



NOTICE OF RFP MODIFICATIONS-ADDENDUM NO. 3

Emergency Watershed Protection-Stream Clearing & Snagging Services and Streambank Stabilization

RFP# 37-03-5038

Pender County Planning and Community Development
805 South Walker Street
Burgaw, NC 28425
Phone: 910-259-1202
07/28/2021

To: All Respondents Replying to Request for Proposal (RFP) No. 37-07-5038

RFP Name: EWP-Stream Clearing & Snagging and Streambank Stabilization

RFP Original Date: 07/06/2021

RFP Original Posting Date on Pender Co. website: 07/06/2021

Subject: Issuance of Addendum No. 3-Access to Plans & Specifications and RFP Submittal Deadline Extended

Issuance Date of Addendum No. 1: 07/13/2021

Issuance Date of Addendum No. 2: 07/27/2021

Issuance Date of Addendum No. 3: 07/28/2021

Modifications to RFP:

1.Plans & Specifications-A digital set of Plans & Specifications (6 sheets) and the Scope of Work (SOW) detailing the work described for the EWP projects included in this RFP are posted on the Pender County Website. For any bidders without internet access, you may contact the designated Point of Contact listed below to find out how to obtain a plan set:

Daniel Adams/Pender Co. Floodplain Administrator

Phone: 1-910-259-0231

Email: dadams@pendercountync.gov

2. Extension of Bid Submittal Date-The deadline for bidders responding to this RFP has been extended by two days. By this announcement, the revised Bid Submittal date is now **Friday 08/06/2021 by 4:00 PM**.

***Bidders are reminded that each of the three Addenda issued for this RFP must be acknowledged in writing, dated, and noted by the bidder on Attachment A: Proposal Form, Item D. Addenda. This required form must be completed and submitted along with other required forms specified in the RFP to assure the submittal is complete.

Re-scheduled date for Site Walks/Inspection: 07/22/2021 at 8:30 AM

Deadline for Respondent's Questions: 07/26/2021 by 3:00PM

Deadline for County Response to Questions: 07/29/2021 by 5:00PM

Deadline for Respondent's RFP Submittal: 08/06/2021 by 4:00PM

**Pender County North Carolina
USDA Emergency Watershed Protection
Stream Clearing & Snagging Services and
Streambank Stabilization
RFP No. 37-07-5038**

**Addendum 3: Plans &
Specifications**

July 28, 2021



EXTENDED Deadline for Submittal of Proposals: Friday, August 6, 2021 at 4:00PM

Sole Point of Contact for Communications Regarding this RFP:

Daniel Adams, CFM- Floodplain Administrator

Phone: 910-259-0231 | Fax: 910-259-1295 | Email: dadams@pendercountync.gov

SECTION 1: INTRODUCTION

The Pender County Planning & Community Development Department (Pender County) seeks to perform Stream Clearing & Snagging, Debris Removal, and Streambank Stabilization projects in designated stream locations throughout Pender County. The primary responsibility of the Contractor will be to perform stream clearing, snagging, woody debris removal, disposal, and streambank stabilization in identified locations of drainage channels in watershed. The proposed work will be conducted in specified stream segments under the supervision of the Pender County Planning & Community Development Department and their designated Construction Field Representatives (CFRs). The purpose of the proposed work is to improve drainage resulting from woody debris deposition caused by Hurricane Florence in September of 2018. The contractor will be tasked with implementing the proposed grant work scope and meeting the requirements developed under the Emergency Watershed Protection (EWP) Program. The proposed work shall be funded in part by the US Department of Agriculture (USDA) and Natural Resources and Conservation Service (NRCS) in a grant identified as Contract # 19-091-4002. The EWP grant was awarded to the County to perform the proposed work in such a manner that reduces imminent threat to life and loss of property in Pender County. The services described in these Plans & Specifications may be expanded, modified, or altered by the County in order to accomplish the USDA emergency watershed protection goals defined in the Grant. Any contract issued by the County resulting from an RFP will be a contract of convenience administered for the sole benefit of Pender County.

The Scope of Work to be accomplished by this USDA Grant involves two tasks. The two tasks consist of differing scopes of work that cover restoration of a total of 35 sites through the County watershed. Task 1 includes 31 sites slated for debris clearing and snagging as shown in Table 1, attached. Task 2 includes four streambank stabilization projects that are described in Section 3: Scope of Work in the RFP on pages 23 to 24, and herein. All 35 of the sites are described further in copies of the USDA Disaster Survey Reports (DSRs) uploaded to the Pender County Website. The proposed work addressed in these Plans & Specifications is summarized as follows.

Task 1: Woody Debris Clearing, Snagging, and Removal- (31 Sites; See Table 1)

Task 2: Streambank Stabilization (4 Sites-see below)

DSR No. 5038-047/Hampstead 1;
DSR No. 5038-048/Hampstead 2;
DSR No. 5038-049/ Hampstead 3; and
DSR No. 5038-051/ Hampstead 5

The two tasks shown above cover a total of 35 project sites located throughout the County. In addition, Section 3-Scope of Work of the RFP describes the methods proposed

for Task 1 and 2 in detail. The above four stream bank stabilization sites will be performed jointly with the clearing and snagging work scope scheduled to occur at these same locations.

SECTION 2. GENERAL INFORMATION

The RFP describing the proposed Scope of Work to be performed under this USDA contract was advertised for procurement on the Pender County Website July 7, 2021. This procurement was open and competitive during the specified period allowed for public bidding by all interested qualified firms. The RFP as advertised complies with procurement requirements specified by 2 -Code of Federal Regulations. The details of the RFP were available for viewing on the Pender County Government website at www.pendercountync.gov and was titled *Emergency Watershed Protection Stream Clearing & Snagging and Streambank Stabilization Services*.

Bidders who responded to this RFP, were advised to follow all instructions carefully and exactly as directed. Bidders were advised not to modify or deviate the format, quantity, or content of the Bid Schedule in any way. All questions or inquiries for the RFP or this set of Plans & Specifications should be directed to:

Daniel Adams, CFM- Floodplain Administrator
Pender County Planning and Community Development Department
Burgaw, NC
Phone: 910-259-0231
Fax: 910-259-1295
Email: dadams@pendercountync.gov

All RFP submission requirements, evaluation criteria, general requirements, insurance, bid bond, performance and payment bond, and all other details related to the selection and anticipated performance of any selected contractor are referenced in the RFP dated July 6, 2021 and are incorporated in these Plans & Specifications by this reference. See details found in the published RFP for further information. Additionally, Plans & Specifications containing the details for completing the four stabilization projects (DSR No. 5038-047, 048, 049 and 051 are found in the supplemental plan set entitled Plans & Specifications-USDA Emergency Watershed Protection, DRS Nos. 5308-047, 048, 049, and 051, Stream Bank Stabilization.

The Bid Schedules submitted for projects covered by these two tasks and include unit rate costs for each as follows:

Task 1: Woody Debris Clearing, Snagging, and Removal: task will be provided by the contractor on a “per linear foot” basis. The unit rate offered in the Bid Schedule was an “all-inclusive rate,” and shall not be increased or changed for any reason other than changes requested or approved by the County. The unit rate includes, at a minimum, the following items, but is not limited only to the following: mobilization/demobilization; labor; labor wages; taxes; federal/state withholdings; materials; equipment; specialized tools; rental equipment, general tools, or goods

of any kind; vegetative waste disposal: fuel/oils; expendables; subsistence; hotels, housing, or any other lodging costs; any insurance costs or premiums; performance or bid bonds; licensing/registrations; medical services; hospitalization; emergency services; environmental fees; permitting fees; inspection costs; or vehicle use or costs; boats; barges; ladders; mats and matting; erosion control devices, silt screens or curtains; or any tools associated with stream clearing or debris removal. Mobilization and de-mobilization cost will not be compensated as a direct cost and should be included in the all-inclusive unit rate prescribed by the Bid Schedule.

Task 2: Streambank Stabilization: scope of work for designated for four sites and shall be provided on a unit rate basis with a **lump sum total not to be exceeded** for each DSR. The unit rates offered by the contractor in the Bid Schedule shall be an “all-inclusive rate,” (as stated above for Task 1) and shall not be increased or changed for any reason other than changes requested or approved by the County for additional or fewer quantities.

- Services provided by contractors in response to the requested services outlined in the RFP shall only be paid per the unit rate costs shown in the Bid Schedules contained in Attachment C: Bid Schedule.
- The unit rates provided in Attachment C: Bid Schedule shall also be applicable to any additional work that may be requested by the County beyond the scopes which have been specified in this RFP. If the County reduces scope or removes any of the work scope items from the Scope of Work advertised for this bid, such costs will be deducted at the same unit rate described in Attachment C: Bid Schedule.
- The County does not guaranty any specific minimum or maximum quantity of work to be awarded as a result of issuance of a contract. The County may alter, add, delete, remove, or modify the Scope of Work in any manner that is determined to be in the best interest of the County. The contractor shall be authorized to perform work based on issuance of a Task Order for a specific scope of work at a specific not-to exceed cost.

Contractors are cautioned not to trespass across any private properties or easements that are not part of the subject project or who have not submitted executed Right-of-Entry and Hold-Harmless Agreements authorizing entry by Pender County. Any contractor or person visiting the referenced project sites un-escorted by an authorized County representative, will be entering at their own risk, will be trespassing, and will be subject to any legal consequences that may ensue.

The contractor(s) selected to perform work specified in these Plans & Specifications must submit a timeline/schedule forecasting or visually illustrating the anticipated dates of milestone completion, progress, and final completion of the advertised scope of work. The timeline/schedule must be submitted for review and approval by the County prior to commencement of work.

The County may award a contract to one or more offerors from all proposals submitted. The County will determine the lowest apparent bidder who is deemed to be the most qualified and best. The County does not guaranty any specific minimum or maximum quantity of work to be

awarded to any contractor as a result of issuance of a contract. The County may alter, add, delete, remove, or modify the Scope of Work in any manner that is determined to be in the best interest of the County. The contractor shall be authorized to perform work based on issuance of a Task Order for a specific scope of work at a specific not-to exceed cost. Regardless of the number of contractors selected and awarded a contract (including Task Orders to perform), each contractor shall perform the work scope included in these Plans & Specifications, including any other requirements set forth in the RFP, and per any issued Task Order.

Below is the general Scope of Work required to perform Task 1 and Task 2 described above:

SECTION 3: SCOPE OF WORK

1. GENERAL SCOPE OF WORK FOR TASK 1

Task 1-Woody Debris Clearing & Snagging and Removal

The general scope of work shall consist of clearing, snagging, and removal of wood and/or woody debris from designated streams and channels throughout Pender County. Most of the wood and woody debris is a result of hurricane force winds experienced during Hurricane Florence in September of 2018. The purpose of the clearing and snagging work is to “cleanup” designated stream areas and improve overall drainage by removal of temporary block points created by falling woody debris. The debris clearing and removal will allow streams to flow more freely without such obstructions resulting in improved drainage. The scope of work will include: snagging, clearing of fallen trees, logs, stumps, limbs, brush, tops, rubbish, and any other woody debris deposited in and adjacent to the specified streams channels. The specified sites that will be restored under this work scope are identified by location, stream length, and DSR number on the attached spreadsheet entitled “Table 1-EWP Contract 5038 Scope of Work”. Maps are also included in the DSRs showing the approximate stream alignments and locations that are scheduled to be addressed under this contract. The work scope for this Task shall be performed in accordance with the specifications outlined in the following documents:

- (1) Natural Resources Conservation Service, Conservation Practice Standard, “Clearing and Snagging”, Code 326, May 2016
- (2) Natural Resources Conservation Service, Conservation Practice Standard, Obstruction Removal”, Code 500, July 2019
- (3) Natural Resources Conservation Service, Conservation Practice Standard, Streambank and Shoreline Protection, Code 580, January 2020
- (4) “Incremental Effects of Large Woody Debris Removal on Physical Aquatic Habitat’, Technical Report EL-92-35, Smith, Roger H., US Army Corps of Engineers and USDA Agricultural Research Service
- (5) “Guidelines for Hurricane/Tornado Cleanup in Riparian Buffer,” North Carolina Division of Water Resources, August 5, 2020

This bid item consists of the removal and disposal of woody stream debris within and adjacent to the reaches described below and the revegetating of disturbed areas. Debris required to be

hauled “off-site” shall be transported only to County approved disposal sites that are permitted by the NC Division of Waste Management. Debris must be separated by woody, construction and demolition, white good items, and tires prior to placement in a permitted landfill. Any sediment that will be removed from project sites shall also be transported to the approved permitted LCID, CDLF or other State permitted facility, as approved by the County. Sites shown in Table under the heading of 326-Clearing and Snagging are anticipated to be performed by “Hand Work” only. Sites identified in Table 1 under the heading 500-Debris Removal may involve use of heavy equipment to facilitate debris operations. For these projects, the cost of heavy equipment and other resources needed to perform the work should be included in the unit rate in the Bid Schedule.

Measurement and payment shall be by Method 1.

Note: The total estimated length of stream clearing and snagging is approximately **+ 24,430 linear feet (LF)** as defined in Table 1 of this RFP. The actual footage for clearing and snagging performed under this contract may change, more or less than the estimated length stated. The County reserves the right to issue Task Orders that may include more or less quantities of clearing and snagging. There is no guaranty expressed or implied that any contractor will be awarded or authorized to perform any set quantity or length of stream clearing, or issued a Task Order to perform any work scope at all.

2. SITE ACCESS

Access to each DSR site shall be performed **ONLY** by the routes or access points designated by the County or the County’s Field Representative (CFR) or Planning Department representative. If the Contractor identifies potential alternate routes or access points, they should notify the CFR of the proposed alternative routes for approval by the CFR in writing. Alternative routes may only be utilized when written approval from the County is granted. Use of un-approved access routes by the contractor for any reason will be grounds for dismissal and termination of contract.

3. LIMITS OF WORK

The limits of the stream clearing and snagging work for each DSR site are shown in each of the provided NRCS Disaster Survey Reports (DSRs) provided to contractors and Table 1 and **shall not** exceed the lengths and geographic points shown in the drawings/maps contained in Table 1. Upstream and downstream clearing lengths are tabulated in Table 1, a spreadsheet attached to this plan, and must be adhered to at all times. The limits of the designated stream debris removal areas are referenced in Section 3, Item 4 of this specification and on the attached drawings. Contractors will be paid on actual quantities that are cleared and as determined by the CFR upon progress and final inspections.

4. CLEARING, SNAGGING, AND DEBRIS REMOVAL

Fallen trees, limbs, dislodged stumps, dislodged brush, rubbish, and any foreign debris within or across the cross section of the channel and designated adjacent areas shall be removed and placed in the designated disposal area. Trees severely undercut by stream bank erosion and hazardous severely leaning trees (greater than 30 degrees) must be cleared snagged, and removed. Also, trees adjacent the channel that appear imminent to fall, and any other trees, woody debris, or stumps marked by the CFR, shall also be removed, and placed laterally at least 20 feet in the disposal corridor area. Excavation of soil or removal of sediment deposits shall not be performed under this work scope of contract.

Unless otherwise approved by the CFR, trees designated for removal shall be cut off as near to the ground surface as conventional tools or field conditions will permit. For leaning trees where the root system of the tree is not exposed, the trunk of the tree shall be cutoff as described above and the stump shall be left in place. For hazardous trees that are leaning or those already down with partially exposed root systems (i.e., hinged on one side), the trunk shall be cutoff as described above and the stump shall be set upright and left in place. Where the stump is completely dislodged, it shall be removed and placed in the disposal area. Any stump or root mass located on the channel bank or bottom that has become unstable or that obstructs flow in the channel as a result of Hurricane Florence, shall be removed and placed in the disposal corridor. Trees that have been “snapped”, are not leaning, have a strong root structure, and pose no threat to the channel shall be left undisturbed, provided the contractor does not need to remove the tree for access purposes to the work zone. Naturally leaning trees with apparently undamaged root systems and other natural, undamaged vegetation shall remain in its natural condition and not be removed.

Removal of standing trees outside of the designated debris removal area is limited to the cutting of severely damaged trees or hazardous trees leaning across the channel and other trees as needed to gain access for equipment to points of channel blockage. Approval by the CFR shall be obtained prior to cutting any “healthy” tree for equipment access purposes. Unless otherwise marked, access for mechanized equipment shall be limited to one side of the channel. Access to the channel shall generally be perpendicular to the channel with precautions taken to protect most producing and stream canopy trees. Dead trees that provide den habitat and are determined to pose no hazard to the channel shall be protected. Heavy equipment working on wet soil conditions must operate from mats or use other measures as approved by the CFR to minimize rutting or soil disturbance.

Disturbance of the channel bottom and banks, and equipment access areas shall be held to the minimum necessary to allow the construction equipment to remove the debris. Trees shall be felled in such a manner as to avoid damage to trees left standing or existing structures and with due regard for the safety of persons and property.

5. DISPOSAL

In general, Clearing & Snagging of natural woody and other vegetative debris shall be disposed adjacent to streambanks, where possible, in an assumed 20ft. wide disposal corridor, measured left or right of the top of the bank of each watercourse in undeveloped areas.

This disposal method shall apply for all work except in locations where the stream is located in improved areas such as cropland, open land, residential areas, yards, parks, utility easements, ingress/egress easements, highway/roadway rights-of-way, regulated riparian buffer zones, other watercourses, or upon any property that the owner has specifically denied the County the Right-of Entry (ROE). Other areas where woody debris shall be removed include those properties where the existing undisturbed woodlands are too narrow to properly dispose of the debris in a sightly manner. Debris shall also not be placed on any nature or hiking trails, sewer line corridors, or railroad rights-of-way, natural gas easements, power line easements, or any other kind of utility easement. Debris shall not be placed in tributaries or side ditches of any watercourses being maintained by this contract. The CFR will assist the contractor in determining the location of acceptable disposal corridors. Woody debris generated from any DSR location shall not be temporarily placed on any private property, nor "piled up" in a staging area that is not an approved disposal corridor to facilitate haul-off or removal at a later date.

In no case, shall cleared woody debris be disposed on private property where such owner has refused Right-of-Entry or denied the County the right to enter their property to complete work specified in these plans.

In cases, offsite disposal of woody debris is required including those areas identified specifically shown in Table 1. In these instances, woody and vegetative debris shall be removed and disposed offsite at permitted wood waste landfills or permitted landfills that are allowed to receive wood waste products. **This method of offsite disposal includes those DSRs where this disposal method is designated as "500-Debris Removal" as shown in Table 1.**

For debris disposed in the onsite 20 ft. wide corridor, it shall be placed in such a manner in the corridor to prevent potential movement of the woody materials back into the floodway by future highwater conditions. Any temporary channel or drain-way crossing that is fashioned by the contractor for temporary access, it shall be immediately removed, in all cases, prior to revegetating disturbed or denuded areas. The contractor shall leave openings or gaps in debris piles to allow lateral flow of future floodwaters back into the stream or watercourse. Any alternative disposal methods proposed by the contractor must be presented to the County or it's CFR and in writing for written approval/authorization, prior to implementing any disposal method that deviates from those identified above.

6. ENVIRONMENTAL REQUIREMENTS

Where the use of heavy equipment is allowed, equipment shall operate adjacent to the stream and not within the stream unless prior approval is granted by the CFR. Crossing a stream to gain access to the opposite bank is permissible, so long as no fill material is place int eh stream to do so. The CFR shall select crossing sites to minimize damage to the streambank and aquatic habitat.

Should an area of the channel be encountered which is affected by beavers, the beaver dam shall not be disturbed. The CFR should be notified of the finding and the exact location for approval in writing by the CFR prior to continuing further debris removal work in the impacted area.

Equipment shall be checked daily and maintained routinely as described by the manufacturer to prevent fuel, oil, and other types of lubricant spills. Refueling, repairs, and lubrication shall be performed at safe distances in upland areas at least 50 ft. away from the stream. Refueling stations should be positioned in such a manner topographically that in the event of a spill, petroleum will not flow down gradient and into the nearby watercourse. Temporary containment shall be implemented by the contractor to contain any fuel or petroleum release. Should fuel leaks, oil leaks or hydraulic pipe rupture occur during debris removal operations, the Contractor shall immediately remove the equipment to a safe area (greater than 50 ft. away from stream) and take prompt action to minimize damage and safeguard the site. The contractor shall immediately report the discharge to the CFR and in accordance with the Special Provisions of this contract shall comply with all provisions and requirements of the North Carolina Oil Pollution and Hazardous Substances Control Act. The NC Department of Environmental Quality (DEQ) shall be notified immediately of all reportable spills in public trust waters regulated by State and Federal agencies..

The Contractor shall perform all heavy equipment maintenance and repairs offsite of the DSR project sites. No DSR site shall be used for storage and/or disposal of deleterious substances or chemical pollutants such as hydraulic oils, drained lubricants, transmission oils, greases, gasoline or other petroleum fuels, solvents, cleaning agents, surfactants, acids, etc. or products produced from a by-product of performing this work. Washing, fueling, or servicing of equipment shall be avoided to prevent spillage or wash water from entering any nearby watercourse.

For those DSR sites where "offsite disposal" of vegetative debris is required, or where it is impractical due to residential settings, the vegetative debris must be removed from the project site. The debris shall then be transported and disposed at a North Carolina Division of Waste Management (NCDWM) permitted Land Clearing and Inert Debris (LCID) or Construction and Demolition Landfill (CDLF). Only permitted LCID's or CDLF's in good standing with the NCDWM located in neighboring counties including Pender, Onslow, Jones, Brunswick, Columbus, Sampson, Duplin, or New Hanover Counties shall be utilized. The facilities must be permitted and authorized to receive such waste per the NC Division of Waste Management requirements and currently operating without administrative constraints, active violations, or administrative orders. No vegetative waste shall be removed and/or disposed at any location without prior written approval from Pender County. Approval of any proposed waste disposal site shall be obtained from Pender County at least 7 days prior to utilizing. DSRs provided in the RFP will indicate those sites "offsite disposal" is required.

The contractor shall also comply with the Clean Water Act (amended in 1972) and US Army Corps of Engineers policies, laws, regulations, and requirements governing destruction or adverse impact to jurisdictional wetlands or Federal waters. These waters include but are not limited to waters defined under Section 404, 401 and Section 10 of the Clean Wat Act.. Any activity

performed by the contractor during the implementation of this work scope that constitutes “dredging and/or filling” shall be prohibited during work performed under this RFP.

7. SPECIAL REQUIREMENTS

The Contractor shall exercise extreme care while working in the areas of existing lawns, driveways, roads, structures, utilities, railroads, drainage ditches, any other improvements, and cropland. The Contractor shall be responsible for the prompt repair or replacement of any such improvements damaged by their operations or any activity performed to complete this work scope.

In the event that fences on private or public property must be temporarily removed for access, the contractor shall first consult with the CFR for approval. If approval is granted by the CFR, the contractor shall remove the fence with care and the no damage to the fence. The fence shall be reinstalled back to the original condition and location immediately after construction access is no longer needed from this access point of the DSR site.

In areas identified in Section 3, Item 13 of this specification, or in the project details as “Hand Work Only”, only portable winches, chainsaws, hand-held tools, block and tackle, cables, log chains, etc., and manual labor will be allowed unless otherwise approved by the CFR. Where the haul off of debris is required in “Hand Work Only” areas, wheeled vehicles for loading and hauling the debris off-site will be allowed at specified selected location(s) as designated by the CFR.

The Contractor shall be responsible for complying with all applicable requirements of the North Carolina Department of Transportation's (NCDOT) Manual on Uniform Traffic Control Devices (M.U.T.C.D.) when work is performed on public right of ways. The Contractor shall contact the Division I Engineer (Jeff Garrett) in Hampstead, NC to gain approval before operating and/or performing work on any NCDOT highway or property. When equipment or personnel are operating on public right-of-way, flag men shall be stationed to warn oncoming traffic of imminent road hazard or congestion. Proper use and construction of waning and road signs shall be in place at all times during debris removal operations on or adjacent to NCDOT roadways. Any debris or sediment placed on NCDOT right of ways or property as a result of debris removal operations must be removed from roadways or property within 24 hours. Residue deposited on roadways may be removed by mechanical sweeping machines, air blowers, or by manual sweeping methods. The Contractor shall be responsible for implementation of all measures required in this section and any other requirement by NCDOT.

8. REVEGETATION

For areas where groundcover surfaces are denuded due to debris removal operations or equipment access into work sites, revegetation shall be performed. Prior to revegetating, any ruts or other surface irregularities resulting from this operation shall be smoothed and the ground surface shall be returned to its original elevation and degree of uniformity as directed by the CFR. Addition of soil fill volume may be required where the existing surface has been compacted to restore ground surface to its original condition. Seeding and mulching shall be performed on a

daily basis as the stream restoration and debris removal work is completed. If any work area is re-disturbed by the Contractor after it has been previously seeded and mulched, the contractor shall be responsible for reseeding and remulching the disturbed areas. Seed, fertilizer, and mulch shall be uniformly applied at the following rates per 1,000 square feet. The below seeding schedule shall be used on all disturbed or denuded areas. However, this specification is subject to change based on recommendations from the local USDA/NRCS Field Representatives prior to the time of project commencement:

Specifications for all areas EXCEPT residential lawns/yards, parks, or improved areas:

Seeding date: September 1 - March 31

- 1.7 lbs. Kentucky 31 Tall Fescue
- 1.1 lbs. Pensacola Bahia Grass
- 12 lbs. 10-20-20 Fertilizer
- 70 lbs. Hay or Small Grain Straw Mulch

Seeding date: April 1- August 31

- 1.1 lbs. Kentucky 31 Tall Fescue
- 1.7 lbs. Pensacola Bahia Grass
- 12.0 lbs. 10-20-20 Fertilizer
- 70.0 lbs. Hay or Small Grain Straw Mulch

Specifications for residential lawns/yards, parks, or improved areas:

Seeding date: January 1 - December 31

- 1.1 lbs. Kentucky 31 Tall Fescue
- 2.0 ounces Centipede
- 12.0 lbs. 10-20-20 Fertilizer
- 70 lbs. Hay or Small Grain Straw Mulch

Should locality, climate and/or ground conditions warrant, the CFR may alter the planting dates to an earlier or later period, seed mix and quantity, or mulch requirements from those shown above. Any change to the seeding-mulching specifications is subject to the approval of the County or the CFR. Also, the above proposed seeding specifications could be changed upon the recommendations of the USDA/NRCS contract personnel providing construction oversight of these projects. The contractor shall install the USDA/NRCS recommended final seeding specification if that specification deviates from the schedule shown above.

9. EQUIPMENT REQUIREMENTS

For work in locations that requires heavy equipment, hydraulic excavators shall be low ground pressure (LGP) machines, and equipped with a stationary or mechanical thumb attachment or grapple attachment. Rubber tire skidders shall be equipped with low ground pressure, high floatation tires.

All equipment used by the contractor should be inspected daily to determine if maintenance is needed and whether there are any leaks of petroleum or deleterious substances. An equipment log should be maintained by the contractor and daily entries of equipment condition or repairs should be noted. The CFR may require periodic field review of the equipment maintenance log. Equipment must be in good working condition upon arrival to commence work and prior to mobilization to any project site

For each work two-way communication capabilities shall be maintained at all times. This requirement may be met with cellular phones or two-way battery operated radios. Radios shall have a broadcast capability of a minimum of 5 watts and shall operate on a frequency of 151.625 MHz on the FM band. Alternate frequencies may be used subject to the approval of the CFR.

10. MEASUREMENT AND PAYMENT

Payment for completed work shall be made by the following method:

Method 1

Measurement for stream clearing, snagging and debris removal will begin at the end of the culvert or edge of the bridge on each side of the roadway and go either upstream or downstream as determined by the direction of the work. The actual end point will be as determined by the CFR. Distances shown on the drawings are estimates only and will not be solely used for the purpose of determining payment. Distances shall be continuous from each beginning point to each end point, with the exception of areas that involve beaver dams. In areas where beaver dams are encountered, a "non-work area" will be flagged by the CFR, and the length of this section will be deducted from payment from the total length of the cleared section of stream. Measurement and payment is made to the nearest linear foot for each segment of stream debris removal and per the unit rate indicated in the executed contract with Pender County. Payment shall be considered as "all inclusive" and full compensation for: all labor, equipment, tools, materials, supplies, seeding, mulching, mobilization, demobilization lodging, subsistence, subcontracted services, subcontracted equipment, subcontracted labor, insurance bonds, or any other costs or expenses necessary and/or incidental for the contractor to complete the work as described in this RFP.

For payment of stabilization projects, measurement and payment will be made using Method 1 and will be based on approved unit rates, and for the actual quantities of material provided by the contractor and approved by the CFR.

11. HEALTH & SAFETY/OSHA

Prior to commencing work, the contractor shall prepare a Health & Safety Plan (HASP) describing all measures that will be implemented on EWP projects to ensure worker health and safety. The HASP shall describe the minimum needed protective clothing, gear, and wares (i.e. hand protection, hearing protection, head protection, clothing, eye protection, foot protection, etc.) and other protective outfitting needed by workers while undertaking specific tasks onsite. The HASP shall identify each critical work task that is anticipated by the contractor to be conducted

on each work site, the equipment to be used, and the safety/risk management measures that will be implemented by the contractor to prevent accident or injury to workers. Since the proposed work is anticipated to be performed in or adjacent to State or Federal waters, safeguards shall be identified in the HASP to ensure worker safety in or around open waters.

The HASP shall be reviewed and acknowledged by signature of each site employee of the contractor, subcontractors, vendors, and any other entity or person that will work or enter onto the proposed work sites to show all are informed of HASP provisions and requirements. Any person entering upon the work site **must** review the HASP and sign off with their acknowledgement and understanding of its content. The proposed HASP must be submitted to the Sponsor for review and approval, at least 10 days prior to mobilization or commencement of work on any site. The contractor shall include provisions in the HASP for conducting mandatory daily tailgate safety meetings prior to beginning work each day. The safety meetings shall be conducted by a qualified contractor designated Health & Safety Officer (HSO). The contractor shall identify their designated HSO who will be onsite and in responsible-charge of Health & Safety each day of work. All employees, subcontractors, vendors, or any other party present onsite on behalf of the contractor shall attend the H&S safety meeting each day, or receive a safety briefing before entering the site. The daily safety meetings shall be documented by written record with a signature by every person attending including meeting start and stop time, and topic/points discussed. A Sponsor representative shall also be in attendance at each daily safety tailgate meeting. A copy of the meeting attendees list shall be provided to the Sponsor daily. The contractor shall keep a copy of the HASP onsite for review for the duration of each project. The contractor shall make the plan available for review (and written acknowledgment) for anyone entering the site.

OSHA Compliance

The contractor is required to perform all work activities in compliance with all OSHA standards and provisions in order to provide and maintain safe working conditions for all workers at all times on each EWP site. Contractors shall perform their work in accordance with OSHA regulations, and the Contract Work Hours and Safety Standards Act (40USC 327-330) as supplemented by Department of Labor Regulations cited in Title 29 CFR Part 5. Any work to be conducted on any site that is governed under Title 29 CFR 1926, Subpart P, Appendix A pertaining to Selection of Protective Systems; Sloping; Shoring; and Benching rules and regulations including OSHA 1926.652, Subpart P, Excavations (a) through 1926.652(g) shall be identified in writing to the Sponsor prior to commencement. The proposed measures to comply with these requirements shall be included in the notice to the Sponsor for review. Notice to the Sponsor shall include a description of the anticipated tasks to be undertaken to comply with these OSHA requirements, the measures, timeframe, and duration that the tasks taken to comply will be ongoing during the project.

12. OTHER PLANS AND SUBMITTALS

The County may require the contractor to submit other plans, submittals, daily reports, logs, or documentation that is deemed necessary for complying with all USDA contract terms and

conditions for payment or program adherence. The contractor agrees to provide the County with any submittals required by USDA that may not be identified in this RFP.

13. ITEMS OF WORK AND CONSTRUCTION DETAILS

There are two primary items of work to be performed in conformance with this specification and the construction details. The scope of work to be performed is divided into the following tasks:

- x Task 1-Stream Clearing & Snagging
- x Task 2-Streambank Stabilization

Last, there are several projects sites that require woody debris to be removed from the location of where it was generated and disposed at “offsite” at permitted disposal facilities. The cost for offsite debris removal/disposal and transportation shall be included in the unit rate costs provided in the Bid Schedule.

2. GENERAL SCOPE OF WORK FOR TASK 2

TASK 2-Streambank Stabilization

Streambank stabilization shall be performed at four of the following specified EWP sites. The stabilization measures anticipated for each proposed site varies depending on the scope of work developed by USDA during their site assessments/inspections which are identified in the Disaster Survey Reports for each project site. The Scope of Work for these four sites are further detailed in drawings found in the Plans & Specifications, Sheets 1 through 6 showing stabilization methods planned for each of the four locations.

The scope of work and quantities of materials are generally specified in the following description of each project. Bidders based their pricing on the scope and estimated quantities shown in the following sections. The cost to perform the work was offered as a “not to exceed” cost. Additional quantities or scope is not anticipated above or beyond those shown in the following description since these projects have been cost estimated by USDA. Contractor(s) should include only one mobilization and demobilization for each of the four projects. If stream clearing & snagging scope also corresponds to the projects shown, only one mobilization and demobilization will be paid by the County to cover both Task 1 and 2. The County will not pay for two separate mob/demobs for work at sites where both Task 1 and 2 will be performed.

The four sites requiring streambank stabilization project sites are identified as:

- 1) DSR-5038-047/Hampstead 1-Harrison Creek
- 2) DSR-5038-048/Hampstead 2-(un-named tributary)
- 3) DSR-5038-049/Hampstead 3-Old Topsail Creek
- 4) DSR-5038-051/Hampstead 5-Nixon Creek

A summary of the proposed scope of work anticipated for each of the four proposed stabilization project sites is shown below:

1). DSR-047/Hampstead 1-Harrison Creek-Hwy 210 Bridge Crossing x Provide 100 tons of NCDOT Class II Rip-rap on bank at 2H:1V slope adjacent to existing

NCDOT rip-rap on wing wall; x no geotextile underlayment required at this location x Shape and/or provide granular fill in eroded area approximately 15ft L X 20 ft. W x Re-seed and mulch less than 0.25 acres of disturbed bank

2). DSR-048/Hampstead 2-un-named tributary-Factory Rd x Provide 30 tons of

NCDOT Class I Rip-rap on bank adjacent to culvert inlet x Shape and grade 260 LF on right bank to a 2H:1V slope x Shape and grade 260 LF on left bank to a 2H:1V slope

x Provide 6 ft. W X 260 LF jute Erosion Control Blanket (ECB) from top of bank to toe of bank on left and right banks; anchor jute matting to substrate

x Seed and mulch 0.25. acres of disturbed bank and ECB

3). DSR-049/Hampstead 3-Old Topsail Creek-Country Club Rd-(Olde Pt. Golf Course) x

Provide 90 tons of NCDOT Class I Rip-rap on left bank (150 LF X 7.0ft H X 1.5 D) x

Provide 90 tons of NCDOT Class I Rip-rap on right bank (150 LF X 7.0ft H X 1.5 D) x

Shaping and grading 150 LF of left pond bank to a 2H:1V slope x Shaping and grading

150 LF of right pond bank to a 2H:1V slope x Provide geotextile underlayment from

top of bank to toe of bank (150LF X 10ft W) x Key-in geotextile fabric at top and

bottom of slope for rip-rap underlayment x Provide jute mat ECB on disturbed areas

not receiving rip-rap x Seed and mulch 0.25. acres of disturbed bank

4). DSR-051/Hampstead 5-Nixon Creek-Long Leaf Dr. to Country Club x Shape and

grade 100LF of left earthbank to a 2H:1V slope (100LF x 7.0ft W)

x Shape and grade 100LF of right earthbank to a 2H:1V slope (100LF x 7.0ft W) x

Provide ECB on left bank (100LF X 7.0ft W) from top of bank to toe of bank x

Provide ECB on right bank (100LF X 7.0ft W) from top of bank to toe of bank x

Seed and mulch 0.25. acres of disturbed bank

Measurement and payment shall be by actual unit cost rates provided in the Bid Schedule with a “not to exceed cost” for each of the four above sites. The County may elect to award a contract for all four stabilization sites, or for one or more of the sites at their discretion. No guaranty is implied or expressed that all sites will be issued to one contractor.

SECTION 3: INSURANCE

General liability insurance is required, however the Contractor is not required to carry Professional insurance or Environmental liability insurance because the nature of this work should not subject the Contractor to such activities. Additional information regarding insurance requirements of the Contractor can be found in Attachment G: Sample Contract for the Provision

of Services, Item I-15, Insurance in the RFP. A Certificate of Insurance will be required of the awarded vendor that complies with the requirements outlined in Attachment G and names the County as an additional insured.

SECTION 4: PERFORMANCE AND PAYMENT BOND

Refer to RFP for requirements for Performance and Payment Bonds. Provisions for these requirements which are stated in the RFP and are included in these Plans & Specifications by reference to the RFP.

SECTION 5: SCHEDULE

A forecast of the proposed milestones and timeline is required to be submitted by the contractor for approval by the County prior to commencement of work as stated in Section 2 above. Contractor(s) selected to perform work specified in these Plans & Specifications must submit a timeline/schedule forecasting or visually illustrating the anticipated dates of milestone completion, progress, and final completion dates of the advertised scope of work. The timeline/schedule must be submitted for review and approval by the County prior to commencement of work.

SECTION 6: GENERAL TERMS AND CONDITIONS

A. CONTRACTUAL REQUIREMENTS AND TERMS AND CONDITION

Terms and Conditions specified in the RFP will apply to any work performed to complete the work scope in these Plans & Specifications and will be incorporated into the resulting contract. Any exceptions to the requirements in the RFP or these Plans & Specifications should be addressed in writing by the offeror's prior to execution of contract with the County.

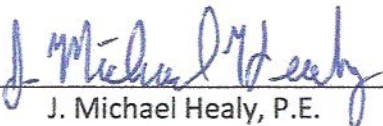
B. ENTIRE AGREEMENT

This set of Plan & Specifications, referenced attachments, the RFP date July 6th, 2021, and additional or supplementary documents incorporated herein by reference, any resulting contract, and the selected offeror's submitted proposal containing all the Terms and Conditions agreed upon by the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of this contract or any part thereof shall have any validity or bind any of the parties hereto. Work described by these Plans & Specifications shall not be modified, altered, changed, or amended unless in writing and signed by the contractor and the duly authorized representative for the County.

SECTION 7: SIGNATURES AND SEALS

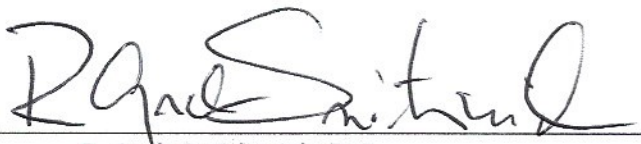
The Plans & Specifications found in this document including all drawings and plan sheets (Sheet 1 through 6) were prepared under the direct supervision of a North Carolina Professional Engineer.

CONSTRUCTION SPECIFICATIONS PREPARED AND SEALED BY:


J. Michael Healy, P.E.
Ardurra Senior Project Engineer
NC License No. 27790

6/14/21
DATE




R. Arch Smithwick, P.G.
Ardurra Senior Project Manager
NC License No. 0866

6/14/21
DATE



End of Document

County of Pender, North Carolina
Department of Planning & Inspections
USDA Emergency Watershed Protection Program
EWP Event Nos. 5038 Hurricane Florence
CONTRACT No. 10-091-4002
DRS No. 37-03-5038-047, 048, 049 & 051
Stream Bank Repair/Stabilization Sites

INDEX SHEETS

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TYPICAL CLASS I&II RIPRAP PLACEMENT DETAIL ... 5
SEDIMENT FENCE DETAIL/OUTLET STABILIZATION
STRUCTURE.....6

- DSR-047/Hampstead 1- Harrison Creek -
Hwy 210 Bridge Crossing
DSR-047/Hampstead 2 Un-named Tributary -
Factory Road
DSR-049/Hampstead 3-Old Topsail Creek -
Country Club Rd (Olde Pt. Golf Course)
DSR-051/Hampstead 5-Nixon Creek -
Long Leaf Dr. to Country Club

AFFIX NC LICENSED/PROFESSIONAL
ENGINEERING SEAL



LOCATION MAP
Project Location



PROJECT DESCRIPTION

STREAM BANK REPAIR/STABILIZATION SITES.

SPONSOR: PENDER COUNTY: PLANNING & INSPECTION DEPARTMENT

ADDRESS: 805 South Walker Street
Burgaw, NC 28425
CONTACT: Mr. Daniel Adams, CFM-Ast Dir
PHONE: 910-259-0231
EMAIL: dadams@pendercountync.gov

PLANS & SPECIFICATIONS

THESE PLANS & SPECIFICATIONS, PREPARED BY ARDURRA, SHALL BE THE FINAL DOCUMENT USED BY THE CONTRACTOR(S) TO PERFORM THE PROJECTS AS SPECIFIED. PROVISIONS CONTAINED IN THE REQUEST FOR PROPOSAL DATED JULY 6, 2021 SHALL BE INCORPORATED WITH THESE PLANS.

THE COUNTY OF PENDER APPROVALS

THE COUNTY OF PENDER SIGNATURES ON THIS PLAN SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSE AND GENERAL LOCATIONS OF THE PROJECTS. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS.

PENDER COUNTY INSPECTION & PLANNING DEPARTMENT	DATE
PENDER COUNTY MANAGER	DATE
USDA CONTRACT REPRESENTATIVE	DATE

REV NO	REVISION DESCRIPTION	SHEET(S)	INITIAL	DATE

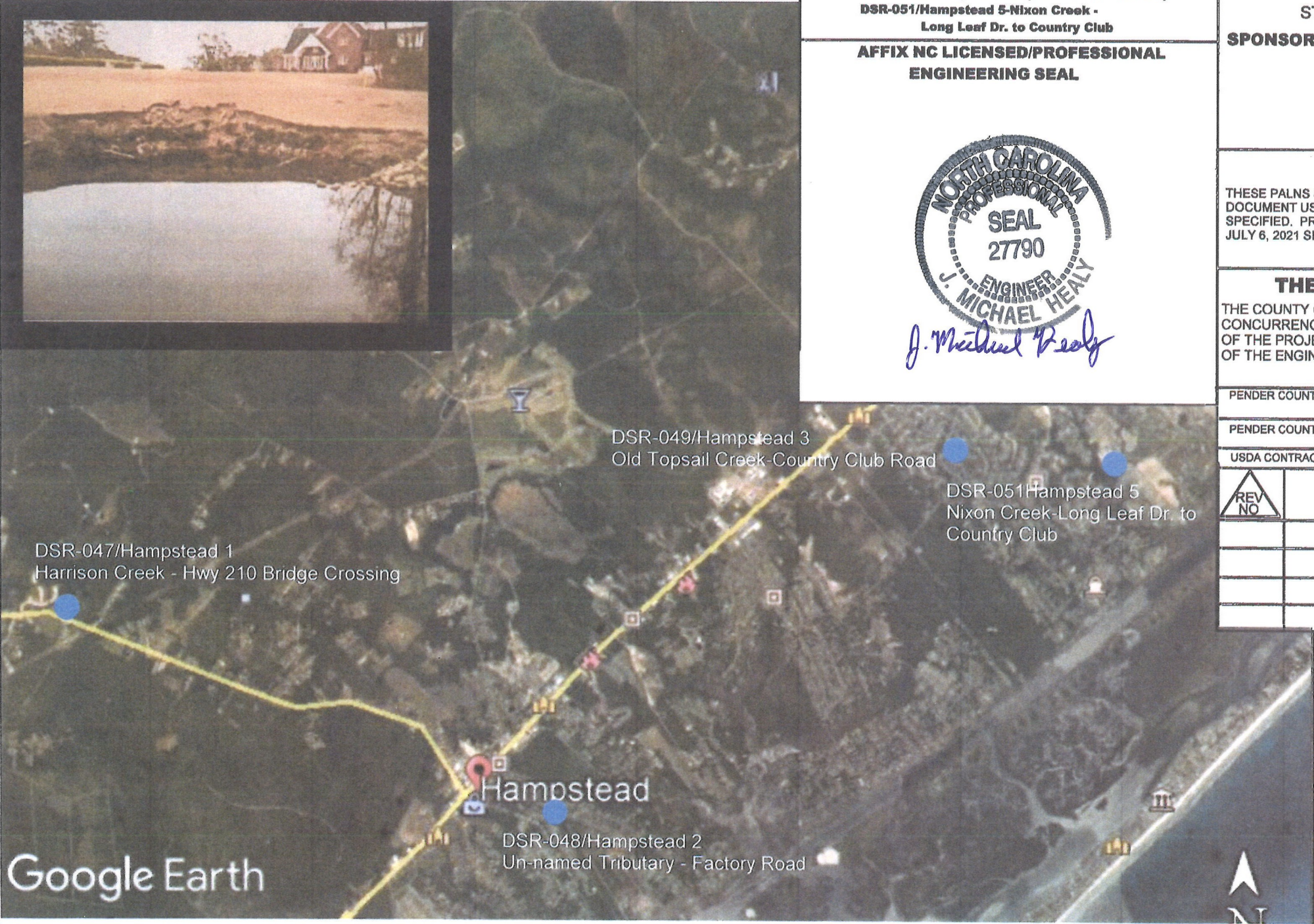
PLANS &
SPECIFICATIONS

County of Pender, North Carolina
Department of Planning & Inspections
Emergency Watershed Protection Program
EWP Event No. 5038 Hurricane Florence
DRS No. 37-03-5038-047, 048, 049 & 051
Stream Bank Repair/Stabilization



- North Carolina Offices
- ☐ Charlotte, NC
704 343 8973
 - ☐ Raleigh, NC
919 277 0494
 - ☒ Wilmington, NC
910 397 2929

TITLE
SHEET



DSR NAME: HAMPSTEAD 1

DSR #: 37-07-5038-047

SITE LOCATIONPROGRAM: EWP
WATERCOURSE: HARRISON CREEK
CROSS STREET/LOCATION: NC 210
LATITUDE: 34 22' 55.13" N
LONGITUDE: -77 45' 18.59" W

- SCOPE OF WORK:**
- SHAPE AND GRADE BANK TO A 2H:1V BANK WHERE INDICATED IN DSR-047.
 - PROVIDE 100 TONS OF NCDOT CLASS II RIPRAP ON BANK TO EXISTING NCDOT RIPRAP ON WING WALL; NO GEOTEXTILE REQUIRED.
 - SEED AND MULCH LESS THAN 0.25 ACRES OF DISTURBED BANK.



DSR NAME: HAMPSTEAD 2

DSR #: 37-07-5038-048

SITE LOCATIONPROGRAM: EWP
WATERCOURSE: Un-named TRIBUTARY
CROSS STREET/LOCATION: FACTORY ROAD
LATITUDE: 34 21' 57.08" N
LONGITUDE: -77 42' 21.43" W

- SCOPE OF WORK:**
- PROVIDING 30 TONS OF NCDOT CLASS I RIPRAP ON BANK ADJACENT TO CULVERT INLET
 - SHAPING AND GRADING 260 LF ON RIGHT BANK TO A 2H:1V SLOPE.
 - SHAPING AND GRADING 260 LF OF LEFT BANK TO A 2H:1V SLOPE.
 - PROVIDE 6 FT W x 260 LF JUTE EROSION CONTROL BLANKET (ECB) FROM TOP OF BANK TO TOE OF BANK ON LEFT AND RIGHT BANKS; ANCHOR JUTE BLANKET MATTING TO SUBSTRATE.
 - SEED AND MULCH 0.25 ACRES OF DISTURBED BANK. BANK TO TOE OF BANK (150 LF x 10 FT W)



DSR NAME: HAMPSTEAD 3

DSR #: 37-07-5038-049

SITE LOCATIONPROGRAM: EWP
WATERCOURSE: OLD TOPSAIL CREEK
CROSS STREET/LOCATION: SPRING GARDEN ROAD
LATITUDE: 34 23' 1.77" N
LONGITUDE: -77 40' 28.33" W

- SCOPE OF WORK:**
- PROVIDE 90 TONS OF NCDOT CLASS I RIPRAP ON LEFT BANK (150 LF x 7.0 FT H x 1.5 FT D)
 - PROVIDE 90 TONS OF NCDOT CLASS I RIPRAP ON RIGHT BANK (150 LF x 7.0 FT H x 1.5 FT D)
 - SHAPING AND GRADING 150 LF OF LEFT POND TO A 2H:1V SLOPE.
 - SHAPING AND GRADING 150 LF OF RIGHT POND BANK TO A 2H:1V SLOPE.
 - PROVIDE GEOTEXTILE UNDERLAYMENT FROM TOP OF BANK TO TOE OF BANK (150 LF x 10 FT W)
 - KEY-IN GEOTEXTILE FABRIC AT TOP AND BOTTOM OF SLOPE FOR RIPRAP UNDERLAYMENT.
 - PROVIDE JUTE MAT ECB ON DISTURBED AREAS NOT RECEIVING RIPRAP.
 - SEED AND MULCH 0.25 ACRES OF DISTURBED BANK.



DSR NAME: HAMPSTEAD 5

DSR #: 37-07-5038-051

SITE LOCATIONPROGRAM: EWP
WATERCOURSE: NIXON CREEK
CROSS STREET/LOCATION: LONG LEAF/COUNTRY CLUB ROAD
LATITUDE: 34 24' 4.26" N
LONGITUDE: -77 39' 19.24" W

- SCOPE OF WORK:**
- SHAPING AND GRADING 100 LF OF LEFT EARTHWORK TO A 2H:1V SLOPE (100 LF x 7.0 FT W).
 - SHAPING AND GRADING 100 LF OF RIGHT EARTHWORK TO A 2H:1V SLOPE (100 LF x 7.0 FT W).
 - PROVIDE EROSION CONTROL BLANKET ON LEFT BANK (100 LF x 7.0 FT W) FROM TOP OF BANK TO TOE OF BANK.
 - PROVIDE EROSION CONTROL BLANKET ON RIGHT BANK (100 LF x 7.0 FT W) FROM TOP OF BANK TO TOE OF BANK.
 - SEED AND MULCH 0.25 ACRES OF DISTURBED BANK. BANK TO TOE OF BANK (150 LF x 10 FT W)



**DSR
WORKSCOPES**

County of Pender, North Carolina
Department of Planning & Inspections
Emergency Watershed Protection Program
EWP Event No. 5038 Hurricane Florence
DRS No. 37-03-5038-047, 048, 049 & 051
Stream Bank Repair/Stabilization

ARDURRA
Collaborate, Innovate, Create



North Carolina Offices

- ☐ Charlotte, NC
704 343 8973
- ☐ Raleigh, NC
919 277 0494
- ☒ Wilmington, NC
910 397 2929

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AS REQUIRED DURING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT EDITION OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL MANUAL. ALL DEVICES REFERRED TO IN THESE PLANS CAN BE FOUND IN THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL MANUAL.
2. ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED AND MULCHED PER THE SCHEDULE AFTER REACHING FINAL GRADE. AREAS WHICH HAVE BEEN DISTURBED AND HAVE NOTREACHED FINAL GRADE, BUT WHICH ARE TO REMAIN UNDISTURBED FOR LONGER THEN 14 DAYS ARE TO BE TEMPORARILY SEEDED AND MULCHED PER THE NCDEQ SCHEDULE AS UPSTREAM AREAS ARE STABILIZED WITH PERMANENT GROUND COVER, DOWNSTREAM TEMPORARY DEVICES ARE TO BE REMOVED. CONTRACTOR SHALL FOLLOW THE STABILIZATION TIME TABLE INCLUDED IN THIS SET OF DRAWINGS.
3. IT IS THE CONTRACTORS RESPONSIBILITY TO PERIODICALLY INSPECT ALL SEDIMENT CONTROL DEVICES IF DURING THE COURSE DEVICES AND ENSURE THAT THEY ARE IN GOOD WORKING ORDER. AT A MINIMUM, ALL DEVICES SHALL BE INSPECTED DAILY AND AFTER MAJOR RAINFALL EVENTS. ANY DEVICE NEEDING REPAIRS SHALL BE REPAIRED WITHIN 24 HOURS.
4. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES IF DURING THE COURSE OF CONSTRUCTION THE ENGINEER OR NCDEQ INSPECTOR DETERMINES THAT THEY ARE REQUIRED.
5. SILT SHALL BE REMOVED FROM SILT FENCES WHEN THE SILT REACHES APPROXIMATELY ONE-THIRD (1/3) THE HEIGHT OF THE BARRIER.
6. THE CONTRACTOR SHALL PERIODICALLY TOP DRESS THE CONSTRUCTION ENTRANCE WITH CLEAN STONE. IF THE CONSTRUCTION ENTRANCE FAILS TO REMOVE DIRT FROM THE TIRES OF THE VEHICLES ENTERING A PUBLIC RIGHT-OF-WAY A WASH RACK SHALL BE INSTALLED AND THE TIRES WASHED. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ANY REQUIREDWATER FOR THE WASHING OF TIRES. DIRT TRACKED ONTO THE PUBLIC RIGHT-OF-WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
7. ALL EROSION AND SILTATION MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING.
8. ALL STORM AND UTILITY LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED PER THE SEEDING SCHEDULE AFTER BACKFIL. NO MORE THAN FIVE HUNDRED FEET OF TRENCH IS TO BE OPEN AT ONE TIME.
9. ALL TEMPORARY EARTH BERMS, DIVERSIONS, AND SILT DAMS ARE TO BE MULCHED AND SEEDED FOR VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. ADDITIONALLY ALL DIVERSION SWALES WILL BE PROTECTED AGAINST HIGH VELOCITY WITH EROSION CONTROL MEASURES AS DENOTED ON THESE PLANS. THE SAME APPLIES TO STOCKPILES ON SITE AS WELL AS SOIL (INTENTIONALLY) TRANSPORTED FROM THE PROJECT SITE.
10. ANY DISTURBED AREA NOT PAVED, SODDED, OR BUILT UPON IS TO BE SEEDED PER THE TEMPORARY AND PERMANENT SEEDING SCHEDULE INCLUDED IN THESE DRAWINGS. MODIFY AS APPLICABLE DEPENDING ON PROPOSED TIME OF CONSTRUCTION.
11. CONTRACTOR STAGING AREA(S) SHALL BE RETURNED TO BETTER THAN ORIGINAL CONDITIONS AT THE COMPLETION OF THE WORK.
12. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPEMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
13. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT. THE CONTRACTOR SHALL SCHEDULE THE MEETING WITH THE NCDEQ INSPECTOR ASSIGNED TO THE PROJECT.
14. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF NCDEQ EROSION AND SEDIMENT CONTROL MANUAL AND THE NORTH CAROLINA SEDIMENTATION POLLUTION CONTROL ACT OF 1973.
15. PERMANENT GROUNDCOVER SHOULD BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 10 WORKING DAYS FOLLOWING THE COMPLETION OF CONSTRUCTION OR DEVELOPEMENT, OR DISTURBING ANY PROJECT AREA.

GENERAL UTILITY NOTE

1. THE ENGINEER MAKES NO GUARANTEE THAT ANY UNDERGROUND UTILITIES SHOWN MAY COMPROMISE OTHER UTILITIES IN THE AREA; EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES ARE IN THE EXACT LOCATION AS INDICATED ALTHOUGH, HE DOES CERTIFY THET THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.
2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION SO THAT CONTRACTOR IS FAMILIAR AND UNDERSTANDIS EXISTING CONDITIONS.
3. FIELD CHANGES MAY BE NECESSARY DUE EXISTING UTILITY LOCATIONS. THE ENGINEER SHALL BE CONTACTED BEFORE MAKING THESE CHANGES.

SEEDING SCHEDULE

PERMANENT SEEDING SCHEDULE FOR ALL AREAS EXCEPT RESIDENTIAL LAWN/YARDS, PARKS OR IMPROVED AREAS

DATES	SPECIES	RATE (LB/1,000 SFT)
SEP 1 to MAR 31	KENTUCKY 31 TALL FESCUE	1.7
	PENSACOLA BAHIA GRASS	1.1
FEB 1 to to AUG 31	KENTUKY 31 TALL FESCUE	1.1
	PENSACOLA BAHIA GRASS	1.7

SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 12 LB/1,000 10-20-20 FERTILIZER. MULCH: 70 LBS HAY OR SMALL GRAIN STRAW MULCH. NOTE: SHOULD LOCALITY, CLIMATE AND/OR GROUND CONDITIONS WARRANT, THE CFR MAY ALTER THE PLANTING DATES TO AN EARLIEROR LATER PERIOD, SEED MIX AND QUALITY, OR MULCH REQUIREMENTS FROM THOSE SHOWN ABOVE. ANY CHANGE O TEH SEEDING-MULCHING SPECIFICATIONS COULD BE CHANGED UPON THE RECOMMENDATIONS OF THE USDA/NRCS CONTRACT PERSONNEL PROVIDING CONSTRUCTION OVERSIGHT OF THESE PROJECTS. THE CONTRACTOR SHALL INSTALL THE USDA/NRCS RECOMMENDED FINAL SEEDING SPECIFICATION IF THAT DEVIATES FROM THE SCHEDULE SHOWN ABOVE.

CONSTRUCTION SEQUENCE

1. SET UP PRE-CONSTRUCTION MEETING.
2. INSTALL SILT FENCE AND OTHER PERIMETER CONTROLS.
3. INSTALL EROSION AND SEDIMENT CONTROL FEATURES AS INDICATED.
4. MINIMIZE DISTURBED AREAS AT ANY GIVEN TIME TO THOSE AREAS TAHT ARE TO BEING ACTIVELY EXCAVATED.
5. INSPECT AND ADJUST AS NECESSARY ALL EROSION CONTROL DEVICES IN ORDER TO MAINTAIN PROPER FUNCTION.
6. COMPLETE AND TEMPORARY SITE ACCESS REQUIREMENTS, INCLUDING CLEARING, ACCESS ROAD INSTALLATION, AND TEMORARY STREAM CROSSING INSTALLATION.
7. REMOVE AND REDUCE VEGETATIVE DEBRIS BOTH IDENTIFIED AND AS ENCOUNTERED THAT IS NOT EXPLICITLY IDENTIFIED IN THE DESCRIPTION OF ACTIVITY TABLE.
8. REMOVE MISCELLANEOUS DEBRIS BOTH IDENTIFIED AND AS ENCOUNTERED THAT IS NOT EXPLICITLY IDENTIFIED IN THE DESCRIPTION OF EACH STABILIZATION PROJECT.
9. REMOVE SEDIMENT AS IDENTIFIED, GRADE DITCHES TO MATCH EXISTING CULVERTS OR PROVIDE POSITIVE DRAINAGE. STOCKPILE REMOVED SEDIMENT WITHIN EXISTING EASEMENTS OR RIGHT-OF-WAYS, ALLOW MATERIAL TO ADEQUATELY DRY PRIOR TO LOADING AND DISPOSAL FOR AREAS WITHOUT ADEQUATE SPACE TO STOCKPILE SEDIMENT NEARBY, TRANSPORT SEDIMENT TO IDENTIFIED STOCKPILE AREAS AND ALLOW TO DRY PRIOR TO DISPOSAL.
10. STABILIZE SITES DURING AND AT THE CONCLUSION OF CONSTRUCTION IN ACCORDANCE WITH THE NOTES AND DETAILS IN THESE PLANS AND AS INSPECTOR HAS INSTRUCTED.
11. ONCE ALL AREAS HAVE BEEN STABILIZED, AND ONLY WITH THE APPROVAL OF THE EROSION INSPECTOR, REMOVE ALL REMAINING EROSION CONTROL DEVICES.
12. REMOVE AND REPLACE ANY ITEMS DISTURBED AND/OR REMOVED DURING ACCESS OR CONSTRUCTION SCTIVITIES REMOVE TEMPORARY ACCESS FEATURES UNLESS INDICATED TO REMAIN.

GENERAL NOTES

1. THIS PROJECT, AS CURRENTLY DESIGNED, MAY NOT INCLUDE ALL COMPONENTS ADDRESSED IN THE VARIOUS GENERAL NOTES. REVIEW PLANS FOR APPLICABILITY.
2. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM THE LOCAL AND STATE AGENCIES.
3. ANY PERMITS WHICH MUST BE OBTAINED SHALL BE THE CONTRACTORS RESPONSIBILITY AND AT HIS EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF ANY USACE OR DWQ PERMIT.
4. ALL PAVING MATERIALS AND DRAINAGE STRUCTURES SHALL BE BUILT AND INSTALLED IN ACORDANCE WITH NORTH CAROLINNA DEPARTMENT OF TRANSPORTSTION STANDARDS AND SPECIFICATIONS.
5. THE LOCATION OF EXISTING SEWER, WATER OR TELEPHONE LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UDERNEATH OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON TH EPLANS FOR ASSISTANCE IN LOCATING EXISTING UTILITIES CALL "NC ONE CALL", DIAL 811.
6. WHERE PAVEMENT IS ENCOUNTERED, THE CONTRACTOR SHALL NOT DISTURB REMOVE AGGREGATE BASE MATERIAL TO SUB-GRADE OR PAVEMENT.
7. DAMAGE TO THE UTILITIES (INCLUDING UNDERGROUND) OR PROPERTY OF OTHERS BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY CONTRACTOR AT NO COST TO OWNER.
8. EXISTING PAVEMNET AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT TO BE REMOVED) SHALL. BE REPAIRED TO LIKE-NEW CONDITION.
9. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITION.
10. THE CONTRACTOR SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY INSPECTOR.
11. THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE REGULATORY AGENCIES AND THE ENGINEER AT LEAST 24 HOURS PRIOR TO STARTING WORK ON THIS PROJECT.
12. UNLESS OTHERWISE NOTED. ALL CONCRETE PIPE SHALL NOT BE ALTERED OR DISTURBED.
13. ALL EXCAVATION FOR UNDERGROUND INSTALLATIONS MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR PART 1926).
14. VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY, ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS, OR DISCREPANCES BEFORE COMMENCING OR PROCEEDING WITH WORK.
15. DEVIATIONS FROM, OR CHANGES TO THESE PLANS SHALL OCCUR ONLY WITH WRITTEN CONCURRENCE FROM PENDER COUNTY OR THE USDA.
16. MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO THE PLANS IF NECESSARY. THE EXISTENCE AND/OR LOCATION OF UTILITIES SHOWN ON THESE PLANS MAY BE ONLY APPROXIMATELY CORRECT. TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN HEREON AND ANY OTHER EXISTING UTILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. REPAIR AT YOUR OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. IF A UTILITY IS DAMAGED DURING CONSTRUCTION, STOP WORK IMMEDIATELY AND NOTIFY THE ENGINEER AND TOWN.
17. PROPERLY SECURE THE CONSTRUCTION AREA AT ALL TIMES AGAINST UNAUTHORIZED ENTRY AND ADEQUATLEY PROTECT EQUIPMENT, MATERIALS, AN COMPLETED WORK FROM THEFT AND VANDALISM. THE OWNER IS NOT RESPONSIBLE FOR THE LOSS OF ANY MATERIAL STORED AT THE SITE.

PERMANENT SEEDING SCHEDULE RESIDENTIAL LAWN/YARDS, PARKS OR IMPROVED AREAS

DATES	SPECIES	RATE (LB/1,000 SFT)
JAN 1 to DEC 31	KENTUCKY 31 TALL FESCUE	1.1
	CENTPEDE	2.0

SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 12 LB/1,000 10-20-20 FERTILIZER. MULCH: 70 LBS HAY OR SMALL GRAIN STRAW MULCH. NOTE: SHOULD LOCALITY, CLIMATE AND/OR GROUND CONDITIONS WARRANT, THE CFR MAY ALTER THE PLANTING DATES TO AN EARLIEROR LATER PERIOD, SEED MIX AND QUALITY, OR MULCH REQUIREMENTS FROM THOSE SHOWN ABOVE. ANY CHANGE O TEH SEEDING-MULCHING SPECIFICATIONS COULD BE CHANGED UPON THE RECOMMENDATIONS OF THE USDA/NRCS CONTRACT PERSONNEL PROVIDING CONSTRUCTION OVERSIGHT OF THESE PROJECTS. THE CONTRACTOR SHALL INSTALL THE USDA/NRCS RECOMMENDED FINAL SEEDING SPECIFICATION IF THAT DEVIATES FROM THE SCHEDULE SHOWN ABOVE.

GENERAL NOTES

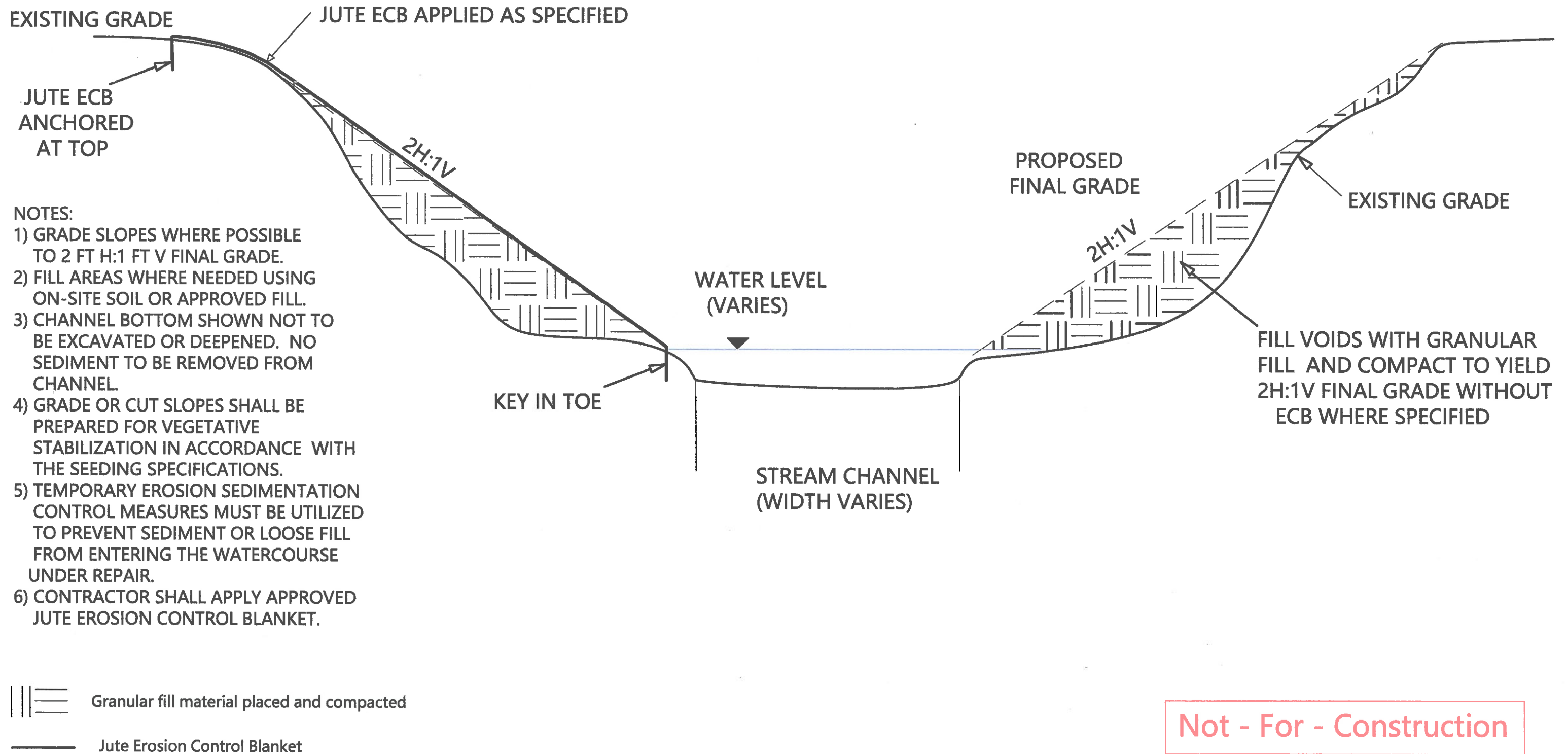
County of Pender, North Carolina
Department of Planning & Inspections
Emergency Watershed Protection Program
EWP Event No. 5038 Hurricane Florence
DRS No. 37-03-5038-047, 048, 049 & 051
Stream Bank Repair/Stabilization

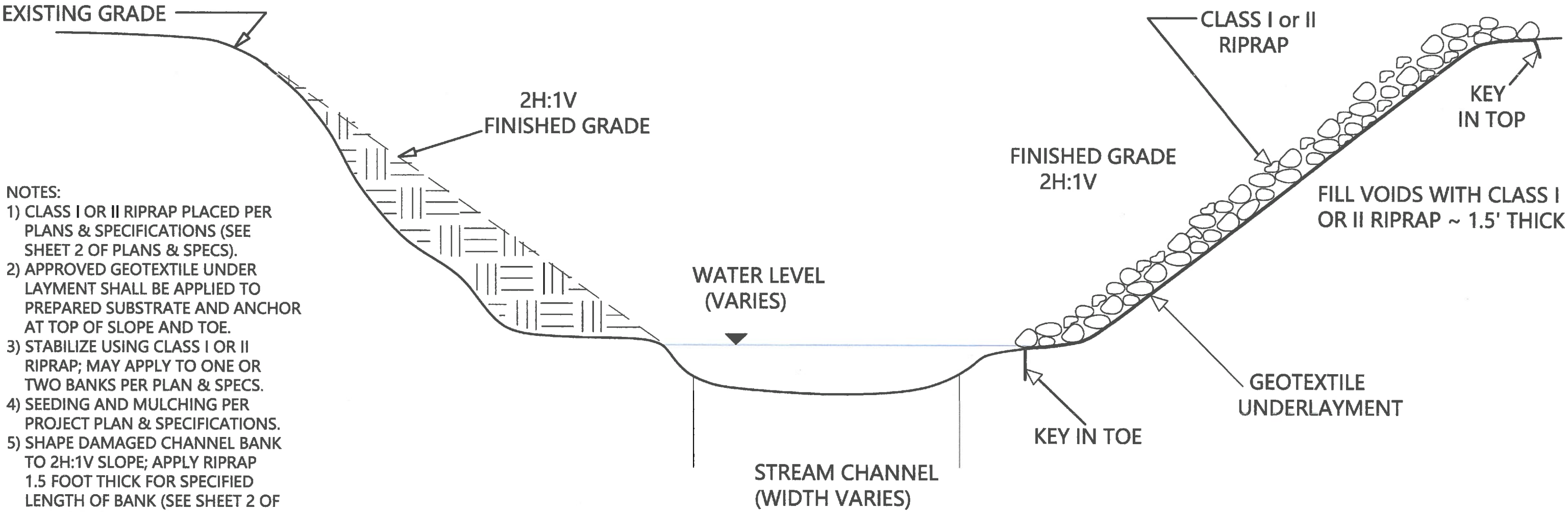


North Carolina Offices

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704 343 8973
- ☐ Raleigh, NC
919 277 0494
- ☒ Wilmington, NC
910 397 2929

SHEET 3





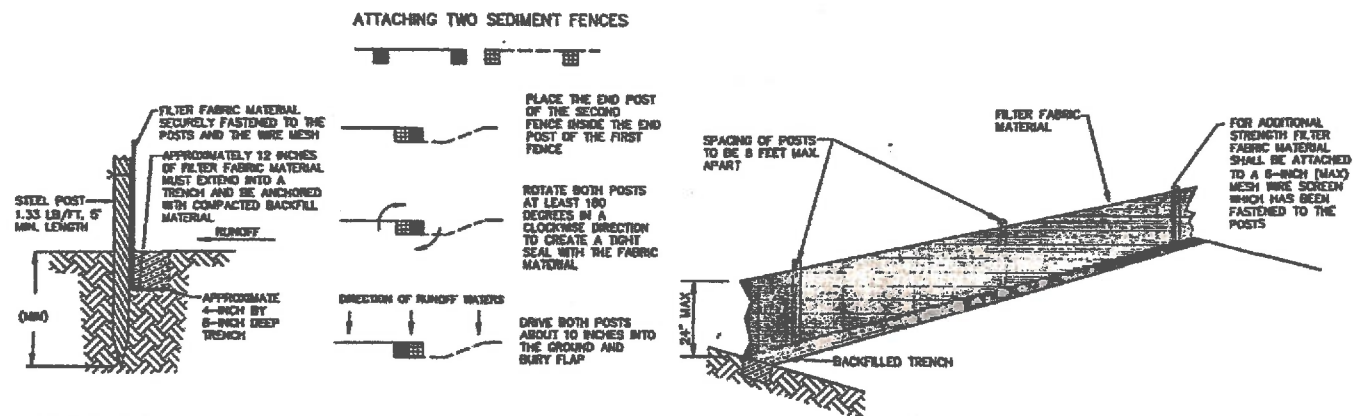
- NOTES:
- 1) CLASS I OR II RIPRAP PLACED PER PLANS & SPECIFICATIONS (SEE SHEET 2 OF PLANS & SPECS).
 - 2) APPROVED GEOTEXTILE UNDER LAYMENT SHALL BE APPLIED TO PREPARED SUBSTRATE AND ANCHOR AT TOP OF SLOPE AND TOE.
 - 3) STABILIZE USING CLASS I OR II RIPRAP; MAY APPLY TO ONE OR TWO BANKS PER PLAN & SPECS.
 - 4) SEEDING AND MULCHING PER PROJECT PLAN & SPECIFICATIONS.
 - 5) SHAPE DAMAGED CHANNEL BANK TO 2H:1V SLOPE; APPLY RIPRAP 1.5 FOOT THICK FOR SPECIFIED LENGTH OF BANK (SEE SHEET 2 OF PLANS & SPECS).
 - 6) APPLY RIPRAP 1.5 FOOT THICK TO ALL SPECIFIED GRADED BANKS.

- ||| Granular fill material placed and compacted
- Class I or II RipRap
- Geotextile Underlayment

Not - For - Construction

<div>ARDURRA</div> <div>Collaborate, Inovate, Create</div>		EWP Project Event No. 5038 DRS No. 37-03-18-5038-047, 048, 409 & 051	TYPICAL PLAN FOR PLACEMENT OF CLASS I OR II RIPRAP FOR CHANNEL BANKS OR SLOPES	TYPICAL CLASS I and II RIPRAP PLACEMENT DETAIL
Drawn By: ST	Checked By: RS			SHEET 5

SEDIMENT FENCE DETAIL



MATERIALS

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOPHINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6481. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 F.
2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LINEAR FT STEEL WITH A MINIMUM LENGTH OF 6 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURE FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FT OF MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS, EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH, FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM OF 50 POUND TENSILE STRENGTH.
7. EXCAVATE TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH COMPACTED SOIL PLACED OVER THE FILTER FABRIC, THROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

SEDIMENT FENCE INSTALLATION USING THE SLICING METHOD

INSTEAD OF EXCAVATING A TRENCH, PLACING FABRIC AND THEN BACKFILLING TRENCH, SEDIMENT FENCE MAY BE INSTALLED USING SPECIFICALLY DESIGNED EQUIPMENT THAT INSERTS THE FABRIC INTO A CUT SLICED IN THE GROUND WITH A DISC.

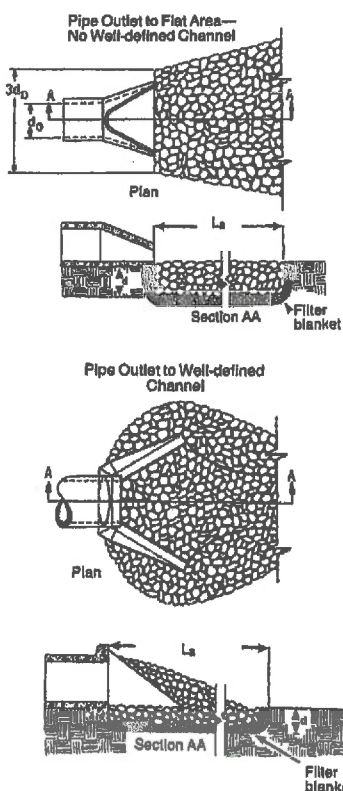
INSTALLATION SPECIFICATIONS

1. THE BASE OF BOTH POSTS SHOULD BE AT LEAST ONE FOOT HIGHER THEN THE MIDDLE OF THE FENCE. CHECK WITH LEVEL IF NECESSARY.
2. INSTALL POSTS 4 FEET APART IN CRITICAL AREAS AND 6 FEET APART ON STANDARD APPLICATIONS.
3. INSTALL POSTS 2 FEET DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRI, ENABLING POSTS TO SUPPORT THE FABRIC FROM UPSTREAM PRESSURE.
4. INSTALL POSTS WITH THE NIPPLES FACING AWAY FROM THE FABRIC.
5. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITHIN THE TOP 8 INCHES OF THE FABRIC, ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART. ALSO EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.
6. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
7. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS, EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH, FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
8. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
9. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM OF 50 POUND TENSILE STRENGTH.
10. NO MORE THAN 24 INCHES OF A 3 INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL.
11. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION.
12. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH. COMPACT THE UPSLOPE SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.

MAINTENANCE

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE, TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

TYPICAL OUTLET STABILIZATION STRUCTURE



SPECIFICATIONS

1. ENSURE THAT THE SUBGRADE FOR THE FILTER AND RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANT FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIPRAP THICKNESS.
2. THE RIPRAP AND GRAVEL FILTER MUST CONFIRM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.
3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER DAMAGED AREA. ALL CONNECTING JOINTS SHOULD BE OVERLAP A MINIMUM OF 1 FT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER CLOTH.
4. RIPRAP MAY BE PLACED BY EQUIPMENT, BUT TAKE CARE TO AVOID DAMAGING THE FILTER.
5. THE MINIMUM THICKNESS OF THE RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER.
6. RIPRAP MAY BE FIELD STONE OR ROUGH QUARRY STONE. IT SHOULD BE HARD, ANGULAR, HIGHLY WEATHER-RESISTANT AND WELL GRADED.
7. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFALL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATIVE COVER.

MAINTENANCE

INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. PROMPTLY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

SEDIMENT FENCE DETAIL
OUTLET STABILIZATION
STRUCTURE

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Department of Planning & Inspections
Emergency Watershed Protection Program
EWP Event No. 5038 Hurricane Florence
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Stream Bank Repair/Stabilization

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SHEET

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