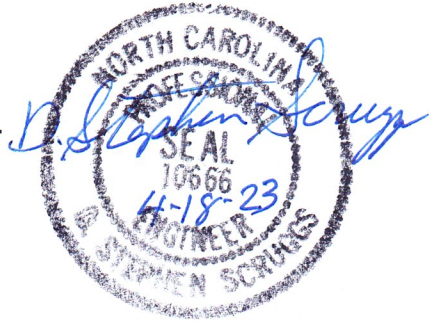


ADDENDUM No. 2

2017 AERIAL SEWER REPLACEMENT PROJECT
CITY BID NUMBER WS-2014-42
CITY OF RALEIGH



AECOM PROJECT No. 60533600
BID DATE: APRIL 25, 2023
ADDENDUM DATE: APRIL 18, 2023

SECTION	DESCRIPTION
General	This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents as noted below. Bidders shall acknowledge receipt of the Addendum in the space provided on the Proposal Form (00410, Page 2). Failure to do so may subject the Bidder to disqualification.
Pre-Bid Conference	The Mandatory Pre-Bid Conference Was held on Thursday, April 6, 2023, at 10:00 a.m. in the parking lot of St. Michael's Episcopal Church, 1520 Canterbury Road, Raleigh, NC 27608. Attached is a copy of the Attendance List sheets, and the Pre-Bid Conference Notes.
Contract Plans	
General Questions	Question: Are any trees or plantings on any of the site required to be replaced? Response: No trees or plantings are to be replaced on any of the work areas, other than what is required on Erosion & Sediment control drawings CU-501 through CU-505.
Plan Sheet CU-104	Note No. 5: At end of note add the following: "See Detail 6, Sheet CU-504."
Plan Sheet CU-504	Replace Plan Sheet CU-504 with the attached Revised Plan Sheet CU-504. Revisions were made to Detail 6 – Cross Section Detail Stream Bank.
Contract Specifications	
Section 00410 Bid Form	Replace Section 00410 – Bid Form in its entirety with the attached Revised Section 004100 – Bid Form. Use the revised form for bid submittal. Revisions were made to the Unit Price Bid Schedule as follows: <ol style="list-style-type: none">(1) Bid Item 24; Added "(Cementitious Liner)" to the description.(2) Bid Item 49; Added additional description.(3) Bid Item 51; Changed the Bid Unit Price from \$50,000 to \$60,000 to match the Extended Bid Price.(4) Added Bid Item 52 – Rip Rap Slope Protection.

SECTION	DESCRIPTION
Section 01 22 00 Unit Prices	<p>Replace Section 01 22 00 – Unit Prices in its entirety with the attached Revised Section 01 22 00 – Unit Prices. The following revisions were made:</p> <ul style="list-style-type: none">(1) Paragraph 1.05 – Pay Items; 24. Bid Item 33 – Demolition of Existing Aerial Crossing Structures: This pay item is associated with removing four aerial crossing structures at the Banbury Road Work Area, and removing two aerial crossing structures at the Woodrow Drive Work Area(2) Paragraph 1.05 – Pay Items; 38. Bid Item 47 – Temporary Gravel Access Road: This pay item is associated with the Banbury Road Work Area, Plan Sheet CU-104, and covers the work for the 12-foot Gravel Access Road leading from the Church’s asphalt road to the work area. Use of ground protection matting at this site does not appear to be suitable to build a ramp from the project site to the Church’s road and to prevent tracking of mud onto the road.(3) Paragraph 1.05 – Pay Items; 40. Bid Item 49 – Clean Up and Seeding, Sub-paragraph c: After “pipeline work” add “(Bid Items 3 through 28).”(4) Paragraph 1.05 – Pay Items: Added Pay Item 52 – Rip Rap Slope Protection.

AECOM Technical Services of North Carolina, Inc.

By:



Steve Scruggs, P.E.

**PRE-BID CONFERENCE
2017 AERIAL SEWER REPLACEMENT**

**CITY BID NUMBER: WS-2014-42
CITY OF RALEIGH**

SINGLE PRIME CONTRACT

April 6, 2023; 10:00 a.m.

- A. Please sign Attendance Sheet since this is a Mandatory Pre-Bid Meeting.
- B. Addendum No. 1 for this project was issued on March 28, 2023 moving the Pre-Bid Conference date to April 6, and replacing the Bidder's Check list.
- C. There will be an addendum sent out after this meeting.
1. Will include sign-up sheet,
 2. Clarifications from this meeting, and
 3. Other items.
- D. Bids
1. Sealed Bids will be received until **2:00 PM on Tuesday, April 25, 2023**, at One Exchange Plaza, 6th floor conference room 1, Raleigh, NC 27602.
 2. Bid to be submitted on the Bid Forms found in the Project Manual. The required bid forms that are in the Project Manual, and that are to be completed and submitted, are as follows:
 - Bidder's Checklist included as the first page of the submitted bidding documents
 - Bid Form (C-410-1 to 10)
 - Form of Bid Bond or Certified Check (Section 00430)
 - Nondiscrimination Agreement (Section 00440)
 - Use of MWBE Businesses (Section 00440)
 - Identification of Minority Business Participation (Section 00440)
 - Affidavit A, Listing of Good Faith Effort, or Affidavit B, Intent to Perform Contract with Own Workforce (Section 00440).
 - Contractor's Certificates, Affidavit of Organization and Authority of Sworn Statement (Section 00441)
 - City of Raleigh – Contractor's Poor Performance Policy (Section 00442)
 - Non-Collusive Affidavit (Section 00443)
 - Notice to Contractor Regarding Intrusions Beyond Project Limits (Section 00444)
 - Evidence of authority to do business in the state of the Project (i.e., copy of contractor's license)
 - Bidder's Checklist (Section 00409)
 3. Once Bids have been opened, the apparent low bidder will be issued a notice that he is the apparent low bidder, and
 - i. He will have 72 hours to submit Affidavits C or D.
 - ii. These forms can be found in the Project Manual.

- E. Once the bids have been opened, they will be tabulated and a certified copy will be sent to all bidders.
- F. Project Specifics:
1. Single Prime Contract and required to have license classification for Public Utilities.
 2. Completion Time and Liquidated Damages
 - i. Substantially complete 300 consecutive days after Notice to Proceed.
 - ii. Final Completion 330 consecutive days after Notice to Proceed.
 - iii. \$1,000.00 per Calendar Day Liquidated Damages.
 3. Project occurs at three sites:
 - i. State Street Area:
 - Replacement of approximately 550 feet of 12-inch aerial sewer mains and steel support piers, replacement of approximately 800 feet of 12-inch aerial sewer mains on existing support piers, manhole rehabilitation, installation of three steel access platforms around existing elevated manholes.
 - Project area is within the 100-year floodplain.
 - ii. Banbury Road Area:
 - Removal of approximately 500 feet of 6-inch sewer mains and manholes, and installation of approximately 565 feet of 8-inch replacement sewer mains and manholes.
 - The work at this area will be conducted in the summer months between May 27 and September 4 while the St. Michaels Episcopal Church's school is on break if the contract period allows this. See Specification Section 01 11 00 for additional information.
 - iii. Woodrow Drive Area:
 - Installation of approximately 150 feet of 6-inch replacement sewer mains including aerial and supports
 4. Contractor shall not allow bypassing of sewage into surface water (e.g. stream, creek, river, ditch, etc.). Contractor is responsible for all bypass pumping required to construct the project as shown. For each of these activities provide a detailed construction sequence showing the bypass pumping arrangement.
 5. Conduct video and photographic inspection of the pre-construction conditions and post-construction conditions for the entire project area, including off site material staging areas and other associated locations.

**REVISED BID FORM
ADDENDUM No. 2**

PROJECT: 2017 Aerial Sewer Replacement Project

CITY BID NO.: WS-2014-42

BID FROM: _____

TABLE OF CONTENTS

	Page
Article 1 – Bid Recipient	1
Article 2 – Bidder’s Acknowledgements.....	1
Article 3 – Bidder’s Representations	2
Article 4 – Bidder’s Certification	3
Article 5 – Basis of Bid.....	3
Article 6 – Time of Completion	7
Article 7 – Attachments to This Bid	7
Article 8 – Defined Terms.....	8
Article 9 – Bid Submittal	8

ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is submitted to:
Dennis Lassiter, Construction Projects Administrator
City of Raleigh, Public Utilities Department
One Exchange Plaza, Suite 620
Raleigh, North Carolina 27601

- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 consecutive calendar days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this bid, bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

No. _____, dated _____

No. _____, dated _____

No. _____, dated _____

No. _____, dated _____

No. _____, dated _____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Supplemental Conditions - 5.02 as containing reliable Technical Data, and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-5.06 as containing reliable Technical Data.

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific sequences of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs.

F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
 - 1. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
 - 2. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
 - 3. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.A:
 - a. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - b. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - c. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - d. coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

- A. For Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in the Bid Schedule below.
- B. Reimbursable Sales Taxes are to be excluded from the bid price for this project in accordance with specification Section 00805 - Procedure For Reporting North Carolina Sales Tax Expenditures On City Of Raleigh Contracts.

THIS AREA INTENTIONALLY LEFT BLANK

UNIT PRICE BID SCHEDULE

Bid Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Extended Bid Price
1	Mobilization (Max. 3% of Total Bid Price)	LS	1		
2	Bypass Pumping	LS	1		
3	12-inch DIP, RJ, Aerial Pipe Replacement	LF	1,346		
4	Removal of Existing Pipe Support Steel Piers	EA	11		
5	HP 12x53 Steel Pile	LF	744		
6	Pile Supported Steel Cap and Pipe Cradle	EA	13		
7	Aerial Crossing Concrete Structures	EA	2		
8	Testing Lead-Based Paint	EA	50		
9	Pipe and Manhole Support Steel Piers Blast Cleaning and Painting (No Lead-Based Paint Removal)	LS	1		
10	Add-on for Blast Cleaning Pipe and Manhole Support Steel Piers having Lead Base Paint	LS	1		
11	0 - 6 feet deep, 6-inch DIP, RJ Sewer Main	LF	128		
12	6 - 8 feet deep, 6-inch DIP, RJ Sewer Main	LF	11		
13	8 - 10 feet deep, 6-inch DIP Sewer Main	LF	10		
14	0 - 6 feet deep, 8-inch DIP Sewer Main	LF	108		
15	6 - 8 feet deep, 8-inch DIP Sewer Main	LF	160		
16	8 - 10 feet deep, 8-inch DIP Sewer Main	LF	110		
17	10 - 12 feet deep, 8-inch DIP Sewer Main	LF	73		
18	12 - 14 feet deep, 8-inch DIP Sewer Main	LF	84		
19	Reconnect 4-inch Sewer Service Lateral	EA	1		
20	6 - 8 feet deep, 4' Dia. New Manhole	EA	2		
21	10 - 12 feet deep, 4' Dia. New Manhole	EA	2		
22	12 - 14 feet deep, 4' Dia. New Manhole	EA	1		
23	Connection to Existing Manholes	EA	10		
24	4' Dia. Manhole Rehabilitation (Cementitious Liner)	VF	26		
25	Replace Existing Manhole Ring and Cover	EA	3		
26	Rebuild Manhole Bench and Channel	EA	4		

Bid Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Extended Bid Price
27	Access Platform for Existing Aerial Manholes	EA	3		
28	Steel Encasement Pipe, Aerial Installation, 14" x 0.375"	LF	85		
29	Rock Excavation	CY	20		
30	Removal of Existing 6-inch DI Sewer Pipe	LF	484		
31	Removal of Existing Manhole	EA	2		
32	Abandonment of Existing 6-inch DI Sewer Pipe in Place	LF	171		
33	Demolition of Exist. Aerial Crossing Structures	EA	6		
34	Asphalt Roadway Patching	SY	11		
35	Concrete Curb and Gutter Replacement	LF	20		
36	Stone Construction Entrance	EA	4		
37	Tree Removal & Disposal	EA	46		
38	Tree Protection Fence	LF	3,568		
39	Temporary Stream Crossing	SY	267		
40	Silt Fence	LF	2,933		
41	Silt Fence Outlet	EA	10		
42	Erosion Control Matting	SY	25		
43	Sandbag Protection	EA	2		
44	Inlet Protection	EA	1		
45	Wattle Barrier	LF	187		
46	Ditch with Rip-Rap Liner	SY	4		
47	Temporary Gravel Access Road	SY	62		
48	15" RCP Storm Drain Pipe	LF	10		
49	Clean Up and Seeding (Minimum 15% of the total cost of pipeline work, Bid Items 3 through 28)	LS	1		
50	Allowance for 3 rd Party Vibration, Monitoring and Soil Compaction Testing	LS	1	\$20,000	\$20,000
51	Contingency Allowance	LS	1	\$60,000	\$60,000
52	Rip Rap Slope Protection	SY	410		

TOTAL BID PRICE (Sum of Items 1 through 52) \$ _____

5.02 Bidders are hereby notified that GS 143-128(d), requires all bidders on single prime projects to identify on their Bid form the contractors they have selected for the subdivisions for branches of work for (1) HVAC, (2) Plumbing, (3) Electrical, and (4) General. Accordingly, bidder shall list below applicable selected contractors for the following branches of work (write "N/A" if not applicable or self-performed).

HVAC	_____	_____
	Name	License No.
Plumbing	_____	_____
	Name	License No.
Electrical	_____	_____
	Name	License No.
General	_____	_____
	Name	License No.

- A. Unit Prices have been computed in accordance with Paragraph 13.03.B of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.
- C. Bidder acknowledges that the rights of the Owner and the recommendations of the Engineer are not to be questioned in the Award of Contracts.
- D. Bidder acknowledges that it is the intention of the Mayor and City Council to let contracts on a basis of the Bids received in accordance with GS 143-129 and in such manner as they deem to be for the best interests of the Owner.
- E. Bidder acknowledges that the Owner reserves the right to accept or reject any or all bids and to waive any informalities in the bidding.
- F. Bidder acknowledges that should the total bid exceed the funds available to construct the project, the Owner reserves the right to reduce the scope of work from the project by deleting certain lump sum or unit price bid items prior to awarding the contract to bring the project within the funds available.
- G. Bidder acknowledges that if this contract is awarded, Bidder must, with every pay request, furnish to the Public Utilities Director of the City of Raleigh an accurate itemized statement of North Carolina Sales Taxes paid on materials, supplies, equipment, and other items charged to this contract, and otherwise fully comply with the "Procedure for Reporting North Carolina Sales Tax Expenditures.". A sales tax form must be submitted even if there is no sales tax incurred.
- H. Bidder agrees to begin work within 10 days from the date of the Notice to Proceed.
- I. Bidder agrees that should the Owner reduce the scope of work by 25% or less of the Total Bid price prior to award of the contract, the lump sum and the unit price on all bid items shall remain unchanged.
- J. Bidder agrees that in the case of failure on his part to execute the said Contract and the Bonds within 15 consecutive calendar days after written notice being given of the award of the Contract, the check, cash or Bid Bond accompanying this Bid shall be paid into the funds of the Owner's

Account set aside for this Project, as liquidated damages for such failure; otherwise the check, cash or Bid Bond accompanying this Bid shall be returned to the Bidder.

- K. Bidder agrees to provide all necessary tools, machinery, equipment, apparatus, and all other means necessary to do all the work and will furnish all labor, materials and all else required to complete such Contract as may be entered into, in the manner prescribed in and in accordance with the terms of the Specifications and Contract and in accordance with the true intent and meaning thereof, and in accordance with the Plans and/or Drawings and the requirements of the Engineers under them, in a first class manner.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete within 300 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06.B of the General Conditions within 330 calendar days after the date when the Contract Times commence to run.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times. This amount is agreed upon as the proper measure of liquidated damages the Owner will sustain, per day, by the failure of the undersigned to complete the work, within the stipulated time, and it is not to be construed, in any sense, as a penalty.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required Bid security in the form of a Bid Bond or Certified Check (Section 00430);
 - B. In accordance with GS 143-128.2(c), Bidder shall identify on its bid the minority businesses that it will use on the project and the total dollar value of the bid that will be performed by the minority businesses and list the good faith efforts (Affidavit A) made to solicit participation. A Bidder that will perform all of the work with its own workforce may submit an Affidavit B to that effect in lieu of the affidavit A required above.
 - 1. Nondiscrimination Agreement (Section 00440);
 - 2. Use of MWBE Businesses (Section 00440);
 - 3. Identification of Minority Business Participation (Section 00440), and;
 - 4. Affidavit A, Listing of Good Faith Effort, or Affidavit B, Intent to Perform Contract with Own Workforce (Section 00440).
 - C. Contractor's Certificates, Affidavit of Organization and Authority of Sworn Statement (Section 00441);
 - D. City of Raleigh – Contractor's Poor Performance Policy (Section 00442);
 - E. Non-Collusive Affidavit (Section 00443);
 - F. Notice to Contractor Regarding Intrusions Beyond Project Limits (Section 00444);
 - G. Evidence of authority to do business in the state of the Project (i.e., copy of contractor's license);
- 7.02 Submit the Bidder's Checklist as provided in the bidding documents with the bid submittal. The Checklist shall be completed and included as the first page of the submittal.

- 7.03 After the bid opening the Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low Bidder, the Bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:
- A. An Affidavit (C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the goal established by the Owner and indicated in the Instruction to Bidders, paragraph Minority Participation Goals. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort; or,
 - B. Affidavit (D) of its good faith effort to meet the goal. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.
- 7.04 Bidder understands that if this Bid is accepted by the Owner, Bidder shall not substitute for the subcontractors named in the Bid Documents except as allowed in the Supplementary Conditions.

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

9.01 Bidder’s License

- A. Number: _____
- B. Classification: _____
- C. Limitation: _____
- D. Employer’s Tax ID No.: _____
- E. Business Address: _____
- F. Phone No.: _____ Fax No.: _____
- G. Contact Person: _____ E-mail Address: _____
- H. Phone No. w/ Ext.: _____

9.02 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual’s signature)

Doing business as: _____

A Partnership

Partnership Name: _____

The Organization and Internal Affairs of the Partnership are governed by the laws of the State of: _____

By: _____

(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title (typed or printed): _____

Attest: _____

(Signature of Corporate Secretary)

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title (typed or printed): _____

(CORPORATE SEAL)

Attest: _____

(Signature of Corporate Secretary)

Date of Qualification to do business in North Carolina is ____/____/____.

Limited Liability Company - LLC

Name of LLC: _____

Name of State under whose Laws the Limited Liability Company was formed:

By: _____

(Signature of Manager)

Name (typed or printed): _____

Title (typed or printed): _____

REVISED SECTION 01 22 00
UNIT PRICES
ADDENDUM NO. 2

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Delineation of measurement and payment criteria applicable to Work performed under Contract by the unit price payment method.

1.02 FIELD MEASUREMENT

- A. Take measurements and compute quantities for submittal of the monthly pay request unless specified otherwise in the measurement paragraphs as indicated in this Section.

1.03 CHANGE IN QUANTITIES

- A. Increase in the quantity of a bid item above what is indicated in the Bid Form shall only be made by a Change Order as required by the Contract Documents.
- B. A final adjusting Change Order shall be made for adjustment of the actual quantities installed prior to submittal of the final pay request.

1.04 GENERAL

- A. Items with a "(X)" in the title of the following bid items represents the size or depth as indicated on the Bid Form. Items with "(Mat'l)" in the title represents the material as indicated on the Bid Form.
- B. Method of measurement for the individual Bid Items shall be as specified below.
- C. Payment for each item shall be in accordance with the Contract Unit Price times the number of units installed in accordance with the Contract Documents.
- D. Work for each bid item shall include, but not be limited to, the work listed below, and the labor, materials, equipment, and services required and reasonably implied by the Contract Documents for a complete installation.
- E. Traffic Control will not be measured but should be included in the individual unit price items, as appropriate. This includes traffic control equipment, flagman, signage, moving control devices, and establishing detours with the City and NCDOT.
- F. Payment: The first Application for Payment will be approved based on the utilities installed during the agreed upon payment period without testing. Subsequent Application for Payments shall not be approved by the Engineer unless utilities installed during the previous payment period have passed the specified tests and clean up and seeding is complete.

1.05 PAY ITEMS

- 1. Bid Item 1: Mobilization (max 3% of Total Bid Price)
 - a. Measurement shall not be made for this item.
 - b. Work: To include administrative cost including, but not limited to, mobilization and demobilization, bonds, insurance, pre-construction, video inspections, shop drawing review and submittal, record drawing documentation/surveys, construction closeout documentation, and construction trailers. This item shall

also include mobilization of construction equipment onto each of the three project sites prior to commencing construction and demobilization of equipment after Final Completion. General office administration for the Project construction and contract administrative costs shall be included in the individual unit price items.

- c. Bid Price for Mobilization shall not exceed 3 percent of the total bid. Half of the mobilization may be requested on the first pay request and the remainder on the second.
2. Bid Item 2: Bypass Pumping
 - a. Measurement: Measure by lump sum for all bypass pumping required to divert sewer necessary for installation of the proposed utility lines manhole lining as shown on the Drawings at each of the three project sites. Payment shall include all labor, material, equipment, piping, and accessories necessary to bypass the encountered flow.
 - b. Work: Delivery and setup of equipment and piping, fuel, oil, maintenance, monitoring, diversion blocking/isolation, scour protection, pumping, disassembling and removal of all equipment and piping, and cleanup.
3. Bid Item 3: 12-inch DIP, RJ, Aerial Pipe Replacement
 - a. Measurement: By the price per linear foot of aerial sewer main installed. Measure pipe from center to center of manholes. No deduction will be made for space occupied by manholes.
 - b. Work: The unit price provided shall be the only compensation for the complete installation and includes furnishing and installing all pipe, fittings and appurtenances, and all other incidental work necessary to provide a complete and ready-to-use system, except for those pay items segregated on the Bid Form. The work shall include cleaning of the existing pipe before removal, properly disposal off site of collected material from the existing sewer pipe, removal of the existing aerial piping, construction staking, flushing, and testing and repair to damaged new and existing utilities.
4. Bid Item 4: Removal of Existing Pipe Support Steel Piers
 - a. Measurement: By number of pipe support steel piers removed.
 - b. Work: Excavation; steel cutting; proper disposal of removed items; backfilling; and for all labor, materials and accessories required for complete removal of each steel pipe support pier, which consists of the two piles, pile cap and pipe strap.
5. Bid Item 5: HP 12x53 Steel Pile
 - a. Measurement: Measure by the linear feet of steel piles installed and accepted, from tip to cutoff, plus required overlength.
 - b. Work: Includes all labor, materials, tools, equipment, a incidentals, driving, cutting off, capping, disposing of cutoffs, steel piles, test piles, testing, reporting and all else required for installing the steel piles.
6. Bid Item 6: Pile Supported Steel Cap and Pipe Cradle
 - a. Measurement: Measure by the number of support caps installed and accepted.
 - b. Work: Furnishing, installing, and all labor, materials and accessories required for complete installation, including steel cutting, welding, structural steel I-Beam and other shapes of the sizes indicated, pipe support cradle, steel shim plates,

neoprene pads, straps, stainless steel bolts, and all else required to weld the pile cap to the piers.

7. Bid Item 7: Aerial Crossing Concrete Structures
 - a. Measurement: Measure by the number of piers installed and accepted.
 - b. Work: Furnishing, installing, and for all labor, materials and accessories required for complete installation.
8. Bid Item 8: Testing Lead Based Paint
 - a. Measurement: By the number of tests conducted.
 - b. Work: The work shall include all labor, equipment, laboratory sampling containers, and all else required for securing paint chip samples from the existing pipe support steel piers (two test per pier), and manhole support steel piers (four tests per manhole support), shipping samples to a certified laboratory, analyzed using approved EPA approved methods, and providing results to the Owner.
9. Bid Item 9: Pipe and Manhole Support Steel Piers Blast Cleaning and Painting (No Lead Based Paint Removal)
 - a. Measurement: Price lump sum for all blast cleaning and painting.
 - b. Work: Includes blast cleaning of all new steel piers and pier caps, and the existing steel piers and pier caps that are to remain and determined by sampling not to be coated with lead-based paint. Also includes painting the new and existing steel piers and pier caps including primer and top-coats, as specified.
10. Bid Item 10: Add-on for Blast Cleaning Pipe and Manhole Support Steel Piers having Lead-Based Paint
 - a. Measurement: Add-on price, lump sum, for blast cleaning existing steel piers and pier caps if sample results determined the steel was coated with lead-based paint.
 - b. Work: Providing the services of a North Carolina licensed lead abatement company to remove lead-based paint from all existing steel piers and pier caps by way of blasting cleaning, including collection, containerization, labeling, transporting and properly disposing off site of the removed lead-based paint.
11. Bid Items 11 – 18: X" (Mat'l) Sanitary Sewer, by depth shown on Bid Form (X' - X')
 - a. Measurement: By the price per linear foot of sewer main installed. Measure pipe from center to center of manholes. No deduction will be made for space occupied by manholes. Measure depth of pipe vertically from pipe invert to original grade.
 - b. Work: The unit price provided shall be the only compensation for the complete installation and includes furnishing and installing all pipe and appurtenances and all other incidental work necessary to provide a complete and ready-to-use system, except for those pay items segregated on the Bid Form.
 - 1) Clearing and grubbing where necessary.
 - 2) Traffic control.
 - 3) Construction staking.
 - 4) Temporary removal and restoration/relocation or temporary support of, but not limited to, existing mail boxes, signs, fences, shrubs, plants, guard rails, power and telephone poles.

- 5) Excavating, shoring and bracing where required, dewatering as required, installing, backfilling (including Class I material as specified for the pipe bedding, haunching, and initial backfill).
 - 6) Installation of warning / identification tape over utilities.
 - 7) Installation of tracer wire on non-metallic utilities.
 - 8) Temporary support and protection of existing underground facilities.
 - 9) Pipe, concrete blocking, connection to existing piping, and fittings 3-inch and smaller.
 - 10) Flushing and testing.
 - 11) Repair to damaged new and existing utilities.
 - 12) Cutting and removal of existing paved surfaces. Patching/repair of existing paved surfaces shall be paid as indicated in the paragraph, "Asphalt and Concrete Pavement Patching."
12. Bid Item 19: Reconnect 4" Sanitary Sewer Service Lateral
- a. Measurement: Measure by the number installed.
 - b. Work: Excavation, backfilling, and compacting, 4-inch service pipe and fittings from main to location of existing cleanout or the location as indicated on the Drawings. New tap to sewer main, service saddle, and straps.
13. Bid Items 20 - 22: 4' ID Manhole, Depth (X) – (X) Feet
- a. Measurement: By the number of manholes installed at various depths. Measure depths from manhole cover to lowest pipe invert.
 - b. Work: Excavating, backfilling, stone sub base, concrete sections as required for the depth, top adjusting rings, steps, pipe boots, and ring and cover (watertight and vented as indicated), piping for inside/outside drops, pipe supports, testing, and cleanup.
14. Bid Item 23: Connect to Existing Manhole
- a. Measurement: Measure by each connection as identified on the Bid Form. Payment shall include all labor, material, equipment, and accessories necessary to connect the proposed utility pipe to the existing structure and create a water tight seal.
 - b. Work: Excavation, backfilling, coring, fittings, pipe boots/connections, seals, grout, and cleanup.
15. Bid Item 24: 4' Dia. Manhole Rehabilitation
- a. Measurement: By the total vertical feet from the manholes indicated to have a cementitious liner measured vertically from the invert to the top of manhole ring.
 - b. Work: By-pass pumping of sewage, high pressure cleaning of interior, removal of and disposal of loose or unsound material, repair and sealing of invert and benches, removal of manhole steps, repair of visible leaks, application of lining system.
16. Bid Item 25: Replace Exist. Manhole Ring & Cover
- a. Measurement: By the number furnished and installed.

- b. Removal of existing frame and cover, furnishing new swing hinge "Revolution," or equal, frame and cover, and installing new frame and cover including finish work.
17. Bid Item 26: Rebuild Manhole Bench and Channel
- a. Measurement: Measure by each bench and channel that is rebuilt. Payment shall include all labor, material, equipment, and accessories necessary to rebuild the concrete manhole bench and channel.
 - b. Work: Removing the existing concrete bench and channel, cleaning, and reforming and rebuilding each.
18. Bid Item 27: Access Platform for Existing Aerial Manholes
- a. Measurement: By the number furnished and installed.
 - b. Work: This item shall include all materials, equipment and labor to furnish and install the steel access platforms around existing manholes on existing aerial concrete pile caps, including field measurements prior to ordering, field adjustments, anchor bolts, and all else required.
19. Bid Item 28: Steel Encasement Pipe, Aerial Installation, 14" x 0.375"
- a. Measurement: Measure by the linear foot along the horizontal centerline of the steel encasement pipes installed to the nearest 0.1 foot.
 - b. Work: This item shall include all materials, equipment, and labor to install the steel encasement pipe above ground on concrete support piers, excavation, and installation into soil banks on each end, restrained joint ductile iron carrier pipe, carrier pipe supports, sealing the ends of the encasement pipe, backfilling, and all else required.
20. Bid Item 29: Rock Excavation by Mechanical Methods
- a. Measurement: By the price per cubic yard as follows:
 - 1) Pipe: Measure along the centerline of the trench, times the depth from the top of rock profile to the specified depth below the pipe, times the pipe bell OD plus four (4) feet.
 - 2) Structure: Measure two (2) feet beyond the outside wall of the structure (excluding extended base) and to a depth of one foot greater than the bottom of the structure.
 - 3) Tunneling and Boring Launch/Receive Pits: Maximum pit dimensions of 40' x 20' or as noted on the plans.
 - 4) General: Take measurements in the presence of the Engineer. Maintain daily log sheets of measured quantities. Log sheets must be signed by the Engineer and submitted with payment request. Payment shall not be made for quantities that have not been field verified by the Engineer.
 - b. Work: Mechanical removal of rock shall be as described above for excavation, with the exception of blasting.
21. Bid Item 30: Removal of Existing 6-inch DI Sewer Pipe
- a. Measurement: Measure by linear foot of pipe removed.
 - b. Work: Excavation; shoring and bracing; removal of existing gravity sewer pipe; proper disposal off site of removed pipe and other items; backfilling; cleanup;

seeding, mulching, and for all labor, materials and accessories required for complete removal.

22. Bid Item 31: Removal of Existing Manholes
 - a. Measurement: By number of manholes removed.
 - b. Work: Excavation; shoring and bracing; demolition and removal of existing concrete or masonry manholes; removal of existing frames and covers; proper disposal of removed items; backfilling; cleanup; seeding, mulching, and for all labor, materials and accessories required for complete removal.
23. Bid Item 32: Abandonment of Existing 6-inch DI Sewer Pipe in Place
 - a. Measurement: Measure by linear foot of pipe abandoned.
 - b. Work: Emptying the pipeline contents and plugging the ends with premixed, fast setting, waterproof cement.
24. Bid Item 33: Demolition of Existing Aerial Crossing Structures
 - a. Measurement: By number of aerials removed.
 - b. Work: Excavation; shoring and bracing; demolition and removal of existing concrete or masonry structures; demolition and removal of existing aerial piping; proper disposal of removed items; backfilling; cleanup; seeding, mulching, and for all labor, materials and accessories required for complete removal.
25. Bid Item 34: Asphalt Roadway Patching
 - a. Measurement: Measure by the square yard along centerline of roadway cut times the pipe bell OD plus four (4) feet. Payment shall not be made for pavement repair required due to excessive open cut caused by Contractor.
 - b. Work: Backfilling, compacting, stone sub-base, asphalt at the depths as specified.
26. Bid Item 35: Concrete Curb and Gutter Replacement
 - a. Measurement: Measure by linear foot of concrete curb replaced.
 - b. Work: This item shall include all materials, testing, equipment, and labor in order to remove and replace curb and gutter to existing conditions.
27. Bid Item 36: Stone Construction Entrance
 - a. Measurement: By number furnished and installed.
 - b. Work: Excavation, washed stone, maintenance, during construction, and final removal and cleanup.
28. Bid Item 37: Tree Removal and Disposal
 - a. Measurement: Measure by the number of approved trees removed, as indicated on the construction plans. No payment shall be made for trees removed without approval of the Engineer.
 - b. Work: This item shall include all materials, equipment and labor to remove and dispose of those trees indicated on the construction plans that are directly in conflict with proposed location of new sewer main.
29. Bid Item 38: Tree Protection Fencing
 - a. Measurement: By the price per linear foot along the base of the tree protection fencing furnished and installed.

- b. Work: Posts, fabric, signs, maintenance during construction, removal and cleanup.
30. Bid Item 39: Temporary Stream Crossing
- a. Measurement: Measure by the square yard installed.
 - b. Work: This item shall include all materials, equipment and labor necessary to install pipe culverts, No. 5 or 57 washed stone, Class B erosion stone, geotextile fabric, rip rap stone, and any other materials necessary for complete installation. Shall also include final removal and cleanup.
31. Bid Item 40: Silt Fence
- a. Measurement: by the price per linear foot along the base of the silt fence installed.
 - b. Work: Posts, wire mesh, fabric, base trench, stone, and maintenance during construction, removal and clean up.
32. Bid Item 41: Silt Fence Outlet
- a. Measurement: Measure by the number of silt fence outlets installed and accepted.
 - b. Work: This item shall include all materials, testing, equipment and labor required to install silt fence wattle outlet, including but not limited to wattle, wooden stakes, and wooden posts.
33. Bid Item 42: Erosion Control Matting
- a. Measurement: Measure by the square yard installed.
 - b. Payment for the erosion control matting shall be in accordance with the Contract Documents for the unit price per square yard of liner installed. Payment shall be for the labor, material, equipment, and accessories required for a complete installation including, but not limited to, fine grading of slopes or ditch, matting material, matting anchors, inspection and maintenance during construction, final removal and cleanup.
34. Bid Item 43: Sandbag Protection
- a. Measurement: Measure by the number of locations protection devices are installed and accepted.
 - b. Work: This item shall include all materials, testing, equipment and labor necessary to install gravel bag barriers, and any other materials necessary for complete installation. Shall also include inspection and maintenance during construction, and final removal and cleanup.
35. Bid Item 44: Inlet Protection
- a. Measurement: Measure by the number of inlet protection devices installed and accepted.
 - b. Work: This item shall include all materials, testing, equipment and labor necessary to install concrete block, wire screen, gravel filter, and all other materials necessary for complete installation. Shall also include inspection and maintenance during construction, and final removal and cleanup.
36. Bid Item 45: Wattle Barrier
- a. Measurement: By the linear feet installed.
 - b. Wattle barrier installed including trench excavation, furnishing and installing the 18-inch diameter by 10-foot-long excelsior wattles, securing in place with 2-foot

wooden stakes and wire staples, maintenance during construction, and final removal and clean up.

37. Bid Item 46: Ditch with Rip-Rap Liner
- a. Measurement: by the price per square yard installed.
 - b. Work: Payment shall be for the labor, material and accessories required for a complete installation including, but not limited to, fine grading of ditch, filter fabric under stone, rip rap, hauling and placement and maintenance during construction.
38. Bid Item 47: Temporary Gravel Access Road
- a. Measurement: Measure by the square yard along centerline times the specified width.
 - b. Work: Excavation, 2" – 3" stone to a depth of 6 inches, maintenance, during construction, and final removal and cleanup.
39. Bid Item 48: X" RCP Storm Drain Pipe
- a. Measurement: By the price per linear foot of storm drain pipe installed; measure horizontally.
 - b. Work: Including excavation, furnishing and installing the pipe, joining to existing pipe, backfilling, compaction and all else required.
40. Bid Item 49: Clean Up and Seeding
- a. Measurement shall not be made for this item.
 - b. Work: Shall include the full width of the disturbed area for the cleanup and seeding along pipeline construction. Work shall include, but not be limited to, removal and proper disposal of debris and excess material, grading disturbed areas to original surface profile prior to trench excavation, cleaning of paved surfaces, proper seeding of disturbed areas including mulching, obtaining approval of cleanup from owner of right-of-way, and soil amendments (fertilizer/lime).
 - c. Total Contract Price of cleanup and seeding must be equal to a minimum of fifteen (15) percent of the total cost of pipeline work (Bid Items 3 through 28).
41. Bid Item 50: Allowance for 3rd Party Vibration, Monitoring and Soil Compaction Testing
- a. Measurement shall not be made for this item.
 - b. An allowance has been established for testing (i.e., soil compaction testing and vibration monitoring above normal monitoring by Contractor) as required in these contract documents. Allowance has also been established to defer selection of actual services to a later date when additional information is available for evaluation. This allowance shall only be utilized upon request by the Owner for these testing/monitoring services.
 - c. Prior to testing, Contractor shall submit the contract between the testing firm and Contractor to the Owner for approval. Where services are requested by Owner, Contractor shall submit invoices to show actual cost of services for use in fulfillment of allowance.
 - d. Payment for allowance shall be for actual invoices for third party services plus up to 5 percent of cost of the services as compensation for coordination of the work.

42. Bid Item 51: Contingency Allowance

- a. Measurement shall not be made for this item.
- b. To be used only at the direction of the Owner and Engineer.
- c. At the completion of the project, any remaining portion of this contingency shall be deducted from the Total of all Unit Price Bid Items.

43. Bid Item 52: Rip Rap Slope Protection

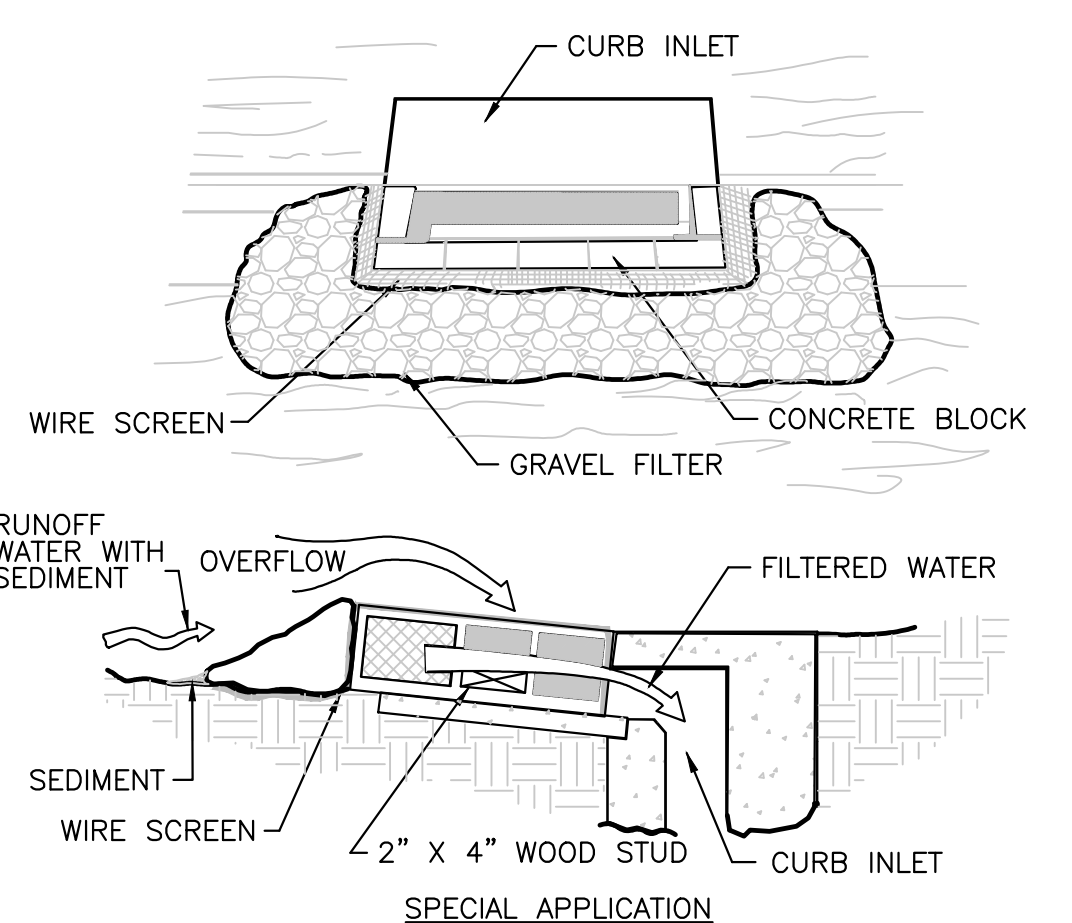
- a. Measurement: by the price per square yard installed.
- b. Work: Payment shall be for the labor, material and accessories required for a complete installation including, but not limited to, grading, geotextile fabric under stone, rip rap, hauling and placement and maintenance during construction.

PART 2 PRODUCTS (NOT USED)

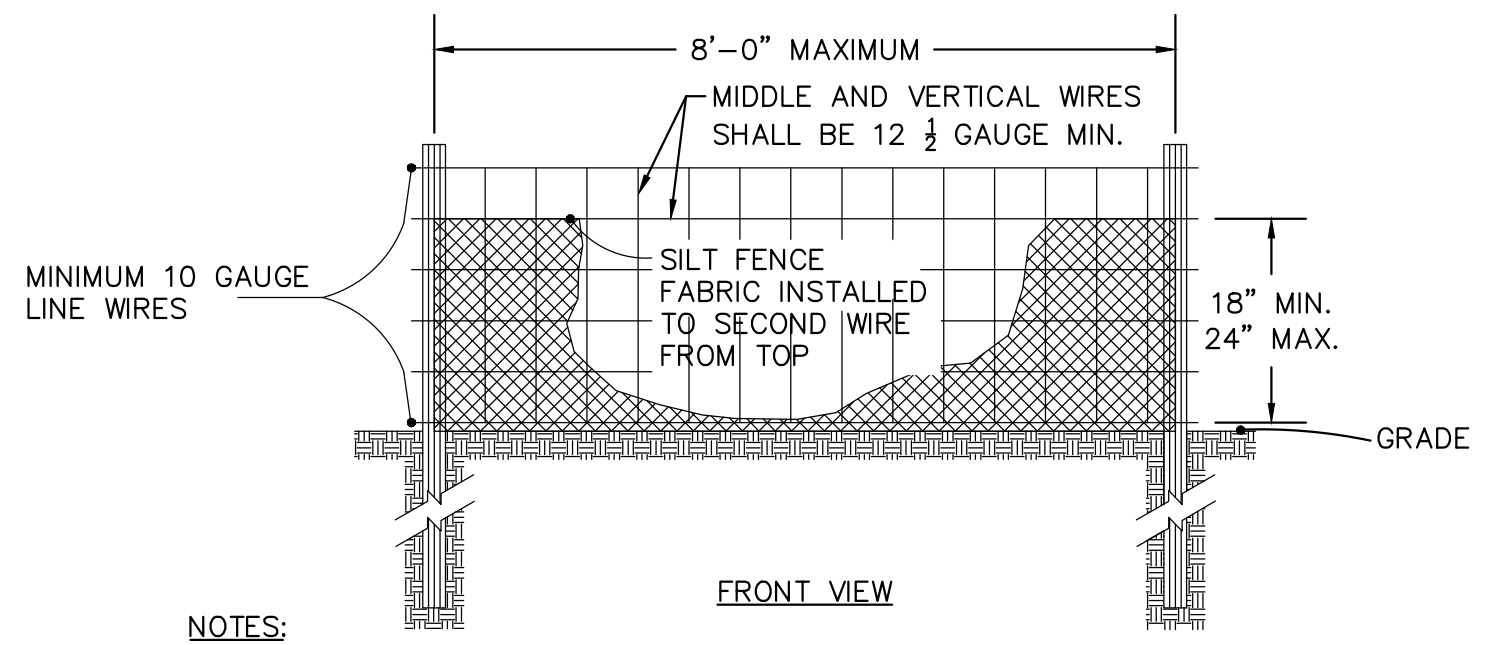
PART 3 EXECUTION (NOT USED)

END OF SECTION

THIS DRAWING IS THE PROPERTY OF AECOM AND IS NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART. IT IS ONLY TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN AND IS NOT TO BE USED ON ANY OTHER PROJECT. AECOM SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT AND SHALL NOT BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ANY OTHER PROJECT. AECOM SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT AND SHALL NOT BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ANY OTHER PROJECT.

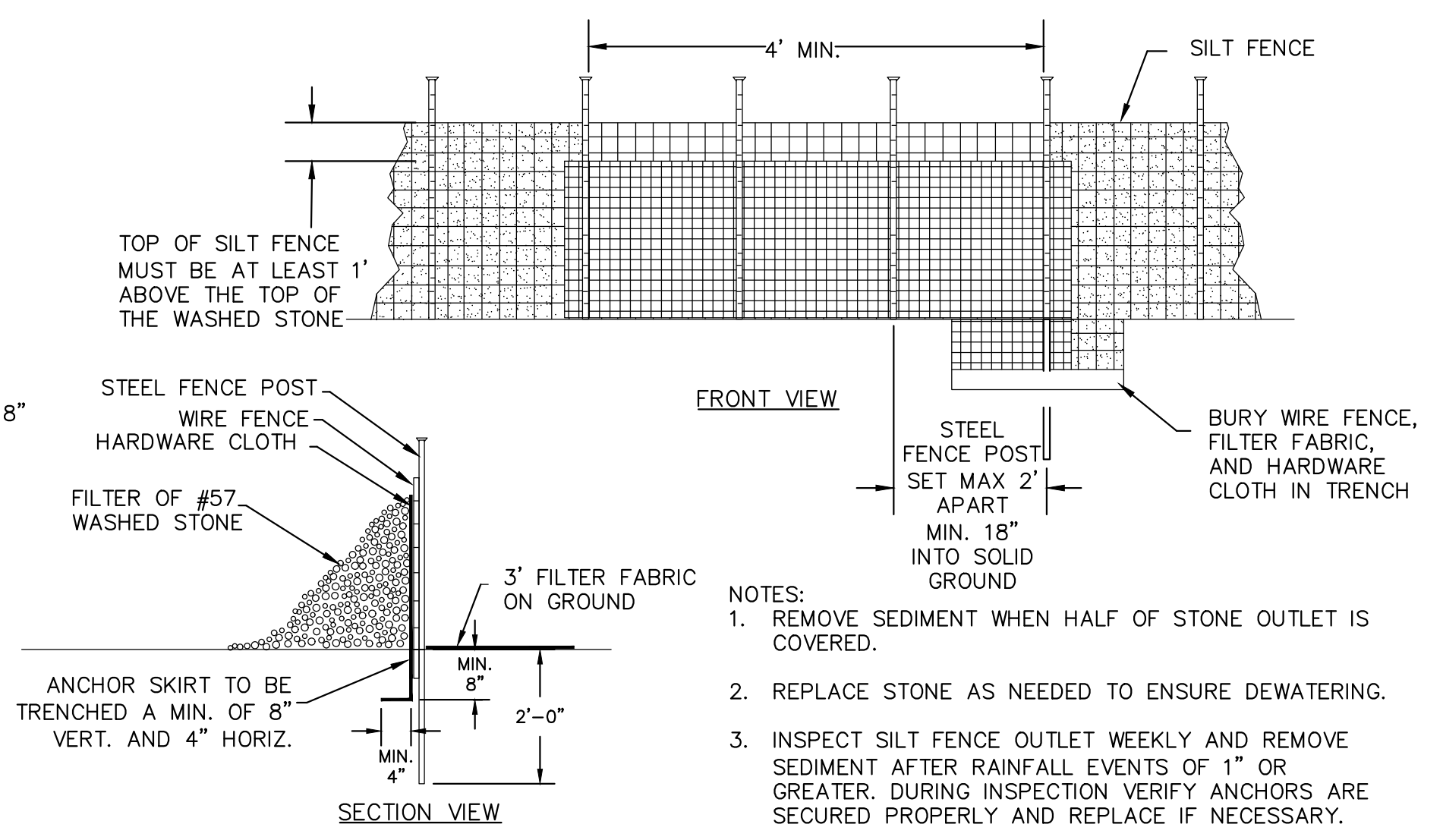


MAINTENANCE NOTE:
INSPECT, CLEAN, AND PROPERLY MAINTAIN BASIN AFTER SIGNIFICANT RAINFALL. REMOVE SEDIMENT WHEN THE VOLUME OF THE BASIN HAS BEEN REDUCED BY ONE-HALF. PLACE THE SEDIMENT THAT HAS BEEN REMOVED IN THE DESIGNATED PLACE AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. IMMEDIATELY REPLACE ANY RIP RAP DISPLACED BY THE STORM. AFTER ALL SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED REMOVE THE INLET PROTECTION DEVICES.



- NOTES:**
- USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
 - INSPECT SILT FENCE WEEKLY AND REMOVE SEDIMENT AFTER RAINFALL EVENTS OF 1" OR GREATER. REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.
 - REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.
 - SILT FENCE IS ROUTINELY DISPLAYED ON THE PLANS AT THE OUTSIDE EDGE OF CONSTRUCTION BOUNDARY LINES (IE: RIGHT OF WAY AND PERMANENT/TEMPORARY UTILITY EASEMENTS) IN ORDER TO PREVENT LINE OVERLAP. WHEN SHOWN THIS WAY, INSTALL SILT FENCE WITHIN THE CONSTRUCTION LIMITS. SILT FENCE IS NEVER TO BE INSTALLED ON PROPERTY NOT PERMITTED FOR CONSTRUCTION.

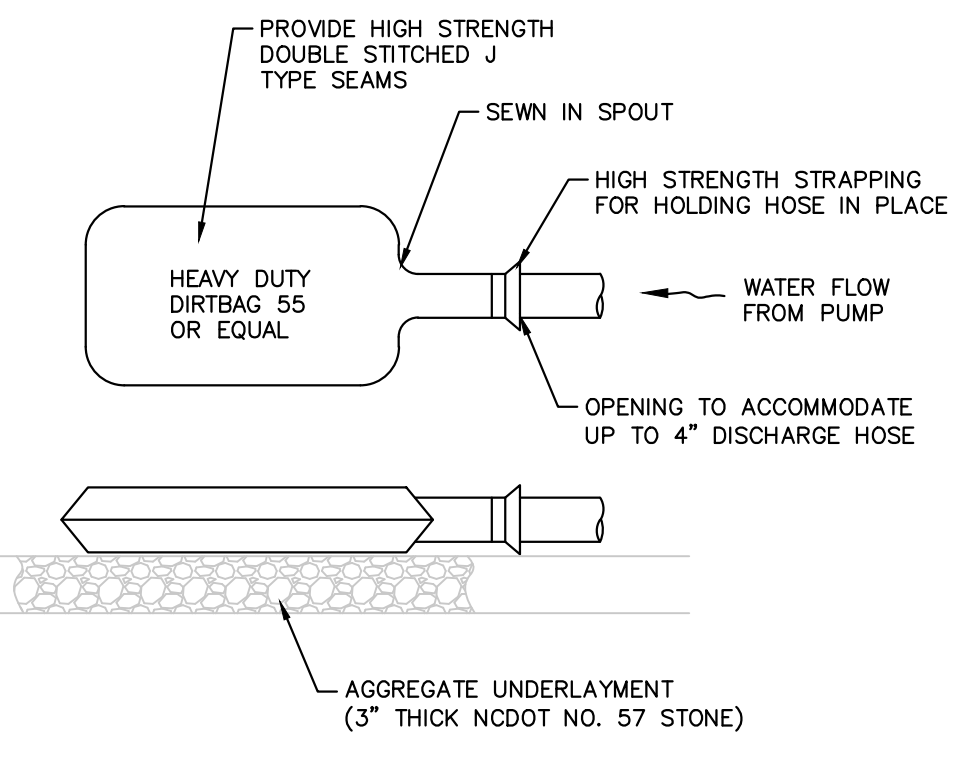
2 STANDARD TEMPORARY SILT FENCE-SF
NOT TO SCALE



- NOTES:**
- REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
 - REPLACE STONE AS NEEDED TO ENSURE DEWATERING.
 - INSPECT SILT FENCE OUTLET WEEKLY AND REMOVE SEDIMENT AFTER RAINFALL EVENTS OF 1" OR GREATER. DURING INSPECTION VERIFY ANCHORS ARE SECURED PROPERLY AND REPLACE IF NECESSARY.

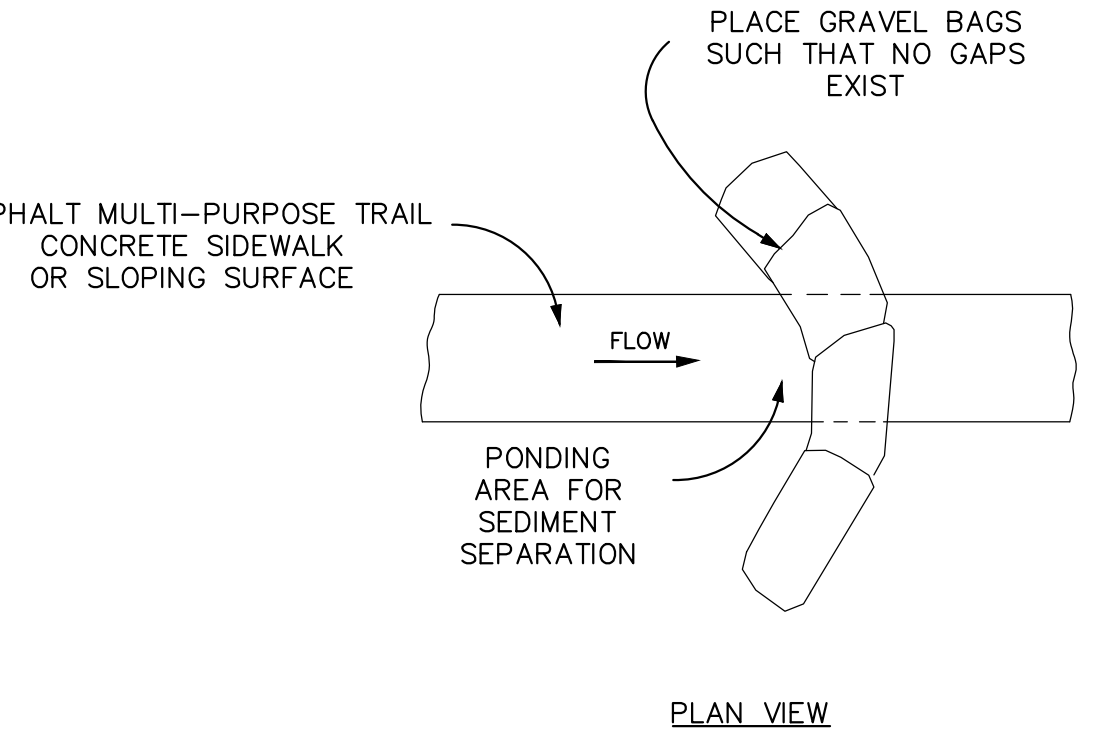
3 STANDARD SILT FENCE OUTLET-SFO
NOT TO SCALE

1 STORM DRAIN INLET PROTECTION
NOT TO SCALE



- DEWATERING BAG NOTES:**
- THE DEWATERING BAG SHALL BE MADE OF NON-WOVEN GEOTEXTILE WITH A MIN. SURFACE AREA OF 225 SQUARE FEET.
 - ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD.
 - THE SEAM STRENGTH SHALL WITHSTAND 100 LB/IN USING ASTM D-4884 TEST METHOD.
 - THE GEOTEXTILE FABRIC SHALL BE A 10 OZ NON-WOVEN FABRIC.
 - DISCHARGE FROM THE DEWATERING BAG SHALL BE DIRECTED SUCH THAT PRE-DISTURBANCE HYDROLOGY IS NOT CHANGED.

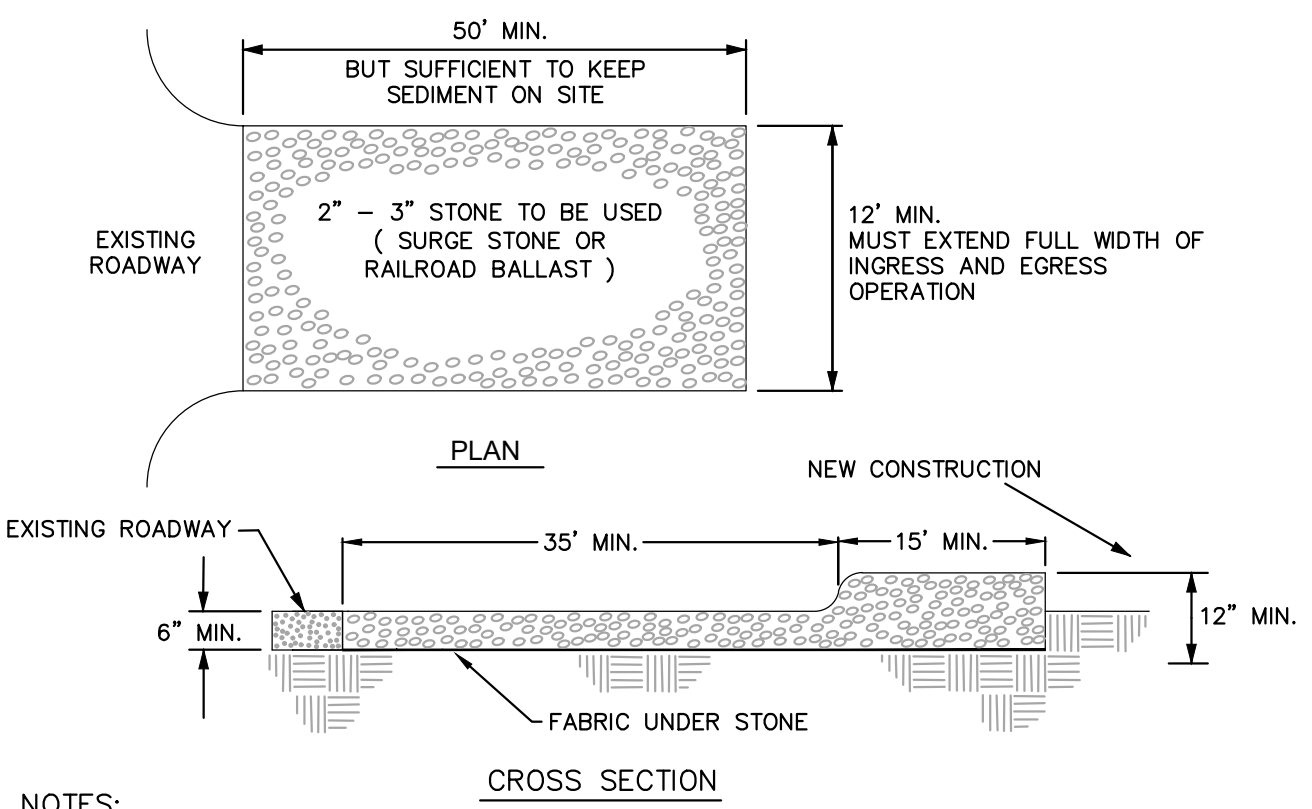
4 PUMP AROUND
NOT TO SCALE



- NOTES:**
- SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHOULD DISCHARGE INTO A STABLE VELOCITY DISSIPATER CONSTRUCTED OF RIP RAP OR SANDBAGS.
 - WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A DEWATERING BASIN, SEDIMENT BAG, OR OTHER ACCEPTED DEVICE. THE MEASURE SHALL BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE WITHOUT CAUSING OUTLET EROSION BETWEEN THE SILT BAG AND CHANNEL.
 - AT THE END OF EACH WORK DAY, THE DISTURBED CHANNEL SHALL BE MATTED.
 - WHEN REPLACING CULVERTS, THE CONTRACTOR SHALL PLACE SAND BAGS ACROSS THE ENTIRE DOWNSTREAM FACE OF EACH PIPE TO PREVENT BACKFLOW DURING PUMP AROUND ACTIVITIES.

7 SANDBAG PROTECTION
NOT TO SCALE

- NOTES:**
- PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING ASPHALT TRAIL, CONCRETE WALK, OR AS SHOWN ON PLANS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
 - USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH 1/2 INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
 - INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT.

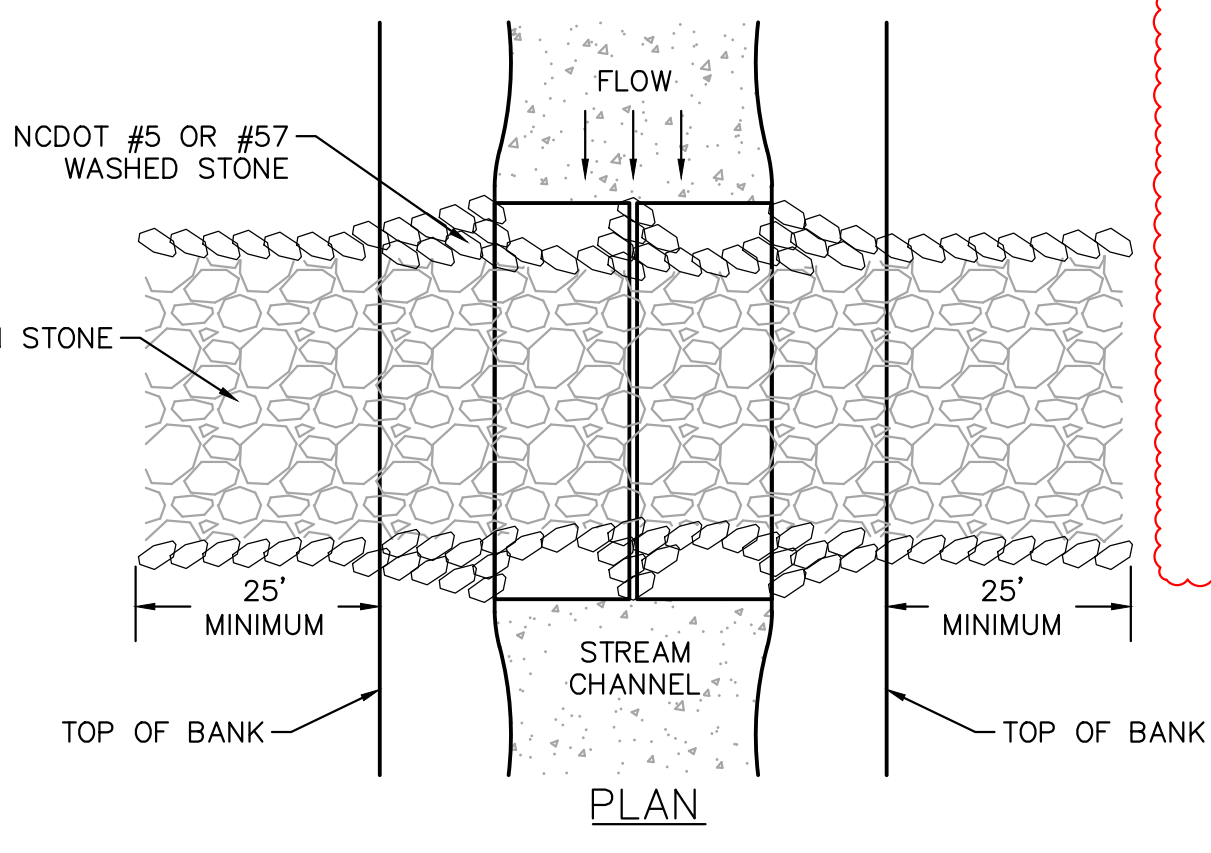
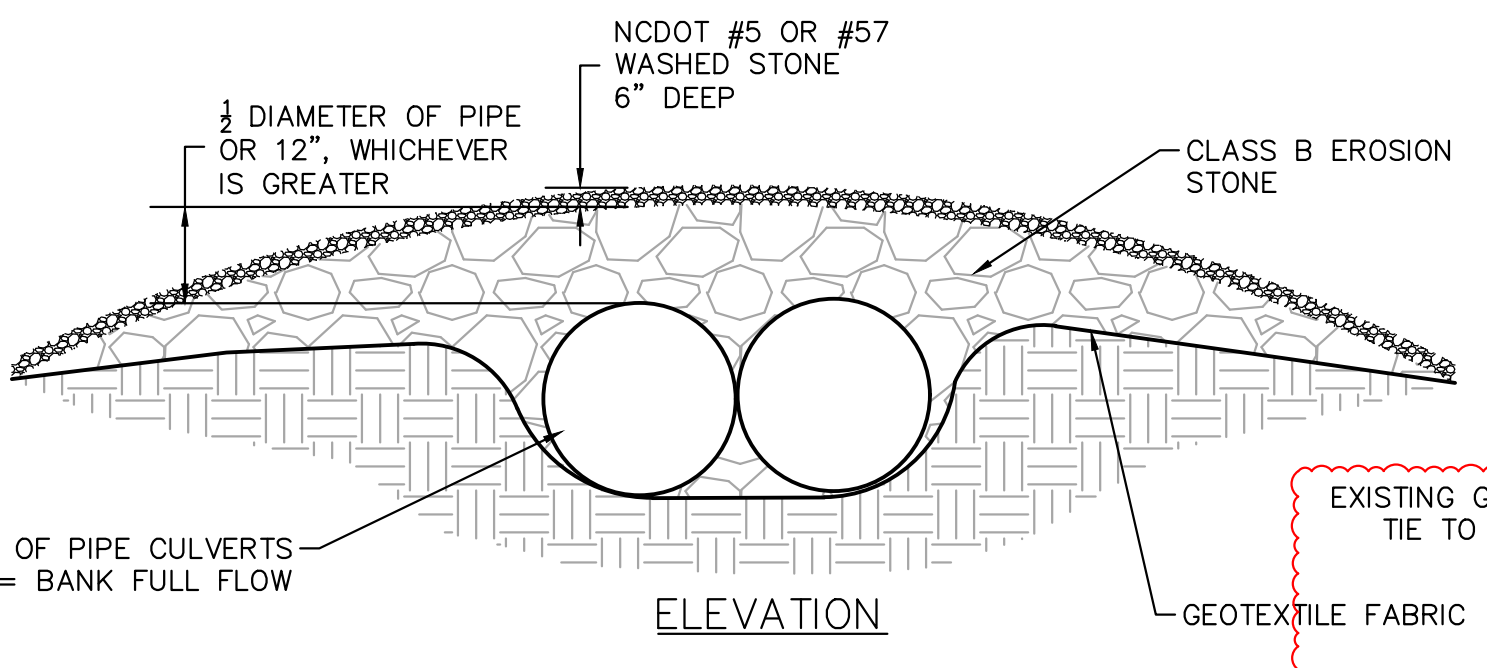


- NOTES:**
- PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
 - IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
 - IF A PROJECT CONTINUES TO PULL MUD AND DEBRIS ON TO THE PUBLIC ROAD, THE GOVERNING AUTHORITY WILL CLEAN THE AREA AND INVOICE THE FINANCIALLY RESPONSIBLE PERSON AS INDICATED ON THE FINANCIAL RESPONSIBILITY FORM.
 - INSPECT CONSTRUCTION ENTRANCES WEEKLY TO ENSURE THE DEVICE IS WORKING PROPERLY. REPLACE OR REPLENISH STONE AS NECESSARY.
 - ANY MATERIAL TRACKED ONTO THE ROADWAY SHALL BE CLEANED UP IMMEDIATELY.

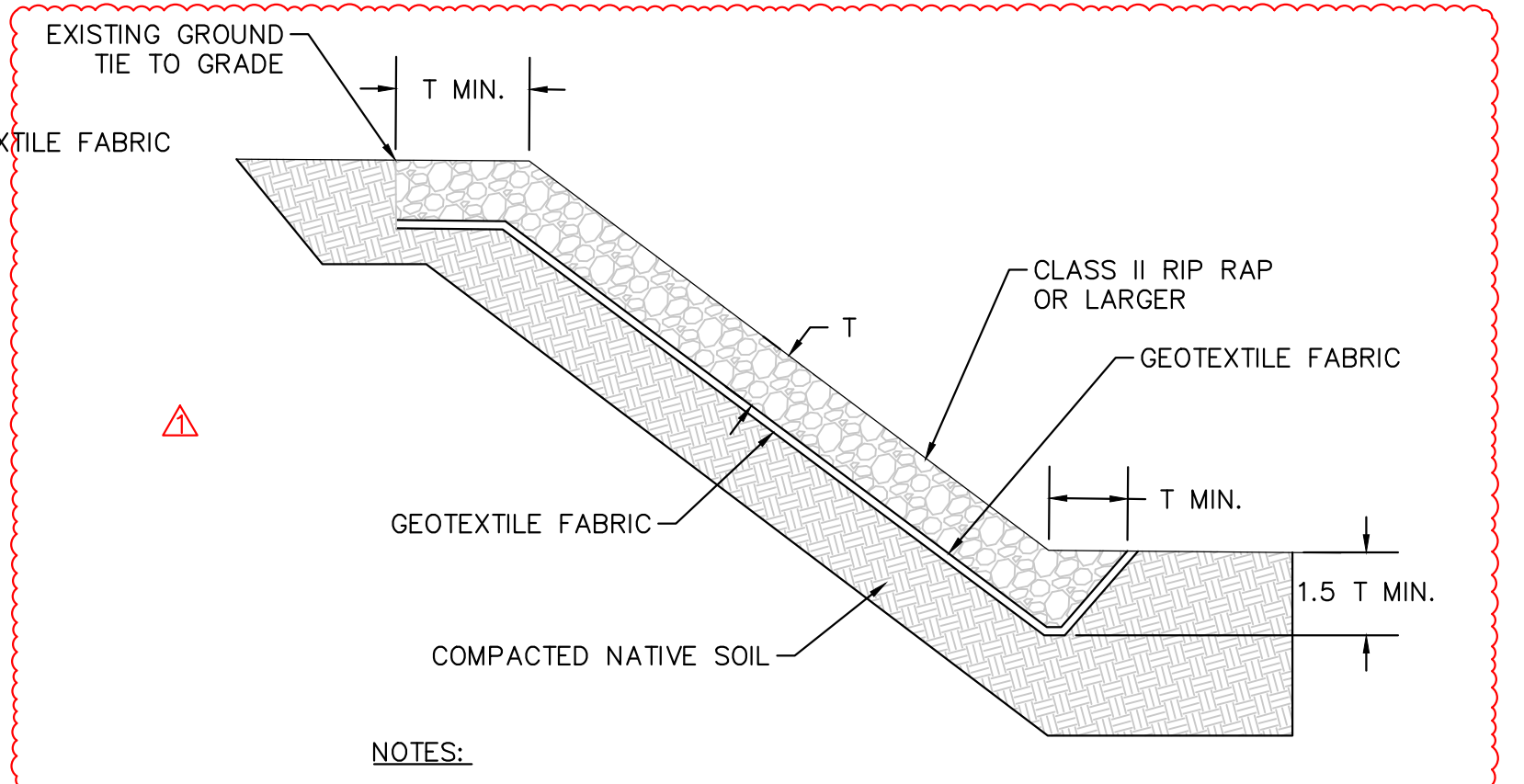
8 CONSTRUCTION ENTRANCE
NOT TO SCALE



- MAINTENANCE NOTES:**
- MONITOR DAILY TO SUPPLEMENT STONE TO ENSURE ENTRANCE FUNCTIONS PROPERLY.
 - CLEAN ANY MATERIAL TRACKED ONTO PUBLIC ROADWAY IMMEDIATELY.
 - SCHEDULE ROUTINE SWEEPING AT THE END OF EACH WORK DAY.
 - WASHING: IF CONDITIONS AT THE SITE ARE SUCH THAT MOST OF THE MUD AND SEDIMENT ARE NOT REMOVED BY VEHICLES TRAVELING OVER THE GRAVEL, THE TIRES SHOULD BE WASHED. WASHING SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO A SEDIMENT TRAP OR OTHER SUITABLE DISPOSAL AREA A WASH RACK MAY BE USED TO MAKE WASHING STONE MORE CONVENIENT AND EFFECTIVE.



5 TEMPORARY STREAM CROSSING
NOT TO SCALE



- NOTES:**
- RIP RAP AND GEOTEXTILE ALONE SHOULD NOT BE USED ON SLOPES GREATER THAN 2H:1V.
 - ON SLOPES BETWEEN 2H:1V AND 1.5H:1V RIP RAP MAY BE BEDED IN 6" OF #57 STONE. CONSULT ENGINEER PRIOR TO INSTALLATION.
 - THICKNESS OF RIP RAP (T) SHOULD BE NO LESS THAN 1.5 X D50 (APPROXIMATELY 21" FOR CLASS II).
 - DEPTH OF THE TOE SHOULD BE APPROXIMATELY 1.5 X THICKNESS (APPROXIMATELY 30" FOR CLASS II).
 - RIP RAP SLOPE PROTECTION IS MODIFIED FROM VDH&T AND NDEQ LAND QUALITY SECTION EROSION AND SEDIMENT CONTROL DESIGN MANUAL.

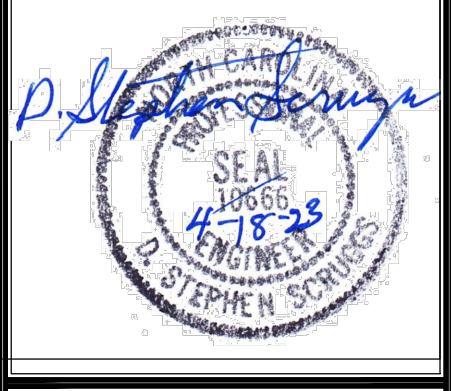
6 CROSS SECTION DETAIL STREAM BANK
NOT TO SCALE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations. This approval of this electronic document is only valid if the document has not been modified and the digital signature below is valid:
CITY OF RALEIGH
DEVELOPMENT APPROVAL

MAINTENANCE NOTES:
INSPECT TEMPORARY STREAM CROSSINGS AFTER RUNOFF-PRODUCING RAINS TO CHECK FOR BLOCKAGE IN CHANNEL, EROSION OF ABUTMENTS, CHANNEL SCOUR, RIP RAP DISPLACEMENT, OR PIPING. MAKE ALL REPAIRS IMMEDIATELY TO PREVENT FURTHER DAMAGE TO THE INSTALLATION.

NO.	REVISIONS	DATE	BY
1	REVISED DETAIL 6 PER ADDENDUM #2	4/18/23	CJP

PROJECT ENG.	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
DSS	DSS	CJP	MCM	UCT



AECOM
AECOM Technical Services of North Carolina
5438 Wade Park Blvd., Suite 200
Raleigh, North Carolina 27607
Telephone (919) 461-1100, FAX (919) 461-1415
www.AECOM.com
NOBELS LIC. NO. F-0342

SHEET TITLE:
EROSION & SEDIMENT CONTROL
DETAILS I
DATE: 4/18/2023 SCALE: NONE

PROJECT:
2017 AERIAL SEWER REPLACEMENT PROJECT
WS-2014-42
RALEIGH, NORTH CAROLINA

ISSUE:	SHEET I.D.
ISSUED FOR CONSTRUCTION	CU-504
AECOM PROJECT NO. 60533600	12 OF 23