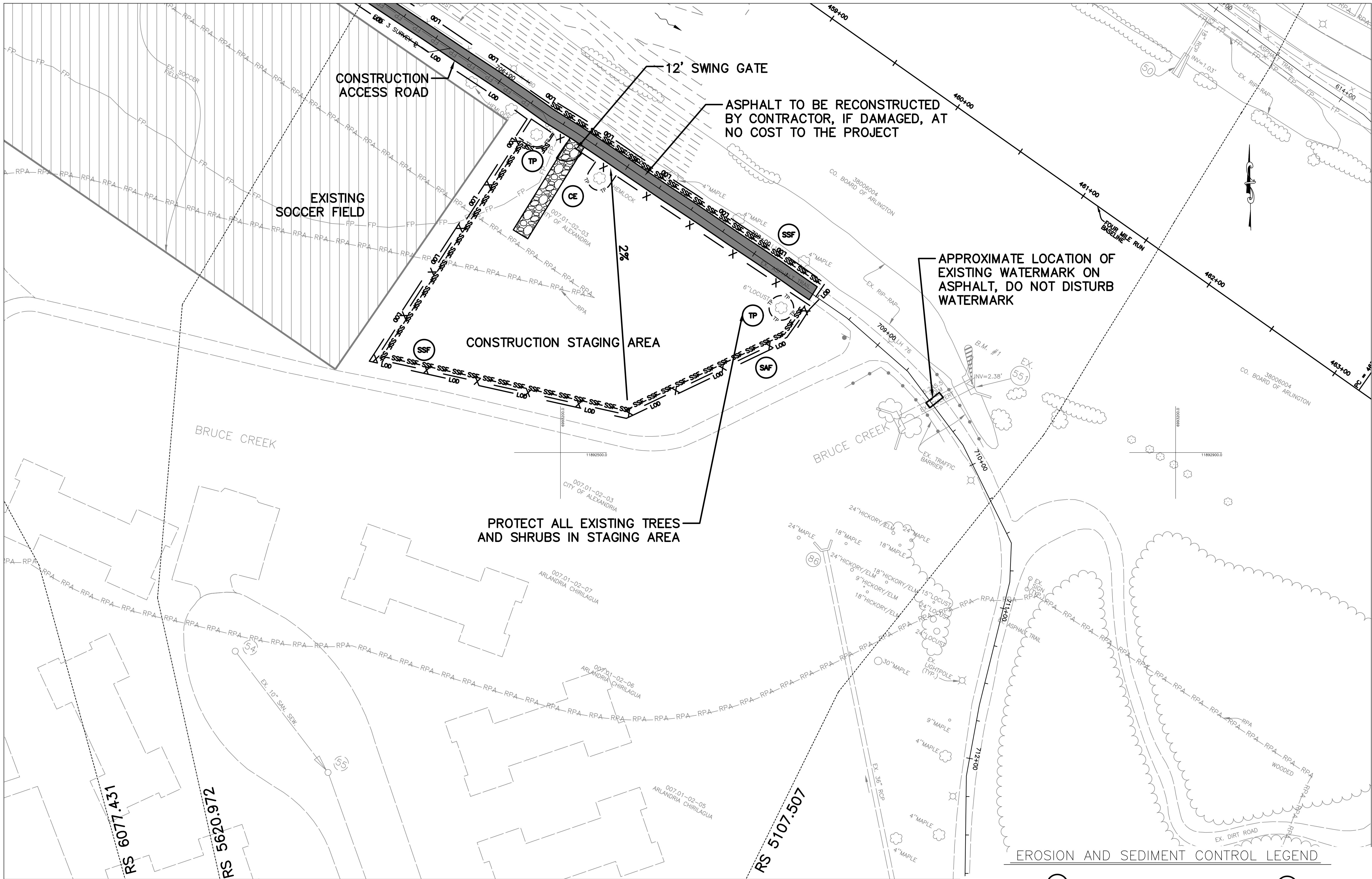
SHEET 16 of 32

FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021

FILENAME: PROPOSED GRADING & EROSION CONTROL PLAN.DWG PATH: \\AD.RKK.COM\FSCLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE\CADD\PLAN PLOTTED BY: HCHEN

MATCH LINE- SEE SHEET 16



PLAN LEGEND

EXISTING CONTOURS	---
PROPOSED CONTOURS	---
HEC-RAS CROSS-SECTIONS	---
50' BASELINE CROSS-SECTIONS	---
GABION BASKET REPAIR AREA	---

NOTES:

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- MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.

SAFETY FENCE

CONSTRUCTION ENTRANCE

COFFER DAM

TURBIDITY CURTAIN

TREE PROTECTION

TEMPORARY ACCESS ROAD AND CULVERT CROSSING

TEMPORARY TIMBER MATTING

LIMIT OF DISTURBANCE

DEWATERING DEVICE

SUPER SILT FENCE

TREE REMOVAL

ARLINGTON
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SEAL



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Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
07/23/2021	
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

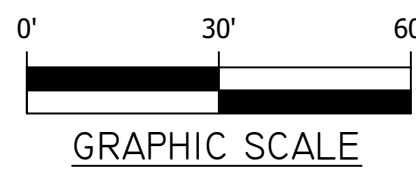
REVISIONS DATE

PROPOSED GRADING &
EROSION CONTROL PLAN -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

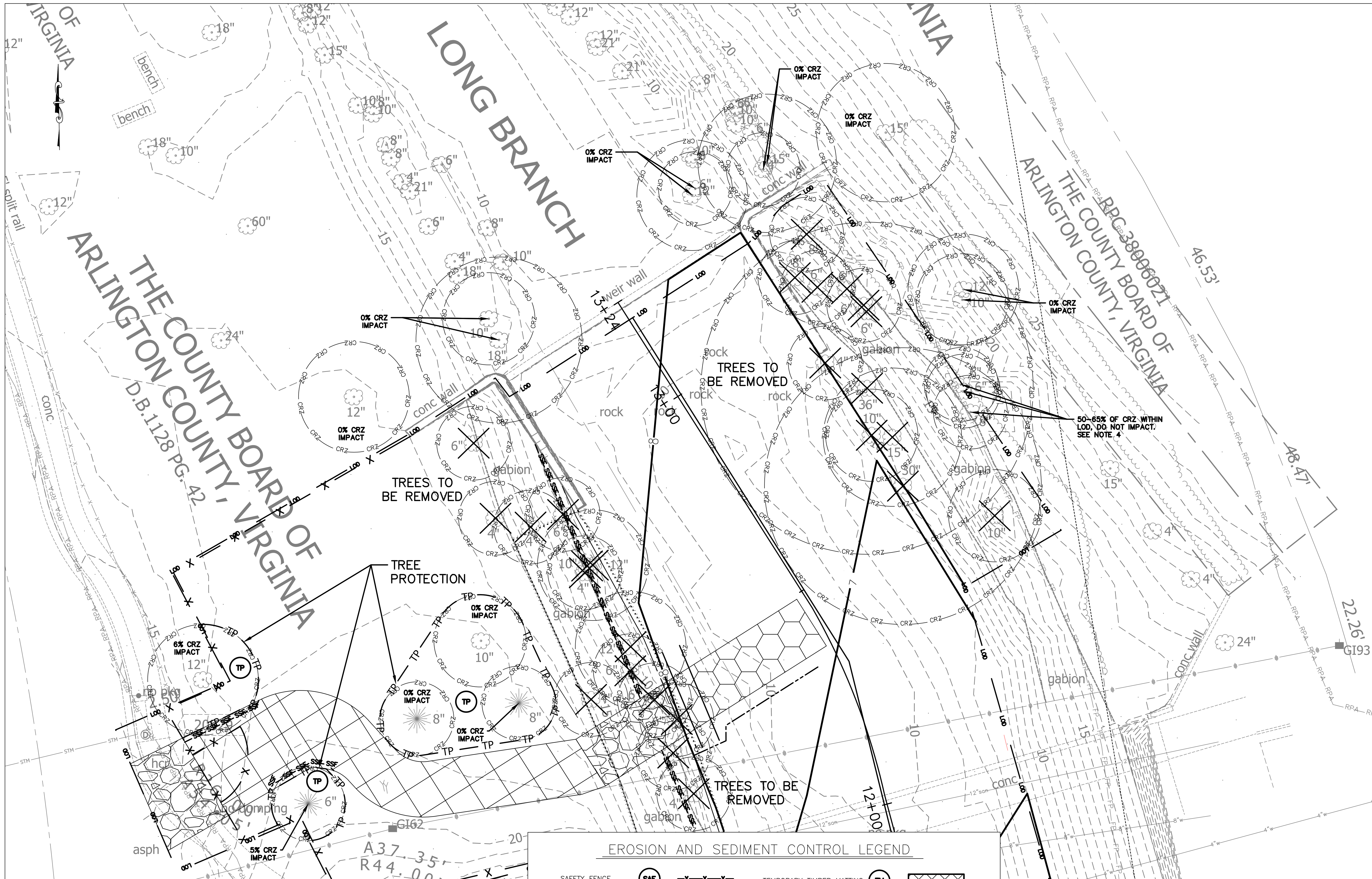
PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



SHEET 17 of 32

FOUR MILE RUN DREDGE PROJECT



PLAN LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- HEC-RAS CROSS-SECTIONS
- 50' BASELINE CROSS-SECTIONS
- GABION BASKET REPAIR AREA

NOTES:

- SEE SHEETS 13-17 FOR FULL EROSION AND SEDIMENT CONTROL PLAN.
- TREE PROTECTION DETAILS ON SHEET 10.
- 100% IMPACT TO THE CRITICAL ROOT ZONE ASSUMED FOR ALL TREES TO BE REMOVED.
- CONTRACTOR SHALL ENSURE PROTECTION OF ALL TREES TO REMAIN. ADDITIONAL TREE PROTECTION MAY BE UTILIZED IF NECESSARY.

EROSION AND SEDIMENT CONTROL LEGEND

- | | | | | | |
|--|-----|-------------------|--------------------------|-----|-----------------------|
| SAFETY FENCE | SAF | ---X---X---X--- | TEMPORARY TIMBER MATTING | TM | [X-X-X-X-X-X-X-X] |
| CONSTRUCTION ENTRANCE | CE | [X-X-X-X-X-X-X-X] | LIMIT OF DISTURBANCE | LOD | --- |
| COFFER DAM | CD | [X-X-X-X-X-X-X-X] | DEWATERING DEVICE | DW | [X-X-X-X-X-X-X-X] |
| TURBIDITY CURTAIN | TC | [X-X-X-X-X-X-X-X] | SUPER SILT FENCE | SSF | ---SSF---SSF---SSF--- |
| TREE PROTECTION | TP | ---TP--- | TREE REMOVAL | | X |
| TEMPORARY ACCESS ROAD AND CULVERT CROSSING | TA | [X-X-X-X-X-X-X-X] | CRITICAL ROOT ZONE | CRZ | --- |

SEAL



APPROVALS DATE

Arjun Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
[Signature]	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS DATE

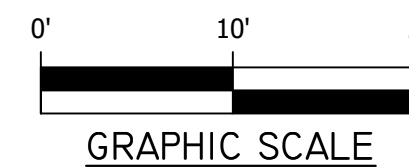
TREE REMOVAL AND PROTECTION PLAN - LONG BRANCH

FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

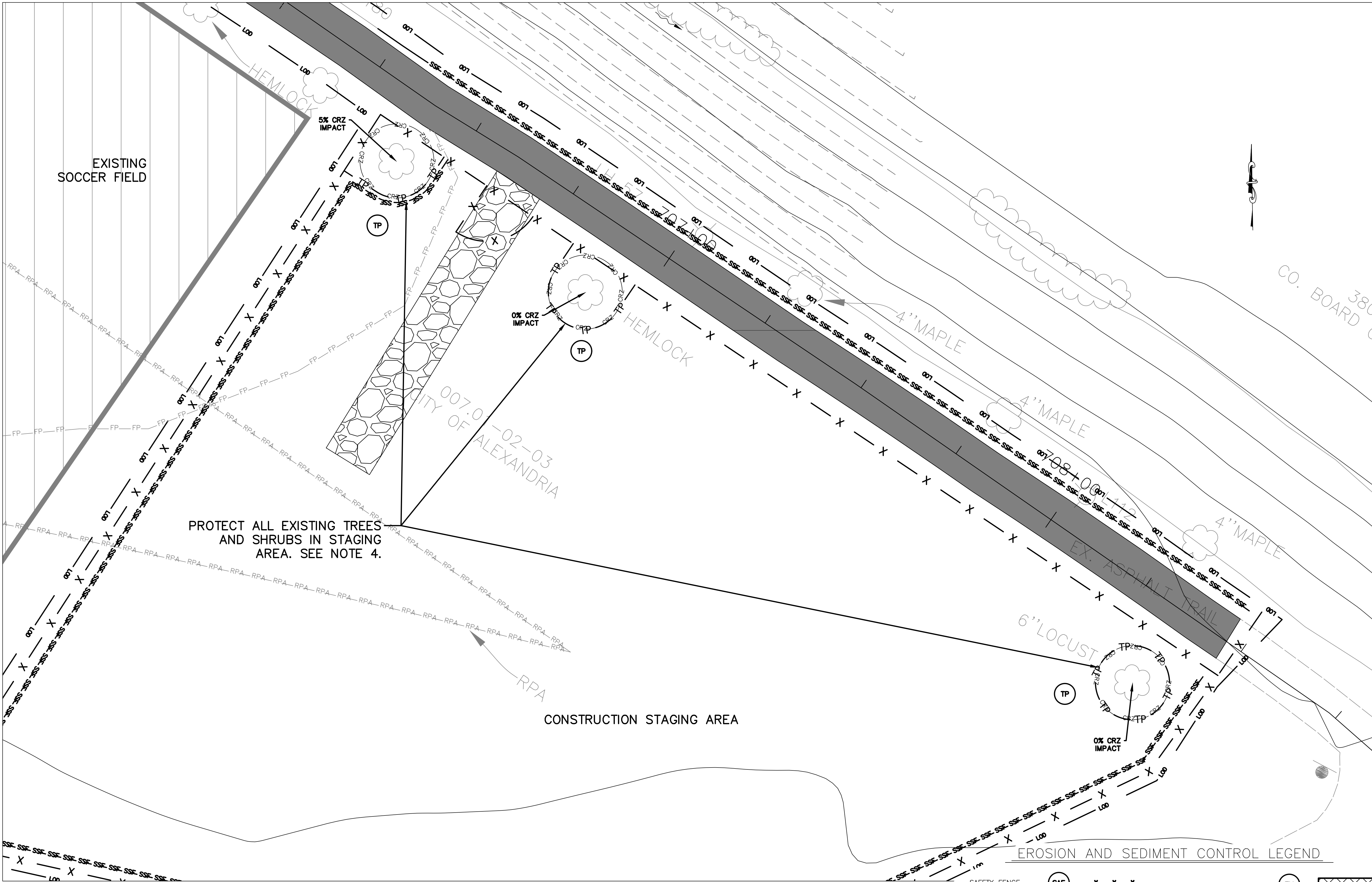
PLOTTED: AUGUST 23 2021

SCALE:Hor.: 1"=10'



REVISED ON 01/07/2021

FILENAME: TREE REMOVAL AND PROTECTION.DWG PATH: \\AD.RKK.COM\FSCLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE\CADD\PLAN PLOTTED BY: HCHEN



PLAN LEGEND	
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
HEC-RAS CROSS-SECTIONS	---
50' BASELINE CROSS-SECTIONS	---
GABION BASKET REPAIR AREA	-----

- NOTES:
- SEE SHEETS 13-17 FOR FULL EROSION AND SEDIMENT CONTROL PLAN.
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SAFETY FENCE	SAF	---	TEMPORARY TIMBER MATTING	TM	---
CONSTRUCTION ENTRANCE	CE	---	LIMIT OF DISTURBANCE	LOD	---
COFFER DAM	CD	---	DEWATERING DEVICE	DW	---
TURBIDITY CURTAIN	TC	---	SUPER SILT FENCE	SSF	---
TREE PROTECTION	TP	---	TREE REMOVAL	X	---
TEMPORARY ACCESS ROAD AND CULVERT CROSSING	TA	---	CRITICAL ROOT ZONE	CRZ	---

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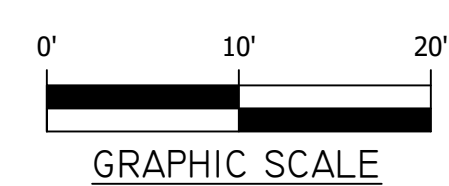
REVISIONS	DATE

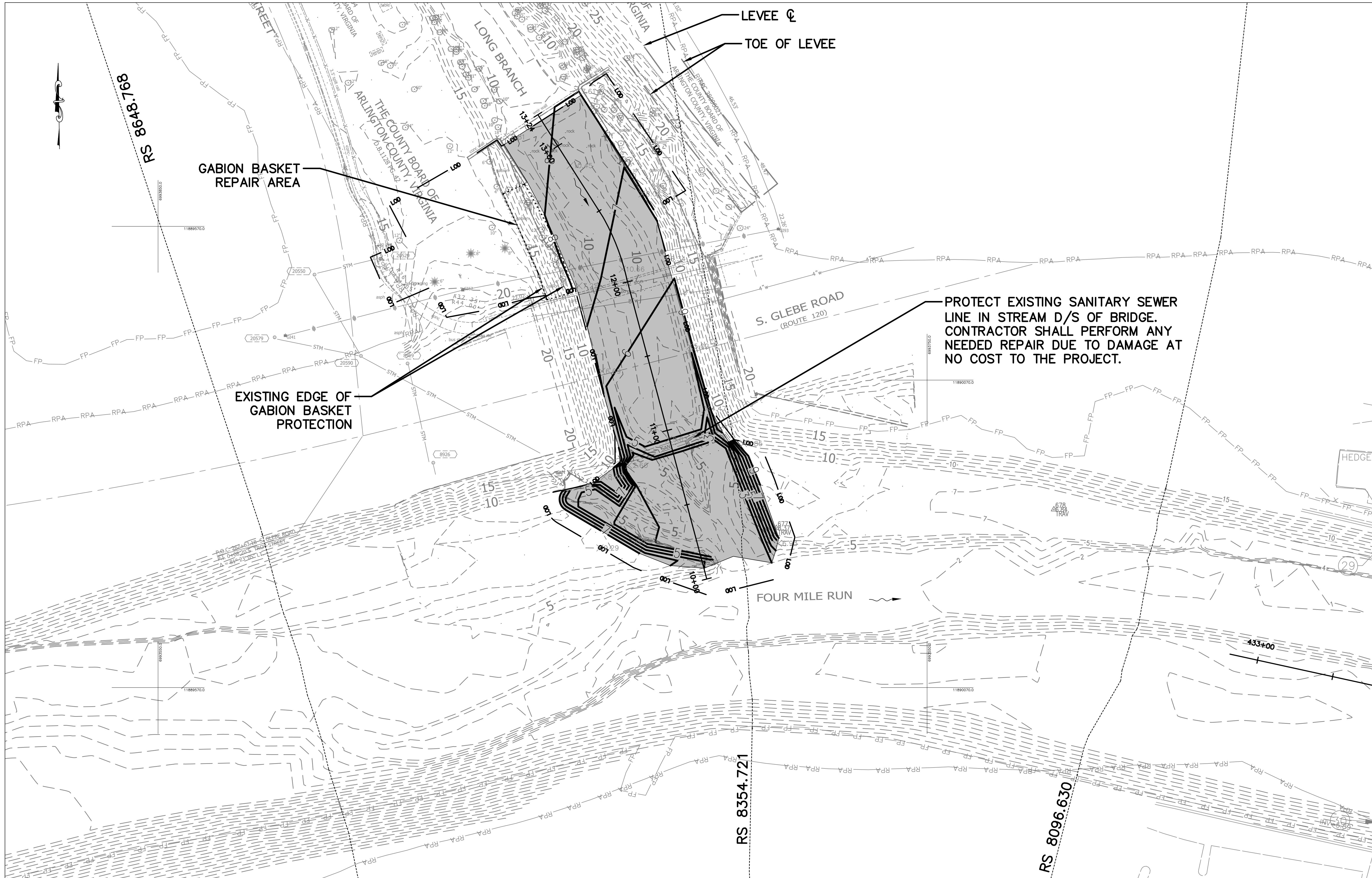
TREE REMOVAL AND PROTECTION
PLAN - FOUR MILE RUN
FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE:Hor.: 1"=10'





PLAN LEGEND

- | | |
|-----------------------------|-----------|
| EXISTING CONTOURS | --- |
| PROPOSED CONTOURS | — |
| HEC-RAS CROSS-SECTIONS | - - - - - |
| 50' BASELINE CROSS-SECTIONS | — |
| LIMIT OF DISTURBANCE | — LOD — |
| PROPOSED DREDGE AREA | ■ |
| GABION BASKET REPAIR AREA | ***** |

- NOTES:
- GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.
 - LONG BRANCH WORK LOCATED IN A NON-TIDAL AREA.
 - NUMEROUS UTILITIES ARE PRESENT IN THE VICINITY OF CONSTRUCTION. CONTRACTOR SHALL PROTECT THESE FACILITIES FROM DAMAGE.

PROTECT EXISTING SANITARY SEWER LINE IN STREAM D/S OF BRIDGE. CONTRACTOR SHALL PERFORM ANY NEEDED REPAIR DUE TO DAMAGE AT NO COST TO THE PROJECT.

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SEAL



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<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Michael J. Finerfrucht</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

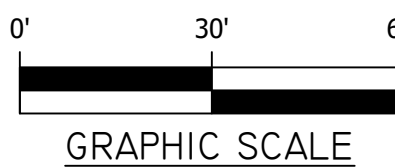
PROPOSED DREDGE AREA -
LONG BRANCH

FOUR MILE RUN DREDGE
PROJECT

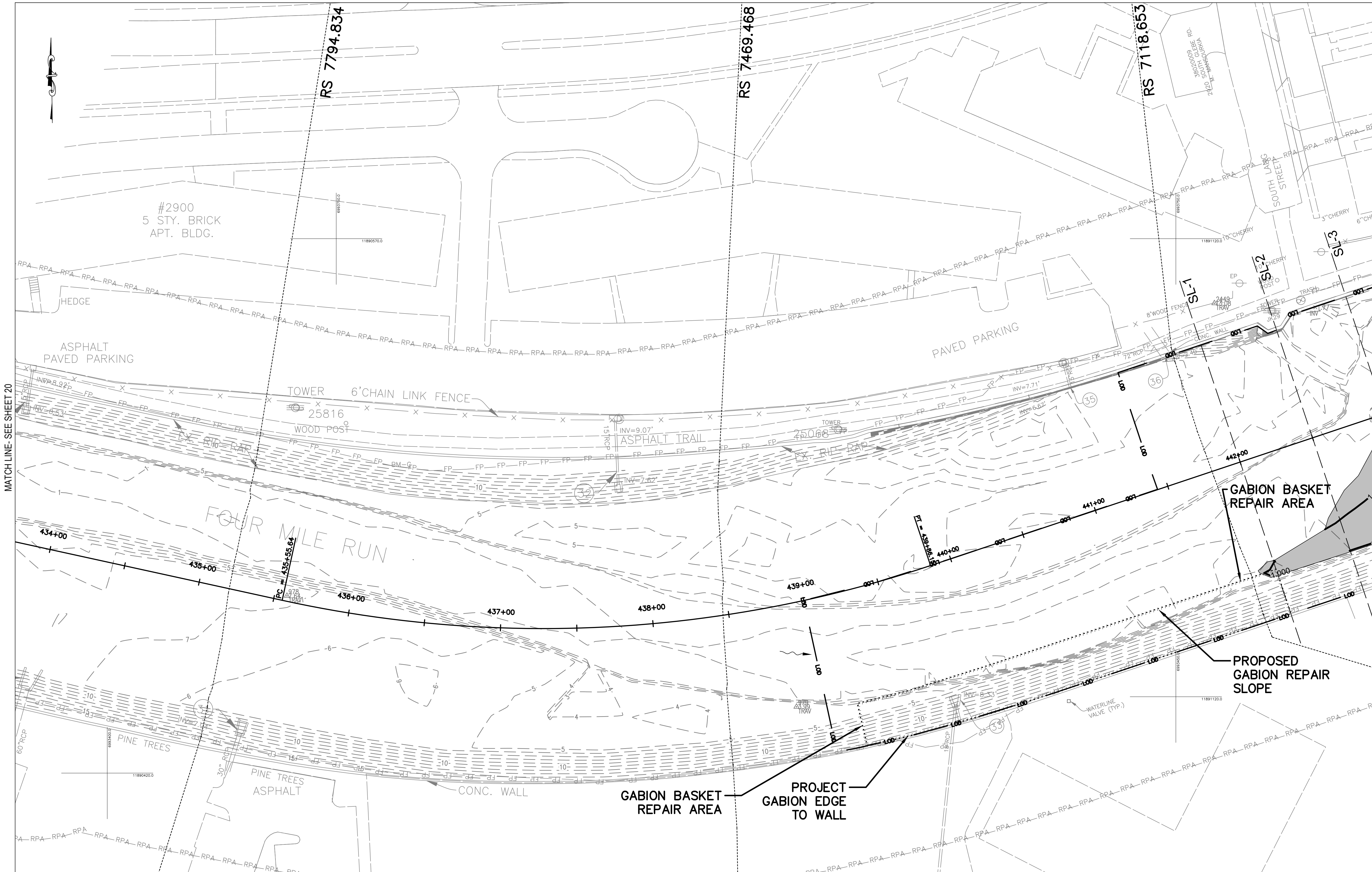
DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



SHEET 20 of 32



PLAN LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- HEC-RAS CROSS-SECTIONS
- 50' BASELINE CROSS-SECTIONS
- LIMIT OF DISTURBANCE
- PROPOSED DREDGE AREA
- GABION BASKET REPAIR AREA

NOTES:
1. GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.

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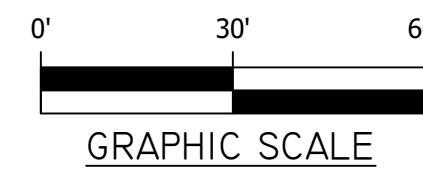
APPROVALS	DATE
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TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

PROPOSED DREDGE AREA - FOUR MILE RUN
FOUR MILE RUN DREDGE PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF
PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'





PLAN LEGEND

EXISTING CONTOURS	---
PROPOSED CONTOURS	---
HEC-RAS CROSS-SECTIONS	----
50' BASELINE CROSS-SECTIONS	----
LIMIT OF DISTURBANCE	---
PROPOSED DREDGE AREA	---
GABION BASKET REPAIR AREA	---

NOTES:
1. GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.

MATCH LINE- SEE SHEET 23

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PROJECT MANAGER	

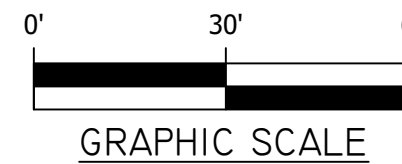
REVISIONS	DATE

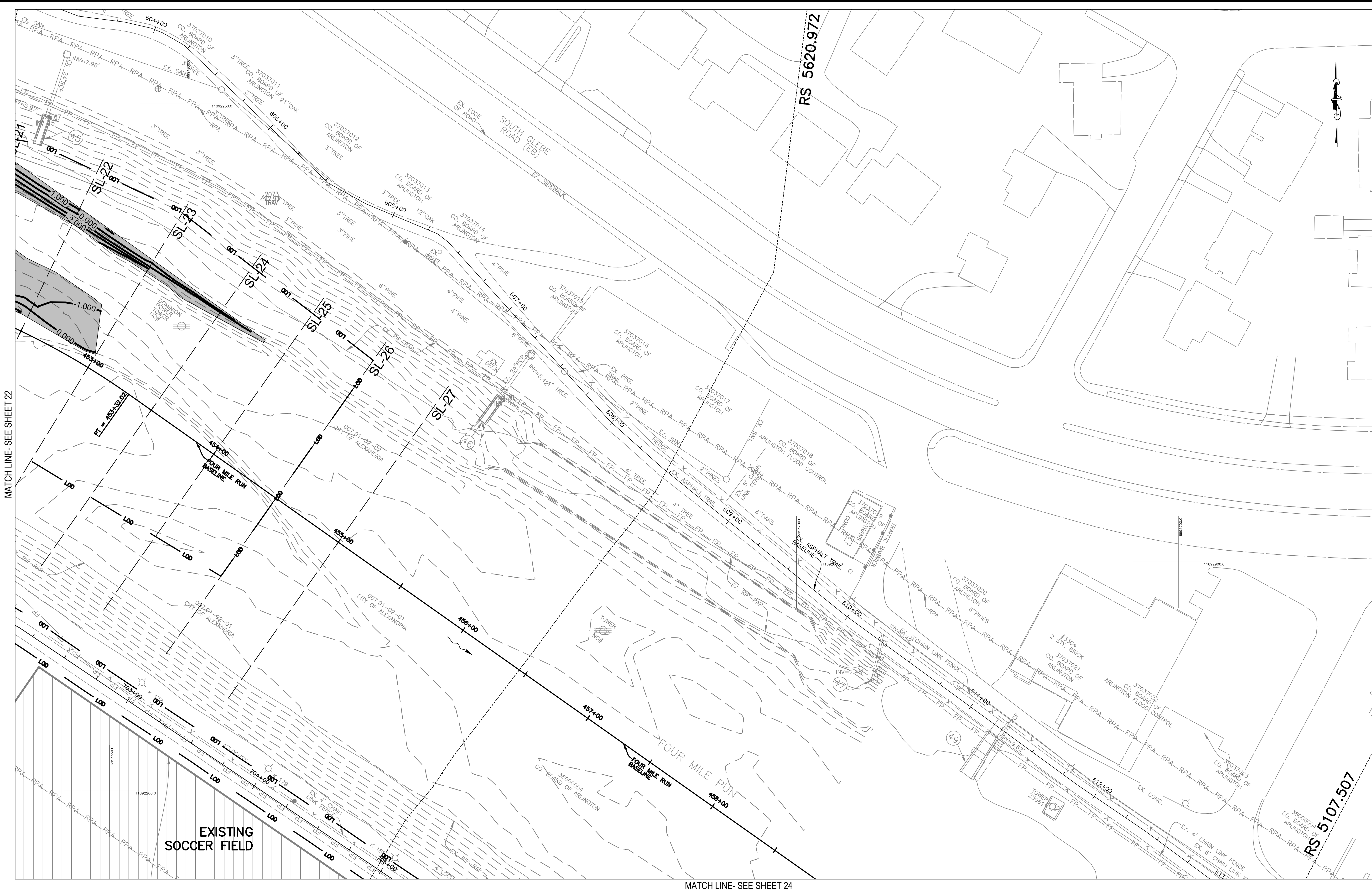
PROPOSED DREDGE AREA -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'





PLAN LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- HEC-RAS CROSS-SECTIONS
- 50' BASELINE CROSS-SECTIONS
- LIMIT OF DISTURBANCE
- PROPOSED DREDGE AREA
- GABION BASKET REPAIR AREA

NOTES:
1. GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.

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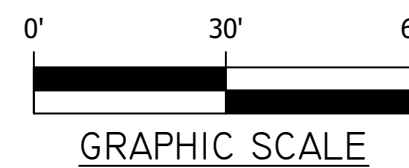
APPROVALS	DATE
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<i>Ramal Taktak</i>	8.18.21
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<i>Dennis M. Leach</i>	07/21/20
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<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

PROPOSED DREDGE AREA -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF
PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



REVISED ON 01/07/2021

FILENAME: PROPOSED DREDGING PLANNING PATH: \\AD.BKK.COM\FS\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4HR DREDGE CADD\PLAN PLOTTED BY: HCHEN

MATCH LINE- SEE SHEET 23



PLAN LEGEND

- EXISTING CONTOURS
PROPOSED CONTOURS
HEC-RAS CROSS-SECTIONS
50' BASELINE CROSS-SECTIONS
LIMIT OF DISTURBANCE
PROPOSED DREDGE AREA
GABION BASKET REPAIR AREA

- NOTES:
1. GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.
2. NO DREDGE AREA VISIBLE WITHIN THE LIMITS OF THIS SHEET.

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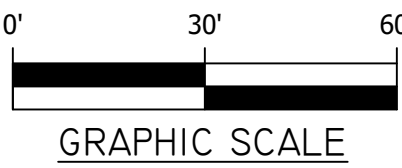
APPROVALS	DATE
<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
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<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

PROPOSED DREDGE AREA -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF
PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'

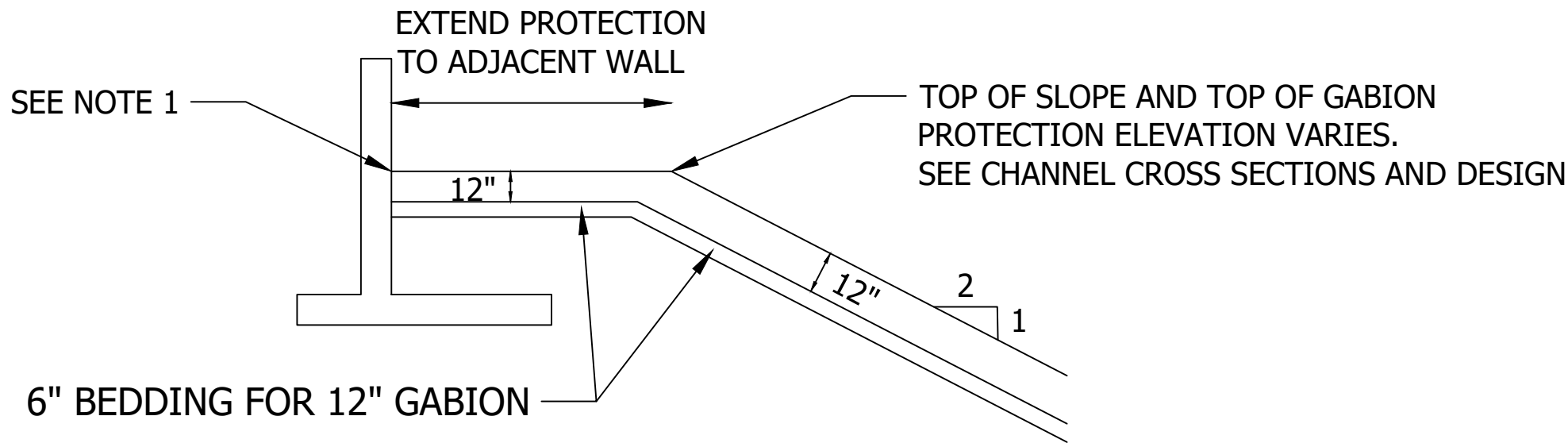


SHEET 24 of 32

FOUR MILE RUN DREDGE PROJECT

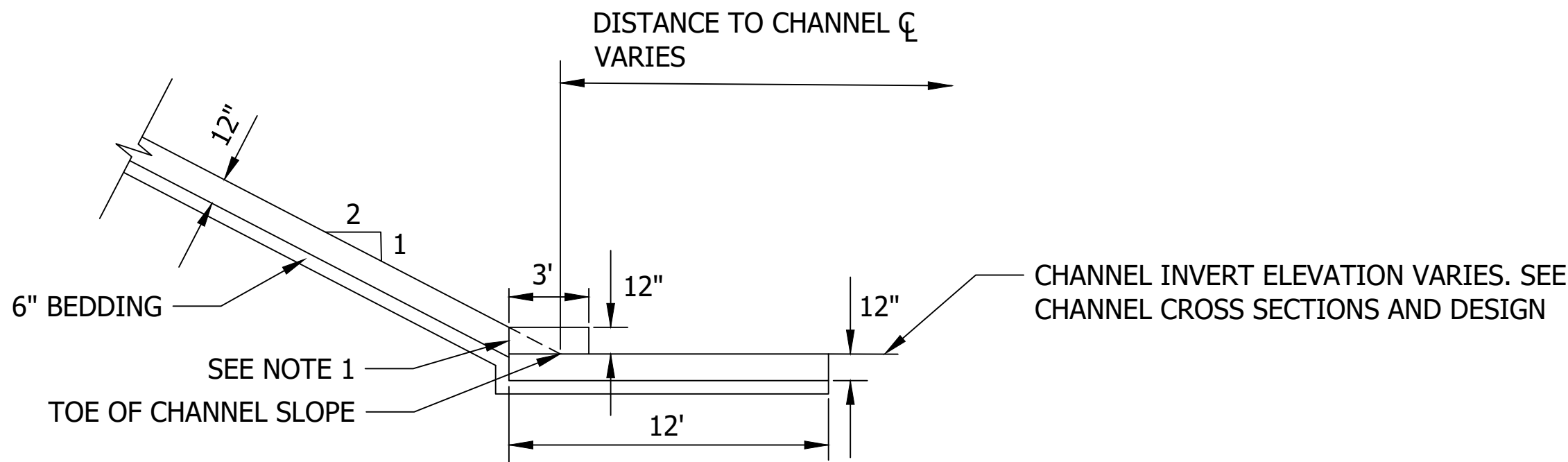
REVISED ON 01/07/2021

FILENAME: GABION BASKET DETAILS.DWG PATH: \\AD.RKK.COM\FSCLOUD\PROJECTS\2019\0160_ARLSTREAM\TASK 2-4HR DREDGE CADD\PLAN PLOTTED BY: HOHEN



TOP DETAIL AT WALLS

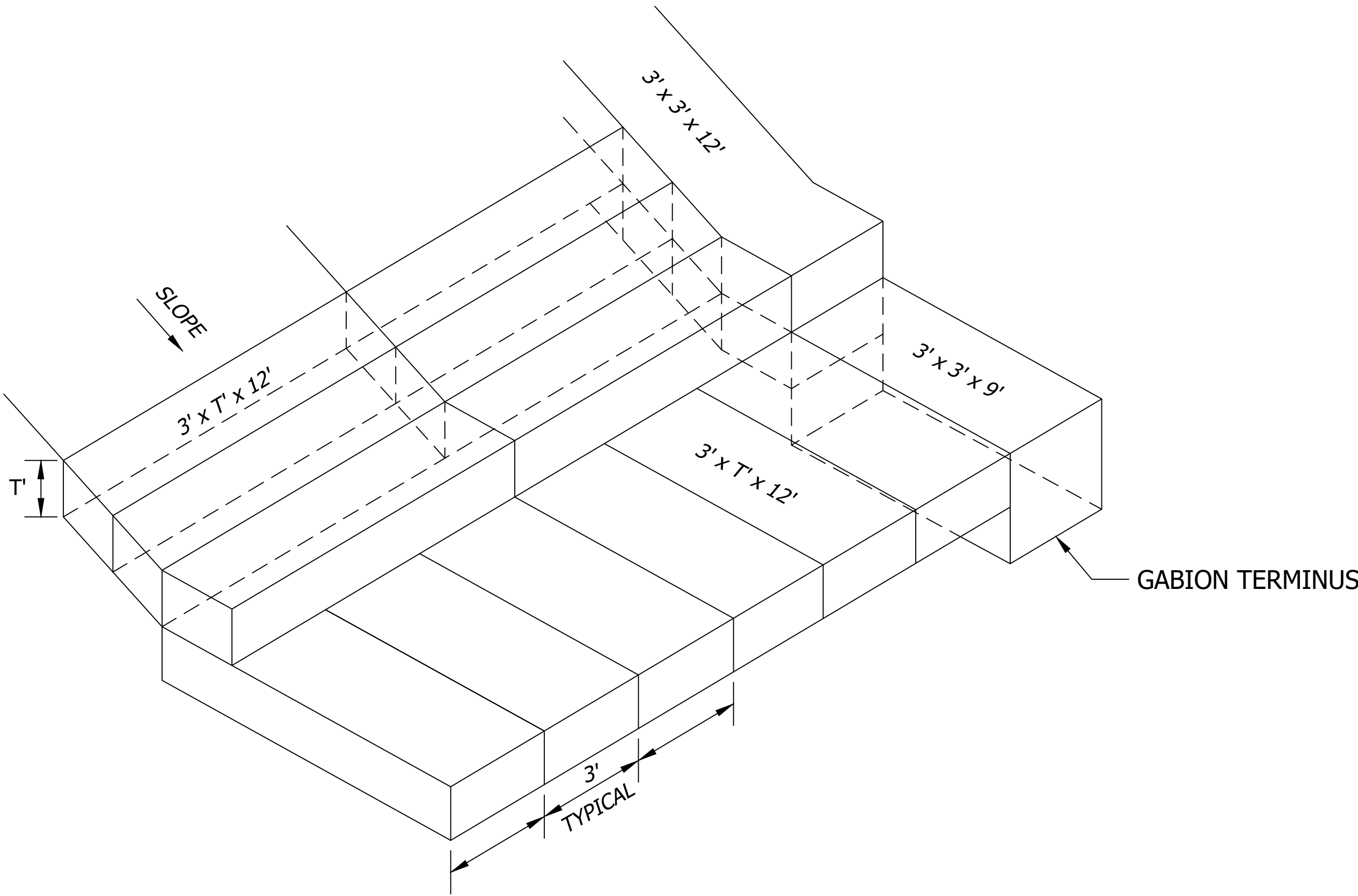
SCALE: 1" = 5'



TOE DETAILS

SCALE: 1" = 5'

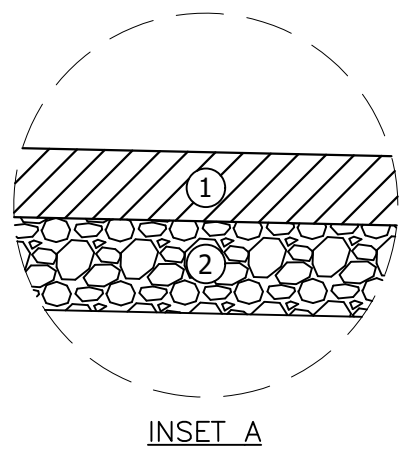
- NOTES:
- CONTRACTOR SHALL CUT AND/OR BIND GABIONS AS REQUIRED TO MEET EXISTING CONDITIONS, STRUCTURES, OR AS DIRECTED BY THE ENGINEER.
 - REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE PROPOSED PLANS.



TYPICAL BASKET ARRANGEMENT

NOT TO SCALE

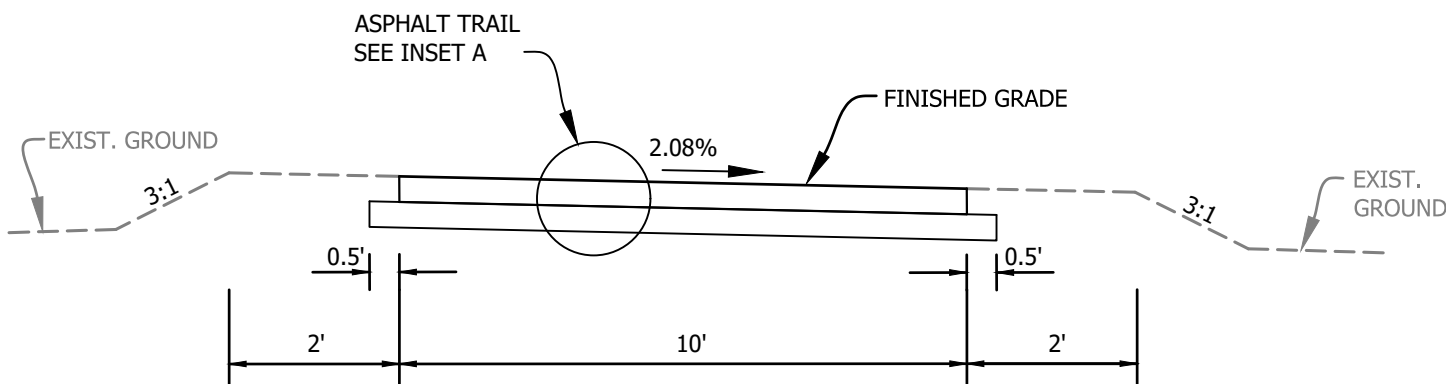
GABION BASKET REPAIR DETAILS



- LEGEND:
- 4" VDOT TYPE SM-9.5A ASPHALT CONCRETE.
 - 6" VDOT 21-A AGGREGATE SUBBASE COMPACTED VDOT 21-A STONE. HAVING MINIMUM CBR-30, COMPACTED TO 95% MAXIMUM STD. PROCTOR DENSITY OR 90% OF THE MAXIMUM MODIFIED PROCTOR DENSITY.

NOTE:
REFER TO PROJECT SPECIFICATIONS SPECIAL PROVISIONS SECTION 02601.

TRAIL FULL RECONSTRUCTION
N.T.S.



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<i>[Signature]</i>	07.23.2021
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<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

CIVIL DESIGN DETAILS
FOUR MILE RUN

FOUR MILE RUN DREDGE
PROJECT

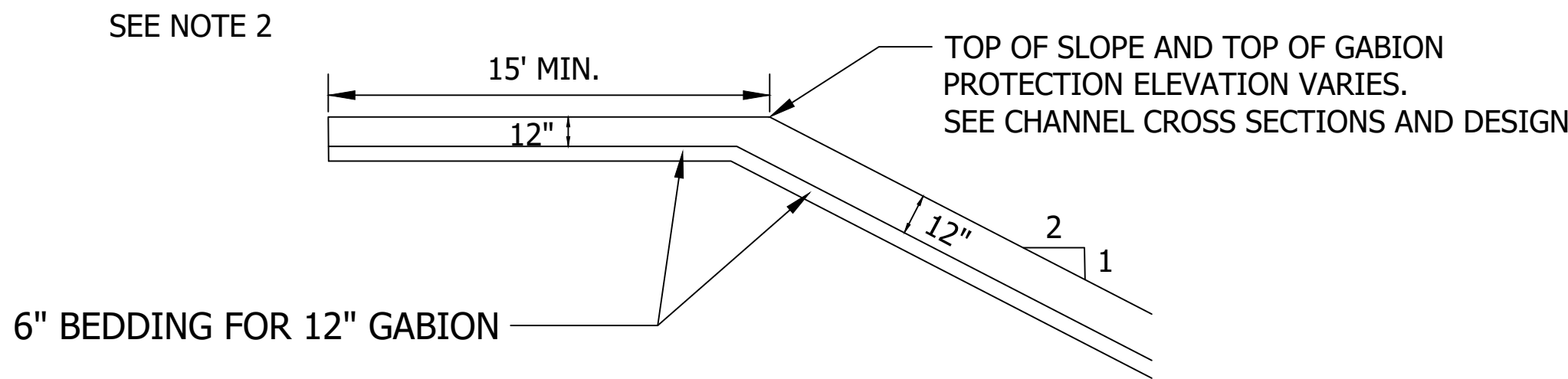
DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: As Noted

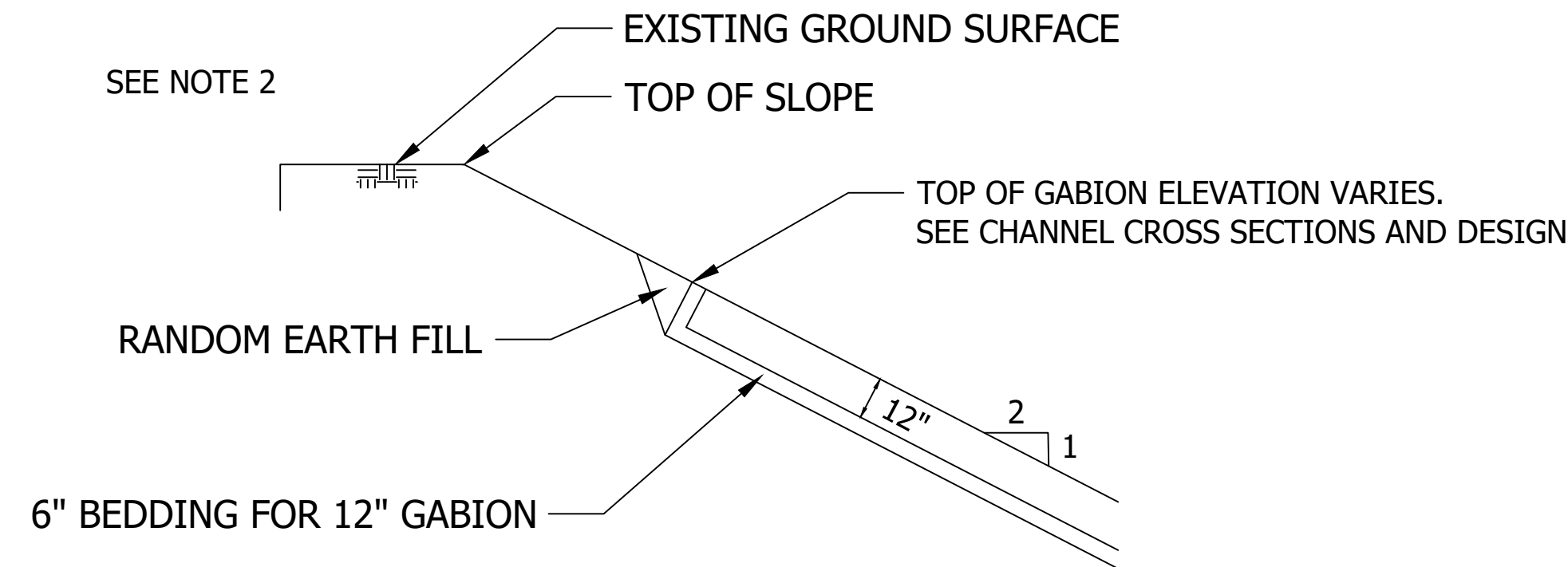
REVISED ON 01/07/2021

FILENAME: GABION BASKET DETAILS.DWG PATH: \\AD.RK.COM\FS\CLOUD\PROJECTS\2019\0160_ARLSTREAM\TASK 2-4HR DREDGE CADD\PLAN PLOTTED BY: HOHEN



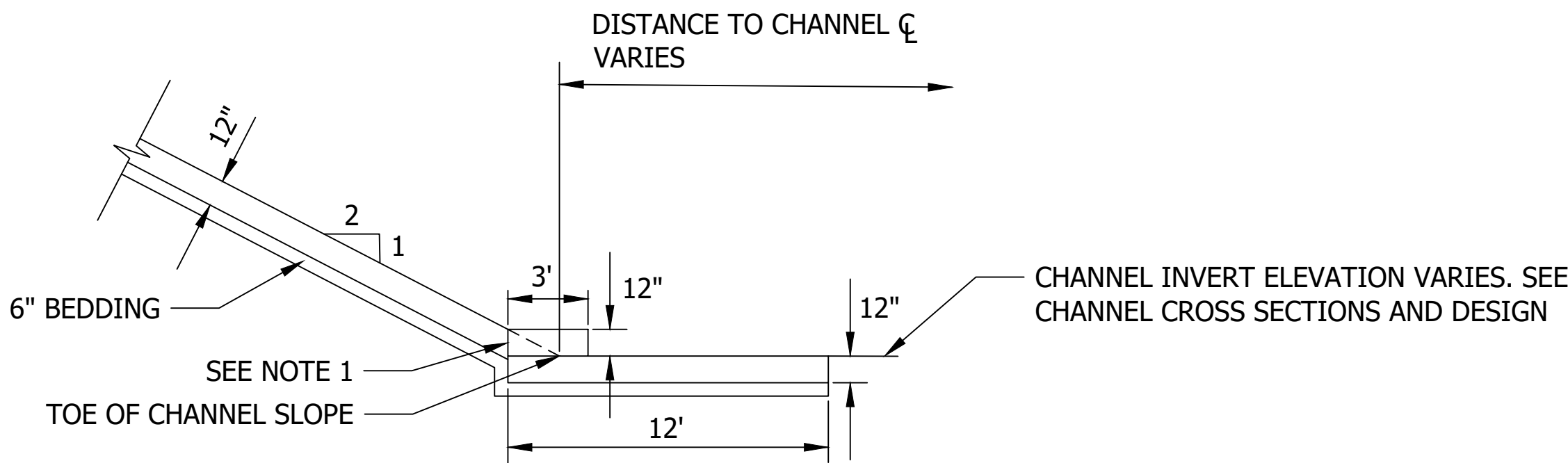
TOP DETAILS
TOP OF GABION AT TOP OF SLOPE

SCALE: 1" = 5'



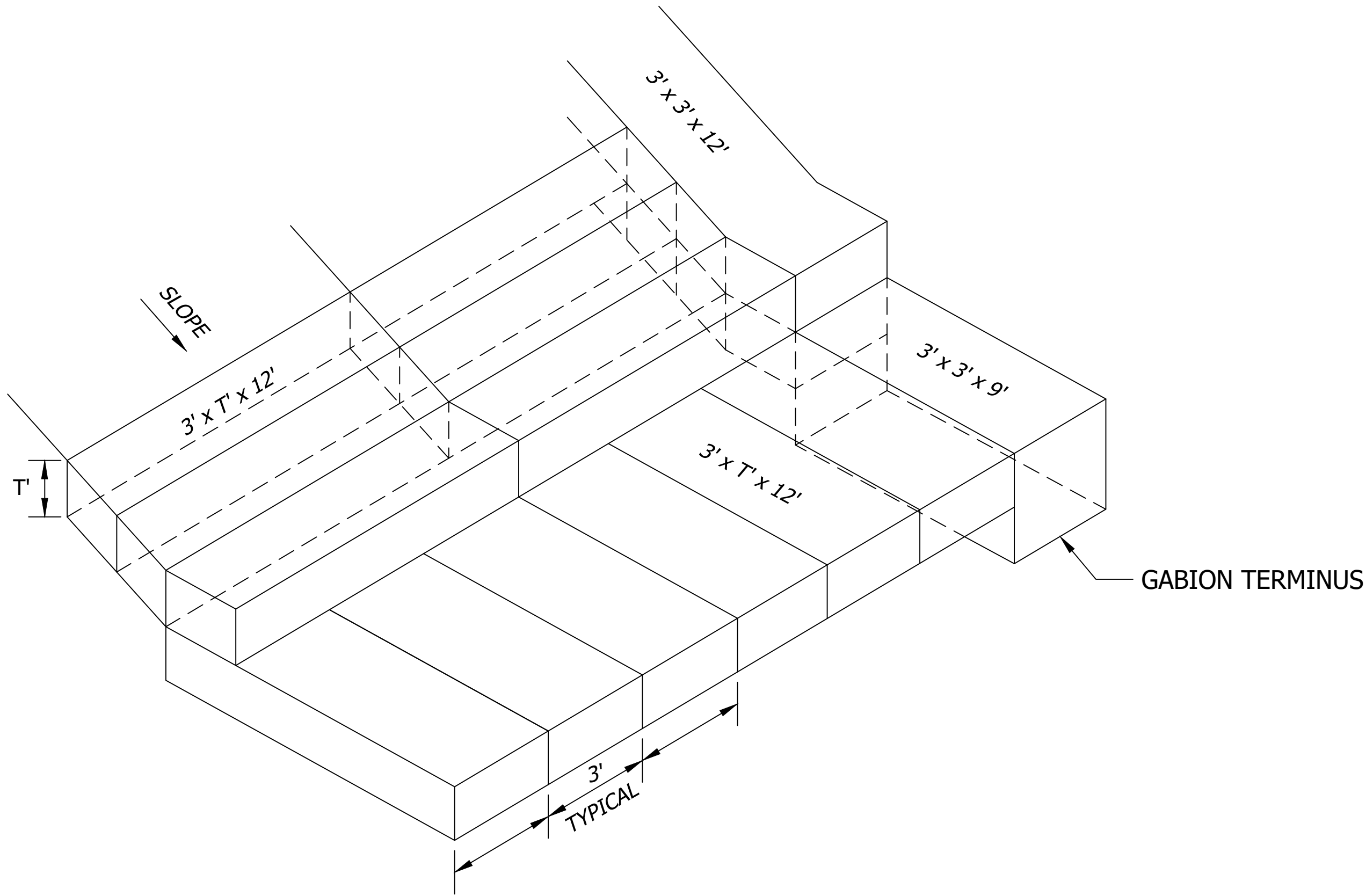
TOP DETAILS
TOP OF GABION BELOW TOP OF SLOPE

SCALE: 1" = 5'



TOE DETAILS

SCALE: 1" = 5'



TYPICAL BASKET ARRANGEMENT

NOT TO SCALE

- NOTES:
1. CONTRACTOR SHALL CUT AND/OR BIND GABIONS AS REQUIRED TO MEET EXISTING CONDITIONS, STRUCTURES, OR AS DIRECTED BY THE ENGINEER.
 2. TOP OF GABION CONFIGURATION TO BE RESTORED TO DETERMINED BY EXISTING CONDITIONS.
 2. REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE PROPOSED PLANS.

GABION BASKET REPAIR DETAILS

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<i>Dennis M. Leach</i>	07/21/20
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<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

CIVIL DESIGN DETAILS
LONG BRANCH

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: As Noted

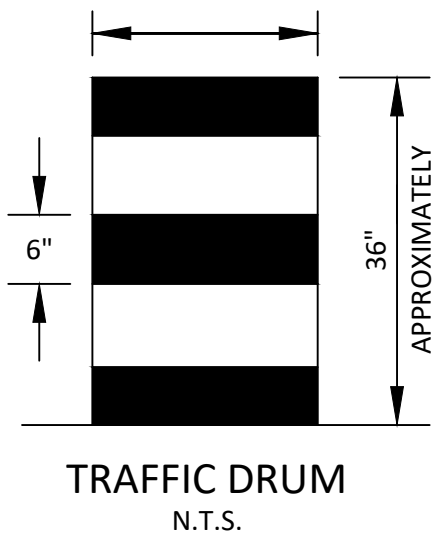
SHEET 25B of 32



MAINTENANCE OF TRAFFIC PLAN

MAINTENANCE OF TRAFFIC PLAN
MOT LEGEND

- CROSSWALK ARROW SIGN
- YIELD HERE TO PEDESTRAIN SIGN
- PEDESTRAIN TRAFFIC CROSSING SIGN
- AREA SIDEWALK CLOSED DURING CONSTRUCTION
- CONSTRUCTION ENTRANCE
- TRAFFIC FLOW
- 2" X 36" TUBULAR MARKERS
- SIGN
- TYPE III BARRICADE



NOTES:
THIS FLOOD CONTROL PROJECT WILL ENTAIL THE REMOVAL OF SEDIMENT (DREDGE) FROM APPROXIMATELY 1200 LF OF THE FOUR MILE RUN CHANNEL, UPSTREAM AND DOWNSTREAM OF THE GLEBE ROAD BRIDGE.

- NOTES:**
- CONTRACTOR WILL MAKE THE CALL ABOUT MOT ZONE WORK SEQUENCES.
 - ALL THE ZONE WORK WILL NOT BE CARRIED OUT AT THE SAME TIME.

- ZONE NOTES:**
- THE FOLLOWING ZONES CAN NOT BE BUILT AT THE SAME TIME : (NOT APPLICABLE)
 - WARNING SIGN SPACING : 100' CHANNELIZATION DEVICES SPACING FOR TRANSITION A AREAS = 20' — APPLIED TO ALL ZONES

ZONE TABLE				
ZONE #	TTC#		COMMENTS	MAXIMUM DURATION
	VEHICULAR	PEDESTRIAN		
ZONE A	TTC-63.2	TTC-36.2	LOGGING OPERATIONS, SIDEWALK CLOSURE AND PEDESTRIAN DETOUR OPERATION	ONE MONTH TO THREE MONTH
NOTE: THE DURATIONS SHOWN WERE DEVELOPED FOR PLANNING AND ESTIMATION PURPOSES ONLY. THE DURATIONS IN NO WAY ALTER THE CONTRACT TIME FOR COMPLETION, OR INFRINGERS ON THE CONTRACTORS MEANS AND METHODS. THE CONTRACTOR'S SUBMITTED SCHEDULE SUPERSEDES THE ESTIMATED DURATIONS SHOWN.				

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18" MINIMUM

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SEAL

COMMONWEALTH OF VIRGINIA
N.R.N.
NILESH RAM NAIKARE
Lic. No. 0402049246
7/19/2021
PROFESSIONAL ENGINEER

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CONSTRUCTION MANAGEMENT SUPERVISOR	
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Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

DETOUR PLAN LONG BRANCH S54D

FROM 26TH STREET S. TO S. GLEBE RD.

FOUR MILE RUN DREDGE PROJECT

DESIGNED: PB
DRAWN: PB
CHECKED: MG

PLOTTED: AUGUST 20 2021

SCALE:

0 50 100
GRAPHIC SCALE

REVISED ON 01/07/2021

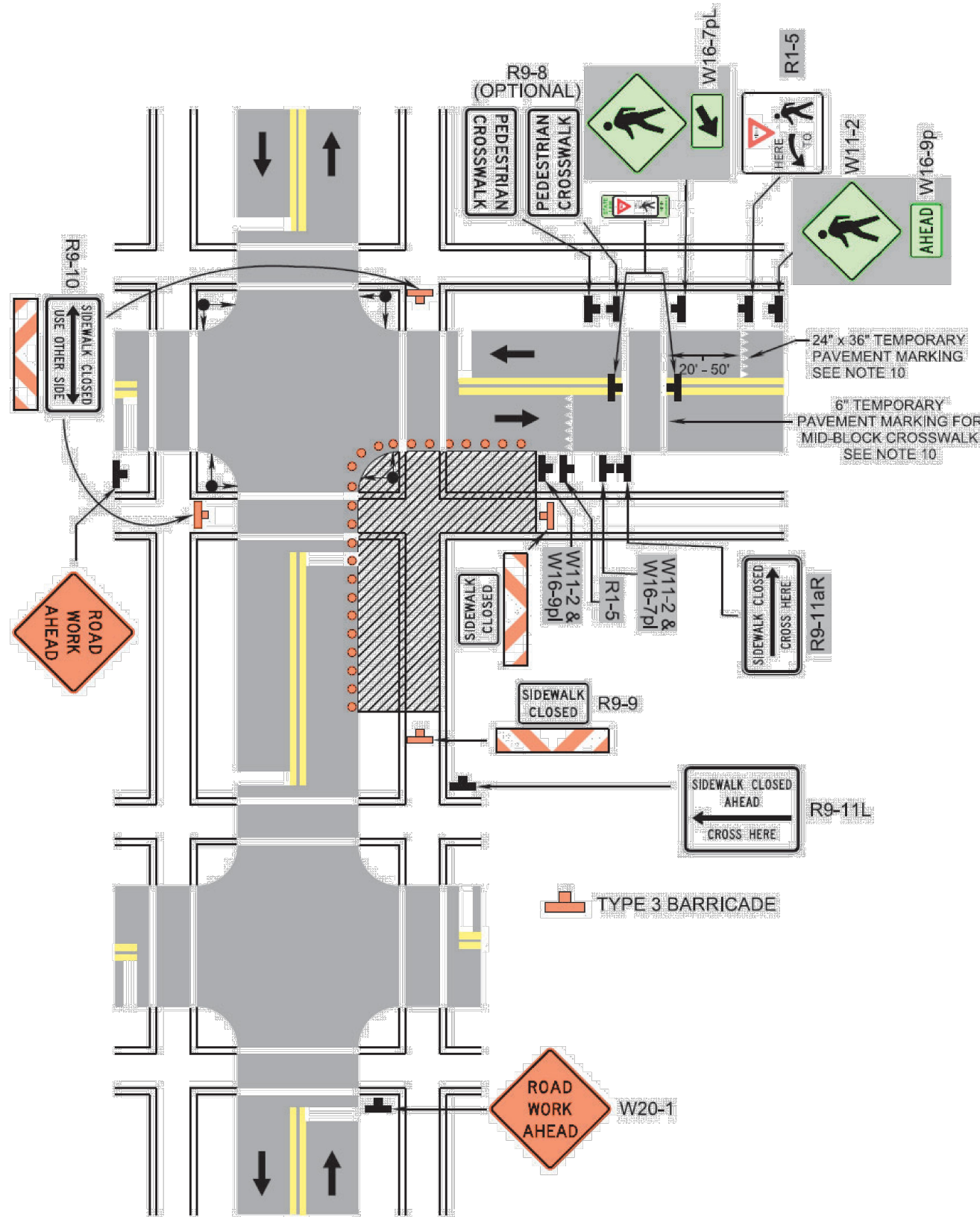
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Typical Traffic Control
Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.2)
NOTES

- Standard:
- When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.
 - Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.
- Guidance:
- Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
 - Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.
 - Temporary markings should be considered for operations exceeding three days in duration.
- Option:
- Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
 - For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.
- Standard:
- In order to maintain the systematic use of the fluorescent yellow-green background for school warning signs in a jurisdiction, the fluorescent yellow-green background for school warning signs shall be used in TTC zones.¹
 - All sidewalk closures shall be closed with Type 3 Barricades. The SIDEWALK CLOSED (R9-9) sign and the SIDEWALK CROSS HERE (R9-11) sign shall be installed above the Type 3 Barricade. The KEEP RIGHT sign can cover the top rail of the Type 3 Barricade.²
- Support:
- Refer to Sections 3B-16 through 3B-18 of the 2009 MUTCD and the Virginia Supplement to the MUTCD¹ for crosswalk¹ lines, yield lines and other related TTC devices that may be used to control vehicular traffic at midblock crosswalks.
- Standard:
- The YIELD HERE TO PEDESTRIANS (R1-5) sign shall be placed at the Yield Line.
 - Fluorescent yellow-green PEDESTRIAN TRAFFIC (W11-2) symbol sign, AHEAD (W16-9p) plaque and ARROW (W16-7p) plaque shall be used to identify the work zone crosswalk.

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.2)



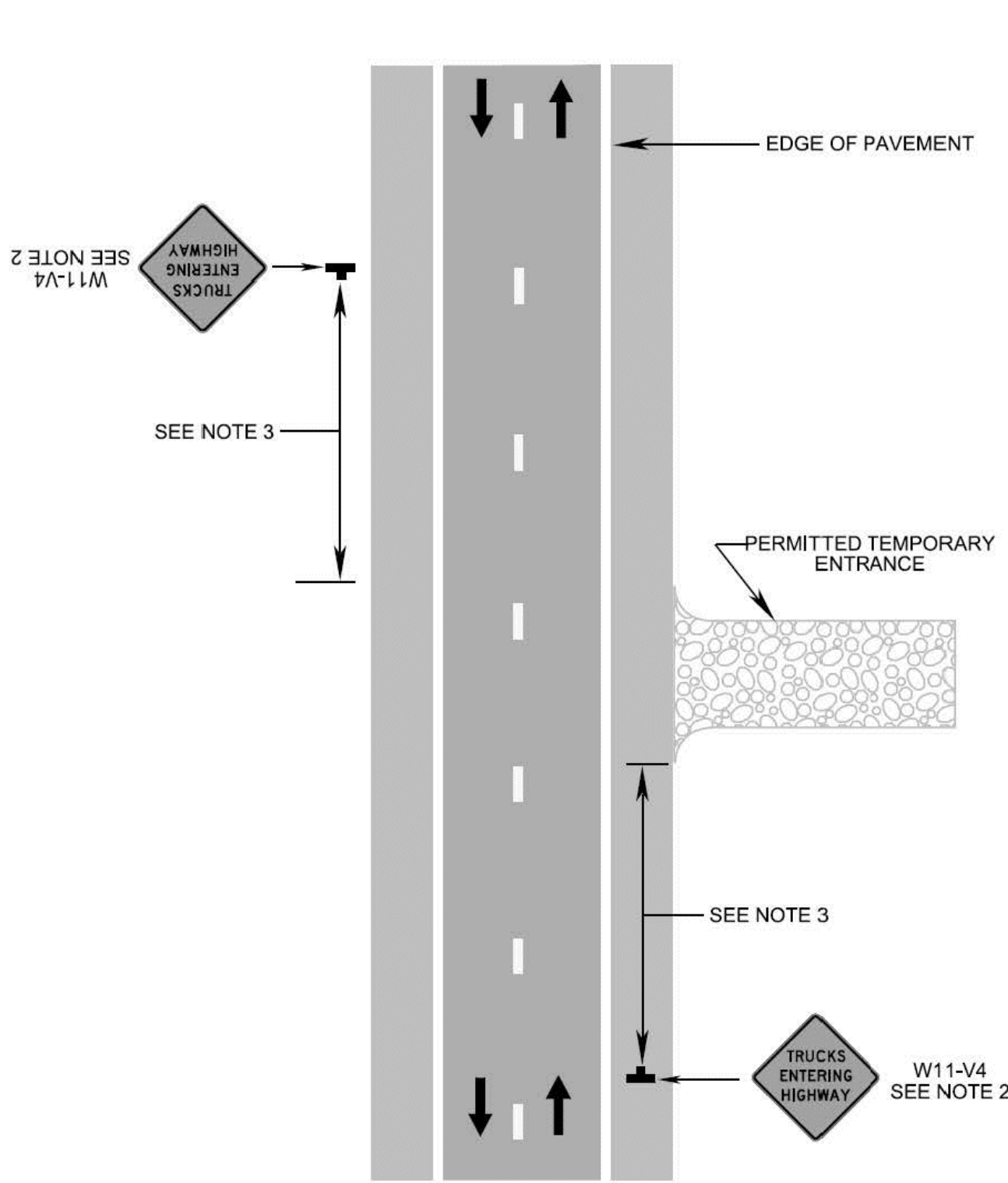
1: Revision 1 – 4/1/2015
2: Revision 2 – 7/1/2018

Typical Traffic Control
Logging Operations
(Figure TTC-63.2)
NOTES

- Standard:
- Prior to the installation of the entrance and placement of any traffic control devices, the appropriate state/local agencies shall be notified.
- Guidance:
- Care should be exercised when establishing the location of the permitted temporary entrance to insure maximum possible sight distance in advance of the entrance, and should be based on the posted speed limit and at least equal to or greater than the values in Table 6G-1, Intersection Sight Distance for Construction Entrances. If the minimum distances in Table 6G-1 cannot be obtained, a flagging operation should be implemented for exiting and entering vehicles.¹
 - Sign spacing distance should be 300'-500' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.
- Standard:
- TRUCKS ENTERING HIGHWAY (W11-V4) sign shall be used to warn of logging trucks entering roadways. LOG TRUCKS ENTERING HIGHWAY sign is not allowed for use.¹
 - On divided highways having a median wider than 8', right and left sign assemblies shall be used. Median barrier is considered to be part of the shoulder and its measurement shall be used to determine the total width of the shoulder.
- Guidance:
- For operations that disrupt (stop) traffic on the travelway, Typical Traffic Control Figure TTC-23, Lane Closure on a Two-Lane Roadway Using Flaggers, or Typical Traffic Control Figure TTC-16 or 17, Outside or Inside Lane Closure Operation on Four-Lane Roadway, should be used.
- Standard:
- Flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).
 - The organization receiving the entrance permit shall be responsible for the removal of all debris (gravel, mud, dust, hauled materials, etc.), obstructions and irregularities caused by the operation in accordance with Section 105 of the Road and Bridge Specifications.
- Guidance:
- For the removal of debris on the roadway, Typical Traffic Control Figure TTC-14, Moving/Mobile Operation on a Two-Lane Roadway, or Typical Traffic Control Figure TTC-13, Moving/Mobile Operation on a Multi-Lane Roadway, should be used.

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Logging Operations
(Figure TTC-63.2)



CONSTRUCTION NOTES

- FOR ALL ARTERIAL STREETS, PORTABLE VARIABLE MESSAGE SIGNS WITH CLOSURE INFORMATION MUST BE INSTALLED AHEAD OF THE PROJECT SITE AT EACH VEHICULAR APPROACH 3 WEEKS PRIOR TO STREET CLOSURE IN LOCATIONS DIRECTED BY THE PROJECT OFFICER.
- CONTRACTOR SHALL REMOVE EXISTING PAVEMENT MARKINGS IN CONFLICT WITH TEMPORARY PAVEMENT MARKINGS.
- CONTACT TRANSPORTATION ENGINEERING OPERATIONS AT 703-228-6598 OR 571-437-1077 AND THE PROJECT OFFICER TO APPROVE MARKING LAYOUT 48 HOURS PRIOR TO INSTALLATION OF MARKINGS.
- ONE LANE CLOSURE IN EACH DIRECTION OF TRAFFIC WILL BE PERMITTED FOR FINAL PAVEMENT OVERLAY.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN THE FLOW OF TRAFFIC ON ANY INTERSECTION WITHIN THE WORK AREA.
- THE CONTRACTOR SHALL NOTIFY ARLINGTON COUNTY PUBLIC SCHOOLS TWO WEEKS PRIOR TO STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT ANY REQUESTS FOR TEMPORARY "NO PARKING" RESTRICTIONS TO THE PROJECT OFFICER AT LEAST 3 WORKING DAYS PRIOR TO THE DESIRED ONSET OF RESTRICTIONS. PRIOR TO A REQUEST FOR THE REMOVAL OF ACCESS TO ANY ADA PARKING SPACE THE CONTRACTOR MUST HAVE MADE PROVISION FOR ALTERNATIVE ADA PARKING AS INDICATED ON THE APPROVED PLAN OR AS DIRECTED BY THE PROJECT OFFICER
- WHEN THE APPROVED PLAN CALLS FOR THE REMOVAL OF ANY PARKING METER THE CONTRACTOR MUST MAKE A REQUEST TO THE PROJECT OFFICER AT LEAST ONE WEEK IN ADVANCE OF THE DESIRED REMOVAL. THE PROJECT OFFICER WILL THEN COORDINATE THE PARKING METER REMOVAL WITH TRAFFIC ENGINEERING AND OPERATIONS.

MOT NOTES:

- PARKING SHALL BE RESTRICTED BY THE COUNTY AS PART OF THE RIGHT OF WAY PERMIT. CONTACT DES-PERMITTING SECTION, 703-228-4798, AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF WORK.
- ALL TEMPORARY BUS TRAVEL LANES MUST BE MINIMUM 11' WIDE.
- THE CONTRACTOR SHALL MAINTAIN ADA ACCESSIBLE PARKING SPACES AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT DES - PERMITTING, 703-228-4798, TO COORDINATE RELOCATION OF EXISTING ADA ACCESSIBLE PARKING SPACES OR TO INSTALL TEMPORARY SIGNAGE OUT OF AND ADJACENT TO THE WORK ZONE AS CONSTRUCTION PROGRESSES. MULTIPLE RELOCATIONS MAY BE NECESSARY DURING EACH PHASE.

PEDESTRIAN NOTE:

- PEDESTRIANS SHALL BE APPROPRIATELY DIRECTED WITH ADVANCED WARNING SIGNS PLACED AT INTERSECTIONS, TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY IN ORDER TO PREVENT CONFLICT WITH MIDBLOCK WORK SITES.

GENERAL NOTES:

- PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, INCLUDING ACCESS TO BUS STOP SHELTERS, UNLESS OTHERWISE APPROVED IN THE PLANS.
- PEDESTRIAN TRAFFIC SHALL BE SEPARATED FROM THE WORK ZONES WITH APPROPRIATE MEASURES IN ACCORDANCE WITH MUTCD.
- ADEQUATE PROVISIONS FOR PERSONS WITH DISABILITIES SHALL BE PROVIDED AT ALL TIMES PER ADA REQUIREMENTS.
- WHEN NECESSARY, PEDESTRIANS SHALL BE APPROPRIATELY DIRECTED WITH ADVANCED WARNING SIGNS PLACED AT INTERSECTIONS, TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY IN ORDER TO PREVENT CONFLICT WITH MIDBLOCK WORK SITES.
- PEDESTRIANS SHALL NOT BE LED INTO CONFLICT WITH WORK SITE EQUIPMENT, OPERATIONS, AND/OR VEHICLES MOVING THROUGH OR AROUND THE WORK SITE.

FIRE DEPARTMENT NOTES:

- ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
- ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
- IN THE EVENT THAT EXISTING FIRE DEPARTMENT CONNECTIONS OR FIRE APPARATUS ACCESS ROADS (FIRE LANES) MUST BE OBSTRUCTED TO FACILITATE CONSTRUCTION ACTIVITIES, CONTACT THE ARLINGTON COUNTY FIRE DEPARTMENT FIRE PREVENTION OFFICE AT 703-228-4644 TO COORDINATE REVIEW AND APPROVAL OF TEMPORARY FIRE DEPARTMENT CONNECTIONS AND/OR FIRE APPARATUS ACCESS ROADS PRIOR TO CREATING THE OBSTRUCTION.

WORK HOURS:

WORK HOURS SHALL BE MONDAY TO FRIDAY AS FOLLOWS:
(NO WEEKEND AND HOLIDAY WORK WILL BE PERMITTED)

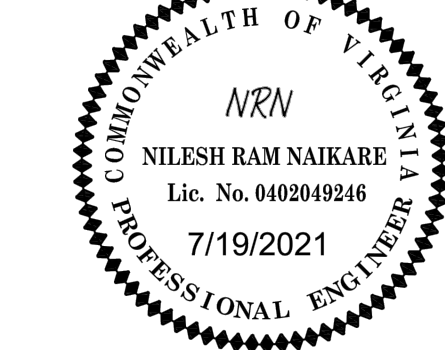
FOUR MILE RUN DREDGE PROJECT FROM 9:00 AM TO 4:00 PM

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
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ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

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SEAL



APPROVALS

DATE

Ankur Patel 07/19/21
DESIGN TEAM ENGINEER SUPERVISOR
Kamal Taktak 8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR
07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF
Dennis M. Leach 07/21/20
TRANSPORTATION DIRECTOR
Michael Gallo 07/21/21
PROJECT MANAGER

REVISIONS

DATE

REVISIONS	DATE

DETOUR PLAN LONG BRANCH
S54D

FOUR MILE RUN DREDGE PROJECT

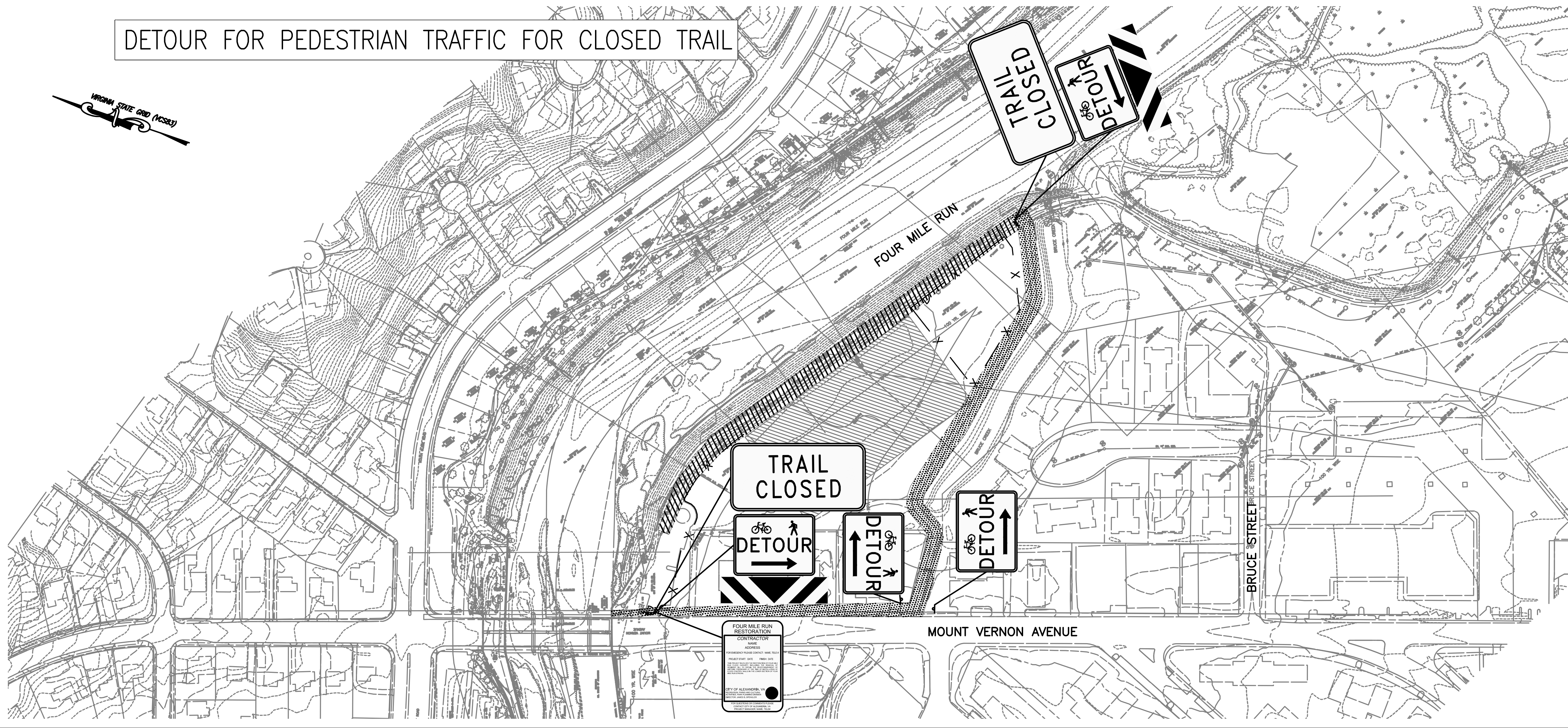
DESIGNED: PB
DRAWN: PB
CHECKED: MG

PLOTTED: AUGUST 20 2021

SCALE:

AS SHOWN

DETOUR FOR PEDESTRIAN TRAFFIC FOR CLOSED TRAIL



- NOTES:
- 1) CONTRACTOR SHALL COMPLY WITH FIGURE TTC-36.2 CROSSWALK CLOSURE AND PEDESTRIAN DETOUR OPERATION OF THE LATEST EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
 - 2) TRAIL CLOSED SIGN SHALL BE A MODIFIED R9-9 30"x18" AND THE PEDESTRIAN DETOUR SIGN SHALL BE A STANDARD M4-9AL 30"x24" BOTH TO BE MOUNTED ON TYPE III BARRICADE PLACED AT EXISTING TRAIL HEAD CLOSURE AT THE BRUCE STREET JUNCTION.
 - 3) TRAIL CLOSED SIGN SHALL BE A MODIFIED R9-9 30"x18" AND THE PEDESTRIAN DETOUR SIGN SHALL BE A STANDARD M4-9AR 30"x24" BOTH TO BE MOUNTED ON TYPE III BARRICADE PLACED AT EXISTING PARKING LOT ENTRANCE AT MOUNT VERNON AVENUE.
 - 4) PROJECT INFORMATION SIGN SHALL BE MOUNTED ON SAFETY FENCE AT CONSTRUCTION ENTRANCE AT MOUNT VERNON AVENUE.

FOUR MILE RUN RESTORATION

CONTRACTOR

NAME

ADDRESS

FOR EMEGENCY PLEASE CONTACT: NAME, TELE #

PROJECT START: DATE

FINISH: DATE

THIS PROJECT INVOLVES THE RESTORATION OF FOUR MILE RUN FLOOD CAPACITY, INCLUDING THE REMOVAL OF SEDIMENT FILL TO OBTAIN THE RE-ESTABLISHMENT OF HISTORIC FREEBOARD AT THE TIME OF INSTALLATION OF FLOOD CONTROL WALLS IN THE LOWER SECTION OF FOUR MILE RUN STREAM.

CITY OF ALEXANDRIA, VA

RECREATION, PARKS AND CULTURAL

ACTIVITIES, PARK PLANNING DIVISION

DIRECTOR: JAMES B. SPENGLER

FOR QUESTIONS OR COMMENTS PLEASE

CONTACT CITY OF ALEXANDRIA, VA

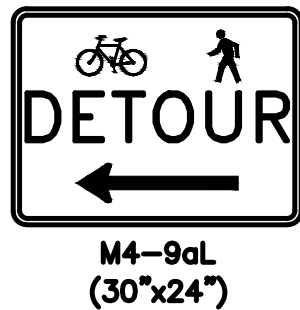
PROJECT MANAGER: NAME, TELE#

(24"x36")

CONTRACTOR SHALL COORDINATE WITH CITY OF ALEXANDRIA

PROJECT MANAGER FOR EMERGENCY CONTACT INFORMATION

(NAME AND TELEPHONE #) AND PROJECT START AND FINISH DATES.



- LEGEND
- TYPE 3 BARRICADE
 - TEMPORARY SIGN
 - SAFETY FENCE
 - TRAIL CLOSED
 - TRAIL DETOUR

- SIGN QUANTITIES
- 1- PROJECT DESCRIPTION SIGN
 - 2- TRAIL CLOSED SIGN
 - 4- PEDESTRIAN DETOUR SIGNS

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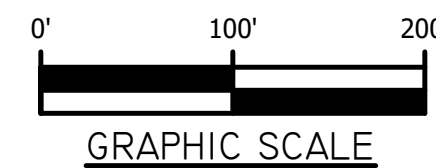
APPROVALS	DATE
Arjun Patel	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
Kamal Taktak	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
Cliff	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	07/21/20
TRANSPORTATION DIRECTOR	
Michael Gallo	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

DETOUR PLAN -
FOUR MILE RUN
FOUR MILE RUN DREDGE
PROJECT

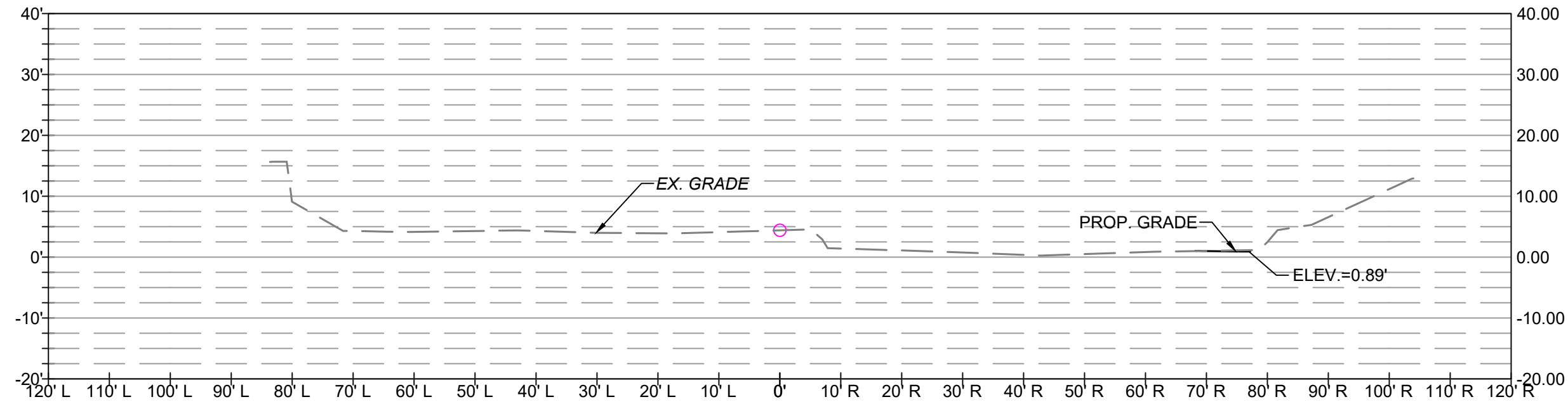
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DRAWN: EC
CHECKED: BMF
PLOTTED: AUGUST 23 2021

SCALE:Hor.: 1"=100'

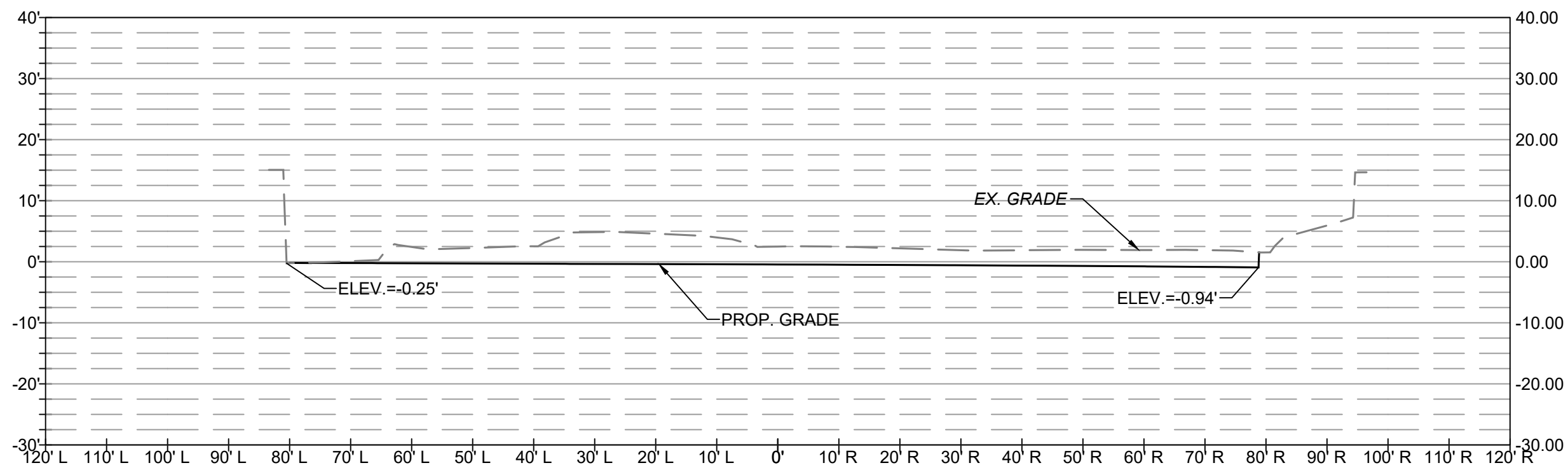


REVISED ON 01/07/2021

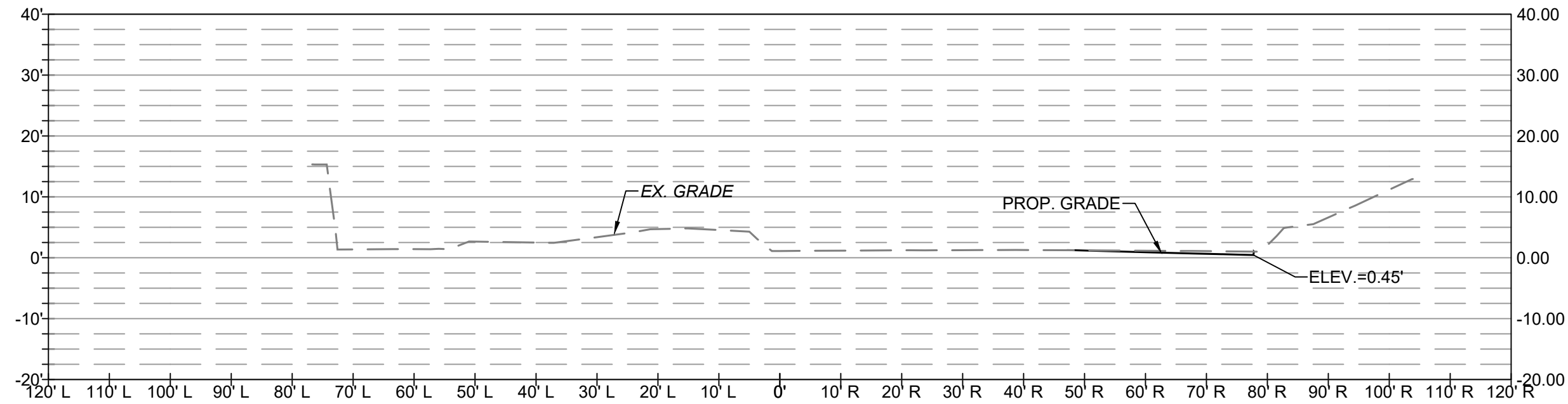
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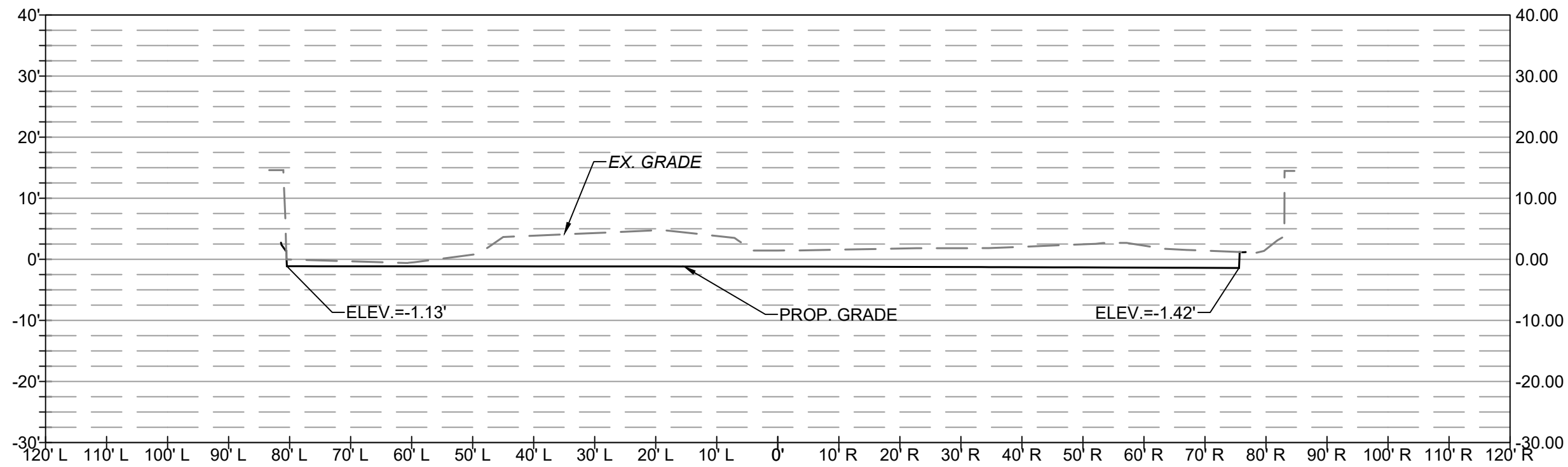
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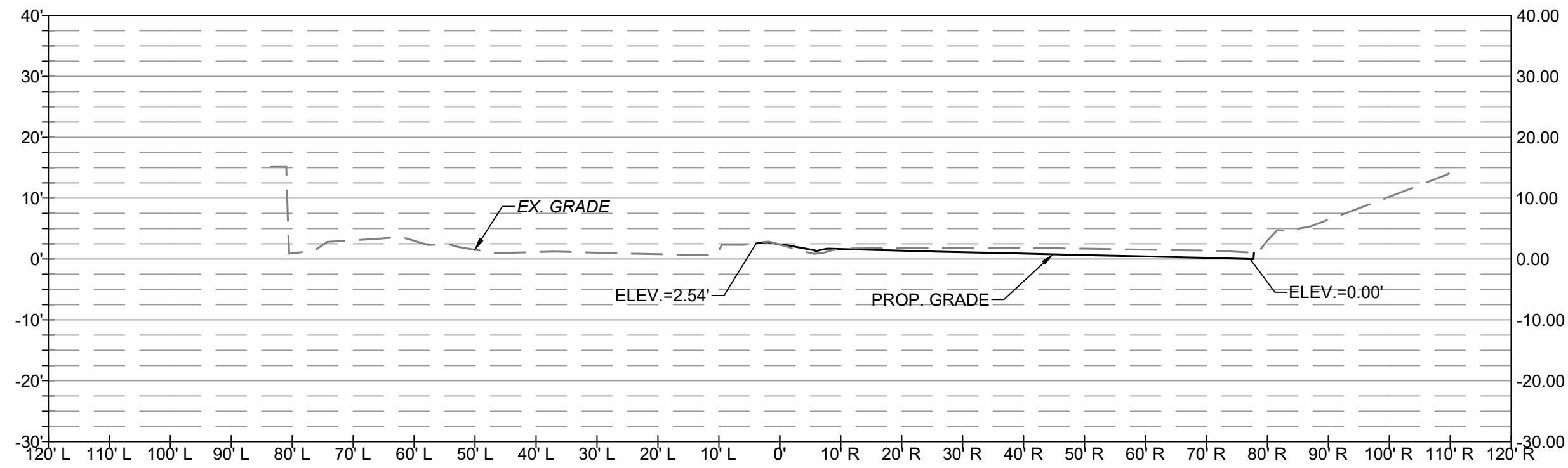
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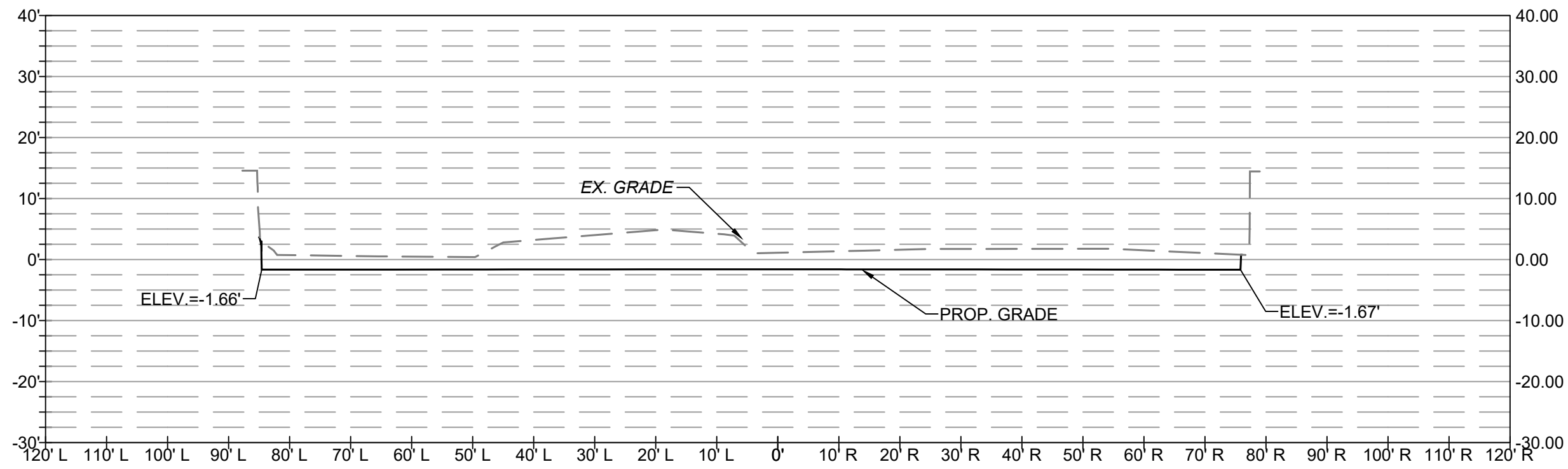
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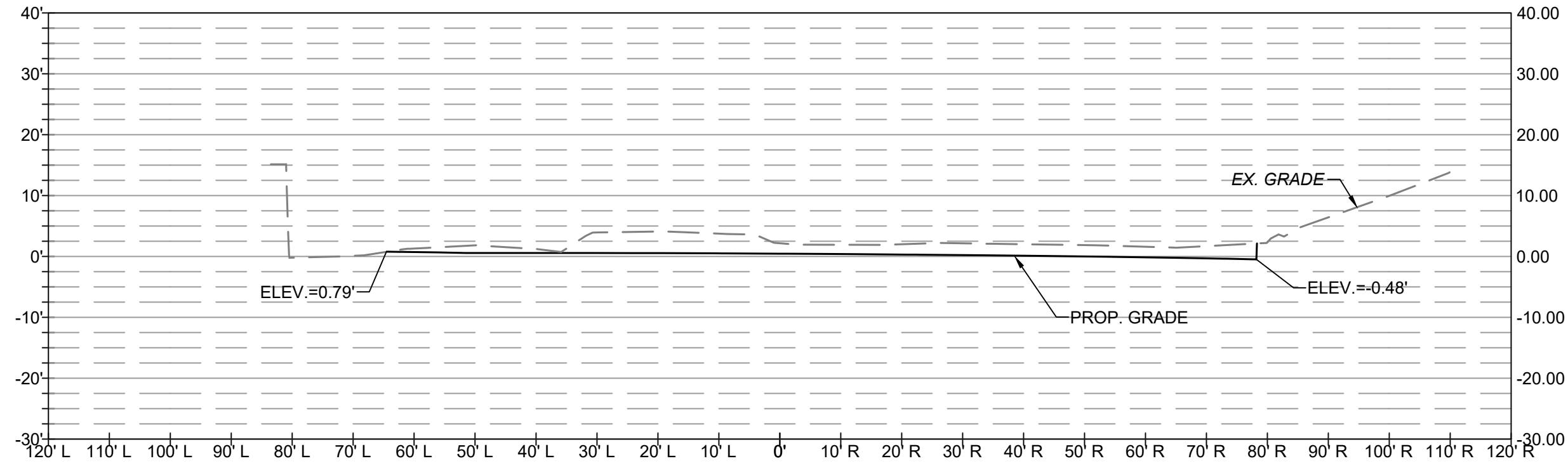
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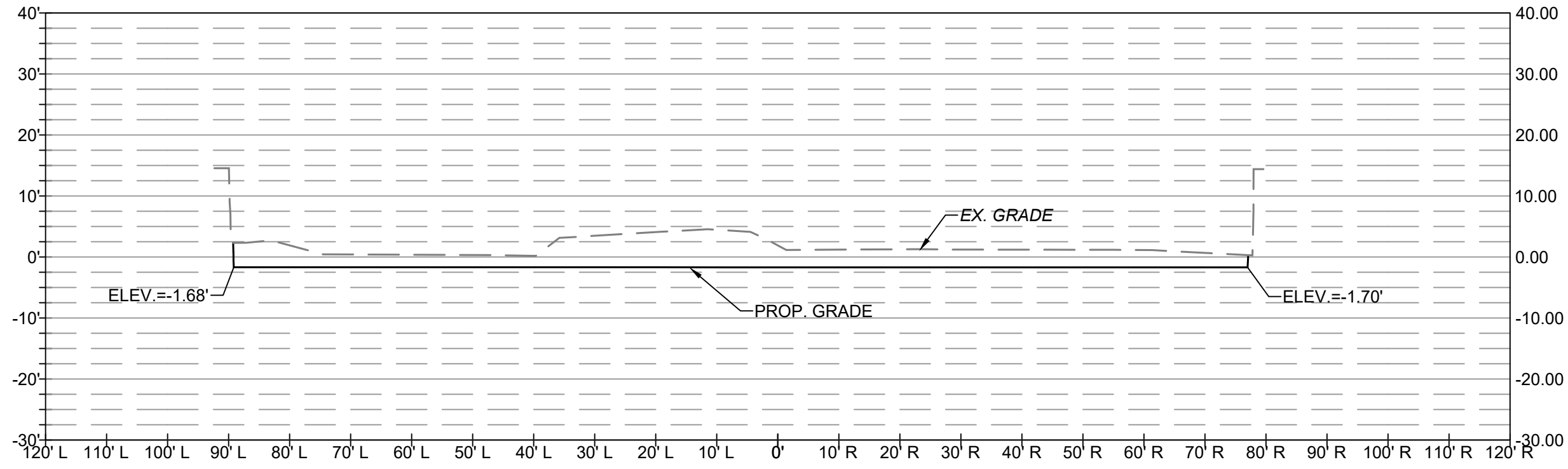
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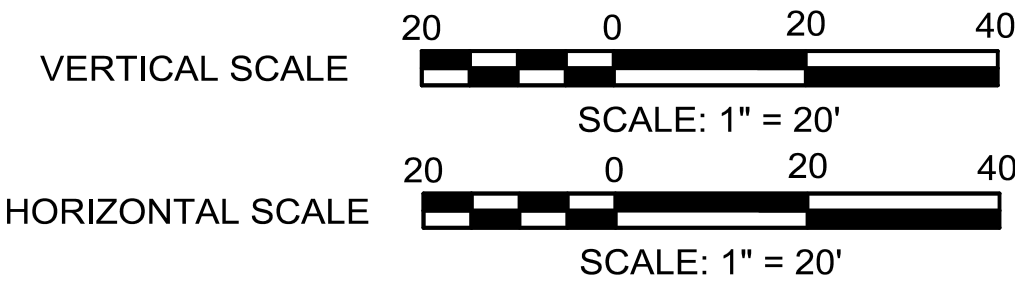
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XS EXCAVATED AREA: 570.8 SF



SECTION @ STA 443+50.00
XS EXCAVATED AREA: 273.9 SF



SECTION @ STA 445+50.00
XS EXCAVATED AREA: 552.9 SF



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APPROVALS	DATE
<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Shafiq</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

SITE CROSS-SECTIONS
- FOUR MILE RUN

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

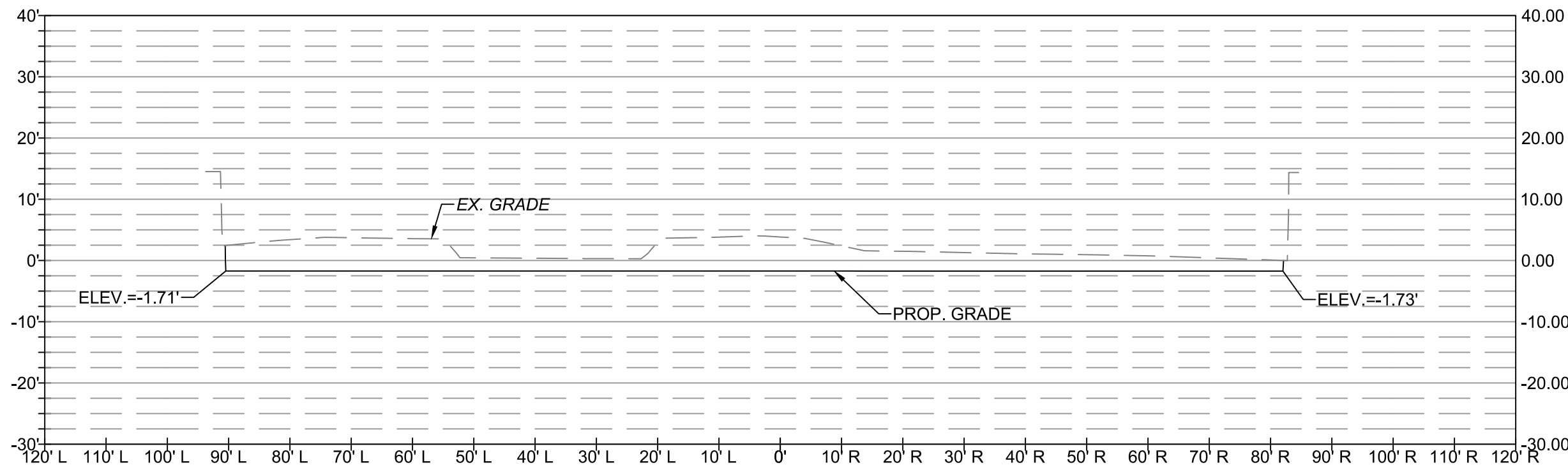
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SHEET 27 of 32

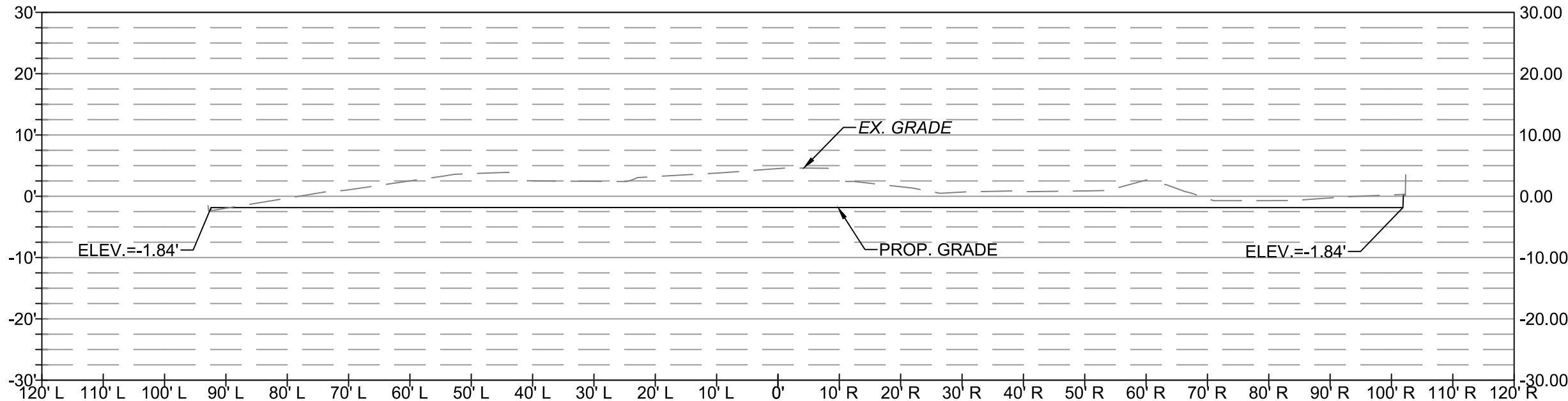
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REVISED ON 01/07/2021

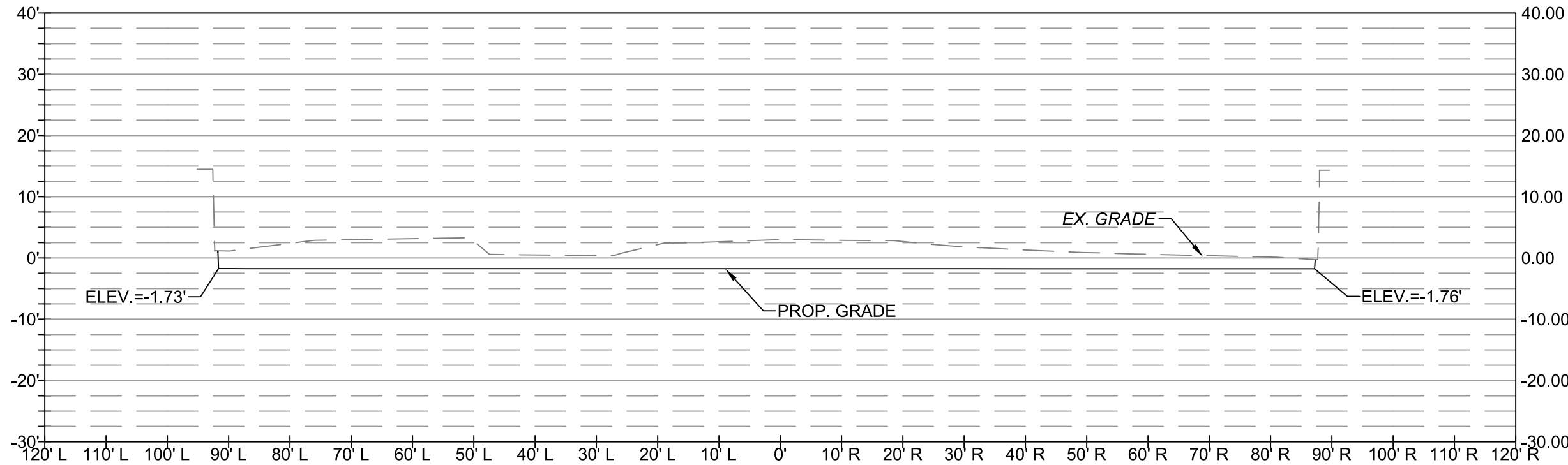
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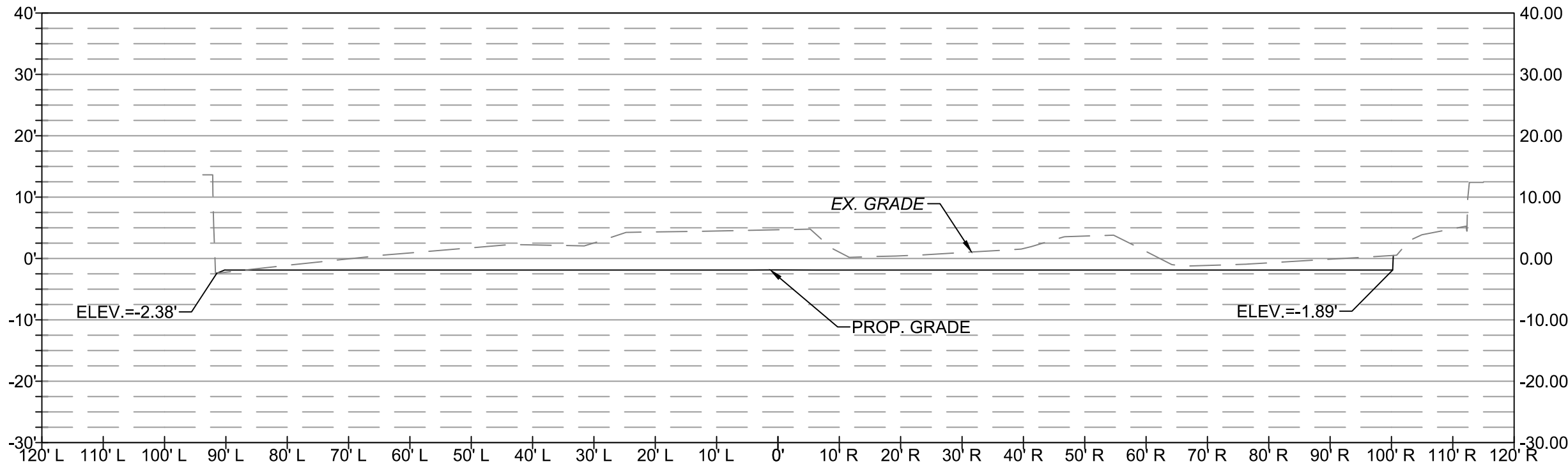
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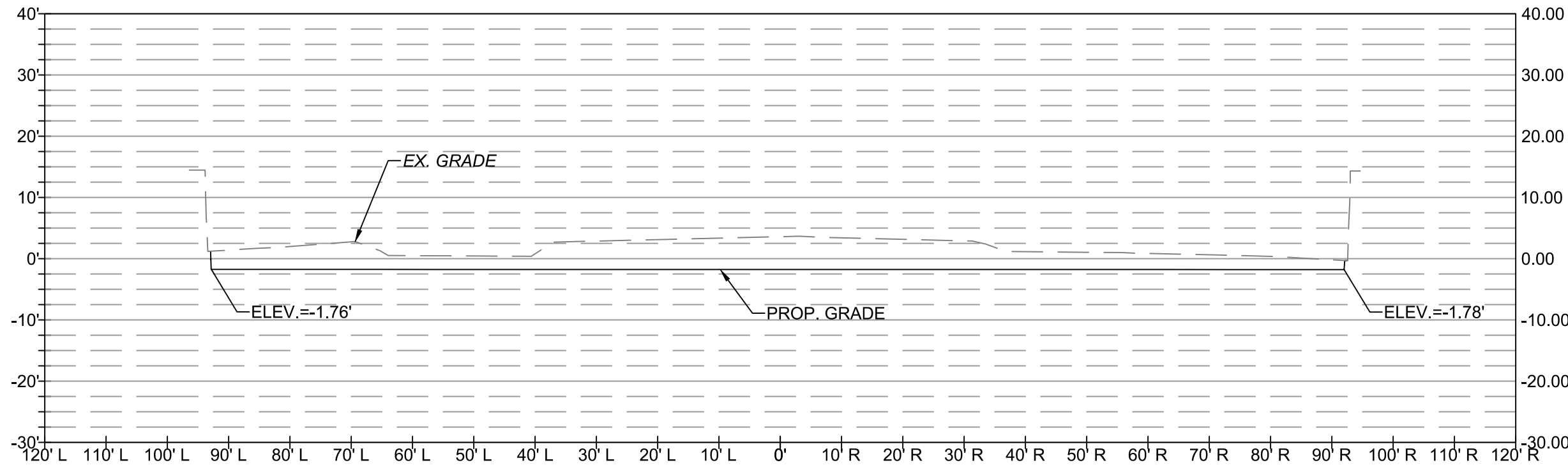
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XS EXCAVATED AREA: 664.9 SF



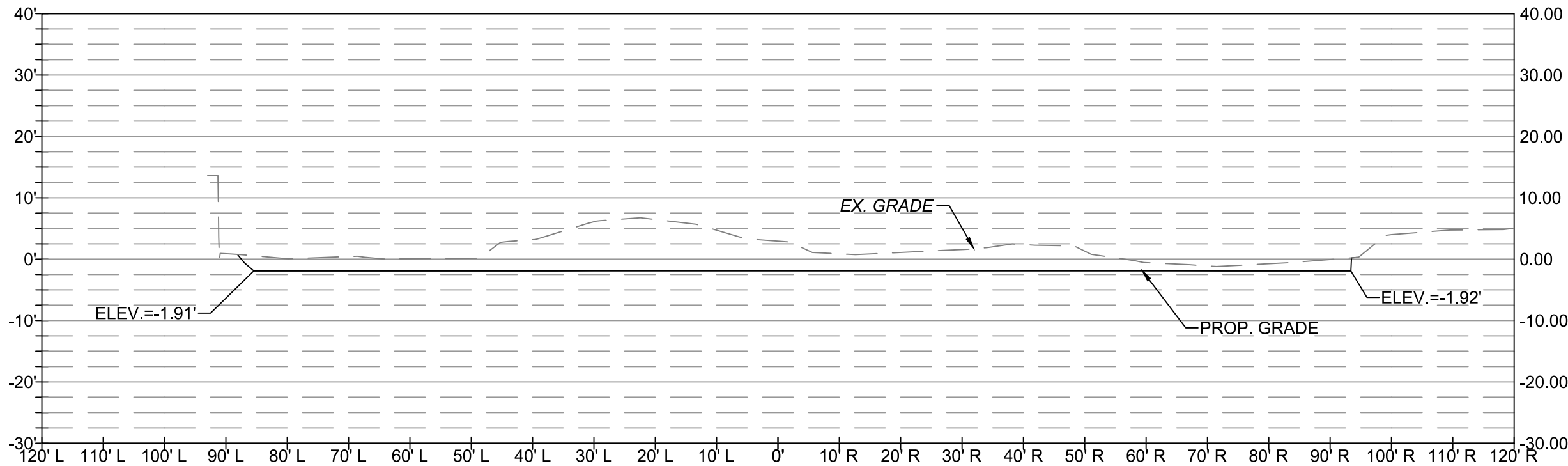
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XS EXCAVATED AREA: 620.6 SF



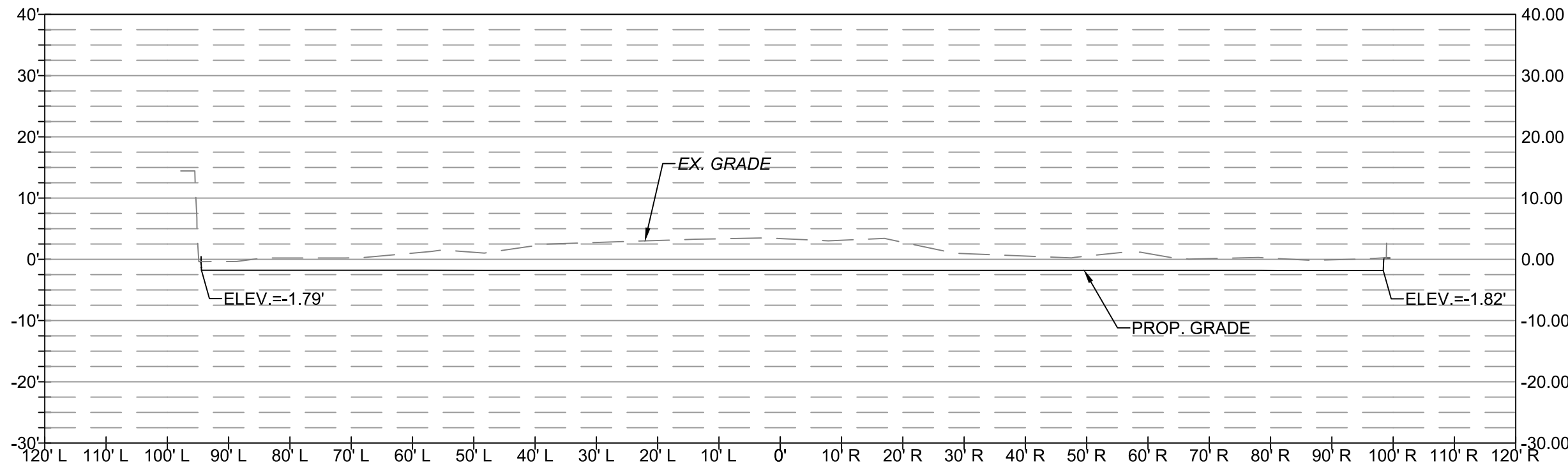
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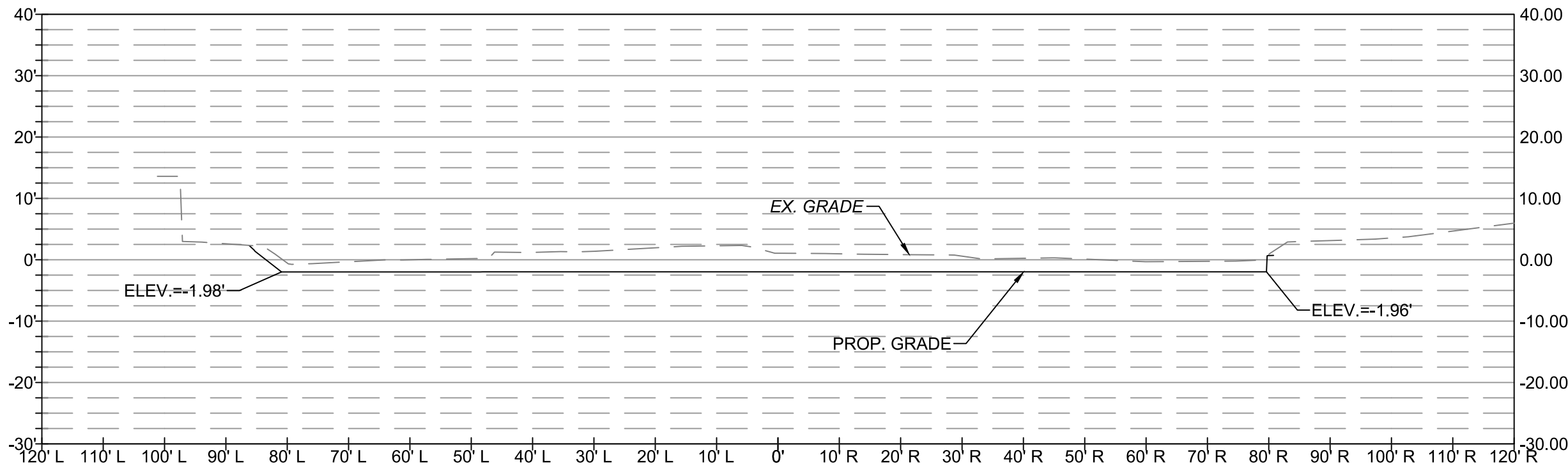
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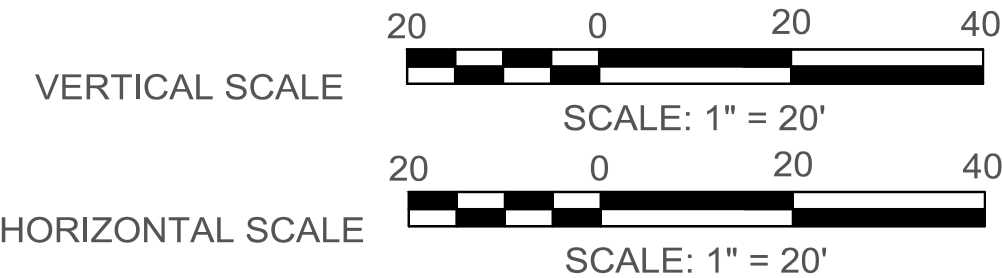
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XS EXCAVATED AREA: 640.9 SF



SECTION @ STA 447+50.00
XS EXCAVATED AREA: 610.2 SF



SECTION @ STA 449+50.00
XS EXCAVATED AREA: 425.2 SF



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SEAL



APPROVALS DATE

<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Shirley</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

SITE CROSS-SECTIONS
- FOUR MILE RUN

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

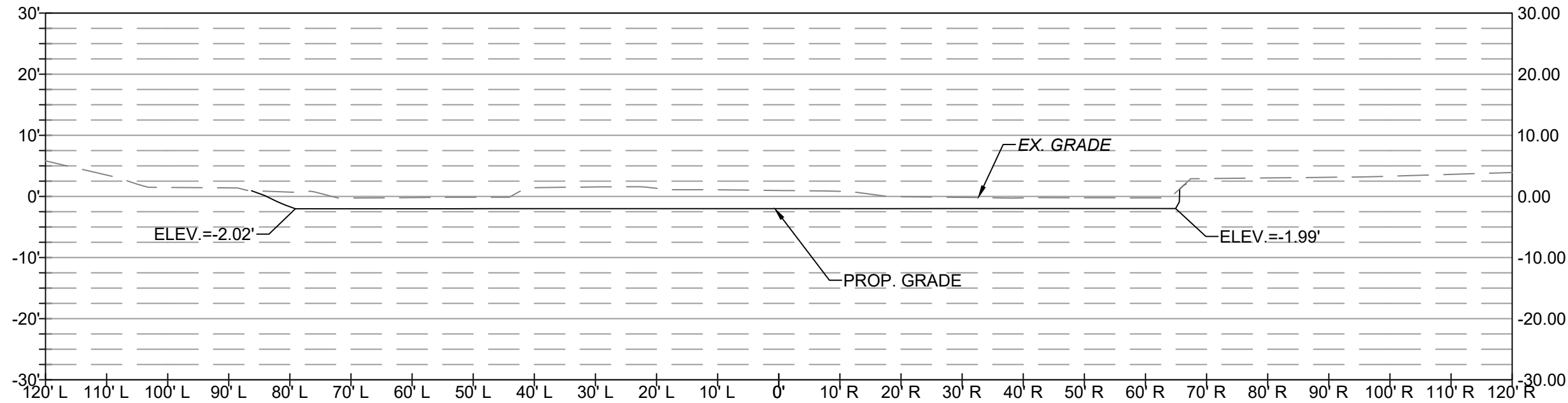
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SHEET 28 of 32

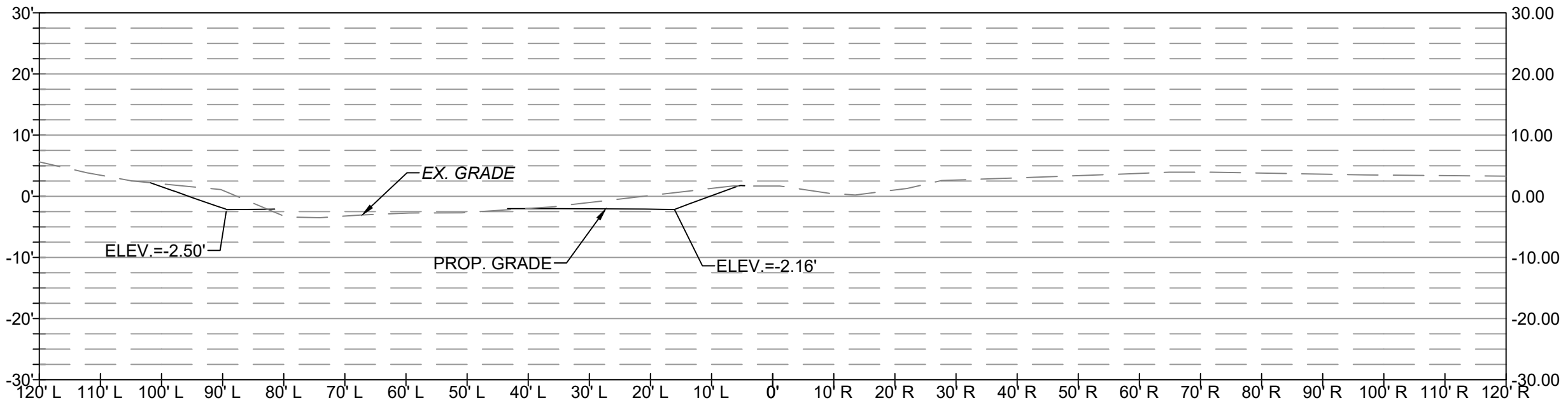
FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021

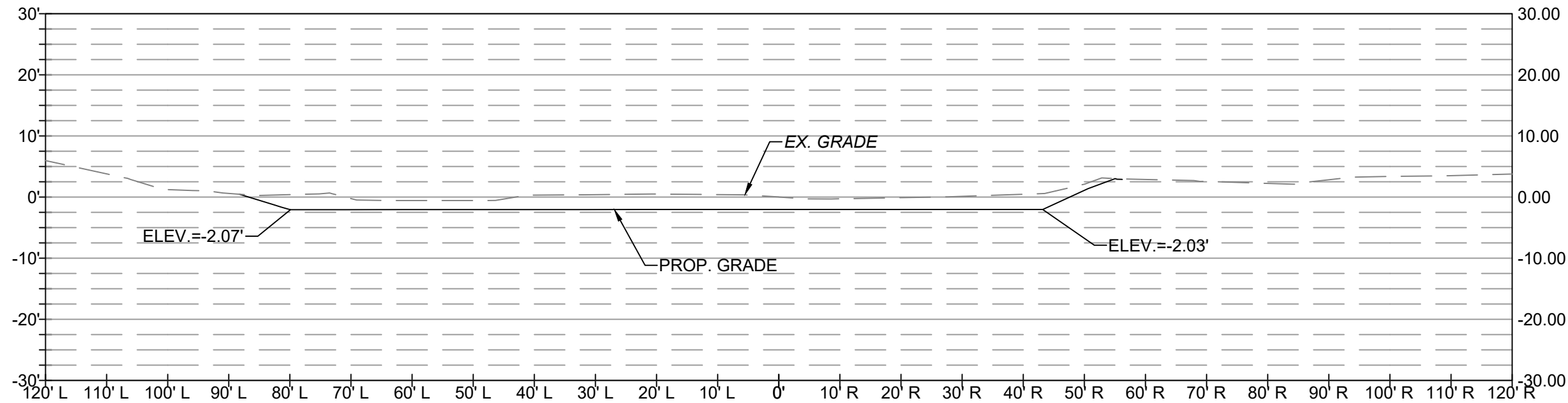
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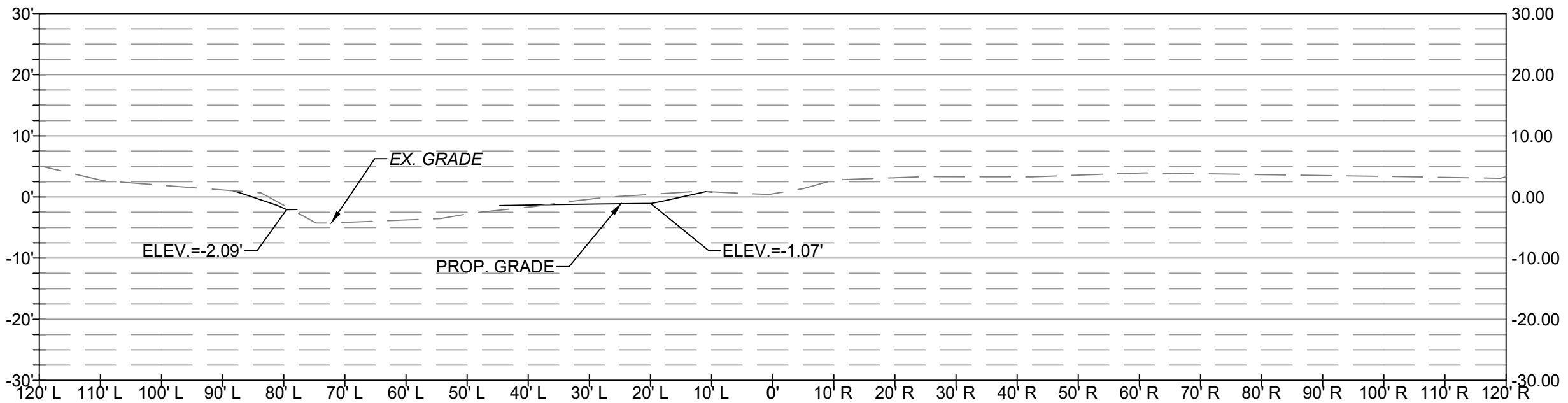
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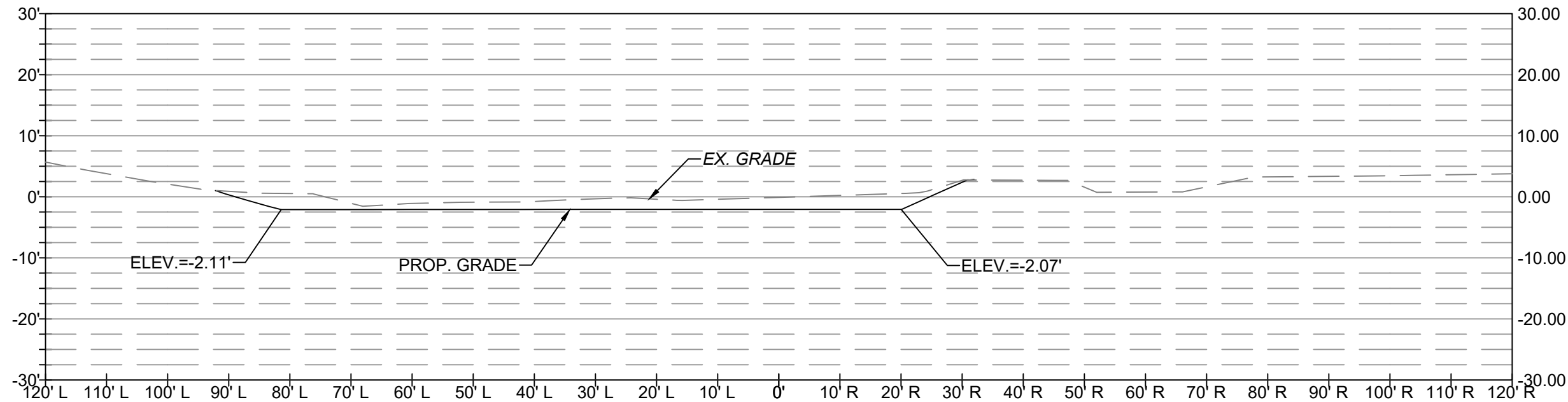
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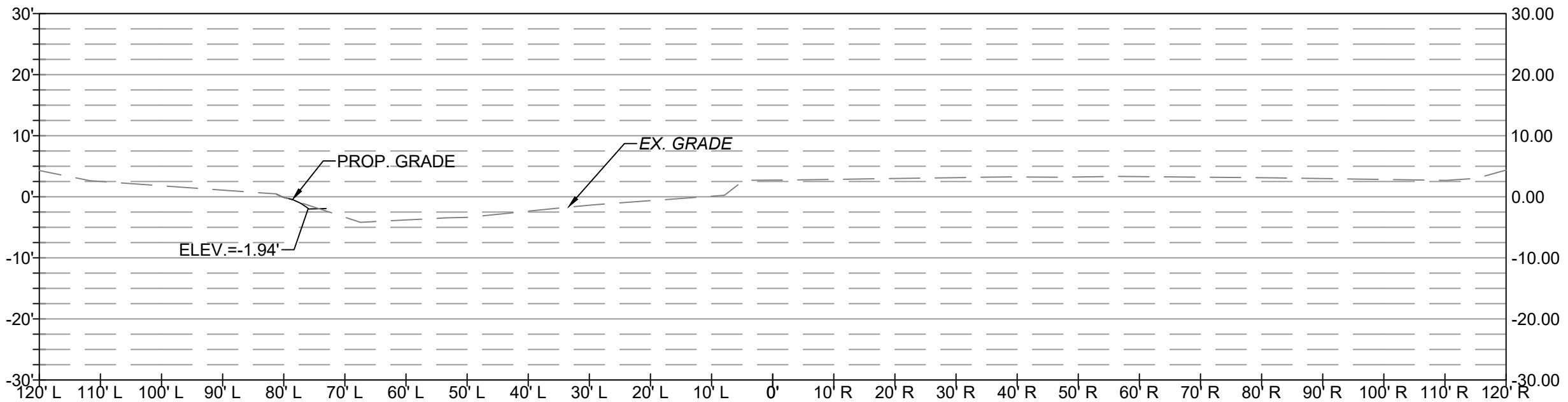
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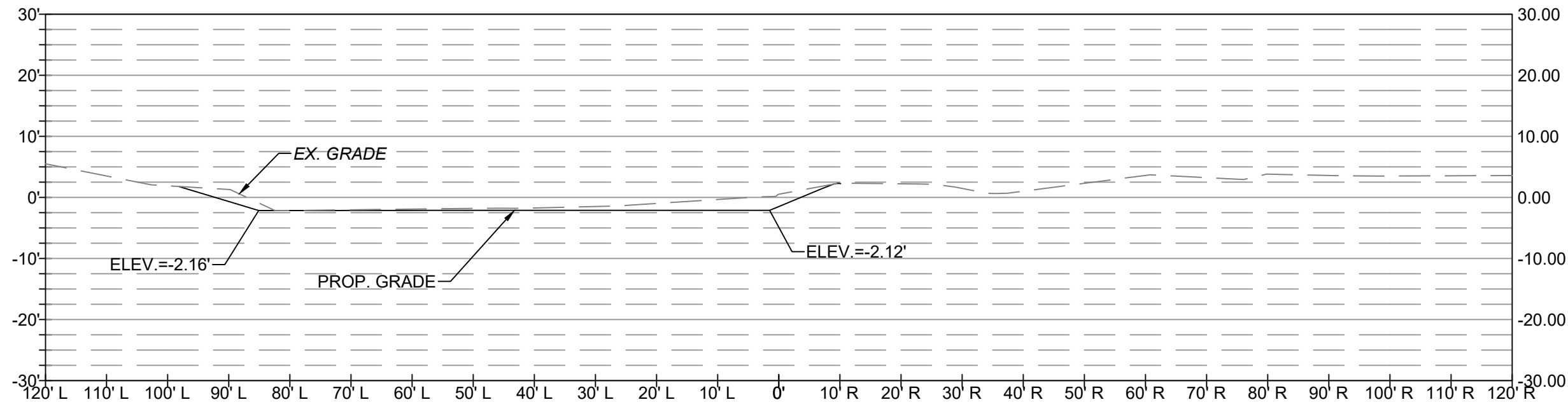
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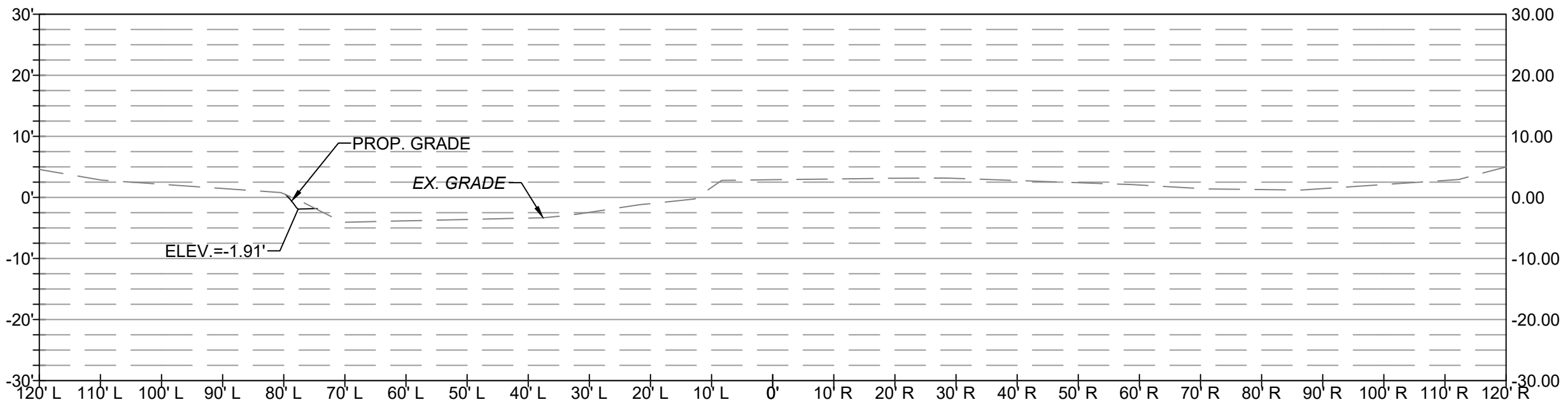
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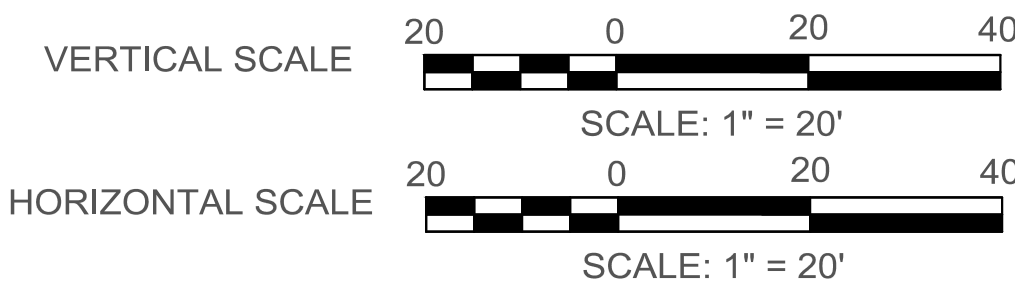
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XS EXCAVATED AREA: 1.0 SF



SECTION @ STA 451+50.00
XS EXCAVATED AREA: 84.4 SF



SECTION @ STA 453+50.00
XS EXCAVATED AREA: 3.6 SF



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SEAL



APPROVALS	DATE
<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>[Signature]</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

SITE CROSS-SECTIONS
- FOUR MILE RUN

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

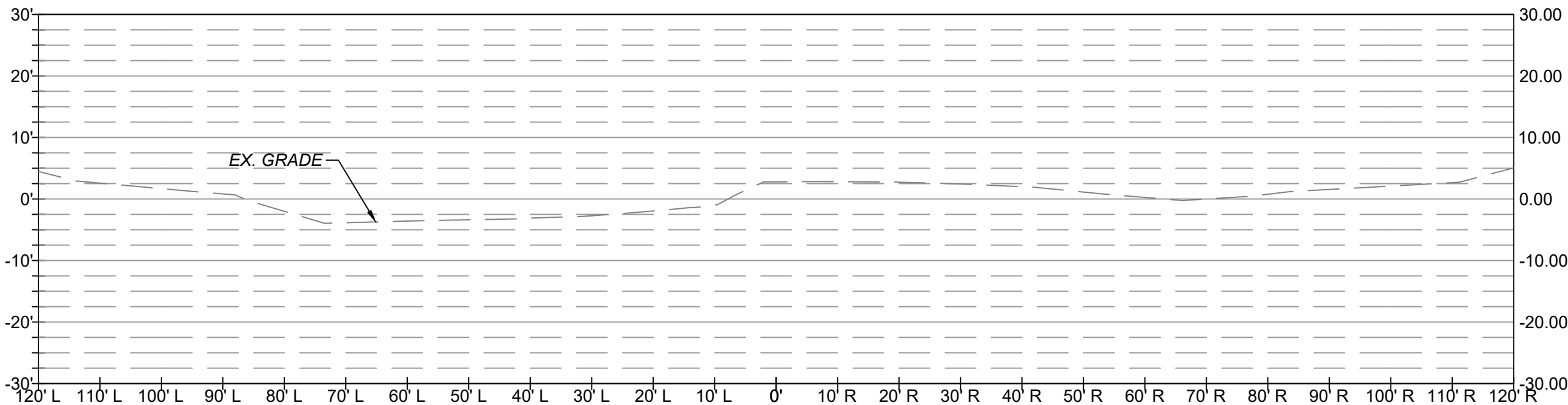
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SHEET 29 of 32

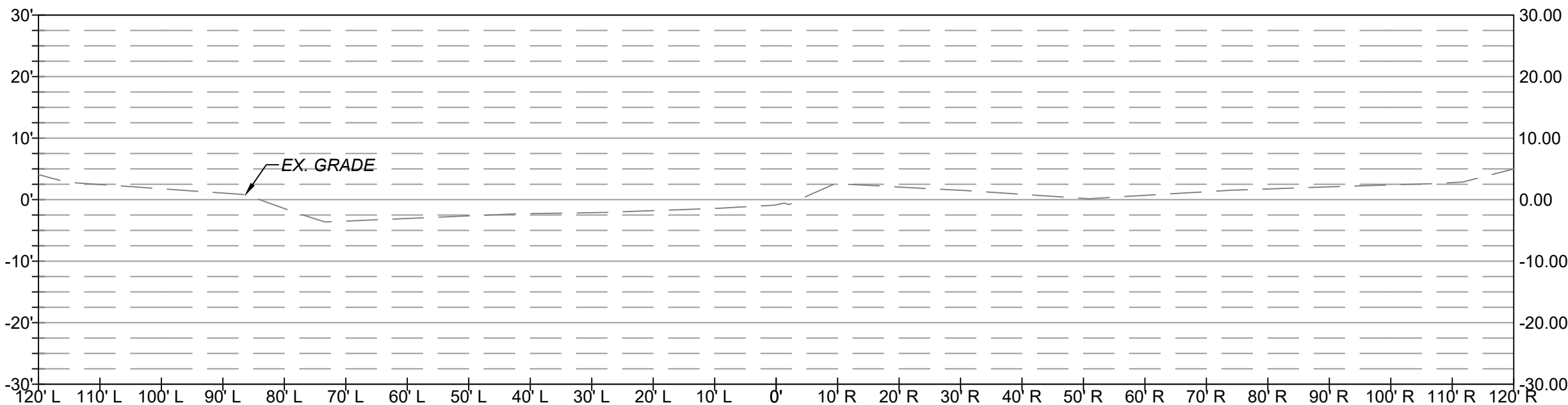
FOUR MILE RUN DREDGE PROJECT

REVISED ON 01/07/2021

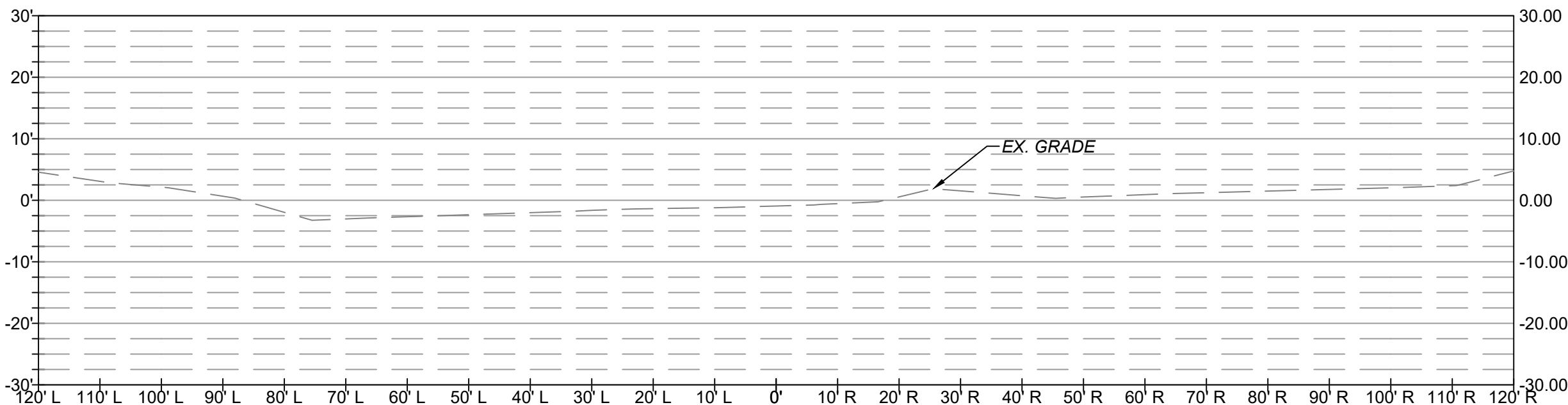
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SECTION @ STA 454+00.00
XS EXCAVATED AREA: 0.0 SF



SECTION @ STA 454+50.00
XS EXCAVATED AREA: 0.0 SF



SECTION @ STA 455+00.00
XS EXCAVATED AREA: 0.0 SF



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APPROVALS	DATE
<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Takak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>[Signature]</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS	DATE

SITE CROSS-SECTIONS
- FOUR MILE RUN

FOUR MILE RUN DREDGE
PROJECT

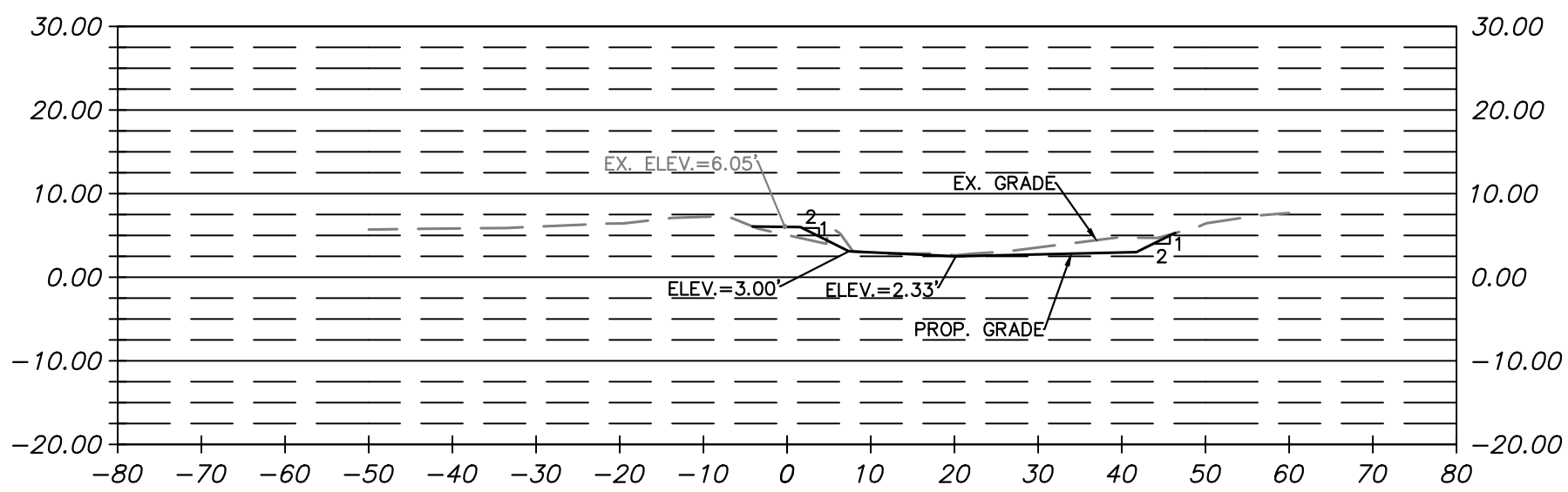
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PLOTTED: AUGUST 23 2021

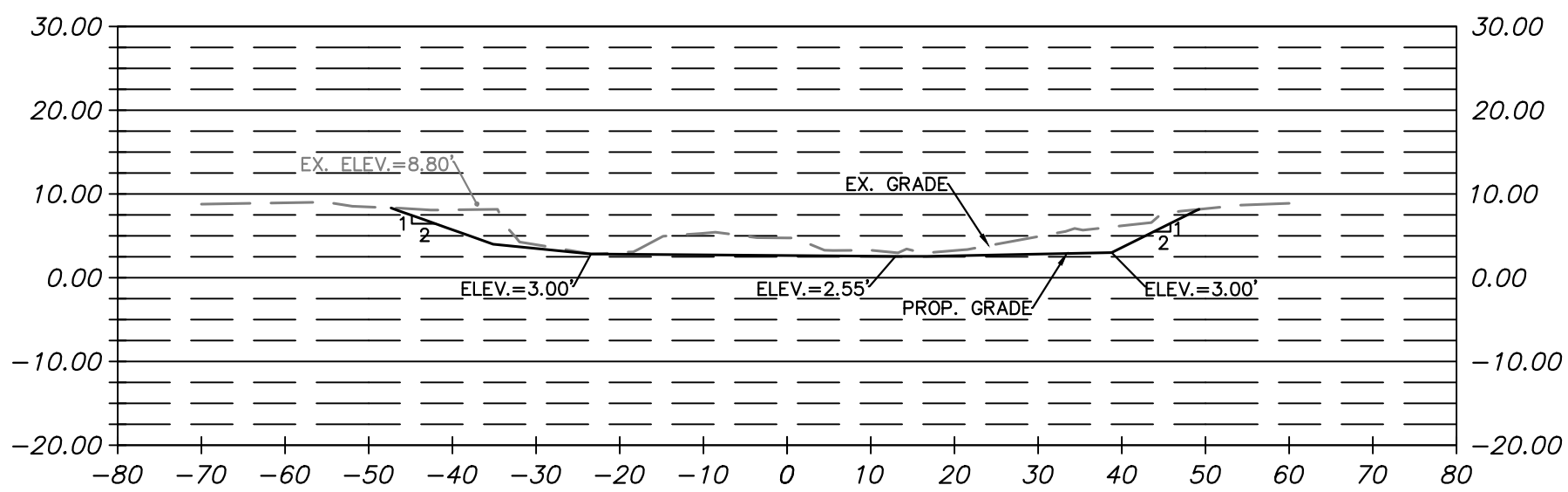
SCALE: As Noted

REVISED ON 01/07/2021

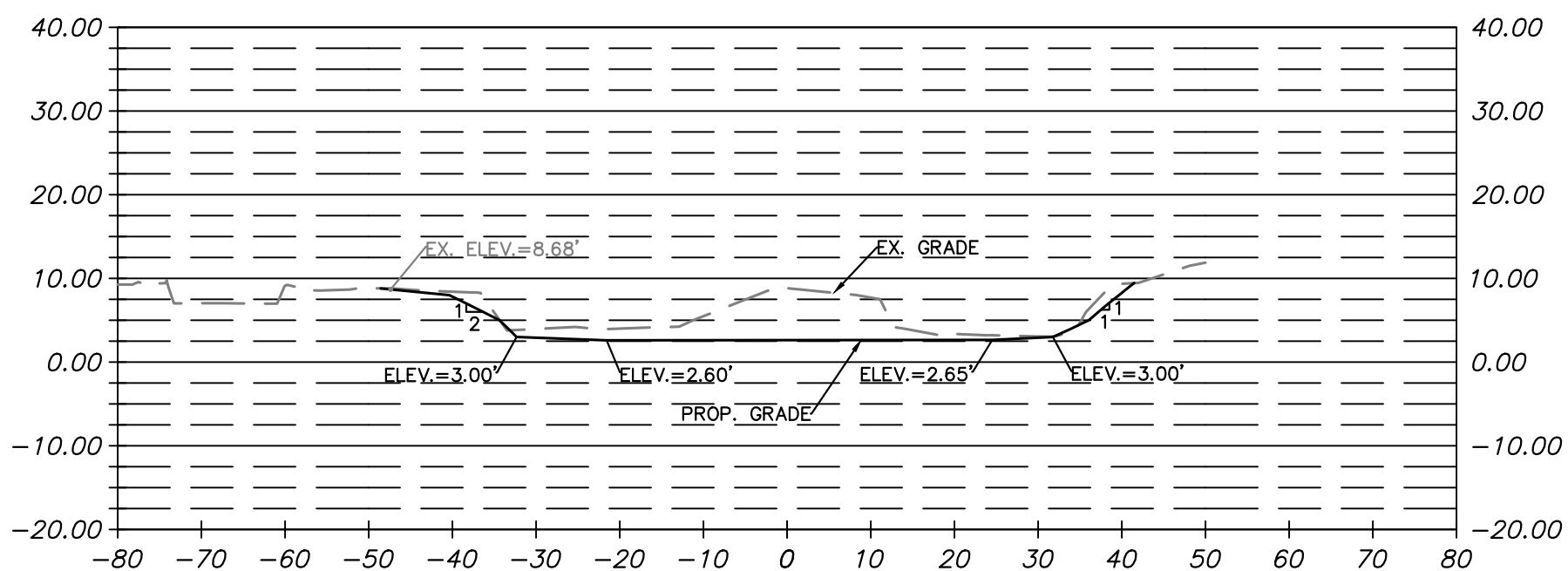
FILENAME: SITE CROSS-SECTIONS_LONG BRANCH.DWG PATH: \\AD.BKK.COM\FS\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4NR DREDGE\CADD\PLAN PLOTTED BY: HCHN



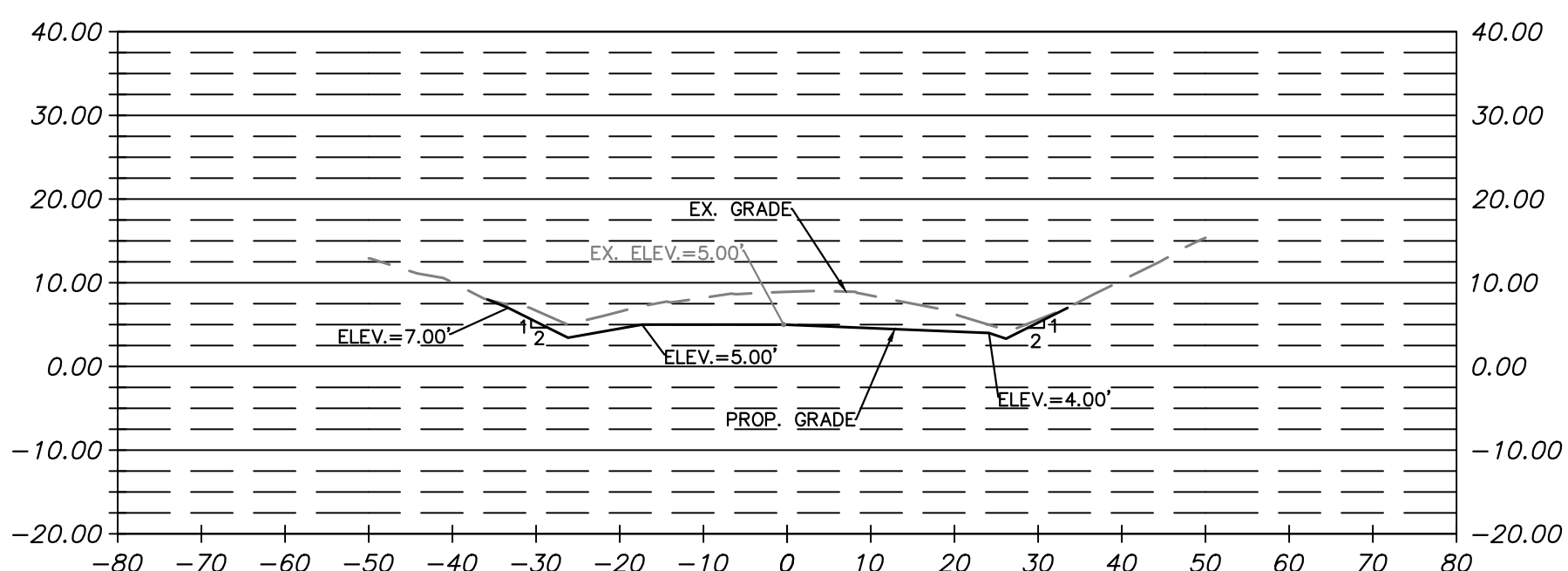
SECTION @ STA 10+11.28
XS EXCAVATED AREA: 21.9 SF



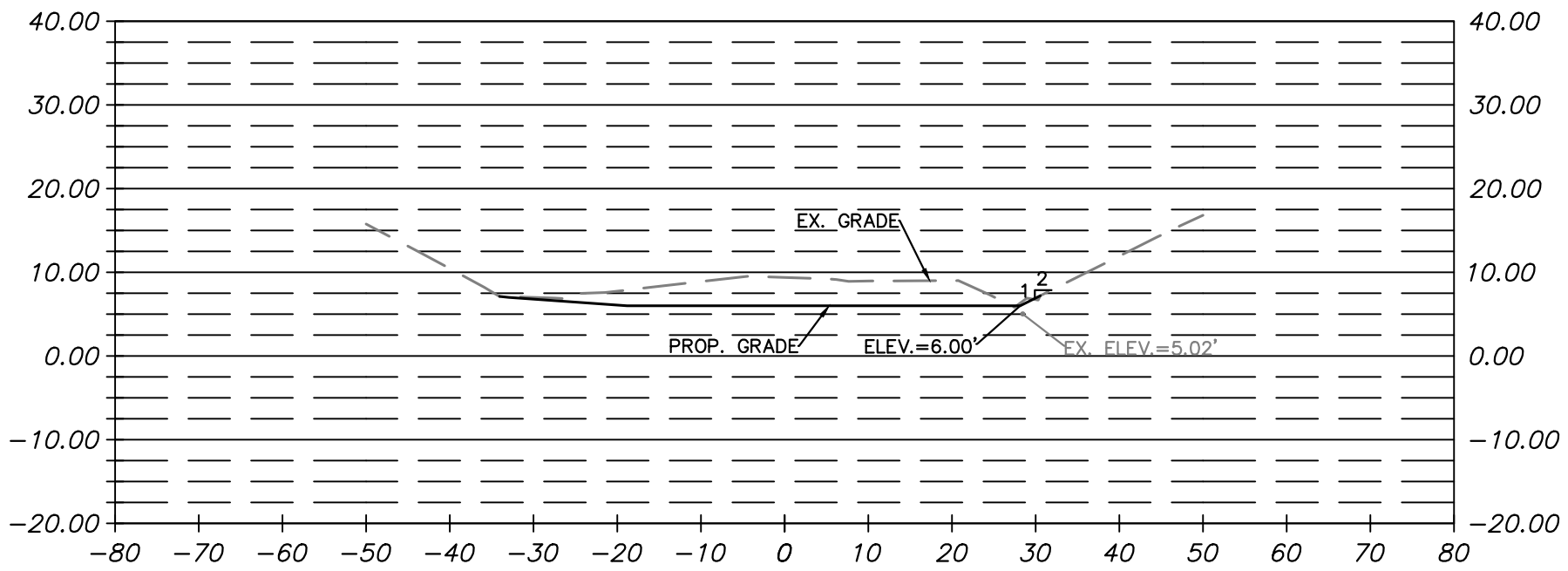
SECTION @ STA 10+35.91
XS EXCAVATED AREA: 143.3 SF



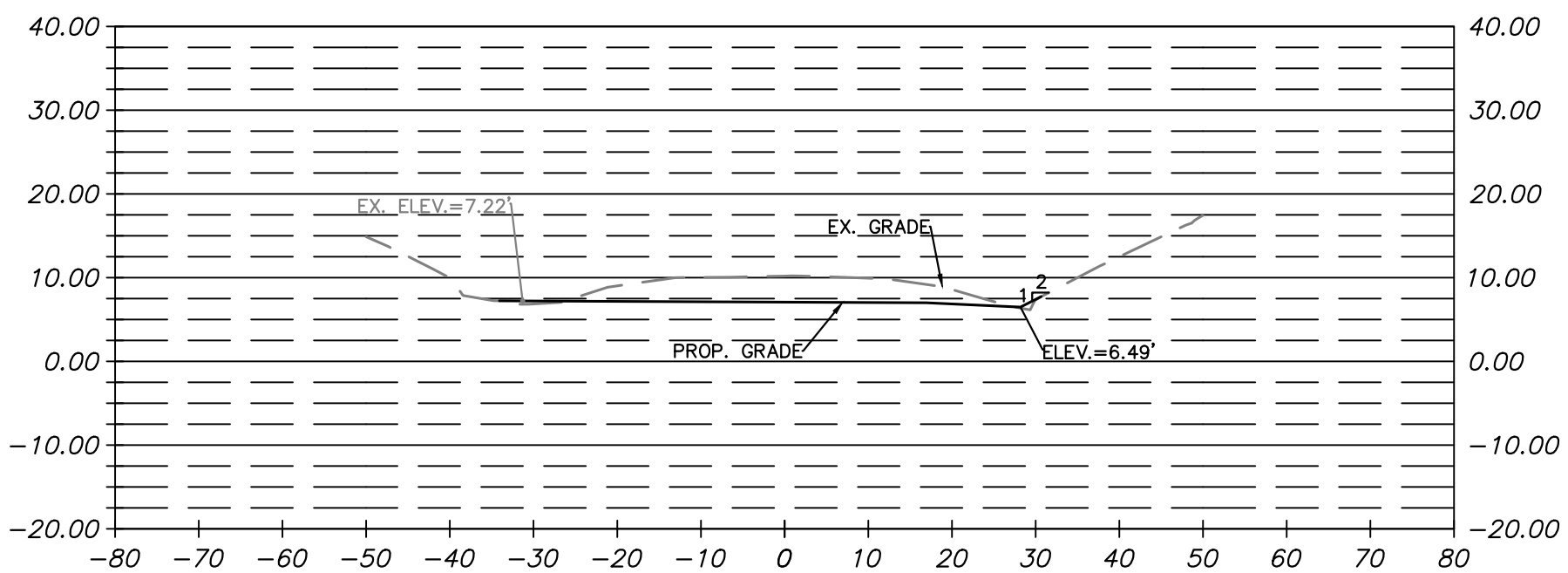
SECTION @ STA 10+81.47
XS EXCAVATED AREA: 176.7 SF



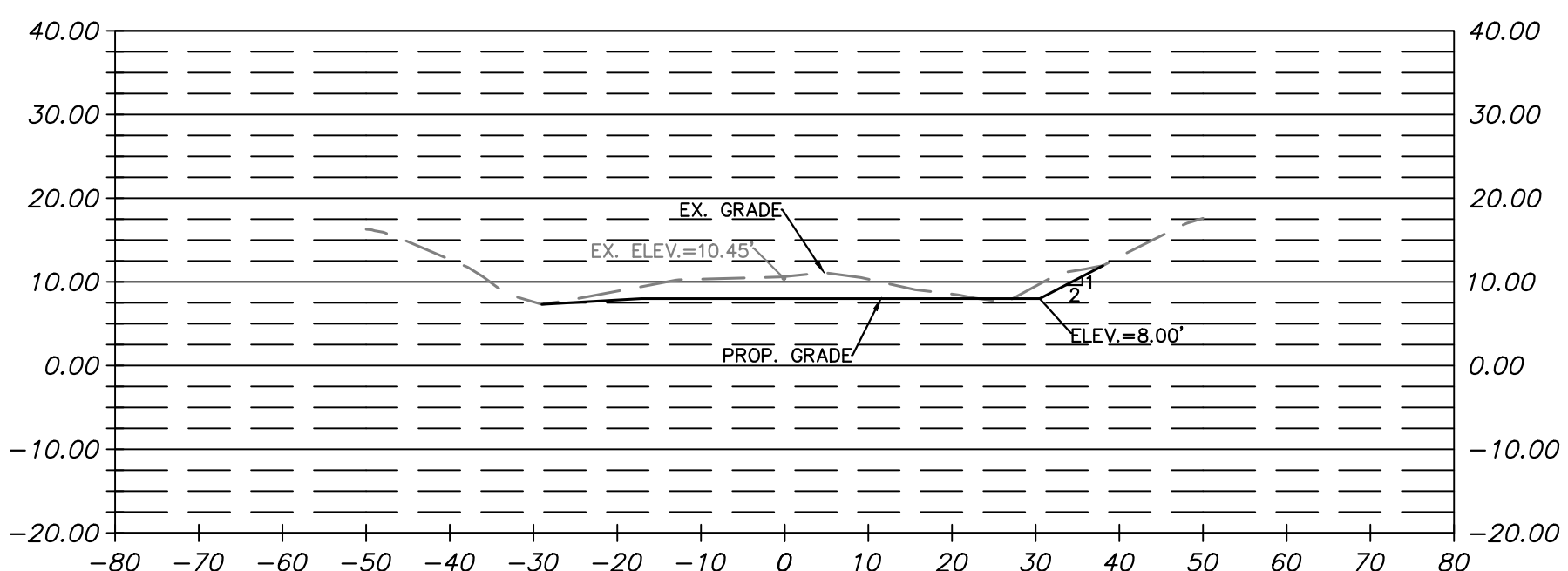
SECTION @ STA 10+94.12
XS EXCAVATED AREA: 166.6 SF



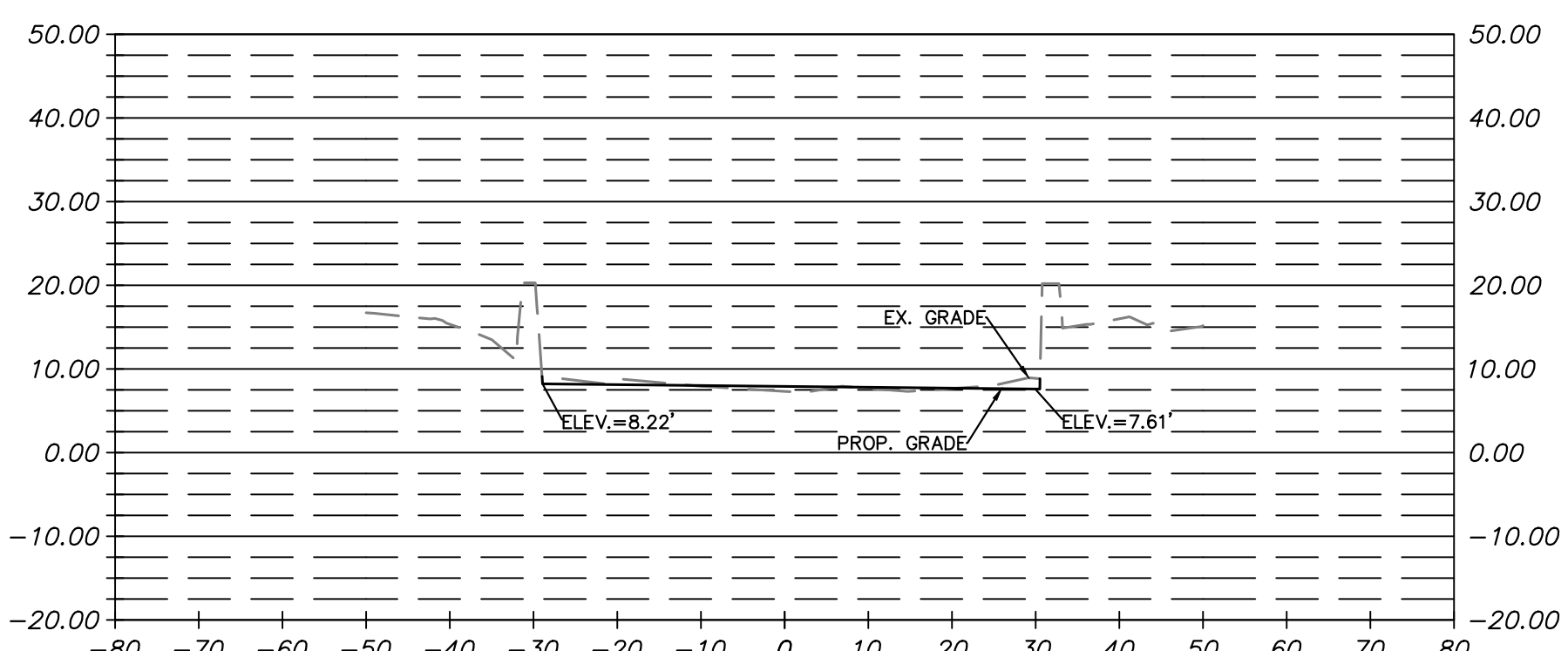
SECTION @ STA 11+49.16
XS EXCAVATED AREA: 139.2 SF



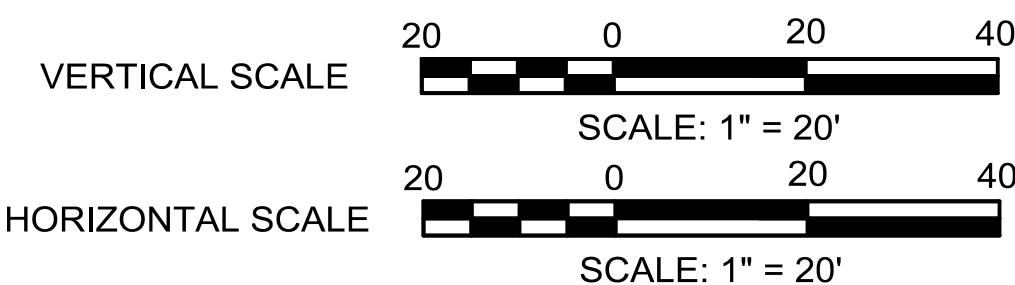
SECTION @ STA 12+05.08
XS EXCAVATED AREA: 119.5 SF



SECTION @ STA 12+85.00
XS EXCAVATED AREA: 99.8 SF



SECTION @ STA 13+19.65
XS EXCAVATED AREA: 3.6 SF



ARLINGTON
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DEPARTMENT OF
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SEAL



APPROVALS DATE

<i>Ankur Patel</i>	07/19/21
DESIGN TEAM ENGINEER SUPERVISOR	
<i>Kamal Taktak</i>	8.18.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Michael J. Leach</i>	07.23.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>Dennis M. Leach</i>	07/21/20
TRANSPORTATION DIRECTOR	
<i>Michael Gallo</i>	07/21/21
PROJECT MANAGER	

REVISIONS DATE

SITE CROSS-SECTIONS
- LONG BRANCH
FOUR MILE RUN DREDGE
PROJECT

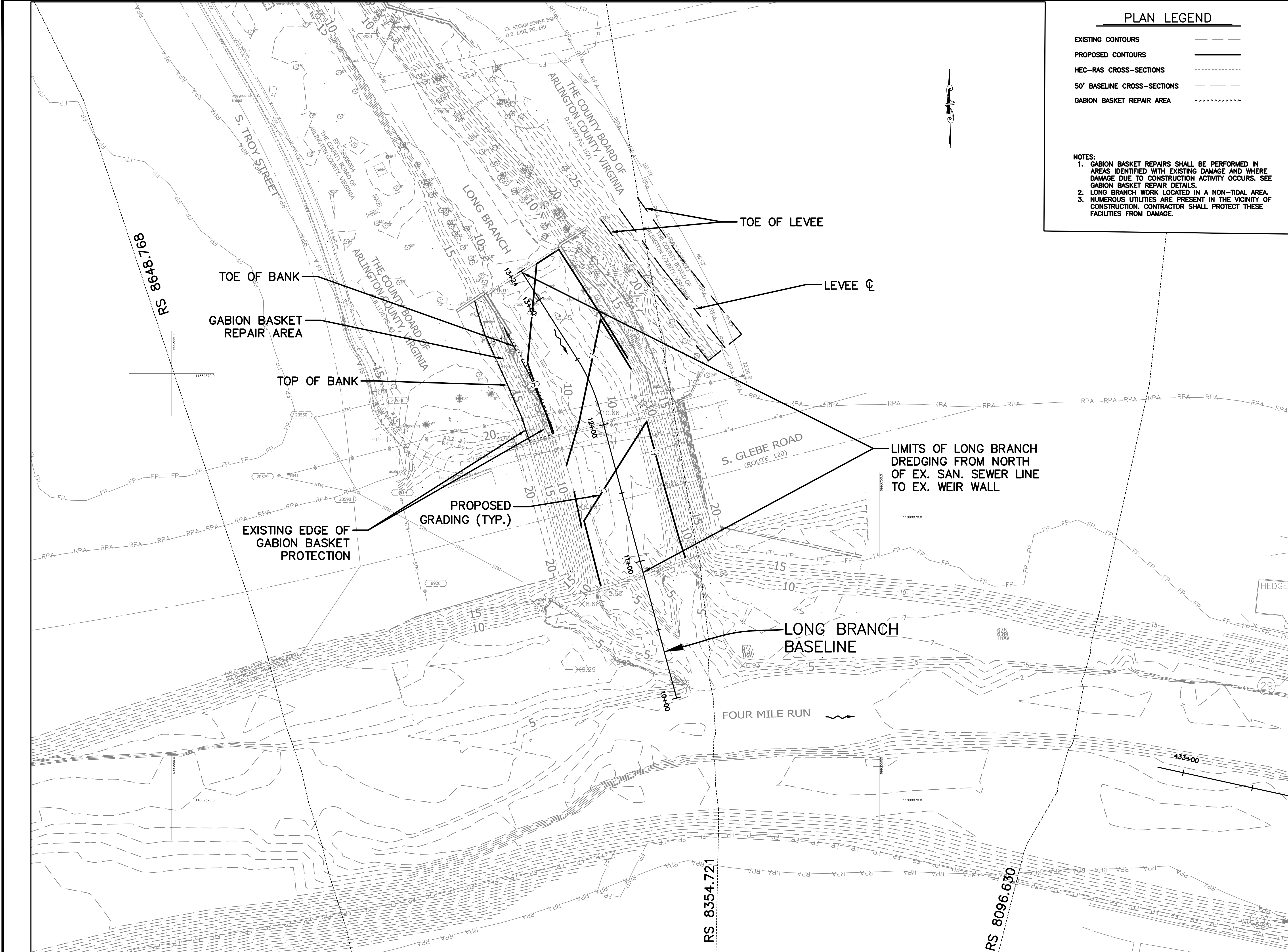
DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: As Noted

REVISED ON 01/07/2021

FILENAME: LONG BRANCH DREDGING.DWG PATH: \\AD.BKK.COM\SYSTEMS\CLOUD\PROJECTS\2019\19160_ARLSTREAM\TASK 2-4MP DREDGE\CADD\PLAN PLOTTED BY: HCHEN



PLAN LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- HEC-RAS CROSS-SECTIONS
- 50' BASELINE CROSS-SECTIONS
- GABION BASKET REPAIR AREA

- NOTES:
- GABION BASKET REPAIRS SHALL BE PERFORMED IN AREAS IDENTIFIED WITH EXISTING DAMAGE AND WHERE DAMAGE DUE TO CONSTRUCTION ACTIVITY OCCURS. SEE GABION BASKET REPAIR DETAILS.
 - LONG BRANCH WORK LOCATED IN A NON-TIDAL AREA.
 - NUMEROUS UTILITIES ARE PRESENT IN THE VICINITY OF CONSTRUCTION. CONTRACTOR SHALL PROTECT THESE FACILITIES FROM DAMAGE.

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REVISIONS DATE

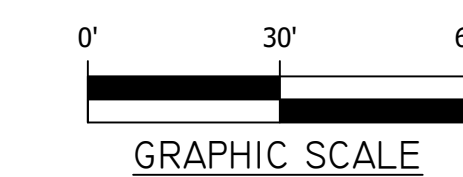
LONG BRANCH DREDGING

FOUR MILE RUN DREDGE
PROJECT

DESIGNED: EC
DRAWN: EC
CHECKED: BMF

PLOTTED: AUGUST 23 2021

SCALE: Hor.: 1"=30'



SHEET 32 of 32

FOUR MILE RUN DREDGE PROJECT