STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

July 17, 2025

ADDENDUM # 1

Contract ID:	DN01123
TIP:	N/A
Federal Aid:	Helene
WBS:	DF18314.2045377
County:	Henderson
Description:	Grading, Paving, Drainage, & Retaining Walls At Various Sites Along SR 1605 (Middle Fork Road/Tom Falls Road) in Henderson County

Letting Date: July 22, 2025

Plan Holders

Content Summary: Bidders Questions/Concerns, Associated Department Responses, Plan Revisions, Pay Item and Provision Revisions

Question/Concern 1: Will all the storm debris in the creek within the work zone be removed by the Corp prior to mobilization by the contractor or will the contractor be responsible for removal of debris in the work area?

Department Response 1: We need to proceed with planning under the assumption that the debris will remain in place. While there is at least one FEMA debris crew currently working in the county's river areas, their operations are inconsistent and move frequently. Therefore, debris removal should remain a quantified pay item based on the work completed to date.

Question/Concern 2: Temporary access will be required to be constructed at each wall location to facilitate the installation of the permanent walls. Can bid item 8017000000-N Construction, Maintenance, & Removal of Temp Access at Sta ******* - 1 LS – be added for each wall location?

Department Response 2: This will be incidental to the retaining wall pay item

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

Telephone: (828) 331-5200
Fax: (828) 331-5201
Customer Service: 1-877-368-4968

Location:
253 WEBSTER ROAD
SYLVA, NC 28779

Website: www.ncdot.gov

Question/Concern 3: After a review of the roadway plans, a typical plan sheet detailing the asphalt thickness and such (Plan sheet 2A-1) is not included. Can this plan sheet be provided

Department Response 3: Yes, this will be attached in this addendum

Question/Concern 4: Line Item 72 – Generic Pavement Marking Item Polycarbonate H-Shaped Markers – is this the correct pavement marking item to used on this project? Adjacent projects are implementing the Generic Pavement Marking Item Inlaid Raised Pavement Markers at the direction of the Division.

Department Response 4: Yes, this came at the recommendation from the Division Asphalt Engineer

The above contract has experienced the following revisions:

1. Revise **Provision SP1 G28 Major Items** on page **G-5** to include additional major items (see attached)

2. Revise **Provision SP1 G37 Specialty Items** on page **G-5** to include "0087-0117 Retaining Wall Items" (see attached)

3. Replace **SP1 G62 Disadvantaged Business Enterprise (Divisions):** on page **G-7 – 21,** with the attached provision

4. Replace **Project Special Provisions for Geotechnical** beginning on page **GT-0.1** with the attached

5. Insert the **Project Special Provisions Permits** beginning on page **P-1** with the attached

6. Insert the attached Sheet 2A-1 after sheet 1B of the DN01123 STANDARD PDF PLANS – ROADWAY 1 of 2

7. Replace page 16 (of the DN01123 STANDARD PDF PLANS – WALLS pdf) with the attached

8. Insert the attached Right-of-Way plans sheets into the DN01123 STANDARD PDF PLANS – ROADWAY 1 of 2

9. Pay Item changes: (see attached)

    a. The quantity for line item 0011: 0199000000-E TEMPORARY SHORING has decreased from 8,315 to **4,557** SF

b. 8834000000-N GENERIC RETAINING WALL ITEM ANCHORS has been added, 12 EA

c. 8853000000-E GENERIC RETAINING WALL ITEM SHOTCRETE has been added, 1,450 CY

d. 8853000000-E GENERIC RETAINING WALL ITEM EXCAVATABLE FLOWABLE FILL has been added, 400 CY

e. 8839000000-E GENERIC RETAINING WALL ITEM NO. 8A MICROPILE LEVELING COURSE has been added, 86 LF

f. 8839000000-E GENERIC RETAINING WALL ITEM NO. 8B MICROPILE LEVELING COURSE has been added, 335 LF

g. Revised description for line item 0091 AA1, 8847000000-E from WALL NO. 8A SOLDIER PILE WALL WITH PANEL KEY to **NO. 8A RETAINING WALL SOIL NAIL WALL**

h. 8847000000-E GENERIC RETAINING WALL ITEM NO. 8A RETAINING WALL SOLIDER PILE WALL has been added, 810 SF

i. Remove line items 0092 – 0100

j. Revised description for line item 0101 BB1, 8847000000-E from WALL NO. 8B SOLIDER PILE WALL WITH PANEL KEY to **NO. 8B RETAINING WALL SOIL NAIL WALL**

k. 8847000000-E GENERIC RETAINING WALL ITEM NO. 8B RETAINING WALL SOLIDER PILE WALL has been added, 4,620 SF

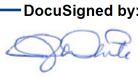
l. Remove line items 0102 – 0110

Please access ebsx addenda files, DN01123.001x. on Bid Express®.

Thank you for your attention to this matter.

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

Sincerely,

DocuSigned by:

29BD93927CF24F6...

Jeanette L. White, P.E.

Division 14 Project Team Lead

MAJOR CONTRACT ITEMS:

(2-19-02)(Rev. 1-16-24) 104 SP1 G28

The following listed items are the major contract items for this contract (see Article 104-5 of the *Standard Specifications*):

Line #	Description
0012	ROCK PLATING
0029	ASPHALT CONC BASE COURSE, TYPE B25.0C
0101	NO. 8B RETAINING WALL SOIL NAIL WALL
0113	EXCAVATABLE FLOWABLE FILL
0115	NO. 8B MICROPILE LEVELING COURSE

SPECIALTY ITEMS:

(7-1-95)(Rev. 1-16-24) 108-6 SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the *Standard Specifications*).

Line #	Description
0044-0050	Guardrail
0059	Long-Life Pavement Markings
0060	Permanent Pavement Markers
0061-0082, 0084-0086	Erosion Control
0083	Reforestation
0087-0117	Retaining Wall Items

FUEL PRICE ADJUSTMENT:

(11-15-05)(Rev. 1-16-24) 109-8 SP1 G43

Page 1-82, Article 109-8, FUEL PRICE ADJUSTMENTS, add the following:

The base index price for DIESEL #2 FUEL is **$ 2.4100** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

(7-15-08)(Rev. 6-17-25) 108-2 SP1 G58

The Contractor's attention is directed to the Standard Special Provision entitled *Availability of Funds Termination of Contracts* included elsewhere in this proposal. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

	Fiscal Year	**Progress (% of Dollar Value)**
2026	(7/01/25 - 6/30/26)	**50**% of Total Amount Bid
2027	(7/01/26 - 6/30/27)	**50**% of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

DISADVANTAGED BUSINESS ENTERPRISE (DIVISIONS):

(10-16-07)(Rev. 5-9-24) 102-15(J) SP1 G62

Description

The purpose of this Special Provision is to carry out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with Federal funds. This provision is guided by 49 CFR Part 26.

Definitions

Additional DBE Subcontractors - Any DBE submitted at the time of bid that will not be used to meet the DBE goal. No submittal of a Letter of Intent is required.

Committed DBE Subcontractor - Any DBE submitted at the time of bid that is being used to meet the DBE goal by submission of a Letter of Intent. Or any DBE used as a replacement for a previously committed DBE firm.

Contract Goal Requirement - The approved DBE participation at time of award, but not greater than the advertised contract goal.

DBE Goal - A portion of the total contract, expressed as a percentage, that is to be performed by committed DBE subcontractor(s).

Disadvantaged Business Enterprise (DBE) - A firm certified as a Disadvantaged Business Enterprise through the North Carolina Unified Certification Program.

Goal Confirmation Letter - Written documentation from the Department to the bidder confirming the Contractor's approved, committed DBE participation along with a listing of the committed DBE firms.

Manufacturer - A firm that owns (or leases) and operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Contractor. A firm that makes minor modifications to the materials, supplies, articles, or equipment is not a manufacturer.

Regular Dealer - A firm that owns (or leases), and operates a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in sufficient quantities, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, concrete or concrete products, gravel, stone, asphalt and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Any supplement of regular dealers' own distribution equipment shall be by a long-term operating lease and not on an ad hoc or contract-by-contract basis.

Distributor – A firm that engages in the regular sale or lease of the items specified by the contract. A distributor assumes responsibility for the items it purchases once they leave the point of origin (e.g., a manufacturer's facility), making it liable for any loss or damage not covered by the carrier's insurance.

Replacement / Substitution – A full or partial reduction in the amount of work subcontracted to a committed (or an approved substitute) DBE firm.

North Carolina Unified Certification Program (NCUCP) - A program that provides comprehensive services and information to applicants for DBE certification, such that an applicant is required to apply only once for a DBE certification that will be honored by all recipients of USDOT funds in the state and not limited to the Department of Transportation only. The Certification Program is in accordance with 49 CFR Part 26.

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

Forms and Websites Referenced in this Provision

DBE Payment Tracking System - On-line system in which the Contractor enters the payments made to DBE subcontractors who have performed work on the project. https://apps.dot.state.nc.us/Vendor/PaymentTracking/

DBE-IS *Subcontractor Payment Information* - Form for reporting the payments made to all DBE firms working on the project. This form is for paper bid projects only. https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf

RF-1 *DBE Replacement Request Form* - Form for replacing a committed DBE. https://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Form%20and%20Instructions.pdf

SAF *Subcontract Approval Form* - Form required for approval to sublet the contract.

https://connect.ncdot.gov/projects/construction/Construction%20Forms/SAF%20Form%20-%20Subcontract%20Approval%20Form%20Revised%2004-19.xlsm

JC-1 *Joint Check Notification Form* - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.
https://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notification%20Form.pdf

Letter of Intent - Form signed by the Contractor and the DBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed DBE for the estimated amount (based on quantities and unit prices) listed at the time of bid.
http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf

Listing of DBE Subcontractors Form - Form for entering DBE subcontractors on a project that will meet this DBE goal. This form is for paper bids only.
http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/08%20DBE%20Subcontractors%20(Federal).docx

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where DBEs quoted on the project. This sheet is submitted with good faith effort packages.
http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls

DBE Regular Dealer/Distributor Affirmation Form – Form is used to make a preliminary counting determination for each DBE listed as a regular dealer or distributor to assess its eligibility for 60 or 40 percent credit, respectively of the cost of materials or supplies based on its demonstrated capacity and intent to perform as a regular dealer or distributor, as defined in section 49 CFR 26.55 under the contract at issue. A Contractor will submit the completed form with the Letter of Intent.
https://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20Regular%20Dealer-Distributor%20Affirmation%20Form%20-%20USDOT%202024.pdf

DBE Goal

The following DBE goal for participation by Disadvantaged Business Enterprises is established for this contract:

Disadvantaged Business Enterprises **2** %

(A) *If the DBE goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that DBEs participate in at least the percent of the contract as set forth above as the DBE goal.

(B) *If the DBE goal is zero*, the Contractor shall make an effort to recruit and use DBEs during the performance of the contract. Any DBE participation obtained shall be reported to the Department.

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as DBE certified shall be used to meet the DBE goal. The Directory can be found at the following link. https:// www.ebs.nc.gov/VendorDirectory/default.html

The listing of an individual firm in the directory shall not be construed as an endorsement of the firm's capability to perform certain work.

Listing of DBE Subcontractors

At the time of bid, bidders shall submit all DBE participation that they anticipate to use during the life of the contract. Only those identified to meet the DBE goal will be considered committed, even though the listing shall include both committed DBE subcontractors and additional DBE subcontractors. Additional DBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goal. Only those firms with current DBE certification at the time of bid opening will be acceptable for listing in the bidder's submittal of DBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

Bidders shall submit a listing of DBE participation in the appropriate section of the electronic submittal file.

(1) Submit the names and addresses of DBE firms identified to participate in the contract. If the bidder uses the updated listing of DBE firms shown in the electronic submittal file, the bidder may use the dropdown menu to access the name and address of the DBE firm.

(2) Submit the contract line numbers of work to be performed by each DBE firm. When no figures or firms are entered, the bidder will be considered to have no DBE participation.

(3) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the DBE goal.

(B) Paper Bids

(1) *If the DBE goal is more than zero,*

(a) Bidders, at the time the bid proposal is submitted, shall submit a listing of DBE participation, including the names and addresses on *Listing of DBE Subcontractors* contained elsewhere in the contract documents in

order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the DBE participation for the contract.

(b) If bidders have no DBE participation, they shall indicate this on the *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation**. Bids submitted that do not have DBE participation indicated on the appropriate form will not be read publicly during the opening of bids. The Department will not consider these bids for award and the proposal will be rejected.

(c) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the DBE goal.

(2) *If the DBE goal is zero,* entries on the *Listing of DBE Subcontractors* are not required, however any DBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

DBE Prime Contractor

When a certified DBE firm bids on a contract that contains a DBE goal, the DBE firm is responsible for meeting the goal or making good faith efforts to meet the goal, just like any other bidder. In most cases, a DBE bidder on a contract will meet the DBE goal by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the DBE bidder and any other DBE subcontractors will count toward the DBE goal. The DBE bidder shall list itself along with any DBE subcontractors, if any, in order to receive credit toward the DBE goal.

For example, if the DBE goal is 45% and the DBE bidder will only perform 40% of the contract work, the prime will list itself at 40%, and the additional 5% shall be obtained through additional DBE participation with DBE subcontractors or documented through a good faith effort.

DBE prime contractors shall also follow Sections A or B listed under *Listing of DBE Subcontractor* just as a non-DBE bidder would.

Written Documentation – Letter of Intent

The bidder shall submit written documentation for each DBE that will be used to meet the DBE goal of the contract, indicating the bidder's commitment to use the DBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the Engineer no later than 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

If the bidder fails to submit the Letter of Intent from each committed DBE to be used toward the DBE goal, or if the form is incomplete (i.e. both signatures are not present), the DBE participation will not count toward meeting the DBE goal. If the lack of this participation drops the commitment below the DBE goal, the Contractor shall submit evidence of good faith efforts, completed in its entirety, to the Engineer no later than 2:00 p.m. on the eighth calendar day following opening of bids, unless the eighth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

Submission of Good Faith Effort

If the bidder fails to meet or exceed the DBE goal the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach the DBE goal.

One complete set and **2** copies of this information shall be received in the office of the Engineer no later than 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with DBE Goals More Than Zero

Adequate good faith efforts mean that the bidder took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient DBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought DBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a bidder has made. Listed below are examples of the types of actions a bidder will take in making a good faith effort to meet the goal and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

(A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the DBEs to respond to the solicitation. Solicitation shall provide the opportunity to DBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

(B) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.

(1) Where appropriate, break out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

(2) Negotiate with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation (2nd and 3rd tier subcontractors).

(C) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(D) (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

(2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

(E) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(F) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.

(G) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

(H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs. Contact within 7 days from the bid opening the Business Opportunity and Work Force Development Unit at BOWD@ncdot.gov to give notification of the bidder's inability to get DBE quotes.

(I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the DBE goal.

In addition, the Department may take into account the following:

(1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the DBE goal.

(2) The bidders' past performance in meeting the DBE goals.

(3) The performance of other bidders in meeting the DBE goal. For example, when the apparent successful bidder fails to meet the DBE goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the DBE goal, but meets or exceeds the average DBE participation obtained by other bidders, the Department may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

If the Department does not award the contract to the apparent lowest responsive bidder, the Department reserves the right to award the contract to the next lowest responsive bidder that can satisfy to the Department that the DBE goal can be met or that an adequate good faith effort has been made to meet the DBE goal.

Non-Good Faith Appeal

The Engineer will notify the Contractor verbally and in writing of non-good faith. A Contractor may appeal a determination of non-good faith made by the Goal Compliance Committee. If a Contractor wishes to appeal the determination made by the Committee, they shall provide written notification to the Engineer. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting DBE Participation Toward Meeting DBE Goal

(A) Participation

The total dollar value of the participation by a committed DBE will be counted toward the contract goal requirement. The total dollar value of participation by a committed DBE will be based upon the value of work performed by the DBE and the actual payments to DBE firms by the Contractor.

(B) Joint Checks

Prior notification of joint check use shall be required when counting DBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 *(Joint Check Notification Form)* and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract goal requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract goal requirement. If a DBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, it shall be presumed that the DBE is not performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department. The Department's decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.

(D) Joint Venture

When a DBE performs as a participant in a joint venture, the Contractor may count toward its contract goal requirement a portion of the total value of participation with the DBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.

(E) Manufacturer, Regular Dealer, Distributor

A Contractor may count toward its DBE requirement 40 percent of its expenditures for materials or supplies (including transportation costs) from a DBE distributor, 60 percent of its expenditures for materials or supplies (including transportation costs) from a DBE regular dealer and 100 percent of such expenditures obtained from a DBE manufacturer.

A Contractor may count toward its DBE requirement the following expenditures to DBE firms that are not manufacturers, regular dealers or distributors:

(1) The fees or commissions charged by a DBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.

(2) With respect to materials or supplies purchased from a DBE, which is neither a manufacturer, regular dealer, nor a distributor count the entire amount of fees or commissions charged that the Department deems to be reasonable, including transportation charges for the delivery of materials or supplies. Do not count any portion of the cost of the materials and supplies themselves.

A Contractor will submit a completed *DBE Regular Dealer/Distributor Affirmation Form* with the Letter of Intent to the Engineer. The Engineer will forward to the State Contractor Utilization Engineer or DBE@ncdot.gov. The State Contractor Utilization Engineer will make a preliminary assessment as to whether a DBE supplier has the demonstrated capacity to perform a commercially useful function (CUF) on a contract-by-contract basis *prior* to its participation.

Commercially Useful Function

(A) DBE Utilization

The Contractor may count toward its contract goal requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is performing and the DBE credit claimed for its performance of the work, and any other relevant factors.

(B) DBE Utilization in Trucking

The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function:

(1) The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting DBE goals.

(2) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

(3) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.

(4) The DBE may subcontract the work to another DBE firm, including an owner-operator who is certified as a DBE. The DBE who subcontracts work to another DBE receives credit for the total value of the transportation services the subcontracted DBE provides on the contract.

(5) The DBE may also subcontract the work to a non-DBE firm, including from an owner-operator. The DBE who subcontracts the work to a non-DBE is entitled to credit for the total value of transportation services provided by the

non-DBE subcontractor not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the DBE and the Contractor will not count towards the DBE contract requirement.

(6) A DBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the DBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. This type of lease may count toward the DBE's credit as long as the driver is under the DBE's payroll.

(7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the DBE that they are subcontracted/leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

DBE Replacement

When a Contractor has relied on a commitment to a DBE subcontractor (or an approved substitute DBE subcontractor) to meet all or part of a contract goal requirement, the contractor shall not terminate the DBE subcontractor or any portion of its work for convenience. This includes, but is not limited to, instances in which the Contractor seeks to perform the work of the terminated subcontractor with another DBE subcontractor, a non-DBE subcontractor, or with the Contractor's own forces or those of an affiliate.

The Contractor must give notice in writing both by certified mail and email to the DBE subcontractor, with a copy to the Engineer of its intent to request to terminate a DBE subcontractor or any portion of its work, and the reason for the request. The Contractor must give the DBE subcontractor five (5) business days to respond to the Contractor's Notice of Intent to Request Termination and/or Substitution. If the DBE subcontractor objects to the intended termination/substitution, the DBE, within five (5) business days must advise the Contractor and the Department of the reasons why the action should not be approved. The five-day notice period shall begin on the next business day after written notice is provided to the DBE subcontractor.

A committed DBE subcontractor may only be terminated or any portion of its work after receiving the Department's written approval based upon a finding of good cause for the proposed termination and/or substitution. Good cause does not exist if the Contractor seeks to terminate a DBE or any portion of its work that it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE was engaged, or so that the Contractor can substitute another DBE or non-DBE contractor after contract award. For purposes of this section, good cause shall include the following circumstances:

(a) The listed DBE subcontractor fails or refuses to execute a written contract;
(b) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does

not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;

(c) The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
(d) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
(e) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR parts 180, 215 and 1200 or applicable State law;
(f) The listed DBE subcontractor is not a responsible contractor;
(g) The listed DBE voluntarily withdraws from the project and provides written notice of withdrawal;
(h) The listed DBE is ineligible to receive DBE credit for the type of work required;
(i) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract; and
(j) Other documented good cause that compels the termination of the DBE subcontractor.

The Contractor shall comply with the following for replacement of a committed DBE:

(A) Performance Related Replacement

When a committed DBE is terminated for good cause as stated above, an additional DBE that was submitted at the time of bid may be used to fulfill the DBE commitment. A good faith effort will only be required for removing a committed DBE if there were no additional DBEs submitted at the time of bid to cover the same amount of work as the DBE that was terminated.

If a replacement DBE is not found that can perform at least the same amount of work as the terminated DBE, the Contractor shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

(1) Copies of written notification to DBEs that their interest is solicited in contracting the work defaulted by the previous DBE or in subcontracting other items of work in the contract.

(2) Efforts to negotiate with DBEs for specific subbids including, at a minimum:

(a) The names, addresses, and telephone numbers of DBEs who were contacted.
(b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed.

(3) A list of reasons why DBE quotes were not accepted.

(4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

(1) When a committed DBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Contractor to solicit replacement DBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement but not the overall goal.

(i) If the DBE's ineligibility is caused solely by its having exceeded the size standard during the performance of the contract. The Department may continue to count participation equal to the remaining work performed by the decertified firm which will count toward the contract goal requirement and overall goal.

(ii) If the DBE's ineligibility is caused solely by its acquisition by or merger with a non-DBE during the performance of the contract. The Department may not continue to count the portion of the decertified firm's performance on the contract remaining toward either the contract goal or the overall goal, even if the Contractor has executed a subcontract with the firm or the Department has executed a prime contract with the DBE that was later decertified.

(2) When a committed DBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named DBE firm, the Contractor shall take all necessary and reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work to meet the DBE goal requirement. If a DBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).

All requests for replacement of a committed DBE firm shall be submitted to the Engineer for approval on Form RF-1 *(DBE Replacement Request).* If the Contractor fails to follow this procedure, the Contractor may be disqualified from further bidding for a period of up to 6 months

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed DBE, the Contractor will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a DBE based upon the Contractor's commitment, the DBE shall participate in additional work to the same extent as the DBE participated in the original contract work.

When the Engineer makes changes that result in extra work, which has more than a minimal impact on the contract amount, the Contractor shall seek additional participation by DBEs unless otherwise approved by the Engineer.

When the Engineer makes changes that result in an alteration of plans or details of construction, and a portion or all of the work had been expected to be performed by a committed DBE, the Contractor shall seek participation by DBEs unless otherwise approved by the Engineer.

When the Contractor requests changes in the work that result in the reduction or elimination of work that the Contractor committed to be performed by a DBE, the Contractor shall seek additional participation by DBEs equal to the reduced DBE participation caused by the changes.

Reports and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a DBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving DBE subcontractors.

When using transportation services to meet the contract commitment, the Contractor shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

Within 30 calendar days of entering into an agreement with a DBE for materials, supplies or services, not otherwise documented by the SAF as specified above, the Contractor shall furnish the Engineer a copy of the agreement. The documentation shall also indicate the percentage (60% or 100%) of expenditures claimed for DBE credit.

Reporting Disadvantaged Business Enterprise Participation

The Contractor shall provide the Engineer with an accounting of payments made to all DBE firms, including material suppliers and contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

(A) Withholding of money due in the next partial pay estimate; or

(B) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

While each contractor (prime, subcontractor, 2nd tier subcontractor) is responsible for accurate accounting of payments to DBEs, it shall be the prime contractor's responsibility to report all monthly and final payment information in the correct reporting manner.

Failure on the part of the Contractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from being approved for work on future projects until the required information is submitted.

Contractors reporting transportation services provided by non-DBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments.

The Contractor shall report the accounting of payments through the Department's DBE Payment Tracking System.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the *Standard Specifications* may be cause to disqualify the Contractor.

CERTIFICATION FOR FEDERAL-AID CONTRACTS:
(3-21-90) SP1 G85

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(A) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(B) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, *Disclosure Form to Report Lobbying*, in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by *Section 1352, Title 31, U.S. Code*. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

PROJECT SPECIAL PROVISIONS

GEOTECHNICAL

EXISTING RETAINING WALL REPAIRS (SPECIAL)	GT-1.1 - GT-1.10
ROCK EMBANKMENTS (SPECIAL)	GT-2.1 - GT-2.2
PARTIALLY GROUTED ROCK FILL (SPECIAL)	GT-3.1 - GT-3.2
SOLDIER PILE RETAINING WALLS (SPECIAL)	GT-4.1 - GT-4.8
SOIL NAIL RETAINING WALLS (SPECIAL)	GT-5.1 - GT-5.12
MICROPILE GRADE BEAM (SPECIAL)	GT-6.1 - GT-6.9
STANDARD SHORING (1-16-24)	GT-7.1 - GT-7.4

Signed by:
Carolinas Geotechnical Group, PLLC
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07/15/2025

EXISTING RETAINING WALL REPAIRS (SPECIAL)

1.0 GENERAL

Construct anchored retaining walls consisting of ground anchors connected to existing steel H-piles with precast concrete panel face in between piles. A ground anchor consists of multi-strand tendons grouted in a drilled hole inclined at an angle below horizontal. Construct anchored retaining walls based on actual elevations and wall dimensions in accordance with the plans. Use a prequalified Anchored Wall Contractor to construct anchored retaining walls. Define "anchored wall" as an anchored retaining wall and "Anchored Wall Contractor" as the Contractor installing ground anchors. Define "anchor" or "tieback" as a ground anchor, "pile" as a steel H-pile and "concrete facing" as a precast concrete face. An abutment wall is defined as an anchored wall with anchors that extend under a bridge end bent or an anchored wall connected to an abutment wall. Even if only one anchor extends under a bridge end bent, the entire anchored wall is considered an abutment wall.

2.0 MATERIALS

Refer to the *Standard Specifications*.

Item	Section
Asphalt Concrete Base Course, Type B25.0C	620
Flowable Fill, Excavatable	1000-7
Geosynthetics	1056
Grout, Type 1	1003
Joint Materials	1028
Masonry	1040
Portland Cement	1024-1
Portland Cement Concrete, Class A	1000
Reinforcing Steel	1070
Select Material, Class VI	1016
Shotcrete	1002
Shoulder Drain Materials	816-2
Steel Plates	1072-2
Untreated Timber	1082-2
Water	1024-4
Welded Stud Shear Connectors	1072-6

Provide Type 2 geotextile for separation geotextiles, Class A concrete for concrete facing and coping and Class VI select material (standard size No. 57 stone) for leveling pads and backfilling. Use Class A concrete that meets Article 450-2 of the *Standard Specifications* or grout for drilled-in piles. Provide untreated timber with a thickness of at least 3" and a bending stress of at least 1,000 psi for timber lagging.

Provide 2" diameter pipe sleeves for weep holes fabricated from either high-density polyethylene (HDPE) or polyvinyl chloride (PVC). HDPE pipe shall conform to AASHTO M 252, and PVC pipe shall conform to ASTM D1785 (Schedule 40). All pipe shall be free of cracks, splits, deformities, or other visible defects and suitable for long-term exposure to

drainage conditions and backfill materials. Use pipe that is smooth-walled, uniform in diameter, and capable of maintaining shape during installation through the precast concrete panel.

For ground anchors, use Type 5 grout.

Provide anchors consisting of grouted multi-strand tendons and anchorages. Use seven-wire strands that meet ASTM A886 or Article 1070-5 of the *Standard Specifications*. Do not splice strands.

Provide Class I corrosion protection (encapsulated tendon) for anchors in accordance with *FHWA Geotechnical Engineering Circular No. 4 "Ground Anchors and Anchored Systems"* (Publication No. FHWA-IF-99-015). Use grease and grout filled sheaths for unbonded lengths of anchors and encapsulation for bond lengths of anchors that meet Article 6.3.4 of the *AASHTO LRFD Bridge Construction Specifications*. Provide trumpets with seals that meet Articles 6.3.3 and 6.4.3 of the AASHTO LRFD specifications. Use bondbreakers, spacers and centralizers that meet Article 6.3.5 of the AASHTO LRFD specifications.

Provide anchorages consisting of bearing plates with washers and nuts for bars or wedge plates and wedges for strands. Use steel plates for bearing plates and steel washers, hex nuts, wedge plates and wedges recommended by the Anchor Manufacturer. Provide steel walers fabricated from structural steel shapes or plates that meet Section 1072 of the *Standard Specifications*. Provide Type 1 material certifications in accordance with Article 106-3. Fabricated walers shall be free of deformation, mill scale, rust, or other contaminants prior to installation. Galvanize walers in accordance with Article 1076-3 unless otherwise noted.

Unless required otherwise in the contract, produce panels with a smooth flat final finish that meets Article 1077-11 of the *Standard Specifications*. When noted in the plans, produce panels with an exposed aggregate finish that meets Article 1077-12 of the *Standard Specifications*. Produce panels within 1/4" of the panel dimensions shown in the accepted submittals. Damaged panels with excessive discoloration, chips or cracks as determined by the Engineer will be rejected.

Provide Type 3 material certifications for anchor materials in accordance with Article 106-3 of the *Standard Specifications*. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store anchor wall materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

Provide Type 1 material certifications for shotcrete steel reinforcement in accordance with Article 106-3 of the *Standard Specifications*. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store anchor wall materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

3.0 PRECONSTRUCTION REQUIREMENTS

A. Anchored Wall Designs

Four-inch diameter anchors may be approved for anchors in rock at the discretion of the Engineer. Where anchors go through piles, reinforce H-pile webs as shown in the plans or submit alternate reinforced web details. Do not extend anchors beyond right-of-way or easement limits. If existing or future obstructions such as foundations, guardrail, fence or handrail posts, pavements, pipes, inlets or utilities will interfere with anchors, maintain a clearance of at least 6" between obstructions and anchors.

Where anchors do not pass through the webs of piles, provide a steel waler system to distribute anchor loads to adjacent piles. The Contractor shall be responsible for the design of the steel waler, including its size, configuration, and method of attachment to the soldier piles. Design the waler to safely transfer the applied anchor loads to the soldier piles without overstressing any component of the system. Submit waler design calculations and details for review and acceptance prior to installation. Design steel waler system in accordance with *AASHTO LRFD Bridge Design Specifications* Connection details and any welding shall conform to Section 1072 of the *Standard Specifications*.

Provide temporary support of excavations for excavations more than 4 ft deep and timber lagging in accordance with the *AASHTO Guide Design Specifications for Bridge Temporary Works*. Except for partial fill sections, backfill voids behind lagging and piles with No. 57 stone and excavatable flowable fill. Separation geotextiles are required between No. 57 stone and overlying fill sections. When placing pavement sections directly on No. 57 stone, cap stone with 4" of asphalt concrete base course.

When indicated on the plans, provide wall drainage systems consisting of geocomposite sheet drains, an aggregate shoulder drain and outlet components. Place sheet drains with a horizontal spacing of no more than 10 ft and center drains between adjacent piles. Attach sheet drains to front of timber lagging and connect drains to aggregate leveling pads. Locate a continuous aggregate shoulder drain along the base of concrete facing in front of piles and leveling pads. Provide aggregate shoulder drains and outlet components in accordance with Roadway Standard Drawing No. 816.02.

Use No. 57 stone for aggregate leveling pads. Use 6" thick leveling pads beneath concrete facing. Unless required otherwise in the plans, embed top of leveling pads at least 12" below bottom of walls shown in the plans.

Design shotcrete and concrete facing in accordance with the plans and Article 11.12.6.2 of the *AASHTO LRFD Bridge Design Specifications*. Use shotcrete and concrete facing with the dimensions shown in the plans and attach facing to nail heads, coping, and steel piles with welded stud shear connectors. Submit working drawings and design calculations for acceptance in accordance with Article 105-2 of the Standard Specifications.

Unless required otherwise in the plans, use CIP reinforced concrete coping at top of anchored retaining walls with panels. Use coping dimensions shown in the plans. When

concrete barrier rail is required above anchored retaining walls, use concrete barrier rail with moment slab as shown in the plans.

At the option of the Contract, an alternative anchor design may be proposed. For alternative anchor design, submit working drawings and design calculations including unit grout/ground bond strengths and lock-off loads for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles with pile and anchor locations including known performance test anchor locations, typical sections and details of piles including reinforced web details, anchors, drainage, shotcrete, temporary support, leveling pads and concrete facing. If necessary, include details on working drawings for concrete barrier rail with moment slab and obstructions extending through walls or interfering with piles, anchors, barriers or moment slabs. Submit design calculations including lateral movement calculations for each wall section with different surcharge loads, geometry or material parameters. Include analysis of temporary conditions in design calculations. At least one analysis is required for each wall section with different anchor lengths. When designing anchored walls with computer software, a hand calculation is required for the wall section with the longest anchors.

B. Anchored Wall Construction Plan

Submit a PDF file of an anchored wall construction plan at least 30 days before the preconstruction meeting. Do not begin anchored wall construction until the construction plan submittal is accepted. Provide detailed project specific information in the anchored wall construction plan that includes the following:

1. Overall description and sequence of anchored wall construction;
2. For drilled-in piles, installation details including drilling equipment and methods for stabilizing and filling holes and for driven piles, proposed pile driving methods and equipment in accordance with Subarticle 450-3(D)(2) of the *Standard Specifications*;
3. List and sizes of excavation equipment, drill rigs and tools, tremies and grouting equipment;
4. Procedures for excavations including temporary support, drilling and grouting, anchor and wall drainage system installation and facing construction;
5. Details of shotcrete equipment and application including mix process, test panels, thickness gauges and shooting methods;
6. Shotcrete nozzleman with certification in accordance with Article 1002-1 of the *Standard Specifications*;
7. Plan and methods for anchor testing with calibration certificates dated within 90 days of the submittal date;
8. Examples of construction records to be provided that meet Section 4.0(G) of this provision;
9. Grout mix design for ground anchors with acceptable ranges for grout flow and density;

10. Shotcrete mix design that meets Section 1002 of the *Standard Specifications*; and

11. Other information shown in the plans or requested by the Engineer.

If alternate construction procedures are proposed or necessary, a revised anchored wall construction plan submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend anchored wall construction until a revised plan is accepted.

C. Preconstruction Meeting

Before starting anchored wall construction, hold a preconstruction meeting to discuss the construction, inspection and testing of the anchored walls. If this meeting occurs before all anchored wall submittals have been accepted, additional preconstruction meetings may be required before beginning construction of anchored walls without accepted submittals. The Resident or Bridge Maintenance Engineer, Area Construction Engineer, Geotechnical Operations Engineer, Contractor and Anchored Wall Contractor Superintendent will attend preconstruction meetings.

4.0 CONSTRUCTION METHODS

Control drainage during construction in the vicinity of anchored walls. Direct run off away from anchored walls and areas above and behind walls. Contain and maintain No. 57 stone and protect material from erosion.

Notify the Engineer before blasting in the vicinity of anchored walls. Perform blasting in accordance with the contract. Unless required otherwise in the plans, install foundations located behind anchored walls before beginning wall construction.

Install anchored walls in accordance with the plans and as directed. Do not excavate behind anchored walls. If overexcavation occurs, repair walls with an approved method and a revised anchored wall design or construction plan may be required.

A. Excavation

Excavate in front of piles from the top down in accordance with the accepted submittals. Excavate in staged horizontal lifts with a maximum height of 5 ft. Use timber lagging or an alternate approved method for temporary support of excavations in accordance with the accepted submittals.

Install temporary support within 24 hours of excavating each lift unless otherwise approved. The installation may be delayed if it can be demonstrated that delays will not adversely affect excavation stability. If excavation faces will be exposed for more than 24 hours, use polyethylene sheets anchored at top and bottom of lifts to protect excavation faces from changes in moisture content.

Remove any cobbles, boulders, rubble or debris that will protrude more than 2" into the required shotcrete thickness. Rocky ground such as colluvium, boulder fills and weathered rock may be difficult to excavate without leaving voids.

If an excavation becomes unstable at any time, suspend anchored wall construction and temporarily stabilize the excavation by immediately placing an earth berm up against the unstable excavation face. When this occurs, repair walls with an approved method and a revised anchored wall design or construction plan may be required.

Remove flowable fill and material in between piles as necessary to install timber lagging. Position lagging with at least 3" of contact in the horizontal direction between the lagging and pile flanges or existing drilled shafts. Do not excavate the next lift until temporary support for the current lift is accepted.

B. Anchors

Fabricate and install anchors in accordance with the accepted submittals and Articles 6.4 and 6.5 of the *AASHTO LRFD Bridge Construction Specifications* except use anchor materials that meet Section 2.0 this provision instead of the AASHTO LRFD specifications and do not use heat-shrink sheaths for unbonded lengths of anchors. Mix and place neat cement grout in accordance with Subarticles 1003-5, 1003-6 and 1003-7 of the *Standard Specifications*. Measure grout temperature, density and flow during grouting with at least the same frequency grout cubes are made for compressive strength. Perform density and flow field tests in the presence of the Engineer in accordance with American National Standards Institute/American Petroleum Institute Recommended Practice 13B-1 (Section 4, Mud Balance) and ASTM C939 (Flow Cone), respectively.

Test anchors in accordance with the contract and as directed. Performance and proof tests are required in accordance with the accepted submittals, Article 6.5.5 of the AASHTO LRFD specifications and the following requirements.

1. Performance tests are required for at least 2 anchors or 5% of total anchors, whichever is greater, for each anchored wall instead of the requirements in Article 6.5.5.2 of the AASHTO LRFD specifications.
2. Electrical resistance load cells are required for performance tests.
3. An additional load increment equal to the alignment load (AL) is required between the maximum test and lock-off loads in Table 6.5.5.2-1 of the AASHTO LRFD specifications.
4. Competent rock in Article 6.5.5.5 of the AASHTO LRFD specifications will be as determined by the Engineer.
5. The lock-off load is as shown in the plans or accepted submittals.

Install steel walers, where required, in accordance with the accepted submittals and prior to lock-off of anchors. Do not conduct anchor lock-off or testing for anchors supported by walers until the waler has been installed and accepted.

The Engineer will determine the number and locations of performance tests required. The approximate known performance test anchor locations are shown in the plans. Submit identification numbers and calibration records for load cells, jacks and pressure

gauges with the anchored wall construction plan. Calibrate each jack and pressure gauge as a unit.

C. Wall Drainage Systems

Install wall drainage systems as shown in the plans or accepted submittals and in accordance with Section 816 of the *Standard Specifications*. Before installing shotcrete reinforcement, place geocomposite sheet drains with the geotextile side against the excavation faces. For highly irregular faces and at the discretion of the Engineer, sheet drains may be placed after shotcreting over weep holes through the shotcrete. Secure sheet drains so drains are in continuous contact with surfaces to which they are attached and allow for full flow the entire height of anchored walls. Discontinuous drainage is not permitted. If splices are needed, overlap sheet drains at least 12" so flow is not impeded. Connect sheet drains to aggregate leveling pads by embedding drain ends at least 4" into No. 57 stone.

A. Shotcrete

Clean ungrouted zones of drill holes and excavation faces of loose materials, mud, rebound and other foreign material. Moisten surfaces to receive shotcrete. Install shotcrete reinforcement in accordance with the contract and accepted submittals. Secure reinforcing steel so shooting does not displace or vibrate reinforcement. Install approved thickness gauges on 5 ft centers in the horizontal and vertical directions to measure shotcrete thickness.

Apply shotcrete in accordance with the contract, accepted submittals and Subarticle 1002-3(F) of the *Standard Specifications*. Use approved shotcrete nozzlemen who made satisfactory preconstruction test panels to apply shotcrete. Direct shotcrete at right angles to excavation faces except when shooting around reinforcing steel. Rotate nozzle steadily in small circular patterns and apply shotcrete from bottom of lifts up.

Make shotcrete surfaces uniform and free of sloughing or sagging. Completely fill ungrouted zones of drill holes and any other voids with shotcrete. Taper construction joints to a thin edge over a horizontal distance of at least the shotcrete thickness. Wet joint surfaces before shooting adjacent sections.

Repair surface defects as soon as possible after shooting. Remove any shotcrete which lacks uniformity, exhibits segregation, honeycombing or lamination or contains any voids or sand pockets and replace with fresh shotcrete to the satisfaction of the Engineer. Protect shotcrete from freezing and rain until shotcrete reaches initial set.

B. Leveling Pads, Panels, Coping and Concrete Facing

Construct aggregate leveling pads at elevations and with dimensions shown in the plans. Compact leveling pads with a vibratory compactor to the satisfaction of the Engineer.

Set panels against pile flanges as shown in the plans. Position panels with at least 2" of contact in the horizontal direction between the panels and pile flanges. If contact cannot

be maintained, remove panels, fill gaps with joint filler and reset panels. Securely support panels until enough No. 57 stone or backfill is placed to hold panels in place.

Construct coping as shown in the plans and Subarticle 452-4(B) of the *Standard Specifications*. When single faced precast concrete barrier is required in front of and against anchored retaining walls, stop coping just above barrier so coping does not interfere with placing barrier up against wall faces. If the gap between a single faced barrier and wall face is wider than 2", fill gap with Class V select material (standard size No. 78M stone). Otherwise, fill gap with backer rod and seal joint between barrier and anchored retaining wall with silicone sealant.

Construct concrete facing in accordance with the plans and Section 420 of the *Standard Specifications*. Do not remove forms until concrete attains a compressive strength of at least 2,400 psi. Unless required otherwise in the plans, provide a Class 2 surface finish for concrete facing that meets Subarticle 420-17(F) of the *Standard Specifications*. Construct concrete facing joints at a spacing of 10 ft to 12 ft unless required otherwise in the plans. Make 1/2" thick expansion joints that meet Article 420-10 of the *Standard Specifications* for every third joint and 1/2" deep grooved contraction or sawed joints that meet Subarticle 825-10(B) or 825-10(E) respectively for the remaining joints. Stop reinforcing steel for concrete facing 2" on either side of expansion joints.

If a brick veneer is required, construct brick masonry in accordance with Section 830 of the *Standard Specifications*. Anchor brick veneers to anchored walls in accordance with Subarticle 453-4 of the *Standard Specifications*. Seal joints above and behind anchored walls between concrete facing and slope protection with silicone sealant.

C. Backfill

For voids behind the anchored retaining walls, backfill behind piles and facing in accordance with the plans. Do not damage portions of anchors exposed behind piles when placing and compacting backfill material in fill areas. Backfill voids behind lagging and piles with excavatable flowable fill and No. 57 stone as shown in the plans. Ensure all voids between piles, lagging and excavation faces are filled with excavatable flowable fill and No. 57 stone. Compact stone to the satisfaction of the Engineer. When separation geotextiles are required, overlap adjacent geotextiles at least 18" and hold separation geotextiles in place with wire staples or anchor pins as needed.

D. Construction Records

Provide 2 copies of anchored wall construction records within 24 hours of completing each row of anchors. Include the following in construction records:

1. Names of Anchored Wall Contractor, Superintendent, Drill Rig Operator, Project Manager and Design Engineer;
2. Wall description, county, Department’s contract, TIP and WBS element number;
3. Wall station and number and lift location, dimensions, elevations and description;
4. Anchor locations, dimensions and inclinations, tendon types, sizes and grades,

corrosion protection and temporary casing information;

5. Date and time drilling begins and ends, tendons are inserted into drill holes, neat cement grout and shotcrete are mixed and arrives on-site and grout placement and shotcrete application begins and ends;
6. Grout volume, temperature, flow and density records;
7. Ground and surface water conditions and elevations if applicable;
8. Weather conditions including air temperature at time of grout placement and shotcrete application;
9. Anchor testing records including load versus movement and time versus creep movement plots; and
10. All other pertinent details related to anchored wall construction.

The Engineer will review construction records to determine the acceptability of each anchor. If an anchor is deemed unacceptable, the Engineer will provide a revised anchor design. The Contractor shall implement the revised design or adjust installation methods as directed and shall be responsible for all costs associated with the revised design, installation, and any additional anchors required to replace or supplement unacceptable anchors.

After completing each anchored wall or stage of a wall, provide a PDF file of all corresponding construction records.

5.0 MEASUREMENT AND PAYMENT

Site 7 Existing Retaining Wall Repairs will be measured and paid for at the contract lump sum price, excluding anchors, shotcrete, and excavatable flowable fill, which will be paid under separate line items. The lump sum price and payment will be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the work as specified and shown on the plans, including but not limited to concrete facing repairs, coping removal and resetting of precast panels, drainage improvements, backfill placement (except excavatable flowable fill), and all associated wall repair activities not covered under separate bid items.

Anchors will be measured and paid as the actual number of anchors installed and accepted, per each. This payment includes all materials, labor, equipment, performance tests, proof tests, grouting, installation, and all incidentals necessary to install complete and functional anchors in accordance with the plans and specifications.

Shotcrete will be measured and paid as the actual number of cubic yards of shotcrete placed and accepted. This payment includes all materials, surface preparation, labor, equipment, forming (if required), curing, and all incidentals necessary to construct the shotcrete facing as shown on the plans.

Excavatable Flowable Fill will be measured and paid as the actual number of cubic yards placed and accepted. This payment includes all labor, materials, equipment, and incidentals

required to furnish and place the excavatable flowable fill as indicated.

The lump sum payment for *Site 7 Existing Retaining Wall Repairs* will also include the cost of design, submittals, excavation, hauling and removal of excavated materials, placement and compaction of No. 57 stone and backfill material (excluding excavatable flowable fill), temporary excavation support, wall drainage systems, leveling pads, coring of 2.5" diameter weep holes in existing panels, installation of 2" diameter HDPE or PVC sleeves, and resetting or replacing precast panels and coping. This also includes brick veneers, if required, and any incidentals necessary to complete the repairs not specifically included in other pay items.

No additional payment will be made and no extension of completion date or time will be allowed for repairing overexcavations or unstable excavations, unacceptable anchors, or thicker shotcrete or concrete facing.

Costs for ditches, fences, handrails, barriers, or guardrails associated with the anchored walls will be paid for under their respective contract items.

Where it is necessary to provide backfill material from off-site sources not already covered in the contract, such hauling and furnishing will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. Placement and compaction of this backfill material shall be considered incidental and will not be paid separately.

Payment will be made under:

Pay Item	**Pay Unit**
Site 7 Existing Retaining Wall Repairs	Lump Sum
Anchors	Each
Shotcrete	Cubic Yard
Excavatable Flowable Fill	Cubic Yard



07/15/2025

Signed by:
Robert E. Kral
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ROCK EMBANKMENTS **(SPECIAL)**

Description

Construct rock embankments in accordance with the contract. Use core material as necessary or required where piles will be driven through rock embankments and as shown in the plans. Rock embankments are required to construct embankments in water at locations shown in the plans and as directed.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Geotextile for Rock Embankments, Type 2	1056
Rip Rap Materials	1042
Select Materials	1016

Provide Class VII select material for rock embankments. Use Class VI select material (standard size No. 57) for core material and Class A and B rip rap and No. 57 stone to fill voids in rock embankments. Obtain aggregates from sources participating in the Department's Aggregate QC/QA Program in accordance with Section 1006 of the *Standard Specifications* or use similar size onsite material approved by the Engineer.

Construction Methods

Construct rock embankments in accordance with the slopes, dimensions and elevations shown in the plans and Section 235 of the *Standard Specifications*. If piles will be installed through rock embankments, place Class VII so there will be at least 5 ft between rock and piles. Place Class VII so smaller rocks are uniformly distributed throughout rock embankments. Provide a uniform surface free of obstructions, debris and groups of large rocks that could cause voids in embankments. When placing Class VII in lifts, place core material to top of the current lift before placing the next lift of Class VII.

Before placing embankment fill material or geotextiles over rock embankments, fill voids in the top of rock embankments with rip rap and No. 57 stone. Place and compact Class B rip rap first followed by Class A rip rap. Then, fill any remaining voids with No. 57 stone so geotextiles are not torn, ripped or otherwise damaged when installed and covered. Compact rip rap and No. 57 stone with tracked equipment or other approved methods. Install geotextiles on top of Class VII, rip rap and No. 57 stone in accordance with Article 270-3 of the *Standard Specifications* before placing embankment fill material.

Measurement and Payment

Rock Embankments will be measured and paid in tons. Select material will be measured by weighing material in trucks in accordance with Article 106-7 of the *Standard Specifications*. Rip Rap, Class A and B will be measured and paid in accordance with Article 876-4 of the *Standard Specifications*. The contract unit price for *Rock Embankments* will be full compensation for providing, hauling, handling, placing, compacting and maintaining select material and rip rap.

Geotextile for Rock Embankments will be measured and paid in square yards. Geotextiles will be measured along the top of rock embankments as the square yards of exposed geotextiles before placing embankment fill material. No measurement will be made for overlapping geotextiles.

The contract unit price for *Geotextile for Rock Embankments* will be full compensation for providing, transporting and installing geotextiles.

Payment will be made under:

Pay Item	**Pay Unit**
Rock Embankments	Ton
Geotextile for Rock Embankments	Square Yard



Signed by:
Robert E. Kral
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07/15/2025

PARTIALLY GROUTED ROCK FILL (SPECIAL)

1.0 GENERAL

Partially grouted rock fill increases the survivability of rock placed adjacent to streams and rivers and increases the resistance to erosion and scour. Construct partially grouted rock fill in accordance with the contract and as shown in the plans.

2.0 MATERIALS

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Grout	1003

Use Type 4 Grout for Partially Grouted Rock Fill except the minimum compressive strength shall be 1,000 psi as determined by the average compressive strength test results of three 3 inch x 6 inch cylinders at the age of 28 days. Obtain aggregates from sources participating in the Department's Aggregate QC/QA Program in accordance with Section 1006 of the *Standard Specifications*.

The grout shall be delivered to the project with water withheld from the approved mix design such that the delivered grout will have an initial average spread diameter less than 14 inches. Spread is determined by measuring the average diameter of the slumped grout after filling an inverted slump cone placed upon a sheet metal surface with minimum dimensions of 3 feet square and slowly lifting the slump cone.

Water may be added to the mix in no more than 1-gallon per cubic yard increments to improve flow and workability prior to and during grout placement. Grout shall not be placed in rock fills when the average spread diameter exceeds 21 inches unless approved by the Engineer. Grout may be agitated in the truck to reduce the spread to the acceptable limit provided the elapsed time for placing grout does not exceed the times in Table 1003-3.

3.0 CONSTRUCTION METHODS

Apply grout to rock fills in accordance with the plans and specifications. Grout shall be placed by a hose or tremie less than 4 inches in diameter, or by automated mechanical means.

Provide protection to prevent grout encountering live water in the adjacent stream. Immediately cease grouting operations and contact the Engineer if grout encounters live water during the work.

When grout will be delivered into the rock fill by pumping, provide a minimum 3 cubic foot container on site to calibrate grout delivery rates prior to beginning grouting operations in the rock fill. The calibration shall include at least 2 separate measurements of time to fill the container when delivered at the pumping rate or pressure the contractor intends to use during the actual work. The grout used to fill the measurement container may be emptied at a grout point in the rock fill or may be wasted in the concrete washout pit for the project.

4.0 MEASUREMENT AND PAYMENT

Grout for Rock Fill will be measured and paid in cubic yards of grout incorporated into the rock fill. The contract unit price for *Grout for Rock Fill* includes full compensation for providing, mixing, and placing grout and any materials and work associated with protecting streams from grout contact.

Payment will be made under:

Pay Item	**Pay Unit**
Grout for Rock Fill	Cubic Yard



Signed by:
Robert C. Kral
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07/15/2025

SOLDIER PILE RETAINING WALLS (SPECIAL)

1.0 GENERAL

Construct soldier pile retaining walls consisting of driven or drilled-in steel H-piles with either precast concrete panels in between piles or a CIP reinforced concrete face attached to front of piles unless required otherwise in the plans. Timber lagging is typically used for temporary support of excavations during construction. Provide CIP reinforced concrete coping as required. Design and construct soldier pile retaining walls based on actual elevations and wall dimensions in accordance with the contract and accepted submittals. Use a prequalified Cantilever Wall Contractor to construct soldier pile retaining walls. Define "soldier pile wall" as a soldier pile retaining wall. Define "panel" as a precast concrete panel and "concrete facing" as a CIP reinforced concrete face. Define "pile" as a steel H-pile and "coping" as CIP concrete coping.

2.0 MATERIALS

Refer to the *Standard Specifications*.

Item	Section
Asphalt Concrete Base Course, Type B25.0C	620
Flowable Fill, Excavatable	1000-7
Geosynthetics	1056
Grout, Type 1	1003
Joint Materials	1028
Masonry	1040
Portland Cement Concrete	1000
Reinforcing Steel	1070
Retaining Wall Panels	1077
Select Materials	1016
Shoulder Drain Materials	816-2
Steel H-Piles	1084-1
Untreated Timber	1082-2
Welded Stud Shear Connectors	1072-6

Provide Type 2 geotextile for separation geotextiles and Class VI select material (standard size No. 57 stone) for leveling pads and backfilling. Use Class A concrete for concrete facing and coping and Class A concrete that meets Article 450-2 of the *Standard Specifications* or grout for drilled-in piles. Use untreated timber with a thickness of at least 3" and a bending stress of at least 1,000 psi for timber lagging.

Unless required otherwise in the contract, produce panels with a smooth flat final finish that meets Article 1077-11 of the *Standard Specifications*. When noted in the plans, produce panels with an exposed aggregate finish that meets Article 1077-12 of the *Standard Specifications*. Produce panels within 1/4" of the panel dimensions shown in the accepted submittals. Damaged panels with excessive discoloration, chips or cracks as determined by the Engineer will be rejected.

For soldier pile walls with panels, galvanize piles in accordance with Section 1076 of the *Standard Specifications*. When noted in the plans, paint galvanized piles in accordance with Article 442-13 of the *Standard Specifications*. Apply the following system to paint galvanized piles gray with waterborne paints that meet Article 1080-9 of the *Standard Specifications*. For painting galvanized piles other colors, contact the Materials and Tests (M&T) Unit for an appropriate paint system.

GRAY PAINT SYSTEM FOR GALVANIZED PILES			
Coat	**Color**	**Dry/Wet Film Thickness (Mils)**	
		Min.	**Max.**
Intermediate	Brown	3.0 DFT	5.0 DFT
Stripe	White	4.0 WFT	7.0 WFT
Topcoat	Gray	2.0 DFT	4.0 DFT
Total		**5.0 DFT**	**9.0 DFT**

Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store soldier pile wall materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

3.0 PRECONSTRUCTION REQUIREMENTS

A. Soldier Pile Wall Surveys

The Retaining Wall Plans show a plan view, typical sections, details, notes and an elevation or profile view (wall envelope) for each soldier pile wall. Before beginning soldier pile wall design, survey existing ground elevations shown in the plans and other elevations in the vicinity of soldier pile wall locations as needed. For proposed slopes above or below soldier pile walls, survey existing ground elevations to at least 10 ft beyond slope stake points. Based on these elevations, finished grades and actual soldier pile wall dimensions and details, submit revised wall envelopes for acceptance. Use accepted wall envelopes for design.

B. Soldier Pile Wall Designs

For soldier pile wall designs, submit PDF files of working drawings and design calculations at least 30 days before the preconstruction meeting. Do not begin soldier pile wall construction until a design submittal is accepted.

Use a prequalified Cantilever Wall Design Consultant to design soldier pile walls. Provide designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for the Cantilever Wall Design Consultant.

Design soldier pile walls in accordance with the plans and Article 11.8 of the *AASHTO LRFD Bridge Design Specifications* unless otherwise required. Design soldier pile walls

for a maximum deflection of 2" or 1.5% of H, whichever is less, with H as shown in the plans.

When noted in the plans, design soldier pile walls for a live load (traffic) surcharge of 250 psf in accordance with Article 11.5.6 of the AASHTO LRFD specifications. For steel beam guardrail with 8 ft posts above soldier pile walls, analyze walls for a nominal horizontal load (P_{H1}) of 300 lb/ft of wall in accordance with Figure 3.11.6.3-2(a) of the AASHTO LRFD specifications. For concrete barrier rail above soldier pile walls, analyze walls for a nominal P_{H1} of 500 lb/ft of wall in accordance with Figure 3.11.6.3-2(a).

When a rock mass shear strength (S_m) is noted in the plans, analyze piles using the equation shown in Figure 3.11.5.6-2 of the AASHTO LRFD specifications to calculate the passive resistance of the rock ($\overline{P_p}$). Use a maximum H-pile spacing of 10 ft. At the Contractor's option, use driven or drilled-in piles for soldier pile walls with concrete facing unless otherwise required. For soldier pile walls with panels, use drilled-in piles unless noted otherwise in the plans. Use concrete or grout for embedded portions of drilled-in piles. Install drilled-in piles by excavating holes with diameters that will result in at least 3" of clearance all around piles.

Provide temporary support of excavations for excavations more than 4 ft deep and timber lagging in accordance with the *AASHTO Guide Design Specifications for Bridge Temporary Works*. At the Contractor's option and when noted in the plans, provide temporary slopes instead of temporary support of excavations. Do not extend temporary slopes outside right-of-way or easement limits. Except for fill sections or when using temporary slopes, backfill voids behind panels, lagging and piles with No. 57 stone. Separation geotextiles are required between No. 57 stone and overlying fill sections. When placing pavement sections directly on No. 57 stone, cap stone with 4" of asphalt concrete base course.

At the Contractor's option, use panels or concrete facing unless required otherwise in the plans. Design panels and concrete facing in accordance with the plans and Section 5 of the *AASHTO LRFD Bridge Design Specifications*. Provide reinforcing steel of sufficient density to satisfy Article 5.7.3.4 of the AASHTO LRFD specifications. Use panels or concrete facing with the dimensions shown in the plans and attach facing to front of H-piles with welded stud shear connectors.

Use No. 57 stone for aggregate leveling pads. Use 6" thick leveling pads beneath panels and concrete facing. Unless required otherwise in the plans, embed top of leveling pads at least 12" below bottom of walls shown in the plans.

Provide wall drainage systems consisting of geocomposite sheet drains, an aggregate shoulder drain and outlet components. Place sheet drains with a horizontal spacing of no more than 10 ft and center drains between adjacent piles. Attach sheet drains to front of timber lagging or back of panels or concrete facing and connect drains to aggregate leveling pads. Locate a continuous aggregate shoulder drain along the base of panels or concrete facing in front of piles and leveling pads. Provide aggregate shoulder drains

and outlet components in accordance with Roadway Standard Drawing No. 816.02.

Unless required otherwise in the plans, use CIP reinforced concrete coping at top of soldier pile walls with panels. Use coping dimensions shown in the plans and at the Contractor's option, connect coping to panels with dowels or extend coping down back of panels. When concrete barrier rail is required above soldier pile walls, use concrete barrier rail with moment slab as shown in the plans.

Submit working drawings and design calculations for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles with pile locations, typical sections and details of piles, drainage, temporary support, leveling pads, panels and concrete facing. If necessary, include details on working drawings for coping, concrete barrier rail with moment slab and obstructions extending through walls or interfering with piles, barriers or moment slabs. Submit design calculations including deflection calculations for each wall section with different surcharge loads, geometry or material parameters. Include analysis of temporary conditions in design calculations. When designing soldier pile walls with computer software, a hand calculation is required for the tallest wall section.

C. Soldier Pile Wall Construction Plan

Submit a PDF file of a soldier pile wall construction plan at least 30 days before the preconstruction meeting. Do not begin soldier pile wall construction until the construction plan submittal is accepted. Provide project specific information in the soldier pile wall construction plan including a detailed construction sequence. For driven piles, submit proposed pile driving methods and equipment in accordance with Subarticle 450-3(D)(2) of the *Standard Specifications*. For drilled-in piles, submit installation details including drilling equipment and methods for stabilizing and filling holes. Provide details in the construction plan of excavations including temporary support and any other information shown in the plans or requested by the Engineer.

If alternate construction procedures are proposed or necessary, a revised soldier pile wall construction plan submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend soldier pile wall construction until a revised plan is accepted.

D. Preconstruction Meeting

Before starting soldier pile wall construction, hold a preconstruction meeting to discuss the construction and inspection of the soldier pile walls. If this meeting occurs before all soldier pile wall submittals have been accepted, additional preconstruction meetings may be required before beginning construction of soldier pile walls without accepted submittals. The Resident or Bridge Maintenance Engineer, Area Construction Engineer, Geotechnical Operations Engineer, Contractor and Cantilever Wall Contractor Superintendent will attend preconstruction meetings.

4.0 CONSTRUCTION METHODS

Control drainage during construction in the vicinity of soldier pile walls. Direct run off away from soldier pile walls and areas above and behind walls. Contain and maintain No. 57 stone and backfill and protect material from erosion.

Notify the Engineer before blasting in the vicinity of soldier pile walls. Perform blasting in accordance with the contract. Unless required otherwise in the plans, install foundations located behind soldier pile walls before beginning wall construction if the horizontal distance to the closest foundation is less than the height of the tallest wall section.

Install soldier pile walls in accordance with the accepted submittals and as directed. Do not excavate behind soldier pile walls unless a temporary slope is shown in the accepted submittals. If overexcavation occurs and is not approved, repair walls with an approved method and a revised soldier pile wall design or construction plan may be required.

A. Piles

If a temporary slope is shown in the accepted submittals, excavate the slope before installing piles. Otherwise, install piles before excavating for soldier pile walls. Weld stud shear connectors to piles in accordance with Article 1072-6 of the *Standard Specifications*.

Install piles within 1" of horizontal and vertical alignment shown in the accepted submittals and with no negative batter (piles leaning forward). Minimize alignment variations between piles for soldier pile walls with concrete facing since variations can result in thicker concrete facing in some locations in order to provide the minimum required facing thickness elsewhere. Locate piles so the minimum required concrete facing thickness, if applicable, and roadway clearances are maintained for variable pile alignments.

Install piles to the required elevations in accordance with Subarticles 450-3(D) and 450-3(E) of the *Standard Specifications*. Piles may be installed with a vibratory hammer as approved by the Engineer. Do not splice piles. If necessary, cut off piles at elevations shown in the accepted submittals along a plane normal to the pile axis.

Use pile excavation to install drilled-in piles. If overexcavation occurs, fill to required elevations with No. 57 stone before setting piles. After filling holes with concrete or grout to the elevations shown in the accepted submittals, remove any fluids and fill remaining portions of holes with flowable fill. Cure concrete or grout at least 7 days before excavating.

Notify the Engineer if refusal is reached before pile excavation or driven piles attain the required penetration. When this occurs, a revised soldier pile wall design or construction plan submittal may be required. When a minimum pile penetration into rock is noted in the plans, rock is as determined by the Engineer.

B. Excavation

If a temporary slope is shown in the accepted submittals, excavate the slope as shown. Otherwise, excavate in front of piles from the top down in accordance with the accepted submittals. Excavate in staged horizontal lifts with a maximum height of 5 ft. Use timber lagging or an alternate approved method for temporary support of excavations in accordance with the accepted submittals.

Install temporary support within 24 hours of excavating each lift unless otherwise approved. The installation may be delayed if it can be demonstrated that delays will not adversely affect excavation stability. If excavation faces will be exposed for more than 24 hours, use polyethylene sheets anchored at top and bottom of lifts to protect excavation faces from changes in moisture content.

If an excavation becomes unstable at any time, suspend soldier pile wall construction and temporarily stabilize the excavation by immediately placing an earth berm up against the unstable excavation face. When this occurs, repair walls with an approved method and a revised soldier pile wall design or construction plan may be required.

Remove flowable fill and material in between piles as necessary to install timber lagging. Position lagging with at least 3" of contact in the horizontal direction between the lagging and pile flanges. Do not excavate the next lift until temporary support for the current lift is accepted.

C. Wall Drainage Systems

Install wall drainage systems as shown in the accepted submittals and in accordance with Section 816 of the *Standard Specifications*. Place geocomposite sheet drains with the geotextile side facing away from wall faces. Secure sheet drains so drains are in continuous contact with surfaces to which they are attached and allow for full flow the entire height of soldier pile walls. Discontinuous sheet drains are not allowed. If splices are needed, overlap sheet drains at least 12" so flow is not impeded. Connect sheet drains to aggregate leveling pads by embedding drain ends at least 4" into No. 57 stone.

D. Leveling Pads, Panels, Coping and Concrete Facing

Construct aggregate leveling pads at elevations and with dimensions shown in the accepted submittals. Compact leveling pads with a vibratory compactor to the satisfaction of the Engineer.

Set panels against pile flanges as shown in the accepted submittals. Position panels with at least 2" of contact in the horizontal direction between the panels and pile flanges. If contact cannot be maintained, remove panels, fill gaps with joint filler and reset panels. Securely support panels until enough No. 57 stone or backfill is placed to hold panels in place.

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Construct concrete facing in accordance with the accepted submittals and Section 420 of the *Standard Specifications*. Do not remove forms until concrete attains a compressive

strength of at least 2,400 psi. Unless required otherwise in the plans, provide a Class 2 surface finish for concrete facing that meets Subarticle 420-17(F) of the *Standard Specifications*. Construct concrete facing joints at a spacing of 10 ft to 12 ft unless required otherwise in the plans. Make 1/2" thick expansion joints that meet Article 420-10 of the *Standard Specifications* for every third joint and 1/2" deep grooved contraction or sawed joints that meet Subarticle 825-10(B) or 825-10(E) respectively for the remaining joints. Stop reinforcing steel for concrete facing 2" on either side of expansion joints.

If a brick veneer is required, construct brick masonry in accordance with Section 830 of the *Standard Specifications*. Anchor brick veneers to soldier pile walls in accordance with Subarticle 453-4 of the *Standard Specifications*. Seal joints above and behind soldier pile walls between coping or concrete facing and concrete slope protection with silicone sealant.

E. Backfill

For fill sections or if a temporary slope is shown in the accepted submittals, backfill behind piles, panels and concrete facing in accordance with Article 410-8 of the *Standard Specifications*. Backfill voids behind panels, lagging and piles with No. 57 stone as shown in the accepted submittals. Ensure all voids between panels and lagging and between piles, lagging and excavation faces are filled with No. 57 stone. Compact stone to the satisfaction of the Engineer. When separation geotextiles are required, overlap adjacent geotextiles at least 18" and hold separation geotextiles in place with wire staples or anchor pins as needed.

F. Pile Coatings

For soldier pile walls with panels, clean exposed galvanized or painted surfaces of piles with a 2,500 psi pressure washer after wall construction is complete. Repair galvanized surfaces that are exposed and damaged in accordance with Article 1076-7 of the *Standard Specifications*. Repair painted surfaces that are exposed and damaged by applying 4.0 to 7.0 mils wet film thickness of a topcoat to damaged areas with brushes or rollers. Use the same paint for damaged areas that was used for the topcoat when painting piles initially. Feather or taper topcoats in damaged areas to be level with surrounding areas.

5.0 MEASUREMENT AND PAYMENT

Soldier Pile Retaining Walls will be measured and paid in square feet. Soldier pile walls will be measured as the square feet of wall face area with the pay height equal to the difference between top of wall and top of leveling pad elevations. Define “top of wall” as top of coping or top of panels or concrete facing for soldier pile walls without coping.

The contract unit price for *Soldier Pile Retaining Walls* will be full compensation for providing designs, submittals, labor, tools, equipment and soldier pile wall materials, installing piles, excavating, hauling and removing excavated materials, placing and compacting No. 57 stone and backfill material and supplying temporary support of excavations, wall drainage systems, leveling pads, panels, concrete facing, No. 57 stone,

geotextiles, aggregate concrete base course and any incidentals necessary to construct soldier pile walls. The contract unit price for *Soldier Pile Retaining Walls* will also be full compensation for coping, pile coatings, backer rod and silicone sealant, No. 78M stone and brick veneers, if required. No additional payment will be made and no extension of completion date or time will be allowed for repairing overexcavations or unstable excavations or thicker concrete facing.

The contract unit price for *Soldier Pile Retaining Walls* does not include the cost for ditches, fences, handrails, barrier or guardrail associated with soldier pile walls as these items will be paid for elsewhere in the contract.

Where it is necessary to provide backfill material behind soldier pile walls from sources other than excavated areas or borrow sources used in connection with other work in the contract, payment for furnishing and hauling such backfill material will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. Placing and compacting such backfill material is not considered extra work but is incidental to the work being performed.

Payment will be made under:

Pay Item	**Pay Unit**
No. 8A Retaining Wall	Square Feet
No. 8B Retaining Wall	Square Feet



07/15/2025

SOIL NAIL RETAINING WALLS (SPECIAL)

1.0 GENERAL

Construct soil nail retaining walls consisting of soil nails spaced at a regular pattern and connected to a shotcrete face. A soil nail consists of a steel or hollow bar grouted in a drilled hole inclined at an angle below horizontal. Design and construct soil nail retaining walls based on actual elevations and wall dimensions in accordance with the contract and accepted submittals. Use a prequalified Anchored Wall Contractor to construct soil nail retaining walls. Define "soil nail wall" as a soil nail retaining wall and "Soil Nail Wall Contractor" as the Anchored Wall Contractor installing soil nails and applying shotcrete. Define "nail" as a soil nail and "concrete facing" or "facing" as reinforced shotcrete face.

Temporary MSE walls are required for construction of soil nail walls. Design and construct temporary MSE walls based on actual elevations and dimensions in accordance with accepted submittals. Temporary MSE walls include temporary geosynthetic and wire facing. Define "temporary wall" as a temporary geosynthetic wall. Define "reinforcement" as geotextile reinforcement. Temporary geosynthetic walls consist of geotextile reinforcement wrapped behind welded wire facing.

2.0 MATERIALS

Refer to the *Standard Specifications*.

Item	Section
Welded Wire Reinforcement	1070
Geotextile for Temporary Wall	1056
Borrow Materials	1018
Joint Materials	1028
Masonry	1040
Portland Cement	1024-1
Reinforcing Steel	1070
Shotcrete	1002
Steel Plates	1072-2
Welded Stud Shear Connectors	1072-6

Provide Type 4a geotextiles with the required ultimate tensile strength for temporary walls.

Provide Type 6 material certifications for retaining wall materials.

Provide Type 5 grout for soil nails.

A. Temporary Wall

Use welded wire reinforcement for welded wire facing, struts and wires with the dimensions and minimum wire sizes shown in the details.

Provide Type 4a geotextile for geotextile reinforcement except for the ultimate tensile

strength.

Use suitable borrow material for MSE wall backfill in accordance with Standard Specification Section 1018. Borrow materials shall have low to moderate plasticity to maintain open holes during soil nail installation.

B. Soil Nails

For soil nails, provide materials consisting of grouted steel or hollow bars and nail head assemblies. Use epoxy coated steel bars that meet AASHTO M 275 or M 31, Grade 60 or 75. Splice bars in accordance with Article 1070-9 of the Standard Specifications. Provide epoxy coated bars that meet Article 1070-7 of the Standard Specifications. Use hollow steel bars manufactured by DYWIDAG-Systems International USA Inc., Nucor Skyline, Williams Form Engineering Corp. or an approved equal.

Fabricate centralizers from schedule 40 PVC plastic pipe or tube, steel or other material not detrimental to steel bars (no wood). Size centralizers to position bars within 1" of drill hole centers and allow tremies to be inserted to ends of holes. Use centralizers that do not interfere with grout placement or flow around bars. Centralizers are required both inside and outside sheaths for encapsulated nails.

Provide nail head assemblies consisting of nuts, washers and bearing plates with welded stud shear connectors. Use steel plates for bearing plates and steel washers and hex nuts recommended by the Soil Nail Manufacturer.

Provide Type 3 material certifications for soil nail materials in accordance with Article 106-3 of the Standard Specifications. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store soil nail wall materials so materials are kept clean and free of damage. Do not crack, fracture or otherwise damage grout inside sheaths of encapsulated nails. Bent, damaged or defective materials will be rejected.

3.0 PRECONSTRUCTION REQUIREMENTS

A. Temporary Walls Designs

Design temporary walls to support soil nail wall construction equipment and other construction loading in accordance with the plans and Article 11.10 of the AASHTO LRFD Bridge Design Specifications. Use geotextile properties approved by the Department or default values in accordance with the AASHTO LRFD specifications. Use geosynthetic properties for the direction reinforcement will be installed, a 3-year design life and the shoring backfill type in the reinforced zone. Submit pdf working drawings and design calculations for temporary walls with the soil nail wall submittal.

B. Soil Nail Wall Designs

For soil nail wall designs, submit PDF files of working drawings and design calculations

at least 30 days before the preconstruction meeting. Do not begin soil nail wall construction until a design submittal is accepted.

Use a prequalified Anchored Wall Design Consultant to design soil nail walls. Provide designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for the Anchored Wall Design Consultant.

Design soil nail walls in accordance with the plans and the *AASHTO LRFD Bridge Design Specifications* unless otherwise required.

Design soil nails that meet the following unless otherwise approved:

1. Horizontal and vertical spacing of at least 3 ft,
2. Inclination of at least 12° below horizontal,
3. Clearance between ends of bars and drill holes of at least 6",
4. Grout cover between epoxy coated bars and drill hole walls of at least 1" or in accordance with Article 11.12.8 of the AASHTO LRFD specifications for encapsulated bars and
5. Diameter of 6" to 10".

Four-inch diameter soil nails may be approved for nails in rock at the discretion of the Engineer. Do not extend nails beyond right-of-way or easement limits. If existing or future obstructions such as foundations, guardrail, fence or handrail posts, pavements, pipes, inlets or utilities will interfere with nails, maintain a clearance of at least 6" between obstructions and nails.

When noted in the plans, design soil nail walls for a live load (traffic) surcharge of 250 psf. For steel beam guardrail with 8 ft posts above soil nail walls, analyze facing and top row of nails for a nominal horizontal load (PH1) of 300 lb/ft of wall in accordance with Figure 3.11.6.3-2(a) of the AASHTO LRFD specifications. For concrete barrier rail above soil nail walls, analyze facing and top row of nails for a nominal PH1 of 500 lb/ft of wall in accordance with Figure 3.11.6.3-2(a).

Provide wall drainage systems consisting of geocomposite sheet drains, an aggregate shoulder drain and outlet components. Place sheet drains with a horizontal spacing of no more than 10 ft and center drains between adjacent nails. Attach sheet drains to excavation faces and connect drains to aggregate leveling pads or weep holes. Locate a continuous aggregate shoulder drain along the base of concrete facing in front of leveling pads. Provide aggregate shoulder drains and outlet components in accordance with Roadway Standard Drawing No. 816.02.

Use No. 57 stone for aggregate leveling pads. Use 6" thick leveling pads beneath concrete facing. Unless required otherwise in the plans, embed top of leveling pads at least 12" below bottom of walls shown in the plans.

Design shotcrete and concrete facing in accordance with the plans and Article 11.12.6.2

of the *AASHTO LRFD Bridge Design Specifications*. Use shotcrete and concrete facing with the dimensions shown in the plans and attach facing to nail heads with welded stud shear connectors. When concrete barrier rail is required above soil nail walls, use concrete barrier rail with moment slab as shown in the plans.

Submit PDF working drawings and design calculations including unit grout/ground bond strengths for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles with nail locations including known test nail locations, typical sections and details of nails, drainage, shotcrete, leveling pads and concrete facing. If necessary, include details on working drawings for concrete barrier rail with moment slab and obstructions extending through walls or interfering with nails, barriers or moment slabs. Submit design calculations for each wall section with different surcharge loads, geometry or material parameters. Include analysis of temporary conditions in design calculations. At least one analysis is required for each wall section with different nail lengths. Analyze internal and compound stability with a computer software program that uses limit equilibrium methods and submit all PDF output files from the program with the design calculations. See Article C11.12.2 of the AASHTO LRFD specifications for determining the maximum soil nail force, T_{maxsn}. Once T_{maxsn} and pullout length behind slip surface, $L_{P,}$ are determined from limit equilibrium methods at the target soil failure resistance factor (1 over factor of safety output from computer software), use these values for soil nail (pullout and tensile resistance) and wall facing (flexure, punching shear and headed-stud tensile resistance) design in accordance with Articles 11.12.5.2, 11.12.6.1 and 11.12.6.2 of the AASHTO LRFD specifications.

When designing soil nail walls with computer software Snail manufactured by the California Department of Transportation (CALTRANS), use Snail, version 2.2.0 or later, to calculate factors of safety and T_{maxsn} and L_P values in accordance with the following:

1. Allowable Stress Design for Analysis Method with no load factors applied except those applied to factored surcharge loads from structures or traffic,

2. Perform Below Toe Search option selected when any soil layer has a friction angle less than 30° and

3. Default value of 0.33 for Interface Friction Reduction Factor.

When designing soil nail walls with computer software other than Snail, use bi-linear (or tri-linear, as applicable) search surfaces intended to reproduce Snail results. Factors of safety and T_{maxsn} and L_P values are acceptable if they are within 5% of the factors of safety and T_{maxsn} and L_P values calculated by the Engineer using the computer software Slide2 manufactured by Rocscience, Inc.

C. Soil Nail Wall Construction Plan

Submit 4 copies and a PDF copy of a soil nail wall construction plan at least 30 days before the preconstruction meeting. Do not begin soil nail wall construction until the

construction plan submittal is accepted. Provide detailed project specific information in the soil nail wall construction plan that includes the following:

1. Overall description and sequence of soil nail wall construction;
2. List and sizes of excavation equipment, drill rigs and tools, tremies and grouting equipment;
3. Procedures for excavations, drilling and grouting, soil nail and wall drainage system installation and facing construction;
4. Details of shotcrete equipment and application including mix process, test panels, thickness gauges and shooting methods;
5. Shotcrete nozzleman with certification in accordance with Article 1002-1 of the *Standard Specifications*;
6. Plan and methods for nail testing with calibration certificates dated within 90 days of the submittal date;
7. Examples of construction and test nail records to be used in accordance with Section 4.0(D) and 5.0(D) of this provision;
8. Approved packaged grout or grout mix design with acceptable ranges for flow and density that meets Section 1003 of the *Standard Specifications*;
9. Shotcrete mix design that meets Section 1002 of the *Standard Specifications*; and
10. Other information shown in the plans or requested by the Engineer.

If alternate construction procedures are proposed or necessary, a revised soil nail wall construction plan submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend soil nail wall construction until a revised plan is accepted.

D. Preconstruction Meeting

Before starting soil nail wall construction, hold a preconstruction meeting to discuss the construction, inspection and testing of the soil nail walls. If this meeting occurs before all soil nail wall submittals have been accepted, additional preconstruction meetings may be required before beginning construction of soil nail walls without accepted submittals. The Resident or Bridge Maintenance Engineer, Bridge Construction Engineer, Geotechnical Operations Engineer, Contractor and Soil Nail Wall Contractor Superintendent will attend preconstruction meetings.

4.0 CONSTRUCTION METHODS

A. Temporary Wall

Construct walls with the minimum required reinforcement length and number of reinforcement layers for each wall section in accordance with the accepted submittals. Place geosynthetics as shown in the accepted submittals.

B. Soil Nail Wall

Control drainage during construction in the vicinity of soil nail walls. Direct run off away from soil nail walls and areas above and behind walls. Clear and remove loose materials, topsoil, and rootmat prior to beginning construction.

Notify the Engineer before blasting in the vicinity of soil nail walls. Perform blasting in accordance with the contract. Unless required otherwise in the plans, install foundations located behind soil nail walls before beginning wall construction.

Install micropile footings located in front of and beneath temporary walls in accordance with the contract and plans before beginning temporary wall construction.

Install temporary walls to support construction equipment.

Install soil nail walls in accordance with the accepted submittals and as directed. Do not excavate behind soil nail walls. If overexcavation occurs, repair walls with an approved method and a revised soil nail wall design or construction plan may be required.

1. Excavation

Excavate for soil nail walls from the top down in accordance with the accepted submittals. Excavate in staged horizontal lifts with no negative batter (excavation face leaning forward). Excavate lifts in accordance with the following:

a. Heights not to exceed vertical nail spacing,

b. Bottom of lifts no more than 3 ft below nail locations for current lift and

c. Horizontal and vertical alignment within 2" of location shown in the accepted submittals.

Remove any cobbles, boulders, rubble or debris that will protrude more than 2" into the required shotcrete thickness. Rocky ground such as colluvium, boulder fills and weathered rock may be difficult to excavate without leaving voids.

Apply shotcrete to excavation faces within 24 hours of excavating each lift unless otherwise approved. Shotcreting may be delayed if it can be demonstrated that delays will not adversely affect excavation stability. If excavation faces will be exposed for more than 24 hours, use polyethylene sheets anchored at top and bottom of lifts to protect excavation faces from changes in moisture content.

If an excavation becomes unstable at any time, suspend soil nail wall construction and temporarily stabilize the excavation by immediately placing an earth berm up against the unstable excavation face. When this occurs, repair walls with an approved method and a revised soil nail wall design or construction plan may be required.

Do not excavate the next lift until nail installations and testing and shotcrete

application for the current lift are accepted and grout and shotcrete for the current lift have cured at least 3 days and 1 day, respectively.

C. Soil Nails

Install soil nails in the same way as acceptable test nails. Drill and grout nails the same day and do not leave drill holes open overnight.

Control drilling and grouting to prevent excessive ground movements, damaging structures and pavements or fracturing rock and soil formations. If ground heave or subsidence occurs, suspend soil nail wall construction and take corrective action to minimize movement. If property damage occurs, make repairs with an approved method and a revised soil nail wall design or construction plan may be required.

1. Drilling

Use drill rigs of the sizes necessary to install soil nails and with sufficient capacity to drill through whatever materials are encountered. Drill straight and clean holes with the dimensions and inclination shown in the accepted submittals. Drill holes within 6" of locations and 2° of inclination shown in the accepted submittals unless otherwise approved.

Stabilize drill holes with temporary casings if unstable, caving or sloughing material is anticipated or encountered. Do not use drilling fluids to stabilize drill holes or remove cuttings.

2. Steel Bars

Center steel bars in drill holes with centralizers. Securely attach centralizers along bars at no more than 8 ft centers. Attach uppermost and lowermost centralizers 18" from excavation faces and ends of holes.

Do not insert steel bars into drill holes until hole locations, dimensions, inclination and cleanliness are approved. Do not vibrate, drive or otherwise force bars into holes. If a steel bar cannot be completely and easily inserted into a drill hole, remove the bar and clean or redrill the hole.

3. Grouting

Remove oil, rust inhibitors, residual drilling fluids and similar foreign materials from holding tanks/hoppers, stirring devices, pumps, lines, tremie pipes and any other equipment in contact with grout before use. Measure grout temperature, density and flow during grouting with at least the same frequency grout cubes are made for compressive strength. Perform density and flow field tests in the presence of the Engineer in accordance with American National Standards Institute/American Petroleum Institute Recommended Practice 13B-1 (Section 4, Mud Balance) and ASTM C939 (Flow Cone), respectively.

Inject grout at the lowest point of drill holes through tremies, e.g., grout tubes, casings, hollow-stem augers or drill rods, in one continuous operation. Fill drill holes progressively from ends of holes to excavation faces and withdraw tremies at a slow even rate as holes are filled to prevent voids in grout. Extend tremies into grout at least 5 ft at all times except when grout is initially placed in holes.

Provide grout free of segregation, intrusions, contamination, structural damage or inadequate consolidation (honeycombing). Cold joints in grout are not allowed except for test nails. Remove any temporary casings as grout is placed and record grout volume for each drill hole.

4. Nail Heads

Weld stud shear connectors to bearing plates of nails in accordance with Article 1072-6 of the *Standard Specifications*. Install nail head assemblies after shotcreting. Before shotcrete reaches initial set, seat bearing plates and tighten nuts so plates contact shotcrete uniformly. If uniform contact is not possible, install nail head assemblies on mortar pads so nail heads are evenly loaded.

D. Wall Drainage Systems

Install wall drainage systems as shown in the accepted submittals and in accordance with Section 816 of the *Standard Specifications*. Before installing shotcrete reinforcement, place geocomposite sheet drains with the geotextile side against temporary faces. Hold sheet drains in place with anchor pins so drains are in continuous contact with surfaces to which they are attached and allow for full flow the entire height of soil nail walls. Discontinuous sheet drains are not allowed. If splices are needed, overlap sheet drains at least 12" so flow is not impeded. Embed sheet drains into the aggregate leveling pad or align with 2-inch diameter weep holes to provide drainage continuity. Exit weep holes just above finished grade and slope holes 1 in/ft so water drains out of the front face.

E. Shotcrete

Clean ungrouted zones of drill holes and excavation faces of loose materials, mud, rebound and other foreign material. Moisten surfaces to receive shotcrete. Install shotcrete reinforcement in accordance with the contract and accepted submittals. Secure reinforcing steel so shooting does not displace or vibrate reinforcement. Install approved thickness gauges on 5 ft centers in the horizontal and vertical directions to measure shotcrete thickness.

Apply shotcrete in accordance with the contract, accepted submittals and Subarticle 1002-3(F) of the *Standard Specifications*. Use approved shotcrete nozzlemen who made satisfactory preconstruction test panels to apply shotcrete. Direct shotcrete at right angles to excavation faces except when shooting around reinforcing steel. Rotate nozzle steadily in small circular patterns and apply shotcrete from bottom of lifts up.

Make shotcrete surfaces uniform and free of sloughing or sagging. Completely fill ungrouted zones of drill holes and any other voids with shotcrete. Taper construction

joints to a thin edge over a horizontal distance of at least the shotcrete thickness. Wet joint surfaces before shooting adjacent sections.

Repair surface defects as soon as possible after shooting. Remove any shotcrete which lacks uniformity, exhibits segregation, honeycombing or lamination or contains any voids or sand pockets and replace with fresh shotcrete to the satisfaction of the Engineer. Protect shotcrete from freezing and rain until shotcrete reaches initial set.

F. Leveling Pads and Concrete Facing

Construct aggregate leveling pads at elevations and with dimensions shown in the accepted submittals. Compact leveling pads with a vibratory compactor to the satisfaction of the Engineer.

Construct shotcrete facing in accordance with the accepted submittals. Provide an acceptable gun finish shotcrete facing in accordance with the contract and plans. Construct facing joints at a spacing of 10 ft unless required otherwise in the plans. Make 1/2" thick expansion joints that meet Article 420-10 of the *Standard Specifications* for every third joint and 1/2" deep grooved contraction or sawed joints that meet Subarticle 825-10(B) or 825-10(E) respectively for the remaining joints. Stop reinforcing steel for facing 2" on either side of expansion joints.

If a brick veneer is required, construct brick masonry in accordance with Section 830 of the *Standard Specifications*. Anchor brick veneers to soil nail walls in accordance with Subarticle 453-4 of the *Standard Specifications*. Seal joints above and behind soil nail walls between concrete facing and slope protection with silicone sealant.

G. Construction Records

Provide 2 copies of soil nail wall construction records within 24 hours of completing each lift. Include the following in construction records:

1. Names of Soil Nail Wall Contractor, Superintendent, Nozzleman, Drill Rig Operator, Project Manager and Design Engineer;
2. Wall description, county, Department’s contract, TIP and WBS element number;
3. Wall station and number and lift location, dimensions, elevations and description;
4. Nail locations, dimensions and inclinations, bar types, sizes and grades, corrosion protection and temporary casing information;
5. Date and time drilling begins and ends, steel bars are inserted into drill holes, grout and shotcrete are mixed and arrives on-site and grout placement and shotcrete application begins and ends;
6. Grout volume, temperature, flow and density records;
7. Ground and surface water conditions and elevations if applicable;
8. Weather conditions including air temperature at time of grout placement and shotcrete application; and

9. All other pertinent details related to soil nail wall construction.

After completing each soil nail wall or stage of a wall, provide a PDF copy of all corresponding construction records.

5.0 NAIL TESTING

Test soil nails in accordance with the contract and as directed. "Verification tests" are performed on nails not incorporated into soil nail walls, i.e., sacrificial nails and "proof tests" are performed on nails incorporated into walls, i.e., production nails. Define "verification test nail" and "proof test nail" as a nail tested with either a verification or proof test, respectively. Define "test nails" as verification or proof test nails.

Verification tests are typically required for at least one nail per soil type per soil nail wall or 2 nails per wall, whichever is greater. Proof tests are typically required for at least one nail per nail row per soil nail wall or at least 5% of production nails, whichever is greater. More or less test nails may be required depending on subsurface conditions encountered. The Engineer will determine the number and locations of verification and proof tests required. The approximate known test nail locations may be shown in the plans.

Do not test nails until grout and shotcrete attain the required 3-day compressive strength. Do not install any production nails until verification tests are accepted.

A. Test Equipment

Use the following equipment to test nails:

1. Two dial gauges with rigid supports,
2. Hydraulic jack and pressure gauge,
3. Jacking block or reaction frame and
4. Electrical resistance load cell (verification tests only).

Provide dial gauges with enough range and precision to measure the maximum test nail movement to 0.001". Use pressure gauges graduated in 100 psi increments or less. Submit identification numbers and calibration records for load cells, jacks and pressure gauges with the soil nail wall construction plan. Calibrate each jack and pressure gauge as a unit.

Align test equipment to uniformly and evenly load test nails. Use a jacking block or reaction frame that does not damage or contact shotcrete within 3 ft of nail heads. Place dial gauges opposite each other on either side of test nails and align gauges within 5° of bar inclinations. Set up test equipment so resetting or repositioning equipment during nail testing is not needed.

B. Test Nails

Test nails include both unbonded and bond lengths. Grout only bond lengths before nail

testing. Provide unbonded and bond lengths of at least 3 ft and 10 ft, respectively. Hollow bar nail installation will require a bond breaker at the slope face for proof testing.

Steel bars for production nails may be overstressed under higher test nail loads. If necessary, use larger size or higher grade bars with more capacity for test nails instead of shortening bond lengths to less than the minimum required.

C. Nail Tests

Install verification test nails with the same equipment, installation methods and drill hole diameter and inclination as production nails. Test verification and proof test nails in accordance with the accepted submittals and Articles 34.5.5.2 and 34.5.5.3, respectively of the *AASHTO LRFD Bridge Construction Specifications*.

D. Test Nail Acceptance

Submit 2 copies of test nail records including load versus movement and time versus creep movement plots within 24 hours of completing each verification or proof test. The Engineer will review the test nail records to determine if test nails are acceptable. Test nail acceptance is based in part on the acceptance criteria in Article 34.5.5.4 of the *AASHTO LRFD Bridge Construction Specifications*.

For proof test nails, maintain stability of unbonded lengths for subsequent grouting. If a proof test nail is accepted but the unbonded length cannot be satisfactorily grouted, do not incorporate the proof test nail into the soil nail wall and add another production nail to replace the test nail.

If the Engineer determines a verification test nail is unacceptable, revise the soil nail design or installation methods. Submit a revised soil nail wall design or construction plan for acceptance and provide acceptable verification test nails with the revised design or installation methods.

If the Engineer determines a proof test nail is unacceptable, either perform additional proof tests on adjacent production nails or revise the soil nail design or installation methods for the production nails represented by the unacceptable proof test nail as determined by the Engineer. Submit a revised soil nail wall design or construction plan for acceptance, provide an acceptable proof test nail with the revised design or installation methods and install additional production nails for the nails represented by the unacceptable proof test nail.

After completing nail testing for each soil nail wall or stage of a wall, provide a PDF file of all corresponding test nail records.

6.0 MEASUREMENT AND PAYMENT

Soil Nail Retaining Walls will be measured and paid as the actual number of square feet of wall face constructed and accepted, as measured along the front face of the wall from the top of wall to the bottom of wall. Define “top of wall” as top of shotcrete facing. The contract

unit price per square foot will be full compensation for all labor, materials, tools, equipment, verification and proof testing, and incidentals necessary to complete the work as shown on the plans and as specified herein.

The contract unit price for *Soil Nail Retaining Walls* will be full compensation for providing designs, submittals, labor, tools, equipment and soil nail wall materials, excavating, hauling and removing excavated materials, installing soil nails, grouting, shotcreting and supplying wall drainage systems, leveling pads, concrete facing and any incidentals necessary to construct soil nail walls. The contract unit price for *Soil Nail Retaining Walls* will also be full compensation for brick veneers, if required. No additional payment will be made and no extension of completion date or time will be allowed for repairing property damage, overexcavations or unstable excavations, unacceptable test nails or thicker shotcrete or concrete facing.

No additional payment will be made and no extension of contract time will be allowed for repairing overexcavations or unstable excavations, unacceptable anchors, or thicker shotcrete or concrete facing.

Costs associated with ditches, fences, handrails, barriers, or guardrails related to the retaining walls will be paid for under their respective contract items. Where backfill material behind the walls must be furnished from off-site sources not covered elsewhere in the contract, hauling and furnishing will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. Placement and compaction of this material shall be considered incidental to the work and will not be paid for separately.

Payment will be made under:

Pay Item	**Pay Unit**
No. 8A Retaining Wall	Square Feet
No. 8B Retaining Wall	Square Feet



07/15/2025

MICROPILE GRADE BEAM **(SPECIAL)**

1.0 GENERAL

This project includes construction of an array of micropiles connected to a leveling course for No. 8A and 8B Retaining Walls, which serve to stabilize existing or potential slope instability and support future wall construction or roadway widening. A micropile is a small diameter, drilled and grouted non-displacement pile. Micropiles are designed and constructed with reinforcing casing and typically a center reinforcing bar. Design and construct micropiles with the required capacity in accordance with the contract and accepted submittals. Use a prequalified Micropile Subcontractor for micropile work. Define "pile" as a micropile and "footing" as a micropile grade beam, knee wall, footing, or leveling course.

2.0 MATERIALS

Refer to the *Standard Specifications*.

Item	Section
Neat Cement Grout, Nonshrink	1003
Reinforcing Steel	1070
Shotcrete	1002

Steel casings may be new "Structural Grade" steel pipe free from dents, cracks, cuts or any other defects. All steel for micropiles shall meet the requirements of Article 106-1 of the *Standard Specifications.*

Provide a Type 1 material certification that meets Article 106-3 of the *Standard Specifications* for reinforcing casings and bars. Store steel reinforcement on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials.

For testing yield strength, define a "lot" as each truckload delivered and 2 samples and tests are required per lot. Use steel casings with the minimum wall thickness shown in the plans and outside diameters ranging from the minimum shown in the plans to 3" larger. Provide casings meeting the tensile requirements of ASTM A252, Grade 3, except with an elongation of at least 15% and yield strength of at least 50 ksi (343 MPa) unless noted otherwise in the plans.

Use deformed steel bars that meet AASHTO M 275 or M31, Grade 60 or 75. Splice reinforcing bars in accordance with Article 1070-9 of the *Standard Specifications*. Hollow self-drilling bars shall meet ASTM A519 or A513 with minimum yield strengths of 100 ksi and 87 ksi, respectively, and shall be oversized to account for up to 1/8-inch reduction in diameter due to corrosion. Locate reinforcing casing joints at least 2 ft from bar splices.

Fabricate bar centralizers from schedule 40 PVC plastic pipe or tube, steel or other material not detrimental to steel reinforcement (no wood). Size centralizers to position reinforcement

within 1" of drill hole centers and allow tremies to be inserted to ends of holes. Use centralizers that do not interfere with grout placement or flow around reinforcement.

Use neat cement grout for Type 2 grout that meets Section 1003 of the *Standard Specifications*. Use reinforced shotcrete for footings.

Provide micropile head assemblies consisting of nuts, washers and bearing plates. Use steel bearing plates that meet ASTM A36 and steel washers and hex nuts recommended by the Bar Manufacturer.

3.0 PRECONSTRUCTION REQUIREMENTS

Two submittals are required. These submittals include (1) micropile design and (2) micropile installation and testing plan. Provide a PDF copy of each submittal. Submit the submittals at least 30 days before starting micropile construction. Do not begin micropile construction until the installation and testing plan is accepted.

A Design Engineer is required to design the micropiles. Submit documentation that the Design Engineer is licensed by the State of North Carolina and has at least 5 years of experience in designing micropiles for footing and in subsurface conditions similar to those for this project. Documentation should include resumes, references, certifications, project lists, experience descriptions and details, etc.

A. Micropile Footing Design Submittal

A conceptual micropile arrangement is shown in the plans. Review and verify existing site and subsurface conditions and survey information before designing micropiles.

Design the micropile footing in accordance with the *FHWA NHI-05-039 Micropile Design and Construction*, Chapter 6. Define “bond length” as the micropile center bar length below the reinforcing casing tip elevation, the reinforcing casing tip elevation if a center bar does not extend below the casing, or the micropile length in weathered rock or rock when only a bar is used for the micropile. Perform a slope stability analysis using the soil parameters and the assumed design failure plane shown in the plans. Determine the required bond length and micropile reinforcement to provide a global factor of safety equal to 1.35. A bond length of at least 10 ft into weathered rock or rock is required. Use a bond length factor of safety equal to 2.0 for axial compression and uplift resistance. Evaluate the shear and bending moment capacity of the cased and uncased sections in the unsupported length and casing joint portions of the micropiles.

Design micropile footings with the minimum dimensions shown on the plans. Reinforce micropile footings to resist the loading from the micropiles and slope instability.

When the micropile footing is utilized to provide bearing support of a retaining wall system, design the micropiles and micropile footing to resist the vertical and horizontal retaining wall loads.

When the micropile footing is used in conjunction with additional geotechnical systems such

as anchored soldier pile walls, permanent soil nail walls, and permanent soil nail shoring in Shored MSE or GRS Retaining Walls, the benefit of all of the stabilization systems may be combined to provide a minimum factor of safety of 1.35. The global stability benefit of a MSE or GRS retaining wall shall not be considered.

Submit working drawings, slope stability analyses, and design calculations including estimated unit ultimate capacities for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Include all dimensions, quantities, elevations and cross-sections necessary to construct the micropile footing. Have piles designed, detailed and sealed by the Design Engineer. When design changes occur due to load test results, varying site conditions or other reasons, a revised design submittal is required.

B. Micropile Installation and Testing Plan Submittal

Provide detailed project specific information in the installation and testing plan that includes the following:

1. List and sizes of proposed equipment including micropile drilling rigs and tools, tremies and grouting equipment;
2. Sequence of micropile construction and step-by-step description of micropile installation including details of casing installation, drilling methods and flushing;
3. List of reinforcement and casings including grades or yield strength and sizes;
4. Methods for placing reinforcement with procedures for supporting and positioning the reinforcement including centralizers;
5. Procedures for placing grout including how the grout will be initially placed in drill holes and acceptable ranges for grout pressures and volumes;
6. Equipment and procedures for monitoring and recording grout levels, pressures and volumes with calibration certificates dated within 90 days of the submittal date;
7. Examples of construction records to be provided that meet Section 8.0 of this provision;
8. Procedures for containment and disposal of drilling spoils, drill flush and waste grout;
9. Approved packaged grout or grout mix design with acceptable ranges for flow and density that meets Section 1003 of the *Standard Specifications*;
10. If load testing is required, load testing details, procedures and plan sealed by the Design Engineer or Project Engineer for the Load Test Supplier with calibration certificates dated within 90 days of the submittal date;
11. Load Test Supplier, when applicable, including Project Engineer; and
12. Other information shown in the plans or requested by the Engineer.

If alternate installation and testing procedures are proposed or necessary, a revised installation and testing plan submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend micropile construction

until a revised plan is accepted.

C. Preconstruction Meeting

Before starting micropile construction, hold a preconstruction meeting to discuss the installation, monitoring and testing of the piles. Schedule this meeting after the Micropile Subcontractor mobilizes to the site. If this meeting occurs before all micropile submittals have been accepted, additional preconstruction meetings may be required before beginning construction of micropiles without accepted submittals. The Resident or Bridge Maintenance Engineer, Bridge Construction Engineer, Geotechnical Operations Engineer, Contractor and Micropile Subcontractor Superintendent and Project Manager will attend preconstruction meetings.

4.0 CONSTRUCTION METHODS

Use equipment and methods accepted in the micropile installation and testing plan or approved by the Engineer. Inform the Engineer of any deviations from the accepted plan. Install production micropiles in the same way as satisfactory demonstration micropiles, if applicable.

Dispose of drilling spoils, drill flush and waste grout as directed and in accordance with Section 802 of the *Standard Specifications*. Drilling spoils consist of all excavated material and fluids removed from drill holes.

When constructing the micropile footing in cold weather, mix and place grout and shotcrete in accordance with Article 420-7 of the *Standard Specifications*, except for the following. Grout may be placed in the ground regardless of the air temperature. Shotcrete may be placed within an enclosure heated to within the air temperature range specified in Article 420-7. The enclosure must remain heated until the shotcrete has reached initial set.

Control drilling and grouting to prevent excessive ground movements, damaging structures and fracturing rock and soil formations. If ground heave or subsidence occurs, suspend micropile construction and take action to minimize movement. If structures are damaged, suspend micropile construction and repair structures with an approved method at no additional cost to the Department. The Engineer may require a revised micropile installation and testing plan when corrective action is necessary.

A. Drilling and Reinforcement

Use micropile drilling rigs capable of drilling through whatever materials are encountered to the dimensions and elevations required for the micropile design. Install piles with tip elevations no higher than shown in the accepted submittals or approved by the Engineer.

Do not install reinforcing casings or begin drilling within 6 pile diameters, center to center, or 5 ft (1.5 m), whichever is greater, of completed micropiles until grout in piles reaches initial set. More clearance may be necessary if micropile construction affects adjacent micropiles.

Install reinforcing casings to a tip elevation no higher than that noted in the plans. Construct reinforcing casing joints in accordance with the accepted submittals. Special welding procedures are required for steel with yield strength greater than 50 ksi (345 MPa).

Use drilling methods that result in the annulus between reinforcing casings and the ground filled with grout, as demonstrated by grout return to the ground surface.

Check for correct micropile location and plumbness or proper inclination before beginning drilling. Stabilize drill holes with casings from beginning of drilling through grouting if unstable material is anticipated or encountered. After drilling, flush drill holes with water or air to remove drill cuttings and other loose materials unless hollow bars are used.

With the exception of hollow bars, use centralizers to center reinforcement bars in drill holes. Securely attach bar centralizers at maximum 10 ft (3 m) intervals along reinforcing bars. Attach upper and lowermost centralizers 5 ft (1.5 m) from the top and bottom of micropiles.

Place conventional reinforcing bars before grouting or after while grout is still fluid. Do not vibrate or drive reinforcement. Reinforcing bars may be gently pushed into grout. If reinforcement can only be partially inserted, redrill or clean drill holes to permit complete insertion.

B. Grouting

Remove oil, rust inhibitors, residual drilling fluids and similar foreign materials from holding tanks/hoppers, stirring devices, pumps, lines, tremie pipes and all other equipment in contact with grout before use. Size grouting equipment to grout each micropile in one continuous operation. Field calibrate grout pumps at the beginning of construction.

Measure grout temperature, density and flow during grouting with at least the same frequency grout cubes are made for compressive strength. Perform density and flow field tests in the presence of the Engineer in accordance with American National Standards Institute/American Petroleum Institute Recommended Practice 13B-1 (Section 4, Mud Balance) and ASTM C939 (Flow Cone), respectively.

Grout micropiles the same day the bond length is drilled and do not leave drill holes open overnight. Place grout with a tremie in accordance with the contract and accepted submittals until uncontaminated grout flows from the top of the micropile. Extend tremie pipe into grout at least 5 ft (1.5 m) at all times except when grout is initially placed in drill holes. Provide grout free of segregation, intrusions, contamination, structural damage or inadequate consolidation (honeycombing). Do not extract temporary casings until the grout level reaches the ground surface.

Monitor and record grout levels, pressures and volumes during placement. To monitor grout pressure, use pumps equipped with a pressure gauge and locate a second pressure gauge at the point of injection into the drill hole. Use pressure gauges that can measure pressures of at least 150 psi (1.0 MPa) or twice the actual grout pressures, whichever is greater.

C. Micropile Footing

Construct reinforced shotcrete footing in accordance with Section 420 of the *Standard Specifications* and the accepted submittals. For footing surfaces exposed to weather, finish footing surfaces with a crown or slope to freely shed water.

D. Construction Records

Provide 2 copies of micropile construction records within 24 hours of completing each pile. Include the following in construction records:

1. Names of Micropile Subcontractor, Superintendent, Drill Rig Operator, Project Manager and Design Engineer;
2. Site description, county, Department's contract, TIP and WBS element number;
3. Micropile location and identifier and required resistance;
4. Micropile diameters, length and tip elevation and top of micropile and ground surface elevations;
5. Reinforcement and casing types, grades or yield strength, sizes and elevations;
6. Date and time drilling begins and ends, reinforcement is placed, grout is mixed and arrives on-site and grout placement begins and ends;
7. Grout level, pressure, volume, temperature, flow and density records;
8. Ground and surface water conditions and elevations;
9. Weather conditions including air temperature at time of grout placement; and
10. All other pertinent details related to micropile construction.

After completing micropiles for each structure or stage of a structure, provide a PDF copy of all corresponding construction records.

5.0 LOAD TESTING

When noted in the plans, load test micropiles in accordance with the accepted submittals, this provision and the plans. The piles to be tested are shown in the plans or as directed. "Verification tests" are performed on demonstration micropiles and "proof tests" are performed on micropiles incorporated into the structure, i.e., production micropiles based on test piles acceptable in accordance with Section 10.0 of this provision.

When using a Load Test Supplier, use a prequalified Load Test Supplier for foundation testing work. Provide load test reports sealed by an engineer approved as a Project Engineer (key person) for the Load Test Supplier.

Do not load test micropiles until grout attains the required 28 day compressive strength. Do not begin construction of any production micropiles until verification tests are satisfactorily completed. For proof tests, install only the test piles and those micropiles needed to anchor the reaction frame, if applicable. Do not install the remaining micropiles until the corresponding test piles are satisfactory.

Design test piles so that applied loads do not exceed 80% of the pile's structural capacity including steel yielding or buckling or grout failing. It may be necessary to design test piles with additional reinforcement to allow for higher applied loads. Use a center reinforcing bar for tension load tests when the reinforcement design for production micropiles does not include one. Any costs associated with additional test pile reinforcement will be considered incidental to the load test pay items.

If reinforcement design for production micropiles does not include a center reinforcing bar, tension load tests are required. Otherwise, test micropiles in either compression or tension at the Contractor's option. Perform static compression load tests in accordance with ASTM D1143 and static tension load tests in accordance with ASTM D3689 except as modified herein.

Set up test equipment and measuring devices so that resetting or repositioning the components before completing testing is not required. Do not apply loads with known weights; a reaction frame and a hydraulic jack are required. Use reaction piles or cribbing and a frame with sufficient strength to prevent excessive deformation, misalignment or racking under peak loading. Do not use existing structures as part of the reaction frame.

Incremental strain measurements are required for all load tests. Use at least one strain gauge at the tip of the test pile, the top of the bond length and, if permanent casing is used, the tip of the casing. Use a calibrated pressure gauge and load cell with the hydraulic jack for verification tests. Provided the same pressure gauge and hydraulic jack are used for proof tests, a load cell is not required for proof tests. Repump jack as needed to maintain the intended load during hold times.

Use the quick load test method in accordance with ASTM D1143 or D3689. For proof tests, load test micropiles to the test loads shown in the accepted submittals. For verification tests, load test piles to at least the test loads shown in the accepted submittals, hold the test loads for 60 minutes and record measurements at 1, 2, 3, 5, 6, 10, 20, 30, 50 and 60 minutes.

For demonstration micropiles, cut off piles 2 ft (0.6 m) below the ground surface when testing is complete.

Submit a PDF copy of each load test report within 7 days of completing load testing. Submit reports sealed by the same engineer that sealed the load testing details, procedures and plan in the accepted micropile installation and testing plan. Provide load test reports that meet ASTM D1143, D3689 or the Load Test Supplier's recommendations. Also, include load versus movement curves for the top of micropile and pile tip.

For static compression load tests, use Davisson's failure criteria in accordance with the *FHWA Design and Construction of Driven Pile Foundations, Vol. II* (Publication No. FHWA-NHI-05-043). For this method, define the failure load as the load corresponding to a movement which exceeds the elastic deformation of the micropile by 0.15" plus the micropile diameter divided by 120. For static tension load tests, use the failure criteria recommended in Section 18.8.3 of the *FHWA Design and Construction of Driven Pile Foundations, Vol. II*. For this method, define the failure load as the load at which the load-

movement curve intersects the elastic lengthening of the micropile plus 0.15". For calculating elastic deformation, the micropile length is the total pile length minus half the bond length.

The Engineer will review the load test report and associated construction records to determine if results are satisfactory within 7 days of receiving the report.

6.0 MICROPILE ACCEPTANCE

Micropile acceptance is based in part on the following criteria.

1. Grout pressures, volumes, flow and densities are within acceptable ranges. Grout is properly placed and does not have any evidence of segregation, intrusions, contamination, structural damage or inadequate consolidation (honeycombing).
2. The Engineer verifies grout flow return around the reinforcing casing. Micropile is within 3" of plan location and 2% of plumb or required inclination. Top of micropile is within 1" above and 3" below the top of micropile elevation shown in the plans.
3. Reinforcement is properly placed and inclination and top of reinforcement is within tolerances for the micropile. Center of reinforcement is within ¾" of the center of the micropile. Tip of reinforcing casing is no higher than that noted in the plans and casing penetrates rock at least 5 ft when noted in the plans.
4. Micropile is satisfactory based on results of load testing, when applicable.

If the Engineer determines a micropile is unacceptable or unsatisfactory, additional testing, remedial measures or replacement micropiles are required at no additional cost to the Department. Do not begin remediation work until remediation plans are approved. No compensation will be made for losses or damages for remedial work or investigation of unacceptable or unsatisfactory micropiles.

7.0 MEASUREMENT AND PAYMENT

Micropile Grade Beam will be measured and paid in linear feet of micropile footing as shown in the plans. The micropile footing length will be determined as the difference between the beginning and ending stations of the micropile footing shown on the plans. No payment will be made for additional micropile footing length unless authorized by the Engineer.

The contract unit prices for *Micropile Grade Beam* will be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the work as shown on the plans and as specified in the contract documents. This includes, but is not limited to, submittals, design, monitoring and recording, micropile drilling through any material, furnishing and installing micropile casings and reinforcement, footing shotcrete and reinforcement, and all associated incidental work.

The contract unit prices for *Micropile Grade Beam* will also include all costs associated with demonstration micropiles, micropile verification tests, and micropile proof tests. No separate payment will be made for these items. Grout up to twice the theoretical drill hole volume is

included in the retaining wall unit prices. Grout in excess of this volume will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. No additional compensation will be made for unacceptable demonstration micropiles, repeated load tests, overexcavation, unstable excavations, additional shotcrete, or drilling through harder than anticipated materials. All such costs are considered incidental to the work and are fully covered by the unit price for *Micropile Grade Beam*.

Payment will be made under:

Pay Item	**Pay Unit**
No. 8A Micropile Leveling Course	Linear Feet
No. 8B Micropile Leveling Course	Linear Feet



Signed by:
Robert C. Kral
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07/15/2025

STANDARD SHORING: **(1-16-24)**

Description

Standard shoring includes standard temporary shoring and standard temporary mechanically stabilized earth (MSE) walls. At the Contractor's option, use standard shoring as noted in the plans or as directed. When using standard shoring, a temporary shoring design submittal is not required. Construct standard shoring based on actual elevations and shoring dimensions in accordance with the contract and Geotechnical Standard Detail No. 1801.01 or 1801.02.

Define "standard temporary shoring" as cantilever shoring that meets the standard temporary shoring detail (Geotechnical Standard Detail No. 1801.01). Define "standard temporary wall" as a temporary MSE wall with geotextile or geogrid reinforcement that meets the standard temporary wall detail (Geotechnical Standard Detail No. 1801.02). Define "standard temporary geotextile wall" as a standard temporary wall with geotextile reinforcement and "standard temporary geogrid wall" as a standard temporary wall with geogrid reinforcement.

Provide positive protection for standard shoring at locations shown in the plans and as directed. See *Temporary Shoring* provision for positive protection types and definitions.

Materials

Refer to the *Standard Specifications*.

Item	**Section**
Concrete Barrier Materials	1170-2
Flowable Fill, Excavatable	1000-7
Geosynthetics	1056
Grout, Type 1	1003
Portland Cement Concrete, Class A	1000
Select Materials	1016
Steel Beam Guardrail Materials	862-2
Steel Sheet Piles and H-Piles	1084
Untreated Timber	1082-2
Welded Wire Reinforcement	1070-3

Provide Type 6 material certifications for shoring materials. Use Class IV select material for temporary guardrail. Use Class A concrete that meets Article 450-2 of the *Standard Specifications* or Type 1 grout for drilled-in piles.

Based on actual shoring height, positive protection, groundwater elevation, slope or surcharge case and traffic impact at each standard temporary shoring location, use sheet piles with the minimum required section modulus or H-piles with the sizes shown in Geotechnical Standard Detail No. 1801.01. Use untreated timber with a thickness of at least 3" and a bending stress of at least 1,000 psi for timber lagging.

(A) Shoring Backfill

Use Class II, Type 1, Class III, Class V or Class VI select material or material that meets AASHTO M 145 for soil classification A-2-4 with a maximum PI of 6 for shoring backfill except do not use the following:

(1) A-2-4 soil for backfill around culverts,

(2) A-2-4 soil in the reinforced zone of standard temporary walls with a back slope and

(3) Class VI select material in the reinforced zone of standard temporary geotextile walls.

(B) Standard Temporary Walls

Use welded wire reinforcement for welded wire facing, struts and wires with the dimensions and minimum wire sizes shown in Geotechnical Standard Detail No. 1801.02. Provide Type 2 geotextile for separation and retention geotextiles. Do not use more than 4 different reinforcement strengths for each standard temporary wall.

(1) Geotextile Reinforcement

Provide Type 4a geotextile for geotextile reinforcement except for the ultimate tensile strength. Based on actual wall height, groundwater elevation, slope or surcharge case and shoring backfill to be used in the reinforced zone at each standard temporary geotextile wall location, provide geotextiles with ultimate tensile strengths as shown in Geotechnical Standard Detail No. 1801.02.

(2) Geogrid Reinforcement

Use geogrids for geogrid reinforcement with a roll width of at least 4 ft and an "approved" status code in accordance with the NCDOT Geosynthetic Reinforcement Evaluation Program. The list of approved geogrids is available from:
connect.ncdot.gov/resources/Geological/Pages/Products.aspx

Based on actual wall height, groundwater or flood elevation, slope or surcharge case and shoring backfill to be used in the reinforced zone at each standard temporary geogrid wall location, provide geogrids for geogrid reinforcement with short-term design strengths as shown in Geotechnical Standard Detail No. 1801.02. Geogrids are approved for short-term design strengths (3-year design life) in the machine direction (MD) and cross-machine direction (CD) based on material type. Define material type from the website above for shoring backfill as follows:

Material Type	Shoring Backfill
Borrow	A-2-4 Soil
Fine Aggregate	Class II, Type 1 or Class III Select Material
Coarse Aggregate	Class V or VI Select Material

Preconstruction Requirements

(A) Concrete Barrier

Define "clear distance" behind concrete barrier as the horizontal distance between the barrier and edge of pavement. The minimum required clear distance for concrete barrier is shown in the plans. At the Contractor's option or if the minimum required clear distance is not available, set concrete barrier next to and up against traffic side of standard shoring except for barrier above standard temporary walls. Concrete barrier with the minimum required clear distance is required above standard temporary walls.

(B) Temporary Guardrail

Define "clear distance" behind temporary guardrail as the horizontal distance between guardrail posts and standard shoring. At the Contractor's option or if clear distance for standard temporary shoring is less than 4 ft, attach guardrail to traffic side of shoring as shown in the plans. Place ABC in clear distance and around guardrail posts instead of pavement. Do not use temporary guardrail above standard temporary walls.

(C) Standard Shoring Selection Forms

Before beginning standard shoring construction, survey existing ground elevations in the vicinity of standard shoring locations to determine actual shoring or wall heights (H). Submit a standard shoring selection form for each location at least 7 days before starting standard shoring construction. Standard shoring selection forms are available from: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx

Construction Methods

Construct standard shoring in accordance with the *Temporary Shoring* provision.

(A) Standard Temporary Shoring Installation

Based on actual shoring height, positive protection, groundwater elevation, slope or surcharge case and traffic impact at each standard temporary shoring location, install piles with the minimum required embedment and extension for each shoring section in accordance with Geotechnical Standard Detail No. 1801.01. For concrete barrier above and next to standard temporary shoring and temporary guardrail above and attached to standard temporary shoring, use "surcharge case with traffic impact" in accordance with Geotechnical Standard Detail No. 1801.01. Otherwise, use "slope or surcharge case with no traffic impact" in accordance with Geotechnical Standard Detail No. 1801.01. If refusal is reached before driven piles attain the minimum required embedment, use drilled-in H-piles with timber lagging for standard temporary shoring.

(B) Standard Temporary Walls Installation

Based on actual wall height, groundwater elevation, slope or surcharge case, geotextile or geogrid reinforcement and shoring backfill in the reinforced zone at each standard temporary wall location, construct walls with the minimum required reinforcement length and number of reinforcement layers for each wall section in accordance with Geotechnical Standard Detail No. 1801.02. For standard temporary walls with pile foundations in the reinforced zone, drive piles through reinforcement after constructing temporary walls.

For standard temporary walls with interior angles less than 90°, wrap geosynthetics at acute corners as directed by the Engineer. Place geosynthetics as shown in Geotechnical Standard Detail No. 1801.02. Place separation geotextiles between shoring backfill and backfill, natural ground or culverts along the sides of the reinforced zone perpendicular to the wall face. For Class V or VI select material in the reinforced zone, place separation geotextiles between shoring backfill and backfill or natural ground on top of and at the back of the reinforced zone.

Measurement and Payment

Standard shoring will be measured and paid in accordance with the *Temporary Shoring* provision.



Signed by:
Robert C. Kral
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07/15/2025

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.

PERMIT	AUTHORITY GRANTING THE PERMIT
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.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

July 10, 2025

Memorandum to File: Henderson County - Emergency Design for SR 1605 (Middle Fork Road/Toms Falls Road) – Segments B and C
WBS Element No. 18314.2045207

From: Patrick J. Breedlove, NCDOT Division 14, PDEA Engineer

Subject: USACE 404 Nationwide Permit and NCWR 401 Water Quality Certification
Non-Notification Notice
NWP 3 & 13 / GC 7466 & 4245

Project Description

This project proposes repairs to eight sections of SR 1605 (Middle Fork Road/Toms Falls Road) in Henderson County. Road repairs involve grading, paving, drainage structures, bank stabilization and retaining walls. Work areas will be dewatered to allow for "work in the dry" conditions. Downstream flow will be maintained.

The project is being Let for construction in three segments, A, B, and C. This memo addresses Segment B and Segment C.

Section 7 Considerations

As of March 27, 2025, the USFWS list the following as either threatened or endangered and may occur in the project area: gray bat (*Myotis grisescens*), northern long-eared bat (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), bog turtle (*Glyptemys muhlenbergii*), monarch butterfly (*Danaus plexippus*), small whorled pogonia (*Isotria medeoloides*), white irisette (*Sisyrinchium dichotomum*), and rock gnome lichen (*Gymnoderma lineare*).

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

Telephone: 828-586-2141
Fax: 828-586-4043
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
253 WEBSTER ROAD
SYLVA NC 28779

Table 2. ESA federally protected species within the Study Area (IPaC: March 27, 2025)

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
Myotis grisescens	gray bat	E	Yes	MA-NLAA PBO
Myotis septentrionalis	Northern long-eared bat	T	Yes	LAA PBO
Perimyotis subflavus	tricolored bat	PE	Yes	LAA PBO
Glyptemys muhlenbergii	bog turtle	SAT	No	Not Required
Danaus Plexippus	Monarch butterfly	PT	Undetermined	Not Required
Isotria medeoloides	small whorled pogonia	T	Yes	No Effect
Sisyrinchium dichotomum	white irisette	E	Yes	No Effect
Gymnoderma lineare	rock gnome lichen	E	No	No Effect

E - Endangered; P – Proposed; T – Threatened.
MA-NLAA – May Affect – Not Likely to Adversely Affect; LAA – Likely to Adversely Affect.
PBO - Programmatic Biological and Conference Opinion, and Programmatic Conference Report Five Imperiled Bat Species in Western North Carolina Service log #22-244

Habitat for rock gnome lichen is not present within the study area.

Habitat is present within the study area for white irisette and small whorled pogonia. Surveys conducted on June 4, 2025 did not identify white irisette of small whorled pogonia.

Several trees that provide summer roosting habitat for Indiana Bats and Tricolored Bats, will be removed. Division 14 utilized the PBO for these species. Division will comply with all commitments outlined in the PBO.

In a letter dated January 27, 2025, the North Carolina Wildlife Resources Commission (NCWRC) waived the trout moratorium. Per NCWRC recommendation, the project will follow *Design Standards in Sensitive Watersheds*.

Section 106 Considerations

The NCDOT Human Environment Unit reviewed the project in March 2025. It was determined no archaeological survey was required.

Four potential historic properties were identified in the area of potential effect (see below). These properties have not been previously assessed for eligibility using the National Register of Historic Places. In order to expedite the project, FHWA, NCDOT and NCHPO agreed to consider the properties as NRHP eligible. A No Adverse Effect determination was made for the properties.

HN1240 WA Pryor House
HN1238 Pryor Farm
HN1177 Huntley Log House
HN1218 Middle Fork Baptist Church

Comments were solicited from the North Carolina Tribal Nations. The only response received was from the Cherokee Nation. The Nation requested that they be contacted if items of cultural significance are discovered during construction.

FEMA Considerations

The project does not involve construction activities in or adjacent to FEMA-regulated floodplains. Flood Insurance Rate Map - Henderson County Map Numbers 3710061300J effective 10/2/2008 and 3710061400J effective 1/6/2010.

Impacts to Waters of the United States

Middle Fork of Hickory Creek (Index: 9-14-1-(2); DWQ Class: C, Tr) and Toms Fork (Index: 9-14-1-3; DWQ Class: C, Tr) are shown on the USGS Bat Cave Quadrangle, NC 2022 topographic map as perennial streams. Several unnamed perennial tributaries are located within the study area. All streams were significantly scoured and eroded by heavy flows from Hurricane Helene.

Toms Creek joins Middle Fork Hickory Creek approximately 0.9 mile upstream from the confluence of Middle Fork Hickory Creek and Hickory Creek. Hickory Creek flows approximately 1.0 mile southeasterly to the Broad River. The Broad River meets the definition of Traditional Navigable Water. For these reasons, we believe Middle Fork Hickory Creek, Toms Creek and the unnamed tributaries are Relatively Permanent Waters and are under the jurisdiction of the U.S. Army Corps of Engineers. In order to construct the project, it will be necessary to impact Waters of the United States in the Broad River Basin (HUC 0305010503). Specifically, NCDOT is requesting to repair several sections of Middle Fork Road. The impacts to jurisdictional features are listed in the table below. Now wetlands will be impacted.

SEGMENT B				
Surface Water Impacts				
Site No.	**Existing Condition**	**Proposed Condition**	**Impact Type**	**Net Impact**
Site 1	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Streambanks	Dewatering	Temporary	5 ft (0.001 AC)
Site 2	Middle Fork Hickory Creek Free Flowing Stream Existing Streambanks	Dewatering	Temporary	24 ft (0.005 AC)
Site 3	Middle Fork Hickory Creek Free Flowing Stream Existing Streambanks	Dewatering	Temporary	200 ft (0.032 AC)
Site 4a	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Streambanks	Culvert	Permanent	4 ft (0.001 AC)
Site 4b	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Streambanks	Dewatering	Temporary	6 ft (0.001 AC)
Site 5	Middle Fork Hickory Creek Free Flowing Stream Existing Streambanks	Dewatering	Temporary	26 ft (0.004 AC)
Site 6a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Channel Relocation	Permanent	97 ft (0.026 AC)
Site 6b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	207 ft (0.030 AC)

SEGMENT B				
Surface Water Impacts				
Site 7	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	17 ft (0.002 AC)
Site 8a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Bank Stabilization	Permanent	251 ft (0.053 AC)
Site 8b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	143 ft (0.040 AC)
Site 8c	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	12 ft (0.002 AC)
Site 9	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	34 ft (0.006 AC0
Site 10a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Channel Relocation	Permanent	82 ft (0.026 AC)
Site 10b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	30 ft (0.011 AC)
Site 11	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	89 ft (0.006 AC)
SEGMENT C				
Surface Water Impacts				
Site 1a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Bank Stabilization	Permanent	19 ft (0.004 AC)
Site 1b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	97 ft (0.021 AC)
Site 2	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	49 ft (0.009 AC)
Site 3a	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Channel Relocation	Permanent	85 ft (0.013 AC)
Site 3b	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	20 ft (0.004 AC)
Site 4	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	15 ft (0.004 AC)
Site 5a	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Culvert	Permanent	26 ft (0.004 AC)
Site 5b	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	12 ft (0.002 AC)

SEGMENT C				
Surface Water Impacts				
Site 5c	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Bank Stabilization	Permanent	11 ft (0.002 AC)
Site 6a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Channel Relocation	Permanent	106 ft (0.031 AC)
Site 6b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	93 ft (0.020 AC)
Site 6c	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Bank Stabilization	Permanent	5 ft (0.001 AC)
Site 7a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Channel Relocation	Permanent	186 ft (0.039 AC)
Site 7b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	22 ft (0.004 AC)
Site 8a	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Channel Relocation	Permanent	139 ft (0.043 AC)
Site 8b	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	41 ft (0.007 AC)
Site 9	Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	85 ft (0.017 AC)
Site 10	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	57 ft (0.003 AC)
Site 11a	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Rip Rap Fill	Permanent	4 ft (0.001 AC)
Site 11b	Trib to Middle Fork Hickory Creek Free Flowing Stream Existing Stream Banks	Dewatering	Temporary	23 ft (0.002 AC)

Permits

NCDOT is hereby authorized to proceed with the construction project outlined above. **U.S. Army Corps of Engineers Nationwide Permit 3 & 13 and N.C. Division of Water Quality General Certification 7466 & 4245 conditions will apply. These permits expire on March 14, 2026.**

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

General Project Information

WBS Element:	Middle Fork Segment B	**TIP Number:**	DF18314.2045381	**Project Type:**	Other	**Date:**	6/6/2025
NCDOT Contact:	Barry Mosteller			**Contractor / Designer:**	Allison Drake, PE		
Address:	253 Webster Road Sylva, NC 28779			**Address:**	1520 South Blvd Ste 200 Charlotte, NC 28203		
Phone:	828-331-5200			**Phone:**	704-940-4726		
Email:	bdmosteller@ncdot.gov			**Email:**	Allison.Drake@rsandh.com		
City/Town:	Hendersonville			**County(ies):**	Henderson		
River Basin(s):	Broad			**CAMA County?**	No		
Wetlands within Project Limits?							

Project Description

Project Length (lin. miles or feet):	0.798 miles	**Surrounding Land Use:**	Rural				
	Proposed Project			**Existing Site**			
Project Built-Upon Area (ac.)	N/A	ac.		N/A	ac.		
Typical Cross Section Description:	2-lane shoulder and retaining walls			2-lane shoulder			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	TBD	Year: 2024	Existing:	N/A	Year:	N/A

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

Project DF18314.2045207 W03292 is an emergency design for SR 1605 (Middle Fork Road/ Tom Falls Road) and SR 1607 (Middle Fork Road) due to significant damage from Hurricane Helene. Bank stabilization measures will be utilized to help protect the roadway and prevent further erosion of the adjacent areas. Surface water impacts have been avoided and minimized to the greatest extent practicable during project design.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: Middle Fork Segment B **TIP/Proj No.:** DF18314.2045381 **County(ies):** Henderson

General Project Information

Waterbody Information

Surface Water Body (1):	Hickory Creek		**NCDWR Stream Index No.:**	9-14		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Trout Waters (Tr)			
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?**	No	
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)						

09/08/99

CONTRACT: DN01122 WBS PROJECT: DF18314.2045381

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2045381	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
DF18314.2045487		PE, RW, UTIL., CONST.
DF18314.2045382		PE, RW, UTIL., CONST.
DF18314.2045381		PE, RW, UTIL., CONST.

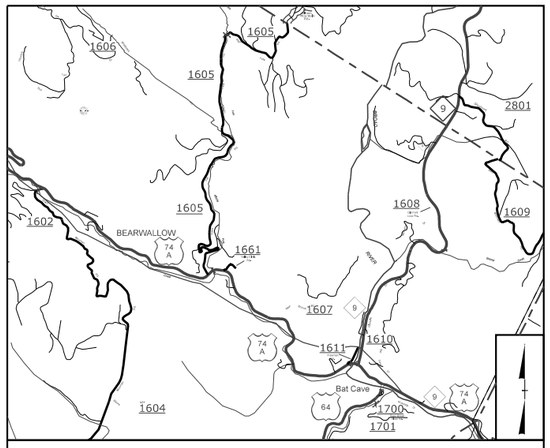
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

LOCATION: EMERGENCY DESIGN FOR SR 1605 (MIDDLE FORK ROAD/TOMS FALLS ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE & RETAINING WALLS

WETLAND AND SURFACE WATER IMPACTS PERMIT

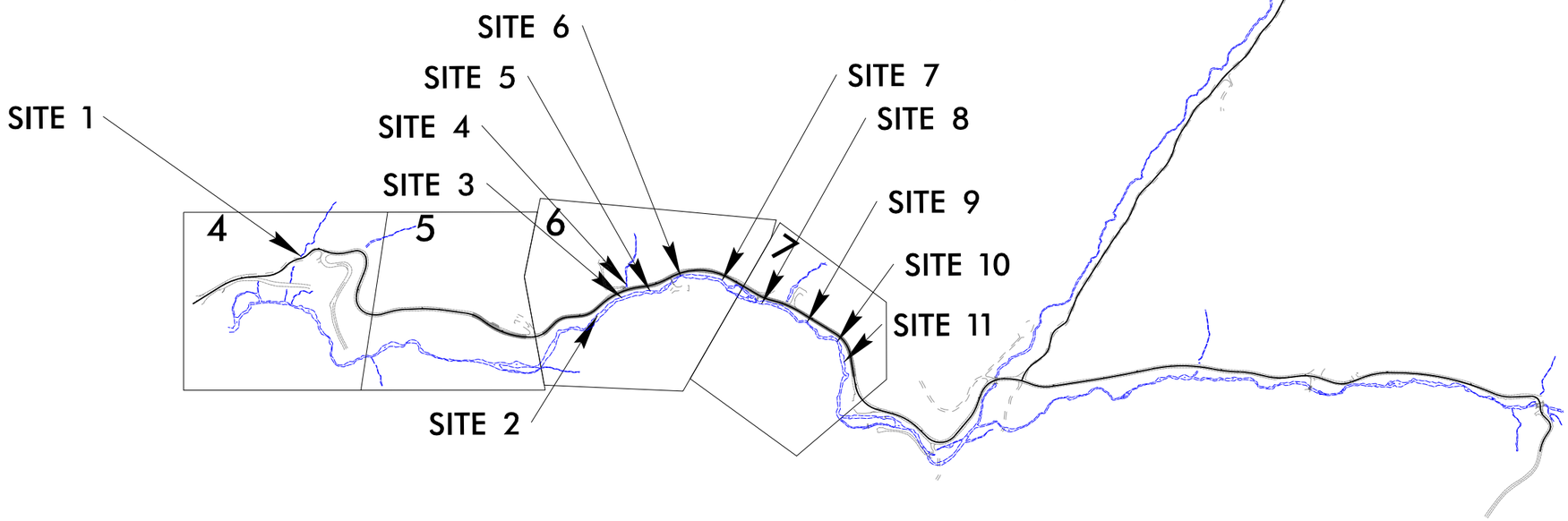


VICINITY MAP ***N.T.S***



NAD 83/
NA 2011

PERMIT DRAWING
SHEET 1 OF 9
DATE: 6/23/2025



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2025 = 610
ADT 2045 = 780

V = 30 MPH

FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY WBS PROJECT DF18314.2045381 = 0.567 MILES

TOTAL LENGTH WBS PROJECT DF18314.2045381 = 0.567 MILES

PREPARED IN THE OFFICE OF:

RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 22, 2025

LETTING DATE:
JULY 22, 2025

ALLISON DRAKE, PE
PROJECT ENGINEER

BROOKE PARKER, PE
JENNIFER STARNES, PE
PROJECT DESIGN ENGINEER

BARRY MOSTELLER
NCDOT CONTACT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045487	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SITE 1
(TEMPORARY SURFACE WATER IMPACT)

BEGIN CONSTRUCTION
TEMPORARY DETOUR
-L- POC STA 25+41.50

END CONSTRUCTION
TEMPORARY DETOUR
-L- POC STA 30+45.95

T-0401 — 18" ALT — HW ** — ELBOWS

T-0402 — 18" RCP — HW

**SLOPE GROUND TO INLET AT 1:1 SLOPE TO ELEVATION 1818.75 OR LOWER (PIPE INVERT AT 1818.00)

SR 1605 MIDDLE FORK RD 21' BST

SR 1605 MIDDLE FORK RD 23' BST

SR 1605 MIDDLE FORK RD 25' BST

EXISTING R/W

SCENIC CURVE

GIACONE, TIA RUTH;GIACONE, MARVIN
Deed Book/Page 004207/00046

ALDRIDGE, CHARLES EDWARDS SR;ALDRIDGE, MARGARET;ALDRIDGE, CHARLES JR
Deed Book/Page 001606/00057

ELLIOTT, JAMES R;ELLIOTT, MARSHA S
Deed Book/Page 003311/00493

HILL, WILLIAM WESLEY;HILL, BARBARA OATES
Deed Book/Page 000521/00405

GILL, KENNETH W;GILL, KIMBERLY L
Deed Book/Page 000610/00963

L & S OATES FAMILY LIMITED PARTNERSHIP
Deed Book/Page 001248/00654

GORDON, KATHERINE FRANCES;
BROMBY, WILLIAM ALAN
Deed Book/Page 003312/00240

LINDEMON, DINA M.
Deed Book/Page 003856/00282

CONWAY, JOHN P TRUSTEE;CONWAY, HARRIET K TRUSTEE
Deed Book/Page 001472/00596

PRUITT, SHIRLEY A
Deed Book/Page 0099CT/02096

RAST, EDWARD M;RAST, JOANNE
Deed Book/Page 000407/00183

WELLS, WENDY JOANNE
Deed Book/Page 001098/00558

EDWARDS, ALFRED C.P.
Deed Book/Page 003284/00093

18" RCP

24" CMP

30" CMP

CMP

TIMBER WALL

45.00'

MATCH LINE -L- STA 37+00.00 SEE SHEET 5

SEE SHEET 5

PERMIT DRAWING
SHEET 2 OF 9

S S — SURFACE WATER IMPACTS

TS TS — TEMPORARY SURFACE WATER IMPACTS

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PROJECT REFERENCE NO.	SHEET NO.
DF1831.4.2045487	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NC FIRM LICENSE No: F-0493

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SITE 1
(TEMPORARY SURFACE WATER IMPACT)

BEGIN CONSTRUCTION TEMPORARY DETOUR -L- POC STA 25+41.50

END CONSTRUCTION TEMPORARY DETOUR -L- POC STA 30+45.95

T-0401 18" ARCH

T-0402 18" ARCH

HW

ELBOWS

SR 1605 MIDDLE FORK RD 2R BST

**SLOPE GROUND TO INLET AT 1:1 SLOPE TO ELEVATION 1818.75 OR LOWER (PIPE INVERT AT 1818.00)

MATCH LINE -L- STA 37+00.00 SEE SHEET 5

PERMIT DRAWING
SHEET 3 OF 9

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

GIACONE, TIA RUTH;GIACONE, MARVIN
Deed Book/Page 004207/00046
ALDRIDGE, CHARLES EDWARDS SR;ALDRIDGE, MARGARET;ALDRIDGE, CHARLES JR
Deed Book/Page 001606/00057
ELLIOTT, JAMES R;ELLIOTT, MARSHA S
Deed Book/Page 003311/00458
HILL, WILLIAM WESLEY;HILL, BARBARA OATES
Deed Book/Page 005521/00497
GILL, KENNETH W;GILL, KIMBERLY L
Deed Book/Page 000610/00963
L & S OATES FAMILY LIMITED PARTNERSHIP
Deed Book/Page 001248/00654
GORDON, KATHERINE FRANCES;BROMBY, WILLIAM ALAN
Deed Book/Page 003312/00240
LINDEMON, DINA M.
Deed Book/Page 003858/00262
CONWAY, JOHN P TRUSTEE;CONWAY, HARRIET K TRUSTEE
Deed Book/Page 003172/00596
PRUITT, SHIRLEY A
Deed Book/Page 009CT/02096
RAST, EDWARD M;RAST, JOANNE
Deed Book/Page 000497/00183
WELLS, WENDY JOANNE
Deed Book/Page 001095/01562
EDWARDS, ALFRED C JR
Deed Book/Page 003284/00793

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PERMIT DRAWING
SHEET 4 OF 9

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045382	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SITE 4b
(TEMPORARY SURFACE WATER IMPACT)

SITE 4a
(SURFACE WATER IMPACT)

SITE 6b
(TEMPORARY SURFACE WATER IMPACT)

SITE 7
(TEMPORARY SURFACE WATER IMPACT)

SITE 8a
(SURFACE WATER IMPACT)

SITE 6a
(SURFACE WATER IMPACT)

SITE 8b
(TEMPORARY SURFACE W

SITE 5
(TEMPORARY SURFACE WATER IMPACT)

SITE 3
(TEMPORARY SURFACE WATER IMPACT)

SITE 2
(TEMPORARY SURFACE WATER IMPACT)

MATCHLINE –L– STA. 61+00.00 SEE SHEET 7

MATCHLINE –L– STA. 47+00.00 SEE SHEET 5

SAVINA, MARCUS E.
Deed Book/Page 004011/00685

SWEENEY, MICHAEL J.;SWEENEY, ATHALYN K.
Deed Book/Page 003310/00277

CONSERVING CAROLINA
Deed Book/Page 000028/00552

GRAVES, NELSON L;GRAVES, LISA
Deed Book/Page 001180/00120

SLOOP, HOLLEE ALEXANDRIA
Deed Book/Page 003963/00199

L & S OATES FAMILY LIMITED PARTNERSHIP
Deed Book/Page 001248/00654

HARMON, TIMOTHY S.
Deed Book/Page 004071/00595

KOURY, MARVIN L;HELMS-KOURY, LINDSEY C.
Deed Book/Page 003946/00578

KOURY, MARVIN;KOURY, LINDSEY
Deed Book/Page 003257/00223

FILKA, RON ALLEN JR.;FILKA, CHRISTINE
Deed Book/Page 003963/00455

RUSSELL, BETTY HUNTLEY
Deed Book/Page 000563/00724

SR 1605 MIDDLE FORK RD

15" RCP-IV
15" CSP
TYPE B-77
PUE
PDE
DUE
GREU TL-3
HW
JS
Sf
TS
R/W

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

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PERMIT DRAWING
SHEET 5 OF 9

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045382	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SITE 4b
(TEMPORARY SURFACE WATER IMPACT)

SITE 4a
(SURFACE WATER IMPACT)

SITE 6b
(TEMPORARY SURFACE WATER IMPACT)

SITE 7
(TEMPORARY SURFACE WATER IMPACT)

SITE 8a
(SURFACE WATER IMPACT)

SITE 6a
(SURFACE WATER IMPACT)

SITE 8b
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SITE 5
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SITE 3
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SITE 2
(TEMPORARY SURFACE WATER IMPACT)

MATCHLINE –L– STA. 61+00.00 SEE SHEET 7

MATCHLINE –L– STA. 47+00.00 SEE SHEET 5

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

SAVINA, MARCUS E.
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SWEENEY, MICHAEL S.; SWEENEY, ATHALYN R.
Deed Book/Page 0053/00027

CONSERVING CAROLINA
Deed Book/Page 000028/00552

GRAVES, NELSON I.; GRAVES, LISA
Deed Book/Page 001180/00120

BLOOP, HOLLEE ALEXANDRIA
Deed Book/Page 002563/00105

L & S OATES FAMILY LIMITED PARTNERSHIP
Deed Book/Page 001248/00654

HARMON, TIMOTHY S.
Deed Book/Page 004071/00598

KOURY, MARVIN L.; HELMS-KOURY, LINDSEY C.
Deed Book/Page 003945/00576

KOURY, MARVIN; KOURY, LINDSEY
Deed Book/Page 003257/00223

FLIKA, RON ALLEN JR.; FLIKA, CHRISTINE
Deed Book/Page 003963/00355

RUSSELL, BETTY HUNTLEY
Deed Book/Page 000563/00724

SR 1605 MIDDLE FORK RD (PRIVATE)

15" RCP-IV

15" CSP

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045382/ DF18314.2045381	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

NAD 83/NA 2011

MATCHLINE -L- STA. 61+00.00

SEE SHEET 9

SITE 8a
(SURFACE WATER IMPACT)

SITE 9
(TEMPORARY SURFACE WATER IMPACT)

SITE 10b
(TEMPORARY SURFACE WATER IMPACT)

SITE 8c
(TEMPORARY SURFACE WATER IMPACT)

SITE 8b
(TEMPORARY SURFACE WATER IMPACT)

SEE CROSS SECTIONS FOR SITE 8 IMAPCTS

SITE 10a
(SURFACE WATER IMPACT)

SITE 11
(TEMPORARY SURFACE WATER IMPACT)

SWEENEY, ATHALYN K;SWEENEY, MICHAEL J
Deed Book/Page 003416/00653

TATE, JOHN EDWARD III;TATE, CANDIS E
Deed Book/Page 003826/00130

OKLER, LINDA;OKLER REVOCABLE FAMILY TRUST
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OKLER, WILLIAM G JR;OKLER, LINDA K
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CONSERVING CAROLINA
Deed Book/Page 000028/00552

COBB, STEVEN STEWART;HUBBARD, JENNIFER LYN
Deed Book/Page 001505/00319

OATES, S LEMUEL;OATES, SANDRA T
Deed Book/Page 001278/00304

RAMOS, ADISLEIDY TAVAREZ
Deed Book/Page 004196/00514

MIDDLE FORK BAPTIST CHURCH
Deed Book/Page 000228/00180

FILKA, RON ALLEN JR;FILKA, CHRISTINE
Deed Book/Page 003963/00455

RUSSELL, BETTY HUNTLEY
Deed Book/Page 000563/00724

2@24" CSP

0701 TB2GI

0702

0703

0704 TB2GI

0706

0707 TB2GI

0710 COLLAR AND EXTEND 72" CMP**

RIP RAP LINED CHANNEL RELOCATION SEE DETAIL 'E'

CLASS II, TYPE 1, CLASS B RIP RAP EST 22 SY GEOTEXTILE

**NOTE: EXISTING CMP WAS ORIGINALLY LABELED AS 48" IN THE SURVEY BUT WAS FIELD VERIFIED AS A 72" CMP BY DIVISION STAFF ON 6/24/2025.

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50' 0' 50' 100' 150'

PERMIT DRAWING
SHEET 6 OF 9

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045382/ DF18314.2045381	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

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MATCHLINE –L– STA. 61+00.00

SEE SHEET 9

SITE 8a
(SURFACE WATER IMPACT)

SITE 9
(TEMPORARY SURFACE WATER IMPACT)

SITE 10b
(TEMPORARY SURFACE WATER IMPACT)

SITE 8c
(TEMPORARY SURFACE WATER IMPACT)

SITE 8b
(TEMPORARY SURFACE WATER IMPACT)

SEE CROSS SECTIONS FOR SITE 8 IMAPCTS

SITE 10a
(SURFACE WATER IMPACT)

SITE 11
(TEMPORARY SURFACE WATER IMPACT)

RIP RAP LINED CHANNEL RELOCATION SEE DETAIL 'E'

CON. CL B RIP RAP
EST 22 SY GEOTEXTILE

COLLAR AND EXTEND 72" CMP**

**NOTE: EXISTING CMP WAS ORIGINALLY LABELED AS 48" IN THE SURVEY BUT WAS FIELD VERIFIED AS A 72" CMP BY DIVISION STAFF ON 6/24/2025

SWEENEY, ATHALYN K/SWEENEY, MICHAEL J
Deed Book/Page 003147/00183

TATE, JOHN EDWARD III/TATE, CANDICE E.
Deed Book/Page 003825/001930

CONSERVING CAROLINA
Deed Book/Page 003009/00582

OKLER, WILLIAM G./OKLER, LINDA M
Deed Book/Page 001179/00080

OKLER, LINDA/OKLER REVOCABLE FAMILY TRUST
Deed Book/Page 003855/00262

COBB, STEVEN STEWART/HUBBARD, JENNIFER LYN
Deed Book/Page 005305/00310

OKLER, LINDA/OKLER REVOCABLE FAMILY TRUST
Deed Book/Page 003855/00262

OATES, K LEMUEL/OATES, SANDRA T
Deed Book/Page 001278/00304

RAMOS, ADISLEIDY TAVAREZ
Deed Book/Page 004196/00514

MIDDLE FORK BAPTIST CHURCH
Deed Book/Page 000228/00180

FILKA, RON ALLEN JR./FILKA, CHRISTINE
Deed Book/Page 003963/00455

RUSSELL, BETTY HUNTLEY
Deed Book/Page 000563/00724

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50′ 0′ 50′ 100′ 150′

PERMIT DRAWING
SHEET 7 OF 9

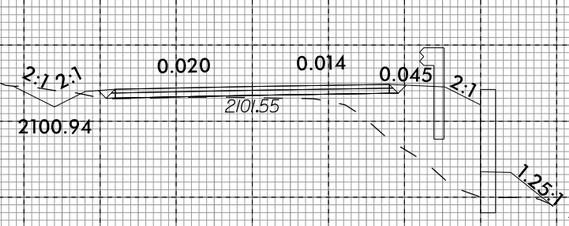
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6/23/16

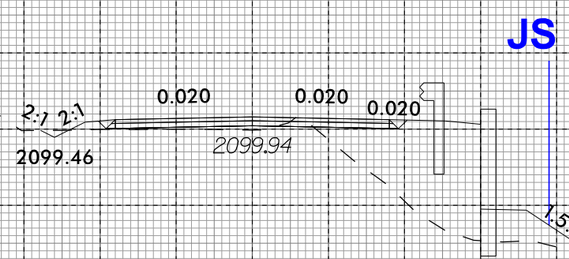
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	DF18314.2045382	X-38

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2120 2115 2110 2105 2100 2095 2090 2135 2130 2125



61+45.00



61+00.00

PERMIT DRAWING
SHEET 8 OF 9

SITE 8 SURFACE WATER IMPACTS

-L- SITE 3

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WETLAND AND SURACE WATER IMPACTS SUMMARY

				WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Stream Name	Structure Size / Type	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)
1	-L- 28+83 RT & LT	Trib to Middle Fork Hickory Creek	30" Pipe / Dewatering							0.001		5	
2	-L- 50+81 to 51+17 RT	Middle Fork Hickory Creek	Dewatering							0.005		24	
3	-L- 51+31 to 54+00 RT	Middle Fork Hickory Creek	Dewatering							0.032		200	
4a	-L- 53+26 LT	Trib to Middle Fork Hickory Creek	2 @ 30" RCP / Culvert						0.001		4		
4b	-L- 53+26 LT	Trib to Middle Fork Hickory Creek	Dewatering							0.001		6	
5	-L- 54+43 to 54+67 RT	Middle Fork Hickory Creek	Dewatering							0.004		26	
6a	-L- 55+29 to 58+56 RT	Middle Fork Hickory Creek	Channel Relocation						0.026		97		
6b	-L- 55+29 to 58+56 RT	Middle Fork Hickory Creek	Dewatering							0.030		207	
7	-L- 59+24 RT	Middle Fork Hickory Creek	Dewatering							0.002		17	
8a	-L- 59+95 to 63+73 RT	Middle Fork Hickory Creek	Bank Stabilization						0.053		251		
8b	-L- 59+95 to 63+73 RT	Middle Fork Hickory Creek	Dewatering							0.040		143	
8c	-L- 63+22 LT	Trib to Middle Fork Hickory Creek	RCBC / Dewatering							0.002		12	
9	-L- 64+56 to 65+09	Middle Fork Hickory Creek	Dewatering							0.006		34	
10a	-L- 66+39 to 67+74 RT	Middle Fork Hickory Creek	Channel Relocation						0.026		82		
10b	-L- 66+39 to 67+74 RT	Middle Fork Hickory Creek	Dewatering							0.011		30	
11	-L- 68+03 to 68+98 RT	Middle Fork Hickory Creek	Dewatering							0.006		89	
TOTALS*:				**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.106**	**0.140**	**434**	**793**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/23/2025
Henderson County
Middle Fork Segment B

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

General Project Information

WBS Element:	DF18314.2045377	**TIP Number:**	Middle Fork Segment C	**Project Type:**	Other	**Date:**	6/6/2025
NCDOT Contact:	Barry Mosteller			**Contractor / Designer:**	Allison Drake, PE		
Address:	253 Webster Road Sylva, NC 28779			**Address:**	1520 South Blvd Ste 200 Charlotte, NC 28203		
Phone:	828-331-5200			**Phone:**	704-940-4726		
Email:	bdmosteller@ncdot.gov			**Email:**	Allison.Drake@rsandh.com		
City/Town:	Hendersonville			**County(ies):**	Henderson		
River Basin(s):	Broad			**CAMA County?**	No		
Wetlands within Project Limits?							

Project Description

Project Length (lin. miles or feet):	0.798 miles	**Surrounding Land Use:**	Rural				
	Proposed Project			**Existing Site**			
Project Built-Upon Area (ac.)	N/A	ac.		N/A	ac.		
Typical Cross Section Description:	2-lane shoulder and retaining walls			2-lane shoulder			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	TBD	Year: 2024	Existing:	N/A	Year:	N/A

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

Project DF18314.2045207 W03292 is an emergency design for SR 1605 (Middle Fork Road/ Tom Falls Road) and SR 1607 (Middle Fork Road) due to significant damage from Hurricane Helene. Bank stabilization measures will be utilized to help protect the roadway and prevent further erosion of the adjacent areas. Surface water impacts have been avoided and minimized to the greatest extent practicable during project design.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: DF18314.2045377 **TIP/Proj No.:** Middle Fork Segment C **County(ies):** Henderson

General Project Information

Waterbody Information

Surface Water Body (1):	Hickory Creek		**NCDWR Stream Index No.:**	9-14		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Trout Waters (Tr)			
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?**	No	
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)						

09/08/99

WBS PROJECT:DF18314.2045377

CONTRACT: DN01123

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

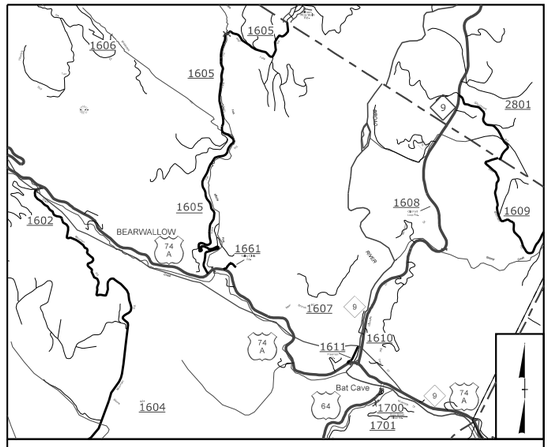
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N.C.	DF18314.2045377	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
DF18314.2045380		PE, RW, UTIL., CONST.
DF18314.2045379		PE, RW, UTIL., CONST.
DF18314.2045417		PE, RW, UTIL., CONST.
DF18314.2045378		PE, RW, UTIL., CONST.
DF18314.2045377		PE, RW, UTIL., CONST.

LOCATION: EMERGENCY DESIGN FOR SR 1605 (MIDDLE FORK ROAD/TOMS FALLS ROAD)

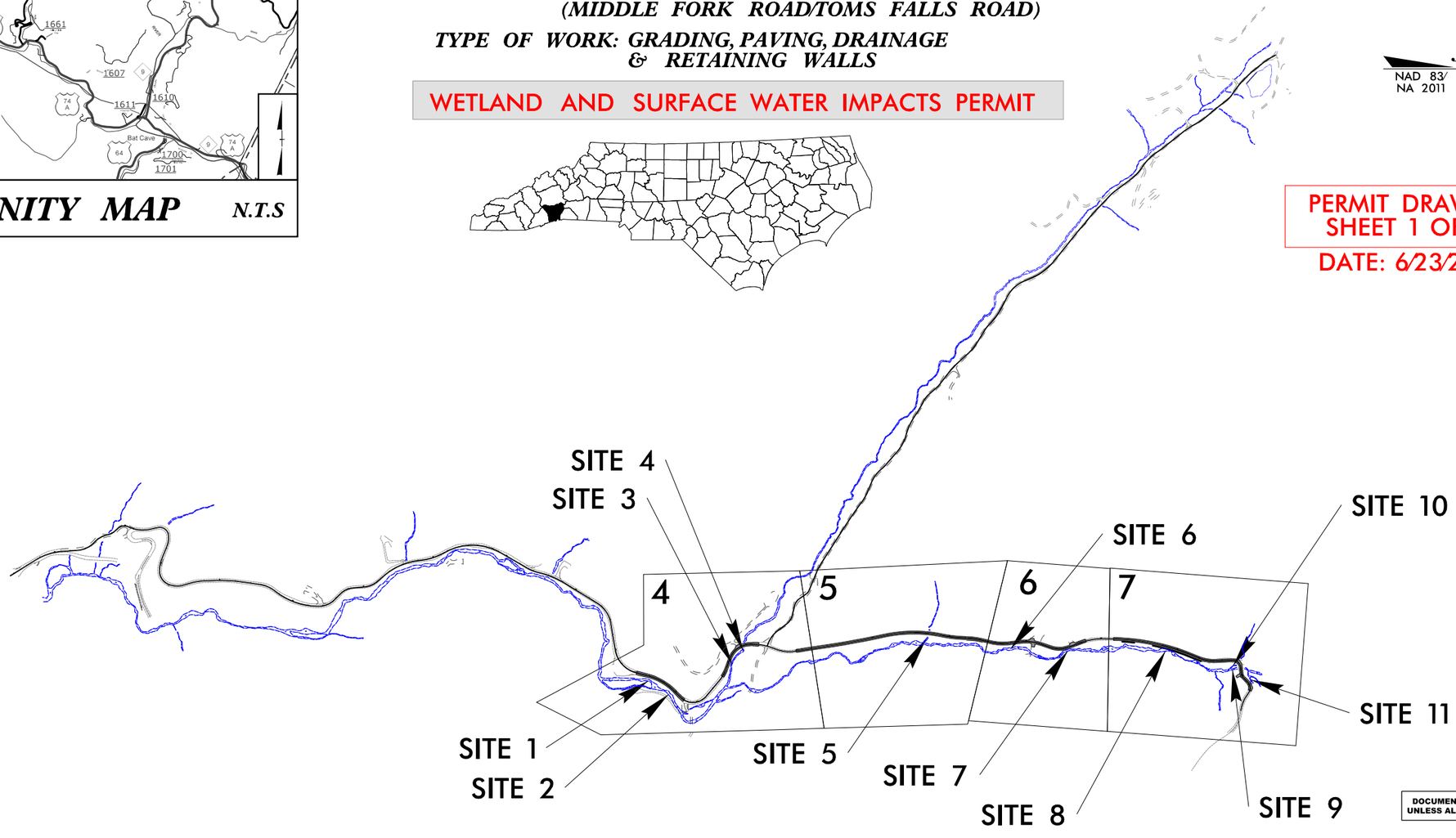
TYPE OF WORK: GRADING, PAVING, DRAINAGE & RETAINING WALLS

WETLAND AND SURFACE WATER IMPACTS PERMIT



VICINITY MAP ***N.T.S***

NAD 83/
NA 2011



PERMIT DRAWING
SHEET 1 OF 10
DATE: 6/23/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2025 = 610
ADT 2045 = 780

V = 30 MPH

FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY WBS PROJECT DF18314.2045377 = 0.798 MILES

TOTAL LENGTH WBS PROJECT DF18314.2045377 = 0.798 MILES

PREPARED IN THE OFFICE OF:
RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 22, 2025

LETTING DATE:
JULY 22, 2025

ALLISON DRAKE, PE
PROJECT ENGINEER

BROOKE PARKER, PE
JENNIFER STARNES, PE
PROJECT DESIGN ENGINEER

BARRY MOSTELLER
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

20-JUN-2025 16:53
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
DF1831.4.2045380 / DF1831.4.2045379 / DF1831.4.2045417	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

PERMIT DRAWING SHEET 2 OF 10

NAD 83/NA 2011

COBB, STEVEN STEWART;HUBBARD, JENNIFER LYN
Deed Book/Page 001505/00319

GLAVIN, CONSTANCE M
Deed Book/Page 001414/00246

MARCHBANKS, ALEX;MCGEE, AMANDA
Deed Book/Page 004065/00222

MARCHBANKS, ALEX;MCGEE, AMANDA
Deed Book/Page 004065/00222

HEMLOCK LLC
A LOUISIANA LIMITED LIABILITY COMPANY
Deed Book/Page 001397/00299

OATES, C LEMUEL;OATES, SANDRA
Deed Book/Page 001133/00699

HEMLOCK LLC
Deed Book/Page 003572/00100

MATCHLINE –L– STA. 86+00.00 SEE SHEET 5

SITE 1b
(TEMPORARY SURFACE WATER IMPACT)

SITE 1a
(SURFACE WATER IMPACT)

SITE 2
(TEMPORARY SURFACE WATER IMPACT)

SITE 3b
(TEMPORARY SURFACE WATER IMPACT)

SITE 3a
(SURFACE WATER IMPACT)

SITE 4
(TEMPORARY SURFACE WATER IMPACT)

EST 3 TON CL B RIP RAP
EST 11 SY GEOTEXTILE

24" RCP–V

EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE

18" RCP–V

EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE

18" CSP

CHANNEL RELOCATION
SEE DETAIL 'A'

EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE

RETAIN

RELOCATE

TB2GI
0802

0803

0805

0806

DETAIL A
CHANNEL CHANGE
(Not to Scale)

Natural Ground
2:1
D
1:1
B
Proposed Fill Slope
Natural Ground
Exist. Channel

Min. D= 2 Ft.
B= 7 Ft.

FROM STA. 79+65 TO STA. 80+50 RT

50' 0' 50' 100' 150'

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045380 / DF18314.2045379 / DF18314.2045417	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

PERMIT DRAWING
SHEET 3 OF 10

NAD 83/NA 2011

COBB, STEVEN STEWART;HUBBARD, JENNIFER LYN
Deed Book/Page 001505/00319

GLAVIN, CONSTANCE M
Deed Book/Page 001414/00249

MARCHBANKS, ALEX;MCGEE, AMANDA
Deed Book/Page 004065/00222

SITE 1b
(TEMPORARY SURFACE WATER IMPACT)

SITE 3b
(TEMPORARY SURFACE WATER IMPACT)

SITE 1a
(SURFACE WATER IMPACT)

SITE 4
(TEMPORARY SURFACE WATER IMPACT)

SITE 3a
(SURFACE WATER IMPACT)

SITE 2
(TEMPORARY SURFACE WATER IMPACT)

HEMLOCK LLC
A LOUISIANA LIMITED LIABILITY COMPANY
Deed Book/Page 001397/00299

HEMLOCK LLC
Deed Book/Page 003572/00100

OATES, C LEMUEL;OATES, SANDRA
Deed Book/Page 001133/00699

MATCHLINE –L– STA. 86+00.00 SEE SHEET 5

EST 3 TON CL B RIP RAP
EST 11 SY GEOTEXTILE
24" RCP-V
EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE
18" RCP-V
EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE
18" CSP
CHANNEL RELOCATION
SEE DETAIL 'A'
EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE
RETAIN
RETAIN
RETAIN
RETAIN
18" CSP

DETAIL A
CHANNEL CHANGE
(Not to Scale)

Natural Ground
2:1
D
1:1
B
Proposed Fill Slope
Natural Ground
Exist. Channel
Min. D= 2 Ft.
B= 7 Ft.

FROM STA. 79+65 TO STA. 80+50 RT

50' 0' 50' 100' 150'

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045417	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 4 OF 10

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MATCH LINE –L– STA 86+00.00 SEE SHEET 4

MATCH LINE –L– STA 97+50.00 SEE SHEET 6

SITE 5b
(TEMPORARY SURFACE WATER IMPACT)

N 11° 43' 16.9" W

SITE 5a
(SURFACE WATER IMPACT)

N 13° 38' 39.4" E

SITE 5c
(SURFACE WATER IMPACT)

N 8° 47' 00.8" W

SR 1605 TOMS FALLS RD 20' BST

RAINEY, MICHAEL L;RAINEY, SANDRA Q
Deed Book/Page 001411/00339

34
COLLEY, PATRICIA HUNTLEY;LANNING, WILLIAM MACK
Deed Book/Page 001003/00599

35
HALL, JENNIFER LYDA
Deed Book/Page 001288/00058

32
FRIEDWALD, ERIC;FRIEDWALD, MINDI
Deed Book/Page 001422/00106

34
COLLEY, PATRICIA HUNTLEY;LANNING, WILLIAM MACK
Deed Book/Page 001003/00599

SEARCY, JULIE LYDA;SEARCY, BILLY MILO III;LYDA, DAVID EUGENE
Deed Book/Page 001668/00700

36

PDE 0901 — REMOVE
PDE 0902 — REMOVE
HW 0902
0903 — REMOVE

EXISTING R/W
EXISTING
LOW LINE ELEV=237.12'

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50' 0' 50' 100' 150'

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045417	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NC FIRM LICENSE No: F-0493

PERMIT DRAWING SHEET 5 OF 10

NAD 83/NA 2011

MATCH LINE –L– STA 86+00.00 SEE SHEET 4

MATCH LINE –L– STA 97+50.00 SEE SHEET 6

SITE 5b
(TEMPORARY SURFACE WATER IMPACT)

N 11° 43' 16.9" W

SITE 5a
(SURFACE WATER IMPACT)

N 13° 38' 39.4" E

SITE 5c
(SURFACE WATER IMPACT)

N 8° 47' 00.8" W

SR 1605 TOMS FALLS RD

PDE 0901 — REMOVE

PDE 0902 — REMOVE

REMOVE 0903

34 COLLEY, PATRICIA HUNTLEY;ANNING, WILLIAM MACK
Deed Book/Page 001093/00598

35 HALL, JENNIFER LYDA
Deed Book/Page 001258/00658

32 FRIEDWALD, ERIC;FRIEDWALD, MINDI
Deed Book/Page 001422/00106

RAINEY, MICHAEL I;RAINEY, SANDRA Q
Deed Book/Page 001411/00339

36 SEARCY, JULIE LYDA;SEARCY, BILLY MILO;LYDA, DAVID EUGENE
Deed Book/Page 001668/00700

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50' 0' 50' 100' 150'

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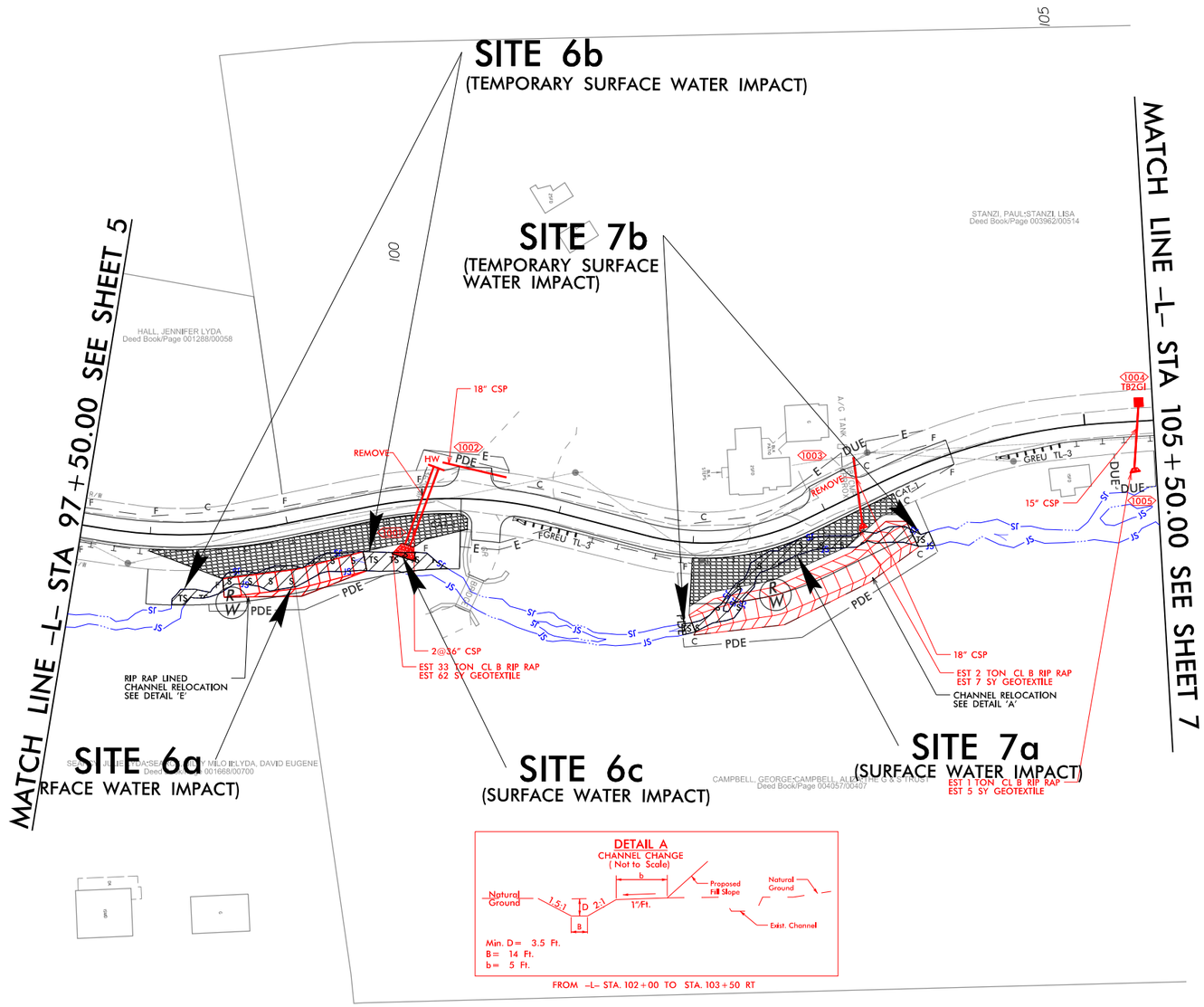
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DF18314.2045417 / DF18314.2045378	6
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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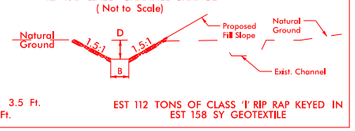


DETAIL A
CHANNEL CHANGE
(Not to Scale)

Min. D= 3.5 Ft.
B= 14 Ft.
b= 5 Ft.

FROM –L– STA. 102+00 TO STA. 103+50 RT

DETAIL E
RIP RAP LINED CHANNEL CHANGE
(Not to Scale)



Min. D= 3.5 Ft.
B= 14 Ft.

EST 112 TONS OF CLASS 'I' RIP RAP KEYED IN
EST 158 SY GEOTEXTILE

–L– STA. 98+50 to 99+50 RT

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50' 0' 50' 100' 150'

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8/17/99

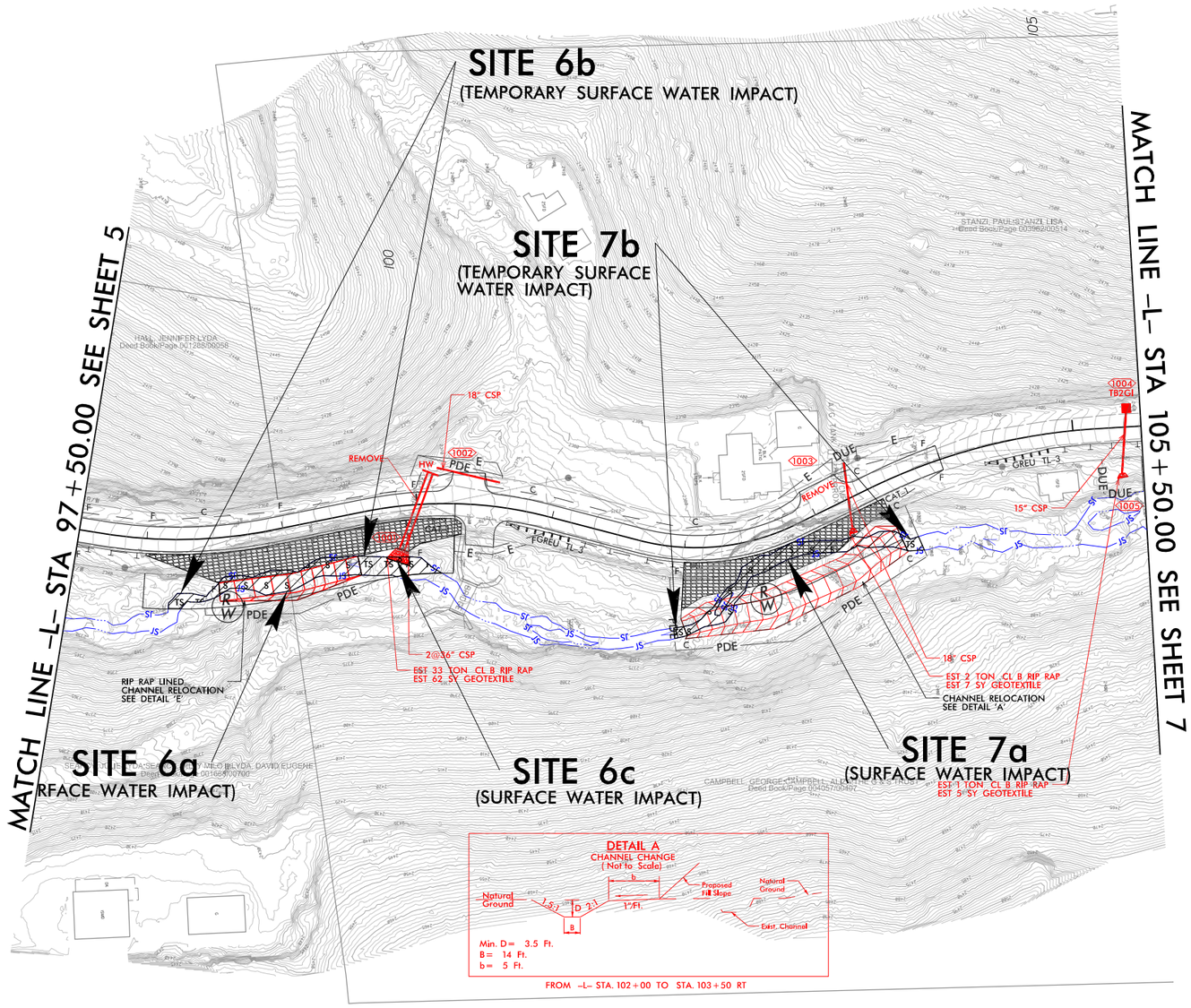
PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045417 / DF18314.2045378	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NA 2011

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PERMIT DRAWING
SHEET 7 OF 10

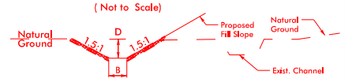


DETAIL A
CHANNEL CHANGE
(Not to Scale)

Min. D= 3.5 Ft.
B= 14 Ft.
b= 5 Ft.

FROM –L– STA. 102+00 TO STA. 103+50 RT

DETAIL E
RIP RAP LINED CHANNEL CHANGE
(Not to Scale)



Min. D= 3.5 Ft.
B= 14 Ft.

EST 112 TONS OF CLASS 'I' RIP RAP KEYED IN
EST 158 SY GEOTEXTILE

–L– STA. 98+50 to 99+50 RT

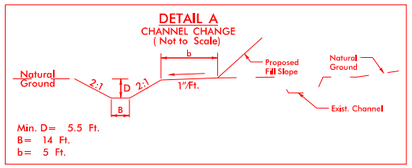
S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

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8/17/99



FROM STA. 108+65 TO STA. 110+00 RT

PERMIT DRAWING SHEET 8 OF 10

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045378 DF18314.2045377	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

110

115

MATCH LINE –L– STA 105+50.00 SEE SHEET 6

SITE 8b
(TEMPORARY SURFACE WATER IMPACT)

SITE 10
(TEMPORARY SURFACE WATER IMPACT)

SITE 11b
(TEMPORARY SURFACE WATER IMPACT)

SITE 11a
(SURFACE WATER IMPACT)

SITE 8a
(SURFACE WATER IMPACT)

SITE 9
(TEMPORARY SURFACE WATER IMPACT)

24" CSP
EST 1 TON CL B RIP RAP
EST 5 SY GEOTEXTILE
EST 3 TON CL B RIP RAP
EST 11 SY GEOTEXTILE
15" CSP
CHANNEL RELOCATION
SEE DETAIL 'A'
15" RCP-V
15" RCP-IV
2@24" RCP-V
EST 11 TON CL B RIP RAP
EST 28 SY GEOTEXTILE
EST 3 TON CL B RIP RAP
EST 10 SY GEOTEXTILE
18" CSP
RETAIN
REMOVE
PDE
PUE
JS
ST
TS
1101 TB2GI
1102
1103 TB2GI
1104
TB2GI 1105
1106
1107 TB2GI
1108
1109 TB2GI
1110
1111

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50' 0' 50' 100' 150'

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045378 DF18314.2045377	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

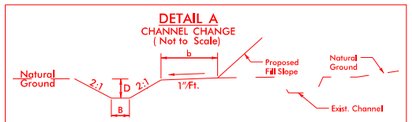
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No. F-0493

PERMIT DRAWING SHEET 9 OF 10

NAD 83/NA 2011

DETAIL A
CHANNEL CHANGE
(Not to Scale)



Min. D= 5.5 Ft.
B= 14 Ft.
b= 5 Ft.

FROM STA. 108+65 TO STA. 110+00 RT

MATCH LINE –L– STA 105+50.00 SEE SHEET 6

110

115

SITE 8b
(TEMPORARY SURFACE WATER IMPACT)

SITE 10
(TEMPORARY SURFACE WATER IMPACT)

SITE 11b
(TEMPORARY SURFACE WATER IMPACT)

SITE 11a
(SURFACE WATER IMPACT)

SITE 8a
(SURFACE WATER IMPACT)

SITE 9
(TEMPORARY SURFACE WATER IMPACT)

24" CSP
EST 1 TON CL B RIP RAP
EST 5 SY GEOTEXTILE
EST 3 TON CL B RIP RAP
EST 11 SY GEOTEXTILE
15" CSP
CHANNEL RELOCATION
SEE DETAIL 'A'
15" RCP-V
15" RCP-IV
2@24" RCP-V
EST 11 TON CL B RIP RAP
EST 28 SY GEOTEXTILE
EST 3 TON CL B RIP RAP
EST 10 SY GEOTEXTILE
18" CSP
RETAIN
REMOVE
PUE
PDE
EXISTING R/W
1101 TB2GI
1102 TB2GI
1103 TB2GI
1104
1105
1106
1108
1109 TB2GI
1110
1111

S S SURFACE WATER IMPACTS

TS TS TEMPORARY SURFACE WATER IMPACTS

50' 0' 50' 100' 150'

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$$$$USERNAME$$$$

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Stream Name	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)
1a	-L- Sta. 72+50 to 73+71 RT	Middle Fork Hickory Creek	Bank Stabilization						0.004		19		
1b	-L- Sta. 72+50 to 73+71 RT	Middle Fork Hickory Creek	Dewatering							0.021		97	
2	-L- Sta. 74+48 to 75+00 RT	Middle Fork Hickory Creek	Dewatering							0.009		49	
3a	-L- Sta. 79+51 to 89+59 RT	Trib to Middle Fork Hickory Creek	Channel Relocation						0.013		85		
3b	-L- Sta. 79+51 to 89+59 RT	Trib to Middle Fork Hickory Creek	Dewatering							0.004		20	
4	-L- Sta. 81+28 to 81+40 RT	Trib to Middle Fork Hickory Creek	Dewatering							0.004		15	
5a	-L- Sta. 93+40 to 93+63 RT	Trib to Middle Fork Hickory Creek	24" CSP / Culvert						0.004		26		
5b	-L- Sta. 93+40 to 93+63 RT	Trib to Middle Fork Hickory Creek	24" CSP / Dewatering							0.002		12	
5c	-L- Sta. 93+66 to 93+68 LT	Trib to Middle Fork Hickory Creek	24" CSP / Bank Stabilization						0.002		11		
6a	-L- Sta. 98+17 to 99+50 RT	Middle Fork Hickory Creek	Channel Relocation						0.031		106		
6b	-L- Sta. 98+17 to 99+50 RT	Middle Fork Hickory Creek	Dewatering							0.020		93	
6c	-L- Sta. 98+17 to 99+50 RT	Middle Fork Hickory Creek	2 @ 36" CSP / Bank Stabilization						0.001		5		
7a	-L- Sta. 101+97 to 103+63 RT	Middle Fork Hickory Creek	Channel Relocation						0.039		186		
7b	-L- Sta. 101+97 to 103+63 RT	Middle Fork Hickory Creek	Dewatering							0.004		22	
8a	-L- Sta. 108+49 to 110+24 RT	Middle Fork Hickory Creek	Channel Relocation						0.043		139		
8b	-L- Sta. 108+49 to 110+24 RT	Middle Fork Hickory Creek	Dewatering							0.007		41	
9	-L- Sta. 113+32 to 114+49 RT	Middle Fork Hickory Creek	RCBC / Dewatering							0.017		85	
10	-L- Sta. 113+52 to 114+19 RT	Trib to Middle Fork Hickory Creek	2 @ 24" RCP / Dewatering							0.003		57	
11a	-L- Sta. 115+49 to 115+71 RT	Trib to Middle Fork Hickory Creek	18" CSP / Rip Rap Fill						0.001		4		
11b	-L- Sta. 115+49 to 115+71 RT	Trib to Middle Fork Hickory Creek	Dewatering							0.002		23	
TOTALS*:				**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.138**	**0.093**	**581**	**514**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/23/2025
Henderson County
Middle Fork Segment C

Nationwide Permit 3
Maintenance

Effective Date: February 25, 2022 / Expiration Date: March 14, 2026
Authority: Sections 10 and 404

(a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This NWP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This NWP also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.). The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built but cannot extend farther than 200 feet in any direction from the structure. This 200-foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization.

(c) This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After conducting the maintenance activity, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 32). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Authorities: Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (Sections 10 and 404))

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

GENERAL CONDITIONS

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.**

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee’s expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects from Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. **Removal of Structures and Fills.** Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. **Wild and Scenic Rivers.**

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ''study river'' for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ''study river'' for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. **Endangered Species.**

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be

necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non- Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre- construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their worldwide Web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. **Migratory Birds and Bald and Golden Eagles**. The permittee is responsible for ensuring that an action authorized by NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. **Historic Properties.**

(a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR

800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 5258 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (*i.e.,* on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1⁄10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1⁄10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 1/103/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 1/103/100-acre or less that require pre- construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation since streams are difficult-to- replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the

waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee- responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (*e.g.,* resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to an herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. **Water Quality.**

(a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFF 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

_____

(Date)

30. **Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a ‘‘USACE project’’), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. **Pre-Construction Notification.**

(a) *Timing.* Where required by the terms of the NWP, the permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is ''no effect'' on listed species or ''no potential to cause effects'' on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the pr set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4)

(i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse

environmental effects of the proposed linear project and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans).

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate.

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act.

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act.

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ‘‘study river’’ for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the ‘‘study river’’ (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a

written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification:* The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination:*

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for:

(i) All NWP activities that require pre-construction notification and result in the loss of greater than 1⁄2-acre of waters of the United States;

(ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and

(iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so, contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre- construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

DISTRICT ENGINEER'S DECISION

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with

the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either:

(a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit;

(b) that the activity is authorized under the NWP subject to the applicant’s submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or

(c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

FURTHER INFORMATION

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

DEFINITIONS

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term ‘‘discharge’’ means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National

Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non- tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of ‘‘open waters’’ include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre- construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may

consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term ''single and complete project'' is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term ''single and complete project'' is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of ''independent utility''). Single and complete non-linear projects may not be ''piecemealed'' to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no

longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian tribe or individual; or (2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a ‘‘water of the United States.’’ If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a sing e aquatic unit (see 33 CFR 328.4(c)(2)).

REGIONAL CONDITIONS:

The following Regional Conditions have been approved by the Wilmington District for the Nationwide Permits (NWPs) published in the January 13, 2021, and December 27, 2021, *Federal Register* (86 FR 2744 and 86 FR 73522) announcing the reissuance of 52 existing (NWPs) and five new NWPs, as well as the reissuance of NWP general conditions and definitions with some modifications.

A. EXCLUDED WATER AND/OR AREAS

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1. **Anadromous Fish Spawning Areas.** Work in waters of the U.S. designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are prohibited from February 15th through June 30th, without prior written approval from the Corps and the appropriate wildlife agencies (NCDMF, NCWRC and/or the National Marine Fisheries Service (NMFS)). Work in waters of the U.S. designated by NCWRC as primary nursery areas in inland waters are prohibited from February 15th through September 30th, without prior written approval from the Corps and the appropriate wildlife agencies. Work in waters of the U.S. designated by NCDMF as primary nursery areas shall be coordinated with NCDMF prior to being authorized by this NWP. Coordination with NCDMF may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

2. **Trout Waters Moratorium.** Work in waters of the U.S. in the designated trout watersheds of North Carolina are prohibited from October 15th through April 15th without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section C.3. below for information on the designated trout watersheds).

3. **Sturgeon Spawning Areas.** No in-water work shall be conducted in waters of the U.S. designated by the National Marine Fisheries Service as Atlantic sturgeon critical habitat from February 1st through June 30th. No in-water work shall be conducted in waters of the U.S. in the Roanoke River designated as Atlantic sturgeon critical habitat from February 1st through June 30th, and August 1st through October 31st, without prior written approval from NMFS.

4. **Submerged Aquatic Vegetation.** Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, NWP 55 and NWP 56, unless Essential Fish Habitat (EFH) consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is verified.

B. REGIONAL CONDITIONS APPLICABLE TO ALL NWP's

1. **Critical Habitat in Western NC.** For proposed activities within waters of the U.S. that require a Pre-Construction Notification (PCN) and are located in the thirteen counties listed below, permittees must provide a copy of the PCN to the U.S. Fish and Wildlife Service (USFWS), 160 Zillicoa Street, Asheville, North Carolina 28801 and the Corps Asheville Regulatory Field Office. Please see General Condition 18 for specific PCN requirements

related to the Endangered Species Act and the below website for information on the location of designated critical habitat.

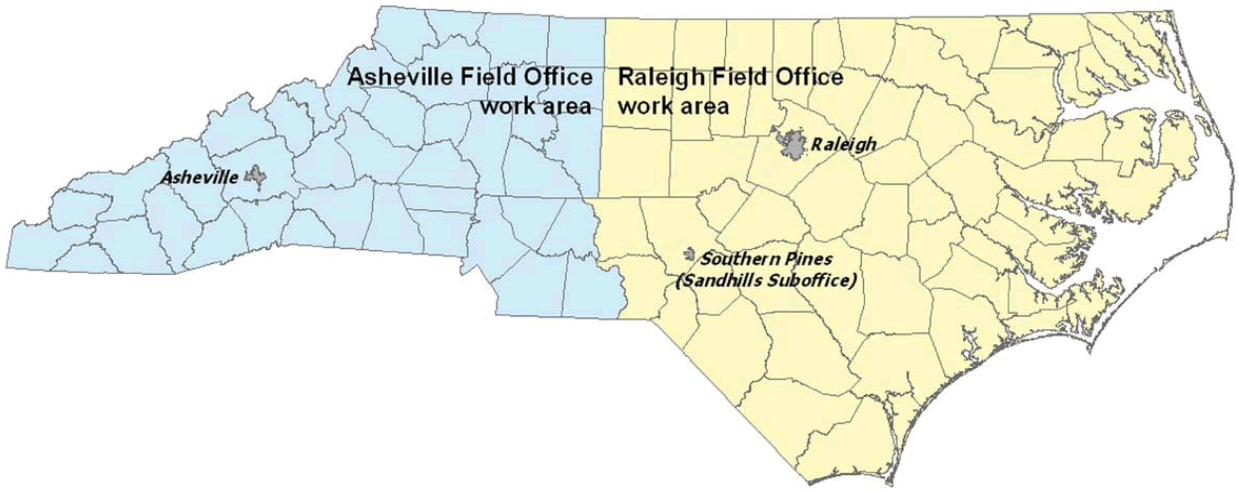
Counties with tributaries that drain to designated critical habitat that require notification to the Asheville U.S. Fish and Wildlife Service: Avery, Cherokee, Graham, Haywood, Henderson, Jackson, Macon, Mecklenburg, Mitchell, Swain, Transylvania, Union and Yancey.

Website and office addresses for Endangered Species Act Information:

The Wilmington District has developed the following website for permittees which provides guidelines on how to review linked websites and maps in order to fulfill NWP General Condition 18 (Endangered Species) requirements: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/AgencyCoordination/ESA.aspx.

Permittees who do not have internet access may contact the appropriate U.S. Fish and Wildlife Service offices listed below or Corps at (910) 251-4850.

Below is a map of the USFWS Field Office Boundaries:



Asheville U.S. Fish and Wildlife Service Office counties: All counties west of and including Anson, Stanly, Davidson, Forsythe and Stokes Counties.

U.S. Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Raleigh U.S. Fish and Wildlife Service Office counties: All counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Telephone: (919) 856-4520

2. **Special Designation Waters.** Prior to the use of any NWP that involves a discharge of dredged or fill material in any of the following identified waters and/or adjacent wetlands in North Carolina, permittees shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). The North Carolina waters and wetlands that require additional PCN requirements are:

"Primary Nursery Areas" (PNA), including inland PNA, as designated by the North Carolina Marine Fisheries Commission and/or the North Carolina Wildlife Resources Commission. The definition of and designated PNA waters can be found in the North Carolina State Administrative Code at Title 15A, Subchapters 3R and 10C (15A NCAC 03R .0103; 15A NCAC 10C .0502; and 15A NCAC 10C .0503) and at the following web pages:

- http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2003%20-%20marine%20fisheries/subchapter%20r/15a%20ncac%2003r%20.0103.pdf

- http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2010%20-%20wildlife%20resources%20and%20water%20safety/subchapter%20c/15a%20ncac%2010c%20.0502.pdf

- http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2010%20-%20wildlife%20resources%20and%20water%20safety/subchapter%20c/15a%20ncac%2010c%20.0503.pdf

3. **Trout Waters.** Prior to any discharge of dredge or fill material into streams, waterbodies or wetlands within the 294 designated trout watersheds of North Carolina, the permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity. The permittee shall also provide a copy of the PCN to the appropriate NCWRC office, or to the EBCI FWM Office (if the project is located on EBCI trust land), to facilitate the determination of any potential impacts to designated Trout Waters.

NCWRC and NC Trout Watersheds:

NCWRC Contact**	Counties that are entirely within Trout Watersheds*	Counties that are partially within Trout Watersheds*

Mountain Coordinator 645 Fish Hatchery Rd., Building B Marion, NC 28752 828-803-6054 For NCDOT Projects: NCDOT Coordinator 12275 Swift Rd. Oakboro, NC 28129 704-984-1070	Alleghany Ashe Avery Graham Haywood Jackson Macon Swain Transylvania Watauga	Burke Buncombe Caldwell Cherokee Clay Henderson Madison McDowell Mitchell Polk Rutherford Surry Wilkes Yancey
EBCI Contact**	**Counties that are within Trout Watersheds***	
Office of Natural Resources P.O. Box 1747, Cherokee, NC 28719 (828) 359-6113	Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties.	

*NOTE: To determine PCN requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps showing trout watersheds in each County at the following webpage: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout/.

**If a project is located on EBCI trust land, submit the PCN in accordance with Regional Condition C.16. Contact the Corps Asheville Regulatory Field Office at (828) 271-7980 with questions.

4. **Western NC Waters and Corridors.** The permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity in waters of the U.S. if the activity will occur within any of the following identified waters in western North Carolina, within 0.5 mile on either side of these waters, or within 0.75 mile of the Little Tennessee River, as measured from the top of the bank of the respective water (i.e., river, stream, or creek):

Brasstown Creek
Burningtown Creek

Cane River
Caney Fork
Cartoogechaye Creek
Chattooga River
Cheoah River
Cowee Creek
Cullasaja River
Deep Creek
Ellijay Creek
French Broad River
Garden Creek
Hiwassee River
Hominy Creek
Iotla Creek
Little Tennessee River (within the river or within 0.75 mile on either side of this river)
Nantahala River
Nolichucky River
North Fork French Broad River
North Toe River
Nottley River
Oconaluftee River (portion not located on trust/EBCI land)
Peachtree Creek
Shooting Creek
Snowbird Creek
South Toe River
Stecoah Creek
Swannanoa River
Sweetwater Creek
Tuckasegee River (also spelled Tuckaseegee or Tuckaseigee)
Valley River
Watauga Creek
Watauga River
Wayah Creek
West Fork French Broad River

To determine PCN requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps for all corridors at the following webpage: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Designated-Special-Waters.aspx .

5. **Limitation of Loss of Stream Bed.** NWPs may not be used for activities that may result in the loss of more than 0.05 acres of stream bed, except for NWP 32.

6. **Pre-Construction Notification for Loss of Stream Bed Exceeding 0.02 acres.** The permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32) prior to the use of any NWP for any activity that results in the loss of more than 0.02 acres of stream bed. This applies to NWPs that do not have PCN requirements as well as those NWPs that require a PCN.

7. **Mitigation for Loss of Stream Bed.** For any NWP that results in a loss of more than 0.02 acres of stream bed, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment, unless the

District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal. For stream bed losses of 0.02 acres or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

8. **Riprap.** For all NWPs that allow for the use of riprap material for bank stabilization, the following conditions shall be applied:

a. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or “keyed” into the bank of the waterbody. A waiver from the specifications in this Regional Condition must be requested in writing.

b. Riprap shall be placed only on the stream banks, or, if it is necessary to be placed in the stream bed, the finished top elevation of the riprap should not exceed that of the original stream bed.

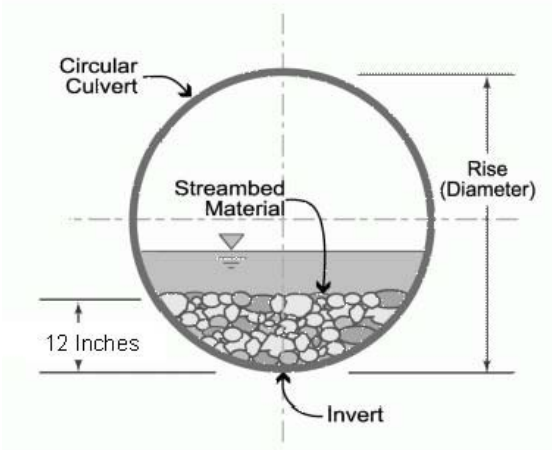
9. **Culvert Placement.** For all NWPs that allow for culvert placement, the following conditions shall be applied:

a. For all NWPs that involve the construction/installation of culverts, measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches. If the culvert outlet is submerged within a pool or scour hole and designed to provide for aquatic passage, then culvert burial into the streambed is not required.

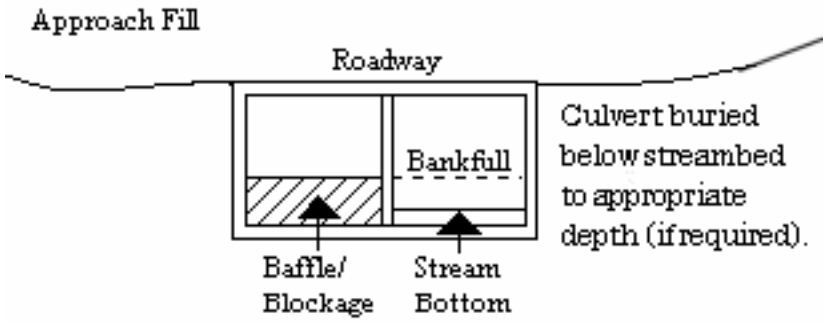
Culvert burial is not required for structures less than 72 inch diameter/width, where the slope of the culvert will be greater than 2.5%, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g., rock ladders, cross vanes, sills, baffles etc.). Culvert burial is not required when bedrock is present in culvert locations.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.



A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp. This waiver request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment. Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

b. Bank-full flows (or less) shall be accommodated through maintenance of the existing bank-full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



c. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. If the width of the culvert is wider than the stream channel, the culvert shall include multiple boxes/pipes, baffles, benches and/or sills to maintain the natural width of the stream channel. If multiple culverts/pipes/barrels are used, low flows shall be accommodated in one culvert/pipe and additional culverts/pipes shall be installed such that they receive only flows above bankfull.

10. **Utility Lines.** For all NWPs that allow for the construction and installation of utility lines, the following conditions shall be applied:

a. Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the U.S. (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

b. The work area authorized by this permit, including temporary and/or permanent fills, will be minimized to the greatest extent practicable. Justification for work corridors exceeding forty (40) feet in width is required and will be based on pipeline diameter and length, size of equipment required to construct the utility line, and other construction information deemed necessary to support the request. The permittee is required to provide this information to the Corps with the initial PCN package.

c. A plan to restore and re-vegetate wetland areas cleared for construction must be submitted with the required PCN. Cleared wetland areas shall be re-vegetated, as appropriate, with species of canopy, shrub, and herbaceous species. The permittee shall not use fescue grass or any other species identified as invasive or exotic species by the NC Native Plant Society (NCNPS): https://ncwildflower.org/invasive-exotic-species-list/.

d. Any permanently maintained corridor along the utility right of way within forested wetlands shall be considered a loss of aquatic function. A compensatory mitigation plan will be required for all such impacts associated with the requested activity if the activity requires a PCN and the cumulative total of permanent conversion of forested wetlands exceeds 0.1 acres, unless the District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal.

Where permanently maintained corridor within forested wetlands is 0.1 acres or less, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment.

e. When directional boring or horizontal directional drilling (HDD) under waters of the U.S., including wetlands, permittees shall closely monitor the project for hydraulic fracturing or “fracking.” Any discharge from hydraulic fracturing or “fracking” into waters of the U.S., including wetlands, shall be reported to the appropriate Corps Regulatory Field Office within 48 hours. Restoration and/or compensatory mitigation may be required as a result of any unintended discharges.

11. **Temporary Access Fills.** The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 0.1 acres of wetlands or 0.02 acres of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, how pre-project conditions will be restored, and include a timetable for all restoration activities.

12. **Federal Navigation Channel Setbacks.** Authorized structures and fills located in or adjacent to Federally authorized waterways must be constructed in accordance with the latest setback criteria established by the Wilmington District Engineer. You may review the setback policy at http://www.saw.usace.army.mil/Missions/Navigation/Setbacks.aspx. This general permit does not authorize the construction of hardened or permanently fixed structures within the Federally Authorized Channel Setback, unless the activity is approved by the Corps. The permittee shall submit a PCN (see General Condition 32) to the District Engineer to obtain a written verification prior to the construction of any structures or fills within the Federally Authorized Channel Setback.

13. **Northern Long-eared Bat – Endangered Species Act Compliance.** The Wilmington District, U.S. Army Corps of Engineers has consulted with the United States Fish and Wildlife

Service (USFWS) in regard to the threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*) and Standard Local Operating Procedures for Endangered Species (SLOPES) have been approved by the Corps and the USFWS. This condition concerns effects to the NLEB only and does not address effects to other federally listed species and/or federally designated critical habitat.

a. Procedures when the Corps is the lead federal* agency for a project:

The permittee must comply with (1) and (2) below when:

• the project is located in the western 41 counties of North Carolina, to include non-federal aid North Carolina Department of Transportation (NCDOT) projects, OR;

• the project is located in the 59 eastern counties of North Carolina and is a non-NCDOT project.

*Generally, if a project is located on private property or on non-federal land, and the project is not being funded by a federal entity, the Corps will be the lead federal agency due to the requirement to obtain Department of the Army authorization to impact waters of the U.S. If the project is located on federal land, contact the Corps to determine the lead federal agency.

(1) A permittee using an NWP must check to see if their project is located in the range of the NLEB by using the following website: http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf. If the project is within the range of the NLEB, or if the project includes percussive activities (e.g., blasting, pile driving, etc.), the permittee is then required to check the appropriate website in the paragraph below to discover if their project:

• is located in a 12-digit Hydrologic Unit Code area (“red HUC” - shown as red areas on the map), AND/OR;

• involves percussive activities within 0.25 mile of a red HUC.

Red HUC maps - for the western 41 counties in NC (covered by the Asheville Ecological Services Field Office), check the project location against the electronic maps found at: http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html. For the eastern 59 counties in NC (covered by the Raleigh Ecological Services Field Office), check the project location against the electronic maps found at: https://www.fws.gov/raleigh/NLEB_RFO.html.

(2) A permittee must submit a PCN to the District Engineer, and receive written verification from the District Engineer, prior to commencing the activity, if the activity will involve any of the following:

• tree clearing/removal and/or, construction/installation of wind turbines in a red HUC, AND/OR;

• bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, (applies anywhere in the range of the NLEB), AND/OR:

• percussive activities in a red HUC, or within 0.25 mile of a red HUC.

The permittee may proceed with the activity without submitting a PCN to either the Corps or the USFWS, provided the activity complies with all applicable NWP terms and general and regional conditions, if the permittee's review under A.(1) and A.(2) above shows that the project is:

- located outside of a red HUC (and there are no percussive activities), and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located outside of a red HUC and there are percussive activities, but the percussive activities will not occur within 0.25-mile of a red HUC boundary, and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located in a red HUC, but the activity will NOT include tree clearing/removal; construction/installation of wind turbines; bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, and/or; any percussive activities.

b. Procedures when the USACE is not the lead federal agency:

For projects where another federal agency is the lead federal agency - if that other federal agency has completed project-specific ESA Section 7(a)(2) consultation for the NLEB, and has (1) determined that the project would not cause prohibited incidental take of the NLEB, and (2) completed coordination/consultation that is required by the USFWS (per the directions on the respective USFWS office's website), that project may proceed without PCN to either the USACE or the USFWS, provided all General and Regional Permit Conditions are met.

The NLEB SLOPES can be viewed on the USACE website at: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/. Permittees who do not have internet access may contact the USACE at (910) 251- 4633.

14. **West Indian Manatee Protection.** In order to protect the endangered West Indian manatee (*Trichechus manatus*) the Permittee shall implement the USFWS' Manatee Guidelines, and strictly adhere to all requirements therein. The guidelines can be found at https://www.fws.gov/raleigh/pdfs/ManateeGuidelines2017.pdf.

15. **ESA Programmatic Biological Opinions.** The Wilmington District, USFWS, NCDOT, and the FHWA have conducted programmatic Section 7(a)(2) consultation for a number of federally listed species and designated critical habitat (DCH), and programmatic consultation concerning other federally listed species and/or DCH may occur in the future. The result of completed programmatic consultation is a Programmatic Biological Opinion (PBO) issued by the USFWS. These PBOs contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" of whichever species or critical habitat is covered by a specific PBO. Authorization under NWPs is conditional upon the permittee's compliance with all the mandatory terms and conditions associated with incidental take of the applicable PBO (or PBOs), which are incorporated by reference in the NWPs. Failure to comply with the terms and conditions associated with incidental take of an applicable PBO, where a take of the federally listed species occurs, would constitute an unauthorized take by the permittee, and would also constitute permittee non-compliance with the authorization under the NWPs. If the terms and conditions of a specific PBO (or PBOs) apply to a project, the Corps will include this/these requirements in any NWP verification that may be issued for a project. For an activity/project that does not require a PCN, the terms and conditions of the applicable PBO(s) also apply to that non-notifying

activity/project. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO and the ESA. All PBOs can be found on our website at: https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/.

16. **Work on Eastern Band of Cherokee Indian Land.**

Notifying NWPs - All PCNs submitted for activities in waters of the U.S. on Eastern Band of Cherokee Indians (EBCI) trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties), must comply with the requirements of the latest MOU between the Wilmington District and the EBCI.

Non-notifying NWPs - Prior to the use of any non-notifying NWP for activities in waters of the U.S. on EBCI trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties), all prospective permittees must comply with the requirements of the latest MOU between the Wilmington District and the EBCI; this includes coordinating the proposed project with the EBCI Natural Resources Program and obtaining a Tribal Approval Letter from the Tribe.

The EBCI MOU can be found at the following URL: http://saw-reg.usace.army.mil/FO/Final-MOU-EBCI-USACE.pdf

17. **Sedimentation and Erosion Control Structures and Measures.**

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

C. REGIONAL CONDITIONS APPLICABLE TO NWP 3

1. In designated trout watersheds, a PCN is not required for impacts to a maximum of 0.02 acres for temporary dewatering) of streams and waterbodies when conducting maintenance activities. Minor deviations in an existing structure's configuration, temporary structures and temporary fills are authorized as part of the maintenance activity. In designated trout watersheds, the permittee shall submit a PCN (see Regional Condition C.3 above and General Condition 32) to the District Engineer prior to commencing the activity if; 1) impacts (other than temporary dewatering to work in dry conditions) to streams or waterbodies exceed 0.008 acres; 2) temporary impacts to streams or waterbodies associated with dewatering to work in dry conditions exceeds 0.02 acres; 3) the project will involve impacts to wetlands; 4) the project involves the replacement of a bridge or spanning structure with a culvert or non-spanning structure in waters of the United States; or 5) the activity will be constructed during the trout waters moratorium (October 15 through April 15).

D. SECTION 401 WATER QUALITY CERTIFICATION (WQC) AND/OR COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION SUMMARY AND APPLICABLE CONDITIONS

The CZMA Consistency Determination and all Water Quality Certifications for the NWPs can be found at: https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Permits/2017-Nationwide-Permits/

Nationwide Permit 13
Bank Stabilization

Effective Date: February 25, 2022 / Expiration Date: March 14, 2026
Authority: Sections 10 and 404

Bank stabilization activities necessary for erosion control or prevention, such as vegetative stabilization, bioengineering, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of bank stabilization techniques, provided the activity meets all of the following criteria:

(a) No material is placed in excess of the minimum needed for erosion protection;

(b) The activity is no more than 500 feet in length along the bank, unless the district engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects (an exception is for bulkheads – the district engineer cannot issue a waiver for a bulkhead that is greater than 1,000 feet in length along the bank);

(c) The activity will not exceed an average of one cubic yard per running foot, as measured along the length of the treated bank, below the plane of the ordinary high water mark or the high tide line, unless the district engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects;

(d) The activity does not involve discharges of dredged or fill material into special aquatic sites, unless the district engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects;

(e) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the United States;

(f) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas);

(g) Native plants appropriate for current site conditions, including salinity, must be used for bioengineering or vegetative bank stabilization;

(h) The activity is not a stream channelization activity; and

(i) The activity must be properly maintained, which may require repairing it after severe storms or erosion events. This NWP authorizes those maintenance and repair activities if they require authorization.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the bank stabilization activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed

in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if the bank stabilization activity: (1) involves discharges of dredged or fill material into special aquatic sites; or (2) is in excess of 500 feet in length; or (3) will involve the discharge of dredged or fill material of greater than an average of one cubic yard per running foot as measured along the length of the treated bank, below the plane of the ordinary high water mark or the high tide line. (See general condition 32.)

Note: In coastal waters and the Great Lakes, living shorelines may be an appropriate option for bank stabilization, and may be authorized by NWP 54.

GENERAL CONDITIONS

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.**

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee’s expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects from Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. **Removal of Structures and Fills.** Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. **Wild and Scenic Rivers.**

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ''study river'' for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ''study river'' for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. **Endangered Species.**

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate

documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non- Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre- construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their worldwide Web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. **Migratory Birds and Bald and Golden Eagles**. The permittee is responsible for ensuring that an action authorized by NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. **Historic Properties.**

(a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR

800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 5258 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (*i.e.,* on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1⁄10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1⁄10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 1/103/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 1/103/100-acre or less that require pre- construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation since streams are difficult-to- replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the

waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee- responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (*e.g.,* resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to an herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. **Water Quality.**

(a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFF 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

_____

(Date)

30. **Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a ‘‘USACE project’’), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. **Pre-Construction Notification.**

(a) *Timing.* Where required by the terms of the NWP, the permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is ''no effect'' on listed species or ''no potential to cause effects'' on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the pr set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4)

(i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse

environmental effects of the proposed linear project and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans).

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate.

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act.

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act.

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ‘‘study river’’ for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the ‘‘study river’’ (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a

written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification:* The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination:*

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for:

(i) All NWP activities that require pre-construction notification and result in the loss of greater than 1⁄2-acre of waters of the United States;

(ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and

(iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so, contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre- construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

DISTRICT ENGINEER'S DECISION

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with

the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either:

(a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit;

(b) that the activity is authorized under the NWP subject to the applicant’s submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or

(c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

FURTHER INFORMATION

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

DEFINITIONS

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term ‘‘discharge’’ means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term

includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non- tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of ‘‘open waters’’ include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre- construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may

consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term ‘‘single and complete project’’ is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term ‘‘single and complete project’’ is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of ‘‘independent utility’’). Single and complete non-linear projects may not be ‘‘piecemealed’’ to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no

longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian tribe or individual; or (2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a ‘‘water of the United States.’’ If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a sing e aquatic unit (see 33 CFR 328.4(c)(2)).

REGIONAL CONDITIONS:

The following Regional Conditions have been approved by the Wilmington District for the Nationwide Permits (NWPs) published in the January 13, 2021, and December 27, 2021, *Federal Register* (86 FR 2744 and 86 FR 73522) announcing the reissuance of 52 existing (NWPs) and five new NWPs, as well as the reissuance of NWP general conditions and definitions with some modifications.

A. EXCLUDED WATER AND/OR AREAS

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1. **Anadromous Fish Spawning Areas.** Work in waters of the U.S. designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are prohibited from February 15th through June 30th, without prior written approval from the Corps and the appropriate wildlife agencies (NCDMF, NCWRC and/or the National Marine Fisheries Service (NMFS)). Work in waters of the U.S. designated by NCWRC as primary nursery areas in inland waters are prohibited from February 15th through September 30th, without prior written approval from the Corps and the appropriate wildlife agencies. Work in waters of the U.S. designated by NCDMF as primary nursery areas shall be coordinated with NCDMF prior to being authorized by this NWP. Coordination with NCDMF may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

2. **Trout Waters Moratorium.** Work in waters of the U.S. in the designated trout watersheds of North Carolina are prohibited from October 15th through April 15th without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section C.3. below for information on the designated trout watersheds).

3. **Sturgeon Spawning Areas.** No in-water work shall be conducted in waters of the U.S. designated by the National Marine Fisheries Service as Atlantic sturgeon critical habitat from February 1st through June 30th. No in-water work shall be conducted in waters of the U.S. in the Roanoke River designated as Atlantic sturgeon critical habitat from February 1st through June 30th, and August 1st through October 31st, without prior written approval from NMFS.

4. **Submerged Aquatic Vegetation.** Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, NWP 55 and NWP 56, unless Essential Fish Habitat (EFH) consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is verified.

B. REGIONAL CONDITIONS APPLICABLE TO ALL NWP's

1. **Critical Habitat in Western NC.** For proposed activities within waters of the U.S. that require a Pre-Construction Notification (PCN) and are located in the thirteen counties listed below, permittees must provide a copy of the PCN to the U.S. Fish and Wildlife Service (USFWS), 160 Zillicoa Street, Asheville, North Carolina 28801 and the Corps Asheville Regulatory Field Office. Please see General Condition 18 for specific PCN requirements

related to the Endangered Species Act and the below website for information on the location of designated critical habitat.

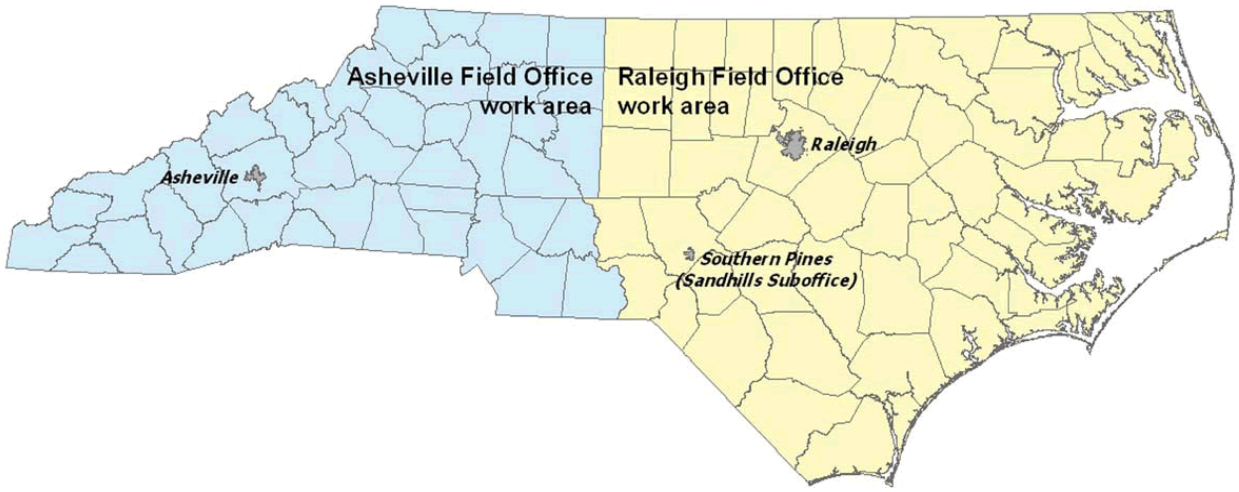
Counties with tributaries that drain to designated critical habitat that require notification to the Asheville U.S. Fish and Wildlife Service: Avery, Cherokee, Graham, Haywood, Henderson, Jackson, Macon, Mecklenburg, Mitchell, Swain, Transylvania, Union and Yancey.

Website and office addresses for Endangered Species Act Information:

The Wilmington District has developed the following website for permittees which provides guidelines on how to review linked websites and maps in order to fulfill NWP General Condition 18 (Endangered Species) requirements: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/AgencyCoordination/ESA.aspx.

Permittees who do not have internet access may contact the appropriate U.S. Fish and Wildlife Service offices listed below or Corps at (910) 251-4850.

Below is a map of the USFWS Field Office Boundaries:



Asheville U.S. Fish and Wildlife Service Office counties: All counties west of and including Anson, Stanly, Davidson, Forsythe and Stokes Counties.

U.S. Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Raleigh U.S. Fish and Wildlife Service Office counties: All counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Telephone: (919) 856-4520

2. **Special Designation Waters.** Prior to the use of any NWP that involves a discharge of dredged or fill material in any of the following identified waters and/or adjacent wetlands in North Carolina, permittees shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). The North Carolina waters and wetlands that require additional PCN requirements are:

"Primary Nursery Areas" (PNA), including inland PNA, as designated by the North Carolina Marine Fisheries Commission and/or the North Carolina Wildlife Resources Commission. The definition of and designated PNA waters can be found in the North Carolina State Administrative Code at Title 15A, Subchapters 3R and 10C (15A NCAC 03R .0103; 15A NCAC 10C .0502; and 15A NCAC 10C .0503) and at the following web pages:

- http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2003%20-%20marine%20fisheries/subchapter%20r/15a%20ncac%2003r%20.0103.pdf

- http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2010%20-%20wildlife%20resources%20and%20water%20safety/subchapter%20c/15a%20ncac%2010c%20.0502.pdf

- http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2010%20-%20wildlife%20resources%20and%20water%20safety/subchapter%20c/15a%20ncac%2010c%20.0503.pdf

3. **Trout Waters.** Prior to any discharge of dredge or fill material into streams, waterbodies or wetlands within the 294 designated trout watersheds of North Carolina, the permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity. The permittee shall also provide a copy of the PCN to the appropriate NCWRC office, or to the EBCI FWM Office (if the project is located on EBCI trust land), to facilitate the determination of any potential impacts to designated Trout Waters.

NCWRC and NC Trout Watersheds:

NCWRC Contact**	Counties that are entirely within Trout Watersheds*	Counties that are partially within Trout Watersheds*

Mountain Coordinator 645 Fish Hatchery Rd., Building B Marion, NC 28752 828-803-6054 For NCDOT Projects: NCDOT Coordinator 12275 Swift Rd. Oakboro, NC 28129 704-984-1070	Alleghany Ashe Avery Graham Haywood	Jackson Macon Swain Transylvania Watauga	Burke Buncombe Caldwell Cherokee Clay Henderson Madison	McDowell Mitchell Polk Rutherford Surry Wilkes Yancey
EBCI Contact**	**Counties that are within Trout Watersheds***			
Office of Natural Resources P.O. Box 1747, Cherokee, NC 28719 (828) 359-6113	Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties.			

*NOTE: To determine PCN requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps showing trout watersheds in each County at the following webpage: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout/.

**If a project is located on EBCI trust land, submit the PCN in accordance with Regional Condition C.16. Contact the Corps Asheville Regulatory Field Office at (828) 271-7980 with questions.

4. **Western NC Waters and Corridors.** The permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity in waters of the U.S. if the activity will occur within any of the following identified waters in western North Carolina, within 0.5 mile on either side of these waters, or within 0.75 mile of the Little Tennessee River, as measured from the top of the bank of the respective water (i.e., river, stream, or creek):

Brasstown Creek
Burningtown Creek

Cane River
Caney Fork
Cartoogechaye Creek
Chattooga River
Cheoah River
Cowee Creek
Cullasaja River
Deep Creek
Ellijay Creek
French Broad River
Garden Creek
Hiwassee River
Hominy Creek
Iotla Creek
Little Tennessee River (within the river or within 0.75 mile on either side of this river)
Nantahala River
Nolichucky River
North Fork French Broad River
North Toe River
Nottley River
Oconaluftee River (portion not located on trust/EBCI land)
Peachtree Creek
Shooting Creek
Snowbird Creek
South Toe River
Stecoah Creek
Swannanoa River
Sweetwater Creek
Tuckasegee River (also spelled Tuckaseegee or Tuckaseigee)
Valley River
Watauga Creek
Watauga River
Wayah Creek
West Fork French Broad River

To determine PCN requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps for all corridors at the following webpage: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Designated-Special-Waters.aspx .

5. **Limitation of Loss of Stream Bed.** NWPs may not be used for activities that may result in the loss of more than 0.05 acres of stream bed, except for NWP 32.

6. **Pre-Construction Notification for Loss of Stream Bed Exceeding 0.02 acres.** The permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32) prior to the use of any NWP for any activity that results in the loss of more than 0.02 acres of stream bed. This applies to NWPs that do not have PCN requirements as well as those NWPs that require a PCN.

7. **Mitigation for Loss of Stream Bed.** For any NWP that results in a loss of more than 0.02 acres of stream bed, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment, unless the

District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal. For stream bed losses of 0.02 acres or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

8. **Riprap.** For all NWPs that allow for the use of riprap material for bank stabilization, the following conditions shall be applied:

a. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or “keyed” into the bank of the waterbody. A waiver from the specifications in this Regional Condition must be requested in writing.

b. Riprap shall be placed only on the stream banks, or, if it is necessary to be placed in the stream bed, the finished top elevation of the riprap should not exceed that of the original stream bed.

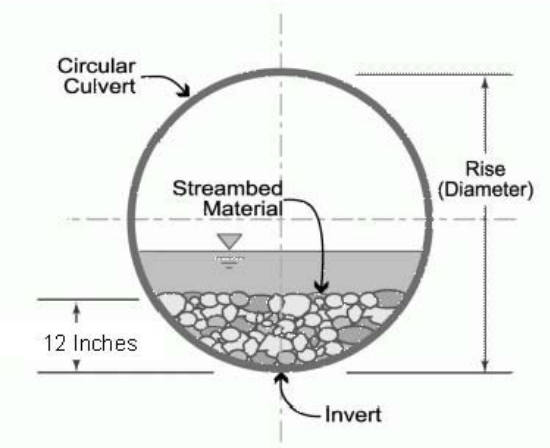
9. **Culvert Placement.** For all NWPs that allow for culvert placement, the following conditions shall be applied:

a. For all NWPs that involve the construction/installation of culverts, measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches. If the culvert outlet is submerged within a pool or scour hole and designed to provide for aquatic passage, then culvert burial into the streambed is not required.

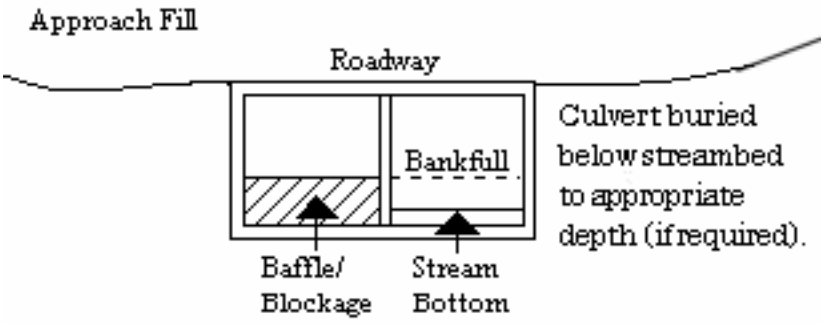
Culvert burial is not required for structures less than 72 inch diameter/width, where the slope of the culvert will be greater than 2.5%, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g., rock ladders, cross vanes, sills, baffles etc.). Culvert burial is not required when bedrock is present in culvert locations.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.



A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp. This waiver request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment. Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

b. Bank-full flows (or less) shall be accommodated through maintenance of the existing bank-full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



c. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. If the width of the culvert is wider than the stream channel, the culvert shall include multiple boxes/pipes, baffles, benches and/or sills to maintain the natural width of the stream channel. If multiple culverts/pipes/barrels are used, low flows shall be accommodated in one culvert/pipe and additional culverts/pipes shall be installed such that they receive only flows above bankfull.

10. **Utility Lines.** For all NWPs that allow for the construction and installation of utility lines, the following conditions shall be applied:

a. Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the U.S. (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

b. The work area authorized by this permit, including temporary and/or permanent fills, will be minimized to the greatest extent practicable. Justification for work corridors exceeding forty (40) feet in width is required and will be based on pipeline diameter and length, size of equipment required to construct the utility line, and other construction information deemed necessary to support the request. The permittee is required to provide this information to the Corps with the initial PCN package.

c. A plan to restore and re-vegetate wetland areas cleared for construction must be submitted with the required PCN. Cleared wetland areas shall be re-vegetated, as appropriate, with species of canopy, shrub, and herbaceous species. The permittee shall not use fescue grass or any other species identified as invasive or exotic species by the NC Native Plant Society (NCNPS): https://ncwildflower.org/invasive-exotic-species-list/.

d. Any permanently maintained corridor along the utility right of way within forested wetlands shall be considered a loss of aquatic function. A compensatory mitigation plan will be required for all such impacts associated with the requested activity if the activity requires a PCN and the cumulative total of permanent conversion of forested wetlands exceeds 0.1 acres, unless the District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal.

Where permanently maintained corridor within forested wetlands is 0.1 acres or less, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment.

e. When directional boring or horizontal directional drilling (HDD) under waters of the U.S., including wetlands, permittees shall closely monitor the project for hydraulic fracturing or “fracking.” Any discharge from hydraulic fracturing or “fracking” into waters of the U.S., including wetlands, shall be reported to the appropriate Corps Regulatory Field Office within 48 hours. Restoration and/or compensatory mitigation may be required as a result of any unintended discharges.

11. **Temporary Access Fills.** The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 0.1 acres of wetlands or 0.02 acres of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, how pre-project conditions will be restored, and include a timetable for all restoration activities.

12. **Federal Navigation Channel Setbacks.** Authorized structures and fills located in or adjacent to Federally authorized waterways must be constructed in accordance with the latest setback criteria established by the Wilmington District Engineer. You may review the setback policy at http://www.saw.usace.army.mil/Missions/Navigation/Setbacks.aspx. This general permit does not authorize the construction of hardened or permanently fixed structures within the Federally Authorized Channel Setback, unless the activity is approved by the Corps. The permittee shall submit a PCN (see General Condition 32) to the District Engineer to obtain a written verification prior to the construction of any structures or fills within the Federally Authorized Channel Setback.

13. **Northern Long-eared Bat – Endangered Species Act Compliance.** The Wilmington District, U.S. Army Corps of Engineers has consulted with the United States Fish and Wildlife

Service (USFWS) in regard to the threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*) and Standard Local Operating Procedures for Endangered Species (SLOPES) have been approved by the Corps and the USFWS. This condition concerns effects to the NLEB only and does not address effects to other federally listed species and/or federally designated critical habitat.

a. Procedures when the Corps is the lead federal* agency for a project:

The permittee must comply with (1) and (2) below when:

• the project is located in the western 41 counties of North Carolina, to include non-federal aid North Carolina Department of Transportation (NCDOT) projects, OR;

• the project is located in the 59 eastern counties of North Carolina and is a non-NCDOT project.

*Generally, if a project is located on private property or on non-federal land, and the project is not being funded by a federal entity, the Corps will be the lead federal agency due to the requirement to obtain Department of the Army authorization to impact waters of the U.S. If the project is located on federal land, contact the Corps to determine the lead federal agency.

(1) A permittee using an NWP must check to see if their project is located in the range of the NLEB by using the following website: http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf. If the project is within the range of the NLEB, or if the project includes percussive activities (e.g., blasting, pile driving, etc.), the permittee is then required to check the appropriate website in the paragraph below to discover if their project:

• is located in a 12-digit Hydrologic Unit Code area (“red HUC” - shown as red areas on the map), AND/OR;

• involves percussive activities within 0.25 mile of a red HUC.

Red HUC maps - for the western 41 counties in NC (covered by the Asheville Ecological Services Field Office), check the project location against the electronic maps found at: http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html. For the eastern 59 counties in NC (covered by the Raleigh Ecological Services Field Office), check the project location against the electronic maps found at: https://www.fws.gov/raleigh/NLEB_RFO.html.

(2) A permittee must submit a PCN to the District Engineer, and receive written verification from the District Engineer, prior to commencing the activity, if the activity will involve any of the following:

• tree clearing/removal and/or, construction/installation of wind turbines in a red HUC, AND/OR;

• bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, (applies anywhere in the range of the NLEB), AND/OR:

• percussive activities in a red HUC, or within 0.25 mile of a red HUC.

The permittee may proceed with the activity without submitting a PCN to either the Corps or the USFWS, provided the activity complies with all applicable NWP terms and general and regional conditions, if the permittee's review under A.(1) and A.(2) above shows that the project is:

- located outside of a red HUC (and there are no percussive activities), and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located outside of a red HUC and there are percussive activities, but the percussive activities will not occur within 0.25-mile of a red HUC boundary, and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located in a red HUC, but the activity will NOT include tree clearing/removal; construction/installation of wind turbines; bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, and/or; any percussive activities.

b. Procedures when the USACE is not the lead federal agency:

For projects where another federal agency is the lead federal agency - if that other federal agency has completed project-specific ESA Section 7(a)(2) consultation for the NLEB, and has (1) determined that the project would not cause prohibited incidental take of the NLEB, and (2) completed coordination/consultation that is required by the USFWS (per the directions on the respective USFWS office's website), that project may proceed without PCN to either the USACE or the USFWS, provided all General and Regional Permit Conditions are met.

The NLEB SLOPES can be viewed on the USACE website at: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/. Permittees who do not have internet access may contact the USACE at (910) 251- 4633.

14. **West Indian Manatee Protection.** In order to protect the endangered West Indian manatee (*Trichechus manatus*) the Permittee shall implement the USFWS' Manatee Guidelines, and strictly adhere to all requirements therein. The guidelines can be found at https://www.fws.gov/raleigh/pdfs/ManateeGuidelines2017.pdf.

15. **ESA Programmatic Biological Opinions.** The Wilmington District, USFWS, NCDOT, and the FHWA have conducted programmatic Section 7(a)(2) consultation for a number of federally listed species and designated critical habitat (DCH), and programmatic consultation concerning other federally listed species and/or DCH may occur in the future. The result of completed programmatic consultation is a Programmatic Biological Opinion (PBO) issued by the USFWS. These PBOs contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" of whichever species or critical habitat is covered by a specific PBO. Authorization under NWPs is conditional upon the permittee's compliance with all the mandatory terms and conditions associated with incidental take of the applicable PBO (or PBOs), which are incorporated by reference in the NWPs. Failure to comply with the terms and conditions associated with incidental take of an applicable PBO, where a take of the federally listed species occurs, would constitute an unauthorized take by the permittee, and would also constitute permittee non-compliance with the authorization under the NWPs. If the terms and conditions of a specific PBO (or PBOs) apply to a project, the Corps will include this/these requirements in any NWP verification that may be issued for a project. For an activity/project that does not require a PCN, the terms and conditions of the applicable PBO(s) also apply to that non-notifying

activity/project. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO and the ESA. All PBOs can be found on our website at: https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/.

16. **Work on Eastern Band of Cherokee Indian Land.**

Notifying NWPs - All PCNs submitted for activities in waters of the U.S. on Eastern Band of Cherokee Indians (EBCI) trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties), must comply with the requirements of the latest MOU between the Wilmington District and the EBCI.

Non-notifying NWPs - Prior to the use of any non-notifying NWP for activities in waters of the U.S. on EBCI trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties), all prospective permittees must comply with the requirements of the latest MOU between the Wilmington District and the EBCI; this includes coordinating the proposed project with the EBCI Natural Resources Program and obtaining a Tribal Approval Letter from the Tribe.

The EBCI MOU can be found at the following URL: http://saw-reg.usace.army.mil/FO/Final-MOU-EBCI-USACE.pdf

17. **Sedimentation and Erosion Control Structures and Measures.**

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

C. REGIONAL CONDITIONS APPLICABLE TO NWP 13

1. In designated trout watersheds, a PCN is not required for impacts up to 0.02 acres of stream for temporary dewatering, and up to 100 linear feet for all other impacts to streams or waterbodies for bank stabilization activities that are not adjoining, adjacent to, or in the relative vicinity of existing stabilization structures. Materials for the stabilization structure(s) and design of the project must be constructed to withstand normal and expected high stream flows. In designated trout waters, the permittee shall submit a PCN (see Regional Condition C.3 above and General Condition 32) to the District Engineer prior to commencing the activity if 1) impacts (other than temporary dewatering to work in dry conditions) to streams and waterbodies exceed 100 linear feet; 2) temporary impacts to streams or waterbodies associated with dewatering to work in dry conditions exceed 0.02 acres of stream channel; or 3) the activity will be constructed during the trout waters moratorium from October 15th through April 15th.

D. SECTION 401 WATER QUALITY CERTIFICATION (WQC) AND/OR COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION SUMMARY AND APPLICABLE CONDITIONS

The CZMA Consistency Determination and all Water Quality Certifications for the NWPs can be found at: https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Permits/2017-Nationwide-Permits/

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 7466

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER 3 (MAINTENANCE)

Water Quality General Certification Number 7466 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 Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (3) of the US Army Corps of Engineers regulations.

The State of North Carolina certifies that the specified category of activity will comply with water quality requirements and applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: January 21, 2025

Signed this day: January 9, 2025

By

Richard E. Rogers, Jr.

Richard E. Rogers, Jr.,
Director

GENERAL CERTIFICATION COVERAGE:

Activities that are eligible for US Army Corps of Engineers Nationwide Permit 3 and are authorized by Coastal Area Management Act (CAMA) General Permits qualify for coverage under this General Certification as long as they comply with all of the Activity Specific and General Conditions of this Certification. If any of the Activity Specific or General Conditions of this Certification cannot be met, then *an Individual* 401 Water Quality Certification from the Division of Water Resources (DWR) is required.

All other activities that are eligible for US Army Corps of Engineers Nationwide Permit 3 qualify for coverage under this General Certification unless they meet one of the thresholds listed below. Activities meeting any one (1) of the thresholds or circumstances listed below are not eligible for coverage under this General Certification and require *an Individual* 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the Activity Specific or General Conditions of this General Certification cannot be met; or
b) Activities authorized by CAMA Major Development Permits, except:
    i. Boat Ramps and associated access (i.e. roads and parking lots) that involve the excavation or filling of less than 500 square feet total of wetland and open water area, with the exception that the excavation or filling of coastal wetlands (as defined in 15A NCAC 07H .0205) shall not exceed 100 square feet;
    ii. Shoreline protection measures (excluding living shorelines/marsh sills) that (1) tie into existing bulkheads, land, or other shoreline protection measures or (2) do not extend waterward of the normal high water or normal water line more than 10 feet, provided the activity will not involve the excavation or filling of any Submerged Aquatic Vegetation (SAV) or significant shellfish resources (as identified by the Division of Marine Fisheries) and impacts less than 500 square feet total of wetland, with the exception that the excavation or filling of coastal wetlands (as defined in 15A NCAC 07H .0205) shall not exceed 100 square feet;
    iii. Living shorelines/marsh sills where (1) the landward edge of the sill does not extend waterward of the normal high water or normal water line more than 30 feet or five feet waterward of the existing wetlands whichever distance is greater, (2) the activity will not involve the excavation or fill of any Submerged Aquatic Vegetation (SAV) or significant shellfish resources (as identified by the Division of Marine Fisheries), and (3) does not result in any fill landward of the toe of the sill alignment, provided the Division of Coastal Management representative submits a copy of the written authorization for the General Permit to the Division upon issuance; or
    iv. Piers and docks designed to accommodate up to but not exceeding 10 vessels (except where prohibited in Outstanding Resource Waters (ORW) as defined in 15A NCAC 02B. 0225(7) & (8)) and where the water depth is equal to or greater than two feet of water at normal low water level or normal water level (whichever is applicable);

v. Projects that involve only shading of waters or wetlands that do not meet the criteria listed in item (iv) above;
vi. Maintenance dredging of less than 0.5 acres of open water or non-vegetated wetlands, provided that the applicant can provide documentation showing the historic dimensions of the dredged channel, and no SAV or shellfish beds are excavated or filled;
vii. Utility lines, except wastewater lines and potable water discharge lines which are subject to an NPDES Permit, as long as all impacts are temporary;
viii. Upland development which involves no more than 1/10 of an acre of excavation or filling of non-coastal wetlands, with the exception that no more than 2,000 square feet of the non-coastal excavation or filling may take place within a Coastal Shoreline Area of Environmental Concern (AEC). For the purposes of this area calculation, the excavation or filling impacts of the entire project shall be considered, which may include boat ramps, bulkheads or other shoreline stabilization measures; and

c) Total additional impacts to streams at an existing impact location greater than 40 linear feet; or
d) Total additional impacts to wetlands, ditches subject to Section 404 of the Clean Water Act (CWA), or lakes/ponds at an existing impact location equal to or greater than one-tenth (1/10) acre; or
e) Any impacts to streams from excavation or dredging other than excavation that is conducted as preparation for installing permanent fill or structures; or
f) Any stream restoration or relocation; or
g) Complete dewatering and drawdowns to a sediment layer related to pond/dam maintenance or removal unless the dewatering activity has been designed to ensure no discharge of sediment will occur into downstream waters AND has been covered by a Sediment and Erosion Control Plan Approval from the Division of Energy, Mineral, and Land Resources (DEMLR) or a delegated local program; or
h) Any high-density project, as defined in 15A NCAC 02H .1003(3) and by the density thresholds specified in 15A NCAC 02H .1017, which:
    i. Disturbs one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); and
    ii. Has permanent wetland, stream, or open water impacts; and
    iii. Is proposing new built-upon area; and
    iv. Does not have a stormwater management plan reviewed and approved under a state stormwater program[1] or a state-approved local government stormwater program[2].

    Projects that have vested rights, exemptions, or other legacy rights or exemptions from state or locally implemented stormwater programs and projects that satisfy state or

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES
[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

locally implemented stormwater programs through use of community in-lieu fee programs **require an Individual 401 Certification**; or

i) Any impacts to SAV or significant shellfish resources as identified by the (DMF); or
j) Any permanent impacts Unique Wetlands (UWL) [15A NCAC 02B .0231]; or
k) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless*:
    i. The activities are listed as "EXEMPT" or "DEEMED ALLOWABLE" from these rules; or
    ii. A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
    iii. A Buffer Authorization Certificate, Certificate with Exception, or Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

In accordance with 15A NCAC 02H .0503(f), the Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project if it is deemed in the public's best interest or determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or will degrade the waters so that existing uses of the waters or downstream waters are precluded.

This General Certification does not relieve the permittee of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

This General Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This General Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and does not create any prescriptive right or any right of priority regarding any usage of water. This General Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this General Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

Upon the presentation of proper credentials, DWR may inspect the property.

This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this General Certification. This General Certification is rescinded when

the US Army Corps of Engineers reauthorizes the corresponding Nationwide Permit or when deemed appropriate by the Director of the Division of Water Resources.

Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

I. ACTIVITY SPECIFIC CONDITIONS:

1. For all dam removal projects meeting the definition under G.S. 143-215.25 and requirements under G.S. 143-215.27 of a professionally supervised dam removal, the applicant shall provide documentation that any sediment that may be released has similar or lower level of contamination than sediment sampled from downstream of the dam in accordance with Session Law 2017-145.

   Citation: 15A NCAC 02H .0506; 15A NCAC 02H .0507(c); 15A NCAC 02B .0200; 15A NCAC02B .0502

2. The effluent water from the dredge spoil shall not be released into open shellfish waters unless Shellfish Sanitation and the DWR Washington (252-946-6481) or Wilmington (910-796-7215) Regional Office, as applicable, are notified and provide approval prior to the release.

   Citation: 15A NCAC 02B .0221

3. For living shorelines, the sills shall have at least one five-foot opening every 100 feet and may be staggered or overlapped or left open as long as the five-foot separation between sections is maintained. Overlapping sections shall not overlap more than 10 feet.

   Citation: 15A NCAC 02H .0506(b)(1) and (3); 15A NCAC 02H .0507(c)

4. For living shorelines, the permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation and turbidity within waters and wetlands outside the permitted area. This shall include, but is not limited to, the immediate installation of silt fencing, turbidity curtains or similar appropriate devices around all areas subject to soil disturbance. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act and the Mining Act of 1971.

   Citation: 15A NCAC 02H .0506(b)(1) and (3); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200

II. GENERAL CONDITIONS:

1. The permittee shall report to the DWR Regional Office any noncompliance with, and/or any violation of, stream or wetland standards [15A NCAC 02B .0200], including but not limited to sediment impacts to streams or wetlands. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the permittee became aware of the non-compliance circumstances.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts); or beyond the thresholds established for use of this General Certification and Nationwide Permit.

   Citation: 15A NCAC 02H .0506; 15A NCAC 02H .0507(c)

3. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2B of Title 15A in the North Carolina Administrative Code.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

4. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur.

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *North Caroline Department of Transportation Sediment and Erosion Control Manual*.

   All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

   For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

   If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

   Citation: 15A NCAC 02H .0506(b)(2); 15A NCAC 02H .0507(c); 15A NCAC02B .0200; 15A NCAC 02B .0231
   Justification: A project that affects waters shall not be permitted unless the existing uses,

5. Sediment and erosion control measures shall not be installed in wetland or waters except within the footprint of temporary or permanent impacts otherwise authorized by this Certification. If placed within authorized impact areas, then placement of such measures shall not be conducted in a manner that results in dis-equilibrium of any wetlands,

streambeds, or streambanks. Any silt fence installed within wetlands shall be removed from wetlands and the natural grade restored within two (2) months of the date that DEMLR or locally delegated program has released the specific area within the project to ensure wetland standards are maintained upon completion of the project.

Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC02B .0200; 15A NCAC 02B .0231

6. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

7. If the project is covered by NPDES Construction Stormwater Permit Number NCG010000 or NPDES Construction Stormwater Permit Number NCG250000, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required.

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their Individual NPDES Stormwater Permit Number NCS000250.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200; 15A NCAC 02B .0231

8. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC Department of Transportation Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200

9. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities.

   All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium.

   Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers) or identified state or federal

endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 04B .0125

10. In-stream structures installed to mimic natural channel geomorphology such as cross-vanes, sills, step-pool structures, etc. shall be designed and installed in such a manner that allow for continued aquatic life movement.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. If the width of the culvert is wider than the stream channel, the culvert shall include multiple boxes/pipes, baffles, benches and/or sills to maintain the natural width of the stream channel. If multiple culverts/pipes/barrels are used, low flows shall be accommodated in one culvert/pipe and additional culverts/pipes shall be installed such that they receive only flows above bankfull.

    Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life. If the culvert outlet is submerged within a pool or scour hole and designed to provide for aquatic passage, then culvert burial into the streambed is not required.

    For structures less than 72” in diameter/width, and topographic constraints indicate culvert slopes of greater than 2.5% culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross-vanes, sills, baffles etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 30 calendar days prior to the installation of the culvert.

    When bedrock is present in culvert locations, culvert burial is not required, provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 30 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters.

    Citation: 15A 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0231

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state.

    Citation: 15A 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200

15. All proposed and approved temporary fill and culverts shall be removed, and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross-sectional dimensions, planform pattern, and longitudinal bed profile. All temporarily impacted sites shall be restored and stabilized with native vegetation.

    Citation: 15A NCAC 02H.0506(b); 15A NCAC 02H .0507(c)

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction*

and Maintenance Activities so as not to restrict stream flow or cause dis-equilibrium during use of this General Certification.

Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original streambed elevation and streambank contours are restored and maintained and shall consist of clean rock or masonry material free of debris or toxic pollutants. Placement of rip-rap or other approved materials shall not result in destabilization of the stream bed or banks upstream or downstream of the area or be installed in a manner that precludes aquatic life passage.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows, and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0201

19. Rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

    Citation: 15A NCAC 02H .0507(c); 15A NCAC 07H .1400 et seq.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication, and general equipment maintenance shall be performed in a manner to prevent, to the maximum extent practicable, contamination of surface waters by fuels and oils.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance and compaction.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0231

22. In accordance with 143-215.85(b), the permittee shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any

petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

Citation: 15A NCAC 02H .0507(c); N.C.G.S 143-215.85(b)

23. The permittee and their authorized agents shall conduct all 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.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

24. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this General Certification. A copy of this General Certification shall be available at the project site during the construction and maintenance of this project.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)

History Note: Water Quality Certification (WQC) Number 7466 issued January 9, 2025; replaces WQC 4239 issued December 18, 2020; replaces WQC 4132 issued December 1, 2017 for activities eligible for USACE NWP3; WQC 3883 issued March 19, 2012; WQC 3687 issued November 1, 2007; WQC 3624 issued March 19, 2007; WQC 3494 issued December 31, 2004; and WQC 3376 issued March 18, 2002.

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4245

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER 13 (BANK STABILIZATION)

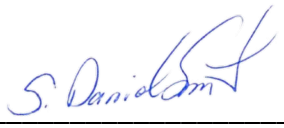
Water Quality General Certification Number 4245 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (13) of the US Army Corps of Engineers regulations.

The State of North Carolina certifies that the specified category of activity will comply with water quality requirements and applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: February 25, 2022

Signed this day: December 18, 2020

By



S. Daniel Smith
Director

GENERAL CERTIFICATION COVERAGE:

Activities that are eligible for US Army Corps of Engineers Nationwide Permit 13 qualify for coverage under this General Certification unless they meet one of the thresholds listed below. Activities meeting any one (1) of the thresholds or circumstances listed below are not eligible for coverage under this General Certification and require *an Individual* 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the conditions of this General Certification cannot be met; or
b) Total temporary and permanent impacts to streambanks or shorelines of greater than 150 feet for bank stabilization projects when non-natural armoring techniques (e.g. rip-rap, gabion baskets, deflection walls) are utilized; or
c) Total temporary and permanent impacts to streambanks or shorelines of greater than 500 feet for bank stabilization projects when natural techniques (e.g. sloping, vegetation, geolifts) are used; or
d) Any permanent fill into, or modification of, streambeds except for single and independent stream stabilization or enhancement projects involving in-stream structures that meet the following criteria:
    i. Designed based on current natural channel techniques; and
    ii. In-stream structures do not exceed a spacing of three structures per 100 feet of stream length up to a total of 500 feet of streambank stabilization; or
e) Any permanent fill into, or modification of, wetlands; or
f) Any stream restoration or relocation other than stream relocations that are conducted for the purpose of proper culvert installation, alignment, protection, repair or maintenance where the relocation length is equal to or less than 50 feet in length and the relocated stream is designed and installed based on current natural channel techniques; or
g) Complete dewatering and drawdowns to a sediment layer related to pond/dam maintenance or removal unless the dewatering activity has been designed to ensure no discharge of sediment will occur into downstream waters AND has been covered by a Sediment and Erosion Control Plan Approval from the Division of Energy, Mineral, and Land Resources (DEMLR) or a delegated local program; or
h) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, or North Carolina or National Wild and Scenic River; or
i) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as Trout unless:
    i. The total impacts are less than 100 feet in length; and
    ii. The project is not adjacent to any other existing stabilization structures; and
    iii. All conditions of this General Certification can be met, including adherence to any moratoriums as stated in General Condition II.9; and
    iv. A *Notification of Work in Trout Watersheds Form* is submitted to the Division at least 60 days prior to commencement of work; or

j) Any permanent impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL) [15A NCAC 02B .0231]; or
k) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless*:
    i. The activities are listed as "EXEMPT" or "DEEMED ALLOWABLE" from these rules; or
    ii. A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
    iii. A Buffer Authorization Certificate, Certificate with Exception, or Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

In accordance with 15A NCAC 02H .0503(f), the Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project if it is deemed in the public's best interest or determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or will degrade the waters so that existing uses of the waters or downstream waters are precluded.

This General Certification does not relieve the permittee of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

This General Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This General Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and does not create any prescriptive right or any right of priority regarding any usage of water. This General Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this General Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

Upon the presentation of proper credentials, DWR may inspect the property.

This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this General Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes the corresponding Nationwide Permit or when deemed appropriate by the Director of the Division of Water Resources.

Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

I. ACTIVITY SPECIFIC CONDITIONS:

1. For all dam removal projects meeting the definition under G.S. 143-215.25 and requirements under G.S. 143-215.27 of a professionally supervised dam removal, the applicant shall provide documentation that any sediment that may be released has similar or lower level of contamination than sediment sampled from downstream of the dam in accordance with Session Law 2017-145.

   Citation: 15A NCAC 02H .0506; 15A NCAC 02H .0507(c); 15A NCAC 02B .0200; 15A NCAC02B .0502
   Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. In determining that the proposed activity will comply with state water quality standards (including designated uses, numeric criteria, narrative criteria, and the state's antidegradation policy), the Division must evaluate if the activity has avoided and minimized impacts to waters, would cause or contribute to a violation of standards or would result in secondary or cumulative impacts.

II. GENERAL CONDITIONS:

1. The permittee shall report to the DWR Regional Office any noncompliance with, and/or any violation of, stream or wetland standards [15A NCAC 02B .0200], including but not limited to sediment impacts to streams or wetlands. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the permittee became aware of the non-compliance circumstances.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
   Justification: Timely reporting of non-compliance is important in identifying and minimizing detrimental impacts to water quality and avoiding impacts due to water pollution that precludes any best use on a short-term or long-term basis.

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts); or beyond the thresholds established for use of this General Certification and Nationwide Permit.

   Citation: 15A NCAC 02H .0506; 15A NCAC 02H .0507(c)
   Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule (including, at minimum: aquatic life propagation, survival, and maintenance of biological integrity; wildlife; secondary contact recreation;

agriculture); and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis.

3. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2B of Title 15A in the North Carolina Administrative Code.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
   Justification: The referenced Riparian Buffer rules were adopted to address water quality impairments and further protect existing uses.

4. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur.

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *North Caroline Department of Transportation Sediment and Erosion Control Manual*.

   All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

   For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

   If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

   Citation: 15A NCAC 02H .0506(b)(2); 15A NCAC 02H .0507(c); 15A NCAC02B .0200; 15A NCAC 02B .0231
   Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses; and (12) turbidity in the receiving water shall not exceed 50

Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes, or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased. As cited in Wetland Standards: (1) Liquids, fill or other solids, or dissolved gases shall not be present in amounts that may cause adverse impacts on existing wetland uses; and (3) Materials producing color or odor shall not be present in amounts that may cause adverse impacts on existing wetland uses.

5. Sediment and erosion control measures shall not be installed in wetland or waters except within the footprint of temporary or permanent impacts otherwise authorized by this Certification. If placed within authorized impact areas, then placement of such measures shall not be conducted in a manner that results in dis-equilibrium of any wetlands, streambeds, or streambanks. Any silt fence installed within wetlands shall be removed from wetlands and the natural grade restored within two (2) months of the date that DEMLR or locally delegated program has released the specific area within the project to ensure wetland standards are maintained upon completion of the project.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC02B .0200; 15A NCAC 02B .0231
   Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses; and (12) turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes, or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased. As cited in Wetland Standards: (1) Liquids, fill or other solids, or dissolved gases shall not be present in amounts that may cause adverse impacts on existing wetland uses; and (3) Materials producing color or odor shall not be present in amounts that may cause adverse impacts on existing wetland uses.

6. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
   Justification: A project that affects waters shall not be permitted unless the existing uses (including aquatic life propagation and biological integrity), and the water quality to protect such uses, are protected. Protections are necessary to ensure any remaining surface waters or wetlands, and any surface waters or wetlands downstream, continue to support existing uses during and after project completion. The Division must evaluate if the activity has

avoided and minimized impacts to waters, would cause or contribute to a violation of standards, or would result in secondary or cumulative impacts.

7. If the project is covered by NPDES Construction Stormwater Permit Number NCG010000 or NPDES Construction Stormwater Permit Number NCG250000, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required.

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their Individual NPDES Stormwater Permit Number NCS000250.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200; 15A NCAC 02B .0231
   Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses; and (12) turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes, or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased. As cited in Wetland Standards: (1) Liquids, fill or other solids, or dissolved gases shall not be present in amounts that may cause adverse impacts on existing wetland uses; and (3) Materials producing color or odor shall not be present in amounts that may cause adverse impacts on existing wetland uses.

8. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC Department of Transportation Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200
   Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses; and (12) turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU

in streams, lakes, or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased.

9. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities.

   All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium.

   Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

   Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 04B .0125
   Justification: In order to protect against impairment of water quality standards and best usage of receiving and downstream waters, water quality based management practices must be employed to protect against direct or indirect discharge of waste or other sources of water pollution. Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule (including, at minimum: aquatic life propagation, survival, and maintenance of biological integrity, wildlife, secondary contact recreation, agriculture), and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis.

10. In-stream structures installed to mimic natural channel geomorphology such as cross-vanes, sills, step-pool structures, etc. shall be designed and installed in such a manner that allow for continued aquatic life movement.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. Ensuring that in-stream structures are installed properly will ensure that surface water quality standards are met and conditions of waters are suitable for all best uses.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be

such as to pass the average historical low flow and spring flow without adversely altering flow velocity. If the width of the culvert is wider than the stream channel, the culvert shall include multiple boxes/pipes, baffles, benches and/or sills to maintain the natural width of the stream channel. If multiple culverts/pipes/barrels are used, low flows shall be accommodated in one culvert/pipe and additional culverts/pipes shall be installed such that they receive only flows above bankfull.

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life. If the culvert outlet is submerged within a pool or scour hole and designed to provide for aquatic passage, then culvert burial into the streambed is not required.

For structures less than 72" in diameter/width, and topographic constraints indicate culvert slopes of greater than 2.5% culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross-vanes, sills, baffles etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 30 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required, provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 30 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. Ensuring that in-stream structures are installed properly will ensure that surface water quality standards are met and conditions of waters are suitable for all best uses.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. Ensuring that in-stream structures are installed properly will ensure that surface water quality standards are met and conditions of waters are suitable for all best uses.

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters.

    Citation: 15A 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0231
    Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses.

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state.

    Citation: 15A 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200
    Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses.

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross-sectional dimensions, planform pattern, and longitudinal bed profile. All temporarily impacted sites shall be restored and stabilized with native vegetation.

Citation: 15A NCAC 02H.0506(b); 15A NCAC 02H .0507(c)
Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Protections are necessary to ensure any remaining surface waters or wetlands, and any surface waters or wetlands downstream, continue to support existing uses after project completion.

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this General Certification.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. Ensuring that in-stream structures are installed properly will ensure that surface water quality standards are met and conditions of waters are suitable for all best uses.

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original streambed elevation and streambank contours are restored and maintained and shall consist of clean rock or masonry material free of debris or toxic pollutants. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or be installed in a manner that precludes aquatic life passage.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. The Division must evaluate if the activity has avoided and minimized impacts to waters, would cause or contribute to a violation of standards, or would result in secondary or cumulative impacts.

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows, and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0201
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. The Division must evaluate if

the activity has avoided and minimized impacts to waters, would cause or contribute to a violation of standards, or would result in secondary or cumulative impacts.

19. Rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

    Citation: 15A NCAC 02H .0507(c); 15A NCAC 07H .1400 et seq.
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. The Division must evaluate if the activity has avoided and minimized impacts to waters, would cause or contribute to a violation of standards, or would result in secondary or cumulative impacts.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication, and general equipment maintenance shall be performed in a manner to prevent, to the maximum extent practicable, contamination of surface waters by fuels and oils.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0200
    Justification: A project that affects waters shall not be permitted unless the existing uses, and the water quality to protect such uses, are protected. Activities must not cause water pollution that precludes any best use on a short-term or long-term basis. As cited in Stream Standards: (2) Oils, deleterious substances, or colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses.

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance and compaction.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0231
    Justification: Wetland standards require maintenance or enhancement of existing uses of wetlands such that hydrologic conditions necessary to support natural biological and physical characteristics are protected; populations of wetland flora and fauna are maintained to protect biological integrity of the wetland; and materials or substances are not present in amounts that may cause adverse impact on existing wetland uses.

22. In accordance with 143-215.85(b), the permittee shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

    Citation: 15A NCAC 02H .0507(c); N.C.G.S 143-215.85(b)

Justification: Person(s) owning or having control over oil or other substances upon notice of discharge must immediately notify the Department, or any of its agents or employees, of the nature, location, and time of the discharge and of the measures which are being taken or are proposed to be taken to contain and remove the discharge. This action is required in order to contain or divert the substances to prevent entry into the surface waters. Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule (including, at minimum: aquatic life propagation, survival, and maintenance of biological integrity; wildlife; secondary contact recreation; agriculture); and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis.

23. The permittee and their authorized agents shall conduct all 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.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
    Justification: Surface water quality standards require that conditions of waters be suitable for all best uses provided for in state rule, and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis. The Division must evaluate if the activity has avoided and minimized impacts to waters, would cause or contribute to a violation of standards, or would result in secondary or cumulative impacts.

24. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this General Certification. A copy of this General Certification shall be available at the project site during the construction and maintenance of this project.

    Citation: 15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c)
    Justification: Those actually performing the work should be aware of the requirements of this 401 Water Quality General Certification to minimize water quality impacts.

History Note: Water Quality Certification (WQC) Number 4245 issued December 18, 2020 replaces WQC 4134 issued December 1, 2017 for activities eligible for USACE NWP13; WQC 4087 issued March 3, 2017; WQC 3885 issued March 19, 2012; WQC 3689 issued November 1, 2007; WQC 3626 issued March 19, 2007; WQC 3495 issued December 31, 2004; and WQC 3399 issued March 2003.

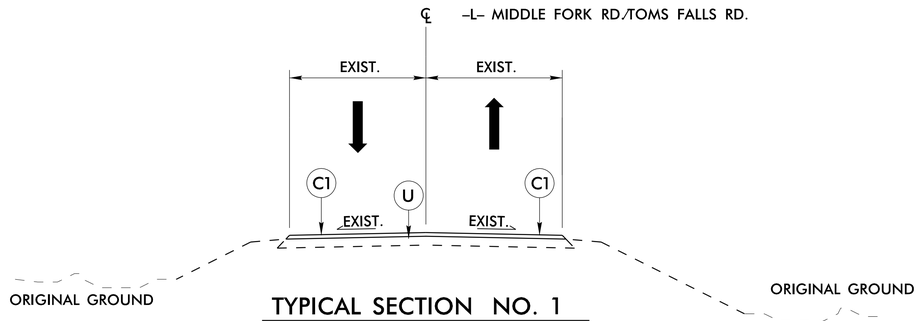
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5/14/99

FINAL PAVEMENT SCHEDULE

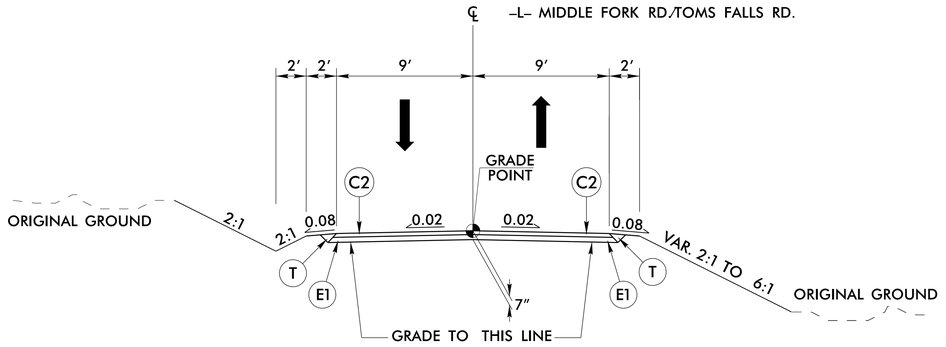
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
J1	PROP. 8" AGGREGATE BASE COURSE.
R1	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE



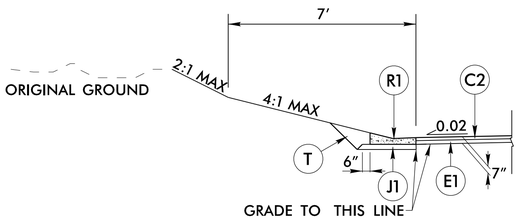
TYPICAL SECTION NO. 1

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–L– STA. 104+00.00 TO –L– STA. 105+80.00



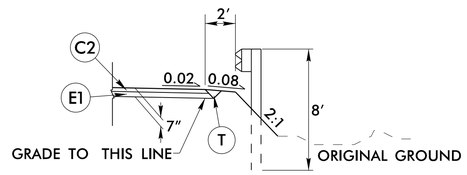
TYPICAL SECTION NO. 2

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–L– STA. 79+00.00 TO –L– STA. 82+50.00
–L– STA. 85+00.00 TO –L– STA. 104+00.00
–L– STA. 105+80.00 TO –L– STA. 116+15.00



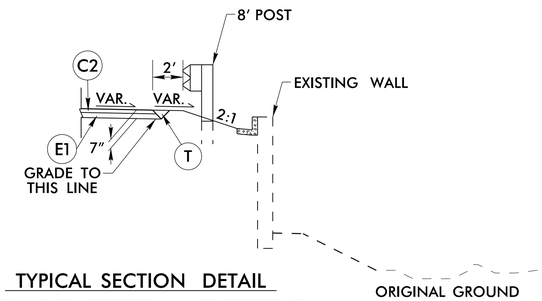
TYPICAL SECTION DETAIL

SHOULDER SECTION WITH EXPRESSWAY GUTTER
SEE PLANS FOR LOCATIONS



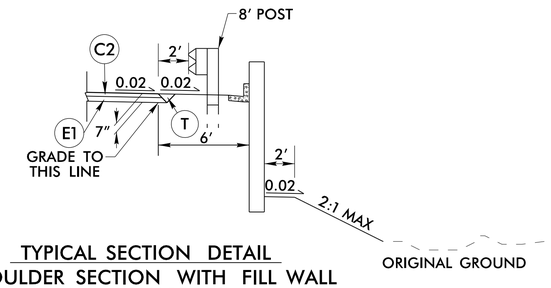
TYPICAL SECTION DETAIL

8′ GUARDRAIL POST ON 2:1 SLOPE
SEE PLANS FOR LOCATIONS



TYPICAL SECTION DETAIL

SHOULDER SECTION AT EXISTING
RETAINING WALL LOCATIONS
SEE PLANS FOR LOCATIONS



TYPICAL SECTION DETAIL

SHOULDER SECTION WITH FILL WALL
AND GUARDRAIL
SEE PLANS FOR LOCATIONS

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040867 ENGINEER ALLISON C. URBAN
6/11/2025

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039464 ENGINEER JOSEPH T. HOLLAND
6/11/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

11-JUN-2025 10:34
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GEOTECHNICAL ENGINEER

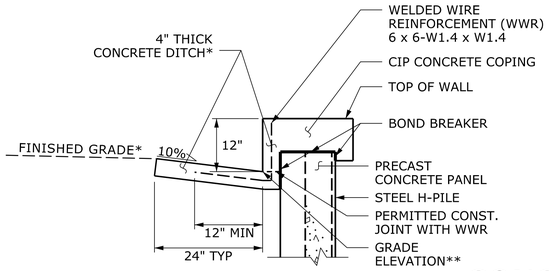
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042642 ROBERT E. KRAL

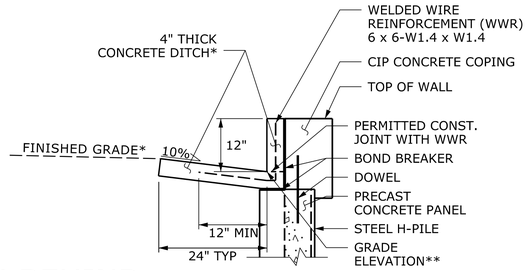
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ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



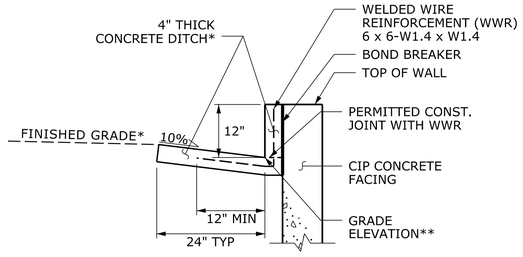


CONCRETE DITCH BEHIND WALL WITH PRECAST PANEL

*SEE ROADWAY PLANS FOR CONCRETE DITCH AND FINISHED GRADE DETAILS.
**SEE WALL ENVELOPE FOR GRADE ELEVATIONS.

TOTAL STRUCTURE QUANTITIES - CONTRACTORS OPTION SHOULDER BUILD-OUT RW08A	
NO. 8A RETAINING WALL	810 SF
NO. 8A MICROPILE LEVELING COURSE	86 LN FT

TOTAL STRUCTURE QUANTITIES - CONTRACTORS OPTION SHOULDER BUILD-OUT RW08B	
NO. 8B RETAINING WALL	4,620 SF
NO. 8A MICROPILE LEVELING COURSE	335 LN FT



CONCRETE DITCH BEHIND WALL WITH CONCRETE FACING

*SEE ROADWAY PLANS FOR CONCRETE DITCH AND FINISHED GRADE DETAILS.
**SEE WALL ENVELOPE FOR GRADE ELEVATIONS.

PROJECT NO.: DF18314.2045378

HENDERSON COUNTY

RETAINING WALL RW08A: -RW08A- STA. 10+00.00 TO 10+85.02

RETAINING WALL RW08B: -RW08B- STA. 10+00.00 TO 13+34.28

SHEET 7 OF 7

PREPARED BY: KND	DATE: 06/25
REVIEWED BY: REK	DATE: 06/25

Prepared in the Office of:

CAROLINAS GEOTECHNICAL GROUP

1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

SITE 8 RETAINING WALLS
RW08A AND RW08B
SOLDIER PILE RETAINING WALLS

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	REK	07/25	3		
2	KND	07/25	4		

SHEET NO. W-15

Docusign Envelope ID: A3B6E046-98F2-491E-BFCE-2354DA844DB1

09/08/99

TIP PROJECT: DF18314.2045377

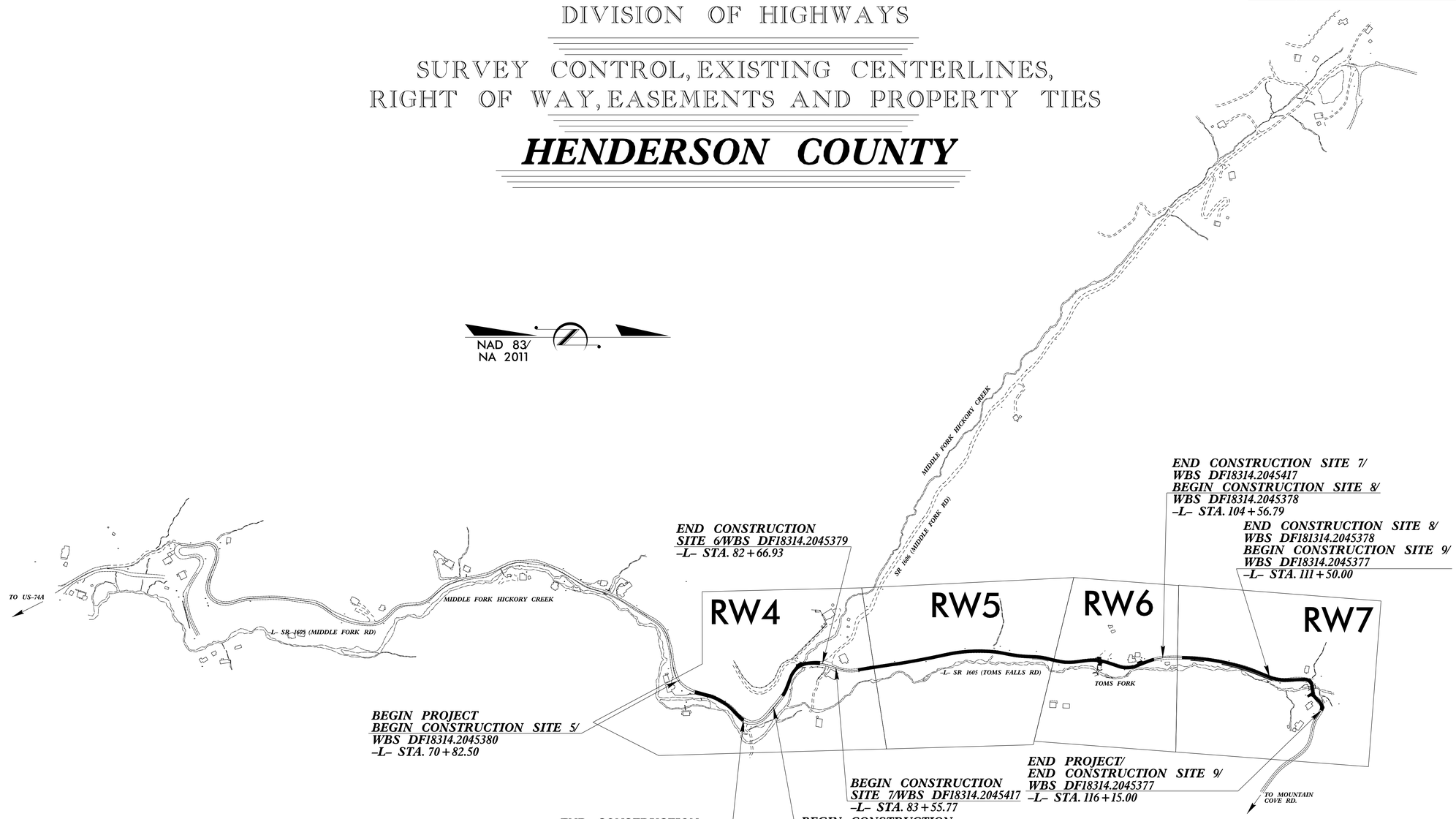
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2045377	RW01	7

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

HENDERSON COUNTY

NAD 83/
NA 2011



GRAPHIC SCALE

50 25 0 50 100
PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "WR-GPS1" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 635,261.425(ft) EASTING: 1,020,928.413(ft) ELEVATION: 1,534.62(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99981006 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "WR-GPS1" TO -L- STATION 70+82.50 IS N 32°14'27" W 9159.49(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
04/22/2025	*07/22/2025*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR DAVID LEE II

DocuSigned by:
SIGNATURE: 6/30/2025 Date:
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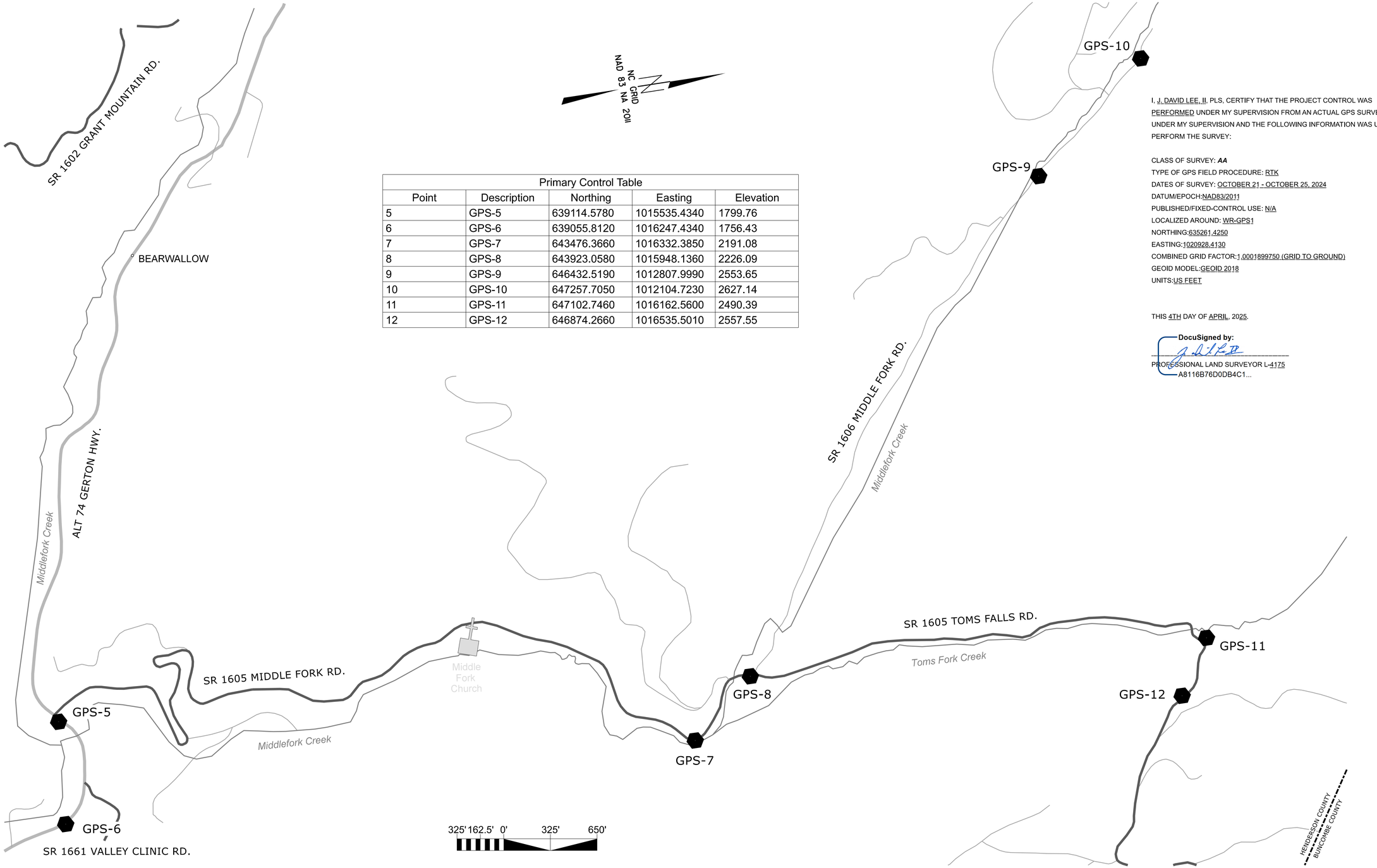
STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

30-JUN-2025 09:14
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ckohn AT COREYKOHNLE

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5/26/20

PRIMARY SURVEY CONTROL SHEET



Primary Control Table				
Point	Description	Northing	Easting	Elevation
5	GPS-5	639114.5780	1015535.4340	1799.76
6	GPS-6	639055.8120	1016247.4340	1756.43
7	GPS-7	643476.3660	1016332.3850	2191.08
8	GPS-8	643923.0580	1015948.1360	2226.09
9	GPS-9	646432.5190	1012807.9990	2553.65
10	GPS-10	647257.7050	1012104.7230	2627.14
11	GPS-11	647102.7460	1016162.5600	2490.39
12	GPS-12	646874.2660	1016535.5010	2557.55

I, J. DAVID LEE, II, PLS, CERTIFY THAT THE PROJECT CONTROL WAS PERFORMED UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

CLASS OF SURVEY: ***AA***
TYPE OF GPS FIELD PROCEDURE: RTK
DATES OF SURVEY: OCTOBER 21 - OCTOBER 25, 2024
DATUM/EPOCH:NAD83/2011
PUBLISHED/FIXED-CONTROL USE: N/A
LOCALIZED AROUND: WR-GPS1
NORTHING:635261.4250
EASTING:1020928.4130
COMBINED GRID FACTOR:1.0001899750 (GRID TO GROUND)
GEOID MODEL:GEOID 2018
UNITS:US FEET

THIS 4TH DAY OF APRIL, 2025.

DocuSigned by:
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...

NOTES:

1. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

GERTON_MF_TF
R/W | 02C-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL
350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: 485FABE0-5131-42AF-8120-2711C7B279F4

5/26/20

SECONDARY SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

SEE SHEET RW02C-12 & 13
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

NC GRID
NAD 83 NA 2011

START

-EL-

-ELMF-
N34°02'21"W
112.04'

-ELMF-
N15°29'44"E
91.87'

-ELMF-
N02°02'29"E
117.84'

-ELMF-
N72°45'21"E
257.37'

-ELMF-
N80°20'46"E
46.52'

-ELMF-
S63°28'19"W
75.15'

-ELMF-
S07°34'48"E
61.40'

-ELMF-
N04°53'16"E
51.31'

-ELMF-
N12°52'59"W
51.92'

-ELMF-
S68°16'59"E
86.20'

-ELMF-
N59°15'50"W
153.29'

-ELMF-
N17°04'58"W
49.29'

BY7-1

BL-101
(REMOVED)

BL-102

BL-103

LEGACY LANE, DR, IT GRAVEL

SR 1605 MIDDLE FORK RD 2F BST

TIMBER WALL

PC
PT
PCC
JS
ST

MATCH LINE -ELMF- STA 38+57.51 SEE SHEET RW02C-3

50' 25' 0' 50' 100'

NOTES:

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THIS 4TH DAY OF APRIL, 2025.

DocuSigned by:
J. David Lee II
A8116B76D0DB4C1...

PROFESSIONAL LAND SURVEYOR L-4175

GERTON_MF_TF
R/W 02C-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II
4/4/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: GERTON_MF_TF

County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL
350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: 685769FD-FDF8-4B5D-A3E2-9DDBA8CB3577

5/26/20

SECONDARY SURVEY CONTROL SHEET

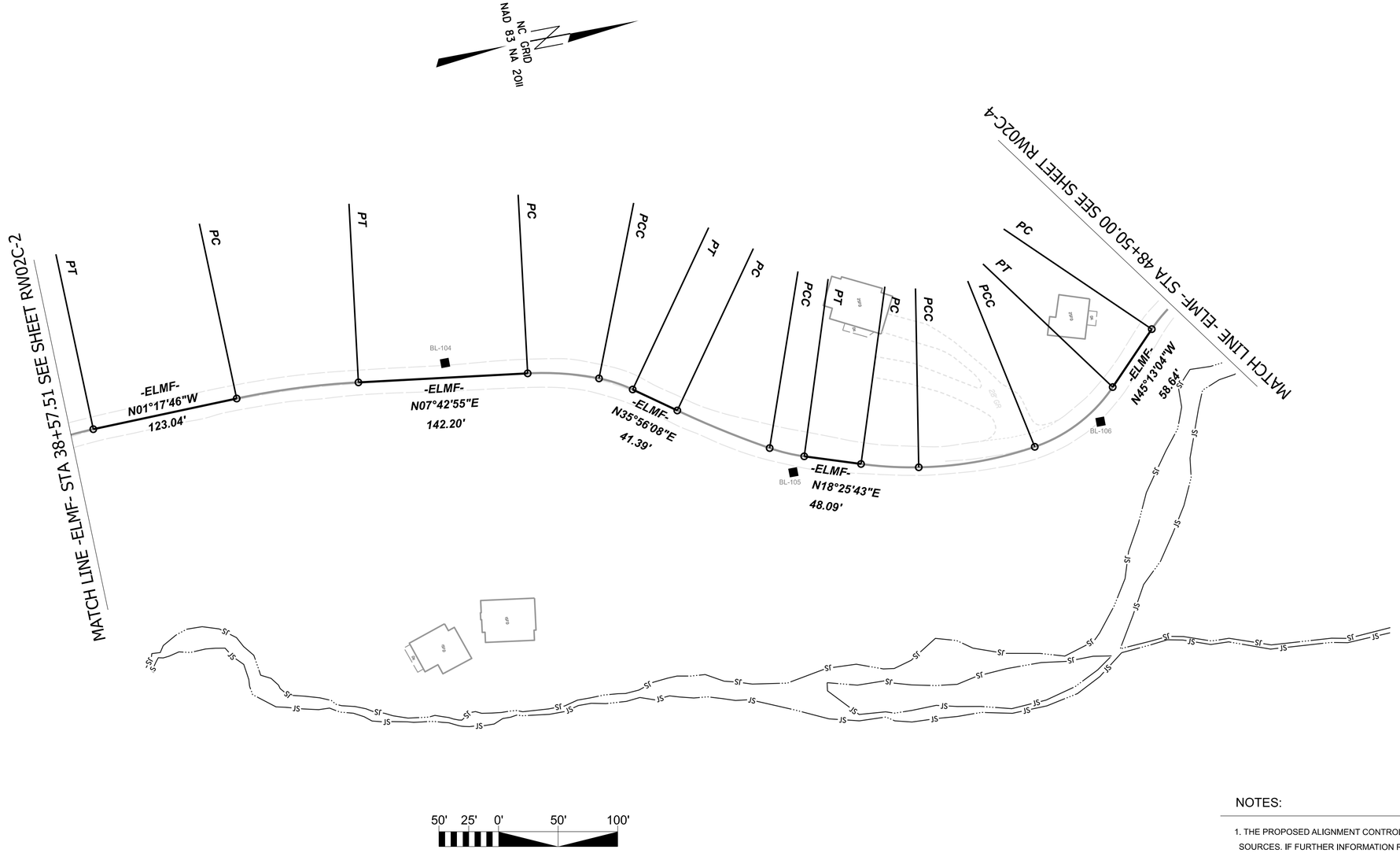
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

SEE SHEET RW02C-12 & 13
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

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THIS 4TH DAY OF APRIL, 2025.

DocuSigned by:
J. David Lee II
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...



NOTES:

1. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

GERTON_MF_TF

R/W | 02C-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II 4/7/2025

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*

County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL
350 PEE DEE AVE., SUITE 202
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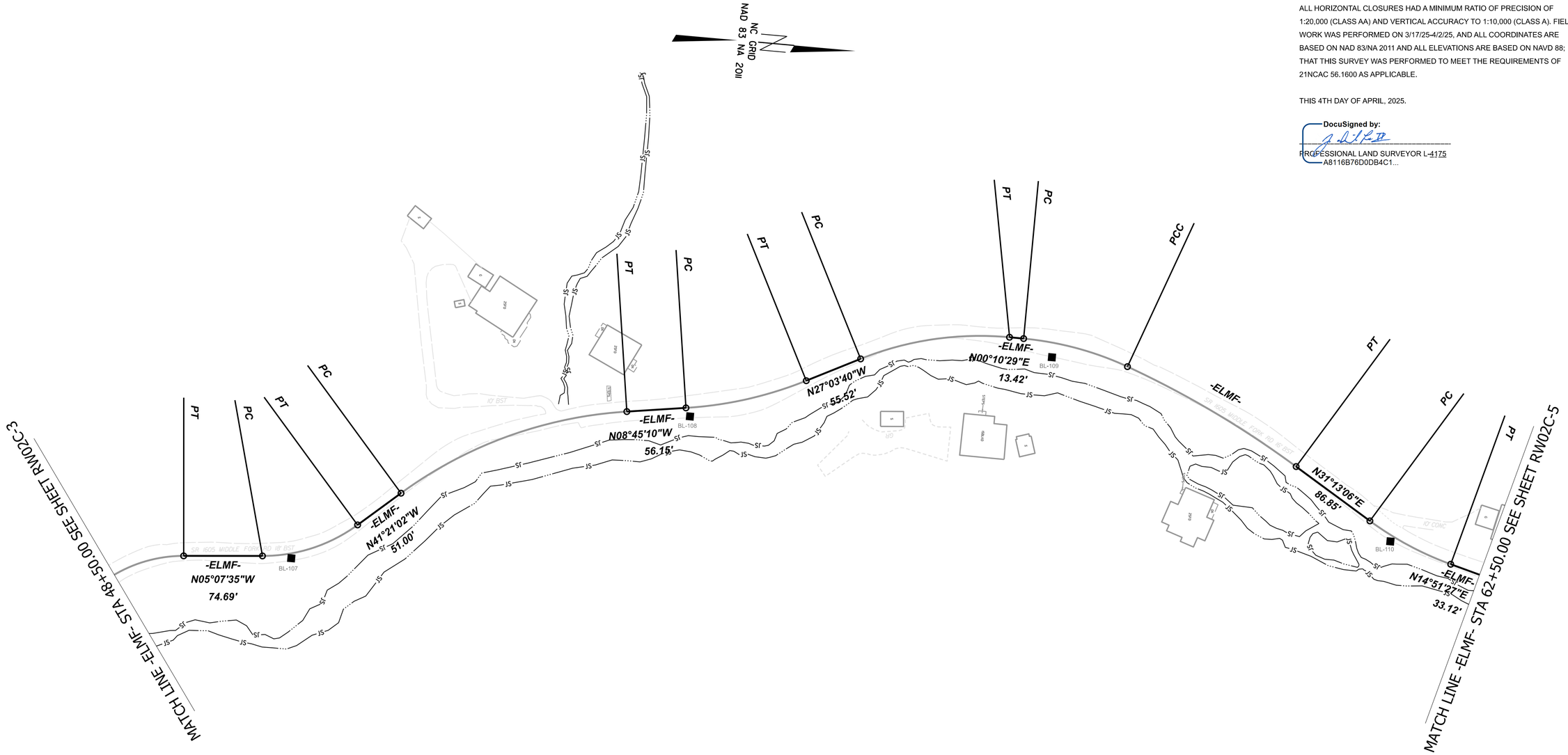
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5/26/20

SECONDARY SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

SEE SHEET RW02C-12 & 13
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS



50' 25' 0' 50' 100'

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THIS 4TH DAY OF APRIL, 2025.

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PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...

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GERTON_MF_TF

R/W | 02C-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II 4/7/2025

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

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350 PEE DEE AVE., SUITE 202
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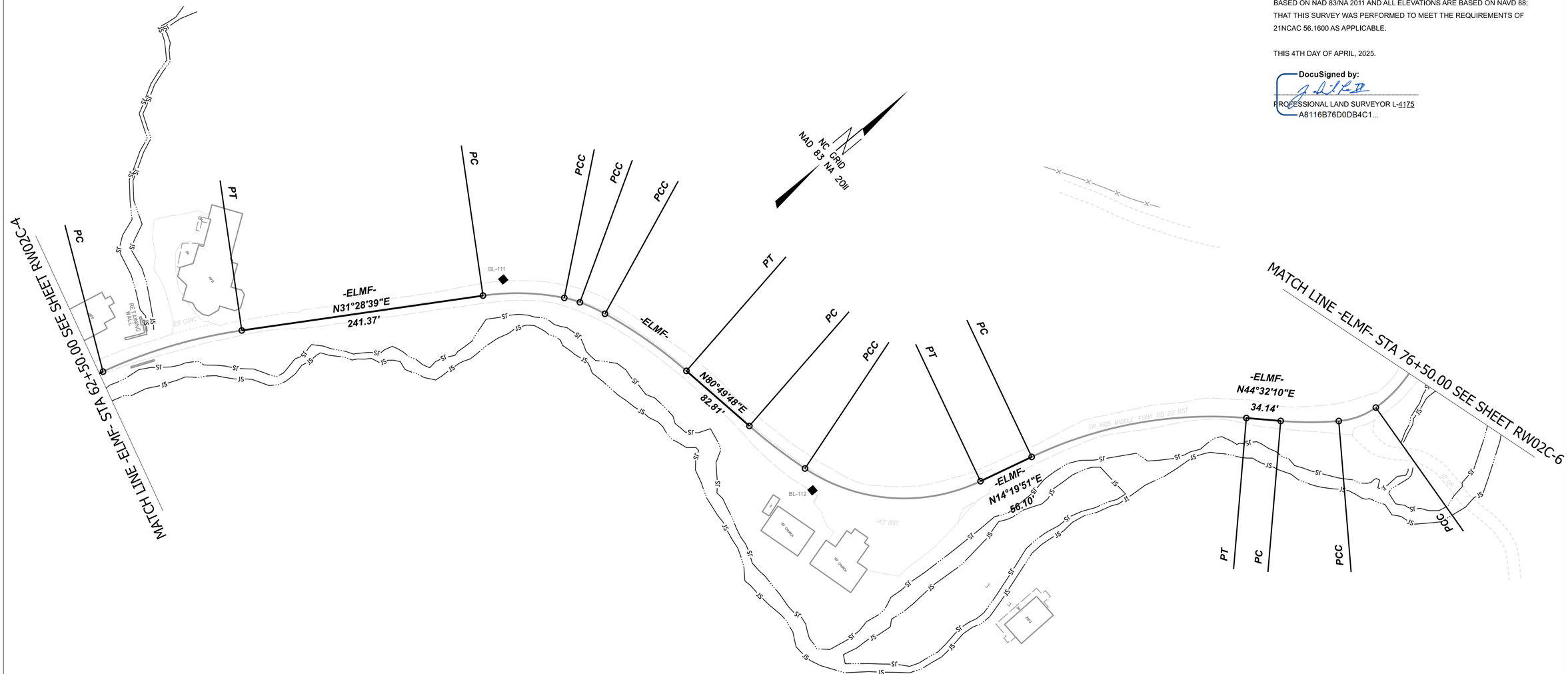
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5/26/20

SECONDARY SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

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DocuSigned by:
J. David Lee II
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...

GERTON_MF_TF
R/W | 02C-5

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

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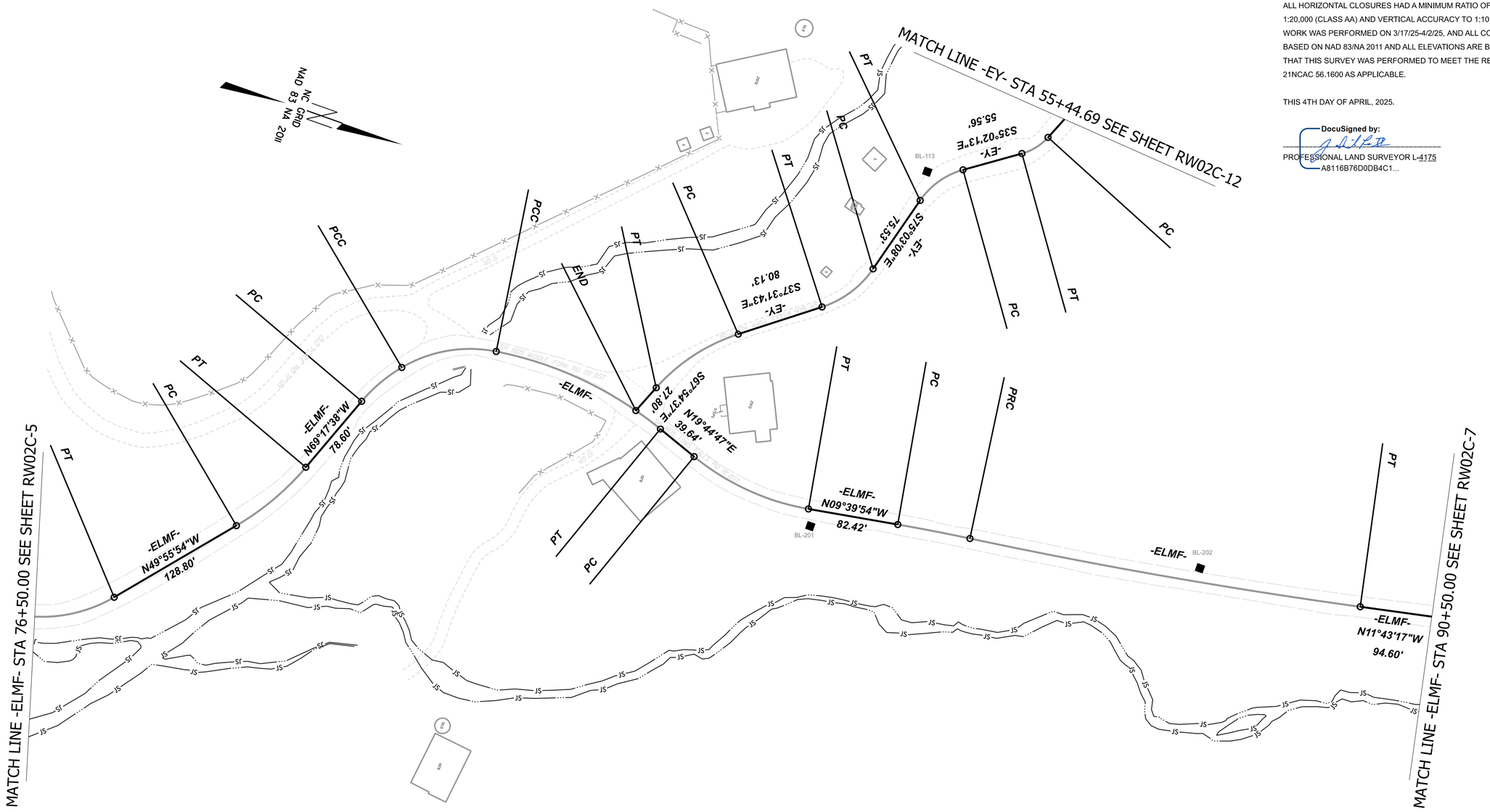
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5/26/20

SECONDARY SURVEY CONTROL SHEET

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THIS 4TH DAY OF APRIL, 2025.

DocuSigned by:
J. David Lee II
A8116B76D0DB4C1...

PROFESSIONAL LAND SURVEYOR L-4175

NOTES:

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GERTON_MF_TF

R/W | 02C-6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II 4/4/2025

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL
350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

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5/26/20

SEE SHEET RW02C-12 & 13
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

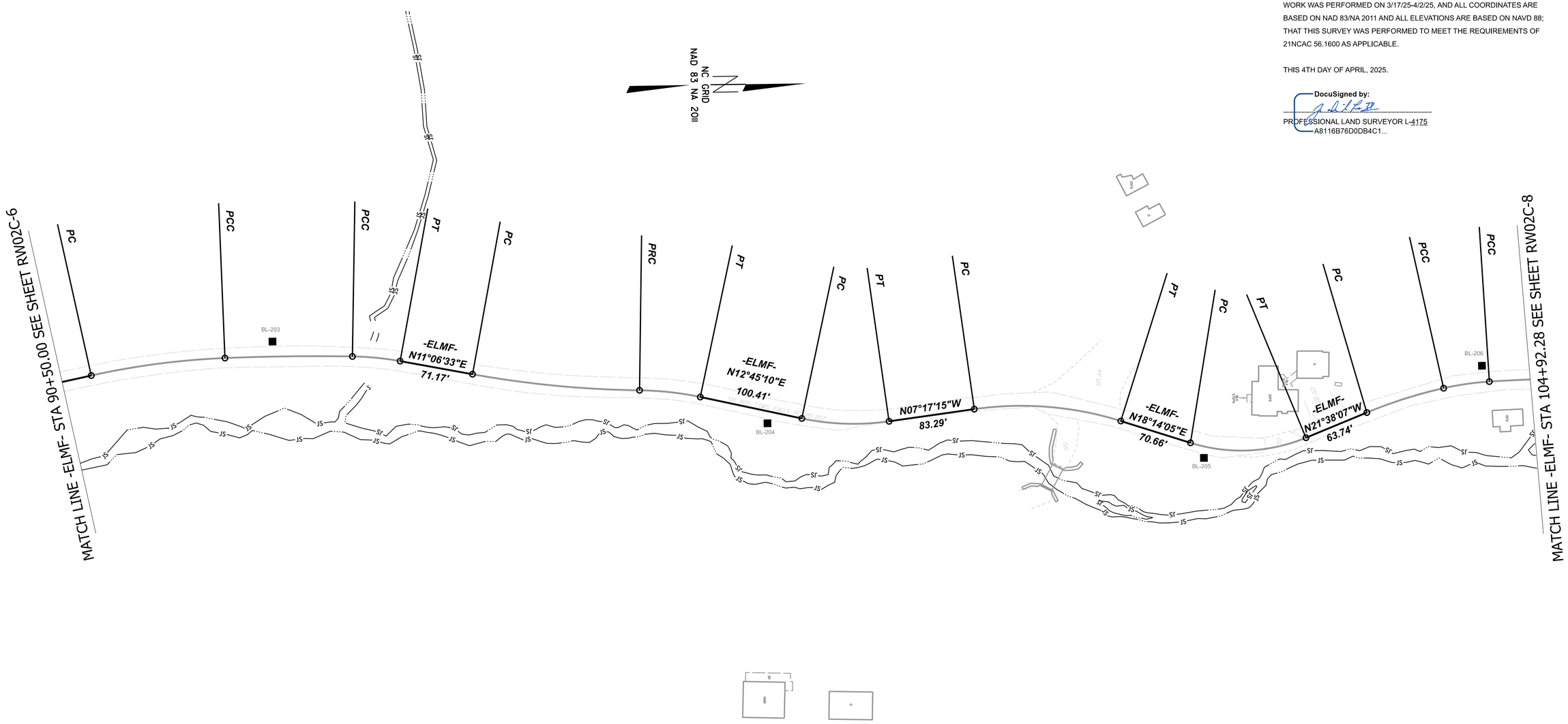
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J. DAVID LEE II
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...



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GERTON_MF_TF

R/W | 02C-7

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II 4/4/2025

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*

County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL

350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: 897B0372-6889-4D0D-BEA4-DB700CF6EB43

5/26/20

SEE SHEET RW02C-12 & 13
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

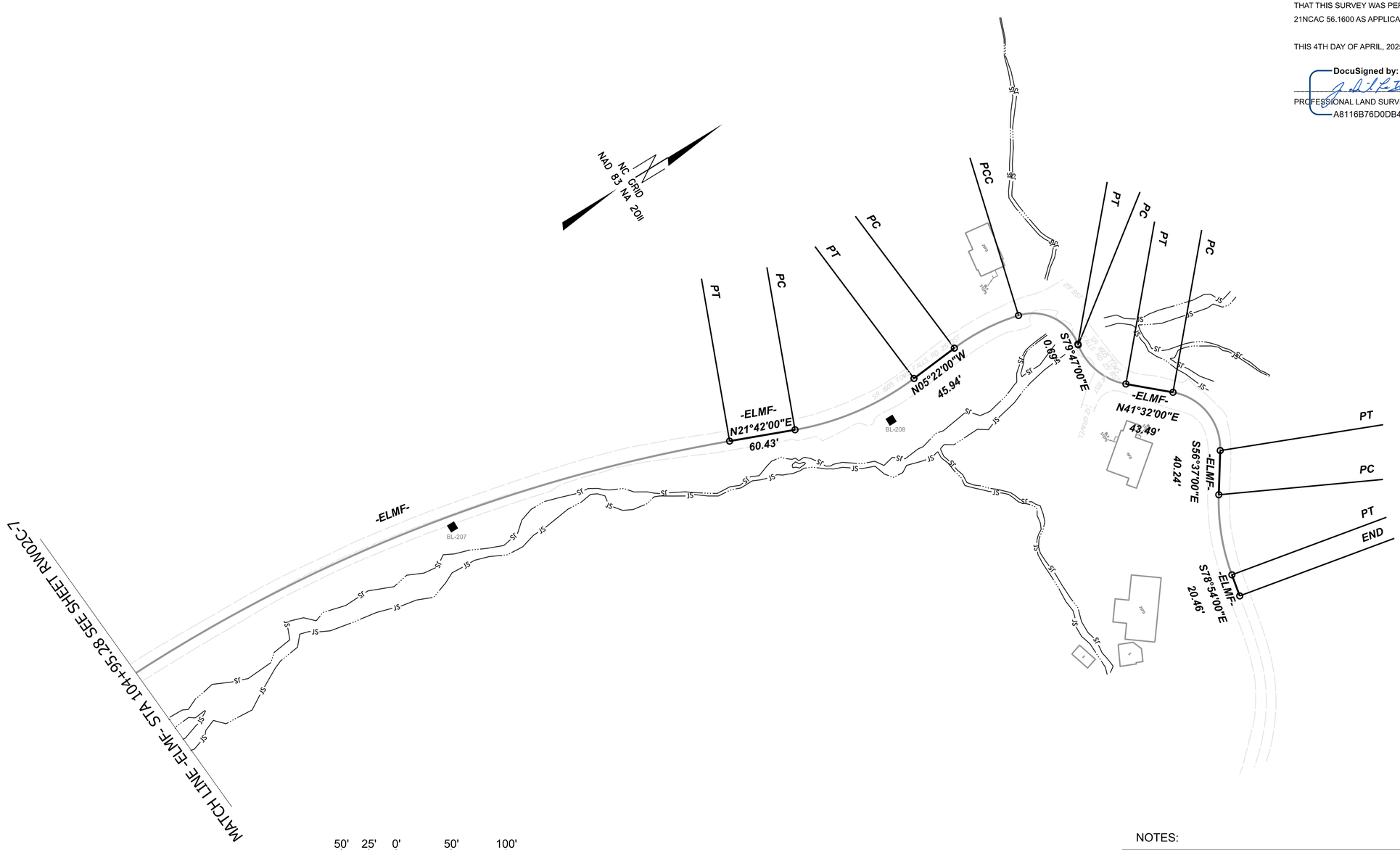
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A8116B76D0DB4C1...



NOTES:

1. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

GERTON_MF_TF

R/W | 02C-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II 4/4/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL
350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: 25B695A2-5605-4A53-8C94-99B646D8DBFB

5/26/20

SECONDARY SURVEY CONTROL SHEET

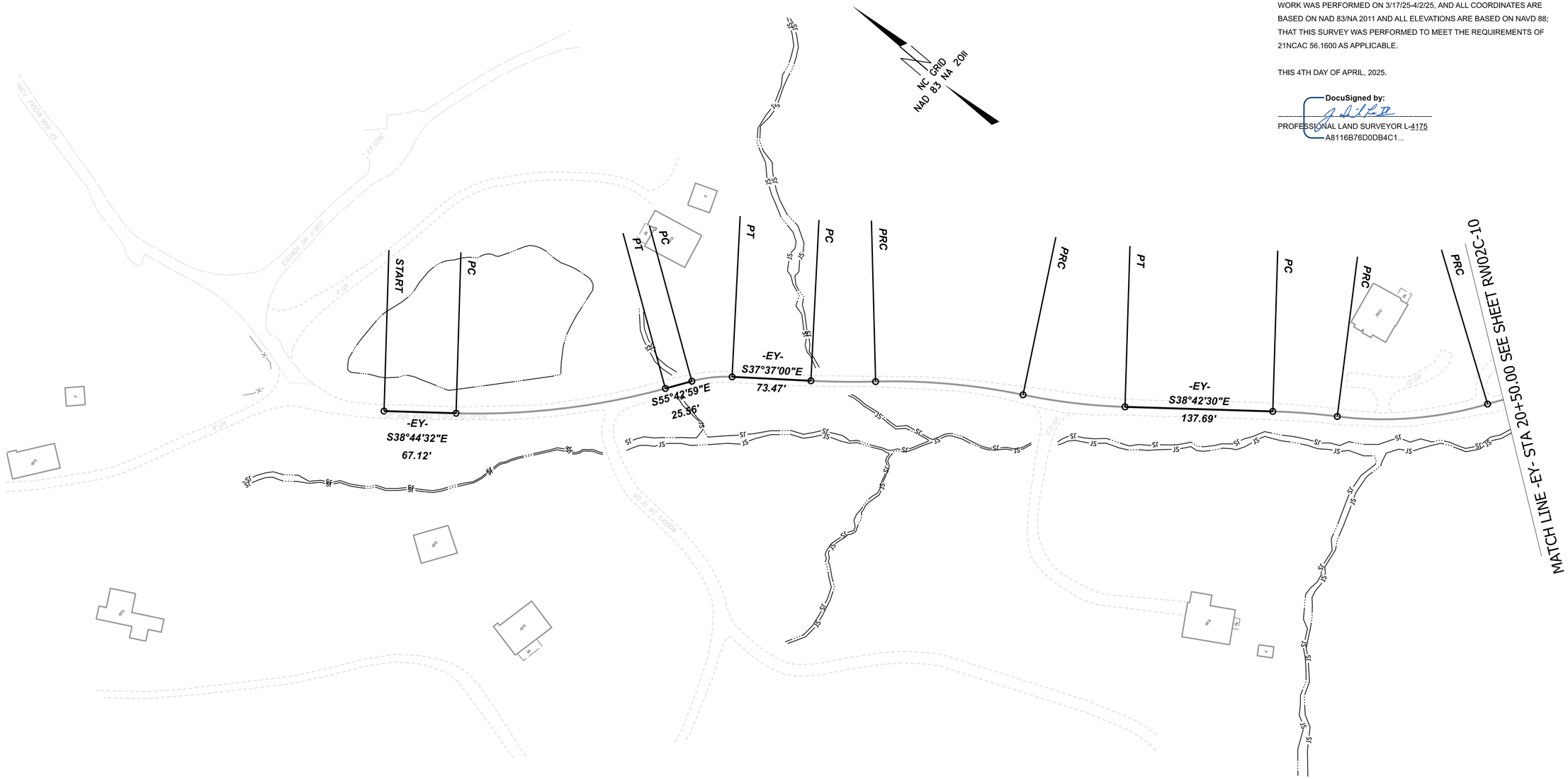
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

SEE SHEET RW02C-12 & 13
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

I, J. DAVID, LEE, II, PLS, CERTIFY THAT THE SECONDARY BASELINE CONTROL FOR THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:20,000 (CLASS AA) AND VERTICAL ACCURACY TO 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED ON 3/17/25-4/2/25, AND ALL COORDINATES ARE BASED ON NAD 83/NA 2011 AND ALL ELEVATIONS ARE BASED ON NAVD 88; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 4TH DAY OF APRIL, 2025.

DocuSigned by:
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...



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GERTON_MF_TF

R/W | 02C-9

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*

County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL
350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: 5B40E36B-111C-4113-9FFD-35A00281B2AB

5/26/20

SECONDARY SURVEY CONTROL SHEET

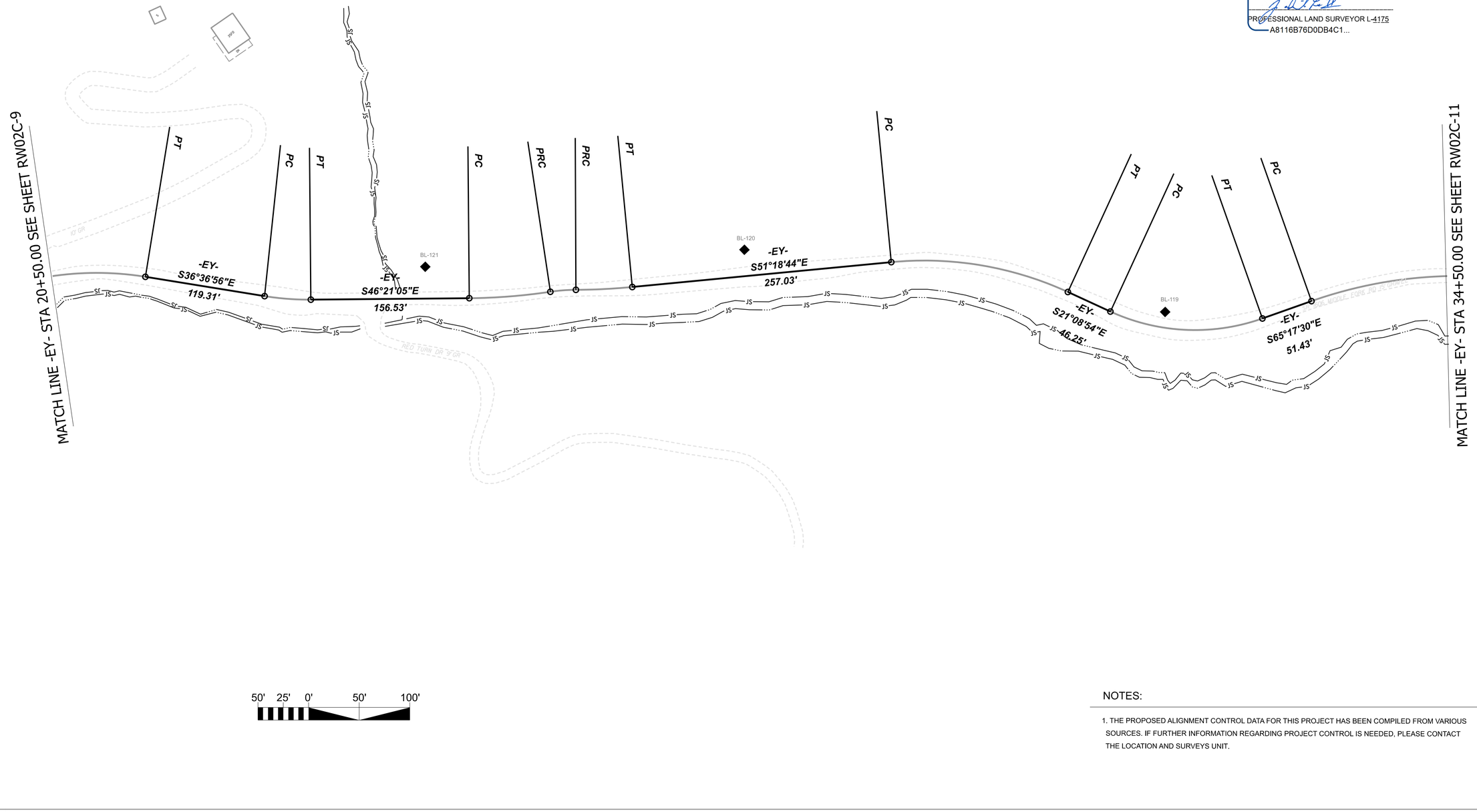
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THIS 4TH DAY OF APRIL, 2025.

DocuSigned by:
J. David Lee II
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...



50' 25' 0' 50' 100'

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GERTON_MF_TF
R/W | 02C-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II 4/7/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

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350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
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Docusign Envelope ID: E34E9D50-F12D-4CA1-BC5E-84BBF241C8A6

5/26/20

SECONDARY SURVEY CONTROL SHEET

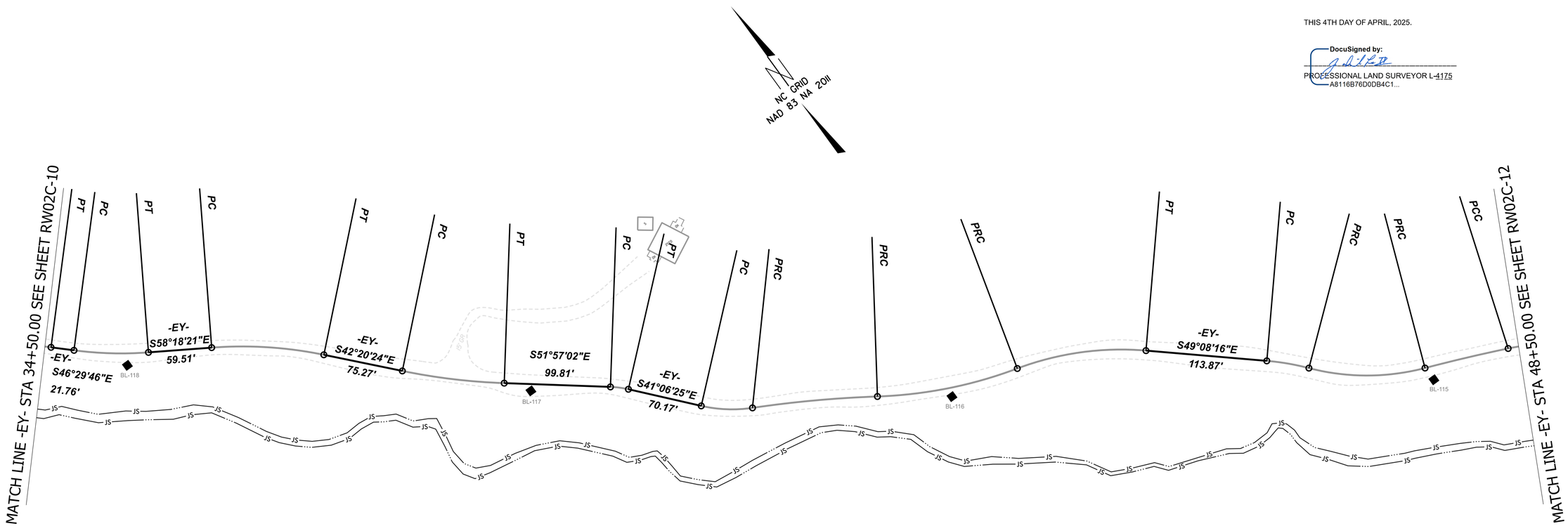
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A8116B76D0DB4C1...



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GERTON_MF_TF

R/W | 02C-11

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

SEAL L-4175 — NORTH CAROLINA PROFESSIONAL LAND SURVEYOR — J. DAVID LEE II — 4/4/2025

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*

County: Henderson

PREPARED FOR

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350 PEE DEE AVE., SUITE 202
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Docusign Envelope ID: 7ADF3EB9-A730-432B-B0D5-7EE86B7F7579

5/26/20

SECONDARY SURVEY CONTROL SHEET

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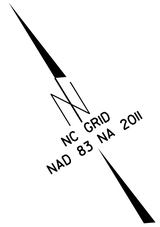
SEE SHEET RW02C-13
FOR FURTHER ALIGNMENT
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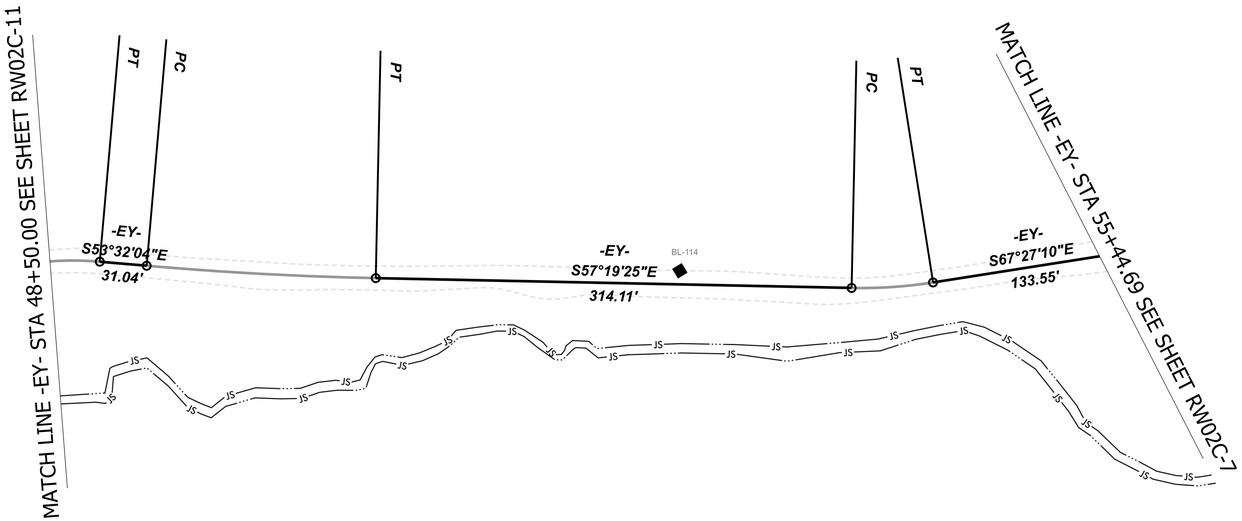
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A314
RW02C-13
Y-402

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J. David Lee II
PROFESSIONAL LAND SURVEYOR L-4175
A8116B76D0DB4C1...





Baseline Points Table					
Points	Description	Northing	Easting	Elevation	
100	BY7-1	639375.1250	1015346.2120	1798.33	
101	BL-101	639811.4860	1015215.4180	0.00	REMOVED BY PROPERTY OWNER BEFORE LEVELED
102	BL-102	640092.1620	1015178.7980	1899.66	
103	BL-103	640032.0640	1015542.6400	1922.94	
104	BL-104	640615.3870	1015521.6790	1968.95	
105	BL-105	640885.4370	1015666.2980	2002.11	
106	BL-106	641146.5250	1015672.7910	2037.73	
107	BL-107	641385.2110	1015559.9020	2051.54	
108	BL-108	641749.4690	1015391.9050	2070.63	
109	BL-109	642086.0430	1015305.0930	2088.64	
110	BL-110	642421.2750	1015450.0780	2102.11	
111	BL-111	642875.4000	1015657.8630	2133.41	
112	BL-112	642977.8790	1016014.0370	2152.69	
113	BL-113	644135.6380	1015649.3840	2262.44	
114	BL-114	644373.7610	1015321.4460	2300.18	
115	BL-115	644617.7000	1014887.5530	2345.10	
116	BL-116	644870.9900	1014512.2000	2378.26	
117	BL-117	645107.8300	1014195.6280	2421.23	
118	BL-118	645350.0090	1013903.2420	2461.02	
119	BL-119	645578.6120	1013626.4470	2492.73	
120	BL-120	645912.3100	1013371.1360	2510.15	
121	BL-121	646119.9610	1013133.3090	2526.79	
201	BL-201	644143.3330	1015988.7500	2246.42	
202	BL-202	644490.0380	1015906.1320	2278.70	
203	BL-203	644907.5310	1015840.8800	2308.17	
204	BL-204	645365.2960	1015927.0230	2345.76	
205	BL-205	645807.0370	1015966.7010	2377.21	
206	BL-206	646077.3440	1015881.4450	2401.57	
207	BL-207	646438.7900	1015932.7220	2431.43	
208	BL-208	646829.6990	1016058.5350	2460.46	

50' 25' 0' 50' 100'

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GERTON_MF_TF
R/W | 02C-12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE II
4/4/2025

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2024 STANDARD SPECIFICATIONS

TIP PROJECT: GERTON_MF_TF
County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

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Wadelynn GEOSPATIAL

350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: A6B50B4B-A1D8-4407-96DE-43525768B314

5/26/20

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SECONDARY SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

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DocuSigned by:

PROFESSIONAL LAND SURVEYOR L-4175

A8116B76D0DB4C1...

EXISTING ALIGNMENT NAME:ELMF - SR 1605 Middle Fork Rd. & Toms Falls Rd.

POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	639086.6472	1015483.8722							
LINE			"	112.0443					
PC	639179.4931	1015421.1542							
CURVE					13°44'59,2" Right	08°29'17,7"	161.986	81.384	675.000
PCC	639323.2664	1015347.3778							
CURVE					35°47'06,3" Right	27°37'40,6"	129.525	66.953	207.383
PT	639450.5848	1015342.0484							
LINE			"	91.8732					
PC	639539.1185	1015366.5936							
CURVE					13°27'15,6" Left	18°49'19,9"	71.481	35.906	304.406
PT	639609.6021	1015377.4653							
LINE			"	117.8389					
PC	639727.3662	1015381.6626							
CURVE					70°42'52,7" Right	60°18'40,8"	117.249	67.407	95.000
PT	639814.7122	1015448.4402							
LINE			"	257.3685					
PC	639891.0073	1015694.2401							
CURVE					07°35'25,1" Right	19°05'54,9"	39.743	19.900	300.000
PT	639900.2438	1015732.8647							
LINE			"	46.5197					
PC	639908.0449	1015778.7257							
CURVE					61°51'51,0" Left	114°35'29,6"	53.987	29.962	50.000
PCC	639941.4865	1015817.7621							
CURVE					100°23'52,5" Left	190°59'09,4"	52.568	36.006	30.000
PCC	639980.6986	1015793.5282							
CURVE					34°36'44,0" Left	85°27'28,4"	40.502	20.890	67.046
PT	639974.3060	1015754.1548							
LINE			"	75.1499					
PC	639940.7413	1015686.9170							
CURVE					23°42'48,4" Right	13°28'52,9"	175.898	89.226	425.000
PCC	639896.5082	1015517.9662							
CURVE					33°33'02,4" Right	47°44'47,3"	70.268	36.174	120.000
PT	639913.2197	1015450.7436							
LINE			"	153.2931					
PC	639991.5652	1015318.9834							
CURVE					128°18'58,1" Left	131°41'48,0"	97.433	89.828	43.506
PT	639948.4316	1015253.6226							
LINE			"	61.4000					
PC	639887.5682	1015261.7220							
CURVE					94°09'53,4" Right	132°35'10,2"	71.022	46.475	43.214
PCC	639838.7305	1015221.4600							
CURVE					55°28'30,7" Right	205°42'28,5"	26.968	14.646	27.853
PCC	639849.4090	1015197.8344							
CURVE					42°49'40,6" Right	118°18'40,6"	36.199	18.992	48.428
PT	639883.3106	1015187.7754							
LINE			"	51.3053					
PC	639934.4293	1015192.1469							
CURVE					17°46'15,3" Left	64°21'20,0"	27.614	13.919	89.030
PT	639961.8655	1015190.2296							
LINE			"	51.9174					
PC	640012.4760	1015178.6540							
CURVE					21°59'04,7" Right	54°34'02,7"	40.289	20.395	105.000
PCC	640052.4965	1015177.3329							
CURVE					52°04'47,9" Right	127°19'26,2"	40.904	21.987	45.000
PCC	640084.8049	1015200.0747							
CURVE					30°33'04,3" Right	71°37'11,0"	42.658	21.849	80.000
PCC	640094.6762	1015241.0566							
CURVE					19°59'03,6" Right	31°17'46,9"	63.855	32.255	183.075
PT	640081.7657	1015303.2629							
LINE			"	86.2026					
PC	640049.8687	1015383.3470							
CURVE					19°42'12,0" Left	27°43'11,7"	71.080	35.894	206.695
PCC	640035.3256	1015452.5660							
CURVE					65°03'52,8" Left	61°57'35,5"	105.011	58.985	92.472
PCC	640085.8325	1015538.2462							
CURVE					44°01'54,4" Left	39°33'58,8"	111.286	58.554	144.809
PT	640193.9980	1015547.5824							
LINE			"	49.2939					
PC	640241.1171	1015533.1022							
CURVE					15°47'12,0" Right	21°00'38,8"	75.136	37.808	272.697
PT	640315.0544	1015521.1411							
LINE			"	123.0445					
PC	640438.0674	1015518.3581							
CURVE					09°00'40,9" Right	08°44'07,8"	103.158	51.686	655.897
PT	640540.9576	1015524.1280							
LINE			"	142.2033					
PC	640681.8736	1015543.2190							
CURVE					14°13'30,5" Right	23°38'33,9"	60.167	30.239	242.340
PCC	640739.8877	1015558.5772							
CURVE					13°59'41,8" Right	46°59'26,2"	29.782	14.966	121.930
PT	640765.8869	1015572.9520							
LINE			"	41.3905					
PC	640799.3999	1015597.2430							
CURVE					06°02'43,1" Left	07°13'23,7"	83.692	41.885	793.213
PCC	640869.6269	1015642.6971							
CURVE					11°27'41,4" Left	38°21'59,2"	29.874	14.987	149.338
PT	640896.8386	1015654.9033							
LINE			"	48.0904					
PC	640942.4628	1015670.1058							
CURVE					08°43'12,5" Left	17°57'33,2"	48.555	24.325	319.033
PCC	640989.5162	1015681.8973							
CURVE					17°53'12,9" Left	18°01'23,6"	99.244	50.029	317.900
PCC	641088.3486	1015683.2170							
CURVE					37°02'21,9" Left	44°11'14,5"	83.824	43.435	129.666
PT	641161.9382	1015646.2083							
LINE			"	58.6419					
PC	641203.2463	1015604.5848							
CURVE					40°05'29,6" Right	44°20'24,6"	90.418	47.149	129.219
PT	641283.4185	1015566.9063							
LINE			"	74.6882					
PC	641357.8080	1015560.2328							
CURVE					36°13'27,2" Left	37°34'00,6"	96.426	49.886	152.517
PT	641444.9428	1015522.8176							
LINE			"	51.0036					
PC	641483.2303	1015489.1213							
CURVE					32°35'51,5" Right	14°07'49,5"	230.691	118.561	405.478
PT	641689.4121	1015392.7505							
LINE			"	56.1532					
PC	641744.9114	1015384.2055							
CURVE					18°18'29,9" Left	15°35'43,7"	117.395	59.202	367.387
PT	641856.1447	1015348.2630							
LINE			"	55.5198					
PC	641905.5863	1015323.0047							
CURVE					27°14'08,9" Right	18°54'59,1"	143.980	73.377	302.889
PT	642044.3064	1015289.8462							
LINE			"	13.4152					
PC	642057.7216	1015289.8871							
CURVE					19°33'41,7" Right	19°05'50,5"	102.431	51.719	300.019

EXISTING ALIGNMENT NAME:ELMF - SR 1605 Middle Fork Rd. & Toms Falls Rd.(cont.)

PCC	642158.1209	1015307.5096							
CURVE					11°28'55,3" Right	06°10'04,0"	186.162	93.394	928.953
PT	642325.8983	1015387.4535							
LINE			"	86.8520					
PC	642400.1740	1015432.4689							
CURVE					16°21'38,4" Left	18°45'24,3"	87.225	43.911	305.467
PT	642480.1705	1015466.4878							
LINE			"	33.1199					
PC	642512.1831	1015474.9804							
CURVE					16°37'11,8" Right	11°33'12,6"	143.852	72.435	495.918
PT	642643.9715	1015531.3766							
LINE			"	241.3702					
PC	642849.8229	1015657.4115							
CURVE					19°37'39,9" Right	24°15'15,4"	80.925	40.863	236.230
PCC	642910.3301	1015710.5522							
CURVE					08°50'53,8" Right	54°52'53,2"	16.123	8.077	104.399
PCC	642919.4461	1015723.8307							
CURVE					08°38'48,8" Right	31°39'19,8"	27.316	13.684	180.998
PCC	642931.2904	1015748.4160							
CURVE					12°13'46,1" Right	12°23'38,6"	98.672	49.524	462.284
PT	642957.2527	1015843.4172							
LINE			"	82.8142					
PC	642970.4504	1015925.1731							
CURVE					07°29'20,6" Left	10°47'37,5"	69.383	34.741	530.824
PCC	642985.9464	1015992.7531							
CURVE					59°00'36,2" Left	32°23'30,1"	182.177	100.097	176.884
PT	643111.6239	1016113.4245							
LINE			"	56.1046					
PC	643165.9827	1016127.3115							
CURVE					30°12'18,7" Right	13°49'09,8"	218.571	111.889	414.605
PT	643354.1457	1016233.4806							
LINE			"	34.1447					
PC	643378.4844	1016257.4282							
CURVE					09°30'28,1" Left	16°31'10,7"	57.555	28.843	346.834
PCC	643422.6633	1016294.2134							
CURVE					30°39'52,8" Left	77°34'23,7"	39.530	20.251	73.860
PCC	643459.4380	1016307.3776							
CURVE					54°17'42,6" Left	44°11'56,7"	122.842	66.471	129.631
PT	643568.5046	1016261.5660							
LINE			"	128.8013					
PC	643651.4142	1016162.9974							
CURVE					19°21'44,4" Left	23°21'22,7"	82.900	41.849	245.312
PT	643693.1491	1016091.8255							
LINE			"	78.6036					
PC	643720.9413	1016018.2992							
CURVE					19°12'55,2" Right	40°06'05,3"	47.917	24.186	142.877
PCC	643745.0134	1015977.1274							
CURVE					41°47'06,7" Right	46°55'26,7"	89.049	46.609	122.103
PCC	643821.0450	1015934.6591							
CURVE					28°02'23,0" Right	16°48'51,4"	166.761	85.086	340.757
PT	643985.3233	1015951.1329							
LINE			"	39.6362					
PC	644022.6288	1015964.5242							
CURVE					29°24'41,0" Left	25°26'21,4"	115.614	59.111	225.226
PT	644136.5355	1015974.5712							
LINE			"	82.4248					
PC	644217.7904	1015960.7330							
CURVE					02°06'51,1" Right	03°09'45,6"	66.848	33.428	1811.632
PRC	644283.8821	1015950.7282							
CURVE					04°10'13,7" Left	01°09'26,4"	360.356	180.257	4950.727
PT	644639.0750	1015890.4214							
LINE			"	94.6011					
PC	644731.7034	1015871.2030							
CURVE					10°13'27,0" Right	07°49'35,2"	130.636	65.492	732.079
PCC	644861.2993	1015856.1870							
CURVE					03°14'04,7" Right	02°37'19,1"	123.367	61.700	2185.221
PCC	644984.6492	1015856.4456							
CURVE					09°22'17,7" Right	20°10'41,5"	46.444	23.274	283.949
PT	645030.7503	1015861.6356							
LINE			"	71.1729					
PC	645100.5896	1015875.3490							
CURVE					09°32'22,0" Left	05°52'04,1"	162.573	81.475	976.445
PRC	645261.9818	1015893.2790							
CURVE					11°10'59,0" Right	18°53'01,6"	59.220	29.705	303.413
PT	645320.6471	1015900.6497							
LINE			"	100.4136					
PC	645418.5837	1015922.8152							
CURVE					20°02'24,9" Left	23°36'45,1"	84.871	42.874	242.650
PT	645502.9269	1015926.8407							
LINE			"	83.2897					
PC	645585.5438	1015916.2755							
CURVE					25°31'20,5" Right	17°47'40,9"	143.427	72.923	321.982
PT	645727.1392	1015929.8437							
LINE			"	70.6584					
PC	645794.2493	1015951.9535							
CURVE					39°52'12,7" Left	34°56'03,9"	114.129	59.484	164.009
PT	645906.0399	1015948.6351							
LINE			"	63.7389					
PC	645965.2884	1015925.1346							
CURVE					09°45'32,0" Right	12°30'10,8"	78.052	39.121	458.256
PCC	646039.9364	1015902.6596							
CURVE					08°58'27,5" Right	20°03'21,7"	44.746	22.419	285.679
PCC	646084.2657	1015896.9106							
CURVE					24°36'07,9" Right	03°56'50,6"	623.254	316.505	1451.490
PT	646694.4402	1015997.9123							
LINE			"	60.4250					
PC	646750.5831	1016020.2542							
CURVE					27°04'00,0" Left	22°45'00,0"	118.974	60.619	251.850
PT	646867.2589	1016036.9982							
LINE			"	45.9417					
PC	646912.9992	1016032.7013							
CURVE					19°45'09,6" Right	30°00'00,0"	65.842	33.251	190.986
PCC	646978.3130	1016037.8527							
CURVE					85°49'50,4" Right	130°00'00,0"	66.024	40.978	44.074
PT	647010.7376	1016088.3618							
LINE			"	0.6885					
PC	647010.6155	1016089.0394							
CURVE					58°41'00,0" Left	100°00'00,0"	58.683	32.208	57.296
PT	647029.0125	1016142.0919							
LINE			"	43.4885					
PC	647061.5667	1016170.9273							
CURVE					81°51'00,0" Right	110°00'00,0"	74.409	45.159	52.087
PT	647070.5232	1016238.5784							
LINE			"	40.2435					
PC	647048.3797	1016272.1820							
CURVE					22°17'00,0" Left	30°00'00,0"	74.278	37.614	190.986
PT	647020.4414	1016340.5007							
LINE			"	20.4632					
END	647016.5018	1016360.5810							

EXISTING ALIGNMENT NAME:EY - SR 1606 Middle Fork Rd.

POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	647156.1470	1012178.1380							
LINE			"	67.1157					
PC	647103.7988	1012220.1403							
CURVE					16°58'26.7" Left	08°36'57.3"	197.009	99.231	665.000
PT	646970.5057	1012364.2315							
LINE			"	25.5634					
PC	646956.1061	1012385.3535							
CURVE					18°05'58.8" Right	47°44'47.3"	37.908	19.113	120.000
PT	646930.2002	1012412.8121							
LINE			"	73.4677					
PC	646872.0055	1012457.6550							
CURVE					04°18'58.7" Left	07°09'43.1"	60.267	30.148	800.000
PRC	646825.6975	1012496.2030							
CURVE					13°11'51.6" Right	09°32'57.5"	138.206	69.410	600.000
PRC	646713.1993	1012575.9568							
CURVE					09°58'22.5" Left	10°25'02.7"	95.733	47.988	550.000
PT	646633.6744	1012629.0370							
LINE			"	137.6915					
PC	646526.2281	1012715.1430							
CURVE					05°26'24.9" Right	09°01'22.6"	60.293	30.169	635.000
PRC	646477.4607	1012750.5591							
CURVE					23°50'28.7" Left	16°51'06.1"	141.477	71.777	340.000
PRC	646378.4689	1012850.2048							
CURVE					20°29'37.3" Right	19°05'54.9"	107.305	54.232	300.000
PT	646305.4896	1012928.0899							
LINE			"	119.3081					
PC	646209.7263	1012999.2504							
CURVE					09°44'08.4" Left	21°13'18.6"	45.876	22.993	269.985
PT	646175.3999	1013029.6021							
LINE			"	156.5301					
PC	646067.3573	1013142.8650							
CURVE					08°00'46.6" Left	09°57'52.1"	80.415	40.273	575.000
PRC	646016.0948	1013204.7377							
CURVE					08°17'29.1" Right	32°44'25.6"	25.325	12.685	175.000
PRC	645999.9047	1013224.1825							
CURVE					05°14'22.4" Left	09°23'33.9"	55.783	27.911	610.000
PT	645963.0953	1013266.0708							
LINE			"	257.0319					
PC	645802.4312	1013466.7009							
CURVE					30°09'50.7" Right	16°51'06.1"	178.997	91.625	340.000
PT	645659.7051	1013571.2765							
LINE			"	46.2491					
PC	645616.5708	1013587.9624							
CURVE					44°08'36.3" Left	28°38'52.4"	154.090	81.097	200.000
PT	645507.0378	1013690.8926							
LINE			"	51.4290					
PC	645485.5406	1013737.6132							
CURVE					18°47'44.6" Right	13°10'17.2"	142.700	71.997	435.000
PT	645405.8827	1013855.2400							
LINE			"	21.7557					
PC	645390.9059	1013871.0200							
CURVE					11°48'35.4" Left	16°51'06.1"	70.081	35.165	340.000
PT	645348.2229	1013926.4469							
LINE			"	59.5098					
PC	645316.9573	1013977.0817							
CURVE					15°57'57.1" Right	15°04'40.2"	105.890	53.290	380.000
PT	645249.5695	1014058.3166							
LINE			"	75.2743					
PC	645193.9297	1014109.0160							
CURVE					09°36'38.4" Left	09°57'52.1"	96.449	48.338	575.000
PT	645128.4074	1014179.6382							
LINE			"	99.8082					
PC	645066.8916	1014258.2351							
CURVE					10°50'37.1" Right	63°39'43.1"	17.033	8.542	90.000
PT	645055.1904	1014270.5780							
LINE			"	70.1743					
PC	645002.3153	1014316.7153							
CURVE					21°19'56.3" Left	44°04'25.2"	48.401	24.484	130.000
PRC	644972.5383	1014354.5187							
CURVE					06°29'36.1" Right	05°30'33.2"	117.864	58.995	1040.000
PRC	644912.2062	1014455.6971							
CURVE					18°42'48.6" Left	13°54'24.3"	134.564	67.887	412.000
PRC	644856.2315	1014577.4098							
CURVE					25°31'17.6" Right	20°45'13.3"	122.974	62.524	276.075
PT	644798.7847	1014684.9922							
LINE			"	113.8666					
PC	644724.2885	1014771.1080							
CURVE					09°48'00.5" Right	24°22'52.3"	40.196	20.147	235.000
PRC	644695.5255	1014799.1158							
CURVE					29°22'16.5" Left	26°38'57.1"	110.214	56.347	215.000
PRC	644631.4861	1014887.3341							
CURVE					02°58'26.5" Right	03°42'30.5"	80.196	40.107	1545.000
PCC	644600.4409	1014961.2674							
CURVE					12°12'01.8" Right	28°27'32.2"	42.871	21.517	201.328
PT	644578.8103	1014998.1870							
LINE			"	31.0412					
PC	644560.3613	1015023.1509							
CURVE					03°47'21.1" Left	02°30'07.5"	151.442	75.749	2289.925
PT	644474.4449	1015147.8291							
LINE			"	314.1097					
PC	644304.8595	1015412.2259							
CURVE					10°07'44.4" Left	18°47'07.8"	53.919	27.030	305.000
PT	644279.9015	1015459.9420							
LINE			"	133.5451					
PC	644228.6942	1015583.2793							
CURVE					32°24'56.4" Right	114°35'29.6"	28.288	14.534	50.000
PT	644211.2213	1015605.0461							
LINE			"	55.5558					
PC	644165.7333	1015636.9410							
CURVE					40°00'55.0" Left	81°51'04.0"	48.888	25.488	70.000
PT	644138.2893	1015676.2001							
LINE			"	75.5318					
PC	644118.8069	1015749.1759							
CURVE					37°31'25.6" Right	63°39'43.1"	58.942	30.572	90.000
PT	644086.6764	1015797.3361							
LINE			"	80.1315					
PC	644023.1281	1015846.1487							
CURVE					30°22'54.3" Left	33°42'12.2"	90.144	46.159	170.000
PT	643969.1633	1015917.0374							
LINE			"	27.7954					
END	643958.7106	1015942.7925							

GERTON_MF_TF

R/W | 02C-13

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II 4/4/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: *GERTON_MF_TF*

County: Henderson

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

Wadelynn GEOSPATIAL

350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

Docusign Envelope ID: DC13DE84-E369-4217-B833-17D48A109F8E

6/2/99

REVISIONS

PROPOSED ALIGNMENT CONTROL SHEET

-L- (SR 1605 - MIDDLE FORK RD. & TOMS FALLS RD.)

TYPE	STATION	NORTH	EAST
POT	21+70.99	639070.4574	1015488.7654
PC	23+62.66	639233.0740	1015387.3213
PT	25+51.39	639410.8703	1015329.8506
PC	26+48.41	639507.6695	1015323.3044
PRC	27+70.87	639615.2532	1015271.3088
PRC	28+71.77	639701.4882	1015222.2109
PT	29+22.85	639746.8135	1015199.8858
PC	29+52.63	639769.3419	1015180.4017
PRC	30+21.88	639834.2034	1015171.5246
PT	31+68.37	639977.1664	1015187.0377
PC	32+16.59	640024.1738	1015176.2862
PCC	33+12.89	640093.5610	1015225.8054
PT	33+86.47	640083.4683	1015297.9479
PC	34+73.07	640051.0034	1015378.2332
PCC	35+48.67	640035.4385	1015451.8215
PCC	36+61.84	640092.3335	1015541.9645
PT	37+63.31	640191.5527	1015548.1486
PC	38+15.28	640241.3871	1015533.4050
PT	38+91.35	640316.2764	1015521.2533
PC	39+77.90	640402.7732	1015518.3050
PT	41+29.76	640554.2593	1015525.9301
PC	42+57.39	640680.7387	1015543.0652
PT	43+55.90	640771.2630	1015579.3189
PC	43+89.23	640798.2482	1015598.8784
PCC	46+75.73	641066.6075	1015684.5027
PT	47+84.82	641164.5961	1015643.1820
PC	48+42.61	641205.3330	1015602.1796
PT	49+26.52	641279.7387	1015567.2364
PC	50+02.45	641355.3702	1015560.4515
PT	51+03.61	641446.7801	1015521.2006
PC	51+50.84	641482.2377	1015489.9949
PT	53+84.11	641690.7189	1015392.5493
PC	54+39.32	641745.2916	1015384.1470
PT	55+61.62	641860.8244	1015345.8230
PC	55+89.30	641885.2814	1015332.8464
PT	59+58.28	642238.6952	1015339.0788
PC	61+55.99	642409.9638	1015437.8437
PT	62+29.84	642478.0426	1015465.9233
PC	62+64.57	642511.6067	1015474.8275
PT	64+09.61	642644.4800	1015531.6880
PC	66+64.51	642861.8716	1015664.7884
PT	68+27.39	642950.1070	1015795.7840
PC	70+02.42	642978.7064	1015968.4646
PT	72+10.60	643111.7337	1016113.4525
PC	72+90.27	643188.9265	1016133.1730
PT	74+80.06	643352.3079	1016225.3593
PC	75+50.46	643402.4911	1016274.7362
PT	77+31.82	643563.8209	1016267.1343
PC	78+67.10	643650.8994	1016163.6094
PT	79+51.59	643693.4319	1016091.0774
PC	80+29.39	643720.9413	1016018.2992
PT	81+81.08	643835.6529	1015931.5282
PC	81+81.08	643835.6529	1015931.5282
PT	83+34.53	643986.5233	1015951.7771
PC	83+70.14	644019.9481	1015964.0778
PT	84+83.98	644132.0136	1015975.2838
PC	87+45.67	644390.6405	1015935.3223
PT	89+99.48	644640.3686	1015890.1530
PC	90+83.74	644722.8690	1015873.0360
PRC	94+48.85	645085.4848	1015872.4070
PRC	96+12.67	645248.0839	1015890.3816
PT	97+11.24	645345.6461	1015902.9991
PC	97+65.96	645398.8179	1015915.9062
PT	98+91.98	645523.9440	1015923.1858
PC	99+61.59	645593.0427	1015914.7199
PT	100+97.85	645727.3855	1015928.9030
PC	101+65.90	645791.7157	1015951.1017
PT	102+83.03	645906.3739	1015948.5026
PC	103+44.35	645963.3752	1015925.8935
PT	105+18.25	646133.3533	1015894.9632
PC	105+79.13	646194.2196	1015896.0356
PT	110+84.70	646687.2042	1015995.0327
PC	111+53.36	646750.9967	1016020.4189
PT	112+57.93	646853.3229	1016037.9400
PC	113+69.01	646964.3109	1016033.5461
PT	114+44.05	647015.9897	1016078.0464
PC	114+82.78	647020.2193	1016116.5435
PT	115+16.60	647034.5762	1016146.4496
PC	115+57.65	647063.6137	1016175.4684
PT	116+25.39	647070.3864	1016237.7828
PC	116+69.02	647046.8718	1016274.5339
PT	117+40.36	647020.4698	1016340.3562
POT	117+60.97	647016.5018	1016360.5811

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	RW02D-1

Location and Surveys

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR DAVID LEE II
6/30/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, J. David Lee, II, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 30th day of June, 2025.

DocuSigned by:
Professional Land Surveyor L-4175
A8116B76D0DB4C1...

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

30-JUN-2025 09:02
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6/2/99

REVISIONS

RIGHT OF WAY CONTROL SHEET

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST	
L	72·50.00	22.50	643144.3372	1016145.0044	
L	72·50.00	40.00	643140.0056	1016161.9598	NOT SET(BEDROCK)
L	72·90.27	40.00	643179.0257	1016171.9283	
L	73·50.00	40.00	643229.1408	1016189.2663	NOT SET(CREEK/DEBRIS)
L	73·50.00	36.00	643230.7573	1016185.6074	NOT SET(CREEK/DEBRIS)
L	74·80.06	36.00	643327.0590	1016251.0204	NOT SET(CREEK)
L	75·00.00	36.00	643341.2738	1016265.0068	NOT SET(CREEK)
L	75·00.00	27.00	643347.5860	1016258.5915	NOT SET(ROCK)
L	89·38.00	22.52	644584.3923	1015924.3710	
L	89·38.01	52.02	644590.0339	1015953.3265	NOT SET(CREEK)
L	89·99.48	52.00	644650.9325	1015941.0687	NOT SET(CREEK)
L	90·50.00	52.00	644700.3967	1015930.8059	NOT SET(CREEK)
L	90·50.00	22.50	644694.4037	1015901.9211	
L	93·00.00	23.19	644937.0127	1015878.0211	PAINT/ETCH ON ROCK
L	93·00.00	61.00	644935.6628	1015915.8034	NOT SET(CREEK)
L	94·00.00	61.00	645028.4493	1015924.2955	NOT SET(CREEK)
L	94·00.00	21.53	645034.2240	1015885.2474	NOT SET(CREEK)
L	94·55.00	22.45	645087.1756	1015895.6447	NOT SET(CREEK)
L	94·55.00	27.00	645086.2978	1015900.1060	NOT SET(CREEK)
L	96·12.67	27.00	645247.5685	1015917.3766	NOT SET(CREEK)
L	96·78.00	27.00	645308.6668	1015922.9938	NOT SET(CREEK)
L	96·78.00	25.14	645308.9704	1015921.1619	NOT SET(CREEK)
L	98·00.00	51.00	645425.0764	1015972.8111	PAINT/ETCH ON ROCK
L	98·00.00	25.64	645428.6366	1015947.7066	NOT SET(CREEK)
L	98·91.98	51.00	645530.1461	1015973.8073	NOT SET(CREEK)
L	99·61.59	51.00	645599.2448	1015965.3414	NOT SET(CREEK)
L	100·34.00	23.89	645662.4294	1015938.3512	PAINT/ETCH ON ROCK
L	100·34.00	51.00	645659.1988	1015965.2677	PAINT/ETCH ON ROCK
L	102·00.00	22.55	645822.0407	1015981.1996	
L	102·00.00	44.00	645819.3533	1016002.4802	
L	102·83.03	44.00	645922.5966	1015989.4028	NOT SET(CREEK)
L	103·44.35	44.00	645979.5979	1015966.7936	NOT SET(CREEK)
L	103·50.00	22.48	645976.6556	1015944.8446	NOT SET(CREEK)
L	103·50.00	44.00	645984.3333	1015964.9504	NOT SET(CREEK)

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST	
L	75·53.00	25.61	643386.7839	1016295.1642	
L	75·53.00	39.00	643377.6182	1016304.9202	NOT SET(ROCK)
L	75·68.00	25.22	643401.3124	1016306.5455	
L	75·68.00	39.00	643393.3275	1016317.7812	NOT SET(ROCK)
L	79·45.00	22.52	643711.8691	1016105.7216	NOT SET(ROOT IN SAND)
L	79·60.00	47.00	643740.3707	1016099.8257	
L	80·59.00	41.00	643768.6307	1016014.4610	
L	80·59.00	22.32	643753.0158	1016004.2147	
L	84·98.00	22.34	644149.2827	1015995.2242	NOT SET(ROCK)
L	84·98.00	55.00	644154.2694	1016027.4977	
L	85·18.00	31.00	644170.3700	1016000.7251	
L	85·18.00	22.04	644169.0011	1015991.8661	NOT SET(ROCK)
L	85·18.00	55.00	644174.0348	1016024.4436	NOT SET(ROCK)
L	85·35.00	31.00	644187.1706	1015998.1291	
L	85·35.00	21.77	644185.7618	1015989.0116	
L	89·26.00	22.52	644572.5575	1015926.6620	NOT SET(ROCK)
L	89·26.00	25.00	644573.0253	1015929.0979	
L	89·38.00	26.00	644585.0576	1015927.7906	NOT SET(FALLEN TREE)
L	93·61.00	-28.00	645001.5740	1015831.2336	NOT SET(ROCK)
L	93·61.00	-24.36	645001.1985	1015834.8496	NOT SET(ROCK)
L	93·72.00	-24.47	645012.4401	1015835.9846	
L	93·72.00	-26.00	645012.6172	1015834.4608	
L	98·40.00	56.00	645470.5867	1015981.6400	NOT SET(CREEK)
L	98·40.00	51.00	645470.7196	1015976.6418	NOT SET(CREEK)
L	99·00.00	64.00	645539.6922	1015985.7349	NOT SET(ROCK)
L	99·97.00	-21.32	645628.2788	1015891.1797	
L	100·03.00	-36.00	645634.9416	1015876.5370	
L	100·60.00	-21.16	645695.2559	1015898.1288	
L	100·60.00	-23.00	645695.6319	1015896.3304	
L	101·91.00	22.54	645811.9332	1015979.6315	
L	101·98.00	76.00	645812.4482	1016033.8445	NOT SET(CREEK)
L	102·57.00	79.00	645898.7476	1016033.2548	NOT SET(CREEK)
L	103·29.00	-22.50	645940.8072	1015910.6396	
L	103·32.00	-32.00	645940.0932	1015900.7028	
L	103·40.00	-22.50	645951.0322	1015906.5839	
L	103·42.00	-29.00	645950.4948	1015899.8044	
L	103·63.00	22.41	645988.2192	1015940.5463	NOT SET(CREEK)
L	103·63.00	63.00	646001.5743	1015978.8810	NOT SET(CREEK)
L	105·07.00	23.08	646122.2846	1015917.9893	
L	105·07.00	43.00	646122.4431	1015937.9075	NOT SET(CREEK)
L	105·44.00	43.00	646158.3390	1015938.4101	NOT SET(CREEK)
L	105·44.00	22.14	646158.7065	1015917.5493	
L	106·05.00	-22.84	646220.9056	1015873.9023	NOT SET(ROCK)
L	106·22.00	-29.00	646238.4644	1015868.4806	NOT SET(ROCK)
L	106·72.00	-28.00	646289.3021	1015872.8477	
L	108·35.00	23.07	646443.6276	1015946.4353	NOT SET(CREEK)
L	108·65.00	65.00	646463.2525	1015993.5246	NOT SET(CREEK)
L	108·65.00	-58.00	646490.3119	1015873.5380	NOT SET(TREES/DEBRIS)
L	108·65.00	-36.00	646485.4720	1015894.9990	NOT SET(TREES/DEBRIS)
L	108·85.00	-36.00	646505.4508	1015899.6548	NOT SET(TREES/DEBRIS)
L	108·85.00	-57.00	646510.3628	1015879.2374	NOT SET(TREES/DEBRIS)
L	109·75.00	65.00	646564.5642	1016020.5946	NOT SET(CREEK)
L	110·35.00	30.00	646630.6161	1016005.7307	NOT SET(CREEK)
L	110·35.00	22.76	646633.0538	1015998.9096	NOT SET(CREEK)
L	111·35.00	-35.00	646746.8830	1015981.1123	
L	111·35.00	-55.00	646754.2779	1015962.5296	
L	111·55.00	-33.00	646764.5262	1015990.2809	
L	111·57.00	-55.00	646773.9815	1015970.3483	
L	112·00.00	-22.55	646799.9954	1016011.3988	NOT SET(ROCK)
L	112·83.00	21.54	646879.2236	1016058.4733	
L	114·00.00	-19.64	647004.4683	1016025.2702	
L	114·00.00	-28.00	647009.0540	1016018.2756	
L	114·03.24	-27.71	647013.0103	1016021.4066	
L	114·86.29	29.60	646991.5985	1016125.3088	NOT SET(PROPERTY OWNER)

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	RW03E-1

Location and Surveys

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE., SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR DAVID LEE
6/30/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , J. David Lee, II, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (Base map Compilation, R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the data compiled came from available surveys/mapping performed by me and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by me; that the depicted property data shown herein were surveyed by me; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 30th day of June, 2025.

DocuSigned by:
Professional Land Surveyor L-4175
A8116B76D0DB4C1...

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED MAY 19, 2025 TO JUNE 3, 2025 .

30-JUN-2025 09:04
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ckohn AT LOREYKOHNLE

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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	RW04

Location and Surveys

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II
6/30/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, J. David Lee, II, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from May 19, 2025 to June 13, 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30th day of June, 2025.

DocuSigned by:
J. David Lee, II
Professional Land Surveyor L-4175
A8116B76D0DB4C1...

REVISIONS

6/2/99

LINDA OKLER & OKLER REVOCABLE FAMILY TRUST
DEED BOOK/PAGE 004065/00262
PLAT SLIDES 3907 & 4403

ATHALYN K. & MICHAEL J. SWEENEY
DEED BOOK/PAGE 003416/00653
PLAT SLIDE 4473

STEVEN STEWART COBB & JENNIFER LYN HUBBARD
DEED BOOK/PAGE 001505/00319
PLAT SLIDE 4473

ADISLEIDY TAVAREZ RAMOS
DEED BOOK/PAGE 004196/00514

CONSTANCE M. GLAVIN
DEED BOOK/PAGE 001414/00246
PLAT SLIDE 8325

MIDDLE FORK BAPTIST CHURCH
DEED BOOK/PAGE 000226/00180
PLAT BOOK/SLIDE 1995/1977

HEMLOCK LLC., A LOUISIANA LIMITED LIABILITY COMPANY
DEED BOOK/PAGE 001397/00299

C. LEMUEL & SANDRA T. OATES
DEED BOOK/PAGE 001133/00699
PLAT SLIDE 2473

HEMLOCK LLC.
DEED BOOK/PAGE 003572/00100
PLAT SLIDE 2473

ALEX MARCHBANKS; AMANDA MCGEE
DEED BOOK/PAGE 004065/00222
PLAT SLIDE 6451

ERIC & MINDI FRIEDWALD
DEED BOOK/PAGE 001422/00106
PLAT BOOK/SLIDE 1997/2473

NAD 83 NC GRID NA 2011

* NOTE: DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS AND SUPERELEVATION RATE

-L- CURVE DATA

PI Sta 73+87.43	PI Sta 76+69.39	PI Sta 79+09.75
Δ = 30° 12' 18.7" (RT)	Δ = 94° 28' 03.4" (LT)	Δ = 19° 21' 44.4" (LT)
D = 15° 54' 55.8"	D = 52° 05' 13.5"	D = 22° 55' 05.9"
L = 189.78'	L = 181.36'	L = 84.48'
T = 97.15'	T = 118.93'	T = 42.65'
R = 360.00'	R = 110.00'	R = 250.00'
SE = 06	SE = N/A	SE = N/A
RO = 90'	RO = N/A	RO = N/A
PI Sta 81+14.37	PI Sta 82+59.06	PI Sta 84+28.31
Δ = 64° 22' 41.4" (RT)	Δ = 25° 07' 11.9" (RT)	Δ = 28° 59' 15.9" (LT)
D = 42° 26' 28.7"	D = 16° 22' 12.8"	D = 25° 27' 53.2"
L = 151.69'	L = 153.45'	L = 113.83'
T = 84.98'	T = 77.98'	T = 58.16'
R = 135.00'	R = 350.00'	R = 225.00'
* SE = 05	SE = N/A	SE = N/A
* RO = 45'	RO = N/A	RO = N/A
DS = 15 MPH		

-L- PC Sta. 66+64.51
-L- PT Sta. 68+27.39
-L- PC Sta. 70+02.42
-L- PT Sta. 72+10.60
-L- PC Sta. 72+90.27
-L- PT Sta. 74+80.06
-L- PC Sta. 75+50.46
-L- PT Sta. 77+31.82
-L- PT Sta. 79+51.59
-L- PC Sta. 78+67.10
-L- PCC Sta. 81+81.08
-L- PC Sta. 80+29.39
-L- PT Sta. 83+34.53
-L- PC Sta. 83+70.14
-L- PT Sta. 84+83.98

N 31° 28' 39.1" E 177.34'
N 68°17'38" W 322.20'
S 67°30'24" E 26.07'
N 80° 35' 45.7" E
N 21°35'42" W 226.62'
N 21°35'42" W 151.74'
N 21°27'06" W 12.92'
N 46°52'05" W 109.36'
N 35°59'16" W 158.88'
N 79°15'04" W 42.00'
N 39°01'43" W 3.00'
N 73°45'45" W 164.67'
S 77°52'19" W 26.20'
S 47°38'04" W 104.32'
S 47°38'04" W 84.58'
S 60°30'44" W 84.58'
S 73°52'28" E 30.36'
S 12°56'44" W 29.33'
S 12°56'44" W 14.24'
S 80°47'23" E 106.88'
S 73°52'28" E 14.98'
N 75°43'01" E 48.36'
N 13°21'07" E 47.08'
S 02°06'33" E 33.18'
S 89°23'53" E 36.75'
S 89°23'53" E 23.26'
S 03°42'22" W 34.49'
S 02°57'47" W 95.12'
S 67°10'32" E 4.30'
S 01°11'20" E 55.28'
N 75°43'01" E 100.41'
S 18°13'16" E 30.12'
S 09°29'33" W 25.06'
S 40°36'14" W 7.56'
S 42°20'50" E 49.35'
S 67°16'52" E 79.00'
S 54°19'00" E 79.46'
S 38°09'04" E 114.39'
S 11°46'19" E 25.69'
S 54°24'29" W 133.56'
S 62°21'28" E 78.39'
N 13°21'07" E 23.33'
N 75°43'01" E 100.41'
N 56°28'49" W 82.44'
N 48°42'29" W 46.03'
N 15°40'45" W 69.39'
N 35°18'31" W 32.60'
N 68°42'
S 41°23'42" W 19.76'
S 41°23'42" W 198.60'
N 8° 47' 00.8" W
N 69° 17' 38.2" W
N 59°38'22" E 135.74'
S 47°38'04" W 114.32'
S 77°52'19" W 18.38'
N 59°38'22" E 47.68'
S 49° 55' 53.3" W 47.68'
N 20° 12' 15.1" E

-L- +80.00 EX. R/W
N 14° 19' 51.0" E
-L- +50.00 25.00' LT
-L- +12.00 EX. R/W
-L- +15.00 30.00' RT
-L- +50.00 40.00' RT 29.00' RT EX. R/W
-L- +90.27 40.00' RT
-L- +50.00 40.00' RT 36.00' RT
-L- +70.00 EX. R/W
-L- +80.06 36.00' RT
-L- +00.00 36.00' RT EX. R/W
N 44° 32' 09.7" E
-L- +53.00 39.00' RT EX. R/W
-L- +68.00 39.00' RT EX. R/W
-L- +10.00 EX. R/W
-L- +09.00 25.00' RT
-L- +59.00 41.00' RT 28.00' RT EX. R/W
-L- +60.00 47.00' RT
-L- +45.00 EX. R/W
-L- +98.00 55.00' RT EX. R/W
-L- +18.00 55.00' RT 31.00' RT EX. R/W
-L- +35.00 31.00' RT EX. R/W

EIP TO RW 21.16'
EIP TO RW 72.72'
EIP TO RW 11.80'
EIP
PDE
PUE
FOOT BRIDGE
EXISTING R/W
EXISTING 20' PRIVATE RIGHT-OF-WAY PER PLAT SLIDES 3907 & 4403
CENTER OF PROPOSED RIGHT-OF-WAY PER (APPROX 10' BY SCALED) PLAT SLIDES 3907 & 4403
SR 1605 MIDDLE FORK RD 20' BST
SR 1606 TOMS FORK RD 18' BST
SR 1605 MIDDLE FORK RD 13' BST
MATCHLINE -L- STA 86+00 (SEE SHEET 5)

70 08 29 30 32

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED MAY 19, 2025 TO JUNE 3, 2025 .

30-JUN-2025 09:06
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johnny.lee
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6/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	RW05

Location and Surveys

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II
6/30/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I J. David Lee, II, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from May 19, 2025 to June 13, 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30th day of June, 2025.

DocuSigned by:
J. David Lee
Professional Land Surveyor L-4175
A8116B76D0DB4C1...

-L- CURVE DATA

PI Sta 88+72.61	PI Sta 92+68.84	PI Sta 95+30.99	PI Sta 96+62.15
△ = 2° 56' 16.1" (LT)	△ = 23° 14' 38.2" (RT)	△ = 10° 25' 43.8" (LT)	△ = 12° 33' 01.9" (RT)
D = 1° 09' 27.0"	D = 6° 21' 58.3"	D = 6° 21' 58.3"	D = 12° 43' 56.6"
L = 253.81'	L = 365.12'	L = 163.82'	L = 98.57'
T = 126.93'	T = 185.10'	T = 82.13'	T = 49.48'
R = 4,950.00'	R = 900.00'	R = 900.00'	R = 450.00'
SE = 04	SE = 06	SE = 04	* SE = 04
RO = 72	RO = 108	RO = 56	* RO = 48
			DS = 20 MPH

* NOTE: DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS AND SUPERELEVATION RATE

N 59°51'07" W 1.08'
C = N 47°26'11" W 10.86'
N 27°32'58" E 41.85'
S 47°26'11" W 15.95'
N 59°51'07" W 34.71'
N 47°26'11" E 34.95'
N 47°24'48" E 236.74'
EIP
S 47°24'48" W 197.76'
S 47°23'42" W 2.65'
EXISTING R/W
45'±
N 8° 47' 00.8" W
MATCHLINE -L- STA 86+00 (SEE SHEET 4)
N 11° 43' 16.9" W
S 47°24'48" W 16.65'
N 38°47'47" W 925.65'
N 76°00'27" W 120.00'
S 82°29'51" W 180.20'
N 14°30'48" E 20.00'
S 85°43'07" W 43.27'
N 14°30'42" E 449.72'
N 16°05'40" W 40.26'
N 65°50'49" E 15.14'
-L- PRC Sta. 96+12.67
N 13° 38' 39.4" E
-L- PT Sta. 97+11.24
EIP TO RW 25.60'
EIP 25.02'
S 89°39'55" E 90.55'
45'±
MATCHLINE -L- STA 97+50 (SEE SHEET 6)
-L- PC Sta. 87+45.67
-L- PT Sta. 89+99.48
-L- PC Sta. 90+83.74
-L- PRC Sta. 94+48.85
N 47°23'32" E 383.46'
S 74°51'25" W 332.69'
N 04°49'45" E 329.20'
N 64°49'41" W 157.46'

-L- +26.00 25.00' RT EX. R/W
-L- +38.00 52.00' RT 26.00' RT EX. R/W
-L- +99.48 52.00' RT
-L- +50.00 52.00' RT EX. R/W
-L- +61.00 28.00' LT EX. R/W
-L- +72.00 26.00' LT EX. R/W
-L- +00.00 61.00' RT EX. R/W
-L- +00.00 61.00' RT EX. R/W
-L- +55.00 47.00' RT 27.00' RT EX. R/W
-L- +25.00 42.00' RT
-L- +79.00 31.00' RT
-L- +12.67 27.00' RT
-L- +78.00 27.00' RT EX. R/W
-L- +25.00 28.00' RT EX. R/W

KATHLEEN E WATSON
Deed Book/Page 1168/747

MICHAEL L RAINEY; SANDRA Q RAINEY
DEED BOOK/PAGE 001411/00339

PATRICIA HUNTLEY COLLEY & WILLIAM MACK LANNING
DEED BOOK/PAGE 001003/00599

JENNIFER LYDA HALL
DEED BOOK/PAGE 001288/00058
PLAT SLIDE 6167

JULIE LYDA & BILLY MILO, II SEARCY & DAVID EUGENE LYDA
DEED BOOK/PAGE 001668/00700
PLAT SLIDE 6167

ERIC & MINDI FRIEDWALD
DEED BOOK/PAGE 001422/00106
PLAT BOOK/SLIDE 1997/2473

32 34 35 36 90 95

NC GRID NAD 83 NA 2011

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED MAY 19, 2025 TO JUNE 3, 2025 .

30-JUN-2025 09:07
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6/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	RW06

Location and Surveys

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II
6/30/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I J. David Lee, II, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from May 19, 2025 to June 13, 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30th day of June, 2025.

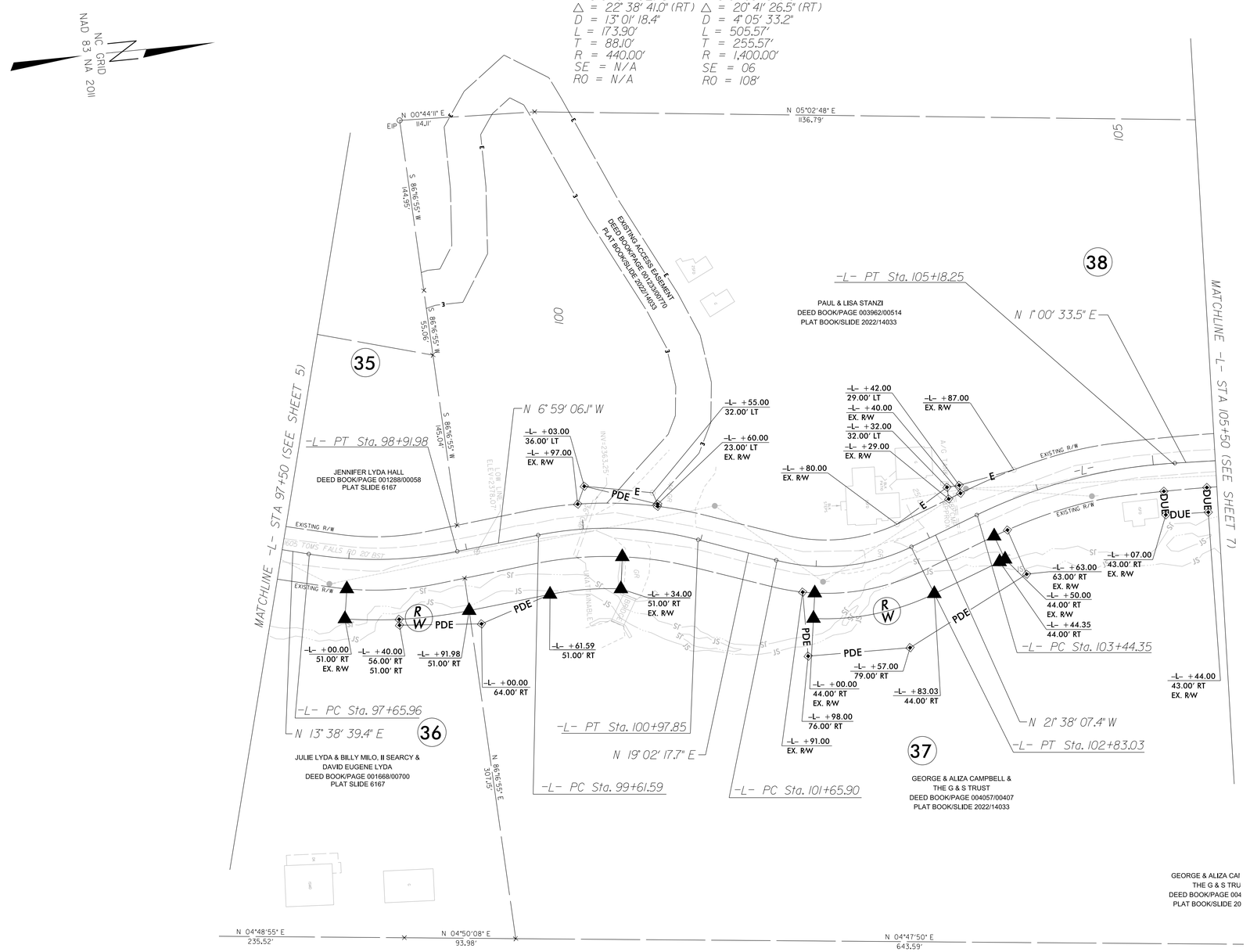
DocuSigned by:
Professional Land Surveyor L-4175
A8116B76D0DB4C1...

-L- CURVE DATA

PI Sta 98+29.66	PI Sta 100+30.92	PI Sta 102+27.06
△ = 20° 37' 45.5" (LT)	△ = 26° 01' 23.8" (RT)	△ = 40° 40' 25.2" (LT)
D = 16° 22' 12.8"	D = 19° 05' 54.9"	D = 34° 43' 29.0"
L = 126.02'	L = 136.26'	L = 117.13'
T = 63.70'	T = 69.32'	T = 61.16'
R = 350.00'	R = 300.00'	R = 165.00'
* SE = 05	* SE = 05	* SE = 06
* RO = 65	* RO = 65	* RO = 78
DS = 25 MPH	DS = 25 MPH	DS = 25 MPH

PI Sta 104+32.45	PI Sta 108+34.70
△ = 22° 38' 41.0" (RT)	△ = 20° 41' 26.5" (RT)
D = 13° 01' 18.4"	D = 4° 05' 33.2"
L = 173.90'	L = 505.57'
T = 88.10'	T = 255.57'
R = 440.00'	R = 1,400.00'
SE = N/A	SE = 06
RO = N/A	RO = 108'

* NOTE: DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS AND SUPERELEVATION RATE



NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED MAY 19, 2025 TO JUNE 3, 2025 .

30-JUN-2025 09:09
J:\Projects\2025\MIDDLEFORK_CON_WAD\MAPPING\ROW Sheets\GERTON_MF_TF_ls_rw06.dgn
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PROJECT REFERENCE NO.	SHEET NO.
DF18314.2045377	RW07

Location and Surveys

WADELYNN GEOSPATIAL, LLC.
350 PEE DEE AVE.,
SUITE 202
ALBEMARLE, NC 28001
(704)550-5150

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4175 LAND SURVEYOR J. DAVID LEE, II
6/30/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I J. David Lee, II, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from May 19, 2025 to June 13, 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30th day of June, 2025.

DocuSigned by:
J. David Lee, II
Professional Land Surveyor L-4175
A8116B76D0DB4C1...

REVISIONS

6/2/99

MATCHLINE -L- STA 105+50 (SEE SHEET 6)

N 05°02'48" E 1136.79'

N 1° 00' 33.5" E

-L- PC Sta. 105+79.13

38

PAUL & LISA STANZI
DEED BOOK/PAGE 003962/00514
PLAT BOOK/SLIDE 2022/14033

-L- +05.00 EX. R/W
-L- +22.00 29.00' LT
-L- +72.00 28.00' LT
-L- +85.00 57.00' LT 36.00' LT
-L- +65.00 58.00' LT 36.00' LT

EXISTING R/W
45.00'
EXISTING R/W

PUE PUE PUE

County: HENDERSON

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	0001000000-E	200	CLEARING & GRUBBING .. ACRE(S)	Lump Sum	L.S.	
0004	0022000000-E	225	UNCLASSIFIED EXCAVATION	1,480 CY		
0005	0036000000-E	225	UNDERCUT EXCAVATION	2,550 CY		
0006	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUBBING	5 ACR		
0007	0106000000-E	230	BORROW EXCAVATION	2,670 CY		
0008	0156000000-E	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	5,400 SY		
0009	0195000000-E	265	SELECT GRANULAR MATERIAL	2,000 CY		
0010	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	2,000 SY		
0011	0199000000-E	SP	TEMPORARY SHORING	4,557 SF		
0012	0223000000-E	275	ROCK PLATING	3,700 SY		
0013	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	120 TON		
0014	0321000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	340 SY		
0015	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	88 LF		
0016	0449000000-E	310	**" RC PIPE CULVERTS, CLASS V (15")	28 LF		
0017	0449000000-E	310	**" RC PIPE CULVERTS, CLASS V (18")	120 LF		

County: HENDERSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0018	0449000000-E	310	**" RC PIPE CULVERTS, CLASS V (24")	116 LF		
0019	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (36", 0.079")	120 LF		
0020	0582000000-E	310	15" CS PIPE CULVERTS, 0.064" THICK	84 LF		
0021	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	224 LF		
0022	0594000000-E	310	24" CS PIPE CULVERTS, 0.064" THICK	144 LF		
0023	0995000000-E	340	PIPE REMOVAL	348 LF		
0024	1011000000-N	500	FINE GRADING	Lump Sum	L.S.	
0025	1099500000-E	505	SHALLOW UNDERCUT	500 CY		
0026	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	1,000 TON		
0027	1112000000-E	505	GEOTEXTILE FOR SUBGRADE STABILIZATION	1,500 SY		
0028	1121000000-E	520	AGGREGATE BASE COURSE	340 TON		
0029	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	1,850 TON		
0030	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	1,390 TON		
0031	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	190 TON		
0032	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	10 TON		
0033	2022000000-E	815	SUBDRAIN EXCAVATION	224 CY		
0034	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	1,000 SY		

County: HENDERSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	168 CY		
0036	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	1,000 LF		
0037	2070000000-N	815	SUBDRAIN PIPE OUTLET	5 EA		
0038	2077000000-E	815	6" OUTLET PIPE	30 LF		
0039	2209000000-E	838	ENDWALLS	6 CY		
0040	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	7 EA		
0041	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	7 EA		
0042	2577000000-E	846	CONCRETE EXPRESSWAY GUTTER	90 LF		
0043	2619000000-E	850	4" CONCRETE PAVED DITCH	130 SY		
0044	3030000000-E	862	STEEL BEAM GUARDRAIL	3,587.5 LF		
0045	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	275 LF		
0046	3145000000-E	862	EXTRA LENGTH GUARDRAIL POST (**' STEEL) (8')	736 EA		
0047	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	30 EA		
0048	3195000000-N	862	GUARDRAIL END UNITS, TYPE AT-1	3 EA		
0049	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	5 EA		
0050	3287000000-N	862	GUARDRAIL END UNITS, TYPE TL-3	8 EA		
0051	3628000000-E	876	RIP RAP, CLASS I	120 TON		

County: HENDERSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0052	3649000000-E	876	RIP RAP, CLASS B	85 TON		
0053	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	770 SY		
0054	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	192 SF		
0055	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	480 SF		
0056	4424500000-N	SP	TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM	3 EA		
0057	4430000000-N	1130	DRUMS	195 EA		
0058	4455000000-N	1150	FLAGGER	60 DAY		
0059	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	15,828 LF		
0060	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM POLYCARBONATE H-SHAPED MARKERS	49 EA		
0061	6000000000-E	1605	TEMPORARY SILT FENCE	4,415 LF		
0062	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	325 TON		
0063	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	160 TON		
0064	6012000000-E	1610	SEDIMENT CONTROL STONE	150 TON		
0065	6015000000-E	1615	TEMPORARY MULCHING	2.5 ACR		
0066	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	500 LB		
0067	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	2.5 TON		
0068	6024000000-E	1622	TEMPORARY SLOPE DRAINS	1,000 LF		

County: HENDERSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0069	6029000000-E	SP	SAFETY FENCE	1,300 LF		
0070	6030000000-E	1630	SILT EXCAVATION	250 CY		
0071	6036000000-E	1631	MATTING FOR EROSION CONTROL	5,200 SY		
0072	6037000000-E	1629	COIR FIBER MAT	500 SY		
0073	6042000000-E	1632	1/4" HARDWARE CLOTH	295 LF		
0074	6084000000-E	1660	SEEDING & MULCHING	2.5 ACR		
0075	6087000000-E	1660	MOWING	2.5 ACR		
0076	6090000000-E	1661	SEED FOR REPAIR SEEDING	250 LB		
0077	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	1.25 TON		
0078	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	250 LB		
0079	6108000000-E	1665	FERTILIZER TOPDRESSING	1.25 TON		
0080	6111000000-E	SP	IMPERVIOUS DIKE	317 LF		
0081	6114500000-N	1667	SPECIALIZED HAND MOWING	50 MHR		
0082	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	5 EA		
0083	6123000000-E	1670	REFORESTATION	2.89 ACR		
0084	6132000000-N	SP	GENERIC EROSION CONTROL ITEM PREFABRICATED CONCRETE WASHOUT	10 EA		
0085	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT - TYPE 1	315 SY		

County: HENDERSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0086	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT - TYPE 2	1,070 SY		
			WALL ITEMS			
0087	0220000000-E	SP	ROCK EMBANKMENTS	2,400 TON		
0088	0222000000-E	SP	GEOTEXTILE FOR ROCK EMBANKMENTS	310 SY		
0089	8832000000-N	SP	GENERIC RETAINING WALL ITEM SITE 7 EXISTING RETAINING WALL REPAIRS	Lump Sum	L.S.	
0090	8853000000-E	SP	GENERIC RETAINING WALL ITEM GROUT FOR ROCK FILL	175 CY		
0111	8834000000-N	SP	GENERIC RETAINING WALL ITEM ANCHORS	12 EA		
0112	8853000000-E	SP	GENERIC RETAINING WALL ITEM SHOTCRETE	1,450 CY		
0113	8853000000-E	SP	GENERIC RETAINING WALL ITEM EXCAVATABLE FLOWABLE FILL	400 CY		
0114	8839000000-E	SP	GENERIC RETAINING WALL ITEM NO. 8A MICROPILE LEVELING COURSE	86 LF		
0115	8839000000-E	SP	GENERIC RETAINING WALL ITEM NO. 8B MICROPILE LEVELING COURSE	335 LF		
			********* BEGIN SCHEDULE AA ******** ********* (2 ALTERNATES) *********			
0091 AA1	8847000000-E	SP	GENERIC RETAINING WALL ITEM NO. 8A RETAINING WALL SOIL NAIL WALL	810 SF		
			***** OR *****			
0116 AA2	8847000000-E	SP	GENERIC RETAINING WALL ITEM NO. 8A RETAINING WALL SOLIDER PILE WALL	810 SF		
			******* END SCHEDULE AA *******			

County: HENDERSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
			******* BEGIN SCHEDULE BB ****** ******* (2 ALTERNATES) *******			
0101 BB1	8847000000-E	SP	GENERIC RETAINING WALL ITEM NO. 8B RETAINING WALL SOIL NAIL WALL	4,620 SF		
			*** OR ***			
0117 BB2	8847000000-E	SP	GENERIC RETAINING WALL ITEM NO. 8B RETAINING WALL SOLIDER PILE WALL	4,620 SF		
			***** END SCHEDULE BB *****			

1405/Jul17/Q90377.89/D363147400000/E99 **Total Amount Of Bid For Entire Project :**