



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN

GOVERNOR

March 17, 2026

DANIEL H. JOHNSON

SECRETARY

ADDENDUM # 1

Contract No. DN01153
TIP No.: N/A
Federal Aid No.: State Funded
WBS Element: BP14.R002.3
County: Haywood
Description: Grading, Drainage, Paving, And Culverts At Culverts 430187, 430188, 430189 And 430190 Over Martins Creek On SR 1341 (Martins Creek Rd) In Haywood County

Letting Date: March 24, 2026

Plan Holders

Content Summary: Provision Additions

The above contract has experienced the following revisions:

1. Include the following provisions after page SSP-21
 - a. Project Special Provisions Work Zone Traffic Control: pages TC-1 through TC-3
 - b. Project Special Provisions Utility by Others: UbO-1
 - c. Project Special Provisions Erosion Control: EC-1 through EC-16
 - d. Project Special Provisions Structures: ST-1 through ST-26
 - e. Project Special Provisions Permits: P-1 and permits following
 - f. Bidder Sheets: S-1 through S-10
 - g. Itemized Proposal Bid Item Sheet: T-1 through T-5
 - h. Execution of Contract: U-1

These revisions do not change bid items or the associated quantities.

There is no ebsx addenda file associated with this addendum.

Thank you for your attention to this matter.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 14
253 WEBSTER ROAD
SYLVA, NC 28779

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Location:
253 WEBSTER ROAD
SYLVA, NC 28779

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If you have any questions, please contact the Division Proposal Engineer at (828) 331-5200.

Sincerely,

Signed by:

29BD93927CF24F6...

Jeanette L. White, P.E.
Highway Division 14, Project Development-
Team Lead

TC-1

BP14-R002

Haywood County

WORK ZONE TRAFFIC CONTROL

Project Special Provisions Table of Contents

Special Provision	Page
Temporary Portable Traffic Signal System	TC-2



12/2/2025

Signed by:

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TC-2

BP14-R002

Haywood County

TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM:

(07-14-15)

Description

Furnish, install, place in operation, repair, maintain, relocate, and remove temporary portable traffic signal system for traffic maintenance during construction along Martins Creek Rd. The temporary portable traffic signals will require a system that is coordinated to maintain safe and efficient traffic operations along Martin Creek Rd during construction operations. The Temporary Portable Traffic Signal System shall be designed such that all devices operate and communicate as a system. The system will contain (2) trailer mounted Portable Traffic Signals units along Martin Creek Rd.

Materials

Provide:

(2) Portable Traffic Signals (PTS). Each shall be self-contained trailer mounted units with two 12” signal heads per trailer. One signal head shall be mounted on an overhead mast arm capable of extending over the travel lane. The other signal head shall be mounted on a vertical upright. Units must be on the NCDOT Approved Products List.

Communication Requirements

All PTS within the signal set up systems shall maintain communication at all times. Acceptable communication shall be either hardwire cable or wireless radio link communication. If the hardwire cable communication is utilized the communication cable shall be deployed in a manner that will not intrude in the direct work area of the project or obstruct vehicular and pedestrian traffic. If the wireless radio link communication option is utilized clear line of sight between signals within the signal setup shall be maintained. Radio communication shall utilize the 900MHz frequency band and have frequency hopping capability. The radio link communication system shall have a minimum range of (1 mile).

Fault Mode Requirements

The PTS system shall revert to a solid red mode upon system default. The default setting shall be solid red unless otherwise specified by the project engineer. The temporary portable traffic signal system repairs shall be the responsibility of the contactor and shall be rendered in a manner that will return to system to full operation condition in the most expeditious manner. The PTS shall be equipped with a remote monitoring system. Where cell communication availability exists, the remote monitoring system shall have capabilities as described in the Remote Monitoring System section of this specification.

Remote Monitoring System

TC-3

BP14-R002

Haywood County

The remote monitoring system (RMS) shall be capable of reporting signal location, battery voltage / battery history and system default. The RMS shall include a password protected web site viewable from any computer with internet capability. In the event of a system default, the RMS shall provide specific information concerning the cause of the system default (i.e....red lamp on signal number 1). The RMS shall be equipped with a mechanism capable of immediately contacting a minimum of three previously designated individuals via text messaging and/or email upon a default.

The running program operating the PTS system shall be available and viewable through the RMS website at all times. The RMS shall maintain a history of the operating system in each signal including operating hours and events and the location of the PTS trailer. The remote monitoring system is not required as part of this bid proposal.

Implementation

Deployment and installation of the PTS System shall only be facilitated by personnel that have been factory trained and fully authorized by the manufacturers.

Measurement and Payment

The Temporary Portable Traffic Signal System will be measured as the (2) trailer mounted units (PTS) furnished, installed, field verified, accepted, operated and removed.

No measurement will be made for operation, relocation, maintenance, removal, or use of flaggers during repair periods as these will be considered incidental to furnishing, installing, and operating the temporary portable traffic signal system.

No measurement will be made for signal controller, communication, vehicle detection system, and traffic signal software as these will be considered incidental to furnishing, installing, and operating the temporary portable traffic signal system.

No payment will be made until signal timing and operation has been field verified and accepted by the Engineer.

Pay Item	Pay Unit
Temporary Portable Traffic Signal System	Each

PROJECT SPECIAL PROVISIONS

Utilities by Others

**General:**

The following utility companies have facilities that will be in conflict with the construction of this project:

- A) Haywood Electric Membership Corporation - Power
- B) AT&T - Communications
- C) Skyrunner – Communications
- D) Spectrum – Communications

The conflicting facilities of these concerns will be adjusted prior to the date of availability, unless otherwise noted and are therefore listed in these special provisions for the benefit of the Contractor. All utility work listed herein will be done by the utility owners. All utilities are shown on the plans from the best available information.

The Contractor's attention is directed to Article 105-8 of the 2024 Standard Specifications.

Utilities Requiring Adjustment:

Utility relocations are shown on the Utilities by Others Plans.

- A) Haywood Electric Membership Corporation
 - 1) Contact person for Haywood EMC is Wayne Nichols at 828-506-0170.
- B) AT&T
 - 1) Contact person for AT&T is Janson Casell at 828-275-6513.
- C) Skyrunner
 - 1) Contact person for Skyrunner is Florian Rumme at 828-215-5548.
- D) Spectrum
 - 1) Contact person for Spectrum is Brian Cooper at Brian.Cooper@charter.com.
 - 2) NCDOT approved an encroachment for Spectrum to install aerial facilities within the project limits, attaching to Haywood EMC's pole line.

PROJECT SPECIAL PROVISIONS**EROSION CONTROL****CONCRETE WASHOUT:**

(10-22-15)(Rev. 4-15-25)

Description

Concrete washouts are impermeable enclosures, above or below grade, to contain concrete wastewater and associated concrete mix from cleaning of ready-mix trucks, drums, pumps, tools or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with washout operations.

Acceptable concrete washouts may include constructed earthen structures, above or below ground, or commercially available devices designed specifically to capture concrete wash water.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Temporary Silt Fence	1605

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall consist of a minimum 10 mil thick polypropylene or polyethylene geomembrane.

Construction Methods

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed by the Engineer near the project entrance(s) or at location(s) of concrete operations. Structures shall be constructed a minimum of 50 feet from drainage conveyances or jurisdictional streams or wetlands. Alternate structure designs or plans for management of concrete washout may be submitted for review and approval by the Engineer. Include in the alternate plan the method used to retain, treat and dispose of the concrete washout wastewater generated within the project limits and in accordance with the minimum setback requirements.

Install temporary silt fence around the perimeter of the structure enclosure in accordance with the details and as directed by the Engineer if the structure is not located in an area where existing erosion and sedimentation control devices are capable of containing stormwater runoff.

Post a sign with the words "Concrete Washout" in close proximity of the concrete washout area, so it is clearly visible to site personnel. Install safety fence as directed by the Engineer for visibility to construction traffic.

Install prefabricated concrete washouts, designed specifically to capture concrete wash water, at locations of additional concrete pouring operations. Acceptable systems may include geotextile lined containers, vinyl or plastic containers or roll-off containers, with or without filter bags with a minimum functional holding capacity of 36 cubic feet (1.33 cubic yards). Submit prefabricated concrete washout system for approval by the Engineer prior to installation. Place prefabricated concrete washout devices to a minimum 50 foot setback from drainage conveyances and jurisdictional streams and wetlands. If the minimum setback cannot be achieved, provide secondary containment to prevent accidental release of wastewater from reaching drainage conveyances or streams.

Prefabricated concrete washouts must be clearly and visibly labeled as such, either by the manufacturer on the product itself, or by a sign with the words "Concrete Washout" in close proximity of the concrete washout area so it is clearly visible to site personnel.

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity. Inspect concrete washout structures for damage to liner or structure to maintain functionality.

Maintain prefabricated concrete washout systems per manufacturer's recommendations. Inspect concrete washout structures for damage to linings or structure and repair or replace as necessary.

Remove the concrete washout structures and sign upon project completion. Grade the area to match the existing topography and permanently seed and mulch area. Dispose of prefabricated concrete washout structures according to state or local waste regulations.

Measurement and Payment

Concrete Washout Structure will be measured and paid per each enclosure installed in accordance with the details in the plans. If alternate plans or details are approved, those structures will also be paid for per each approved and installed structure. Such price and payment will be full compensation for all work including, but not limited to, furnishing all materials, labor, equipment, signage, slurry solidification and incidentals necessary to construct, maintain and remove *Concrete Washout Structure* and dispose of residual concrete washout wastewater and concrete solids.

Prefabricated Concrete Washout will be measured and paid per each system installed in accordance with the manufacturer's recommendations. Such price and payment will be full compensation for all work including, but not limited to, furnishing all materials, labor, equipment, signage, slurry solidification and incidentals necessary to install, maintain and remove *Prefabricated Concrete Washout*, and dispose of residual concrete washout wastewater and concrete solids.

Temporary Silt Fence will be measured and paid for in accordance with Article 1605-5 of the *Standard Specifications*.

Safety Fence shall be measured and paid for as provided elsewhere in this contract.

No measurement will be made for over excavation or stockpiling or other items necessary to complete this work.

Payment will be made under:

Pay Item	Pay Unit
Concrete Washout Structure	Each
Prefabricated Concrete Washout	Each

CONSTRUCTION MATERIALS MANAGEMENT

(3-19-19) (rev. 04-27-20)

Description

The requirements set forth shall be adhered to in order to meet the applicable materials handling requirements of the NCG010000 permit. Structural controls installed to manage construction materials stored or used on site shall be shown on the E&SC Plan. Requirements for handling materials on construction sites shall be as follows:

Polyacrylamides (PAMS) and Flocculants

Polyacrylamides (PAMS) and flocculants shall be stored in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures designed to protect adjacent surface waters. PAMS or other flocculants used shall be selected from the NC DWR List of Approved PAMS/Flocculants. The concentration of PAMS and other flocculants used shall not exceed those specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions. The NC DWR List of Approved PAMS/Flocculants is available at:

https://files.nc.gov/ncdeq/Water+Quality/Environmental+Sciences/ATU/PAM8_30_18.pdf

Equipment Fluids

Fuels, lubricants, coolants, and hydraulic fluids, and other petroleum products shall be handled and disposed of in a manner so as not to enter surface or ground waters and in accordance with applicable state and federal regulations. Equipment used on the site must be operated and maintained properly to prevent discharge of fluids. Equipment, vehicle, and other wash waters shall not be discharged into E&SC basins or other E&SC devices. Alternative controls should be provided such that there is no discharge of soaps, solvents, or detergents.

Waste Materials

Construction materials and land clearing waste shall be disposed of in accordance with North Carolina General Statutes, Chapter 130A, Article 9 - Solid Waste Management, and rules governing the disposal of solid waste (15A NCAC 13B). Areas dedicated for managing construction material and land clearing waste shall be at least 50 feet away from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. Paint and other liquid construction material waste shall not be dumped into storm drains. Paint and other liquid construction waste washouts should be located at least 50 away from storm drain inlets unless there is no alternative. Other options are to install lined washouts or use portable, removable bags or bins. Hazardous or toxic waste shall be managed in accordance with the federal Resource Conservation and Recovery Act (RCRA) and NC Hazardous Waste Rules at 15A NCAC, Subchapter 13A. Litter and sanitary waste shall be managed in a manner to prevent it from entering jurisdictional waters and shall be disposed of offsite.

Herbicide, Pesticide, and Rodenticides

Herbicide, pesticide, and rodenticides shall be stored and applied in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act, North Carolina Pesticide Law of 1971 and labeling restrictions.

Concrete Materials

Concrete materials onsite, including excess concrete, must be controlled and managed to avoid contact with surface waters, wetlands or buffers. No concrete or cement slurry shall be discharged from the site. (Note that discharges from onsite concrete plants require coverage under a separate NPDES permit – NCG140000.) Concrete wash water shall be managed in accordance with the *Concrete Washout Structure* provision. Concrete slurry shall be managed and disposed of in accordance with *NCDOT DGS and HOS DCAR Distribution of Class A Residuals Statewide* (Permit No. WQ0035749). Any hardened concrete residue will be disposed of, or recycled on site, in accordance with state solid waste regulations.

Earthen Material Stock Piles

Earthen material stock piles shall be located at least 50 feet away from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available.

Measurement and Payment

Conditions set within the *Construction Materials Management* provision are incidental to the project for which no direct compensation will be made.

IMPERVIOUS DIKE:

(9-9-11)(Rev. 11-15-22)

Description

This work consists of furnishing, installing, maintaining, pumping and removing an *Impervious Dike* for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed by the Engineer.

Materials

Acceptable materials shall include but not be limited to sheet piles, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious geotextile.

Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

Construction Methods

Where impervious dikes are shown on the plans and used to dewater or lower the water elevation, construct in accordance with Article 410-4 and 410-5.

Measurement and Payment

Impervious Dike will be measured and paid as the actual number of linear feet of impervious dike(s) constructed, measured in place from end to end of each separate installation that has been completed and accepted by the Engineer. Such price and payment will be full compensation for all work including but not limited to furnishing materials, construction, maintenance, pumping and removal of the impervious dike.

Payment will be made under:

Pay Item

Impervious Dike

Pay Unit

Linear Foot

LAWN TYPE APPEARANCE:

All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones $\frac{3}{4}$ " and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

MINIMIZE REMOVAL OF VEGETATION:

The Contractor shall minimize removal of vegetation within project limits to the maximum extent practicable. Vegetation along stream banks and adjacent to other jurisdictional resources outside the construction limits shall only be removed upon approval of Engineer. No additional payment will be made for this minimization work.

Native Grass Seeding And Mulching (West)

Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands and riparian areas, and adjacent to Stream Relocation and/or trout stream construction within a 50 foot zone on both sides of the stream or depression, measured from top of stream bank or center of depression. The stream bank of the stream relocation shall be seeded by a method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the permanent soil reinforcement mat section of preformed scour holes, and in other areas as directed.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

August 1 - June 1

18# Creeping Red Fescue
8# Big Bluestem
6# Indiangrass
4# Switchgrass
35# Rye Grain
500# Fertilizer
4000# Limestone

May 1 – September 1

18# Creeping Red Fescue
8# Big Bluestem
6# Indiangrass
4# Switchgrass
25# German or Browntop Millet
500# Fertilizer
4000# Limestone

Approved Creeping Red Fescue Cultivars:

Aberdeen Boreal Epic Cindy Lou

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the *Standard Specifications* and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Measurement and Payment

Native Grass *Seeding and Mulching* will be measured and paid for in accordance with Article 1660-8 of the *Standard Specifications*.

PERMANENT SOIL REINFORCEMENT MAT:

9-1-2011 (Rev. 8-20-24)

Description

This work consists of furnishing and placing permanent soil reinforcement mat (PSRM), of the type specified, over previously prepared areas at locations shown on the plans and as directed by the Engineer.

Materials

The product shall be a permanent soil reinforcement mat constructed of synthetic stabilized, non-biodegradable synthetic fibers processed to form a rigid permanent three-dimensional structure to promote soil stability in combination with vegetation under hydraulic stresses. Organic biodegradable fibers (such as straw, coir, excelsior or blends thereof) may also be incorporated into the PSRM, evenly distributed throughout the mat. PSRMs utilizing organic fibers shall have a bottom and top UV stabilized netting stitched together with UV stabilized thread to retain the organic fibers. All PSRMs shall meet the following minimum physical properties:

Property	Test Method	Value	Unit
Thickness	ASTM D6525	≥0.25	in
Tensile Strength (MD)	ASTM D6818	225	lbs/ft
Tensile Strength (TD)	ASTM D6818	175	lbs/ft
Vegetation Establishment (Min)	ASTM D7322	250	%
UV Stability ¹	ASTM D4355	≥80	%

¹ASTM D4355 Tensile Strength and % strength retention of material after 1,000 hours of exposure.

PSRM shall also meet the minimum performance values by type as shown in the table below:

Property	Test Method	Type 1	Type 2	Type 3	Type 4	Type 5	Unit
Maximum Permissible Shear Stress (Unvegetated)	ASTM 6460	2.25	2.5	3.0	3.25	N/A	lb/ft ²
Maximum Permissible Shear Stress (Vegetated)	ASTM 6460	6.0	8.0	10.0	12.0	16.0	lb/ft ²
Maximum Allowable Velocity (Vegetated)	ASTM 6460	8.0	12	16.0	20.0	24.0	ft/s

Staples shall be used as anchors. Provide staples to meet Article 1060-8 of the *Standard Specifications*.

Construction Methods

All areas to be protected with the PSRM shall be brought to final grade and prepared in accordance with Section 1660 of the *Standard Specifications*. The surface of the soil shall be smooth, firm,

stable and free of rocks, clods, roots or other obstructions that would prevent the mat from lying in direct contact with the soil surface. Preserve the required line, grade and cross section of the area covered. Unroll the PSRM in the direction of the flow of water and apply without stretching so that it will lie smoothly but loosely on the soil surface. Bury the up-channel or top of slope end of each piece of PSRM in a narrow trench at least 6 inches deep and tamp firmly. Where one roll of matting ends and a second-roll begins, overlap the end of the upper roll over the beginning of the second roll so there is a 6 inch overlap. Install staple checks 4 inches on center and every 30 feet longitudinally in the matting or as directed by the Engineer. Fold over and bury matting to the full depth of the trench, close and tamp firmly. Overlap matting at least 4 inches where 2 or more widths of matting are laid side by side.

Place staples across matting at ends, junctions and check trenches approximately 10 inches apart. Place staples along the outer edges and down the center of each strip of matting 3 feet apart. Place staples along all lapped edges 10 inches apart. Install product with netting and biodegradable fibers on the top side if present. Trenching and stapling shall fit individual cut or fill slope conditions and conform to manufacturer's installation recommendations for the type specified. Any conflict between the manufacturer's installation recommendations and this special provision will be resolved by the more stringent measures being required.

Apply all soil amendments and one-half of the seed in accordance with Section 1660 of the Standard Specifications of the types at the rates specified in the contract prior to installation of the PSRM. For PSRMs that do not contain biodegradable fibers, apply 3/4 inch to 1 inch loose, friable topsoil uniformly over the PSRM and gently work to incorporate into the structure of the PSRM completely filling the voids until the level of soil is at the top of the PSRM. Apply the remainder of the seed and gently work into the surface of the topsoil in-fill and mulch. For all other PSRMs, apply 3/4 inch to 1 inch of loose, friable topsoil uniformly over the PSRM and gently work to create a suitable seed bed. Apply the remainder of the seed and gently work into the surface of the topsoil. At the sole discretion of the Engineer, topsoil may be omitted for PSRMs containing biodegradable fibers. All seed should be applied prior to installation of PSRM if topsoil is omitted and will not need to be mulched.

Measurement and Payment

Permanent Soil Reinforcement Mat, Type __ will be measured and paid for as the actual number of square yards measured along the surface of the ground over which permanent soil reinforcement mat of the specified type is installed and accepted. Overlaps will not be included in the measurement and will be considered as incidental to the work. Such price and payment shall be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply topsoil and install the PSRM.

Payment will be made under:

Pay Item

Permanent Soil Reinforcement Mat, Type __

Pay Unit

Square Yard

SAFETY FENCE AND JURISDICTIONAL FLAGGING:**Description**

Safety Fence shall consist of furnishing materials, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary, or other boundaries located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland, endangered vegetation, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.

Interior boundaries for jurisdictional areas noted above shall be delineated by stakes and highly visible flagging.

Jurisdictional boundaries at staging areas, waste sites, or borrow pits, whether considered outside or interior boundaries shall be delineated by stakes and highly visible flagging.

Materials**(A) Safety Fencing**

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb/ft of length.

(B) Boundary Flagging

Wooden stakes shall be 4 feet in length with a minimum nominal 3/4" x 1-3/4" cross section. The flagging shall be at least 1" in width. The flagging material shall be vinyl and shall be orange in color and highly visible.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence. The fence shall be erected to conform to the general contour of the ground.

(A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final

acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence geotextile shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

Place construction stakes to establish the location of the safety fence in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for the staking of the safety fence. All stakeouts for safety fence shall be considered incidental to the work being paid for as "Construction Surveying", except that where there is no pay item for construction surveying, all safety fence stakeout will be performed by state forces.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

(B) Boundary Flagging

Boundary flagging delineation of interior boundaries shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Interior boundaries may be staked on a tangent that runs parallel to buffer but must not encroach on the buffer at any location. Interior boundaries of hand clearing shall be identified with a different colored flagging to distinguish it from mechanized clearing.

Boundary flagging delineation of interior boundaries will be placed in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for delineation of the interior boundaries. This delineation will be considered incidental to the work being paid for as *Construction Surveying*, except that where there is no pay item or construction surveying the cost of boundary flagging delineation shall be included in the unit prices bid for the various items in the contract. Installation for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Additional flagging may be placed on overhanging vegetation to enhance visibility but does not substitute for installation of stakes.

Installation of boundary flagging for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall be performed in accordance with Subarticle 230-4(B)(5) or Subarticle 802-2(F) of the *Standard Specifications*. No direct pay will be made for this delineation, as the cost of same shall be included in the unit prices bid for the various items in the contract.

The Contractor shall be required to maintain alternative stakes and highly visible flagging in a satisfactory condition for the duration of the project as determined by the Engineer.

Measurement and Payment

Safety Fence will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation

including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

Pay Item	Pay Unit
Safety Fence	Linear Foot

STABILIZATION REQUIREMENTS:

(4-30-2019)(Rev. 1-21-2025)

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit issued by the North Carolina Department of Environmental Quality Division of Energy, Mineral, and Land Resources. Temporary or permanent ground cover stabilization shall occur within the following time frames from the last land-disturbing activity:

- Stabilize perimeter dikes, swales, ditches, and perimeter slopes within 7 calendar days.
- Stabilize high quality water (HQW) zones within 7 calendar days.
- Stabilize slopes steeper than 3:1 within 7 calendar days.
 - If slopes are 10 feet or less in length and are not steeper than 2:1, 14 calendar days are allowed.
- Stabilize slopes 3:1 to 4:1 within 14 calendar days.
 - 7 calendar days for slopes greater than 50 feet in length and with slopes steeper than 4:1.
 - 7 calendar days for perimeter dikes, swales, ditches, perimeter slopes, and HQW Zones.
- Stabilize areas with slopes flatter than 4:1 within 14 calendar days.
 - 7 calendar days for perimeter dikes, swales, ditches, perimeter slopes, and HQW Zones.

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING:

(WestEd)

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

Shoulder and Median Areas

August 1 - June 1
20# Kentucky Bluegrass

May 1 - September 1
20# Kentucky Bluegrass

75#	Hard Fescue	75#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1

100#	Tall Fescue
15#	Kentucky Bluegrass
30#	Hard Fescue
25#	Rye Grain
500#	Fertilizer
4000#	Limestone

May 1 - September 1

100#	Tall Fescue
15#	Kentucky Bluegrass
30#	Hard Fescue
10#	German or Browntop Millet
500#	Fertilizer
4000#	Limestone

Approved Tall Fescue Cultivars:

06 Dust	Escalade	Kalahari	Serengeti
2 nd Millennium	Essential	Kitty Hawk 2000	Shelby
3 rd Millennium	Evergreen 2	Legitimate	Shenandoah III
Avenger	Faith	Lexington	Shenandoah Elite
Bar Fa	Falcon IV	LifeGuard	Sheridan
Barlexas	Falson NG	LSD	Sidewinder
Barlexas II	Falcon V	Magellan	Signia
Barrera	Fat Cat	Masterpiece	Silver Hawk
Barrington	Fesnova	Millennium SRP	Skyline
Barrobusto	Fidelity	Monet	Solara
Barvado	Finelawn Elite	Mustang 4	Southern Choice II
Biltmore	Finelawn Xpress	Naturally Green	Speedway
Bingo	Finesse II	Ninja 2	Spyder LS
Bizem	Firebird	Ol' Glory	Sunset Gold
Black Tail	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tahoe II
Blade Runner II	Five Point	Pedigree	Talladega
Bonsai	Focus	Picasso	Tanzania
Braveheart	Forte	Piedmont	Temple
Bravo	Garrison	Plantation	Terrano
Bullseye	Gazelle II	Proseeds 5301	Thor
Cannavaro	GLX Aced	Prospect	Thunderstruck
Catalyst	Gold Medallion	Quest	Titanium LS
Cayenne	Grande 3	RainDance	Titan LTD
Cezanne RZ	Greenbrooks	Raptor II	Tracer
Chipper	Greenkeeper	Rebel IV	Traverse SRP
Cochise IV	Gremlin	Rebel Exeda	Trio
Constitution	Greystone	Rebel Sentry	Tulsa Time
Corgi	Guardian 21	Regenerate	Turbo

Corona	Guardian 41	Regiment II	Turbo RZ
Coyote	Hemi	Rembrandt	Tuxedo
Cumberland	Honky Tonk	Rendition	Ultimate
Darlington	Hot Rod	Reunion	Umbrella
DaVinci	Hunter	Rhambler 2 SRP	Van Gogh
Desire	Inferno	Riverside	Venture
Diablo	Integrity	RNP	Watchdog
Dominion	Jaguar 3	Rocket	Wolfpack II
Dynamic	Jamboree	Saltillo	Xtremegreen
Dynasty	Justice	Scorpion	

Approved Kentucky Bluegrass Cultivars:

4-Season	Blue Coat	Granite	Prosperity
Alexa II	Blue Note	Hampton	Quantum Leap
America	Blue Velvet	Harmonie	Rambo
Apollo	Boomerang	Impact	Rhapsody
Aramintha	Cabernet	Jackrabbit	Rhythm
Arcadia	Champagne	Jefferson	Royce
Aries	Champlain	Juliet	Rubicon
Armada	Chicago II	Keeneland	Rugby II
Arrow	Corsair	Langara	Rush
Arrowhead	Courtyard	Legend	Shariz
Aura	Dauntless	Liberator	Showcase
Avid	Delight	Lunar	Skye
Award	Diva	Madison	Solar Eclipse
Awesome	Dynamo	Mazama	Sonoma
Bandera	Eagleton	Mercury	Sorbonne
Barduke	Emblem	Merlot	Starburst
Barnique	Empire	Midnight	Sudden Impact
Baron	Envicta	Midnight II	Thermal Blue
Baroness	Everest	Moon Shadow	Total Eclipse
Barrister	Everglade	Mystere	Touche
Barvette HGT	Excursion	Nu Destiny	Tsunami
Bedazzled	Freedom II	NuChicago	Valor
Belissimo	Fredon III	NuGlade	Washington
Bewitched	Front Page	Oasis	Zedor
Beyond	Futurity	Odyssey	Zinfandel
Blackjack	Gaelic	Perfection	
Bluebank	Ginney II	Pinot	
Blueberry	Gladstone	Princeton 105	

Approved Hard Fescue Cultivars:

Aurora Gold	Firefly	Nordic	Rhino
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Azay Blue	Gladiator	Oxford	Scaldis II
Beacon	Granite	Predator	Spartan II
Berkshire	Heron	Quatro	Stonehenge
Beudin	Jetty	Reliant II	Sword
Blueray	Minimus	Reliant IV	Warwick
Chariot	Miser	Rescue 911	
Eureka II	Nancock	Resolute	

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza and 15# Crown Vetch January 1 - December 31.

The Crown Vetch Seed should be double inoculated if applied with a hand seeder. Four times the normal rate of inoculant should be used if applied with a hydroseeder. If a fertilizer-seed slurry is used, the required limestone should also be included to prevent fertilizer acidity from killing the inoculant bacteria. Caution should be used to keep the inoculant below 80° F to prevent harm to the bacteria. The rates and grades of fertilizer and limestone shall be the same as specified for *Seeding and Mulching*.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

TEMPORARY SEEDING:

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. German Millet, or Browntop Millet shall be used in summer months and rye grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

FERTILIZER TOPDRESSING:

Fertilizer used for topdressing shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

SUPPLEMENTAL SEEDING:

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, and the rate of application may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

MOWING:

The minimum mowing height on this project shall be six inches.

TEMPORARY PIPE FOR CULVERT CONSTRUCTION:**Description**

This work consists of furnishing, installing, maintaining and removing any and all temporary pipe used on this project in conjunction with the culvert construction.

Construction Methods

The Contractor shall install temporary pipe in locations shown on the plans in such a manner approved by the Engineer. The temporary pipe shall provide a passageway for the stream through the work-site. The minimum size requirements will be as stated on the erosion control plans.

Measurement and Payment

___" *Temporary Pipe* will be measured and paid for at the contract unit price per linear foot of temporary pipe approved by the Engineer and measured in place from end to end. Such price and payment will be full compensation for all work covered by this section including but not limited to furnishing all materials required for installation, construction, maintenance, and removal of temporary pipe.

Payment will be made under:

Pay Item

___" Temporary Pipe

Pay Unit

Linear Foot

WASTE AND BORROW SOURCES:

(2-16-11) (Rev. 3-17-22)

Payment for temporary erosion control measures, except those made necessary by the Contractor's own negligence or for his own convenience, will be paid for at the appropriate contract unit price for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices that may be required on a commercial borrow or waste site will be done at the Contractor's expense.

All offsite Staging Areas, Borrow and Waste sites shall be in accordance with "Borrow and Waste Site Reclamation Procedures for Contracted Projects" located at:

<https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/Contract%20Reclamation%20Procedures.pdf>

All forms and documents referenced in the "Borrow and Waste Site Reclamation Procedures for Contracted Projects" shall be included with the reclamation plans for offsite staging areas, and borrow and waste sites.

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Project Special Provisions

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Structure(s)

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Signed by:

 14D2958725514F4...
 12/15/2025

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FALSEWORK AND FORMWORK**(11-30-23)****GENERAL**

Use this Special Provision as a guide to develop temporary works submittals required by the *Standard Specifications* or other provisions; no additional submittals are required herein. Such temporary works include, but are not limited to, falsework and formwork.

Falsework is any temporary construction used to support the permanent structure until it becomes self-supporting. Formwork is the temporary structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Access scaffolding is a temporary structure that functions as a work platform that supports construction personnel, materials, and tools, but is not intended to support the structure. Scaffolding systems that are used to temporarily support permanent structures (as opposed to functioning as work platforms) are considered to be falsework under the definitions given. Shoring is a component of falsework such as horizontal, vertical, or inclined support members. Where the term “temporary works” is used, it includes all of the temporary facilities used in bridge construction that do not become part of the permanent structure.

Design and construct safe and adequate temporary works that will support all loads imposed and provide the necessary rigidity to achieve the lines and grades shown on the plans in the final structure.

MATERIALS

Select materials suitable for temporary works; however, select materials that also ensure the safety and quality required by the design assumptions. The Engineer has authority to reject material on the basis of its condition, inappropriate use, safety, or nonconformance with the plans. Clearly identify allowable loads or stresses for all materials or manufactured devices on the plans. Revise the plan and notify the Engineer if any change to materials or material strengths is required.

DESIGN REQUIREMENTS**(A) Working Drawings**

Provide working drawings for items as specified in the contract, or as required by the Engineer, with design calculations and supporting data in sufficient detail to permit a structural and safety review of the proposed design of the temporary work.

On the drawings, show all information necessary to allow the design of any component to be checked independently as determined by the Engineer.

When concrete placement is involved, include data such as the drawings of proposed sequence, rate of placement, direction of placement, and location of all construction joints.

When required, have the drawings and calculations prepared under the guidance of, and sealed by, a North Carolina Registered Professional Engineer who is knowledgeable in temporary works design.

If requested by the Engineer, submit with the working drawings manufacturer’s catalog data listing the weight of all construction equipment that will be supported on the temporary work.

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Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders.

As an option for the Contractor, overhang falsework hangers may be uniformly spaced, at a maximum of 36 inches, provided the following conditions are met:

Member Type (PCG)	Member Depth, (inches)	Max. Overhang Width, (inches)	Max. Slab Edge Thickness, (inches)	Max. Screenshot Wheel Weight, (lbs.)	Bracket Min. Vertical Leg Extension, (inches)
II	36	39	14	2000	26
III	45	42	14	2000	35
IV	54	45	14	2000	44
MBT	63	51	12	2000	50
MBT	72	55	12	1700	48

Overhang width is measured from the centerline of the girder to the edge of the deck slab. For Type II, III & IV prestressed concrete girders (PCG), 45-degree cast-in-place half hangers and rods must have a minimum safe working load of 6,000 lbs.

For MBT prestressed concrete girders, 45-degree angle holes for falsework hanger rods shall be cast through the girder top flange and located, measuring along the top of the member, 1'-2 1/2" from the edge of the top flange. Hanger hardware and rods must have a minimum safe working load of 6,000 lbs.

For link slabs, the top of girders directly beneath the link slab shall be free of overhang falsework attachments or other hardware. Submit calculations and working drawings for overhang falsework in the link slab region.

The overhang bracket provided for the diagonal leg shall have a minimum safe working load of 3,750 lbs. The vertical leg of the bracket shall extend to the point that the heel bears on the girder bottom flange, no closer than 4 inches from the bottom of the member. However, for 72-inch members, the heel of the bracket shall bear on the web, near the bottom flange transition.

Provide adequate overhang falsework and determine the appropriate adjustments for deck geometry, equipment, casting procedures and casting conditions.

If the optional overhang falsework spacing is used, indicate this on the falsework submittal and advise the girder producer of the proposed details. Failure to notify the Engineer of hanger type and hanger spacing on prestressed concrete girder casting drawings may delay the approval of those drawings.

Falsework hangers that support concentrated loads and are installed at the edge of thin top flange concrete girders (such as bulb tee girders) shall be spaced so as not to exceed 75% of the manufacturer's stated safe working load. Use of dual leg hangers (such as Meadow Burke HF-42 and HF-43) are not allowed on concrete girders with thin top flanges. Design the

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falsework and forms supporting deck slabs and overhangs on girder bridges so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.

When staged construction of the bridge deck is required, detail falsework and forms for screed and fluid concrete loads to be independent of any previous deck pour components when the mid-span girder deflection due to deck weight is greater than $\frac{3}{4}$ ".

Note on the working drawings any anchorages, connectors, inserts, steel sleeves or other such devices used as part of the falsework or formwork that remains in the permanent structure. If the plan notes indicate that the structure contains the necessary corrosion protection required for a Corrosive Site, epoxy coat, galvanize or metalize these devices. Electroplating will not be allowed. Any coating required by the Engineer will be considered incidental to the various pay items requiring temporary works.

Design falsework and formwork requiring submittals in accordance with the current edition of *AASHTO Guide Design Specifications for Bridge Temporary Works* except as noted herein.

(1) Wind Loads

Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph. In addition, Table 2.2A is included to provide the maximum wind speeds by county in North Carolina.

Table 2.2 - Wind Pressure Values

Height Zone feet above ground	Pressure, lb/ft ² for Indicated Wind Velocity, mph				
	70	80	90	100	110
0 to 30	15	20	25	30	35
30 to 50	20	25	30	35	40
50 to 100	25	30	35	40	45
over 100	30	35	40	45	50

(2) Time of Removal

The following requirements replace those of Article 3.4.8.2.

Do not remove forms until the concrete has attained strengths required in Article 420-16 of the *Standard Specifications* and these Special Provisions.

Do not remove forms until the concrete has sufficient strength to prevent surface damage.

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Table 2.2A - Steady State Maximum Wind Speeds by Counties in North Carolina

COUNTY	25 YR (mph)	COUNTY	25 YR (mph)	COUNTY	25 YR (mph)
Alamance	70	Franklin	70	Pamlico	100
Alexander	70	Gaston	70	Pasquotank	100
Alleghany	70	Gates	90	Pender	100
Anson	70	Graham	80	Perquimans	100
Ashe	70	Granville	70	Person	70
Avery	70	Greene	80	Pitt	90
Beaufort	100	Guilford	70	Polk	80
Bertie	90	Halifax	80	Randolph	70
Bladen	90	Harnett	70	Richmond	70
Brunswick	100	Haywood	80	Robeson	80
Buncombe	80	Henderson	80	Rockingham	70
Burke	70	Hertford	90	Rowan	70
Cabarrus	70	Hoke	70	Rutherford	70
Caldwell	70	Hyde	110	Sampson	90
Camden	100	Iredell	70	Scotland	70
Carteret	110	Jackson	80	Stanley	70
Caswell	70	Johnston	80	Stokes	70
Catawba	70	Jones	100	Surry	70
Cherokee	80	Lee	70	Swain	80
Chatham	70	Lenoir	90	Transylvania	80
Chowan	90	Lincoln	70	Tyrell	100
Clay	80	Macon	80	Union	70
Cleveland	70	Madison	80	Vance	70
Columbus	90	Martin	90	Wake	70
Craven	100	McDowell	70	Warren	70
Cumberland	80	Mecklenburg	70	Washington	100
Currituck	100	Mitchell	70	Watauga	70
Dare	110	Montgomery	70	Wayne	80
Davidson	70	Moore	70	Wilkes	70
Davie	70	Nash	80	Wilson	80
Duplin	90	New Hanover	100	Yadkin	70
Durham	70	Northampton	80	Yancey	70
Edgecombe	80	Onslow	100		
Forsyth	70	Orange	70		

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(B) Review and Approval

The Engineer is responsible for the review and approval of temporary works' drawings.

Submit the working drawings sufficiently in advance of proposed use to allow for their review, revision (if needed), and approval without delay to the work.

The time period for review of the working drawings does not begin until complete drawings and design calculations, when required, are received by the Engineer.

Do not start construction of any temporary work for which working drawings are required until the drawings have been approved. Such approval does not relieve the Contractor of the responsibility for the accuracy and adequacy of the working drawings.

CONSTRUCTION REQUIREMENTS

All requirements of Section 420 of the *Standard Specifications* apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in the design of the temporary works. Do not weld falsework members to any portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

Provide tell-tales attached to the forms and extending to the ground, or other means, for accurate measurement of falsework settlement. Make sure that the anticipated compressive settlement and/or deflection of falsework does not exceed 1 inch. For cast-in-place concrete structures, make sure that the calculated deflection of falsework flexural members does not exceed 1/240 of their span regardless of whether or not the deflection is compensated by camber strips.

(A) Maintenance and Inspection

Inspect and maintain the temporary work in an acceptable condition throughout the period of its use. Certify that the manufactured devices have been maintained in a condition to allow them to safely carry their rated loads. Clearly mark each piece so that its capacity can be readily determined at the job site.

Perform an in-depth inspection of an applicable portion(s) of the temporary works, in the presence of the Engineer, not more than 24 hours prior to the beginning of each concrete placement. Inspect other temporary works at least once a month to ensure that they are functioning properly. Have a North Carolina Registered Professional Engineer inspect the cofferdams, shoring, sheathing, support of excavation structures, and support systems for load tests prior to loading.

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(B) Foundations

Determine the safe bearing capacity of the foundation material on which the supports for temporary works rest. If required by the Engineer, conduct load tests to verify proposed bearing capacity values that are marginal or in other high-risk situations.

The use of the foundation support values shown on the contract plans of the permanent structure is permitted if the foundations are on the same level and on the same soil as those of the permanent structure.

Allow for adequate site drainage or soil protection to prevent soil saturation and washout of the soil supporting the temporary works supports.

If piles are used, the estimation of capacities and later confirmation during construction using standard procedures based on the driving characteristics of the pile is permitted. If preferred, use load tests to confirm the estimated capacities; or, if required by the Engineer conduct load tests to verify bearing capacity values that are marginal or in other high risk situations.

The Engineer reviews and approves the proposed pile and soil bearing capacities.

REMOVAL

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.

Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

MEASUREMENT AND PAYMENT

Unless otherwise specified, *Falsework and Formwork* will not be directly measured.

Payment at the contract unit prices for the various pay items requiring temporary works will be full compensation for the above falsework and formwork.

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SUBMITTAL OF WORKING DRAWINGS**(1-31-25)****GENERAL**

Submit working drawings in accordance with Article 105-2 of the *Standard Specifications* and this Special Provision. For this Special Provision, “submittals” refers to only those listed in this Special Provision. The list of submittals contained herein does not represent a list of required submittals for the project. Submittals are only necessary for those items as required by the contract. Make submittals that are not specifically noted in this provision directly to the Engineer. Either the Structures Management Unit or the Geotechnical Engineering Unit or both units will jointly review submittals.

If a submittal contains variations from plan details or specifications or significantly affects project cost, field construction or operations, discuss the submittal with and submit all copies to the Engineer. State the reason for the proposed variation in the submittal. To minimize review time, make sure all submittals are complete when initially submitted. Provide a contact name and information with each submittal. Direct any questions regarding submittal requirements to the Engineer, Structures Management Unit contacts or the Geotechnical Engineering Unit contacts noted below.

To facilitate in-plant inspection by NCDOT and approval of working drawings, provide the name, address and telephone number of the facility where fabrication will actually be done if different than shown on the title block of the submitted working drawings. This includes, but is not limited to, precast concrete items, prestressed concrete items and fabricated steel or aluminum items.

ADDRESSES AND CONTACTS

For submittals to the Structures Management Unit, use the following addresses:

Via Email: SMU-wdr@ncdot.gov (do not cc SMU Working Drawings staff)

Via US mail:

Mr. D. N. Snoke, P. E.
State Structures Engineer
North Carolina Department
of Transportation
Structures Management Unit
1581 Mail Service Center
Raleigh, NC 27699-1581

Attention: Mr. J. L. Bolden, P. E.

Via other delivery service:

Mr. D. N. Snoke, P. E.
State Structures Engineer
North Carolina Department
of Transportation
Structures Management Unit
1000 Birch Ridge Drive
Raleigh, NC 27610

Attention: Mr. J. L. Bolden, P. E.

For submittals to the Geotechnical Engineering Unit, use the following addresses:

For projects in Divisions 1-7 (Eastern Regional Office):

Via Email: EastGeotechnicalSubmittal@ncdot.gov

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Via US mail:

Mr. Thomas Santee, P. E.
Assistant State Geotechnical
Engineer – Eastern Region
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
1570 Mail Service Center
Raleigh, NC 27699-1570

Via other delivery service:

Mr. Thomas Santee, P. E.
Assistant State Geotechnical
Engineer – Eastern Region
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
3301 Jones Sausage Road, Suite 100
Garner, NC 27529

For projects in Divisions 8-14 (Western Regional Office):

Via Email: WestGeotechnicalSubmittal@ncdot.gov

Via US mail or other delivery service:

Mr. Eric Williams, P. E.
Assistant State Geotechnical
Engineer – Western Region
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Western Regional Office
5253 Z Max Boulevard
Harrisburg, NC 28075

The status of the review of structure-related submittals sent to the Structures Management Unit can be viewed from the Unit’s website, via the “[Drawing Submittal Status](#)” link.

The status of the review of geotechnical-related submittals sent to the Geotechnical Engineering Unit can be viewed from the Unit’s website, via the “[Geotechnical Construction Submittals](#)” link.

Direct any questions concerning submittal review status, review comments or drawing markups to the following contacts:

Primary Structures Contact: James Bolden (919) 707 – 6408
jlbolden@ncdot.gov

Secondary Structures Contacts: Madonna Rorie (919) 707 – 6508
mlrorie@ncdot.gov

Eastern Regional Geotechnical Contact (Divisions 1-7):
Thomas Santee (984) 920-8901
EastGeotechnicalSubmittal@ncdot.gov

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Western Regional Geotechnical Contact (Divisions 8-14):

Eric Williams (980)258-6400

WestGeotechnicalSubmittal@ncdot.gov**SUBMITTAL COPIES**

Furnish one complete copy of each submittal, including all attachments, to the Engineer. At the same time, submit a copy of the same complete submittal directly to the Structures Management Unit and/or the Geotechnical Engineering Unit as specified in the tables below.

The first table below covers “Structure Submittals.” The Engineer will receive review comments and drawing markups for these submittals from the Structures Management Unit. The second table in this section covers “Geotechnical Submittals.” The Engineer will receive review comments and drawing markups for these submittals from the Geotechnical Engineering Unit.

Unless otherwise required, submit one set of supporting calculations to either the Structures Management Unit or the Geotechnical Engineering Unit unless both units require submittal copies in which case submit a set of supporting calculations to each unit. Provide additional copies of any submittal as directed.

STRUCTURE SUBMITTALS

Submittal	Submittal Required by Structures Management Unit?	Submittal Required by Geotechnical Engineering Unit?	Contract Reference Requiring Submittal ¹
Arch Culvert Falsework	Y	N	Plan Note, SN Sheet & “Falsework and Formwork”
Box Culvert Falsework ⁷	Y	N	Plan Note, SN Sheet & “Falsework and Formwork”
Cofferdams	Y	Y	Article 410-4
Foam Joint Seals ⁶	Y	N	“Foam Joint Seals”
Expansion Joint Seals (hold down plate type with base angle)	Y	N	“Expansion Joint Seals”
Expansion Joint Seals (modular)	Y	N	“Modular Expansion Joint Seals”
Expansion Joint Seals (strip seals)	Y	N	“Strip Seal Expansion Joints”

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Falsework & Forms ² (substructure)	Y	N	Article 420-3 & “Falsework and Formwork”
Falsework & Forms (superstructure)	Y	N	Article 420-3 & “Falsework and Formwork”
Girder Erection over Railroad	Y	N	Railroad Provisions
Maintenance and Protection of Traffic Beneath Proposed Structure	Y	N	“Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____”
Metal Bridge Railing	Y	N	Plan Note
Metal Stay-in-Place Forms	Y	N	Article 420-3
Metalwork for Elastomeric Bearings ^{4,5}	Y	N	Article 1072-8
Miscellaneous Metalwork ^{4,5}	Y	N	Article 1072-8
Disc Bearings ⁴	Y	N	“Disc Bearings”
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	Y	N	Applicable Provisions
Placement of Equipment on Structures (cranes, etc.)	Y	N	Article 420-20
Prestressed Concrete Box Beam (detensioning sequences) ³	Y	N	Article 1078-11
Precast Concrete Box Culverts	Y	N	“Optional Precast Reinforced Concrete Box Culvert at Station ____”
Prestressed Concrete Cored Slab (detensioning sequences) ³	Y	N	Article 1078-11
Prestressed Concrete Deck Panels	Y	N	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	Y	N	Articles 1078-8 and 1078-11
Removal of Existing Structure over Railroad	Y	N	Railroad Provisions
<hr/>			
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	Y	N	Article 420-3

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Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	Y	N	“Modular Expansion Joint Seals”
Sound Barrier Wall (precast items)	Y	N	Article 1077-2 & “Sound Barrier Wall”
Sound Barrier Wall Steel Fabrication Plans ⁵	Y	N	Article 1072-8 & “Sound Barrier Wall”
Structural Steel ⁴	Y	N	Article 1072-8 Article 400-3 & “Construction, Maintenance and Removal of Temporary Structure at Station _____”
Temporary Detour Structures	Y	Y	Article 1072-8
TFE Expansion Bearings ⁴	Y	N	Article 1072-8

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles refer to the *Standard Specifications*.
2. Submittals for these items are necessary only when required by a note on plans.
3. Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
4. The fabricator may submit these items directly to the Structures Management Unit.
5. The two sets of preliminary submittals required by Article 1072-8 of the *Standard Specifications* are not required for these items.
6. Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
7. Submittals are necessary only when the top slab thickness is 18” or greater.

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GEOTECHNICAL SUBMITTALS

Submittal	Submittals Required by Geotechnical Engineering Unit	Submittals Required by Structures Management Unit	Contract Reference Requiring Submittal ¹
Drilled Pier Construction Plans ²	Y	N	Subarticle 411-3(A)
Crosshole Sonic Logging (CSL) Reports ²	Y	N	Subarticle 411-5(A)(2)
Pile Driving Equipment Data Forms ^{2,3}	Y	N	Subarticle 450-3(D)(2)
Pile Driving Analyzer (PDA) Reports ²	Y	N	Subarticle 450-3(F)(3)
Retaining Walls ⁴	Y; drawings and calculations	Y; drawings	Applicable Provisions
Temporary Shoring ⁴	Y; drawings and calculations	Y; drawings	“Temporary Shoring” & “Temporary Soil Nail Walls”

FOOTNOTES

- References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.
- Submit one hard copy of submittal to the Engineer. Submit a second copy of submittal electronically (PDF via email), US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.
- The Pile Driving Equipment Data Form is available from:
<https://connect.ncdot.gov/projects/construction/ConstManRefDocs/PILE%20DRIVING%20EQUIPMENT%20DATA%20FORM.pdf>
See second page of form for submittal instructions.
- Electronic copy of submittal is required. See referenced provision.

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Haywood County

CRANE SAFETY**(11-30-23)****GENERAL**

Comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors, sub-contractors, and fully operated rental companies shall comply with the current Occupational Safety and Health Administration (OSHA) regulations.

Submit all items listed below to the Engineer prior to beginning crane operations. Changes in personnel or equipment must be reported to the Engineer and all applicable items listed below must be updated and submitted prior to continuing with crane operations.

CRANE SAFETY SUBMITTAL LIST

- (A) **Competent Person:** Provide the name and qualifications of the “Competent Person” responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- (B) **Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- (C) **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.
- (D) **Certifications:** Crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO) or the National Center for Construction Education and Research (NCCER). Other approved nationally accredited programs will be considered upon request. In addition, crane operators shall have a current CDL medical card. Submit a list of crane operator(s) and include current certification for each type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

MEASUREMENT AND PAYMENT

No direct payment will be made for *Crane Safety*. All costs shall be considered incidental to items for which direct payment is made.

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Haywood County

GROUT FOR STRUCTURES**(12-1-17)****GENERAL**

This Special Provision addresses grout for use in pile blockouts, grout pockets, shear keys, dowel holes and recesses for structures. This Special Provision does not apply to grout placed in post-tensioning ducts for bridge beams, girders, decks, end bent caps, or bent caps. Mix and place grout in accordance with the manufacturer's recommendations, the applicable sections of the *Standard Specifications* and this Special Provision.

MATERIAL REQUIREMENT

Unless otherwise noted on the plans, use a Type 3 Grout in accordance with Section 1003 of the *Standard Specifications*.

Initial setting time shall not be less than 10 minutes when tested in accordance with ASTM C266.

Construction loading and traffic loading shall not be allowed until the 3-day compressive strength is achieved.

SAMPLING AND PLACEMENT

Place and maintain components in final position until grout placement is complete and accepted. Concrete surfaces to receive grout shall be free of defective concrete, laitance, oil, grease, and other foreign matter. Saturate concrete surfaces with clean water and remove excess water prior to placing grout.

MEASUREMENT AND PAYMENT

No separate payment will be made for *Grout for Structures*. The cost of the material, equipment, labor, placement, and any incidentals necessary to complete the work shall be considered incidental to the structure item requiring grout.

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Haywood County

**OPTIONAL PRECAST REINFORCED CONCRETE
BOX CULVERT****(10-31-24)****GENERAL**

This Special Provision covers the design, fabrication and construction of precast reinforced concrete box culverts intended for the conveyance of storm water.

The option for a precast reinforced box culvert, in lieu of a cast-in-place culvert, is permitted only when indicated on the plans. When the precast option is selected, provide the size and number of barrels as indicated on the plans. Detail the culvert with cast-in-place wings walls and footings. Precast wing walls and footings will not be allowed. Provide a precast box culvert that meets the requirements of Section 1077 and any other applicable parts of the *Standard Specifications*.

The Contractor shall be responsible for the design and load rating of the precast culverts, as well necessary cast-in-place elements. Design the precast culvert sections in accordance with ASTM C1577 or the current edition of the *AASHTO LRFD Bridge Design Specifications*. Regardless of size, load rate precast reinforced concrete box culverts in accordance with the current edition of the *AASHTO Manual for Bridge Evaluation* for the AASHTO design load, the applicable North Carolina legal loads, and Fixing America's Surface Transportation (FAST) Act's emergency vehicles (EV). Refer to the section on North Carolina's Legal Loads for the load rating vehicle configurations.

Submit, to the Engineer, a set of detailed plans and load rating sheets for review and approval. Show all structural details in the plans, including the size and spacing of the required reinforcement necessary to build the precast box and cast-in-place members. The plans, load rating sheets, and design calculations shall be sealed by a North Carolina Registered Professional Engineer.

If the span, rise and design earth cover for the precast reinforced concrete box culvert are identical to a previously approved submittal, the Contractor may request the previously approved design calculations and plans be considered as the submittal for review and approval. However, a set of plans and rating sheets will need to be submitted to become part of the contract plans.

After the plans, rating sheets and design calculations are approved, submit a finalized complete set of plans, including the load rating sheets in 22" x 34" (ANSI D) format plan sheets to incorporate into the contract plans.

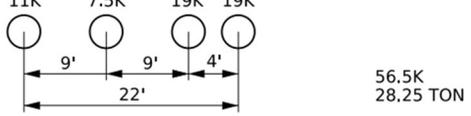
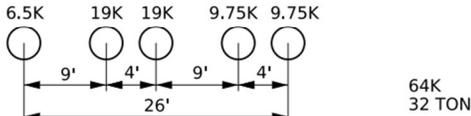
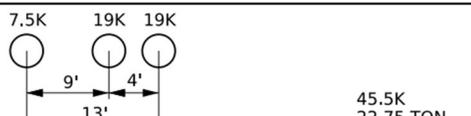
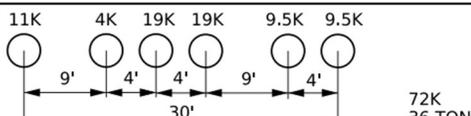
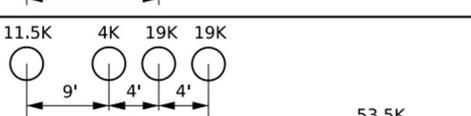
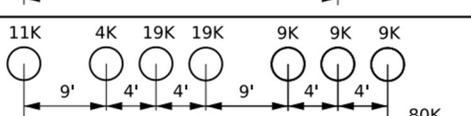
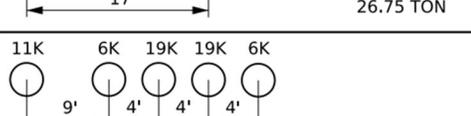
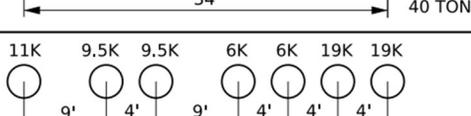
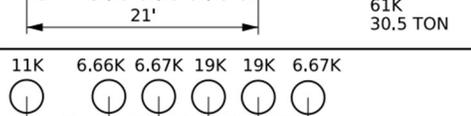
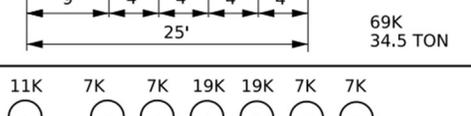
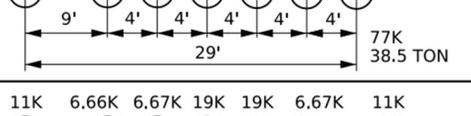
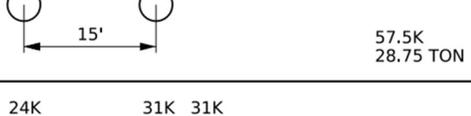
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Haywood County

NORTH CAROLINA'S LEGAL LOADS

Legal loads for structures carrying interstate traffic:

NORTH CAROLINA LEGAL LOADS			
SINGLE VEHICLE (SV)		TRUCK TRACTOR SEMI-TRAILER (TTST)	
*REF.#	SCHEMATIC	*REF.#	SCHEMATIC
SH (I01)		T4A (I09)	
S3C (I02)		T5B (I10)	
S3A (I03)		T6A (I11)	
S4A (I04)		T7A (I12)	
S5A (I05)		T7B (I13)	
S6A (I06)		FAST ACT EMERGENCY VEHICLES	
		REF.#	SCHEMATIC
S7B (I07)		EV2	
S7A (I08)		EV3	

* () = NC LEGAL LOAD CODE FOR THE SPECIFICATIONS FOR THE NATIONAL BRIDGE INVENTORY (SNBI) ITEM ID B.EP.01

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Haywood County

Legal loads for structures carrying non-interstate traffic:

NORTH CAROLINA LEGAL LOADS			
SINGLE VEHICLE (SV)		TRUCK TRACTOR SEMI-TRAILER (TTST)	
* REF.#	SCHEMATIC	* REF.#	SCHEMATIC
SNSH (N01)		TNAGRIT3 (N09)	
SNGARBS2 (N02)		TNT4A (N10)	
SNAGRIS2 (N03)		TNT6A (N11)	
SNCOTTS3 (N04)		TNT7A (N12)	
SNAGGRS4 (N05)		TNT7B (N13)	
SNS5A (N06)		TNAGRIT4 (N14)	
SNS6A (N07)		TNAGT5A (N15)	
SNS7B (N08)		TNAGT5B (N16)	
FAST ACT EMERGENCY VEHICLES			
REF.#	SCHEMATIC		
EV2			
EV3			

* () = NC LEGAL LOAD CODE FOR THE SPECIFICATIONS FOR THE NATIONAL BRIDGE INVENTORY (SNBI) ITEM ID B.EP.01

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Haywood County

PRECAST REINFORCED CONCRETE BOX SECTIONS

The precast reinforced concrete box culvert sections shall match the size and hydraulic opening indicated in the contract plans.

(A) Design

- (1) Design Fill – The design earth cover is reported on the plans as the elevation difference between the point of maximum fill and the bottom of the top slab.
- (2) Placement of Reinforcement – Provide a 1-inch concrete cover over the reinforcement subject to the provisions of Section E. Extend the inside reinforcement into the tongue portion of the joint and the outside reinforcement into the groove portion of the joint. Detail the clear distance of the end wires so it is not less than ½ inch or more than two (2) inches from the ends of the box section. Assemble reinforcement per the requirements of ASTM C1577 or the approved design. The exposure of the ends of the wires used to position the reinforcement is not a cause for rejection.
- (3) Laps and Spacing – Use lap splices for the transverse reinforcement. Detail the transverse wires so that the center to center spacing is not less than two (2) inches or more than four (4) inches. Do not detail the longitudinal wires with a center to center spacing of more than 8 inches.

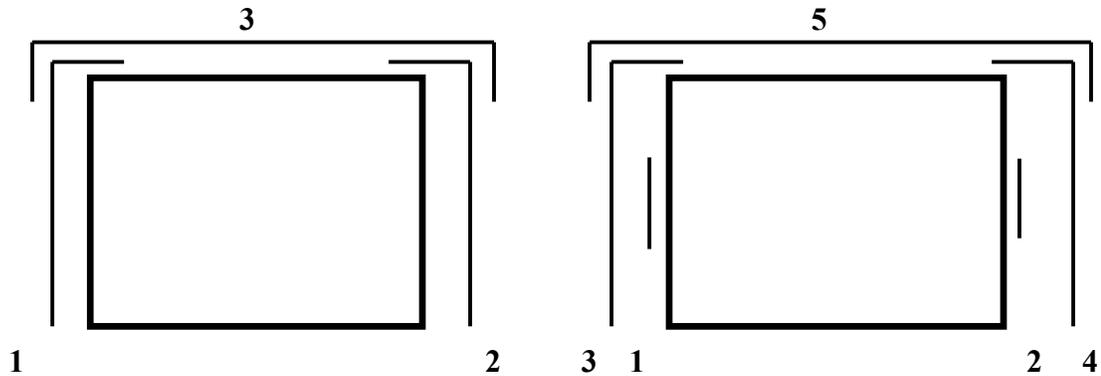
(B) Joints

- (1) Produce the precast reinforced concrete box section with tongue and groove ends. Design and form these ends of the box section so, when the sections are laid together, they make a continuous line of box sections with a smooth interior free of appreciable irregularities in the flowline, all compatible with the permissible variations given in Section F. The internal joint formed at the tongue and groove ends of the precast units shall be sealed with either bitumen/butyl sealant or closed-cell neoprene material. The internal joint material shall be installed in accordance with the manufacturer's recommendations. The material shall be shown on the shop drawings when they are submitted for review.
- (2) Seal the external joint with an outside sealer wrap conforming to ASTM C877 that is at least 12 inches wide and covers the joint on both the sides and the top of the box section. Use ConWrap CS-212 from Concrete Sealants, Inc., EZ-Wrap from Press-Seal Gasket Corporation, Seal Wrap from Mar-Mac Manufacturing Co., Inc., Cadilloc External Pipe Joint from Cadilloc, or an approved equal for the outside sealer wrap. If the outside sealer wrap is not applied in a continuous strip along the entire joint, a 12 inch minimum lap of the outside sealer wrap is permitted. Before placing the outside sealer wrap, clean and prime the area receiving the outside sealer wrap in accordance with the sealer wrap manufacturer recommendations. The joint wrap manufacturer installation recommendations shall be included with shop drawings submitted for review. The external joint wrap shall be installed in pieces, as indicated on Figure 1 below:

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**Figure 1**

Cover the external joint sealer with a 3 foot strip of filter fabric conforming to Type 4 requirements in Section 1056 of the *Standard Specifications*.

Place multiple lines of a precast reinforced concrete box culvert such that the longitudinal joint between the sections has a minimum width of three (3) inches. Fill the joint between multiple lines of precast box sections with Class A concrete. Use Class A concrete that meets the requirements listed in the *Standard Specifications* except that Field Compressive Strength Specimens are not required.

(C) Manufacture

Manufacture precast reinforced concrete box culvert sections by either the wet cast method or dry cast method.

- (1) Mixture – In addition to the requirements of Section 1077 of the *Standard Specifications*, do not proportion the mix with less than 564 lb/yd³ of Portland cement. When a flowable concrete consistency is required, refer to Section 1077-5(B) of the *Standard Specifications* for the use of Self-Consolidating Concrete (SCC) and Intermediate Flow Concrete.
- (2) Strength – Concrete shall develop a minimum 28-day compressive strength of 5,000 psi. Movement of the precast sections should be minimized during the initial curing period. Any damage caused by moving or handling during the initial curing phase will be grounds for rejection of that precast section.
- (3) Air Entrainment – Air entrain the concrete in accordance with Section 1077 – 5(A) of the *Standard Specifications*. For dry cast manufacturing, air entrainment is not required.
- (4) Testing – Test the concrete in accordance with the requirements of Section 1077 – 5(C) of the *Standard Specifications*.

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- (5) Handling – Handling devices or holes are permitted in each box section for the purpose of handling and placing. Submit details of handling devices or holes for approval and do not cast any concrete until approval is granted. Remove all handling devices flush with concrete surfaces as directed. Fill holes in a neat and workmanlike manner with an approved non-metallic non-shrink grout, concrete, or hole plug.

(D) Physical Requirements

Acceptability of precast culvert sections is based on concrete cylinders made and tested in accordance with ASTM C31 and ASTM C39.

(E) Permissible Variations

- (1) Flatness – All external surfaces shall be flat, true, and plumb. Irregularities, depressions, or high spots on all external surfaces shall not exceed $\frac{1}{2}$ inch in 8 feet.
- (2) Internal Dimensions – Produce sections so that the internal and haunch dimensions do not vary more than $\frac{1}{4}$ inch from the plan dimensions.
- (3) Adjacent Sections - Internal, external, and haunch dimensions for connecting sections shall not vary more than $\frac{1}{2}$ inch.
- (4) Length of Tongue and Groove – The minimum length of the tongue shall be four (4) inches. The minimum length of the groove shall be four (4) inches. The dimensions of the tongue and groove shall not vary more than $\frac{1}{4}$ inch from the plan dimensions.
- (5) Slab and Wall Thickness – Produce sections so that the slab and wall thickness are not less than that shown on the plans by more than 5% or $\frac{3}{16}$ inch, whichever is greater. A thickness more than that required on the plans is not a cause for rejection.
- (6) Length of Opposite Surfaces – Produce sections so that variations in laying lengths of two (2) opposite surfaces of the box section meet the requirements of ASTM C1577, Section 11.3.
- (7) Length of Section – Produce sections so that the underrun in length of a section is not more than $\frac{1}{2}$ inch in any box section.
- (8) Position of Reinforcement – Produce sections so that the maximum variation in the position of the reinforcement is $\pm \frac{3}{8}$ inch for slab and wall thicknesses of five (5) inches or less and $\pm \frac{1}{2}$ inch for slab and wall thicknesses greater than five (5) inches. Produce sections so that the concrete cover is never less than $\frac{5}{8}$ inch as measured to the internal surface or the external surface. The preceding minimum cover limitations do not apply at the mating surfaces of the joint.
- (9) Area of Reinforcement – Use the design steel shown on the plans for the steel reinforcement. Steel areas greater than those required are not cause for rejection. The permissible variation in diameter of any wire in finished fabric is prescribed for the wire before fabrication by either AASHTO M32 or M225.

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(F) Marking

- (1) Each section shall be match-marked in order of intended installation as indicated on the approved shop drawings. Ensure that pieces fit together neatly and in a workmanlike manner. In order to ensure a good, neat field fit, the Department will verify assembly of the first five (5) adjacent sections or 20% of the total culvert length, whichever is greater, at the producer's facility and match-mark the pieces. This will require that a minimum of three (3) adjacent sections of the culvert be fitted at the production yard at a time and then match-marked. Once three (3) sections have been match-marked, the first section may be removed for shipment and a fourth section set for marking. Continue in a progressive manner until all sections have been properly match-marked. The producer shall document the GO-NO-GO dimensional measurements of each box culvert section produced through the post-pour inspection process.
- (2) Clearly mark each section of the box culvert in accordance with ASTM C1577, Section 15. The information requirements of Section 15.1 shall be clearly marked on the inner surface of each section.

(G) Construction

- (1) Pre-installation Meeting – A pre-installation meeting is required prior to installation. Representatives from the Contractor, the precast box manufacturer, and the Department should attend this meeting. The precast box manufacturer's representative shall be on site during installation.
- (2) Foundation – Foundation for precast box culvert shall meet the requirements of Section 414 of the *Standard Specifications*. In addition, Type VI foundation material shall be encapsulated in filter fabric conforming to Type 4 requirements in Section 1056 of the *Standard Specifications*. The filter fabric shall be placed perpendicular to the culvert barrel. Provide sufficient overhang beyond the excavation to allow a minimum lap of three (3) feet when the foundation material is placed, and fabric wrapped on top. Perpendicular sections of fabric shall be continuous. A minimum lap of two (2) feet shall be provided between sections of fabric.
- (3) Installation – Sections shall be placed at the beginning of the outlet end of the culvert with the groove end being laid upgrade. Tongue sections shall be laid into the groove sections. Positive means shall be provided to pull each section firmly into the previously placed section so that the joints are tightly homed. Use a "come-along" box pullers or other approved methods to create a positive means of joining box sections. Construction equipment shall not have direct contact with the box section. The load of the box shall be suspended by lifting device during joining procedure.
- (4) Backfill – Complete backfill in accordance with Section 414 of the *Standard Specifications*.

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Haywood County

MEASUREMENT AND PAYMENT

Payment for the Precast Reinforced Concrete Box Culvert will be a lump sum amount equal to the payment that would be allowed for construction of a Cast-in-Place Box Culvert, except for Foundation Conditioning Material and Culvert Excavation. Plan quantities and unit bid prices will be used to compute the lump sum amount. Such price and payment will be full compensation for all work covered by this Special Provision, the plans and applicable parts of the Standard Specifications and will include, but not be limited to, furnishing all labor, materials (including all filter fabric), equipment and other incidentals necessary to complete this work. Such price and payment will also be full compensation for concrete, reinforcing steel, labor, equipment, and all other related materials necessary for the completion of the barrel section, and the construction of the headwalls, leveling pad, end curtain walls, wings, and wing footings. The cost of designing, load rating, and plan preparation for the optional Precast Reinforced Concrete Box Culvert will be paid for by the Contractor and will not be reimbursed by the Department.

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ASBESTOS ASSESSMENT**(11-30-23)****INSPECTION FOR ASBESTOS CONTAINING MATERIAL**

Prior to conducting bridge demolition or renovation activities, the Contractor shall thoroughly inspect the bridge or affected components for the presence of asbestos containing material (ACM) using a firm prequalified by NCDOT to perform asbestos surveys. The inspection must be performed by a N.C. accredited asbestos inspector with experience inspecting bridges or other industrial structures. The N.C. accredited asbestos inspector must conduct a thorough inspection, identifying all asbestos-containing material as required by the Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants (NESHAP) Code of Federal Regulations (CFR) 40 CFR, Part 61, Subpart M.

The Contractor shall submit an inspection report to the Engineer, which at a minimum must include information required in 40 CFR 763.85 (a)(4) vi)(A)-(E), as well as a project location map, photos of existing structure, the date of inspection and the name, N.C. accreditation number, and signature of the N.C. accredited asbestos inspector who performed the inspection and completed the report. The cover sheet of the report shall include project identification information. Place the following notes on the cover sheet of the report and check the appropriate box:

- ACM was found
 ACM was not found

REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIAL

If ACM is found, notify the Engineer. Compensation for removal and disposal of ACM is considered extra work in accordance with Article 104-7 of the *Standard Specifications*.

An Asbestos Removal Permit must be obtained from the Health Hazards Control Unit (HHCU) of the N.C. Department of Health & Human Services, Division of Public Health, if more than 35 cubic feet, 160 square feet, or 260 linear feet of regulated ACM (RACM) is to be removed from a structure and this work must be completed by a contractor prequalified by NCDOT to perform asbestos abatement. RACM is defined in 40 CFR, Part 61, Subpart M. Note: 40 CFR 763.85 (a)(4) vi)(D) defines ACM as surfacing, TSI and Miscellaneous which does not meet the NESHAP RACM.

DEMOLITION NOTIFICATION

Even if no ACM is found (or if quantities are less than those required for a permit), a Demolition Notification (DHHS-3768) must be submitted to the HHCU. Notifications and Asbestos Permit applications require an original signature and must be submitted to the HHCU 10 working days prior to beginning demolition activities. The 10 working day period starts based on the post-marked date or date of hand delivery. Demolition that does not begin as originally notified requires submission of a separate revision form HHCU 3768-R to HHCU. Reference the North Carolina Administrative Code, Chapter 10A, Subchapter 41C, Article .0605 for directives on revision submissions.

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Haywood County

Contact Information

Health Hazards Control Unit (HHCU)
N.C. Department of Health and Human Services
1912 Mail Service Center
Raleigh, NC 27699-1912
Telephone: (919) 707-5950
Fax: (919) 870-4808

SPECIAL CONSIDERATIONS

Buncombe, Forsyth, and Mecklenburg counties also have asbestos permitting and NESHAP requirements must be followed. For projects involving permitted RACM removals, both the applicable county and the state (HHCU) must be notified.

For demolitions with no RACM, only the local environmental agencies must be notified. Contact information is as follows:

Buncombe County

WNC Regional Air Pollution Control Agency
49 Mt. Carmel Road
Asheville, NC 28806
(828) 250-6777

Forsyth County

Environmental Affairs Department
537 N. Spruce Street
Winston-Salem, NC 27101
(336) 703-2440

Mecklenburg County

Land Use and Environmental Services Agency
Mecklenburg Air Quality
700 N. Tryon Street
Charlotte, NC 28202
(704) 336-5430

ADDITIONAL INFORMATION

Additional information may be found on N.C. asbestos rules, regulations, procedures, and N.C. accredited inspectors, as well as associated forms for demolition notifications and asbestos permit applications at the N.C. Asbestos Hazard Management Program website:

<https://epi.dph.ncdhhs.gov/asbestos/ahmp.html>

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Haywood County

MEASUREMENT AND PAYMENT

Asbestos Assessment Payment will be paid at the lump sum contract unit price and will be full compensation for all asbestos inspections, reports, permitting and notifications.

Payment will be made under:

Pay Item

Pay Unit

Asbestos Assessment

Lump Sum

PROJECT SPECIAL PROVISION

(10-18-95) (Rev. 10-15-24)

Z-1

PERMITS

The Contractor's attention is directed to the following permits, which have been issued to the Department of Transportation by the authority granting the permit.

<u>PERMIT</u>	<u>AUTHORITY GRANTING THE PERMIT</u>
Dredge and Fill and/or Work in Navigable Waters (404)	U. S. Army Corps of Engineers
Water Quality (401)	Division of Water Resources, DEQ State of North Carolina

The Contractor shall comply with all applicable permit conditions during construction of this project.

Agents of the permitting authority will periodically inspect the project for adherence to the permits.

The Contractor's attention is also directed to Articles 107-10 and 107-13 of the *Standard Specifications* and the following:

Should the Contractor propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Contractor's responsibility to coordinate with the Engineer to determine what, if any, additional permit action is required. The Contractor shall also be responsible for initiating the request for the authorization of such construction method by the permitting agency. The request shall be submitted through the Engineer. The Contractor shall not utilize the construction method until it is approved by the permitting agency. The request normally takes approximately 60 days to process; however, no extensions of time or additional compensation will be granted for delays resulting from the Contractor's request for approval of construction methods not specifically identified in the permit.

Where construction moratoriums are contained in a permit condition which restricts the Contractor's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the restricted waters, wetlands or buffer zones, provided that activities outside those areas is done in such a manner as to not affect the restricted waters, wetlands or buffer zones.



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
WRDA TRANSPORTATION BRANCH
69 DARLINGTON AVENUE
WILMINGTON NORTH CAROLINA 28403

August 15, 2025

Regulatory Division
SAW-2025-00940

Sent Via email: pjbreedlove@ncdot.gov

North Carolina Department of Transportation
Attn: Mr. Patrick Breedlove
253 Webster Road
Sylva, NC 28779

Dear Mr. Breedlove:

This letter is in response to the Pre-Construction Notification (PCN) you submitted to the Wilmington District, WRDA/Transportation Branch on May 5, 2025, for a Department of the Army Nationwide permit (NWP) verification. This project has been assigned the file number SAW-2025-00940 and is known as the BP14.R002 / Br 187 188 189 190 replacement project. This file number should be referenced in all correspondence concerning this project.

A review of the information provided indicates that the proposed work would include the replacement of four obsolete bridges with box culverts in the same location. Specific impacts include the temporary impact to 320 lf of stream channel due to temporary dewatering, the permanent impact to 316 lf of stream channel due to riprap stabilization, the permanent loss of 231 lf of stream channels due to box culvert construction and the permanent impact to 0.001 acres of wetlands. The project involves the replacement of four bridges along Martins Creek Road, with the first bridge replacement occurring north of the intersection of Martin's Creek Road and Fines Creek Road, and the other bridge replacements occurring at varied distances along Martin's Creek Road with the last bridge replacement located south of the intersection of Martin's Creek Road and Bill Lowe road in Waynesville, Haywood County, North Carolina, at Latitude 35.679140 and Longitude -82.980650.

We have determined that the proposed work is authorized by NWP 14 pursuant to authorities under Section 404 of the Clean Water Act (33 U.S.C § 1344). The proposed work must be accomplished in strict accordance with the general permit conditions, any regional conditions, the special conditions listed in this letter, the application materials, and the enclosed plans. If the extent of the project area and/or nature of the authorized impacts to waters are modified, a revised PCN must be submitted to this office for written approval before work is initiated. Any violation of permit conditions or deviation from your submitted plans may subject the permittee to enforcement action.

This verification is valid until March 14, 2026, unless prior to this date the subject NWP(s) is suspended, revoked, or is modified such that the activity no longer complies with the terms and conditions of this NWP. If you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

Project Specific Special Conditions:

- 1) Endangered Species: In order to avoid and minimize effects to endangered species DOT will comply with the following measures:
 - Tree clearing will take place from October 16 to March 31.
 - The existing bridges and any culverts \geq 3 feet in manufactured diameter within the action area will be surveyed within 14 days of construction to ensure absence of roosting bats. The U.S. Fish and Wildlife Service (Service) Asheville Field Office will be contacted immediately if bats are observed.
 - No night work or associated temporary lighting will occur.
 - No additional permanent lighting will be added to the action area.
 - No blasting will occur.
- 2) In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.

This NWP verification does not preclude the necessity to obtain any other Federal, State, or local permits, licenses, and/or certifications, which may be required.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Crystal Amschler, Project Manager of the WRDA/Transportation Branch at 828-526-6013, by mail at the above address, or by email at crystal.c.amschler@usace.army.mil. Please take a moment to complete our customer satisfaction survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Sincerely,



M. Scott Jones, PWS
WRDA / Transportation Branch Chief
USACE - Wilmington District

Enclosures

<p>U.S. Army Corps of Engineers (USACE)</p> <p>CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT</p> <p>For use of this form, see Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act; the proponent agency is CECW-COR.</p>	<p><i>Form Approved -</i></p> <p><i>OMB No. 0710-0003</i></p> <p><i>Expires 2027-10-31</i></p>
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The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0003, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PURPOSE: This form is used by recipients of U.S. Army Corps of Engineer Regulatory permits to certify compliance with the permit terms and conditions.

Your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, Wilmington District, Regulatory Office.

The certification can be submitted by email at crystal.c.amschler@usace.army.mil or by mail at the below address:

U.S. Army Corps of Engineers
 Wilmington District Office
 Street Address: 151 Patton Ave Rm 208
 City: Asheville State: NC Zip Code: 28801

COMPLETED BY THE CORPS

Corps Action Number:	SAW-2025-00940
Permit Type: <u>General Permit</u>	
General Permit Number and Name <i>(if applicable)</i> :	
Name of Permittee:	NCDOT
Project Name:	the BP14.R002 / Br 187 188 189 190 replacement project
Project Location <i>(physical address)</i> :	Martin's Creek Road
	Waynesville, North Carolina

PERMITTEE'S CERTIFICATION

Date Work Started: _____

Date Work Completed: _____

Enclose photographs showing the completed project *(if available)*.

I _____ hereby certify that the work authorized by the above referenced permit has been completed in accordance with all of the permit terms and conditions, and that any required compensatory mitigation has been completed in accordance with the permit conditions.

Name	Date	Signature
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US Army Corps of Engineers – Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: NCDOT

Action ID: SAW-2025-00940

Project Name: the BP14.R002 / Br 187 188 189 190 replacement project

County: Haywood

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee’s responsibility to ensure that Wilmington District Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one Mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate Mitigation Sponsors.

Instructions to Sponsor: The Sponsor verifies that the mitigation requirements (credits) shown below have been released and are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated ledger to the Permittee, the Project Manager who issued the permit, the Bank Project Manager, and the District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Permitted Impacts and Compensatory Mitigation Requirements

Permitted Impacts Requiring Mitigation*: 8-digit HUC and Basin: 06010106, French Broad River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
		231				

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

Compensatory Mitigation Requirements: 8-digit HUC and Basin: 06010106, French Broad River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
		462				

Mitigation Site Debited: _____
 (List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the Wilmington District, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: _____

Name of Sponsor’s Authorized Representative: _____

Signature of Sponsor’s Authorized Representative

Date of Signature



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
WRDA TRANSPORTATION BRANCH
69 DARLINGTON AVENUE
WILMINGTON NORTH CAROLINA 28403

August 14, 2025

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the District is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the District is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. When NCDMS provides mitigation for authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by NCDMS must be provided to the District within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the District has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the District Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the District, the Sponsor must obtain case-by-case approval from the District Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the District administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

This form is not valid unless signed below by the District Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the District Project Manager at the address below, 3) the Bank Manager listed in RIBITS, and 4) the Wilmington District Mitigation Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (or by email to SAWMIT@usace.army.mil).***

Questions regarding this form or any of the permit conditions may be directed to the District Mitigation Office.

USACE Project Manager: Crystal Amschler
USACE Field Office: WRDA
US Army Corps of Engineers
151 Patton Ave Rm 208
Asheville
Email: crystal.c.amschler@usace.army.mil

Crystal Amschler

Wilmington District Project Manager Signature

Digitally signed by Crystal Amschler

Date: 2025.08.14 16:30:39 -04'00'

[Click here to enter a date.](#)

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: BP14.R002 TIP/Proj No: SF-430187_188_189_190 County(ies): Haywood Page 1 of 6

General Project Information

WBS Element:	BP14.R002	TIP Number:	SF-430187_188_189_190	Project Type:	Other	Date:	4/9/2024
NCDOT Contact:	Zachary Shuler			Contractor / Designer:	Alex Vinson		
Address:	345 Toot Hallow Road Bryson City, NC 28713			Address:	8521 Six Forks Rd, Suite 400, Raleigh, NC 27615		
	Phone:	828-488-0902			Phone:	919-926-4109	
	Email:	ztshuler@ncdot.gov			Email:	alex.vinson@rsandh.com	
City/Town:	Clyde			County(ies):	Haywood		
River Basin(s):	French Broad			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.292 miles	Surrounding Land Use:	Farm Land, Woods, Residential					
Project Built-Upon Area (ac.)		Proposed Project		Existing Site				
0.7 ac.				0.6 ac.				
Typical Cross Section Description:	Two 9ft lanes with 3ft grassed shoulder (7ft with guardrail)			Two 9ft lanes with varying grassed shoulder length				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	N/A	Year:	N/A	Existing:	100	Year:	2016

General Project Narrative:
(Description of Minimization of Water Quality Impacts)

Existing bridges 187, 188, 189, and 190 are to be replaced with culverts. Each culvert will have sills, baffles, and a low flow cell. Please view the 'Bridge to Culvert' sheets for more information on each specific culvert. NCDOT will attempt to avoid and minimize impacts to the stream to the greatest extent practicable during project design such as armoring stream banks to reduce erosion and matching existing ditches.



North Carolina Department of Transportation
 Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: BP14.R002
TIP/Proj No.: SF-430187_188_189_190
County(ies): Haywood
Page 2 **of** 6

General Project Information

Waterbody Information

Surface Water Body (1):	Martins Creek		NCDWR Stream Index No.:	5-32-9	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	N/A		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (2):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:			Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (3):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:			Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: BP14.R002
TIP/Proj No.: SF-430187
County(ies): Haywood
Page 3 **of** 6

Bridge to Culvert Avoidance and Minimization

Proposed Structure Summary

Sheet No. & Station	Sheet No.: 4	Station: L187 12+71	Number of Barrels:	2
Drainage Area (ac or sq mi):	2.13 Sq. Miles		Barrel Width/Diameter (ft):	9
Surface Water Body:	Martins Creek		Barrel Height (ft):	5
Culvert Type:	Box		Culvert Length (ft)	70
Avoidance and Minimization Efforts: (Bridge to Culvert)	The proposed RCBC has a low flow barrel that mimics the existing natural channel. Then inlet and outlet will have bank stabilization that will help with erosion. The culvert is aligned with the stream and has no sharp bends.			

Stream Slope

Fish and/or Aquatic Life Passage

Existing Average Stream Slope (%):	4.00 %	Existing Low Flow Channel Dimensions in the Stream:	1:1 and 5:1 banks with 9ft base.
Proposed Culvert Slope (%):	4 %		
Proposed Culvert Burial Depth (ft): 1 ft		Proposed Low Flow Dimensions Through the Culvert:	9ft wide box.
Existing Streambed Material:	Course sand and rock.		
Proposed Sills/Baffles:	Sills at inlets and outlet and 4 baffles spaced approx. 12ft apart per NCDOT guidelines and specifications.	Existing Low Flow Velocities in the Stream (ft/s):	1.12 ft/s
		Proposed Low Flow Velocities Through the Culvert (ft/s):	1.14 ft/s
		Alternating Low Flow Sills/Baffles:	The culvert will have 2 Sills and 4 baffles

Culvert/Stream Alignment

Stream Patterns Upstream and Downstream of the Culvert that Could Affect Fish Passage and Bank Stability:	Slight bends upstream and downstream but should not effect fish passage at culvert.	
Bed Forms Impacted by Culvert (riffles, pools, glides, etc.):	The culvert will be installed in the location of an existing riffle.	
Low Flow Floodplain Bench Required? (provide justification)	Yes	There is to be a low flow and high flow cell
Bends at Inlet/Outlet? (describe culvert alignment with stream)	No	
Stream Realignment Necessary? (provide justification)	No	
Bank Stabilization:	Class "I" Rip Rap, 45' upstream and 50' downstream	

Outlet Velocities

Natural Stream Channel 2-yr Velocity (ft/s):	6.3	Natural Stream Channel 10-yr Velocity (ft/s):	5.5
Proposed Culvert 2-yr Outlet Velocity (ft/s):	6	Proposed Culvert 10-yr Outlet Velocity (ft/s):	8.2

Roadway Geometric Considerations

Evaluate/Describe Roadway Geometric Constraints:	Culvert is longer on downstream end due to traffic control needs.
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Please fill out all yellow cells as completely as possible. Use pick lists where provided. For more information on the NCDOT Stormwater Management Plan form, please refer to the document, NCDOT

		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN					
(Version 2.07; Released October 2016)							
WBS Element: BP14.R002		TIP No.: SF-430188		County(ies): Haywood		Page 4 of 6	
Bridge to Culvert Avoidance and Minimization							
Proposed Structure Summary							
Sheet No. & Station		Sheet No.: 4		Station: 12+82.90 -L188-		Number of Barrels: 2	
Drainage Area (ac or sq mi):		2.06		Sq. Miles		Barrel Width/Diameter (ft): 8'	
Surface Water Body:		Martin Creek		Barrel Height (ft):		5'	
Culvert Type:		Dual RCBC		Culvert Length (ft)		52'	
Avoidance and Minimization Efforts: (Bridge to Culvert)		The proposed RCBC has a low flow barrel that mimics the existing natural channel. The inlet and outlet will have bank stabilization that will help with erosion. The culvert is aligned with the stream and has no sharp bends.					
Stream Slope				Fish and/or Aquatic Life Passage			
Existing Average Stream Slope (%):		2.10		%		Existing Low Flow Channel Dimensions in the Stream:	
Proposed Culvert Slope (%):		2.10		%		Trapeziodal, with a channel bottom 6' to 8' wide. Side slopes vary, but are typically around 2:1 on both sides. Normal water depth estimated to be 8" to 1'.	
Culvert Burial				Proposed Low Flow Dimensions Through the Culvert: 8' x 1' low flow channel. Since the proposed culvert is an RCBC the side slopes will be vertical.			
Proposed Culvert Burial Depth (ft):		1'					
Existing Streambed Material:		Coarse Sand, Small Pebbles and Rocks		Existing Low Flow Velocities in the Stream (ft/s):		1.5 ft/s	
Proposed Sills/Baffles:		Yes, sills are to be used at the inlet/outlet and baffles are to be used inside the culvert due to the 2.1% slope		Proposed Low Flow Velocities Through the Culvert (ft/s):		1.52 ft/s	
				Alternating Low Flow Sills/Baffles:		Alternating sills and baffles are not necessary due to a low flow barrel that matches the natural stream width.	
Culvert/Stream Alignment							
Stream Patterns Upstream and Downstream of the Culvert that Could Affect Fish Passage and Bank Stability:		There is a small bridge just D/S of the proposed culvert					
Bed Forms Impacted by Culvert (riffles, pools, glides, etc.):		The proposed RCBC is to be placed in a riffle section of the stream.					
Low Flow Floodplain Bench Required? (provide justification)		Yes		There is to be a low flow and a high flow cell			
Bends at Inlet/Outlet? (describe culvert alignment with stream)		No					
Stream Realignment Necessary? (provide justification)		No					
Bank Stabilization:		Class "II" Rip Rap, 36' Upstream and 40' Downstream					
Outlet Velocities							
Natural Stream Channel 2-yr Velocity (ft/s):		4.2		Natural Stream Channel 10-yr Velocity (ft/s):		6.0	
Proposed Culvert 2-yr Outlet Velocity (ft/s):		6.3		Proposed Culvert 10-yr Outlet Velocity (ft/s):		8.6	
Roadway Geometric Considerations							
Evaluate/Describe Roadway Geometric Constraints:		Phased construction to be used during bridge removal and culvert installation.					

Please fill out all yellow cells as completely as possible. Use pick lists where provided. For more information on the NCDOT Stormwater Management Plan form, please refer to the document, NCDOT

		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN				
(Version 2.07; Released October 2016)						
WBS Element: BP14.R002		TIP No.: SF-430189		County(ies): Haywood		Page 5 of 6
Bridge to Culvert Avoidance and Minimization						
Proposed Structure Summary						
Sheet No. & Station	Sheet No.:	4	Station:	11+43.35 -L189-	Number of Barrels:	1
Drainage Area (ac or sq mi):		1.98	Sq. Miles		Barrel Width/Diameter (ft):	21'-7"
Surface Water Body:	Martin Creek			Barrel Height (ft):	4'-11"	
Culvert Type:	Aluminum Box Culvert			Culvert Length (ft)	48'	
Avoidance and Minimization Efforts: (Bridge to Culvert)	The proposed ABC has a low flow channel that mimics the existing natural channel. The inlet and outlet will have bank stabilization that will help with erosion. The culvert is aligned with the stream and should not be affected by bends in the existing stream.					
Stream Slope			Fish and/or Aquatic Life Passage			
Existing Average Stream Slope (%):			1.07	%	Existing Low Flow Channel Dimensions in the Stream:	Trapezoidal, with a channel bottom 7' to 10' wide. Side slopes vary, but are typically around 2:1 on both sides. Normal water depth estimated to be 8" to 1'.
Proposed Culvert Slope (%):			1.00	%	Proposed Low Flow Dimensions Through the Culvert:	
Culvert Burial						
Proposed Culvert Burial Depth (ft):	1'					
Existing Streambed Material:	Coarse Sand, Small Pebbles and Rocks			Proposed Low Flow Velocities in the Stream (ft/s):	1.10 ft/s	
Proposed Sills/Baffles:	Yes, sills are to be used at the inlet/outlet and baffles are to be used inside the culvert due to the 1.0% slope.			Proposed Low Flow Velocities Through the Culvert (ft/s):	1.09 ft/s	
				Alternating Low Flow Sills/Baffles:	No	
Culvert/Stream Alignment						
Stream Patterns Upstream and Downstream of the Culvert that Could Affect Fish Passage and Bank Stability:	Bends in the stream					
Bed Forms Impacted by Culvert (riffles, pools, glides, etc.):	None					
Low Flow Floodplain Bench Required? (provide justification)	Yes	There is to be a low flow channel and a high flow area				
Bends at Inlet/Outlet? (describe culvert alignment with stream)	Yes	The culvert is aligned with the natural stream, however there is a bend just downstream of the proposed culvert that should be unaffected, as the proposed culvert is further away from it than the existing bridge.				
Stream Realignment Necessary? (provide justification)	No					
Bank Stabilization:	Class "II" Rip Rap, 25' Upstream and 21' Downstream					
Outlet Velocities						
Natural Stream Channel 2-yr Velocity (ft/s):			5.6	Natural Stream Channel 10-yr Velocity (ft/s):	7.5	
Proposed Culvert 2-yr Outlet Velocity (ft/s):			5.9	Proposed Culvert 10-yr Outlet Velocity (ft/s):	9.2	
Roadway Geometric Considerations						
Evaluate/Describe Roadway Geometric Constraints:	Phased construction to be used during bridge removal and culvert installation.					

Please fill out all yellow cells as completely as possible. Use pick lists where provided. For more information on the NCDOT Stormwater Management Plan form, please refer to the document, NCDOT

		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN				
(Version 2.07; Released October 2016)						
WBS Element: BP14.R002		TIP No.: SF-430190		County(ies): Haywood		Page 6 of 6
Bridge to Culvert Avoidance and Minimization						
Proposed Structure Summary						
Sheet No. & Station	Sheet No.:	4	Station:	13+77.68 -L190-	Number of Barrels:	1
Drainage Area (ac or sq mi):		1.3	Sq. Miles		Barrel Width/Diameter (ft):	22'-1"
Surface Water Body:		Martin Creek			Barrel Height (ft):	6'-6"
Culvert Type:		Aluminum Box Culvert			Culvert Length (ft)	54'
Avoidance and Minimization Efforts: (Bridge to Culvert)		The proposed ABC has a low flow channel that mimics the existing natural channel. The inlet and outlet will have bank stabilization that will help with erosion. There are bends at the inlet and outlet. The proposed culvert is aligned with the existing stream, and has been designed to be tall to keep it as far from these bends as possible.				
Stream Slope			Fish and/or Aquatic Life Passage			
Existing Average Stream Slope (%):		3.83	%	Existing Low Flow Channel Dimensions in the Stream:	Trapezoidal, with a channel bottom 5' to 8' wide. Side slopes vary, but are typically around 2:1 on both sides. Normal water depth estimated to be 8" to 1'.	
Proposed Culvert Slope (%):		3.80	%	Proposed Low Flow Dimensions Through the Culvert:	The low flow channel will be 8' x 1'	
Culvert Burial			Proposed Sills/Baffles:		Existing Low Flow Velocities in the Stream (ft/s):	
Proposed Culvert Burial Depth (ft):		1'		1.25 ft/s		
Existing Streambed Material:		Coarse Sand, Small Pebbles and Rocks		Proposed Low Flow Velocities Through the Culvert (ft/s):		1.26 ft/s
		Yes, sills are to be used at the inlet/outlet and baffles are to be used inside the culvert due to the 3.8% slope		Alternating Low Flow Sills/Baffles:		No
Culvert/Stream Alignment						
Stream Patterns Upstream and Downstream of the Culvert that Could Affect Fish Passage and Bank Stability:		Bends in the stream				
Bed Forms Impacted by Culvert (riffles, pools, glides, etc.):		None				
Low Flow Floodplain Bench Required? (provide justification)		Yes	There is to be a low flow channel and a high flow area			
Bends at Inlet/Outlet? (describe culvert alignment with stream)		Yes	There are bends at the inlet and outlet. The proposed culvert is aligned with the existing stream, and has been designed to be tall to keep it as far from these bends as possible.			
Stream Realignment Necessary? (provide justification)		No				
Bank Stabilization:		Class "II" Rip Rap, 21' Upstream and 27' Downstream				
Outlet Velocities						
Natural Stream Channel 2-yr Velocity (ft/s):		7.9	Natural Stream Channel 10-yr Velocity (ft/s):	8.3		
Proposed Culvert 2-yr Outlet Velocity (ft/s):		8.4	Proposed Culvert 10-yr Outlet Velocity (ft/s):	9.4		
Roadway Geometric Considerations						
Evaluate/Describe Roadway Geometric Constraints:		Phased construction to be used during bridge removal and culvert installation.				

09.08/99

WBS: BP14.R002

CONTRACT: DN00492

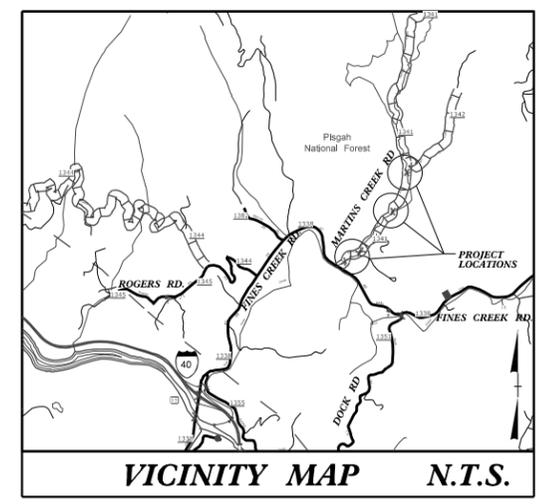
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HAYWOOD COUNTY

LOCATION: CULVERTS 430187, 430188, 430189 AND 430190 OVER
MARTINS CREEK ON SR 1341 (MARTINS CREEK RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERTS

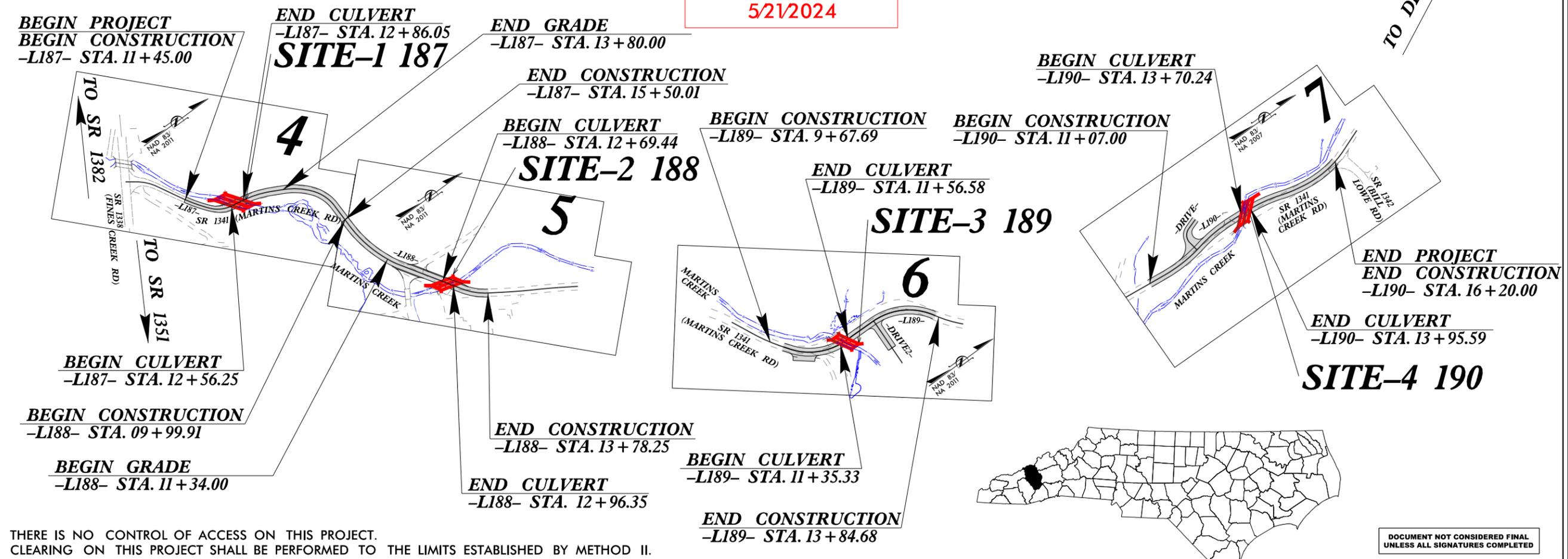
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N.C.	BP14.R002	1	9
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP14.R002.1	N/A	PE	
BP14.R002.2	N/A	ROW, UTL.	
BP14.R002.3	N/A	CONST	



WETLAND AND SURFACE WATER IMPACTS PERMIT

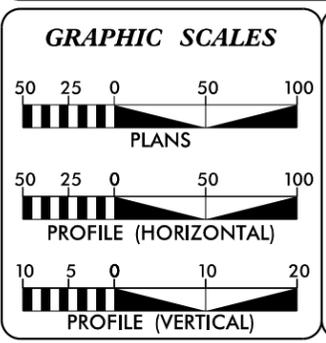
**PERMIT DRAWING
SHEET 1 OF 14**

**PERMIT PLAN DATE
5/21/2024**



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2016 = 100

T = 6%
 V = 25 MPH
 430187, 430188, 430189

V = 30 MPH
 430190

FUNC CLASS =
 LOCAL
 SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY = 0.272 MILES
 LENGTH STRUCTURE = 0.020 MILES
 TOTAL LENGTH = 0.292 MILES

-L187-, -L188-, -L189- & -L190- USED TO CALCULATE LENGTH

Prepared In the Office of:
RS&H
ARCHITECTS-ENGINEERS-PLANNERS, INC.
 8521 SIX FORKS RD, SUITE 400
 RALEIGH, NC 27615

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 2024

LETTING DATE:

SEAN KORTOVICH, PE
PROJECT ENGINEER

ALLISON HARRIS, EI
PROJECT DESIGN ENGINEER

ZACH SHULER, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



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PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

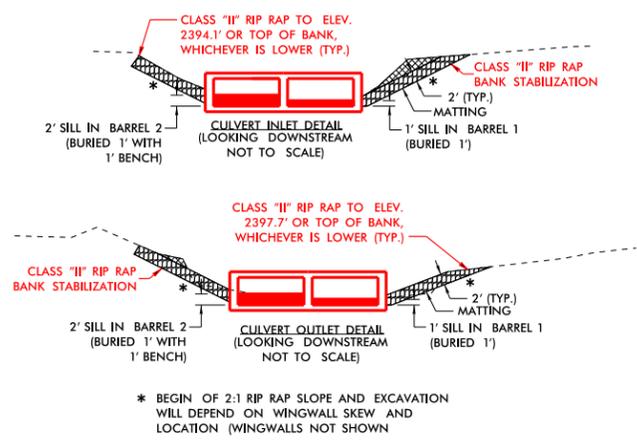
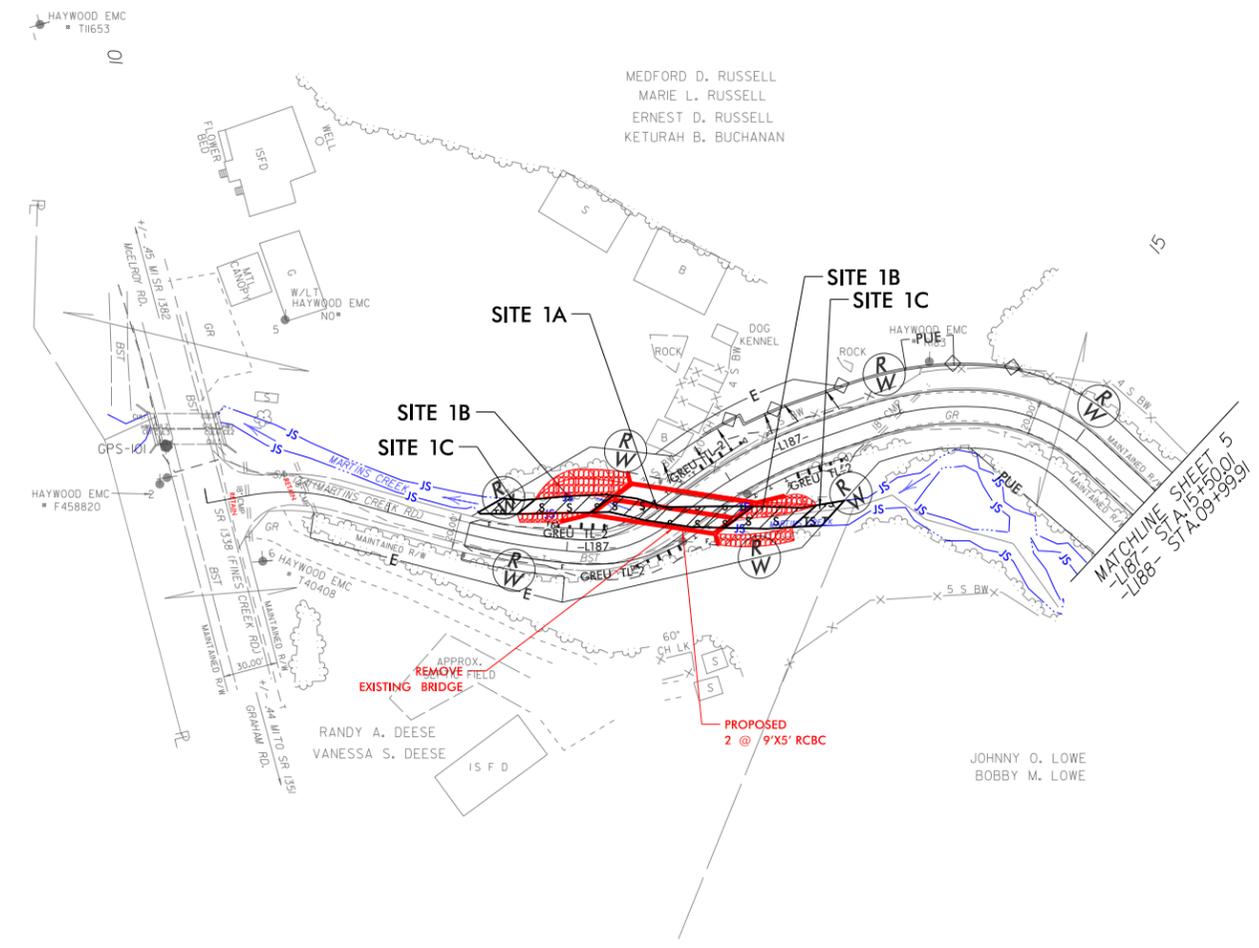
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8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493



PERMIT DRAWING
SHEET 2 OF 14

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS

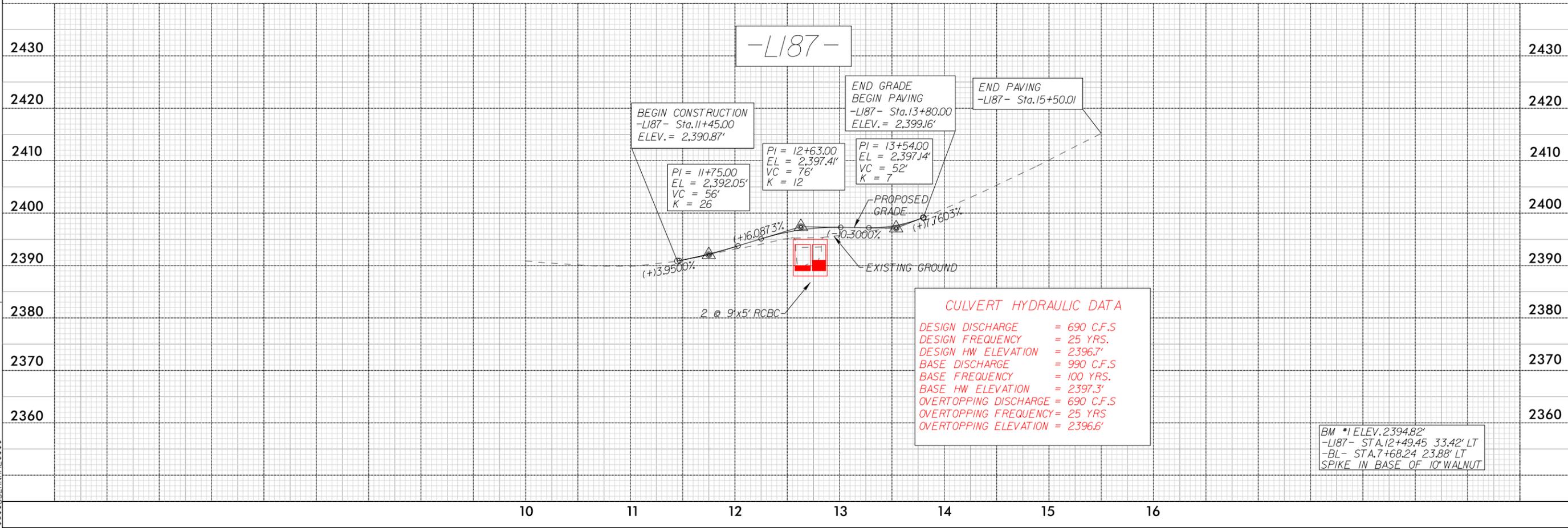


* BEGIN OF 2:1 RIP RAP SLOPE AND EXCAVATION WILL DEPEND ON WINGWALL SKEW AND LOCATION (WINGWALLS NOT SHOWN)

Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage.

REVISIONS

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DESIGN FREQUENCY	= 25 YRS.
DESIGN HW ELEVATION	= 2396.7'
BASE DISCHARGE	= 990 C.F.S
BASE FREQUENCY	= 100 YRS.
BASE HW ELEVATION	= 2397.3'
OVERTOPPING DISCHARGE	= 690 C.F.S
OVERTOPPING FREQUENCY	= 25 YRS
OVERTOPPING ELEVATION	= 2396.6'

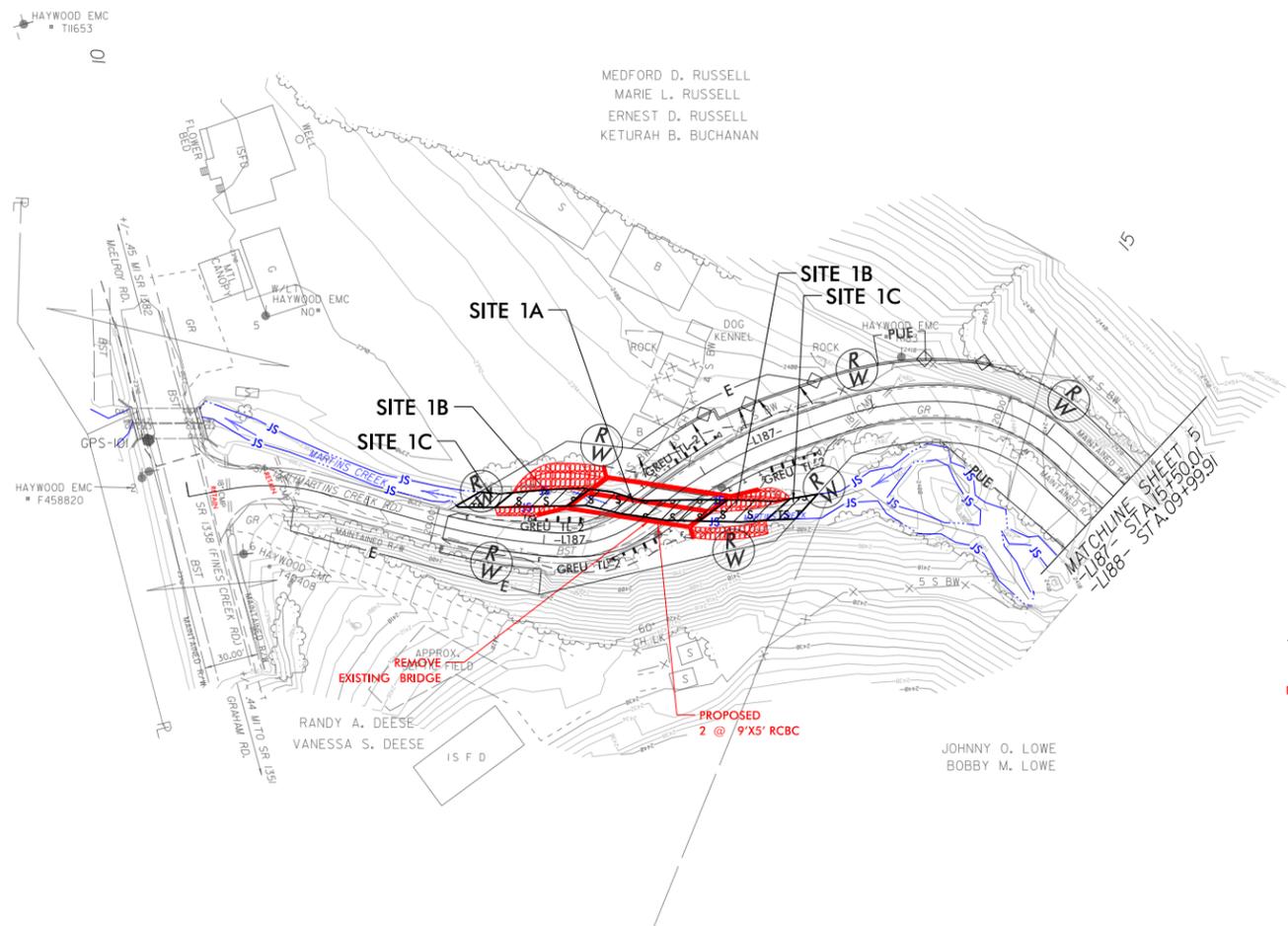
BM *1 ELEV. 2394.82'
-L187- STA. 12+49.45 33.42' LT
-BL- STA. 7+68.24 23.88' LT
SPIKE IN BASE OF 10' WALNUT

8/17/99

PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

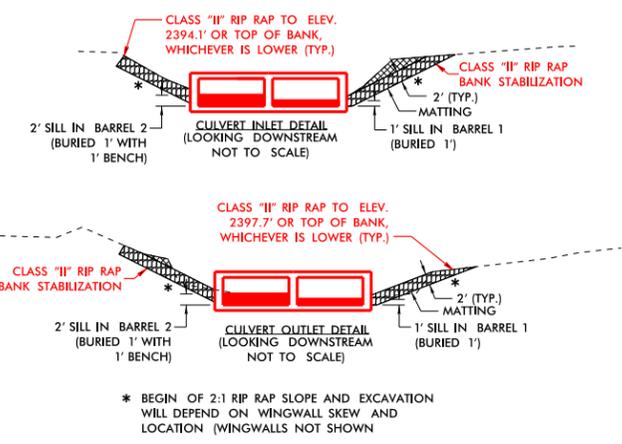
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RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493



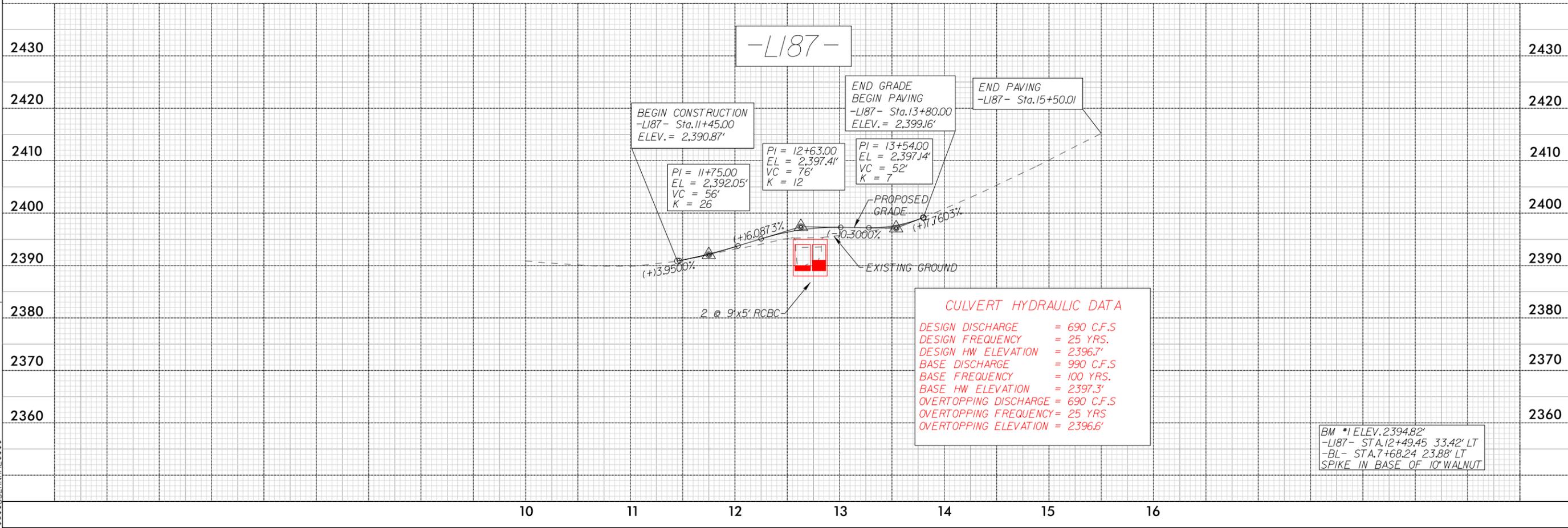
PERMIT DRAWING SHEET 3 OF 14

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS



Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage.

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BM *1 ELEV. 2394.82'
-L187- STA.12+49.45 33.42' LT
-BL- STA.7+68.24 23.88' LT
SPIKE IN BASE OF 10' WALNUT

PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

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RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

ENLARGEMENT

SITE 1B
SITE 1C

**PERMIT DRAWING
SHEET 4 OF 14**

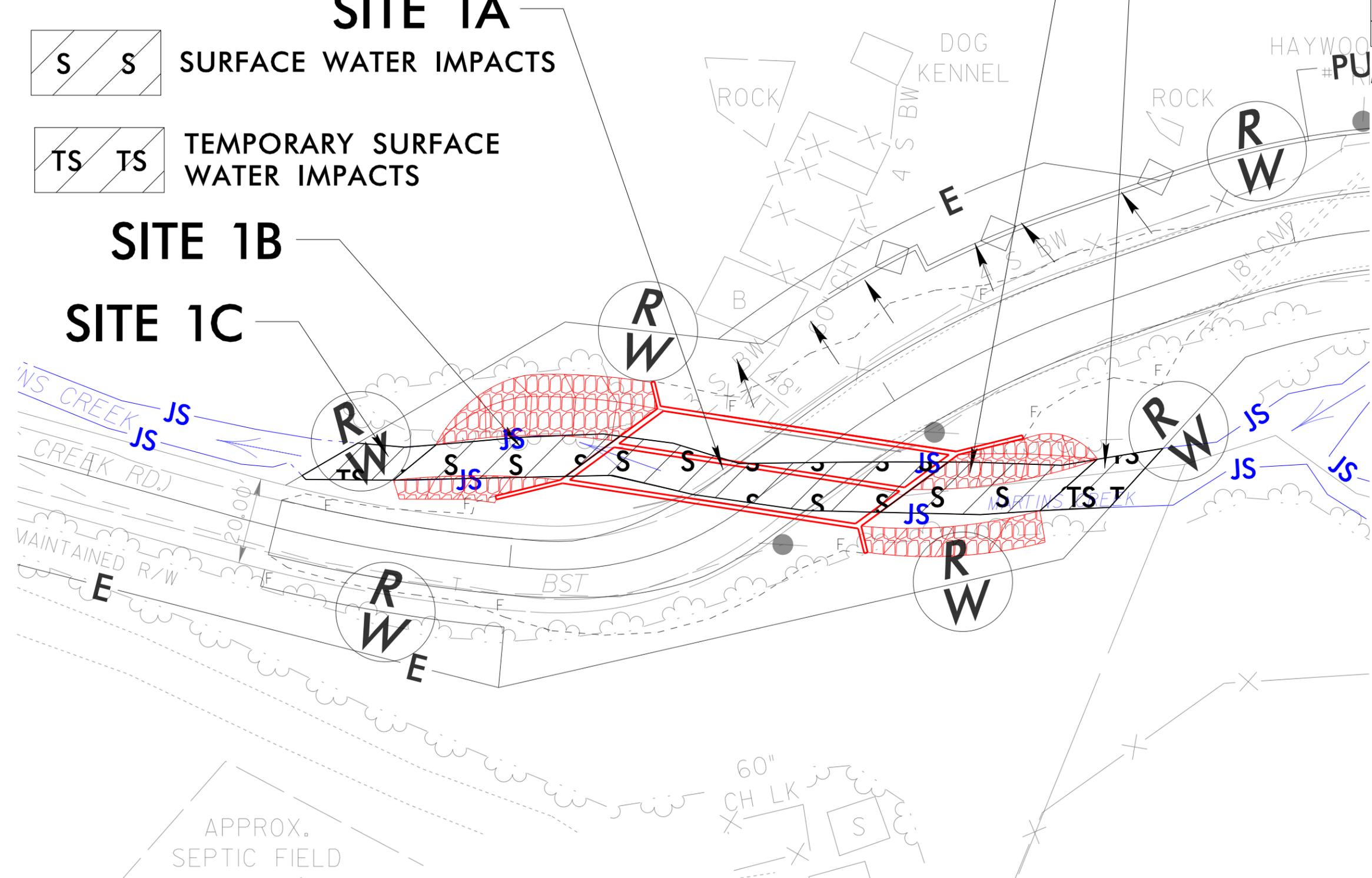


SURFACE WATER IMPACTS



TEMPORARY SURFACE WATER IMPACTS

SITE 1A
SITE 1B
SITE 1C



APPROX.
SEPTIC FIELD

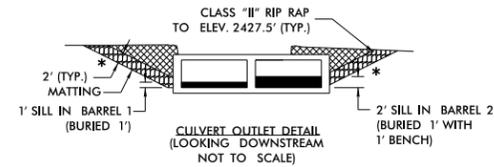
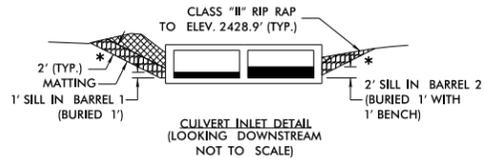
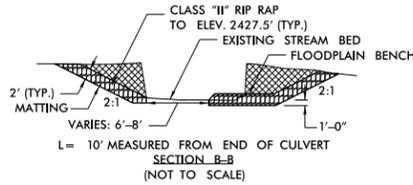
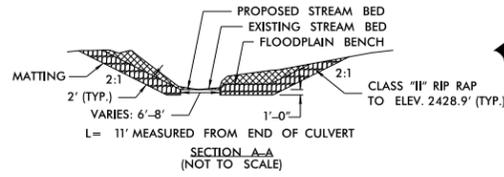
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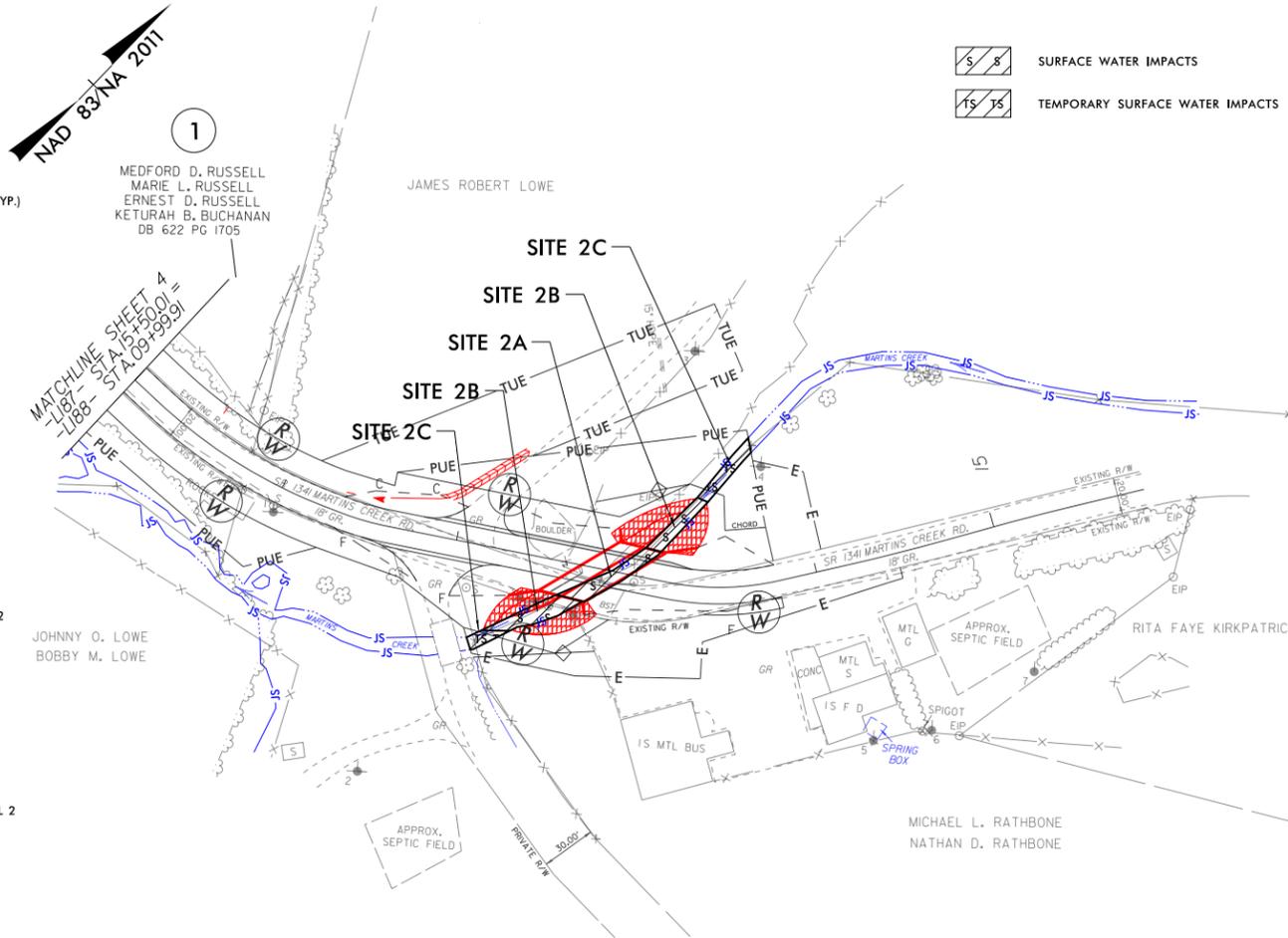
RS&H 8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

PERMIT DRAWING
SHEET 5 OF 14

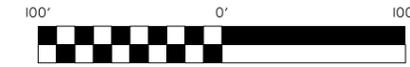
Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage.



* BEGIN OF 2:1 RIP RAP SLOPE AND EXCAVATION WILL DEPEND ON WINGWALL SKEW AND LOCATION (WINGWALLS NOT SHOWN)

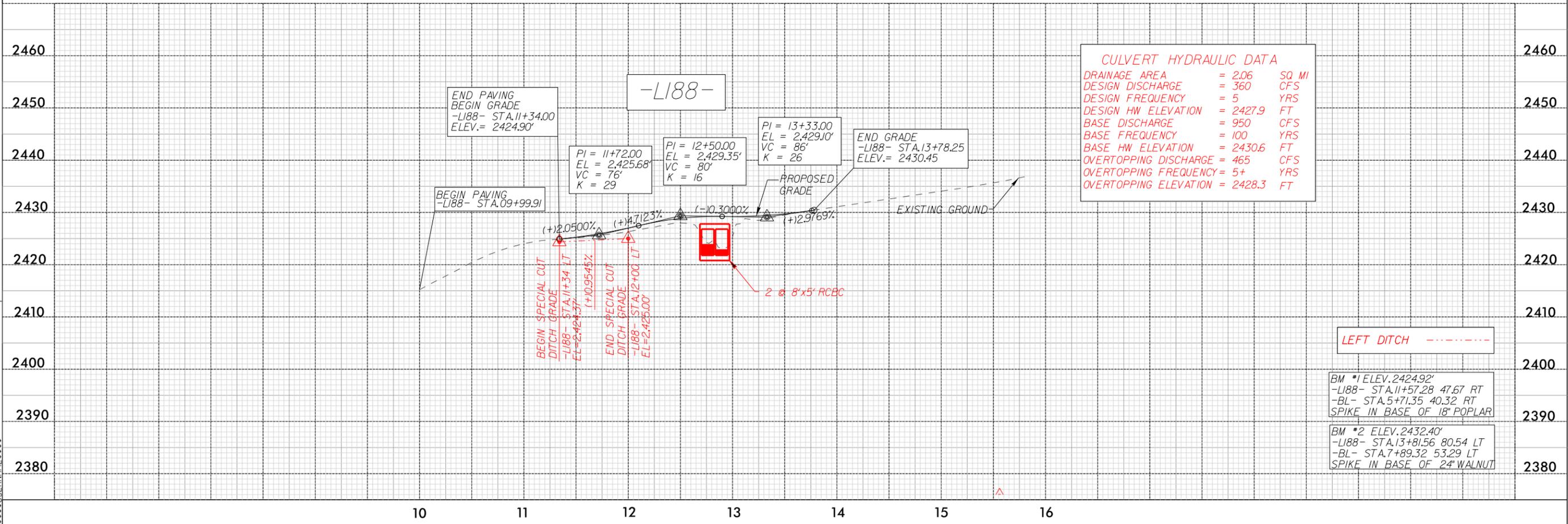


SURFACE WATER IMPACTS
 TEMPORARY SURFACE WATER IMPACTS



REVISIONS

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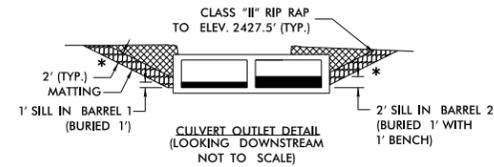
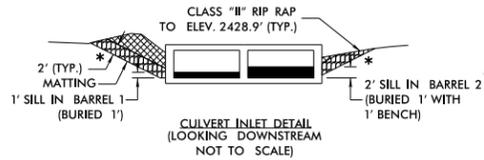
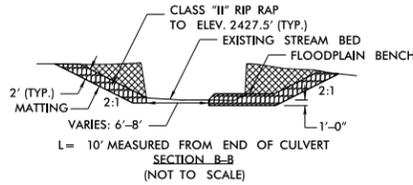
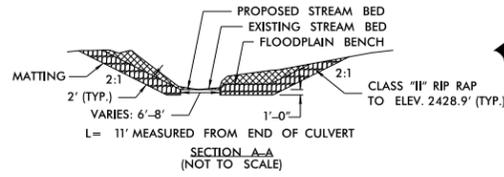
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

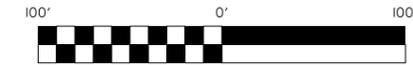
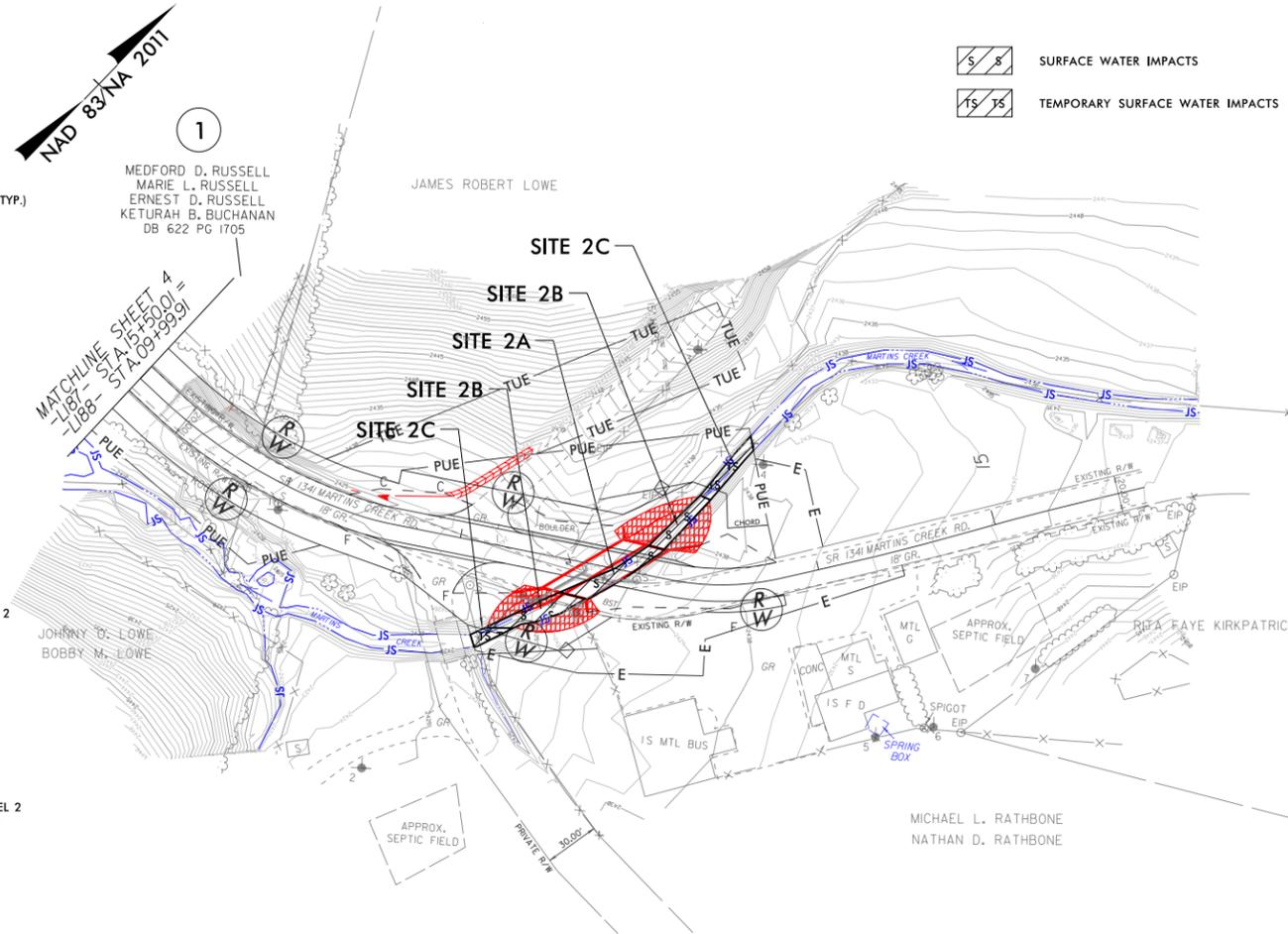
RS&H 8521 SIX FORKS ROAD, SUITE 400 RALEIGH, NC 27615 NC FIRM LICENSE No. F-0493

PERMIT DRAWING SHEET 6 OF 14

Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage.

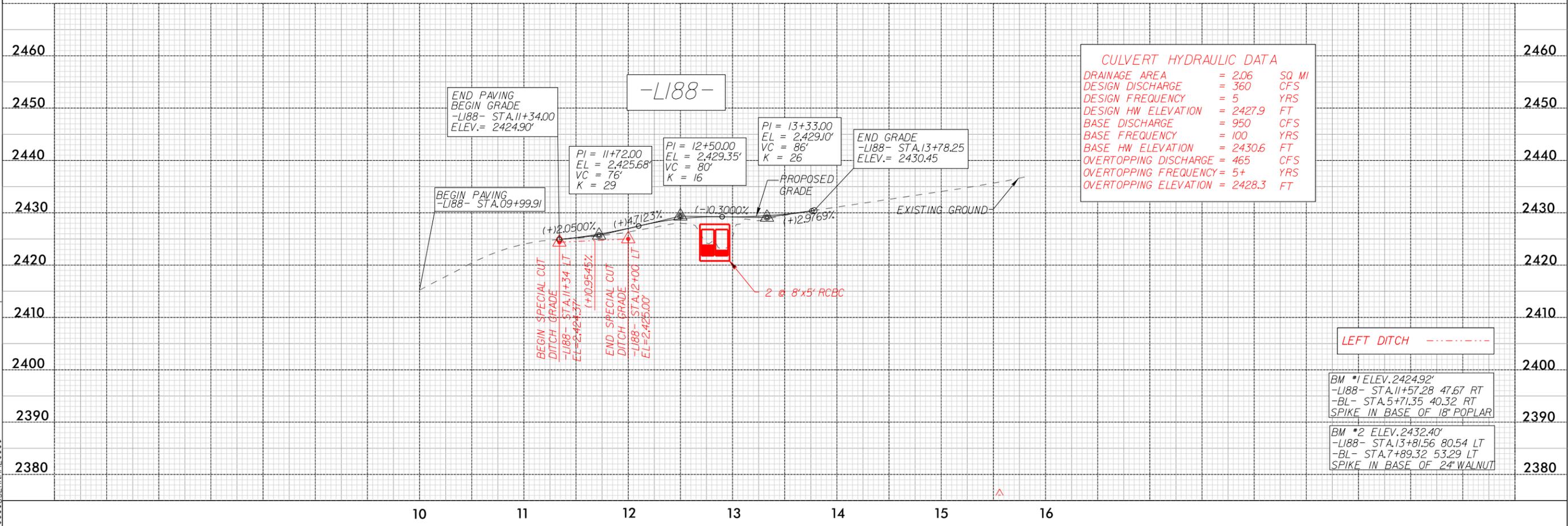


* BEGIN OF 2:1 RIP RAP SLOPE AND EXCAVATION WILL DEPEND ON WINGWALL SKEW AND LOCATION (WINGWALLS NOT SHOWN)



REVISIONS

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CULVERT HYDRAULIC DATA	
DRAINAGE AREA	= 2.06 SQ MI
DESIGN DISCHARGE	= 360 CFS
DESIGN FREQUENCY	= 5 YRS
DESIGN HW ELEVATION	= 2427.9 FT
BASE DISCHARGE	= 950 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2430.6 FT
OVERTOPPING DISCHARGE	= 465 CFS
OVERTOPPING FREQUENCY	= 5+ YRS
OVERTOPPING ELEVATION	= 2428.3 FT

LEFT DITCH -----

BM #1 ELEV. 2424.92'
 -L188- STA.11+57.28 47.67 RT
 -BL- STA.5+71.35 40.32 RT
 SPIKE IN BASE OF 18' POPLAR

BM #2 ELEV. 2432.40'
 -L188- STA.13+81.56 80.54 LT
 -BL- STA.7+89.32 53.29 LT
 SPIKE IN BASE OF 24' WALNUT

PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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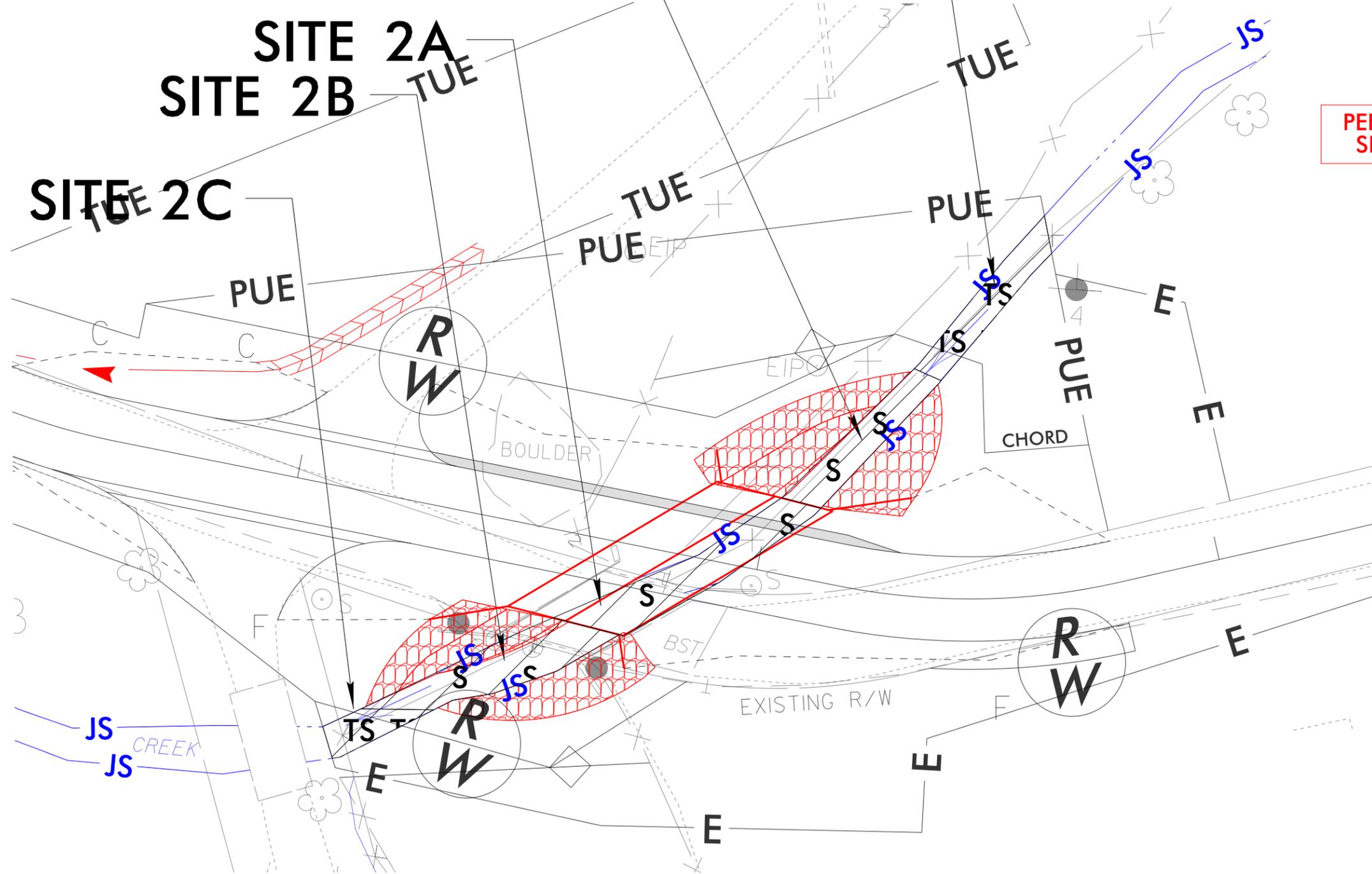
PERMIT DRAWING
SHEET 7 OF 14

ENLARGEMENT

SITE 2B SITE 2C

SITE 2A SITE 2B

SITE 2C



SURFACE WATER IMPACTS



TEMPORARY SURFACE WATER IMPACTS

REVISIONS

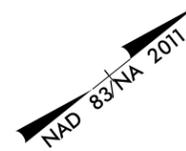
8/17/99

NO REVISIONS HAVE BEEN MADE TO CULVERT 430189. PLANS INCLUDED IN SUBMITTAL FOR REFERENCE ONLY.

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND

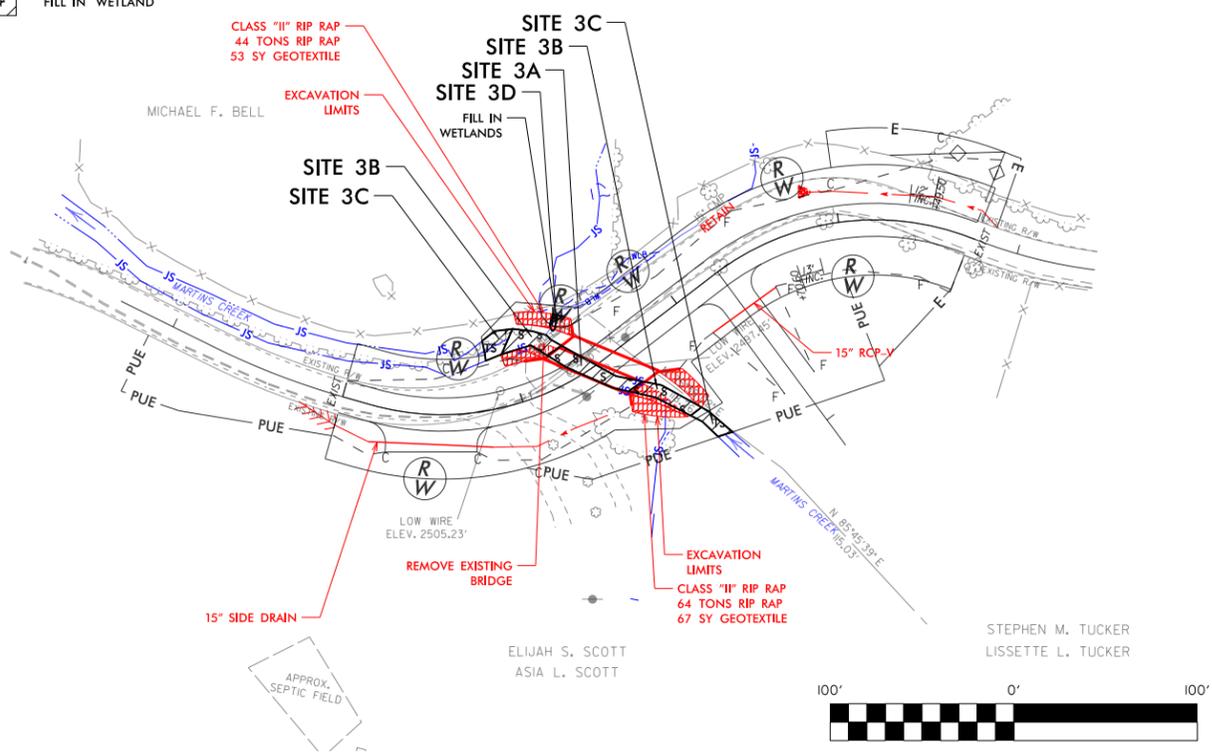
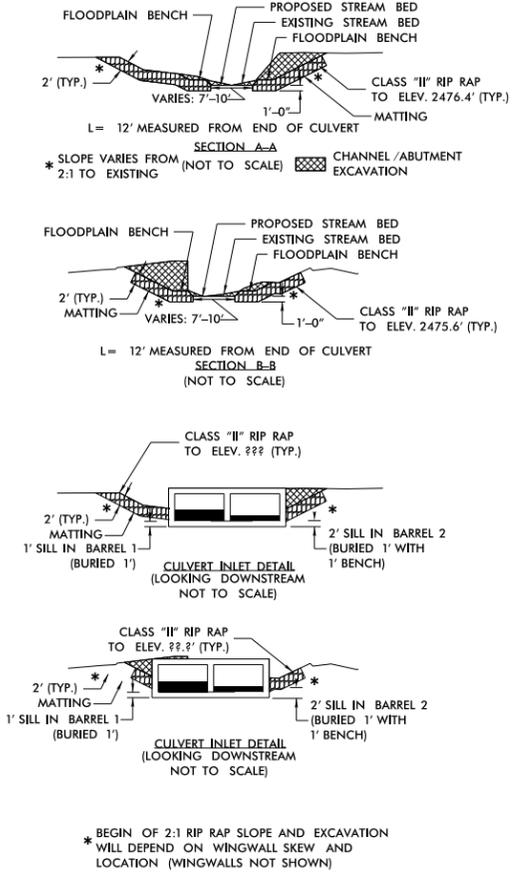
CULVERT NO. 430189

PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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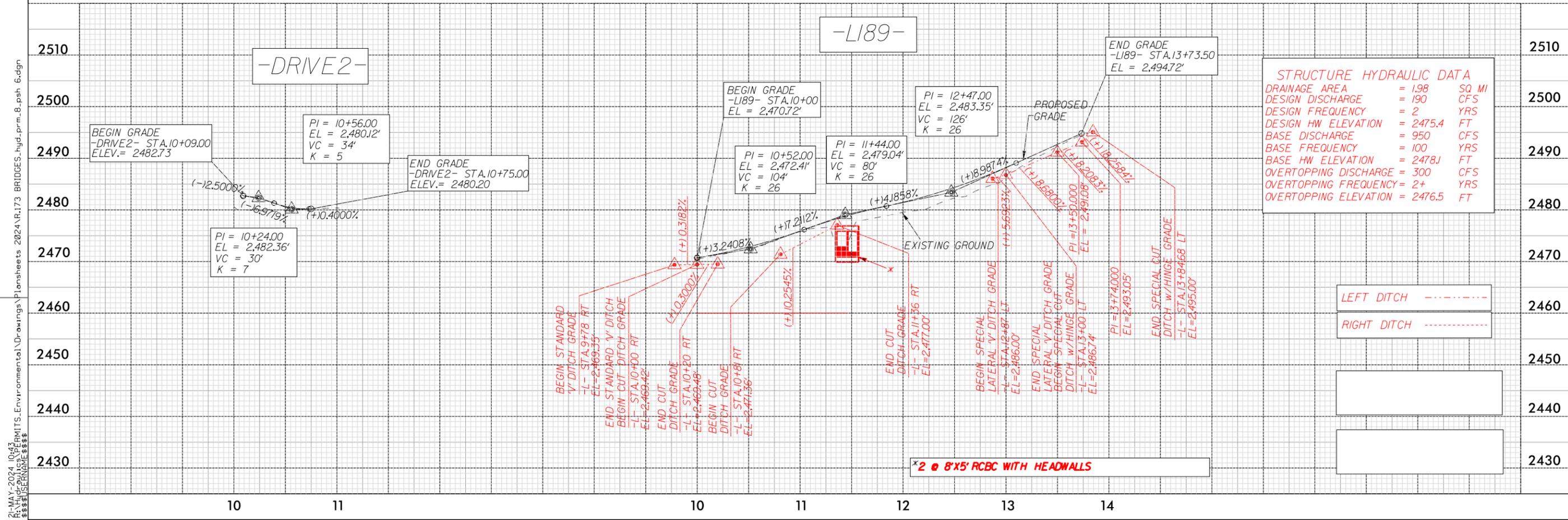
PERMIT DRAWING
SHEET 8 OF 14



Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage.

FOR CULVERT PLANS, SEE SHEET C-1 THRU C-15

REVISIONS
ROW REVISION 7 - 22: PUE REVISED ON PARCELS 7 AND 8. TCE REVISED ON PARCEL 8 BECAUSE OF PUE REVISION. (SMK)



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8/17/99

NO REVISIONS HAVE BEEN MADE TO CULVERT 430189. PLANS INCLUDED IN SUBMITTAL FOR REFERENCE ONLY.

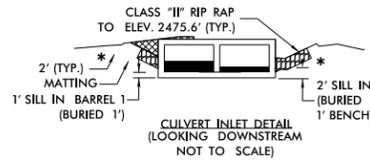
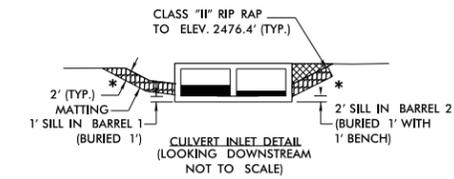
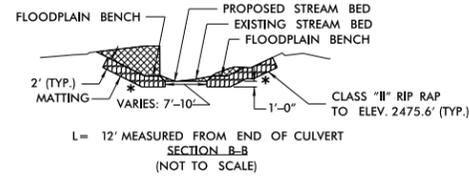
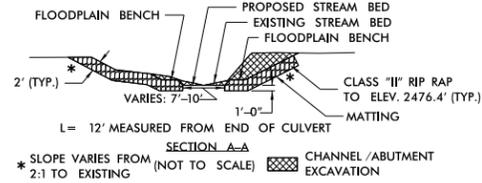
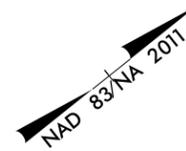
- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND

CULVERT NO. 430189

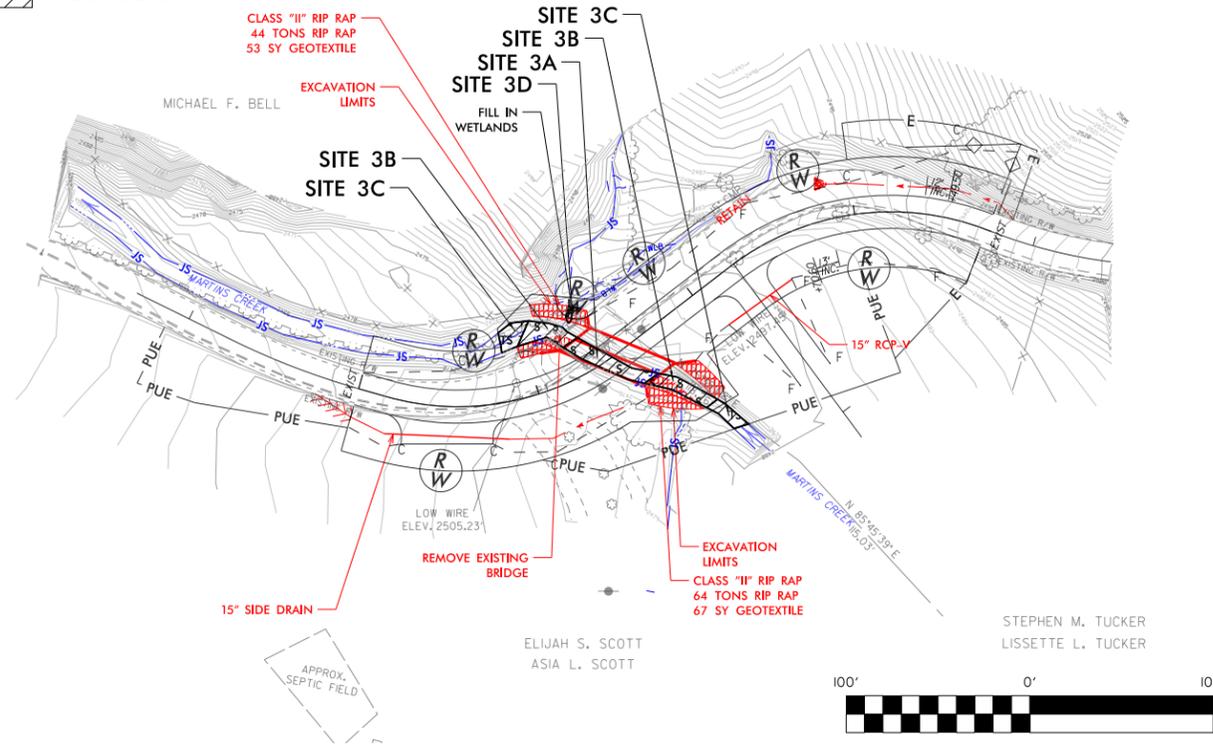
PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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RALEIGH, NC 27615
NC FIRM LICENSE No. F-0493

PERMIT DRAWING
SHEET 9 OF 14



* BEGIN OF 2:1 RIP RAP SLOPE AND EXCAVATION WILL DEPEND ON WINGWALL SKEW AND LOCATION (WINGWALLS NOT SHOWN)

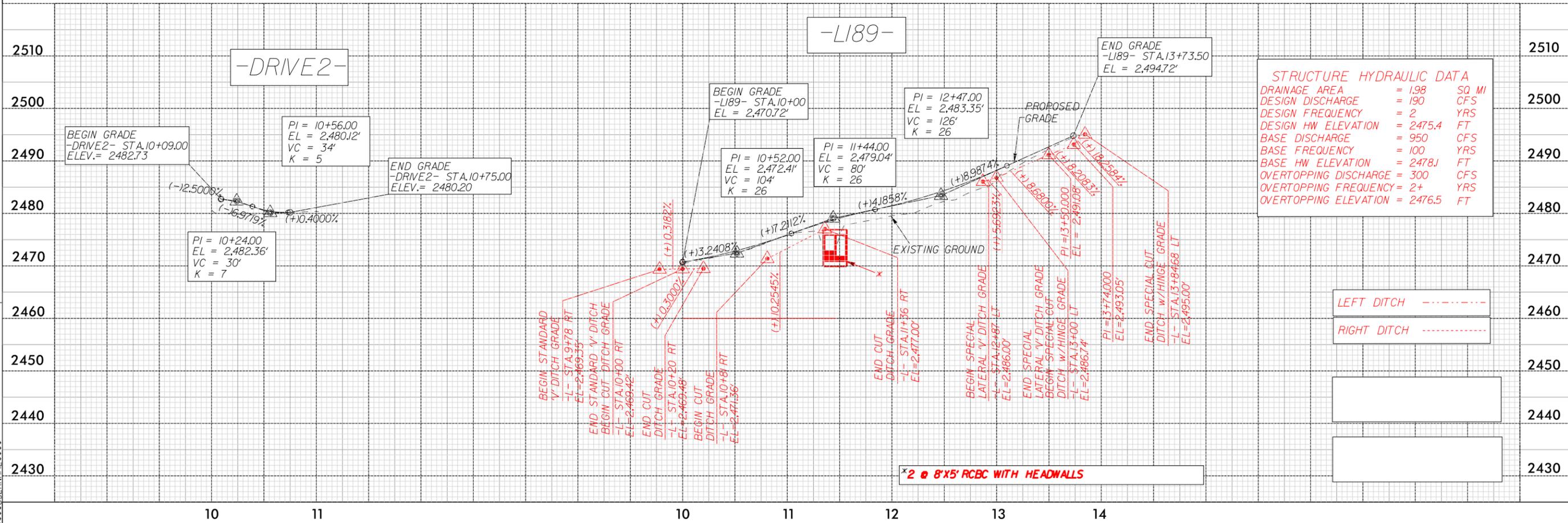


Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage.

FOR CULVERT PLANS, SEE SHEET C-1 THRU C-15

REVISIONS
ROW REVISION 7 - --2: PUE REVISED ON PARCELS 7 AND 8. TCE REVISED ON PARCEL 8 BECAUSE OF PUE REVISION. (SMK)

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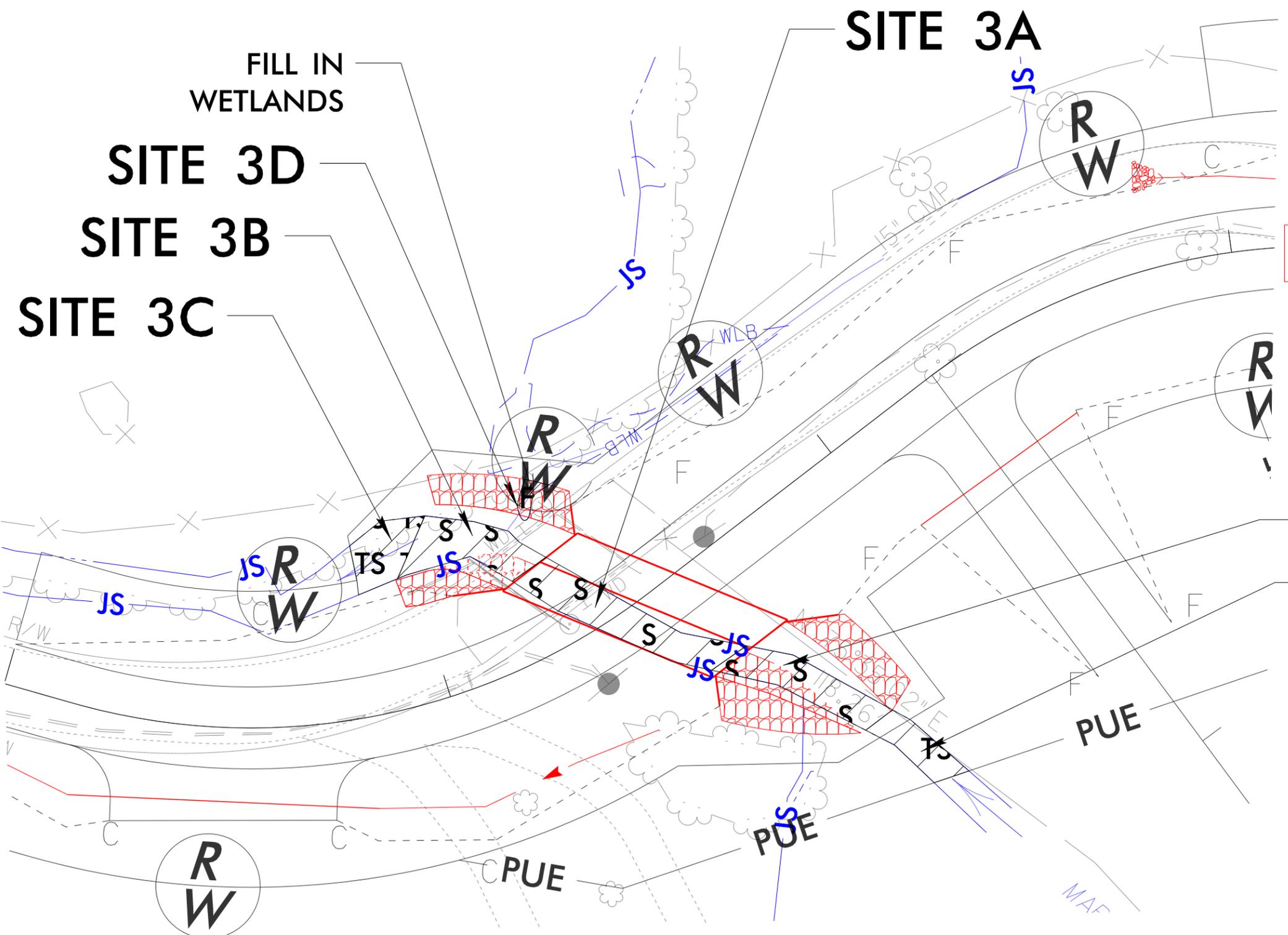
LEFT DITCH
RIGHT DITCH

* 2 @ 8'x5' RCBC WITH HEADWALLS

PROJECT REFERENCE NO. BPI4.R002	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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RS&H 8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

PERMIT DRAWING
SHEET 10 OF 14



ENLARGEMENT



SURFACE WATER IMPACTS



TEMPORARY SURFACE WATER IMPACTS



FILL IN WETLAND

REVISIONS

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Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage

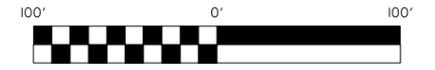
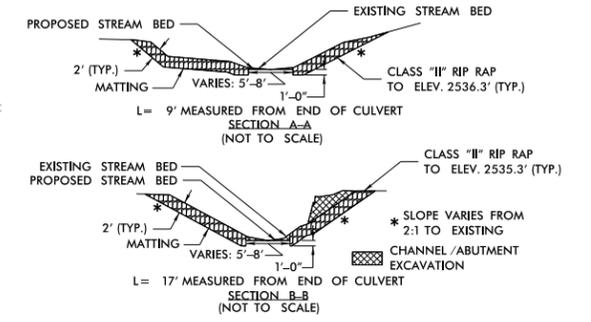
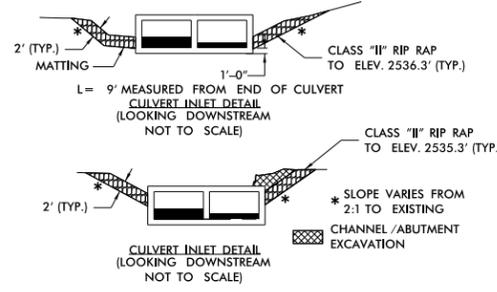
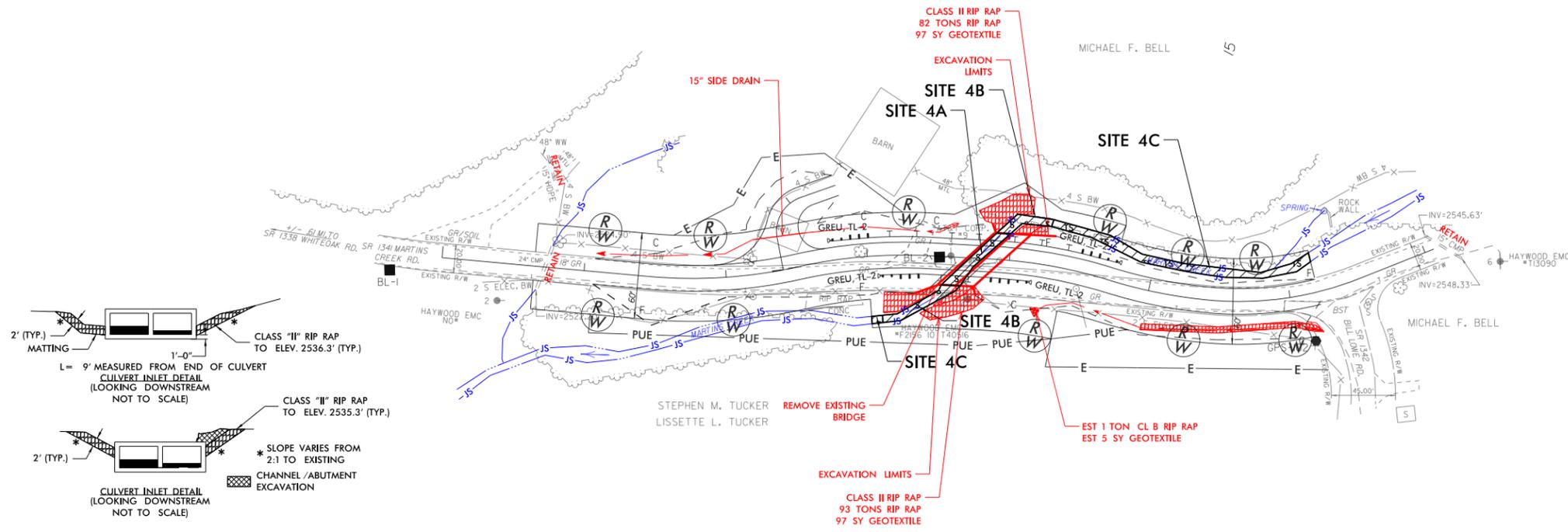
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS

NAD 83/NA 2007

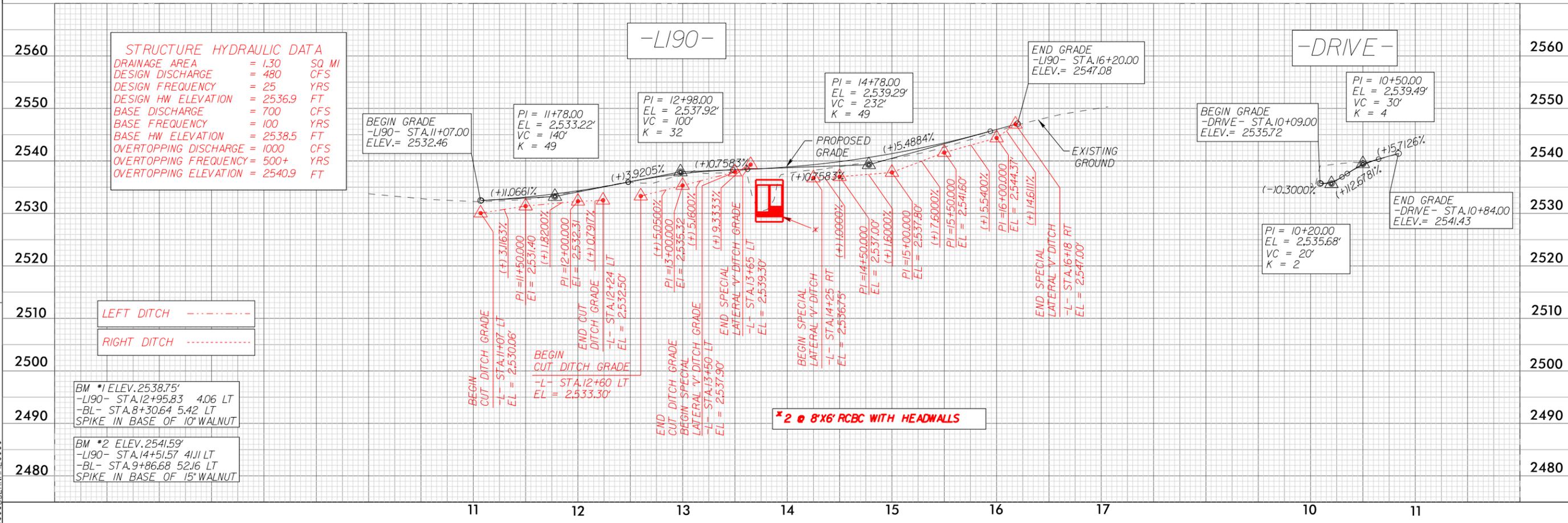
PROJECT REFERENCE NO.	SHEET NO.
BPI4.R002	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

RS&H 8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

PERMIT DRAWING SHEET 11 OF 14



REVISIONS



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Rip-rap may be used/supplemented for culvert backfill, then it should be topped with native or other finer material to facilitate wildlife passage

TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS

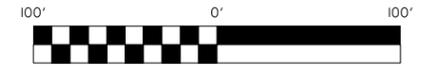
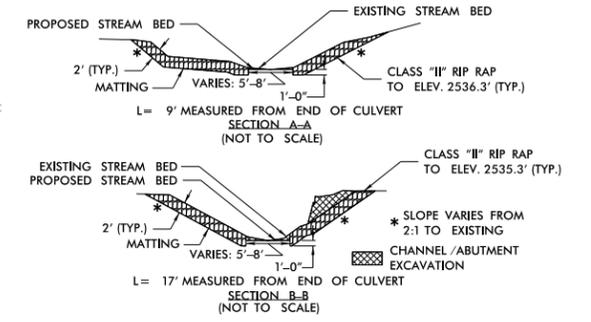
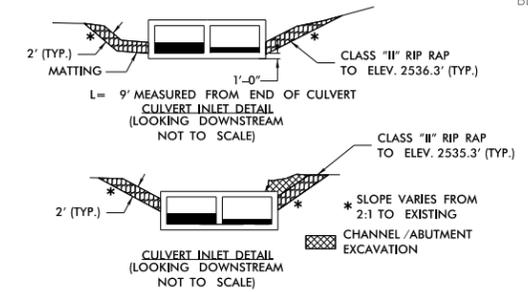
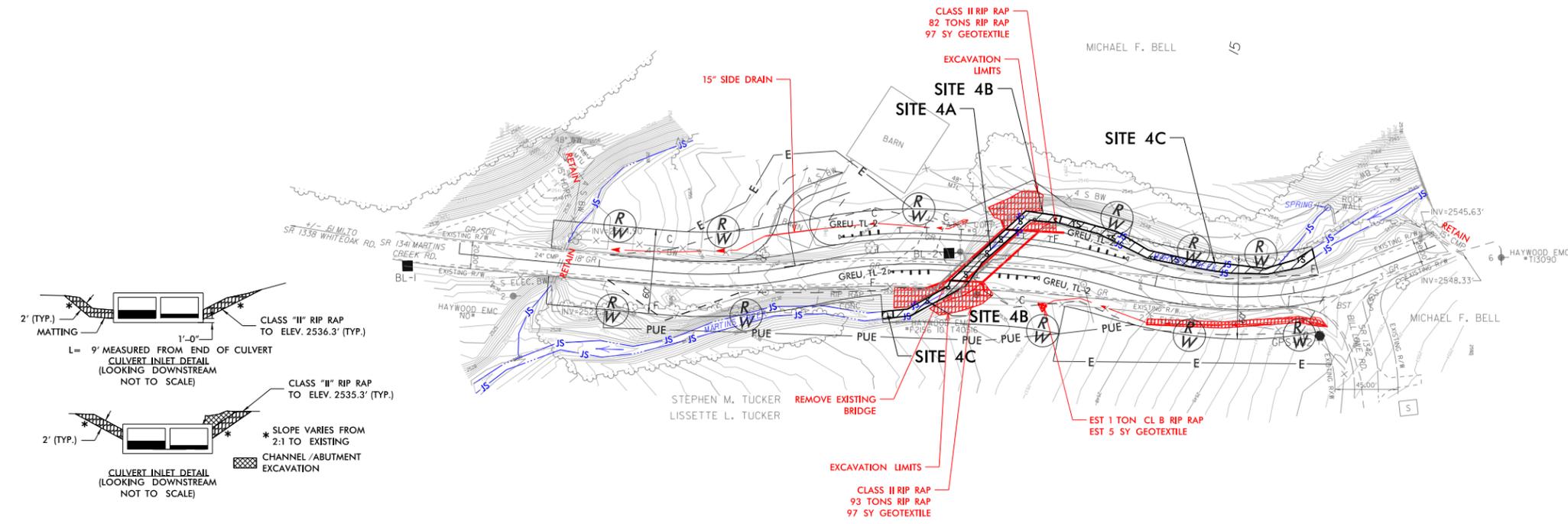
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PROJECT REFERENCE NO.	SHEET NO.
BPI4.R002	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

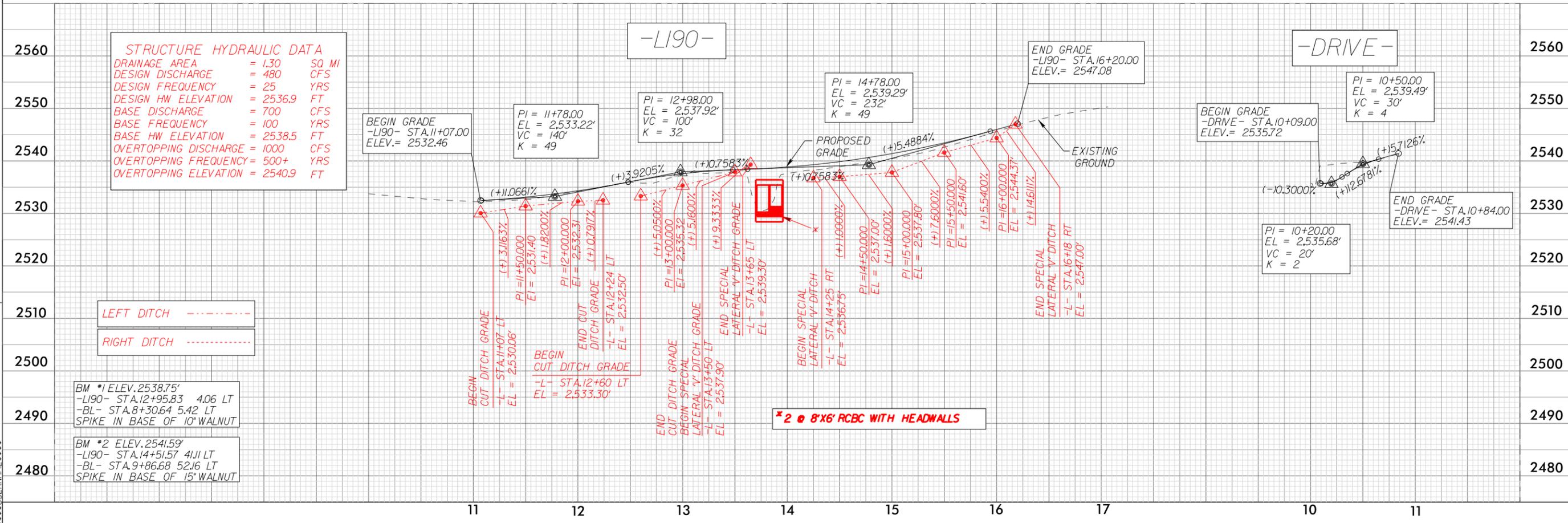
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RS&H
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

PERMIT DRAWING SHEET 12 OF 14



REVISIONS



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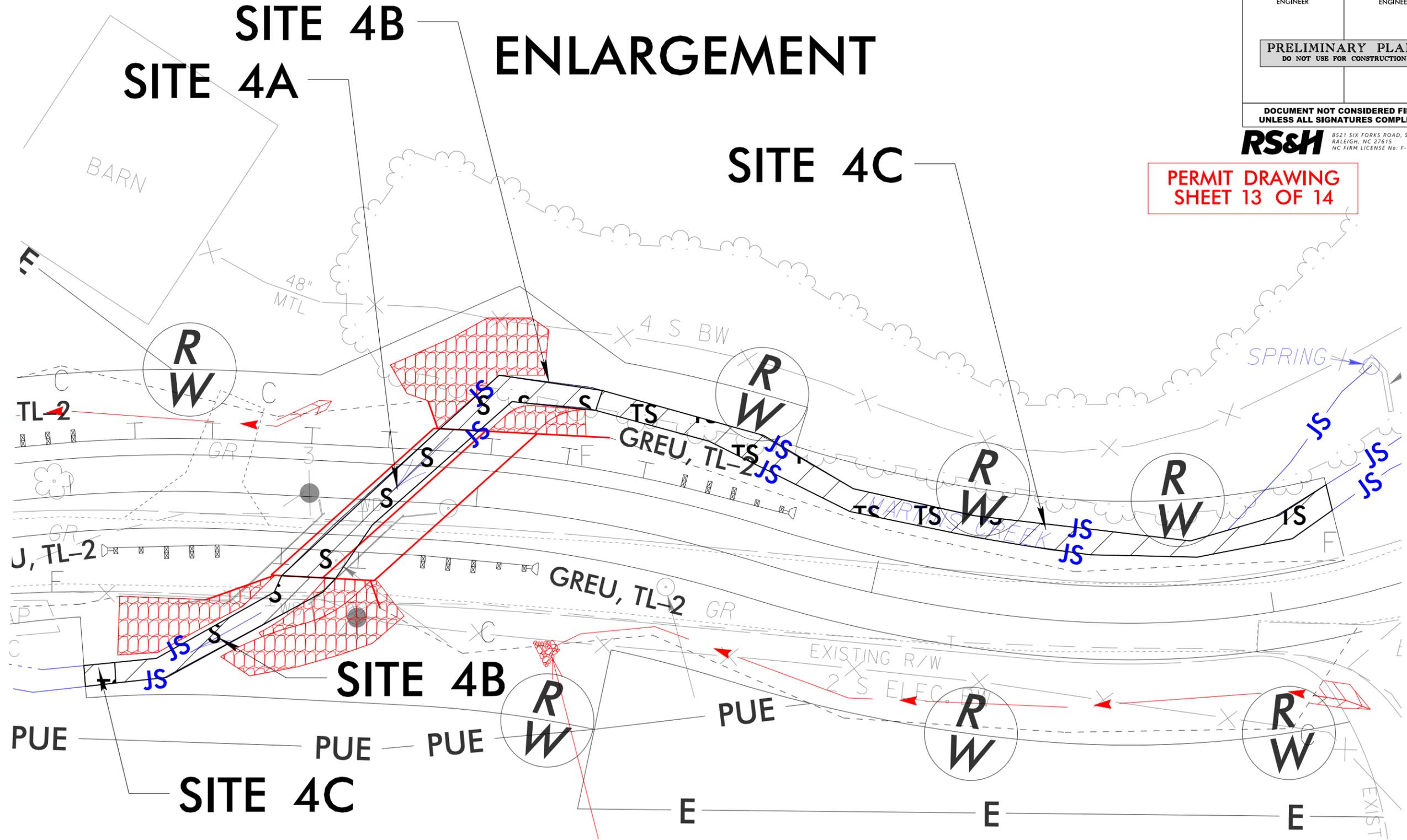
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

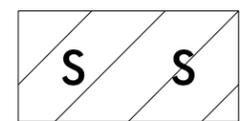
RS&H 8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

PERMIT DRAWING
SHEET 13 OF 14

ENLARGEMENT



TEMPORARY SURFACE WATER IMPACTS



SURFACE WATER IMPACTS

REVISIONS

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WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1C	-L187- 11+48 to 11+79 LT	Dewater						0.004		19		
1B	-L187- 11+70 to 12+35 LT	Rip-rap bank stabilization					0.008		42			
1A	-L187- 12+14 to 13+04 LT & RT	2@9'x5' RCBC					0.018		76			
1B	-L187- 12+81 to 13+38 RT	Rip-rap bank stabilization					0.009		35			
1C	-L187- 13+18 to 13+56 RT	Dewater					0.004		15			
2C	-L188- 12+16 to 12+38 RT	Dewater					0.003		16			
2B	-L188- 12+23 to 12+68 RT	Rip-rap bank stabilization					0.009		44			
2A	-L188- 12+53 to 13+11 LT & RT	2@8'x5' RCBC					0.010		53			
2B	-L188- 13+02 to 13+37 LT	Rip-rap bank stabilization					0.006		39			
2C	-L188- 13+28 to 13+80 LT	Dewater					0.006		39			
3C	-L189- 10+85 to 11+10 LT	Dewater					0.004		14			
3B	-L189- 10+96 to 11+36 LT	Rip-rap bank stabilization					0.006		28			
3A	-L189- 11+23 to 11+60 LT & RT	2@8'x5' RCBC					0.009		50			
3B	-L189- 11+50 to 11+76 RT	Rip-rap bank stabilization					0.006		36			
3C	-L189- 11+69 to 11+82 RT	Dewater					0.003		21			
3D	-L189- 11+34 to 11+46 LT	Rip-rap bank stabilization	0.001									
4C	-L190- 13+00 to 13+09 RT	Dewater					0.001		8			
4B	-L190- 13+09 to 13+66 RT	Rip-rap bank stabilization					0.007		54			
4A	-L190- 13+53 to 13+99 LT & RT	2@8'x6' RCBC					0.009		52			
4B	-L190- 13+90 to 14+26 LT	Rip-rap bank stabilization					0.005		38			
4C	-L190- 14+25 to 16+20 LT	Dewater					0.024		188			
TOTALS*:			0.001	0.000	0.000	0.000	0.000	0.102	0.049	547	320	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 5/21/2024
 Haywood
 BP14.R002 (430187_188_187_189)



CULVERT SURVEY & HYDRAULIC DESIGN REPORT

N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
HYDRAULICS UNIT
RALEIGH, N. C.

State Proj. Reference No. SF-430187 WBS Project No. 17BP.14.R.173 Proj. Station 1187-12+71
County HAYWOOD Bridge Over MARTIN'S CREEK Struc. Inv. No. 430187
SR 1341 SR 1338 SR 1342
On Highway MARTIN'S CREEK RD Between FINES CREEK RD. and BILL LOWE RD
Recommended Structure 2 @ 9'x5' RCBC w/6" TOP BEVEL EMBEDDED 1' WITH 1' SILL IN BARREL 1
INLET AND OUTLET AND 2' SILL IN BARREL 2 INLET AND OUTLET

Recommended Width of Roadway 32' SHOULDER PT TO SHOULDER PT Skew 45°
Recommended Location is (Up/Down) Stream from Existing Crossing.

Latitude 35.679111 Longitude -82.980639
Statewide Tier Regional Tier Sub-Regional Tier
Bench Mark is BM#1: SPIKE IN BASE OF 10" WALNUT, 1187- STA. 12+50.10 LT
Northing 818122 Easting 725761 Elev. 2394.82 ft. Datum: NAVD 88
Temporary Crossing STAGED CONSTRUCTION



Designed by: ALEXANDER R VINSON, PE
Assisted by: BRADLEY J. GAHAN



Date 6/30/2023



Review by: _____ Date _____

6/30/2023

SITE DATA

Drainage Area 2.13 SQ. MI. Source DELINEATED USGS STREAMSTATS
River Basin FRENCH BROAD Character RURAL
Stream Classification (Such as Trout, High Quality Water, etc.) C
Data on Existing Structure BRIDGE 430187: 1@25'6" TIM FLOOR ON I-BEAMS

Debris Potential: Low Moderate High
Waterway Opening Below 100yr. WS EL. 45.4 s.f.
Data on Structures Up and Down Stream US: BRIDGE 430188: 1@20'-6" TIM FLOOR ON I-BEAMS
DS: E4217 @ 0'x18' CULVERT

Gage Station No. NA Period of Records NA
Max. Discharge NA c.f.s. Date NA Frequency NA

Historical Flood Information:
Date NA Elev. 2397 ft. Est. Freq. yr. Source LOCAL RESIDENT Period of Knowledge 13 yrs.
Date NA Elev. NA ft. Est. Freq. yr. Source NA Period of Knowledge NA yrs.
Date NA Elev. NA ft. Est. Freq. yr. Source NA Period of Knowledge NA yrs.
Allowable HW Elev. MAINTAIN OR IMPROVE LOS Normal Water Surface Elev. 2390.6 ± ft.
Manning's n: Left O.B. 0.12 Channel 0.05 Right O.B. 0.12 Source FIELD INVESTIGATION
Flood Study / Status NONE (LATEST HS REVISION 1/6/2010)
Flood Study 100 yr. Discharge NA c.f.s.; WS Elev.: Floodway NA ft. Without Floodway NA ft.
@River Station NA

DESIGN DATA

Hydrological Method USGS SIR 2009-5158 (REGION II)
Hydraulic Design Method HEC RAS VERSION 6.1.0 - SF-430187 Martin Creek SR1341
Design Tailwater : $Q_{10} = 2392.4$ ft.; $Q_{25} = 2393.1$ ft.; $Q_{50} = 2393.4$ ft.; $Q_{100} = 2393.6$ ft.; $Q_{500} = 2394.2$ ft.

Slo & Type	Q (c.f.s.)	Inlet Control			Outlet Control			Remarks
		K _e	HWD (ft.)	H _w (ft.)	d _c (ft.)	H _o (ft.)	LS _o (ft.)	
SEE HEC RAS MODEL								

Total Proposed Waterway Opening 75 s.f.
Outlet Velocity (V_o) 8.1 f.p.s. Natural Channel Velocity (V_n) 7.7 f.p.s.
Required Outlet Protection RIP RAP ON BANKS
State Floodway Compliance Type NA

INFORMATION TO BE SHOWN ON PLANS

HYDRAULIC DATA	
FRENCH BROWAGE	<u>-0.02</u> c.f.s.
FREQUENCY OF OVERTOP FLOOD	<u>50</u> yrs.
DESIGN HIGH WATER ELEVATION	<u>2396.8</u>
DRAINAGE AREA	<u>2.13</u> SQ. MI.
BASE BROWAGE (DISCH)	<u>0.00</u> c.f.s.
BASE HIGH WATER ELEVATION	<u>2396.3</u>

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	<u>0.00</u> c.f.s.
FREQUENCY OF OVERTOPPING FLOOD	<u>50</u> yrs.
OVERTOPPING FLOOD ELEVATION	<u>2396.8</u> ±

*NEW LOCATION OF OVERTOPPING
WS EL Taken @ River Station 305

ADDITIONAL INFORMATION AND COMPUTATIONS

USGS REGRESSION EQUATIONS
SOURCE CHANNEL VELOCITY CALCULATED ON 8/8/2016:
USGS SIR 2009-5158 (REGION II, BLUE RIDGE) US: 1.12 f.p.s. DS: 0.99 f.p.s.

DRAINAGE AREA = 2.13 SQ. MI.
 $Q_{10} = 288$ (DA)^{0.7792} = 288 (2.13)^{0.7792} = 500 cfs
 $Q_{25} = 398$ (DA)^{0.7792} = 398 (2.13)^{0.7792} = 690 cfs
 $Q_{50} = 479$ (DA)^{0.7792} = 479 (2.13)^{0.7792} = 820 cfs
 $Q_{100} = 575$ (DA)^{0.7792} = 575 (2.13)^{0.7792} = 990 cfs
 $Q_{500} = 794$ (DA)^{0.7792} = 794 (2.13)^{0.7792} = 1400 cfs

***HISTORICAL DATA: RESIDENT STATES THAT APPROX 13 YEARS AGO A LARGE STORM EVENT CAUSED THE BRIDGE TO OVERTOP APPROXIMATELY 1'-2'.**

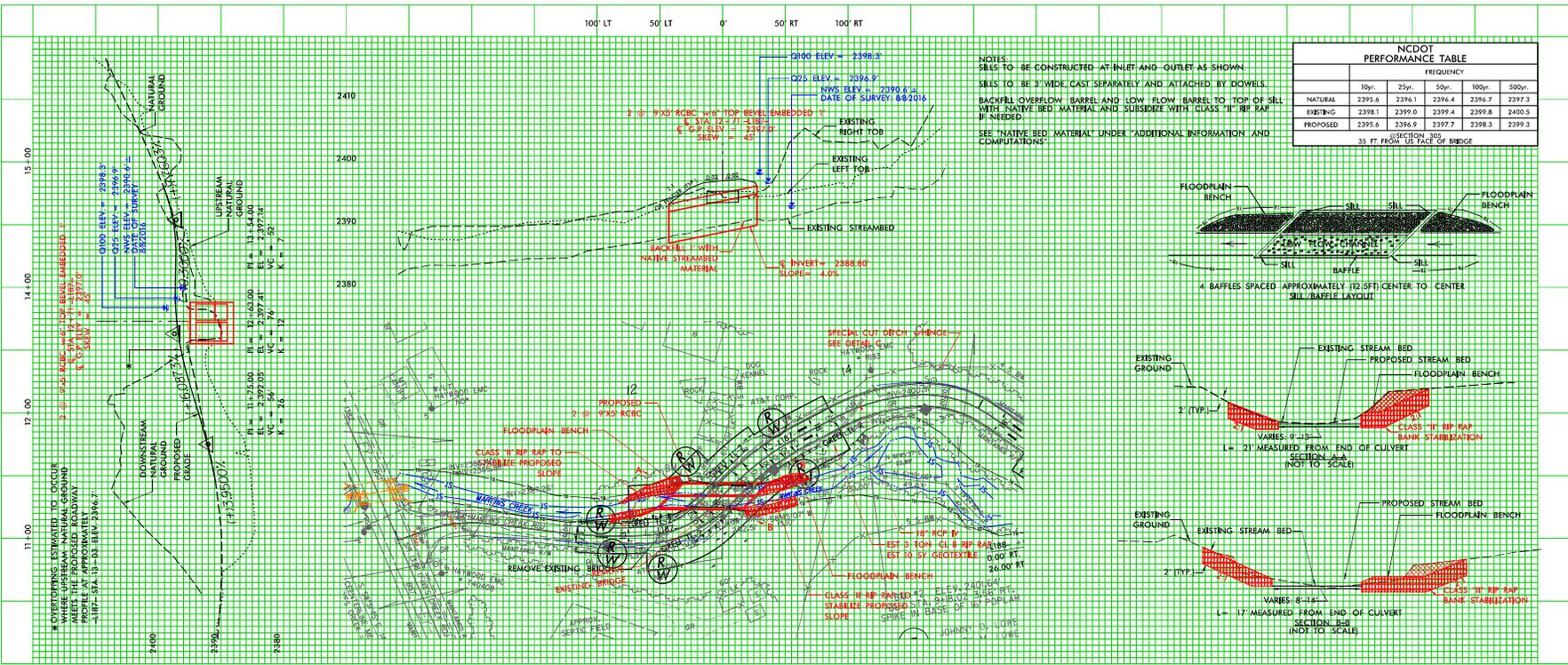
NATIVE BED MATERIAL:

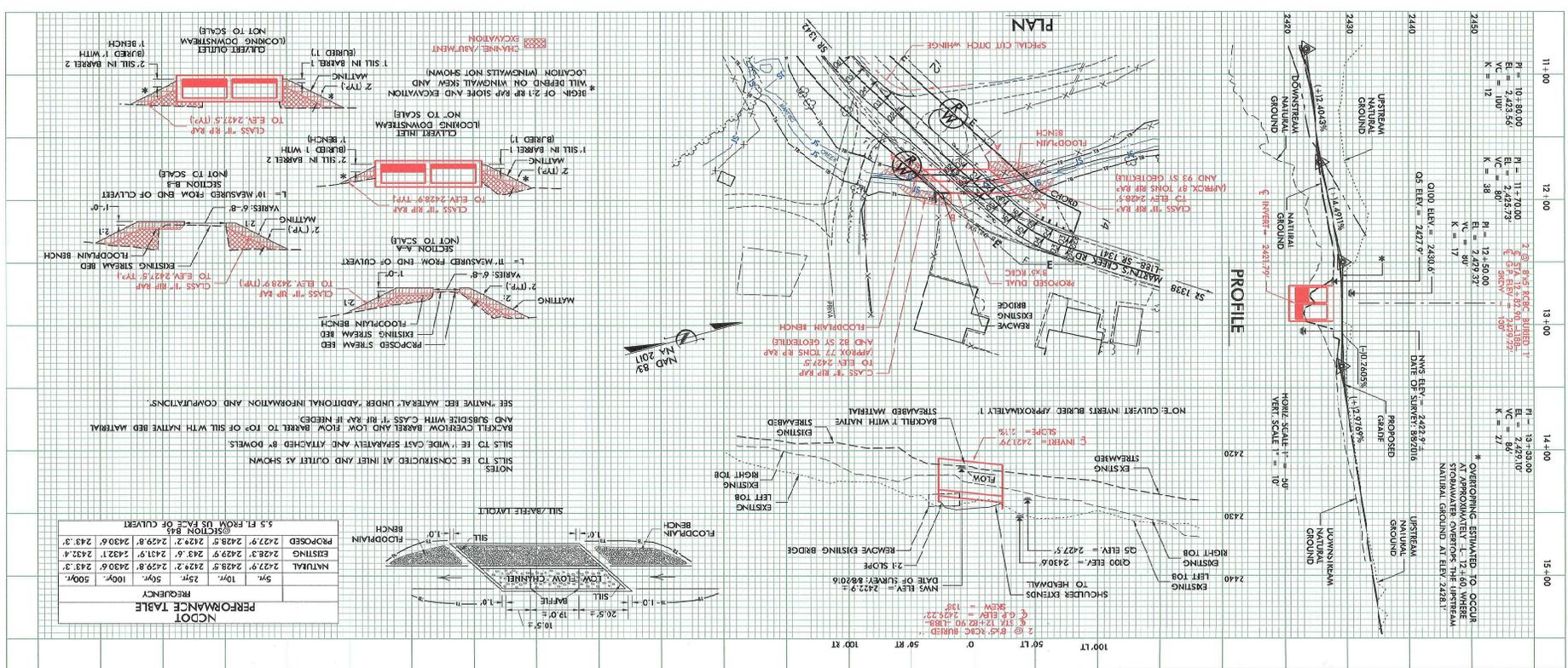
NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

NO STRUCTURES WILL BE ADVERSELY IMPACTED BY WSEL'S FROM THIS PROJECT.

NATIVE MATERIAL SPECIFICATION FOR BACKFILLING NOTE

The Engineer, in consultation with DEO staff, shall review all material to be used as backfill prior to conducting the backfill activity. Backfill shall consist of native material only unless the Engineer, in consultation with DEO staff, determines that (1) the native material is unsuitable, or (2) additional material is required to supplement the native material. The chosen backfill material shall not have adverse effects to aquatic life, aquatic life passage, or water quality. Native material consists of material that is excavated from the stream bed or floodplain at the project site during culvert construction.





ADDITIONAL INFORMATION AND COMPUTATIONS

USGS SIR 2009-5158 (REGION II, BLUE RIDGE)

DRAINAGE AREA = 2.66 SQ. MI.

Q ₁₀	Q ₂₅	Q ₅₀	Q ₁₀₀	Q ₅₀₀
209 (DA)	209 (2.06)	360 cfs	490 cfs	794 (DA)
398 (DA)	398 (2.06)	650 cfs	800 cfs	1300 cfs
479 (DA)	479 (2.06)	800 cfs	950 cfs	
575 (DA)	575 (2.06)	950 cfs	1300 cfs	

NATIVE BED MATERIAL:

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

CHANNEL VELOCITY CALCULATED ON 8/2016: 1.5 F.P.S.

***HISTORICAL DATA**

RESIDENT STATES THAT HE HAS SEEN THE BRIDGE OVERTOP TWICE IN ABOUT 50 YEARS. THE LATEST EVENT WAS APPROXIMATELY 2 YEARS AGO. WATER TYPICALLY OVERTOPS THE BANK AND FLOWS INTO THE FIELD ACROSS FROM HIS HOME.

NO STRUCTURES WILL BE ADVERSELY IMPACTED BY WSEL'S FROM THIS PROJECT.

SITE DATA

Drainage Area 2.66 SQ. MI. Source DELINEATED USGS STREAMSTATS
 River Basin FRENCH BROAD Character RURAL
 Stream Classification (Such as Trout, High Quality Water, etc.) C
 Data on Existing Structure BRIDGE 430188: 1@20'6" TIM FLOOR ON I-BEAMS W/TIM CAPS/TIM POSTS & SILLS @ 5'6" CENTERS
 Total Waterway Opening 48.2 s.f. Waterway Opening Eelow 100yr. WS EL. 48.2 s.f.
 Debris Potential: Low/L Moderate/High
 Data on Structures Up and Down Stream US: BRIDGE 430189 (TO BE REPLACED): 1@20'6" TIM FLOOR ON I-BEAMS W/TIM CAPS/TIM POSTS & CONC SILL @ 4'3" CENTERS; HEIGHT CROWN TO BED = 6 FT | DS: BRIDGE 430187 (TO BE REMOVED): 1@25'5" TIM FLOOR ON I-BEAMS W/TIM CAPS/TIM POSTS & SILLS @ 5'3" CENTERS; HEIGHT CROWN TO BED = 6 FT
 Gege Station No. N/A Period of Records N/A
 Max. Discharge N/A c.f.s Date N/A Frequency N/A

Historical Flood Information: SEE ADDITIONAL INFORMATION AND COMPUTATIONS SECTION

Date 2014 Elev. 2428.2 ± ft. Est. Freq. 25 yr. Source LOCAL RESIDENT Period of Knowledge 60 ± yrs.
 Date Elev. ft. Est. Freq. yr. Source 2422.5 ± ft. FIELD Period of Knowledge yrs.
 Allowable HW Elev. 2432.1 ft. EXISTING 100YR WSEL @ 8/2016 Normal Water Surface Elev. 2422.5 ± ft. DATE OF SURVEY: 8/2016

Mannings n : Left 0.05 Channel 0.05 Right 0.05 Obtained From INVESTIGATION
 Flood Study/Status NONE (LATEST RS REVISION 4/32012) Floodway Established? NO
 Flood Study 100 yr. Discharge NA c.f.s.; WS Elev. Floodway NA ft. Floodway NA ft.

DESIGN DATA

Hydrological Method USGS SIR 2009-5158 (REGION II BLUE RIDGE)
 Hydraulic Design Method HEC RAS VERSION 4.1.0 - SF-430188 Martin Creek SRI341
 Design Tailwater : Q₁₀ N/A ft.; Q₂₅ N/A ft.; Q₅₀ N/A ft.; Q₁₀₀ N/A ft.; Q₅₀₀ N/A ft.

Size & Type	Q (cfs)	K _o	Inlet Control		Outlet Control		Remarks
			HWD	H ₁ (ft.)	d _c	d _o	
SEE HEC RAS MODEL							

Is a Floodway Revision Required? NO Total Proposed Waterway Opening 56 s.f.
 Outlet Velocity (V_o) 8.6 f.p.s. Natural Channel Velocity (V_n) 6.0 f.p.s.

Required Outlet Protection CLASS "B" RIP RAP ON BANKS

INFORMATION TO BE SHOWN ON PLANS

WS EL. Taken @ River Station 846
 Design: Discharge 360 c.f.s. Frequency 5 yr. Elev. 2427.9 ft.
 Base Flood: Discharge 950 c.f.s. Frequency 100 yr. Elev. 2430.6 ft.
 Overtopping: Discharge 465 c.f.s. Frequency 5+ yr. Elev. 2428.3 ft.

CULVERT SURVEY & HYDRAULIC DESIGN REPORT

N. C. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 HYDRAULICS UNIT
 RALEIGH, N. C.

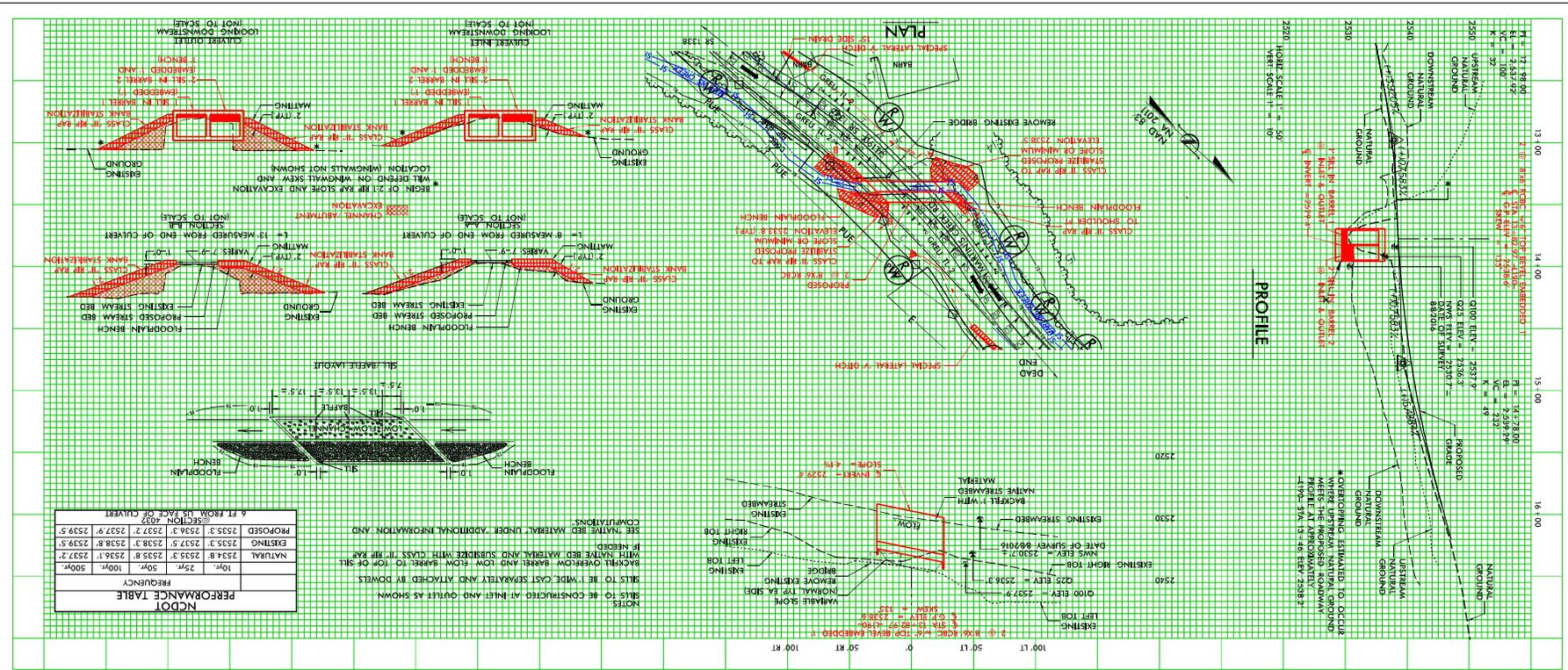
I.D. No. SF-430188 Project No. 178P.14.R.173 Proj. Station -1188-12+82.90
 County HAYWOOD Stream MARTIN CREEK Stru. No. 188
 On Highway MARTIN'S CREEK RD. Between FINES CREEK RD and BILL LOWE RD
 SR 1341 SR 1342
 Recommended Structure 2 @ 8'x6' RCBC BURIED 1' WITH HEADWALLS, WITH SILLS AND BAFFLES, AND WITH 6" TOP BEVEL
 Recommended Width of Roadway 30' SHOULDER 2' TO SHOULDER PT Skew 138°
 Recommended Location is (Up, A) Stream from Existing Crossing.
 Latitude 35.67982 Longitude -82.97925
 Statewide Tier Regional Tier Sub-Regional Tier
 Bench Mark is BM#1-1188 STA 11+79.48' RT SPIKE IN BASE OF 16" POPLAR Elev. 2424.92 ft. Datum: NAVD 88
 Temporary Crossing STAGED CONSTRUCTION



Designed by: RAJENDER GADDA
 Assisted by: ALEXANDER R VINSON
 Project Engineer: RICHARD L BOLLINGER
 Reviewed by: [Signature] 8/10/17
 Date 3102017



Stream: MARTIN CREEK; Struc. Inv. No. 188; I.D. No. SF-430188; Project No. 178P.14.R.173; Date: 8/10/17



ADDITIONAL INFORMATION AND COMPUTATIONS

USGS SIR 2009-5158 (REGION II, BLUE RIDGE)

DRAINAGE AREA = 1.30 SQ. MI.

Q_{100}	= 288 (DA)	= 288 (1.30)	= 350 cfs
Q_{50}	= 398 (DA)	= 398 (1.30)	= 480 cfs
Q_{25}	= 479 (DA)	= 479 (1.30)	= 600 cfs
Q_{10}	= 575 (DA)	= 575 (1.30)	= 700 cfs
Q_{5}	= 794 (DA)	= 794 (1.30)	= 950 cfs

CHANNEL VELOCITY CALCULATED ON 8/8/2016:
 US: 0.7 f.p.s. DS: 1.8 f.p.s.

HISTORICAL DATA: MR. RAMSEY DOES NOT BELIEVE THE BRIDGE HAS BEEN OVERTOPPED.

NATIVE BED MATERIAL:
 NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

NO STRUCTURES WILL BE ADVERSELY IMPACTED BY WSEL'S FROM THIS PROJECT.

SITE DATA

Drainage Area 1.30 SQ. MI. Source DELINEATED USGS STREAMSTATS VERIFIED WITH LIDAR DATA

River Basin FRENCH BROAD Character RURAL

Stream Classification (Such as Trout, High Quality Water, etc.) C

Date on Existing Structure BRIDGE 430190: 10/20/92 TIM FLOOR ON I-BEAMS W/TM CAPS/TIM POSTS & SILLS @ 5'6" CENTERS

Total Waterway Opening 70.7' s.f. Waterway Opening Below 100yr WS EL 70.7' s.f.

Debris Potential: Low Moderate High ROCKS AND BRANCHES IN STREAM

Date on Structures Up and Down Stream US: NON-INVENTORY STRUCTURE | DS: BRIDGE 430189 (TO BE REPLACED) | 10/20/6' TIM FLOOR ON I-BEAMS W/TM CAPS/TIM POSTS & CONC SILL @ 4'3" CENTERS; HIGHEST CROWN TO BED = 6 FT

Gage Station No. NA Period of Records NA yrs.

Max. Discharge NA c.f.s Date NA Frequency NA

Historical Flood Information: SEE ADDITIONAL INFORMATION AND COMPUTATIONS SECTION

Date NA Elev. <= 2537.6 ft Est. Freq. NA yr. Source (DIVISION 14 NCDOT) Period of Knowledge 20+ yrs.

Date NA Elev. NA ft Est. Freq. NA yr. Source (DIVISION 14 NCDOT) Period of Knowledge 20+ yrs.

Allowable HW Elev. 2538.8 ft. EXISTING 100yr WSEL @ RS 4032 Normal Water Surface Elev. 2530.7 s.f. DATE OF SURVEY: 8/8/2016

Manning's n: Left O.B. 0.12 Channel 0.05 Right O.B. 0.12 Obtained From INVESTIGATION

Flood Study/Status NONE (LATEST FIS REVISION 1/6/2010) Floodway Established NO

Flood Study 100 yr. Discharge NA c.f.s.; WS Elev.: NA ft. Without Floodway NA ft.

DESIGN DATA

Hydrological Method USGS SIR 2009-5158 (REGION II)

Hydraulic Design Method HEC RAS VERSION 5.0.7 - SF-430190 Martin Creek SR1341

Design Tailwater: Q_{10} NA ft.; Q_{25} NA ft.; Q_{50} NA ft.; Q_{100} NA ft.; Q_{500} NA ft.

Silo & Type	Q (c.f.s.)	Inlet Control			Outlet Control			Remarks
		K _e	HW (ft.)	HW (ft.)	dc	$\frac{d_c}{D}$	H ₁ LS ₀ (ft.)	
SEE HEC RAS MODEL								

Is a Floodway Revision Required? NO Total Proposed Waterway Opening 72' s.f.

Outlet Velocity (V_o) 10.7 f.p.s. Natural Channel Velocity (V_n) 8.3 f.p.s.

Required Outlet Protection RIP RAP ON BANKS

INFORMATION TO BE SHOWN ON PLANS

WS EL Taken @ River Station 4032

Design: Discharge 480 c.f.s. Frequency 25 yr. Elev. 2536.3 ft.

Base Flood: Discharge 700 c.f.s. Frequency 100 yr. Elev. 2537.9 ft.

* Overtopping: Discharge 1100 c.f.s. Frequency 500+ yr. Elev. 2540.9 ft.

* SEE PROFILE

CULVERT SURVEY & HYDRAULIC DESIGN REPORT

N. C. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 HYDRAULICS UNIT
 RALEIGH, N. C.

I.D. No. SF-430190 Project No. 17BP.14.R.173 Proj Station -1190- 13 + 82.97

County HAYWOOD Stream MARTIN CREEK Stru. No. 190

On Highway MARTIN'S CREEK RD Between FINES CREEK RD and DEAD END

Recommended Structure 2 @ 8'x6" RCBC w/6" TOP BEVEL (EMBEDDED 1') WITH 1' SILL IN BARREL 1 INLET AND OUTLET AND 2' SILL IN BARREL 2 INLET AND OUTLET

Recommended Width of Roadway 30' SHOULDER PT TO SHOULDER PT skew 135'

Recommended Location is (Up, A) Down) Stream from Existing Crossing.

Latitude 35.68641 Longitude -82.9750

Statewide Tier Regional Tier Sub-Regional Tier

Bench Mark is BM#2: SPIKE IN BASE OF 15" WALNUT 4'1/2' OF -1190- STA 14 - 52 Elev. 2541.59 ft. Datum: NAVD 88

Temporary Crossing STAGED CONSTRUCTION



Designed by: ALEXANDER R VINSON

Assisted by: BENJAMIN J FULLENWIDER

Project Engineer: RICHARD L BOLLINGER

Reviewed by: Marc T. Shann

Date 10/19/2021





DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
WRDA TRANSPORTATION BRANCH
69 DARLINGTON AVENUE
WILMINGTON NORTH CAROLINA 28403

August 14, 2025

Regulatory Program/Division

Sent Via email: pjbreedlove@ncdot.gov

North Carolina Department of Transportation
Attn: Mr. Patrick Breedlove
253 Webster Road
Sylva, NC 28779

Dear Mr. Breedlove:

This letter is in response to your request to the Wilmington District, WRDA Transportation Branch for a preliminary jurisdictional determination (PJD). The project involves the replacement of four bridges along Martins Creek Road, with the first bridge replacement occurring north of the intersection of Martin's Creek Road and Fines Creek Road, and the other bridge replacements occurring at varied distances along Martin's Creek Road with the last bridge replacement located south of the intersection of Martin's Creek Road and Bill Lowe road in Waynesville, Haywood County, North Carolina, at Latitude 35.679140 and Longitude -82.980650. This project has been assigned the file number SAW-2025-00940 (the BP14.R002 / Br 187 188 189 190 replacement project). This file number should be referenced in all correspondence concerning this project.

Based on our review of the information you furnished, and other information available to our office, we have preliminarily determined the above-referenced area may contain approximately 1,972 linear feet of stream and 0.01 acre of wetlands which are considered waters of the United States under the U.S. Army Corps of Engineers (Corps) regulatory jurisdiction. This determination was made in accordance with the Corps regulatory authority pursuant to Section 404 of the Clean Water Act, and based upon criteria contained in the 1987 Corps of Engineers Wetland Delineation Manual and the Eastern Mountains and Piedmont regional supplement.

Section 404 of the Clean Water Act requires a Department of the Army (DA) permit be obtained prior to the discharge of dredged or fill material into waters of the United States, including wetlands. Section 10 of the Rivers and Harbors Act of 1899 requires a DA permit be obtained for any work in, on, over or under navigable waters of the United States.

For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made based on a preliminary

jurisdictional determination will treat all waters including wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved jurisdictional determination, which is an appealable action, by contacting the Corps district for further instructions. Please **sign and return** the attached PJD form within 30 days of receipt. If a signed PJD form is not received within 30 days of the date of this letter, the Corps will presume concurrence.

This determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the review area identified in this request. The determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

You are cautioned that work performed in areas which may be waters of the United States, as indicated in the preliminary JD, without a Department of the Army permit could subject you to enforcement action.

If you have any questions concerning this correspondence, please contact Crystal Amschler, Project Manager of the WRDA /Transportation Branch at 828-526-6013, by mail at the above address, or by email at crystal.c.amschler@usace.army.mil. Please take a moment to complete our customer satisfaction survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Sincerely,

A handwritten signature in black ink that reads "M. Scott Jones". The signature is written in a cursive, flowing style.

M. Scott Jones, PWS
WRDA / Transportation Branch Chief
USACE - Wilmington District

Enclosures

U.S. Army Corps of Engineers (USACE)
PRELIMINARY JURISDICTIONAL DETERMINATION (PJD)

For use of this form, see Sec 404 CWA, Sec 10 RHA, Sec 103 MPRSA; the proponent agency is CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires 2024-04-30

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

Principal Purpose The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the review area that may be subject to federal jurisdiction under the regulatory authorities referenced above.

Routine Uses This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice or FOIA request as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in any resulting jurisdictional determination (JD), which may be made available to the public on the District's website and/or on the Headquarters USACE website.

Disclosure Submission of requested information is voluntary; however, if information is not provided, the request for a JD cannot be evaluated nor can a PJD be issued.

The Agency Disclosure Notice (ADN)

The public reporting burden for this collection of information, 0710-0024, is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

SECTION I - BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD:

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:
 Patrick J. Breedlove - NCDOT Division 14
 345 Toots Hollow Road Bryson City, NC 28713

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION AND BACKGROUND INFORMATION:

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: North Carolina County/Parish/Borough: Haywood County City: Clyde

Center coordinates of site (lat/long in degree decimal format): Latitude: 35.683257 ° Longitude: -82.97622 °

Universal Transverse Mercator: Zone 17

Name of nearest waterbody: Martins Creek

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: _____

Field Determination

Date(s): _____

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Martins Creek	35.679957	-82.979212	1972 feet	non-wetland	Section 404

Site Number	Latitude (<i>decimal degrees</i>)	Longitude (<i>decimal degrees</i>)	Estimated amount of aquatic resource in review area (<i>acreage and linear feet, if applicable</i>)	Type of aquatic resource (<i>i.e., wetland vs. non-wetland waters</i>)	Geographic authority to which the aquatic resource "may be" subject (<i>i.e., Section 404 or Section 10/404</i>)
WA	35.683257	-82.976227	0.01 AC	wetland	Section 404

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD or no JD whatsoever, which do not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the USACE has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD or reliance on no JD whatsoever; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of USACE permit authorization based on a PJD or no JD whatsoever constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the USACE will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

F. SUPPORTING DATA. Data reviewed for PJD (*check all that apply*)
 Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
 Map: vicinity, topographic, aerial and soil survey
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
- Office concurs with data sheets/delineation report.
- Office does not concur with data sheets/delineation report.
 Rationale: _____
- Data sheets prepared by the USACE:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
- USGS NHD data.
- USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name:

USDA Natural Resources Conservation Service Soil Survey.

Citation: _____

National Wetlands Inventory map(s).

Cite Name: _____

State/Local Wetland Inventory map(s):

FEMA/FIRM maps:

100-year Floodplain Elevation is: _____ . (National Geodectic Vertical Datum of 1929)

Photographs: Aerial (*Name & Date*): 2022

or Other (*Name & Date*): site photos 7/12/2024

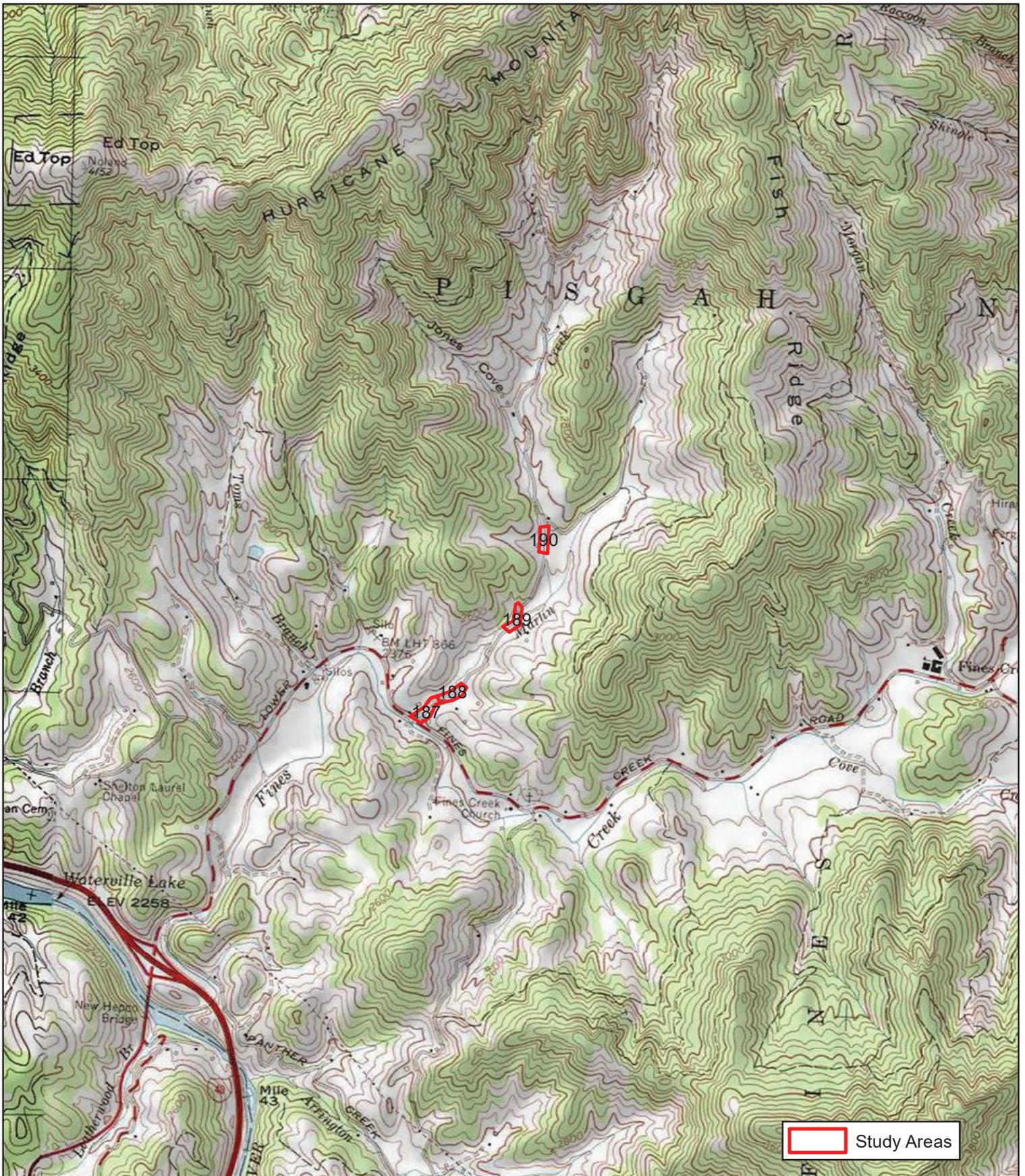
Previous determination(s). File no. and date of response letter:

Other information (*please specify*):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the USACE and should not be relied upon for later jurisdictional determinations.

Name of Regulatory Staff Member Completing PJD Crystal Amschler	Date Crystal Amschler	Signature of Regulatory Staff Member Completing PJD Digitally signed by Crystal Amschler Date: 2025.08.15 10:16:05 -04'00'
Name of Person Requesting PJD Patrick J. Breedlove	Date 2025-05-05	Signature of Person Requesting PJD (<i>REQUIRED, unless obtaining the Signature is Impracticable</i>) Patrick J. Breedlove Digitally signed by Patrick J. Breedlove Date: 2025.05.05 12:35:37 -04'00'

¹ Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.



This Exhibit is for planning purposes only and shown herein does not meet NC 47-30 Requirements and therefore is not for design, construction, or recording or transfer of title. The Exhibit was compiled from available information obtained from the sources listed below.

Sources:
 NCDOT, NC OneMap, ESRI
 February 2024

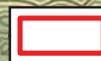


Figure 2 - Topographic Map

BR14.R002

Replacement of Bridges 187-190 over Martins Creek
 on Martins Creek Road (SR1341)
 Haywood County, North Carolina

0 1,000 2,000
 Feet

 Study Areas



TRANSYSTEMS

U.S. Army Corps of Engineers (USACE)
**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS
 AND REQUEST FOR APPEAL**

*Form Approved –
 OMB No. 0710-0003
 Expires 2027-10-31*

For use of this form, see Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act; the proponent agency is CECW-COR.

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority The authorities for requesting this information are Sections 9, 10, 13, and 14, Rivers and Harbors Act of March 3, 1899; Section 404, Clean Water Act; and Section 103 Marine Protection Research and Sanctuaries Act of 1972.

Principal Purpose This information serves as notification to affected parties regarding the USACE administrative appeal options and process, as well as to facilitate requests for appeal of USACE decisions with which they disagree.

Routine Uses Routine uses will include: (a) To serve as notification to affected parties of the Corps administrative appeal options and process and to facilitate requests for appeal of Corps decisions with which they disagree. (b) Records may be referred to the Department of Justice for possible criminal prosecution. (c) Records may be referred to other Federal, State, and local agencies for evaluation and enforcement purposes.

Disclosure Disclosure of this information is voluntary on your part. However, failure of individual to provide requested information could result in inability to determine all pertinent information regarding a Department of the Army permit matter.

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0003, is estimated to average 1 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PURPOSE: This form is used to facilitate the initiation of the administrative appeals process. The appeals process allows an affected party to pursue an administrative appeal of certain Corps of Engineers decisions with which they disagree.

Upon release, this form will also be available on the Corps website <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/>

Applicant: NCDOT	File Number: SAW-2025-00940	Date: 8/14/2025
Documents Attached (<i>select all that apply</i>):		Form Reference Section:
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL WITHOUT PREJUDICE	C
<input type="checkbox"/>	PERMIT DENIAL WITH PREJUDICE	D
<input type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	E
<input checked="" type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	F

SECTION I

The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/appeals/> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C. PERMIT DENIAL WITHOUT PREJUDICE: Not appealable

You received a permit denial without prejudice because a required Federal, state, and/or local authorization and/or certification has been denied for activities which also require a Department of the Army permit before final action has been taken on the Army permit application. The permit denial without prejudice is not appealable. There is no prejudice to the right of the applicant to reinstate processing of the Army permit application if subsequent approval is received from the appropriate Federal, state, and/or local agency on a previously denied authorization and/or certification.

D: PERMIT DENIAL WITH PREJUDICE: You may appeal the permit denial

You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information for reconsideration

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.
- **RECONSIDERATION:** You may request that the district engineer reconsider the approved JD by submitting new information or data to the district engineer within 60 days of the date of this notice. The district will determine whether the information submitted qualifies as new information or data that justifies reconsideration of the approved JD. A reconsideration request does not initiate the appeal process. You may submit a request for appeal to the division engineer to preserve your appeal rights while the district is determining whether the submitted information qualifies for a reconsideration.

F: PRELIMINARY JURISDICTIONAL DETERMINATION: Not appealable

You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision you may contact:	If you have questions regarding the appeal process, or to submit your request for appeal, you may contact:
Name: Crystal Amschler	Name: Krista Sabin, Regulatory Appeals Review Officer
Street Address, City, State: 151 Patton Ave Rm 208 Asheville, NC 28801	Street Address, City, State: Kristen Sabin Regulatory Administrative Appeal Review Officer US Army Corps of Engineers South Atlantic 60 Forsyth Street SW Room 9M 15 Atlanta Georgia, 30303-8801

Phone: 828-526-6013	Phone: 904-314-9631
Email: crystal.c.amschler@usace.army.mil	Email: Krista.D.Sabin@usace.army.mil

SECTION II – REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. Use additional pages as necessary. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation and will have the opportunity to participate in all site investigations.

Email address of appellant and/or agent	Telephone number
---	------------------

Signature of appellant or agent	Date
---------------------------------	------



NORTH CAROLINA
Environmental Quality

June 12, 2025

JOSH STEIN
Governor

D. REID WILSON
Secretary

RICHARD E. ROGERS, JR.
Director

Mr. Patrick Breedlove
Division 14 PDEA Engineer
North Carolina Department of Transportation
253 Webster Road
Sylva, North Carolina, 28779

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with
ADDITIONAL CONDITIONS for Proposed improvements to Replace Bridges 187, 188, 189, 190 over
Martins Creek on SR 1341 (Martins Creek Road), in Haywood County, WBS Number: BP14.R002.
NCDWR Project No. 20250594

Dear Mr. Breedlove:

Attached hereto is a copy of Certification No. 007861 issued to The North Carolina Department of Transportation
(NCDOT) dated June 12, 2025.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

DocuSigned by:

80EGA32C7C38490
Richard E. Rogers, Jr., Director
Division of Water Resources

Attachments

Electronic copy only distribution:

Crystal Amschler, US Army Corps of Engineers, Asheville Field Office
Kevin Barnett, Division 14 Environmental Officer
Holland Youngman, US Fish and Wildlife Service
Dave McHenry, NC Wildlife Resources Commission
File Copy



401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 0.001 acres of jurisdictional wetlands, and 867 linear feet of jurisdictional streams in Haywood County. The project shall be constructed pursuant to the application received May 5, 2025. The authorized impacts are as described below:

Stream Impacts in the French Broad River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
S1	-	-	76	-	76	76
S2	-	-	77	-	77	0
S3	-	-	-	34	34	0
S4	-	-	53	-	53	53
S5	-	-	83	-	83	0
S6	-	-	-	55	55	0
S7	-	-	50	-	50	50
S8	-	-	64	-	64	0
S9	-	-	-	35	35	0
S10	-	-	52	-	52	52
S11	-	-	92	-	92	0
S12	-	-	-	196	196	0
Total			547	320	867	231

Total Stream Impact for Project: 547 linear feet of permanent and 320 linear feet of temporary.



Wetland Impacts in the French Broad River Basin

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
Site 3D	0.001	-	-	-	-	-	0.001
Total	0.001						0.001

Total Wetland Impact for Project: 0.001 acres of permanent impact.

The application provides adequate assurance that the discharge of fill material into the waters of the French Broad River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application received May 5, 2025. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed 0.1 acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (c) (2) and (4).

For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

Project Specific Conditions

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a preconstruction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand any potential issues at the permitted site. NCDWR staff shall be invited to the preconstruction meeting. [15A NCAC 02H .0507(b)(2) and (b)(3)]
2. Compensatory mitigation for 231 linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated July 11, 2024 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.
3. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of *NCDOT's Best Management Practices for Construction and Maintenance Activities*. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
4. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]



5. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS000250, please refer to the most recent version of the *North Carolina Department of Transportation Stormwater Best Management Practices Toolbox* manual for approved measures. [15A NCA 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
6. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]

General Conditions

1. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H .0506(b)(2)]
2. Wetland areas impacted by temporary clearing shall be stabilized and reseeded with native wetland seed. [15A NCAC 2H. 0506 (b)]
3. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B. 0200]
4. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. [15A NCAC 02H .0506 (b)(2)]
5. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]
6. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H. 0506(b)(2)]
7. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H. 0506 (b)(2)]
8. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H. 0506 (b)(2)]
9. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B



.0506(b)(2)]

10. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
11. All work in or adjacent to waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H. 0506(b)(3) and (c)(3)]
12. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H. 0506(b)(3)]
13. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H .0506(b)(3)]
14. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H .0506(b)(3)]
15. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H .0506(b)(3)]
16. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with § 303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B .0200]
17. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3: 1, unless otherwise authorized by this certification. [15A NCAC 02H .0506(b)(2)]
18. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on -site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
19. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non- commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H .0501 and .0502]
20. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
21. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B .0506(b)(2)]
22. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H .0502(f)]



23. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H .0506(b)(3) and (c)(3)]

24. DWR approves the stormwater drainage design as shown in the 401 application, under the assumption that it meets the requirements of the NCDOT NPDES permit #NCS000250. These plans are enforceable by DWR. Changes to the approved plans are prohibited without prior approval from DWR.

If sediment or other pollutants are found to be discharged from the stormwater outfalls, DWR may take enforcement action. NCDOT and DWR shall assess the damage to water quality standards and implement an appropriate action plan to address the impacts. The action plan shall provide an appropriate timeline for implementation as agreed upon by both DWR and NCDOT. This may require NCDOT to obtain a modification to its current 401 and 404 permits.

25. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H .0506(b)(3) and (c)(3)]:

- a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
- b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor -owned or leased borrow pits associated with the project.
- c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

26. Sediment and erosion control measures shall not be placed in wetlands or surface waters, or within 5 feet of the top of bank, without prior approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

This approval and its conditions are final and binding unless contested [G.S. 143-215.5]. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of \$25,000.00 per day for each violation.



This Certification can be contested as provided in Chapter 150B of the North Carolina General Statutes by filing a Petition for a Contested Case Hearing (Petition) with the North Carolina Office of Administrative Hearings (OAH) within sixty (60) calendar days. Requirements for filing a Petition are set forth in Chapter 150B of the North Carolina General Statutes and Title 26 of the North Carolina Administrative Code. Additional information regarding requirements for filing a Petition and Petition forms may be accessed at <http://www.ncoah.com/> or by calling the OAH Clerk's Office at (919) 431-3000.

A party filing a Petition must serve a copy of the Petition on:

William F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601

If the party filing the Petition is not the permittee, then the party must also serve the recipient of the Certification in accordance with N.C.G.S 150B-23(a).

This the 12th day of June 2025

DIVISION OF WATER RESOURCES

DocuSigned by:

80ECA32C7C38490...

Richard E. Rogers, Jr., Director

WQC No. 007861



LISTING OF MBE/WBE SUBCONTRACTORS

Sheet of

Firm Name and Address	Circle One	Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				

* The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the MBE/WBE subcontractor, and these prices will be used to determine the percentage of the MBE/WBE participation in the contract.

** Dollar Volume of MBE/WBE Subcontractor Percentage of Total Contract Bid Price:

If firm is a Material Supplier Only, show Dollar Volume as 60% of Agreed Upon Amount from Letter of Intent.

If firm is a Manufacturer, show Dollar Volume as 100% of Agreed Upon Amount from Letter of Intent.

LISTING OF MBE/WBE SUBCONTRACTORS

Sheet of

Firm Name and Address	Circle One	Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				

**** Dollar Volume of MBE Subcontractor \$ _____**

MBE Percentage of Total Contract Bid Price _____%

**** Dollar Volume of WBE Subcontractor \$ _____**

WBE Percentage of Total Contract Bid Price _____%

***The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the MBE/WBE subcontractor, and these prices will be used to determine the percentage of the MBE/WBE participation in the contract.**

**** Dollar Volume of MBE/WBE Subcontractor Percentage of Total Contract Bid Price.**

If firm is a Material Supplier Only, show Dollar Volume as 60% of Agreed Upon Amount from Letter of Intent.

If firm is a Manufacturer, show Dollar Volume as 100% of Agreed Upon Amount from Letter of Intent.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NC

BID BOND

Principal: _____
Name of Principal Contractor

Surety: _____
Name of Surety

Contract Number: DN01153 County: Haywood

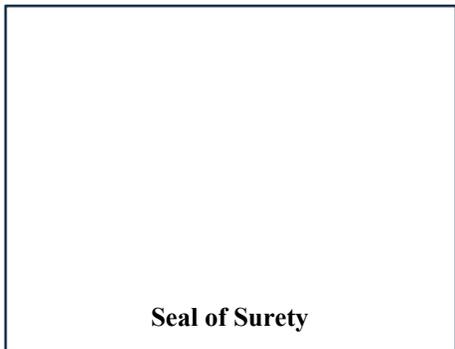
Date of Bid: _____

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Department of Transportation in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, in accordance with Article 102-10 of the *Standard Specifications*, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Board of Transportation shall award a contract to the Principal, the Principal shall, within fourteen (14) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Department of Transportation makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have fourteen (14) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3 of the *Standard Specifications*, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Department of Transportation as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the _____ day of _____, 20 _____



Print or type Surety Company Name NAIC #

By _____
General Agent or Attorney-in-Fact Signature

Print or type Signer's Name

BID BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Full name of Corporation

Address as prequalified

By _____
Signature of **President, Vice President, Assistant Vice President**
Select appropriate title



Affix Corporate Seal

Print or type Signer's name

Attest _____
Signature of **Secretary, Assistant Secretary**
Select appropriate title

Print or type Signer's name

BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Full name of Firm

Address as prequalified

By:

Signature of Member, Manager, Authorized Agent
Select appropriate title

Print or type Signer's name

BID BOND

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Print or type Individual Name

Trading and doing business as

Full name of Firm

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

BID BOND

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Print or type Individual Name

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

BID BOND

PARTNERSHIP

SIGNATURE OF CONTRACTOR (Principal)

Full name of Partnership

Address as prequalified

By _____
Signature of Partner

Print or type Signer's name

Signature of Witness

Print or type Signer's name

ADDENDA

ADDENDUM #1

I, _____ representing _____
(SIGNATURE)

Acknowledge receipt of Addendum #1.

ADDENDUM #2

I, _____ representing _____
(SIGNATURE)

Acknowledge receipt of Addendum #2.

ADDENDUM #3

I, _____ representing _____
(SIGNATURE)

Acknowledge receipt of Addendum #3.

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0036000000-E	225	UNDERCUT EXCAVATION	200 CY		
0004	0043000000-N	226	GRADING	Lump Sum	L.S.	
0005	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUBBING	1 ACR		
0006	0195000000-E	265	SELECT GRANULAR MATERIAL	200 CY		
0007	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	200 SY		
0008	0199000000-E	SP	TEMPORARY SHORING	2,600 SF		
0009	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	20 TON		
0010	0321000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	60 SY		
0011	0343000000-E	310	15" SIDE DRAIN PIPE	108 LF		
0012	0449000000-E	310	*** RC PIPE CULVERTS, CLASS V (15")	44 LF		
0013	1121000000-E	520	AGGREGATE BASE COURSE	1,200 TON		
0014	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	580 TON		
0015	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	320 TON		
0016	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	50 TON		
0017	3030000000-E	862	STEEL BEAM GUARDRAIL	662.5 LF		

County: HAYWOOD

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0018	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	20 EA		
0019	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	1 EA		
0020	3288000000-N	862	GUARDRAIL END UNITS, TYPE TL-2	17 EA		
0021	3380000000-E	862	TEMPORARY STEEL BEAM GUARDRAIL	650 LF		
0022	3387000000-N	862	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (B-77)	1 EA		
0023	3389150000-N	862	TEMPORARY GUARDRAIL END UNITS, TYPE ***** (TL-2)	13 EA		
0024	3389160000-N	862	TEMPORARY ADDITIONAL GUARDRAIL POSTS	5 EA		
0025	3569000000-E	867	BARBED WIRE FENCE RESET	470 LF		
0026	3575000000-E	SP	GENERIC FENCING ITEM ELECTRIC FENCE RESET	580 LF		
0027	3649000000-E	876	RIP RAP, CLASS B	42 TON		
0028	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	1,402 SY		
0029	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	48 SF		
0030	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	140 SF		
0031	4424500000-N	SP	TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM	3 EA		
0032	4430000000-N	1130	DRUMS	50 EA		
0033	4455000000-N	1150	FLAGGER	12 DAY		
0034	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	6 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	4470000000-N	1160	REMOVE & RESET TEMPORARY CRASH CUSHION	1 EA		
0036	4485000000-E	1170	PORTABLE CONCRETE BARRIER	491 LF		
0037	4505000000-E	1170	REMOVE & RESET PORTABLE CONCRETE BARRIER (ANCHORED)	115 LF		
0038	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	3,030 LF		
0039	6000000000-E	1605	TEMPORARY SILT FENCE	4,470 LF		
0040	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	200 TON		
0041	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	410 TON		
0042	6012000000-E	1610	SEDIMENT CONTROL STONE	345 TON		
0043	6015000000-E	1615	TEMPORARY MULCHING	2.5 ACR		
0044	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	200 LB		
0045	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	1 TON		
0046	6024000000-E	1622	TEMPORARY SLOPE DRAINS	200 LF		
0047	6029000000-E	SP	SAFETY FENCE	440 LF		
0048	6030000000-E	1630	SILT EXCAVATION	460 CY		
0049	6036000000-E	1631	MATTING FOR EROSION CONTROL	5,815 SY		
0050	6037000000-E	1629	COIR FIBER MAT	100 SY		
0051	6042000000-E	1632	1/4" HARDWARE CLOTH	150 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0052	6045000000-E	SP	*** TEMPORARY PIPE (36")	700 LF		
0053	6070000000-N	1639	SPECIAL STILLING BASINS	8 EA		
0054	6071002000-E	1642	FLOCCULANT	60 LB		
0055	6071012000-E	1642	COIR FIBER WATTLE	200 LF		
0056	6084000000-E	1660	SEEDING & MULCHING	3 ACR		
0057	6087000000-E	1660	MOWING	3 ACR		
0058	6090000000-E	1661	SEED FOR REPAIR SEEDING	50 LB		
0059	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25 TON		
0060	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50 LB		
0061	6108000000-E	1665	FERTILIZER TOPDRESSING	1.25 TON		
0062	6111000000-E	SP	IMPERVIOUS DIKE	814 LF		
0063	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR		
0064	6117000000-N	1675	RESPONSE FOR EROSION CONTROL	100 EA		
0065	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	4 EA		
0066	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT TYPE 3	475 SY		
CULVERT ITEMS						
0067	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (11+46.15 -L189-)	Lump Sum	L.S.	

County: HAYWOOD

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0068	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (12+71.00 -L187-)	Lump Sum	L.S.	
0069	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (12+82.90 -L188-)	Lump Sum	L.S.	
0070	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (18+82.97 -L190-)	Lump Sum	L.S.	
0071	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0072	8130000000-N	414	BOX CULVERT EXCAVATION, STA ***** (11+46.15 -L189-)	Lump Sum	L.S.	
0073	8130000000-N	414	BOX CULVERT EXCAVATION, STA ***** (12+71.00 -L187-)	Lump Sum	L.S.	
0074	8130000000-N	414	BOX CULVERT EXCAVATION, STA ***** (12+82.90 -L188-)	Lump Sum	L.S.	
0075	8130000000-N	414	BOX CULVERT EXCAVATION, STA ***** (18+82.97 -L190-)	Lump Sum	L.S.	
0076	8133000000-E	414	FOUNDATION CONDITIONING MATERIAL, BOX CULVERT	368 TON		
0077	8196000000-E	420	CLASS A CONCRETE (CULVERT)	556.4 CY		
0078	8245000000-E	425	REINFORCING STEEL (CULVERT)	73,625 LB		
0079	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	601 TON		
0080	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	658 SY		

1611/Feb19/Q104434.9/D377602324000/E80

Total Amount Of Bid For Entire Project :

Execution of Contract

Contract No: DN01153

County: Haywood

ACCEPTED BY THE DEPARTMENT

Proposals Engineer

Date

EXECUTION OF CONTRACT AND BONDS
APPROVED AS TO FORM:

Division Engineer

Date